

**HYDROLOGIC AND HYDRAULIC REPORT
FOR
MENIFEE VALLEY AREA DRAINAGE PLAN**

**Job Number 14795-B
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INTRODUCTION

The Menifee Valley Area Drainage Plan (ADP) has been prepared at the request of Riverside County Flood Control and Water Conservation District (RCFC&WCD) to provide preliminary design and analyses for the regional drainage improvements to be implemented in Menifee Valley. The purpose of this study is to ensure that the proposed drainage improvements will meet the needs of future development in Menifee Valley by providing an adequate regional drainage system. Final design plans and calculations are not included in the scope of this study.

The regional drainage improvements are proposed within Tracts 31229, 31008, and within an easement located between Briggs Road and Leon Road obtained from an individual property owner. Several other tracts in the area will ultimately connect to this regional drainage system as they develop. Exhibit 1 shows an aerial photograph identifying the locations of the currently planned tracts.

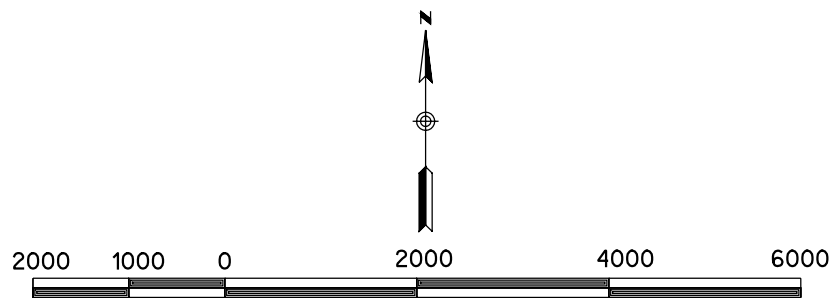
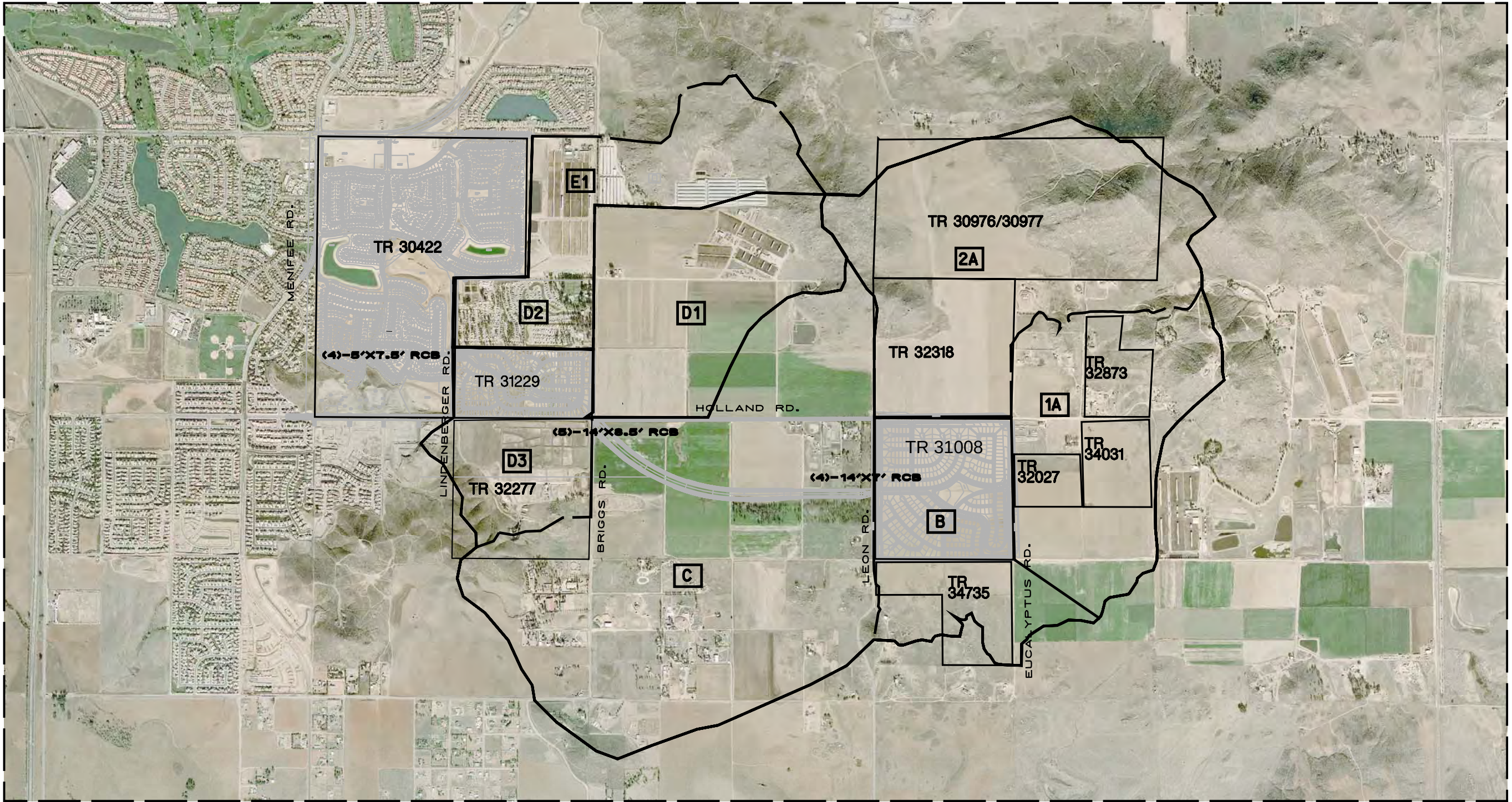
The most downstream of the proposed regional drainage improvements are located within Tract 31229, where a proposed man-made private lake (Tr. 31229 lake) will extend from Lindenberger Road to Briggs Road. This private lake will connect on the downstream side to a proposed reinforced concrete box (RCB) system to be built in conjunction with of the final phase of Tract 30422 by Centex Homes (final design pending). The lake will connect on the upstream end to an RCB system at the intersection of Briggs Road and Holland Road to be constructed as part of the regional drainage improvements.

Upstream of Briggs Road, the regional drainage improvements include a proposed earthen trapezoidal channel (Regional Channel) that will extend from Briggs Road to Leon Road. The proposed channel is to be maintained by RCFC&WCD. An easement for the proposed channel, which is located on private property, has been obtained from the property owner. The channel will connect to a proposed RCB system at Leon Road.

Upstream of the proposed Leon Road culvert system, the regional drainage system will split into three proposed grass-lined trapezoidal channels within Tr. 31008. Valley Wide Recreation & Parks District has agreed to maintain these channels. The three channels, referred to as Valley Wide Channel A, Valley Wide Channel B, and Valley Wide Channel C are designed to capture off-site flows at the upstream ends of Tr. 31008 and convey the flow to Leon Road. Channel A collects flows tributary to the north side of Holland Road, at the northwest corner of Tr. 31008¹. Channel B extends from Leon Road to the southeast corner of Tr. 31008 to capture flows collected on the eastern side of Eucalyptus Road. Channel C extends from Leon Road to the southwest corner of Tr. 31008 to capture flows collected on the western side of Craig Avenue.

Methodology and results for the preliminary hydrologic and hydraulic calculations performed for the conceptual design of the regional drainage plan are presented in this report.

¹ Reference: Hydrologic/Hydraulic Calculations for Tracts 31229 & 31008, Artiga Civil Design, August 11, 2006.



GRAPHIC SCALE 1"= 2000'

**MENIFEE VALLEY AREA
DRAINAGE PLAN
EXHIBIT 1: MENIFEE VALLEY TRACTS**

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MENIFEE VALLEY SLOPE CRITERIA

The existing terrain within Meniffee Valley is generally flat and undeveloped except for at the downstream end of the valley near Meniffee Road, where residential developments are constructed or under construction. Drainage in the valley is therefore governed by these downstream developments, and all future upstream developments must be higher to allow positive drainage. In order to allow future developments to tie-into the regional drainage system proposed in this study, RCFC&WCD has mandated that the flowline for all regional drainage structures must have a maximum cumulative slope of 0.1% projected from the existing flowline at Meniffee Road.

Table 1 on the following page shows several variables including the existing flowline elevation, proposed flowline elevation, and allowable flowline elevation. The allowable flowline elevation is the elevation at the location of interest at a 0.1% slope projected from Meniffee Road. In all locations, the proposed flowline elevation of the regional drainage improvements outlined on this report are lower than both the existing flowline elevation and the allowable flowline elevation.

Two other variables of interest shown on the table are the proposed cumulative slope and the proposed intermittent slope. The cumulative slope is measured from Meniffee Road at each location and the intermittent slope is measured between each location. The table shows that although some of the intermittent slopes are greater than 0.1%, the cumulative slope from Meniffee Road always remains below 0.1%.

Finally, a line was projected perpendicularly from Meniffee Road to Eucalyptus Road (rather than along the flow line of the proposed regional facilities) to obtain the shortest distance. Then a 0.1% slope was calculated along this line to obtain the most conservative interpretation of the 0.1% slope rule. Even in this case, the proposed flowline elevations for the regional facilities are lower than the allowable flowline elevation at every road crossing.

Table 1. Menifee Valley Overall Slope Calculation

	LOCATION	DISTANCE FROM MENIFEE ROAD (ft) ¹	EXISTING FLOWLINE ELEVATION (ft)	PROPOSED FLOWLINE ELEVATION (ft)	ALLOWABLE FLOWLINE ELEVATION (s=0.001)	PROPOSED EL. MINUS ALLOWABLE EL. (ft)	PROPOSED CUMULATIVE SLOPE FROM MENIFEE RD	PROPOSED INTERMITTENT SLOPES
CONNECT TO OFFSITE	D/S MENIFEE RD	0	1421.20	1421.20	N/A	N/A	N/A	N/A
TR. 30422	U/S MENIFEE RD	140	1421.3	1421.3	1421.34	-0.04	0.0007	0.0007
	D/S LAGUNA VISTA	1460	1417.5	1417.50	1422.66	-5.16	-0.0025	-0.0029
	U/S LAGUNA VISTA	1540	1417.5	1417.50	1422.74	-5.24	-0.0024	0.0000
	D/S LINDENBERGER	3850	1426.5	1421.60	1425.05	-3.45	0.0001	0.0018
TR. 31229	U/S LINDENBERGER	4010	1426.5	1422.00	1425.21	-3.21	0.0002	0.0025
	D/S BRIGGS & HOLLAND	12470	1430.00	1422.00	1433.67	-11.67	0.0001	0.0000
REGIONAL CHANNEL	U/S BRIGGS & HOLLAND	12770	1428.00	1422.00	1433.97	-11.97	0.0001	0.0000
	D/S LEON	18210	1434	1428.89	1439.41	-10.52	0.0004	0.0013
TR. 31008/ VALLEY WIDE CHANNEL A	U/S LEON	18430	1435	1429.11	1439.63	-10.52	0.0004	0.0010
	D/S DROP STRUCTURE	18445	1435	1427.70	1439.65	-11.95	0.0004	-0.0940
	U/S DROP STRUCTURE	18485	1435	1429.87	1439.69	-9.82	0.0005	0.0542
	D/S "A STREET"	19070	1437.5	1430.70	1440.27	-9.57	0.0005	0.0014
	U/S "A STREET"	19175	1437.5	1430.80	1440.38	-9.58	0.0005	0.0010
	D/S "R STREET"	19950	1438	1431.58	1441.15	-9.57	0.0005	0.0010
	U/S "R STREET"	20042	1437.5	1431.67	1441.24	-9.57	0.0005	0.0010
	D/S EUCALYPTUS	21630	1439.5	1433.26	1442.83	-9.57	0.0006	0.0010
CONNECT TO OFFSITE	U/S EUCALYPTUS	21790	1440	1433.34	1442.99	-9.65	0.0006	0.0005
TR. 31008/ VALLEY WIDE CHANNEL B	D/S HOLLAND	19740	1437.5	1431.53	1440.94	-9.41	0.0005	0.0009
TR. 31008/ VALLEY WIDE CHANNEL C	D/S CRAIG AVENUE	21630	1439.5	1432.30	1442.99	-10.69	0.0005	0.0004
CONNECT TO OFFSITE	U/S HOLLAND	19890	1436	1432.11	1441.09	-8.98	0.0005	0.0001
CALCULATED ALLOWABLE ELEVATION BASED ON 0.1% SLOPE PROJECTED PERPENDICULAR FROM MENIFEE RD ²								
MAJOR ROAD CROSSINGS	MENIFEE RD	0	1421.41	1421.30	N/A	N/A		
	LINDENBERGER RD	2600	1426.50	1422.00	1423.80	-1.8		
	BRIGGS RD	5300	1428.00	1422.00	1426.50	-4.5		
	LEON RD	10500	1435.00	1429.11	1431.70	-2.59		
	EUCALYPTUS RD	13000	1440.00	1433.34	1434.20	-0.86		
1 Distance from Menifee Road calculated along centerline of proposed drainage improvements								
2 Distance from Menifee Road calculated along a straight path perpendicular to Menifee Road								

HYDROLOGIC METHODOLOGY AND RESULTS

Hydrologic Methodology

The U.S. Army Corps of Engineers HEC-1 hydrologic modeling software was used to analyze the hydrologic characteristics of the Menifee Valley Creek watershed. It has the capability to generate hydrographs, in accordance with the Synthetic Unit Hydrograph procedures outlined in the RCFC&WCD Hydrology Manual. Program parameters include basin area, lag time, and rainfall distribution.

The following list identifies the sources of data for the ultimate post-project condition 100-year HEC-1 analysis for the Menifee Valley Creek watershed. All hydrologic backup information is provided in Appendix A.

- Ultimate land use data based on the “Sun City/Menifee Area Land Use Plan” (October 7, 2003)
- Hydrologic soil type obtained from Plate C-1.42 of the RCFC&WCD “Hydrology Manual” (April 1978)
- Average Fullerton-San Jose S-graph #11
- Precipitation data based on Plates E-5.2, E-5.4, and E-5.6 of the RCFC&WCD “Hydrology Manual” (April 1978)

Table 2. Storm Frequency and Precipitation for Menifee Valley Creek Watershed

Storm Frequency	Precipitation (inches)
100-year, 3-hour	1.8

In a previous hydrologic study performed for Tr. 30422², HEC-1 calculations for the 100-year, 3-hour, 6-hour, and 24-hour storm events were prepared for the Menifee Valley Creek watershed. The HEC-1 results showed that the 100-year, 3-hour storm produced the highest peak runoff. Therefore, only the 100-year, 3-hour storm was analyzed for this study. The approved Tr. 30422 study was used as the basis for the hydrologic analyses prepared for this ADP. The previous

study was revised with more accurate drainage boundaries based on updated topography, as well as better accuracy using digital base-maps and watershed delineations.

Hydrologic Analyses

Based on previous comments from RCFC&WCD one Synthetic Unit Hydrograph was created for each location that a peak flow rate was desired. See Exhibit 2 for the watershed delineation of the drainage basins. The seven HEC-1 models are described below:

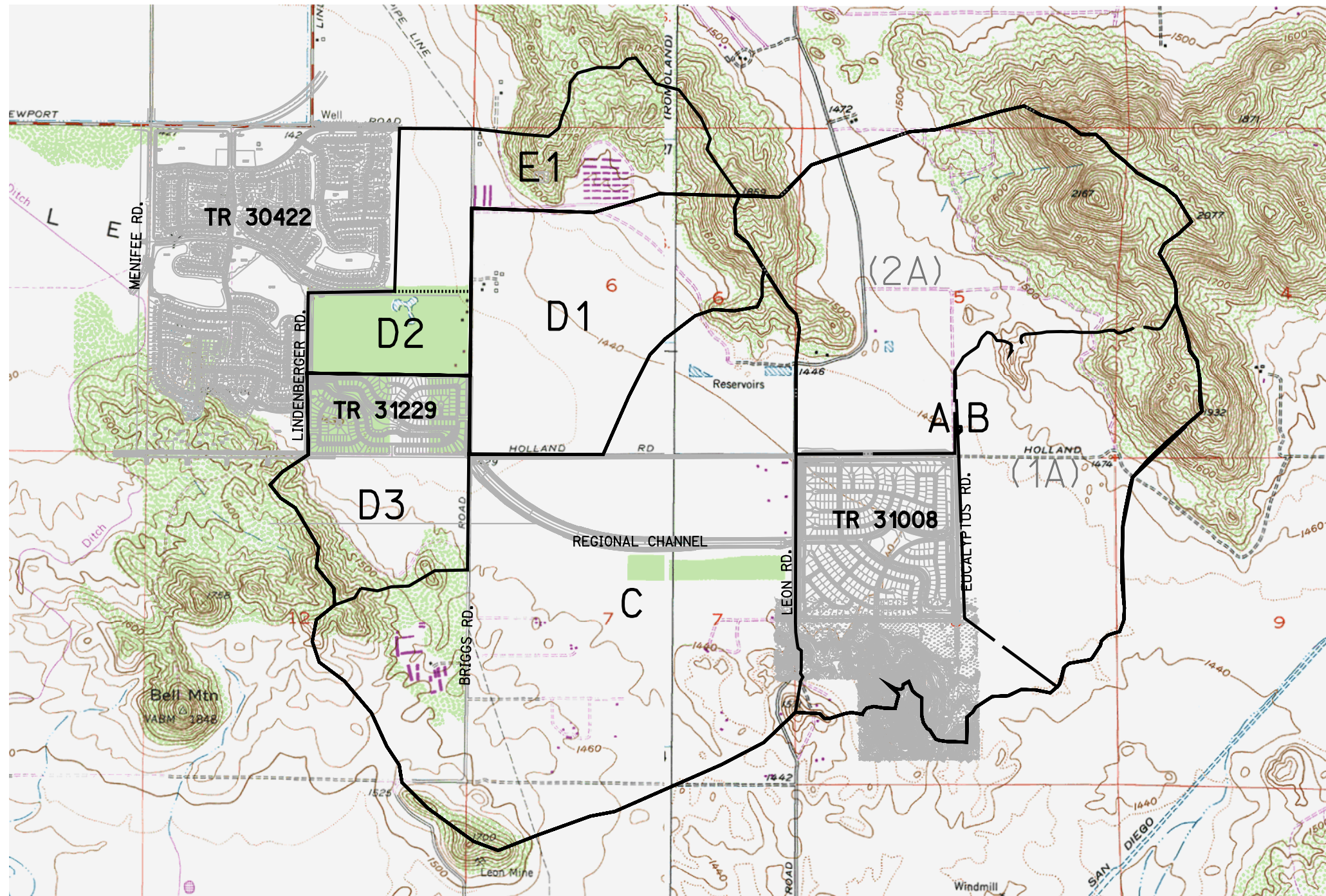
- Drainage area upstream of Lindenberger Road – Interim Post-Project Through Tr. 31229 (Drainage Areas A, B, C, D3). The peak flow rate that is conveyed through the Tr. 31229 lake was used in the HEC-RAS analysis for the interim post-project condition.
- Drainage area upstream of Lindenberger Road – Interim Post-Project Bypass Tr. 31229 (Drainage Areas D1, D2, E1). The peak flow rate that bypasses Tr. 31229 was used in the split flow calculation within the HEC-RAS analysis for the interim post-project condition.

Due to factors including the flat terrain in the area and the expected order in which the tracts will be constructed, a portion of the drainage located east of Briggs Road will not be intercepted by Tr. 31229 during the initial phase of regional drainage improvements. Instead, the drainage flows from Basin D1 will be conveyed westerly toward the RV park rather than southerly toward the Tr. 31229 lake. Basin D1 will follow pre-project drainage patterns and will enter Tr. 30422. This scenario is expected to be temporary until Tr. 31229 is constructed, at which time on-site drainage facilities will be constructed to accept drainage flows from Basin D1. Therefore, two post-project conditions were analyzed hydrologically as well as hydraulically, the interim post-project condition and the ultimate post-project condition.

² Hydrologic and Hydraulic Study for Menifee Valley Creek within the Lakes at Menifee Project (TR-30422)
Revised: July 26, 2005, Rick Engineering Company

- Drainage area upstream of Lindenberger Road – Ultimate Post-Project (Drainage Areas A, B, C, D1, D3). The peak flow rate that is conveyed through the Tr. 31229 lake was used in the HEC-RAS analysis for the ultimate post-project condition. Please note that drainage basins D2 and E1 will not drain to the Tr. 31229 in the ultimate post-project condition, these basins will continue to drain westerly toward Tr. 30422.
- Drainage area downstream of Briggs Road (Drainage Areas A, B, C, D1). The peak flow rate downstream of Briggs Road was used to size Lakes within Tr. 31229 in the WSPGW analysis for the Briggs & Holland Culverts. For the ultimate condition analysis it is assumed that the flow from offsite (D1) will connect to Briggs & Holland culvert and therefore, the Ultimate culvert WSPGW analysis models a combined flow through a portion of the culverts.
- Drainage area upstream of Briggs Road (Drainage Areas A, B, and C). The peak flow rate upstream of Briggs Road was used to size the Regional Channel between Leon Road and Briggs Road in the WSPGW analysis for the Regional Channel.
- Drainage area upstream of Leon Road (Drainage Areas A and B). The peak flow rate upstream of Leon Road was used to size the Leon Road culvert in the WSPGW analysis for Valley Wide Channel B.
- Drainage area tributary to the Eucalyptus Road culvert located at the Eucalyptus Road/Craig Avenue intersection (Drainage Area 1A). The peak flow rate from Drainage Area 1A was used to size the Eucalyptus Road culvert in the WSPGW analysis for Channel B.
- Drainage area tributary to the Holland Road culvert located at the Holland Road/Leon Road intersection (Drainage Area 2A). The peak flow rate from Drainage Area 2A was used to size the Holland Road culvert in the WSPGW analysis for Channel A.

Copies of the HEC-1 analyses and Workmaps are included in Appendix C.



**MENIFEE VALLEY AREA
DRAINAGE PLAN
EXHIBIT 2: DRAINAGE BASINS**

MAY 23, 2007
JN: 14795-B

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Additional Hydrologic Analyses

The Tr. 31008 on-site drainage areas tributary to Valley Wide Channel A, Valley Wide Channel B and Valley Wide Channel C were delineated and a peak flow rate of 1.2 cfs/ac was assumed per RCFC&WCD direction. Additionally, three off-site drainage areas located south of Tr. 31008 that drain to Channel C were also estimated at 1.2 cfs/ac because these off-site areas are too small to analyze using synthetic unit hydrograph methodology. Please see the hydrology maps located in Map Pocket 1 for the Tr. 31008 on-site and off-site drainage areas.

Hydrologic Results

Table 3 shows the peak discharge at key locations in Menifee Valley Creek.

**Table 3. Ultimate 100-year Peak Discharges
In Menifee Valley Creek**

Location	Drainage Basin	Peak Discharge (cfs)*
Lindenberger Road at Tr. 31229 Lake (Interim Post-Prj)	A, B, C, D3	2,077
Lindenberger Road north of Tr. 31229 (Interim Post-Prj)	D1, D2, E1	679
Lindenberger Road at Tr. 31229 Lake (Ultimate Post-Prj)	A, B, C, D1, D3	2,325
Briggs Road at Regional Channel (Interim Post-Prj)	A, B, C	2,066
Briggs Road at Regional Channel (Ultimate Post-Prj)	A, B, C, D1	2,348
Leon Road at Regional Channel	A, B	1,367
Eucalyptus Road at Craig Avenue	1A	428
Holland Road at Leon Road	2A	677

* cfs = cubic feet per second

HYDRAULIC METHODOLOGY

Hydraulic Methodology

The U.S. Army Corps of Engineers Hydrologic Engineering Center – River Analysis System (HEC-RAS) program was used to model the pre-project condition for the entire study reach (Menifee Road to Eucalyptus Road); as well as, the interim post-project, and the ultimate post-project condition for the Tr. 31229 lake (Lindenberger Road to Briggs Road). HEC-RAS calculates water surface profiles based on the energy equation and the momentum equation. Channel geometric information, Manning's roughness coefficient, discharge, as well as any known boundary conditions are required to complete the hydraulic model. HEC-RAS has the capability to model subcritical, supercritical, and mixed flow. Copies of the HEC-RAS analyses for the pre-project, interim post-project, and ultimate post-project are provided in Appendices C-E respectively.

The Los Angeles County Flood Control District's WSPGW program was used to model the Regional Channel, Valley Wide Channel A, Valley Wide Channel B, and Valley Wide Channel C. WSPGW was more appropriate for these channels because they are engineered and relatively uniform geometry. WSPGW computes and plots uniform and non-uniform steady flow water surface profiles and pressure gradients in open channels or closed conduits with regular or irregular sections. Channel geometric information, Manning's roughness coefficient, discharge, as well as any known boundary conditions are required to complete the hydraulic model. The flow in a system may alternate between supercritical, subcritical, or pressure flow. Two scenarios were modeled in the post-project WSPGW analysis. Copies of the WSPGW analyses modeling the interim (Velocity) and Ultimate (Capacity) are provided in Appendices F-G.

Hydraulic Losses Through Culverts

Per criteria outlined by RCFC, each of the proposed box culverts should be designed to flow with a minimum freeboard of 1-foot, and proposed box culverts that do not meet this criteria should be modeled as flowing-full. From the hydraulic analysis, it was determined that a freeboard of 1-foot could not be provided with the currently proposed culvert systems at

Lindenberger and Briggs & Holland, hence the culverts were designed to flow full. Losses associated with the culverts flowing full was manually calculated and additional friction loss was added to the HEC-RAS and WSPGW models. Backup hydraulic calculation for the losses associated with culverts flowing full are provided in Appendix B.

Proposed Regional Drainage Improvements

This report presents the methodology and results of the hydraulic analyses for the following proposed regional drainage facilities (listed from downstream to upstream):

- Lindenberger Road culvert
- Tr. 31229 lake
- Briggs & Holland Road culvert
- Regional Channel
- Leon Road culvert
- Valley Wide Channel B
- Two on-site culverts within Channel B – A Street culvert and R Street culvert
- Eucalyptus Road culvert
- Valley Wide Channel A
- Holland Road culvert
- Valley Wide Channel C
- Craig Avenue Culvert

Lindenberger Road Culvert, Tr. 31229 Lake: HEC-RAS Hydraulic Analysis

The Lindenberger Road culvert will consist of 4 cells 20-feet wide by 7.5-feet high by approximately 142-feet long. The upstream and downstream flow lines are 1422.0 feet and 1421.6 feet respectively. This culvert will be constructed in conjunction with Tr. 30422 during their final phase of construction. Additional supporting calculation for downstream protection of the channel is included in Appendix B.

The construction of the Tr. 31229 lake to a mass-graded condition is proposed between Lindenberger Road and Briggs Road. The mass-graded lake will be designed and constructed to

be consistent with the Tr. 31229 tentative map to avoid as much disturbance to the area as possible during final construction. The proposed lake has an anticipated daily operating level of 1422.0 feet. The lake bottom elevation will vary between 1400.0 feet and 1415.0 feet.

Culvert at Briggs & Holland Road Crossing: WSPGW Hydraulic Analysis

The proposed culvert at Briggs & Holland Road is 610.79-feet long and consists of 5 cells 14-feet wide by 8.5-feet high. A portion of the culvert system lies within Tr. 31229. The upstream and downstream flow lines are 1422.0 feet and 1422.0 feet respectively. The culvert system extends from 200-feet downstream of the Briggs & Holland Road within Tract 31229 to upstream of the road intersection. Additional supporting calculation for headloss through the Briggs & Holland culvert is included in Appendix B.

Regional Channel, and Leon Road Culvert: WSPGW Hydraulic Analysis

The Regional Channel is approximately 1.1 miles long with a trapezoidal geometry that consists of a bottom width ranging between 79 feet and 100 feet, and 4:1 side slopes. The channel is designed to provide a minimum of 1-foot of freeboard.

Construction of levees is proposed on both sides of channel banks for portions of the channel, although they will not function as “true” flood control levees due to the RCFC&WCD requirement to intercept local runoff without the use of flapgates. Culverts or “gaps” in the levees are to be used to intercept local drainage and discharge it into the channel in the interim condition. Since future development will ultimately place fill outside the limits of the channel, and therefore the channel will no longer require levees, a minimum of 1 foot of freeboard above the ultimate anticipated channel WSEL is proposed. Design of the local drainage to the channel will be analyzed in final design.

The proposed levee geometry is 4:1 side slopes on the inside of the channel, 2:1 side slopes on the outside of the levee, and a 15-ft wide access road along the top of the levee (on both the right and left sides of the channel). Runoff from the local drainage areas will be conveyed through proposed pipes under the levees.

Levees are the most feasible option to contain the 100-year flow in the Regional Channel because the WSEL at Briggs Road (downstream end of the channel) is controlled by backwater from Tr. 30422, which is higher than the existing ground elevation at the upstream end of Briggs Road.

A preliminary future 4 cell 14-feet wide by 7-feet tall RCB culvert system is anticipated within the RCFC Channel, therefore a culvert has been modeled to assess the impacts that might result on the construction of a proposed future road crossing at, or near, Laventana. The length of the culverts is assumed to be 100-feet and the upstream and downstream flowline elevations are 1424.94-feet and 1424.84-feet. This culvert system is assumed at river station 69+50.00 in the RCFC Channels WSPGW model for the ultimate capacity analysis only, to accommodate the hydraulic impact of a future road crossing. This culvert is not included as part of the currently proposed regional drainage improvements and is subject to change.

The proposed Leon Road culvert is approximately 222.49-feet long and consists of 4 cells 14-feet wide by 7-feet tall. The upstream and downstream flowlines are 1429.11 feet and 1428.89 feet, respectively.

Valley Wide Channel B, A Street Culvert, R Street Culvert, Eucalyptus Road Culvert: WSPGW Hydraulic Analysis

Channel B is located within Tr. 31008, and is approximately 1.1 mile long with a trapezoidal geometry consisting of 4:1 side slopes and a bottom width that varies from 15-feet to 165-feet. The channel is designed to provide a minimum of 1-foot of freeboard over the 100-year WSEL.

The Channel B model includes the following three culvert crossings: A Street, R Street, and Eucalyptus Road. The A Street culvert is approximately 101-feet long and consists of 3 cells 10-feet wide by 5-feet tall. The upstream and downstream flowlines are 1430.80 feet and 1430.70 feet, respectively. The R Street culvert is 92-feet long and consists of 3 cells 10-feet wide by 5-feet tall. The upstream and downstream flowlines are 1431.67 feet and 1431.58 feet, respectively. The Eucalyptus Road culvert is 86-feet long and consists of 2 cells 12-feet wide by

4.5-feet tall. The upstream and downstream flowlines are 1433.34 feet and 1433.26 feet, respectively.

Valley Wide Channel A, Holland Road Culvert: WSPGW Hydraulic Analysis

Channel A is located within Tr. 31008, and is approximately 1,300-feet long with a trapezoidal geometry, 4:1 side slopes and a bottom width that varies from 23-feet to 29-feet. The channel is designed to provide a minimum of 1-foot of freeboard over the 100-year WSEL.

The Channel A model includes the proposed Holland Road culvert located at the northwest corner of the site. The Holland Road culvert is approximately 91-feet long and consists of 3 cells 9-feet wide by 4-feet tall. The upstream and downstream flowlines are 1432.11-feet and 1431.53 feet, respectively.

Valley Wide Channel C and Craig Avenue Culvert: WSPGW Hydraulic Analysis

Channel C is located within Tr. 31008, and is approximately 0.23-miles long with a trapezoidal geometry, 4:1 side slopes and a bottom width that varies from approximately 17-feet to 45-feet. The channel is designed to provide a minimum of 1-foot of freeboard over the 100-year WSEL.

The Channel C model includes the proposed Craig Avenue culvert located at the northwest corner of the site. The Craig Avenue culvert is approximately 73.5-feet long and consists of 2 cells 3-feet tall RCPs. The upstream and downstream flowlines are 1432.52-feet and 1431.30 feet, respectively.

Hydraulic Models

Pre-Project Condition

The pre-project condition analysis, modeled using HEC-RAS, was created for a baseline comparison with the interim and ultimate post-project conditions. This analysis is based on the assumption that Tr. 30422 is constructed.

The following sources were used to obtain cross-sectional geometry:

- “Request for a Letter of Map Revision (LOMR) for a Portion of Meniffee Creek Located within the County of Riverside, California” dated November 22, 2006, prepared by Rick Engineering Company
- Topography provided by Artiga Civil Design, 1-ft contours and spot elevations on vertical datum NGVD 29
- RCFC&WCD 200-scale topographic maps on vertical datum NAVD 88 (converted to NGVD 29 by subtracting 2.47 feet)

The complete pre-project HEC-RAS analysis is provided in Appendix D. The pre-project HEC-RAS cross-section locations and 100-year floodplain are shown on the workmaps in Map Pockets 2 and 3.

Post-Project Conditions

The following two post-project conditions were analyzed:

- **Interim Post-Project** - Assumes that the Tr. 31229 lake is mass-graded, but future (upstream of Briggs Road) drainage improvements to collect drainage from Basin D1 are not constructed; therefore runoff from this area drains westerly toward the RV park. Since this analysis results in a lower tail water, this model is also used as the velocity analysis for the regional development.
- **Ultimate Post-Project** - Assumes that Tr. 31229 is constructed including completion of the lake, and drainage from Basin D1 will be collected by future drainage improvements to intercept runoff from the area upstream of Briggs Road

and conveyed to the lake. Since this analysis results in higher tail water, this model is also used as the capacity analysis for the regional improvements.

Although two post-project conditions are analyzed, there is no difference in cross-sectional geometry within the Tr. 31229 lake or the channels. The only change is the tributary drainage area, which impacts the downstream boundary condition (starting water surface elevation), the peak flow rate, and the split flow analysis north of Tr. 31229. The HEC-RAS analysis for the lake in the Interim Post-Project Condition contains a split-flow analysis to model the flow from Basin D1 as it is conveyed through the RV Park and into Tr. 30422. This split flow is eliminated in the Ultimate Post-Project Condition as the flow from Basin D1 will be conveyed directly to the lake.

- **Interim Post-Project**

HEC-RAS for Tr. 31229 lake: The HEC-RAS is an extension of the LOMR analysis for Menifee Valley Creek submitted to FEMA by Tr. 30422 (pending final approval from FEMA), which extends approximately 1.5 miles downstream of Lindenberger Road, the western boundary of Tr. 31229. The extension includes the culvert system beneath Lindenberger Road, the Tr. 31229 lake, the culvert system at Briggs & Holland Road culverts. The analysis includes a split flow where the reach “Upstream” splits into two reaches: “split to Lake C” and “RV10500-10000.” A separate reach, “to Rancon,” models flow through the Tr. 31229 lake. All three reaches confluence and become the reach “THROUGH LAKES” within Tr. 30422. The Interim Post-Project Condition HEC-RAS analysis is provided in Appendix E and the cross-sections are shown on the workmaps located in Map Pocket 3. Please refer to Appendix B for additional headloss calculation.

WSPGW for Culvert at Briggs & Holland Road: The WSPGW analysis analyses the culvert at Briggs & Holland Road crossing. The culvert is approximately 610.79-feet long and connects the Lakes within Tr. 31229 and the Regional Channel. The culvert geometry was modeled based on the plans provided by Artiga Civil Design as shown

on the WSPGW workmap (Map Pocket 5). The Interim Post-Project (Velocity) WSPGW analysis is provided in Appendix G. See also Appendix B for additional headloss calculation at Briggs & Holland Culvert.

WSPGW from Briggs & Holland Road to Leon Road (Regional Channel): The WSPGW analysis extends from the upstream face of the Briggs Road culverts to the downstream face of the Leon Road culverts. Channel geometry for the Regional Channel was based on the alignment provided by Artiga Civil Design as shown on the WSPGW workmaps (Map Pocket 5).

A velocity analysis that uses a lower Manning's roughness coefficient within the channel (0.025) to characterize a bare earthen condition was modeled for the interim condition due to the lower tail water. The velocity run is intended to show higher velocities, therefore all slope protection will be sized using this run. The Interim Post-Project (Velocity) WSPGW analysis is provided in Appendix G.

WSPGW from Leon Road to Holland Road (Valley Wide Channel A): WSPGW analysis extending from upstream of the Leon Road culvert through the Holland Road culvert. The velocity run was analyzed for the interim condition. Channel geometries for the Channel A, Channel B, and Channel C were based on the alignment provided by ACD Engineering as shown on the WSPGW workmaps (Map Pockets 7). The Interim Post-Project (Velocity) WSPGW analysis is provided in Appendix G.

WSPGW from Leon Road to Eucalyptus Road (Valley Wide Channel B): WSPGW analysis extending from the upstream face of the Leon Road culvert through the Eucalyptus Road culvert. The WSPGW analysis also includes two culverts within Tr. 31008. The velocity run was analyzed for the interim condition. The Interim Post-Project (Velocity) WSPGW analysis is provided in Appendix G.

Table 4. Interim Post-Project Condition (Velocity) Starting Water Surface Elevations

Hydraulic Analysis		WSEL (ft)	Source
Tr. 31229 Lake HEC-RAS		1424.58	FEMA Run for Interim and Ultimate Condition
Culvert at Briggs & Holland Road	Velocity	1428.90	XS 1700 Tr. 31229 Lake Interim HEC-RAS
Regional Channel WSPGW	Velocity	1429.04	Station 4072.770 Culvert at Briggs & Holland Velocity WSPGW*
Channel A WSPGW	Velocity	1433.88	Station 1100.00 Channel B Velocity WSPGW
Channel B WSPGW	Velocity	1433.14	Station 9721.960 Regional Channel Velocity WSPGW
Channel C WSPGW	Velocity	1433.88	Station 1100.00 Channel B Velocity WSPGW

* includes additional headloss through Briggs & Holland culvert of 0.06-feet from culvert flowing full calculated in Attachment A

Table 5. Interim Post-Project (Velocity) Condition Peak Flow Rates

Hydraulic Analysis	Location	Q (cfs)	Source
Tr. 31229 Lake HEC-RAS	Reach: Upstream	679	HEC-1: D1,D2,E1
	Reach: split to Lake C	144	Calculated by HEC-RAS (split-flow function)
	Reach: RV10500-10000	535	Calculated by HEC-RAS (split-flow function)
	Reach: to Rancon (XS 12200-11800)	2,066	HEC-1: A, B, C
	Reach: to Rancon (XS 11700-9450)	2,077	HEC-1: A, B, C, D3
	Reach: THROUGH LAKES (XS 9400- 6899)	3,024	FEMA Q
Cuvert at Briggs & Holland	Regional Channel to Lake in Tr. 31229	2,066	HEC-1: A, B, C
Regional Channel WSPGW Capacity/Velocity	Whole Reach	2,066	HEC-1: A, B, C
Channel A WSPGW Capacity/Velocity	Off-site, upstream end	677	HEC-1: 2A
	On-site, various locations	See Drainage Map in Map Pocket 1	Calculated based on 1.2 cfs/acre
Channel B WSPGW Capacity/Velocity	Off-site, upstream end	428	HEC-1: 1A
	On-site, various locations	See Drainage Map in Map Pocket 1	Calculated based on 1.2 cfs/acre
	On-site, Channel A Lateral	673.58	Calculated ratio - see back-up calcs in Appendix G
	On-site, Channel C Lateral	66.62	Calculated ratio - see back-up calcs in Appendix G
	Leon Road Culvert, upstream end	1,367	HEC-1: A, B

- **Ultimate Post-Project**

HEC-RAS for Tr. 31229 lake: The HEC-RAS is also an extension of the LOMR analysis for Menifee Valley Creek submitted to FEMA by Tr. 30422, however the split flows were removed from the analysis to model the total flow from the watershed through the Tr. 31229 lake, connecting to Tr. 30422 via the Lindenberger culverts. The Ultimate Post-Project Condition HEC-RAS analysis is provided in Appendix F and the cross-sections are shown on the workmaps located in Map Pocket 4. Please refer to Appendix B for additional headloss and supporting calculation for riprap sizing.

WSPGW for Briggs & Holland Culverts: Same geometry as interim post-project analysis, different starting water surface elevation is used. The discharge changes to anticipate a future junction to accept flows from area D1 upstream of Briggs Road. The Ultimate Post-Project WSPGW analysis is provided in Appendix H. WSPGW Stations are shown on the workmaps located in Map Pocket 5. Please find additional headloss calculation for the culverts in Appendix B.

WSPGW from Briggs & Holland Road to Leon Road (Regional Channel): Same geometry as interim post-project analysis, but includes a lateral bringing offsite flow in the lake within Tr. 31229 downstream of the culvert system also models a future road crossing at Laventana. A different water surface elevation is used. A capacity analysis was modeled to determine the maximum water surface elevation. The Ultimate Post-Project (Capacity) WSPGW analysis is provided in Appendix H. WSPGW Stations are shown on the workmaps located in Map Pocket 5.

WSPGW from Leon Road to Holland Road (Valley Wide Channel A): Same geometry and discharge as interim post-project analysis, different starting water surface elevation. The capacity analysis was modeled for the ultimate condition. The Ultimate Post-Project (Capacity) WSPGW analysis is provided in Appendix H. WSPGW Stations are shown on the workmaps located in Map Pocket 6.

WSPGW from Leon Road to Eucalyptus Road (Valley Wide Channel B): Same geometry and discharge as interim post-project analysis, different starting water surface elevation. A capacity analysis was modeled to determine the maximum water surface elevation. The Ultimate Post-Project (Capacity) WSPGW analysis is provided in Appendix H. WSPGW Stations are shown on the workmaps located in Map Pocket 6.

WSPGW from Leon Road to Craig Avenue (Valley Wide Channel C): Same geometry and discharge as interim post-project analysis, different starting water surface elevation. The Capacity analysis was modeled for ultimate condition. The Ultimate Post-Project (Capacity) WSPGW analysis is provided in Appendix H. WSPGW Stations are shown on the workmaps located in Map Pocket 6.

Table 6. Ultimate Post-Project Condition (Capacity) Starting Water Surface Elevations

Hydraulic Analysis		WSEL (ft)	Source
Tr. 31229 Lake HEC-RAS		1424.58	FEMA Run for Interim and Ultimate Condition
Culvert at Briggs & Holland Road	Capacity	1429.86	XS 1700 Tr. 31229 Lake Ultimate HEC-RAS
Regional Channel WSPGW	Capacity	1430.13	Station 4072.770 Culvert at Briggs & Holland Capacity WSPGW*
Channel A WSPGW	Capacity	1433.93	Station 1100.00 Channel B Capacity WSPGW
Channel B WSPGW	Capacity	1433.54	Station 9721.960 Regional Channel Capacity WSPGW
Channel C WSPGW	Capacity	1433.93	Station 1100.00 Channel B Capacity WSPGW

* includes additional headloss through Briggs & Holland culvert of 0.06-feet from culvert flowing full calculated in Attachment A

Table 7. Ultimate Post-Project (Capacity) Condition Peak Flow Rates

Hydraulic Analysis	Location	Q (cfs)	Source
Tr. 31229 Lake HEC-RAS	XS 12200-12000	2,066	HEC-1: A, B, C
	XS 11900-11800	2,325	HEC-1: A, B, C, D1, D3
	XS 11700-6700	3,024	FEMA Q
Culvert at Briggs & Holland Road Crossing	Downstream end of culvert	2,348	HEC-1: A, B, C, D1
Regional Channel WSPGW Capacity/Velocity	Whole Reach	2,066	HEC-1: A, B, C
Channel A WSPGW Capacity/Velocity	Off-site, upstream end	677	HEC-1: 2A
	On-site, various locations	See Drainage Map in Map Pocket 1	Calculated based on 1.2 cfs/acre
Channel B WSPGW Capacity/Velocity	Off-site, upstream end	428	HEC-1: 1A
	On-site, various locations	See Drainage Map in Map Pocket 1	Calculated based on 1.2 cfs/acre
	On-site, Channel A Lateral	673.58	Calculated ratio - see back-up calcs in Appendix G
	On-site, Unnamed Lateral	66.62	Calculated ratio - see back-up calcs in Appendix G
	Leon Road Culvert, upstream end	1,367	HEC-1: A, B

HYDRAULIC RESULTS

Impacts to Adjacent Properties

In the interim and ultimate conditions, the flow from Drainage Basins A, B, and C will be conveyed through the proposed Valley Wide Channel A, Valley Wide Channel B, Valley Wide Channel C and the Regional Channel, which will result in a channelized floodplain. Since the pre-project floodplain is wide and follows a different alignment, it is inappropriate to directly compare pre-project WSELs with post-project WSELs. As currently designed, Channels A, B, C and the Regional Channel will provide a minimum of 1-ft of freeboard. Therefore, there is not expected to be negative impact to adjacent property owners.

Downstream of the regional channel there is a similarity in the pre-project and post-project (interim) floodplains that allows for comparison. Drainage from Basin D1 will not be collected and conveyed to the Tr. 31229 Lake, therefore in the interim condition this portion of the floodplain will follow a similar pattern to pre-project conditions. However, the flow will be greatly reduced. Table 8 shows a summary comparison of WSELs. As shown on the summary table, the interim post-project WSEL is lower than the pre-project WSEL for every cross-section except for cross-sections 9600 and 9500, where the interim post-project WSEL is 0.02 ft higher than pre-project. This is due to the hydraulic losses associated with flows entering the Tr. 30422 Lake and are not a concern.

These cross-sections are located at the Lindemberger Road entrance into Tr. 30422. This increase is not expected to negatively impact the upstream RV park.

Table 8. Pre-Project vs. Interim Post-Project Condition WSELs

REACH		CROSS-SECTION	Q (cfs)		WSEL (ft)	
		PRE & INTERIM	PRE-PROJECT	INTERIM CONDITION	PRE-PROJECT	INTERIM CONDITION
UPSTREAM		15000	2,325	679.00	1431.69	1431.35
		14500	2,325	679.00	1430.99	1430.35
		14000	2,325	679.00	1430.92	1430.31
		13500	2,325	679.00	1430.89	1430.30
		13045	2,325	679.00	1430.88	1430.30
		13000	2,325	679.00	1430.86	1430.30
		12500	3,024	679.00	1430.60	1430.17
		12000	3,024	679.00	1430.20	1429.89
		11500	3,024	679.00	1429.64	1429.58
		11000	3,024	679.00	1428.34	1427.74
SPLIT TO LAKE C		10995	732.35	192.67	1428.28	1427.73
		10980	732.35	192.67	1428.13	1427.72
		10965	732.35	192.67	1428.12	1427.72
		10950	732.35	192.67	1428.00	1427.71
		10940	732.35	192.67	1428.07	1427.71
		10930	732.35	192.67	1428.08	1427.71
		10920	732.35	192.67	1428.08	1427.71
		10910	732.35	192.67	1428.07	1427.71
		10900	732.35	192.67	1428.07	1427.71
		10880	732.35	192.67	1428.05	1427.71
		10870	732.35	192.67	1427.91	1427.70
		10850	732.35	192.67	1427.77	1427.68
		10845	732.35	192.67	1427.80	1427.68
		10840	732.35	192.67	1427.71	1427.68
		10820	732.35	192.67	1427.58	1427.66
10500-10000	RV10500-10000	10500	2,291.65	486.33	1428.02	1427.74
		10000	2,291.65	486.33	1427.90	1427.73
FLOW TO LAKE SIDE		9700	1,025.05	486.33	1427.69	1427.67
		9600	1,025.05	486.33	1427.63	1427.65
		9500	1,025.05	486.33	1427.63	1427.65

Channel Velocities

The permissible velocity within the channels is 6 feet per second (fps), therefore no riprap or hardened lining will be required within the channel at locations where the velocity is less than 6 fps, with the exception of culvert entrances and outlets. The interim condition velocity run (Manning's $n = 0.025$) WSPGW analyses were used to identify locations where slope protection will be recommended. There is a couple of cross-sections within the Regional System with velocity exceeding 6 fps. Since these cross-sections are already modeled to have riprap protection, a separate analysis is not performed. Also, since an Angled culvert is proposed at the Lindenberger Road Crossing, riprap is sized based on the velocity and the super elevation at the outlet for the bottom and sides. Back up on riprap sizing is provided in Appendix B.

CONCLUSION

This Menifee Valley ADP provides preliminary design and analyses for the regional drainage improvements to be implemented in Menifee Valley. The purpose of this study is to ensure that the proposed drainage improvements will meet the needs of future development in Menifee Valley by providing an adequate regional drainage system. This analysis addresses the conceptual design, and final design plans and calculations are not included in the scope of this study.

This study consists of hydrologic analyses of the tributary watersheds and hydraulic analyses of all the proposed regional drainage structures for the interim and ultimate conditions.

Results of the hydrologic analyses were used as the source of flow rate information for the hydraulic analyses. The goals of the hydraulic design were the following:

- The flowline for all regional drainage structures must have a maximum cumulative slope of 0.1% or less projected from the existing flowline at Menifee Road.
- Avoid negative impacts to adjacent property owners in the interim condition, when some of the drainage will follow existing flow patterns rather than being collected and conveyed within the proposed regional drainage structures.
- Provide a free board of 1-foot through all proposed culverts or calculate losses based on culverts flowing full per direction of RCFC&WCD.
- Identify locations within the proposed regional channels where velocities exceed 6 fps. Slope protection in the form of riprap or other hardened lining will be recommended at these locations, as well as at culvert entrances and exits.

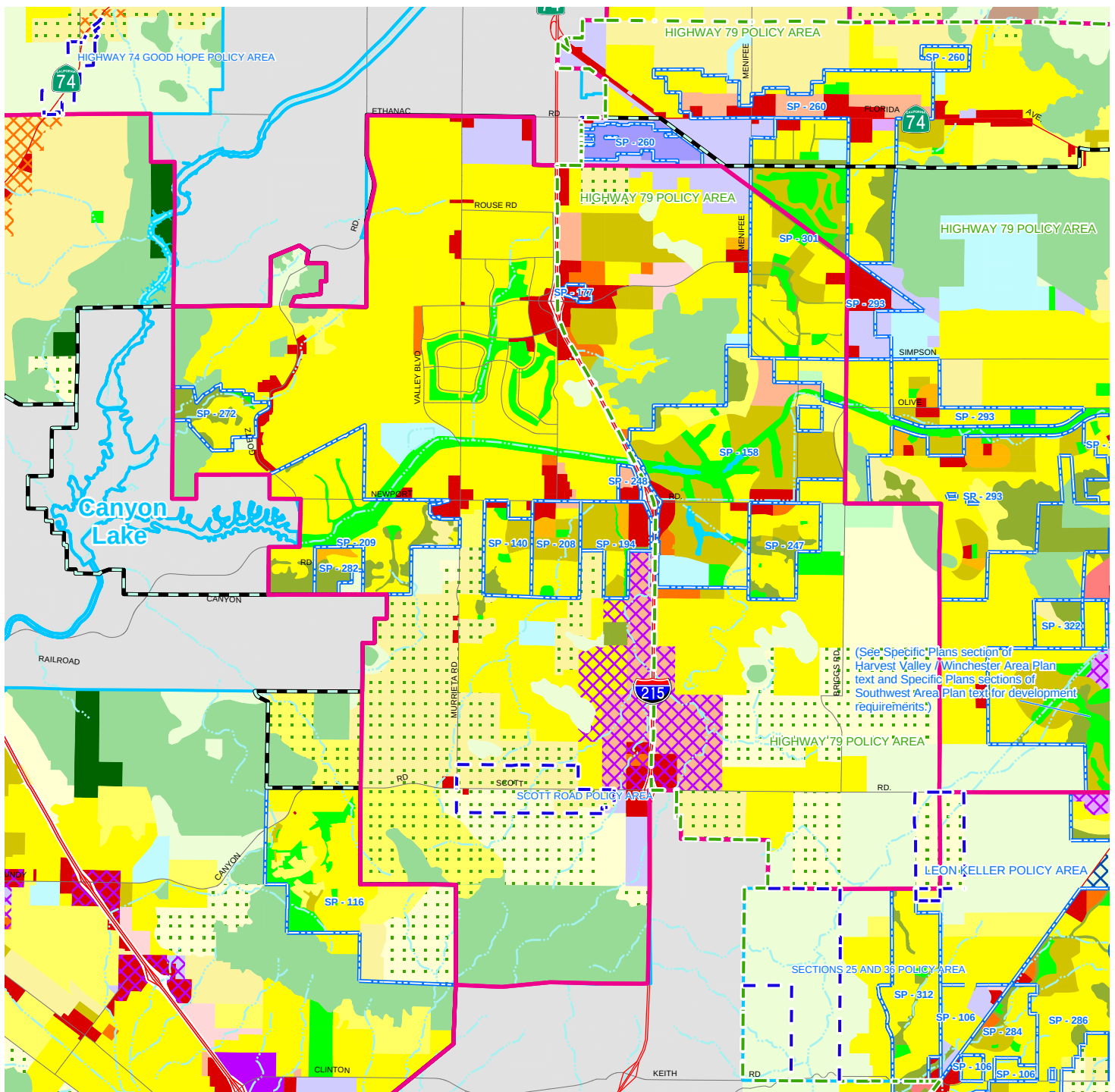
A copy of the approved Preliminary Channel and Lake Drainage Plans for Holland Channel are attached in Map Pocket 7 of this report. Also, letters of agreement from Leon Road, LLC (Tr. 31008) and Rancon Winchester Valley 155, LLC (Tr. 31229) are attached in Appendix J.

The results presented in this ADP support the goals of the hydraulic design.

APPENDIX A

Hydrologic Back-Up For HEC-1 Analysis & Split Flow Ratio Calculation

Back-Up for HEC-1 Analysis



GENERAL PLAN FOUNDATION COMPONENTS AND LAND USE DESIGNATIONS

COMMUNITY DEVELOPMENT

- Estate Residential (2 ac min)
- Very Low Density Residential (1 ac min)
- Low Density Residential (0.5 ac min)
- Medium Density Residential (2-5 du/acre)
- Medium High Density Residential (5-8 du/acre)
- High Density Residential (8-14 du/acre)
- Very High Density Residential (14-20 du/acre)
- Highest Density Residential (20+ du/acre)
- Commercial Retail
- Commercial Tourist
- Commercial Office
- Community Center

COMMUNITY DEVELOPMENT (CONT)

- Light Industrial
- High Industrial
- Business Park
- Public Facilities
- Mixed Use Planning Area

RURAL COMMUNITY

- Estate Residential (2 ac min)
- Very Low Density Residential (1 ac min)
- Low Density Residential (0.5 ac min)

RURAL

- Rural Residential (5 ac min)
- Rural Mountainous (10 ac min)
- Rural Desert (10 ac min)

AGRICULTURE

- Agriculture

OPEN SPACE

- Conservation
- Conservation - Habitat
- Open Space - Recreation
- Open Space - Rural
- Open Space - Water
- Open Space - Mineral Resources

OVERLAYS

- Business Park
- Community Center
- Community Development
- Commercial Retail
- Rural Village and Rural Village Study Area
- Watercourse
- Supervisory District Boundary
- Specific Plans
- Cities
- Areas Subject to Indian Jurisdiction
- Area Plan Boundaries
- MWD Facilities

Source Information: General Plan land uses depicted on this map were developed by The County of Riverside Planning Department. The oldest data shown on this map was created in 1990.

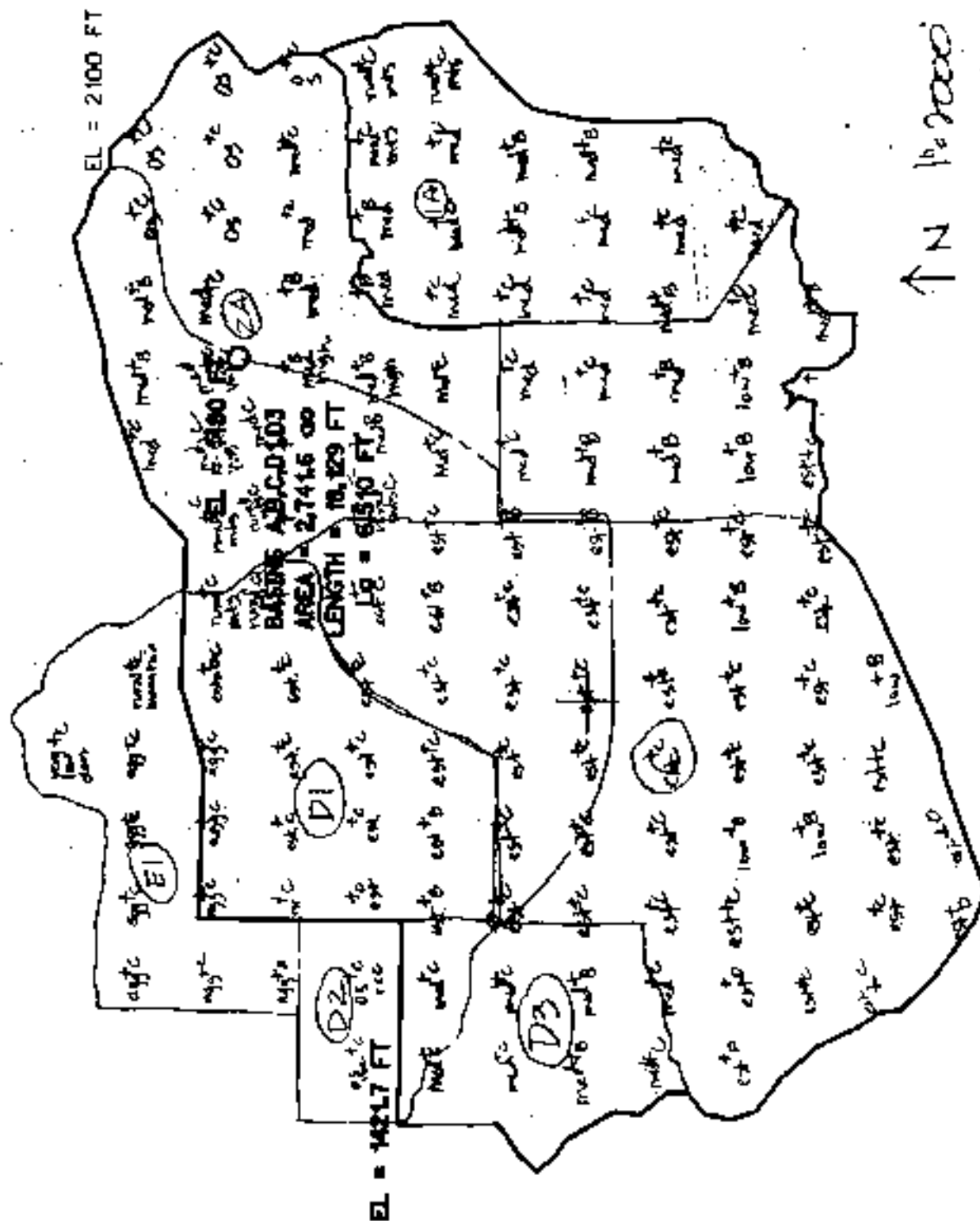
Note: This Map may show designations on lands that have been annexed to cities after 1999.

This map may not represent the most current information available and may be revised without prior notice. The geographic information system and other sources should be queried for the most current information. This map or any information represented on it, shall not be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording.

Figure 3.17

Ultimate Build-out
Soil Types/Land Use
Workmap
11-15-06

14795B



RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group			
		A	B	C	D
<u>NATURAL COVERS -</u>					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	72	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	28	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
<u>URBAN COVERS -</u>					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
<u>AGRICULTURAL COVERS -</u>					
Fallow (Land plowed but not tilled or seeded)		76	85	90	92

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RUNOFF INDEX NUMBERS
FOR
PERVIOUS AREA

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group			
		A	B	C	D
<u>AGRICULTURAL COVERS</u> (cont.) -					
Legumes, Close Seeded (Alfalfa, sweetclover, timothy, etc.)	Poor	66	77	85	89
	Good	58	72	81	85
Orchards, Deciduous (Apples, apricots, pears, walnuts, etc.)		See Note 4			
Orchards, Evergreen (Citrus, avocados, etc.)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
Pasture, Dryland (Annual grasses)	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Pasture, Irrigated (Legumes and perennial grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
Row Crops (Field crops - tomatoes, sugar beets, etc.)	Poor	72	81	88	91
	Good	67	78	85	89
Small Grain (Wheat, oats, barley, etc.)	Poor	65	76	84	88
	Good	63	75	83	87
Vineyard		See Note 4			

Notes:

1. All runoff index (RI) numbers are for Antecedent Moisture Condition (AMC) II.
2. Quality of cover definitions:
 Poor-Heavily grazed or regularly burned areas. Less than 50 percent of the ground surface is protected by plant cover or brush and tree canopy.
 Fair-Moderate cover with 50 percent to 75 percent of the ground surface protected.
 Good-Heavy or dense cover with more than 75 percent of the ground surface protected.
3. See Plate C-2 for a detailed description of cover types.
4. Use runoff index numbers based on ground cover type. See discussion under "Cover Type Descriptions" on Plate C-2.
5. Reference Bibliography item 17.

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**RUNOFF INDEX NUMBERS
FOR
PERVIOUS AREA**

ACTUAL IMPERVIOUS COVER

Land Use (1)	Range-Percent	Recommended Value For Average Conditions-Percent (2)
Natural or Agriculture	0 - 10	0
Single Family Residential: (3)		
40,000 S. F. (1 Acre) Lots	10 - 25	20
20,000 S. F. ($\frac{1}{2}$ Acre) Lots	30 - 45	40
7,200 - 10,000 S. F. Lots	45 - 55	50
Multiple Family Residential:		
Condominiums	45 - 70	65
Apartments	65 - 90	80
Mobile Home Park	60 - 85	75
Commercial, Downtown Business or Industrial	80 - 100	90

Notes:

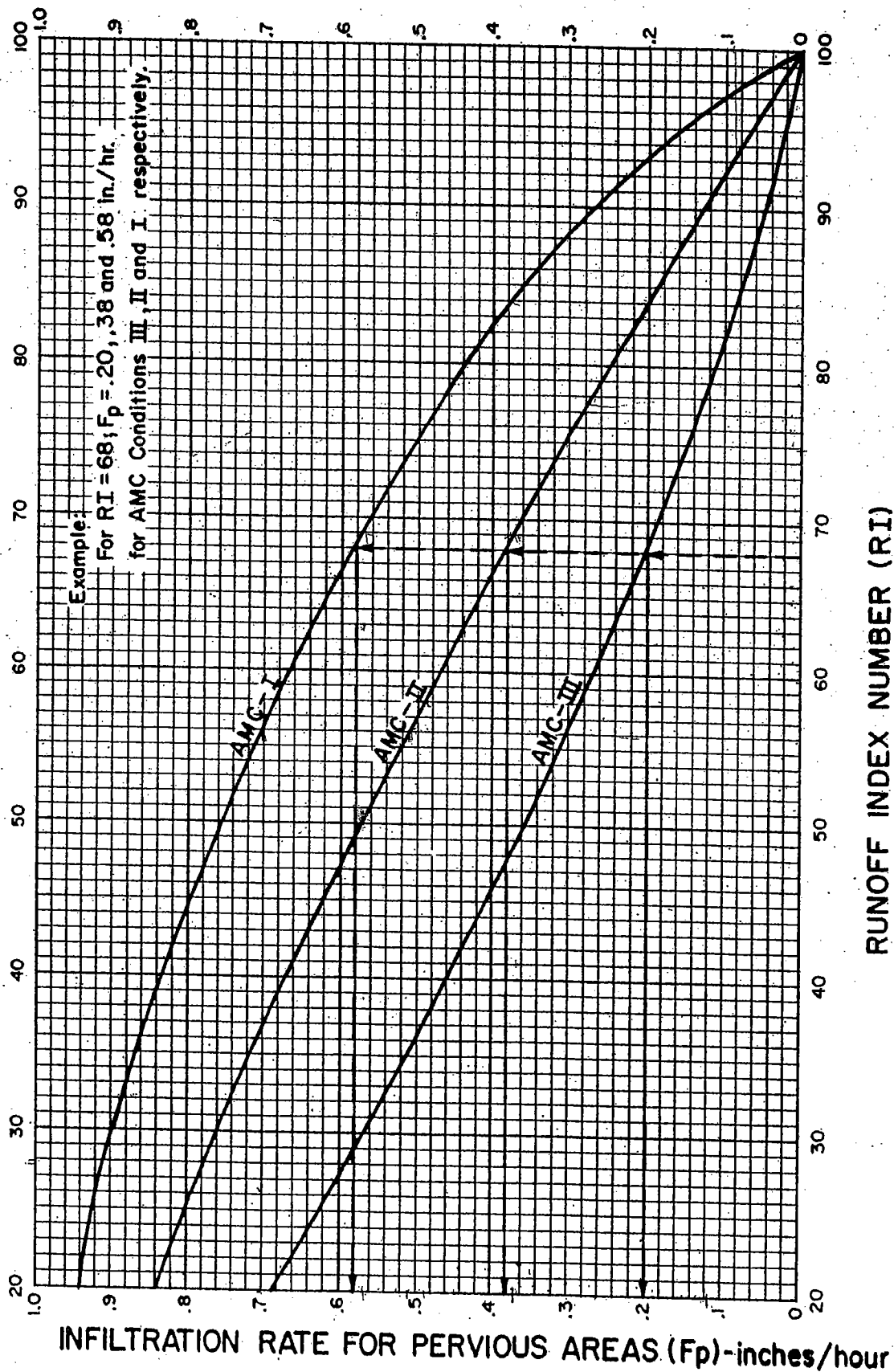
1. Land use should be based on ultimate development of the watershed. Long range master plans for the County and incorporated cities should be reviewed to insure reasonable land use assumptions.
2. Recommended values are based on average conditions which may not apply to a particular study area. The percentage impervious may vary greatly even on comparable sized lots due to differences in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area should always be made, and a review of aerial photos, where available may assist in estimating the percentage of impervious cover in developed areas.
3. For typical horse ranch subdivisions increase impervious area 5 percent over the values recommended in the table above.

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IMPERVIOUS COVER
FOR
DEVELOPED AREAS

NOTES:

I. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography Item No. 36.



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INFILTRATION RATE FOR
PERVIOUS AREAS VERSUS
RUNOFF INDEX NUMBERS

ACTUAL IMPERVIOUS COVER

Land Use (1)	Range-Percent	Recommended Value For Average Conditions-Percent (2)
Natural or Agriculture	0 - 10	0
Single Family Residential: (3)		
40,000 S. F. (1 Acre) Lots	10 - 25	20
20,000 S. F. (½ Acre) Lots	30 - 45	40
7,200 - 10,000 S. F. Lots	45 - 55	50
Multiple Family Residential:		
Condominiums	45 - 70	65
Apartments	65 - 90	80
Mobile Home Park	60 - 85	75
Commercial, Downtown Business or Industrial	80 -100	90

Notes:

1. Land use should be based on ultimate development of the watershed. Long range master plans for the County and incorporated cities should be reviewed to insure reasonable land use assumptions.
2. Recommended values are based on average conditions which may not apply to a particular study area. The percentage impervious may vary greatly even on comparable sized lots due to differences in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area should always be made, and a review of aerial photos, where available may assist in estimating the percentage of impervious cover in developed areas.
3. For typical horse ranch subdivisions increase impervious area 5 percent over the values recommended in the table above.

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HYDROLOGY MANUAL

IMPERVIOUS COVER
FOR
DEVELOPED AREAS

② Indentation

Project:

total
infiltrate = $0.20 / .9 = .22$

from plate E-2.1 of the District Hydrology Manual

Project: Menifee Valley Master Drainage Plan - Interim Condition Basins D1, D2, E1

total

infiltrate rate = $0.19 / .9 = \boxed{0.21}$

from plate E-2.1 of the District Hydrology Manual

Project: snifee Valley Master Drainage Plan - Basins A, B, C, D1, D3 (ULTIMATE-CONDITION) @ LINDENBERGER F

total
infiltrate = $0.20 / 9 = .22$

from plate E-2.1 of the District Hydrology Manual

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Menifee Valley Master Drainage Plan - Basins A, B, C (INTERIM CONDITION)

	total	infiltrate rate =	$0.20 / .9 =$	$.22$
--	-------	-------------------	---------------	-------

infiltrate=

Deane

Menifee Valley Master Drainage Plan - Basins A, B

$$F = 0.2$$

total area=	59.00	total	infiltrate=
-------------	-------	-------	-------------

Menifee Valley Master Drainage Plan - Basins A, B, C, D1 (INTERIM CONDITION)

Project:

[illegible]

total	infiltrate rate = 0.21/0.9 =
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Menifee Valley Master Drainage Plan - Basins 2A

Project:

[illegible]

total
infiltrate = $0.18 / 0.9 = 0.204$

from plate E-2.1 of the District Hydrology Manual

AVERAGE ADJUSTED LOSS RATE

Menifee Valley Master Drainage Plan - Basins 1A

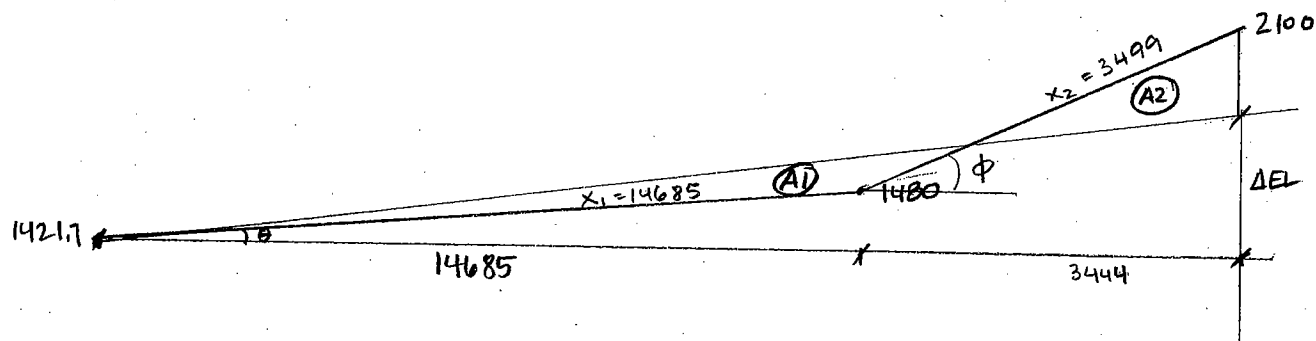
Project:

[illegible]

total
infiltrate rate = $0.16 / 0.9 = 0.178$

from plate E-2.1 of the District Hydrology Manual

Basins A, B, C, D1, D3



$$X_1^2 = (1480 - 1421.7)^2 + 14685^2$$

$$X_1 = 14685$$

$$X_2^2 = (2100 - 1480)^2 + 3444^2$$

$$X_2 = 3499$$

$$\tan \theta = \frac{58.3}{14685}$$

$$\theta = 0.22^\circ$$

$$\theta = 0^\circ 13' 12''$$

$$\tan \phi = \frac{620}{3444}$$

$$\phi = 10.2^\circ$$

$$\phi = 10^\circ 12' 0''$$

- Draw lines to scale in microstation: w/14795B\14795b_hydro_slope_calc.dgn
- Measure A1 & A2 until areas match

$$A1 = 715537 \text{ ft}^2$$

$$A2 = 708782 \text{ ft}^2$$

> ok

$$\Delta EL = 185 \text{ ft (measured in microstation)}$$

$$S (\text{ft/mi}) = \frac{185 \text{ ft}}{(14685 + 3444) / 5280}$$

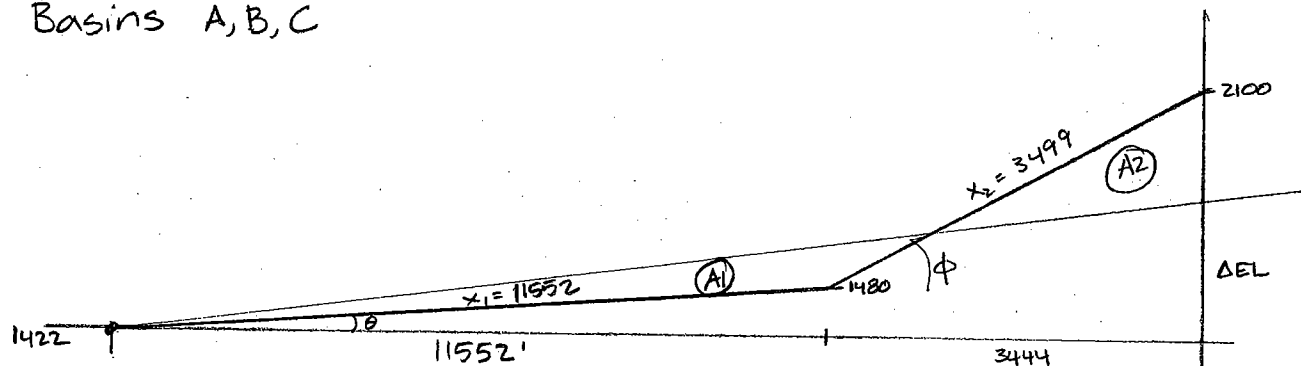
$$S = 53.9 \text{ ft/mi}$$

Basins A, B, C, D3 : SAME AS A, B, C

$$S = 75.3 \text{ ft/mi}$$

because flowline through D3 is too flat.

Basins A, B, C



$$x_1^2 = (1480 - 1422)^2 + (11552)^2$$

$$x_1 = 11552$$

$$\theta = \tan^{-1} \left(\frac{58}{11552} \right)$$

$$\theta = 0.29^\circ$$

$$\theta = 0^\circ 17' 24''$$

$$A_1 = 648410 \text{ ft}^2$$

$$A_2 = 650187 \text{ ft}^2 > \text{OK}$$

$$x_2 = 3499 \text{ (same as pg. 1.)}$$

$$\phi = 10.2^\circ$$

$$\phi = 10^\circ 12' 0''$$

$$\Delta EL = 214'$$

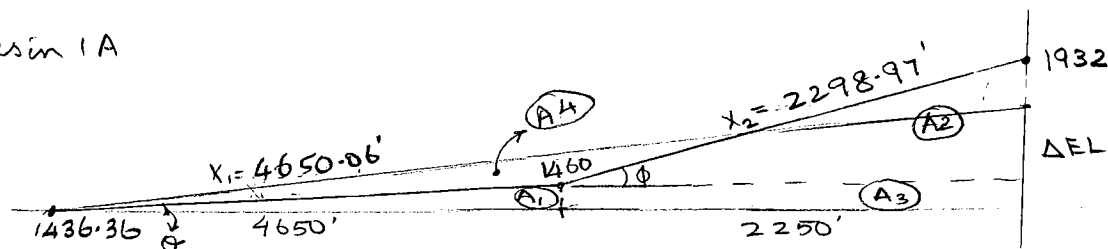
$$S(\text{ft/mi}) = \frac{214}{(11552 + 3444) / 5280}$$

$$S = 75.3 \text{ ft/mi}$$

$$S = 174.9 \text{ ft/mi}$$

5/8/07
14795-B

Basin 1A



$$X_1^2 = (1460 - 1436.36)^2 + (4650)^2$$

$$X_1 = 4650.06'$$

$$\theta = \tan^{-1} \left(\frac{1460 - 1436.36}{4650} \right)$$

$$= 1^\circ 31'$$

$$= 1.53^\circ$$

$$X_2^2 = (1932 - 1460)^2 + 2250^2$$

$$X_2 = 2298.97'$$

$$\phi = \tan^{-1} \left(\frac{1932 - 1460}{2250} \right)$$

$$= 0^\circ 12'$$

$$= 0.21^\circ$$

$$A1 + A2 + A3 = A4$$

$$\left[\frac{1}{2} \times 4650 \times (1460 - 1436.36) \right] + \left[\frac{1}{2} \times 2250 \times (1460 - 1436.36) \right] + \left[\frac{1}{2} \times 2250 \times (1932 - 1460) \right]$$

$$= \frac{1}{2} \times (4650 + 2250) \times \Delta EL$$

$$(54963) + (53190) + (531000) = 3450 \times \Delta EL$$

$$\Delta EL = 185.26$$

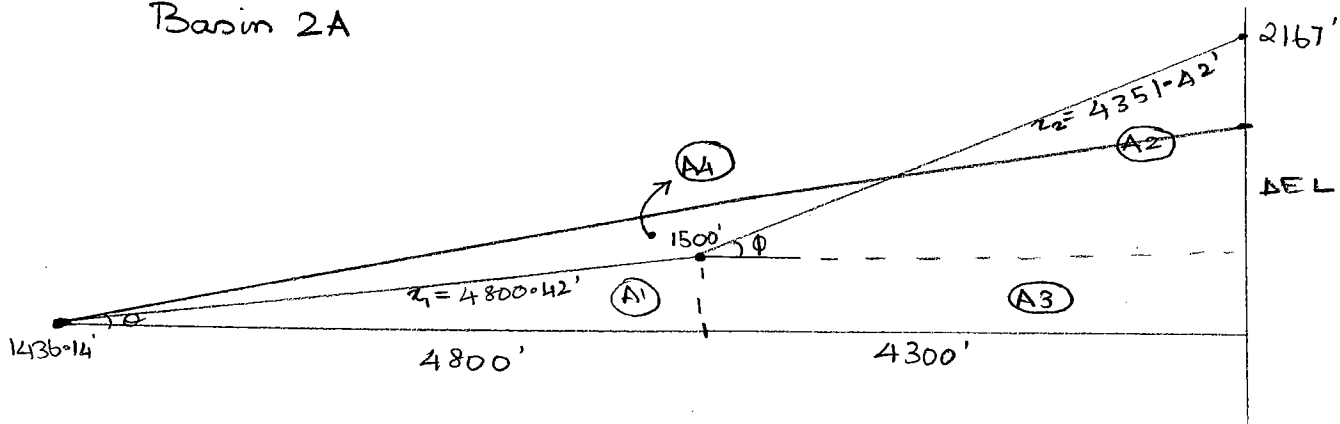
$$S = \frac{\Delta EL}{(4650 + 2250)}$$

$$= \frac{185.26}{6900} = 0.027$$

$$S = 141.77 \text{ ft/mi}$$

$$\approx 141.8 \text{ ft/mi}$$

Basin 2A



$$X_1^2 = (1500 - 1436.14)^2 + (4800)^2$$

$$X_2^2 = (2167 - 1500)^2 + (4300)^2$$

$$X_1 = 4800.42'$$

$$X_2 = 4351.42'$$

$$\theta = \tan^{-1} \left(\frac{1500 - 1436.14}{4800} \right)$$

$$\phi = \tan^{-1} \left(\frac{2167 - 1500}{4300} \right)$$

$$\theta = 0.013$$

$$= 0^\circ 0' 47''$$

$$\phi = 0.154$$

$$\phi = 0^\circ 9' 14''$$

$$A_1 + A_2 + A_3 = A_4$$

$$\left[\frac{1}{2} \times 4800 \times (1500 - 1436.14) \right] + \left[\frac{1}{2} \times 4300 \times (2167 - 1500) \right] + \left[4300 \times (1500 - 1436.14) \right]$$

$$= \left[\frac{1}{2} \times 4300 \times \Delta EL \right]$$

$$153264 + 1434050 + 274598 = 2150 \times \Delta EL$$

$$\Delta EL = 866.01'$$

$$S = \frac{\Delta EL}{(4800 + 4300)}$$

$$= \frac{866.01}{9100}$$

$$= 0.095$$

$$S = 502.47 \text{ ft/mi} \approx 502.5 \text{ ft/mi}$$



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San Diego, California 92110-2596

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Fax: (619) 291-4165

Date _____
Job No. _____
Page _____
Done By _____
Checked By _____

Basins ABCD1

*Slope same as Basin ABC
S = 79°*

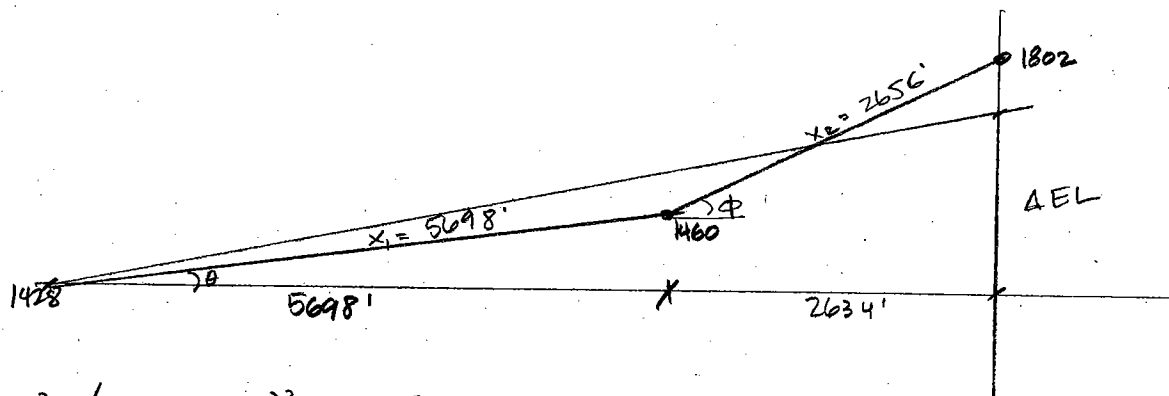


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Date 11.21.06
Job No. 14795 B
Page 6/
Done By KH
Checked By _____

BASINS D1, D2, E1



$$X_1^2 = (1460 - 1428)^2 + 5698^2$$

$$X_1 = 5698'$$

$$X_2^2 = (1802 - 1460)^2 + 2634^2$$

$$X_2 = 2656'$$

$$\theta = \tan^{-1}(32/5698)$$

$$\theta = 0.32^\circ$$

$$\theta = 0^\circ 19' 12''$$

$$\phi = \tan^{-1}(342/2634)$$

$$\phi = 7.4^\circ$$

$$\phi = 7^\circ 24' 0''$$

$$A1 = 223750$$

$$A2 = 224216$$

$$\Delta EL = 150'$$

$$S (\text{ft/mi}) = \frac{150'}{(5698 + 2634)/5280}$$

$$S = 95.1 \text{ ft/mi}$$

Split Flow Ratio Calculation

Ratio Flow for Channel
A & C

$$Q_{R-A} + Q_{R-U} = 1367 - 626.8 \\ = 740.2 \text{ cfs}$$

$$Q_{act-A} + Q_{act-U} = 728.0 + 69.3 \text{ (} Q_{act-total} \text{)} \\ = 797.3 \text{ cfs}$$

$$\frac{Q_{act-A}}{Q_{act-Total}} = \text{Ratio A}$$

$$\frac{728}{797.3} \Rightarrow 0.91$$

$$\frac{Q_{act-U}}{Q_{act-Total}} = \text{Ratio U}$$

$$\frac{69.3}{797.3} \Rightarrow 0.09$$

$$Q_{R-A} = 0.91 (740.2)$$

$$Q_{RA} = 673.58 \text{ cfs}$$

$$Q_{R-U} = 0.09 (740.2)$$

$$Q_{RU} = 66.62 \text{ cfs}$$

APPENDIX B

Hydraulic Back-Up for Riprap sizing at Lindenberger culvert outfall Headloss calculation for culverts flowing full

Riprap sizing at Lindenger culvert outfall

2003 REGIONAL SUPPLEMENT

TO

"GREENBOOK 2003"

STANDARD SPECIFICATIONS

FOR

PUBLIC WORKS CONSTRUCTION

2003 Edition

SDWR-STD-02G-sup
Water Resources Department
2003 Regional Supplement to Green
Book 2003 Standard Specifications for
Public Works Construction

Approved and adopted by the
San Diego Regional Standards Committee
March 2003

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PART 2 CONSTRUCTION MATERIALS

SECTION 200 - ROCK MATERIALS

200-1 ROCK PRODUCTS

200-1.6 Stone for Riprap

Page 44 - Add:

"The individual classes of rocks used in slope protection shall conform to Table 200-1.6(A).

Replace Table 200-1.6(A) with:

Table 200-1.6(A)

PERCENTAGE LARGER THAN

Rock Sizes	CLASSES					
	1.8 Tonne (2 Ton)	900 kg (1 Ton)	450 kg (½ Ton)	220 kg (1/4 Ton)	No. 2 Backing	No. 3 Backing
3.6 Tonne (4 Ton)	0-5					
1.8 Tonne (2 Ton)	50-100	0-5				
900 kg. (1 Ton)	95-100	50-100	0-5			
450 kg. (½ Ton)		-----	50-100	0-5		
220 kg. (1/4 Ton)		95-100	-----	50-100		
90 kg. (200 Lb.)			95-100	-----		
34 kg. (75 Lb.)				95-100	0-5	
11 kg. (25 Lb.)					25-75	0-5
2.2 kg. (5 Lb.)					90-100	25-75
0.4 kg. (1 Lb.)						90-100

The amount of material smaller than the smallest size listed in the table for any class of rock slope protection shall not exceed the percentage limit listed in the table determined on a weight basis. Compliance with the percentage limit shown in the table for all other sizes of the individual pieces of any class of rock slope protection shall be determined by the ratio of the number of individual pieces larger than the smallest size listed in the table for that class also pertaining to 200-1.7

2003 REGIONAL SUPPLEMENT

200-1.6.3 Quality Requirements

Page 45 - First paragraph, second sentence change "60 days" to "30 days".

200-1.7 Selection of Riprap and Filter Blanket Material

Table 200-1.7

Velocity Meters/Sec (Ft/Sec) (1)	Rock Class (2)	Rip Rap Thic- k- Nes s "T"	Filter Blanket Upper Layer(s) (3)			
			Option 1 Sect. 200 (4)	Optio n 2 Sect.4 00 (4)	Option 3 (5)	Lower Layer (6)
2 (6-7)	No. 3 Backing	0.6	5 mm (3/16")	C2	D.G.	----
2.2 (7-8)	No. 2 Backing	1.0	6 mm (1/4")	B3	D.G.	----
2.6 (8-9.5)	Facing	1.4	9.5 mm (3/8")	----	D.G.	----
3 (9.5-11)	Light	2.0	12.5 mm (1/2")	----	25mm (3/4"- 1-1/2")	----
3.5 (11-13)	220 kg (1/4 Ton)	2.7	19 mm (3/4")	----	25mm (3/4"- 1-1/2")	SAND
4 (13-15)	450 kg (1/2 Ton)	3.4	25 mm (1")	----	25mm (3/4"- 1-1/2")	SAND
4.5 (15-17)	900 kg (1 Ton)	4.3	37.5 mm (1-1/2")	----	TYPE B	SAND
5.5 (17-20)	1.8Tonne (2 Ton)	5.4	50 mm (2")	----	TYPE B	SAND

See Section 200-1.6. see also Table 200-1.6 (A)

Practical use of this table is limited to situations where "T" is less than inside diameter.

- (1) Average velocity in pipe or bottom velocity in energy dissipater, whichever is greater.
- (2) If desired rip rap and filter blanket class is not available, use next larger class.
- (3) Filter blanket thickness = 0.3 Meter (1 Foot) or "T", whichever is less.
- (4) Standard Specifications for Public Works Construction.
- (5) D.G. = Disintegrated Granite, 1mm to 10mm.

P.B. = Processed Miscellaneous Base.

Type B = Type B bedding material, (minimum 75% crushed particles, 100% passing 62.5 mm (2 ½") sieve, 10% passing 1" sieve).

- (6) Sand 75% retained on #200 sieve.

SECTION 201 - CONCRETE, MORTAR AND RELATED MATERIALS

201-1 PORTLAND CEMENT CONCRETE

201-1.1 Requirements

201-1.1.2 Concrete Specified by Class

Page 51 - Modify Table 201-1.1.2(A) as follows:

1) **Revise:**

Concrete Pavement (not integral with curb)	520-A-2500
--	------------

To Read:

Concrete Pavement (not integral with curb)	520-C-2500
Cross Gutter and Alley Aprons	560-C-3250

2) **Revise:**

Curb, Integral Curb and Pavement	520-C-2500
Gutter, Walk, Alley Aprons	520-C-2500P

To Read:

Curb and Gutter (separate or combined)	520-C-2500
and Walks	520-C-2500P

3) Change concrete class for "Sidehill Surface Drainage Facilities" from "500-C-2500" to "520-C-2500".

4) Change concrete class for "Pipe Bedding and Encasement, Anchors and Thrust Blocks, Wall Support for Pipe" from "450-C-2000²" to "480-C-2000²".

5) Change concrete class for "Fence and Guardrail Post Foundations" from "500-C-2500" to "520-C-2500".

201-1.2 Materials

201-1.2.1 Portland Cement

Page 56 - First paragraph, first sentence revise to read:

"All cement to be used or furnished shall be low alkali and shall be either Type I or Type II Portland Cement conforming to ASTM C 150, or Type IP (MS) portland - pozzolan cement conforming to ASTM C 595, unless otherwise specified."

201-1.2.3 Water

Page 55 - Second paragraph replace "1,000 PPM (mg/L) of sulfates" with "1,300 (mg/L) PPM of sulfates".

Third paragraph replace "800 PPM (mg/L) of sulfates" with "1,300 (mg/L) PPM of sulfates".

Super Elevation ~~Friction Factor~~ for angled culvert
at 9490-9491 (Ultimate Angle Analysis)

$$\Delta Y = C \frac{V^2 W}{g r}$$

$\Delta Y \rightarrow$ rise in W.S.E

$C \rightarrow$ super elevation co-efficient

$V \rightarrow$ Mean channel velocity

$W \rightarrow$ width of the channel

$g \rightarrow$ acceleration due to gravity

$r \rightarrow$ radius of channel centerline

Known data:

$C = 0.5$ (table 2-4 Tech. eng. & design guides)

$V = 5.55 \text{ ft/s}$ (Velocity at D/S of culvert)

$W = 117.48 \text{ ft}$ (Top Width from HEC-RAS) at 9491

$g = 32.2 \text{ ft}^2/\text{s}$

$r \approx 140 \text{ ft}$

Super Elevation: $\Delta Y = \frac{0.5 (5.55)^2 (117.48)}{32.2 \times 140} \Rightarrow \Delta Y = 0.4 \text{ ft}$

Water Surface Elevation = $0.4 + 1428.41$
towards left of channel = 1428.41 feet

$\therefore$ Depth of water = $1428.41 - 1421.20 = 7.21 \text{ feet}$

Cross Section Number: **X-sec 9491 - Ultimate Analysis**

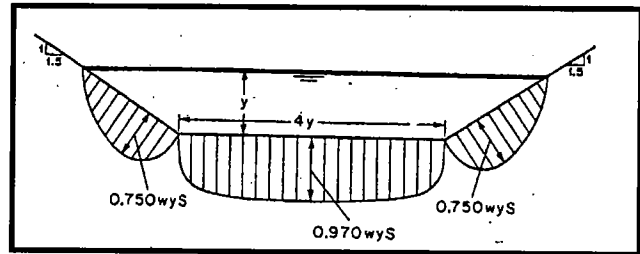
Flow Depth: 7.21 feet (including S.Elev)

Flow Velocity: 9.1 fps

bottom width: 87 feet

z: 2 :1

$S_{EGL} = 0.003$ *Decimal Slope of EGL*



Required Riprap Size from Greenbook:	No. 3 Backing - $D_{50}=0.4$ feet (or larger)
--------------------------------------	---

Tractive Force Calculations

Channel Bottom:

$$b/y = 12.067$$

$X_{\text{bottom}} = \underline{\underline{1}}$ from figure 1

$$T_{\text{bottom}} = X_{\text{bottom}} (\gamma_W) D S_{\text{EGL}}$$

$$T_{\text{bottom}} = 1.3497 \text{ lb/ft}^3$$

$$T_{\text{permissible}} = 0.04 (\gamma_s - \gamma_w) D_{50}$$

$$T_{\text{permissible}} = 0.04 (165 - 62.4 \text{ lb/ft}^3) D_{50}$$

$$T_{\text{bottom}} = T_{\text{permissible}} = 4.1 D_{50}$$

D₅₀ = 0.329 feet

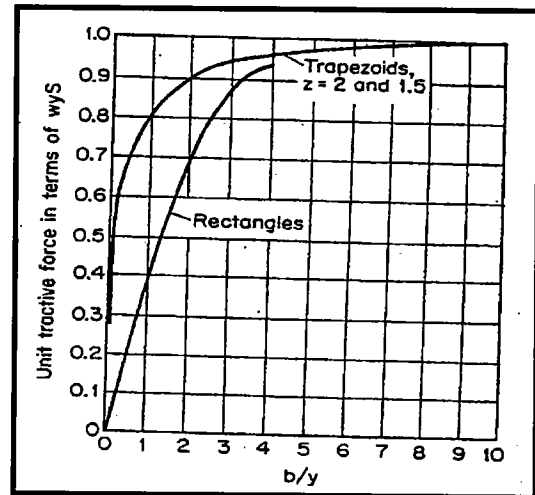


Figure 1: On bottom of Channels

Channel Sides:

$$b/y = 12.067$$

$$X_{\text{side}} = \underline{0.78} \quad \text{from figure 2}$$

$$T_{\text{side}} = X_{\text{side}} (y_W) D S_{\text{EGL}}$$

$$T_{side} = 1.0528 \text{ lb/ft}^3$$

$$T_{\text{perm-side}} = T_{\text{side}} [(1 - (\sin^2 \Phi / \sin^2 \theta))^{0.5}] = 4.1 D_{50}$$

$$\phi = 26.57 \text{ degrees}$$

$\theta =$ 40 degrees (angle of repose of rock)

$$T_{\text{perm-side}} = 1.4657 \text{ lb/ft}^2$$

$$T_{\text{side}} = T_{\text{perm-side}} = 4.1 D_{50}$$

D₅₀ = 0.357 feet

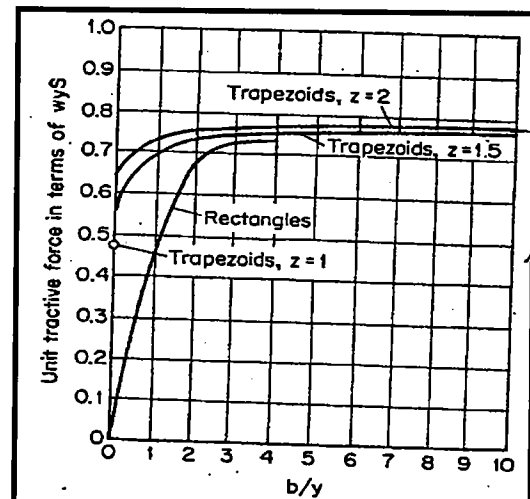


Figure 2: On sides of Channels

Design Specifications:

Required Rock Size

No. 3 Backing - $D_{50}=0.4$ feet (or larger)

Minimum Rock Thickness:

0.6 Feet (or 1.5 x D₅₀)

Filter Material:

Per Geotechnical Engineers Specifications

Headloss calculation for culverts flowing full

Culvert at Biggs & Holland (angle analysis) - Ultimate Condition

Size (5) - 14' x 8.5' RCB ; $l_1 = 266.22'$, $l_2 = 345.36'$
 $Q_1 = 2348 \text{ cfs}$; $Q_2 = 2062 \text{ cfs}$

$$A = 5 \times (14 \times 8.5) \\ = 595 \text{ sq ft}$$

$$P = 5 \times 2 (14 + 8.5) \\ = 225 \text{ ft}$$

$$R = A/P = \frac{595}{225} = 2.64'$$

$$h_{f1} = \left[\frac{Q_1 n}{1.486 A R^{2/3}} \right]^2 l_1$$

$$= \left[\frac{2348 \times 0.014}{1.486 \times 595 \times (2.64)^{2/3}} \right]^2 \times 266.22$$

$$= 0.16 \text{ ft}$$

$$h_{f2} = \left[\frac{Q_2 n}{1.486 A R^{2/3}} \right]^2 \times l_2$$

$$= \left[\frac{2066 \times 0.014}{1.486 \times 595 \times (2.64)^{2/3}} \right]^2 \times 344.57$$

$$= 0.10 \text{ ft}$$

$$\text{Total } h_f = 0.20 \text{ ft}$$

$$\text{WSPGW } h_f = 0.14 \text{ ft}$$

$\therefore$ an additional 0.06 ft loss is added to the energy grade (EG)

Culvert at Briggs & Holland (angle analysis) - Interim Condition

Size (5) - 14' x 8.5' RCB ; $l = 611.58$

$$A = 5 \times 14 \times 8.5 \\ = 595 \text{ sq ft}$$

$$Q = 2066 \text{ cfs}$$

$$P = 5 \times 2 (14 + 8.5) \\ = 225 \text{ ft}$$

$$R = A/P = 595/225 = 2.64 \text{ ft}$$

$$h_f = \left[\frac{Qn}{1.486 \times A R^{2/3}} \right]^2 \times l$$

$$= \left[\frac{2066 \times 0.014}{1.486 \times 595 \times (2.64)^{2/3}} \right]^2 \times 610.79$$

$$= 0.18 \text{ ft} \text{ assuming culvert flowing full}$$

$$\text{WSP6/W } h_f = 0.19$$

$\therefore$ No additional headloss is added to upstream of culvert at Briggs & Holland for the interim condition.

Culvert at HEC-RAS Station 10100

Angled Culvert - Interim
Lindenberger

$$Q = 20774 \text{ A}$$

$$h_f = L \left[\frac{Q \cdot n}{1.486 \times A^{2/3}} \right]^2$$

$$= 176 \times \left[\frac{2077 \times 0.014}{1.486 \times 600 \times (2.73)^{2/3}} \right]^2$$

$$= 0.05 \text{ ft}$$

Losses are estimated on
culvert system flowing
full per RCFC & WCD's
direction.

$$A = 4 \times 20 \times 7.5 \\ = 600 \text{ sq ft}$$

$$P = [2 \times (20 + 7.5)] \times 4 \\ = 220 \text{ ft}$$

$$R = \frac{A}{P} = \frac{600}{220} = 2.73 \text{ ft}$$

Added ΔEG in HEC-RAS to
compensate the difference in
friction loss derived based
on culvert flowing full.

$$\text{HEC-RAS } h_f = 0.04$$

$$\Delta EG = 0.05 - 0.04 \\ = \underline{\underline{0.01'}}$$

Culvert at HEC-RAS Station 10100 - (angle analysis)
Ultimate + Lindenberger

$$Q = 3024 \text{ cfs}$$

$$A = 4 \times 20 \times 7.5 \\ = 600 \text{ sq ft}$$

$$V = \frac{3024}{600} = 5.04 \text{ ft/s}$$

$$P = [2 \times (20 + 7.5)] \times 4 \\ = 220 \text{ ft}$$

The culvert system is

assumed to be flowing full

for calculating losses per RCF's

direction.

$$R = \frac{A}{P} = \frac{600}{220} = 2.73 \text{ ft}$$

$$h_f = L \left[\frac{Q_n}{1.486 A R^{2/3}} \right]^2$$

$$= \left[\frac{3024 \times 0.014}{1.486 \times 600 \times 2.73^{2/3}} \right]^2 \times 176$$

$$= 0.1 \text{ ft}$$

$$P = [2 \times (20 + 7.5)] \times 4 \\ = 220$$

$$R = \frac{A}{P}$$

$$= \frac{600}{220} \\ = 2.73 \text{ ft}$$

Added ΔE_G in
HEC-RAS to compensate
the difference in friction
loss derived based on
hand calculation

$$\text{HEC-RAS } h_f = 0.01$$

$$\Delta E_G = 0.1 - 0.01$$

$$\underline{\underline{\Delta E_G = 0.03}}$$

FHWA Full Flow Equations

For culverts flowing full, the total **head loss**, or energy loss, through the culvert is measured in feet (or meters). The head loss, H_L , is computed using the following formula:

$$H_L = h_{en} + h_f + h_{ex} \quad (6-5)$$

Where: h_{en} = entrance loss (feet or meters)

h_f = friction loss (feet or meters)

h_{ex} = exit loss (feet or meters)

The friction loss in the culvert is computed using Manning's formula, which is expressed as follows:

$$h_f = L \left(\frac{Qn}{1.486 AR^{2/3}} \right)^2 \quad (6-6)$$

Where: h_f = friction loss (feet)

L = culvert length (feet)

Q = flow rate in the culvert (cfs)

n = Manning's roughness coefficient

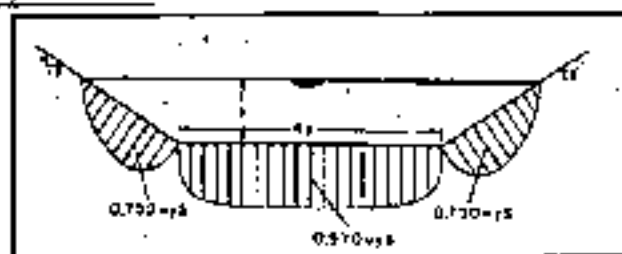
A = area of flow (square feet)

R = hydraulic radius (feet)

The entrance energy loss is computed as a coefficient times the velocity head inside the culvert at the upstream end. The exit energy loss is computed as a coefficient times the change in velocity head from just inside the culvert, at the downstream end, to outside of the culvert at the downstream end. The exit and entrance loss coefficients are described in the next section of this chapter.

Cross Section Number: X-sec 9490.6 - Ultimate Analysis

Flow Depth: 7.69 feet (including S Elev)
 Flow Velocity: 9.08 fps
 bottom width: 116 feet
 z: 3:1
 $S_{LGL} = 0.001$ Decadal Slope of EGL



Required Riprap Size from Greenbook: Facing - $D_{50} = 0.9$ feet (or larger)

Tractive Force Calculations

Channel Bottom:

$b/y = 16.361$
 $X_{bottom} = 1$ from figure 1

$$T_{bottom} = X_{bottom} (Y_W) D S_{LGL}$$

$$T_{bottom} = 0.4526 \text{ lb/ft}^2$$

$$T_{permissible} = 0.04 (Y_S - Y_W) D_{50}$$

$$T_{permissible} = 0.04 (165 - 62.4 \text{ lb/ft}^2) D_{50}$$

$$T_{bottom} = T_{permissible} = 4.1 D_{50}$$

$$D_{50} = 0.110 \text{ feet}$$

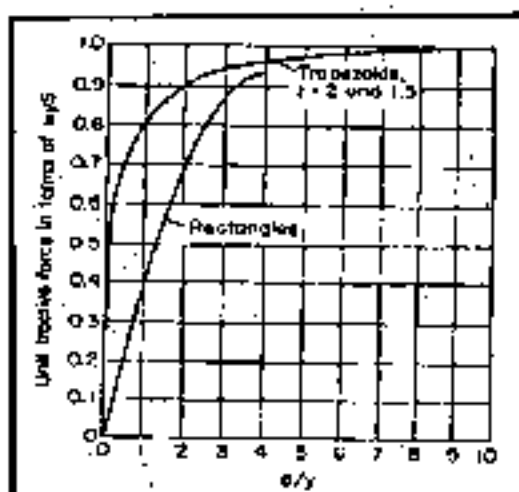


Figure 1: On bottom of Channels

Channel Sides:

$b/y = 16.361$
 $X_{side} = 0.78$ from figure 2

$$T_{side} = X_{side} (Y_W) D S_{LGL}$$

$$T_{side} = 0.353 \text{ lb/ft}^2$$

$$T_{permissible} = T_{side} [(1 - (\sin^2 \Phi / \sin^2 \theta))^{1/2}] = 4.1 D_{50}$$

$$\Phi = 18.43 \text{ degrees}$$

$$\theta = 40 \text{ degrees (angle of repose of rock)}$$

$$T_{permissible} = 0.4065 \text{ lb/ft}^2$$

$$T_{side} = T_{permissible} = 4.1 D_{50}$$

$$D_{50} = 0.089 \text{ feet}$$

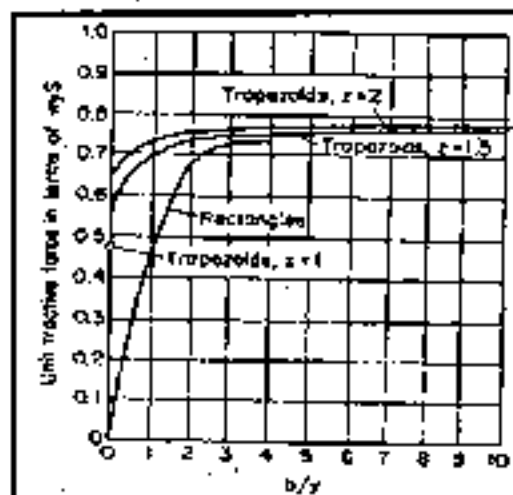


Figure 2: On sides of Channels

Design Specifications:

Required Rock Size	Facing - $D_{50} = 0.9$ feet (or larger)
Minimum Rock Thickness:	1.4 Feet (or $1.5 \times D_{50}$)
Filter Material	Per Geotechnical Engineers Specifications

Super Elevation at 9490.6

$$\Delta Y = C \frac{V^2 W}{g r}$$

ΔY → rise in W.S.E

C → super elevation co-efficient

V → mean channel velocity

W → width of the channel

g → acceleration due to gravity

r → radius of channel centerline

known data

$C = 0.5$ (Table 2.4 Tech Eng & design guide)

$V = 9.08 \text{ ft/s}$ $g = 32.2 \text{ ft/s}^2$

$W = 116 \text{ ft}$ $r \approx 140 \text{ ft}$

$$\Delta Y = 0.5 \times \frac{(9.08)^2 \times 116}{32.2 \times 140} = 1.06$$

W.S.E. } $= 1427.61 + 1.06 = 1428.69$
on left side

$$\therefore \text{Depth} = 1428.69 - 1421.6 = 7.09 \text{ ft}$$

2003 REGIONAL SUPPLEMENT
 TO
"GREENBOOK 2003"
 STANDARD SPECIFICATIONS
 FOR
 PUBLIC WORKS CONSTRUCTION
 2003 Edition

SDWR-STD-02G-sup
 Water Recycling Department
 2003 Regional Supplement to Green
 Book 2003 Standard Specifications for
 Public Works Construction

Approved and adopted by the
 San Diego Regional Standards Committee
 March 2003

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RICK ENG. CO.

PART 2 CONSTRUCTION MATERIALS

SECTION 200 - ROCK MATERIALS

200-1 ROCK PRODUCTS

200-1.6 Stone for Riprap

Page 44 - Add:

"The individual classes of rocks used in slope protection shall conform to Table 200-1.6(A).

Replace Table 200-1.6(A) with:

Table 200-1.6(A)

PERCENTAGE LARGER THAN

Rock Sizes	C L A S S E S					
	1.8 Tonne (2 Ton)	900 kg (1 Ton)	450 kg (½ Ton)	220 kg (¼ Ton)	No. 2 Backing	No. 3 Backing
3.6 Tonne (4 Ton)	0-5					
1.8 Tonne (2 Ton)	50-100	0-5				
900 kg. (1 Ton)	95-100	50-100	0-5			
450 kg. (½ Ton)			50-100	0-5		
220 kg. (¼ Ton)		95-100		50-100		
90 kg. (200 Lb.)			95-100			
34 kg. (75 Lb.)				95-100	0-5	
13 kg. (25 Lb.)					25-75	0-5
2.2 kg. (5 Lb.)					90-100	25-75
0.4 kg. (1 Lb.)						90-100

The amount of material smaller than the smallest size listed in the table for any class of rock slope protection shall not exceed the percentage limit listed in the table determined on a weight basis. Compliance with the percentage limit shown in the table for all other sizes of the individual pieces of any class of rock slope protection shall be determined by the ratio of the number of individual pieces larger than the smallest size listed in the table for that class also pertaining to 200-1.7

2003 REGIONAL SUPPLEMENT

200-1.6.3 Quality Requirements

Page 45 - First paragraph, second sentence change "60 days" to "30 days".

200-1.7 Selection of Riprap and Filter Blanket Material

Table 200-1.7

Velocity Meters/Sec (Ft/Sec) (1)	Rock Class (2)	Rip Rap Thic- k- ness "T"	Filter Blanket Upper Layer(s) (3)			
			Option 1 Sect. 200 (4)	Option 2 Sect. 400 (4)	Option 3 (5)	Lower Layer (6)
2 (6-7)	No. 3 Backing	0.6	5 mm (3/16")	C2	D.G.	----
2.2 (7-8)	No. 2 Backing	1.0	6 mm (1/4")	B3	D.G.	---
2.6 (8-9.5)	Facing	1.4	9.5 mm (3/8")	----	D.G.	----
3 (9.5-11)	Light	2.0	12.5 mm (1/2")	---	25mm (3/4" - 1-1/2")	----
3.5 (11-13)	220 kg (1/4 Ton)	2.7	19 mm (3/4")	----	25mm (3/4" - 1-1/2")	SAND
4 (13-15)	450 kg (1/2 Ton)	3.4	25 mm (1")	---	25mm (3/4" - 1-1/2")	SAND
4.5 (15-17)	900 kg (1 Ton)	4.3	37.5 mm (1-1/2")	----	TYPE B	SAND
5.5 (17-20)	1.8 Tonne (2 Ton)	5.4	50 mm (2")	----	TYPE B	SAND

See Section 200-1.6. see also Table 200-1.6 (A)

Practical use of this table is limited to situations where "T" is less than inside diameter.

- (1) Average velocity in pipe or bottom velocity in energy dissipater, whichever is greater.
- (2) If desired rip rap and filter blanket class is not available, use next larger class.
- (3) Filter blanket thickness = 0.3 Meter (1 Foot) or "T", whichever is less.
- (4) Standard Specifications for Public Works Construction.
- (5) D.G. = Disintegrated Granite, 1mm to 10mm

P.B. = Processed Miscellaneous Base.

Type B = Type B bedding material, (minimum 75% crushed particles, 100% passing 62.5 mm (2 1/2") sieve, 10% passing 1" sieve).

- (6) Sand 75% retained on #200 sieve.

SECTION 201 - CONCRETE, MORTAR AND RELATED MATERIALS

201-1 PORTLAND CEMENT CONCRETE

201-1.1 Requirements

201-1.1.2 Concrete Specified by Class

Page 51 - Modify Table 201-1.1.2(A) as follows:

1) Revise:

Concrete Pavement (not integral with curb)	520-A-2500
--	------------

To Read:

Concrete Pavement (not integral with curb)	520-C-2500
Cross Gutter and Alley Aprons	560-C-3250

2) Revise:

Curb, Integral Curb and Pavement	520-C-2500
Gutter, Walk, Alley Aprons	520-C-2500P

To Read:

Curb and Gutter (separate or combined)	520-C-2500
and Walks	520-C-2500P

3) Change concrete class for "Sidehill Surface Drainage Facilities" from "500-C-2500" to "520-C-2500".

4) Change concrete class for "Pipe Bedding and Encasement, Anchors and Thrust Blocks, Wall Support for Pipe" from "450-C-2000²" to "480-C-2000²".

5) Change concrete class for "Fence and Guardrail Post Foundations" from "500-C-2500" to "520-C-2500".

201-1.2 Materials

201-1.2.1 Portland Cement

Page 56 - First paragraph, first sentence revise to read:

"All cement to be used or furnished shall be low alkali and shall be either Type I or Type II Portland Cement conforming to ASTM C 150, or Type IP (MS) portland - pozzolan cement conforming to ASTM C 595, unless otherwise specified."

201-1.2.3 Water

Page 55 - Second paragraph replace "1,000 PPM (mg/L) of sulfates" with "1,300 (mg/L) PPM of sulfates".

Third paragraph replace "800 PPM (mg/L) of sulfates" with "1,300 (mg/L) PPM of sulfates".

APPENDIX C

100-Year, 3-Hour HEC-1 Analyses for:

HEC-1 Analysis and Workmap for Drainage Areas: A, B, C, D3

HEC-1 Analysis and Workmap for Drainage Areas: D1, D2, E1

HEC-1 Analysis and Workmap for Drainage Areas: A, B, C, D1, D3

HEC-1 Analysis and Workmap for Drainage Areas: A, B, C, D1

HEC-1 Analysis and Workmap for Drainage Areas: A, B, C

HEC-1 Analysis and Workmap for Drainage Areas: A, B

HEC-1 Analysis and Workmap for Drainage Areas: 1A

HEC-1 Analysis and Workmap for Drainage Areas: 2A

**100-Year, 3-Hour HEC-1 Analyses for:
HEC-1 Analysis and Workmap for Drainage Areas: A, B, C, D3**

ID	Menifee Valley Drainage Plan 05-17-07									
ID	100-YR	3HR	ULTIMATE DEVELOPED CONDITION							
ID	Basins A, B, C, D3									
IT	05	08JUL04	0000	300						
IO	5	2								
KK	1									
BA	3.77									
PB	1.80									
IN	05	08JUL04	0000							
PI	.013	.013	.011	.015	.015	.018	.015	.018	.018	.015
PI	.016	.018	.022	.022	.022	.020	.026	.027	.024	.027
PI	.033	.031	.029	.030	.031	.042	.050	.035	.068	.073
PI	.082	.059	.020	.018	.018	.006				
LU		.220	10.0							
KM	UHG FROM	AVERAGE	FULLERTON - SAN JOSE S-GRAPH							
UI	570.	811.	1169.	1373.	2097.	3585.	5485.	2461.	1697.	1305.
UI	1199.	940.	784.	727.	633.	567.	483.	423.	389.	344.
UI	317.	250.	231.	208.	138.	138.	138.	136.	29.	29.
UI	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
UI	29.5	29.5	29.5	29.5	29.5	29.5	29.5	22.8		
ZZ										

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* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
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*

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

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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 Menifee Valley Drainage Plan 05-17-07
2	ID 100-YR 3HR ULTIMATE DEVELOPED CONDITION
3	ID Basins A, B, C, D3
4	IT 05 08JUL04 0000 300
5	IO 5 2
6	KK 1
7	BA 3.77
8	PB 1.80
9	IN 05 08JUL04 0000
10	PI .013 .013 .011 .015 .015 .018 .015 .018 .018 .015
11	PI .016 .018 .022 .022 .022 .020 .026 .027 .024 .027
12	PI .033 .031 .029 .030 .031 .042 .050 .035 .068 .073
13	PI .082 .059 .020 .018 .018 .006
14	LU .220 10.0
15	KM UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
16	UI 570. 811. 1169. 1373. 2097. 3585. 5485. 2461. 1697. 1305.
17	UI 1199. 940. 784. 727. 633. 567. 483. 423. 389. 344.
18	UI 317. 250. 231. 208. 138. 138. 138. 136. 29. 29.
19	UI 29.5 29.5 29.5 29.5 29.5 29.5 29.5 29.5 29.5 29.5
20	UI 29.5 29.5 29.5 29.5 29.5 29.5 29.5 22.8
21	ZZ

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5 IO OUTPUT CONTROL VARIABLES

IT HYDROGRAPH TIME DATA

```
COMPUTATION INTERVAL      .08 HOURS
TOTAL TIME BASE    24.92 HOURS
```

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

STATION

1

(0) OUTFLOW

0. 400. 800. 1200. 1600. 2000. 2400. 0. 0. 0. 0. 0. 0. (L) PRECIP, (X) EXCESS												
.00	.00	.00	.00	.00	.00	.00	.00	.16	.12	.08	.04	.00

DAHRMN PER

80000	10.
80005	20 .
80010	30 .
80015	40 .
80020	5.0 .
80025	6.0 .
80030	7. 0 .
80035	8. 0 .
80040	9. 0 .
80045	10. 0 .
80050	11. .0 .
80055	12. 0 .
80100	13. 0 .
80105	14. 0 .
80110	15. 0 .
80115	16. 0 .
80120	17. 0 .
80125	18. 0 .
80130	19. .0 .
80135	20. 0 .

[illegible]

[illegible]

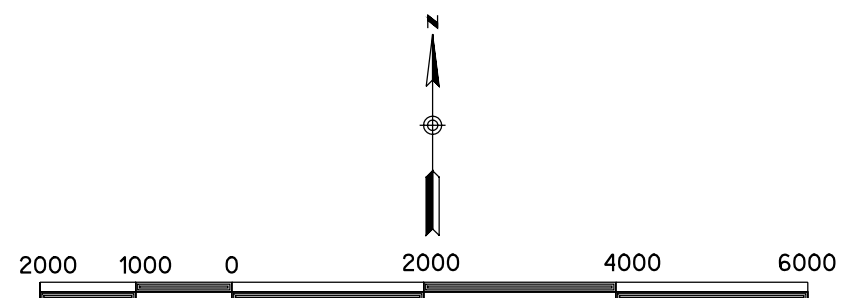
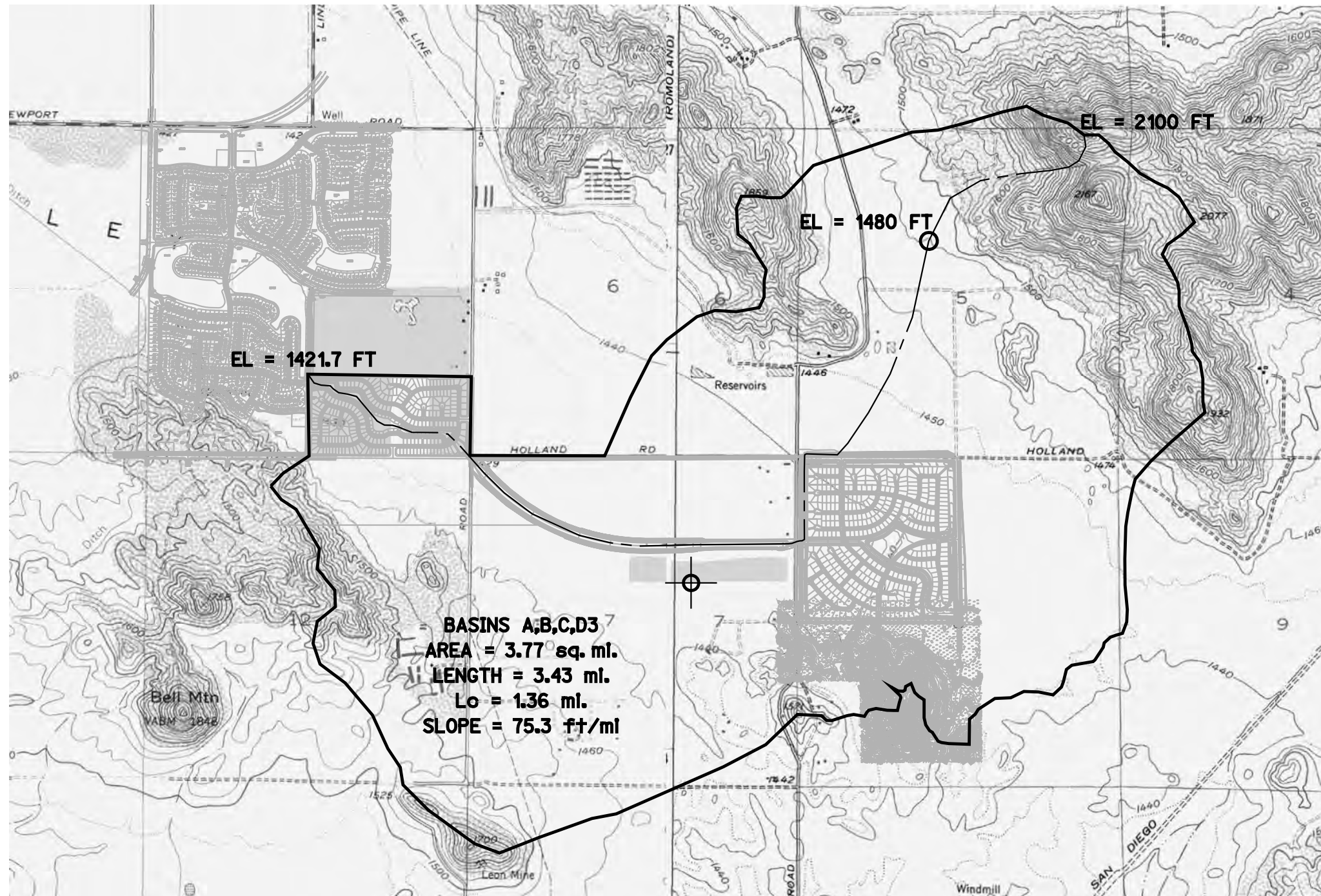
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GRAPHIC SCALE 1"= 2000'

**MENIFEE VALLEY AREA
DRAINAGE PLAN
HEC-1 WORKMAP FOR
BASINS A, B, C, D3**

**MAY 22, 2007
JN: 14795-B**

RICK
ENGINEERING COMPANY

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SAN DIEGO, CA 92110
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(FAX) 619.291.4165

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San Diego Riverside Sacramento Orange Phoenix Tucson

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\\s01\projects\14795-B\14795-B-1\Map_A0204.dgn
15-May-2010 1:45:26

**100-Year, 3-Hour HEC-1 Analyses for:
HEC-1 Analysis and Workmap for Drainage Areas: D1, D2, E1**

ID	Menifee Valley Drainage Plan 11-21-06									
ID	100-YR	3HR	ULTIMATE	DEVELOPED CONDITION						
ID	Basins D1, D2, E1									
IT	05	08JUL04	0000	300						
IO	5	2								
KK	1									
BA	1.00									
PB	1.80									
IN	05	08JUL04	0000							
PI	.013	.013	.011	.015	.015	.018	.015	.018	.018	.015
PI	.016	.018	.022	.022	.022	.020	.026	.027	.024	.027
PI	.033	.031	.029	.030	.031	.042	.050	.035	.068	.073
PI	.082	.059	.020	.018	.018	.006				
LU	.21		10.0							
KM	UHG FROM AVERAGE		FULLERTON - SAN JOSE S-GGRAPH							
UI	313.	548.	1025.	2228.	970.	601.	440.	346.	278.	215.
UI	179.	145.	110.	78.	65.	48.	14.	14.	14.	14.
UI	14.0	14.0	14.0	14.0	14.0	14.0	10.2			
ZZ										

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

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

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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 Menifee Valley Drainage Plan 11-21-06
2	ID 100-YR 3HR ULTIMATE DEVELOPED CONDITION
3	ID Basins D1, D2, E1
4	IT 05 08JUL04 0000 300
5	IO 5 2
6	KK 1
7	BA 1.00
8	PB 1.80
9	IN 05 08JUL04 0000
10	PI .013 .013 .011 .015 .015 .018 .015 .018 .018 .015
11	PI .016 .018 .022 .022 .022 .020 .026 .027 .024 .027
12	PI .033 .031 .029 .030 .031 .042 .050 .035 .068 .073
13	PI .082 .059 .020 .018 .018 .006
14	LU .21 10.0
15	KM UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
16	UI 313. 548. 1025. 2228. 970. 601. 440. 346. 278. 215.
17	UI 179. 145. 110. 78. 65. 48. 14. 14. 14. 14.
18	UI 14.0 14.0 14.0 14.0 14.0 14.0 10.2
19	ZZ

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* * * * *

5 IO OUTPUT CONTROL VARIABLES

IT HYDROGRAPH TIME DATA

```
COMPUTATION INTERVAL      .08 HOURS
TOTAL TIME BASE    24.92 HOURS
```

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

1

0.	100.	200.	300.	400.	500.	600.	700.	0.	0.	0.	0.	0.
										(L) PRECIP,	(X) EXCESS	
.00	.00	.00	.00	.00	.00	.00	.00	.16	.12	.08	.04	.00

[illegible]

[illegible]

80715	880	.
80720	890	.
80725	900	.
80730	910	.
80735	920	.
80740	930	.
80745	940	.
80750	950	.
80755	960	.
80800	970	.
80805	980	.
80810	990	.
80815	1000	.
80820	1010	.
80825	1020	.
80830	1030	.
80835	1040	.
80840	1050	.
80845	1060	.
80850	1070	.
80855	1080	.
80900	1090	.
80905	1100	.
80910	1110	.
80915	1120	.
80920	1130	.
80925	1140	.
80930	1150	.
80935	1160	.
80940	1170	.
80945	1180	.
80950	1190	.
80955	1200	.
81000	1210	.
81005	1220	.
81010	1230	.
81015	1240	.
81020	1250	.
81025	1260	.
81030	1270	.
81035	1280	.
81040	1290	.
81045	1300	.
81050	1310	.
81055	1320	.
81100	1330	.
81105	1340	.
81110	1350	.
81115	1360	.
81120	1370	.
81125	1380	.
81130	1390	.
81135	1400	.
81140	1410	.
81145	1420	.
81150	1430	.
81155	1440	.
81200	1450	.
81205	1460	.
81210	1470	.
81215	1480	.
81220	1490	.
81225	1500	.
81230	1510	.
81235	1520	.

[illegible]

[illegible]

82330	2830	.	.	.	.	.	.	.	.	.	.	.	.	.
82335	2840	.	.	.	.	.	.	.	.	.	.	.	.	.
82340	2850	.	.	.	.	.	.	.	.	.	.	.	.	.
82345	2860	.	.	.	.	.	.	.	.	.	.	.	.	.
82350	2870	.	.	.	.	.	.	.	.	.	.	.	.	.
82355	2880	.	.	.	.	.	.	.	.	.	.	.	.	.
90000	2890	.	.	.	.	.	.	.	.	.	.	.	.	.
90005	2900	.	.	.	.	.	.	.	.	.	.	.	.	.
90010	2910	.	.	.	.	.	.	.	.	.	.	.	.	.
90015	2920	.	.	.	.	.	.	.	.	.	.	.	.	.
90020	2930	.	.	.	.	.	.	.	.	.	.	.	.	.
90025	2940	.	.	.	.	.	.	.	.	.	.	.	.	.
90030	2950	.	.	.	.	.	.	.	.	.	.	.	.	.
90035	2960	.	.	.	.	.	.	.	.	.	.	.	.	.
90040	2970	.	.	.	.	.	.	.	.	.	.	.	.	.
90045	2980	.	.	.	.	.	.	.	.	.	.	.	.	.
90050	2990	.	.	.	.	.	.	.	.	.	.	.	.	.
90055	3000	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1
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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+					6-HOUR	24-HOUR	72-HOUR			
	HYDROGRAPH AT									
+		1	679.	2.75	133.	33.	32.	1.00		

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

**100-Year, 3-Hour HEC-1 Analyses for:
HEC-1 Analysis and Workmap for Drainage Areas: A, B, C, D1, D3**

ID	Menifee Valley Drainage Plan 11-21-06									
ID	100-YR	3HR	ULTIMATE DEVELOPED CONDITION							
ID	Basins A, B, C, D1, D3									
IT	05	08JUL04	0000	300						
IO	5	2								
KK	1									
BA	4.28									
PB	1.80									
IN	05	08JUL04	0000							
PI	.013	.013	.011	.015	.015	.018	.015	.018	.018	.015
PI	.016	.018	.022	.022	.022	.020	.026	.027	.024	.027
PI	.033	.031	.029	.030	.031	.042	.050	.035	.068	.073
PI	.082	.059	.020	.018	.018	.006				
LU		.22	10.0							
KM	UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH									
UI	631.	883.	1290.	1455.	2272.	3344.	6689.	2863.	2113.	1447.
UI	1352.	1132.	894.	851.	720.	661.	584.	473.	445.	421.
UI	351.	329.	256.	256.	190.	153.	153.	153.	117.	33.
UI	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6
UI	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	
ZZ										

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* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 21NOV06 TIME 14:47:43 *
*

*
* 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      X
XXXXXXX XXXX      X      XXXXX  X
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 Menifee Valley Drainage Plan 11-21-06
2	ID 100-YR 3HR ULTIMATE DEVELOPED CONDITION
3	ID Basins A, B, C, D1, D3
4	IT 05 08JUL04 0000 300
5	IO 5 2
6	KK 1
7	BA 4.28
8	PB 1.80
9	IN 05 08JUL04 0000
10	PI .013 .013 .011 .015 .015 .018 .015 .018 .018 .015
11	PI .016 .018 .022 .022 .022 .020 .026 .027 .024 .027
12	PI .033 .031 .029 .030 .031 .042 .050 .035 .068 .073
13	PI .082 .059 .020 .018 .018 .006
14	LU .22 10.0
15	KM UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
16	UI 631. 883. 1290. 1455. 2272. 3344. 6689. 2863. 2113. 1447.
17	UI 1352. 1132. 894. 851. 720. 661. 584. 473. 445. 421.
18	UI 351. 329. 256. 256. 190. 153. 153. 153. 117. 33.
19	UI 32.6 32.6 32.6 32.6 32.6 32.6 32.6 32.6 32.6 32.6
20	UI 32.6 32.6 32.6 32.6 32.6 32.6 32.6 32.6 32.6 32.6
21	ZZ

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *

*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *

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*          DAVIS, CALIFORNIA 95616          *
*          (916) 756-1104                   *
*                                           *
*****

```

5 IO OUTPUT CONTROL VARIABLES

IT HYDROGRAPH TIME DATA

```
COMPUTATION INTERVAL      .08 HOURS
TOTAL TIME BASE    24.92 HOURS
```

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

STATION

1

(0) OUTFLOW

0. 400. 800. 1200. 1600. 2000. 2400. 0. 0. 0. 0. 0. 0. (L) PRECIP, (X) EXCESS												
.00	.00	.00	.00	.00	.00	.00	.00	.16	.12	.08	.04	.00

DAHRMN PER

[illegible]

[illegible]

[illegible]

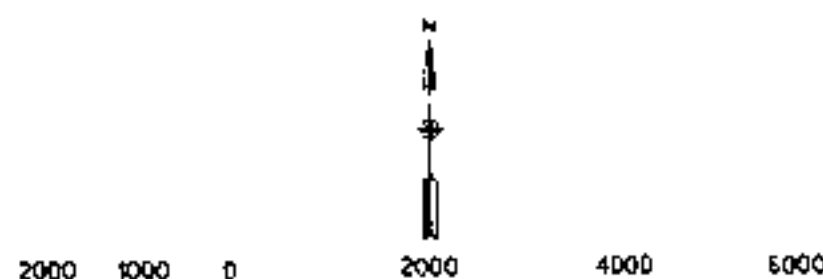
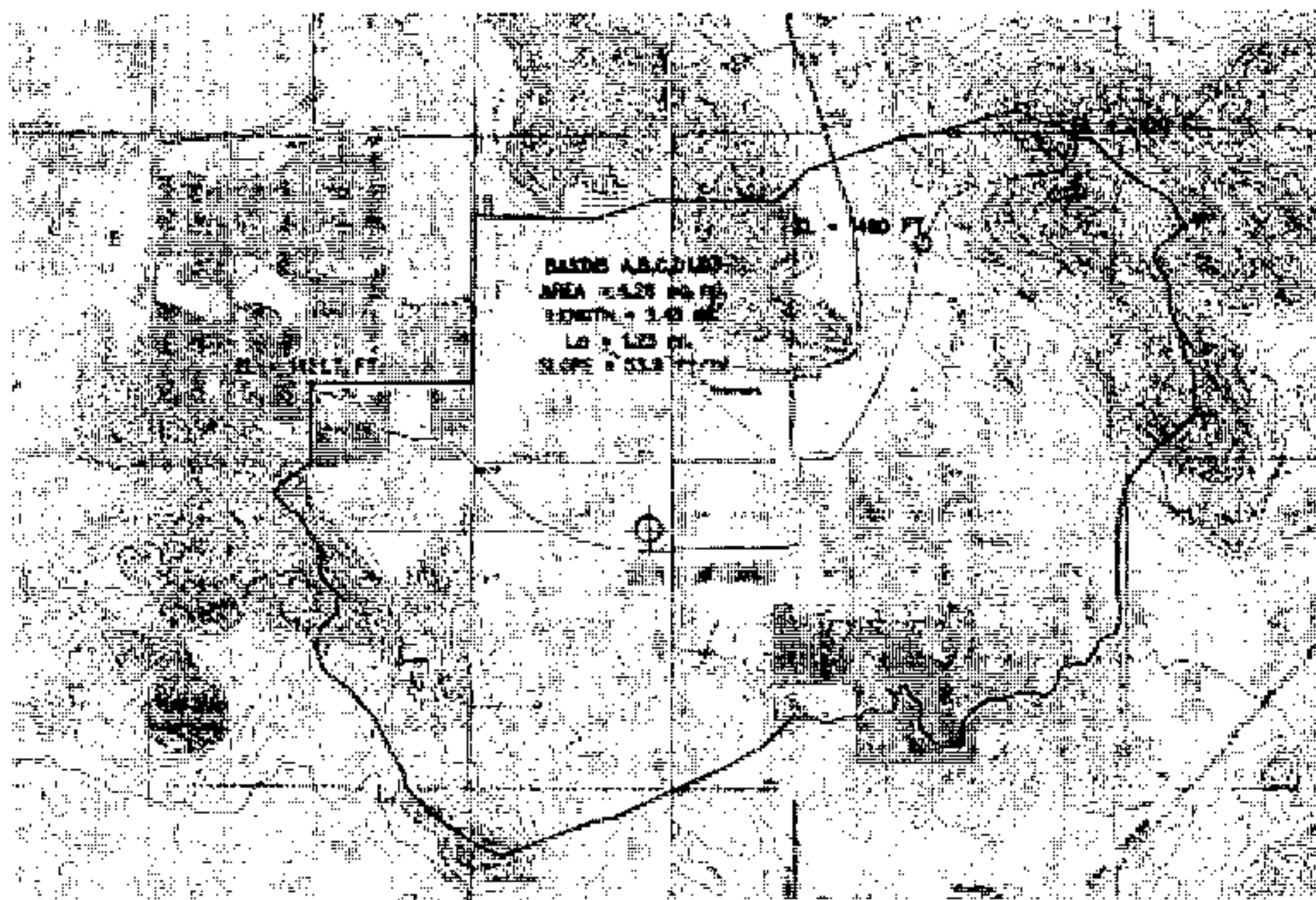
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81235	1520
81240	1530
81245	1540
81250	1550
81255	1560
81300	1570
81305	1580
81310	1590
81315	1600
81320	1610
81325	1620
81330	1630
81335	1640
81340	1650
81345	1660
81350	1670
81355	1680
81400	1690
81405	1700
81410	1710
81415	1720
81420	1730
81425	1740
81430	1750
81435	1760
81440	1770
81445	1780
81450	1790
81455	1800
81500	1810
81505	1820
81510	1830
81515	1840
81520	1850
81525	1860
81530	1870
81535	1880
81540	1890
81545	1900
81550	1910
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81600	1930
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81610	1950
81615	1960
81620	1970
81625	1980
81630	1990
81635	2000
81640	2010
81645	2020
81650	2030
81655	2040
81700	2050
81705	2060
81710	2070
81715	2080
81720	2090
81725	2100
81730	2110
81735	2120
81740	2130
81745	2140
81750	2150

[illegible]

11

$$+ +$$

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



GRAPHIC SCALE 1" = 2000'

RICK
ENGINEERING COMPANY

5620 MIDWAY ROAD
SAN DIEGO, CA 92110
(619) 291-0107
(619) 415-2111

www.rickeng.com

**MENIFEE VALLEY AREA
DRAINAGE PLAN**
HEC-1 WORKMAP FOR
BASINS A, B, C, D1, D2

MAY 22, 2007
JN: 14785-B

**100-Year, 3-Hour HEC-1 Analyses for:
HEC-1 Analysis and Workmap for Drainage Areas: A, B, C**

ID	Menifee Valley Drainage Plan 05-17-07									
ID	100-YR	3HR	ULTIMATE DEVELOPED CONDITION							
ID	Basins A, B, C									
IT	05	08JUL04	0000	300						
IO	5	2								
KK	1									
BA	3.45									
PB	1.80									
IN	05	08JUL04	0000							
PI	.013	.013	.011	.015	.015	.018	.015	.018	.018	.015
PI	.016	.018	.022	.022	.022	.020	.026	.027	.024	.027
PI	.033	.031	.029	.030	.031	.042	.050	.035	.068	.073
PI	.082	.059	.020	.018	.018	.006				
LU		.220	10.0							
KM	UHG FROM	AVERAGE	FULLERTON -	SAN JOSE	S-GGRAPH					
UI	678.	1008.	1422.	2217.	3982.	5438.	2406.	1447.	1345.	1017.
UI	872.	737.	649.	536.	462.	420.	355.	289.	259.	193.
UI	155.	155.	132.	33.	33.	33.	33.	33.	33.	33.
UI	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	31.5	
ZZ										

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 17MAY07 TIME 10:30:44 *
*

*
* 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      X
XXXXXXX XXXX      X      XXXXX  X
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 Menifee Valley Drainage Plan 05-17-07
2	ID 100-YR 3HR ULTIMATE DEVELOPED CONDITION
3	ID Basins A, B, C
4	IT 05 08JUL04 0000 300
5	IO 5 2
6	KK 1
7	BA 3.45
8	PB 1.80
9	IN 05 08JUL04 0000
10	PI .013 .013 .011 .015 .015 .018 .015 .018 .018 .015
11	PI .016 .018 .022 .022 .022 .020 .026 .027 .024 .027
12	PI .033 .031 .029 .030 .031 .042 .050 .035 .068 .073
13	PI .082 .059 .020 .018 .018 .006
14	LU .220 10.0
15	KM UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
16	UI 678. 1008. 1422. 2217. 3982. 5438. 2406. 1447. 1345. 1017.
17	UI 872. 737. 649. 536. 462. 420. 355. 289. 259. 193.
18	UI 155. 155. 132. 33. 33. 33. 33. 33. 33. 33.
19	UI 33.1 33.1 33.1 33.1 33.1 33.1 33.1 33.1 31.5
20	ZZ

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*

*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
*

5 IO OUTPUT CONTROL VARIABLES

IT HYDROGRAPH TIME DATA

ENGLISH UNITS

STATION 1

(0) OUTFLOW

0.	400.	800.	1200.	1600.	2000.	2400.	0.	0.	0.	0.	0.
										(L) PRECIP,	(X) EXCESS
.00	.00	.00	.00	.00	.00	.00	.00	.16	.12	.08	.04

DAHRMN PER

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

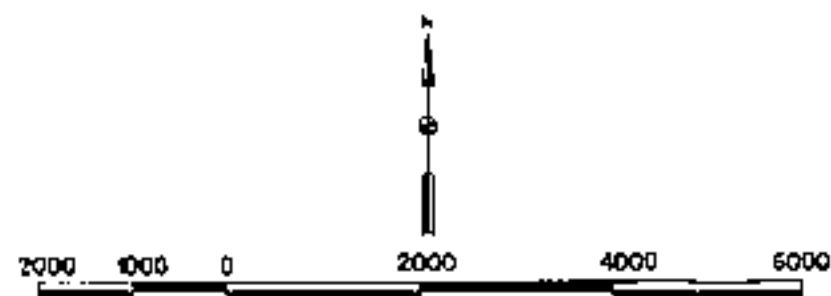
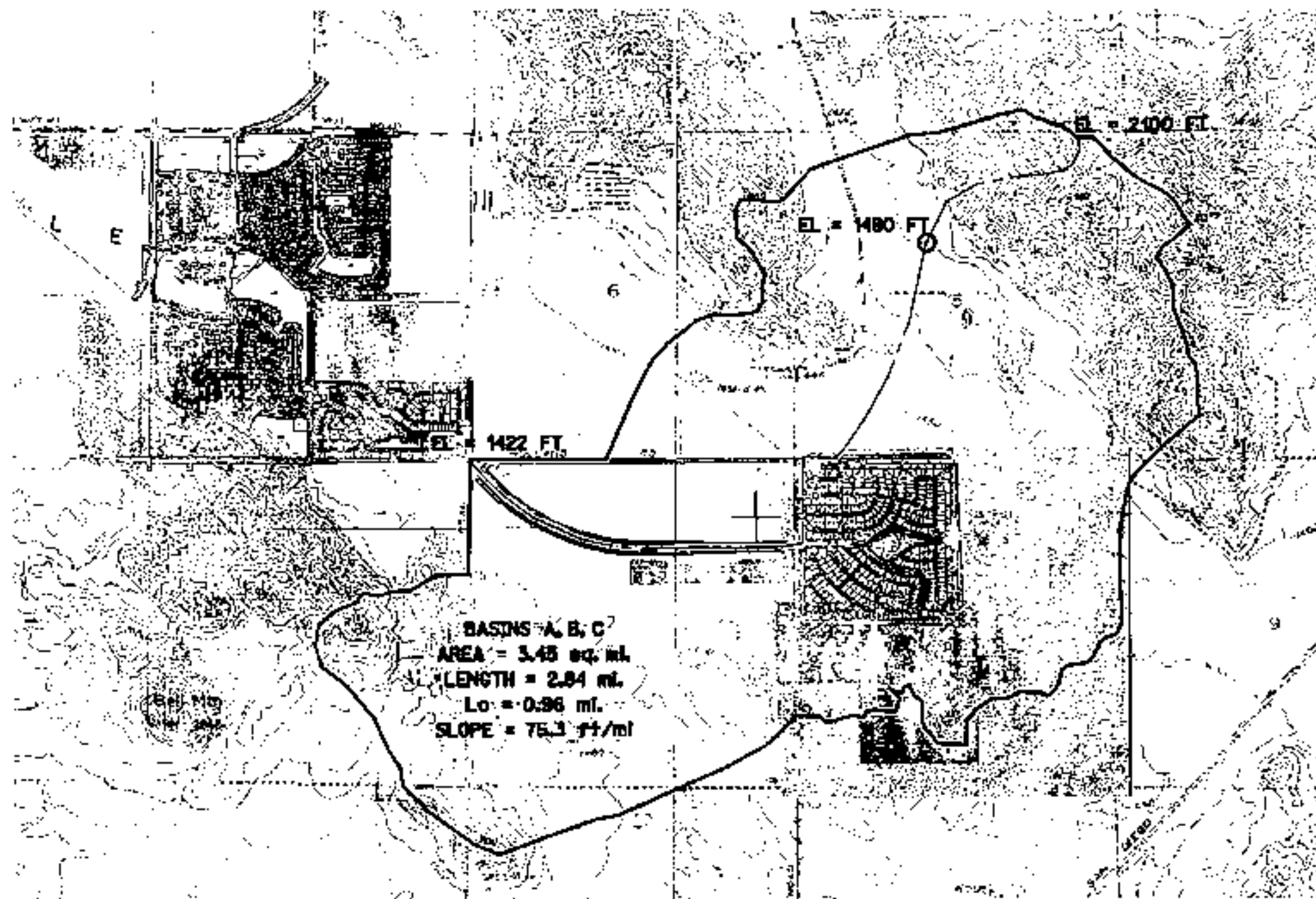
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82330	2830	.	.	.	.	.	.	.	.	.	.	.	.	.
82335	2840	.	.	.	.	.	.	.	.	.	.	.	.	.
82340	2850	.	.	.	.	.	.	.	.	.	.	.	.	.
82345	2860	.	.	.	.	.	.	.	.	.	.	.	.	.
82350	2870	.	.	.	.	.	.	.	.	.	.	.	.	.
82355	2880	.	.	.	.	.	.	.	.	.	.	.	.	.
90000	2890	.	.	.	.	.	.	.	.	.	.	.	.	.
90005	2900	.	.	.	.	.	.	.	.	.	.	.	.	.
90010	2910	.	.	.	.	.	.	.	.	.	.	.	.	.
90015	2920	.	.	.	.	.	.	.	.	.	.	.	.	.
90020	2930	.	.	.	.	.	.	.	.	.	.	.	.	.
90025	2940	.	.	.	.	.	.	.	.	.	.	.	.	.
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90035	2960	.	.	.	.	.	.	.	.	.	.	.	.	.
90040	2970	.	.	.	.	.	.	.	.	.	.	.	.	.
90045	2980	.	.	.	.	.	.	.	.	.	.	.	.	.
90050	2990	.	.	.	.	.	.	.	.	.	.	.	.	.
90055	3000	.	.	.	.	.	.	.	.	.	.	.	.	.

1
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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
					6-HOUR	24-HOUR	72-HOUR			
+	HYDROGRAPH AT	1	2066.	2.92	450.	112.	108.	3.45		

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



GRAPHIC SCALE 1" = 2000'

RICK
 1420 HARRIS ROAD
 SAN DIEGO, CA 92113
 619.491.2001
 619.491.2011 FAX

**MENIFEE VALLEY AREA
 DRAINAGE PLAN
 HEC-1 WORKMAP FOR
 BASINS A, B, C**

MAY 23, 2007
 JN: 14798-B

**100-Year, 3-Hour HEC-1 Analyses for:
HEC-1 Analysis and Workmap for Drainage Areas: A, B, C, D1**

ID	Menifee Valley Drainage Plan 05-17-07									
ID	100-YR 3HR ULTIMATE DEVELOPED CONDITION									
ID	Basins A, B, C, D1									
IT	05	08JUL04	0000	300						
IO	5	2								
KK	1									
BA	3.96									
PB	1.80									
IN	05	08JUL04	0000							
PI	.013	.013	.011	.015	.015	.018	.015	.018	.018	.015
PI	.016	.018	.022	.022	.022	.020	.026	.027	.024	.027
PI	.033	.031	.029	.030	.031	.042	.050	.035	.068	.073
PI	.082	.059	.020	.018	.018	.006				
LU		.230	10.0							
KM	UHG FROM AVERAGE FULLERTON - SAN JOSE S-GGRAPH									
UI	779.	1157.	1632.	2545.	4570.	6241.	2762.	1661.	1544.	1167.
UI	1001.	846.	745.	615.	530.	483.	408.	332.	298.	222.
UI	178.	178.	152.	38.	38.	38.	38.	38.	38.	38.
UI	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	36.2	
ZZ										

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 17MAY07 TIME 15:50:24 *
*

*
* 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      X
XXXXXXX XXXX      X      XXXXX  X
X      X  X      X      X      X
X      X  X      X      X      X
X      X  XXXXXXX  XXXXX      XXX

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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
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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 Menifee Valley Drainage Plan 05-17-07
2	ID 100-YR 3HR ULTIMATE DEVELOPED CONDITION
3	ID Basins A, B, C, D1
4	IT 05 08JUL04 0000 300
5	IO 5 2
6	KK 1
7	BA 3.96
8	PB 1.80
9	IN 05 08JUL04 0000
10	PI .013 .013 .011 .015 .015 .018 .015 .018 .018 .015
11	PI .016 .018 .022 .022 .022 .020 .026 .027 .024 .027
12	PI .033 .031 .029 .030 .031 .042 .050 .035 .068 .073
13	PI .082 .059 .020 .018 .018 .006
14	LU .230 10.0
15	KM UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
16	UI 779. 1157. 1632. 2545. 4570. 6241. 2762. 1661. 1544. 1167.
17	UI 1001. 846. 745. 615. 530. 483. 408. 332. 298. 222.
18	UI 178. 178. 152. 38. 38. 38. 38. 38. 38. 38.
19	UI 38.0 38.0 38.0 38.0 38.0 38.0 38.0 38.0 36.2
20	ZZ

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*

*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
*

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

82325	2820	.	.	.	.	.	.	.	.	.	.	.	.	.
82330	2830	.	.	.	.	.	.	.	.	.	.	.	.	.
82335	2840	.	.	.	.	.	.	.	.	.	.	.	.	.
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90000	2890	.	.	.	.	.	.	.	.	.	.	.	.	.
90005	2900	.	.	.	.	.	.	.	.	.	.	.	.	.
90010	2910	.	.	.	.	.	.	.	.	.	.	.	.	.
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90020	2930	.	.	.	.	.	.	.	.	.	.	.	.	.
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90045	2980	.	.	.	.	.	.	.	.	.	.	.	.	.
90050	2990	.	.	.	.	.	.	.	.	.	.	.	.	.
90055	3000	.	.	.	.	.	.	.	.	.	.	.	.	.

1
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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
					6-HOUR	24-HOUR	72-HOUR			
+	HYDROGRAPH AT	1	2348.	2.92	505.	126.	122.	3.96		

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

**100-Year, 3-Hour HEC-1 Analyses for:
HEC-1 Analysis and Workmap for Drainage Areas: A, B**

ID	Menifee Valley Drainage Plan 11-21-06									
ID	100-YR	3HR	ULTIMATE DEVELOPED CONDITION							
ID	Basins A, B									
IT	05	08JUL04	0000	300						
IO	5	2								
KK	1									
BA	1.93									
PB	1.80									
IN	05	08JUL04	0000							
PI	.013	.013	.011	.015	.015	.018	.015	.018	.018	.015
PI	.016	.018	.022	.022	.022	.020	.026	.027	.024	.027
PI	.033	.031	.029	.030	.031	.042	.050	.035	.068	.073
PI	.082	.059	.020	.018	.018	.006				
LU		.200	10.0							
KM	UHG FROM AVERAGE FULLERTON - SAN JOSE S-GGRAPH									
UI	691.	1258.	2656.	4225.	1585.	1112.	783.	620.	473.	385.
UI	301.	233.	146.	139.	55.	30.	30.	30.	30.	30.
UI	29.7	29.7	29.7	29.7	9.0					
ZZ										

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 21NOV06 TIME 14:58:51 *
*

*
* 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      X
XXXXXXX XXXX      X      XXXXX  X
X      X  X      X      X      X
X      X  X      X      X      X
X      X  XXXXXXX  XXXXX      XXX

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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 Menifee Valley Drainage Plan 11-21-06
2	ID 100-YR 3HR ULTIMATE DEVELOPED CONDITION
3	ID Basins A, B
4	IT 05 08JUL04 0000 300
5	IO 5 2
6	KK 1
7	BA 1.93
8	PB 1.80
9	IN 05 08JUL04 0000
10	PI .013 .013 .011 .015 .015 .018 .015 .018 .018 .015
11	PI .016 .018 .022 .022 .022 .020 .026 .027 .024 .027
12	PI .033 .031 .029 .030 .031 .042 .050 .035 .068 .073
13	PI .082 .059 .020 .018 .018 .006
14	LU .200 10.0
15	KM UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
16	UI 691. 1258. 2656. 4225. 1585. 1112. 783. 620. 473. 385.
17	UI 301. 233. 146. 139. 55. 30. 30. 30. 30. 30.
18	UI 29.7 29.7 29.7 29.7 9.0
19	ZZ

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 21NOV06 TIME 14:58:51 *
*

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

* * * * *

5 IO OUTPUT CONTROL VARIABLES

IT HYDROGRAPH TIME DATA

ENGLISH UNITS

1

STATION 1

(0) OUTFLOW

DAHRMN PER

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

82330	2830	.	.	.	.	.	.	.	.	.	.	.	.	.
82335	2840	.	.	.	.	.	.	.	.	.	.	.	.	.
82340	2850	.	.	.	.	.	.	.	.	.	.	.	.	.
82345	2860	.	.	.	.	.	.	.	.	.	.	.	.	.
82350	2870	.	.	.	.	.	.	.	.	.	.	.	.	.
82355	2880	.	.	.	.	.	.	.	.	.	.	.	.	.
90000	2890	.	.	.	.	.	.	.	.	.	.	.	.	.
90005	2900	.	.	.	.	.	.	.	.	.	.	.	.	.
90010	2910	.	.	.	.	.	.	.	.	.	.	.	.	.
90015	2920	.	.	.	.	.	.	.	.	.	.	.	.	.
90020	2930	.	.	.	.	.	.	.	.	.	.	.	.	.
90025	2940	.	.	.	.	.	.	.	.	.	.	.	.	.
90030	2950	.	.	.	.	.	.	.	.	.	.	.	.	.
90035	2960	.	.	.	.	.	.	.	.	.	.	.	.	.
90040	2970	.	.	.	.	.	.	.	.	.	.	.	.	.
90045	2980	.	.	.	.	.	.	.	.	.	.	.	.	.
90050	2990	.	.	.	.	.	.	.	.	.	.	.	.	.
90055	3000	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1
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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
					6-HOUR	24-HOUR	72-HOUR			
+										
HYDROGRAPH AT										
+		1	1367.	2.75	263.	66.	63.	1.93		

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

**100-Year, 3-Hour HEC-1 Analyses for:
HEC-1 Analysis and Workmap for Drainage Areas: 1A**

ID	Menifee Valley Drainage Plan 05-08-06										
ID	100-YR	3HR	ULTIMATE DEVELOPED CONDITION								
ID	Basins 1A										
IT	05	08JUL04	0000	300							
IO	5	2									
KK	1										
BA	0.58										
PB	1.80										
IN	05	08JUL04	0000								
PI	.013	.013	.011	.015	.015	.018	.015	.018	.018	.015	
PI	.016	.018	.022	.022	.022	.020	.026	.027	.024	.027	
PI	.033	.031	.029	.030	.031	.042	.050	.035	.068	.073	
PI	.082	.059	.020	.018	.018	.006					
LU		.178	10.0								
KM	UHG FROM	AVERAGE	FULLERTON -	SAN JOSE	S-GRAPH						
UI	226.	432.	1046.	1126.	418.	309.	229.	177.	132.	108.	
UI	78.3	54.9	44.4	22.5	9.5	9.5	9.5	9.5	9.5	9.5	
UI	9.5	9.5	7.9								
ZZ											

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 23MAY07 TIME 10:15:27 *
*

*
* 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      X
XXXXXXX XXXX      X      XXXXX  X
X      X  X      X      X      X
X      X  X      X      X      X
X      X  XXXXXXX  XXXXX      XXX

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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 Menifee Valley Drainage Plan 05-08-06
2	ID 100-YR 3HR ULTIMATE DEVELOPED CONDITION
3	ID Basins 1A
4	IT 05 08JUL04 0000 300
5	IO 5 2
6	KK 1
7	BA 0.58
8	PB 1.80
9	IN 05 08JUL04 0000
10	PI .013 .013 .011 .015 .015 .018 .015 .018 .018 .015
11	PI .016 .018 .022 .022 .022 .020 .026 .027 .024 .027
12	PI .033 .031 .029 .030 .031 .042 .050 .035 .068 .073
13	PI .082 .059 .020 .018 .018 .006
14	LU .178 10.0
15	KM UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
16	UI 226. 432. 1046. 1126. 418. 309. 229. 177. 132. 108.
17	UI 78.3 54.9 44.4 22.5 9.5 9.5 9.5 9.5 9.5 9.5
18	UI 9.5 9.5 7.9
19	ZZ

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 23MAY07 TIME 10:15:27 *
*

*
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* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *

* * * * *

5 IO OUTPUT CONTROL VARIABLES

IT HYDROGRAPH TIME DATA

```
COMPUTATION INTERVAL      .08 HOURS
TOTAL TIME BASE    24.92 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

STATION

1

(0) OUTFLOW

0.	50.	100.	150.	200.	250.	300.	350.	400.	450.	0.	0.	0.
										(L) PRECIP,	(X) EXCESS	
.00	.00	.00	.00	.00	.00	.00	.00	.16	.12	.08	.04	.00

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

82330	2830	.	.	.	.	.	.	.	.	.	.	.	.	.
82335	2840	.	.	.	.	.	.	.	.	.	.	.	.	.
82340	2850	.	.	.	.	.	.	.	.	.	.	.	.	.
82345	2860	.	.	.	.	.	.	.	.	.	.	.	.	.
82350	2870	.	.	.	.	.	.	.	.	.	.	.	.	.
82355	2880	.	.	.	.	.	.	.	.	.	.	.	.	.
90000	2890	.	.	.	.	.	.	.	.	.	.	.	.	.
90005	2900	.	.	.	.	.	.	.	.	.	.	.	.	.
90010	2910	.	.	.	.	.	.	.	.	.	.	.	.	.
90015	2920	.	.	.	.	.	.	.	.	.	.	.	.	.
90020	2930	.	.	.	.	.	.	.	.	.	.	.	.	.
90025	2940	.	.	.	.	.	.	.	.	.	.	.	.	.
90030	2950	.	.	.	.	.	.	.	.	.	.	.	.	.
90035	2960	.	.	.	.	.	.	.	.	.	.	.	.	.
90040	2970	.	.	.	.	.	.	.	.	.	.	.	.	.
90045	2980	.	.	.	.	.	.	.	.	.	.	.	.	.
90050	2990	.	.	.	.	.	.	.	.	.	.	.	.	.
90055	3000	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1
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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+					6-HOUR	24-HOUR	72-HOUR			
	HYDROGRAPH AT									
+		1	428.	2.75	82.	21.	20.	.58		

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

**100-Year, 3-Hour HEC-1 Analyses for:
HEC-1 Analysis and Workmap for Drainage Areas: 2A**

ID	Menifee Valley Drainage Plan 05-08-06									
ID	100-YR	3HR	ULTIMATE DEVELOPED CONDITION							
ID	Basins 2A									
IT	05	08JUL04	0000	300						
IO	5	2								
KK	1									
BA	0.92									
PB	1.80									
IN	05	08JUL04	0000							
PI	.013	.013	.011	.015	.015	.018	.015	.018	.018	.015
PI	.016	.018	.022	.022	.022	.020	.026	.027	.024	.027
PI	.033	.031	.029	.030	.031	.042	.050	.035	.068	.073
PI	.082	.059	.020	.018	.018	.006				
LU		.204	10.0							
KM	UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH									
UI	377.	750.	2040.	1437.	668.	463.	356.	265.	208.	158.
UI	119.	73.	66.	16.	16.	16.	16.	16.	16.	16.
UI	15.6	15.6								
ZZ										

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*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 10MAY07 TIME 10:08:09 *
*

*
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* 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      X
XXXXXXX XXXX      X      XXXXX  X
X      X  X      X      X      X
X      X  X      X      X      X
X      X  XXXXXXX  XXXXX      XXX

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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 Menifee Valley Drainage Plan 05-08-06
2	ID 100-YR 3HR ULTIMATE DEVELOPED CONDITION
3	ID Basins 2A
4	IT 05 08JUL04 0000 300
5	IO 5 2
6	KK 1
7	BA 0.92
8	PB 1.80
9	IN 05 08JUL04 0000
10	PI .013 .013 .011 .015 .015 .018 .015 .018 .018 .015
11	PI .016 .018 .022 .022 .022 .020 .026 .027 .024 .027
12	PI .033 .031 .029 .030 .031 .042 .050 .035 .068 .073
13	PI .082 .059 .020 .018 .018 .006
14	LU .204 10.0
15	KM UHG FROM AVERAGE FULLERTON - SAN JOSE S-GRAPH
16	UI 377. 750. 2040. 1437. 668. 463. 356. 265. 208. 158.
17	UI 119. 73. 66. 16. 16. 16. 16. 16. 16. 16.
18	UI 15.6 15.6
19	ZZ

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 10MAY07 TIME 10:08:09 *
*

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

* * * * *

5 IO OUTPUT CONTROL VARIABLES

IT HYDROGRAPH TIME DATA

```
COMPUTATION INTERVAL      .08 HOURS
TOTAL TIME BASE    24.92 HOURS
```

ENGLISH UNITS

1

STATION

1

(0) OUTFLOW

0.	100.	200.	300.	400.	500.	600.	700.	0.	0.	0.	0.	0.
										(L) PRECIP,	(X) EXCESS	
.00	.00	.00	.00	.00	.00	.00	.00	.16	.12	.08	.04	.00

[illegible]

[illegible]

80715	880	.
80720	890	.
80725	900	.
80730	910	.
80735	920	.
80740	930	.
80745	940	.
80750	950	.
80755	960	.
80800	970	.
80805	980	.
80810	990	.
80815	1000	.
80820	1010	.
80825	1020	.
80830	1030	.
80835	1040	.
80840	1050	.
80845	1060	.
80850	1070	.
80855	1080	.
80900	1090	.
80905	1100	.
80910	1110	.
80915	1120	.
80920	1130	.
80925	1140	.
80930	1150	.
80935	1160	.
80940	1170	.
80945	1180	.
80950	1190	.
80955	1200	.
81000	1210	.
81005	1220	.
81010	1230	.
81015	1240	.
81020	1250	.
81025	1260	.
81030	1270	.
81035	1280	.
81040	1290	.
81045	1300	.
81050	1310	.
81055	1320	.
81100	1330	.
81105	1340	.
81110	1350	.
81115	1360	.
81120	1370	.
81125	1380	.
81130	1390	.
81135	1400	.
81140	1410	.
81145	1420	.
81150	1430	.
81155	1440	.
81200	1450	.
81205	1460	.
81210	1470	.
81215	1480	.
81220	1490	.
81225	1500	.
81230	1510	.
81235	1520	.

[illegible]

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82330	2830	.	.	.	.	.	.	.	.	.	.	.	.	.
82335	2840	.	.	.	.	.	.	.	.	.	.	.	.	.
82340	2850	.	.	.	.	.	.	.	.	.	.	.	.	.
82345	2860	.	.	.	.	.	.	.	.	.	.	.	.	.
82350	2870	.	.	.	.	.	.	.	.	.	.	.	.	.
82355	2880	.	.	.	.	.	.	.	.	.	.	.	.	.
90000	2890	.	.	.	.	.	.	.	.	.	.	.	.	.
90005	2900	.	.	.	.	.	.	.	.	.	.	.	.	.
90010	2910	.	.	.	.	.	.	.	.	.	.	.	.	.
90015	2920	.	.	.	.	.	.	.	.	.	.	.	.	.
90020	2930	.	.	.	.	.	.	.	.	.	.	.	.	.
90025	2940	.	.	.	.	.	.	.	.	.	.	.	.	.
90030	2950	.	.	.	.	.	.	.	.	.	.	.	.	.
90035	2960	.	.	.	.	.	.	.	.	.	.	.	.	.
90040	2970	.	.	.	.	.	.	.	.	.	.	.	.	.
90045	2980	.	.	.	.	.	.	.	.	.	.	.	.	.
90050	2990	.	.	.	.	.	.	.	.	.	.	.	.	.
90055	3000	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

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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			BASIN AREA	MAXIMUM STAGE
					6-HOUR	24-HOUR	72-HOUR		
+	HYDROGRAPH AT	1	677.	2.75	124.	31.	30.	.92	

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

APPENDIX D

Pre-Project Condition HEC-RAS Analysis

HEC-RAS Plan: Pre_project Profile: FEMA Q100

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Upstream	22365	FEMA Q100	1367.00	1439.83	1441.05	1441.05	1441.26	0.012796	4.03	399.75	962.42	0.91
Upstream	21815	FEMA Q100	1367.00	1438.53	1440.17		1440.19	0.000485	1.07	1274.80	1322.80	0.19
Upstream	21265	FEMA Q100	1367.00	1438.53	1439.65		1439.71	0.002026	1.93	714.32	989.46	0.38
Upstream	20760	FEMA Q100	1367.00	1437.33	1438.69		1438.76	0.001849	2.48	684.70	855.49	0.39
Upstream	20445	FEMA Q100	1367.00	1437.03	1438.28		1438.31	0.000908	1.44	982.21	1157.90	0.26
Upstream	20205	FEMA Q100	1367.00	1436.53	1438.15		1438.17	0.000442	1.15	1234.08	1241.35	0.19
Upstream	19710	FEMA Q100	1367.00	1436.53	1437.74		1437.78	0.001698	1.53	900.18	1453.32	0.33
Upstream	19155	FEMA Q100	1367.00	1435.53	1437.45		1437.46	0.000271	0.81	1685.15	1699.39	0.14
Upstream	18605	FEMA Q100	2325.00	1435.03	1436.37	1436.37	1436.72	0.015470	4.72	492.99	736.03	1.02
Upstream	18600	FEMA Q100	2325.00	1435.00	1435.69		1435.79	0.005223	2.49	932.01	1602.15	0.58
Upstream	18550	FEMA Q100	2325.00	1434.00	1435.64		1435.68	0.000980	1.70	1500.86	1684.40	0.28
Upstream	18395	FEMA Q100	2325.00	1433.00	1435.41		1435.47	0.001294	1.88	1252.60	1249.69	0.32
Upstream	18165	FEMA Q100	2325.00	1433.70	1434.97		1435.03	0.001850	1.97	1177.27	1318.67	0.37
Upstream	17765	FEMA Q100	2325.00	1432.50	1434.51		1434.54	0.000803	1.47	1586.26	1486.50	0.25
Upstream	17470	FEMA Q100	2325.00	1432.40	1434.23		1434.27	0.001084	1.60	1463.69	1618.39	0.29
Upstream	17120	FEMA Q100	2325.00	1432.10	1433.67		1433.73	0.001173	2.02	1337.39	1657.86	0.31
Upstream	16670	FEMA Q100	2325.00	1431.70	1433.23		1433.26	0.000882	1.46	1687.68	2206.44	0.26
Upstream	16300	FEMA Q100	2325.00	1431.20	1432.74		1432.79	0.001964	1.65	1409.53	2167.09	0.36
Upstream	15830	FEMA Q100	2325.00	1430.00	1432.42		1432.44	0.000369	1.35	2033.83	1955.80	0.18
Upstream	15265	FEMA Q100	2325.00	1430.50	1432.21		1432.23	0.000392	1.09	2197.62	2146.88	0.18
Upstream	15000	FEMA Q100	2325.00	1430.53	1431.69		1431.72	0.001723	1.62	1558.40	2205.80	0.30
Upstream	14500	FEMA Q100	2325.00	1429.53	1430.99		1431.03	0.001492	1.69	1469.45	1716.60	0.29
Upstream	14000	FEMA Q100	2325.00	1428.53	1430.92		1430.93	0.000087	0.60	4230.70	2728.00	0.08
Upstream	13500	FEMA Q100	2325.00	1428.73	1430.89		1430.90	0.000063	0.49	4800.09	2834.33	0.07
Upstream	13045	FEMA Q100	2325.00	1427.80	1430.88		1430.88	0.000022	0.38	6356.07	2738.30	0.04
Upstream	13000	FEMA Q100	2325.00	1428.03	1430.86		1430.86	0.000164	0.53	4698.15	2618.54	0.06
Upstream	12500	FEMA Q100	3024.00	1427.70	1430.60		1430.61	0.000749	1.03	3446.32	2702.79	0.13
Upstream	12000	FEMA Q100	3024.00	1427.00	1430.20		1430.22	0.001300	1.19	2890.21	2914.62	0.17
Upstream	11500	FEMA Q100	3024.00	1427.00	1429.64	1428.66	1429.66	0.001694	1.15	2866.66	2987.20	0.19
Upstream	11000	FEMA Q100	3024.00	1427.00	1428.34		1428.42	0.004972	2.63	1472.42	1815.18	0.51
10500 - 10000	10500	FEMA Q100	2291.65	1425.50	1428.02		1428.03	0.000245	0.69	3684.38	2078.40	0.08
10500 - 10000	10000	FEMA Q100	2291.65	1425.50	1427.89		1427.91	0.000284	1.07	2475.38	1897.29	0.13
split to Lake "C	10995	FEMA Q100	732.35	1423.00	1428.28		1428.30	0.000041	0.96	785.57	159.32	0.07
split to Lake "C	10980	FEMA Q100	732.35	1422.70	1428.13		1428.25	0.000337	2.81	260.73	117.77	0.21
split to Lake "C	10965	FEMA Q100	732.35	1422.70	1428.12		1428.23	0.000376	2.96	295.72	78.13	0.22
split to Lake "C	10950	FEMA Q100	732.35	1422.60	1428.00		1428.18	0.000523	3.49	210.23	134.58	0.26
split to Lake "C	10940	FEMA Q100	732.35	1409.00	1428.07		1428.08	0.000031	0.85	896.90	173.29	0.06
split to Lake "C	10930	FEMA Q100	732.35	1381.00	1428.08		1428.08	0.000008	0.43	1738.43	319.28	0.03
split to Lake "C	10920	FEMA Q100	732.35	1381.00	1428.08		1428.08	0.000008	0.42	1784.44	328.62	0.03
split to Lake "C	10910	FEMA Q100	732.35	1381.00	1428.07		1428.08	0.000009	0.45	1648.13	303.54	0.03
split to Lake "C	10900	FEMA Q100	732.35	1409.00	1428.07		1428.07	0.000018	0.66	1169.93	228.87	0.05
split to Lake "C	10880	FEMA Q100	732.35	1422.30	1428.05		1428.07	0.000051	1.13	683.64	157.40	0.08
split to Lake "C	10870	FEMA Q100	732.35	1422.00	1427.91	1424.01	1428.03	0.000289	2.75	266.08	69.65	0.20
split to Lake "C	10860		Culvert									
split to Lake "C	10850	FEMA Q100	732.35	1422.00	1427.77		1427.90	0.000328	2.88	253.88	70.40	0.21
split to Lake "C	10845	FEMA Q100	732.35	1422.00	1427.80		1427.85	0.000136	1.84	397.71	167.70	0.14
split to Lake "C	10840	FEMA Q100	732.35	1421.80	1427.71	1423.78	1427.82	0.000277	2.69	271.85	82.34	0.20
split to Lake "C	10830		Culvert									
split to Lake "C	10820	FEMA Q100	732.35	1421.60	1427.57		1427.70	0.000306	2.85	256.90	82.00	0.21
split to Rancon	9600	FEMA Q100	1266.60	1421.70	1427.83	1423.22	1427.87	0.000093	1.60	823.07	164.85	0.11
split to Rancon	9491	FEMA Q100	1266.60	1421.60	1427.79	1423.25	1427.85	0.000134	1.93	656.29	154.93	0.14
split to Rancon	9490	FEMA Q100	1266.60	1410.00	1427.76		1427.82	0.000164	2.06	645.81	117.58	0.15
split to Rancon	9480	FEMA Q100	1266.60	1410.00	1427.73		1427.79	0.000166	2.07	644.64	119.55	0.15
split to Rancon	9470	FEMA Q100	1266.60	1410.00	1427.69		1427.76	0.000177	2.13	624.26	115.77	0.15
split to Rancon	9460	FEMA Q100	1266.60	1410.00	1427.66		1427.73	0.000178	2.12	631.76	119.66	0.15
split to Rancon	9450	FEMA Q100	1266.60	1410.00	1427.63		1427.69	0.000162	2.02	657.02	121.23	0.14
flow to Lakeside	9700	FEMA Q100	1025.05	1424.00	1427.69		1427.87	0.001277	3.35	305.99	518.37	0.33
flow to Lakeside	9600	FEMA Q100	1025.05	1423.50	1427.63		1427.79	0.001327	3.35	324.22	113.20	0.33
flow to Lakeside	9500	FEMA Q100	1025.05	1422.80	1427.62		1427.71	0.000381	2.36	446.22	446.35	0.19
THROUGH LAKES	9400	FEMA Q100	3024.00	1352.00	1427.65		1427.66	0.000037	0.84	3658.60	626.63	0.06
THROUGH LAKES	9200	FEMA Q100	3024.00	1352.00	1427.63		1427.65	0.000052	0.98	3151.48	542.36	0.07
THROUGH LAKES	9000	FEMA Q100	3024.00	1352.00	1427.62		1427.63	0.000031	0.77	3992.12	683.87	0.06
THROUGH LAKES	8700	FEMA Q100	3024.00	1352.00	1427.61		1427.62	0.000044	0.90	3448.07	606.88	0.06
THROUGH LAKES	8600	FEMA Q100	3024.00	1373.00	1427.58		1427.61	0.000104	1.39	2171.53	444.91	0.10
THROUGH LAKES	8550	FEMA Q100	3024.00	1386.00	1427.55		1427.60	0.000175	1.81	1666.67	408.80	0.13
THROUGH LAKES	8500	FEMA Q100	3024.00	1417.50	1427.45	1420.46	1427.56	0.000215	2.72	1173.12	142.81	0.15
THROUGH LAKES	8200		Culvert									
THROUGH LAKES	8100	FEMA Q100	3024.00	1417.50	1427.33		1427.46	0.000240	2.86	1074.70	156.74	0.16
THROUGH LAKES	7900	FEMA Q100	3024.00	1367.00	1427.26		1427.38	0.000467	2.84	1063.19	521.55	0.21
THROUGH LAKES	7700	FEMA Q100	3024.00	1367.00	1427.25		1427.31	0.000223	1.97	1537.97	501.86	0.15
THROUGH LAKES	7500	FEMA Q100	3024.00	1367.00	1427.23		1427.28	0.000172	1.71	1766.68	482.77	0.13
THROUGH LAKES	7200	FEMA Q100	3024.00	1367.00	1427.21		1427.25	0.000118	1.41	2176.97	421.46	0.10
THROUGH LAKES	7100	FEMA Q100	3024.00	1367.00	1427.17		1427.21	0.000181	1.75	1750.76	559.10	0.13
THROUGH LAKES	7000	FEMA Q100	3024.00	1370.00	1427.14		1427.18	0.000148	1.56	1975.62	372.20	0.12
THROUGH LAKES	6900	FEMA Q100	3024.00	1421.60	1426.57		1427.09	0.000353	5.80	528.59	140.35	0.46
THROUGH LAKES	6899	FEMA Q100	3024.00	1421.30	1426.59	1424.35	1427.06	0.000303	5.50	549.47	140.50	0.43
THROUGH LAKES	6750		Bridge									
THROUGH LAKES	6700	FEMA Q100	3024.00	1421.20	1426.45		1426.87	0.000291	5.38	644.28	142.29	0.42
THROUGH LAKES	6688	FEMA Q100	3105.00	1421.20	1426.59		1426.70	0.000268	2.55	1221.81	429.44	0.26
THROUGH LAKES	6518	FEMA Q100	3105.00	1421.60	1426.56		1426.66	0.000182	2.46	1263.98	328.92	0.22
THROUGH LAKES	6189	FEMA Q100	3105.00	1421.00	1426.47		1426.59	0.000179	2.79	1114.22	236.06	0.23

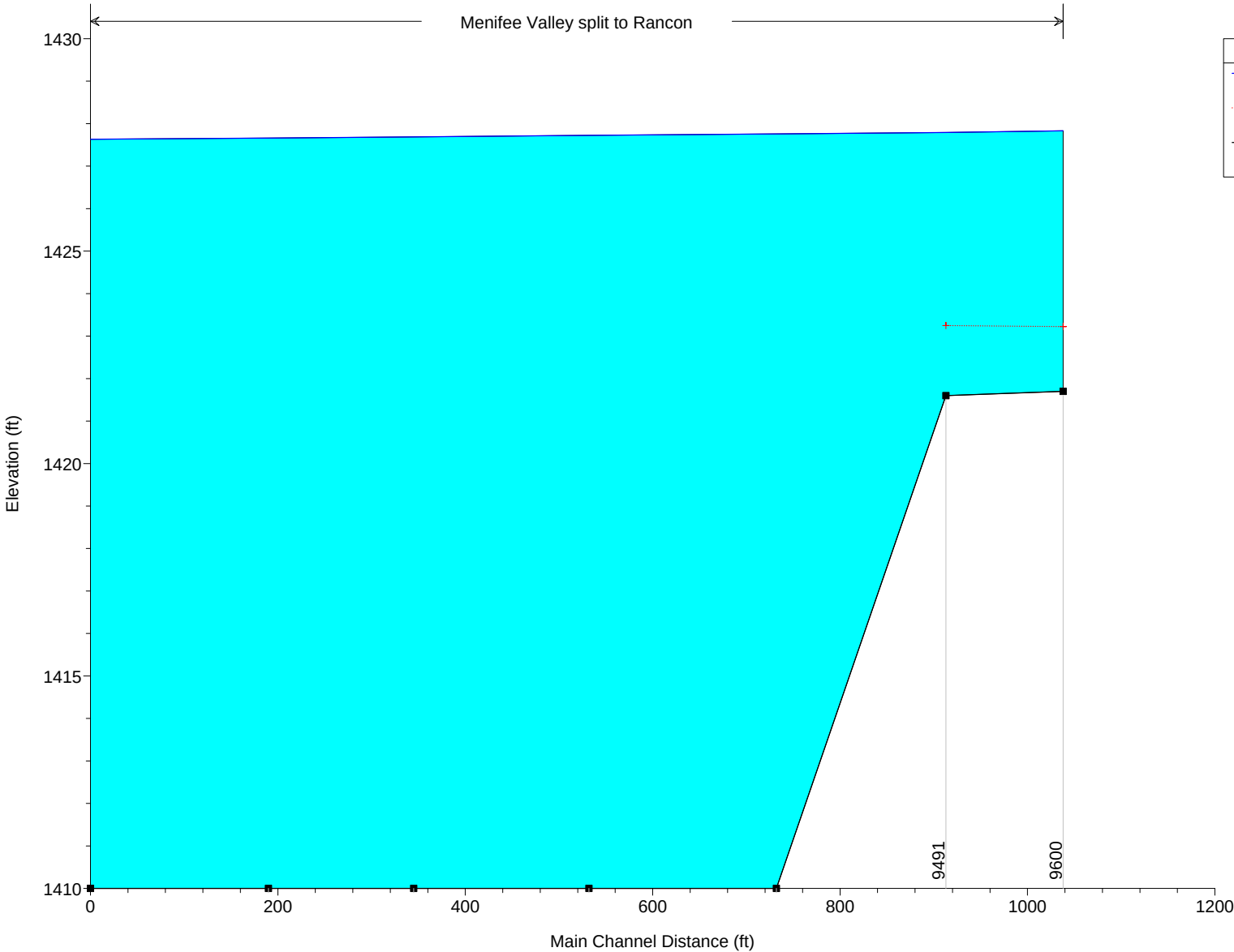
HEC-RAS Plan: Pre_project Profile: FEMA Q100 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
THROUGH LAKES	5912	FEMA Q100	3105.00	1420.10	1426.45		1426.55	0.000111	2.48	1253.57	220.17	0.18
THROUGH LAKES	5721	FEMA Q100	3105.00	1420.40	1426.35		1426.50	0.000648	3.12	997.31	260.33	0.28
THROUGH LAKES	5473	FEMA Q100	3105.00	1401.20	1426.45		1426.45	0.000001	0.33	9466.25	494.39	0.01
THROUGH LAKES	5110	FEMA Q100	3105.00	1402.90	1426.45		1426.45	0.000007	0.72	4327.80	317.73	0.03
THROUGH LAKES	4836	FEMA Q100	3105.00	1401.40	1426.45		1426.45	0.000003	0.51	6067.26	387.54	0.02
THROUGH LAKES	4584	FEMA Q100	3105.00	1401.90	1426.44		1426.45	0.000008	0.78	3988.21	283.08	0.04
THROUGH LAKES	4449	FEMA Q100	3105.00	1401.60	1426.44		1426.45	0.000004	0.62	5027.26	322.21	0.03
THROUGH LAKES	4275	FEMA Q100	3105.00	1402.60	1426.44		1426.45	0.000009	0.73	4250.20	372.13	0.04
THROUGH LAKES	3990	FEMA Q100	3830.00	1402.10	1426.44		1426.44	0.000001	0.33	11690.10	651.51	0.01
THROUGH LAKES	3700	FEMA Q100	3830.00	1402.40	1426.44		1426.44	0.000001	0.39	9860.92	562.53	0.02
THROUGH LAKES	3370	FEMA Q100	3830.00	1402.90	1426.44		1426.44	0.000006	0.61	6265.53	532.90	0.03
THROUGH LAKES	3070	FEMA Q100	3830.00	1402.00	1426.44		1426.44	0.000002	0.44	8693.26	490.50	0.02
THROUGH LAKES	2810	FEMA Q100	3830.00	1402.10	1426.44		1426.44	0.000002	0.41	9254.35	512.06	0.02
THROUGH LAKES	2610	FEMA Q100	3830.00	1401.90	1426.44		1426.44	0.000002	0.43	8998.97	490.13	0.02
THROUGH LAKES	2497	FEMA Q100	3830.00	1404.40	1426.43		1426.44	0.000004	0.58	6571.47	449.56	0.03
THROUGH LAKES	2400	FEMA Q100	3830.00	1405.70	1426.41		1426.44	0.000022	1.23	3126.16	248.27	0.06
THROUGH LAKES	2333	FEMA Q100	3830.00	1407.80	1426.41		1426.43	0.000029	1.31	2926.62	258.91	0.07
THROUGH LAKES	2212	FEMA Q100	3830.00	1412.00	1426.13		1426.40	0.000108	4.24	904.35	102.13	0.25
THROUGH LAKES	2159	FEMA Q100	1885.00	1421.25	1426.00	1423.81	1426.37	0.000348	4.86	388.13	198.88	0.39
THROUGH LAKES	2156	FEMA Q100	1885.00	1418.00	1426.11	1420.66	1426.26	0.000074	3.02	623.83	200.86	0.19
THROUGH LAKES	2130	FEMA Q100	1885.00	1417.90	1425.54	1421.99	1426.12	0.000861	6.11	308.34	40.73	0.39
THROUGH LAKES	2129	FEMA Q100	1885.00	1417.90	1425.56	1421.87	1426.09	0.000348	5.85	322.44	42.15	0.37
THROUGH LAKES	2033	Bridge										
THROUGH LAKES	1937	FEMA Q100	1885.00	1417.00	1425.23		1425.69	0.000282	5.44	346.25	42.16	0.33
THROUGH LAKES	1936	FEMA Q100	1885.00	1417.00	1425.23	1420.98	1425.69	0.000282	5.44	346.24	42.16	0.33
THROUGH LAKES	1926	FEMA Q100	1938.00	1417.00	1425.26		1425.64	0.001041	4.93	392.80	61.70	0.34
THROUGH LAKES	1826	FEMA Q100	1938.00	1417.20	1424.93		1425.48	0.002171	5.96	325.02	76.27	0.51
THROUGH LAKES	1529	FEMA Q100	1938.00	1417.10	1425.05		1425.11	0.000383	1.90	1022.62	373.39	0.20
THROUGH LAKES	1190	FEMA Q100	1938.00	1416.00	1424.95		1424.99	0.000281	1.72	1125.81	375.47	0.18
THROUGH LAKES	790	FEMA Q100	1938.00	1416.00	1424.58	1421.30	1424.78	0.001138	3.55	546.29	172.77	0.35

MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

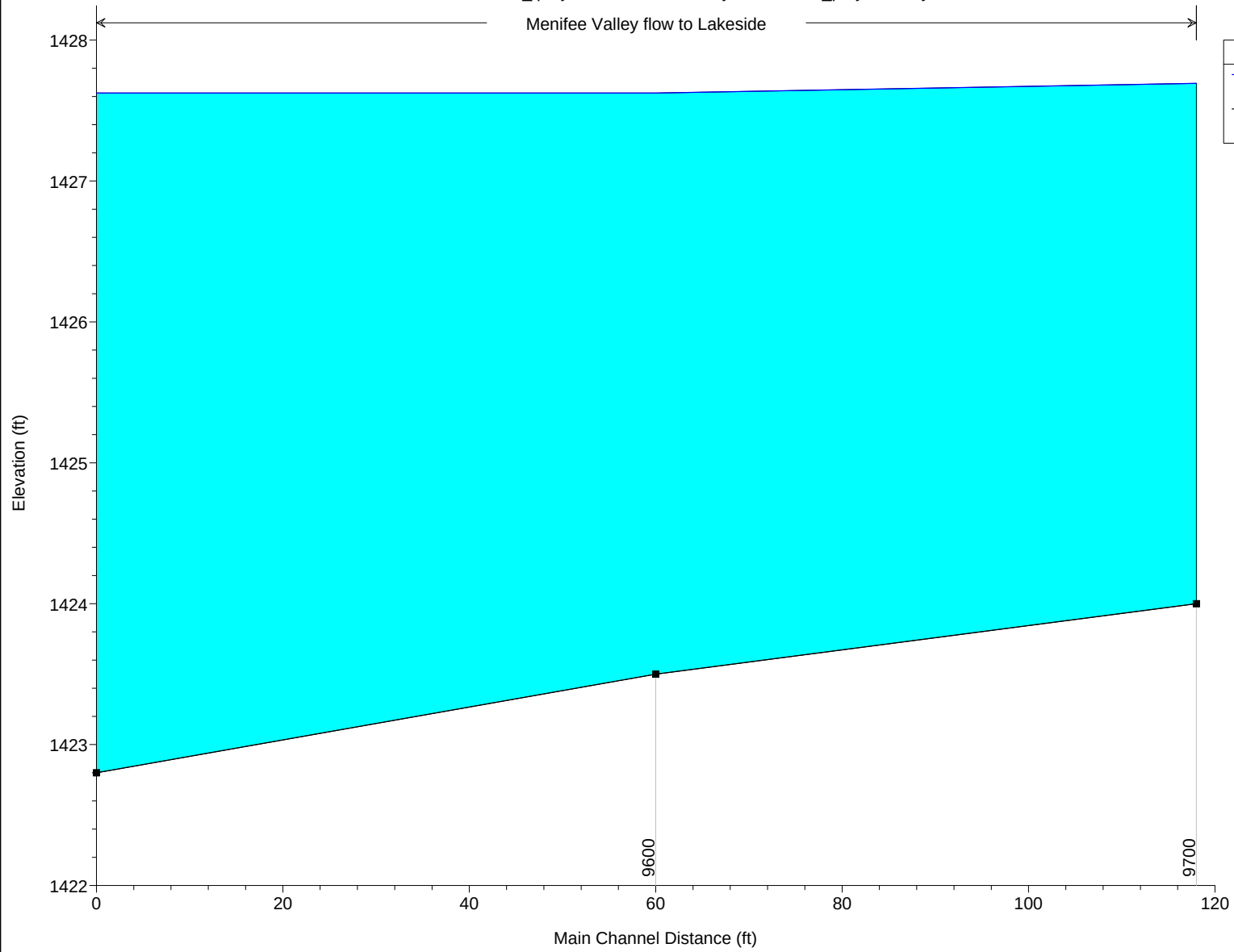
Menifee Valley split to Rancon



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Meniffee Valley 3/28/2014

Geom: Pre_project for Meniffee Valley Flow: Pre_project 100 year

Meniffee Valley flow to Lakeside

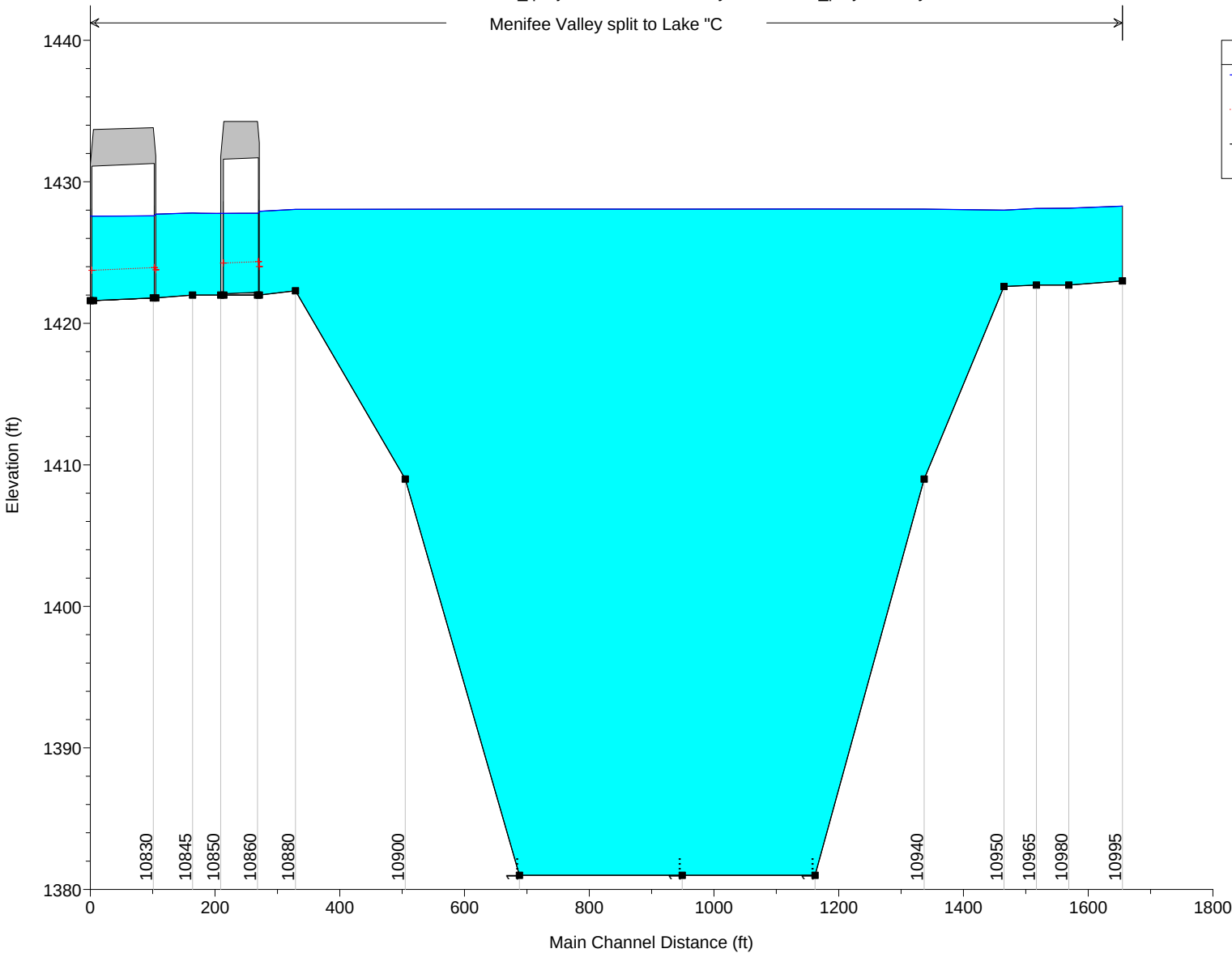


Legend	
WS FEMA Q100	
Ground	

MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Meniffee Valley 3/28/2014

Geom: Pre_project for Meniffee Valley Flow: Pre_project 100 year

Meniffee Valley split to Lake "C"



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Meniffee Valley 3/28/2014

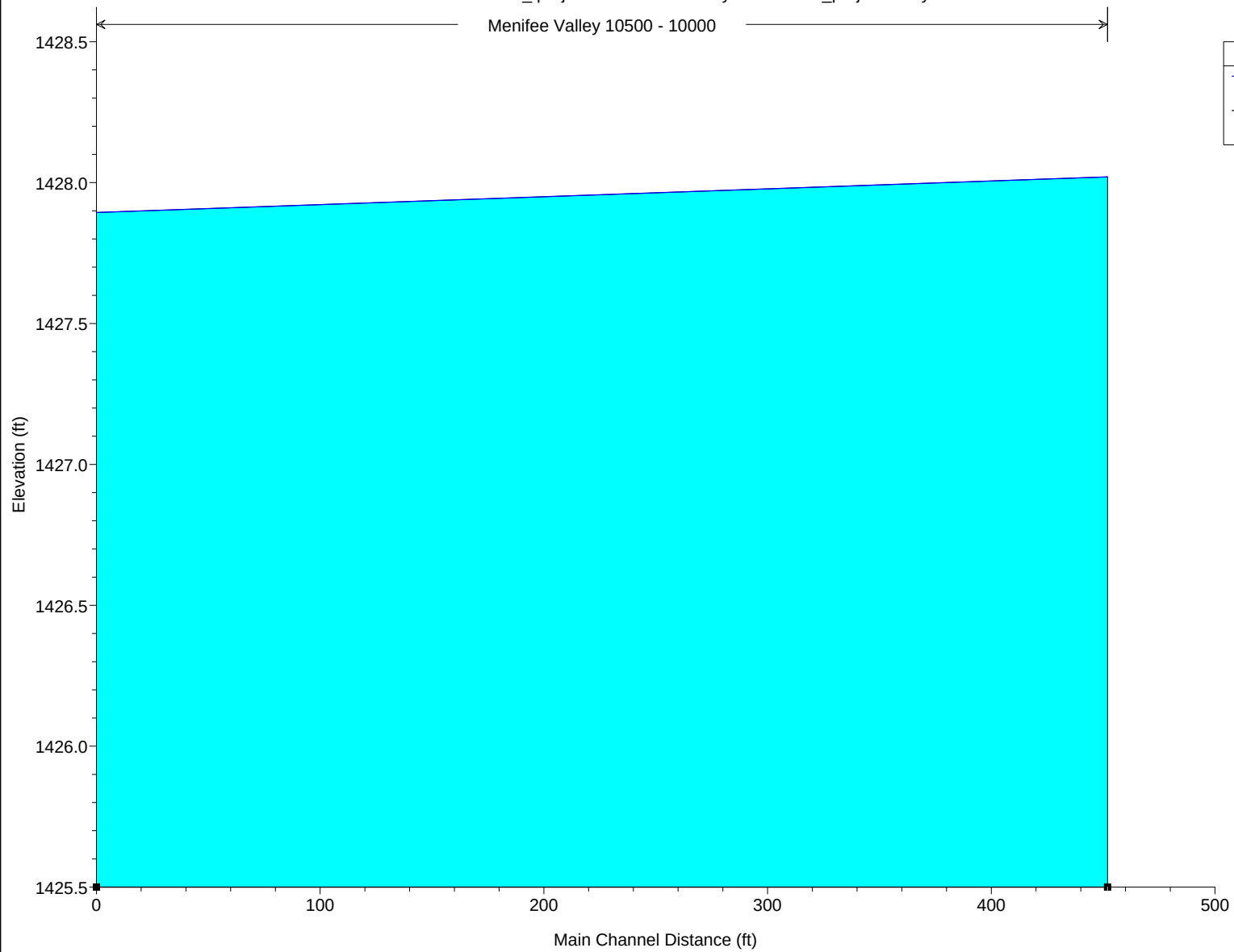
Geom: Pre_project for Meniffee Valley Flow: Pre_project 100 year

Meniffee Valley 10500 - 10000

Legend

WS FEMA Q100

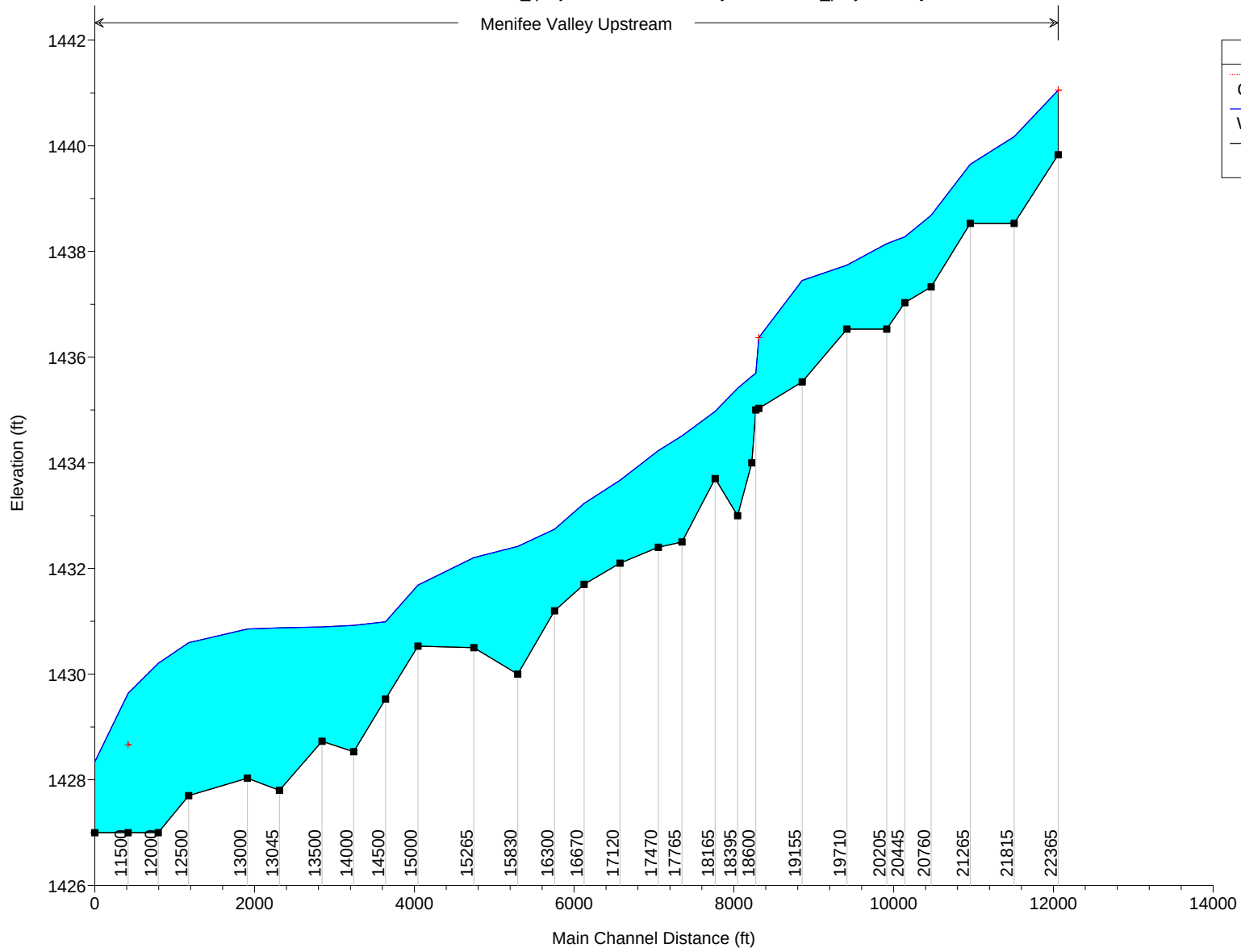
Ground



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Meniffee Valley 3/28/2014

Geom: Pre_project for Meniffee Valley Flow: Pre_project 100 year

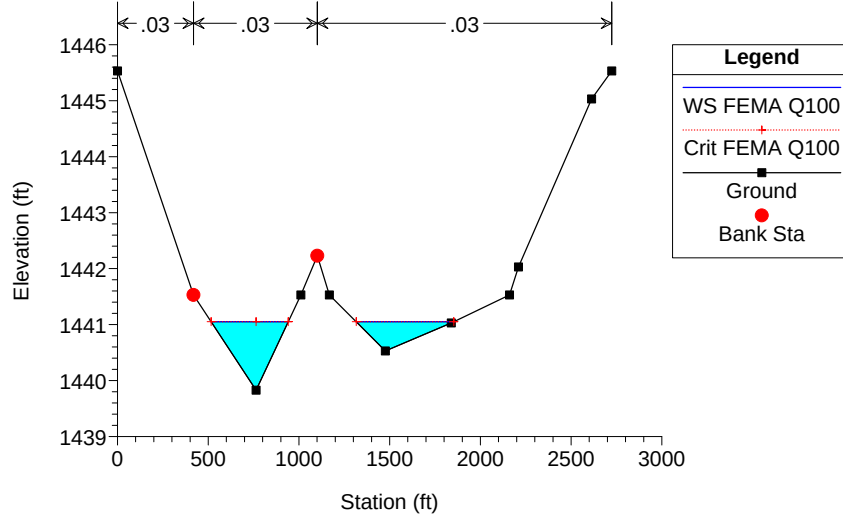
Meniffee Valley Upstream



Legend	
Crit FEMA Q100	
WS FEMA Q100	
Ground	

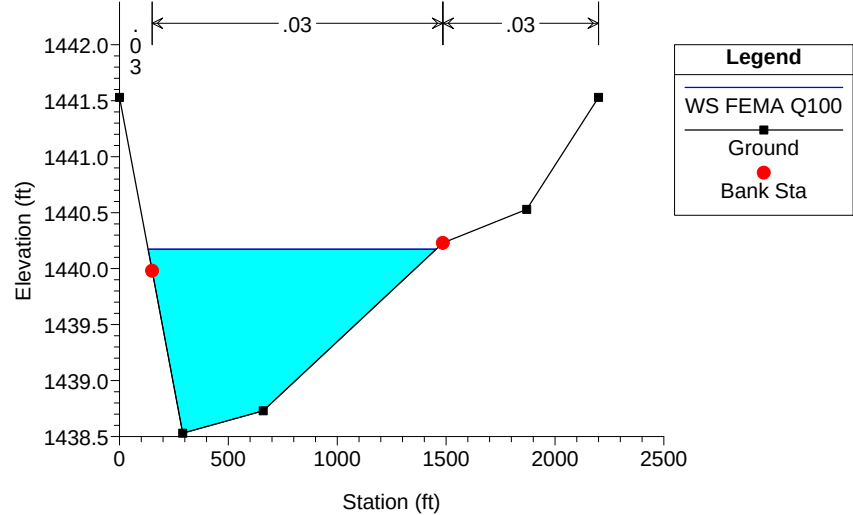
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 22365



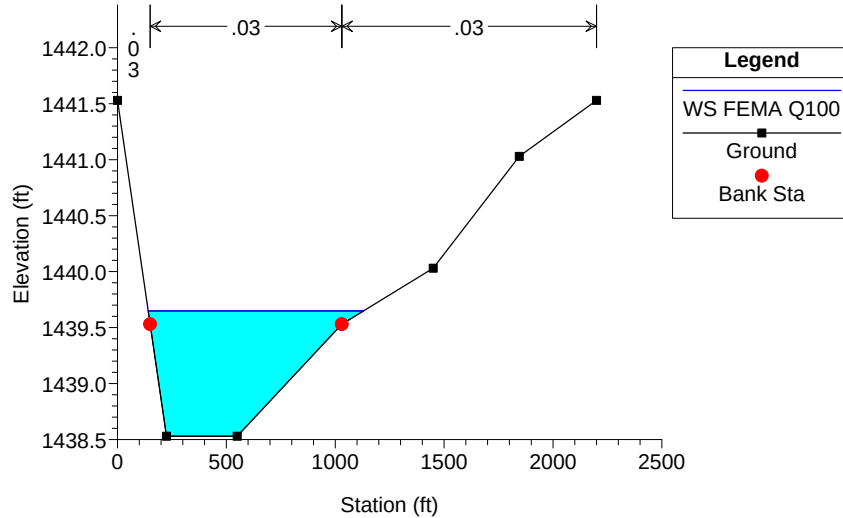
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 21815



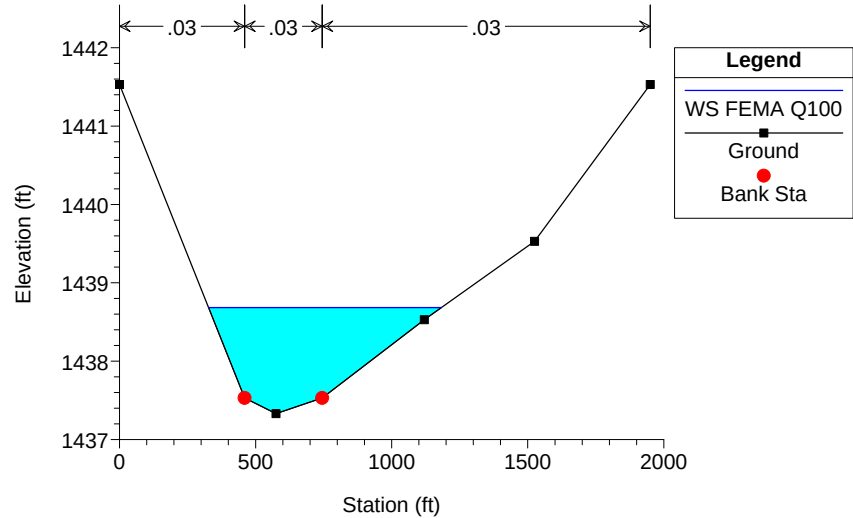
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 21265



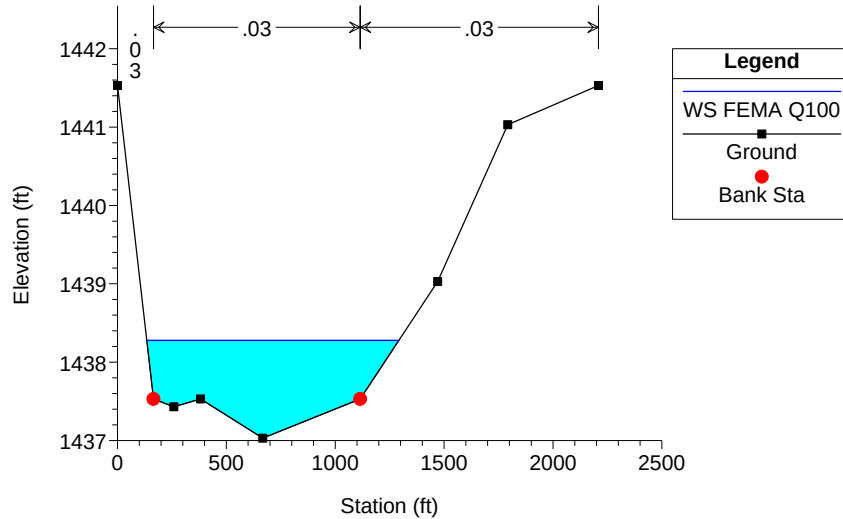
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 20760



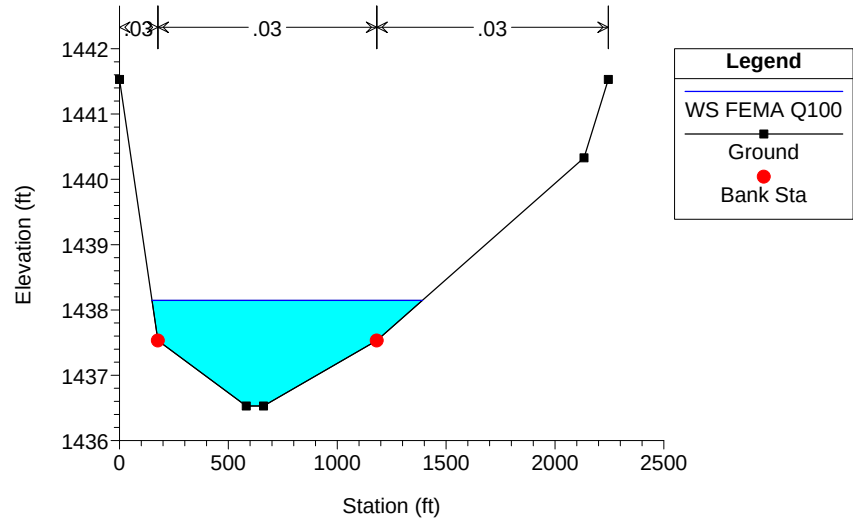
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 20445



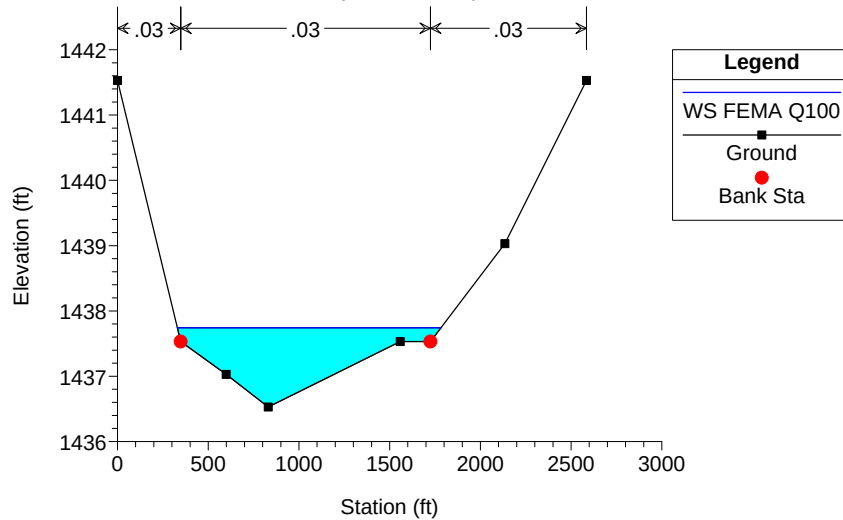
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 20205



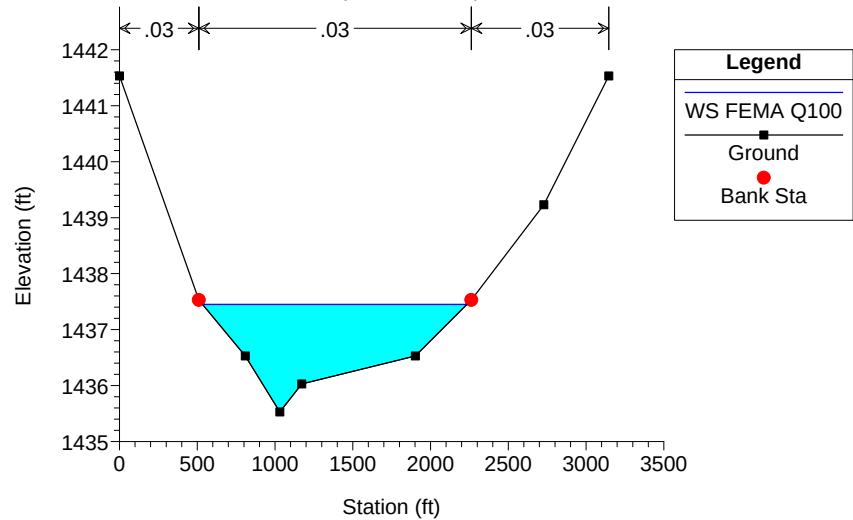
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 19710



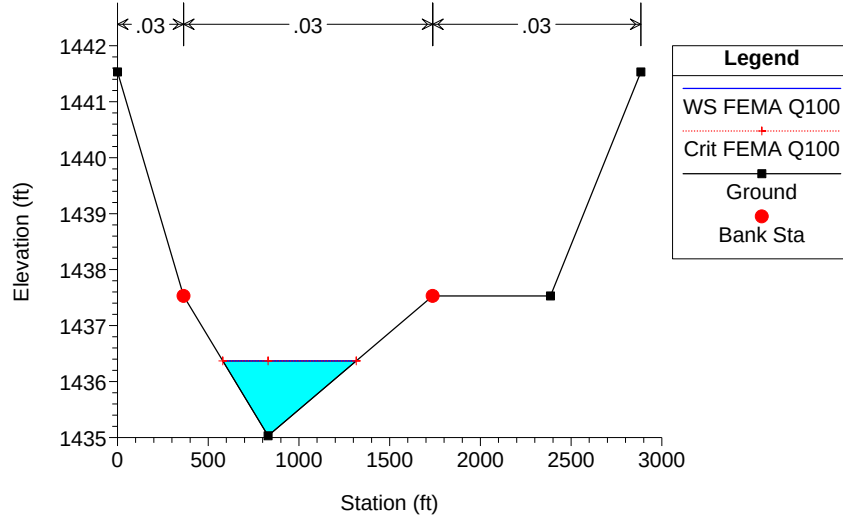
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 19155



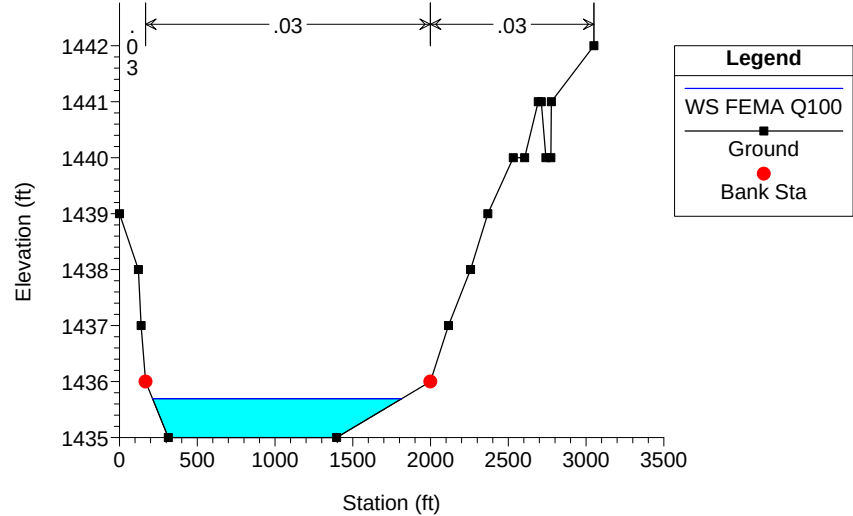
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 18605



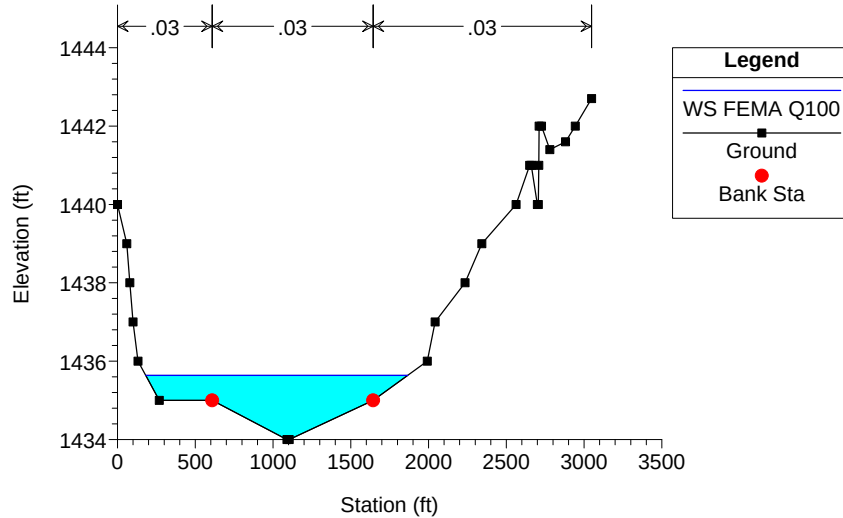
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 18600



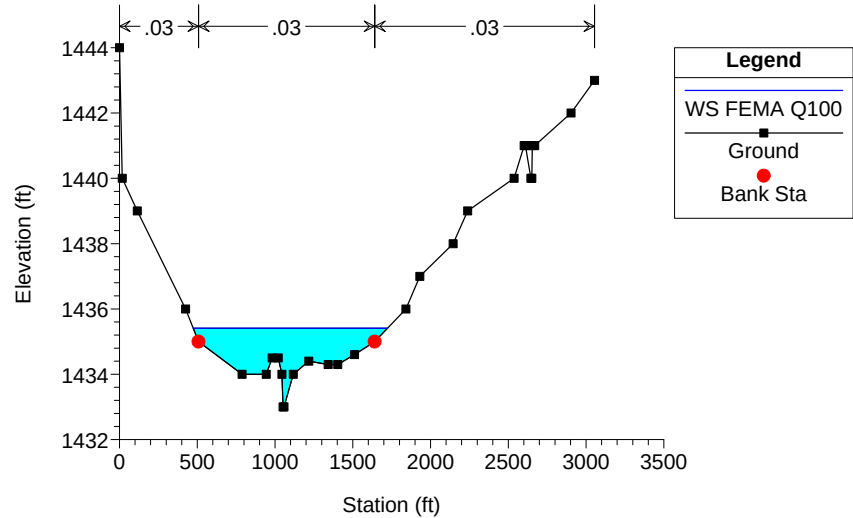
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 18550



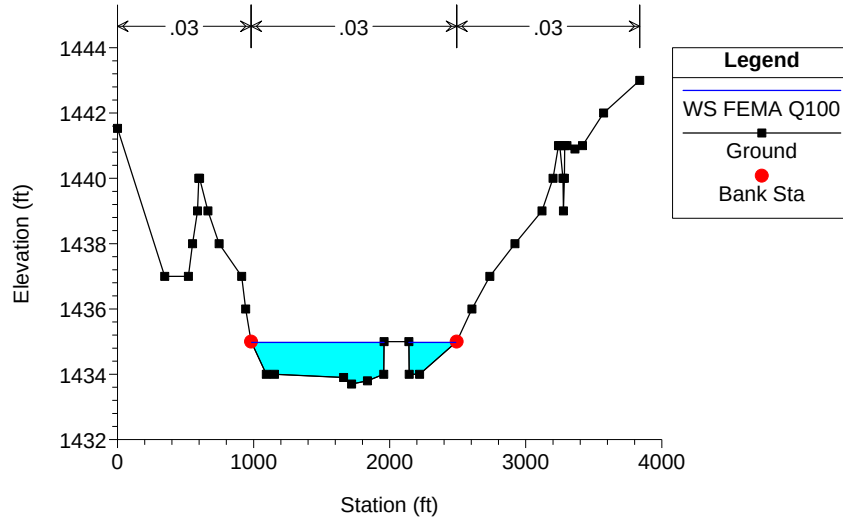
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 18395



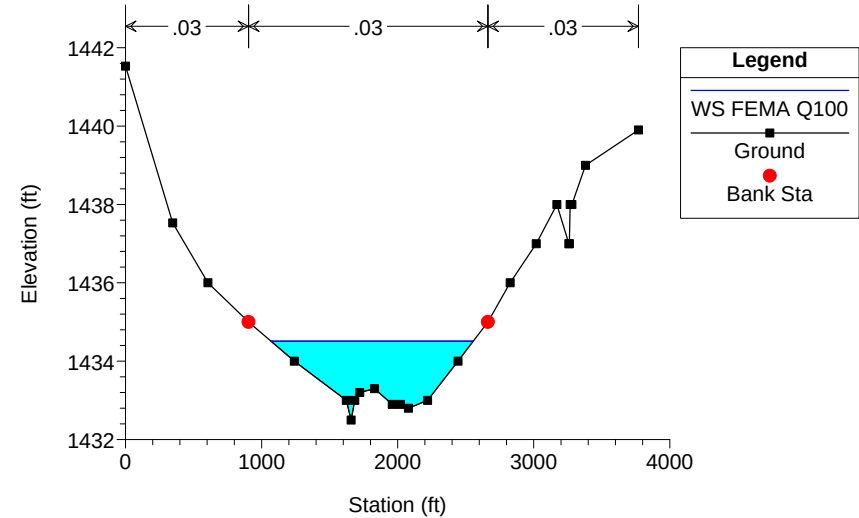
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 18165



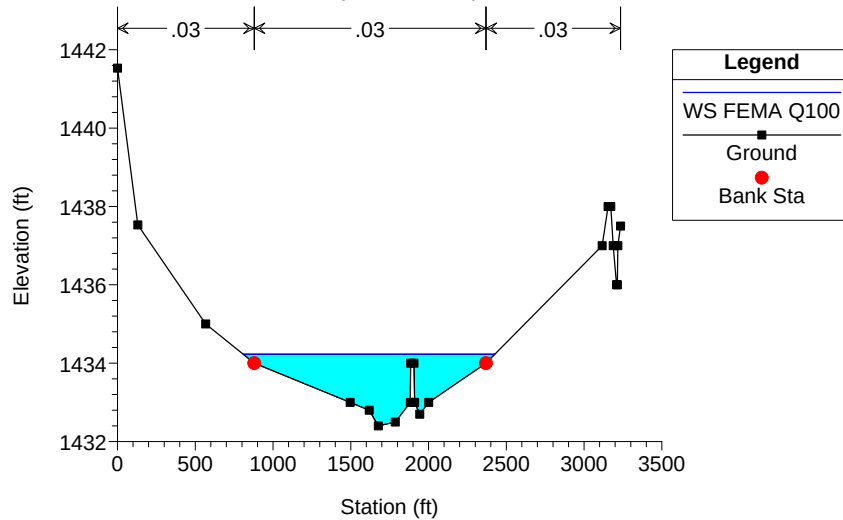
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 17765



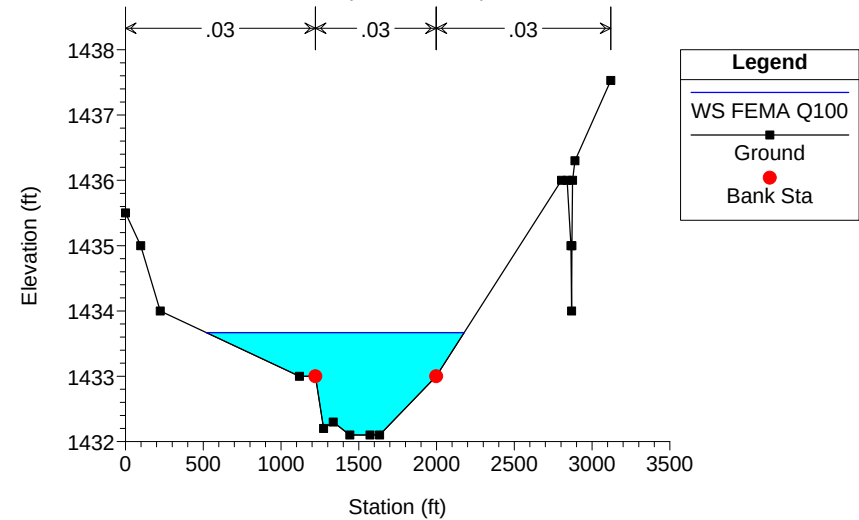
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 17470



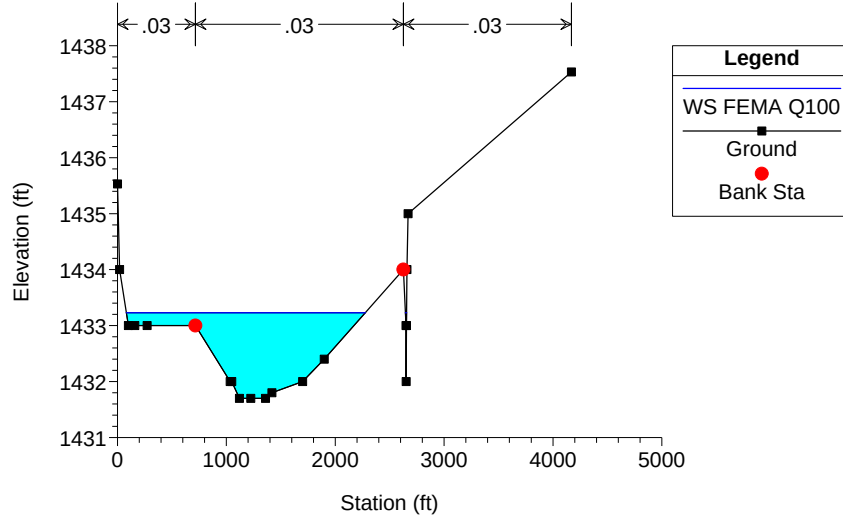
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 17120



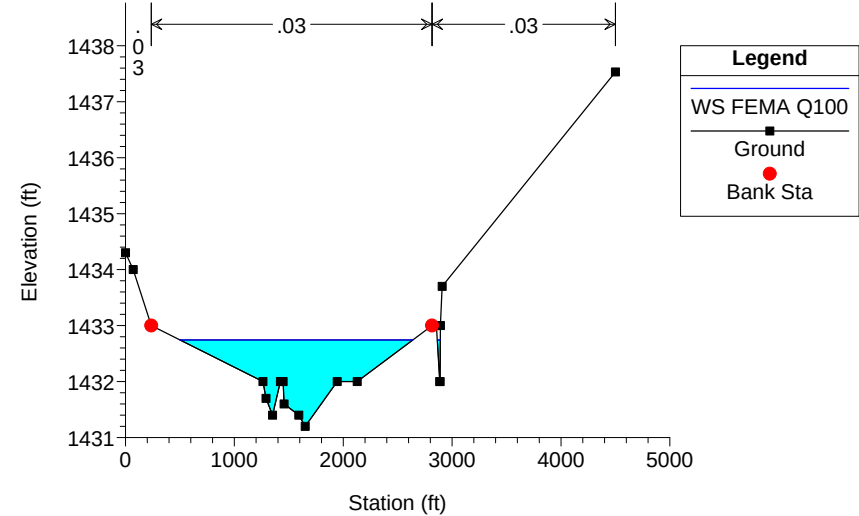
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Meniffee Valley 3/28/2014

Geom: Pre_project for Meniffee Valley Flow: Pre_project 100 year
River = Meniffee Valley Reach = Upstream RS = 16670



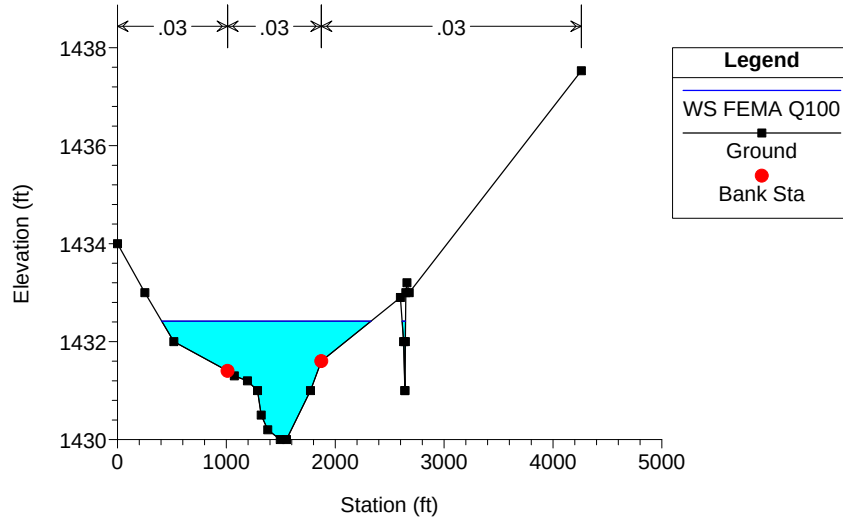
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Meniffee Valley 3/28/2014

Geom: Pre_project for Meniffee Valley Flow: Pre_project 100 year
River = Meniffee Valley Reach = Upstream RS = 16300



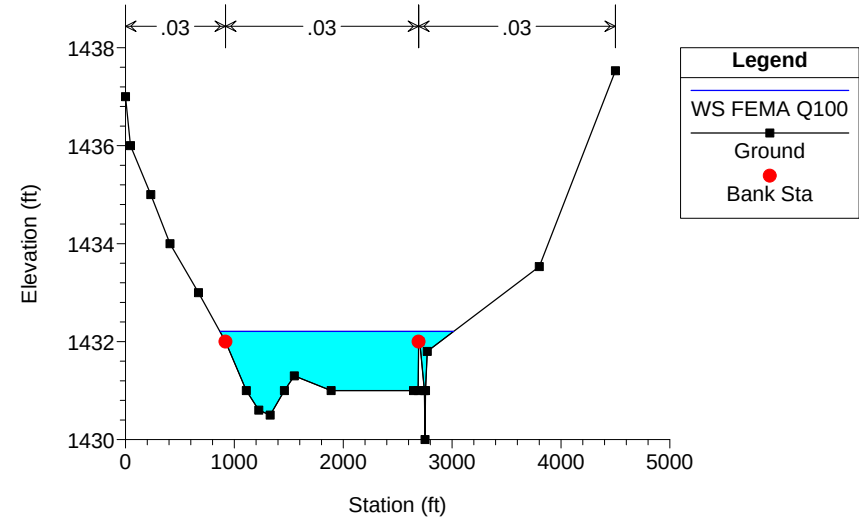
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Meniffee Valley 3/28/2014

Geom: Pre_project for Meniffee Valley Flow: Pre_project 100 year
River = Meniffee Valley Reach = Upstream RS = 15830



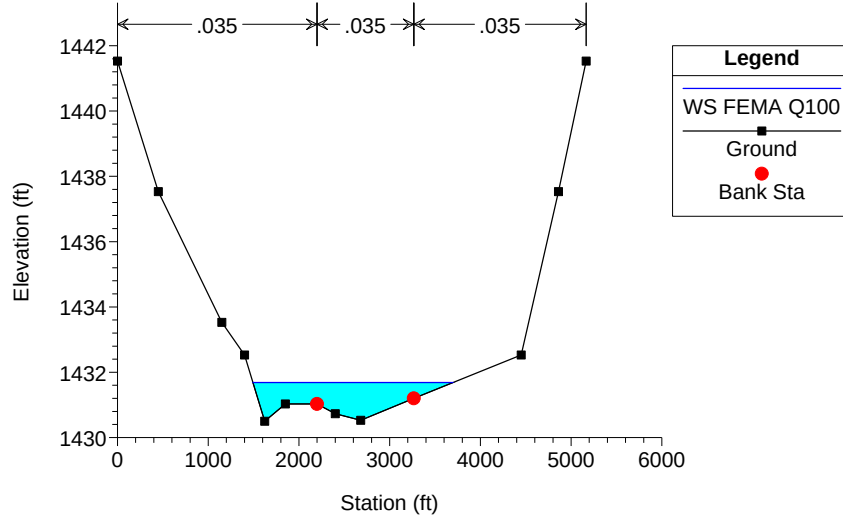
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Meniffee Valley 3/28/2014

Geom: Pre_project for Meniffee Valley Flow: Pre_project 100 year
River = Meniffee Valley Reach = Upstream RS = 15265



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

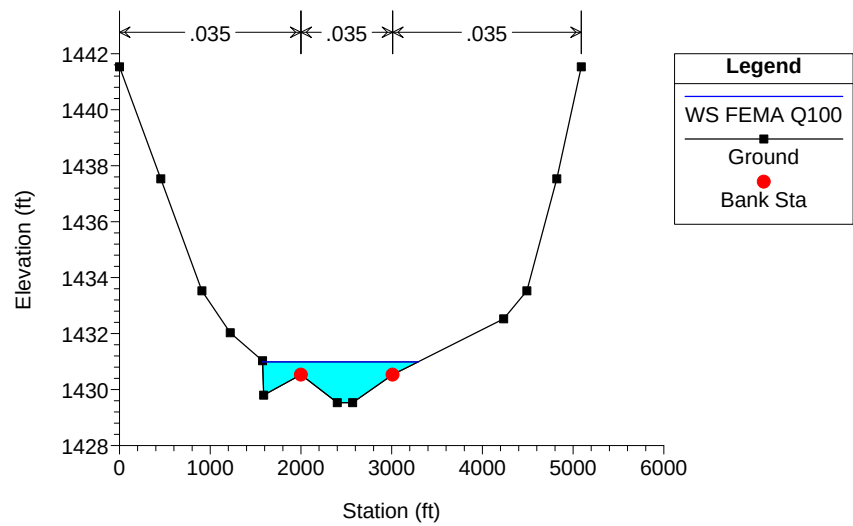
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 15000



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

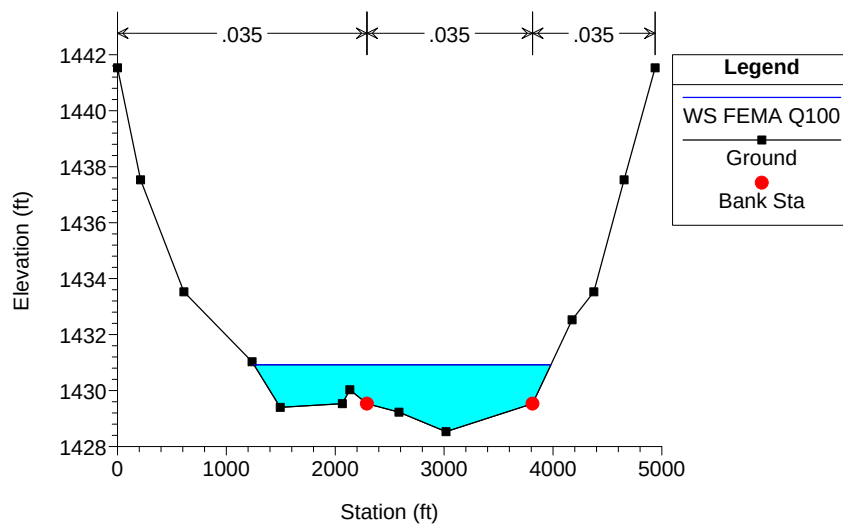
River = Menifee Valley Reach = Upstream RS = 14500 Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

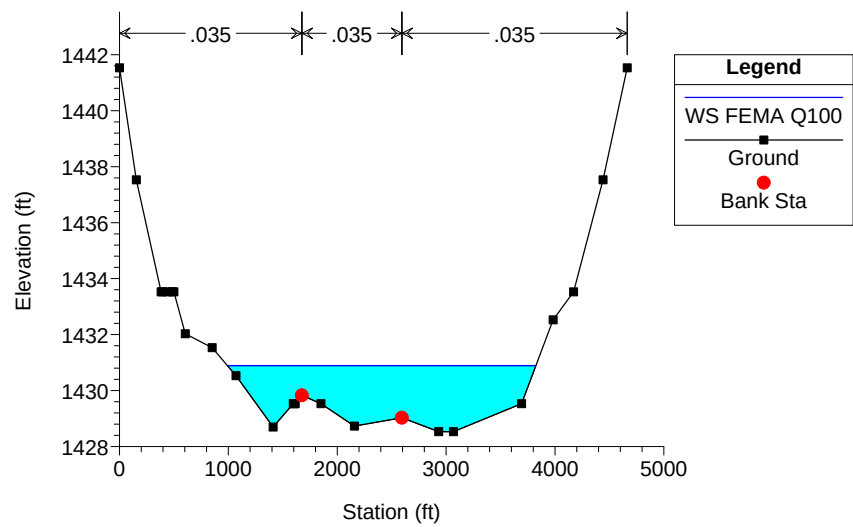
River = Menifee Valley Reach = Upstream RS = 14000 Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

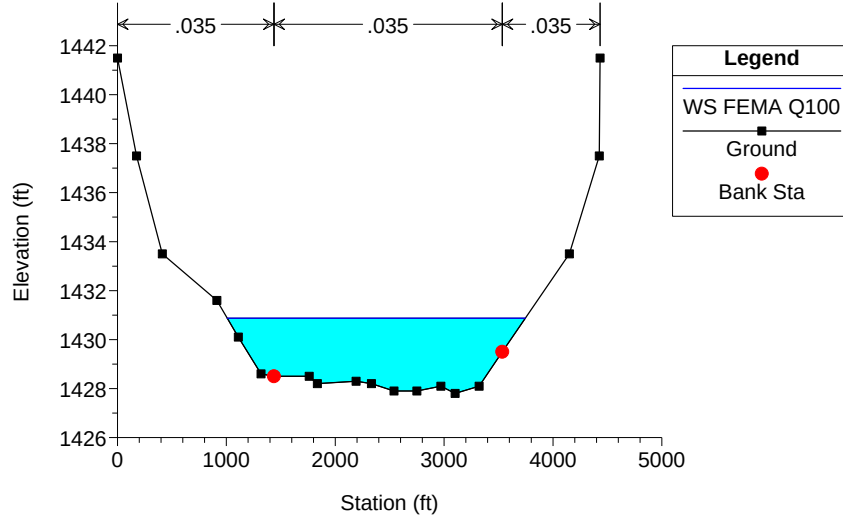
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

River = Menifee Valley Reach = Upstream RS = 13500 Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

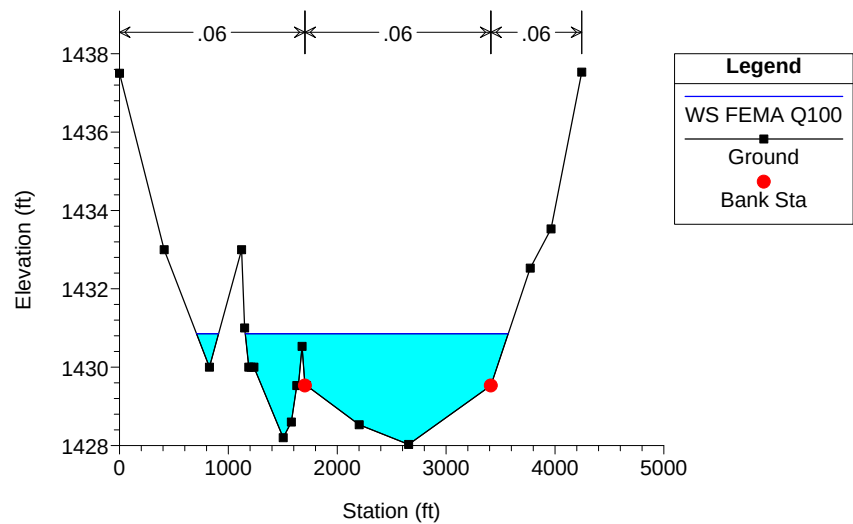
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = Upstream RS = 13045



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

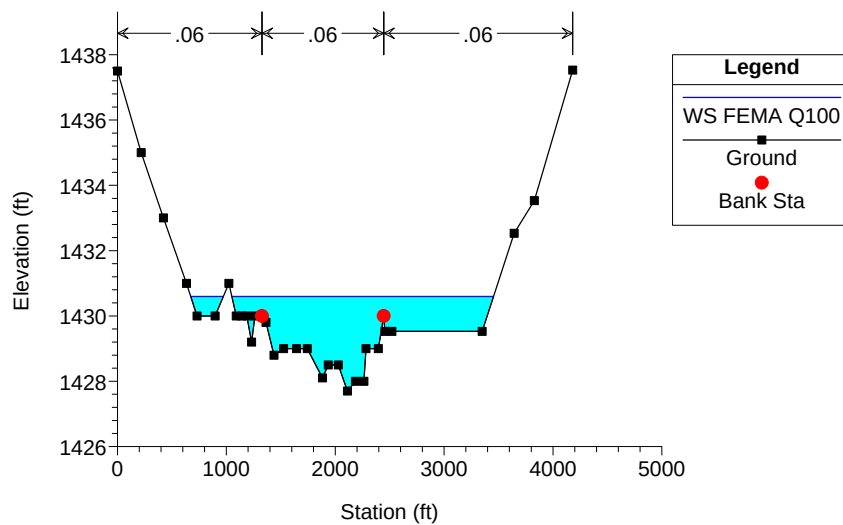
River = Menifee Valley Reach = Upstream RS = 13000 Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

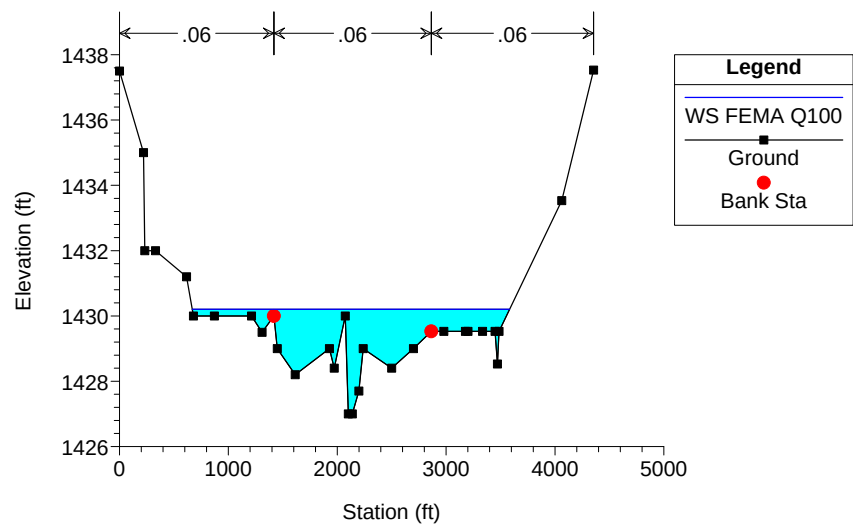
River = Menifee Valley Reach = Upstream RS = 12500 Some of the elevations adjusted by -2.47'



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

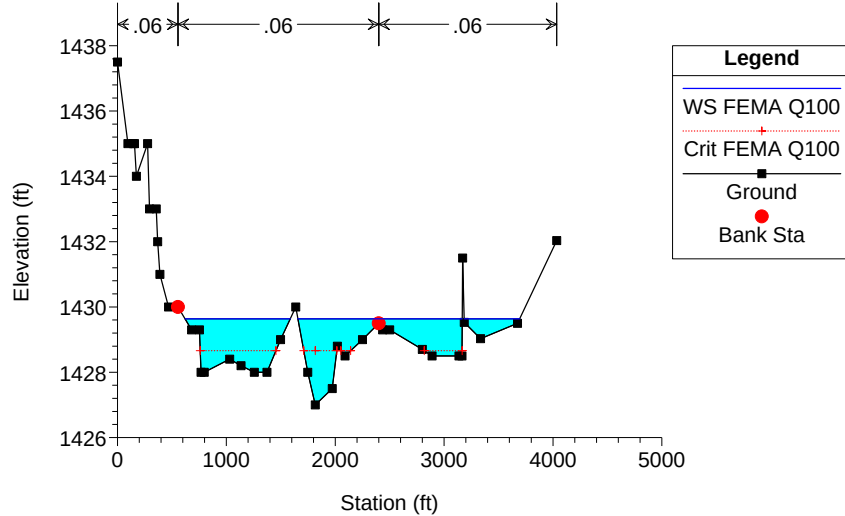
River = Menifee Valley Reach = Upstream RS = 12000 Some of the elevations adjusted by -2.47'



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

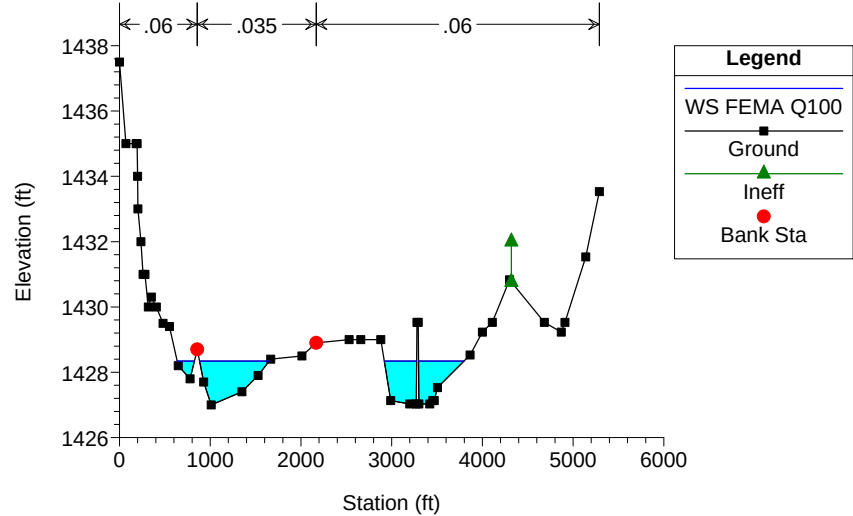
River = Menifee Valley Reach = Upstream RS = 11500 stations 3185-4035 adjusted by -2.47'



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

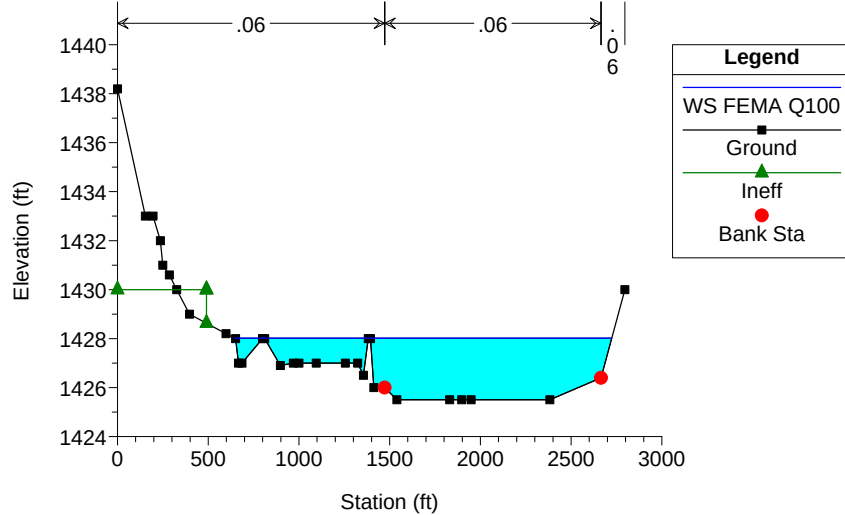
River = Menifee Valley Reach = Upstream RS = 11000 stations 2990 - 5290 adjusted by -2.47'



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

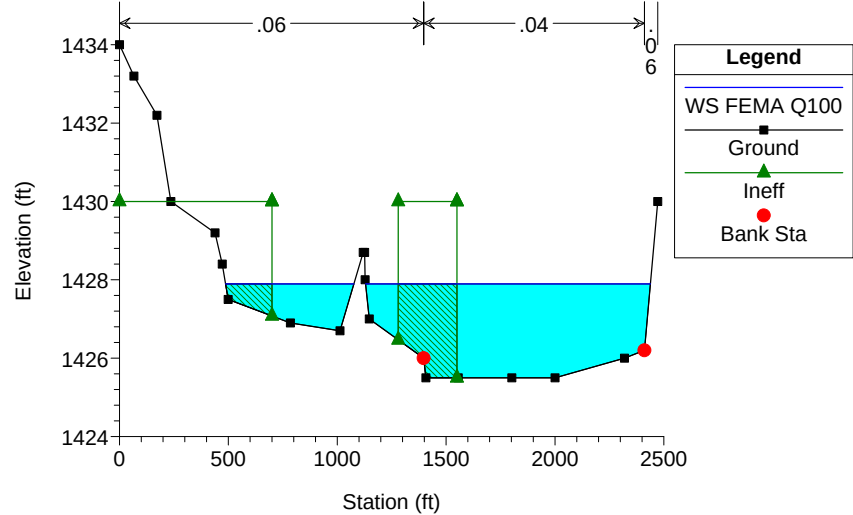
River = Menifee Valley Reach = 10500 - 10000 RS = 10500



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

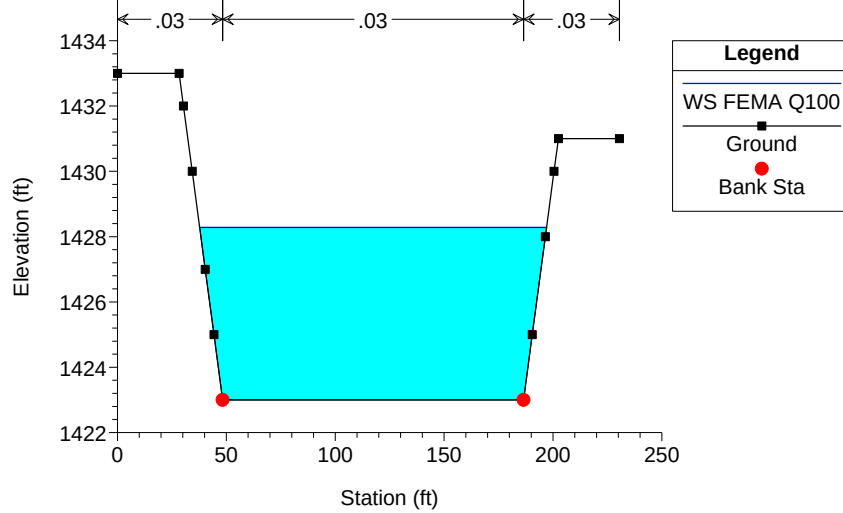
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

River = Menifee Valley Reach = 10500 - 10000 RS = 10000



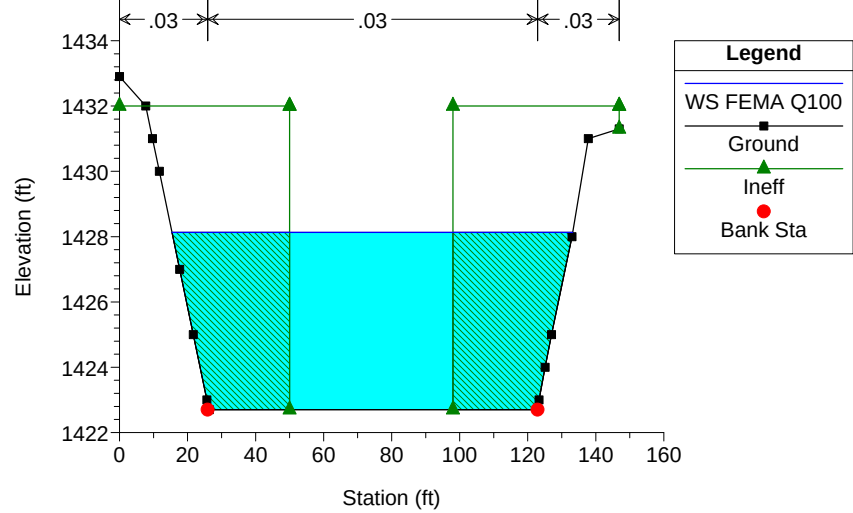
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10995



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

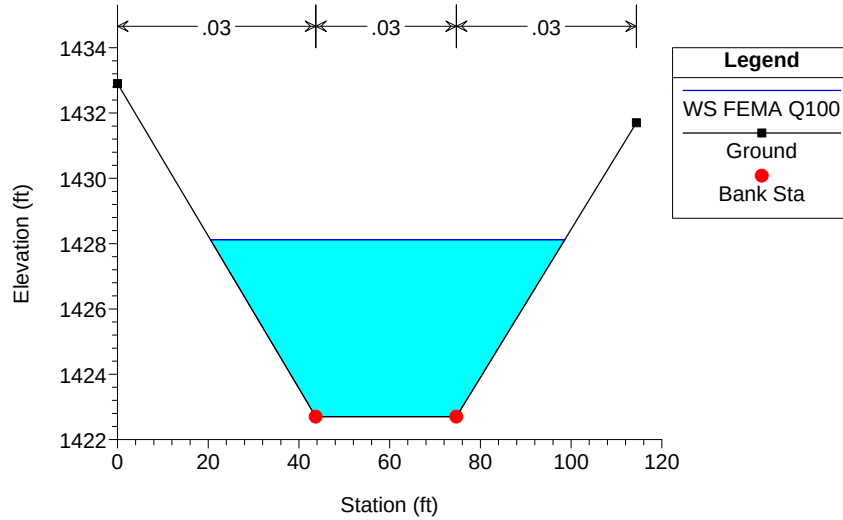
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10980



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

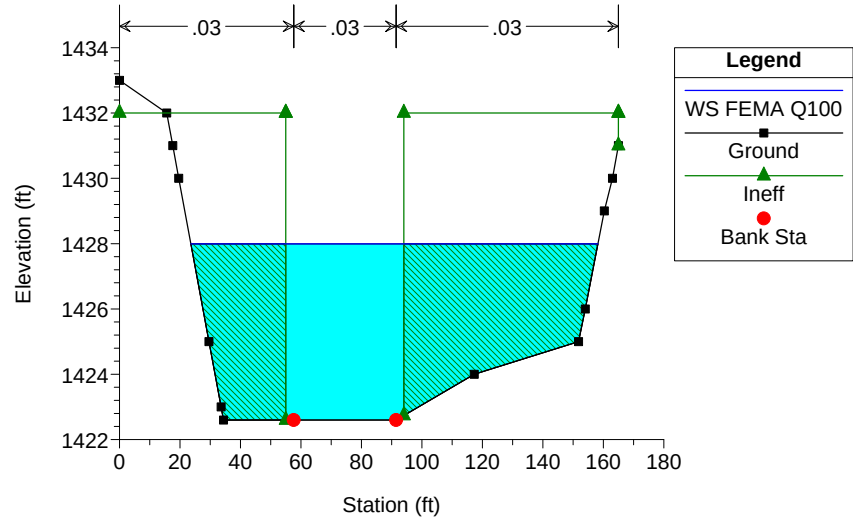
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

River = Menifee Valley Reach = split to Lake "C" RS = 10965 This Cross Section 10965 replaced the culvert proposed in the CL



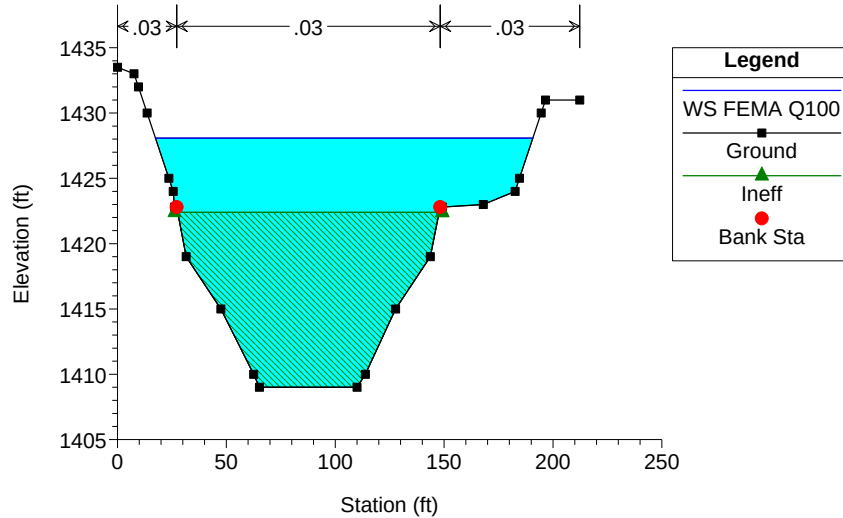
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10950



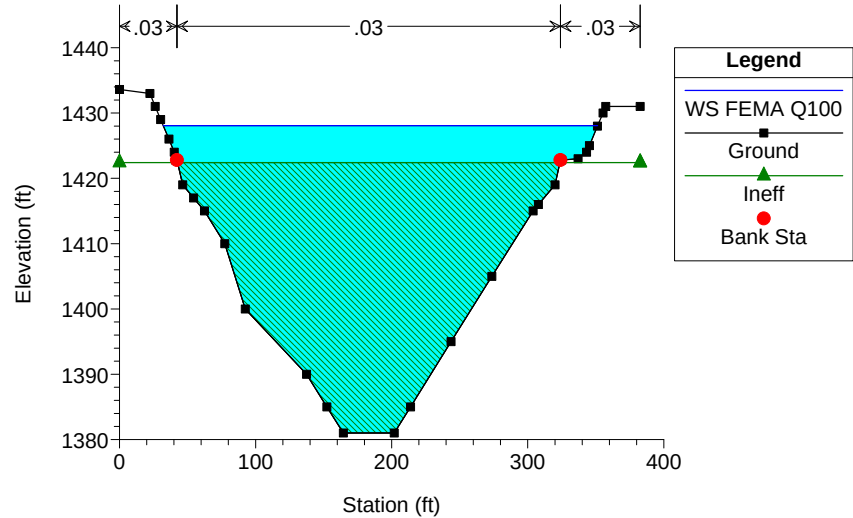
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10940



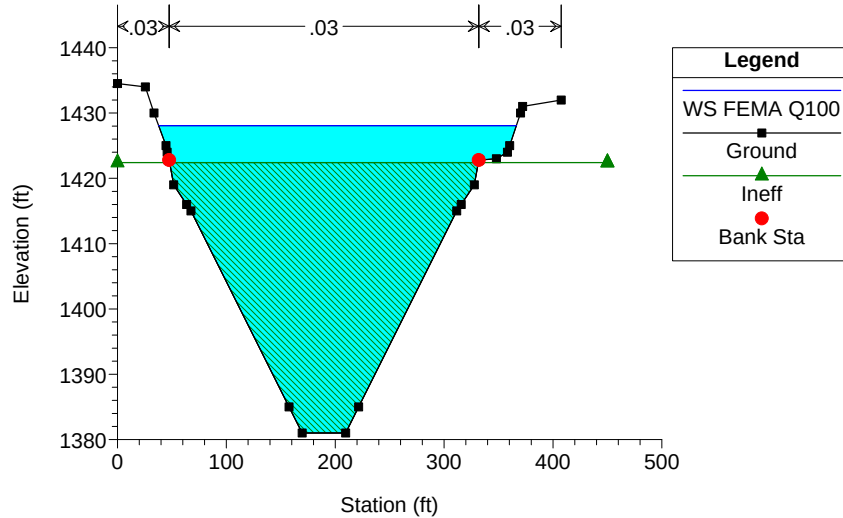
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10930



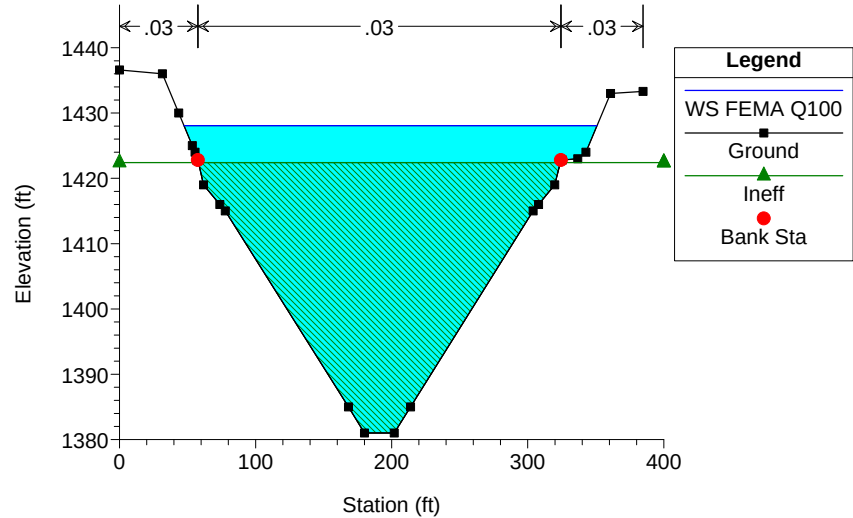
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10920



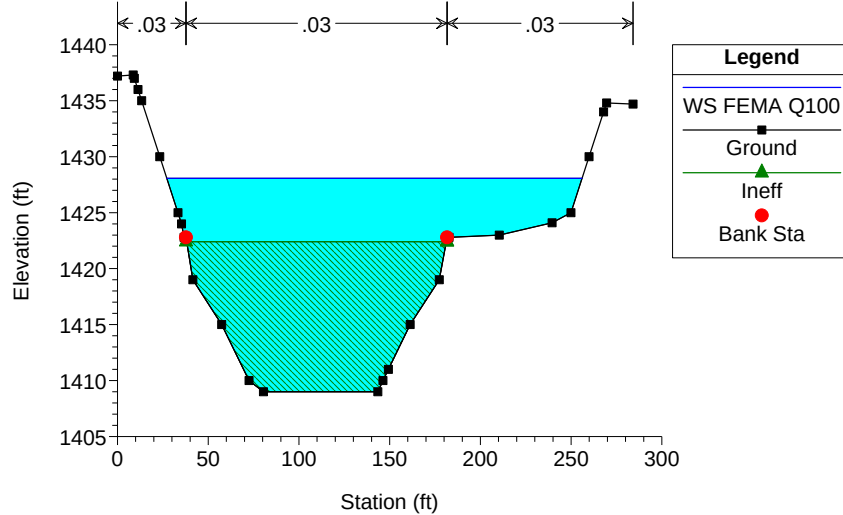
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10910



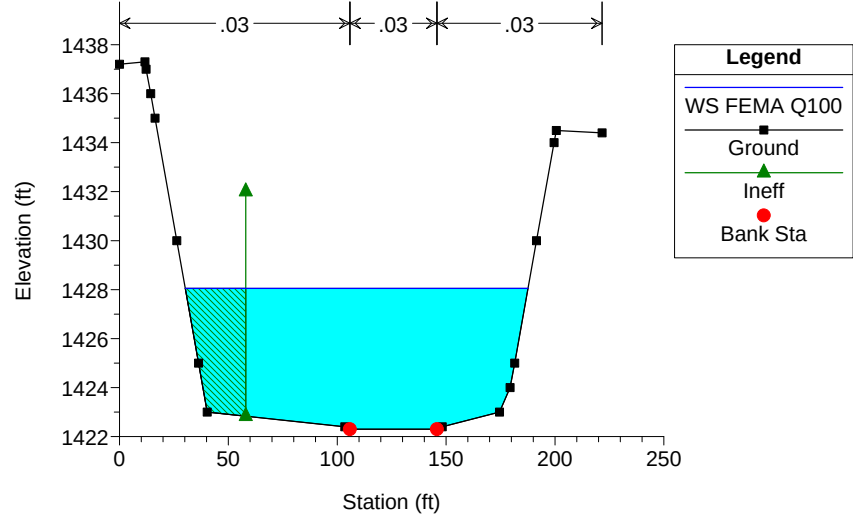
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10900



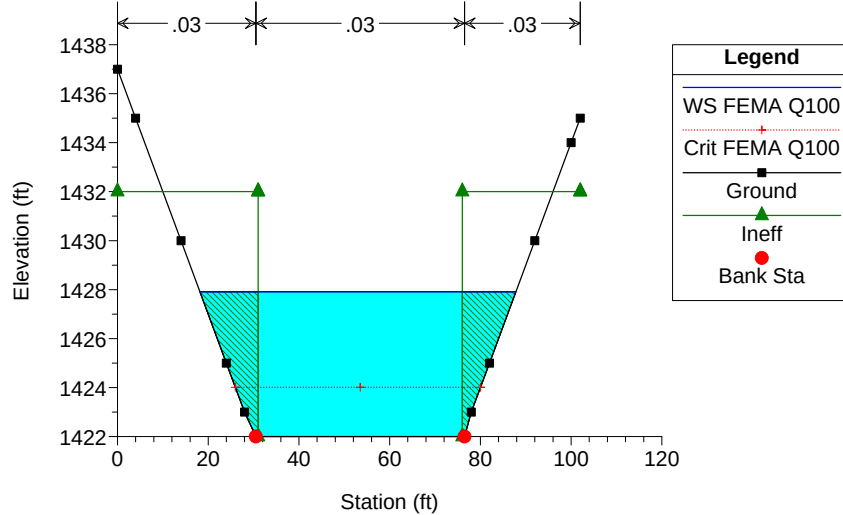
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10880



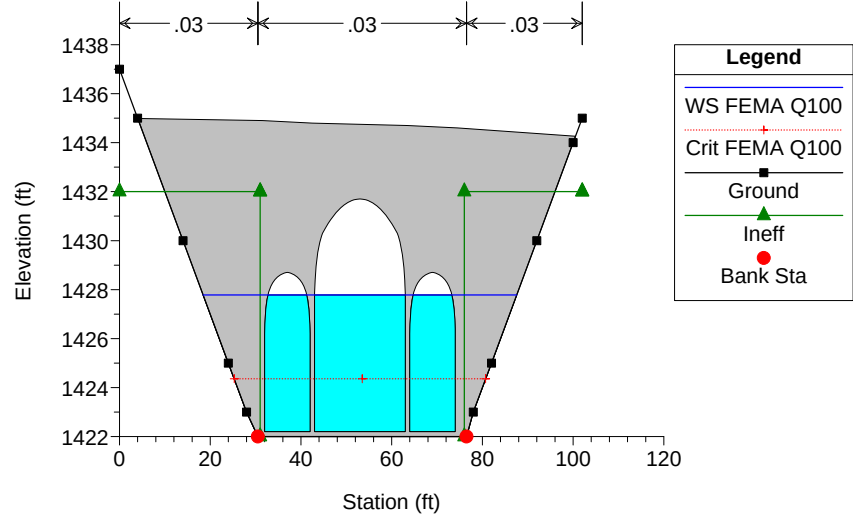
MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10870



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

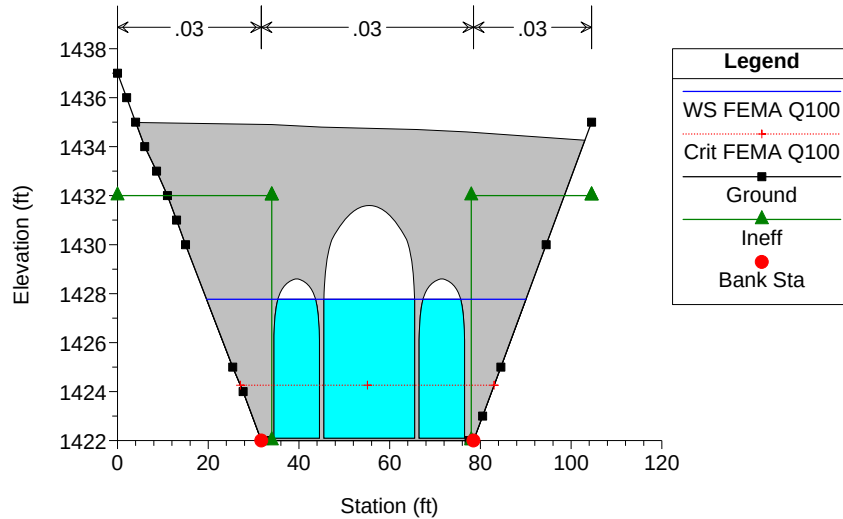
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Lake "C" RS = 10860 Culv (2) -10'X6.5' ARCH & (1) -20'X9.5' ARCH CONCRETE CULVERTS AT STA



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

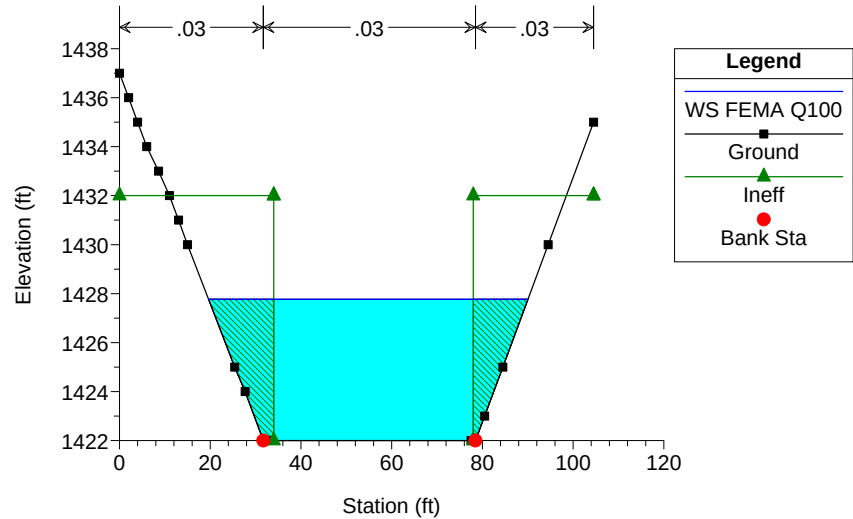
River = Menifee Valley Reach = split to Lake "C" RS = 10860 Culv (2) -10'X6.5' ARCH & (1) -20'X9.5' ARCH CONCRETE CULVERTS AT STA



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

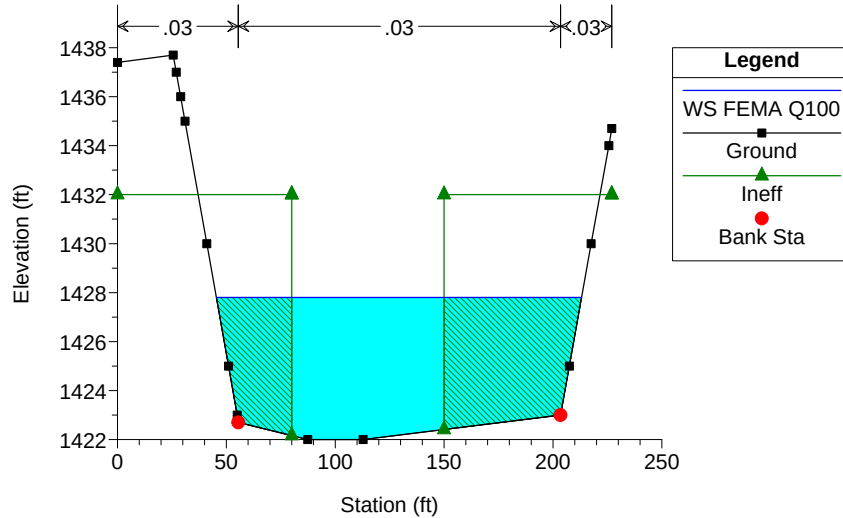
River = Menifee Valley Reach = split to Lake "C" RS = 10850



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

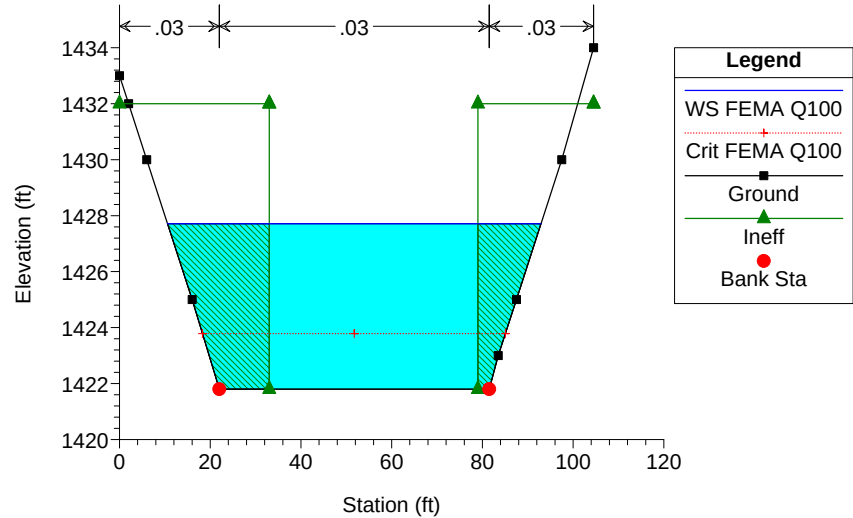
River = Menifee Valley Reach = split to Lake "C" RS = 10845



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

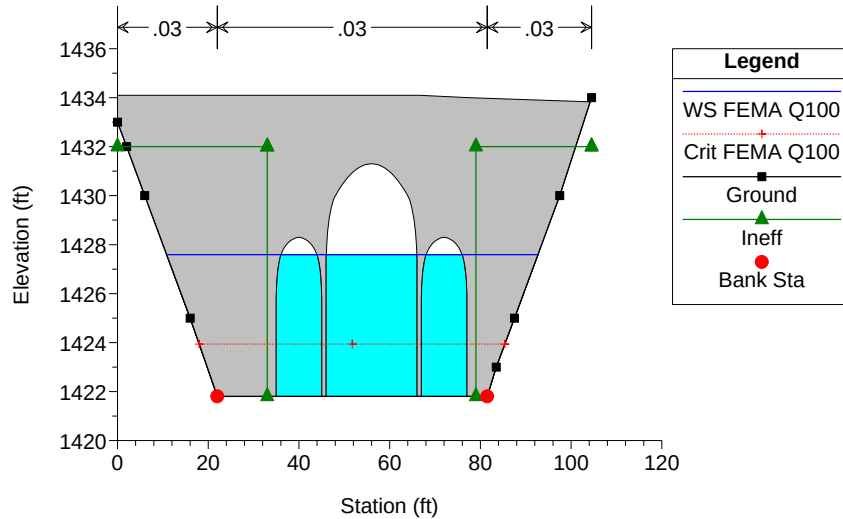
River = Menifee Valley Reach = split to Lake "C" RS = 10840



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

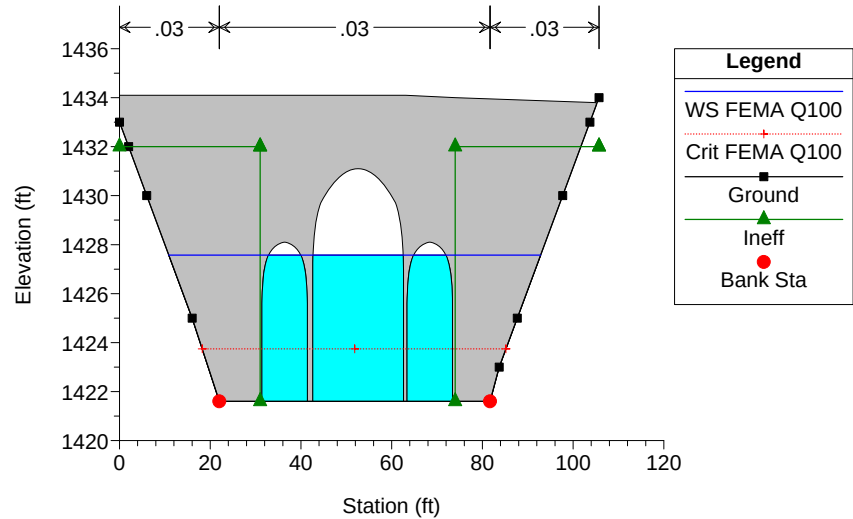
River = Menifee Valley Reach = split to Lake "C" RS = 10830 Culv (2) -10'X6.5' ARCH & (1) -20'X9.5' ARCH CONCRETE CULVERTS AT TRE



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

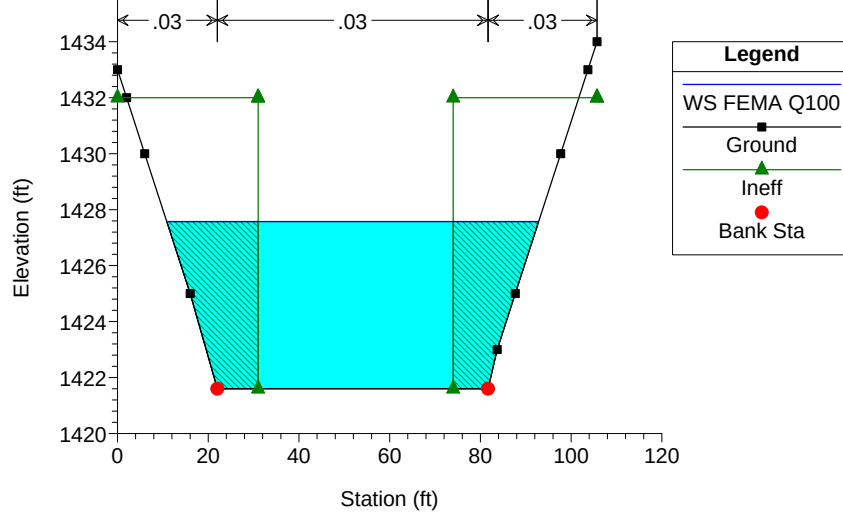
River = Menifee Valley Reach = split to Lake "C" RS = 10830 Culv (2) -10'X6.5' ARCH & (1) -20'X9.5' ARCH CONCRETE CULVERTS AT TRE



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

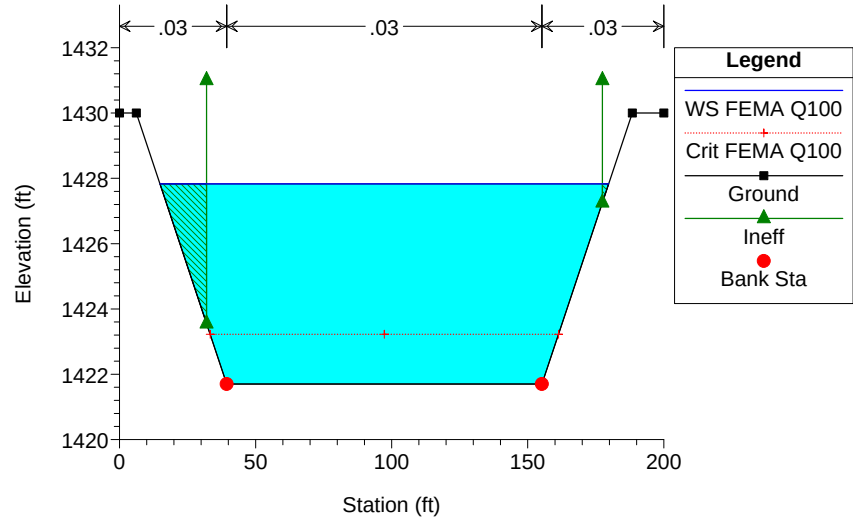
River = Menifee Valley Reach = split to Lake "C" RS = 10820



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

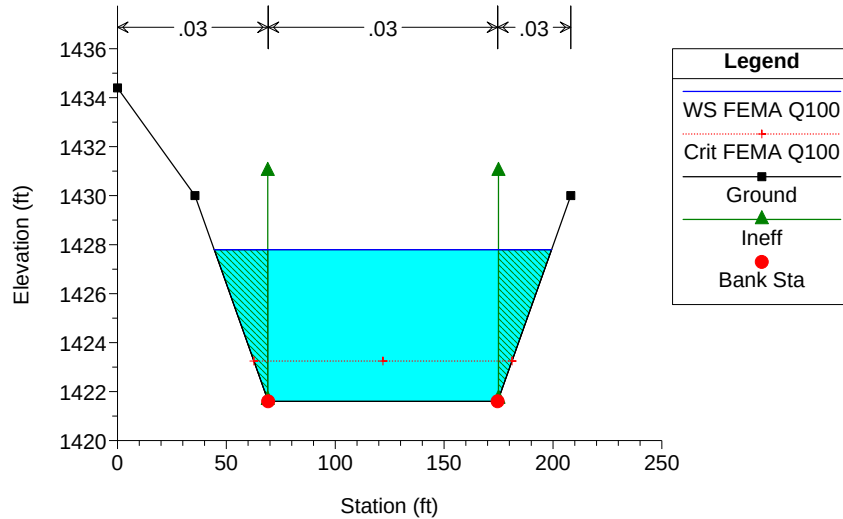
River = Menifee Valley Reach = split to Rancon RS = 9600 This Cross-Section has been revised: the same bottom width as th



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

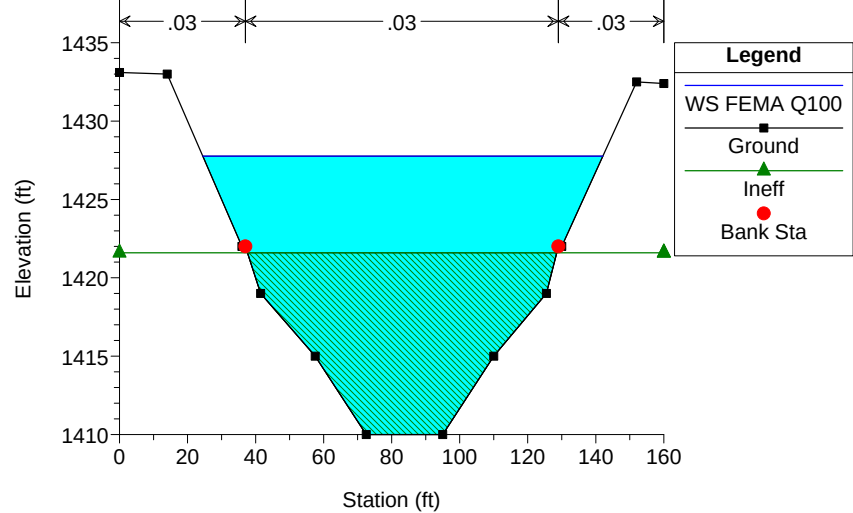
River = Menifee Valley Reach = split to Rancon RS = 9491 This Cross-Section has been revised: the same bottom width as th



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

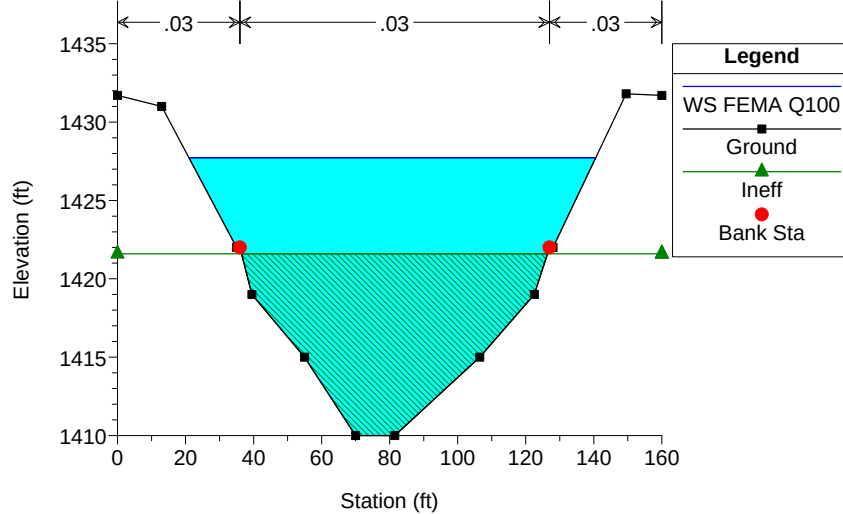
River = Menifee Valley Reach = split to Rancon RS = 9490



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

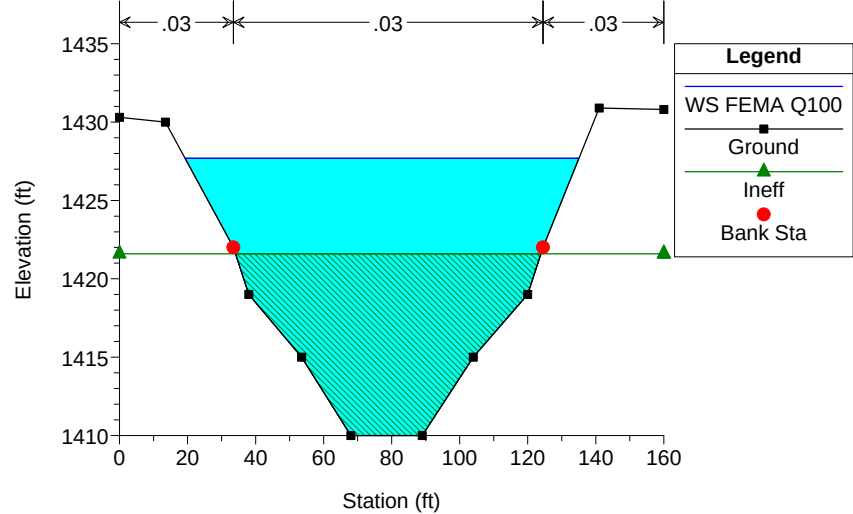
River = Menifee Valley Reach = split to Rancon RS = 9480



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

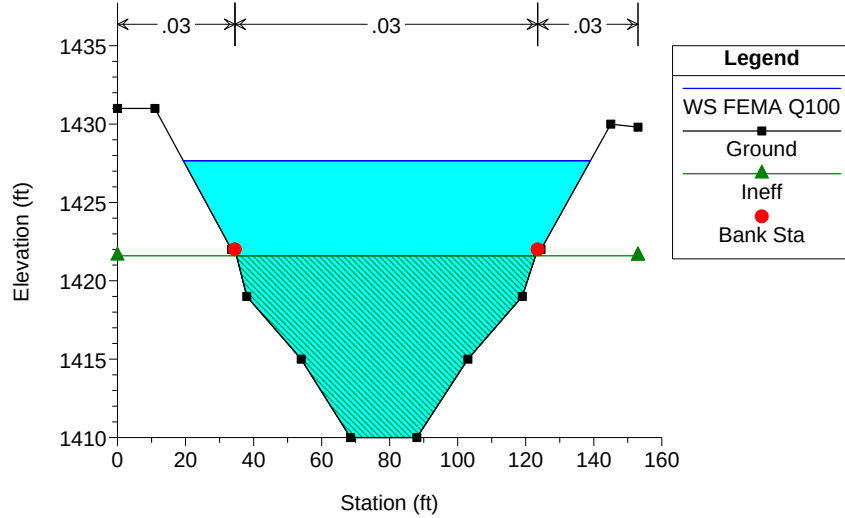
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

River = Menifee Valley Reach = split to Rancon RS = 9470



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

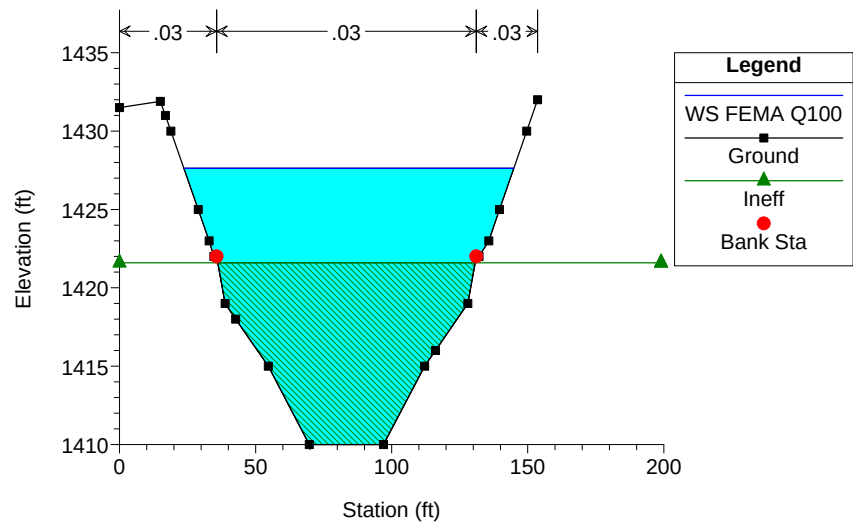
Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year
River = Menifee Valley Reach = split to Rancon RS = 9460



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

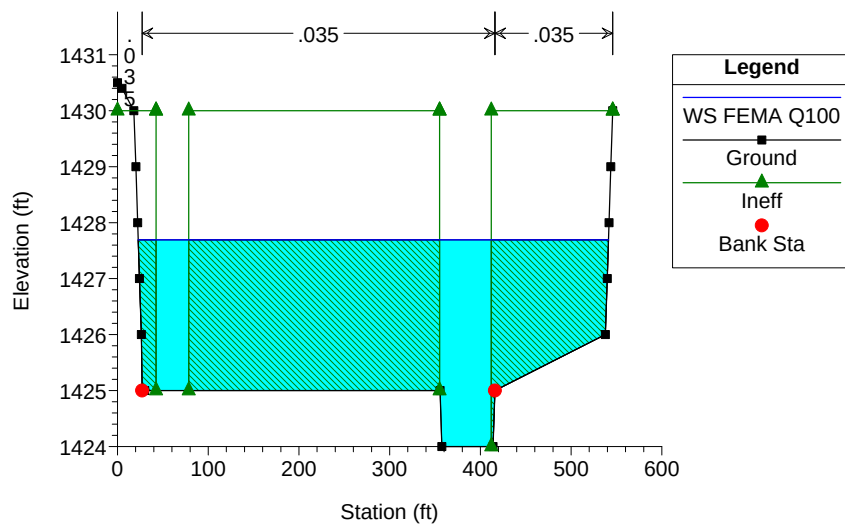
River = Menifee Valley Reach = split to Rancon RS = 9450 Last Cross-section of Reach: split to Rancon



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

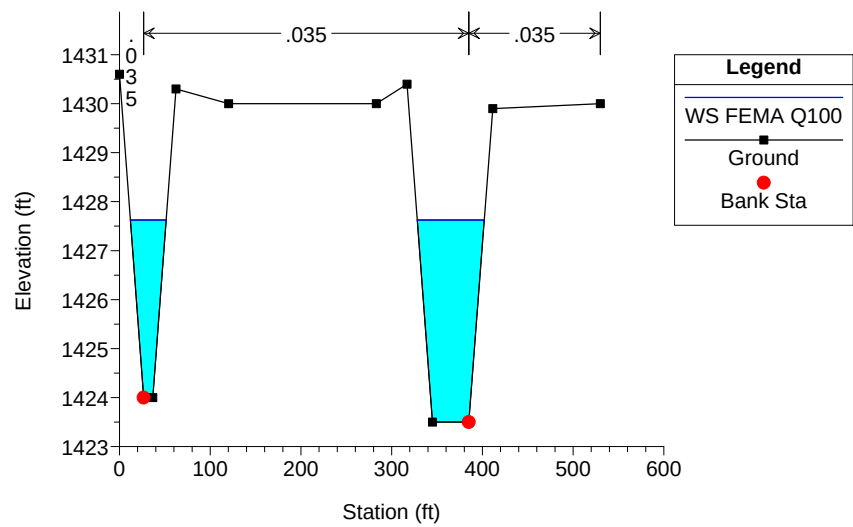
River = Menifee Valley Reach = flow to Lakeside RS = 9700 Upstream of Lakeside Drive (formerly street "B")



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

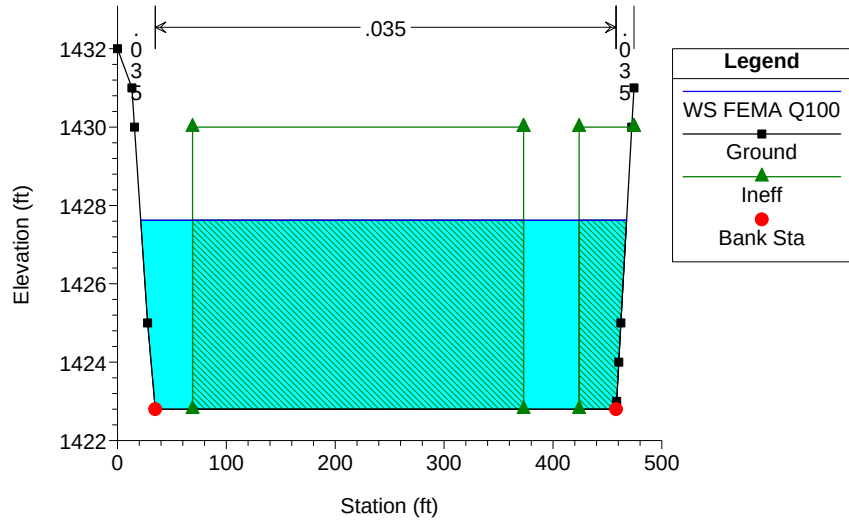
River = Menifee Valley Reach = flow to Lakeside RS = 9600 This Cross section 9600 replaced the proposed culverts at Street



MENIFEE VALLEY AREA DRAINAGE PLAN Plan: Pre_project for Menifee Valley 3/28/2014

Geom: Pre_project for Menifee Valley Flow: Pre_project 100 year

River = Menifee Valley Reach = flow to Lakeside RS = 9500 Downstream of Street "B"



X	X	XXXXXX	XXXX	XXXX	XX	XXXX
X	X	X	X	X	X	X
X	X	X	X	X	X	X
XXXXXXXX	XXXX	X	XXX	XXXX	XXXXXX	XXXX
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	XXXXXX	XXXX	X	X	XXXXX

PROJECT DATA
Project Title: MENIFEE VALLEY AREA DRAINAGE PLAN
Project File : PRE.INT.POST.prj
Run Date and Time: 3/28/2014 10:20:53 AM

Project in English units

Project Description:
Menifee Valley Creek Existing topo for the entire run. Data includes FEMA HEC-2 data from station 790 to sta 6750, CSL Engineering data from approved CLOMR for sta 9500 to sta 11500, REC data for proposed Lakes at Menifee project from sta 6750 to sta 9700 and REC data for sta 12000 to sta 15000.

These pre-project
hydraulic analysis for Menifee Valley based on the post-project condition of
Tract 39422 (The Lakes project).

PLAN DATA

Plan Title: Pre-project for Menifee Valley
Plan File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix
D\Pre-Project\PRE.INT.POST.prj

Geometry Title: Pre_ project for Menifee Valley

Geometry File :
r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix D\Pre-
Project\PRE.INT.POST.g05

Flow Title : Pre-project 100 year
Flow File :
r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix D\Pre-
Project\PRE.INT.POST.prj

Plan Description:

UPDATED w/LOMR INFO.

Plan Summary Information:
Number of: Cross Sections = 106 Multiple Openings = 0
Culverts = 3 Inline Structures = 0
Bridges = 2 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3

Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Hydraulic computation Method: At breaks in p values only
Fiction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Pre-project 100 year
Flow File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix
D\Pre-Project\PRE.INT.POST.prj

Flow Data (cfs)

River	Reach	RS	FEMA Q100
Menifee Valley	Upstream	22365	1367
Menifee Valley	Upstream	18605	2325
Menifee Valley	Upstream	12500	3024
Menifee Valley	10500 - 10000	10500	2291.65
Menifee Valley	split to Lake "C108995		732.35
Menifee Valley	split to Rancon 9600		1266.6
Menifee Valley	flow to Lakes1de9700		1025.05
Menifee Valley	THROUGH LAKES	9400	3024
Menifee Valley	THROUGH LAKES	7700	3024
Menifee Valley	THROUGH LAKES	6608	3105
Menifee Valley	THROUGH LAKES	3990	3630
Menifee Valley	THROUGH LAKES	1550	1835
Menifee Valley	THROUGH LAKES	1926	1938

Boundary Conditions

River	Reach	Profile	Upstream
Downstream			
Menifee Valley	Upstream	FEMA Q100	Critical
Menifee Valley	THROUGH LAKES	FEMA Q100	
1424.58			Known WS =

GEOMETRY DATA

Geometry Title: Pre_ project for Menifee Valley
Geometry File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix
D\Pre-Project\PRE.INT.POST.g05

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
Menifee Valley	Upstream	SPLIT #1	SPLIT #1
Menifee Valley	10500 - 10000	SPLIT #1	SPLIT #2
Menifee Valley	split to Rancon "C	SPLIT #1	COMBINE ALL
Menifee Valley	split to Rancon	SPLIT #2	COMBINE ALL
Menifee Valley	flow to Lakeside	SPLIT #2	COMBINE ALL
Menifee Valley	THROUGH LAKES	COMBINE ALL	

JUNCTION INFORMATION

Name: SPLIT #2
Description:
Energy computation Method

Length across Junction
River
Menifee Valley 10500 - 10000
Menifee Valley 10500 - 10000
Name: COMBINE ALL
Description: Junction Combine All is located immediately upstream of
Cross-section 9400
Energy computation Method

Length across Junction
River
Menifee Valley flow to Lakeside to Menifee Valley THROUGH LAKES
Menifee Valley split to Rancon to Menifee Valley THROUGH LAKES
Menifee Valley split to Lake "C" to Menifee Valley THROUGH LAKES
Name: SPLIT #1
Description:
Energy computation Method

Length across Junction
River
Menifee Valley Upstream
Menifee Valley Upstream
Cross SECTION

RIVER: Menifee Valley
REACH: Upstream RS: 22365

INPUT
Description:
Station Elevation Data num=
Sta Elev Sta Elev Sta Elev Sta Elev
0 1445.53 419.2 1441.53 763.5 1439.83 1010.5 1441.53 1101.8 1442.23
1167.7 1441.53 1476.2 1440.53 1839.9 1441.03 2160.3 1441.53 2210.1 1442.03
2512.8 1445.03 2723.6 1445.53

Manning's n Values num=
Sta n Val Sta n Val Sta n Val
0 .03 419.2 .03 419.2 .03 1101.8 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
419.2 1101.8 650 550 350
Cross SECTION

RIVER: Menifee Valley
REACH: Upstream RS: 21815

INPUT
Description:
Station Elevation Data num=
Sta Elev Sta Elev Sta Elev Sta Elev
0 1441.53 150 1439.98 290 1438.53 660 1438.73 1485 1440.23
1870 1440.53 2200 1441.53

Manning's n Values num=
Sta n Val Sta n Val Sta n Val
0 .03 150 .03 1485 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
150 1485 600 550 440
Cross SECTION

RIVER: Menifee Valley
REACH: Upstream RS: 21265

INPUT
Description:
Station Elevation Data num=
Sta Elev Sta Elev Sta Elev Sta Elev
0 1441.53 150 1439.53 225 1438.53 550 1438.53 1030 1435.53
1450 1440.83 1845 1441.03 2260 1441.53

Manning's n Values num=
Sta n Val Sta n Val Sta n Val
0 .03 150 .03 1030 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
150 1030 460 490 500
Cross SECTION

RIVER: Menifee Valley
REACH: Upstream RS: 20760

INPUT
Description:
Station Elevation Data num=
Sta Elev Sta Elev Sta Elev Sta Elev
0 1441.53 460 1437.53 575 1437.33 745 1437.53 1120 1438.53
1525 1439.53 1950 1441.53

Manning's n Values num=
Sta n Val Sta n Val Sta n Val
0 .03 460 .03 745 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
460 745 320 330 460
Cross SECTION

RIVER: Menifee Valley
REACH: Upstream RS: 20445

INPUT
Description:
Station Elevation Data num=
Sta Elev Sta Elev Sta Elev Sta Elev
0 1441.53 1437.53 268.7 1437.53 381.7 1437.53 607.1 1437.03
1114.8 1437.53 1470.5 1439.03 1792.3 1441.03 2208.7 1441.53

Manning's n Values num=
Sta n Val Sta n Val Sta n Val
0 .03 165.1 .03 1114.8 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
165.1 1114.8 213.4 225.3 257.5
Cross SECTION

RIVER: Menifee Valley
REACH: Upstream RS: 20205

INPUT
Description:
Station Elevation Data num=
Sta Elev Sta Elev Sta Elev Sta Elev
0 1441.53 176.6 1437.53 581.9 1436.53 661.6 1436.53 1181.3 1437.53
2133.2 1440.33 2245 1441.53

Manning's n Values num=
Sta n Val Sta n Val Sta n Val
0 .03 176.6 .03 1181.3 .03

RIVER: Menifee Valley														
REACH: Upstream														
RS: 16670														
INPUT														
Description:														
Station	Elevation	Data	num=	19	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	347	1437.53	551	1438	1439	588	1439	19	1433	1221	1433		
597	1440	603	1435	1093	1434	1153	1434	1661	1433.9	1435	1432.3	1442		
942	1436	982	1435	1093	1434	1153	1434	1661	1433.9	1435	1432.3	1442		
1720	1433.7	1837	1433.8	1956	1434	1959	1435	2146	1435	2804	1436	1572		
2144	1434	2220	1434	2435	1435	2604	1436	2736	1437	2870	1436	1572		
2921	1438	3119	1439	3200	1440	3240	1441	3260	1441	3260	1436	1572		
3273	1440	3277	1439	3284	1440	3286	1441	3303	1441	3303	1436	1572		
3361	1446.9	3417	1441	3572	1442	3638	1443					1572		
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	982	2493	777.6	416.6	560.2								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	880	2369	2493	777.6	416.6	560.2	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 1765														
INPUT														
Description:														
Station	Elevation	Data	num=	25	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	347.4	1437.53	606	1436	904	1435	1240	1434					
1623	1433	1658	1432.5	1685	1433	1721	1433.2	1830	1433.3					
1960	1432.9	2020	1432.9	2079	1432.8	2220	1433	2443	1434					
2663	1435	2826	1436	3018	1437	3179	1438	3258	1437					
3262	1437	3267	1438	3281	1438	3380	1439	3769	1439.9					
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	904	2663	450.8	295.6	622.5								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	904	2663	2663	450.8	295.6	622.5	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 17470														
INPUT														
Description:														
Station	Elevation	Data	num=	23	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	1303	1437.53	567	1436	880	1434	1406	1433					
1618	1432.8	1677	1432.4	1786	1432.5	1883	1433	1895	1434					
1906	1434	1911	1433	1943	1432.7	2091	1433	2369	1434					
3116	1437	3154	1438	3172	1438	3187	1437	3209	1436					
3214	1436	3217	1437	3235	1437.5									
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	880	2369	526.9	479.1	600.3								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	880	2369	2369	526.9	479.1	600.3	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 17120														
INPUT														
Description:														
Station	Elevation	Data	num=	22	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	347	1437	521	1437	551	1438	1439	588	1439	19	1433		
597	1440	603	1440	604	1439	747	1438	912	1437	98	1435	1223		
942	1436	982	1435	1093	1434	1153	1434	1661	1433.9	1435	1432.3	1442		
1720	1433.7	1837	1433.8	1956	1434	1959	1435	2146	1435	2804	1436	1572		
2144	1434	2220	1434	2435	1435	2604	1436	2736	1437	2870	1436	1572		
2921	1438	3119	1439	3200	1440	3240	1441	3260	1441	3260	1436	1572		
3273	1440	3277	1439	3284	1440	3286	1441	3303	1441	3303	1436	1572		
3361	1446.9	3417	1441	3572	1442	3638	1443					1572		
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	982	2493	777.6	416.6	560.2								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	880	2369	2493	777.6	416.6	560.2	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 1765														
INPUT														
Description:														
Station	Elevation	Data	num=	25	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	347.4	1437.53	606	1436	904	1435	1240	1434					
1623	1433	1658	1432.5	1685	1433	1721	1433.2	1830	1433.3					
1960	1432.9	2020	1432.9	2079	1432.8	2220	1433	2443	1434					
2663	1435	2826	1436	3018	1437	3179	1438	3258	1437					
3262	1437	3267	1438	3281	1438	3380	1439	3769	1439.9					
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	904	2663	450.8	295.6	622.5								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	904	2663	2663	450.8	295.6	622.5	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 17470														
INPUT														
Description:														
Station	Elevation	Data	num=	23	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	1303	1437.53	567	1436	880	1434	1406	1433					
1618	1432.8	1677	1432.4	1786	1432.5	1883	1433	1895	1434					
1906	1434	1911	1433	1943	1432.7	2091	1433	2369	1434					
3116	1437	3154	1438	3172	1438	3187	1437	3209	1436					
3214	1436	3217	1437	3235	1437.5									
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	880	2369	526.9	479.1	600.3								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	880	2369	2369	526.9	479.1	600.3	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 17120														
INPUT														
Description:														
Station	Elevation	Data	num=	22	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	347	1437	521	1437	551	1438	1439	588	1439	19	1433		
597	1440	603	1440	604	1439	747	1438	912	1437	98	1435	1223		
942	1436	982	1435	1093	1434	1153	1434	1661	1433.9	1435	1432.3	1442		
1720	1433.7	1837	1433.8	1956	1434	1959	1435	2146	1435	2804	1436	1572		
2144	1434	2220	1434	2435	1435	2604	1436	2736	1437	2870	1436	1572		
2921	1438	3119	1439	3200	1440	3240	1441	3260	1441	3260	1436	1572		
3273	1440	3277	1439	3284	1440	3286	1441	3303	1441	3303	1436	1572		
3361	1446.9	3417	1441	3572	1442	3638	1443					1572		
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	982	2493	777.6	416.6	560.2								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	880	2369	2493	777.6	416.6	560.2	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 1765														
INPUT														
Description:														
Station	Elevation	Data	num=	25	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	347.4	1437.53	606	1436	904	1435	1240	1434					
1623	1433	1658	1432.5	1685	1433	1721	1433.2	1830	1433.3					
1960	1432.9	2020	1432.9	2079	1432.8	2220	1433	2443	1434					
2663	1435	2826	1436	3018	1437	3179	1438	3258	1437					
3262	1437	3267	1438	3281	1438	3380	1439	3769	1439.9					
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	904	2663	450.8	295.6	622.5								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	904	2663	2663	450.8	295.6	622.5	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 17470														
INPUT														
Description:														
Station	Elevation	Data	num=	23	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	1303	1437.53	567	1436	880	1434	1406	1433					
1618	1432.8	1677	1432.4	1786	1432.5	1883	1433	1895	1434					
1906	1434	1911	1433	1943	1432.7	2091	1433	2369	1434					
3116	1437	3154	1438	3172	1438	3187	1437	3209	1436					
3214	1436	3217	1437	3235	1437.5									
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	880	2369	526.9	479.1	600.3								
CROSS SECTION														
Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.						
	880	2369	2369	526.9	479.1	600.3	.1	.3						
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Upstream														
RS: 17120														
INPUT														
Description:														
Station	Elevation	Data	num=	22	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1441.53	347	1437	521	1437	551	1438	1439	588	1439	19	1433		
597	1440	603	1440	604	1439	747	1438	912	1437	98	1435	1223		
942	1436	982	1435	1093	1434	1153	1434	1661	1433.9	1435	1432.3	1442		
1720	1433.7	1837	1433.8	1956	1434	1959	1435	2146	1435	2804	1436	1572		
2144	1434	2220	1434	2435	1435	2604	1436	2736	1437	2870	1436	1572		
2921	1438	3119	1439	3200	1440	3240	1441	3260	1441	3260	1436	1572		
3273	1440	3277	1439	3284	1440	3286	1441	3303	1441	3303	1436	1572		
3361	1446.9	3417	1441	3572	1442	3638	1443					1572		
Manning's n Values														
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.03	982	2493	777.6	416.6	560.2								
CROSS SECTION														

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1434	251	1433	517	1432	1011	1431.4	1073	1431.3
1193	1431.2	1286	1431	1320	1430.5	1380	1430.2	1495	1430
1320	1431.6	1431	1431	1495	1429.8	1588	1429.2	1678	1429.1
2032	1431	2042	1431	2644	1432	2646	1433	2659	1433.2
2079	1433	4260	1437.53						
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	1011	.03	1873	.03				
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
1011	1873					740	550	800	.1

CROSS SECTION

RIVER: Menifee Valley
 REACH: Upstream

RS: 15265

INPUT

Description: Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1437	46	1436	232	1435	488	1434	670	1433
918	1432	1110	1431	1225	1430.6	1329	1430.5	1460	1431
1551	1431.3	1888	1431	2646	1431	2688	1431	2693	1432
2703	1432	2746	1431	2751	1430	2755	1431	2772	1431.8
3800	1433.53	4500	1437.53						
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	918	.03	2693	.03				

Blocked Obstructions									
Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L
238	241	1435	259	262	1435				
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
918	2693					685	700	775	.1

CROSS SECTION

RIVER: Menifee Valley
 REACH: Upstream

RS: 15000

INPUT

Description: Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1441.53	450	1437.53	1150	1433.53	1400	1432.53	1623	1430.5
1850	1431.03	2200	1431.03	2400	1430.73	2680	1430.53	3266.48	1431.2
4450	1432.53	4860	1437.53	5165	1441.53				
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2200	.035	3266.48	.035				

Blocked Obstructions									
Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
2200	3206.48					505	405	377	.1

CROSS SECTION

RIVER: Menifee Valley
 REACH: Upstream

RS: 14500

INPUT

Description: Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1441.53	455	1437.53	908	1433.53	1220	1432.03	1576	1431.03
1589	1429.8	2000	1430.53	2400	1429.53	2570	1429.53	3010	1430.53
4235	1432.53	4490	1433.53	4820	1437.53	5090	1441.53		
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2200	.035	3266.48	.035				

Blocked Obstructions									
Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
2200	3206.48					505	405	377	.1

Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2000	.035	3010	.035				
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
2000	3010					497	399	338	.1

CROSS SECTION

RIVER: Menifee Valley
 REACH: Upstream

RS: 14000

INPUT

Description: Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1441.53	212	1437.53	609.9	1433.53	1295.8	1433.93	1405	1429.4
2065.6	1429.53	2133.6	1430.03	2291.4	1429.532	2291.6	1429.53	2585.5	1429.23
3017.4	1428.53	3013.1	1429.53	4175	1432.53	4375	1433.53	4652.9	1437.53
4938.8	1441.53								
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2291.6	.035	3813.1	.035				

Blocked Obstructions									
Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L
238	241	1435	259	262	1435				
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
2291.6	3813.1					493.2	396.7	337.5	.1

CROSS SECTION

RIVER: Menifee Valley
 REACH: Upstream

RS: 13500

INPUT

Description: Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1441.53	154.4	1437.53	382.5	1433.53	395.1	1433.53	441.5	1433.53
483.5	1433.53	498.7	1433.53	603.8	1432.03	609.3	1431.53	1070.6	1430.53
1484.5	1429.53	1550.6	1428.53	1848.5	1428.53	1850.6	1428.53	1850.6	1428.53
1850.7	1429.53	2157.3	1428.73	2593.8	1429.03	2932.5	1429.53	3066.7	1429.53
3693.7	1429.53	3982.5	1432.53	4170.9	1433.53	4441.6	1437.53	4664	1441.53
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1676.1	.035	2593.8	.035				

Blocked Obstructions									
Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
1676.1	2593.8					553.1	532.6	497	.1

CROSS SECTION

RIVER: Menifee Valley
 REACH: Upstream

RS: 13045

INPUT

Description: Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1441.5	175	1437.5	412	1433.5	912	1431.6	1110	1430.1
1318	1428.6	1438	1428.5	1760	1428.5	1836	1428.2	2192	1428.3
2332	1428.2	2539	1427.9	2750	1427.9	2970	1428.1	3101	1427.8
3321	1428.1	3534	1429.5	4150	1433.5	4426	1437.5	4433	1441.5
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1676.1	.035	2593.8	.035				

Blocked Obstructions									
Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
1676.1	2593.8					553.1	532.6	497	.1

[illegible]

RIVER: Menifee Valley
REACH: 10500 - 10000
RS: 10000

INPUT
Description:

[illegible]

1426.2	2411	1426	2319	1425.5	2000	1425.5	1802	1425.5	1556	1425.5	1126	1428.7	472	1426.4	493	1427.3	703	1426.3	1013	1426.7	1113	1426.5	1147	1425.5	1426.2
--------	------	------	------	--------	------	--------	------	--------	------	--------	------	--------	-----	--------	-----	--------	-----	--------	------	--------	------	--------	------	--------	--------

Manning's n	Stations	Values	num=	3
Sta	n	Val	Sta	n
Val			Sta	n

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	1397	2411		0	0		.1	.3

Inertive Flow	Sta		Elev Permanent T
	L	R	
	0	700	1430

CROSS SECTION

RIVER: Menifee Valley
REACH: split to Lake "C" RS: 10995

INPUT
Description:

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		
3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100			
4	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84</																				

Manning's n	num=	3
Sta	Sta	Sta
n	n	n
Val	Val	Val

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	48.3	186.5		67	86		.3	.5

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C" RS: 10940

INPUT

Description:									
Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1433.5	7.6	1433	9.6	1432	13.6	1430	23.6	1425
25.6	1424	26.2	1422.8	27.2	1422.8	31.5	1419	47.5	1415
62.5	1410	65.2	1409	110	1409	113.8	1410	127.7	1415
143.7	1419	148.2	1422.8	149.2	1422.8	168	1423	182.6	1424
184.6	1425	194.6	1430	196.6	1431	212.3	1431		
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	27.2	.03	148.2	.03				
Bank Sta: 27.2 148.2									
Lengths: Left Channel Right									
Ineffective Flow num= 1									
Sta L	Sta R	Elev	num	Coeff	Contr.	Expan.			
26.2	149.2	1422.4	T			.3			

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C" RS: 10930

INPUT

Description:									
Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1433.6	22.3	1433	26.2	1431	30.2	1429	36.3	1426
40.2	1424	41.2	1422.8	42.2	1422.8	46.4	1419	54.4	1417
62.4	1415	77.4	1410	92.4	1400	137.4	1390	152.4	1385
164.5	1381	201.9	1381	213.9	1385	243.6	1395	273.6	1465
303.9	1415	307.8	1416	320	1419	324	1422.8	325	1422.8
337	1423	343.2	1424	345.3	1425	351.2	1428	355.3	1430
357.3	1431	382.6	1431						
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	42.2	.03	324	.03				
Bank Sta: 42.2 324									
Lengths: Left Channel Right									
Ineffective Flow num= 1									
Sta L	Sta R	Elev	num	Coeff	Contr.	Expan.			
382.6	1422.4	T			.1	.3			

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C" RS: 10920

INPUT

Description:									
Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1434.5	25.5	1434	33.5	1430	44.5	1425	45.5	1424
46.5	1422.8	47.5	1422.8	51.6	1419	63.5	1416	67.5	1415
157.6	1385	169.6	1381	209.6	1381	221.5	1385	311.6	1415
315.7	1416	327.7	1419	331.8	1422.8	332.8	1422.8	348.1	1423
358.2	1424	366.2	1425	370.2	1430	372.2	1431	407.5	1432
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	382.6	1422.4	T					

Sta n Val Sta n Val Sta n Val
0 .03 47.5 .03 331.8 .03

Bank Sta: Left Right Lengths: Left Channel Right
47.5 331.8 318 261

Ineffective Flow num= 1
Sta L Sta R Elev Permanent

0 450 1422.4 T

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C" RS: 10910

INPUT

Description:									
Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1436.6	31.5	1436	43.5	1430	53.5	1425	55.5	1424
56.6	1422.8	57.6	1422.8	61.7	1419	73.7	1416	77.7	1415
168.3	1385	180	1381	201.9	1381	213.9	1385	303.9	1415
307.9	1416	319.8	1419	324.4	1422.8	325.4	1422.8	336.8	1423
342.7	1424	360.8	1433	384.7	1433.3				
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	57.6	.03	324.4	.03				
Bank Sta: 57.6 324.4									
Lengths: Left Channel Right									
Ineffective Flow num= 1									
Sta L	Sta R	Elev	num	Coeff	Contr.	Expan.			
400	1422.4	T			.1	.3			

Sta n Val Sta n Val Sta n Val
0 .03 57.6 .03 324.4 .03

Bank Sta: Left Right Lengths: Left Channel Right
57.6 324.4 144 183

Ineffective Flow num= 1
Sta L Sta R Elev Permanent

0 400 1422.4 T

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C" RS: 10900

INPUT

Description:									
Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1437.8	33.3	1437	43.3	1432	53.3	1427	58.3	1425
23.3	1430	33.3	1425	35.3	1424	36.7	1422.8	37.7	1422.8
41.5	1419	57.4	1415	72.5	1410	80.4	1409	143.5	1409
146.3	1419	149.3	1411	161.3	1415	177.3	1419	181.7	1422.8
182.7	1422.8	210.4	1423	239.5	1424.1	249.9	1425	259.9	1430
267.9	1434	269.6	1434.8	284.1	1434.7				
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	37.7	.03	181.7	.03				
Bank Sta: 37.7 181.7									
Lengths: Left Channel Right									
Ineffective Flow num= 1									
Sta L	Sta R	Elev	num	Coeff	Contr.	Expan.			
37.7	181.7	1422.4	T			.1	.3		

Sta n Val Sta n Val Sta n Val
0 .03 37.7 .03 181.7 .03

Bank Sta: Left Right Lengths: Left Channel Right
37.7 181.7 87 176

Ineffective Flow num= 1
Sta L Sta R Elev Permanent

37.7 181.7 1422.4 T

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C" RS: 10880

INPUT

Description:									
Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1434.5	25.5	1434	33.5	1430	44.5	1425	45.5	1424
46.5	1422.8	47.5	1422.8	51.6	1419	63.5	1416	67.5	1415
157.6	1385	169.6	1381	209.6	1381	221.5	1385	311.6	1415
315.7	1416	327.7	1419	331.8	1422.8	332.8	1422.8	348.1	1423
358.2	1424	366.2	1425	370.2	1430	372.2	1431	407.5	1432
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	382.6	1422.4	T					

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1437.2 11.7 1437.3 12.2 1437 14.3 1436 16.3 1435
26.3 1439 36.3 1425 46.3 1423 103.5 1422.4 105.8 1422.3
15.6 1423 16.2 1422.4 16.8 1423 179.4 1424 181.5 1425
191.5 1430 199.6 1434 206.6 1434.5 221.6 1434.4

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 105.8 .03 145.8 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
105.8 145.8 1 87 58 65 .3 .5

Ineffective Flow num= 1
Sta L Sta R Elev Permanent
0 58 1432 T

CROSS SECTION

RIVER: Menifee Valley RS: 10870
REACH: Split to Lake "C

INPUT

Description: num= 12
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev

0 1437 4 1435 14 1430 24 1425 28 1423
30.5 1422 76.5 1422 78 1423 82 1425 92 1430
100 1434 102 1435

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 30.5 .03 76.5 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
30.5 76.5 2 62 62 62 .3 .5

Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 31 1432 T
76 102 1432 T

CULVERT

RIVER: Menifee Valley RS: 10860
REACH: Split to Lake "C

INPUT

Description: (2) -10'X6.5' ARCH & (1) -20'X9.5' ARCH CONCRETE CULVERTS AT

STARRING LANE num= 3
Distance from Upstream XS = 54
Deck/Roadway Width = 54
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates num= 6

Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 1435 31.5 1434.9 42.5 1434.8
63.5 1434.7 74.5 1434.6 105.5 1434.2

Upstream Bridge Cross Section Data

Station Elevation Data num= 12
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1437 4 1435 14 1430 24 1425 28 1423
30.5 1422 76.5 1422 78 1423 82 1425 92 1430
100 1434 102 1435

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 30.5 .03 76.5 .03

Bank Sta: Left Right Coeff Contr. Expan.

Ineffective Flow num= 2 .3 .5
Sta L Sta R Elev Permanent
0 102 1432 T

Downstream Deck/Roadway Coordinates num= 6
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 1435 34 1434.9 45 1434.8
66 1434.7 77 1434.6 108 1434.2

Downstream Bridge Cross Section Data num= 18
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1437 2 1436 4 1435 6 1434 8.6 1433
11 1432 13 1431 15 1430 25.4 1425 27.7 1424
31.7 1422 32.5 1422 77.5 1422 78.5 1422 80.5 1423
84.5 1425 94.5 1430 104.5 1435

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 31.7 .03 78.5 .03

Bank Sta: Left Right Coeff Contr. Expan.
31.7 78.5 2 .3 .5

Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 34 1432 T
78 104.5 1432 T

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = 1434.2
Elevation at which weir flow begins = 1434.2
Energy head used in spillway design =
Spillway height used in design = Broad Crested
Weir crest shape =

Number of Culverts = 2

Culvert Name Shape Rise Span
STARRING LN Conspan Arch 6.5 10
FHWA Chart # 69- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss
Coef 1.5 56 .014 .014 0 .5 1

Number of Barrels = 2
Upstream Elevation = 1422.2
Centerline Stations
Sta. Sta.
37 69
Downstream Elevation = 1422.1
Centerline Stations
Sta. Sta.
39.5 71.5

Culvert Name Shape Rise Span
STARRING LN Conspan Arch 9.5 20
FHWA Chart # 69- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss
Coef 1.5 56 .014 .014 0 .5 1

Upstream Elevation = 1422.2
Centerline Station = 53
Downstream Elevation = 1422.1
Centerline Station = 55.5

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10850

INPUT

Description:					num= 18				
Station	Elevation	Data	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1437	2	1436	4	1435	6	1434	8.6	1433
11	1432	13	1431	15	1430	25.4	1425	27.7	1424
31.7	1422	32.5	1422	77.5	1422	78.5	1422	80.5	1423
84.5	1425	94.5	1425	1430	104.5	1435			
Manning's n Values					num= 3				
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	31.7	.03	78.5	.03	50	45	51	
Bank Sta: Left Right Lengths: Left Channel Right					Coeff Contr. Expan.				
31.7	78.5	78.5			.3	.5			
Ineffective Flow num= 2									
Sta L	Sta R	Elev	Permanent						
0	34	1432	T						
78	104.5	1432	T						

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10845

INPUT

Description:					num= 16				
Station	Elevation	Data	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1437.4	25.6	1437.7	27	1437	29	1436	31	1435
41	1430	51	1425	55	1423	55.5	1422.7	87.4	1422
112.8	1422	203.5	1423	207.5	1425	217.5	1430	225.7	1434
227	1434.7								
Manning's n Values					num= 3				
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	55.5	.03	203.5	.03	68	59	61	
Bank Sta: Left Right Lengths: Left Channel Right					Coeff Contr. Expan.				
55.5	203.5	203.5			.3	.5			
Ineffective Flow num= 2									
Sta L	Sta R	Elev	Permanent						
0	80	1432	T						
150	227	1432	T						

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10840

INPUT

Description:					num= 10				
Station	Elevation	Data	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1433	2	1432	6	1430	16	1425	22	1421.8
81.5	1421.8	83.5	1423	87.5	1425	97.5	1430	104.5	1434
Manning's n Values					num= 3				
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	22	.03	81.5	.03	3			
Bank Sta: Left Right Lengths: Left Channel Right					Coeff Contr. Expan.				

Ineffective Flow num= 22 81.5 num= 2 105 105 105 .3 .5

Sta L Sta R Elev Permanent
0 1432 T
79 104.5 1432 T

CULVERT

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10830

INPUT

Description: (2) -10'X6.5' ARCH & (1) -20'X9.5' ARCH CONCRETE CULVERTS AT TRES
LAGOS DR.
Distance from Upstream XS = 4
Deck/Roadway Width = 96
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates

num= 6
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
66.5 1434.1 34.5 1434.1 108.5 1433.8

Upstream Bridge Cross Section Data num= 10

Station Elevation Data num= 10
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1433 2 1432 6 1430 16 1425 22 1421.8
81.5 1421.8 83.5 1423 87.5 1425 97.5 1430 104.5 1434

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 22 .03 81.5 .03

Bank Sta: Left Right Coeff Contr. Expan.
Ineffective Flow num= 2 .3 .5

Sta L Sta R Elev Permanent
0 33 1432 T
79 104.5 1432 T

Downstream Deck/Roadway Coordinates num= 6

Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 1434.1 31.1 1434.1 105.1 1433.8
63.1 1434.1 74.1 1434

Downstream Bridge Cross Section Data num= 11

Station Elevation Data num= 11
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1433 2 1432 6 1430 16 1425 22 1421.6
81.7 1421.6 83.7 1423 87.7 1425 97.7 1430 103.7 1433
105.7 1434

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 22 .03 81.7 .03

Bank Sta: Left Right Coeff Contr. Expan.
Ineffective Flow num= 2 .1 .3

Sta L Sta R Elev Permanent
0 31 1432 T
74 105.7 1432 T

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 1434.1
Energy head used in spillway design =
Spillway height used in design =

Description: This Cross-Section has been revised: the same bottom width as the CLOMR, but 4:1 side slope upto the elevation of 1430, proposed street. this is for LOMR without culvert at this location.

Description: Last Cross-section of Reach: split to Rancon														
INPUT														
Station Elevation Data			num=			22			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431.5	3	1431.5	15	1431.9	16.9	1431	18.9	1430	28.9	1425	1430	28.9	1425
55	1410	70	1410	81.5	1410	106.5	1415	122.5	1419	1419	1419	1419	42.7	1418
127	1422	128	1422	149.5	1431.8									
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	36	.03	127	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	160	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: Split to Rancon RS: 9470														
INPUT														
Station Elevation Data			num=			12			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1430.3	13.5	1430	33.5	1422	38	1419	53.5	1415	124.5	1422			
68	1410	89	1410	104	1415	120	1419	124.5	1422					
141	1430.9	160	1430.8											
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	33.5	.03	124.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	160	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9460														
INPUT														
Station Elevation Data			num=			14			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54	1415	68.5	1410	88	1410	103	1415	119	1419					
123.5	1422	124.5	1422	145	1430	153	1429.8							
Manning's n Values			num=			3			Sta			Elev		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta
0	.03	34.5	.03	123.5	.03									
Bank Sta: Left			Right			Lengths: Left			Channel			Right		
Sta L	Sta R	Elev	num=	1										
0	153	1421.6	Permanent											
CROSS SECTION														
RIVER: Menifee Valley														
REACH: split to Rancon RS: 9450														
INPUT														
Station Elevation Data			num=			11			Sta			Elev		
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	1431	11	1431	33.5	1422	38	1419	53.5	1415	124.5	1422			
54														

RIVER: Menifee Valley									
REACH: Flow to Lakeside									
RS: 9500									
INPUT									
Description: Downstream of Street "B"									
Station Elevation Data num= 11									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1432	13.2	1431	15.6	1430	27.6	1425	34.7	1422.8
458	1422.8	458.5	1423	460.5	1424	462.4	1425	472.4	1430
474.4	1431								
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	34.7	.035	458	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
34.7	458			0	0	0			
Ineffective Flow num= 2									
Sta	L	Sta	R	Elev	Permanent				
69	373	1430	T						
424	474.4	1430	T						
CROSS SECTION									
RIVER: Menifee Valley									
REACH: THROUGH LAKES									
RS: 9400									
INPUT									
Description:									
Station Elevation Data num= 22									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1431.4	66	1431	82	1422	85	1422	90	1419
106	1415	122	1410	153	1400	297	1352	355	1352
385	1352	435	1369	617	1410	628	1415	645	1419
649	1422	680	1423	682	1423.5	700	1428	800	1429
823	1434	905	1434						
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	85	.035	649	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
649	85			410	250	150			
Ineffective Flow num= 1									
Sta	L	Sta	R	Elev	Permanent				
0	800	1421.6	T						
CROSS SECTION									
RIVER: Menifee Valley									
REACH: THROUGH LAKES									
RS: 9200									
INPUT									
Description:									
Station Elevation Data num= 20									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1430.5	40	1431	75	1431	90	1422	100	1422
104	1419	120	1415	136	1410	389	1352	358	1352
381	1360	530	1410	547	1415	564	1419	568	1422
610	1423	624	1428	724	1429	735	1433	760	1433.7
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	100	.035	568	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
100	568			285	360	390			
CROSS SECTION									
RIVER: Menifee Valley									
REACH: THROUGH LAKES									
RS: 9000									
INPUT									
Description:									
Station Elevation Data num= 21									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1430	137	1431	156	1431	185	1423	195	1422
199	1419	214	1415	230	1410	403	1352	500	1352
595	1352	620	1360	770	1410	784	1415	803	1419
807	1422	839	1422	853	1428	952	1429	959	1430
1011	1431.5								
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	195	.035	807	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
195	807			130	190	310			
Ineffective Flow num= 1									
Sta	L	Sta	R	Elev	Permanent				
0	1011	1421.6	T						
CROSS SECTION									
RIVER: Menifee Valley									
REACH: THROUGH LAKES									
RS: 8700									
INPUT									
Description:									
Station Elevation Data num= 41									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1430	45.2	1432.4	134.5	1432.1	141.4	1428.6	154.3	1424.4
163.9	1423	166.9	1422	167	1420	187.1	1415	202.1	1410
232.1	1400	262.3	1390	292.2	1380	322.1	1370	331.1	1367
376.1	1352	407.9	1352	452.9	1367	463.4	1370	496.7	1380
530.9	1390	565.3	1400	595.3	1410	632.4	1415	684.3	1420
684.4	1422	714.8	1422.1	733.5	1425	767.6	1430	768.5	1430.1
905	1430.7	924.2	1430	928.4	1430	956.8	1430.6	989.4	1430
1009	1431	1010.4	1431.4	1041.9	1431.4	1043.5	1431.8	1115.4	1431.8
1121.4	1431.9								
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	166.9	.035	684.4	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
166.9	684.4			125	150	210			
Ineffective Flow num= 1									
Sta	L	Sta	R	Elev	Permanent				
0	1120	1421.6	T						
CROSS SECTION									
RIVER: Menifee Valley									
REACH: THROUGH LAKES									
RS: 8600									
INPUT									
Description:									
Station Elevation Data num= 34									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1431.2	11.9	1431.8	100	1431.8	106.4	1428.6	107.1	1428.4
Manning's n Values num= 34									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11.9	.035	100	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
11.9	100			34	100	106.4	1428.6	107.1	1428.4
CROSS SECTION									

116.7 1427.1 119.8 1423 132 1422 132.1 1420 152.2 1415
167.3 1410 197.4 1400 227.6 1390 257.7 1380 306.2 1373
356.7 1390 392.2 1390 532.3 1400 548.4 1410 593.5 1415
526.2 1420 542.0 1420 857.4 1430 911.7 1435 949.2 1435
937.2 1431 989.1 1431 997.1 1431 1017.5 1431.1

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val

0 .035 132 .035 534.3 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
132 534.3 50 70 .1 .3

Ineffective Flow num= 3

Sta L Sta R Elev Permanent

0 132 1430 T

495 1024 1430 T

132 495 1421.0 T

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES RS: 8550

INPUT

Description:

Station Elevation Data num= 30

Sta Elev Sta Elev Sta Elev

0 1431.5 24.7 1431.5 27.2 1431 38.8 1429.5 58.8 1422

58.9 1420 62.9 1419 265.7 1415 141.5 140 124.5 1400

167.0 1410 170.0 1410 183.0 1400 183.0 1400 183.0 1400

35.9 1410 37.2 1415 397.7 1420 397.9 1422 423 1422

442.8 1425 456.5 1428.5 583 1429 816.3 1430 843.3 1431

862.6 1431 881.4 1431 907.4 1431 928.8 1431 949 1431

Manning's n Values num= 3

Sta n Val Sta n Val Sta n Val

0 .035 58.8 .035 423 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
58.8 423 130 220 .3 .5

Ineffective Flow num= 3

Sta L Sta R Elev Permanent

0 1430 T

35 95 1430 T

78 358 1421.0 T

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES RS: 8590

INPUT

Description: Upstream of Laguna Vista Dr.

Station Elevation Data num= 29

Sta Elev Sta Elev Sta Elev

0 1435 2 1434 4 1438 16 1432 18 1431

10 1427 12 1426 14 1425 16 1424 18 1423

20 1425 22 1424 24 1422 26 1417.5 28 1417.5

139 1422 149 1423 153 1424 153 1425 155 1426

157 1427 159 1428 161 1429 163 1430 165 1431

167 1432 169 1433 171 1434 173 1435

Manning's n Values num= 3

Sta n Val Sta n Val Sta n Val

0 .035 35 .035 139 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
35 139 112 110 .3 .5

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 1434.6
Weir crest shape = Broad Crested
Weir crest shape = Broad Crested
Number of Culverts = 2

Culvert Name Shape Rise Span
LAGUNA VIS 2conspan Arch 13.5 32
FHWA Chart # 69- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss
Coef 18 74 .014 .014 0 .5 1

Number of Barrels = 2
Upstream Elevation = 1417.5
Centerline Stations
Sta. Sta.
51 121.34
Downstream Elevation = 1417.5
Centerline Stations
Sta. Sta.
58 128.34

Culvert Name Shape Rise Span
LAGUNA VIS 1conspan Arch 14.5 36
FHWA Chart # 69- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss
Coef 18 74 .014 .014 0 .5 1

Upstream Elevation = 1417.5
Centerline Station = 86.17
Downstream Elevation = 1417.5
Centerline Station = 93.17

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 8100

INPUT
Description: Downstream of Laguna Vista Dr.
Station Elevation Data num= 19
Sta Elev Sta Elev Sta Elev Sta Elev
0 1435 2 1434 6 1432 10 1430 14 1428
20 1425 24 1423 42 1422 42 1417.5 146 1417.5
146 1422 163.4 1423 165.4 1424 167.4 1425 173.4 1428
177.6 1430 181.6 1432 188.8 1435 191 1436

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .035 42 .035 146 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Sta L Sta R Elev num= 2
Ineffective Flow Permanent
Sta L Sta R Elev num= 2
151 191 1435 T

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES RS: 7900

INPUT
Description: Downstream of Laguna Vista Dr.
Station Elevation Data num= 20
Sta Elev Sta Elev Sta Elev Sta Elev
0 1433.5 138 1433 160 1424 169 1422
190 1419 209 1415 221 1410 344 1370 353 1367
467 1367 477 1370 600 1410 612 1415 635 1419
639 1422 656 1423 666 1424 680 1430 770 1430

Manning's n Values num= 3
Sta n Val Sta n Val
0 .035 186 .035 639 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Sta L Sta R Elev num= 3
Ineffective Flow Permanent
Sta L Sta R Elev num= 3
598 770 1430 T
410 598 1421.6 T

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 7700

INPUT
Description: Downstream of Laguna Vista Dr.
Station Elevation Data num= 21
Sta Elev Sta Elev Sta Elev Sta Elev
0 1433 93 1432 185 1432 204 1423
236 1422 241 1419 260 1415 273 1410 397 1370
408 1367 498 1367 509 1370 629 1410 642 1415
658 1419 662 1422 680 1423 690 1424 705 1430
800 1429.4

Manning's n Values num= 3
Sta n Val Sta n Val
0 .035 236 .035 662 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Sta L Sta R Elev num= 3
Ineffective Flow Permanent
Sta L Sta R Elev num= 3
632 1000 1430 T
360 632 1421.6 T

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 7500

INPUT
Description: Downstream of Laguna Vista Dr.
Station Elevation Data num= 20
Sta Elev Sta Elev Sta Elev Sta Elev
0 1431.3 106 1432 131 1432 151 1424
190 1422 194 1419 210 1415 228 1410 346 1370
358 1367 432 1367 442 1370 560 1410 575 1415
591 1419 595 1422 613 1423 628 1428 685 1428

Manning's n Values num= 3
Sta n Val Sta n Val
0 .035 190 .035 595 .035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Sta L Sta R Elev num= 3
Ineffective Flow Permanent
Sta L Sta R Elev num= 3
632 1000 1430 T
360 632 1421.6 T

CROSS SECTION

[illegible]

RIVER: Menifee Valley REACH: THROUGH LAKES										RS: 6688									
INPUT																			
Description:																			
Station		Elevation		Data		num= 15		Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev				
620	1426.3	650	1426.6	710	1426	785	1425	817	1424	840	1423	860	1422.5	882.1	1421.2				
840	1423	860	1422.5	882.1	1421.2	1016.9	1421.2	1019	1423	1030	1425	1047	1426	1059	1428				
Manning's n Values																			
Sta		n Val		Sta		n Val		Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val				
620	.035	650	.02	1059	.035														
Bank Sta:		Left	Right	Lengths:		Left Channel	Right	170	170	Coeff Contr.		170	170	Expan. .3					
CROSS SECTION																			
Description:																			
Station		Elevation		Data		num= 15		Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev				
740	1427	760	1427.4	785	1427	895	1426	820	1425	833	1424	865	1422	918	1423				
1081	1422	1107	1423	1129	1428	1133	1428	1133.1	1431										
Manning's n Values																			
Sta		n Val		Sta		n Val		Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val				
740	.035	740	.02	1133	.035														
Bank Sta:		Left	Right	Lengths:		Left Channel	Right	329	329	Coeff Contr.		329	329	Expan. .3					
CROSS SECTION																			
Description:																			
Station		Elevation		Data		num= 33		Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev				
596	1428	606	1428	630	1429	630	1430	650	1430.2	678	1430	710	1426	726	1422				
732.8	1421.5	732.9	1419.1	738	1418.9	750	1416.5	759	1416.5	800	1404.7	800	1404.7	800	1404.7				
815	1401.4	850	1401.4	900	1402.1	900	1402.1	950	1401.9	1000	1401.2	1000	1401.2	1000	1401.2				
1060	1402	1079	1402	1100	1405.9	1100	1405.9	1150	1415	1172.9	1418.9	1172.9	1418.9	1172.9	1418.9				
1173.3	1419.1	1173.4	1421.5	1176	1422	1179	1423	1196	1423	1196	1424	1196	1423	1196	1424				
Manning's n Values																			
Sta		n Val		Sta		n Val		Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val				
596	.035	705	.03	1206	.035														
Bank Sta:		Left	Right	Lengths:		Left Channel	Right	363	363	Coeff Contr.		363	363	Expan. .3					
CROSS SECTION																			
Description:																			
Station		Elevation		Data		num= 27		Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev				
826	1428	826.1	1425	828	1425	831	1424	837	1424	837	1424	837	1424	837	1424				
852	1422	863.5	1421.43	863.6	1419.2	867.5	1418.9	900	1418.9	900	1418.9	900	1418.9	900	1418.9				
950	1404.5	958	1403.9	1000	1402.9	1018	1402.9	1050	1409.8	1050	1409.8	1050	1409.8	1050	1409.8				
1093	1418.9	1101	1419.34	1101.1	1421.35	1104	1422	1122	1422	1122	1422	1122	1422	1122	1422				
RIVER: Menifee Valley REACH: THROUGH LAKES										RS: 5110									
INPUT																			
Description:																			
Station		Elevation		Data		num= 27		Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev				
826	1428	826.1	1425	828	1425	831	1424	837	1424	837	1424	837	1424	837	1424				
852	1422	863.5	1421.43	863.6	1419.2	867.5	1418.9	900	1418.9	900	1418.9	900	1418.9	900	1418.9				
950	1404.5	958	1403.9	1000	1402.9	1018	1402.9	1050	1409.8	1050	1409.8	1050	1409.8	1050	1409.8				
1093	1418.9	1101	1419.34	1101.1	1421.35	1104	1422	1122	1422	1122	1422	1122	1422	1122	1422				

[illegible]

[illegible]

REACH: THROUGH LAKES RS: 2400

INPUT

Description:									
Station Elevation Data		num=		22					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
863.9	1431.864	1428	873	1426	876.5	1425			
881	1424	907.2	1421.4	968	1418.9	950	1411.5		
983	1405.7	1000	1405.7	1026	1410.2	1095.5	1418.9		
1096.8	1419.6	1096.9	1421.87	1100	1423	1116	1425		
1125	1428	1313	1428.7						

Manning's n Values

Sta	n Val	Sta	n Val
863.9	.035	864	.03
1125	.035		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
864	1125	67	67	67	67		.1	.3

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES

RS: 2333

INPUT

Description:									
Station Elevation Data		num=		24					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
853.9	1431.3	854	1428.3	857	1425	873	1422		
895.3	1421.3	895.4	1419.3	906.5	1418.9	928	1407.8		
900.9	1409.2	901.8	1409.2	918	1408.8	1006	1418.8		
1093.9	1419.8	1091.8	1421.5	1096	1422	1101.5	1423		
1113	1426	1121	1428	1153	1427	1168	1428		

Manning's n Values

Sta	n Val	Sta	n Val
853.9	.035	854	.03
1121	.035		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
854	1121	121	121	121	121		.1	.3

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES

RS: 2212

INPUT

Description:									
Station Elevation Data		num=		8					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1429.4	68	1428	160	1427.7	163	1421	213	1412
254	1421	264	1426.8	1120	1429.6				

Manning's n Values

Sta	n Val	Sta	n Val
0	.035	160	.015
160	.035	264	.035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
160	264	56	56	56	56		.3	.5

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES

RS: 2159

INPUT

Description:									
Station Elevation Data		num=		14					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428.9	878	1430.1	912	1430.1	954	1429.1	966	1428.4
976	1427.9	979	1427.9	979.1	1417.9	989.1	1417.9	989.2	1425.9
989.7	1425.9	989.8	1417.9	999.8	1417.9	999.9	1425.9	1000.3	1425.9
1000.4	1417.9	1010.4	1417.9	1010.5	1425.9	1011	1425.9	1011.1	1417.9
1021.1	1417.9	1021.2	1427.9	1024	1427.9	1027	1428.4	1062	1429.1
1072	1429.9	1092	1431	1119	1430	1180	1428.9	1197	1428.9
1241	1429.9	1252	1430.9						

Manning's n Values

Sta	n Val	Sta	n Val
868	.035	879	.015
1021.2	.035		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
868	979	1021.2	2	1	1		.3	.5

CROSS SECTION

REACH: THROUGH LAKES RS: 2156

INPUT

Description:									
Station Elevation Data		num=		14					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1429	531	1426.8	544	1426	557	1425	625	1425
661	1426	733.8	1427.7	734.5	1427.7	734.6	1421.25	816.2	1421.25
816.3	1427.7	817	1427.7	1036	1426.8	1033	1429.6		

Manning's n Values

Sta	n Val	Sta	n Val
0	.035	734.5	.015
1036	.035	1033	.035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
734.5	816.3	2	3.25	3.25	3.25		.3	.5

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES

RS: 2156

INPUT

Description:									
Station Elevation Data		num=		14					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1429	531	1426.8	544	1426	557	1425	625	1425
661	1426	736.2	1427.7	736.9	1427.7	737	1418	813.8	1418
813.9	1427.7	814.6	1427.7	1030	1426.8	1033	1429.6		

Manning's n Values

Sta	n Val	Sta	n Val
0	.035	736.9	.015
1030	.035	1033	.035

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
736.9	813.9	2	25.75	25.75	25.75		.3	.5

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES

RS: 2130

INPUT

Description:									
Station Elevation Data		num=		32					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428.9	878	1430.1	912	1430.1	954	1429.1	966	1428.4
976	1427.9	979	1427.9	979.1	1417.9	989.1	1417.9	989.2	1425.9
989.7	1425.9	989.8	1417.9	999.8	1417.9	999.9	1425.9	1000.3	1425.9
1000.4	1417.9	1010.4	1417.9	1010.5	1425.9	1011	1425.9	1011.1	1417.9
1021.1	1417.9	1021.2	1427.9	1024	1427.9	1027	1428.4	1062	1429.1
1072	1429.9	1092	1431	1119	1430	1180	1428.9	1197	1428.9
1241	1429.9	1252	1430.9						

Manning's n Values

Sta	n Val	Sta	n Val
868	.035	879	.015
1021.2	.035		

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
868	979	1021.2	2	1	1		.3	.5

CROSS SECTION

Selected Low Flow Methods = Energy

High Flow Method
Energy Only

Additional Bridge Parameters

Add Friction component to Momentum

Do not add Weight component to Momentum

Class 8 flow critical depth computations use critical depth

inside the bridge at the upstream end

Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 1937

INPUT

Description: This is a REPEATED section..

Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428	878	1429.2	912	1429.2	954	1428.2	966	1427.5
976	1427	979	1427	979.1	1417	989.1	1417	989.8	1417
999.8	1417	1000.4	1417	1010.4	1417	1011.1	1417	1021.1	1417
1021.2	1427	1024	1427	1027	1427.5	1062	1428.2	1072	1429
1092	1430.1	1119	1429.1	1180	1428	1197	1428	1241	1429
1252	1430								

Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
868	.035	979	.015	1021.2	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
979	1021.2	1	1	1	1				
Coeff Contr. Expan.									
						.3			.5

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 1936

INPUT

Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428	878	1429.2	912	1429.2	954	1428.2	966	1427.5
976	1427	979	1427	979.1	1417	989.1	1417	989.2	1417
989.7	1417	989.8	1417	999.8	1417	999.9	1417	1000.3	1417
1000.4	1417	1010.4	1417	1010.5	1417	1011	1417	1011.1	1417
1021.1	1417	1021.2	1427	1024	1427	1027	1427.5	1062	1428.2
1072	1429	1092	1430.1	1119	1429.1	1180	1428	1197	1428
1241	1429	1252	1430						

Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
868	.035	979	.015	1021.2	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
979	1021.2	1	1	1	1				
Coeff Contr. Expan.									
						.3			.5

Ineffective Flow

Sta L Sta R Elev Permanent

868 979 1429 F

1021.2 1252 1429 F

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 1926

INPUT

Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
862	1428	868	1429	874	1430	884	1431	894	1431
914	1430	921	1429	937	1428	944	1428	954	1427
959	1426	968	1425	976	1421	976	1417	1020	1417
1020	1422	1022	1423	1024	1424	1026	1425	1031	1426
1034	1427	1036	1428	1046	1428	1051	1428	1060	1429
1068	1430	1079	1431	1107	1431	1128	1430	1144	1429
1189	1428	1201	1428	1233	1429	1245	1430	1280	1431
1328	1430								

Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
862	.035	909	.03	1068	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
909	1068	1	1	1	1				
Coeff Contr. Expan.									
						.1			.3

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 1826

INPUT

Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428	878	1429	894	1428	904	1428	914	1428
931	1426	949	1429	954	1428	958	1427	962	1426
966	1425	968	1424	971	1423	976	1422	978	1421
981	1420	986	1419	990	1418	1000	1417.2	1009	1418
1012	1419	1017	1420	1020	1421	1024	1422	1027	1423
1035	1424	1043	1425	1047	1426	1051	1427	1058	1428
1063	1429	1064	1430	1079	1429	1081	1428	1083	1427
1141	1427	1143	1427	1146	1426	1159	1426	1163	1427
1167	1428	1173	1429	1181	1428	1190	1427	1196	1426
1202	1425	1209	1425	1216	1426	1222	1427	1229	1428
1256	1429	1281	1430						

Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
857	.035	900	.03	1056	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
906	1058	297	297	297	297				
Coeff Contr. Expan.									
						.1			.3

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 1529

INPUT

Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
831	1428	842	1427	865	1426	867	1425	866	1424
917	1423	927	1422	937	1421	952	1420	971	1419
989	1418	1000	1417.1	1010	1418	1015	1419	1021	1420
1027	1421	1061	1422	1135	1423	1179	1424	1210	1425
1235	1425	1268	1425	1285	1426	1295	1427	1304	1428
1312	1429	1318	1430						

Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
834	.035	834	.03	1304	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
834	1304	3	3	1304	3				
Coeff Contr. Expan.									
						.1			.3

Bank Sta.	Left	Right	Length:	Left Channel	Right	Coeff	Contr.	Expan.
834	1304			339	339		.1	.3
CROSS SECTION								
RIVER: Menifee Valley								
REACH: THROUGH LAKES								
RS: 1190								
INPUT								
Description:								
Station Elevation Data								
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
698	1429	722	1429	728	1430	748	1429	
757	1428	765	1427	765	1426	768	1425	
784	1424	787	1424	809	1425	831	1424	
935	1423	951	1424	964	1423	968	1422	
975	1420	980	1419	985	1418	988	1417	
1012	1417	1017	1418	1024	1419	1054	1420	
1118	1422	1135	1423	1150	1424	1159	1425	
1210	1427	1237	1428					
Manning's n Values								
Sta	n	Sta	n	Sta	n	Sta	n	
698	.035	757	.03	1237	.035			
Bank Sta: Left Right Lengths: Left Channel Right								
757	1237			400	400			
CROSS SECTION								
RIVER: Menifee Valley								
REACH: THROUGH LAKES								
RS: 790								
INPUT								
Description:								
Station Elevation Data								
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
729	1428	778	1428	784	1429	791	1428	
804	1426	806	1425	811	1425	828	1425	
844	1426	847	1427	862	1427	866	1426	
912	1426	927	1425	938	1424	947	1423	
963	1421	969	1420	977	1419	985	1418	
1000	1416	1008	1417	1015	1418	1019	1419	
1030	1421	1035	1432	1048	1423	1115	1424	
1125	1426	1129	1427	1134	1428			
Manning's n Values								
Sta	n	Sta	n	Sta	n	Sta	n	
729	.035	912	.03	1134	.035			
Bank Sta: Left Right Lengths: Left Channel Right								
912	1134			0	0			
SUMMARY OF MANNING'S N VALUES								
River: Menifee Valley								
Reach								
Upstream	22365			n1	n2	n3		
Upstream	21815							
Upstream	21265							
Upstream	20760							
Upstream	20445							
Upstream	20205							
Upstream	19710							
Upstream	19155							

THROUGH LAKES	6518	.035	.02	.035	Upstream	11000	0	0	0
THROUGH LAKES	6189	.035	.02	.035	10500 - 10000	10500	344	452	530
THROUGH LAKES	5912	.035	.02	.035	Split to Lake "C"	10000	0	0	0
THROUGH LAKES	5811	.035	.03	.035	Split to Lake "C"	10000	67	82	94
THROUGH LAKES	5472	.035	.03	.035	Split to Lake "C"	10000	53	52	51.5
THROUGH LAKES	5110	.035	.03	.035	Split to Lake "C"	10000	53	52	51.5
THROUGH LAKES	4836	.035	.03	.035	Split to Lake "C"	10000	82	128	169
THROUGH LAKES	4584	.035	.03	.035	Split to Lake "C"	10000	82	128	169
THROUGH LAKES	4449	.035	.03	.035	Split to Lake "C"	10000	249	175	170
THROUGH LAKES	4275	.035	.03	.035	Split to Lake "C"	10000	225	213	234
THROUGH LAKES	3990	.035	.03	.035	Split to Lake "C"	10000	318	261	205
THROUGH LAKES	3760	.035	.03	.035	Split to Lake "C"	10000	144	183	315
THROUGH LAKES	3370	.035	.03	.035	Split to Lake "C"	10000	87	176	196
THROUGH LAKES	3070	.035	.03	.035	Split to Lake "C"	10000	87	58	65
THROUGH LAKES	2810	.035	.03	.035	Split to Lake "C"	10000	62	62	62
THROUGH LAKES	2510	.035	.03	.035	Split to Lake "C"	10000	50	45	51
THROUGH LAKES	2497	.035	.03	.035	Split to Lake "C"	10000	66	59	61
THROUGH LAKES	2330	.035	.03	.035	Split to Lake "C"	10000	105	105	105
THROUGH LAKES	2122	.035	.03	.035	Split to Lake "C"	10000	105	105	105
THROUGH LAKES	2159	.035	.015	.035	Split to Lake "C"	10000	0	0	0
THROUGH LAKES	2156	.035	.015	.035	Split to Rancon	9600	139	125	125
THROUGH LAKES	2129	.035	.015	.035	Split to Rancon	9491	274	181	94
THROUGH LAKES	2033	.035	.015	.035	Split to Rancon	9490	200	200	200
THROUGH LAKES	1937	.035	.015	.035	Split to Rancon	9480	187	187	187
THROUGH LAKES	1936	.035	.015	.035	Split to Rancon	9470	155	155	155
THROUGH LAKES	1926	.035	.03	.035	Split to Rancon	9460	150	150	200
THROUGH LAKES	1826	.035	.03	.035	Split to Rancon	9450	0	0	0
THROUGH LAKES	1529	.035	.03	.035	Flow to Lakeside	9700	51	58	60
THROUGH LAKES	1190	.035	.03	.035	Flow to Lakeside	9600	56	60	61
THROUGH LAKES	790	.035	.03	.035	Flow to Lakeside	9500	0	0	0
					THROUGH LAKES	9400	410	250	150
					THROUGH LAKES	9200	425	250	150
					THROUGH LAKES	9000	130	100	310
					THROUGH LAKES	8700	125	150	210
					THROUGH LAKES	8600	50	50	70
					THROUGH LAKES	8550	130	120	220
					THROUGH LAKES	8500	112	111	110
					THROUGH LAKES	8200	343	237.5	246
					THROUGH LAKES	8100	200	150	100
					THROUGH LAKES	7900	170	175	180
					THROUGH LAKES	7700	245	190	135
					THROUGH LAKES	7500	330	220	120
					THROUGH LAKES	7200	340	185	75
					THROUGH LAKES	7100	75	200	320
					THROUGH LAKES	7000	1	1	1
					THROUGH LAKES	6950	169	169	169
					THROUGH LAKES	6850	50	50	50
					THROUGH LAKES	6750	170	170	170
					THROUGH LAKES	6688	329	329	329
					THROUGH LAKES	6518	277	277	277
					THROUGH LAKES	6189	191	191	191
					THROUGH LAKES	5912	248	248	248
					THROUGH LAKES	5721	363	363	363
					THROUGH LAKES	5473	274	274	274
					THROUGH LAKES	5110	252	252	252
					THROUGH LAKES	4836	135	135	135
					THROUGH LAKES	4584	174	174	174
					THROUGH LAKES	4449	205	205	205
					THROUGH LAKES	4275	200	200	200
					THROUGH LAKES	3990	330	330	330
					THROUGH LAKES	3760	300	300	300
					THROUGH LAKES	3370	260	260	260
					THROUGH LAKES	3070	200	200	200
					THROUGH LAKES	2810	113	113	113
					THROUGH LAKES	2510	97	97	97
					THROUGH LAKES	2497	67	67	67
					THROUGH LAKES	2400	121	121	121
					THROUGH LAKES	2333	56	56	56
					THROUGH LAKES	2212	3.25	3.25	3.25
					THROUGH LAKES	2159			

SUMMARY OF REACH LENGTHS

River: Menifee Valley

Reach	River Sta.	Left	Channel	Right
Upstream	22365	650	550	350
Upstream	21815	600	550	440
Upstream	21285	560	500	500
Upstream	20810	420	490	460
Upstream	20445	213.4	225.3	257.5
Upstream	20205	477	488.6	838.8
Upstream	19710	597.4	559.9	731.9
Upstream	19155	556.3	542.8	820
Upstream	18605	61	38	35
Upstream	18600	50	50	50
Upstream	18350	380	177	260
Upstream	18105	325	281.5	206.6
Upstream	17765	777.6	416.6	560.2
Upstream	17470	450.8	295.6	622.5
Upstream	17120	526.9	479.1	600.3
Upstream	16670	450	450	450
Upstream	16070	400	370	350
Upstream	15890	380	350	350
Upstream	15820	740	550	800
Upstream	15265	685	700	775
Upstream	15000	595	485	377
Upstream	14500	497	399	338
Upstream	14000	493.2	396.7	337.5
Upstream	13500	553.1	532.6	497
Upstream	13045	422	401	366
Upstream	13000	757	736	720
Upstream	12500	303	382	493
Upstream	12000	330	376	430
Upstream	11500	329	417	536

APPENDIX E

Interim Post-Project Condition HEC-RAS Analysis

HEC-RAS Plan: MV-Interim Profile: FEMA Q100

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Upstream	15000	FEMA Q100	679.00	1430.53	1431.35		1431.37	0.001678	1.16	592.23	1780.12	0.28
Upstream	14500	FEMA Q100	679.00	1429.53	1430.35		1430.39	0.003726	1.61	421.13	1168.64	0.41
Upstream	14000	FEMA Q100	679.00	1428.53	1430.31		1430.32	0.000048	0.34	2036.66	2414.59	0.05
Upstream	13500	FEMA Q100	679.00	1428.73	1430.30		1430.30	0.000026	0.24	2666.61	2360.34	0.04
Upstream	13045	FEMA Q100	679.00	1427.80	1430.30		1430.30	0.000005	0.16	4341.95	2224.43	0.02
Upstream	13000	FEMA Q100	679.00	1428.03	1430.30		1430.30	0.000057	0.25	2724.92	1918.60	0.04
Upstream	12500	FEMA Q100	679.00	1428.00	1430.17		1430.18	0.001241	1.03	889.46	1192.73	0.16
Upstream	12000	FEMA Q100	679.00	1427.00	1429.90		1429.90	0.000421	0.60	1272.60	1471.13	0.09
Upstream	11500	FEMA Q100	679.00	1428.50	1429.58	1429.01	1429.59	0.002246	1.23	733.45	1843.11	0.21
Upstream	11000	FEMA Q100	679.00	1427.03	1427.74		1427.81	0.011821	2.08	343.53	603.81	0.44
split to Lake °C	10995	FEMA Q100	192.74	1423.00	1427.73		1427.73	0.000004	0.28	698.33	157.12	0.02
split to Lake °C	10980	FEMA Q100	192.74	1422.70	1427.72		1427.73	0.000030	0.80	240.83	116.17	0.06
split to Lake °C	10965	FEMA Q100	192.74	1422.70	1427.72		1427.73	0.000035	0.86	264.88	74.61	0.07
split to Lake °C	10950	FEMA Q100	192.74	1422.60	1427.71		1427.72	0.000044	0.97	199.01	133.40	0.08
split to Lake °C	10940	FEMA Q100	192.74	1409.00	1427.71		1427.71	0.000003	0.24	834.69	171.85	0.02
split to Lake °C	10930	FEMA Q100	192.74	1381.00	1427.71		1427.71	0.000001	0.12	1622.71	317.82	0.01
split to Lake °C	10920	FEMA Q100	192.74	1381.00	1427.71		1427.71	0.000001	0.12	1665.82	327.10	0.01
split to Lake °C	10910	FEMA Q100	192.74	1381.00	1427.71		1427.71	0.000001	0.13	1539.27	302.09	0.01
split to Lake °C	10900	FEMA Q100	192.74	1409.00	1427.71		1427.71	0.000002	0.19	1089.16	227.45	0.01
split to Lake °C	10880	FEMA Q100	192.74	1422.30	1427.71		1427.71	0.000004	0.32	639.98	156.04	0.02
split to Lake °C	10870	FEMA Q100	192.74	1422.00	1427.70	1422.83	1427.71	0.000023	0.75	256.55	68.80	0.06
split to Lake °C	10860		Culvert									
split to Lake °C	10850	FEMA Q100	192.74	1422.00	1427.68		1427.69	0.000024	0.77	249.91	70.03	0.06
split to Lake °C	10845	FEMA Q100	192.74	1422.00	1427.68		1427.69	0.000010	0.49	389.49	167.23	0.04
split to Lake °C	10840	FEMA Q100	192.74	1421.80	1427.68	1422.62	1427.68	0.000020	0.71	270.27	82.20	0.05
split to Lake °C	10830		Culvert									
split to Lake °C	10820	FEMA Q100	192.74	1421.60	1427.66		1427.67	0.000020	0.74	260.41	82.32	0.05
to Rancon	11700	FEMA Q100	2077.00	1422.00	1428.90		1429.00	0.000232	2.73	835.23	149.63	0.18
to Rancon	11600	FEMA Q100	2077.00	1415.00	1428.88		1428.97	0.000209	2.51	872.61	146.78	0.17
to Rancon	11500	FEMA Q100	2077.00	1415.00	1428.82		1428.94	0.000273	2.84	776.51	133.92	0.19
to Rancon	11400	FEMA Q100	2077.00	1415.00	1428.77		1428.88	0.000276	2.84	774.89	134.37	0.19
to Rancon	11300	FEMA Q100	2077.00	1415.00	1428.73		1428.84	0.000244	2.67	821.76	141.91	0.18
to Rancon	11200	FEMA Q100	2077.00	1410.00	1428.74		1428.79	0.000118	1.86	1159.49	191.70	0.13
to Rancon	11100	FEMA Q100	2077.00	1400.00	1428.75		1428.77	0.000051	1.22	1741.19	277.59	0.08
to Rancon	11040	FEMA Q100	2077.00	1400.00	1428.75		1428.76	0.000025	0.87	2422.06	378.77	0.06
to Rancon	11020	FEMA Q100	2077.00	1400.00	1428.75		1428.76	0.000022	0.82	2587.09	402.69	0.06
to Rancon	11000	FEMA Q100	2077.00	1400.00	1428.73		1428.76	0.000047	1.18	1807.45	287.80	0.08
to Rancon	10900	FEMA Q100	2077.00	1410.00	1428.69		1428.74	0.000122	1.89	1142.64	189.83	0.13
to Rancon	10800	FEMA Q100	2077.00	1410.00	1428.63		1428.72	0.000210	2.43	893.74	153.77	0.17
to Rancon	10700	FEMA Q100	2077.00	1410.00	1428.64		1428.68	0.000083	1.56	1374.00	225.92	0.11
to Rancon	10600	FEMA Q100	2077.00	1410.00	1428.59		1428.65	0.000159	2.12	1019.41	173.45	0.15
to Rancon	10500	FEMA Q100	2077.00	1415.00	1428.51		1428.62	0.000266	2.72	801.70	141.72	0.19
to Rancon	10400	FEMA Q100	2077.00	1415.00	1428.52		1428.58	0.000130	1.92	1123.10	192.83	0.13
to Rancon	10300	FEMA Q100	2077.00	1415.00	1428.38		1428.54	0.000428	3.38	650.57	119.94	0.24
to Rancon	10100	FEMA Q100	2077.00	1421.70	1428.34	1424.23	1428.47	0.000308	3.07	737.91	135.22	0.21
to Rancon	10001		Culvert									
to Rancon	9491	FEMA Q100	2077.00	1421.60	1428.02		1428.14	0.000299	2.77	749.58	117.40	0.19
to Rancon	9490	FEMA Q100	2077.00	1410.00	1427.91		1428.07	0.000405	3.29	663.41	118.19	0.23
to Rancon	9480	FEMA Q100	2077.00	1410.00	1427.82		1427.98	0.000424	3.34	656.07	120.00	0.24
to Rancon	9470	FEMA Q100	2077.00	1410.00	1427.72		1427.90	0.000468	3.47	628.08	115.91	0.25
to Rancon	9460	FEMA Q100	2077.00	1410.00	1427.65		1427.83	0.000482	3.49	630.14	119.59	0.25
to Rancon	9450	FEMA Q100	2077.00	1410.00	1427.57		1427.73	0.000453	3.35	649.12	120.97	0.24
RV10500 - 10000	10500	FEMA Q100	486.26	1425.50	1427.74		1427.74	0.000020	0.18	2674.97	1317.19	0.02
RV10500 - 10000	10000	FEMA Q100	486.26	1425.50	1427.73		1427.73	0.000019	0.26	1939.62	1302.37	0.03
RV10500 - 10000	9700	FEMA Q100	486.26	1424.00	1427.67		1427.71	0.000295	1.60	303.68	518.27	0.16
RV10500 - 10000	9600	FEMA Q100	486.26	1423.50	1427.65		1427.69	0.000290	1.57	327.52	113.68	0.15
RV10500 - 10000	9500	FEMA Q100	486.26	1422.80	1427.65		1427.67	0.000084	1.11	449.12	446.48	0.09
THROUGH LAKES	9400	FEMA Q100	3024.00	1352.00	1427.65		1427.66	0.000037	0.84	3658.60	626.63	0.06
THROUGH LAKES	9200	FEMA Q100	3024.00	1352.00	1427.63		1427.65	0.000052	0.98	3151.48	542.36	0.07
THROUGH LAKES	9000	FEMA Q100	3024.00	1352.00	1427.62		1427.63	0.000031	0.77	3992.12	683.87	0.06
THROUGH LAKES	8700	FEMA Q100	3024.00	1352.00	1427.61		1427.62	0.000044	0.90	3448.07	606.88	0.06
THROUGH LAKES	8600	FEMA Q100	3024.00	1373.00	1427.58		1427.61	0.000104	1.39	2171.53	444.91	0.10
THROUGH LAKES	8550	FEMA Q100	3024.00	1386.00	1427.55		1427.60	0.000175	1.81	1666.67	408.80	0.13
THROUGH LAKES	8500	FEMA Q100	3024.00	1417.50	1427.45	1420.46	1427.56	0.000215	2.72	1173.12	142.81	0.15
THROUGH LAKES	8200		Culvert									
THROUGH LAKES	8100	FEMA Q100	3024.00	1417.50	1427.33		1427.46	0.000240	2.86	1074.70	156.74	0.16
THROUGH LAKES	7900	FEMA Q100	3024.00	1367.00	1427.26		1427.38	0.000467	2.84	1063.19	521.55	0.21
THROUGH LAKES	7700	FEMA Q100	3024.00	1367.00	1427.25		1427.31	0.000223	1.97	1537.97	501.86	0.15
THROUGH LAKES	7500	FEMA Q100	3024.00	1367.00	1427.23		1427.28	0.000172	1.71	1766.68	482.77	0.13
THROUGH LAKES	7200	FEMA Q100	3024.00	1367.00	1427.21		1427.25	0.000118	1.41	2176.97	421.46	0.10
THROUGH LAKES	7100	FEMA Q100	3024.00	1367.00	1427.17		1427.21	0.000181	1.75	1750.76	559.10	0.13
THROUGH LAKES	7000	FEMA Q100	3024.00	1370.00	1427.14		1427.18	0.000148	1.56	1975.62	372.20	0.12
THROUGH LAKES	6900	FEMA Q100	3024.00	1421.60	1426.57		1427.09	0.000353	5.80	528.59	140.35	0.46
THROUGH LAKES	6899	FEMA Q100	3024.00	1421.30	1426.59	1424.35	1427.06	0.000303	5.50	549.47	140.50	0.43
THROUGH LAKES	6750		Bridge									
THROUGH LAKES	6700	FEMA Q100	3024.00	1421.20	1426.45		1426.87	0.000291	5.38	644.28	142.29	0.42
THROUGH LAKES	6688	FEMA Q100	3105.00	1421.20	1426.59		1426.70	0.000268	2.55	1221.81	429.44	0.26
THROUGH LAKES	6518	FEMA Q100	3105.00	1421.60	1426.56		1426.66	0.000182	2.46	1263.98	328.92	0.22
THROUGH LAKES	6189	FEMA Q100	3105.00	1421.00	1426.47		1426.59	0.000179	2.79	1114.22	236.06	0.23
THROUGH LAKES	5912	FEMA Q100	3105.00	1420.10	1426.45		1426.55	0.000111	2.48	1253.57	220.17	0.18
THROUGH LAKES	5721	FEMA Q100	3105.00	1420.40	1426.35		1426.50	0.000648	3.12	997.31	260.33	0.28

HEC-RAS Plan: MV-Interim Profile: FEMA Q100 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
THROUGH LAKES	5473	FEMA Q100	3105.00	1401.20	1426.45		1426.45	0.000001	0.33	9466.25	494.39	0.01
THROUGH LAKES	5110	FEMA Q100	3105.00	1402.90	1426.45		1426.45	0.000007	0.72	4327.80	317.73	0.03
THROUGH LAKES	4836	FEMA Q100	3105.00	1401.40	1426.45		1426.45	0.000003	0.51	6067.26	387.54	0.02
THROUGH LAKES	4584	FEMA Q100	3105.00	1401.90	1426.44		1426.45	0.000008	0.78	3988.21	283.08	0.04
THROUGH LAKES	4449	FEMA Q100	3105.00	1401.60	1426.44		1426.45	0.000004	0.62	5027.26	322.21	0.03
THROUGH LAKES	4275	FEMA Q100	3105.00	1402.60	1426.44		1426.45	0.000009	0.73	4250.20	372.13	0.04
THROUGH LAKES	3990	FEMA Q100	3830.00	1402.10	1426.44		1426.44	0.000001	0.33	11690.10	651.51	0.01
THROUGH LAKES	3700	FEMA Q100	3830.00	1402.40	1426.44		1426.44	0.000001	0.39	9860.92	562.53	0.02
THROUGH LAKES	3370	FEMA Q100	3830.00	1402.90	1426.44		1426.44	0.000006	0.61	6265.53	532.90	0.03
THROUGH LAKES	3070	FEMA Q100	3830.00	1402.00	1426.44		1426.44	0.000002	0.44	8693.26	490.50	0.02
THROUGH LAKES	2810	FEMA Q100	3830.00	1402.10	1426.44		1426.44	0.000002	0.41	9254.35	512.06	0.02
THROUGH LAKES	2610	FEMA Q100	3830.00	1401.90	1426.44		1426.44	0.000002	0.43	8998.97	490.13	0.02
THROUGH LAKES	2497	FEMA Q100	3830.00	1404.40	1426.43		1426.44	0.000004	0.58	6571.47	449.56	0.03
THROUGH LAKES	2400	FEMA Q100	3830.00	1405.70	1426.41		1426.44	0.000022	1.23	3126.16	248.27	0.06
THROUGH LAKES	2333	FEMA Q100	3830.00	1407.80	1426.41		1426.43	0.000029	1.31	2926.62	258.91	0.07
THROUGH LAKES	2212	FEMA Q100	3830.00	1412.00	1426.13		1426.40	0.000108	4.24	904.35	102.13	0.25
THROUGH LAKES	2159	FEMA Q100	1885.00	1421.25	1426.00	1423.81	1426.37	0.000348	4.86	388.13	198.88	0.39
THROUGH LAKES	2156	FEMA Q100	1885.00	1418.00	1426.11	1420.66	1426.26	0.000074	3.02	623.83	200.86	0.19
THROUGH LAKES	2130	FEMA Q100	1885.00	1417.90	1425.54	1421.99	1426.12	0.000861	6.11	308.34	40.73	0.39
THROUGH LAKES	2129	FEMA Q100	1885.00	1417.90	1425.56	1421.87	1426.09	0.000348	5.85	322.43	42.15	0.37
THROUGH LAKES	2033	Bridge										
THROUGH LAKES	1937	FEMA Q100	1885.00	1417.00	1425.23		1425.69	0.000282	5.44	346.25	42.16	0.33
THROUGH LAKES	1936	FEMA Q100	1885.00	1417.00	1425.23	1420.98	1425.69	0.000282	5.44	346.24	42.16	0.33
THROUGH LAKES	1926	FEMA Q100	1938.00	1417.00	1425.26		1425.64	0.001041	4.93	392.79	61.69	0.34
THROUGH LAKES	1826	FEMA Q100	1938.00	1417.20	1424.93		1425.48	0.002172	5.96	324.99	76.27	0.51
THROUGH LAKES	1529	FEMA Q100	1938.00	1417.10	1425.05		1425.10	0.000383	1.90	1022.49	373.37	0.20
THROUGH LAKES	1190	FEMA Q100	1938.00	1416.00	1424.95		1424.99	0.000281	1.72	1125.67	375.46	0.18
THROUGH LAKES	790	FEMA Q100	1938.00	1416.00	1424.58	1421.30	1424.78	0.001138	3.55	546.29	172.77	0.35

Plan: MV-Interim Menifee Valley to Rancon RS: 10001 Culv Group: Angle Box #1 Profile: FEMA Q100

Q Culv Group (cfs)	519.25	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.31
Q Barrel (cfs)	519.25	Culv Vel DS (ft/s)	4.04
E.G. US. (ft)	1428.48	Culv Inv El Up (ft)	1422.00
W.S. US. (ft)	1428.34	Culv Inv El Dn (ft)	1421.60
E.G. DS (ft)	1428.14	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	1428.02	Culv Exit Loss (ft)	0.13
Delta EG (ft)	0.33	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.32	Q Weir (cfs)	
E.G. IC (ft)	1426.38	Weir Sta Lft (ft)	
E.G. OC (ft)	1428.47	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	1428.03	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1428.02	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.75	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.76	Min El Weir Flow (ft)	1431.21

Addition E.G.=0.03'assumed culvert system flowing full

Please refer to hydraulic backup calculations for additional headloss for this cross-section.
Same for Angle Box #1 through 4

Plan: MV-Interim Menifee Valley to Rancon RS: 10001 Culv Group: AngleBox #2 Profile: FEMA Q100

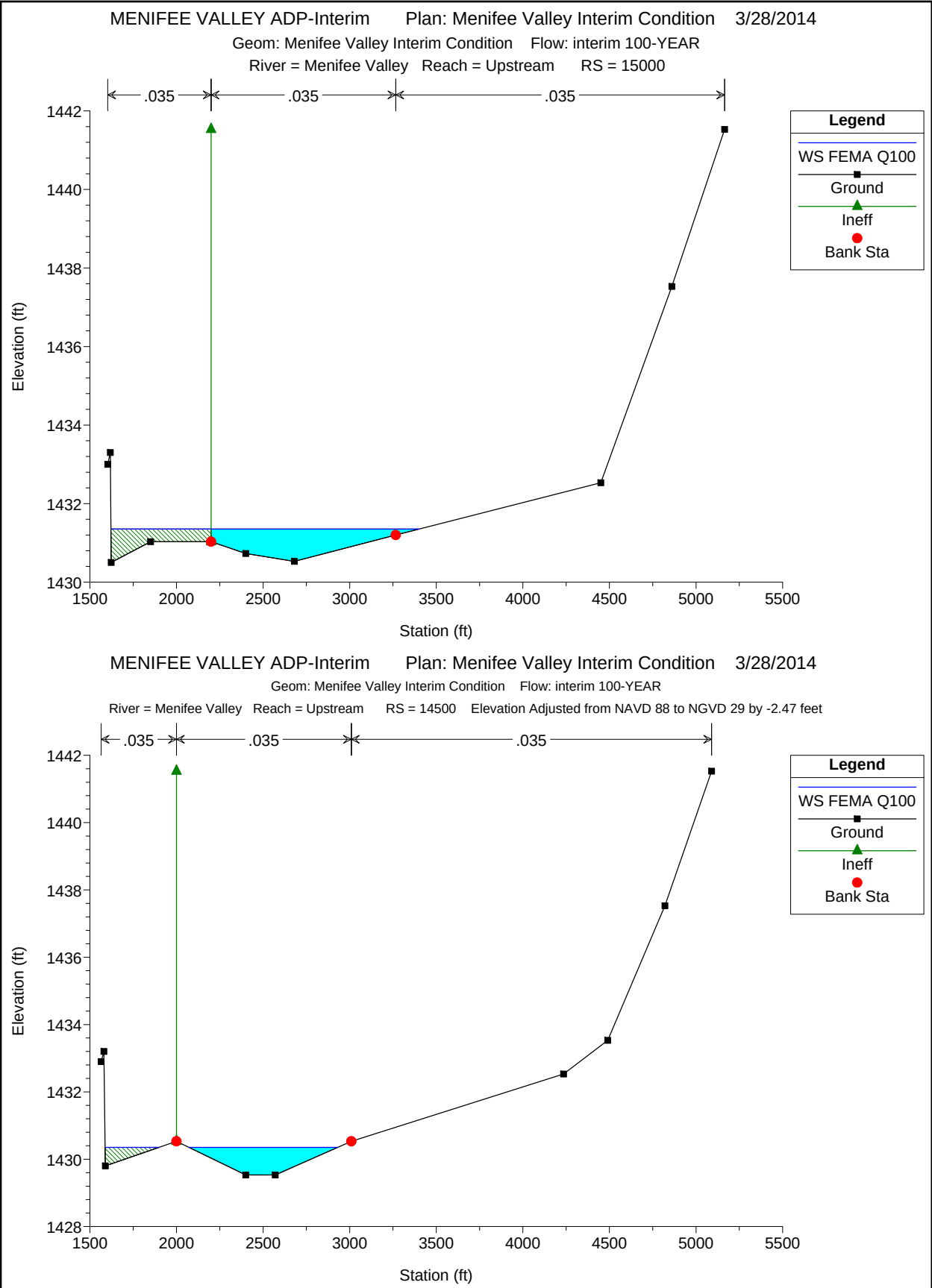
Q Culv Group (cfs)	519.25	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.30
Q Barrel (cfs)	519.25	Culv Vel DS (ft/s)	4.04
E.G. US. (ft)	1428.48	Culv Inv El Up (ft)	1422.00
W.S. US. (ft)	1428.34	Culv Inv El Dn (ft)	1421.60
E.G. DS (ft)	1428.14	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	1428.02	Culv Exit Loss (ft)	0.13
Delta EG (ft)	0.33	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.32	Q Weir (cfs)	
E.G. IC (ft)	1426.38	Weir Sta Lft (ft)	
E.G. OC (ft)	1428.47	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	1428.03	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1428.02	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	2.90	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.76	Min El Weir Flow (ft)	1431.21

Plan: MV-Interim Menifee Valley to Rancon RS: 10001 Culv Group: AngleBox #3 Profile: FEMA Q100

Q Culv Group (cfs)	519.25	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.30
Q Barrel (cfs)	519.25	Culv Vel DS (ft/s)	4.04
E.G. US. (ft)	1428.48	Culv Inv El Up (ft)	1422.00
W.S. US. (ft)	1428.34	Culv Inv El Dn (ft)	1421.60
E.G. DS (ft)	1428.14	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	1428.02	Culv Exit Loss (ft)	0.13
Delta EG (ft)	0.33	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.32	Q Weir (cfs)	
E.G. IC (ft)	1426.38	Weir Sta Lft (ft)	
E.G. OC (ft)	1428.48	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	1428.04	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1428.02	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.05	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.76	Min El Weir Flow (ft)	1431.21

Plan: MV-Interim Menifee Valley to Rancon RS: 10001 Culv Group: AngleBox #4 Profile: FEMA Q100

Q Culv Group (cfs)	519.25	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.30
Q Barrel (cfs)	519.25	Culv Vel DS (ft/s)	4.04
E.G. US. (ft)	1428.48	Culv Inv El Up (ft)	1422.00
W.S. US. (ft)	1428.34	Culv Inv El Dn (ft)	1421.60
E.G. DS (ft)	1428.14	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	1428.02	Culv Exit Loss (ft)	0.13
Delta EG (ft)	0.33	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.32	Q Weir (cfs)	
E.G. IC (ft)	1426.38	Weir Sta Lft (ft)	
E.G. OC (ft)	1428.48	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	1428.04	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1428.02	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.13	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	2.76	Min El Weir Flow (ft)	1431.21



MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley

Reach = Upstream

RS = 14500

Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet

Elevation (ft)

Station (ft)

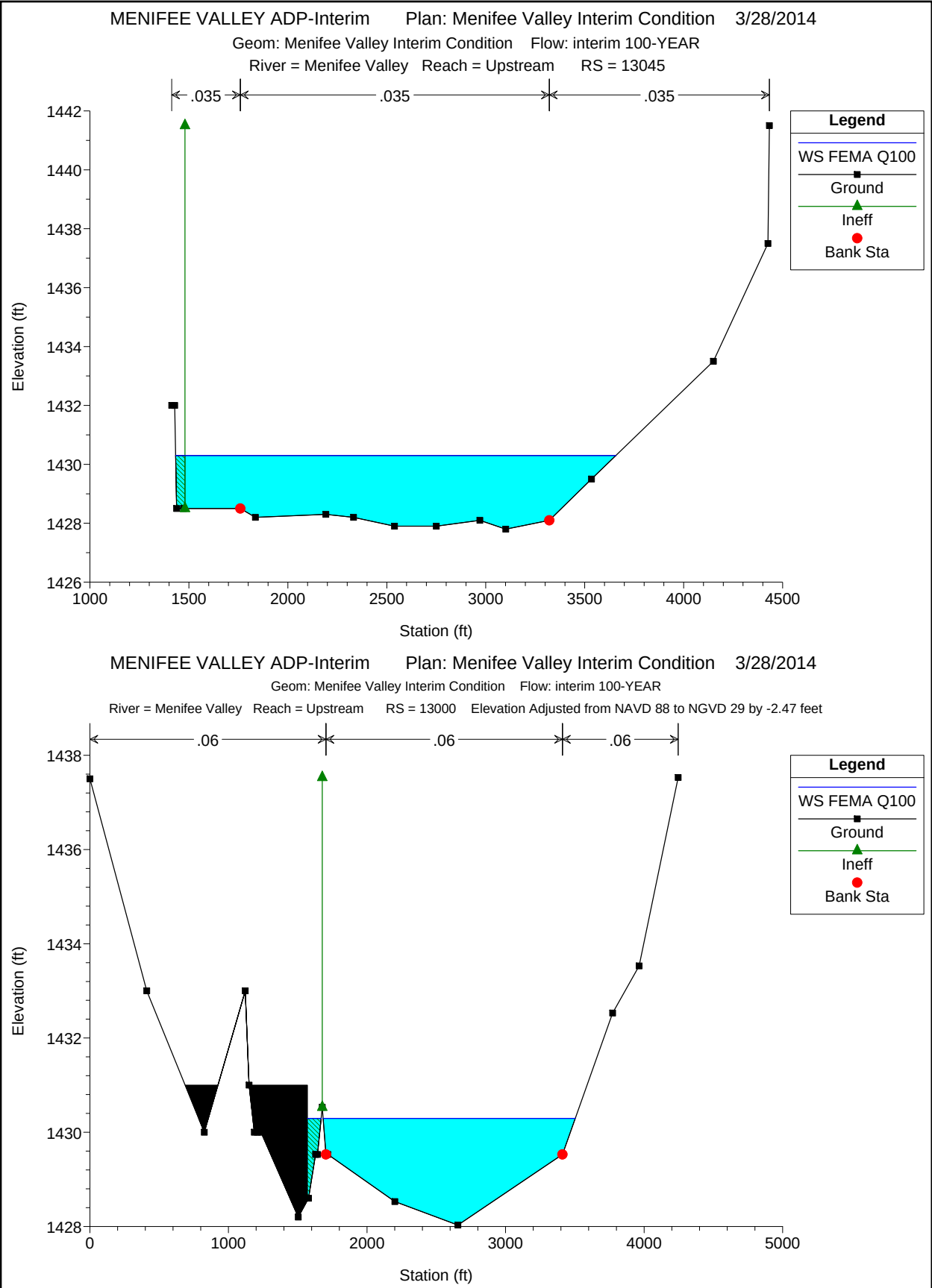
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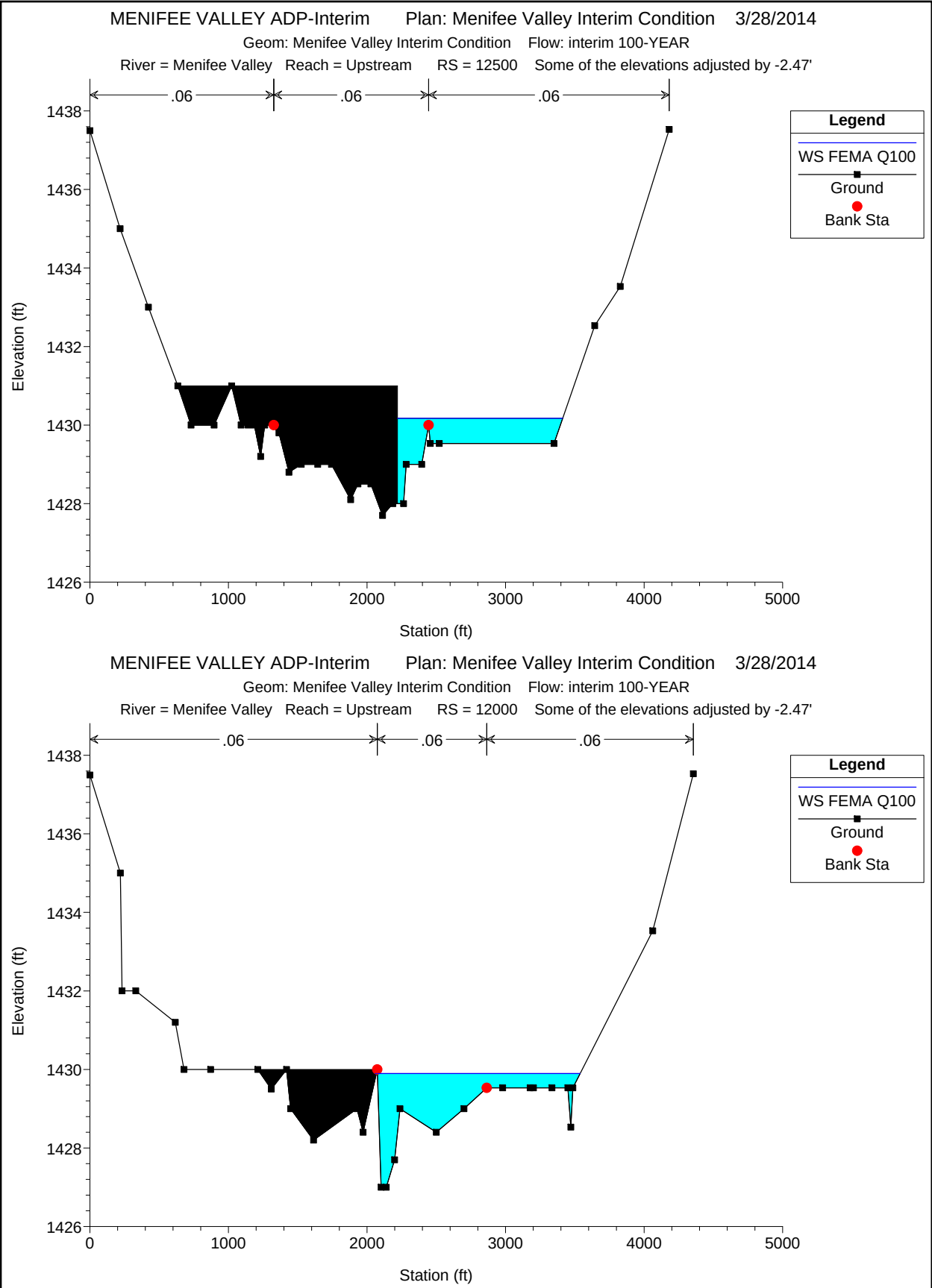
WS FEMA Q100

Ground

Ineff

Bank Sta





MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley

Reach = Upstream

RS = 12000

Some of the elevations adjusted by -2.47'

Elevation (ft)

1438

1436

1434

1432

1430

1428

1426

0

1000

2000

3000

4000

5000

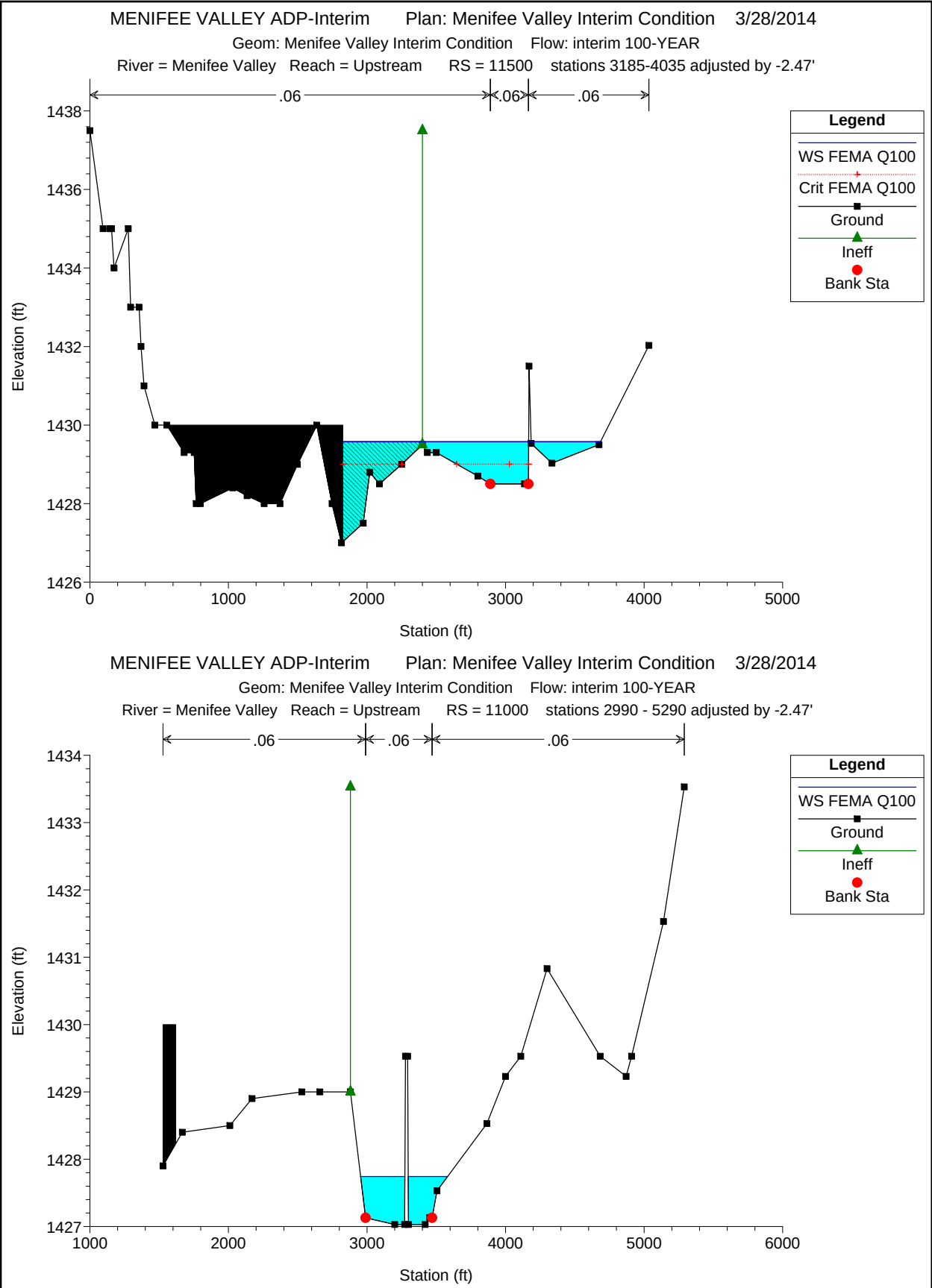
Station (ft)

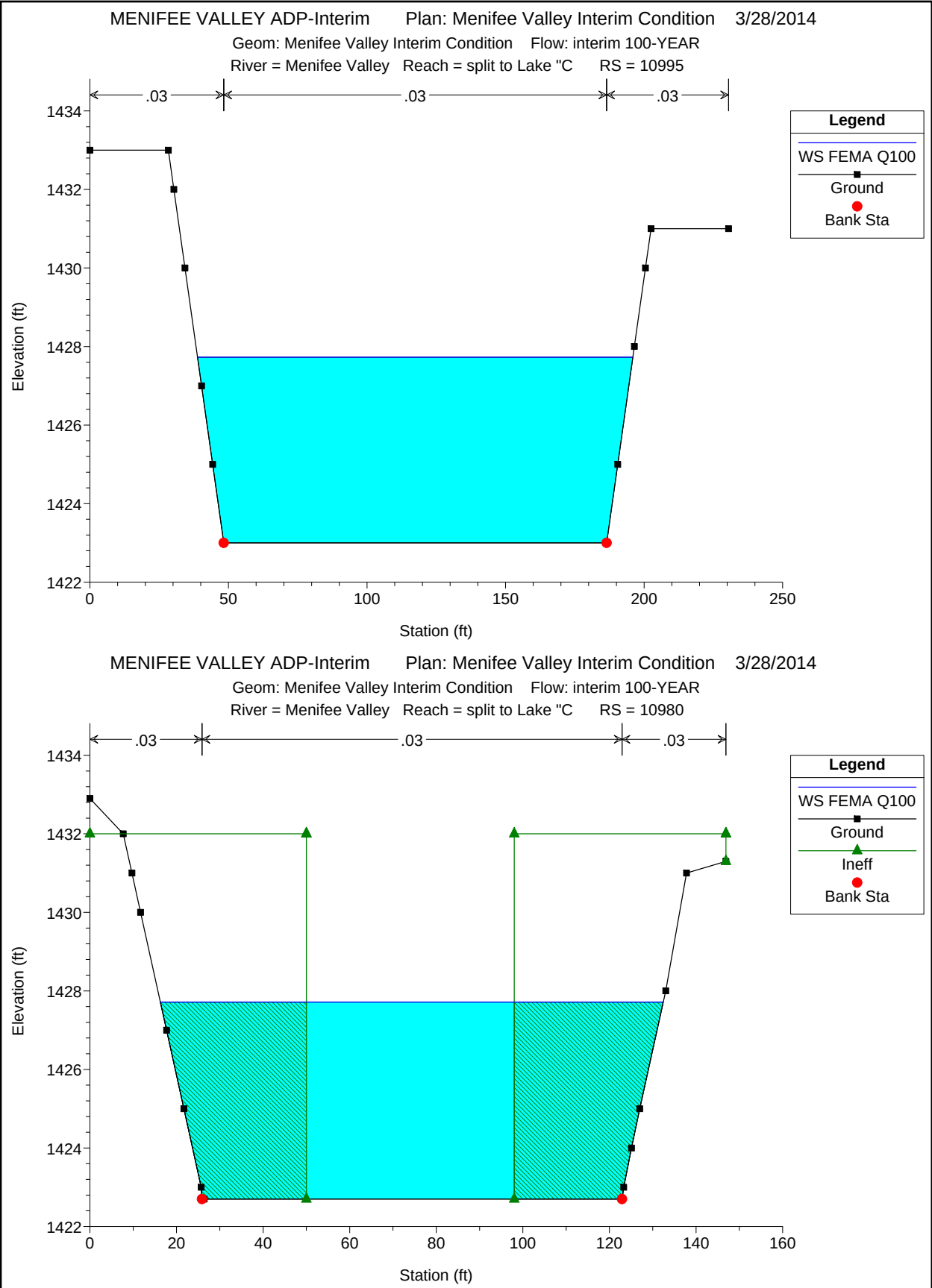
Legend

WS FEMA Q100

Ground

Bank Sta





MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR

River = Meniffee Valley Reach = split to Lake "C" RS = 10980

Elevation (ft)

1434

1432

1430

1428

1426

1424

1422

0

20

40

60

80

100

120

140

160

Station (ft)

Legend

WS FEMA Q100

Ground

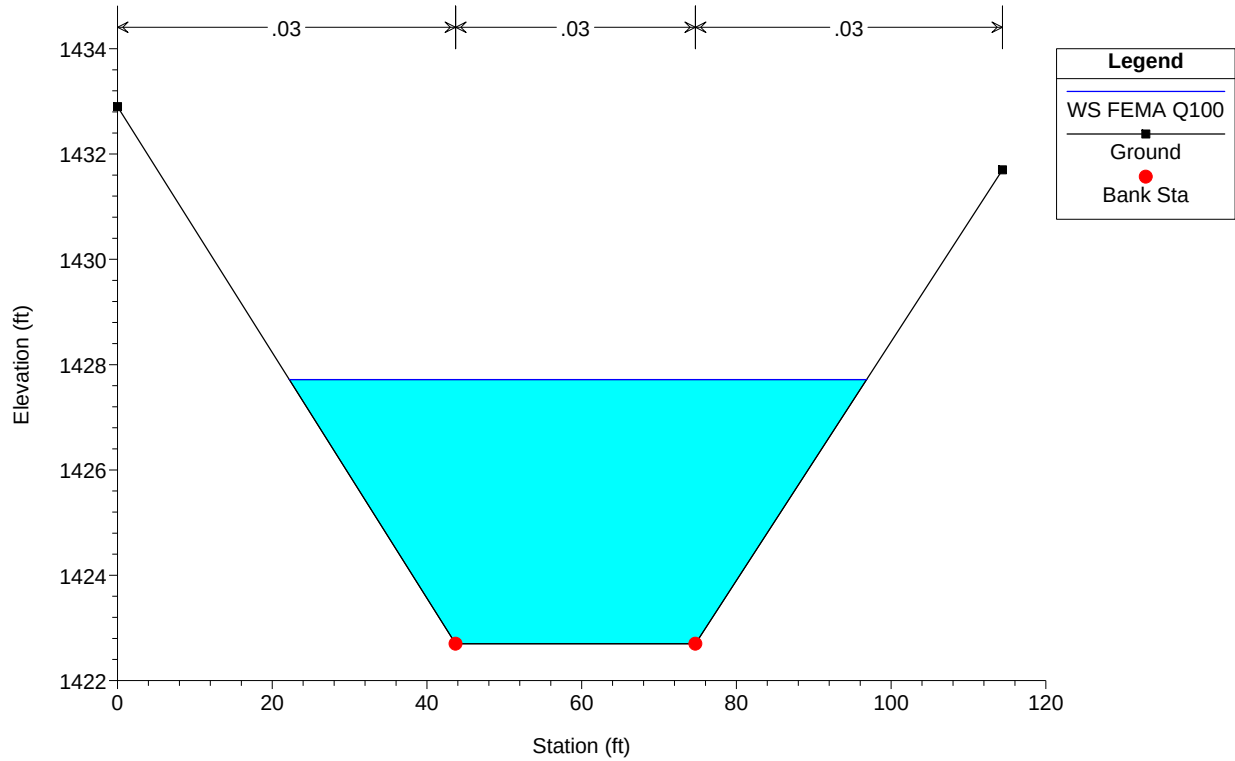
Ineff

Bank Sta

MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR

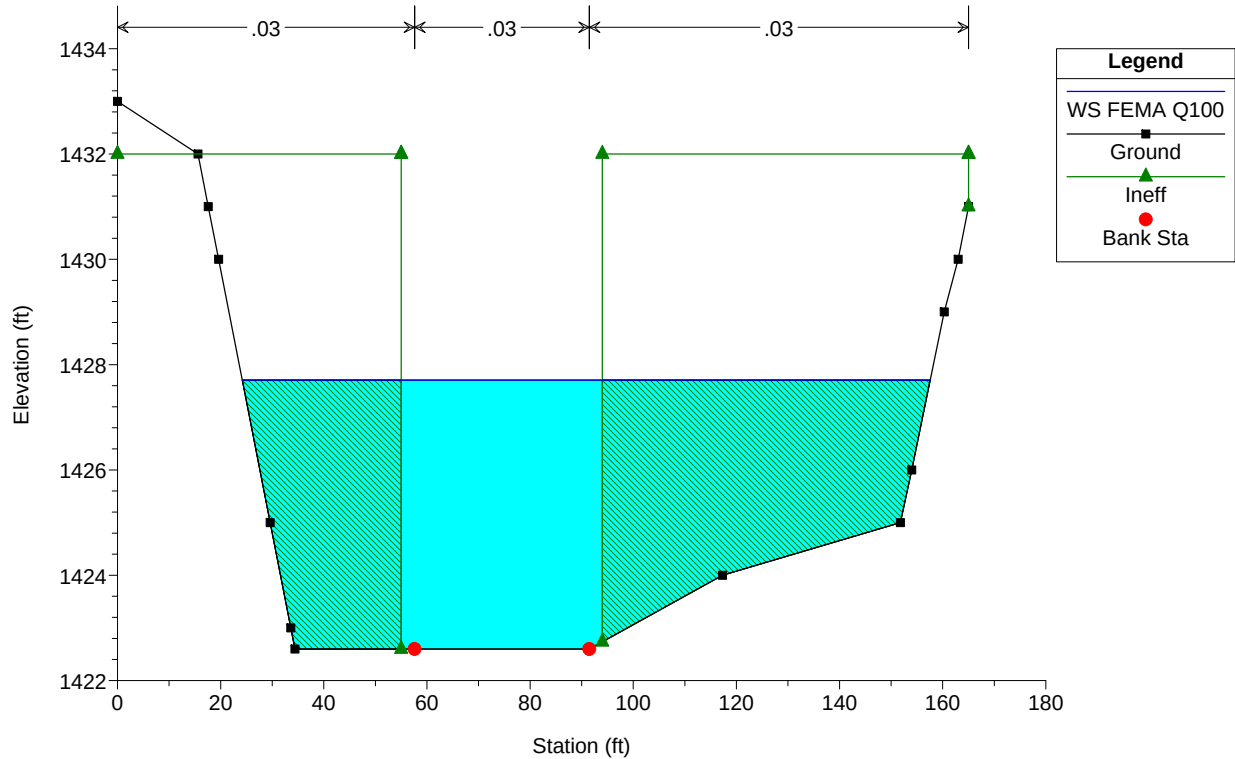
River = Menifee Valley Reach = split to Lake "C" RS = 10965 This Cross Section 10965 replaced the culvert proposed in the CL

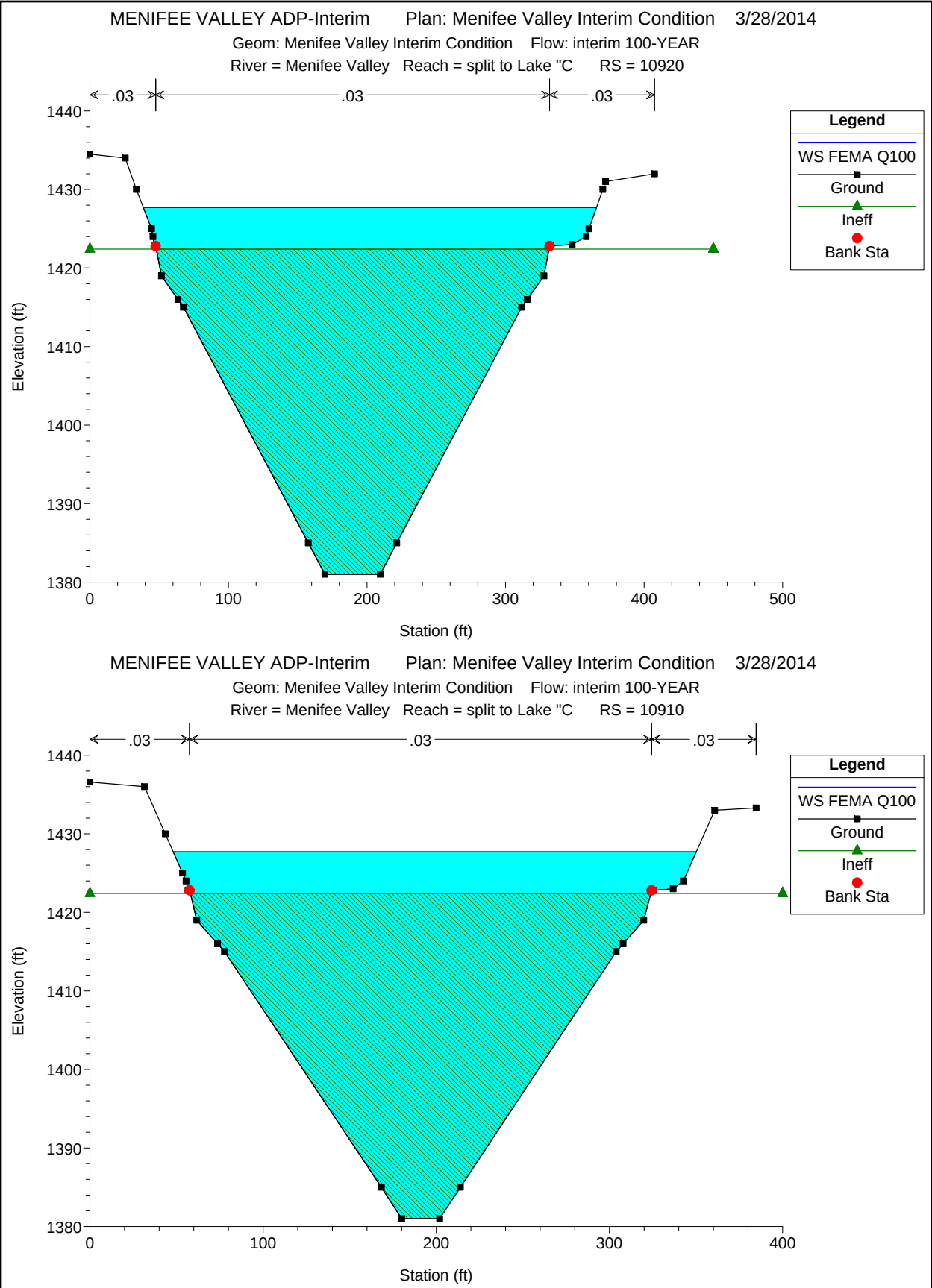


MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR

River = Menifee Valley Reach = split to Lake "C" RS = 10950





MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley

Reach = split to Lake "C"

RS = 10910

Elevation (ft)

1440

1430

1420

1410

1400

1390

1380

0

100

200

300

400

← .03 →

← .03 →

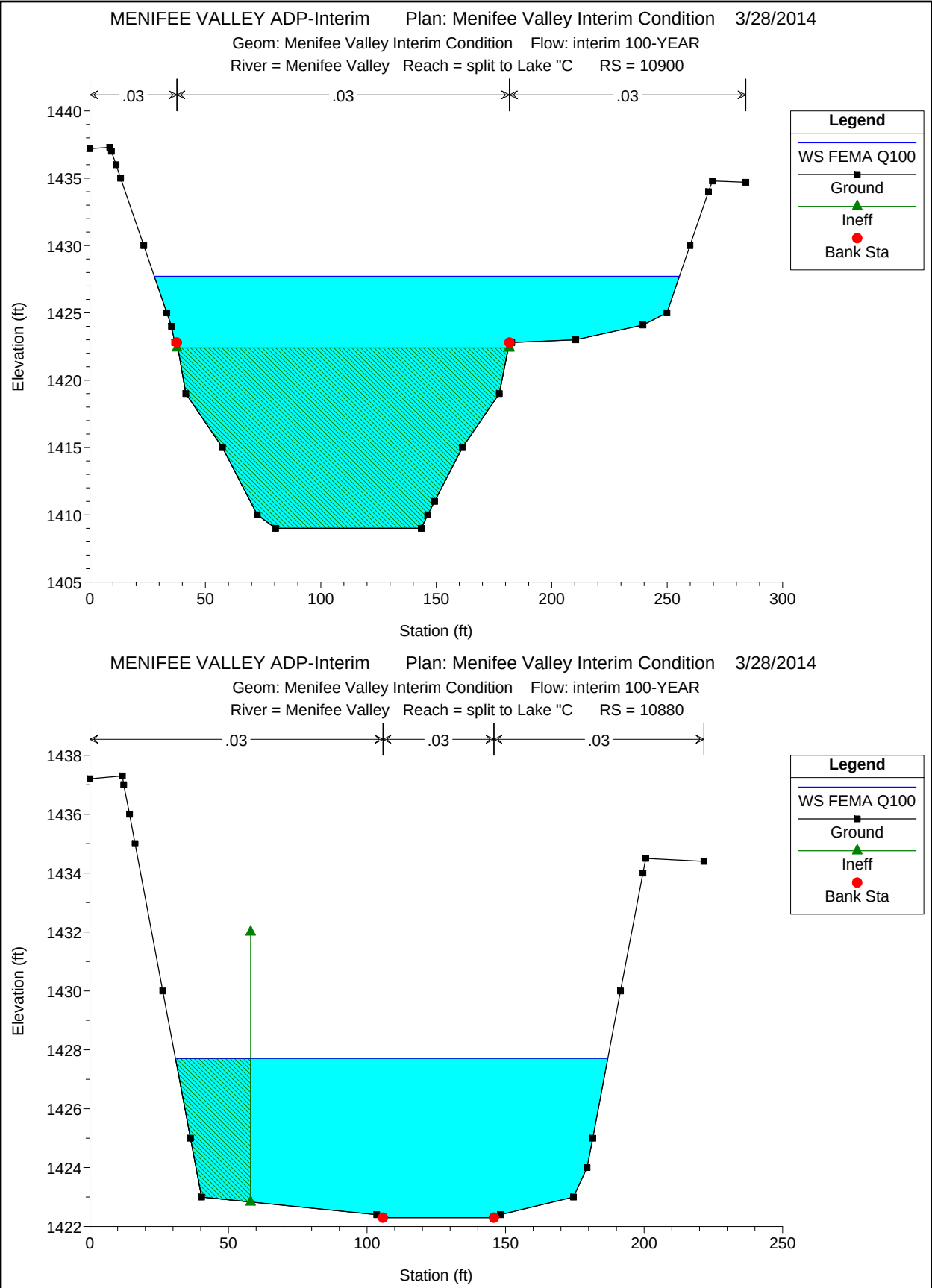
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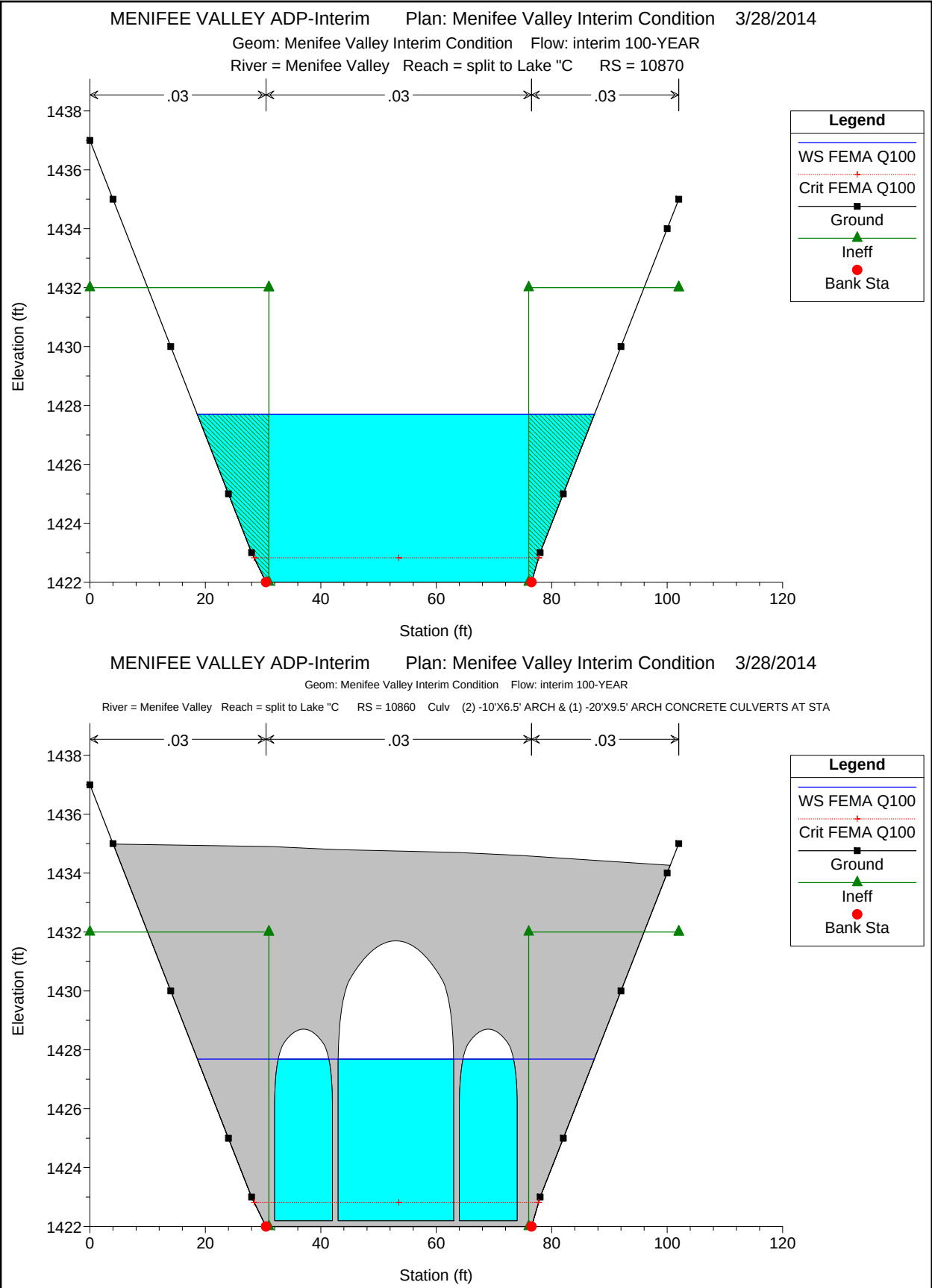
WS FEMA Q100

Ground

Ineff

Bank Sta





MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley

Reach = split to Lake "C"

RS = 10860

Culv (2) -10'X6.5' ARCH & (1) -20'X9.5' ARCH CONCRETE CULVERTS AT STA

Elevation (ft)

1438

1436

1434

1432

1430

1428

1426

1424

1422

0

20

40

60

80

100

120

Station (ft)

Legend

WS FEMA Q100

Crit FEMA Q100

Ground

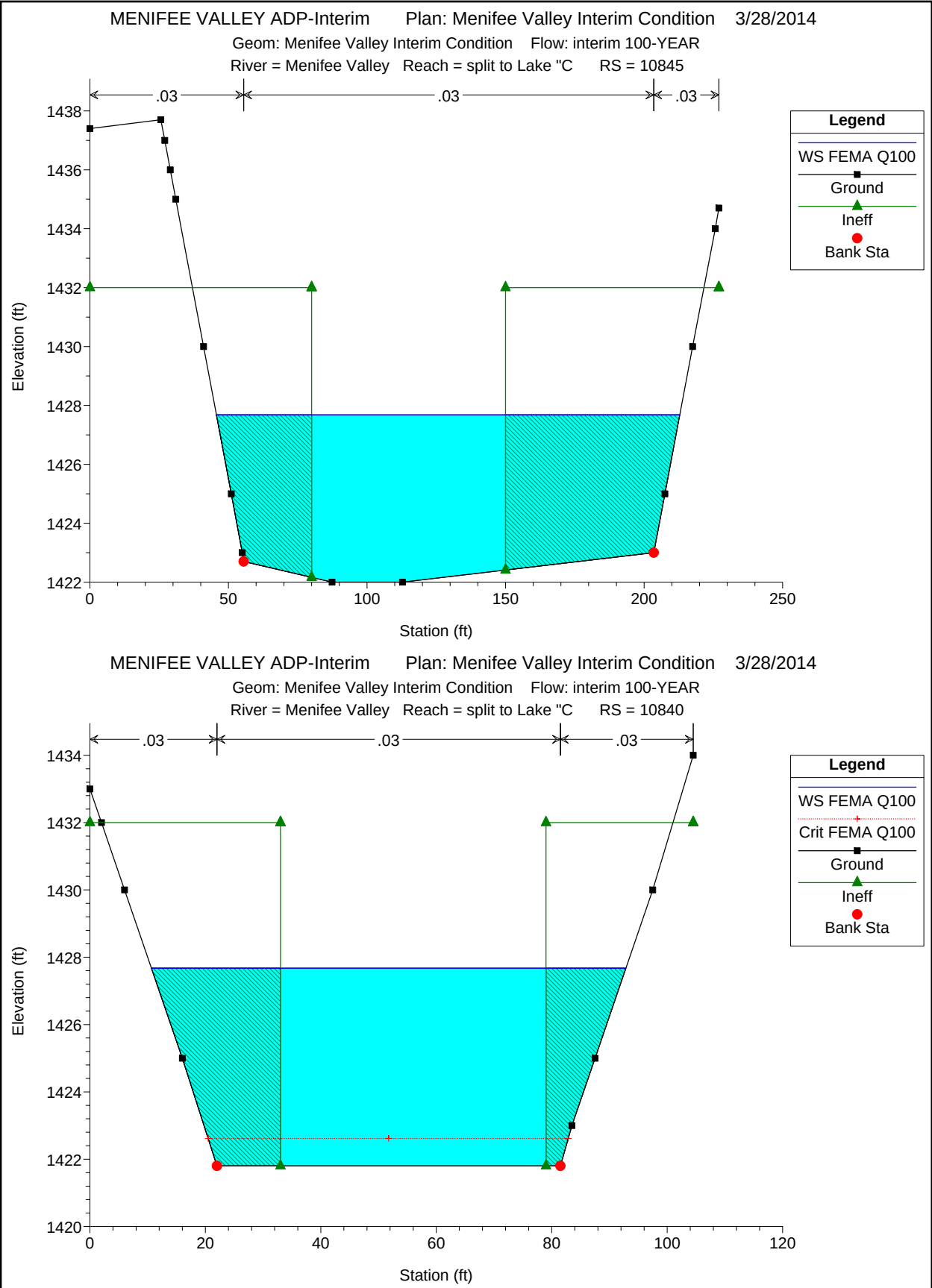
Ineff

Bank Sta

0.03

0.03

0.03



MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley Reach = split to Lake "C" RS = 10840

Elevation (ft)

1434

1432

1430

1428

1426

1424

1422

1420

0

20

40

60

80

100

120

Legend

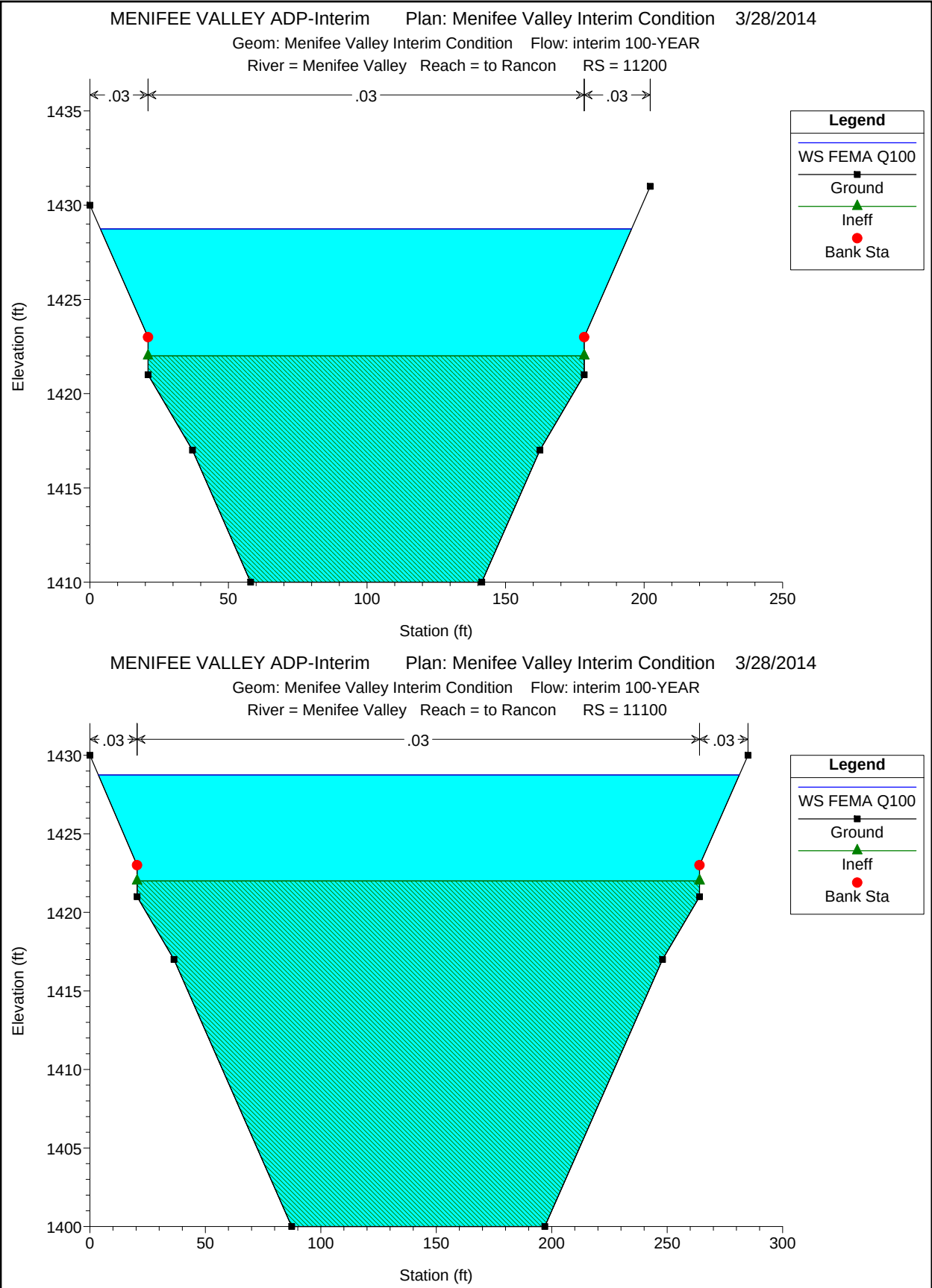
WS FEMA Q100

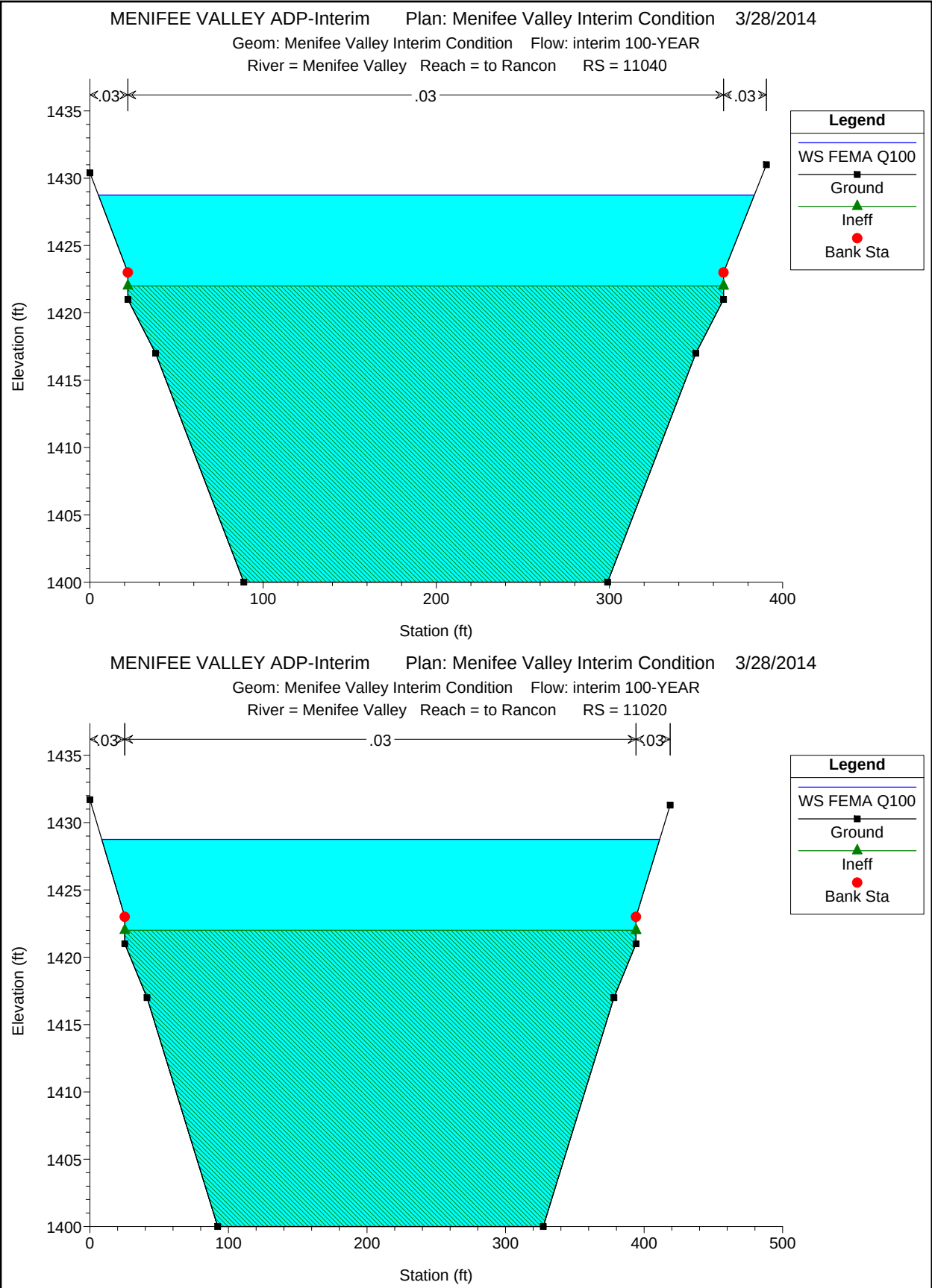
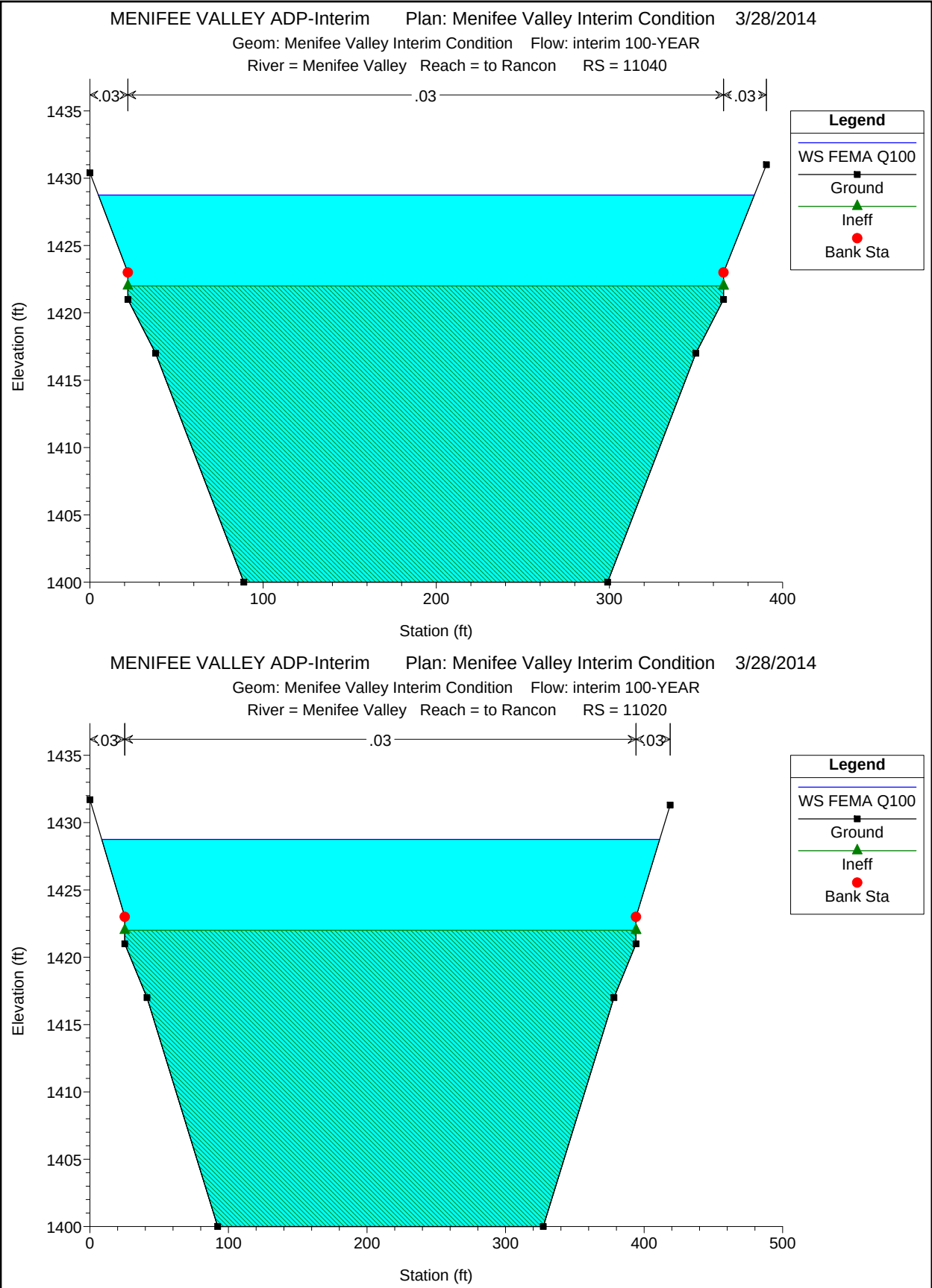
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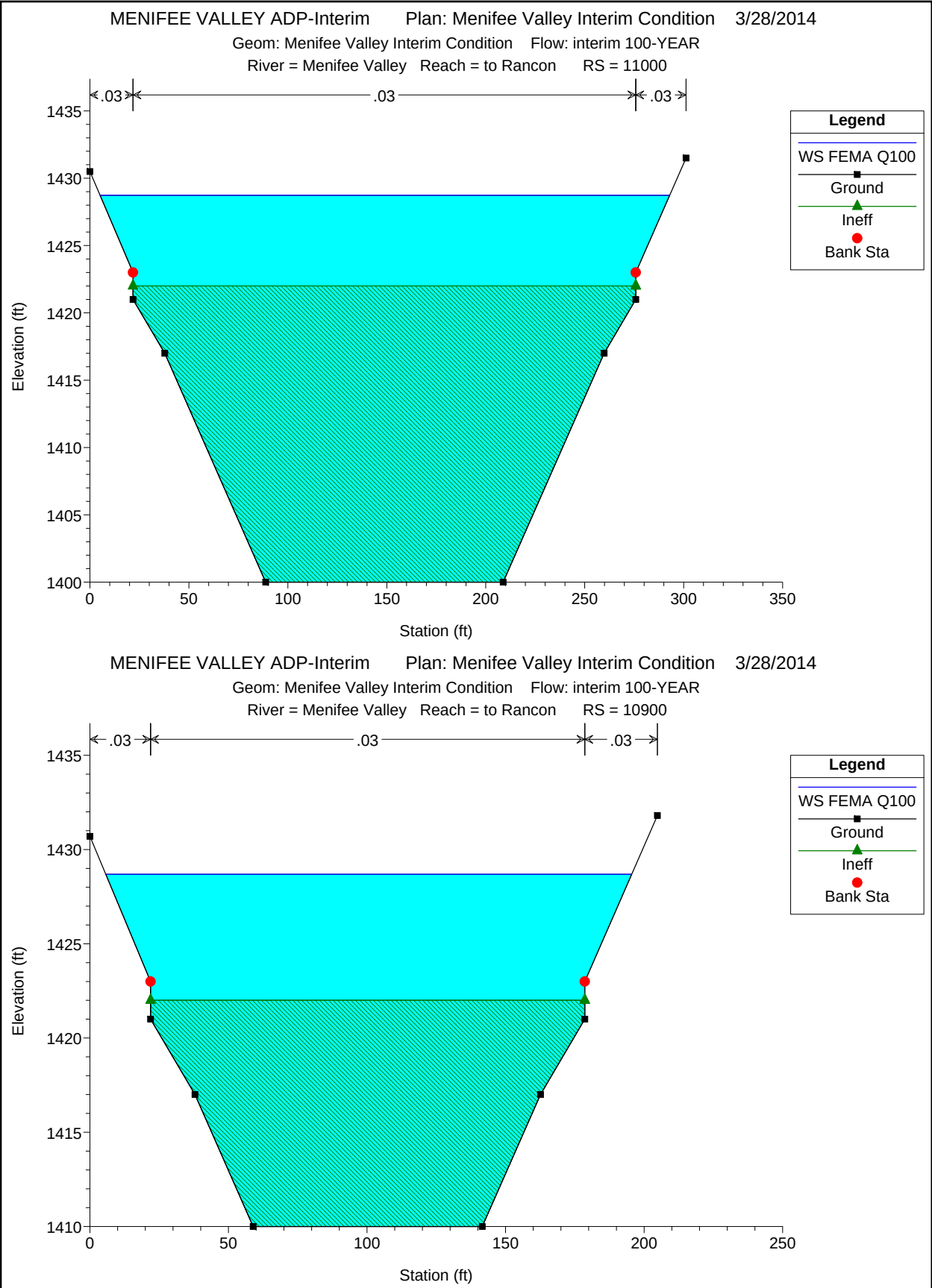
Ground

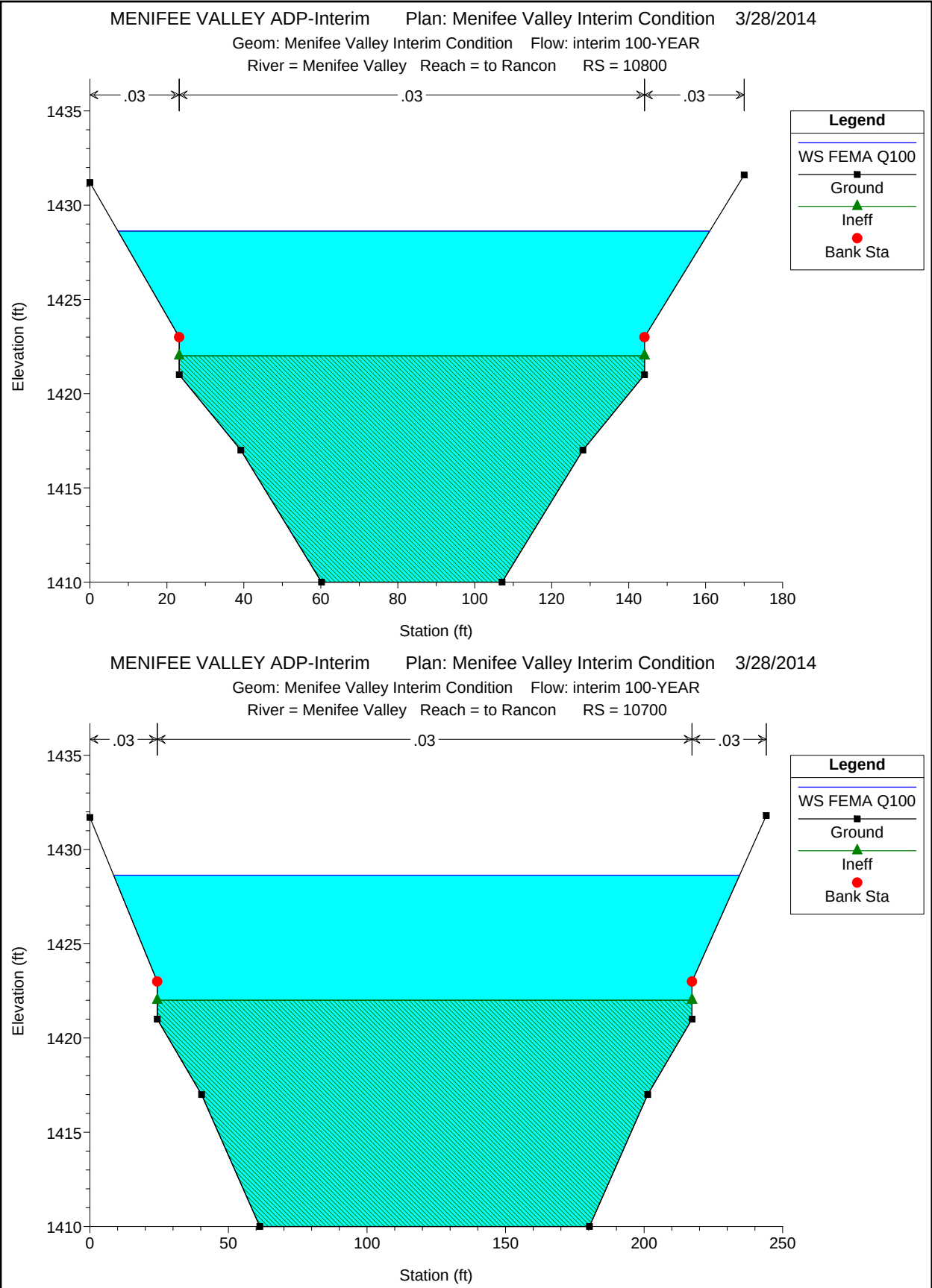
Ineff

Bank Sta









MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley Reach = to Rancon RS = 10700

Elevation (ft)

1435

1430

1425

1420

1415

1410

0

50

100

150

200

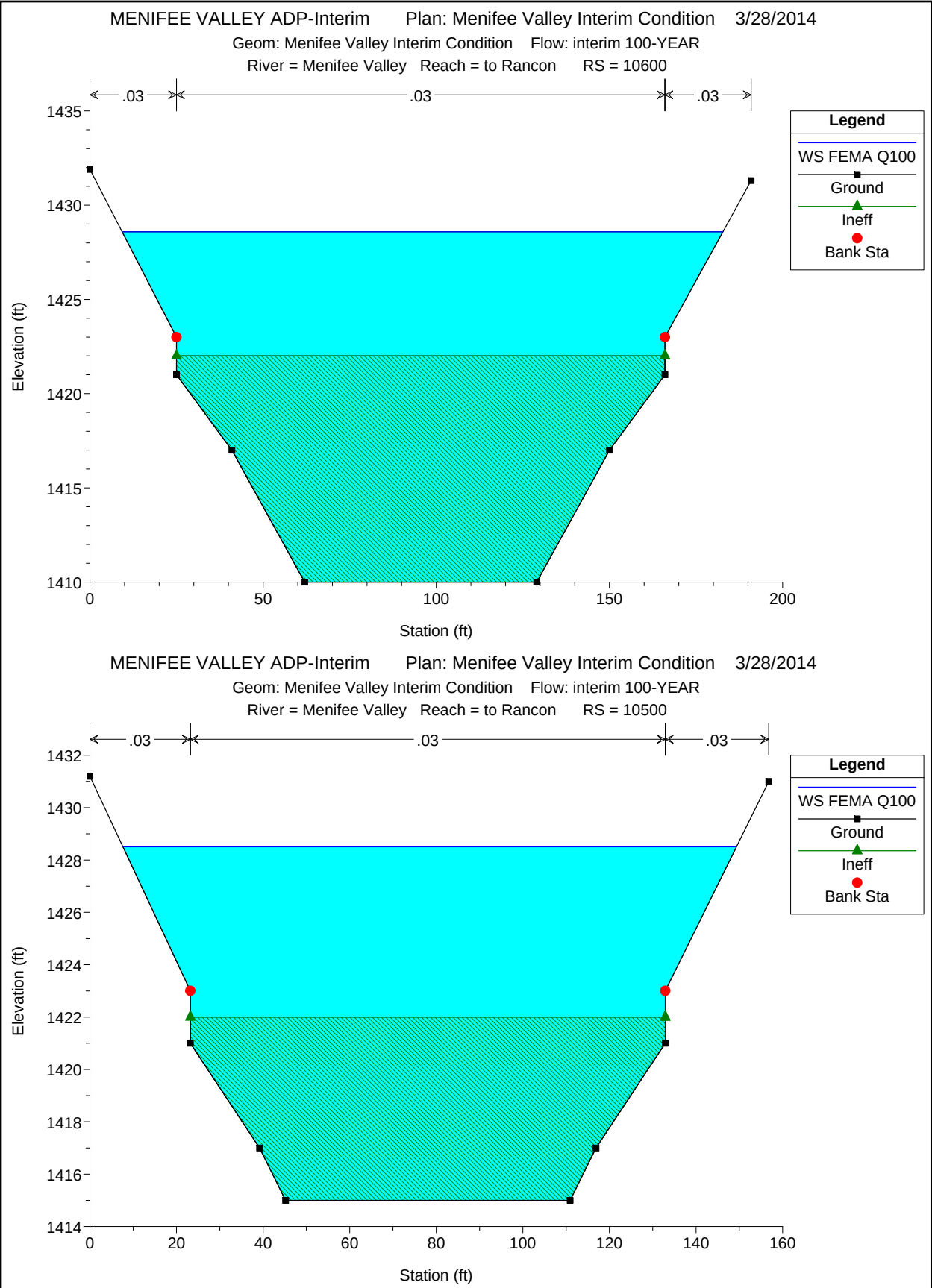
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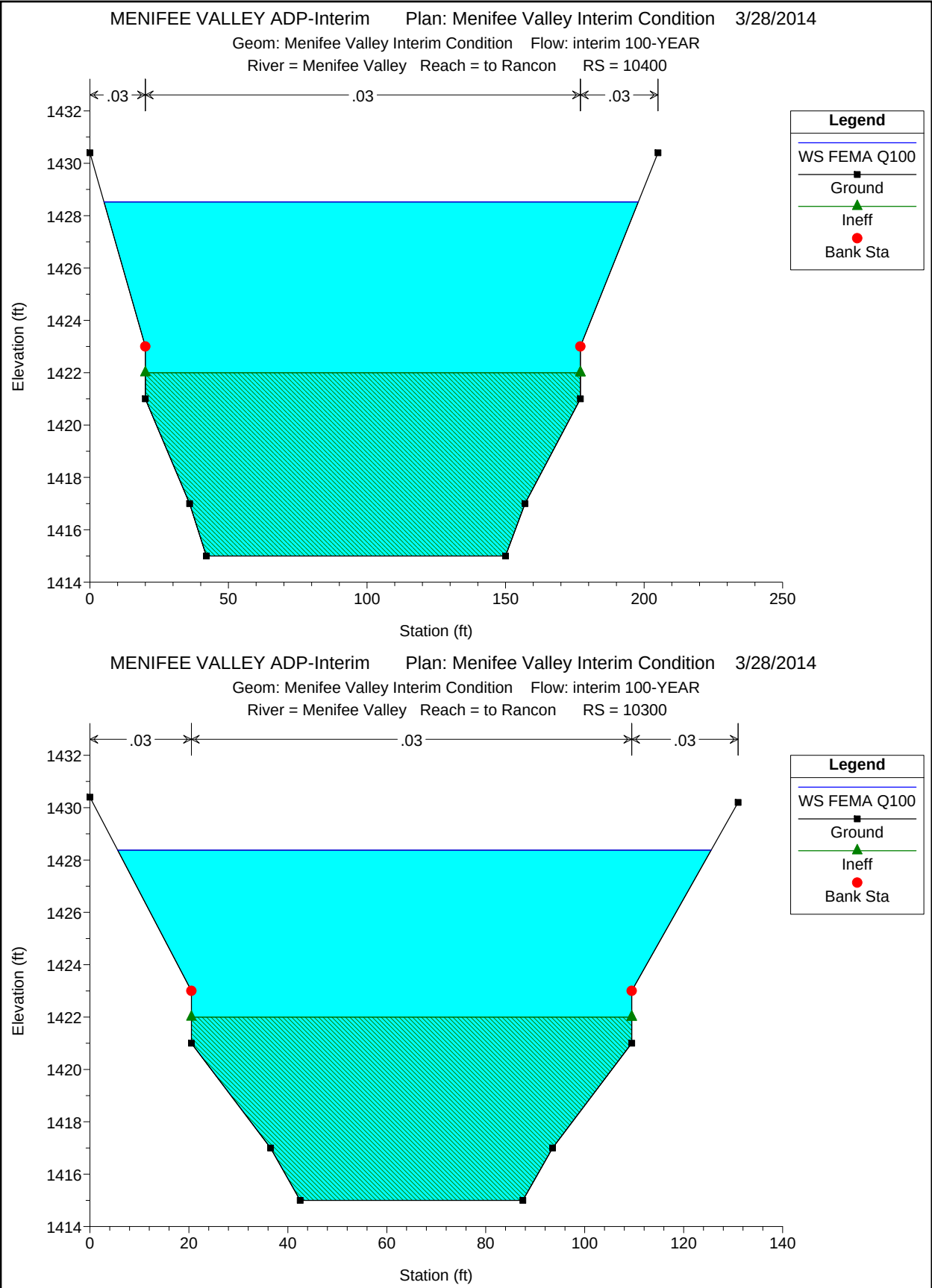
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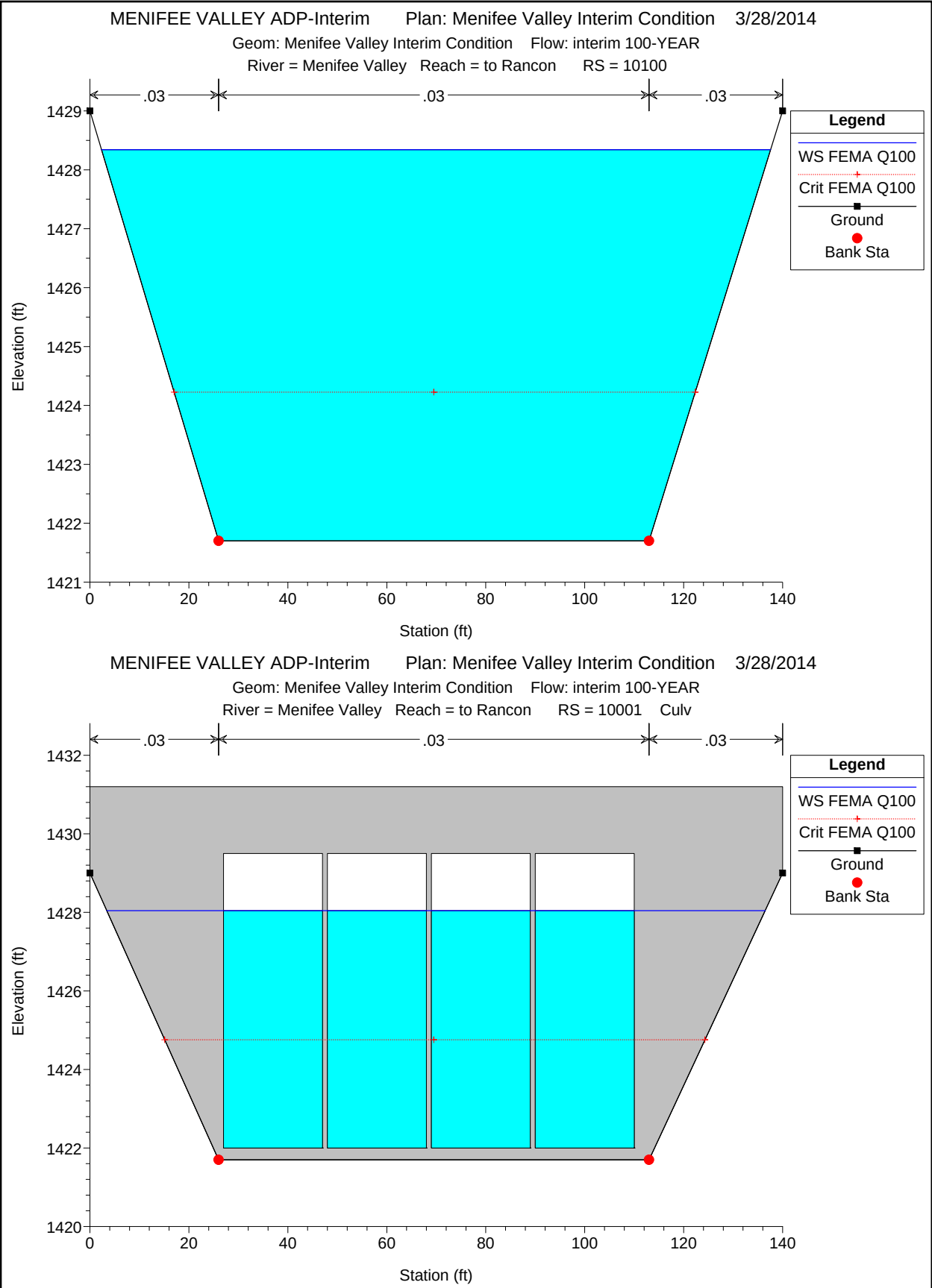
Ground

Ineff

Bank Sta







MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley Reach = to Rancon RS = 10001 Culv

Elevation (ft)

1432

1430

1428

1426

1424

1422

1420

0

20

40

60

80

100

120

140

←.03→

←.03→

←.03→

1432

1430

1428

1426

1424

1422

1420

0

20

40

60

80

100

120

140

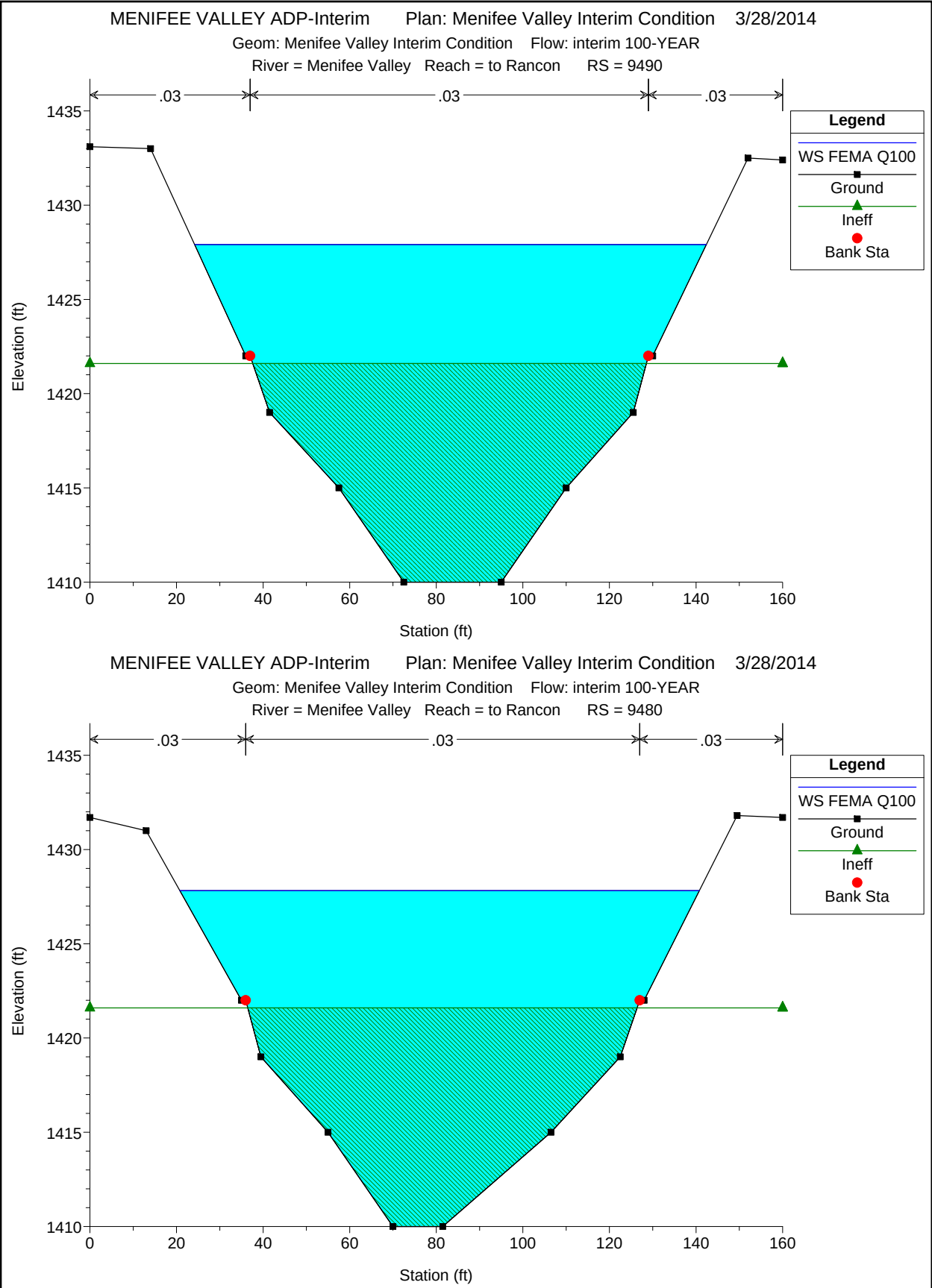
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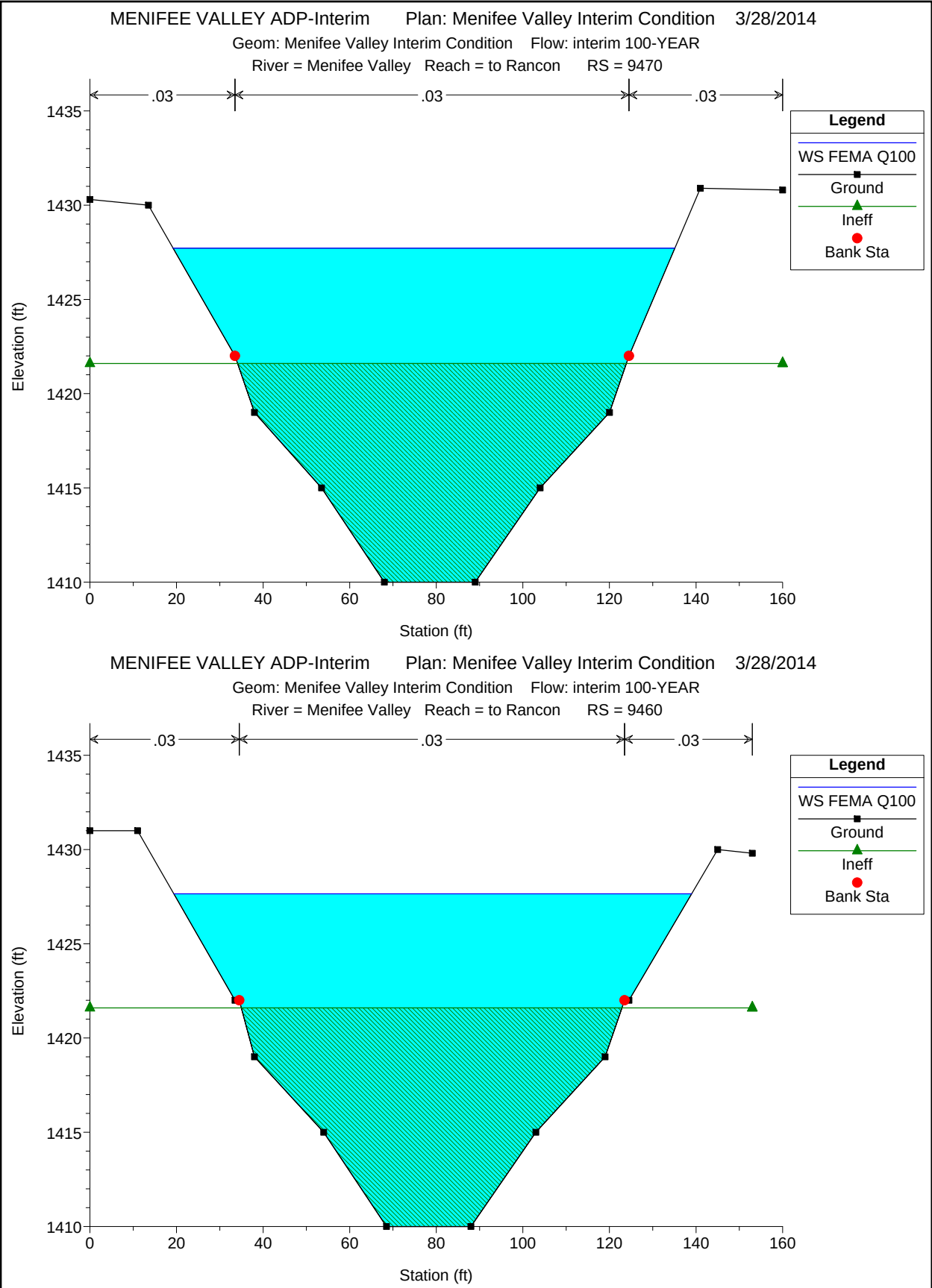
WS FEMA Q100

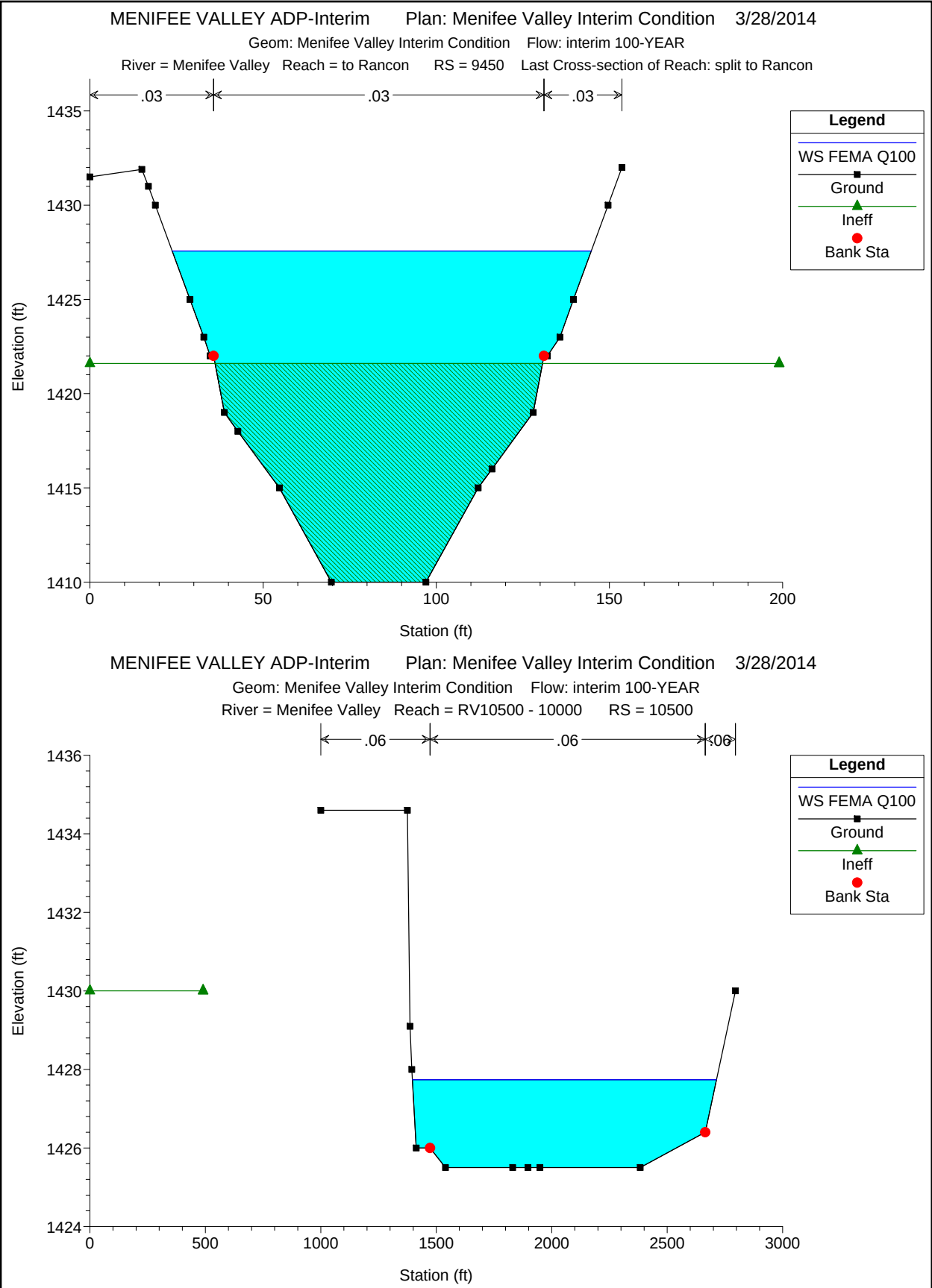
Crit FEMA Q100

Ground

Bank Sta







MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley

Reach = RV10500 - 10000

RS = 10500

Elevation (ft)

1436

1434

1432

1430

1428

1426

1424

Station (ft)

0

500

1000

1500

2000

2500

3000

Legend

WS FEMA Q100

Ground

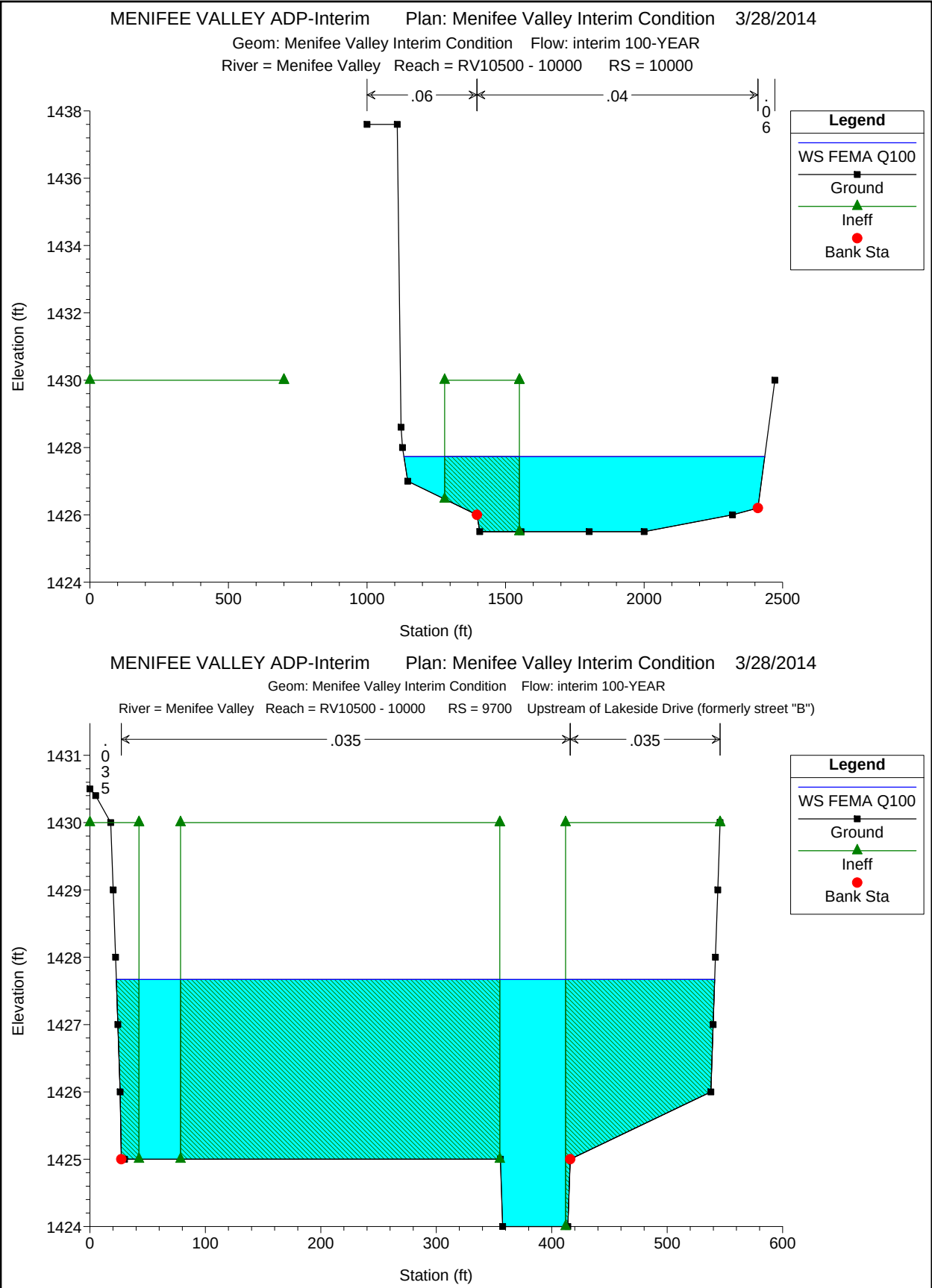
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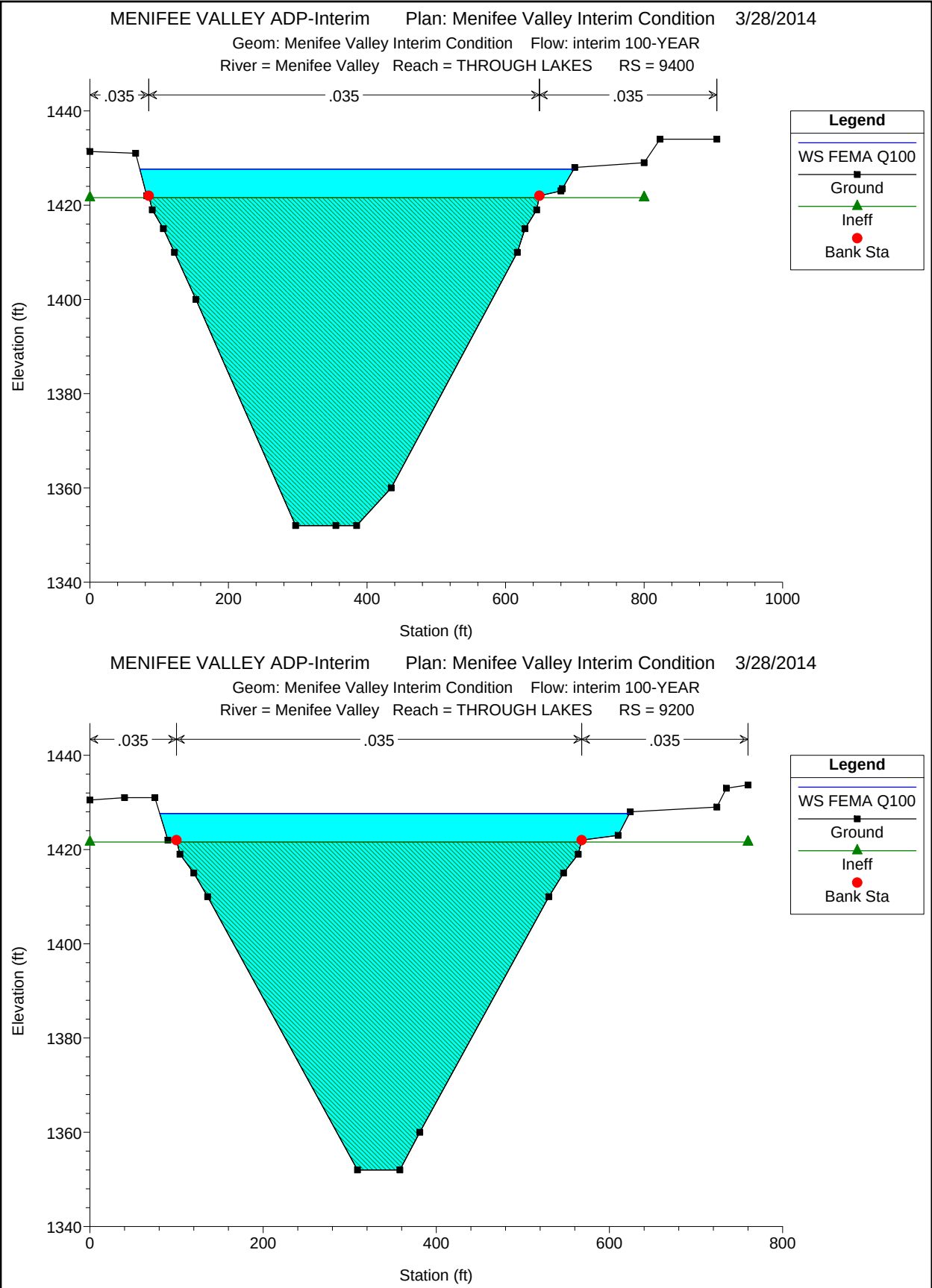
Bank Sta

0.06

0.06

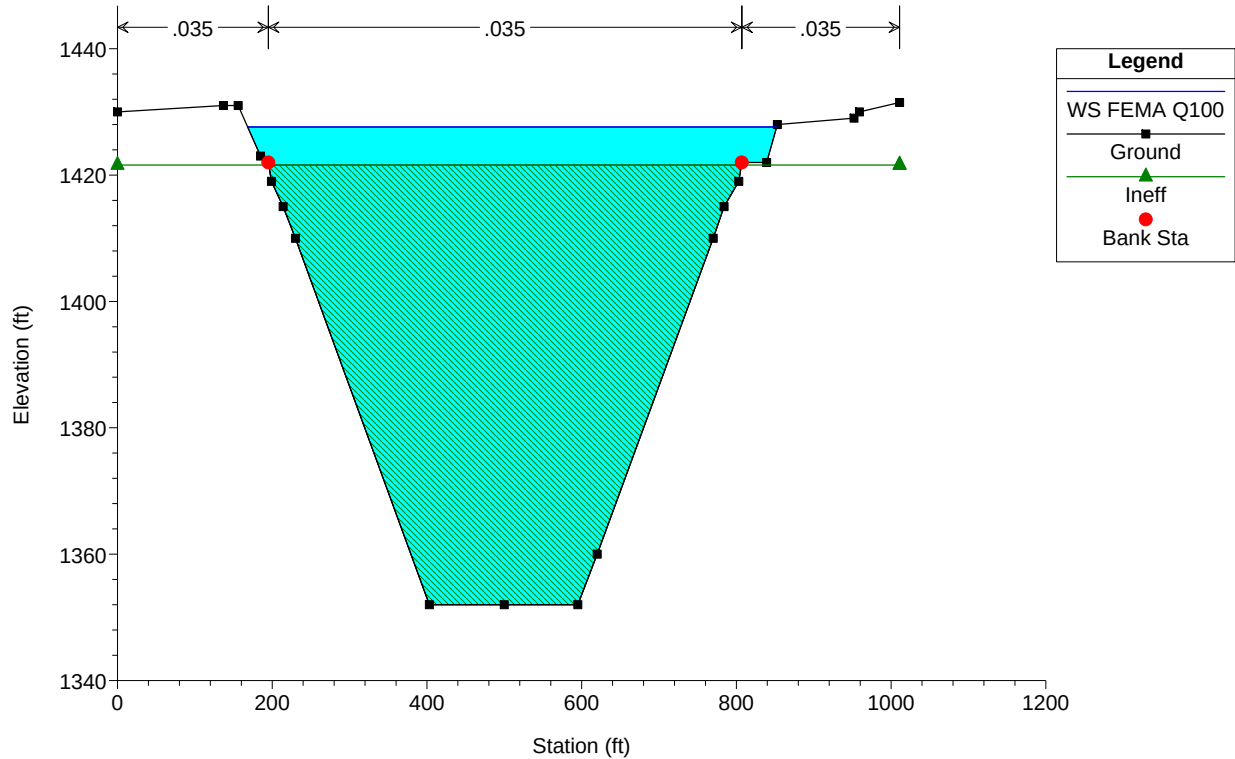
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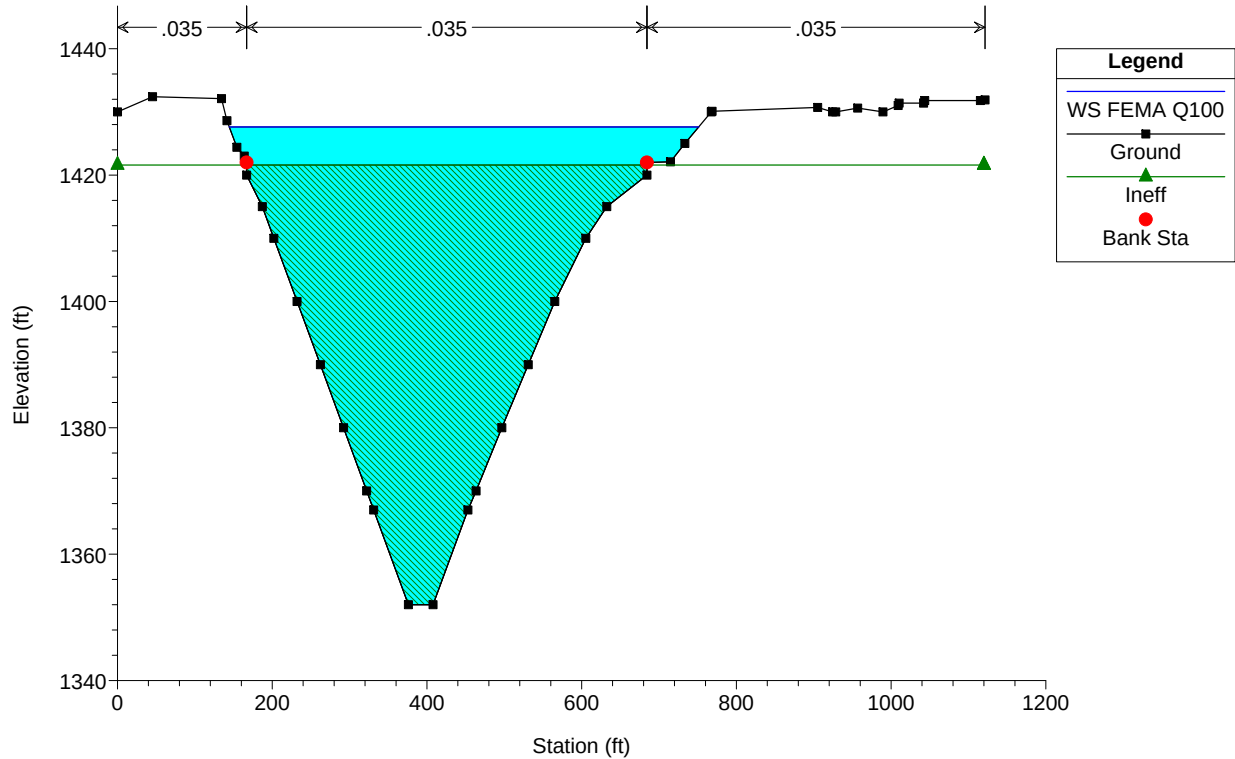
MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

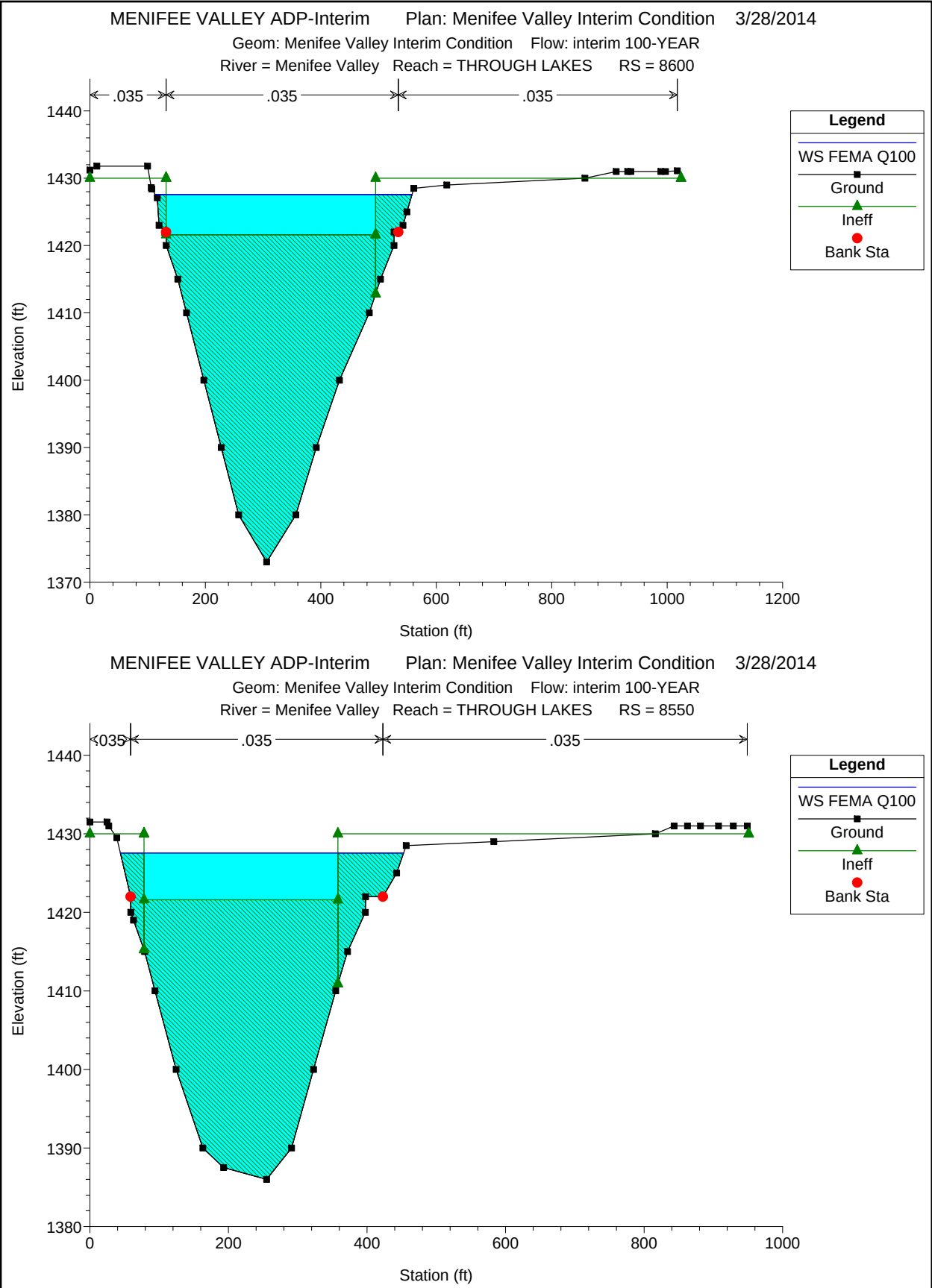
Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR
River = Meniffee Valley Reach = THROUGH LAKES RS = 9000

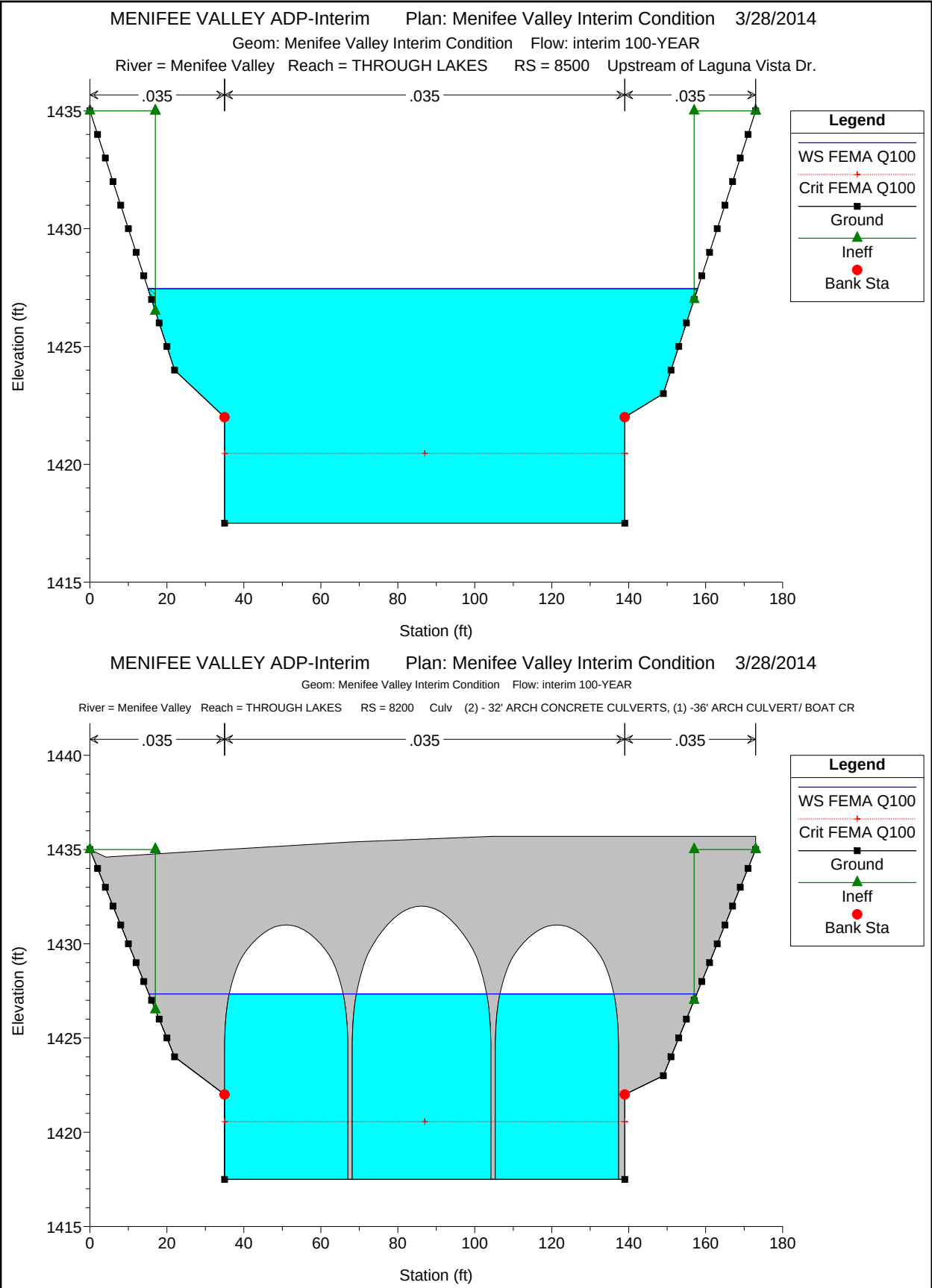
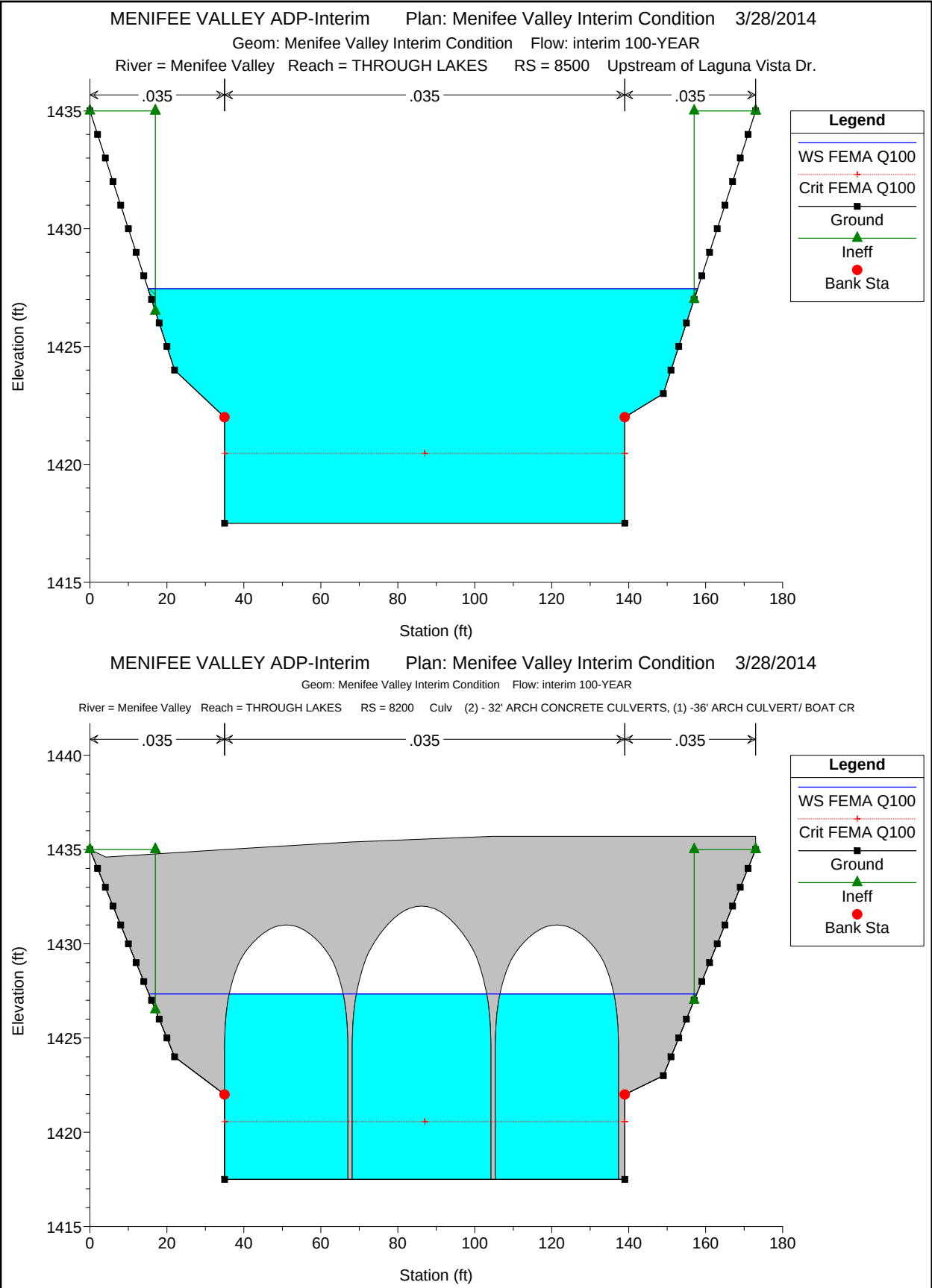


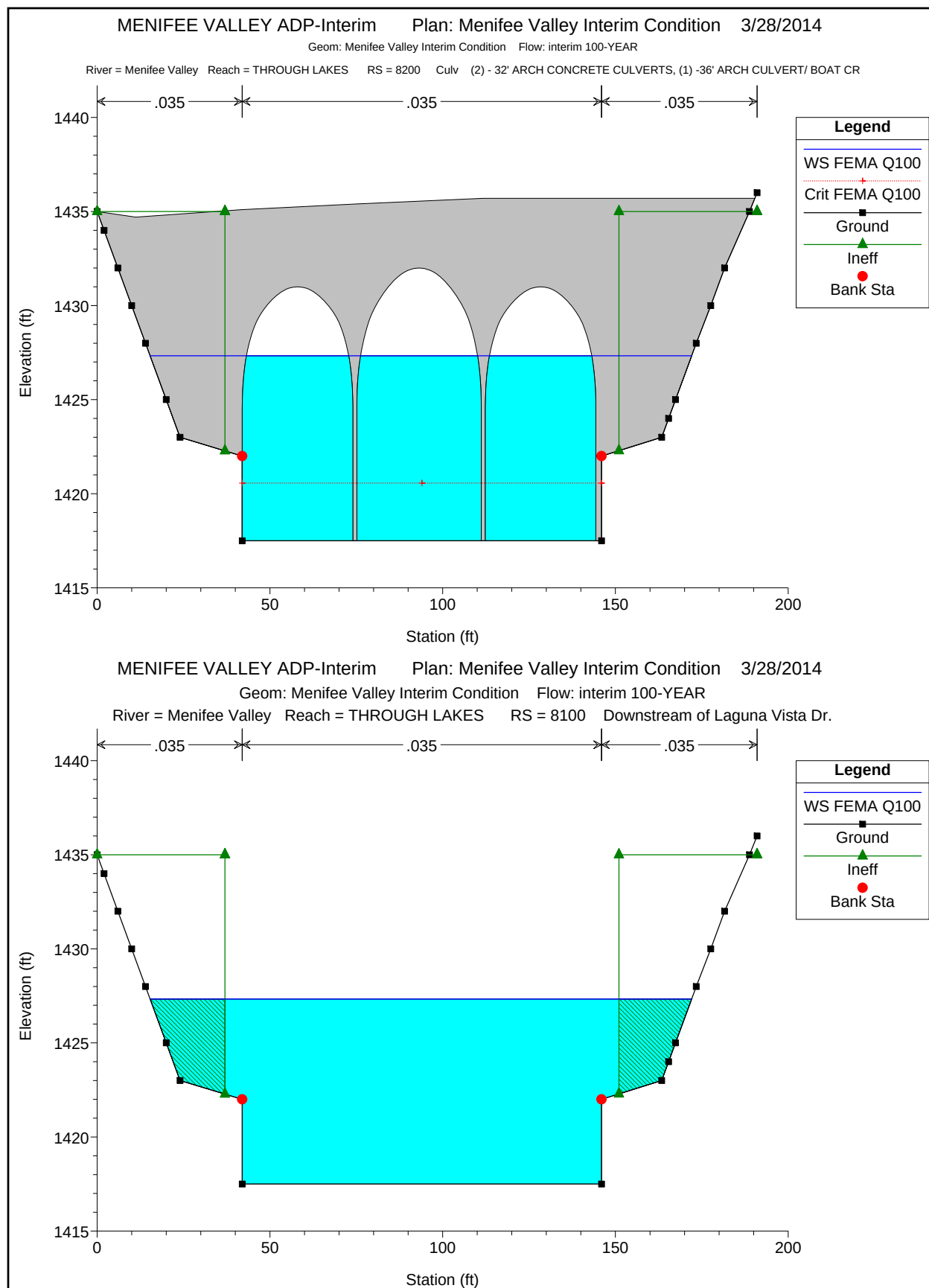
MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

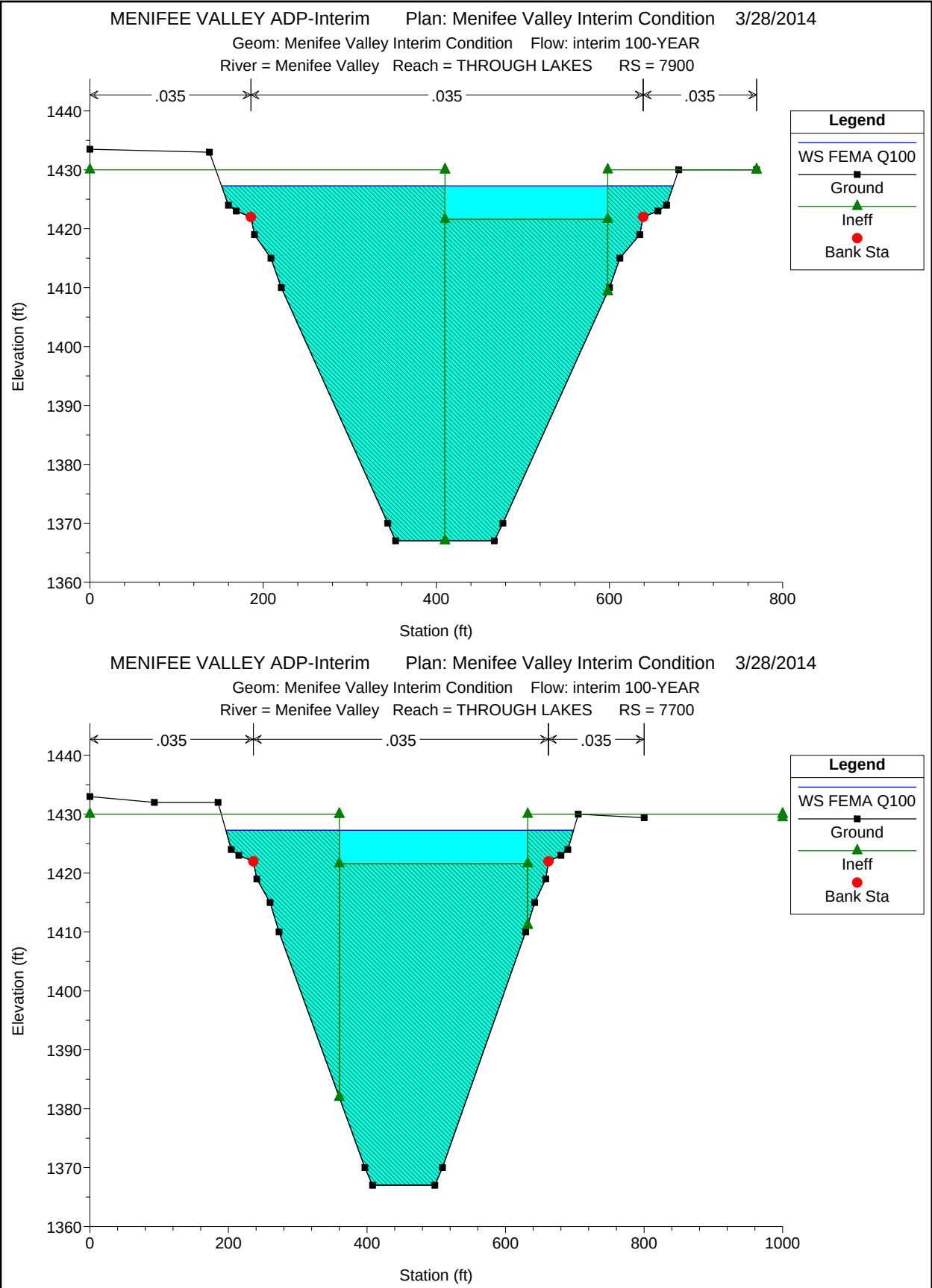
Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR
River = Meniffee Valley Reach = THROUGH LAKES RS = 8700

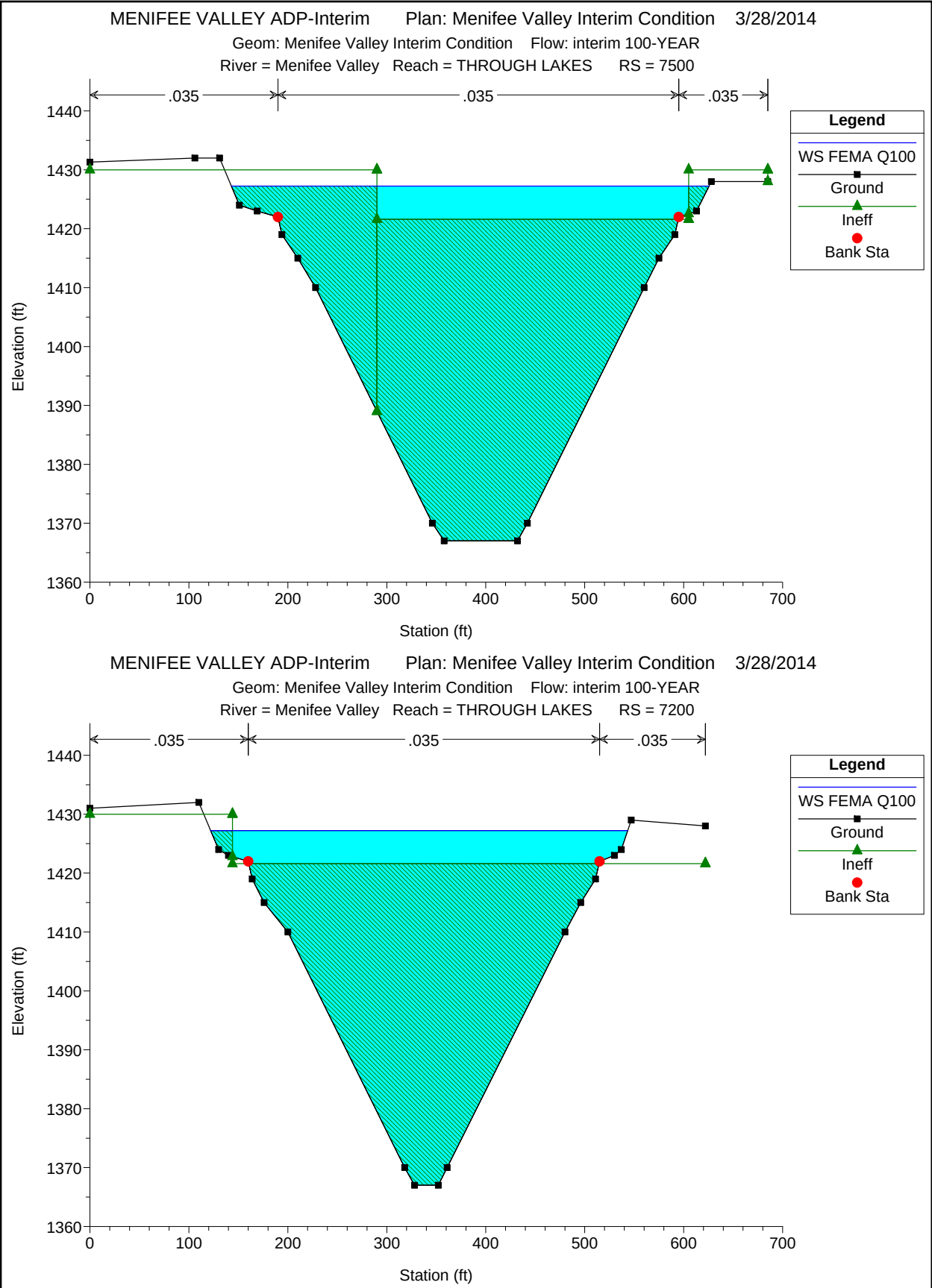


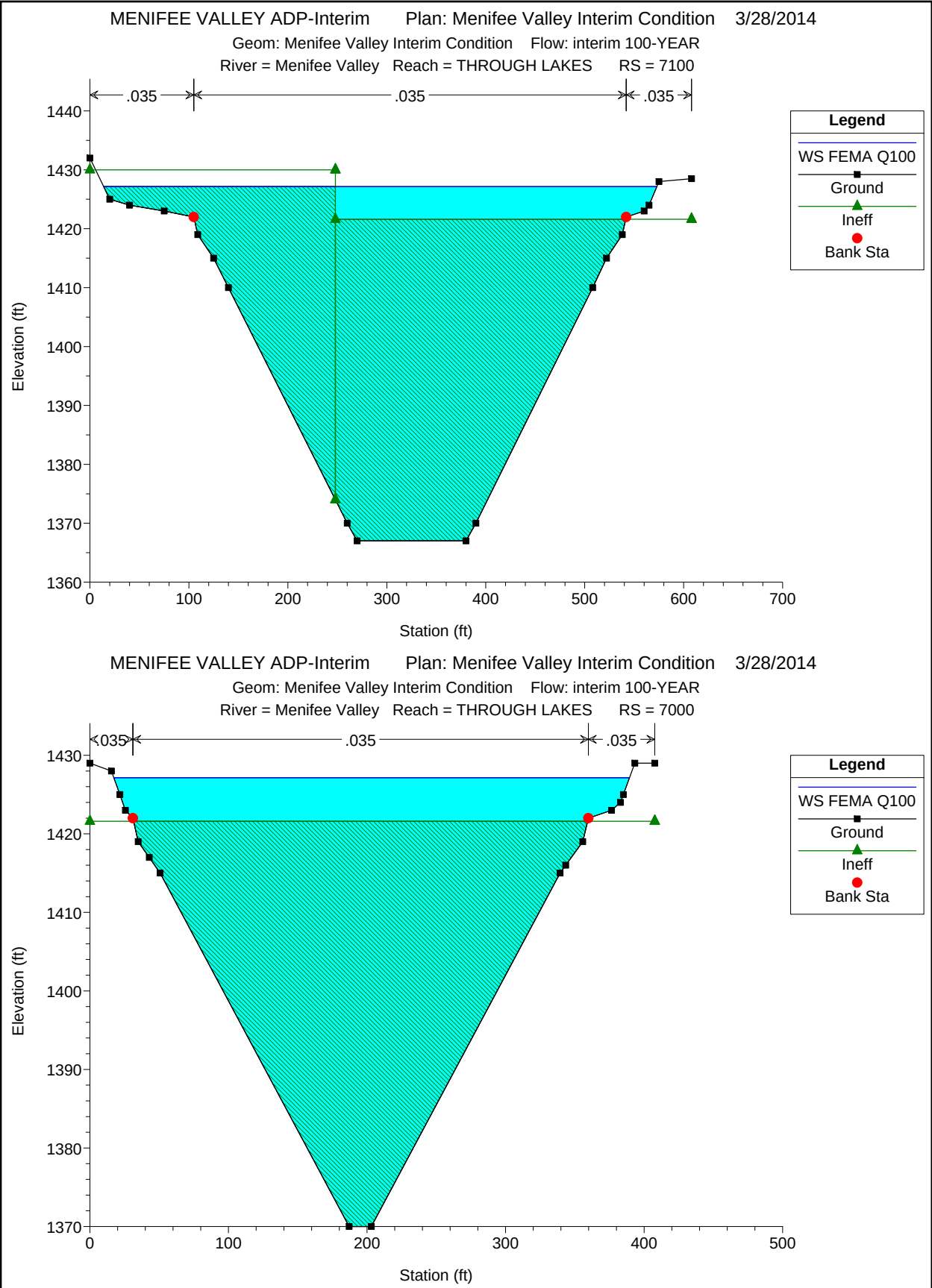












Elevation (ft)

1430

1420

1410

1400

1390

1380

1370

0

100

200

300

400

500

←.035→

←.035→

←.035→

WS FEMA Q100

Ground

Ineff

Bank Sta

Elevation (ft)

1430

1420

1410

1400

1390

1380

1370

0

100

200

300

400

500

←.035→

←.035→

←.035→

WS FEMA Q100

Ground

Ineff

Bank Sta

Elevation (ft)

1430

1420

1410

1400

1390

1380

1370

0

100

200

300

400

500

←.035→

←.035→

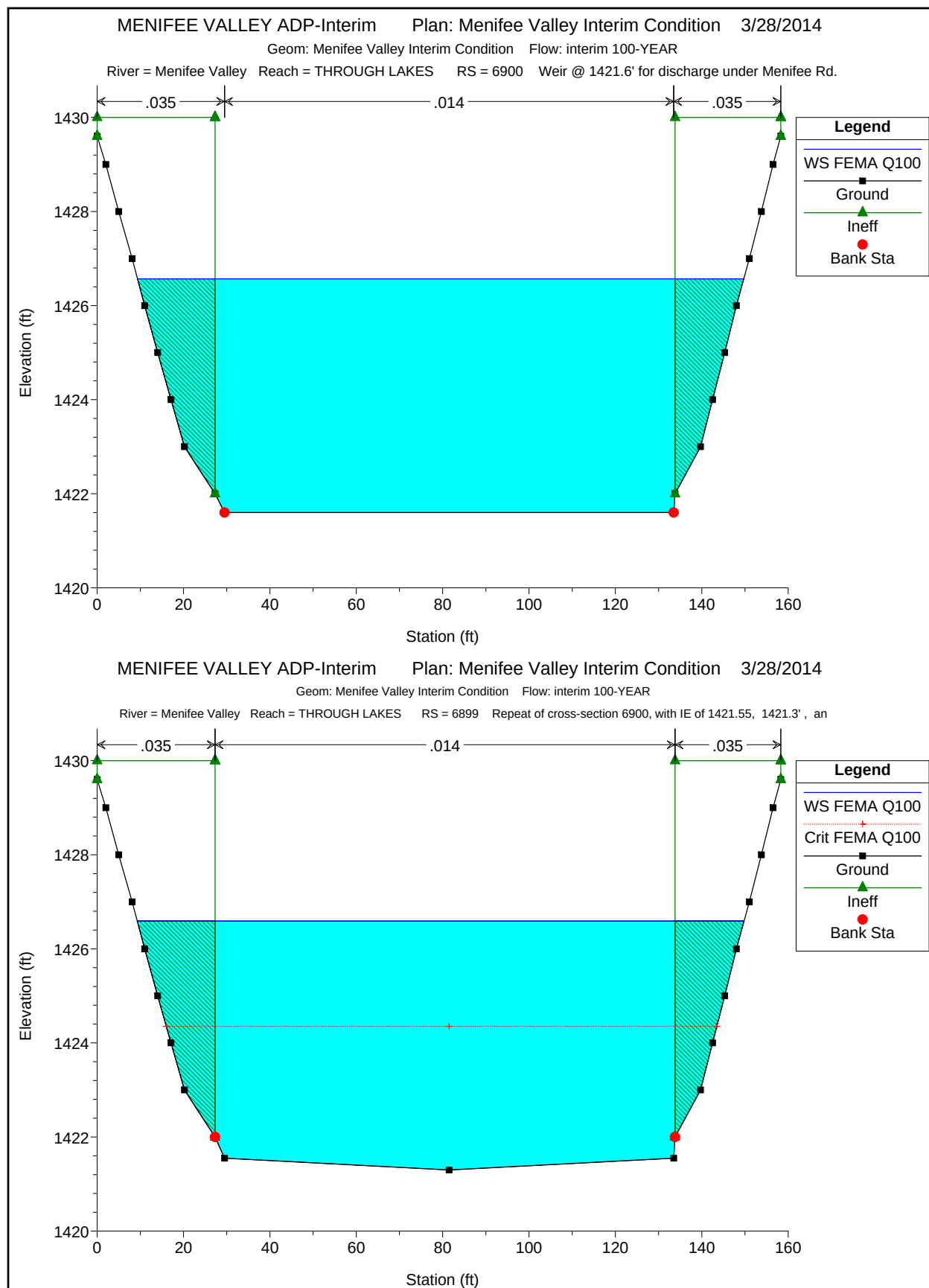
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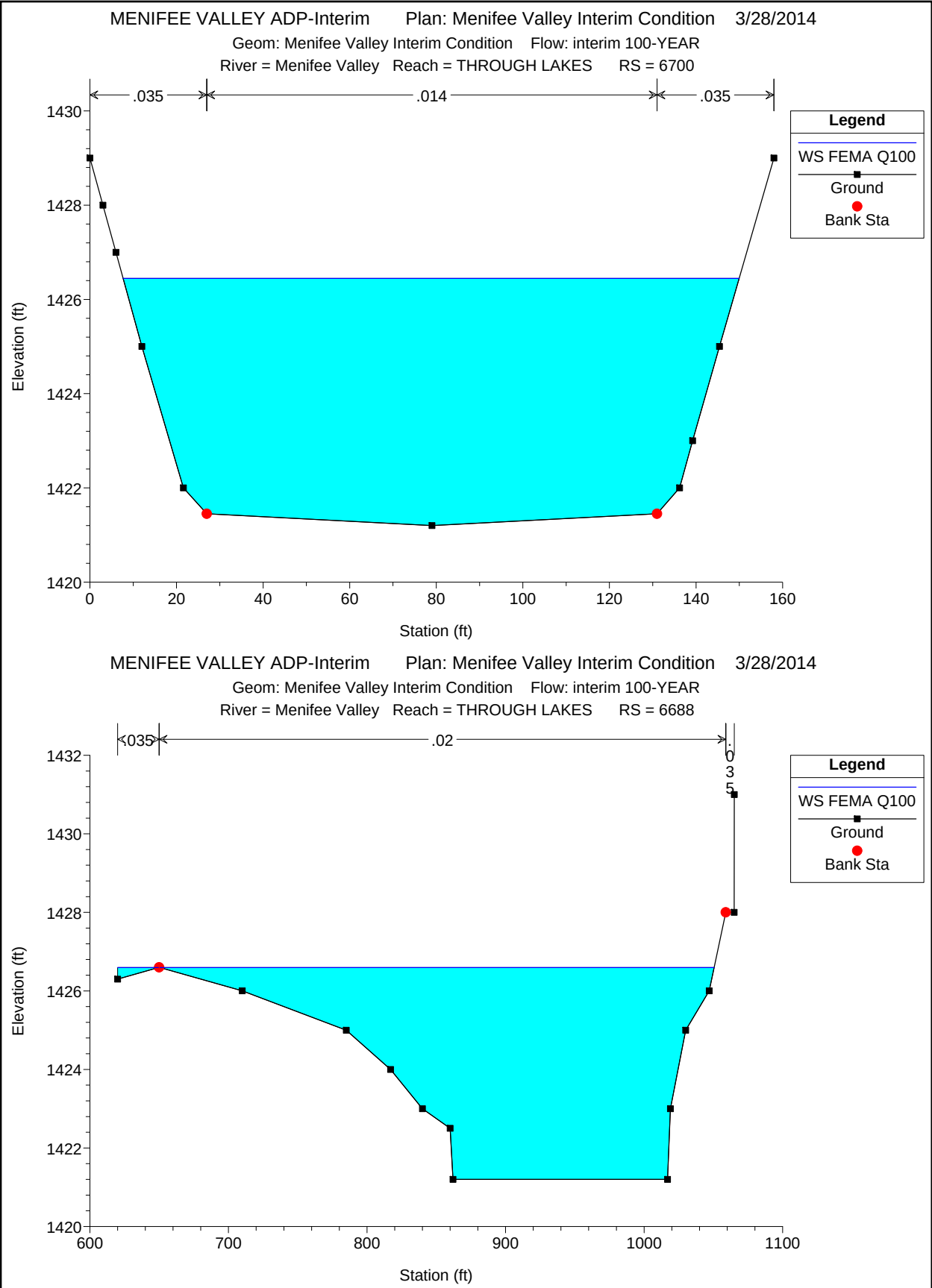
WS FEMA Q100

Ground

Ineff

Bank Sta





MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR

River = Meniffee Valley Reach = THROUGH LAKES RS = 6688

1432

1430

1428

1426

1424

1422

1420

600

700

800

900

1000

1100

←.035→

←.02→

←.035→

Legend

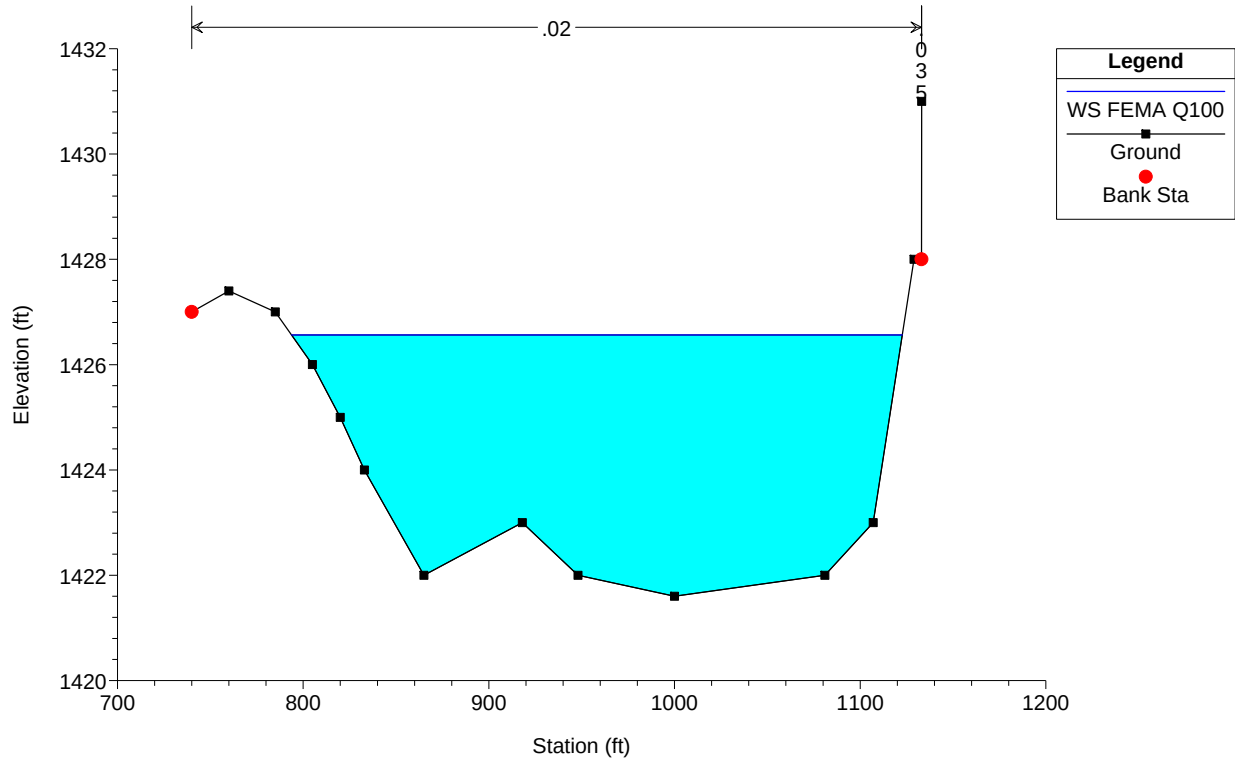
WS FEMA Q100

Ground

Bank Sta

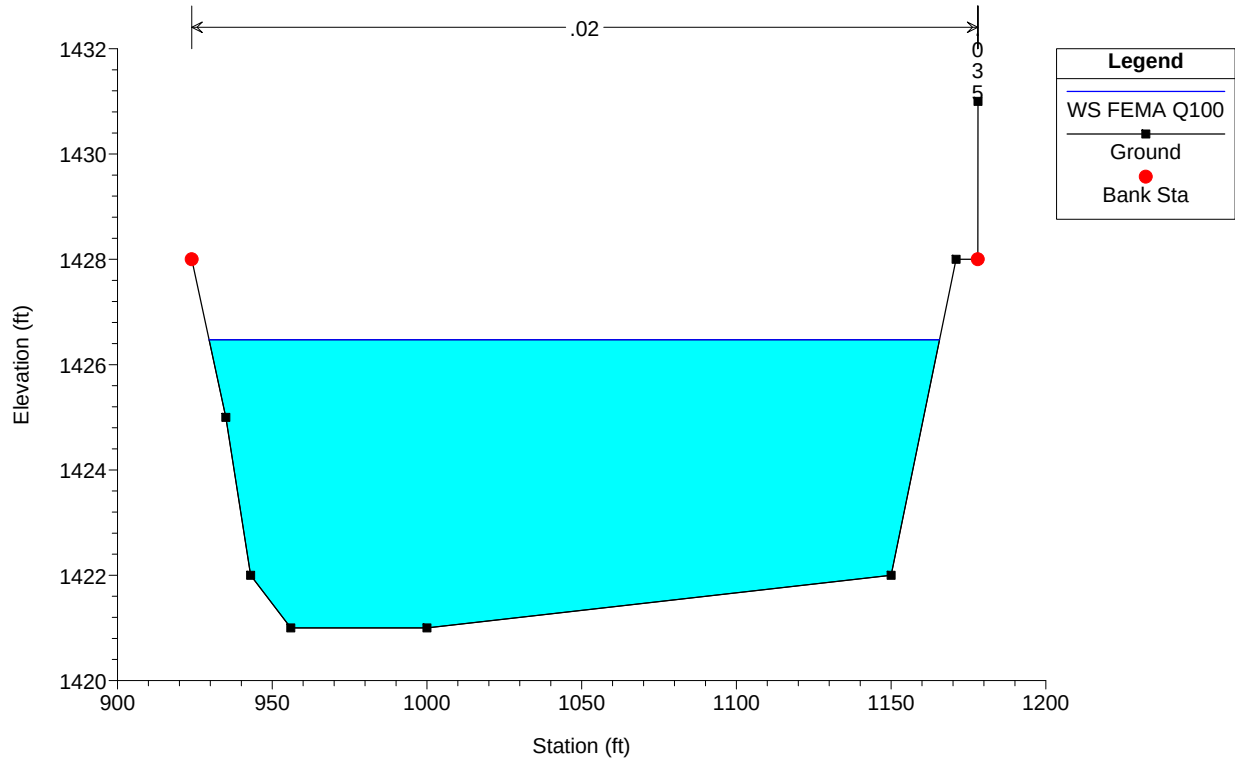
MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR
River = Menifee Valley Reach = THROUGH LAKES RS = 6518



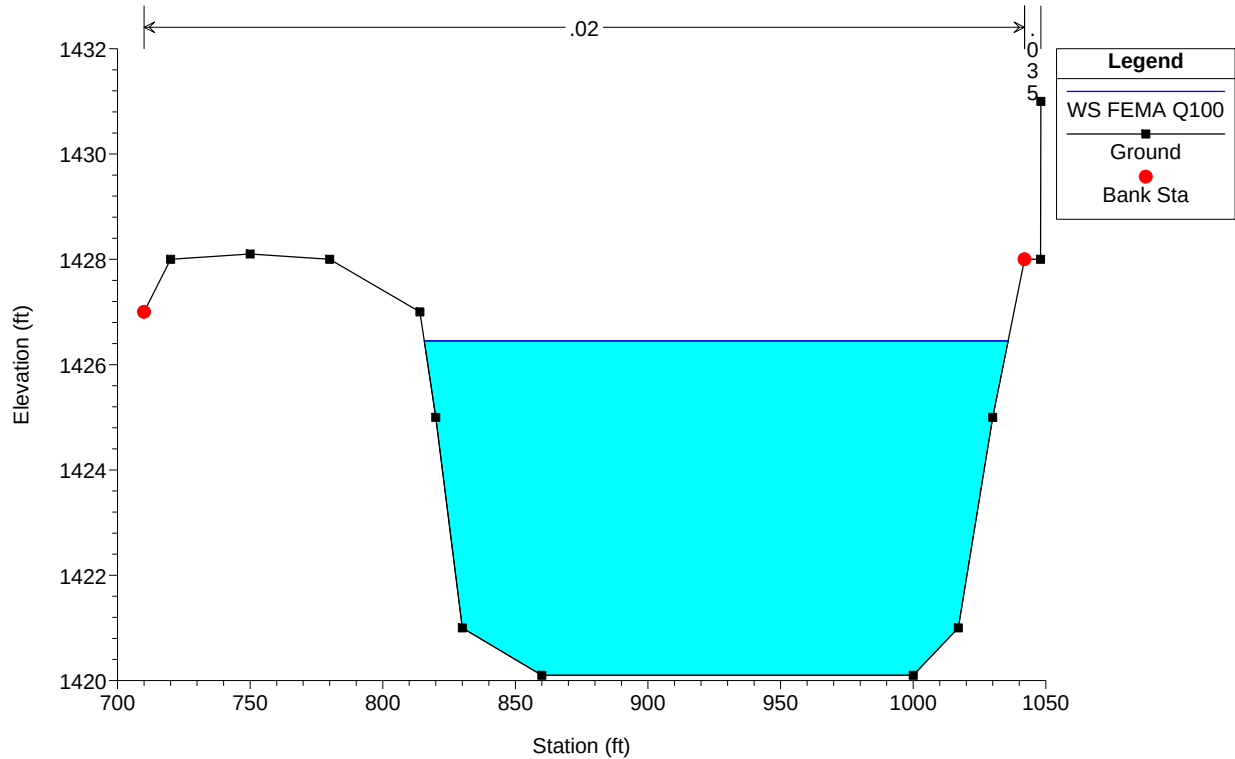
MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR
River = Menifee Valley Reach = THROUGH LAKES RS = 6189



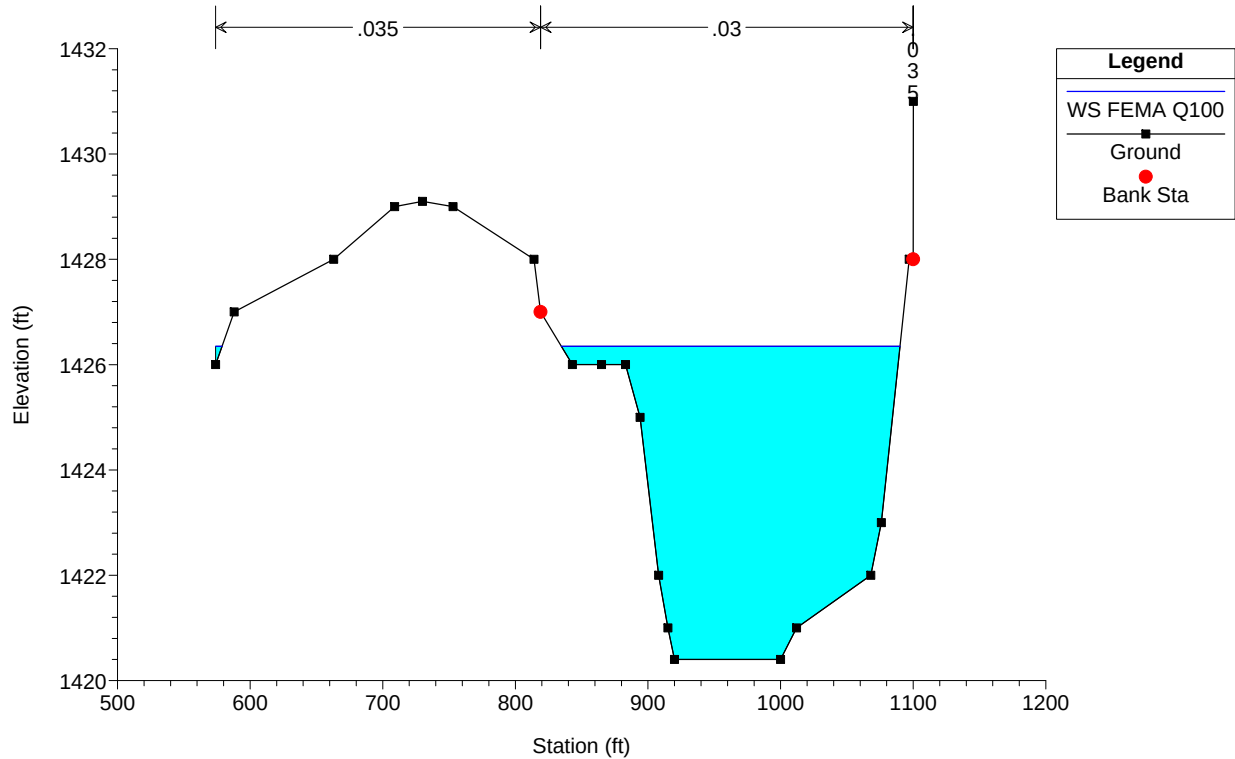
MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR
River = Menifee Valley Reach = THROUGH LAKES RS = 5912



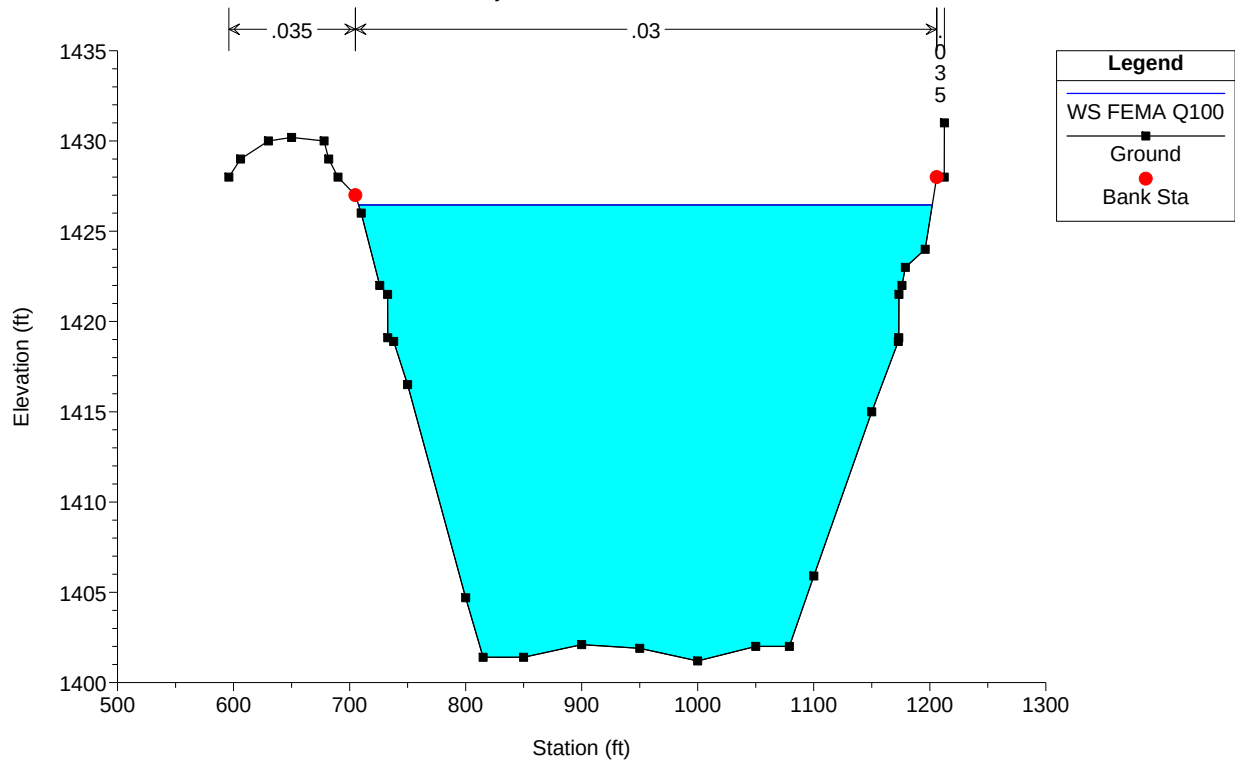
MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR
River = Menifee Valley Reach = THROUGH LAKES RS = 5721



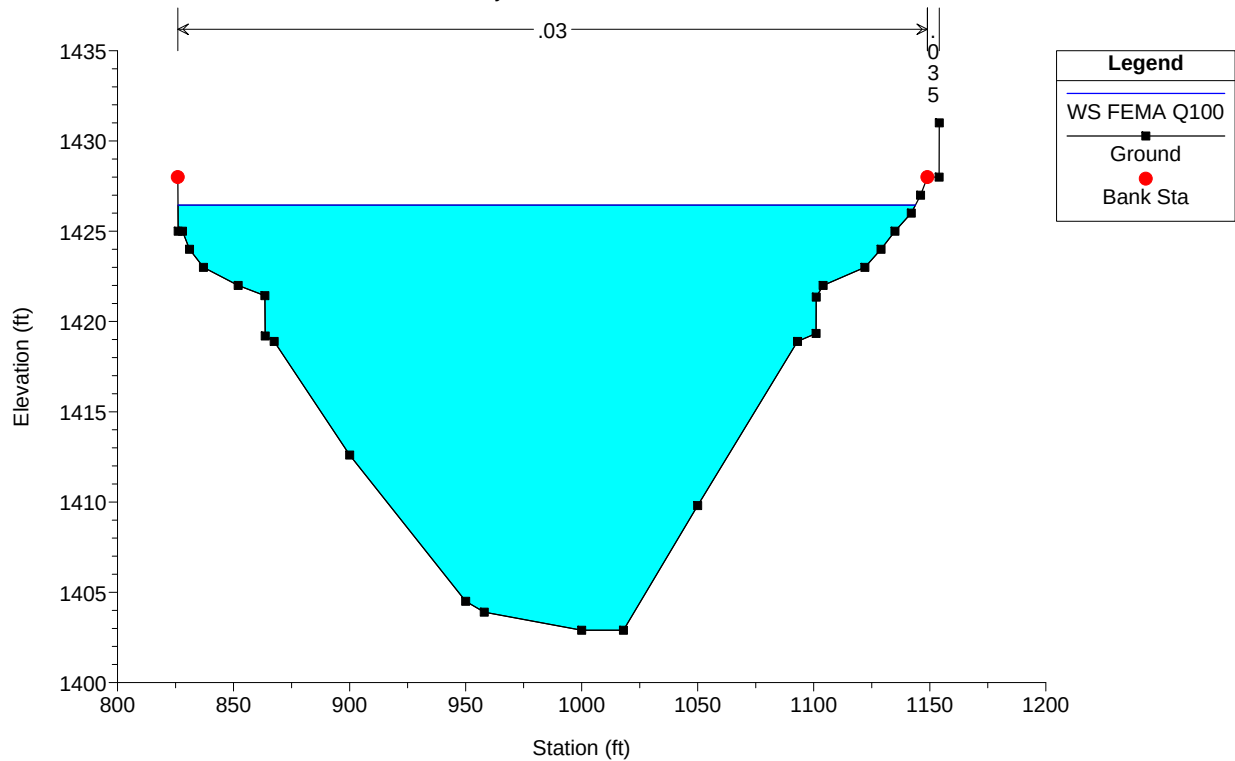
MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

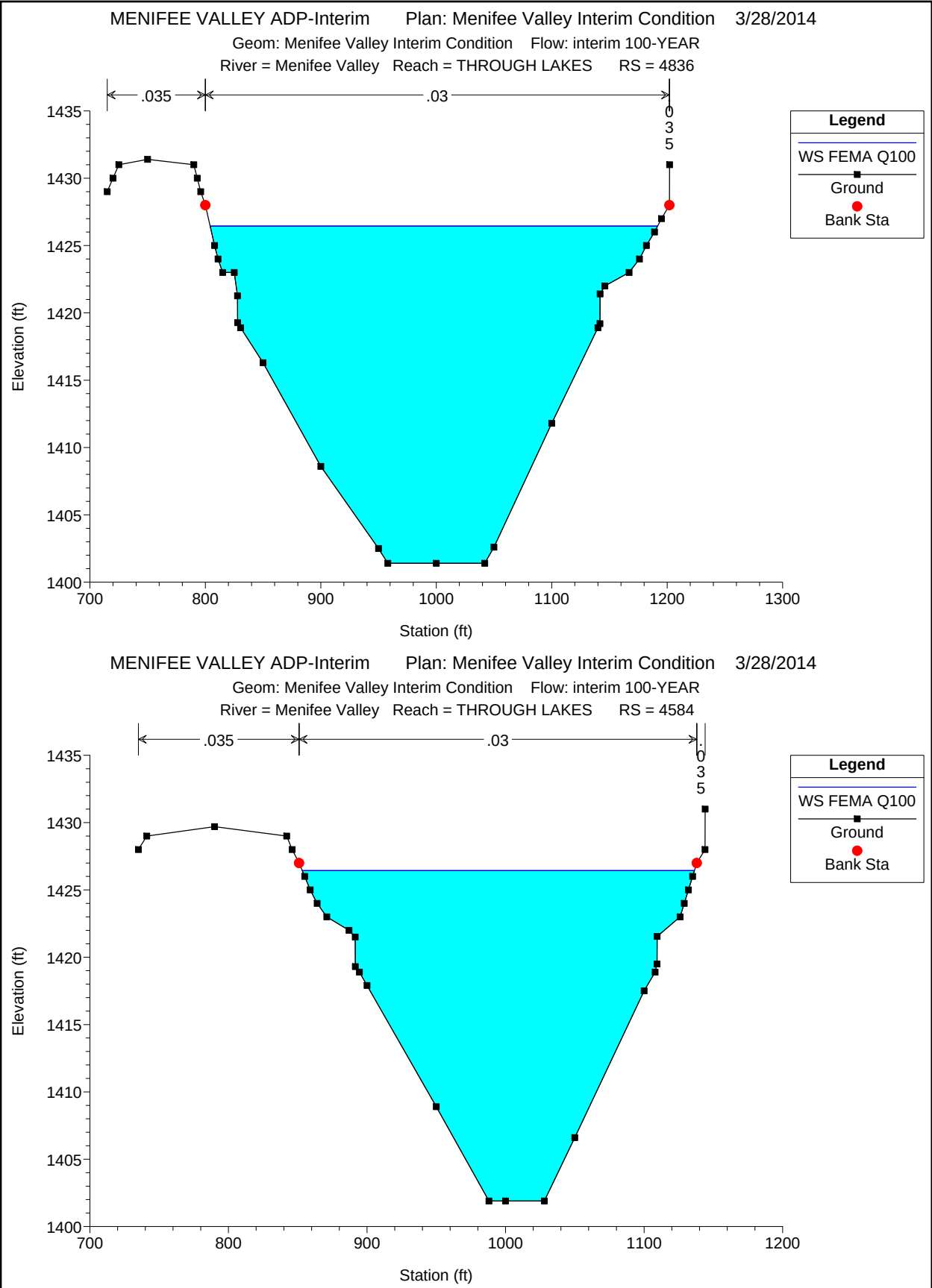
Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR
River = Meniffee Valley Reach = THROUGH LAKES RS = 5473



MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR
River = Meniffee Valley Reach = THROUGH LAKES RS = 5110





MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley Reach = THROUGH LAKES RS = 4584

Elevation (ft)

1435

1430

1425

1420

1415

1410

1405

1400

700

800

900

1000

1100

1200

0.035

0.03

0.35

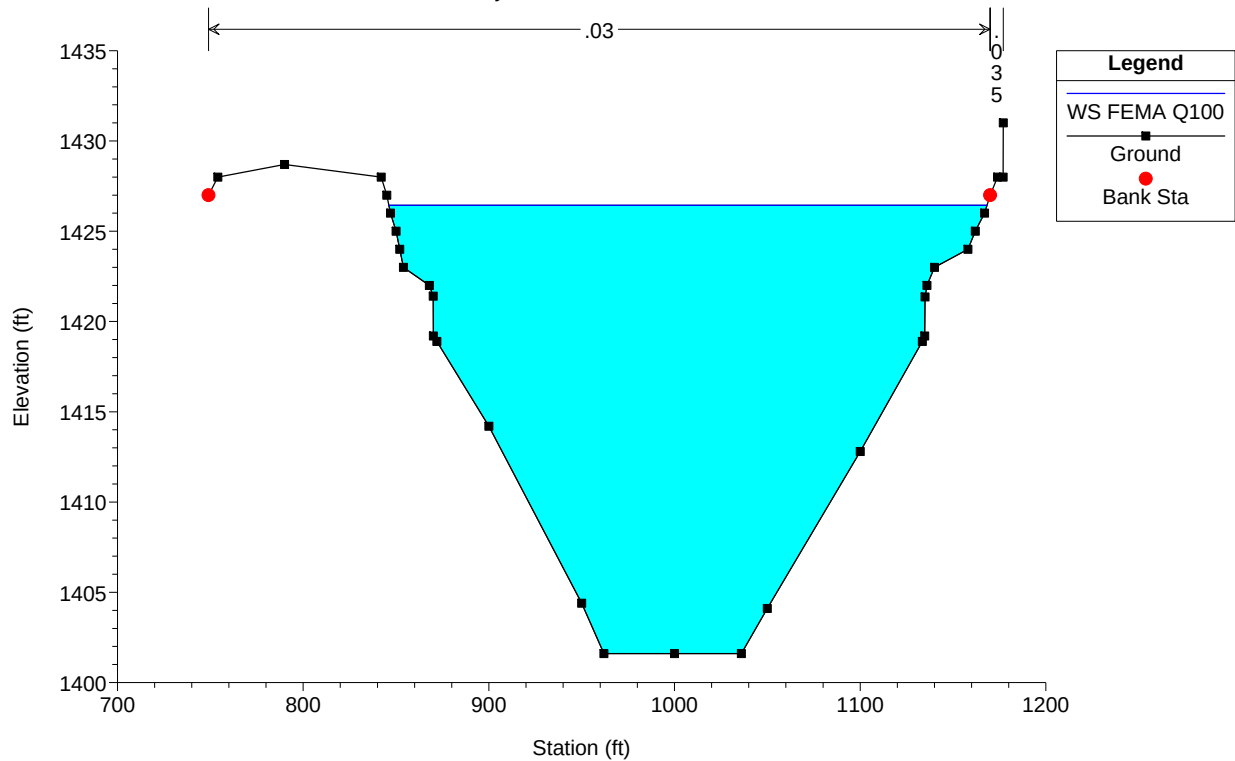
WS FEMA Q100

Ground

Bank Sta

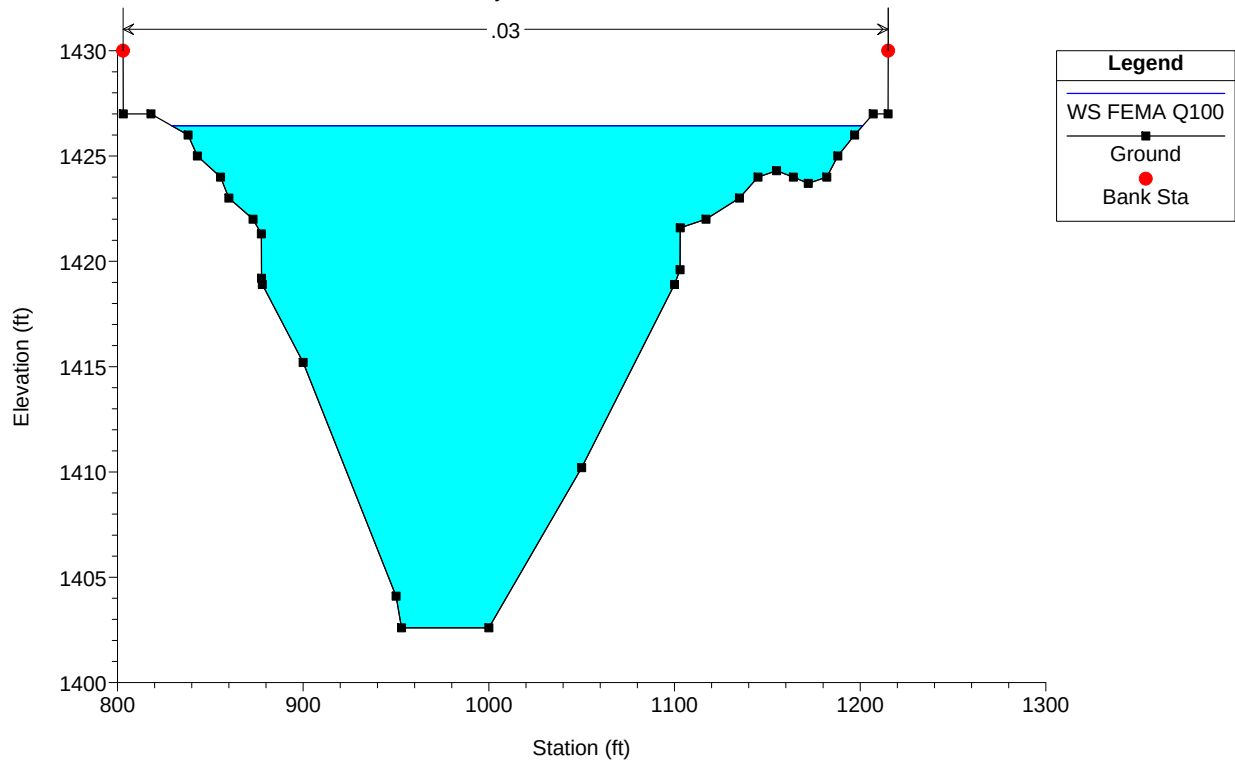
MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR
River = Meniffee Valley Reach = THROUGH LAKES RS = 4449



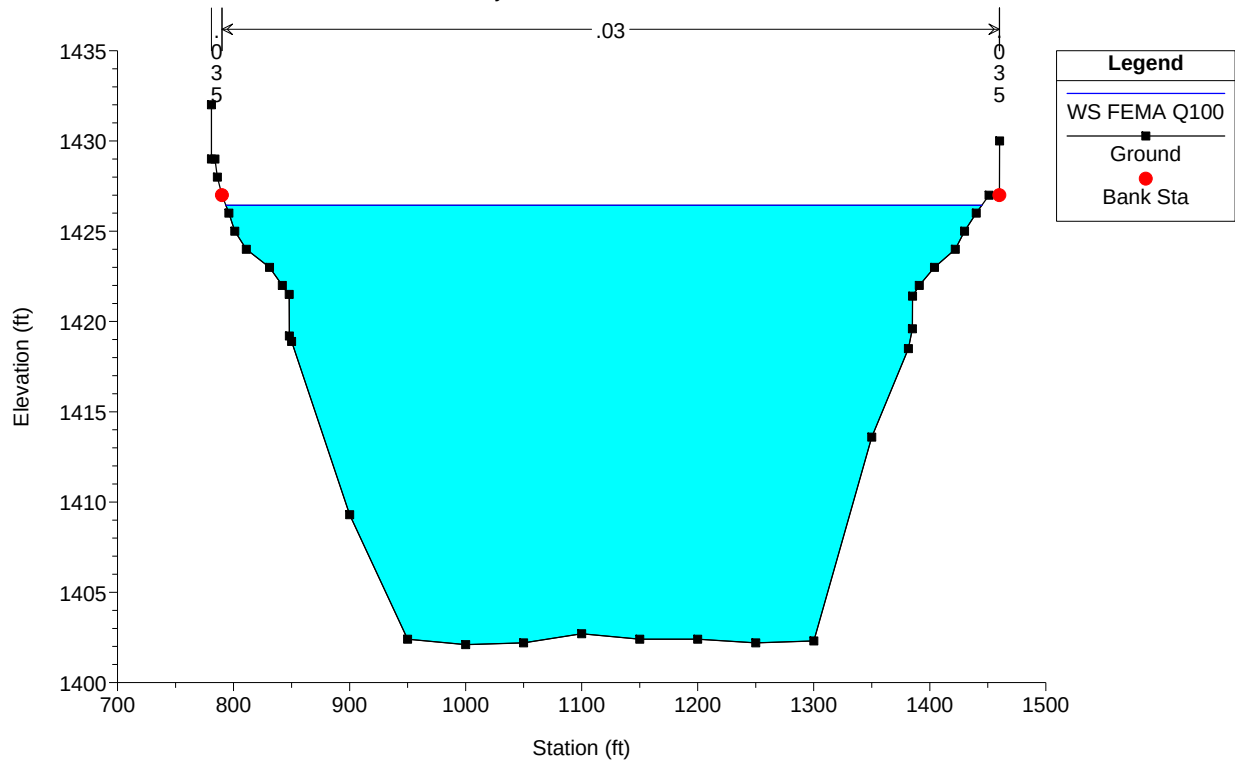
MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR
River = Meniffee Valley Reach = THROUGH LAKES RS = 4275



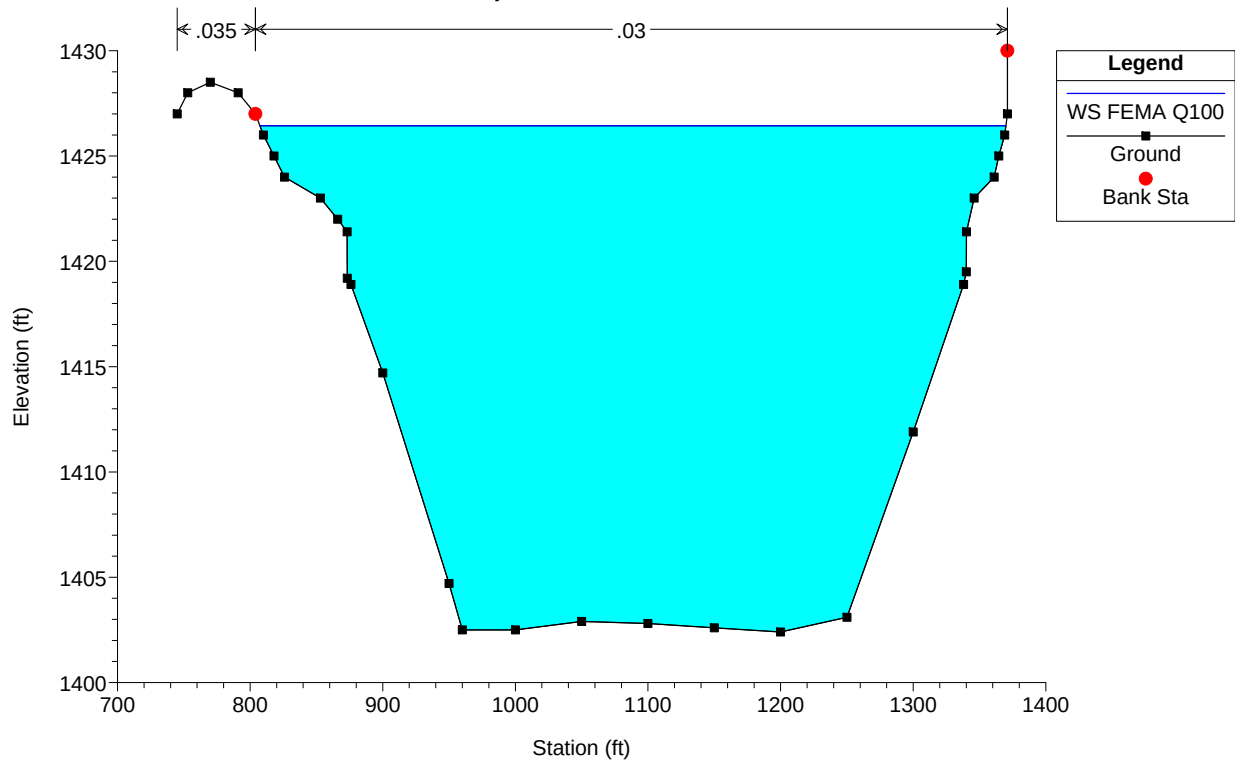
MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

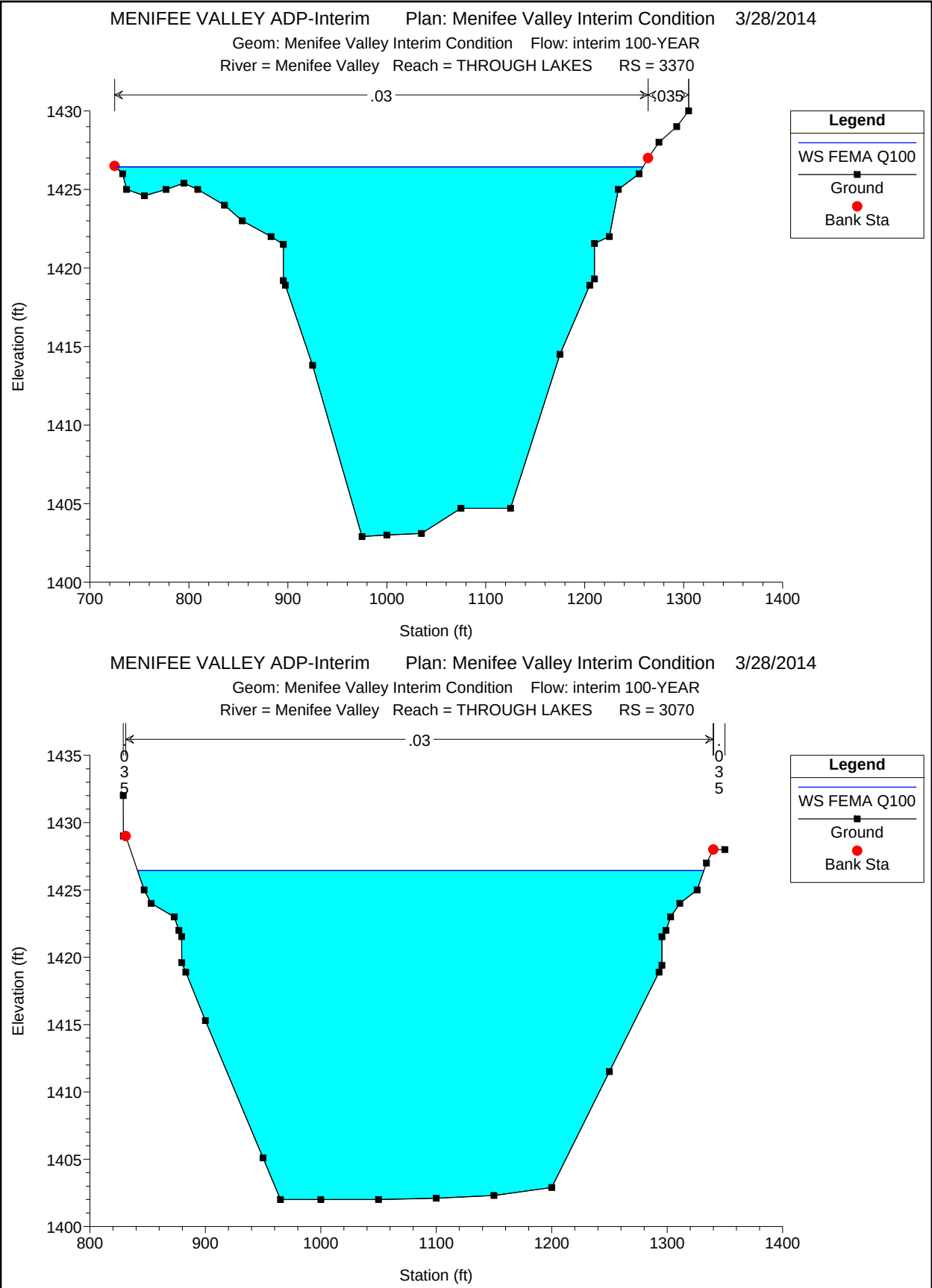
Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR
River = Meniffee Valley Reach = THROUGH LAKES RS = 3990



MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR
River = Meniffee Valley Reach = THROUGH LAKES RS = 3700





MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley

Reach = THROUGH LAKES

RS = 3070

Elevation (ft)

1435

1430

1425

1420

1415

1410

1405

1400

800

900

1000

1100

1200

1300

1400

Legend

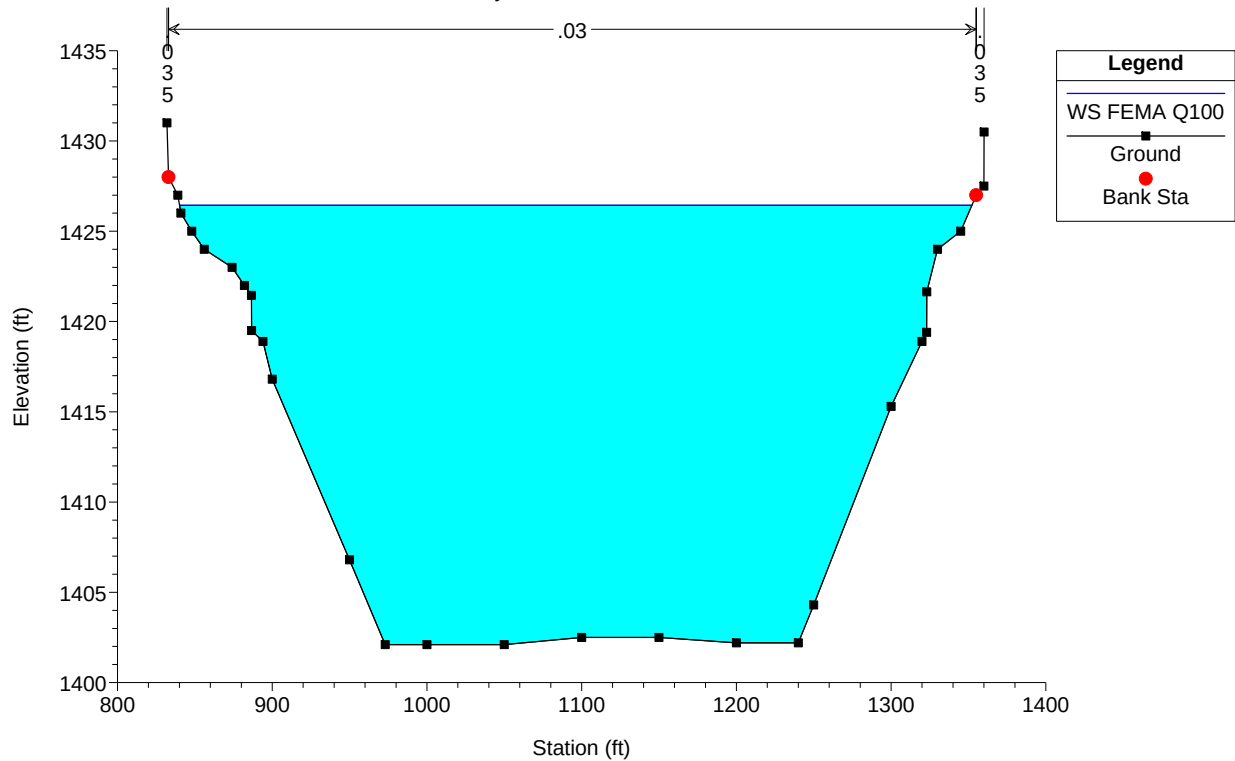
WS FEMA Q100

Ground

Bank Sta

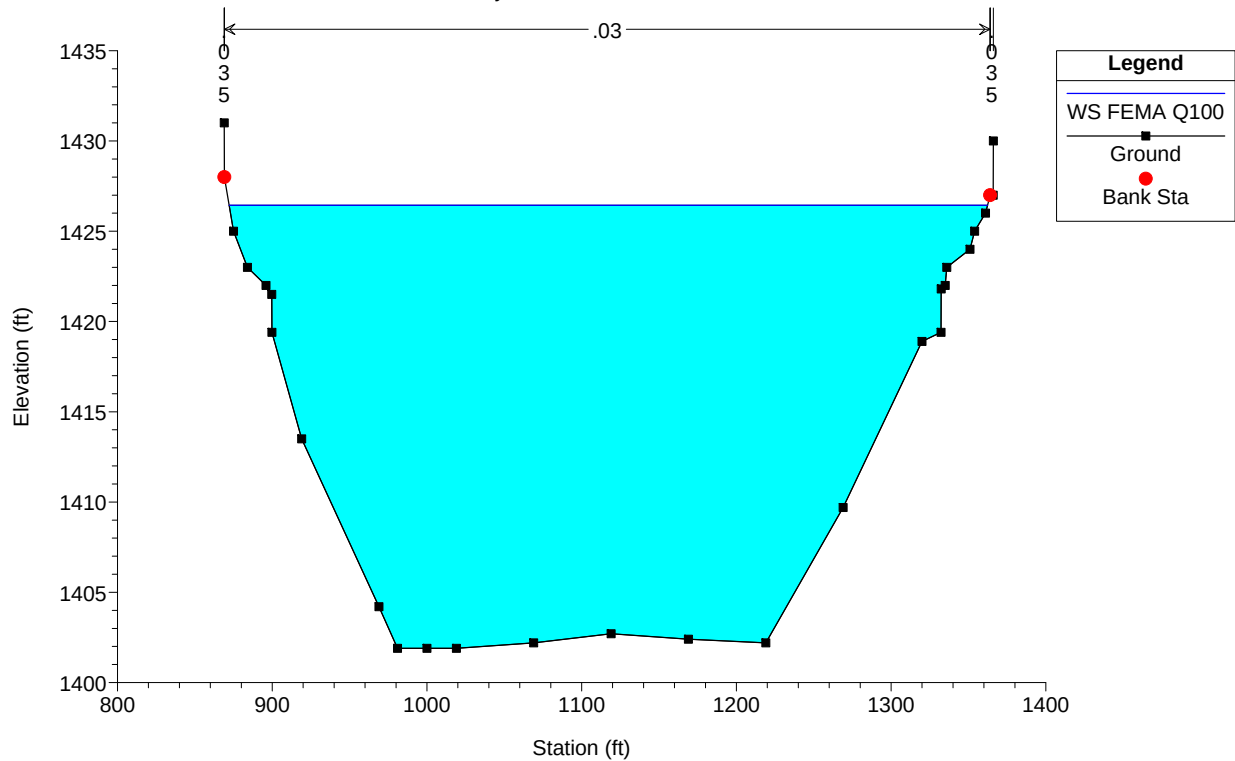
MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

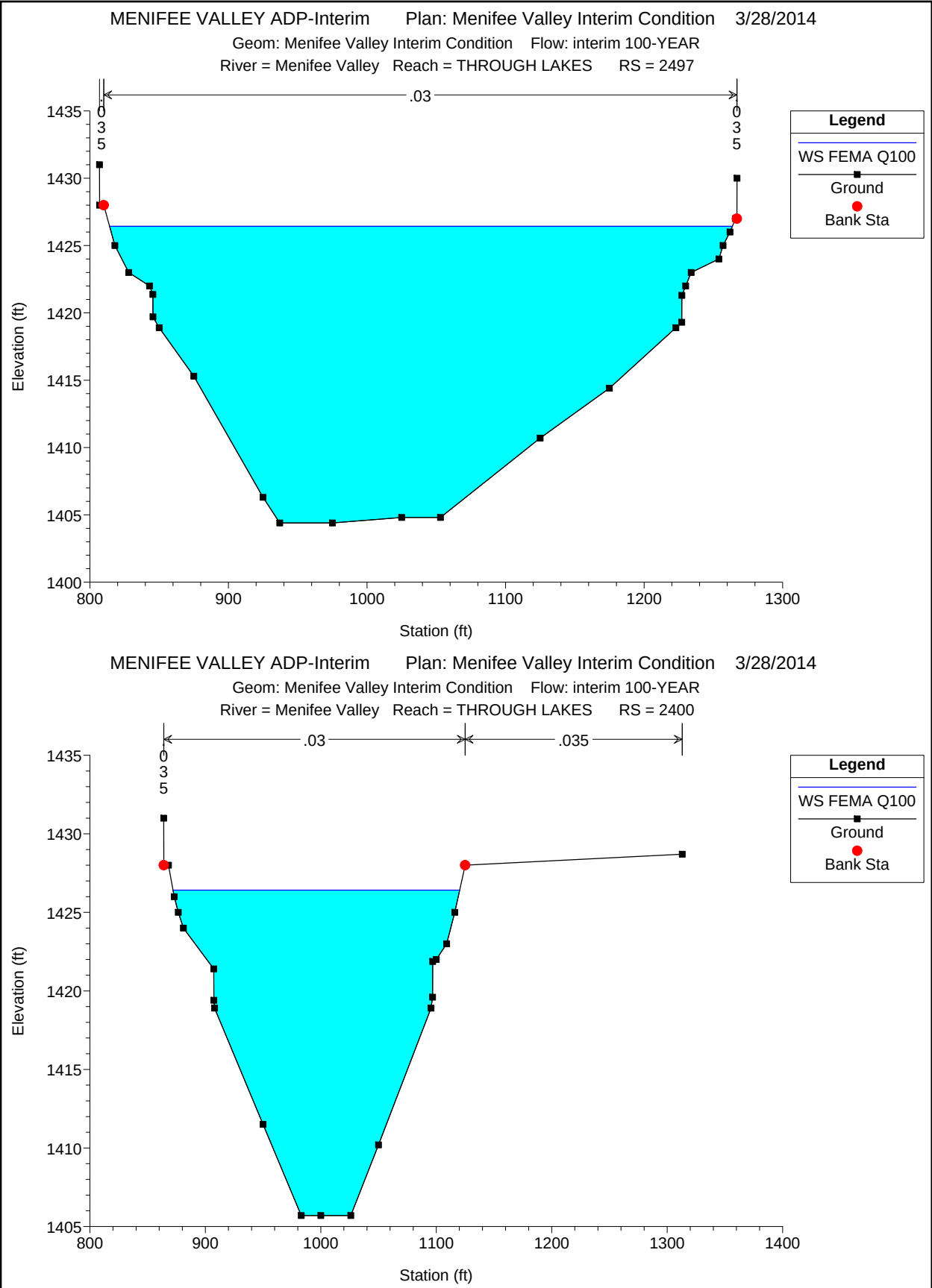
Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR
River = Menifee Valley Reach = THROUGH LAKES RS = 2810

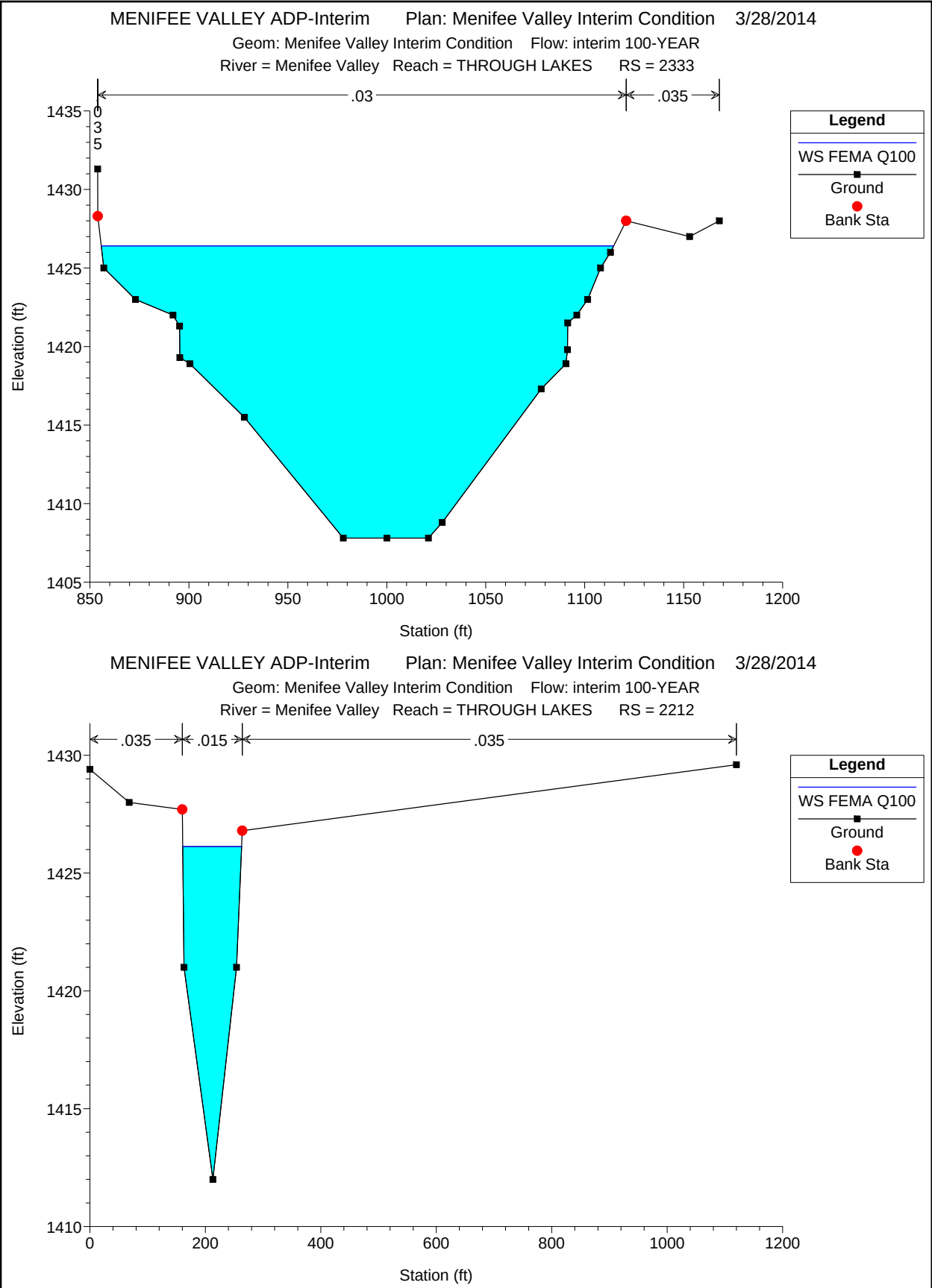


MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR
River = Menifee Valley Reach = THROUGH LAKES RS = 2610







MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley Reach = THROUGH LAKES RS = 2212

Elevation (ft)

1430

1425

1420

1415

1410

0

200

400

600

800

1000

1200

0.035

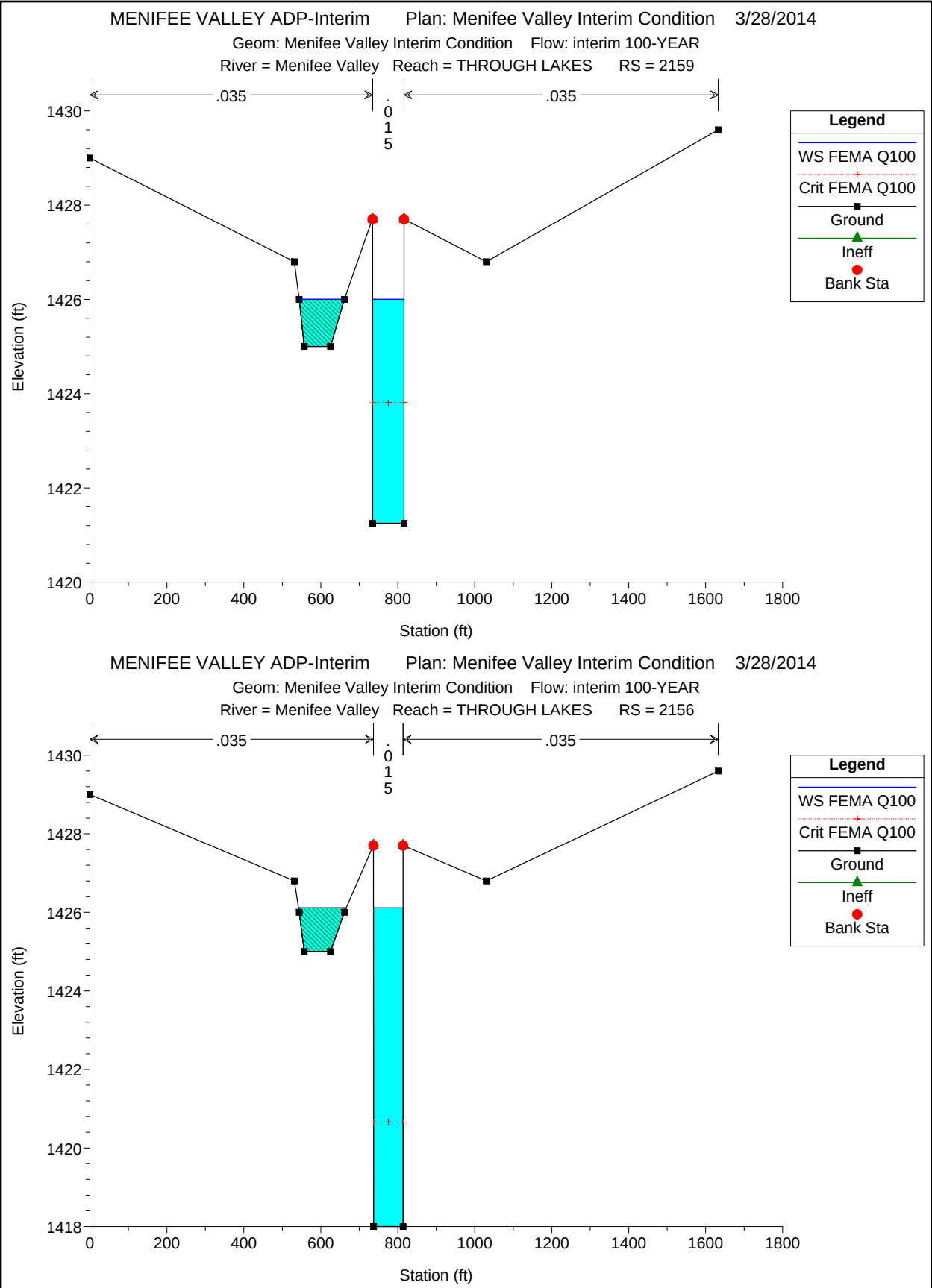
0.015

0.035

WS FEMA Q100

Ground

Bank Sta



MENIFEE VALLEY ADP-Interim

Plan: Menifee Valley Interim Condition

3/28/2014

Geom: Menifee Valley Interim Condition

Flow: interim 100-YEAR

River = Menifee Valley

Reach = THROUGH LAKES

RS = 2156

Elevation (ft)

1430

1428

1426

1424

1422

1420

1418

0

200

400

600

800

1000

1200

1400

1600

1800

0.035

0.035

0.15

WS FEMA Q100

Crit FEMA Q100

Ground

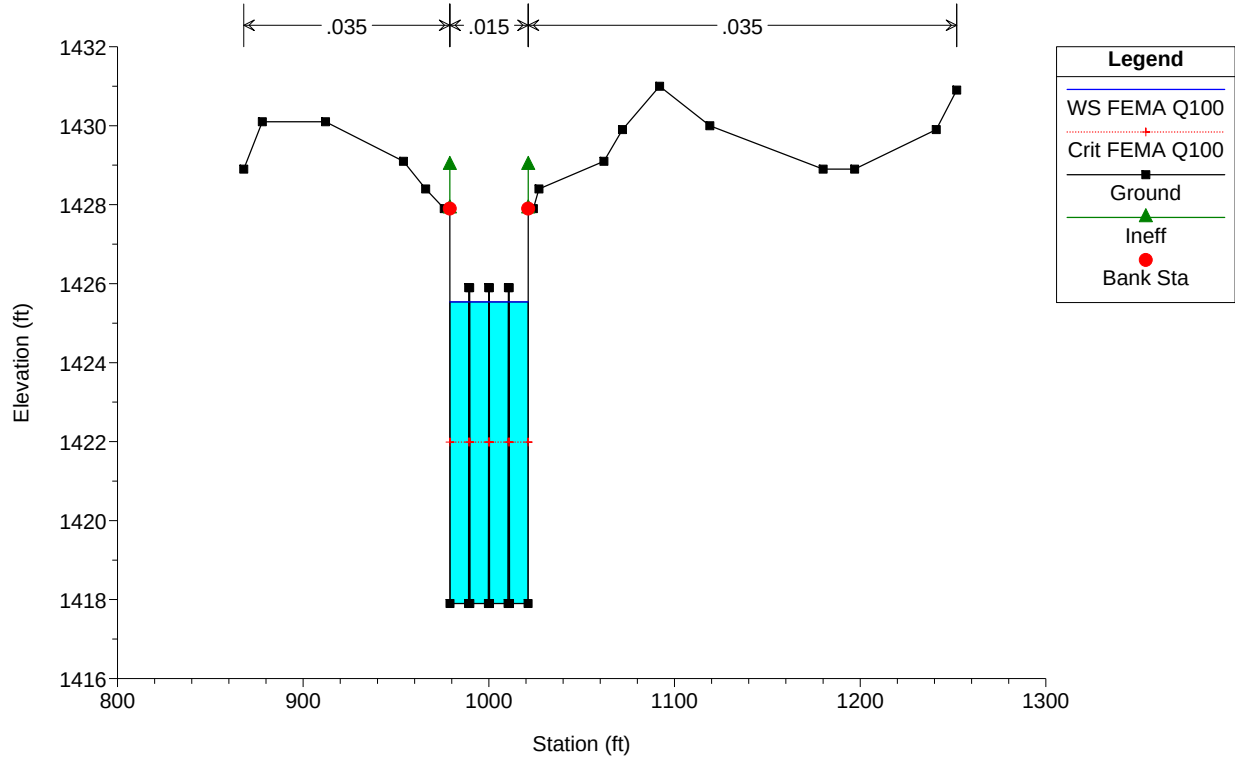
Ineff

Bank Sta

MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR

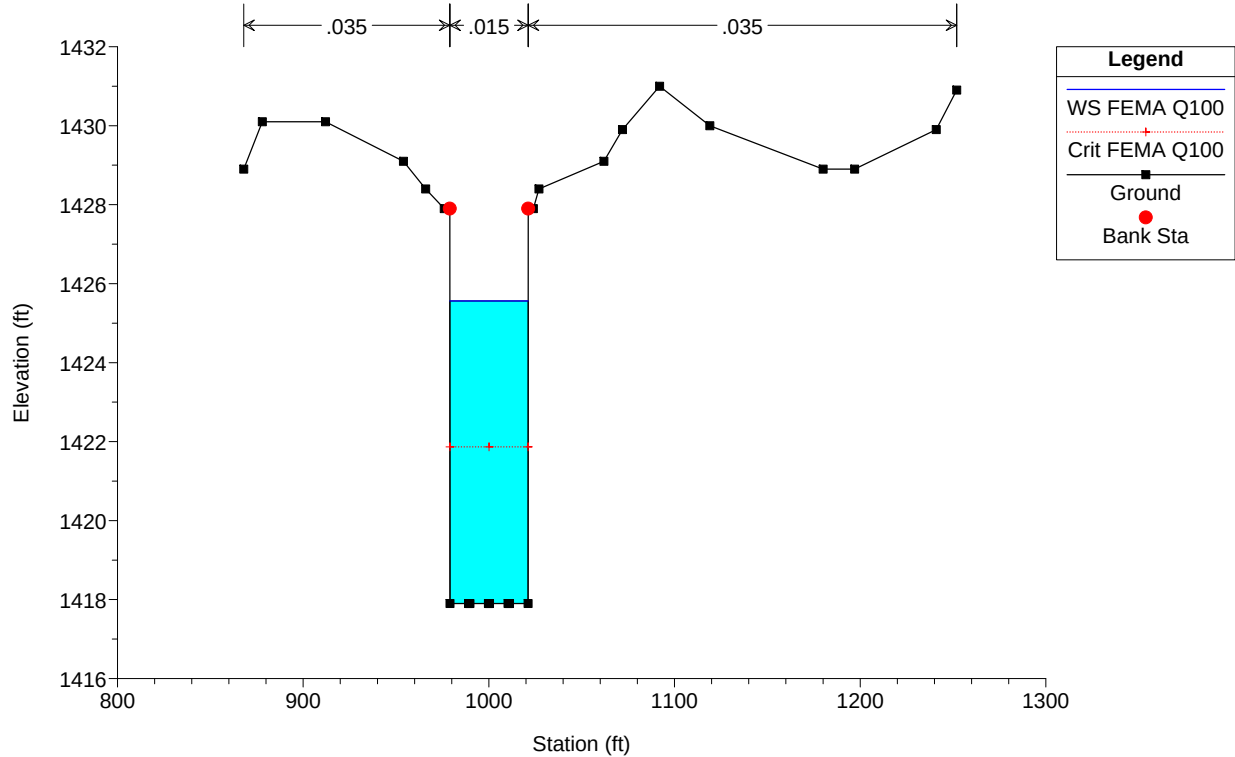
River = Menifee Valley Reach = THROUGH LAKES RS = 2130 This is a REPEATED section.

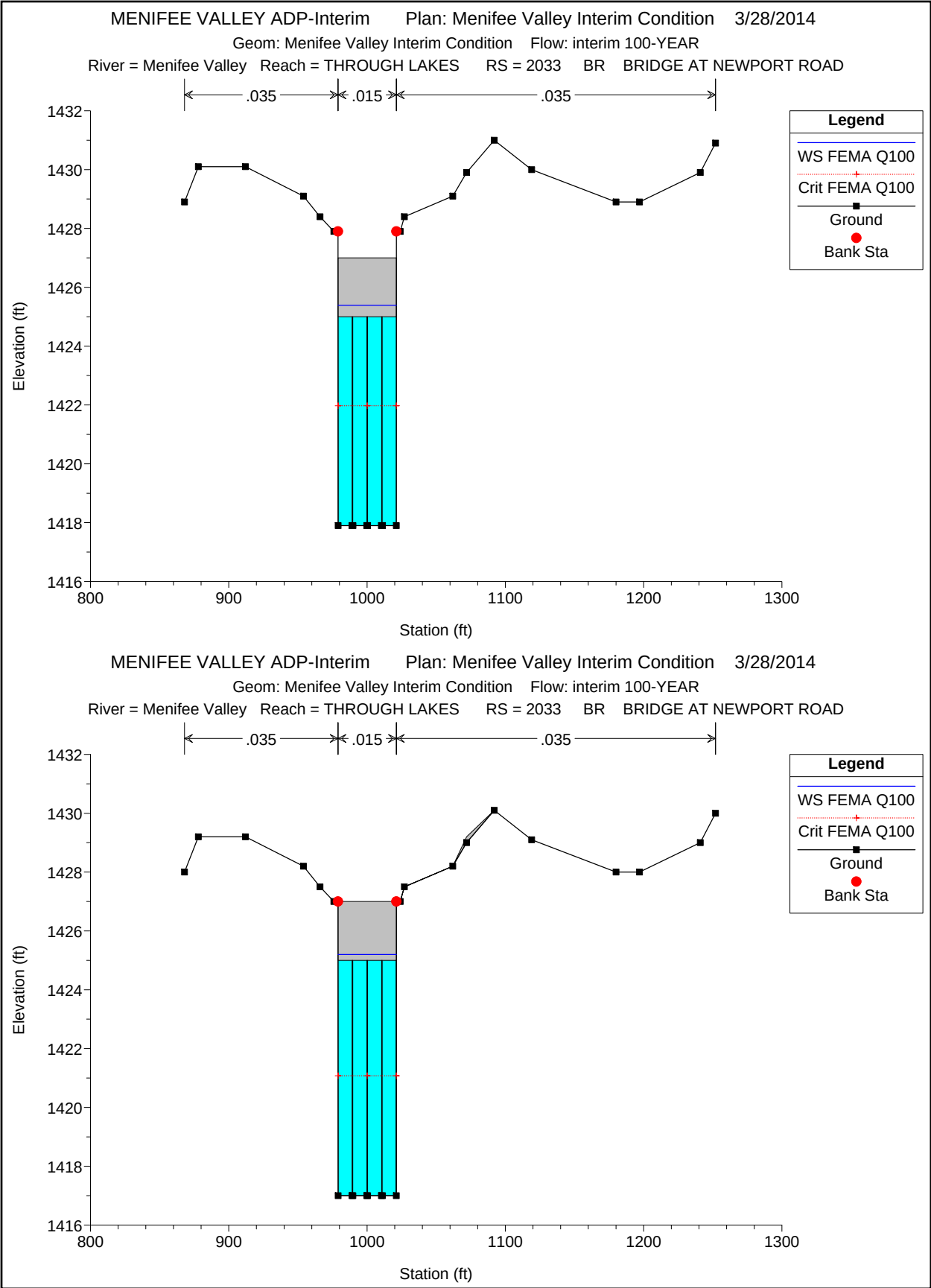


MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR

River = Menifee Valley Reach = THROUGH LAKES RS = 2129 This is a REPEATED section.

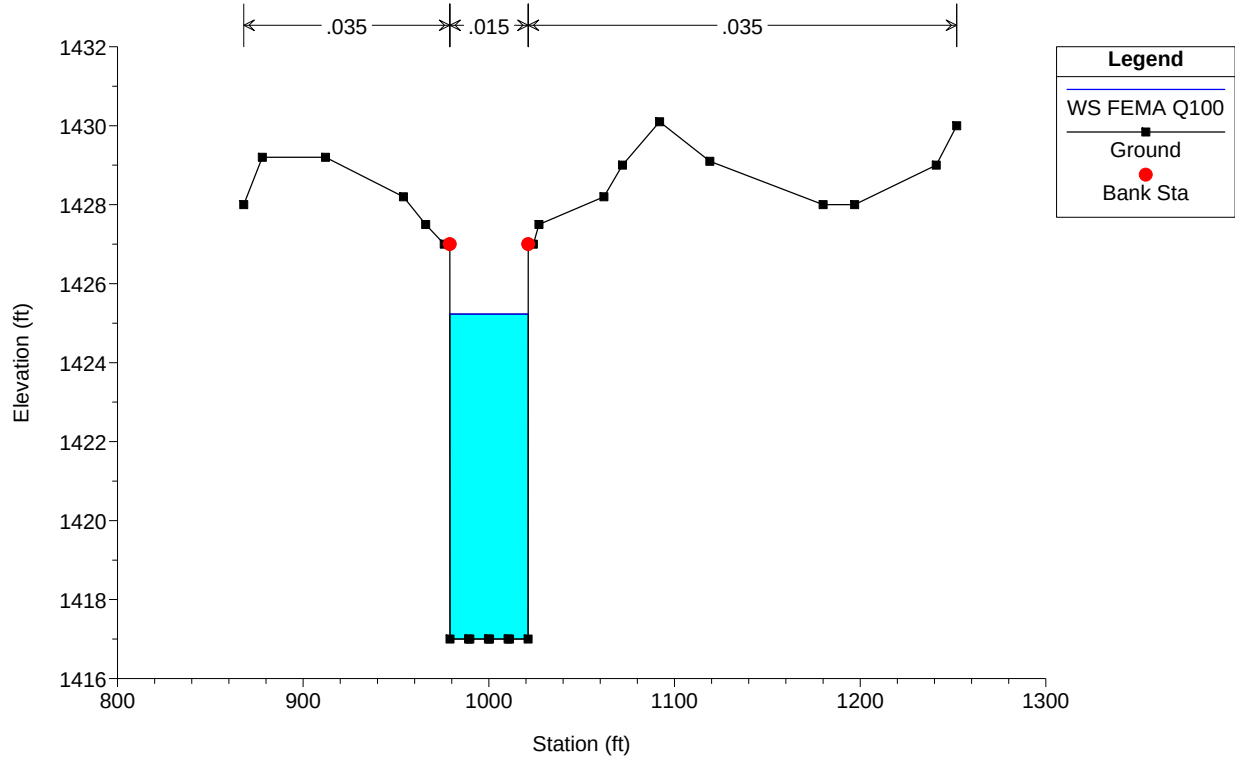




MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR

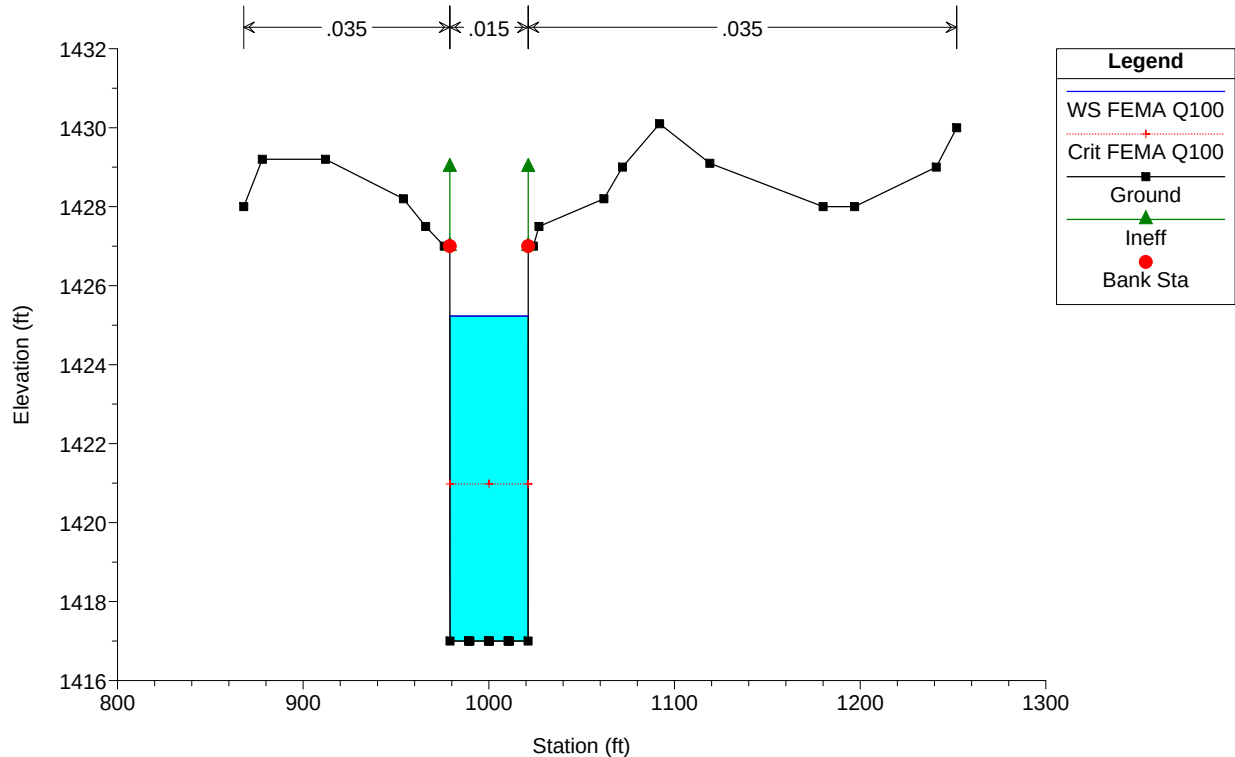
River = Menifee Valley Reach = THROUGH LAKES RS = 1937 This is a REPEATED section.

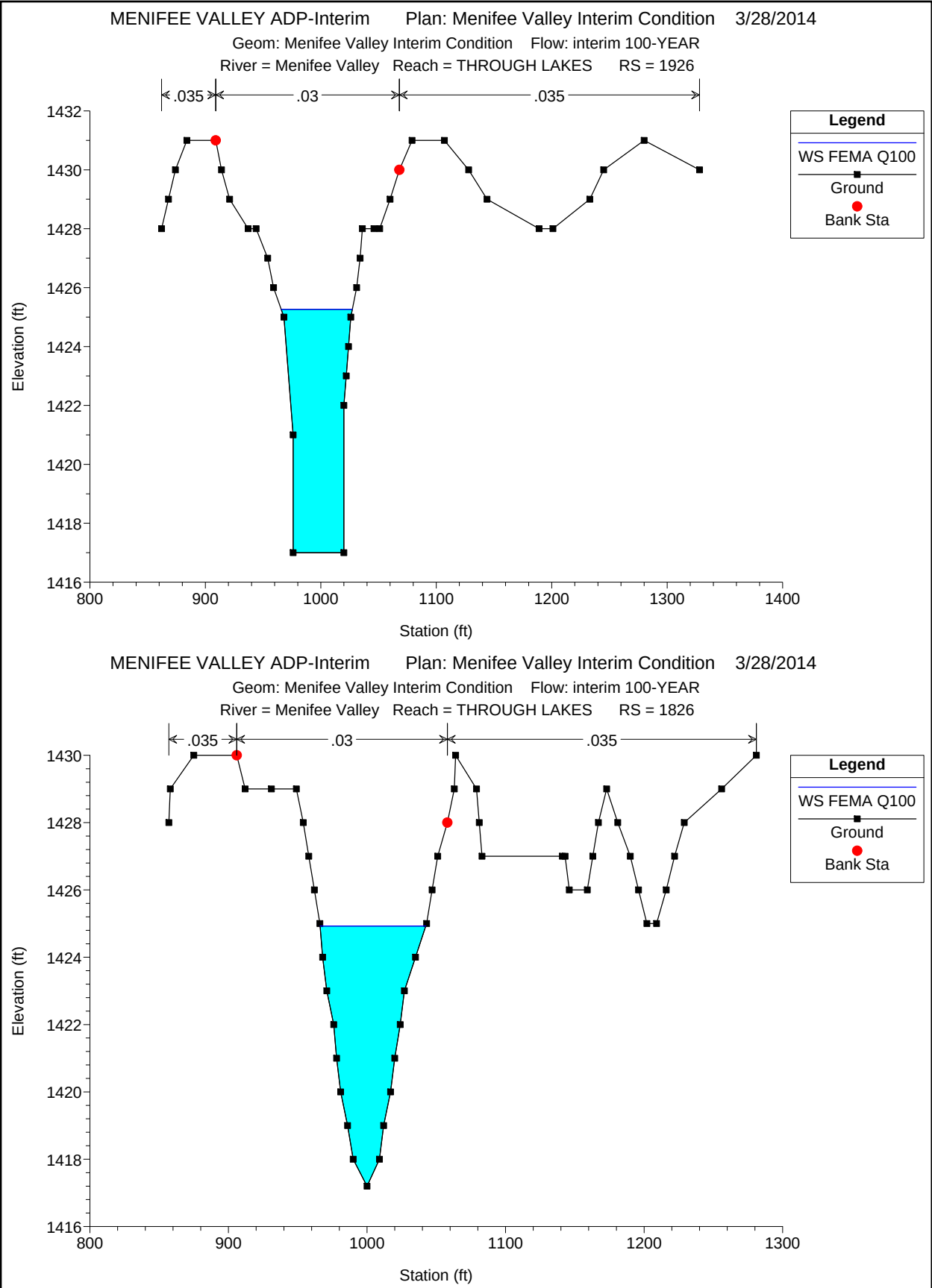


MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR

River = Menifee Valley Reach = THROUGH LAKES RS = 1936





MENIFEE VALLEY ADP-Interim Plan: Meniffee Valley Interim Condition 3/28/2014

Geom: Meniffee Valley Interim Condition Flow: interim 100-YEAR

River = Meniffee Valley Reach = THROUGH LAKES RS = 1826

1430

1428

1426

1424

1422

1420

1418

1416

800

900

1000

1100

1200

1300

←.035→

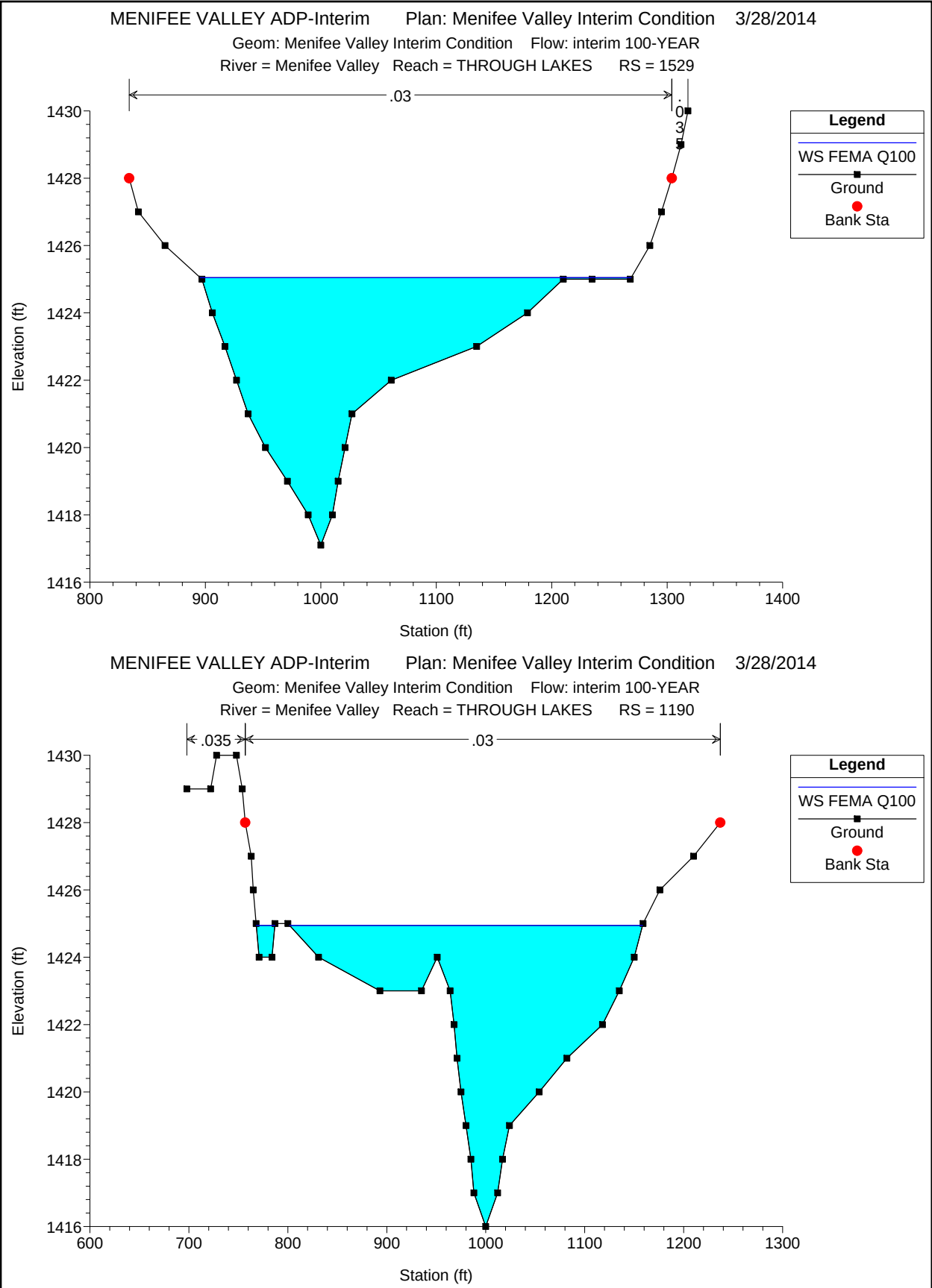
.03

←.035→

WS FEMA Q100

Ground

Bank Sta



MENIFEE VALLEY ADP-Interim

Plan: Meniffee Valley Interim Condition

3/28/2014

Geom: Meniffee Valley Interim Condition

Flow: interim 100-YEAR

River = Meniffee Valley

Reach = THROUGH LAKES

RS = 1190

Elevation (ft)

1430

1428

1426

1424

1422

1420

1418

1416

Station (ft)

600

700

800

900

1000

1100

1200

1300

Legend

WS FEMA Q100

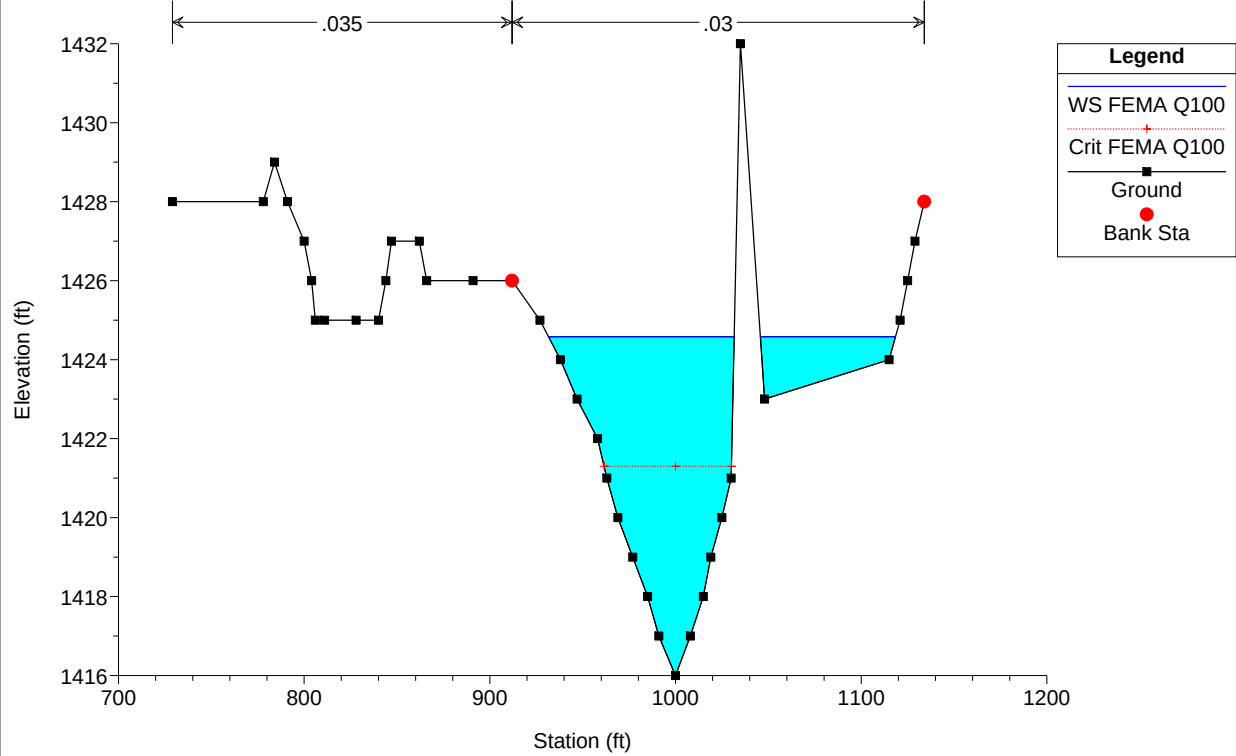
Ground

Bank Sta

MENIFEE VALLEY ADP-Interim Plan: Menifee Valley Interim Condition 3/28/2014

Geom: Menifee Valley Interim Condition Flow: interim 100-YEAR

River = Menifee Valley Reach = THROUGH LAKES RS = 790



HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

X X XXXXX XXXX XXXX XX XXXX
X X X X X X X X X X
X X X X X X X X X X
XXXXXXXX XXXX XXX XXXX XXXX
X X X X X X X X X X
X X XXXXXX XXXX X X X XXXX

PROJECT DATA
Project Title: MENIFEE VALLEY ADP-Interim
Project File : \WInterim.pj
Run Date and Time: 3/28/2014 10:03:28 AM

Project in English units

Project Description:
Menifee Valley Creek Existing topo for the entire run. Data includes FEMA HEC-2 data from station 790 to sta 6750, CSL Engineering Data from approved CLOMR for sta 9500 to sta 11500, REC data for proposed Lakes at Menifee project from sta 6750 to sta 9700 and REC data for sta 12000 to sta 15000.

These pre-project
hydraulic analysis for Menifee Valley based on the post-project condition of
Tract 30422 (The Lakes project).

PLAN DATA

Plan Title: Menifee Valley Interim Condition
Plan File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix E\Interim Post-Project\WInterim.p06

Geometry Title: Menifee Valley Interim Condition
Geometry File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix E\Interim Post-Project\WInterim.p07

Flow Title : interim 100-YEAR
Flow File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix E\Interim Post-Project\WInterim.f02

Plan Description:
UPDATED TO REFLECT LOMR

Plan Summary Information:
Number of: Cross Sections = 103 Multiple Openings = 0
Culverts = 4 Inline Structures = 0
Bridges = 2 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Interim 100-YEAR
Flow File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix E\Interim Post-Project\WInterim.f02

Flow Data (cfs)

River	Reach	Upstream	RS	FEMA Q100
Menifee Valley	Split to Lake	15000		679
Menifee Valley	to Rancon	"C10995		144
Menifee Valley	RV10500 - 10000	11700		2077
Menifee Valley	THROUGH LAKES	10500		535
Menifee Valley	THROUGH LAKES	9400		3024
Menifee Valley	THROUGH LAKES	7700		3024
Menifee Valley	THROUGH LAKES	6688		3105
Menifee Valley	THROUGH LAKES	3990		3830
Menifee Valley	THROUGH LAKES	2159		1885
Menifee Valley	THROUGH LAKES	1926		1938

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Menifee Valley	Upstream	FEMA Q100	Critical	
Menifee Valley	THROUGH LAKES	FEMA Q100		Known WS = 1424.58

Changes in WS and EG

River	Reach	Profile	Type	Value
Menifee Valley	to Rancon	RS 10100 FEMA Q100 Addtnl EG		.01

GEOMETRY DATA

Geometry Title: Menifee Valley Interim Condition
Geometry File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix E\Interim Post-Project\WInterim.g07

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
Menifee Valley	Upstream		SPLIT #1
Menifee Valley	Split to Lake "C	SPLIT #1	COMBINE ALL
Menifee Valley	to Rancon		COMBINE ALL
Menifee Valley	RV10500 - 10000	SPLIT #1	COMBINE ALL
Menifee Valley	THROUGH LAKES	COMBINE ALL	

JUNCTION INFORMATION

Name: COMBINE ALL
Description: Junction Combine All is located immediately upstream of Cross-section 9400

Energy computation Method

Length across Junction	Tributary	Reach	Length	Angle
Menifee Valley	RV10500 - 10000	to Menifee Valley	THROUGH LAKES	0
Menifee Valley	to Rancon	to Menifee Valley	THROUGH LAKES	0
Menifee Valley	split to Lake "C	to Menifee Valley	THROUGH LAKES	160

Name: SPLIT #1

Description:

Energy computation Method

Length across Junction	Tributary	Reach	Length	Angle
Menifee Valley	River	to Menifee Valley	RV10500 - 10000	470
Menifee Valley	Upstream	to Menifee Valley	split to Lake "C	500

CROSS SECTION

RIVER: Menifee Valley									
REACH: Upstream									
RS: 15000									
INPUT									
Description: Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet									
Station Elevation Data num= 11									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1603	1430.73	1603	1430.73	1603	1430.73	1603	1430.73	1603	1430.73
2068	1430.73	2068	1430.73	2068	1430.73	2068	1430.73	2068	1430.73
5165	1441.53	5165	1441.53	5165	1441.53	5165	1441.53	5165	1441.53
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1603	.035	2200	.035	3266.48	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
1603	3266.48	1603	3266.48	1603	3266.48	1603	3266.48	1603	3266.48
Ineffective Flow num= 1									
Sta L	Sta R	Elev	Permanent						
1603	2200			1603	2200			1603	2200
CROSS SECTION									
RIVER: Menifee Valley									
REACH: Upstream									
RS: 14500									
INPUT									
Description: Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet									
Station Elevation Data num= 11									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1565	1432.9	1565	1432.9	1565	1432.9	1565	1432.9	1565	1432.9
2570	1429.53	2570	1429.53	2570	1429.53	2570	1429.53	2570	1429.53
5090	1441.53	5090	1441.53	5090	1441.53	5090	1441.53	5090	1441.53
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1565	.035	2090	.035	3010	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
1565	3010	1565	3010	1565	3010	1565	3010	1565	3010
Ineffective Flow num= 1									
Sta L	Sta R	Elev	Permanent						
1565	2090			1565	2090			1565	2090
CROSS SECTION									
RIVER: Menifee Valley									
REACH: Upstream									
RS: 14000									
INPUT									
Description: Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet									
Station Elevation Data num= 14									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1474	1432.4	1474	1432.4	1474	1432.4	1474	1432.4	1474	1432.4
2291	1429.53	2291	1429.53	2291	1429.53	2291	1429.53	2291	1429.53
4175	1432.53	4175	1432.53	4175	1432.53	4175	1432.53	4175	1432.53
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1474	.035	2291	.035	3813.1	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
1474	3813.1	1474	3813.1	1474	3813.1	1474	3813.1	1474	3813.1
Ineffective Flow num= 1									
Sta L	Sta R	Elev	Permanent						
1474	2133.6			1474	2133.6			1474	2133.6
Blocked Obstructions num= 2									
Sta L	Sta R	Elev	Permanent						
238	241	1435		238	241	1435		238	241
CROSS SECTION									
RIVER: Menifee Valley									
REACH: Upstream									
RS: 13500									
INPUT									
Description: Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet									
Station Elevation Data num= 21									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1187	1430	1187	1430	1187	1430	1187	1430	1187	1430
1628	1429.53	1628	1429.53	1628	1429.53	1628	1429.53	1628	1429.53
2201	1428.53	2201	1428.53	2201	1428.53	2201	1428.53	2201	1428.53
4245	1437.53	4245	1437.53	4245	1437.53	4245	1437.53	4245	1437.53
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1703.6	.06	3410.5	.06				
Bank Sta: Left Right Lengths: Left Channel Right									
1703.6	3410.5	1703.6	3410.5	1703.6	3410.5	1703.6	3410.5	1703.6	3410.5
Ineffective Flow num= 1									
Sta L	Sta R	Elev	Permanent						
0	1676.9			0	1676.9			0	1676.9
Blocked Obstructions num= 1									
Sta L	Sta R	Elev	Permanent						
0	1570	1431		0	1570	1431		0	1570
CROSS SECTION									
RIVER: Menifee Valley									
REACH: Upstream									
RS: 12500									
INPUT									
Description: Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet									
Station Elevation Data num= 17									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1381	1432	1381	1432	1381	1432	1381	1432	1381	1432
1613.9	1429.53	1613.9	1429.53	1613.9	1429.53	1613.9	1429.53	1613.9	1429.53
2932.5	1428.53	2932.5	1428.53	2932.5	1428.53	2932.5	1428.53	2932.5	1428.53
4441.6	1437.53	4441.6	1437.53	4441.6	1437.53	4441.6	1437.53	4441.6	1437.53
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1381	.035	1676.1	.035	2593.8	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
1676.1	2593.8	1676.1	2593.8	1676.1	2593.8	1676.1	2593.8	1676.1	2593.8
Ineffective Flow num= 1									
Sta L	Sta R	Elev	Permanent						
1381	1676.1			1381	1676.1			1381	1676.1
CROSS SECTION									
RIVER: Menifee Valley									
REACH: Upstream									
RS: 13045									
INPUT									
Description: Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet									
Station Elevation Data num= 17									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1413	1432	1413	1432	1413	1432	1413	1432	1413	1432
1836	1428.2	1836	1428.2	1836	1428.2	1836	1428.2	1836	1428.2
2970	1428.1	2970	1428.1	2970	1428.1	2970	1428.1	2970	1428.1
4426	1437.5	4426	1437.5	4426	1437.5	4426	1437.5	4426	1437.5
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1413	.035	1760	.035	3321	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
1760	3321	1760	3321	1760	3321	1760	3321	1760	3321
Ineffective Flow num= 1									
Sta L	Sta R	Elev	Permanent						
1413	1480			1413	1480			1413	1480
CROSS SECTION									
RIVER: Menifee Valley									
REACH: Upstream									
RS: 13000									
INPUT									
Description: Elevation Adjusted from NAVD 88 to NGVD 29 by -2.47 feet									
Station Elevation Data num= 21									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1437.5	0	1437.5	0	1437.5	0	1437.5	0	1437.5
1187	1430	1187	1430	1187	1430	1187	1430	1187	1430
1628	1429.53	1628	1429.53	1628	1429.53	1628	1429.53	1628	1429.53
2201	1428.53	2201	1428.53	2201	1428.53	2201	1428.53	2201	1428.53
4245	1437.53	4245	1437.53	4245	1437.53	4245	1437.53	4245	1437.53
Manning's n Values num= 3									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1703.6	.06	3410.5	.06				
Bank Sta: Left Right Lengths: Left Channel Right									
1703.6	3410.5	1703.6	3410.5	1703.6	3410.5	1703.6	3410.5	1703.6	3410.5
Ineffective Flow num= 1									
Sta L	Sta R	Elev	Permanent						
0	1676.9			0	1676.9			0	1676.9
Blocked Obstructions num= 1									
Sta L	Sta R	Elev	Permanent						
0	1570	1431		0	1570	1431		0	1570
CROSS SECTION									
RIVER: Menifee Valley									
REACH: Upstream									
RS: 12500									
INPUT									

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10965

INPUT
Description: This Cross Section 10965 replaced the culvert proposed in the CUMC

Station Elevation Data																	
Sta		Elev		Sta		Elev		Sta									
0		1432.9		43.7		1422.7		114.4									
1432.9		43.7		1422.7		74.7		1422.7									
Manning's n Values																	
Sta		Elev		Sta		Elev		Sta									
0		.03		.03		.03		.03									
43.7		74.7		74.7		74.7		74.7									
Bank Sta: Left Right Lengths: Left Channel Right																	
43.7		.3		.3		.3		.3									
Permanent T																	
T																	

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10950

INPUT																	
Description:																	
Station Elevation Data																	
Sta		Elev		Sta		Elev		Sta									
0		1433		15.6		1432		17.6									
33.6		1423		34.4		1422.6		57.6									
151.8		1425		154		1426		166.3									
Manning's n Values																	
Sta		Elev		Sta		Elev		Sta									
0		.03		.03		.03		.03									
57.6		91.5		91.5		91.5		91.5									
Bank Sta: Left Right Lengths: Left Channel Right																	
57.6		91.5		91.5		91.5		91.5									
Ineffective Flow num=																	
Sta L		Sta R		Elev		Elev		Elev									
0		55		1432		T		T									
Coeff Contr. Expan.																	
.3		.3		.3		.3		.3									
Permanent T																	
T																	

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10940

INPUT																	
Station Elevation Data																	
Sta		Elev		Sta		Elev		Sta									
0		1433.5		7.6		1433		9.6									
25.6		1424		26.2		1422.8		27.2									
62.5		1410		65.2		1409		110									
143.7		1419		148.2		1422.8		149.2									
184.6		1425		194.6		1430		196.6									
Manning's n Values																	
Sta		Elev		Sta		Elev		Sta									
0		.03		.03		.03		.03									
27.2		148.2		148.2		148.2		148.2									
Bank Sta: Left Right Lengths: Left Channel Right																	
27.2		148.2		148.2		148.2		148.2									
Ineffective Flow num=																	
Sta L		Sta R		Elev		Elev		Elev									
26.2		149.2		1422.4		T		T									
Coeff Contr. Expan.																	
.1		.1		.1		.1		.1									
Permanent T																	
T																	

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10930

Station Elevation Data																	
Sta		Elev		Sta		Elev		Sta									
0		1433.5		7.6		1433		9.6									
25.6		1424		26.2		1422.8		27.2									
62.5		1410		65.2		1409		110									
143.7		1419		148.2		1422.8		149.2									
184.6		1425		194.6		1430		196.6									
Manning's n Values																	
Sta		Elev		Sta		Elev		Sta									
0		.03		.03		.03		.03									
27.2		148.2		148.2		148.2		148.2									
Bank Sta: Left Right Lengths: Left Channel Right																	
27.2		148.2		148.2		148.2		148.2									
Ineffective Flow num=																	
Sta L		Sta R		Elev		Elev		Elev									
26.2		149.2		1422.4		T		T									
Coeff Contr. Expan.																	
.1		.1		.1		.1		.1									
Permanent T																	
T																	

CROSS SECTION

RIVER: Menifee Valley
REACH: Split to Lake "C RS: 10920

INPUT
Description: This Cross Section 10920 replaced the culvert proposed in the CUMC

Manning's n Values									
Sta		Elev		Sta		Elev		Sta	
0		1433.6		22.3		1433		30.2	
40.2		1424		41.2		1422.8		42.2	
62.4		1415		77.4		1410		92.4	
164.5		1381		201.9		1381		213.9	
393.9		1415		307.8		1416		320	
337		1423		343.2		1424		345.3	
357.3		1431		362.6		1431			
num=									
Sta		Elev		Sta		Elev		Sta	
42.2		.03		324		.03		324	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
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.03		.03		.03		.03		.03	
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.03		.03		.03		.03		.03	
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.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
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.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
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.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
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.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03		.03		.03		.03	
.03		.03							

Description: Station Elevation Data	num=28		Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
	0 1437.2		8.6	1437.3	9.3	1437	11.3	1436	13.3	1435
	23.3		1430	33.3	1425	35.3	1424	36.7	1422.8	1422.8
	41.5		1419	57.4	1415	72.5	1410	80.4	1409	1409
	146.3		1410	149.3	1411	161.3	1415	177.3	1419	1422.8
	182.7		1422.8	210.4	1423	239.5	1424.1	249.9	1425	1430
	207.9		1434	269.6	1434.8	284.1	1434.7			
	Manning's n Values		num=3		Sta	n Val	Sta	n Val	Sta	n Val
	0		.03	37.7	.03	181.7	.03			
	Bank Sta: Left		Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.	
Ineffective Flow		num=1		Sta L	Sta R	Elev	Sta	Elev	Sta	Elev
37.7		181.7	1422.4	Permanent						
Sta L		Sta R	Elev	Permanent						
37.7		181.7	1422.4	T						
CROSS SECTION										
RIVER: Menifee Valley										
REACH: split to Lake "C" RS: 10880										
INPUT										
Description:										
Station Elevation Data num=19										
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev										
0 1437.2 11.7 1437.3 12.2 1437 14.3 1436 16.3 1435										
26.3 1430 36.3 1425 40.3 1423 103.5 1422.4 105.8 1422.3										
145.8 1422.3 148.2 1422.4 174.5 1423 179.4 1424 181.5 1425										
191.5 1430 199.6 1434 200.6 1434.5 221.6 1434.4										
Manning's n Values num=3										
Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val										
0 .03 105.8 .03 145.8 .03										
Bank Sta: Left Right Lengths: Left Channel Right										
105.8 145.8 87 58										
Ineffective Flow num=1										
Sta L Sta R Elev Permanent										
0 58 1432 T										
CROSS SECTION										
RIVER: Menifee Valley										
REACH: split to Lake "C" RS: 10870										
INPUT										
Description:										
Station Elevation Data num=12										
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev										
0 1437 4 1435 14 1430 24 1425 28 1423										
30.5 1422 76.5 1422 78 1423 82 1425 92 1430										
100 1434 102 1435										
Manning's n Values num=3										
Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val										
0 .03 30.5 .03 76.5 .03										
Bank Sta: Left Right Lengths: Left Channel Right										
30.5 76.5 62 62										
Ineffective Flow num=2										
Sta L Sta R Elev Permanent										
0 31 1432 T										
76 102 1432 T										
CULVERT										
RIVER: Menifee Valley										
REACH: split to Lake "C" RS: 10860										
INPUT										
Description: (2) -10'X6.5' ARCH & (1) -20'X9.5' ARCH CONCRETE CULVERTS AT STARTING LANE										
Distance from Upstream XS = 3										
Deck/Roadway Width = 54										
Weir Coefficient = 2.6										
Upstream Deck/Roadway Coordinates num=6										
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord										
0 1435 31.5 1434.9 105.5 1434.8										
63.5 1434.7 74.5 1434.2										
Upstream Bridge Cross Section Data num=12										
Station Elevation Data num=12										
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev										
0 1437 4 1435 14 1430 24 1425 28 1423										
30.5 1422 76.5 1422 78 1423 82 1425 92 1430										
100 1434 102 1435										
Manning's n Values num=3										
Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val										
0 .03 30.5 .03 76.5 .03										
Bank Sta: Left Right Coeff Contr. Expan.										
30.5 76.5 2 .3										
Ineffective Flow num=2										
Sta L Sta R Elev Permanent										
0 31 1432 T										
76 102 1432 T										
Downstream Deck/Roadway Coordinates num=6										
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord										
0 1435 34 1434.9 108 1434.2										
66 1434.7 77 1434.6										
Downstream Bridge Cross Section Data num=18										
Station Elevation Data num=18										
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev										
0 1437 2 1436 4 1435 6 1434 8 1433										
11 1432 13 1431 15 1430 25.4 1425 27.7 1424										
31.7 1422 32.5 1422 77.5 1422 78.5 1422 80.5 1423										
84.5 1425 94.5 1430 104.5 1435										
Manning's n Values num=3										
Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val										
0 .03 31.7 .03 78.5 .03										
Bank Sta: Left Right Coeff Contr. Expan.										
31.7 78.5 2 .3										
Ineffective Flow num=2										
Sta L Sta R Elev Permanent										
0 34 1432 T										
78 104.5 1432 T										
Upstream Embankment side slope = 2 horiz. to 1.0 vertical										
Downstream Embankment side slope = 2 horiz. to 1.0 vertical										
Maximum allowable submergence for weir flow = .95										
Elevation at which weir flow begins = 1434.2										
Energy head at spillway design = 1434.2										
Sill height used in design = 1434.2										
Weir crest shape = Broad Crested										
Number of Culverts = 2										
Culvert Name Shape Rise Span										
STARTING LN.Conspan Arch 6.5 10										
FHWA Chart # 60- Span/Rise ratio approximate 2:1										
FHWA Scale # 1 - 0 degree wing wall angle										
Solution Criteria = Highest U.S. EG										
Culvert Upstnm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef										
Number of Barrets = 2 1.5 56 .014 .014 0 .5										
Upstream Elevation = 1422.2										
Centerline Stations										
Sta. Sta.										
37 69										
Downstream Elevation = 1422.1										
Centerline Stations										
Sta. Sta.										
39.5 71.5										

Culvert Name Shape Rise Span
Starring Ln2Conspan Arch 9.5 20
FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
0 1
1.5 56 .014
Upstream Elevation = 1422.2
Centerline Station = 1422.1
Downstream Elevation = 1422.1 = 53
Centerline Station = 55.5

CROSS SECTION

RIVER: Menifee Valley
REACH: split to Lake "C RS: 10850

INPUT

Description: num= 18
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1437 1430 1435 1434 87.4 1433
11 1432 13 1430 25.4 1425 27.7 1424
31.7 1422 32.5 1422 77.5 1422 80.5 1423
84.5 1425 94.5 1430 104.5 1435
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 31.7 .03 78.5 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Sta L Sta R Elev Permanent
0 1432 1432 T
78 104.5 1432 T

CROSS SECTION

RIVER: Menifee Valley
REACH: split to Lake "C RS: 10845

INPUT

Description: num= 16
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1437.4 25.0 1437.7 27 1437 29 1436 31 1435
43 1430 51 1425 55.5 1422.7 87.4 1422
112.8 1422 203.5 1425 207.5 1425 217.5 1430 225.7 1434
227 1434.7
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 55.5 .03 203.5 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Sta L Sta R Elev Permanent
0 1432 1432 T
150 227 1432 T

CROSS SECTION

RIVER: Menifee Valley
REACH: split to Lake "C RS: 10840

INPUT

Description: num= 10
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1433 2 1432 6 1430 16 1425 22 1421.8
81.5 1421.8 83.5 1423 87.5 1430 104.5 1434
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val

0 .03 22 81.5 .03
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Sta L Sta R Elev Permanent
0 1432 1432 T
79 104.5 1432 T

CULVERT

RIVER: Menifee Valley
REACH: split to Lake "C RS: 10830

INPUT

Description: (3) - ARCH CONCRETE CULVERTS AT TRES LAGOS DR.
Distance from Upstream XS = 4
Deck/Roadway Width = 96
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates num= 6
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 1434.1 34.5 1434.1 45.5 1434.1
66.5 1434.1 77.5 1434 108.5 1433.8

Upstream Bridge Cross Section Data num= 10
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1433 2 1432 6 1430 16 1425 22 1421.8
81.5 1421.8 83.5 1423 87.5 1425 97.5 1430 104.5 1434

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 22 .03 81.5 .03

Bank Sta: Left Right Coeff Contr. Expan.
Sta L Sta R Elev Permanent
0 1432 1432 T
79 104.5 1432 T

Downstream Deck/Roadway Coordinates num= 6
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 1434.1 31.1 1434.1 42.1 1434.1
63.1 1434.1 74.1 1434 105.1 1433.8

Downstream Bridge Cross Section Data num= 11
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1433 2 1432 6 1430 16 1425 22 1421.6
81.7 1421.6 83.7 1423 87.7 1425 97.7 1430 103.7 1433
105.7 1434

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 22 .03 81.7 .03

Bank Sta: Left Right Coeff Contr. Expan.
Sta L Sta R Elev Permanent
0 1432 1432 T
74 105.7 1432 T

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 1434.1
Energy head used in spillway design =
Spillway height used in design = Broad Crested
Weir crest shape =

Number of Culverts = 2
Culvert Name Shape Rise Span
Tres Lagos 2conspan Arch 6.5 10

Description:													
Station		Elevation		Data		num=		10		Elev		Sta	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1431.3	24.9	1423	24.9	1421	40.9	1417	46.9	1415				
114.9	1415	120.9	1417	136.9	1421	136.9	1423	161.4	1431.4				
Manning's n Values													
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	24.9	.03	136.9	.03								
Bank Sta: Left Right Lengths: Left Channel Right													
Bank Sta:	24.9	136.9		105	127								
Ineffective Flow													
Sta	L	Sta	R	Sta	L	Sta	R	Sta	L	Sta	R	Sta	L
24.9	136.9	1422	Permanent										
CROSS SECTION													
RIVER: Menifee Valley													
REACH: to Rancon RS: 11500													
INPUT													
Description:													
Station		Elevation		Data		num=		10		Elev		Sta	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1431.3	24.6	1423	24.6	1421	40.6	1417	46.6	1415				
101.5	1415	107.5	1417	123.5	1421	123.5	1423	147	1430.7				
Manning's n Values													
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	24.6	.03	123.5	.03								
Bank Sta: Left Right Lengths: Left Channel Right													
Bank Sta:	24.6	123.5		200	200								
Ineffective Flow													
Sta	L	Sta	R	Sta	L	Sta	R	Sta	L	Sta	R	Sta	L
24.6	123.5	1422	Permanent										
CROSS SECTION													
RIVER: Menifee Valley													
REACH: to Rancon RS: 11400													
INPUT													
Description:													
Station		Elevation		Data		num=		10		Elev		Sta	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1430.4	21.9	1423	21.9	1421	37.9	1417	43.9	1415				
99.7	1415	105.7	1417	121.7	1421	121.7	1423	146.6	1431.2				
Manning's n Values													
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	21.9	.03	121.7	.03								
Bank Sta: Left Right Lengths: Left Channel Right													
Bank Sta:	21.9	121.7		160	160								
Ineffective Flow													
Sta	L	Sta	R	Sta	L	Sta	R	Sta	L	Sta	R	Sta	L
21.9	121.7	1422	Permanent										
CROSS SECTION													
RIVER: Menifee Valley													
REACH: to Rancon RS: 11300													
INPUT													
Description:													
Station		Elevation		Data		num=		10		Elev		Sta	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1431.3	24	1423	24	1421	40	1417	46	1415				
109.3	1415	115.3	1417	131.3	1421	131.3	1423	157.1	1431.5				
Manning's n Values													
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	24	.03	131.3	.03								
Bank Sta: Left Right Lengths: Left Channel Right													
Bank													

REACH: to Rancon															RS: 11020																	
INPUT															INPUT																	
Description:															Description:																	
Station			Elevation			Data			num=			10			Station			Elev			Sta			Elev			Sta			Elev		
Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R			
0	1431.7	25.2	1423	25.2	1423	25.2	1423	25.2	1421	41.2	1417	92.2	1400	1431.3	0	1431.7	25.2	1423	25.2	1423	25.2	1421	41.2	1417	92.2	1400	1431.3	0	1431.7			
327.2	1400	378.2	1417	394.2	1417	394.2	1417	394.2	1421	394.2	1421	394.2	1421	394.2	327.2	1400	378.2	1417	394.2	1417	394.2	1421	394.2	1423	418.8	1431.3	327.2	1400				
Manning's n Values															Manning's n Values																	
Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val			
0	.03	25.2	.03	394.2	.03										0	.03	25.2	.03	394.2	.03						0	.03	25.2				
Bank Sta: Left															Bank Sta: Left																	
25.2			394.2			1417			1423			1421			1421			1421			1421			1421			1421			1421		
Ineffective Flow															Ineffective Flow																	
Sta	L	R	num=	1	Permanent										Sta	L	R	num=	1	Permanent							Sta	L	R			
25.2	394.2	1422	T												25.2	394.2	1422	T								25.2	394.2	1422	T			
CROSS SECTION															CROSS SECTION																	
RIVER: Menifee Valley															RIVER: Menifee Valley																	
REACH: to Rancon															REACH: to Rancon																	
INPUT															INPUT																	
Description:															Description:																	
Station			Elevation			Data			num=			10			Station			Elev			Sta			Elev			Sta			Elev		
Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R			
208.8	1400	259.8	1417	275.8	1417	275.8	1423	21.8	1423	21.8	1423	21.8	1423	21.8	1417	275.8	1421	275.8	1421	275.8	1421	275.8	1421	275.8	1423	391.2	1431.5	208.8	1400			
Manning's n Values															Manning's n Values																	
Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val			
0	.03	21.8	.03	275.8	.03										0	.03	21.8	.03	275.8	.03						0	.03	21.8				
Bank Sta: Left															Bank Sta: Left																	
21.8			275.8			1417			1423			1421			1421			1421			1421			1421			1421			1421		
Ineffective Flow															Ineffective Flow																	
Sta	L	R	num=	1	Permanent										Sta	L	R	num=	1	Permanent							Sta	L	R			
21.8	275.8	1422	T												21.8	275.8	1422	T								21.8	275.8	1422	T			
CROSS SECTION															CROSS SECTION																	
RIVER: Menifee Valley															RIVER: Menifee Valley																	
REACH: to Rancon															REACH: to Rancon																	
INPUT															INPUT																	
Description:															Description:																	
Station			Elevation			Data			num=			10			Station			Elev			Sta			Elev			Sta			Elev		
Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R			
141.6	1410	162.6	1417	178.6	1417	178.6	1423	21.9	1423	21.9	1423	21.9	1423	21.9	1417	178.6	1421	178.6	1421	178.6	1421	178.6	1423	204.8	1431.8	141.6	1410	162.6				
Manning's n Values															Manning's n Values																	
Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val			
0	.03	21.9	.03	178.6	.03										0	.03	21.9	.03	178.6	.03						0	.03	21.9				
Bank Sta: Left															Bank Sta: Left																	
21.9			178.6			1417			1423			1421			1421			1421			1421			1421			1421			1421		
Ineffective Flow															Ineffective Flow																	
Sta	L	R	num=	1	Permanent										Sta	L	R	num=	1	Permanent							Sta	L	R			
21.9	178.6	1422	T												21.9	178.6	1422	T								21.9	178.6	1422	T			
CROSS SECTION															CROSS SECTION																	
RIVER: Menifee Valley															RIVER: Menifee Valley																	
REACH: to Rancon															REACH: to Rancon																	
INPUT															INPUT																	
Description:															Description:																	
Station			Elevation			Data			num=			10			Station			Elev			Sta			Elev			Sta			Elev		
Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R			
107.1	1410	128.1	1417	144.1	1417	144.1	1423	23.2	1423	23.2	1423	23.2	1423	23.2	107.1	1410	128.1	1417	144.1	1417	144.1	1423	204.8	1431.8	107.1	1410	128.1	1417				
Manning's n Values															Manning's n Values																	
Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val			
0	.03	21.9	.03	178.6	.03										0	.03	21.9	.03	178.6	.03						0	.03	21.9				
Bank Sta: Left															Bank Sta: Left																	
21.9			178.6			1417			1423			1421			1421			1421			1421			1421			1421			1421		
Ineffective Flow															Ineffective Flow																	
Sta	L	R	num=	1	Permanent										Sta	L	R	num=	1	Permanent							Sta	L	R			
21.9	178.6	1422	T												21.9	178.6	1422	T								21.9	178.6	1422	T			
CROSS SECTION															CROSS SECTION																	
RIVER: Menifee Valley															RIVER: Menifee Valley																	
REACH: to Rancon															REACH: to Rancon																	
INPUT															INPUT																	
Description:															Description:																	
Station			Elevation			Data			num=			10			Station			Elev			Sta			Elev			Sta			Elev		
Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R			
107.1	1410	128.1	1417	144.1	1417	144.1	1423	23.2	1423	23.2	1423	23.2	1423	23.2	107.1	1410	128.1	1417	144.1	1417	144.1	1423	204.8	1431.8	107.1	1410	128.1	1417				
Manning's n Values															Manning's n Values																	
Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val			
0	.03	21.9	.03	178.6	.03										0	.03	21.9	.03	178.6	.03						0	.03	21.9				
Bank Sta: Left															Bank Sta: Left																	
21.9			178.6			1417			1423			1421			1421			1421			1421			1421			1421			1421		
Ineffective Flow															Ineffective Flow																	
Sta	L	R	num=	1	Permanent										Sta	L	R	num=	1	Permanent							Sta	L	R			
21.9	178.6	1422	T												21.9	178.6	1422	T								21.9	178.6	1422	T			
CROSS SECTION															CROSS SECTION																	
RIVER: Menifee Valley															RIVER: Menifee Valley																	
REACH: to Rancon															REACH: to Rancon																	
INPUT															INPUT																	
Description:															Description:																	
Station			Elevation			Data			num=			10			Station			Elev			Sta			Elev			Sta			Elev		
Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R			
107.1	1410	128.1	1417	144.1	1417	144.1	1423	23.2	1423	23.2	1423	23.2	1423	23.2	107.1	1410	128.1	1417	144.1	1417	144.1	1423	204.8	1431.8	107.1	1410	128.1	1417				
Manning's n Values															Manning's n Values																	
Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val			
0	.03	21.9	.03	178.6	.03										0	.03	21.9	.03	178.6	.03						0	.03	21.9				
Bank Sta: Left															Bank Sta: Left																	
21.9			178.6			1417			1423			1421			1421			1421			1421			1421			1421			1421		
Ineffective Flow															Ineffective Flow																	
Sta	L	R	num=	1	Permanent										Sta	L	R	num=	1	Permanent							Sta	L	R			
21.9	178.6	1422	T												21.9	178.6	1422	T								21.9	178.6	1422	T			
CROSS SECTION															CROSS SECTION																	
RIVER: Menifee Valley															RIVER: Menifee Valley																	
REACH: to Rancon															REACH: to Rancon																	
INPUT															INPUT																	
Description:															Description:																	
Station			Elevation			Data			num=			10			Station			Elev			Sta			Elev			Sta			Elev		
Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R			
107.1	1410	128.1	1417	144.1	1417	144.1	1423	23.2	1423	23.2	1423	23.2	1423	23.2	107.1	1410	128.1	1417	144.1	1417	144.1	1423	204.8	1431.8	107.1	1410	128.1	1417				
Manning's n Values															Manning's n Values																	
Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val			
0	.03	21.9	.03	178.6	.03										0	.03	21.9	.03	178.6	.03						0	.03	21.9				
Bank Sta: Left															Bank Sta: Left																	
21.9			178.6			1417			1423			1421			1421			1421			1421			1421			1421			1421		
Ineffective Flow															Ineffective Flow																	
Sta	L	R	num=	1	Permanent										Sta	L	R	num=	1	Permanent							Sta	L	R			
21.9	178.6	1422	T												21.9	178.6	1422	T								21.9	178.6	1422	T			
CROSS SECTION															CROSS SECTION																	
RIVER: Menifee Valley															RIVER: Menifee Valley																	
REACH: to Rancon															REACH: to Rancon																	
INPUT															INPUT																	
Description:															Description:																	
Station			Elevation			Data			num=			10			Station			Elev			Sta			Elev			Sta			Elev		
Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R	Sta	L	R	Elev	L	R			
107.1	1410	128.1	1417	144.1	1417	144.1	1423	23.2	1423	23.2	1423	23.2	1423	23.2	107.1	1410	128.1	1417	144.1	1417	144.1	1423	204.8	1431.8	107.1	1410	128.1	1417				
Manning's n Values															Manning's n Values																	
Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val	Sta	L	R	n	Val			
0	.03	21.9	.03	178.6	.03										0	.03	21.9	.03	178.6	.03												

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
0 1429 26 1421.7 140 1429 .014 .014 .5 1

Upstream Elevation Data num= 4
Sta Elev Sta Elev Sta Elev
0 1429 26 1421.7 140 1429
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 26 .03 113 .03
Bank Sta: Left Right Coeff Contr. Expan.
26 113 .3 .5

Downstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord
0 1431.2 164 1431.2

Downstream Bridge Cross Section Data num= 6
Station Elevation Data num= 6
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1431.6 9 1431 10 1421.6 126 1421.6 127 1430.6
147 1432

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 9 .03 127 .03
Bank Sta: Left Right Coeff Contr. Expan.
9 127 .3 .5

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway resistance used in design =
Weir Crest Shape = Broad Crested

Number of Culverts = 4
Culvert Name Shape Rise Span
Angle Box #1 Box 7.5 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
1 142 1422 .014 .014 .5 1

Upstream Elevation = 1422
Centerline Station = 37
Downstream Elevation = 1421.6
Centerline Station = 22

Culvert Name Shape Rise Span
AngleBox #2 Box 7.5 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
1 165 .014 .014 .5 1

Upstream Elevation = 1422
Centerline Station = 58
Downstream Elevation = 1421.6
Centerline Station = 52

Culvert Name Shape Rise Span
AngleBox #3 Box 7.5 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
1 165 .014 .014 .5 1

Upstream Elevation = 1422
Centerline Station = 58
Downstream Elevation = 1421.6
Centerline Station = 52

Culvert Name Shape Rise Span
AngleBox #4 Box 7.5 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
1 192 .014 .014 .5 1

Upstream Elevation = 1422
Centerline Station = 79
Downstream Elevation = 1421.6
Centerline Station = 77

Culvert Name Shape Rise Span
AngleBox #4 Box 7.5 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
1 192 .014 .014 .5 1

Upstream Elevation = 1422
Centerline Station = 79
Downstream Elevation = 1421.6
Centerline Station = 77

Culvert Name Shape Rise Span
AngleBox #4 Box 7.5 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
1 192 .014 .014 .5 1

Upstream Elevation = 1422
Centerline Station = 79
Downstream Elevation = 1421.6
Centerline Station = 77

Culvert Name Shape Rise Span
AngleBox #4 Box 7.5 20
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
1 192 .014 .014 .5 1

CROSS SECTION

RIVER: Menifee Valley
REACH: to Rancon RS: 9470

INPUT

Description: Last Cross-section of Reach: split to Rancon

Station Elevation Data num= 12

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1439.3 13.5 1439 33.5 1422 38 1419 53.5 1415

68 1419 89 1410 104 1415 120 1419 124.5 1422

141 1439.9 160 1438.8

Manning's n Values num= 3

Sta n Val Sta n Val

0 .03 33.5 .03 124.5 .03

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 1

Sta L Sta R Elev Permanent

0 160 1421.6 T

CROSS SECTION

RIVER: Menifee Valley

REACH: to Rancon RS: 9460

INPUT

Description: Last Cross-section of Reach: split to Rancon

Station Elevation Data num= 14

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1431 11 1430 33.5 1422 38 1419 53.5 1415

54 1415 69.7 1410 97 1410 120 1419 124.5 1422

123.5 1422 124.5 1422 145 1438 153 1429.8

Manning's n Values num= 3

Sta n Val Sta n Val

0 .03 34.5 .03 123.5 .03

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 1

Sta L Sta R Elev Permanent

0 153 1421.6 T

CROSS SECTION

RIVER: Menifee Valley

REACH: to Rancon RS: 9450

INPUT

Description: Last Cross-section of Reach: split to Rancon

Station Elevation Data num= 22

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1431.5 15 1431.9 16.9 1431 18.9 1430 28.9 1425

32.9 1423 34.7 1422 35.7 1422 38.8 1419 42.7 1418

54.7 1415 69.7 1410 97 1410 120 1419 124.5 1422

128 1419 131.1 1422 132.1 1422 135.7 1425

149.6 1430 153.6 1432

Manning's n Values num= 3

Sta n Val Sta n Val

0 .03 35.7 .03 131.1 .03

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 1

Sta L Sta R Elev Permanent

0 199 1421.6 T

CROSS SECTION

RIVER: Menifee Valley

REACH: to Rancon RS: 9460

INPUT

Description: Last Cross-section of Reach: split to Rancon

Station Elevation Data num= 22

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1431.5 15 1431.9 16.9 1431 18.9 1430 28.9 1425

32.9 1423 34.7 1422 35.7 1422 38.8 1419 42.7 1418

54.7 1415 69.7 1410 97 1410 120 1419 124.5 1422

128 1419 131.1 1422 132.1 1422 135.7 1425

149.6 1430 153.6 1432

Manning's n Values num= 3

Sta n Val Sta n Val

0 .03 35.7 .03 131.1 .03

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 1

Sta L Sta R Elev Permanent

0 199 1421.6 T

CROSS SECTION

RIVER: Menifee Valley

REACH: to Rancon RS: 9460

INPUT

Description: Last Cross-section of Reach: split to Rancon

Station Elevation Data num= 22

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1431.5 15 1431.9 16.9 1431 18.9 1430 28.9 1425

32.9 1423 34.7 1422 35.7 1422 38.8 1419 42.7 1418

54.7 1415 69.7 1410 97 1410 120 1419 124.5 1422

128 1419 131.1 1422 132.1 1422 135.7 1425

149.6 1430 153.6 1432

Manning's n Values num= 3

Sta n Val Sta n Val

0 .03 35.7 .03 131.1 .03

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 1

Sta L Sta R Elev Permanent

0 199 1421.6 T

REACH: RV10500 - 10000 RS: 10500

INPUT

Description: Upstream of Lakeside Drive (formerly street "B")

Station Elevation Data num= 13

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

1000 1434.6 1375 1434.6 1386 1429.1 1384 1428

1428 1425.5 1831 1425.5 2796 1425.5 1897 1425.5 1949 1425.5

2383 1425.5 2665 1426.4

Manning's n Values num= 3

Sta n Val Sta n Val

1000 .06 1473 .06 2665 .06

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 1

Sta L Sta R Elev Permanent

0 490 1430 T

CROSS SECTION

RIVER: Menifee Valley

REACH: RV10500 - 10000 RS: 10000

INPUT

Description: Upstream of Lakeside Drive (formerly street "B")

Station Elevation Data num= 13

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

1000 1437.6 1109 1437.6 1123 1428.6 1128 1428 1147 1427

1397 1426 1407 1425.5 1556 1425.5 1802 1425.5 2000 1425.5

2319 1426 2411 1426.2 2472 1430

Manning's n Values num= 3

Sta n Val Sta n Val

1000 .06 1397 .04 2411 .06

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 2

Sta L Sta R Elev Permanent

0 700 1430 T

CROSS SECTION

RIVER: Menifee Valley

REACH: RV10500 - 10000 RS: 9700

INPUT

Description: Upstream of Lakeside Drive (formerly street "B")

Station Elevation Data num= 18

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1430.5 5 1430.4 18 1430 20.2 1429 22.2 1428

24.2 1427 26.2 1426 27.2 1425 30 1425 355.5 1425

357.5 1424 414 1424 416 1425 537.8 1426 539.8 1427

541.8 1428 543.8 1429 545.8 1430

Manning's n Values num= 3

Sta n Val Sta n Val

0 .035 27.2 .035 416 .035

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 3

Sta L Sta R Elev Permanent

0 42.5 1430 T

CROSS SECTION

RIVER: Menifee Valley

REACH: RV10500 - 10000 RS: 9600

INPUT

Description: Upstream of Lakeside Drive (formerly street "B")

Station Elevation Data num= 18

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1430.5 5 1430.4 18 1430 20.2 1429 22.2 1428

24.2 1427 26.2 1426 27.2 1425 30 1425 355.5 1425

357.5 1424 414 1424 416 1425 537.8 1426 539.8 1427

541.8 1428 543.8 1429 545.8 1430

Manning's n Values num= 3

Sta n Val Sta n Val

0 .035 27.2 .035 416 .035

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 3

Sta L Sta R Elev Permanent

0 42.5 1430 T

CROSS SECTION

RIVER: Menifee Valley

REACH: RV10500 - 10000 RS: 9600

INPUT

Description: Upstream of Lakeside Drive (formerly street "B")

Station Elevation Data num= 18

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1430.5 5 1430.4 18 1430 20.2 1429 22.2 1428

24.2 1427 26.2 1426 27.2 1425 30 1425 355.5 1425

357.5 1424 414 1424 416 1425 537.8 1426 539.8 1427

541.8 1428 543.8 1429 545.8 1430

Manning's n Values num= 3

Sta n Val Sta n Val

0 .035 27.2 .035 416 .035

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow num= 3

Sta L Sta R Elev Permanent

0 42.5 1430 T

CROSS SECTION

RIVER: Menifee Valley

REACH: RV10500 - 10000 RS: 9600

INPUT

Description: Upstream of Lakeside Drive (formerly street "B")

Station Elevation Data num= 18

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

0 1430.5 5 1430.4 18 1430 20.2 1429 22.2 1428

24.2 1427 26.2 1426 27.2 1425 30 1425 355.5 1425

Description: This Cross section 9600 replaced the proposed culverts at Street "B". The side slope is modeled as 4:1 per the grading plan with top street elevation of 1430 feet.

Station Elevation Data										
num=	11									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	1430.6	26.7	1424	36.7	1424	62.3	1430.3	120.3	1430	
283.1	1430	316.9	1436.4	345	1423.5	385	1423.5	411.4	1429.9	
530	1430									
Manning's n Values										
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	
0	.035	26.7	.035	385	.035					

Bank Sta: Left 26.7 Right 385 Lengths: Left Channel 56 Right 61 Coeff Contr. .3 Expan. .5

CROSS SECTION

RIVER: Menifee Valley

REACH: RVJ0500 - 10600 RS: 9500

INPUT

Description: Downstream of Street "B"										
Station Elevation Data										
num=	11									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	1432	13.2	1431	15.6	1430	27.6	1425	34.7	1422.8	
458	1422.8	458.5	1423	460.5	1424	462.4	1425	472.4	1430	
474.4	1431									
Manning's n Values										
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	
0	.035	34.7	.035	458	.035					

Bank Sta: Left 34.7 Right 458 Lengths: Left Channel 0 Right 0 Coeff Contr. .3 Expan. .5

Ineffective Flow num= 2

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
69	373	1430	T							
424	474.4	1430	T							

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES RS: 9400

INPUT

Description:										
Station Elevation Data										
num=	22									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	1431.4	66	1431	82	1422	85	1422	90	1419	
106	1415	122	1410	153	1400	297	1352	355	1352	
385	1352	435	1360	617	1410	628	1415	645	1419	
649	1422	680	1423	682	1423.5	700	1428	800	1429	
823	1434	905	1434							
Manning's n Values										
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	
0	.035	85	.035	649	.035					

Bank Sta: Left 85 Right 649 Lengths: Left Channel 150 Right 150 Coeff Contr. .1 Expan. .3

Ineffective Flow num= 1

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	800	1421.6	T							

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES RS: 9200

INPUT

Description:										
Station Elevation Data										
num=	20									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	1430.5	80	1431	136	1410	142	1408	150	1352	
104	1419	120	1415	136	1410	136	1352	386	1352	
Manning's n Values										
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	
0	.035	85	.035	649	.035					

Bank Sta: Left 85 Right 649 Lengths: Left Channel 150 Right 150 Coeff Contr. .1 Expan. .3

Ineffective Flow num= 1

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	800	1421.6	T							

381	1360	530	1410	547	1415	564	1419	568	1422
610	1423	624	1428	724	1429	785	1433	760	1433.7
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	100	.035	568	.035				

Bank Sta: Left 100 Right 568 Lengths: Left Channel 285 Right 390 Coeff Contr. .1 Expan. .3

Ineffective Flow num= 1

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	760	1421.6	T						

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES RS: 9000

INPUT

Description:										
Station Elevation Data										
num=	21									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
109	1419	214	1415	230	1410	483	1352	560	1352	
595	1352	620	1360	770	1410	784	1415	863	1419	
807	1422	839	1422	853	1428	952	1429	959	1430	
1011	1431.5									
Manning's n Values										
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	
0	.035	195	.035	807	.035					

Bank Sta: Left 195 Right 807 Lengths: Left Channel 130 Right 310 Coeff Contr. .1 Expan. .3

Ineffective Flow num= 1

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	1011	1421.0	T							

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES RS: 8700

INPUT

Description:										
Station Elevation Data										
num=	41									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
163	1420	166.0	1422	167	1420	187.1	1370	202.1	1370	
232.1	1400	282.3	1306	292.2	1360	322.1	1370	331.1	1367	
376.1	1352	407.9	1352	452.9	1367	463.4	1370	496.7	1360	
530.9	1390	565.3	1400	605.3	1410	632.4	1415	684.3	1420	
684.4	1422	714.8	1422.1	733.5	1425	767.6	1430	768.5	1430.1	
905	1430.7	924.2	1430	928.4	1430	956.8	1430.6	989.4	1430	
1009	1431	1010.4	1431.4	1041.9	1431.4	1043.5	1431.8	1115.4	1431.8	
1121.4	1431.9									
Manning's n Values										
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	
0	.035	166.9	.035	684.4	.035					

Bank Sta: Left 166.9 Right 684.4 Lengths: Left Channel 125 Right 210 Coeff Contr. .1 Expan. .3

Ineffective Flow num= 1

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	1120	1421.6	T							

CROSS SECTION

RIVER: Menifee Valley

REACH: THROUGH LAKES RS: 8600

INPUT

Description:										
Station Elevation Data										
num=	34									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
104	1419	120	1415	136	1410	142	1408	150	1352	
104	1419	120	1415	136	1410	136	1352	386	1352	
Manning's n Values										
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	
0	.035	85	.035	649	.035					

Bank Sta: Left 85 Right 649 Lengths: Left Channel 125 Right 210 Coeff Contr. .1 Expan. .3

Ineffective Flow num= 1

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	800	1421.6	T							

0 1431.2 11.9 1431.8 109 1431.8 106.4 1428.6 107.1 1428.4
116.7 1427.1 119.8 1423 132 1422 132.1 1420 152.2 1415
167.3 1410 1490 227.6 1390 257.7 1380 306.2 1373
356.7 1380 392.2 1390 432.3 1400 484 1410 503.5 1415
526.7 1420 526.8 1422 534.3 1422 542.2 1423 549.2 1425
561.2 1428.5 618.1 1429 857.4 1430 911.7 1431 931.5 1431
937.2 1431 989.1 1431 997.1 1431 1017.5 1431.1

Manning's n Values num= 3 Sta n Val
Sta n Val Sta n Val
0 .035 132 .035 534.3 .035
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Ineffective Flow num= 3
Sta L Sta R Elev Permanent
495 1024 1430 T
132 495 1421.6 T

CROSS SECTION
RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 8550

INPUT
Description: num= 30
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1431.5 24.7 1431.5 27.2 1431 38.8 1429.5 58.8 1422
58.9 1420 62.9 1419.5 79 1415 94 1410 124.5 1400
163 1390 193 1387.5 255.1 1386 322.9 1400
354.9 1410 372 1415 397.7 1420 397.9 1422 423 1422
442.8 1425 456.5 1428.5 583 1429 846.3 1430 843.3 1431
862.6 1431 881.4 1431 907.4 1431 928.6 1431 949 1431

Manning's n Values num= 3 Sta n Val
Sta n Val Sta n Val
0 .035 58.8 .035 423 .035
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Ineffective Flow num= 3
Sta L Sta R Elev Permanent
0 78 1430 T
358 951 1430 T
78 358 1421.6 T

CROSS SECTION
RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 8500

INPUT
Description: Upstream of Laguna Vista Dr. num= 29
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1435 2 1434 4 1433 6 1432 8 1431
10 1430 12 1429 14 1428 16 1427 18 1426
20 1425 22 1424 24 1423 26 1422 28 1421
30 1420 32 1419 34 1418 36 1417 38 1416
40 1410 42 1409 44 1408 46 1407 48 1406
107 1432 109 1433 111 1434 113 1435

Manning's n Values num= 3 Sta n Val
Sta n Val Sta n Val
0 .035 35 .035 139 .035
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 17 1435 T
157 173 1435 T

CULVERT
Culvert Name Shape Rise Span
LAGUNA VIS 20span Arch 13.5 32
FHWA Chart # 00- Span/Rise ratio approximate 2:1
FHWA Scale # 1: 0 degree wing wall angle
Solution Criteria = Highest U.S. Eg

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 8200
INPUT
Description: (2) - 32' ARCH CONCRETE CULVERTS, (1) - 36' ARCH CULVERT/ BOAT
CROSSING AT LAGUNA VISTA DR.

Distance from Upstream XS = 18
Weir Roadway Width = 71
Weir Coefficient = 3
Upstream Deck/Roadway Coordinates num= 8

Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 1435 4.17 1434.6 35 1435
67.58 1435.4 104.76 1435.7 137.34 1435.7
170.17 1435.7 173 1435.7

Upstream Bridge Cross Section Data num= 29
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1435 2 1434 4 1433 6 1432 8 1431
10 1430 12 1429 14 1428 16 1427 18 1426
20 1425 22 1424 24 1423 26 1422 28 1421
30 1420 32 1419 34 1418 36 1417 38 1416
40 1410 42 1409 44 1408 46 1407 48 1406
107 1432 109 1433 111 1434 113 1435

Manning's n Values num= 3 Sta n Val
Sta n Val Sta n Val
0 .035 35 .035 139 .035
Bank Sta: Left Right Coeff Contr. Expan.
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
157 173 1435 T

Downstream Deck/Roadway Coordinates num= 8
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 1435 11.17 1434.7 42 1435.1
74.58 1435.4 111.76 1435.7 144.34 1435.7
177.17 1435.7 191 1435.7

Downstream Bridge Cross Section Data num= 19
Station Elevation Data Sta Elev Sta Elev Sta Elev Sta Elev
0 1435 2 1434 4 1433 6 1432 8 1428
10 1430 12 1429 14 1428 16 1427 18 1426
20 1425 24 1424 26 1423 28 1422 30 1421
40 1410 42 1409 44 1408 46 1407 48 1406
107 1432 109 1433 111 1434 113 1435

Manning's n Values num= 3 Sta n Val
Sta n Val Sta n Val
0 .035 42 .035 146 .035
Bank Sta: Left Right Coeff Contr. Expan.
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
151 191 1435 T

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = 1434.6
Elevation at which weir flow begins = .95
Energy head used in spillway design =
Spillway height used in design = Broad Crested
Weir crest shape =

Number of Culverts = 2
Culvert Name Shape Rise Span
LAGUNA VIS 20span Arch 13.5 32
FHWA Chart # 00- Span/Rise ratio approximate 2:1
FHWA Scale # 1: 0 degree wing wall angle
Solution Criteria = Highest U.S. Eg

Culvert Upstream Dist 18 Length 74 Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
.5
Number of Barrels = 2
Upstream Elevation = 1417.5
Centerline Stations

Sta. Sta.
51 121.34
Downstream Elevation = 1417.5
Centerline Stations
Sta. Sta.
58 128.34

Culvert Name Shape Rise Span
LAGUNA VIS IConspan Arch 14.5 36
FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstream Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
18 74 .014 .014 .5
Upstream Elevation = 1417.5
Centerline Station = 86.17
Downstream Elevation = 1417.5
Centerline Station = 93.17

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 8100

INPUT
Description: Downstream of Laguna Vista Dr.

Station Elevation Data				num= 19			
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1435	2	1434	6	1432	10	1430
10	1435	24	1432	42	1428	74	1424
140	1421	162	1423	185	1424	167	1425
177	1436	181	1436	188	1435	191	1436
Manning's n Values				num= 3			
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	42	.035	146	.035		
Bank Sta: Left		Right		Lengths: Left Channel		Right	
42	146	2	343	237.5	246		
Ineffective Flow				num= 2			
Sta L	Sta R	Sta L	Sta R				
0	37	1435	Permanent				
151	191	1435	T				

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 7900

INPUT
Description:

Station Elevation Data				20			
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1433.5	138	1433	160	1424	169	1423
190	1419	299	1415	221	1410	344	1378
467	1367	477	1370	600	1410	612	1415
639	1422	656	1423	666	1424	680	1436
Manning's n Values				num= 3			
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	186	.035	639	.035		
Bank Sta: Left Right				Lengths: Left Channel Right			
186	639	3	200	150	100		
Ineffective Flow				num= 3			
Sta L	Sta R	Sta L	Sta R				
0	410	1430	Permanent				
598	770	1430	T				
410	598	1421.6	T				

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 7700

INPUT
Description:

Station Elevation Data				num= 21				Sta Elev				Sta Elev				Sta Elev			
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1433	93	1432	185	1432	274	1432	360	1430	448	1428	536	1426	624	1424	712	1422		
236	1422	241	1419	260	1415	273	1410	286	1406	299	1402	312	1398	325	1394	338	1390		
408	1367	498	1367	509	1378	629	1410	642	1415	655	1420	668	1425	681	1430	694	1435		
658	1419	662	1422	680	1423	690	1424	703	1427	716	1430	729	1433	742	1436	755	1439		
800	1429.4																		
Manning's n Values				num= 3				Sta n Val				Sta n Val				Sta n Val			
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val		
0	.035	236	.035	662	.035	662	.035	662	.035	662	.035	662	.035	662	.035	662	.035		
Bank Sta: Left Right				Lengths: Left Channel Right				Coeff Contr. Expan.											
236	662	3	170	175	180														
Ineffective Flow				num= 3															
Sta L	Sta R	Elev	Permanent	Sta L	Sta R	Elev	Permanent	Sta L	Sta R	Elev	Permanent	Sta L	Sta R	Elev	Permanent	Sta L	Sta R		
0	360	1430	T	0	360	1430	T	0	360	1430	T	0	360	1430	T	0	360		
632	1000	1430	T	632	1000	1430	T	632	1000	1430	T	632	1000	1430	T	632	1000		
360	632	1421.6	T	360	632	1421.6	T	360	632	1421.6	T	360	632	1421.6	T	360	632		

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 7500

INPUT
Description:

Station Elevation Data				num= 20		Sta Elev		Sta Elev		Sta Elev	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1431	3	106	1432	131	1432	151	1424	169	1423	169
190	1422	194	1419	210	1415	228	1410	346	1370	346	1370
358	1367	432	1367	442	1378	560	1410	575	1415	575	1415
591	1419	595	1422	613	1423	628	1428	685	1428	685	1428
Manning's n Values				num= 3		Sta n Val					
Sta	n Val	Sta	n Val	Sta	n Val						
0	.035	190	.035	595	.035						
Bank Sta: Left Right				Lengths: Left Channel Right		Coeff Contr.		Expan.			
190	595	3	245	190	135						
Ineffective Flow				num= 3							
Sta L	Sta R	Sta L	Sta R	Sta L	Sta R						
0	290	1430	T	605	685	1430	T				
290	605	1421.6	T	290	605	1421.6	T				

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 7200

INPUT
Description:

Station Elevation Data				num= 20		Sta Elev		Sta Elev		Sta Elev		Sta Elev			
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	1431	110	1432	1300	1424	140	1423	160	1422	1422	1422	1422	1422		
164	1419	176	1415	200	1410	318	1370	328	1367	328	1367	328	1367		
352	1367	361	1370	480	1410	496	1415	511	1419	511	1419	511	1419		
515	1422	530	1423	537	1424	547	1429	622	1428	622	1428	622	1428		
Manning's n Values				num= 3		Sta n Val		Sta n Val		Sta n Val		Sta n Val			
Sta	n	Val		Sta	n	Val		Sta	n	Val		Sta	n	Val	
0	.035	160		.035	515	.035									
Bank Sta: Left		Right		Lengths: Left		Channel Right		Coeff Contr.		Expan.		Coeff Contr.		Expan.	
160	515	2	330	220	120										
Ineffective Flow		num= Permanent		num= Permanent		num= Permanent		num= Permanent		num= Permanent		num= Permanent		num= Permanent	
Sta L	Sta R	Elev		Sta L	Sta R	Elev		Sta L	Sta R	Elev		Sta L	Sta R	Elev	
0	144	1430	T	0	144	1430	T	0	144	1430	T	0	144	1430	T
144	622	1421.6	T	144	622	1421.6	T	144	622	1421.6	T	144	622	1421.6	T

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 7100

INPUT

Description: Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1432	20	1425	40	1424	75	1423	105	1422
109	1419	125	1415	140	1410	260	1370	270	1367
308	1367	390	1370	508	1410	522	1415	538	1419
542	1422	560	1423	565	1424	575	1428	608	1428.5
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	105	.035	542	.035	542	.035		
Bank Sta: Left Right Lengths: Left Channel Right									
	31	359.8	num=	19					
Ineffective Flow	45	429	num=	21.6	Elev	Sta	Elev	Sta	Elev
Sta L	Sta R	Elev	Permanent	50	1429	56	1425	25	1422
248	608	1421.6	T	34.8	1419	42.8	1417	1370	203.1
				339.4	1415	343.4	1416	355.7	1419
				383	1424	385	1425	393.3	1429
									407.7
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	31	.035	359.8	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
	31	359.8	num=	1					
Ineffective Flow	45	429	num=	2	Elev	Sta	Elev	Sta	Elev
Sta L	Sta R	Elev	Permanent	50	1429	56	1425	25	1422
248	608	1421.6	T	34.8	1419	42.8	1417	1370	203.1
				339.4	1415	343.4	1416	355.7	1419
				383	1424	385	1425	393.3	1429
									407.7

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 7000

INPUT

Description: Station Elevation Data									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1429.6	2	1429	5	1428	8.1	1427	11	1426
14	1425	17.1	1424	20.2	1423	27.3	1422	29.5	1421.5
135.5	1421.6	133.6	1422	135.7	1423	136.5	1424	137.3	1425
148	1426	151	1427	153.6	1428	156.5	1429		
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	31	.035	359.8	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
	31	359.8	num=	1					
Ineffective Flow	45	429	num=	2	Elev	Sta	Elev	Sta	Elev
Sta L	Sta R	Elev	Permanent	50	1429	56	1425	25	1422
0	407.7	1421.6	T	34.8	1419	42.8	1417	1370	203.1
				339.4	1415	343.4	1416	355.7	1419
				383	1424	385	1425	393.3	1429
									407.7

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 6900

INPUT

Description: Weir @ 1421.6' for discharge under Menifee Rd.									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1429.6	2	1429	5	1428	8.1	1427	11	1426
14	1425	17.1	1424	20.2	1423	27.3	1422	29.5	1421.5
135.5	1421.6	133.6	1422	135.7	1423	136.5	1424	137.3	1425
148	1426	151	1427	153.6	1428	156.5	1429		
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	29.5	.014	133.5	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
	29.5	133.5	num=	2					
Ineffective Flow	45	429	num=	2	Elev	Sta	Elev	Sta	Elev
Sta L	Sta R	Elev	Permanent	50	1429	56	1425	25	1422
133.8	156.3	1430	T	34.8	1419	42.8	1417	1370	203.1
				339.4	1415	343.4	1416	355.7	1419
				383	1424	385	1425	393.3	1429
									407.7

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 6899

INPUT

Description: Repeat of cross-section 6900, with IE of 1421.55, 1421.3' , and 1421.55' into culverts									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1429.6	2	1429	5	1428	8.1	1427	11	1426
14	1425	17.1	1424	20.2	1423	27.3	1422	29.5	1421.55
81.5	1421.3	133.5	1421.55	133.8	1422	139.7	1423	142.5	1424
145.3	1425	148	1426	151	1427	153.8	1428	156.5	1429
158.3	1429.6								
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	27.3	.014	133.8	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
	27.3	133.8	num=	3					
Ineffective Flow	45	429	num=	2	Elev	Sta	Elev	Sta	Elev
Sta L	Sta R	Elev	Permanent	50	1429	56	1425	25	1422
133.8	156.3	1430	T	34.8	1419	42.8	1417	1370	203.1
				339.4	1415	343.4	1416	355.7	1419
				383	1424	385	1425	393.3	1429
									407.7

BRIDGE

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 6750

INPUT

Description: 5 - (20' X 6') BOX CULVERTS AT MENIFEE ROAD. Please note this culverts are modeled as bridge to account the cross fall.									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1429.6	2	1429	5	1428	8.1	1427	11	1426
14	1425	17.1	1424	20.2	1423	27.3	1422	29.5	1421.55
81.5	1421.3	133.5	1421.55	133.8	1422	139.7	1423	142.5	1424
145.3	1425	148	1426	151	1427	153.8	1428	156.5	1429
158.3	1429.5								
Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	27.3	.014	133.8	.035				
Bank Sta: Left Right Lengths: Left Channel Right									
	27.3	133.8	num=	2					
Ineffective Flow	45	429	num=	2	Elev	Sta	Elev	Sta	Elev
Sta L	Sta R	Elev	Permanent	50	1429	56	1425	25	1422
133.8	156.3	1430	T	34.8	1419	42.8	1417	1370	203.1
				339.4	1415	343.4	1416	355.7	1419
				383	1424	385	1425	393.3	1429
									407.7

Upstream Bridge Cross Section Data

Station Elevation Data	num=	21
Sta L	Sta R	Elev
0	1429.6	17.1
14	1425	17.1
81.5	1421.3	133.5
145.3	1425	148
158.3	1429.5	

Downstream Bridge Cross Section Data

Station Elevation Data	num=	3
Sta L	Sta R	Elev
0	1429.5	27.3
14	1425	27.3
81.5	1421.3	133.5
145.3	1425	148
158.3	1429.5	

Upstream Bridge Cross Section Data

Station Elevation Data	num=	21
Sta L	Sta R	Elev
0	1429.6	17.1
14	1425	17.1
81.5	1421.3	133.5
145.3	1425	148
158.3	1429.5	

Downstream Bridge Cross Section Data

Station Elevation Data	num=	12
Sta L	Sta R	Elev
0	1429.5	27.3
14	1425	27.3
81.5	1421.3	133.5
145.3	1425	148
158.3	1429.5	

Elev

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 2130

INPUT

Description: This is a REPEATED section.

Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428.9	878	1430.1	912	1430.1	954	1429.1	966	1428.4
976	1427.9	979	1427.9	979.1	1417.9	989.1	1417.9	989.2	1425.9
989.7	1425.9	989.8	1417.9	999.8	1425.9	1000.3	1425.9		
1000.4	1417.9	1010.4	1417.9	1010.5	1425.9	1011.1	1417.9		
1021.1	1417.9	1021.2	1427.9	1024	1427.9	1062	1428.4		
1072	1429.9	1092	1431	1119	1430	1180	1428.9	1197	1428.9
1241	1429.9	1252	1430.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
868	.035	979	.015	1021.2	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
868	979	1429	F
1021.2	1252	1429	F

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 2129

INPUT

Description: This is a REPEATED section.

Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428.9	878	1430.1	912	1430.1	954	1429.1	966	1428.4
976	1427.9	979	1427.9	979.1	1417.9	989.1	1417.9	989.2	1417.9
989.7	1417.9	989.8	1417.9	999.8	1417.9	1000.3	1417.9		
1000.4	1417.9	1010.4	1417.9	1010.5	1417.9	1011.1	1417.9		
1021.1	1417.9	1021.2	1427.9	1024	1427.9	1062	1428.4		
1072	1429.9	1092	1431	1119	1430	1180	1428.9	1197	1428.9
1241	1429.9	1252	1430.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
868	.035	979	.015	1021.2	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
868	979	1429	F
1021.2	1252	1429	F

BRIDGE

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 2033

INPUT

Description: BRIDGE AT NEWPORT ROAD

Distance from Upstream XS = 1

Deck/Roadway Width = 10

Weir Crest Elevation = 2.0

Upstream Deck/Roadway Coordinates num= 32

Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord
868	1428	0	878	1429.2	0	912	1429.2	0	0
954	1428.2	0	966	1427.5	0	976	1427	0	0
979	1427	1425	979.1	1427	1425	989.1	1427	1425	1425
989.2	1427	1425	989.7	1427	1425	989.8	1427	1425	1425
999.8	1427	1425	999.9	1427	1425	1000.3	1427	1425	1425
1000.4	1427	1425	1010.4	1427	1425	1010.5	1427	1425	1425
1011	1427	1425	1011.1	1427	1425	1021.1	1427	1425	1425
1021.2	1427	1425	1024	1427	0	1062	1427.5	0	0
1062	1428.2	0	1072	1429.2	0	1082	1429.1	0	0
1119	1428.1	0	1180	1428	0	1197	1428	0	0
1241	1429	0	1252	1430	0				

Upstream Bridge Cross Section Data

Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428.9	878	1429.1	912	1430.1	954	1429.1	966	1428.4
976	1427.9	979	1427.9	979.1	1417.9	989.1	1417.9	989.2	1417.9
989.7	1417.9	989.8	1417.9	999.8	1417.9	1000.3	1417.9		
1000.4	1417.9	1010.4	1417.9	1010.5	1417.9	1011.1	1417.9		
1021.1	1417.9	1021.2	1427.9	1024	1427.9	1062	1428.4		
1072	1429.9	1092	1431	1119	1430	1180	1428.9	1197	1428.9
1241	1429.9	1252	1430.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
868	.035	979	.015	1021.2	.035

Bank Sta: Left Right Coeff Contr. Expan.

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
868	979	1429	F
1021.2	1252	1429	F

Downstream Deck/Roadway Coordinates

Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord
868	1428	0	878	1429.2	0	912	1429.2	0	0
954	1428.2	0	966	1427.5	0	976	1427	0	0
979	1427	1425	979.1	1427	1425	989.1	1427	1425	1425
989.2	1427	1425	989.7	1427	1425	989.8	1427	1425	1425
999.8	1427	1425	999.9	1427	1425	1000.3	1427	1425	1425
1000.4	1427	1425	1010.4	1427	1425	1010.5	1427	1425	1425
1011	1427	1425	1011.1	1427	1425	1021.1	1427	1425	1425
1021.2	1427	1425	1024	1427	0	1062	1427.5	0	0
1062	1428.2	0	1072	1429.2	0	1082	1430.1	0	0
1119	1429.1	0	1180	1428	0	1197	1428	0	0
1241	1429	0	1252	1430	0				

Downstream Bridge Cross Section Data

Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
868	1428	878	1429.2	912	1429.2	954	1428.2	966	1427.5
976	1427	979	1427	979.1	1417	989.1	1417	989.2	1417
999.8	1417	1000.4	1417	1010.4	1417	1011.1	1417	1021.1	1417
1021.2	1427	1024	1427	1027	1427.5	1062	1428.2	1072	1429
1092	1430.1	1119	1429.1	1180	1428	1197	1428	1241	1429
1252	1430								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
868	.035	979	.015	1021.2	.035

Bank Sta: Left Right Coeff Contr. Expan.

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
868	979	1429	F
1021.2	1252	1429	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical

Downstream Embankment side slope = 0 horiz. to 1.0 vertical

Maximum allowable submergence for weir flow = .95

Elevation at which weir flow begins =

Energy head used in spillway design =

Spillway height used in design =

Weir crest shape = Broad Crested

Number of Piers = 3

Pier Data

Pier Station Upstream= 989.45 Downstream= 989.45

Upstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Pier Data

Pier Station Upstream= 1000.1 Downstream= 1000.1

Upstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

Downstream num= 2

Width Elev Width Elev

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 1190

INPUT

Station Elevation Data										37
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
698	1429	722	1429	728	1430	748	1430	754	1429	
757	1428	763	1427	765	1426	768	1425	771	1424	
784	1424	787	1425	809	1425	831	1424	893	1423	
935	1423	951	1424	964	1423	968	1422	971	1421	
975	1420	980	1419	985	1418	988	1417	1000	1416	
1012	1417	1017	1418	1024	1419	1054	1420	1082	1421	
1118	1422	1135	1423	1150	1424	1159	1425	1176	1426	
1210	1427	1237	1428							
Manning's n Values										3
Sta	n	Sta	n	Sta	n	Sta	n	Sta	n	Val
698	.035	757	.03	1237	.035					
Bank Sta: Left Right Lengths: Left Channel Right										Expan.
757	757	1237		400	400			.1	.3	

CROSS SECTION

RIVER: Menifee Valley
REACH: THROUGH LAKES RS: 790

INPUT

Station Elevation Data										38
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
714	1426	771	1426	784	1426	791	1428	800	1427	
804	1426	806	1425	811	1425	828	1425	840	1425	
844	1426	847	1427	862	1427	866	1426	891	1426	
912	1426	927	1425	938	1424	947	1423	958	1422	
963	1421	969	1420	977	1419	985	1418	991	1417	
1000	1416	1008	1417	1015	1418	1019	1419	1025	1420	
1030	1421	1035	1432	1048	1423	1115	1424	1121	1425	
1125	1426	1129	1427	1134	1428					
Manning's n Values										3
Sta	n	Sta	n	Sta	n	Sta	n	Sta	n	Val
729	.035	912	.03	1134	.035					
Bank Sta: Left Right Lengths: Left Channel Right										Expan.
912	912	1134		0	0			.1	.3	

SUMMARY OF MANNING'S N VALUES

River:Menifee Valley

Reach	River Sta.	n1	n2	n3
Upstream	15000	.035	.035	
Upstream	14500	.035	.035	
Upstream	14000	.035	.035	
Upstream	13500	.035	.035	
Upstream	13000	.035	.035	
Upstream	12500	.06	.06	
Upstream	12000	.06	.06	
Upstream	11500	.06	.06	
Upstream	11000	.06	.06	
split to Lake "C	10995	.03	.03	
split to Lake "C	10980	.03	.03	
split to Lake "C	10965	.03	.03	
split to Lake "C	10950	.03	.03	
split to Lake "C	10940	.03	.03	
split to Lake "C	10930	.03	.03	
split to Lake "C	10920	.03	.03	
split to Lake "C	10910	.03	.03	
Split to Lake "C	10900	.03	.03	

THROUGH LAKES	2156	.035	.015	.035
THROUGH LAKES	2139	.035		
THROUGH LAKES	2129	.035	.015	.035
THROUGH LAKES	2633	.035		
THROUGH LAKES	1937	.035	.015	.035
THROUGH LAKES	1936	.035	.015	.035
THROUGH LAKES	1926	.035	.03	.035
THROUGH LAKES	1926	.035	.03	.035
THROUGH LAKES	1520	.035	.03	.035
THROUGH LAKES	1190	.035	.03	.035
THROUGH LAKES	790	.035	.03	.035

Bridge

SUMMARY OF REACH LENGTHS

River: Menifee Valley

Reach	River Sta.	Left	Channel	Right
Upstream	15000	585	485	377
Upstream	14999	497	399	328
Upstream	14000	483.2	396.7	337.5
Upstream	13500	121	121	121
Upstream	13045	422	401	366
Upstream	13060	757	736	720
Upstream	12500	383	382	483
Upstream	12000	330	376	430
Upstream	11500	329	417	536
Upstream	11000	0	0	0
split to Lake "C	10995	67	86	94
split to Lake "C	10980	53	52	51.5
split to Lake "C	10965	53	52	51.5
split to Lake "C	10950	82	128	109
split to Lake "C	10935	295	170	170
split to Lake "C	10920	225	213	224
split to Lake "C	10910	318	261	205
split to Lake "C	10900	144	183	315
split to Lake "C	10890	87	176	196
split to Lake "C	10880	87	58	65
split to Lake "C	10870	62	62	62
split to Lake "C	10860			
split to Lake "C	10850	50	45	51
split to Lake "C	10845	68	59	61
split to Lake "C	10840	195	105	105
split to Lake "C	10830			
split to Lake "C	10820	0	0	0
to Rancon	11700	164	119	160
to Rancon	11695	125	125	125
to Rancon	11690	260	260	260
to Rancon	11400	160	180	151
to Rancon	11300	220	182	160
to Rancon	11200	165	198	196
to Rancon	11100	125	125	177
to Rancon	11040	215	103	69
to Rancon	11020	178	80	43
to Rancon	11000	120	117	107
to Rancon	10900	145	159	156
to Rancon	10800	165	200	234
to Rancon	10700	153	158	197
to Rancon	10600	181	175	147
to Rancon	10500	115	106	154
to Rancon	10400	180	135	185
to Rancon	10300	187	132	137
to Rancon	10100	177	225	260
to Rancon	10001			
to Rancon	9491	274	181	94
to Rancon	9490	200	200	200
to Rancon	9480	187	187	187
to Rancon	9470	155	155	155
to Rancon	9460	150	190	200
to Rancon	9450	0	0	0
RV10500 - 10000	10000	344	452	530
RV10500 - 10000	9700	290	350	350
RV10500 - 10000	9600	51	58	60
RV10500 - 10000	9500	56	60	61
RV10500 - 10000	9400	0	0	0
THROUGH LAKES	9400	410	250	150

THROUGH LAKES	9200	285	360	390
THROUGH LAKES	9000	130	190	210
THROUGH LAKES	8700	125	150	210
THROUGH LAKES	8600	50	50	70
THROUGH LAKES	8550	130	120	220
THROUGH LAKES	8500	112	111	110
THROUGH LAKES	8200			
THROUGH LAKES	8100	Culvert	237.5	246
THROUGH LAKES	7900	150	150	160
THROUGH LAKES	7800	200	200	190
THROUGH LAKES	7700	170	175	180
THROUGH LAKES	7500	245	190	135
THROUGH LAKES	7200	330	220	120
THROUGH LAKES	7100	340	185	75
THROUGH LAKES	7000	75	200	320
THROUGH LAKES	6900	1	1	1
THROUGH LAKES	6899	169	169	169
THROUGH LAKES	6750	Bridge		
THROUGH LAKES	6700	50	50	50
THROUGH LAKES	6688	170	170	170
THROUGH LAKES	6518	329	329	329
THROUGH LAKES	6189	277	277	277
THROUGH LAKES	6181	191	191	191
THROUGH LAKES	5722	248	248	248
THROUGH LAKES	5473	383	383	383
THROUGH LAKES	5119	274	274	274
THROUGH LAKES	4836	252	252	252
THROUGH LAKES	4584	135	135	135
THROUGH LAKES	4449	174	174	174
THROUGH LAKES	4275	285	285	285
THROUGH LAKES	3990	290	290	290
THROUGH LAKES	3700	330	330	330
THROUGH LAKES	3370	300	300	300
THROUGH LAKES	2810	260	260	260
THROUGH LAKES	2610	113	113	113
THROUGH LAKES	2460	87	87	87
THROUGH LAKES	2380	67	67	67
THROUGH LAKES	2333	121	121	121
THROUGH LAKES	2212	56	56	56
THROUGH LAKES	2159	3.25	3.25	3.25
THROUGH LAKES	2156	25.75	25.75	25.75
THROUGH LAKES	2130	1	1	1
THROUGH LAKES	2129	192.4	192.4	192.4
THROUGH LAKES	2033	Bridge		
THROUGH LAKES	1937	1	1	1
THROUGH LAKES	1936	10	10	10
THROUGH LAKES	1926	100	100	100
THROUGH LAKES	1826	297	297	297
THROUGH LAKES	1529	339	339	339
THROUGH LAKES	1390	400	400	400
THROUGH LAKES	790	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Menifee Valley

Reach	River Sta.	Contr.	Expan.
Upstream	15000	.1	.3
Upstream	14500	.1	.3
Upstream	14000	.1	.3
Upstream	13500	.1	.3
Upstream	13045	.1	.3
Upstream	13000	.1	.3
Upstream	12500	.1	.3
Upstream	12000	.1	.3
Upstream	11500	.1	.3
Upstream	11000	.1	.3
split to Lake "C	10995	.3	.5
split to Lake "C	10980	.3	.5
split to Lake "C	10965	.3	.5
split to Lake "C	10950	.3	.5
split to Lake "C	10940	.1	.3
split to Lake "C	10930	.1	.3
split to Lake "C	10920	.1	.3
split to Lake "C	10910	.1	.3

split to Lake "C	10900	.1	.3	2159	THROUGH LAKES	.3
split to Lake "C	10880	.3	.5	2156	THROUGH LAKES	.3
split to Lake "C	10870	.3	.5	2130	THROUGH LAKES	.3
split to Lake "C	10860	Culvert		2129	THROUGH LAKES	.3
split to Lake "C	10850	.3	.5	2033	THROUGH LAKES	.3
split to Lake "C	10845	.3	.5	1937	THROUGH LAKES	.3
split to Lake "C	10840	.3	.5	1936	THROUGH LAKES	.5
split to Lake "C	10830	.3	.5	1926	THROUGH LAKES	.3
split to Lake "C	10820	Culvert		1826	THROUGH LAKES	.3
split to Lake "C	11700	.3	.5	1529	THROUGH LAKES	.1
split to Lake "C	11600	.3	.5	1529	THROUGH LAKES	.1
split to Lake "C	11500	.1	.3	1199	THROUGH LAKES	.1
split to Lake "C	11460	.1	.3	790	THROUGH LAKES	.3
split to Lake "C	11360	.1	.3			
split to Lake "C	11300	.1	.3			
split to Lake "C	11160	.1	.3			
split to Lake "C	11040	.1	.3			
split to Lake "C	11020	.1	.3			
split to Lake "C	11000	.1	.3			
split to Lake "C	10900	.1	.3			
split to Lake "C	10880	.1	.3			
split to Lake "C	10700	.1	.3			
split to Lake "C	10600	.1	.3			
split to Lake "C	10500	.1	.3			
split to Lake "C	10400	.1	.3			
split to Lake "C	10300	.1	.3			
split to Lake "C	10100	.1	.3			
split to Lake "C	10000	.3	.5			
split to Lake "C	9991	Culvert				
split to Lake "C	9990	.3	.5			
split to Lake "C	9490	.1	.3			
split to Lake "C	9480	.1	.3			
split to Lake "C	9470	.1	.3			
split to Lake "C	9460	.1	.3			
split to Lake "C	9450	.1	.3			
split to Lake "C	9450	.1	.3			
split to Lake "C	10500	.1	.3			
split to Lake "C	10500	.1	.3			
split to Lake "C	10000	.1	.3			
split to Lake "C	9700	.3	.5			
split to Lake "C	9600	.3	.5			
split to Lake "C	9500	.3	.5			
split to Lake "C	9400	.1	.3			
split to Lake "C	9200	.1	.3			
split to Lake "C	9000	.1	.3			
split to Lake "C	8700	.1	.3			
split to Lake "C	8600	.1	.3			
split to Lake "C	8500	.3	.5			
split to Lake "C	8500	.3	.5			
split to Lake "C	8200	Culvert				
split to Lake "C	8100	.3	.5			
split to Lake "C	7900	.1	.3			
split to Lake "C	7700	.1	.3			
split to Lake "C	7500	.1	.3			
split to Lake "C	7200	.1	.3			
split to Lake "C	7100	.1	.3			
split to Lake "C	7000	.1	.3			
split to Lake "C	6900	.3	.5			
split to Lake "C	6899	.3	.5			
split to Lake "C	6750	Culvert				
split to Lake "C	6700	.3	.5			
split to Lake "C	6600	.1	.3			
split to Lake "C	6518	.1	.3			
split to Lake "C	6189	.1	.3			
split to Lake "C	5912	.1	.3			
split to Lake "C	5721	.1	.3			
split to Lake "C	5473	.1	.3			
split to Lake "C	5110	.1	.3			
split to Lake "C	4836	.1	.3			
split to Lake "C	4584	.1	.3			
split to Lake "C	4449	.1	.3			
split to Lake "C	4275	.1	.3			
split to Lake "C	3990	.1	.3			
split to Lake "C	3700	.1	.3			
split to Lake "C	3570	.1	.3			
split to Lake "C	3060	.1	.3			
split to Lake "C	2810	.1	.3			
split to Lake "C	2610	.1	.3			
split to Lake "C	2497	.1	.3			
split to Lake "C	2400	.1	.3			
split to Lake "C	2333	.1	.3			
split to Lake "C	2212	.3	.5			

APPENDIX F

Ultimate Post-Project Condition HEC-RAS Analysis

HEC-RAS Plan: MV-Ultimate River: Menifee Valley Reach: menifee ADP Profile: FEMA Q100

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
menifee ADP	11700	FEMA Q100	3024.00	1422.00	1429.85		1430.02	0.000305	3.42	981.83	157.53	0.22
menifee ADP	11600	FEMA Q100	3024.00	1415.00	1429.83		1429.97	0.000281	3.16	1014.34	152.39	0.20
menifee ADP	11500	FEMA Q100	3024.00	1415.00	1429.74		1429.93	0.000368	3.58	902.36	139.46	0.23
menifee ADP	11400	FEMA Q100	3024.00	1415.00	1429.67		1429.85	0.000375	3.59	898.29	139.77	0.23
menifee ADP	11300	FEMA Q100	3024.00	1415.00	1429.63		1429.79	0.000333	3.38	950.54	147.28	0.22
menifee ADP	11200	FEMA Q100	3024.00	1410.00	1429.64		1429.73	0.000161	2.37	1334.71	197.09	0.15
menifee ADP	11100	FEMA Q100	3024.00	1400.00	1429.66		1429.69	0.000069	1.56	1995.70	282.96	0.10
menifee ADP	11040	FEMA Q100	3024.00	1400.00	1429.66		1429.68	0.000035	1.12	2769.68	384.28	0.07
menifee ADP	11020	FEMA Q100	3024.00	1400.00	1429.66		1429.68	0.000030	1.04	2956.38	408.03	0.07
menifee ADP	11000	FEMA Q100	3024.00	1400.00	1429.64		1429.67	0.000065	1.50	2069.59	293.12	0.10
menifee ADP	10900	FEMA Q100	3024.00	1410.00	1429.57		1429.65	0.000169	2.41	1311.45	194.93	0.15
menifee ADP	10800	FEMA Q100	3024.00	1410.00	1429.47		1429.61	0.000291	3.11	1025.64	158.70	0.20
menifee ADP	10700	FEMA Q100	3024.00	1410.00	1429.50		1429.56	0.000116	1.99	1569.63	230.92	0.13
menifee ADP	10600	FEMA Q100	3024.00	1410.00	1429.42		1429.53	0.000222	2.72	1165.03	178.26	0.18
menifee ADP	10500	FEMA Q100	3024.00	1415.00	1429.29		1429.47	0.000377	3.50	914.47	146.28	0.23
menifee ADP	10400	FEMA Q100	3024.00	1415.00	1429.32		1429.41	0.000183	2.47	1279.23	198.01	0.16
menifee ADP	10300	FEMA Q100	3024.00	1415.00	1429.08		1429.36	0.000623	4.38	736.57	124.00	0.29
menifee ADP	10100	FEMA Q100	3024.00	1421.70	1429.04	1424.92	1429.26	0.000455	3.99	833.43	140.00	0.26
menifee ADP	10001		Culvert									
menifee ADP	9491	FEMA Q100	3024.00	1421.60	1428.40		1428.63	0.000528	3.81	794.12	117.48	0.26
menifee ADP	9490	FEMA Q100	3024.00	1410.00	1428.18		1428.49	0.000739	4.58	696.00	119.32	0.31
menifee ADP	9480	FEMA Q100	3024.00	1410.00	1428.01		1428.33	0.000808	4.71	678.80	120.87	0.33
menifee ADP	9470	FEMA Q100	3024.00	1410.00	1427.80		1428.17	0.000949	4.99	637.07	116.25	0.35
menifee ADP	9460	FEMA Q100	3024.00	1410.00	1427.63		1428.01	0.001031	5.09	628.42	119.52	0.37
menifee ADP	9450	FEMA Q100	3024.00	1410.00	1427.45		1427.82	0.001032	4.99	634.47	120.49	0.36
menifee ADP	9400	FEMA Q100	3024.00	1352.00	1427.65		1427.66	0.000037	0.84	3658.60	626.63	0.06
menifee ADP	9200	FEMA Q100	3024.00	1352.00	1427.63		1427.65	0.000052	0.98	3151.48	542.36	0.07
menifee ADP	9000	FEMA Q100	3024.00	1352.00	1427.62		1427.63	0.000031	0.77	3992.12	683.87	0.06
menifee ADP	8700	FEMA Q100	3024.00	1352.00	1427.61		1427.62	0.000044	0.90	3448.07	606.88	0.06
menifee ADP	8600	FEMA Q100	3024.00	1373.00	1427.58		1427.61	0.000104	1.39	2171.53	444.91	0.10
menifee ADP	8550	FEMA Q100	3024.00	1386.00	1427.55		1427.60	0.000175	1.81	1666.67	408.80	0.13
menifee ADP	8500	FEMA Q100	3024.00	1417.50	1427.45	1420.46	1427.56	0.000215	2.72	1173.12	142.81	0.15
menifee ADP	8200		Culvert									
menifee ADP	8100	FEMA Q100	3024.00	1417.50	1427.33		1427.46	0.000240	2.86	1074.70	156.74	0.16
menifee ADP	7900	FEMA Q100	3024.00	1367.00	1427.26		1427.38	0.000467	2.84	1063.19	521.55	0.21
menifee ADP	7700	FEMA Q100	3024.00	1367.00	1427.25		1427.31	0.000223	1.97	1537.97	501.86	0.15
menifee ADP	7500	FEMA Q100	3024.00	1367.00	1427.23		1427.28	0.000172	1.71	1766.68	482.77	0.13
menifee ADP	7200	FEMA Q100	3024.00	1367.00	1427.21		1427.25	0.000118	1.41	2176.97	421.46	0.10
menifee ADP	7100	FEMA Q100	3024.00	1367.00	1427.17		1427.21	0.000181	1.75	1750.76	559.10	0.13
menifee ADP	7000	FEMA Q100	3024.00	1370.00	1427.14		1427.18	0.000148	1.56	1975.62	372.20	0.12
menifee ADP	6900	FEMA Q100	3024.00	1421.60	1426.57		1427.09	0.000353	5.80	528.59	140.35	0.46
menifee ADP	6899	FEMA Q100	3024.00	1421.30	1426.59	1424.35	1427.06	0.000303	5.50	549.47	140.50	0.43
menifee ADP	6750		Bridge									
menifee ADP	6700	FEMA Q100	3024.00	1421.20	1426.45		1426.87	0.000291	5.38	644.28	142.29	0.42
menifee ADP	6688	FEMA Q100	3105.00	1421.20	1426.59		1426.70	0.000268	2.55	1221.81	429.44	0.26
menifee ADP	6518	FEMA Q100	3105.00	1421.60	1426.56		1426.66	0.000182	2.46	1263.98	328.92	0.22
menifee ADP	6189	FEMA Q100	3105.00	1421.00	1426.47		1426.59	0.000179	2.79	1114.22	236.06	0.23
menifee ADP	5912	FEMA Q100	3105.00	1420.10	1426.45		1426.55	0.000111	2.48	1253.57	220.17	0.18
menifee ADP	5721	FEMA Q100	3105.00	1420.40	1426.35		1426.50	0.000648	3.12	997.31	260.33	0.28
menifee ADP	5473	FEMA Q100	3105.00	1401.20	1426.45		1426.45	0.000001	0.33	9466.25	494.39	0.01
menifee ADP	5110	FEMA Q100	3105.00	1402.90	1426.45		1426.45	0.000007	0.72	4327.80	317.73	0.03
menifee ADP	4836	FEMA Q100	3105.00	1401.40	1426.45		1426.45	0.000003	0.51	6067.26	387.54	0.02
menifee ADP	4584	FEMA Q100	3105.00	1401.90	1426.44		1426.45	0.000008	0.78	3988.21	283.08	0.04
menifee ADP	4449	FEMA Q100	3105.00	1401.60	1426.44		1426.45	0.000004	0.62	5027.26	322.21	0.03
menifee ADP	4275	FEMA Q100	3105.00	1402.60	1426.44		1426.45	0.000009	0.73	4250.20	372.13	0.04
menifee ADP	3990	FEMA Q100	3830.00	1402.10	1426.44		1426.44	0.000001	0.33	11690.10	651.51	0.01
menifee ADP	3700	FEMA Q100	3830.00	1402.40	1426.44		1426.44	0.000001	0.39	9860.92	562.53	0.02
menifee ADP	3370	FEMA Q100	3830.00	1402.90	1426.44		1426.44	0.000006	0.61	6265.53	532.90	0.03
menifee ADP	3070	FEMA Q100	3830.00	1402.00	1426.44		1426.44	0.000002	0.44	8693.26	490.50	0.02
menifee ADP	2810	FEMA Q100	3830.00	1402.10	1426.44		1426.44	0.000002	0.41	9254.35	512.06	0.02
menifee ADP	2610	FEMA Q100	3830.00	1401.90	1426.44		1426.44	0.000002	0.43	8998.97	490.13	0.02
menifee ADP	2497	FEMA Q100	3830.00	1404.40	1426.43		1426.44	0.000004	0.58	6571.47	449.56	0.03
menifee ADP	2400	FEMA Q100	3830.00	1405.70	1426.41		1426.44	0.000022	1.23	3126.16	248.27	0.06
menifee ADP	2333	FEMA Q100	3830.00	1407.80	1426.41		1426.43	0.000029	1.31	2926.62	258.91	0.07
menifee ADP	2212	FEMA Q100	3830.00	1412.00	1426.13		1426.40	0.000108	4.24	904.35	102.13	0.25
menifee ADP	2159	FEMA Q100	1885.00	1421.25	1426.00	1423.81	1426.37	0.000348	4.86	388.13	198.88	0.39
menifee ADP	2156	FEMA Q100	1885.00	1418.00	1426.11	1420.66	1426.26	0.000074	3.02	623.83	200.86	0.19
menifee ADP	2130	FEMA Q100	1885.00	1417.90	1425.54	1421.99	1426.12	0.000861	6.11	308.34	40.73	0.39
menifee ADP	2129	FEMA Q100	1885.00	1417.90	1425.56	1421.87	1426.09	0.000348	5.85	322.44	42.15	0.37
menifee ADP	2033		Bridge									
menifee ADP	1937	FEMA Q100	1885.00	1417.00	1425.23		1425.69	0.000282	5.44	346.25	42.16	0.33
menifee ADP	1936	FEMA Q100	1885.00	1417.00	1425.23	1420.98	1425.69	0.000282	5.44	346.24	42.16	0.33
menifee ADP	1926	FEMA Q100	1938.00	1417.00	1425.26		1425.64	0.001041	4.93	392.80	61.70	0.34
menifee ADP	1826	FEMA Q100	1938.00	1417.20	1424.93		1425.48	0.002171	5.96	325.02	76.27	0.51
menifee ADP	1529	FEMA Q100	1938.00	1417.10	1425.05		1425.11	0.000383	1.90	1022.62	373.39	0.20
menifee ADP	1190	FEMA Q100	1938.00	1416.00	1424.95		1424.99	0.000281	1.72	1125.81	375.47	0.18
menifee ADP	790	FEMA Q100	1938.00	1416.00	1424.58	1421.30	1424.78	0.001138	3.55	546.29	172.77	0.35

Plan: MV-Ultimate Menifee Valley menifee ADP RS: 10001 Culv Group: AngleBox1 Profile: FEMA Q100

Q Culv Group (cfs)	756.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.90
Q Barrel (cfs)	756.00	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	1429.26	Culv Inv El Up (ft)	1422.00
W.S. US. (ft)	1429.04	Culv Inv El Dn (ft)	1421.60
E.G. DS (ft)	1428.63	Culv Frctn Ls (ft)	0.07
W.S. DS (ft)	1428.40	Culv Exit Loss (ft)	0.25
Delta EG (ft)	0.63	Culv Entr Loss (ft)	0.30
Delta WS (ft)	0.63	Q Weir (cfs)	
E.G. IC (ft)	1427.69	Weir Sta Lft (ft)	
E.G. OC (ft)	1429.25	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	1428.41	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1428.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.54	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.54	Min El Weir Flow (ft)	1431.21

Additional E.G.=0.03' assumed culvert system flowing full.
Please refer to hydraulic backup calculations for additional
headloss for this cross section.
Same for Angle Box 1 through 4.

Plan: MV-Ultimate Menifee Valley menifee ADP RS: 10001 Culv Group: AngleBox2 Profile: FEMA Q100

Q Culv Group (cfs)	756.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.89
Q Barrel (cfs)	756.00	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	1429.26	Culv Inv El Up (ft)	1422.00
W.S. US. (ft)	1429.04	Culv Inv El Dn (ft)	1421.60
E.G. DS (ft)	1428.63	Culv Frctn Ls (ft)	0.08
W.S. DS (ft)	1428.40	Culv Exit Loss (ft)	0.25
Delta EG (ft)	0.63	Culv Entr Loss (ft)	0.30
Delta WS (ft)	0.63	Q Weir (cfs)	
E.G. IC (ft)	1427.69	Weir Sta Lft (ft)	
E.G. OC (ft)	1429.26	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	1428.42	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1428.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.72	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.54	Min El Weir Flow (ft)	1431.21

Plan: MV-Ultimate Menifee Valley menifee ADP RS: 10001 Culv Group: AngleBox3 Profile: FEMA Q100

Q Culv Group (cfs)	756.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.87
Q Barrel (cfs)	756.00	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	1429.26	Culv Inv El Up (ft)	1422.00
W.S. US. (ft)	1429.04	Culv Inv El Dn (ft)	1421.60
E.G. DS (ft)	1428.63	Culv Frctn Ls (ft)	0.09
W.S. DS (ft)	1428.40	Culv Exit Loss (ft)	0.25
Delta EG (ft)	0.63	Culv Entr Loss (ft)	0.30
Delta WS (ft)	0.63	Q Weir (cfs)	
E.G. IC (ft)	1427.69	Weir Sta Lft (ft)	
E.G. OC (ft)	1429.27	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	1428.43	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1428.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.92	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.54	Min El Weir Flow (ft)	1431.21

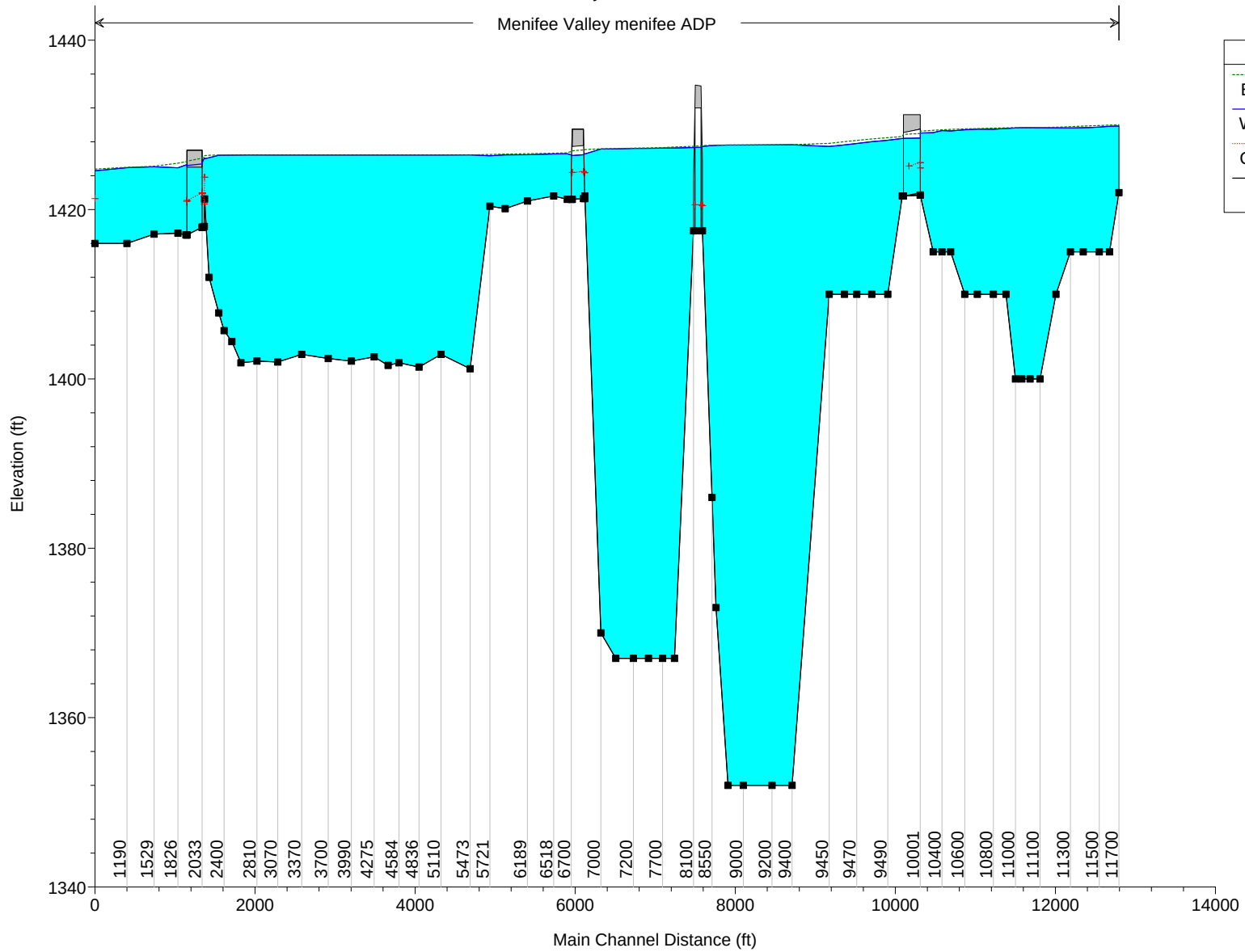
Plan: MV-Ultimate Menifee Valley menifee ADP RS: 10001 Culv Group: AngleBox4 Profile: FEMA Q100

Q Culv Group (cfs)	756.00	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.87
Q Barrel (cfs)	756.00	Culv Vel DS (ft/s)	5.56
E.G. US. (ft)	1429.26	Culv Inv El Up (ft)	1422.00
W.S. US. (ft)	1429.04	Culv Inv El Dn (ft)	1421.60
E.G. DS (ft)	1428.63	Culv Frctn Ls (ft)	0.10
W.S. DS (ft)	1428.40	Culv Exit Loss (ft)	0.25
Delta EG (ft)	0.63	Culv Entr Loss (ft)	0.30
Delta WS (ft)	0.63	Q Weir (cfs)	
E.G. IC (ft)	1427.69	Weir Sta Lft (ft)	
E.G. OC (ft)	1429.28	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	1428.44	Weir Max Depth (ft)	
Culv WS Outlet (ft)	1428.40	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.03	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.54	Min El Weir Flow (ft)	1431.21

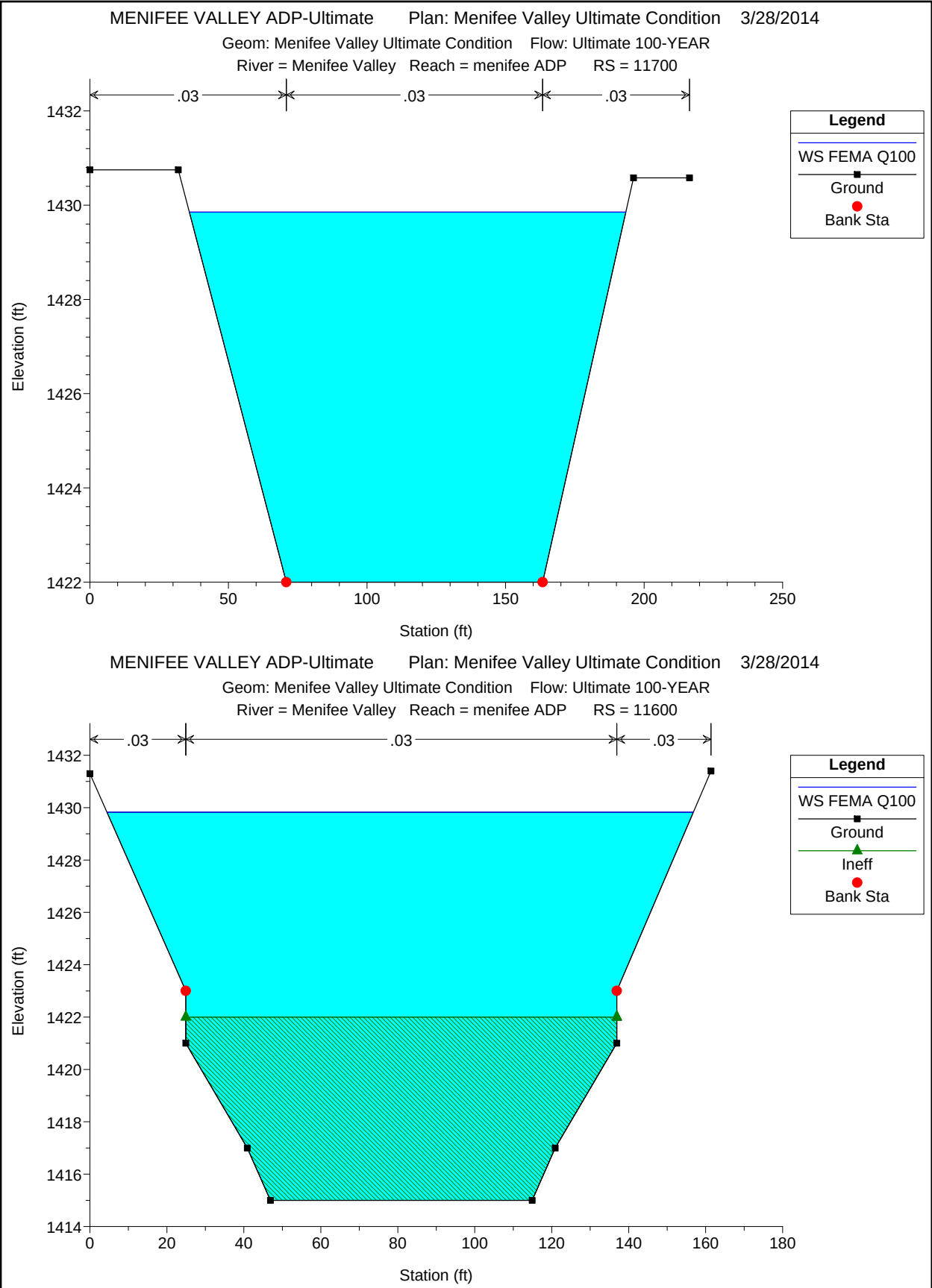
MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

Menifee Valley menifee ADP



Legend	
EG	FEMA Q100
WS	FEMA Q100
Crit	FEMA Q100
	Ground



MENIFEE VALLEY ADP-Ultimate

Plan: Meniffee Valley Ultimate Condition

3/28/2014

Geom: Meniffee Valley Ultimate Condition

Flow: Ultimate 100-YEAR

River = Meniffee Valley Reach = meniffee ADP RS = 11600

Elevation (ft)

1432

1430

1428

1426

1424

1422

1420

1418

1416

1414

0

20

40

60

80

100

120

140

160

180

Station (ft)

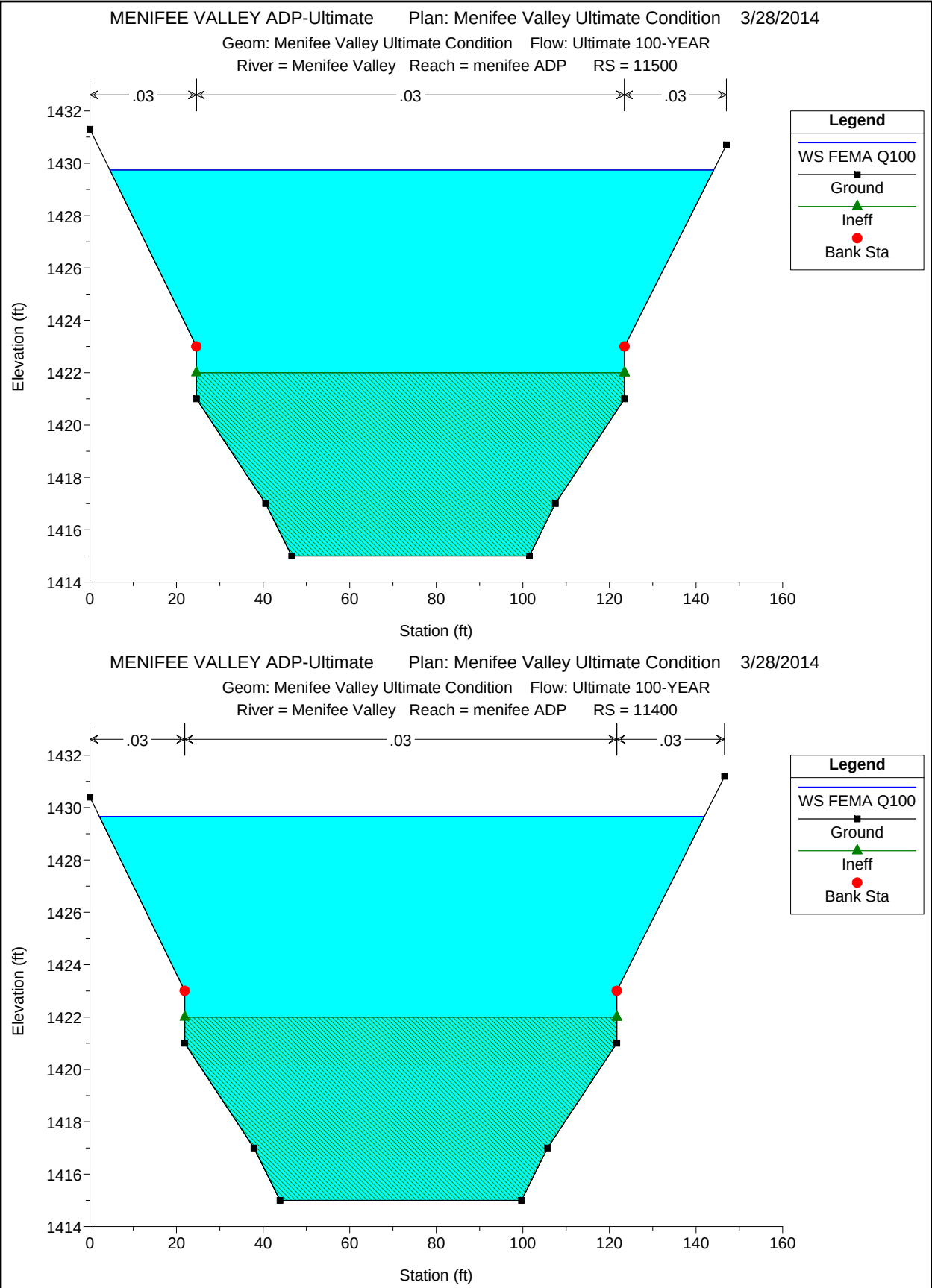
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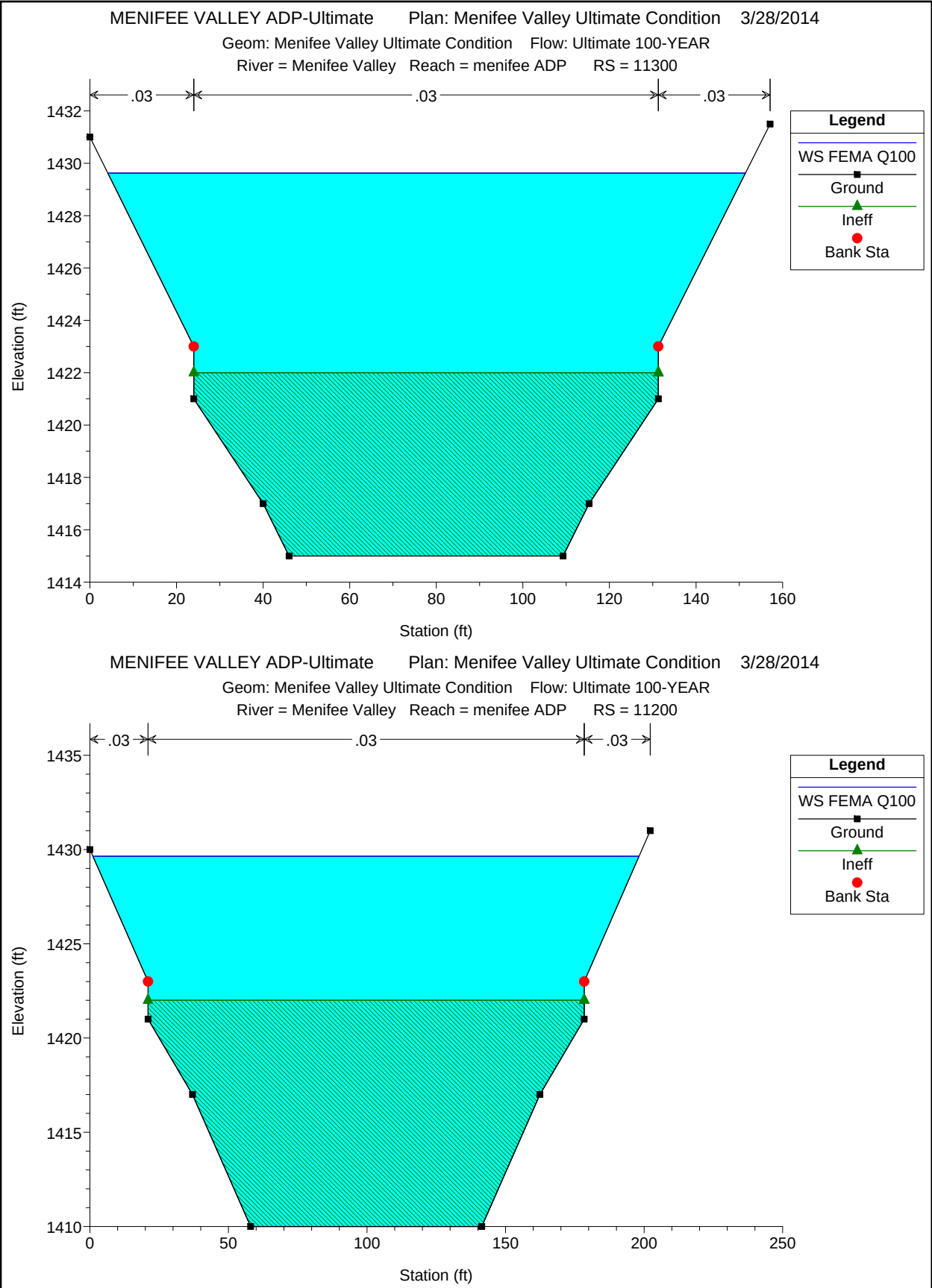
WS FEMA Q100

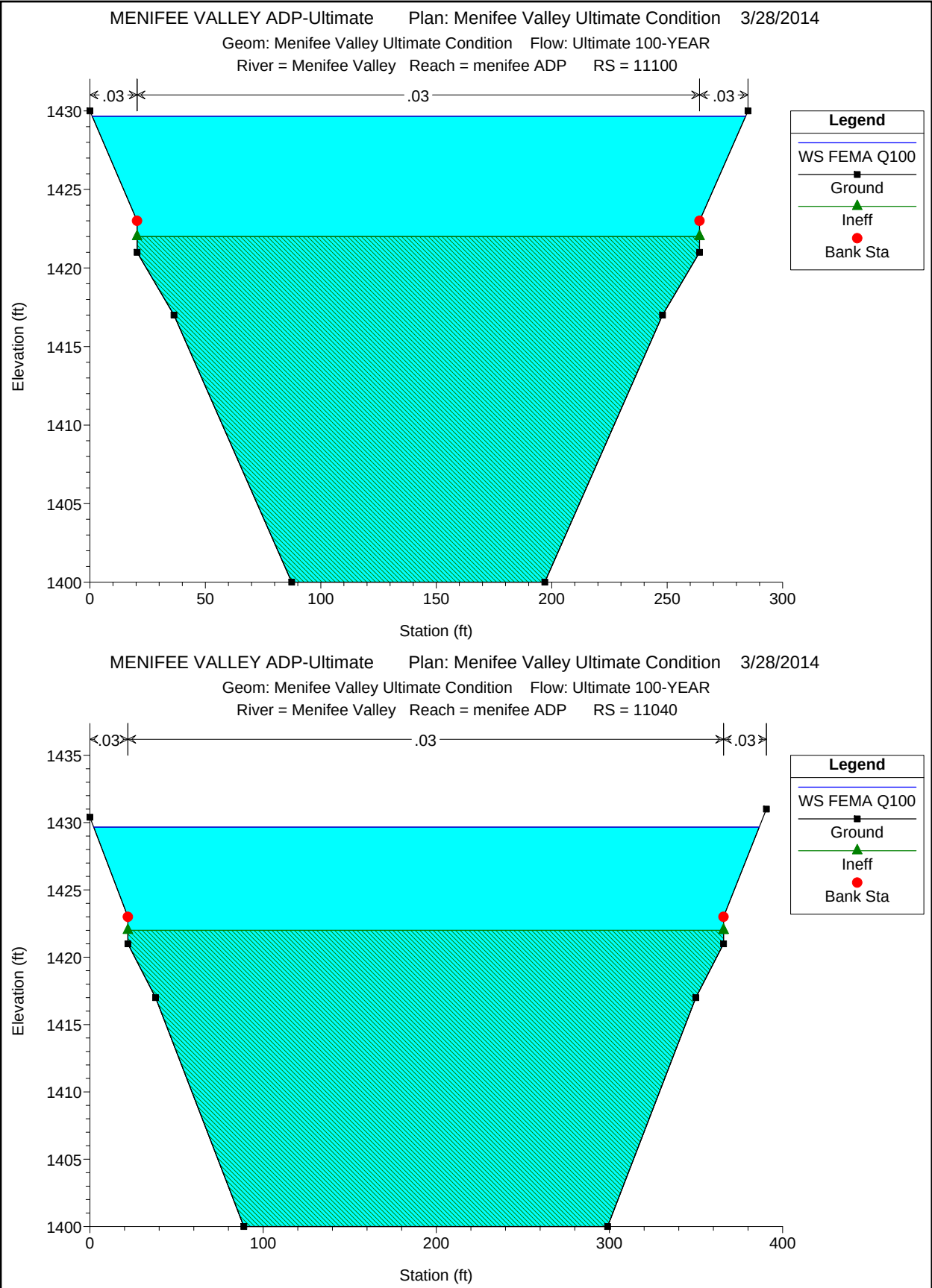
Ground

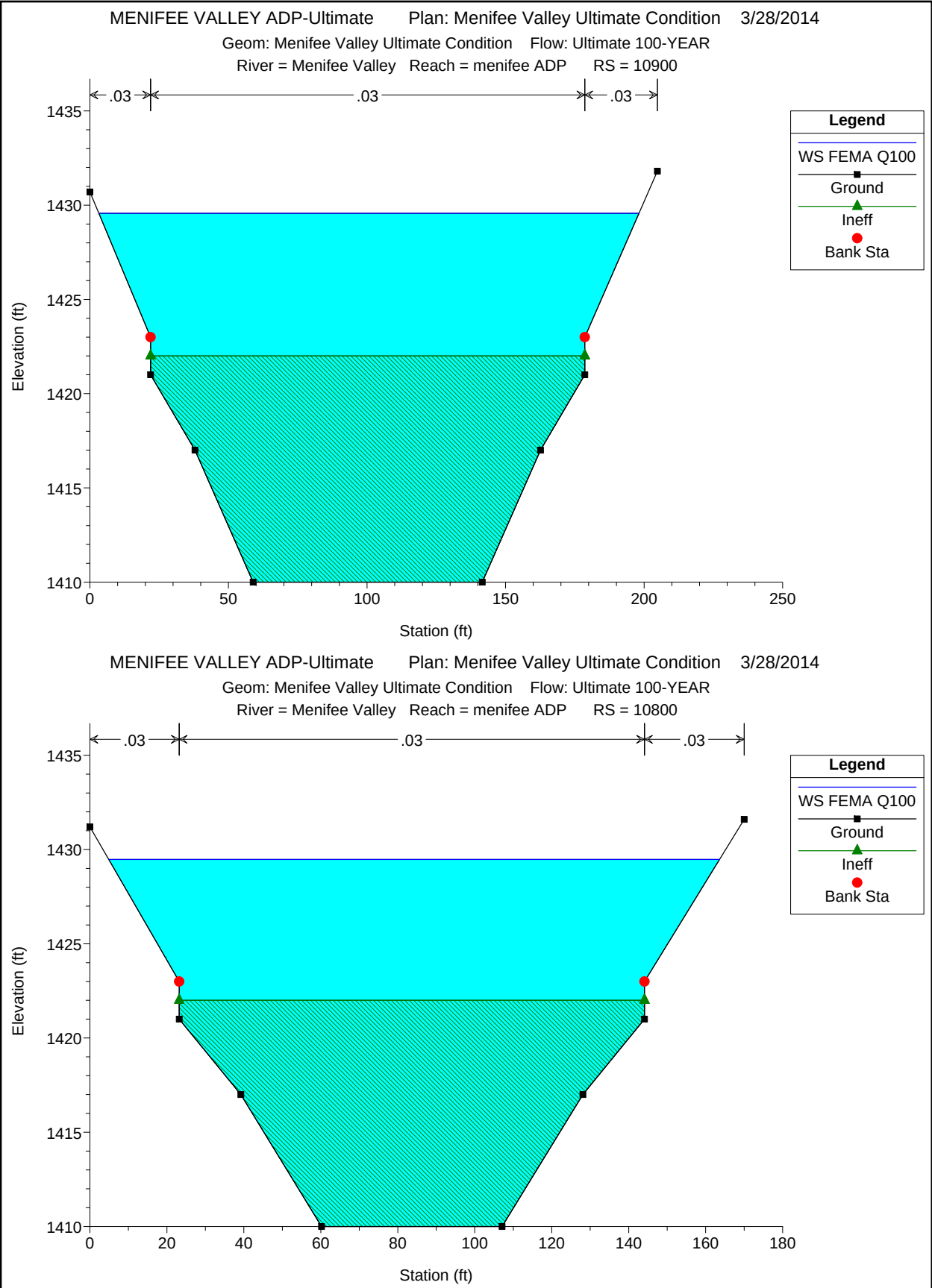
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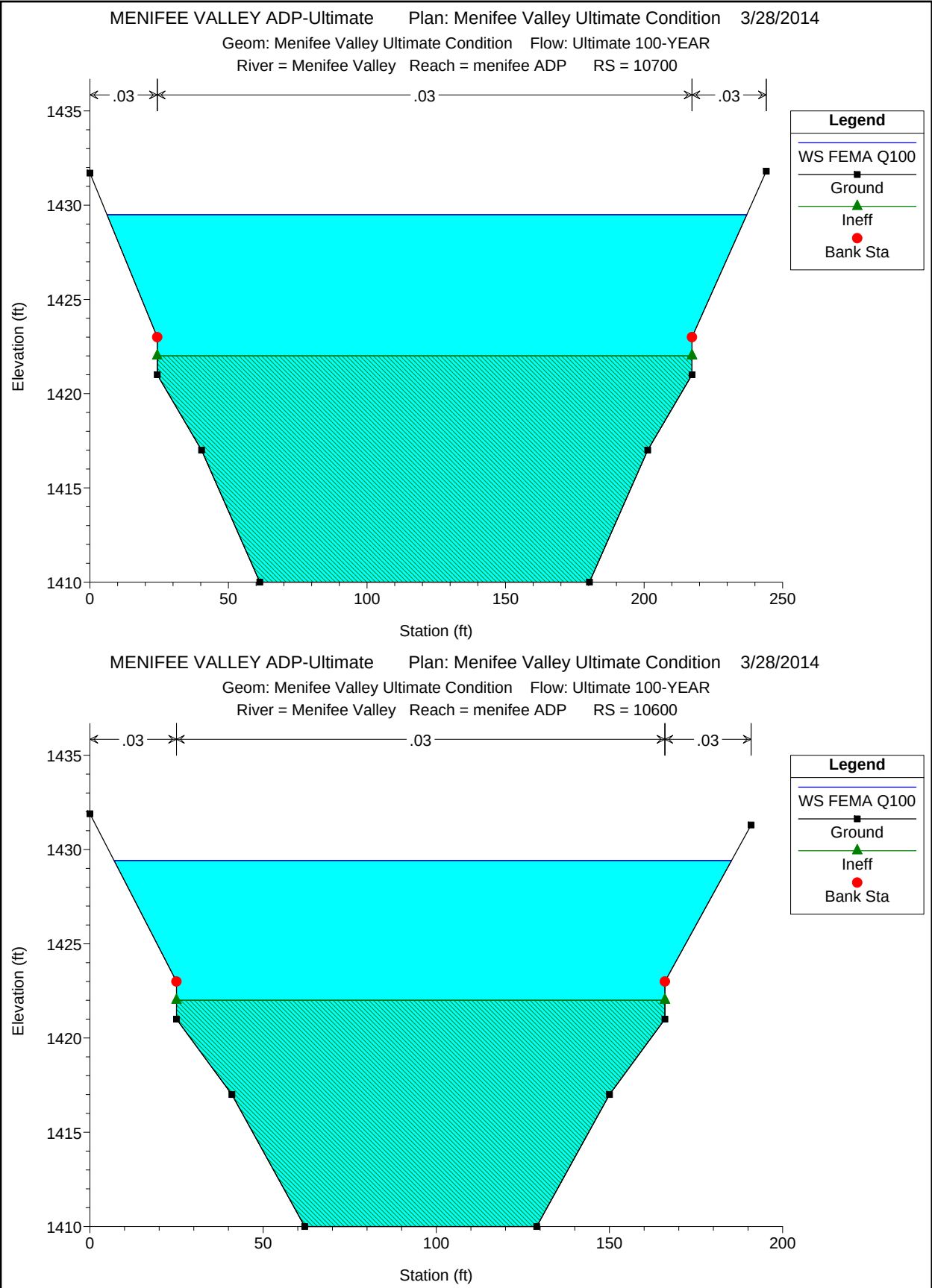
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MENIFEE VALLEY ADP-Ultimate Plan: Meniffee Valley Ultimate Condition 3/28/2014

Geom: Meniffee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Meniffee Valley Reach = meniffee ADP RS = 10600

Elevation (ft)

1435

1430

1425

1420

1415

1410

Station (ft)

0

50

100

150

200

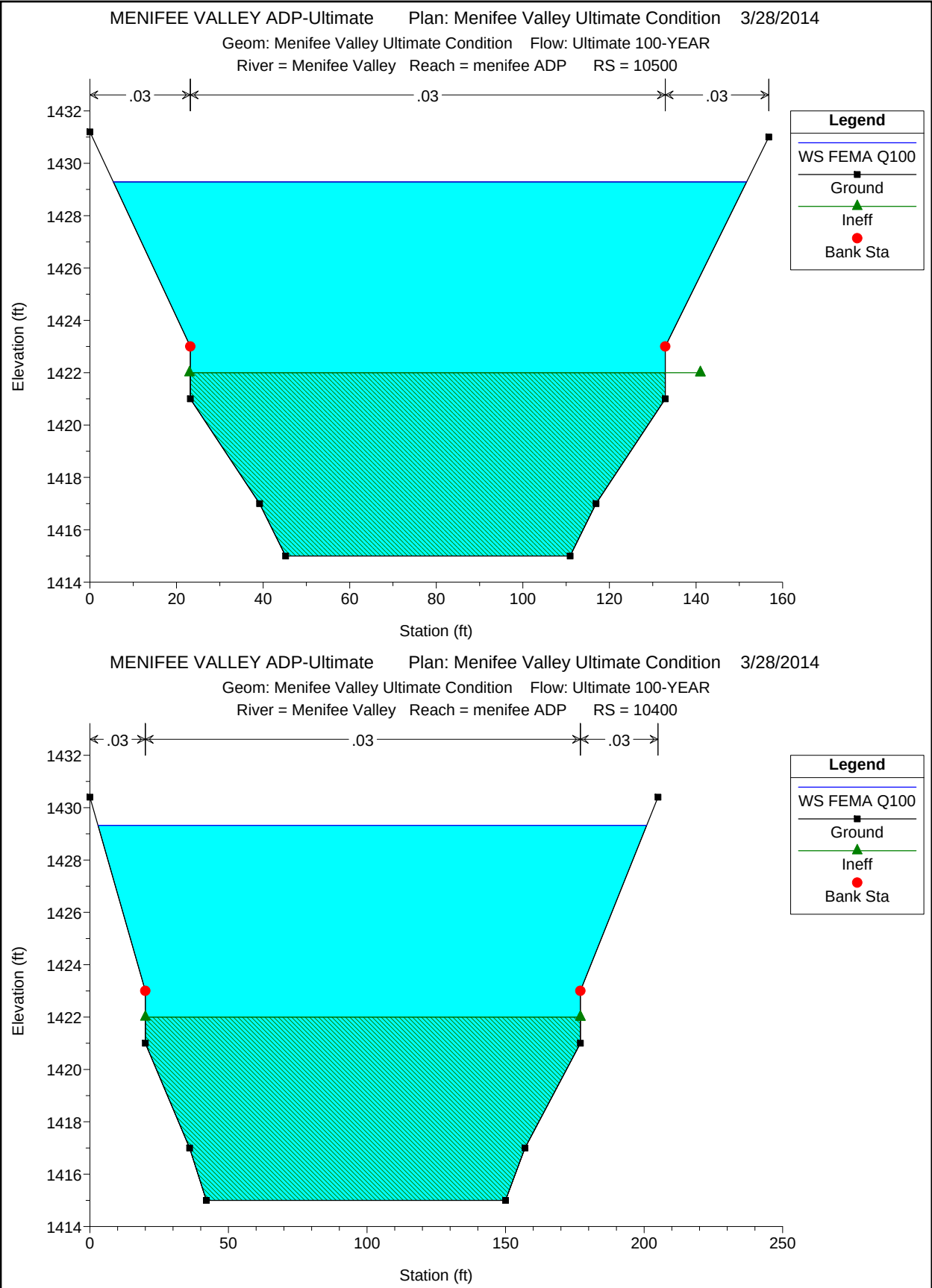
Legend

WS FEMA Q100

Ground

Ineff

Bank Sta



Elevation (ft)

Station (ft)

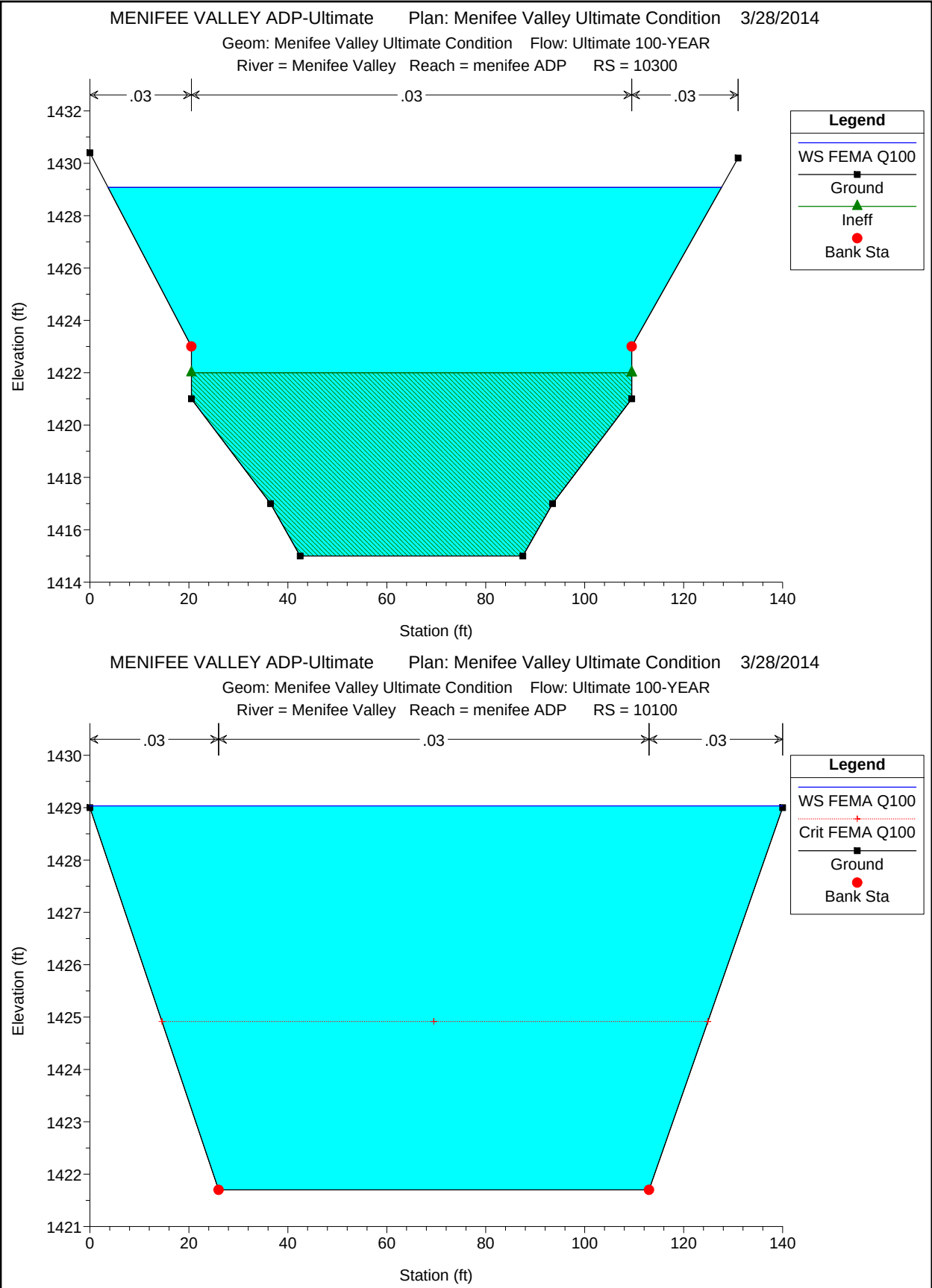
Legend

WS FEMA Q100

Ground

Ineff

Bank Sta



MENIFEE VALLEY ADP-Ultimate

Plan: Meniffee Valley Ultimate Condition

3/28/2014

Geom: Meniffee Valley Ultimate Condition

Flow: Ultimate 100-YEAR

River = Meniffee Valley Reach = meniffee ADP RS = 10100

Elevation (ft)

1430

1429

1428

1427

1426

1425

1424

1423

1422

1421

Station (ft)

0

20

40

60

80

100

120

140

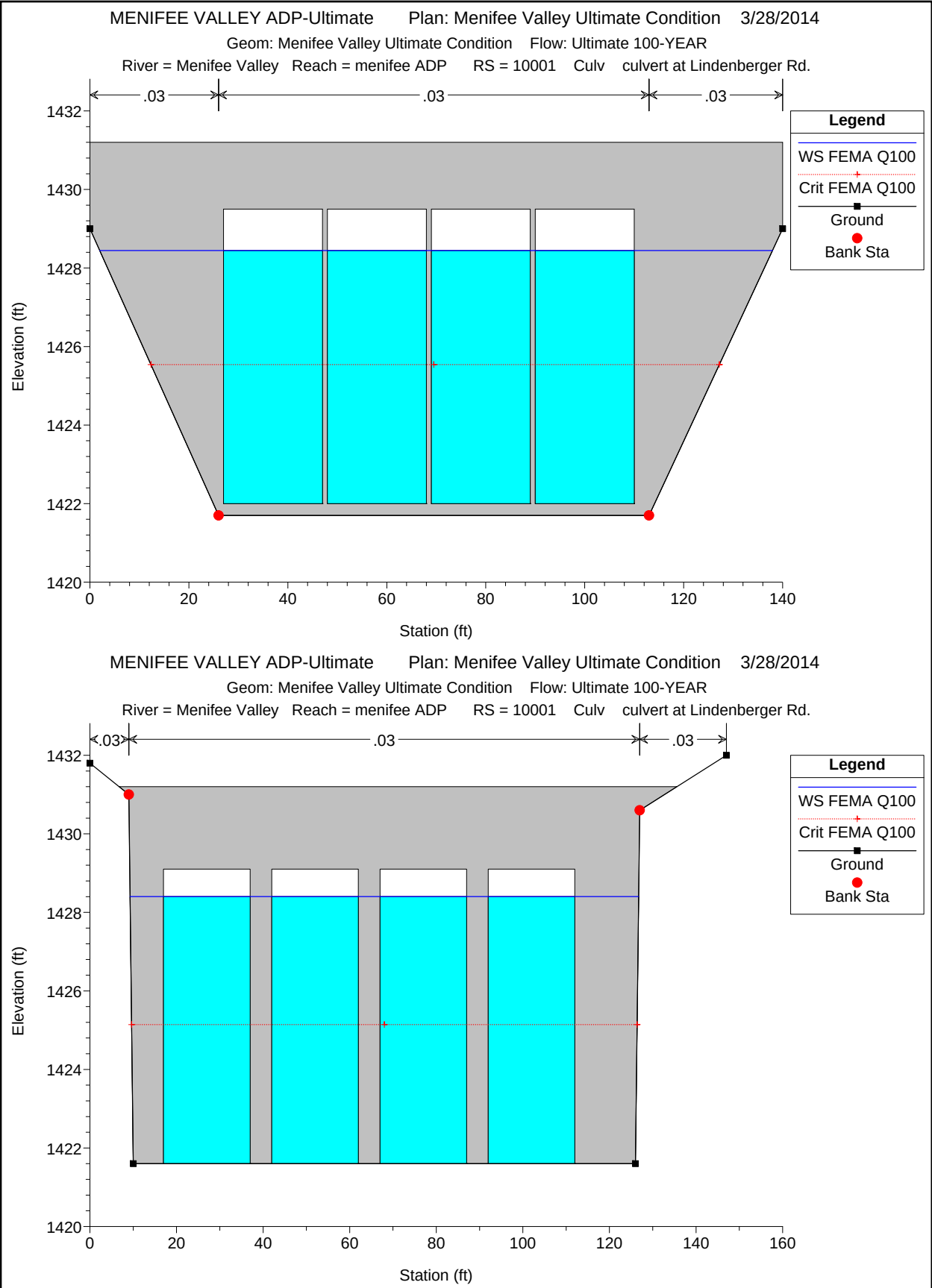
Legend

WS FEMA Q100

Crit FEMA Q100

Ground

Bank Sta



MENIFEE VALLEY ADP-Ultimate

Plan: Meniffee Valley Ultimate Condition

3/28/2014

Geom: Meniffee Valley Ultimate Condition

Flow: Ultimate 100-YEAR

River = Meniffee Valley

Reach = meniffee ADP

RS = 10001

Culv culvert at Lindenberger Rd.

Elevation (ft)

1432

1430

1428

1426

1424

1422

1420

0

20

40

60

80

100

120

140

160

←.03→

←.03→

←.03→

1432

1430

1428

1426

1424

1422

1420

1432

1430

1428

1426

1424

1422

1420

0

20

40

60

80

100

120

140

160

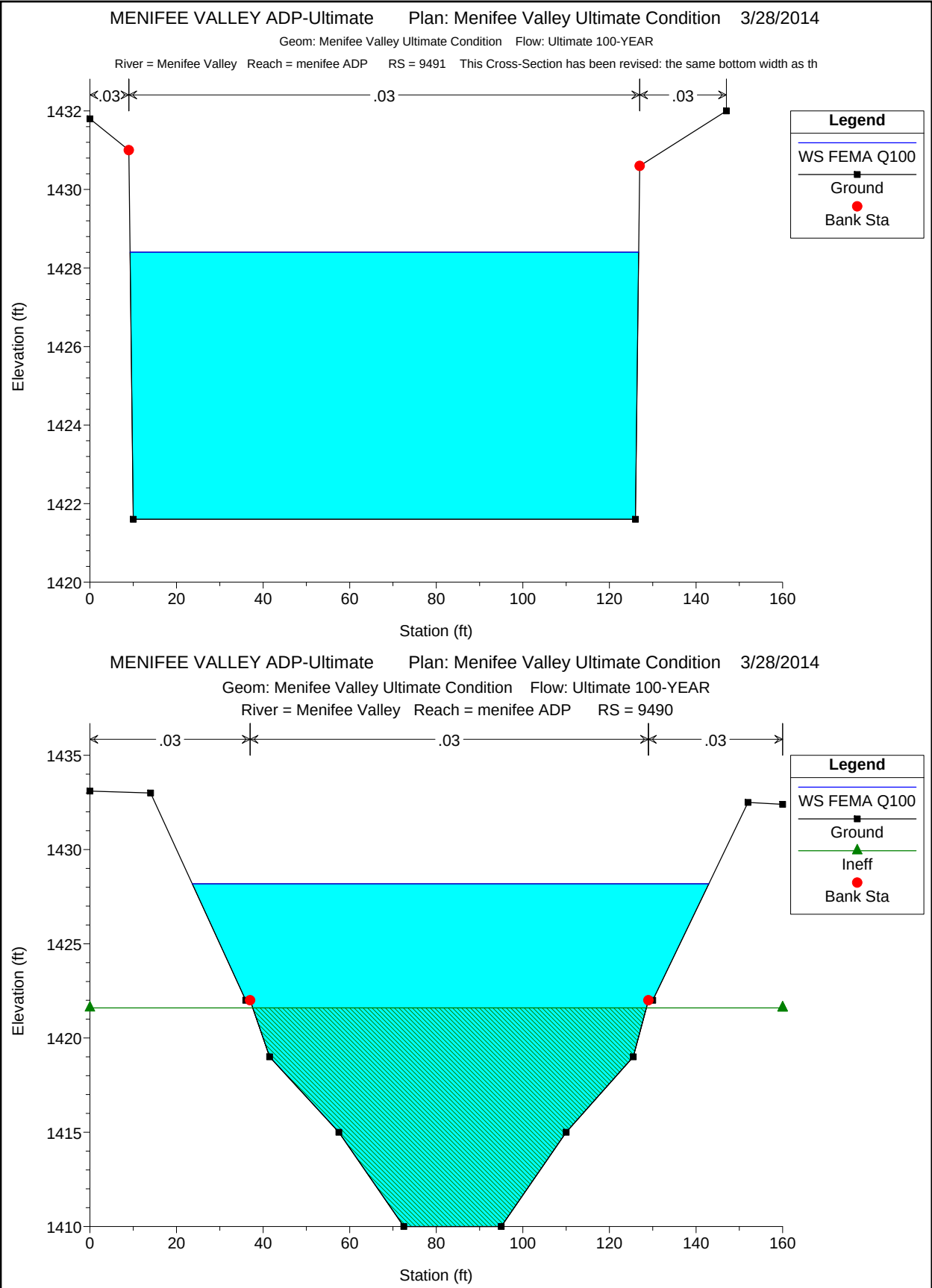
Legend

WS FEMA Q100

Crit FEMA Q100

Ground

Bank Sta



MENIFEE VALLEY ADP-Ultimate

Plan: Menifee Valley Ultimate Condition

3/28/2014

Geom: Menifee Valley Ultimate Condition

Flow: Ultimate 100-YEAR

River = Menifee Valley

Reach = menifee ADP

RS = 9490

Elevation (ft)

1435

1430

1425

1420

1415

1410

Station (ft)

0

20

40

60

80

100

120

140

160

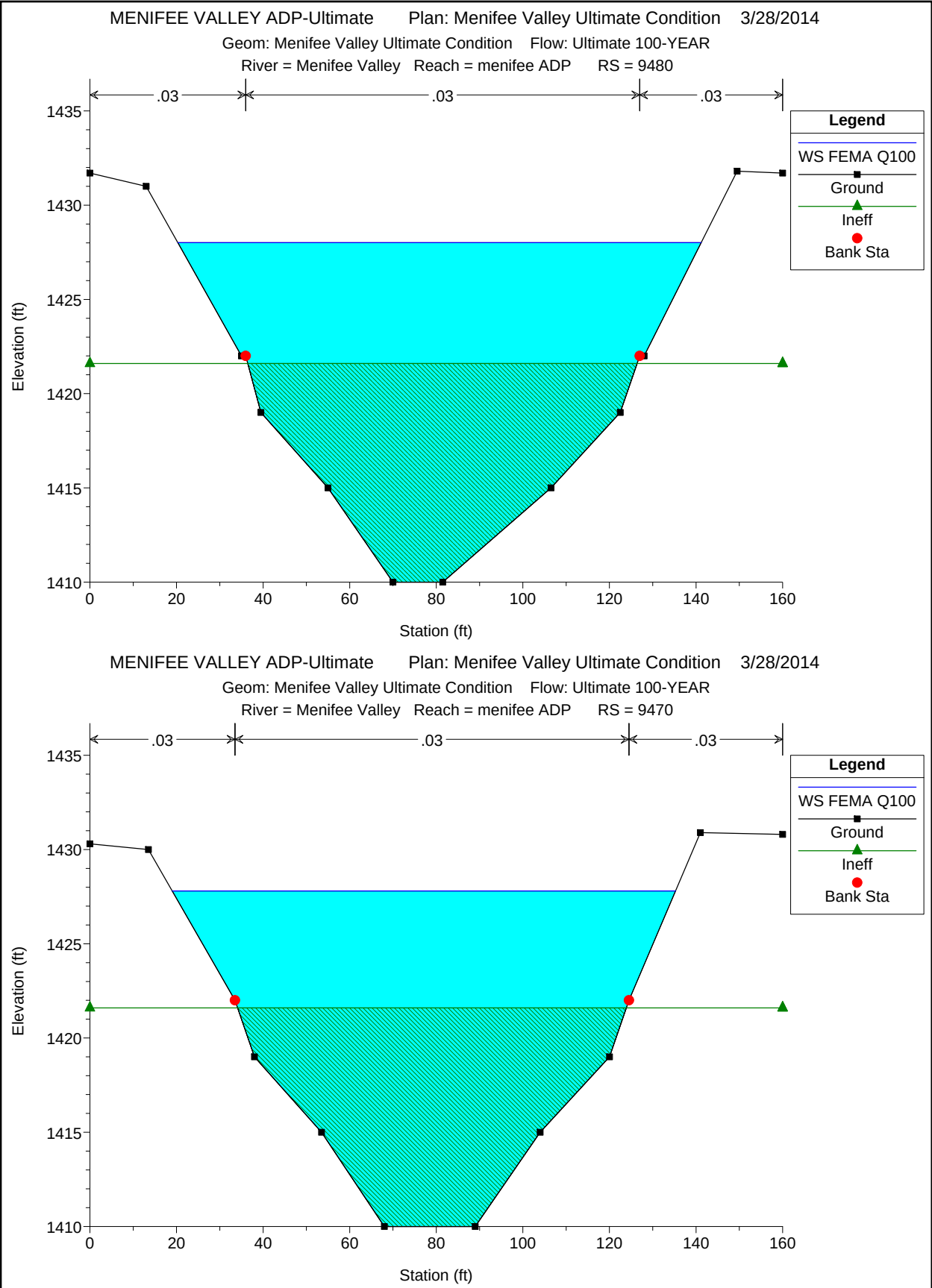
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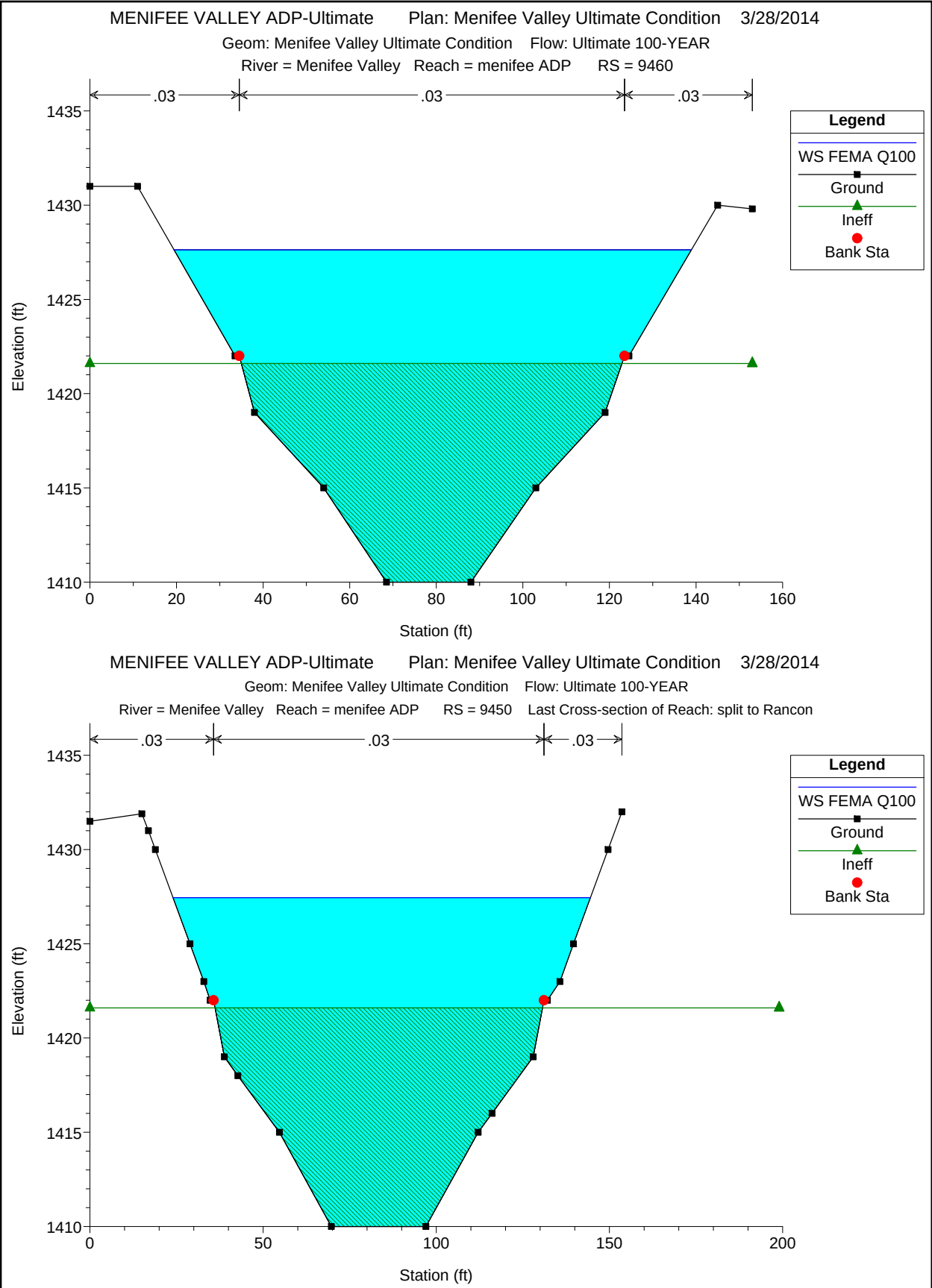
WS FEMA Q100

Ground

Ineff

Bank Sta





MENIFEE VALLEY ADP-Ultimate

Plan: Menifee Valley Ultimate Condition

3/28/2014

Geom: Menifee Valley Ultimate Condition

Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 9450 Last Cross-section of Reach: split to Rancon

Elevation (ft)

1435

1430

1425

1420

1415

1410

0

50

100

150

200

← .03 →

← .03 →

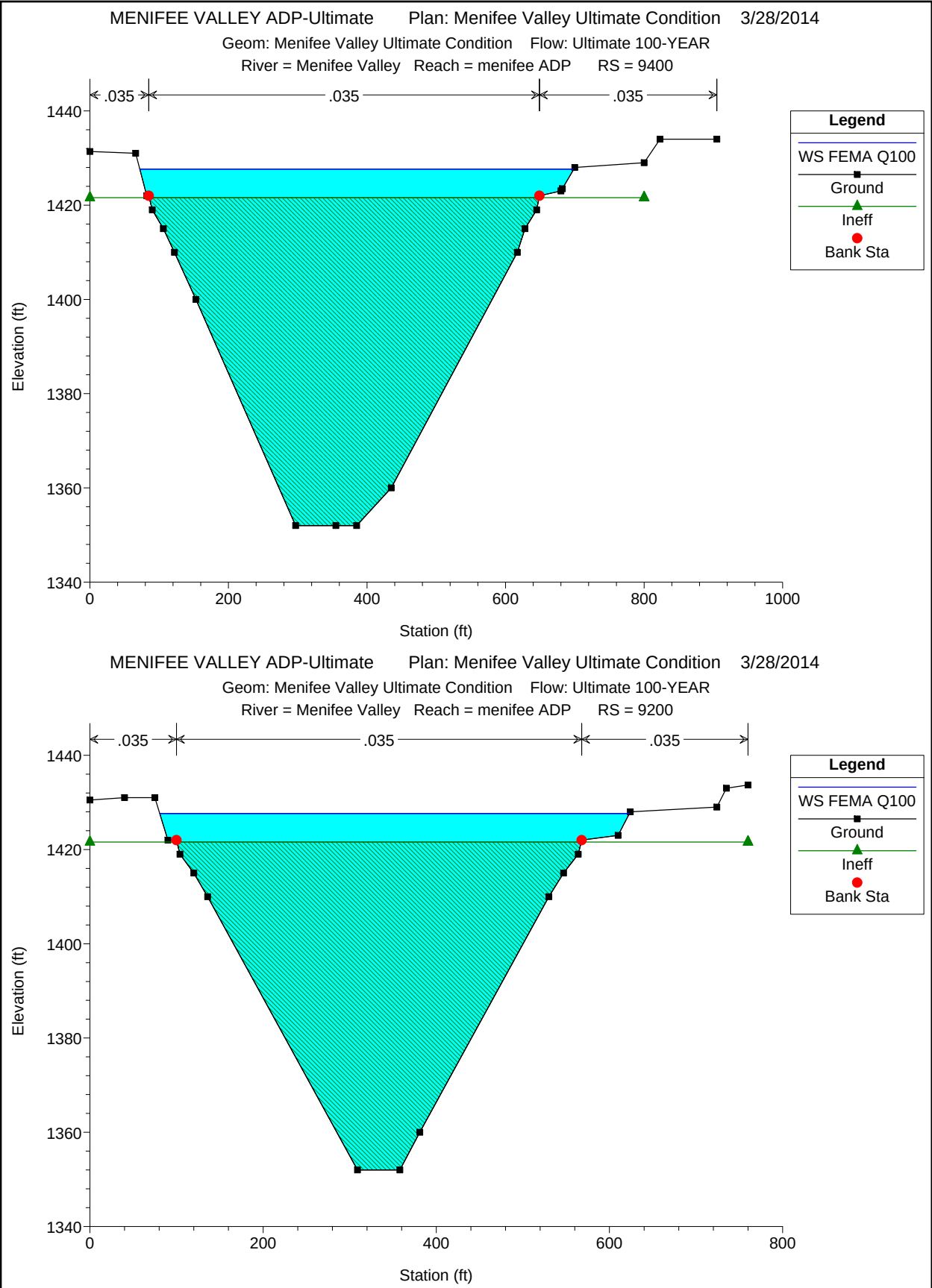
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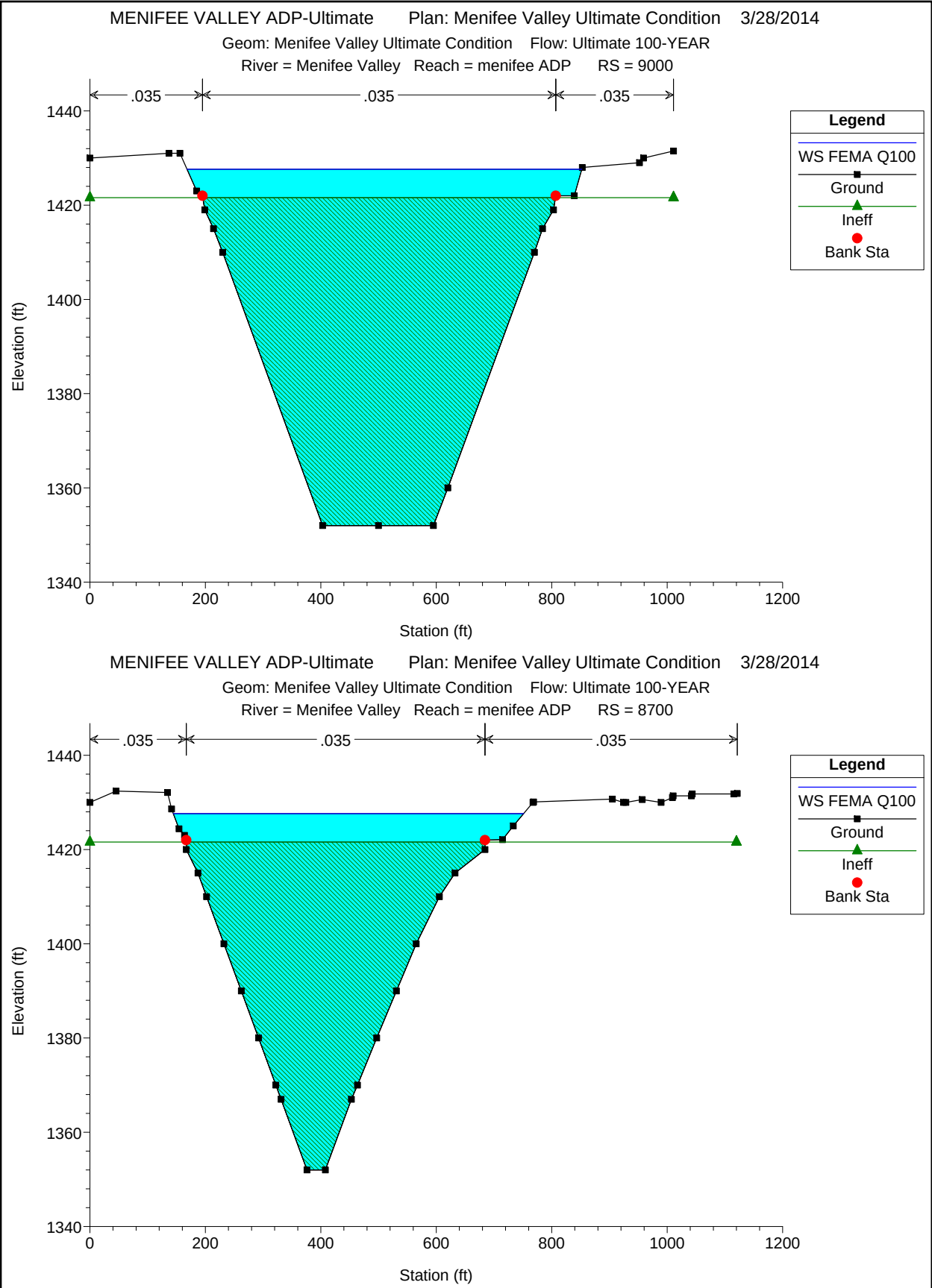
WS FEMA Q100

Ground

Ineff

Bank Sta





MENIFEE VALLEY ADP-Ultimate

Plan: Menifee Valley Ultimate Condition

3/28/2014

Geom: Menifee Valley Ultimate Condition

Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 8700

Elevation (ft)

1440

1420

1400

1380

1360

1340

0

200

400

600

800

1000

1200

← .035

← .035

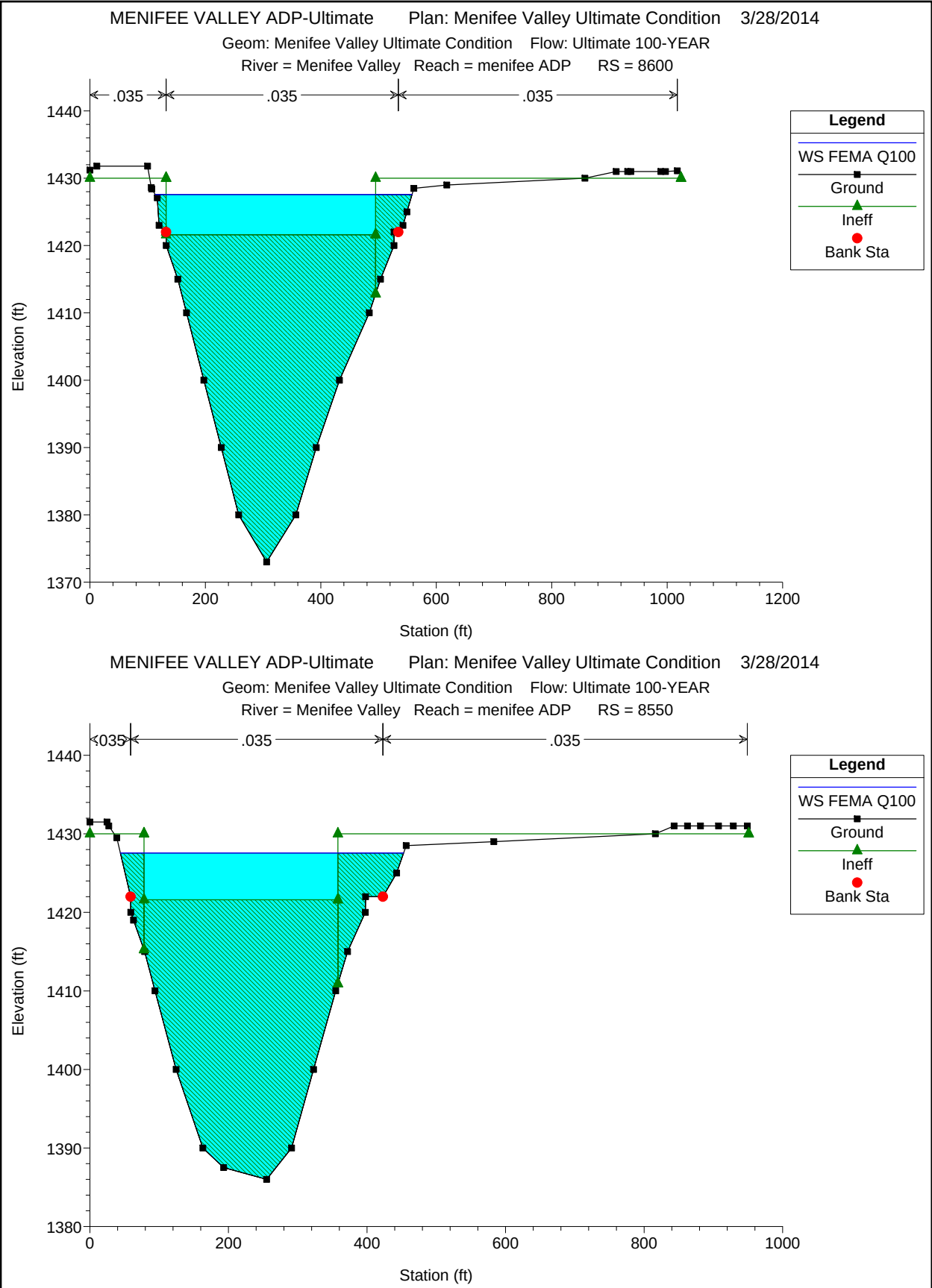
← .035

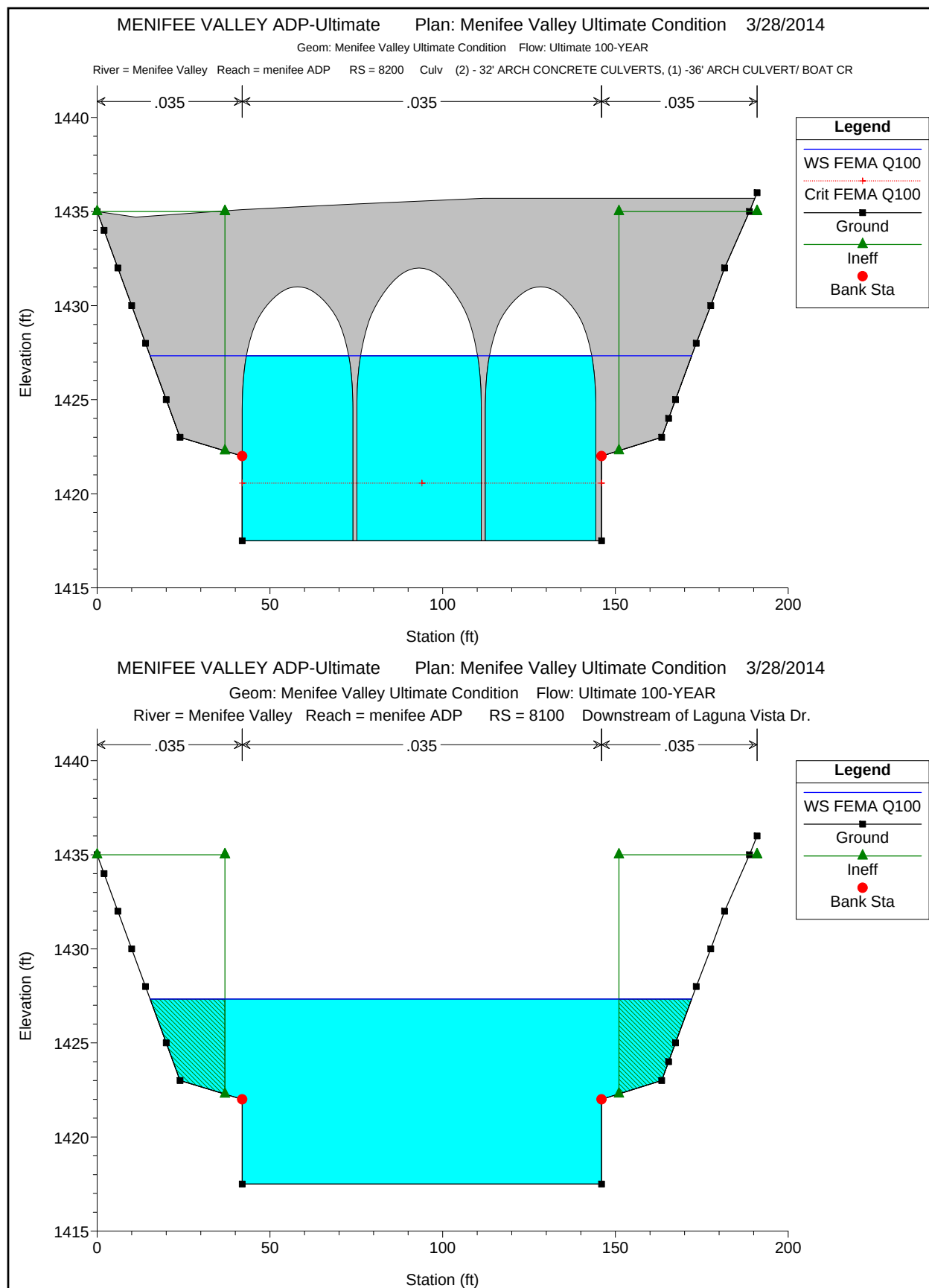
WS FEMA Q100

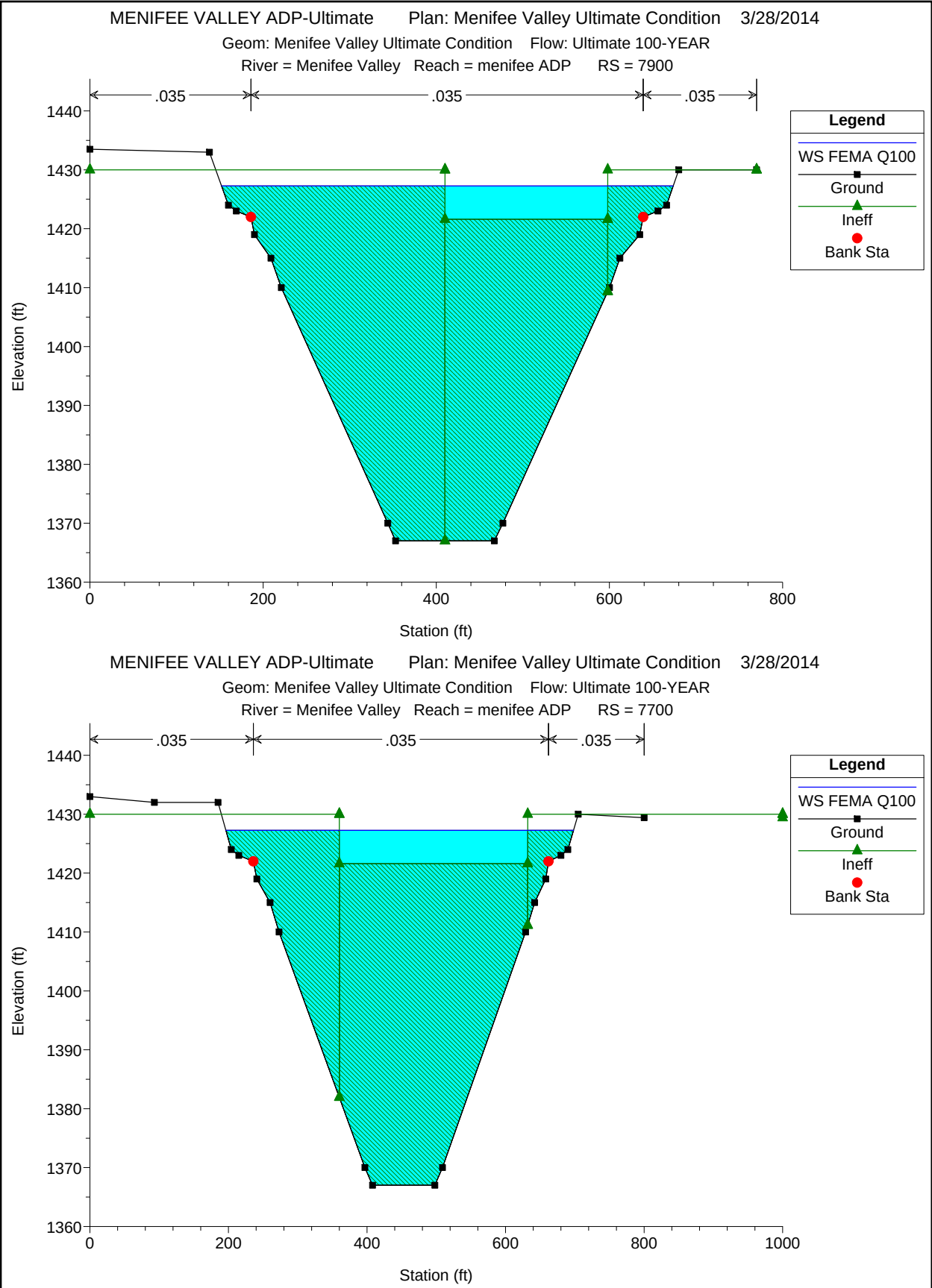
Ground

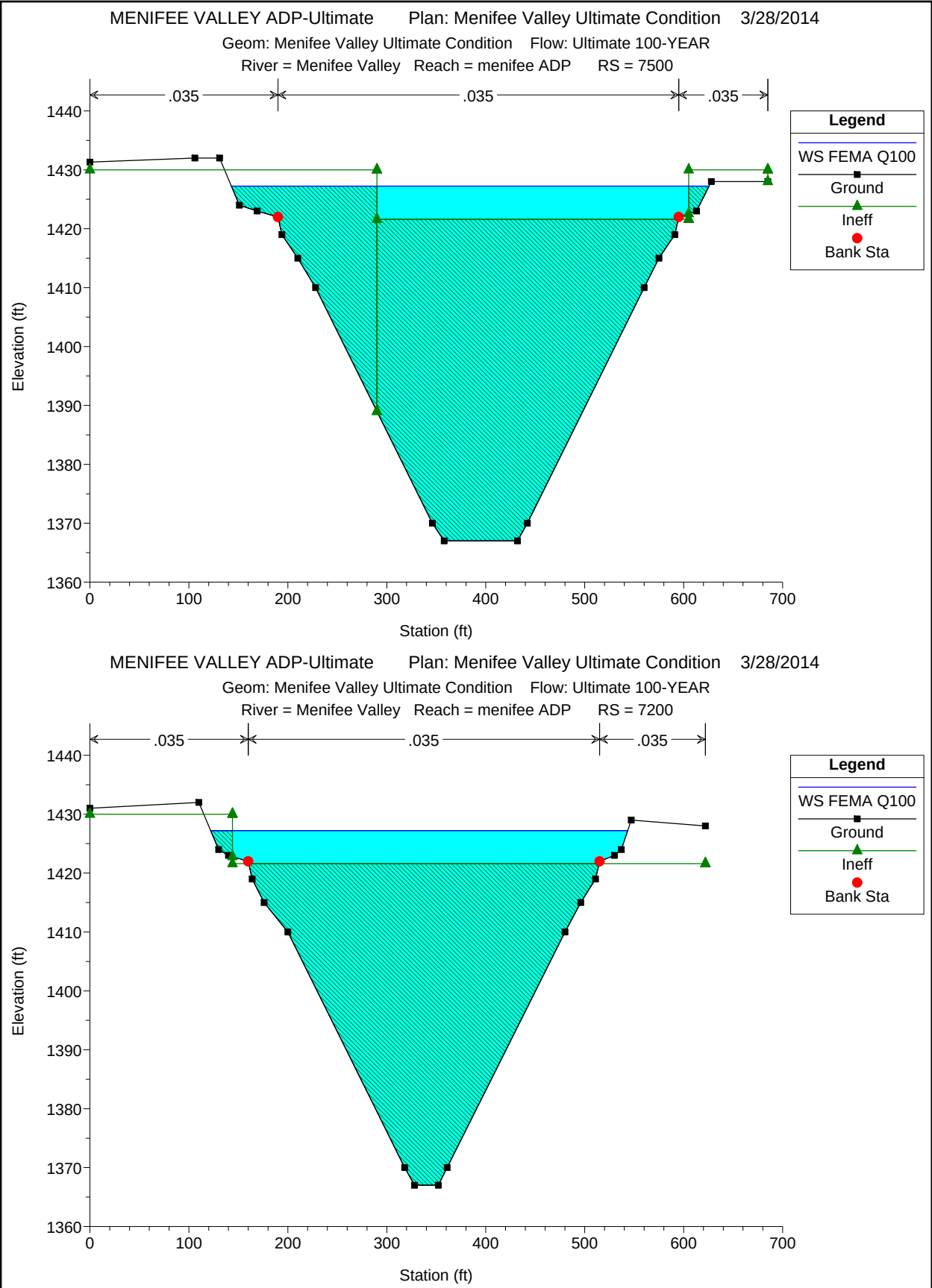
Ineff

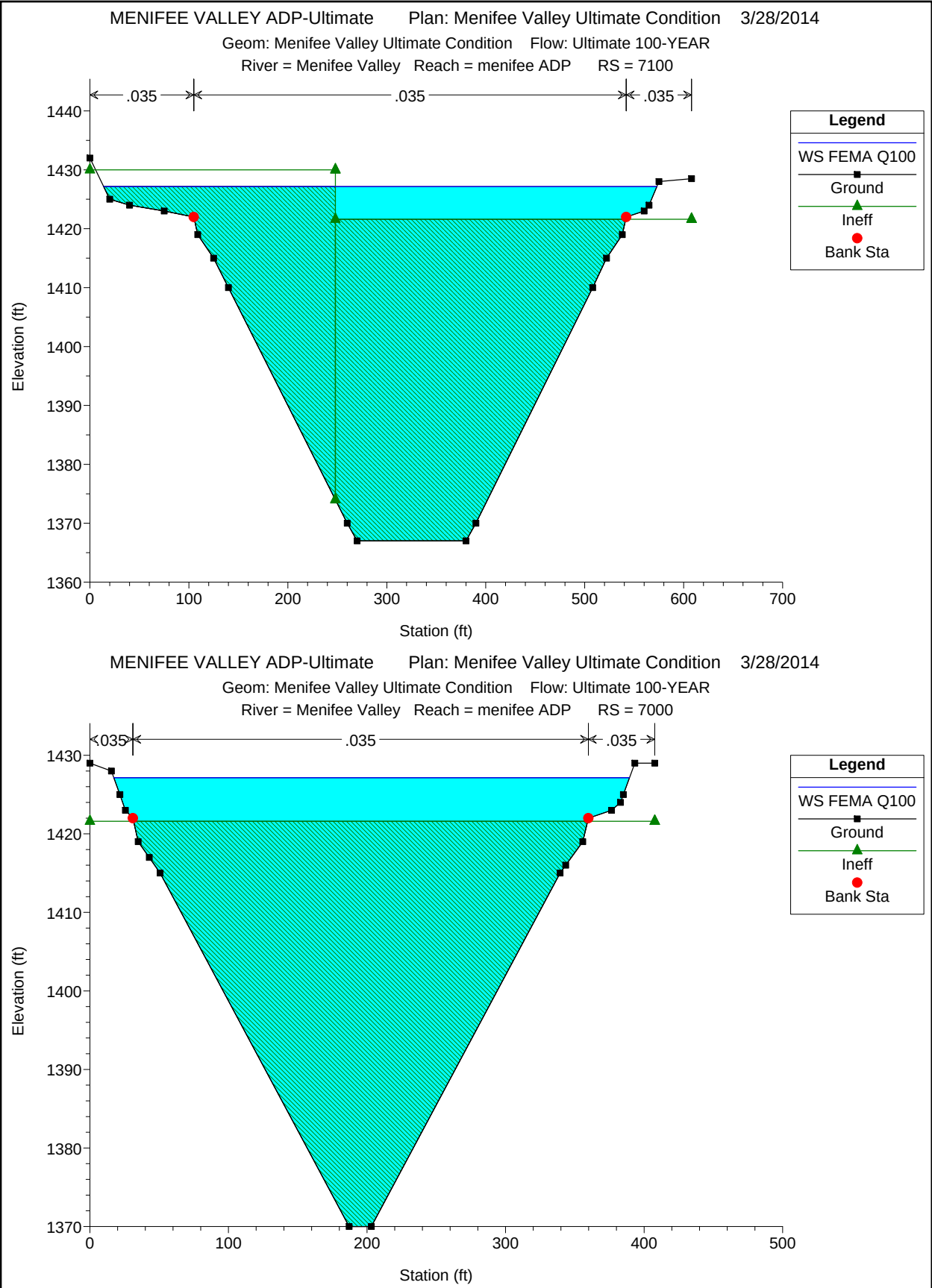
Bank Sta











MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 7000

Elevation (ft)

1430

1420

1410

1400

1390

1380

1370

0

100

200

300

400

500

←.035→

←.035→

←.035→

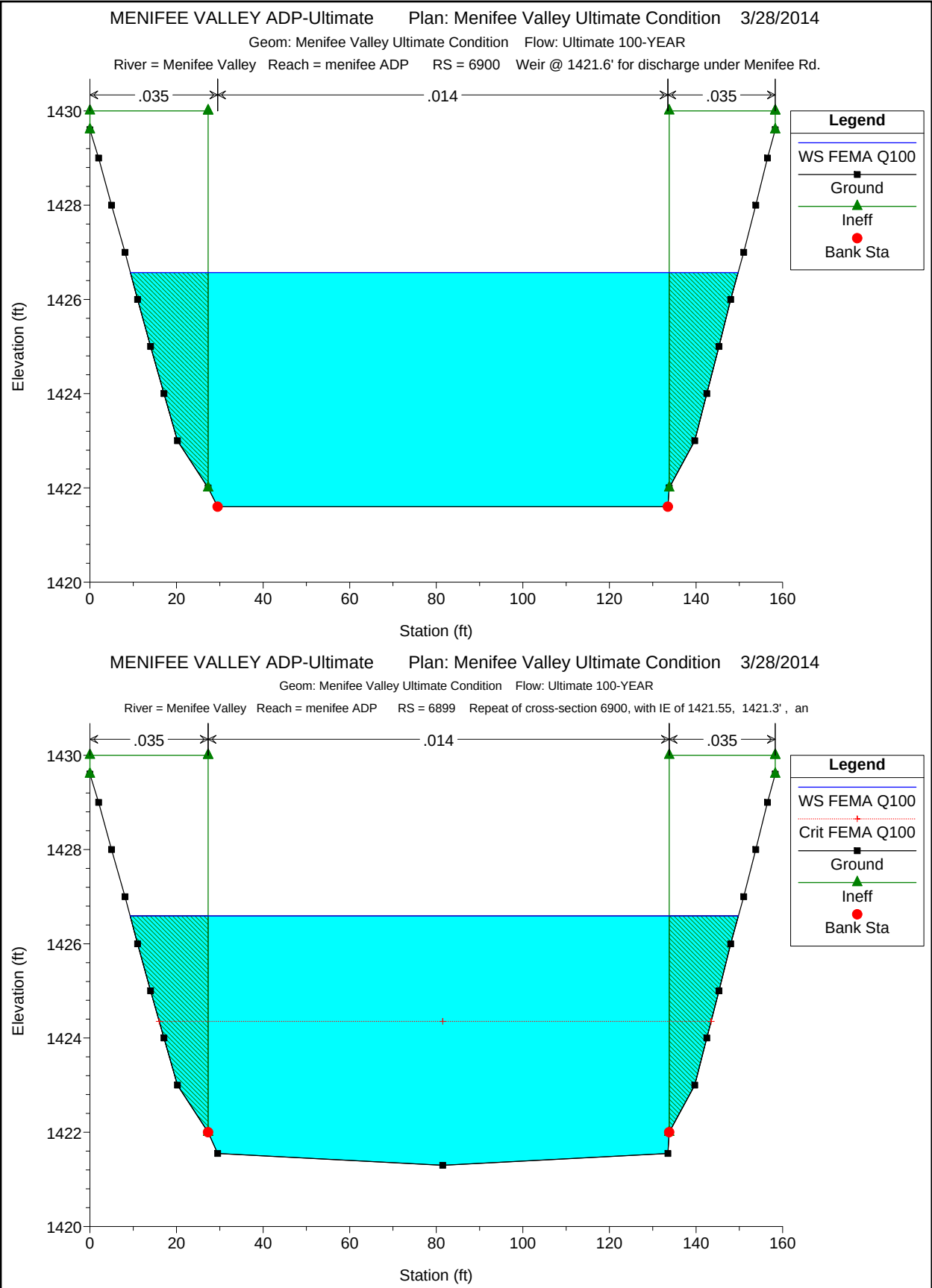
Legend

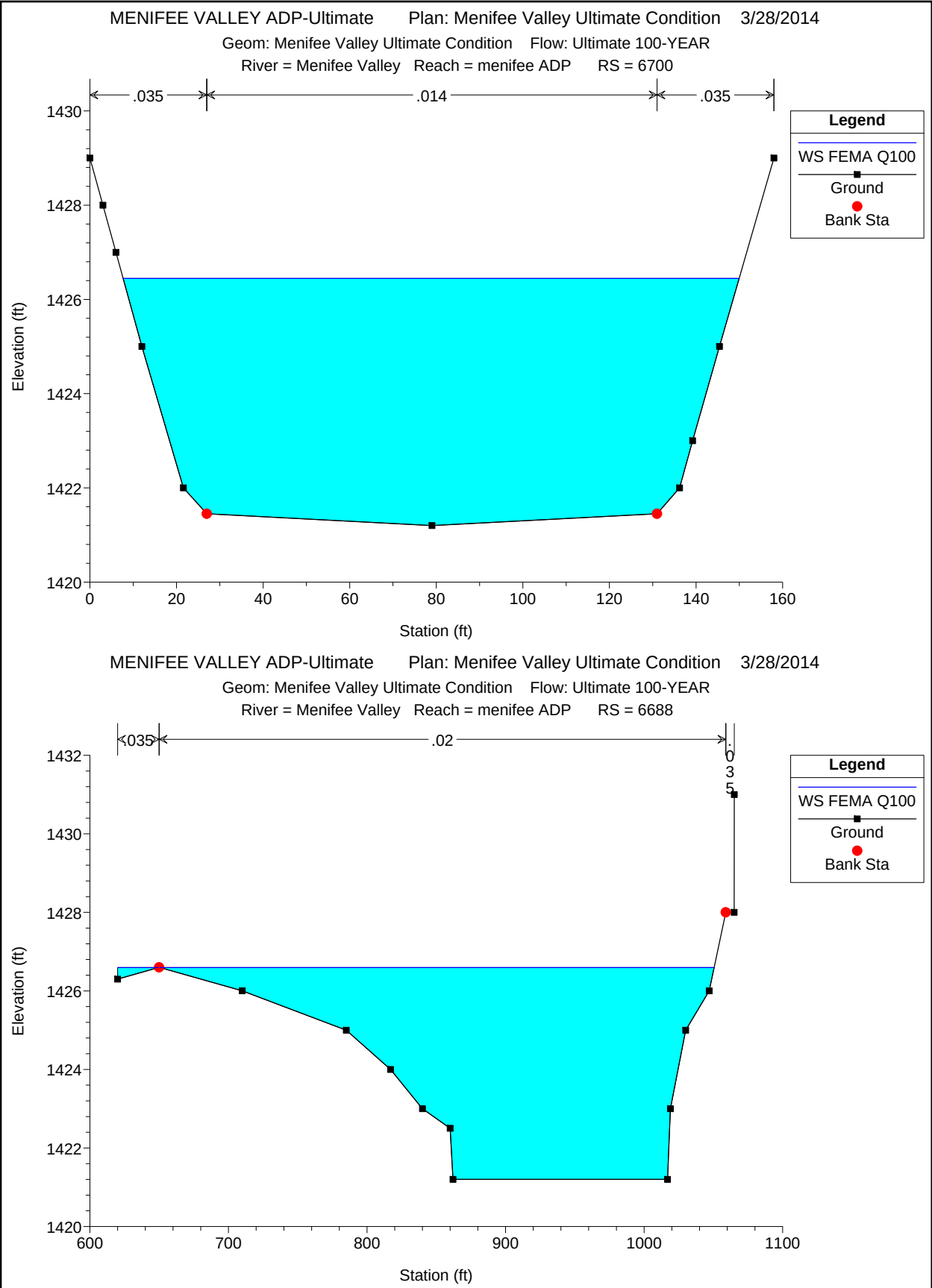
WS FEMA Q100

Ground

Ineff

Bank Sta

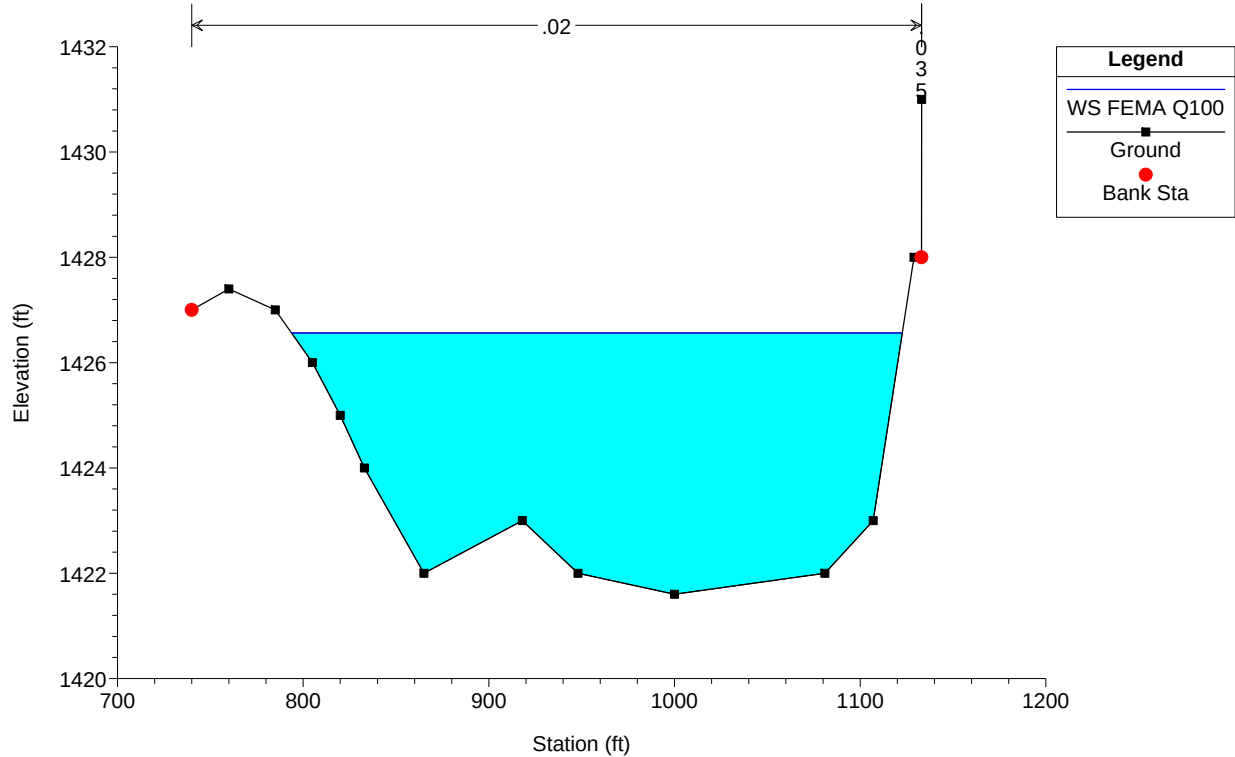




MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

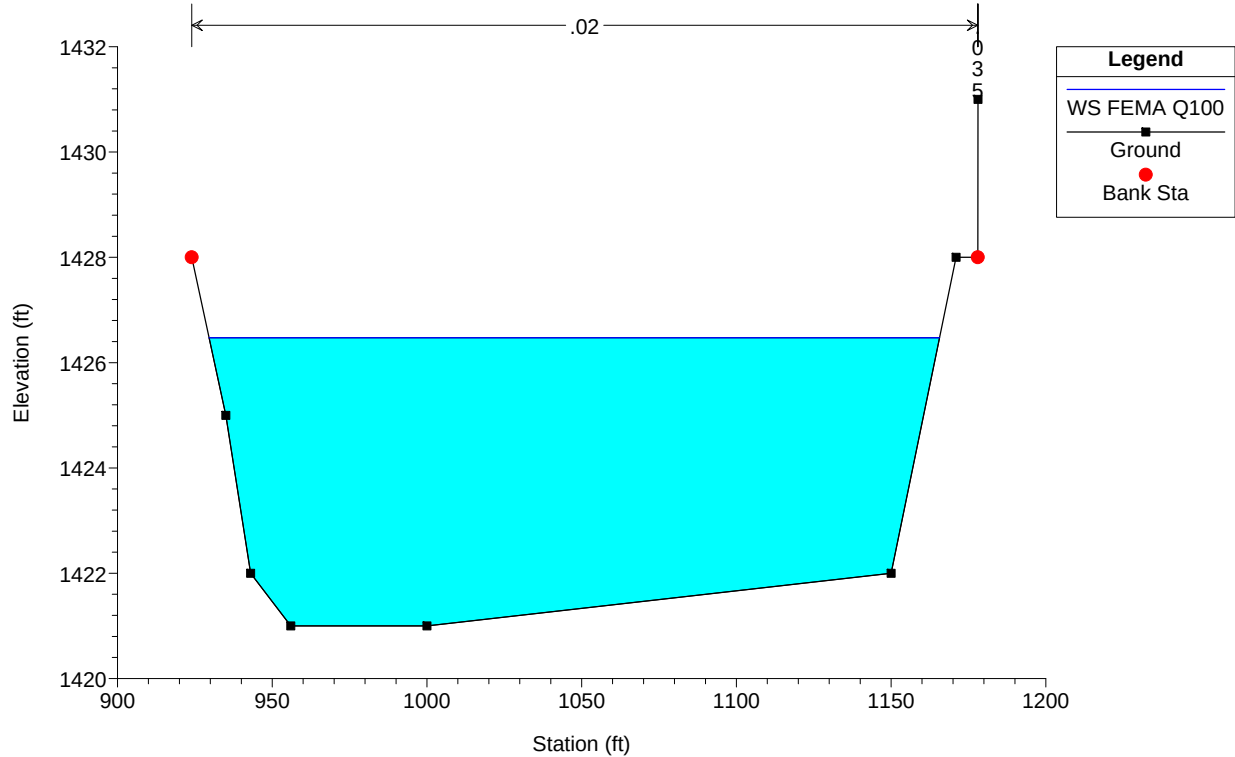
River = Menifee Valley Reach = menifee ADP RS = 6518

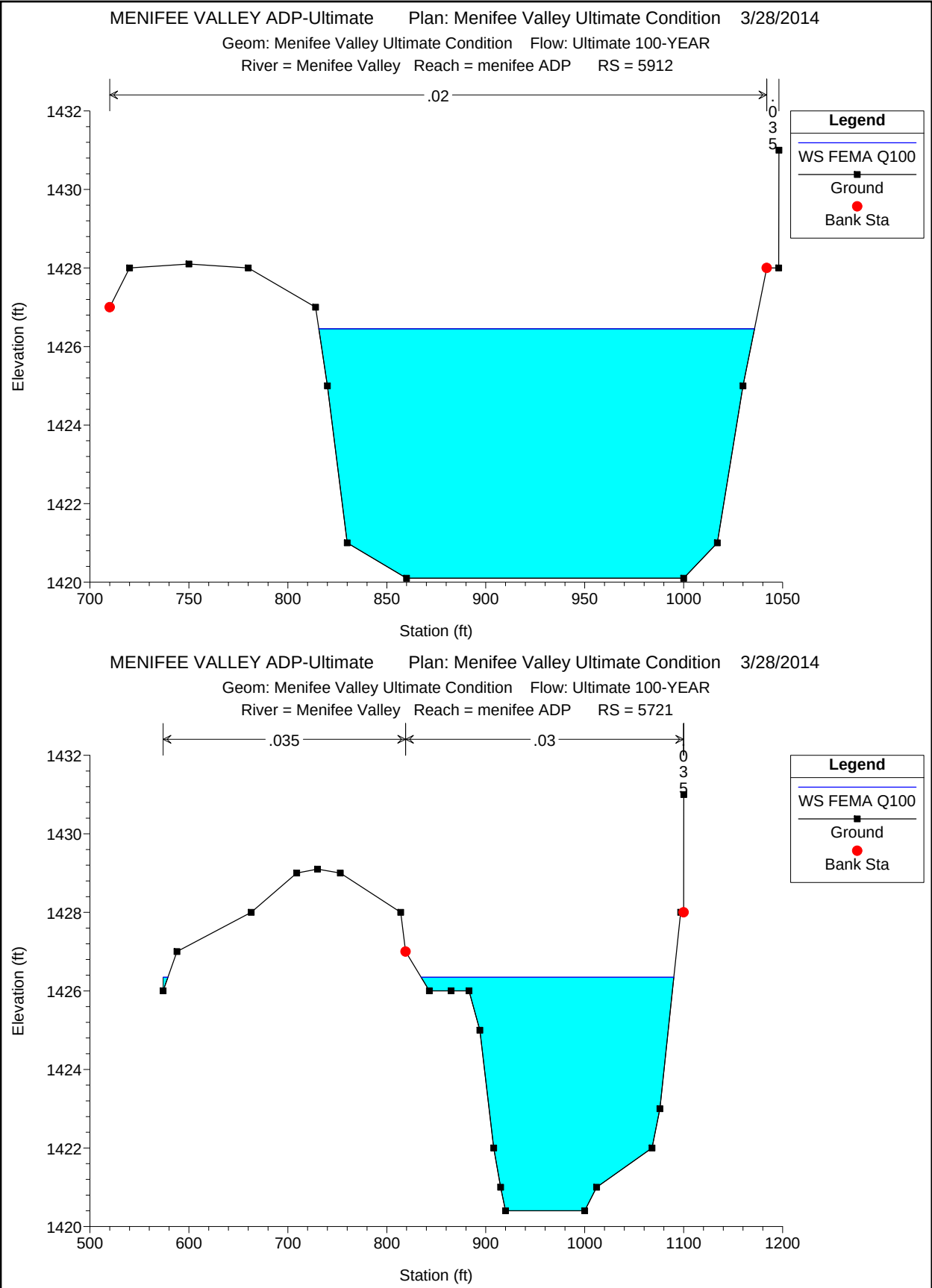


MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 6189

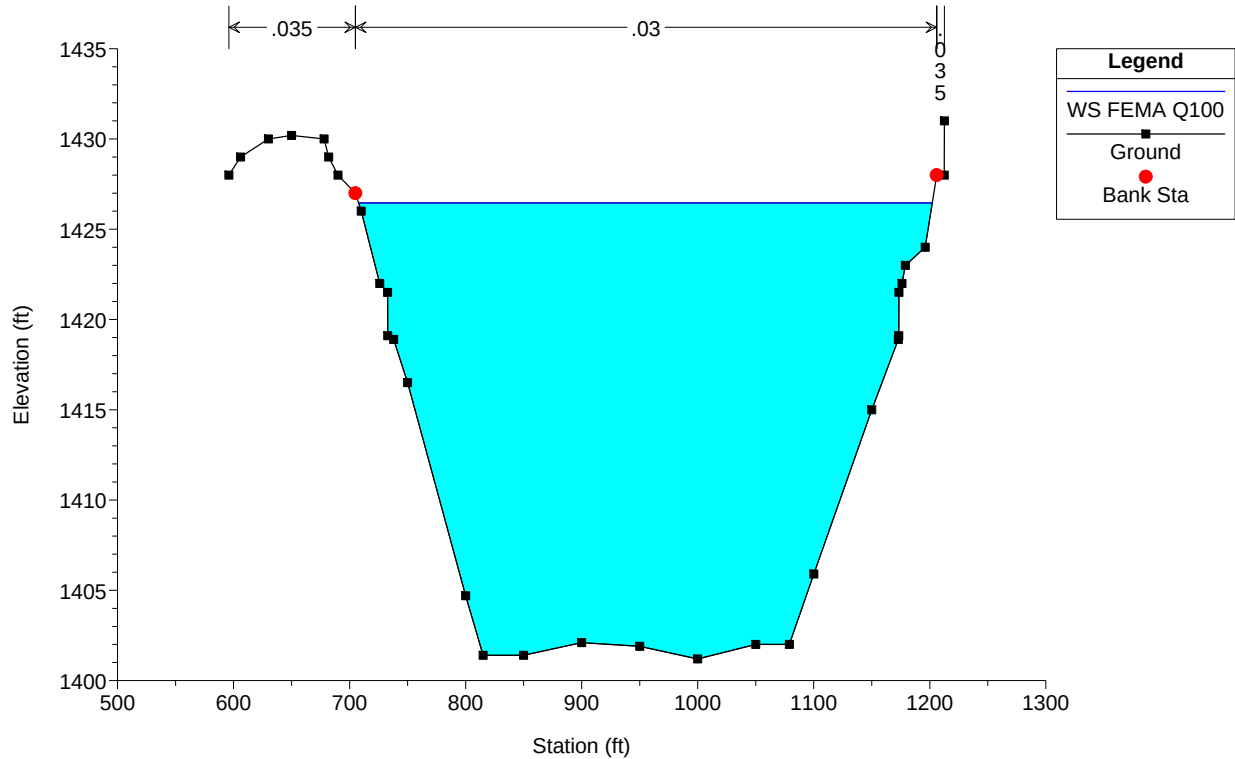




MENIFEE VALLEY ADP-Ultimate Plan: Meniffee Valley Ultimate Condition 3/28/2014

Geom: Meniffee Valley Ultimate Condition Flow: Ultimate 100-YEAR

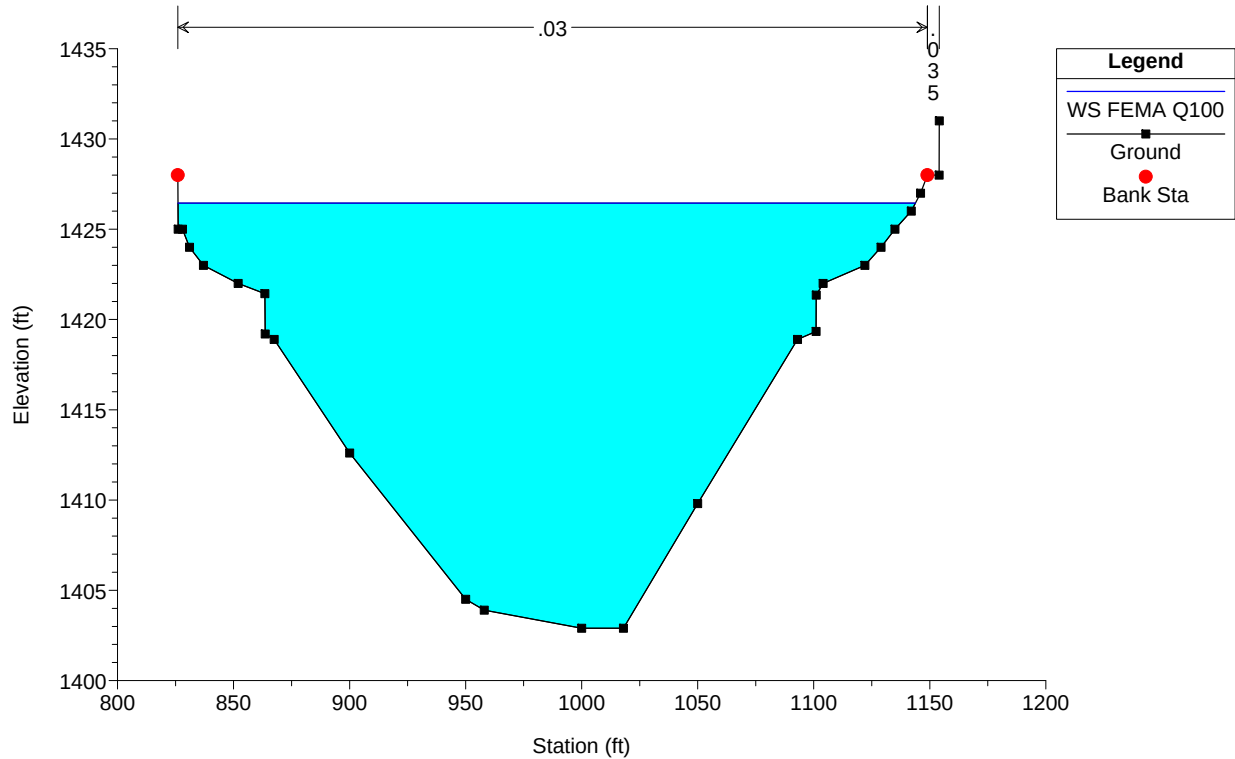
River = Meniffee Valley Reach = meniffee ADP RS = 5473

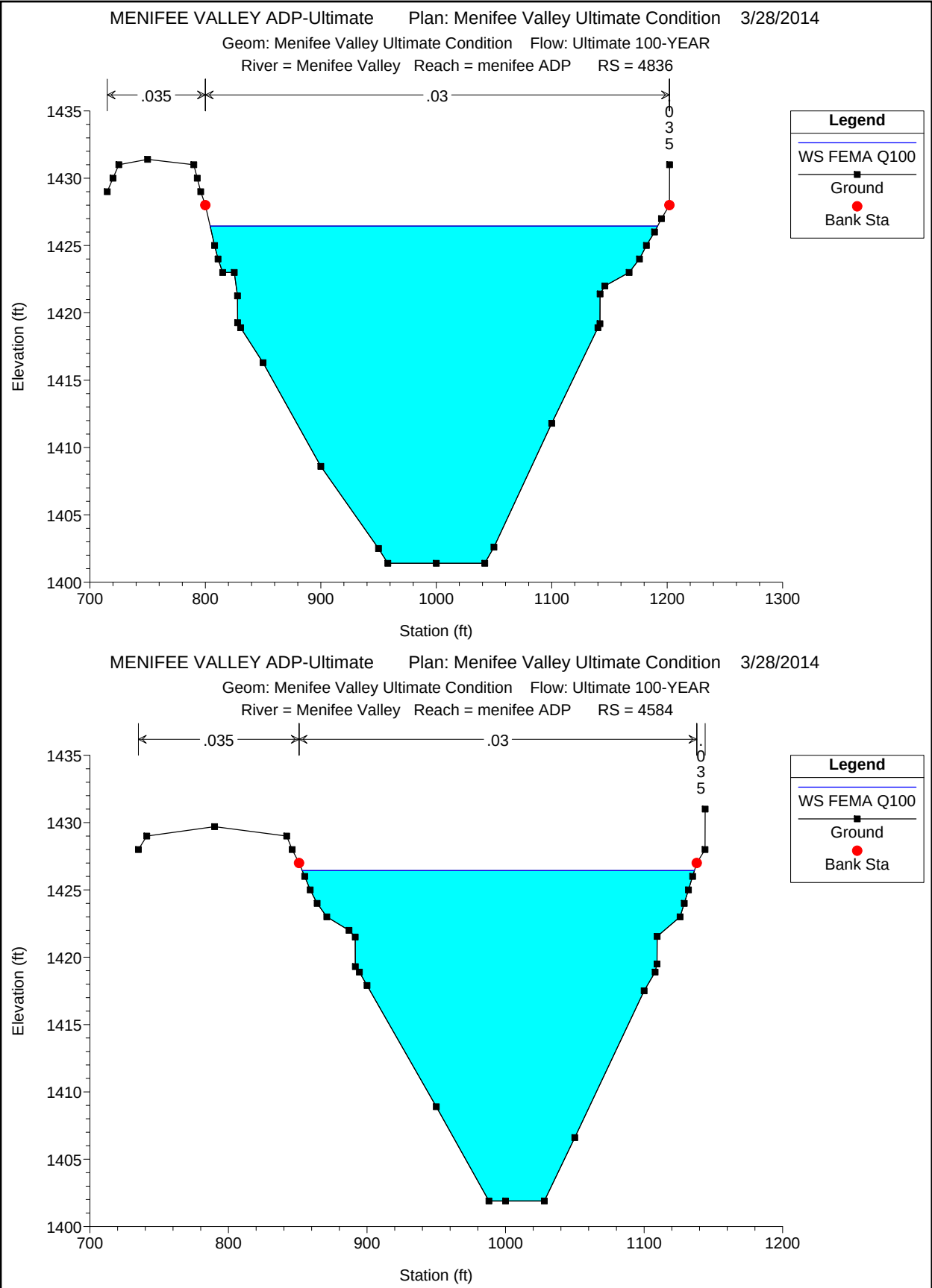


MENIFEE VALLEY ADP-Ultimate Plan: Meniffee Valley Ultimate Condition 3/28/2014

Geom: Meniffee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Meniffee Valley Reach = meniffee ADP RS = 5110

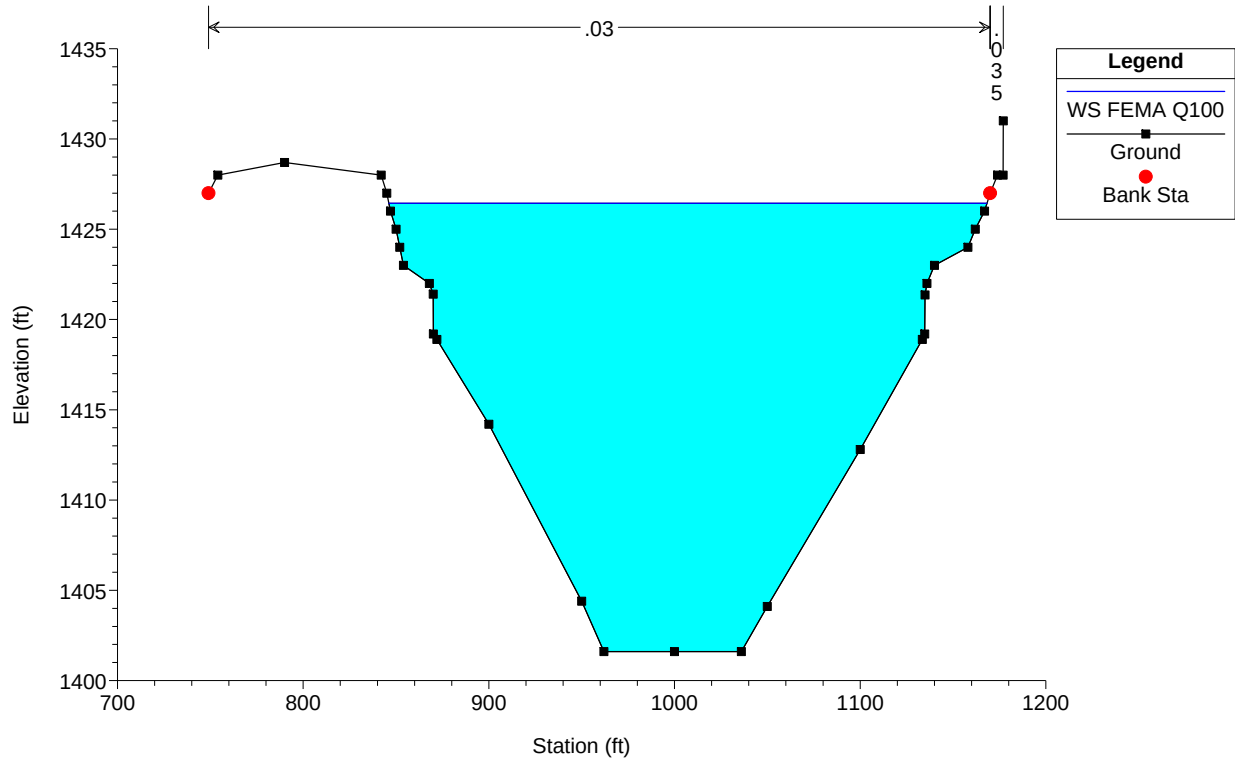




MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

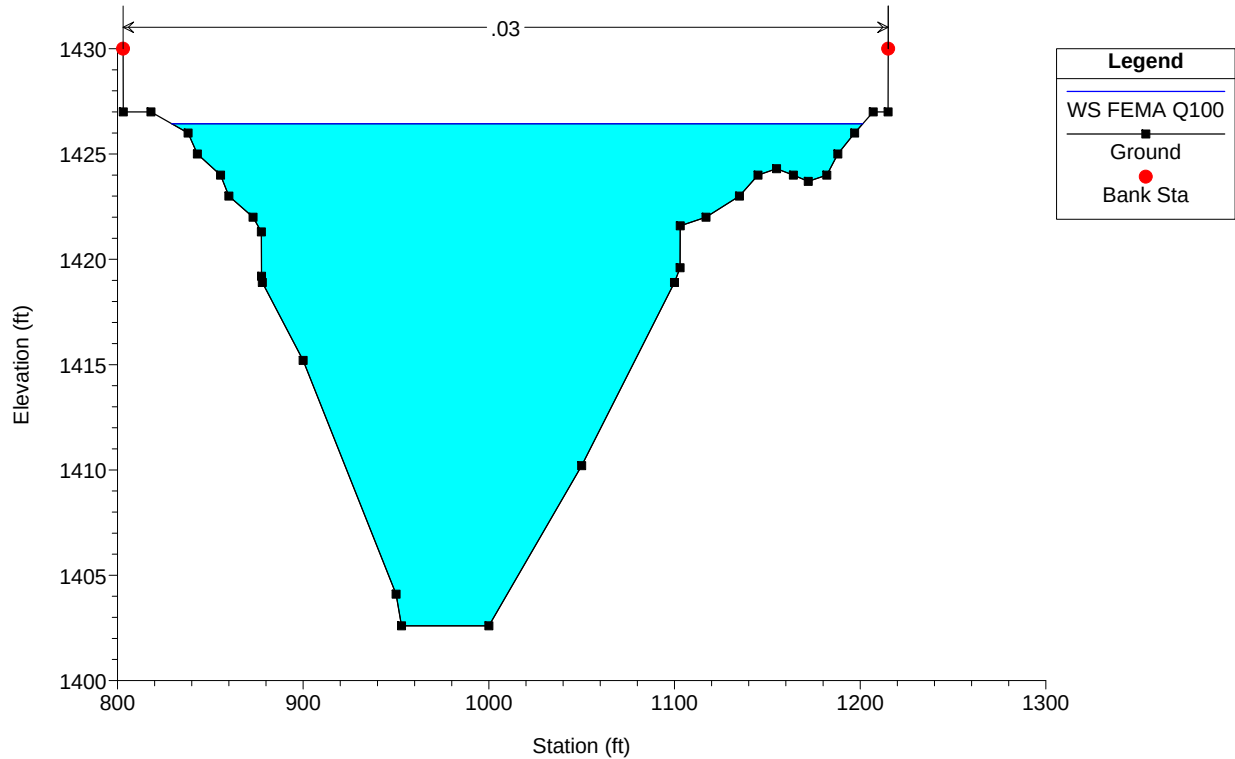
River = Menifee Valley Reach = menifee ADP RS = 4449



MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

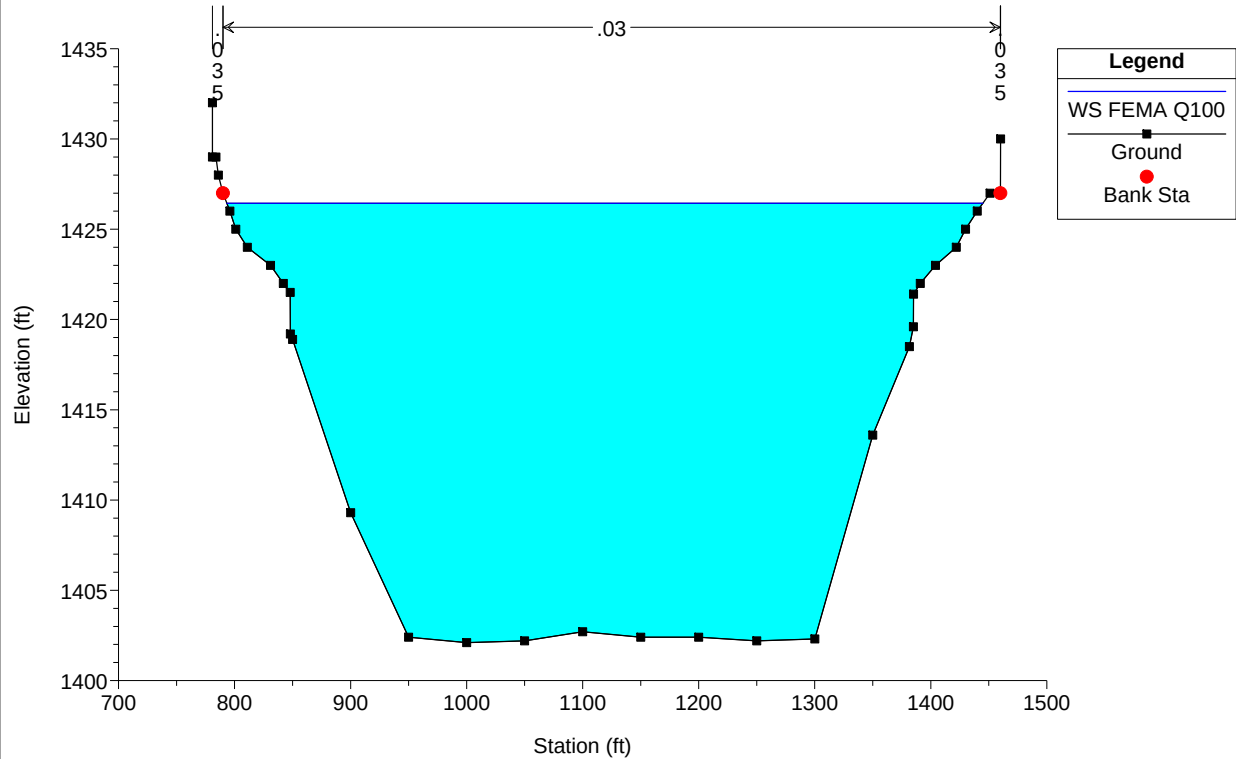
River = Menifee Valley Reach = menifee ADP RS = 4275



MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

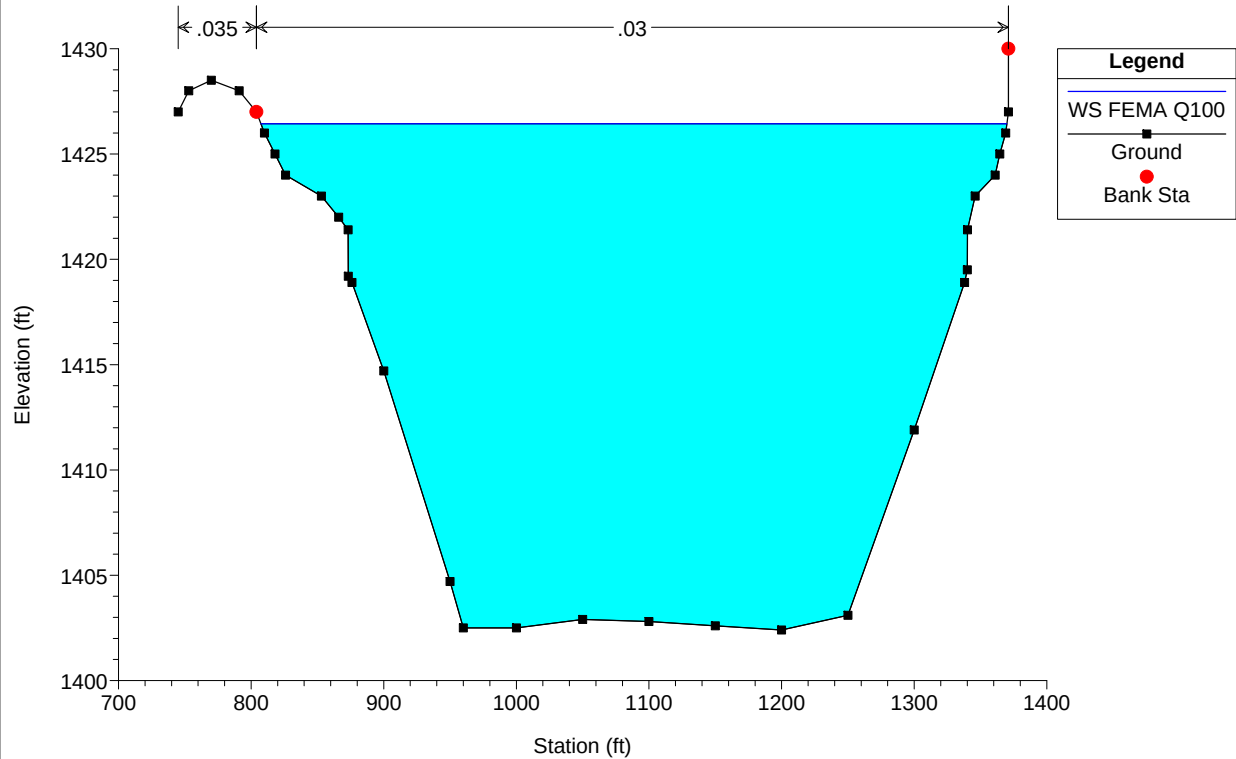
River = Menifee Valley Reach = menifee ADP RS = 3990



MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

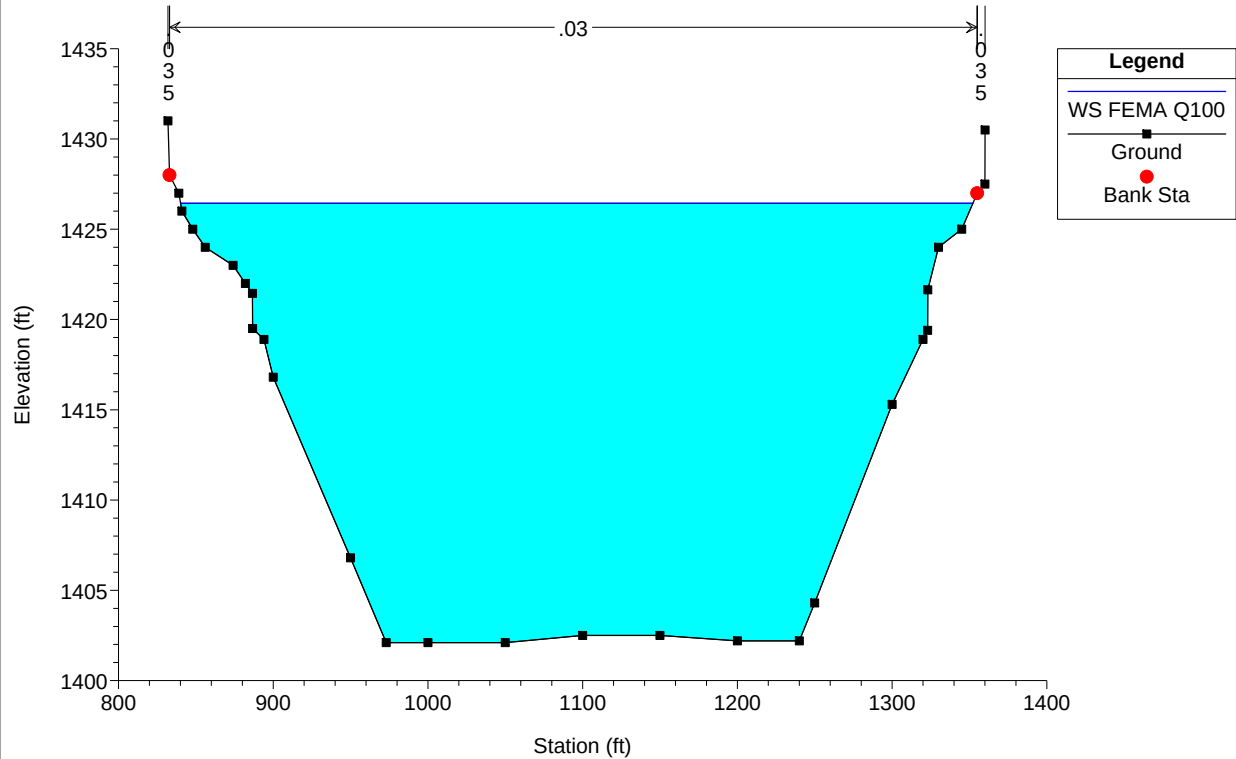
River = Menifee Valley Reach = menifee ADP RS = 3700



MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

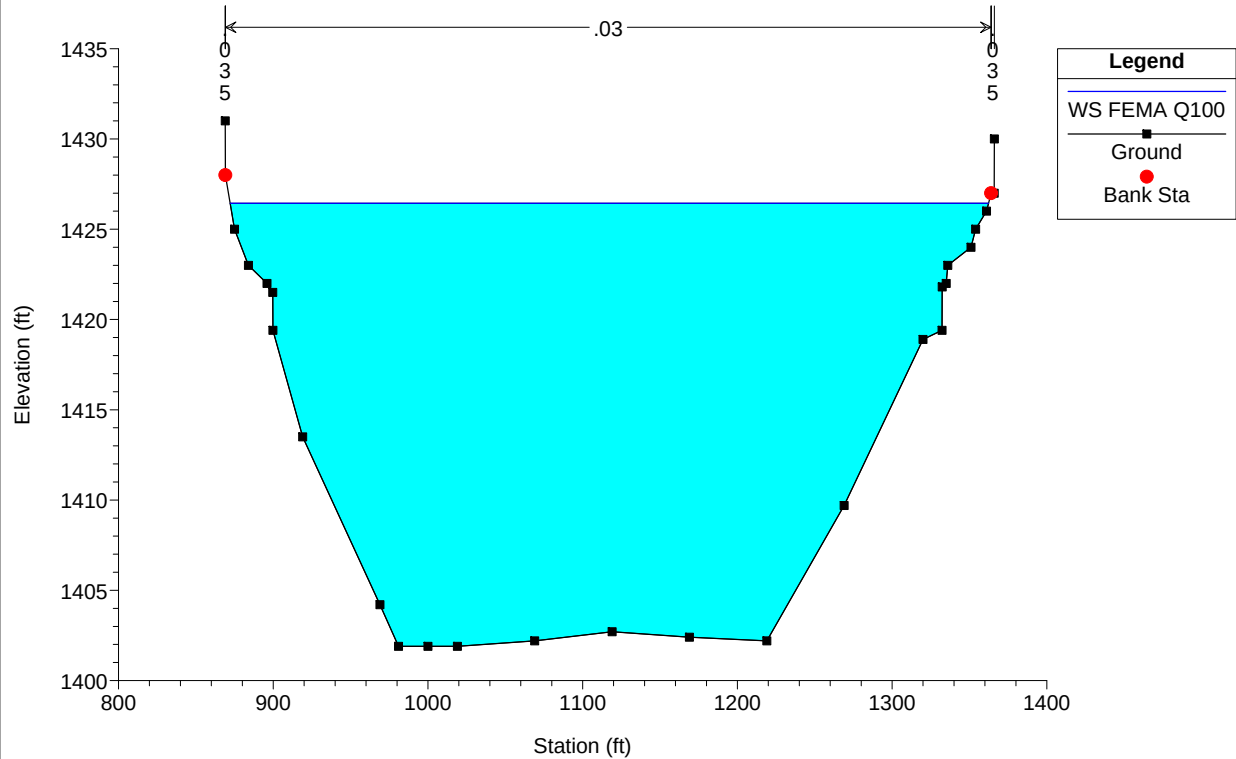
River = Menifee Valley Reach = menifee ADP RS = 2810

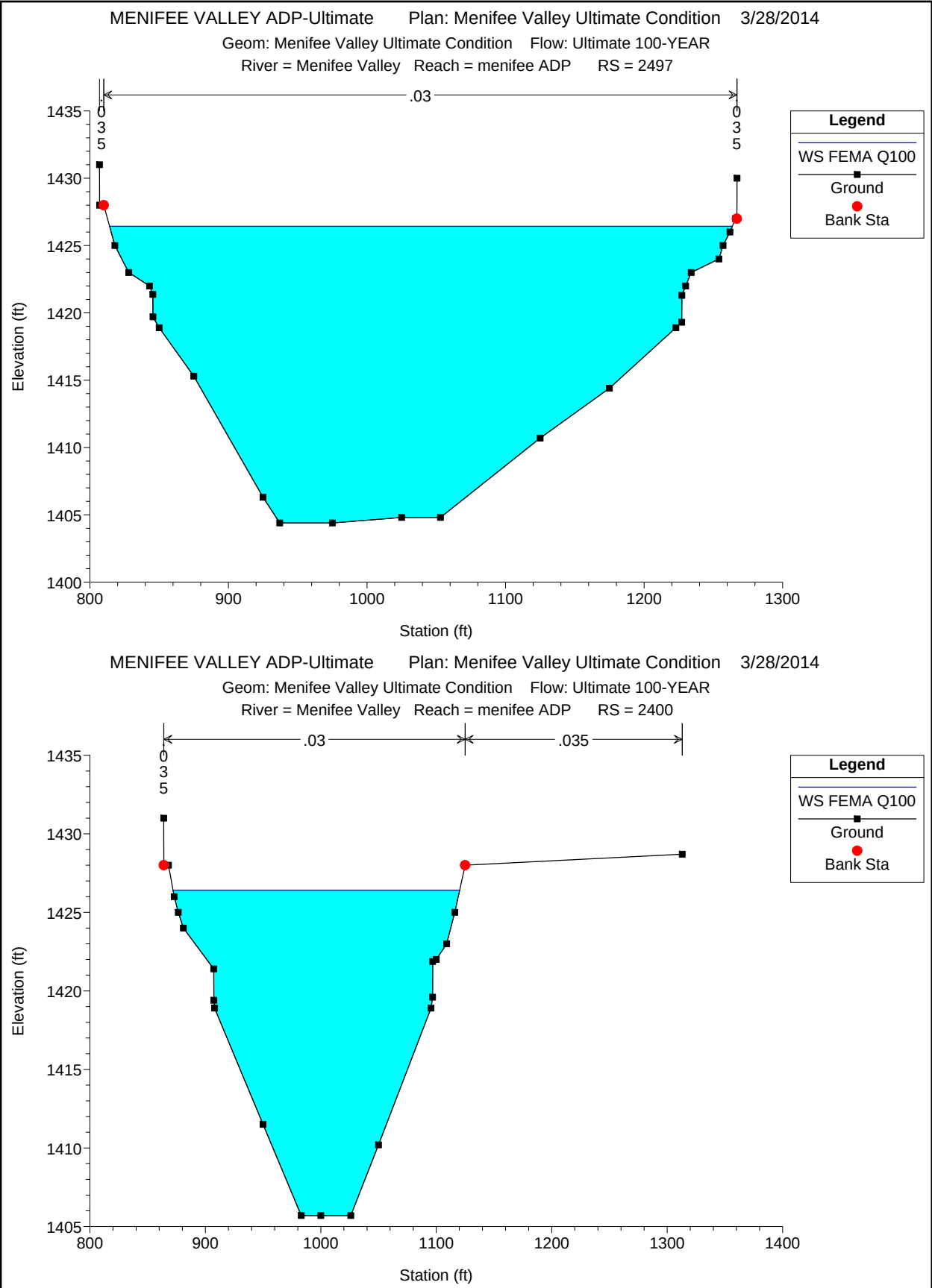


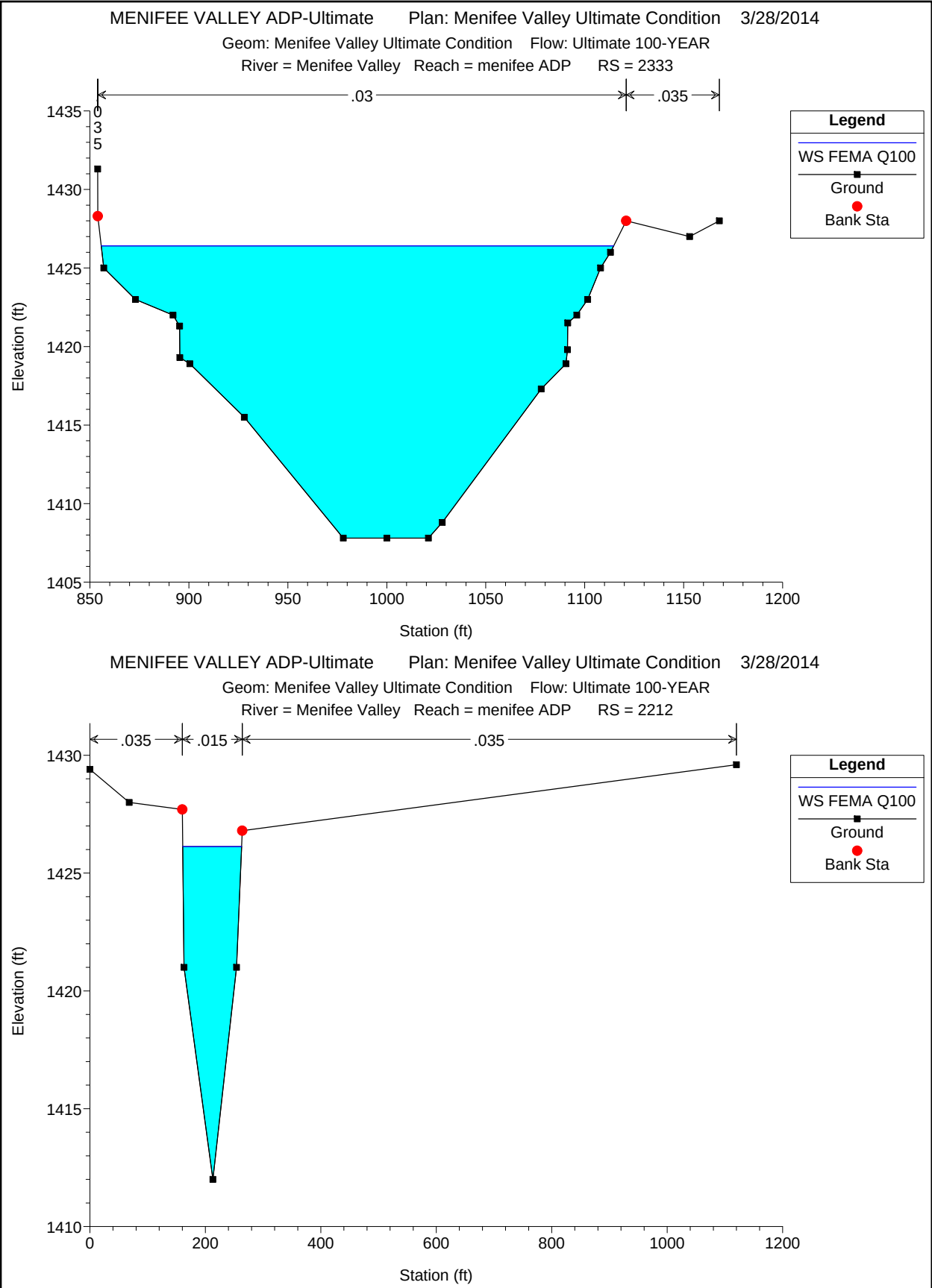
MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

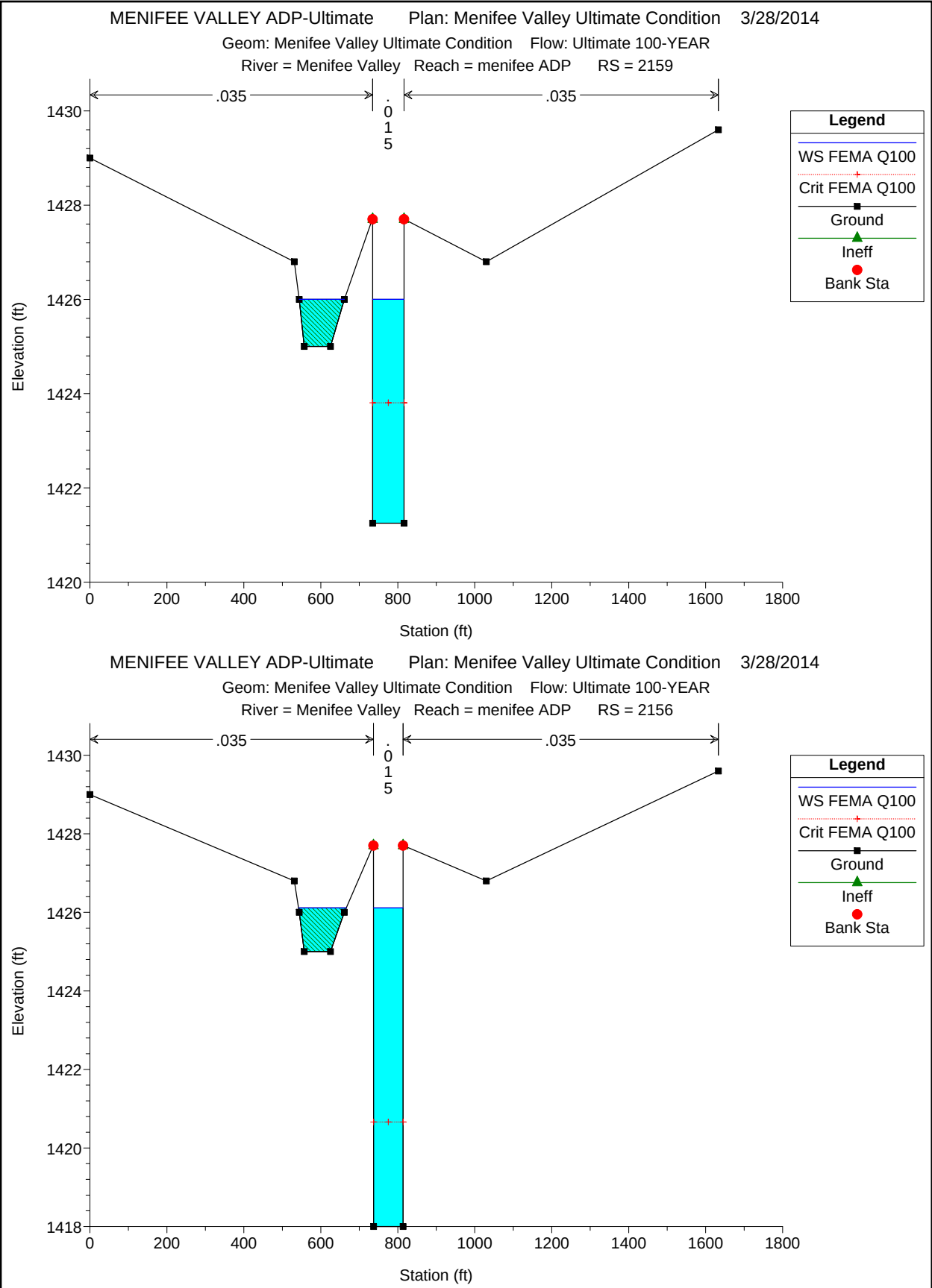
Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 2610









MENIFEE VALLEY ADP-Ultimate

Plan: Menifee Valley Ultimate Condition

3/28/2014

Geom: Menifee Valley Ultimate Condition

Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 2156

Elevation (ft)

1430

1428

1426

1424

1422

1420

1418

0

200

400

600

800

1000

1200

1400

1600

1800

0.035

0.035

0.15

WS FEMA Q100

Crit FEMA Q100

Ground

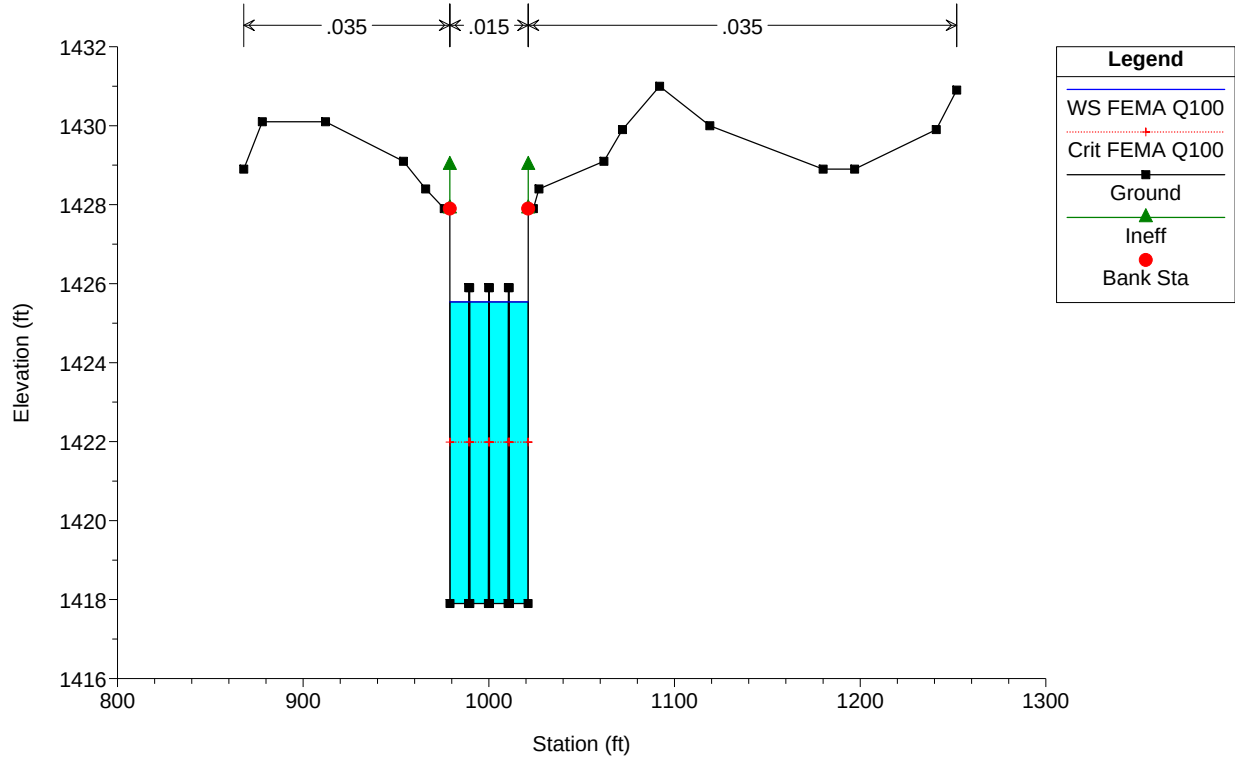
Ineff

Bank Sta

MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

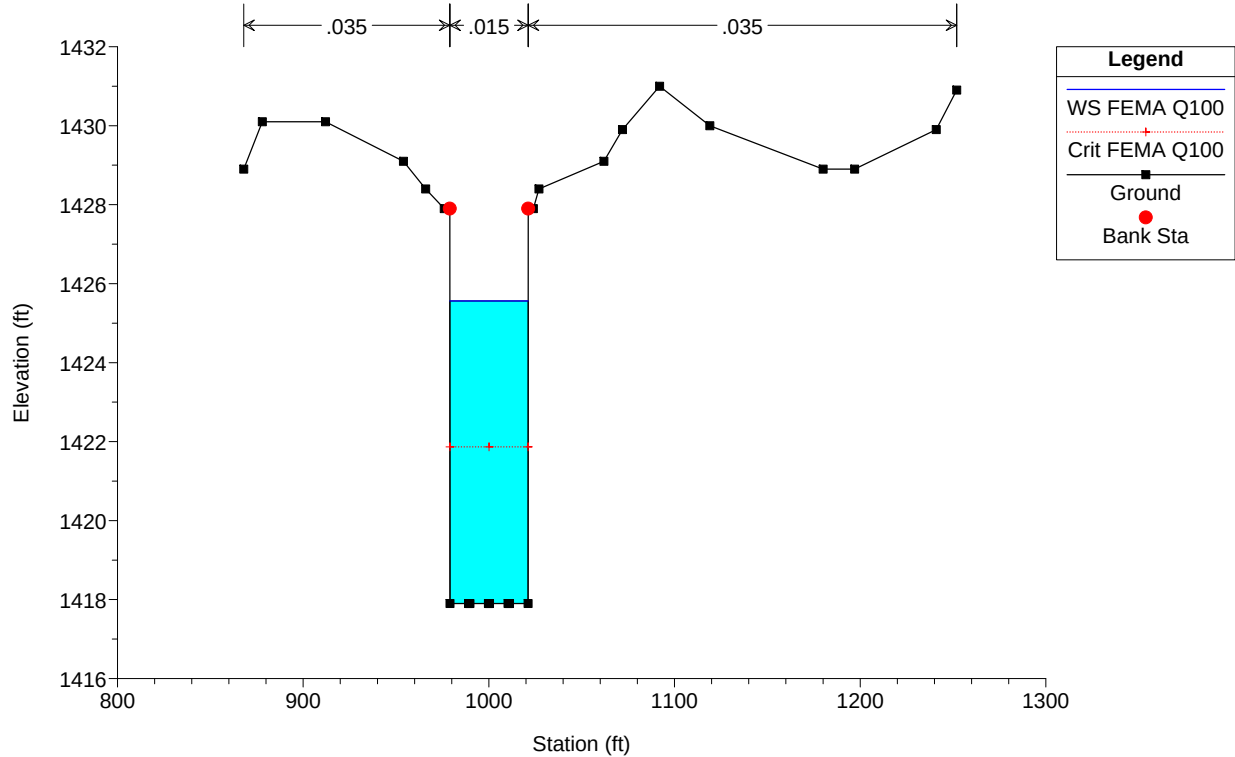
River = Menifee Valley Reach = menifee ADP RS = 2130 This is a REPEATED section.

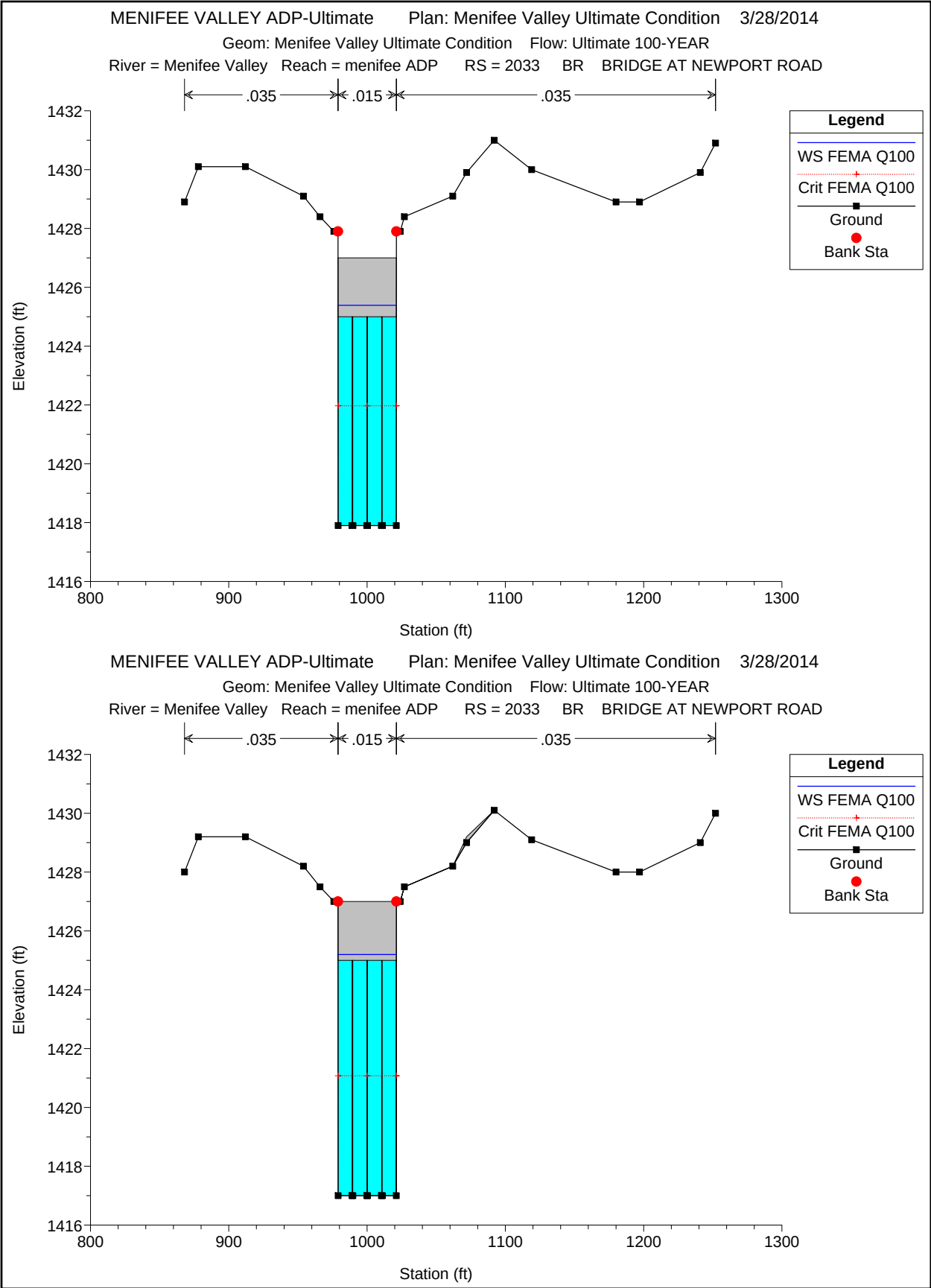


MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 2129 This is a REPEATED section.

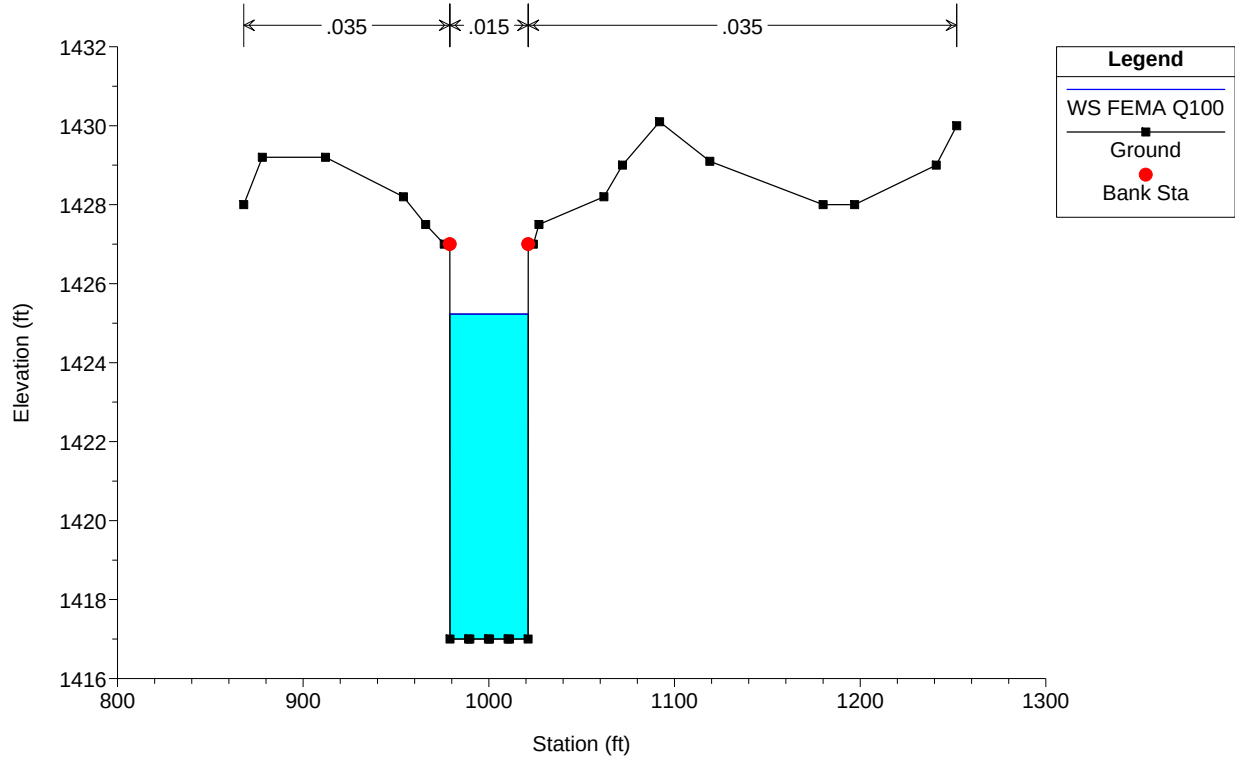




MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

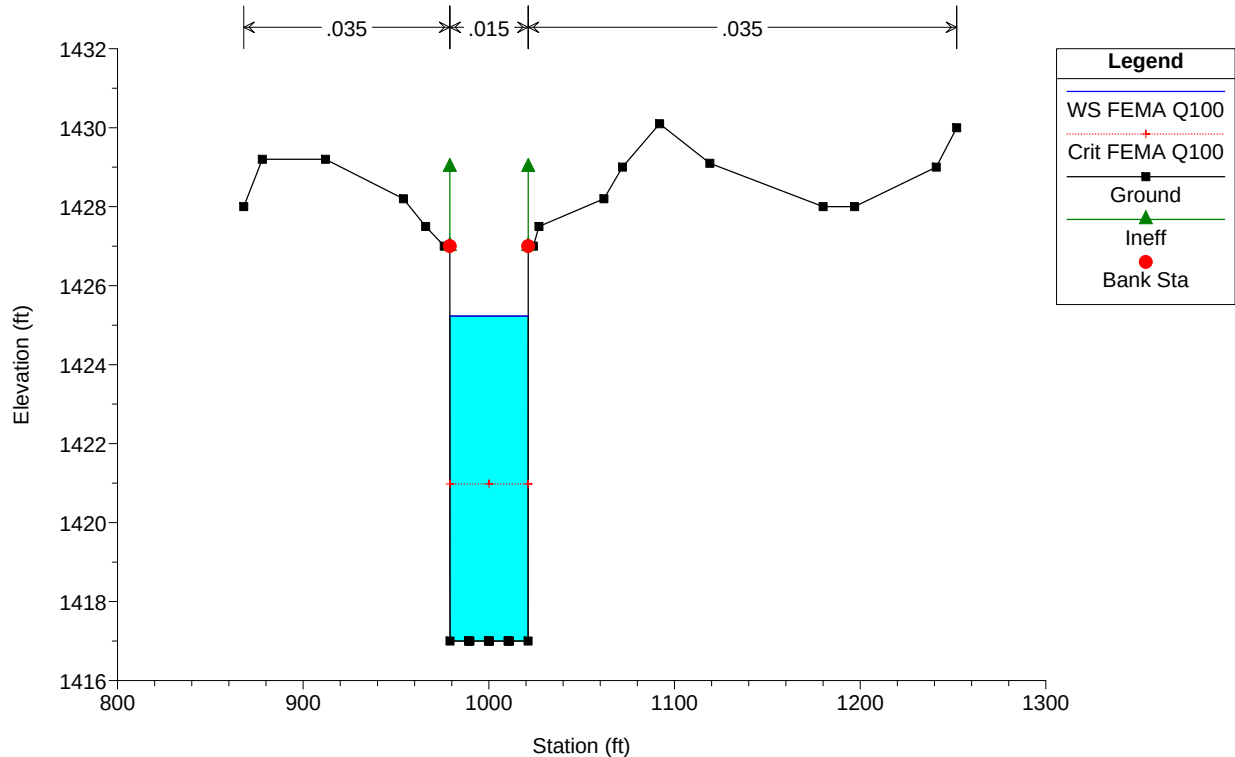
River = Menifee Valley Reach = menifee ADP RS = 1937 This is a REPEATED section.

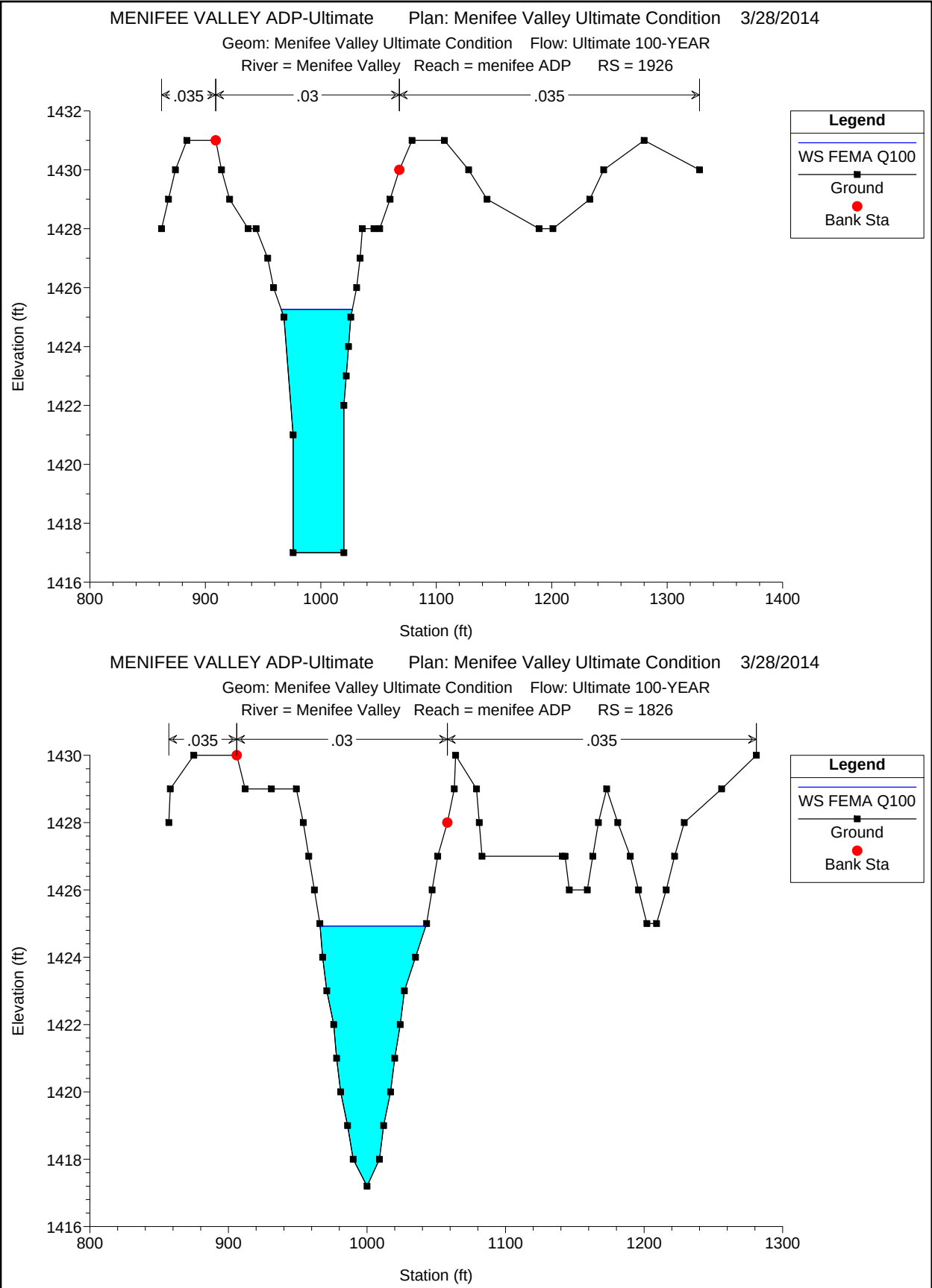


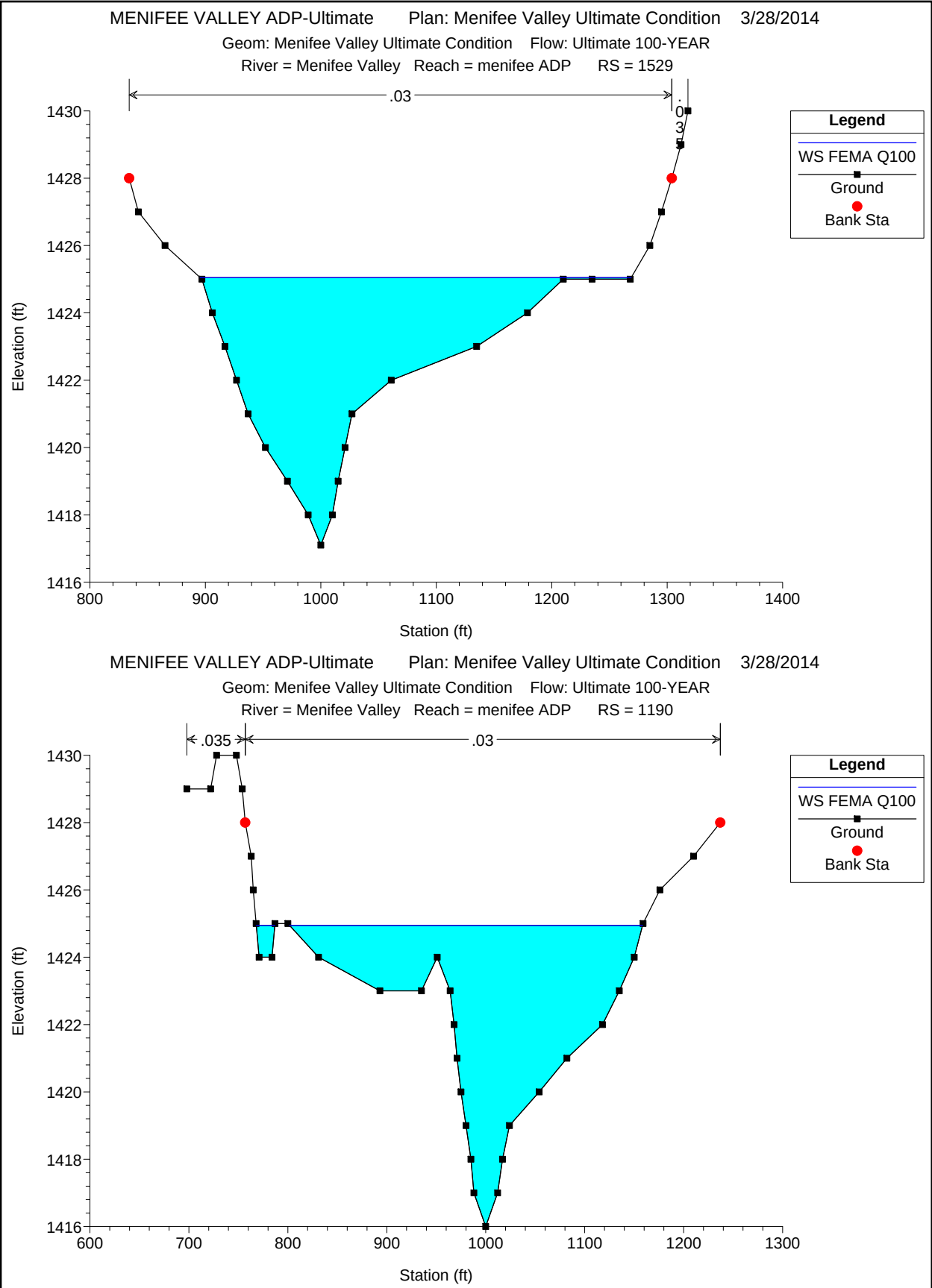
MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 1936







MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 1190

Elevation (ft)

1430

1428

1426

1424

1422

1420

1418

1416

600

700

800

900

1000

1100

1200

1300

0.035

0.03

Legend

WS FEMA Q100

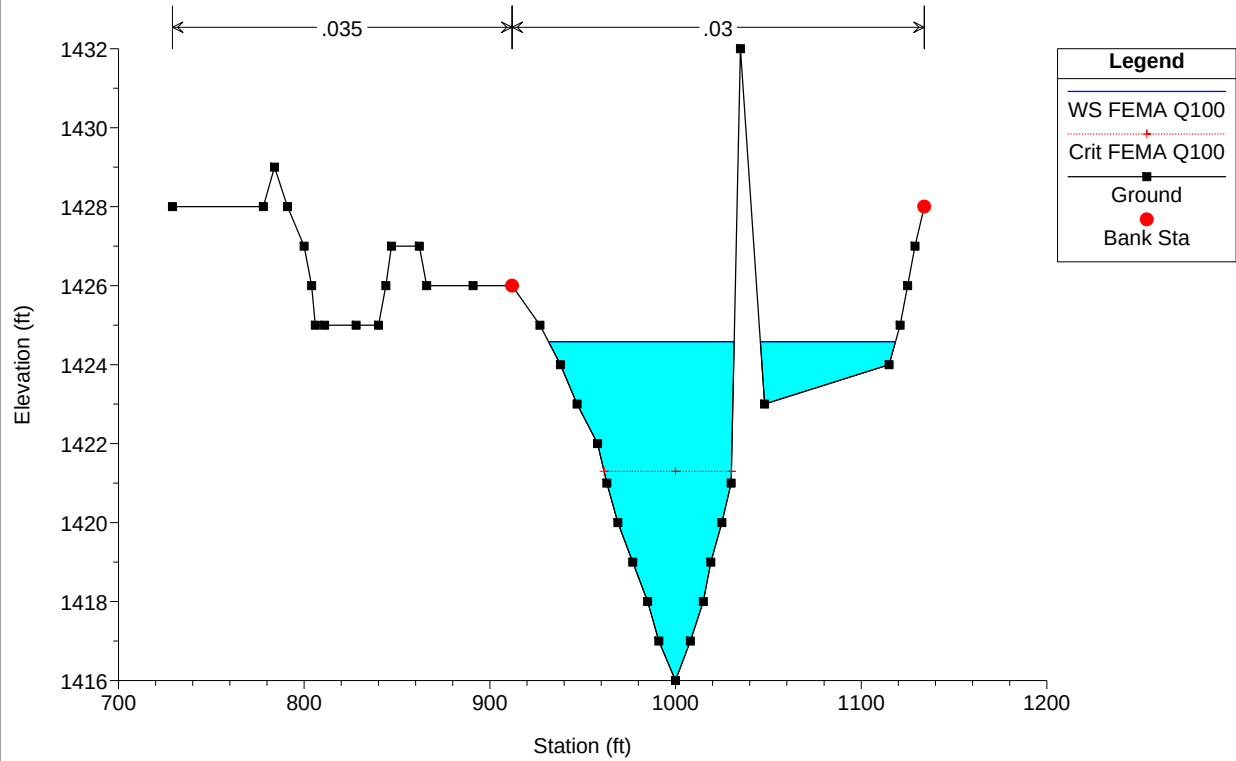
Ground

Bank Sta

MENIFEE VALLEY ADP-Ultimate Plan: Menifee Valley Ultimate Condition 3/28/2014

Geom: Menifee Valley Ultimate Condition Flow: Ultimate 100-YEAR

River = Menifee Valley Reach = menifee ADP RS = 790



HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
699 Second Street
Davis, California

X X XXXXXX XXXX XX XXXX
X X X X X X X X X X
X XXXXXX XXX X XXXX
X X X X X X X X X X
X XXXXXX XXXX X X XXXX

PROJECT DATA
Project Title: MENIFEE VALLEY ADP-Ultimate
Project File: WUltimate.prj
Run Date and Time: 3/28/2014 8:45:06 AM

Project in English units

Project Description:
Menifee Valley Cutoff Existing topo for the entire run. Data includes FEMA HEC-2
data from station 798 to sta 6750. CSL Engineering data from approved CLOMR for
sta 6900 to sta 11800. REC data for proposed Lakes at Menifee project from sta
6750 to sta 9700 and REC data for sta 12000 to sta 15000.

These pre-project
data were used for Menifee Valley based on the post-project condition of
Tract 38422 (The Lakes project).

PLAN DATA

Plan Title: Menifee Valley Ultimate Condition
Plan File: r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix F\Ultimate Post-Project\WVUltimate.p07
Geometry Title: Menifee Valley Ultimate Condition
Geometry File: r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix F\Ultimate Post-Project\WVUltimate.p06
Flow File
Flow File : r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix F\Ultimate Post-Project\WVUltimate.p03
Plan Description:
UPDATED TO REFLECT LOWR

Plan Summary Information:
Number of: Cross Sections = 73 Multiple Openings = 0
Culverts = 2 Inline Structures = 0
Bridges = 2 Lateral Structures = 0
Computational Information
Water surface calculation tolerance = 0.01
Minimum water surface elevation tolerance = 20.01
Maximum number of iterations = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Ultimate 100-YEAR
Flow File: r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix F\Ultimate Post-Project\WVUltimate.p03
Flow Data (cfs)

River
Menifee Valley menifee ADP RS FEMA Q100
Menifee Valley menifee ADP 11700 3224
Menifee Valley menifee ADP 3335 3335
Menifee Valley menifee ADP 3900 3900
Menifee Valley menifee ADP 2159 1885
Menifee Valley menifee ADP 1926 1938

Boundary Conditions

River Reach Profile Upstream
Menifee Valley menifee ADP FEMA Q100
Changes in MS and EG Normal S = 0.001 Known MS = 1424.58

River Reach Profile Type Value
Menifee Valley menifee ADP RS Profile FEMA Q100 Additl EG .03

GEOMETRY DATA

Geometry Title: Menifee Valley Ultimate Condition
Geometry File: r:\16684\Hydro\MenifeeADP\MenifeeValleyADP_Appendices_May07_Submittal\Appendix F\Ultimate Post-Project\WVUltimate.p06
CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 11700
INPUT
Description:
Station Elevation Data num= 6
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1438.75 31.9 1430.75 70.9 1422 103.4 1422 196.2 1438.58
210.4 1430.58
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .83 70.9 .83 103.4 .83
Bank Sta: Left Right Lengths: Left Channel Right
70.9 103.4 104 119 Coeff Contr. Expan.
.3 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 11600
INPUT
Description:
Station Elevation Data num= 10
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1431.3 24.9 1423 24.9 1421 48.9 1417 46.6 1415
114.9 1415 107.5 1417 135.9 1421 130.9 1423 101.4 1431.4
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .83 24.9 .83 135.9 .83
Bank Sta: Left Right Lengths: Left Channel Right
24.9 135.9 136 142 Coeff Contr. Expan.
1 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 11500
INPUT
Description:
Station Elevation Data num= 10
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1431.3 24.6 1423 24.6 1421 48.6 1417 46.6 1415
101.5 1415 107.5 1417 123.5 1421 123.5 1423 147 1436.7
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .83 24.6 .83 123.5 .83
Bank Sta: Left Right Lengths: Left Channel Right
24.6 123.5 120 200 Coeff Contr. Expan.
1 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 11400
INPUT
Description:
Station Elevation Data num= 10
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1438.4 21.9 1423 21.9 1421 37.9 1417 43.9 1415
99.7 1415 105.7 1417 121.7 1421 121.7 1423 146.6 1431.2
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .83 21.9 .83 121.7 .83
Bank Sta: Left Right Lengths: Left Channel Right
21.9 121.7 100 151 Coeff Contr. Expan.
1 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 11300
INPUT
Description:
Station Elevation Data num= 10
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 1431 24 1423 24 1421 48 1417 46 1415
100.3 1415 115.3 1417 131.3 1421 131.3 1423 157.1 1431.5
Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .83 24 .83 131.3 .83
Bank Sta: Left Right Lengths: Left Channel Right
24 131.3 120 182 Coeff Contr. Expan.
1 .1 .3

CROSS SECTION

21.8 275.8 1422 T

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 10900

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1430.7 21.9 1423 21.9 1421 37.9

141.4 1410 102.4 1417 178.4 1423 202.2 1431

Manning's n Values

Sta n Val Sta n Val

0 .83 21 .83 21.9 .83 178.4 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

21 178.4 1422

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 10800

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1431.2 23.2 1423 23.2 1421 39.2

197.1 1410 128.1 1417 144.1 1421 144.1

Manning's n Values

Sta n Val Sta n Val

0 .83 23.2 .83 144.1 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

23.2 144.1 1422

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 10700

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1431.7 24.3 1423 24.3 1421 48.3

180.3 1410 201.3 1417 217.3 1421 217.3

Manning's n Values

Sta n Val Sta n Val

0 .83 24.3 .83 217.3 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

24.3 217.3 1422

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 10600

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1431.9 25 1423 25 1421 41

129 1410 159 1417 166 1421 166

Manning's n Values

Sta n Val Sta n Val

0 .83 25 .83 166 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

25 166 1422

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 10500

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1431.2 23.2 1423 23.2 1421 48.2

116.9 1415 116.9 1417 132.9 1421 132.9

Manning's n Values

Sta n Val Sta n Val

0 .83 23.2 .83 132.9 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

23.2 132.9 1422

RIVER: Menifee Valley
REACH: menifee ADP

RS: 11200

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1430 21.9 1423 21.9 1421 37.9

141.4 1410 102.4 1417 178.4 1423 202.2 1431

Manning's n Values

Sta n Val Sta n Val

0 .83 21 .83 21.9 .83 178.4 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

21 178.4 1422

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 11000

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1430 20.4 1423 20.4 1421 36.4

197 1400 204 1417 204 1421 204

Manning's n Values

Sta n Val Sta n Val

0 .83 20.4 .83 204 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

20.4 204 1422

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 11040

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1430.4 21.9 1423 21.9 1421 37.9

206.9 1400 349.9 1417 365.9 1421 365.9

Manning's n Values

Sta n Val Sta n Val

0 .83 21.9 .83 365.9 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

21.9 365.9 1422

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 11020

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1431.7 25.2 1423 25.2 1421 41.2

327.2 1400 378.2 1417 394.2 1421 394.2

Manning's n Values

Sta n Val Sta n Val

0 .83 25.2 .83 394.2 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

25.2 394.2 1422

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP

RS: 11000

INPUT

Description:

Station Elevation Data

Sta Elev Sta Elev Sta Elev Sta Elev

0 1430.5 21.8 1423 21.8 1421 37.8

208.8 1400 209.8 1417 275.8 1421 275.8

Manning's n Values

Sta n Val Sta n Val

0 .83 21.8 .83 275.8 .83

Bank Sta: Left Right Lengths: Left Channel Right

Ineffective Flow Sta L Sta R Elev Permanent

21.8 275.8 1422

REACH: Menifee Valley										RS: 9488									
INPUT										EXPAN.									
Description: Station Elevation Data										Coeff. Contr.									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev				
14	1415	15	1416	16	1417	17	1418	18	1419	19	1420	20	1421	21	1422				
22	1423	23	1424	24	1425	25	1426	26	1427	27	1428	28	1429	29	1430				
31	1431	32	1432	33	1433	34	1434	35	1435	36	1436	37	1437	38	1438				
40	1439	41	1440	42	1441	43	1442	44	1443	45	1444	46	1445	47	1446				
49	1447	50	1448	51	1449	52	1450	53	1451	54	1452	55	1453	56	1454				
58	1455	59	1456	60	1457	61	1458	62	1459	63	1460	64	1461	65	1462				
67	1463	68	1464	69	1465	70	1466	71	1467	72	1468	73	1469	74	1470				
76	1471	77	1472	78	1473	79	1474	80	1475	81	1476	82	1477	83	1478				
85	1479	86	1480	87	1481	88	1482	89	1483	90	1484	91	1485	92	1486				
94	1487	95	1488	96	1489	97	1490	98	1491	99	1492	100	1493	101	1494				
103	1495	104	1496	105	1497	106	1498	107	1499	108	1500	109	1501	110	1502				
112	1503	113	1504	114	1505	115	1506	116	1507	117	1508	118	1509	119	1510				
121	1511	122	1512	123	1513	124	1514	125	1515	126	1516	127	1517	128	1518				
130	1519	131	1520	132	1521	133	1522	134	1523	135	1524	136	1525	137	1526				
139	1527	140	1528	141	1529	142	1530	143	1531	144	1532	145	1533	146	1534				
148	1535	149	1536	150	1537	151	1538	152	1539	153	1540	154	1541	155	1542				
157	1543	158	1544	159	1545	160	1546	161	1547	162	1548	163	1549	164	1550				
166	1551	167	1552	168	1553	169	1554	170	1555	171	1556	172	1557	173	1558				
175	1559	176	1560	177	1561	178	1562	179	1563	180	1564	181	1565	182	1566				
184	1567	185	1568	186	1569	187	1570	188	1571	189	1572	190	1573	191	1574				
193	1575	194	1576	195	1577	196	1578	197	1579	198	1580	199	1581	200	1582				
202	1583	203	1584	204	1585	205	1586	206	1587	207	1588	208	1589	209	1590				
211	1591	212	1592	213	1593	214	1594	215	1595	216	1596	217	1597	218	1598				
220	1599	221	1600	222	1601	223	1602	224	1603	225	1604	226	1605	227	1606				
229	1607	230	1608	231	1609	232	1610	233	1611	234	1612	235	1613	236	1614				
238	1615	239	1616	240	1617	241	1618	242	1619	243	1620	244	1621	245	1622				
247	1623	248	1624	249	1625	250	1626	251	1627	252	1628	253	1629	254	1630				
256	1631	257	1632	258	1633	259	1634	260	1635	261	1636	262	1637	263	1638				
265	1639	266	1640	267	1641	268	1642	269	1643	270	1644	271	1645	272	1646				
274	1647	275	1648	276	1649	277	1650	278	1651	279	1652	280	1653	281	1654				
283	1655	284	1656	285	1657	286	1658	287	1659	288	1660	289	1661	290	1662				
292	1663	293	1664	294	1665	295	1666	296	1667	297	1668	298	1669	299	1670				
301	1671	302	1672	303	1673	304	1674	305	1675	306	1676	307	1677	308	1678				
310	1679	311	1680	312	1681	313	1682	314	1683	315	1684	316	1685	317	1686				
319	1687	320	1688	321	1689	322	1690	323	1691	324	1692	325	1693	326	1694				
328	1695	329	1696	330	1697	331	1698	332	1699	333	1700	334	1701	335	1702				
337	1703	338	1704	339	1705	340	1706	341	1707	342	1708	343	1709	344	1710				
346	1711	347	1712	348	1713	349	1714	350	1715	351	1716	352	1717	353	1718				
355	1719	356	1720	357	1721	358	1722	359	1723	360	1724	361	1725	362	1726				
363	1727	364	1728	365	1729	366	1730	367	1731	368	1732	369	1733	370	1734				
372	1735	373	1736	374	1737	375	1738	376	1739	377	1740	378	1741	379	1742				
381	1743	382	1744	383	1745	384	1746	385	1747	386	1748	387	1749	388	1750				
390	1751	391	1752	392	1753	393	1754	394	1755	395	1756	396	1757	397	1758				
399	1759	400	1760	401	1761	402	1762	403	1763	404	1764	405	1765	406	1766				
408	1767	409	1768	410	1769	411	1770	412	1771	413	1772	414	1773	415	1774				
417	1775	418	1776	419	1777	420	1778	421	1779	422	1780	423	1781	424	1782				
426	1783	427	1784	428	1785	429	1786	430	1787	431	1788	432	1789	433	1790				
435	1791	436	1792	437	1793	438	1794	439	1795	440	1796	441	1797	442	1798				
444	1799	445	1800	446	1801	447	1802	448	1803	449	1804	450	1805	451	1806				
452	1807	453	1808	454	1809	455	1810	456	1811	457	1812	458	1813	459	1814				
461	1815	462	1816	463	1817	464	1818	465	1819	466	1820	467	1821	468	1822				
470	1823	471	1824	472	1825	473	1826	474	1827	475	1828	476	1829	477	1830				
479	1831	480	1832	481	1833	482	1834	483	1835	484	1836	485	1837	486	1838				
488	1839	489	1840	490	1841	491	1842	492	1843	493	1844	494	1845	495	1846				
497	1847	498	1848	499	1849	500	1850	501	1851	502	1852	503	1853	504	1854				
506	1855	507	1856	508	1857	509	1858	510	1859	511	1860	512	1861	513	1862				
515	1863	516	1864	517	1865	518	1866	519	1867	520	1868	521	1869	522	1870				
524	1871	525	1872	526	1873	527	1874	528	1875	529	1876	530	1877	531	1878				
533	1879	534	1880	535	1881	536	1882	537	1883	538	1884	539	1885	540	1886				
542	1887	543	1888	544	1889	545	1890	546	1891	547	1892	548	1893	549	1894				
551	1895	552	1896	553	1897	554	1898	555	1899	556	1900	557	1901	558	1902				
560	1903	561	1904	562	1905	563	1906	564	1907	565	1908	566	1909	567	1910				
569	1911	570	1912	571	1913	572	1914	573	1915	574	1916	575	1917	576	1918				
578	1919	579	1920	580	1921	581	1922	582	1923	583	1924	584	1925	585	1926				
587	1927	588	1928	589	1929	590	1930	591	1931	592	1932	593	1933	594	1934				
596	1935	597	1936	598	1937	599	1938	600	1939	601	1940	602	1941	603	1942				
605	1943	606	1944	607	1945	608	1946	609	1947	610	1948	611	1949	612	1950				
614	1951	615	1952	616	1953	617	1954	618	1955	619	1956	620	1957	621	1958				
623	1959	624	1960	625	1961	626	1962	627	1963	628	1964	629	1965	630	1966				
632	1967	633	1968	634	1969	635	1970	636	1971	637	1972	638	1973	639	1974				
641	1975	642	1976	643	1977	644	1978	645	1979	646	1980	647	1981	648	1982				
650	1983	651	1984	652	1985	653	1986	654	1987	655	1988	656	1989	657	1990				
659	1991	660	1992	661	1993	662	1994	663	1995	664	1996	665	1997	666	1998				
668	1999	669	2000	670	2001	671	2002	672	2003	673	2004	674	2005	675	2006				
677	2007	678	2008	679	2009	680	2010	681	2011	6									

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 7000
INPUT

Downstream Deck/Roadway Coordinates

[illegible]

1173.3 1419.1 1173.4 1421.5 1176 1422 1179 1423 1196 1424

1298 1428 1212.5 1428 1212.6 1431

Manning's n Values num= 3 Sta n Val 1296 .895

596 .835 765 Sta n Val

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 5110

INPUT

Description:

Station Elevation Data num= 27

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

852 1422 863.5 1421.43 863.6 1419.2 867.5 1415.9 890 1412.6

858 1404.5 858 1403.9 8618 1402.9 8618 1402.9 8650 1409.8

865 1409.8 865 1409.8 865 1409.8 865 1409.8 865 1409.8

1129 1424 1135 1425 1135 1425 1142 1426 1146 1428

1154 1428 1154.1 1431

Manning's n Values num= 3 Sta n Val

Sta n Val

826 .835 826 .83 1149 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 4836

INPUT

Description:

Station Elevation Data num= 34

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

715 1429 720 1430 725 1431 750 1431.4 790 1431

793 1430 796 1429 800 1428 808 1425 811.1 1424

815 1425 815 1425 815 1425 815 1425 815 1425

860 1415.3 860 1408.6 869 1402.5 869 1401.4 869 1401.4

1842 1401.4 1850 1402.6 1160 1411.8 1148 1415.9 1141.8 1419.2

1141.9 1421.4 1146 1422 1167 1423 1176 1424 1182 1425

1189 1426 1195 1427 1192 1426 1202.1 1431

Manning's n Values num= 3 Sta n Val

Sta n Val

715 .835 880 .83 1282 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 4584

INPUT

Description:

Station Elevation Data num= 31

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

735 1428 741 1429 780 1429.7 842 1429 846 1428

847 1427 851 1427 851 1427 851 1427 851 1427

887 1422 891.5 1421.5 891.6 1419.3 894.5 1415.9 890 1417.9

958 1405.9 968 1401.9 1060 1401.9 1162 1401.9 1050 1406.6

1162 1406.6 1162 1406.6 1162 1406.6 1162 1406.6 1162 1406.6

1129 1424 1132 1425 1135 1426 1138 1427 1144 1428

1144.1 1431

Manning's n Values num= 3 Sta n Val

Sta n Val

735 .835 851 .83 1138 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 4449

INPUT

Description:

Station Elevation Data num= 32

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

748 1427 754 1428 790 1428.7 842 1428 845 1427

847 1426 859 1425 852 1424 854 1423 858 1422

892 1401.6 892 1401.6 892 1401.6 892 1401.6 892 1401.6

962 1401.6 962 1401.6 962 1401.6 962 1401.6 962 1401.6

1133.5 1418.9 1134.8 1421.36 1134.9 1421.36 1136 1422 1140 1423

1158 1424 1162 1425 1167 1426 1170 1427 1174 1428

1177 1428 1177.1 1431

Manning's n Values num= 3 Sta n Val

Sta n Val

748 .835 740 .83 1170 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 4275

INPUT

Description:

Station Elevation Data num= 31

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

883 1430 883.1 1427 818 1427 838 1426 843 1425

855.5 1424 860 1423 873 1422 877.5 1421.3 877.6 1419.2

878 1418.9 880 1415.2 890 1404.1 893 1402.6

1135 1423 1145 1424 1155 1424.3 1164 1424 1172 1423.7

1182 1424 1188 1425 1197 1426 1207 1427 1215 1427

1215.1 1430

Manning's n Values num= 3 Sta n Val

Sta n Val

883 .835 883 .83 1215.1 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 3990

INPUT

Description:

Station Elevation Data num= 34

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

786.9 1432 781 1429 784 1429 786 1428 790 1427

815 1427 815 1427 815 1427 815 1427 815 1427

848 1421.5 848.1 1419.2 859 1418.9 900 1409.3 956 1402.4

1090 1402.1 1050 1402.2 1180 1402.7 1150 1402.4 1200 1402.4

1385.1 1422.2 1390 1402.2 1402 1402.2 1402 1402.2

1385.1 1422.2 1390 1402.2 1402 1402.2 1402 1402.2

1440 1426 1451 1427 1460 1427 1460.1 1438 1425

Manning's n Values num= 3 Sta n Val

Sta n Val

786.9 .835 799 .83 1460 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 3780

INPUT

Description:

Station Elevation Data num= 32

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

745 1427 751 1428 770 1428.5 791 1428 866 1427

818 1426 818 1426 826 1424 853 1423 866 1422

873.1 1421.4 873.2 1419.2 876 1418.9 900 1414.7 950 1404.7

1090 1402.4 1250 1403.1 1380 1411.9 1338 1415.9 1340 1415.5

1346.1 1421.4 1346 1423 1361 1424 1364.5 1425 1369 1426

1371 1427 1371 1430

Manning's n Values num= 3 Sta n Val

Sta n Val

745 .835 804 .83 1371 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 3370

INPUT

Description:

Station Elevation Data num= 30

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

725 1426.5 733 1426 737 1425 755 1424.6 777 1425

815 1421.5 815 1421.5 815 1421.5 815 1421.5 815 1421.5

895.4 1421.5 895.5 1419.2 897.5 1418.9 925 1417.8 975 1402.9

1090 1403 1035 1403.1 1075 1404.7 1125 1404.7 1175 1414.5

1255 1426 1264 1427 1275 1427 1283 1428 1394 1435

Manning's n Values num= 3 Sta n Val

Sta n Val

725 .835 725 .83 1264 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

RIVER: Menifee Valley

REACH: menifee ADP

RS: 3070

INPUT

Description:

Station Elevation Data num= 29

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev

628 1422 628 1422 628 1422 628 1422 628 1422

873 1427 877 1427 879.4 1421.3 879.5 1419.5 883 1418.9

960 1415.3 950 1405.1 965 1402 1080 1402 1080 1402

1100 1402.1 1150 1402.1 1200 1402.1 1250 1402.1 1290 1411.5

1300 1402.1 1300 1402.1 1300 1402.1 1300 1402.1 1300 1402.1

1306 1425 1334 1427 1340 1428 1350 1428

Manning's n Values num= 3 Sta n Val

Sta n Val

628 .835 740 .83 1170 .895

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. .1 .3

CROSS SECTION

Manning's n Values
Sta n Val Sta n Val
825.9 .635 831 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
831 1340 260 260 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2810

INPUT

Description:
Station Elevation Data num= 20
Sta Elev Sta Elev Sta Elev Sta Elev
832 1431 833 1428 839 1427 841 1426 848 1425
855 1424 862 1422 866 1420 874 1419 886 1418
887 1418 894 1416 901 1414 908 1412 915 1410
1256 1404.3 1309 1415.3 1329 1418.9 1353 1421.4 1378 1424.6
1350 1424 1345 1425 1335 1427 1360 1427.5 1366.1 1436.5
Manning's n Values num= 3
Sta n Val Sta n Val
832 .635 833 .63 835 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
833 1335 260 260 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2610

INPUT

Description:
Station Elevation Data num= 28
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
869 1431 869.1 1428 875 1425 884 1423 896 1422
899 1421 906 1419 1010 1401.9 1069 1402.2 1110 1402.7 1160 1402.4
1219 1402.2 1260 1409.7 1320 1409.2 1332.3 1415.4 1332.4 1421.8
1353 1422 1360 1422 1365 1422 1370 1422 1374 1422 1385 1422 1390 1422 1396 1422 1400 1422
Manning's n Values num= 3
Sta n Val Sta n Val
869 .635 869.1 .63 874 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
869.1 1394 113 113 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2497

INPUT

Description:
Station Elevation Data num= 28
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
886.9 1422 845.4 1421.37 845.5 1419.7 850 1418.9 878 1415.3
925 1406.3 937 1404.4 975 1404.4 1025 1404.8 1053 1404.8
1125 1416.7 1175 1414.4 1223 1419.9 1227.2 1419.3 1227.3 1421.3
1266 1427 1267 1427 1267 1427 1267.1 1430
Manning's n Values num= 3
Sta n Val Sta n Val
886.9 .635 810 .63 1267 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
810 1267 97 97 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2400

INPUT

Description:
Station Elevation Data num= 22
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
881 1424 967.2 1421.4 967.3 1419.4 988 1415.9 979 1411.5
1069 1405.7 1069 1405.7 1026 1405.7 1069 1412.2 1095.5 1418.9
1125 1428 1125 1428 1125 1428 1125 1428 1125 1428 1125 1428 1125 1428
Manning's n Values num= 3
Sta n Val Sta n Val
881 .635 864 .63 1125 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
864 1125 67 67 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2333

INPUT

Description:
Station Elevation Data num= 24
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
883 1405.7 1069 1405.7 1026 1405.7 1069 1412.2 1095.5 1418.9
1125 1428 1125 1428 1125 1428 1125 1428 1125 1428 1125 1428 1125 1428
Manning's n Values num= 3
Sta n Val Sta n Val
883 .635 864 .63 1125 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
864 1125 67 67 .1 .3

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
853.9 1431.3 854 1428.3 857 1425 873 1423 892 1422
895.3 1421.3 895.4 1419.3 900.5 1418.9 928 1415.5 978 1407.8
1015.3 1407.8 1015.3 1407.8 1015.3 1407.8 1015.3 1407.8 1015.3 1407.8
1093.3 1419.8 1091.4 1421.5 1096 1422 1101.5 1423 1108 1425
1113 1426 1121 1428 1153 1427 1168 1428
Manning's n Values num= 3
Sta n Val Sta n Val
853.9 .635 854 .63 1121 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
854 1121 121 121 .1 .3

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2212

INPUT

Description:
Station Elevation Data num= 8
Sta Elev Sta Elev Sta Elev Sta Elev
1429.4 68 1428 169 1427.7 163 1421 213 1412
254 1421 264 1426.8 1120 1429.6
Manning's n Values num= 3
Sta n Val Sta n Val
1429.4 .635 160 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
160 264 56 56 .3 .5

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2159

INPUT

Description:
Station Elevation Data num= 14
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
1429 531 1426.8 544 1426 557 1425 625 1425
661 1426 733.8 1427.7 734.5 1427.7 734.6 1421.25 816.2 1421.25
816.3 1427.7 817 1427.7 1630 1426.8 1633 1425.6
Manning's n Values num= 3
Sta n Val Sta n Val
1429 .635 734.5 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
734.5 816.3 2 3.25 3.25
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
816.3 1427.7 F
816.3 1427.7 F

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2156

INPUT

Description:
Station Elevation Data num= 14
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
1429 531 1426.8 544 1426 557 1425 625 1425
661 1426 733.8 1427.7 734.5 1427.7 734.6 1421.25 816.2 1421.25
813.9 1427.7 814.6 1427.7 1630 1426.8 1633 1425.6
Manning's n Values num= 3
Sta n Val Sta n Val
1429 .635 736.9 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
736.9 813.9 2 25.75 25.75
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
813.9 1427.7 F
813.9 1427.7 F

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2130

INPUT

Description: This is a REPEATED section.
Station Elevation Data num= 32
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
868 1428.9 878 1430.1 912 1430.1 954 1428.1 966 1428.4
987 1425.9 989.9 1417.9 999.8 1417.9 999.8 1417.9 999.8 1417.9
1000.4 1417.9 1010.4 1417.9 1010.4 1417.9 1010.4 1417.9 1010.4 1417.9
1021.1 1417.9 1021.2 1427.9 1024 1427.9 1027 1428.4 1027 1428.4
1027 1428.4 1027 1428.4 1027 1428.4 1027 1428.4 1027 1428.4 1027 1428.4
1341 1429.9 1252 1430.9
Manning's n Values num= 3
Sta n Val Sta n Val
868 .635 979 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
979 1021.2 2 1 1
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
868 1429.9 F
868 1429.9 F

CROSS SECTION

RIVER: Menifee Valley
REACH: menifee ADP RS: 2130

INPUT

Description: This is a REPEATED section.
Station Elevation Data num= 32
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
868 1428.9 878 1430.1 912 1430.1 954 1428.1 966 1428.4
987 1425.9 989.9 1417.9 999.8 1417.9 999.8 1417.9 999.8 1417.9
1000.4 1417.9 1010.4 1417.9 1010.4 1417.9 1010.4 1417.9 1010.4 1417.9
1021.1 1417.9 1021.2 1427.9 1024 1427.9 1027 1428.4 1027 1428.4
1027 1428.4 1027 1428.4 1027 1428.4 1027 1428.4 1027 1428.4 1027 1428.4
1341 1429.9 1252 1430.9
Manning's n Values num= 3
Sta n Val Sta n Val
868 .635 979 .635
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
979 1021.2 2 1 1
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
868 1429.9 F
868 1429.9 F

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

Reach	River Sta.	Contr.	Expan.
1	100	100	100
2	200	200	200
3	300	300	300
4	400	400	400
5	500	500	500
6	600	600	600
7	700	700	700
8	800	800	800
9	900	900	900
10	1000	1000	1000
11	1100	1100	1100
12	1200	1200	1200
13	1300	1300	1300
14	1400	1400	1400
15	1500	1500	1500
16	1600	1600	1600
17	1700	1700	1700
18	1800	1800	1800
19	1900	1900	1900
20	2000	2000	2000
21	2100	2100	2100
22	2200	2200	2200
23	2300	2300	2300
24	2400	2400	2400
25	2500	2500	2500
26	2600	2600	2600
27	2700	2700	2700
28	2800	2800	2800
29	2900	2900	2900
30	3000	3000	3000
31	3100	3100	3100
32	3200	3200	3200
33	3300	3300	3300
34	3400	3400	3400
35	3500	3500	3500
36	3600	3600	3600
37	3700	3700	3700
38	3800	3800	3800
39	3900	3900	3900
40	4000	4000	4000
41	4100	4100	4100
42	4200	4200	4200
43	4300	4300	4300
44	4400	4400	4400
45	4500	4500	4500
46	4600	4600	4600
47	4700	4700	4700
48	4800	4800	4800
49	4900	4900	4900
50	5000	5000	5000
51	5100	5100	5100
52	5200	5200	5200
53	5300	5300	5300
54	5400	5400	5400
55	5500	5500	5500
56	5600	5600	5600
57	5700	5700	5700
58	5800	5800	5800
59	5900	5900	5900
60	6000	6000	6000
61	6100	6100	6100
62	6200	6200	6200
63	6300	6300	6300
64	6400	6400	6400
65	6500	6500	6500
66	6600	6600	6600
67	6700	6700	6700
68	6800	6800	6800
69	6900	6900	6900
70	7000	7000	7000
71	7100	7100	7100
72	7200	7200	7200
73	7300	7300	7300
74	7400	7400	7400
75	7500	7500	7500
76	7600	7600	7600
77	7700	7700	7700
78	7800	7800	7800
79	7900	7900	7900
80	8000	8000	8000
81	8100	8100	8100
82	8200	8200	8200
83	8300	8300	8300
84	8400	8400	8400
85	8500	8500	8500
86	8600	8600	8600
87	8700	8700	8700
88	8800	8800	8800
89	8900	8900	8900
90	9000	9000	9000
91	9100	9100	9100

APPENDIX G

WSPGW Analysis for Interim (Velocity) Condition

Culvert at Briggs & Holland

Regional (RCFC) Channel

Channel B

Channel A

Channel C

WSPGW Analysis for Culvert at Briggs & Holland
Interim (Velocity) Analysis

T1	MENIFEE VALLEY ADP - Interim Condition										0
T2	Culvert Crossing under Briggs and Holland (5)-14'x8.5' RCB										
T3	JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: INTCULBRIGHOL.WSW										
SO	3446.790	1422.000	1							1428.900	
TS	3448.790	1422.000	3		.030						.000
BX	3448.790	1422.000	2								
R	3570.000	1422.000	2		.014						7.000
R	3755.000	1422.000	2		.014						-3.5000
R	4059.580	1422.000	2		.014						.000
WE	4059.580	1422.000	2		.500						
TS	4072.770	1422.000	5		.014						.000
SH	4072.770	1422.000	5							1422.000	
CD	1	1	0	.000	10.000	92.500	3.000	3.000		.00	
CD	2	3	4	1.000	8.500	74.000	.000	.000		.00	
CD	3	1	0	.000	10.000	74.000	.000	.000		.00	
CD	5	2	4	1.000	10.000	74.000	.000	.000		.00	
Q				2066.000	.0						

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-17-2007 Time: 3:59:11

MENIFEE VALLEY ADP - Interim Condition

0

Culvert Crossing under Briggs and Holland (5)-14'x8.5' RCB

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: INTCULBRIGHOL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3446.790	1422.000	6.900	1428.900	2066.00	2.65	.11	1429.01	.00	2.43	133.90	10.000	92.500	3.00	0 .0
TRANS STR	.0000					.0005	.00	6.90	.19		.030	.00	3.00	TRAP
3448.790	1422.000	6.826	1428.826	2066.00	4.09	.26	1429.09	.05	2.89	74.00	10.000	74.000	.00	0 .0
BRIDGE EXIT														
3448.790	1422.000	6.791	1428.791	2066.00	4.35	.29	1429.08	.04	3.00	74.00	8.500	74.000	.00	4 1.0
121.210	.0000					.0003	.04	6.83	.30	.00	.014	.00	.00	BOX
3570.000	1422.000	6.833	1428.833	2066.00	4.32	.29	1429.12	.01	3.00	74.00	8.500	74.000	.00	4 1.0
185.000	.0000					.0003	.06	6.85	.30	.00	.014	.00	.00	BOX
3755.000	1422.000	6.897	1428.897	2066.00	4.28	.28	1429.18	.00	3.00	74.00	8.500	74.000	.00	4 1.0
304.580	.0000					.0003	.09	6.90	.30	.00	.014	.00	.00	BOX
4059.580	1422.000	6.997	1428.997	2066.00	4.22	.28	1429.27	.00	3.00	74.00	8.500	74.000	.00	4 1.0
WALL ENTRANCE														
4059.580	1422.000	7.060	1429.060	2066.00	3.95	.24	1429.30	.00	2.89	74.00	8.500	74.000	.00	0 .0
TRANS STR	.0000					.0002	.00	7.06	.26		.014	.00	.00	BOX
4072.770	1422.000	7.039	1429.039	2066.00	4.19	.27	1429.31	.00	3.00	74.00	10.000	74.000	.00	4 1.0

WSPGW Analysis for Regional (RCFC) Channel
Interim (Velocity) Analysis

T1 MENIFEE VALLEY ADP - REGIONAL CHANNEL										0
T2 VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER										
T3 JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTVANGLE.WSW										
S0	4072.770	1422.000	1						1429.039	
TS	4200.000	1422.090	3	.014					.000	
TS	4295.100	1422.190	5	.014					-0.600	
TS	4419.040	1422.308	5	.025					-0.032	
TS	4500.710	1422.390	5	.025					-2.028	
R	5429.800	1423.309	5	.025					-15.200	
R	5642.650	1423.532	5	.025					-3.480	
R	5887.450	1423.777	5	.025					-3.860	
R	6900.000	1424.790	5	.025					-16.700	
R	6950.000	1424.840	5	.014					-0.819	
R	7100.000	1424.990	5	.025					-0.819	
R	7206.840	1425.097	5	.025					-1.750	
R	7682.760	1425.573	5	.025					.000	-2.669
TS	8034.350	1425.925	9	.025					.000	
R	8041.100	1425.932	9	.025					.000	2.226
TS	8105.370	1425.996	10	.025					.000	
TS	8139.690	1426.030	11	.025					.000	
TS	8301.730	1426.192	12	.025					.000	
R	9310.340	1427.201	12	.025					.000	
TS	9343.910	1427.235	14	.025					.000	
TS	9408.490	1428.797	16	.025					.000	
R	9456.490	1428.845	16	.041					.000	
JX	9458.490	1428.847	16	16.041		699.0		1428.847	00.0	.000
TS	9499.470	1428.888	17	.014					.000	
BX	9499.470	1428.888	18							
R	9590.090	1428.979	18	.014					-20.600	
R	9630.090	1429.019	18	.014					.000	
R	9721.960	1429.111	18	.014					20.900	
WE	9721.960	1429.111	19	.500						
SH	9721.960	1429.111	19					1429.111		
CD	1	1	0	.000	10.000	74.000	.300	.300	4.44	
CD	3	1	0	.000	10.000	87.000	2.000	2.000	5.22	
CD	5	1	0	.000	10.000	100.000	4.000	4.000	6.00	
CD	7	1	0	.000	8.500	74.000	.000	.000	.00	
CD	8	3	4	1.000	7.500	74.000	.000	.000	.00	
CD	9	1	0	.000	10.000	80.000	4.000	4.000	4.80	
CD	10	1	0	.000	10.000	80.000	4.000	4.000	4.80	
CD	11	1	0	.000	10.000	80.000	4.000	4.000	4.80	
CD	12	1	0	.000	10.000	78.000	4.000	4.000	4.68	
CD	14	1	0	.000	10.000	95.000	4.000	4.000	5.70	
CD	15	1	0	.000	10.000	81.000	4.000	4.000	4.86	
CD	16	1	0	.000	10.000	81.000	4.000	4.000	4.86	
CD	17	2	0	.000	10.000	59.000	.000	.000	.00	
CD	18	3	3	1.000	7.000	59.000	.000	.000	.00	
CD	19	2	3	1.000	10.000	59.000	.000	.000	.00	
Q				1367.000						

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:15:10

MENIFEE VALLEY ADP - REGIONAL CHANNEL

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTVANGLE.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
4072.770	1422.000	7.039	1429.039	2066.00	3.97	.24	1429.28	.00	3.07	78.00	10.000	74.000	.30	0 .0
TRANS STR	.0007					.0001	.01	7.04	.27		.014	-5.22	.30	TRAP
4200.000	1422.090	7.076	1429.166	2066.00	3.02	.14	1429.31	.00	2.78	113.57	10.000	87.000	2.00	0 .0
TRANS STR	.0011					.0001	.01	7.08	.22		.014	-6.00	2.00	TRAP
4295.100	1422.190	7.037	1429.227	2066.00	2.43	.09	1429.32	.00	2.57	152.30	10.000	100.000	4.00	0 .0
TRANS STR	.0010					.0002	.02	7.04	.18		.025	-6.00	4.00	TRAP
4419.040	1422.308	6.939	1429.247	2066.00	2.47	.10	1429.34	.02	2.57	151.52	10.000	100.000	4.00	0 .0
TRANS STR	.0010					.0002	.02	6.96	.19		.025	-6.00	4.00	TRAP
4500.710	1422.390	6.871	1429.261	2066.00	2.51	.10	1429.36	.00	2.57	150.97	10.000	100.000	4.00	0 .0
312.513	.0010					.0002	.06	6.88	.19	4.37	.025	-6.00	4.00	TRAP
4813.223	1422.699	6.616	1429.315	2066.00	2.63	.11	1429.42	.01	2.57	148.92	10.000	100.000	4.00	0 .0
312.423	.0010					.0002	.07	6.62	.20	4.37	.025	-6.00	4.00	TRAP
5125.646	1423.008	6.368	1429.376	2066.00	2.76	.12	1429.49	.01	2.57	146.95	10.000	100.000	4.00	0 .0
304.154	.0010					.0003	.08	6.37	.22	4.37	.025	-6.00	4.00	TRAP
5429.800	1423.309	6.137	1429.446	2066.00	2.89	.13	1429.58	.01	2.57	145.10	10.000	100.000	4.00	0 .0
212.850	.0010					.0003	.06	6.14	.23	4.30	.025	-6.00	4.00	TRAP
5642.650	1423.532	5.969	1429.501	2066.00	2.99	.14	1429.64	.01	2.57	143.75	10.000	100.000	4.00	0 .0
244.800	.0010					.0003	.08	5.98	.24	4.36	.025	-6.00	4.00	TRAP

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:15:10

MENIFEE VALLEY ADP - REGIONAL CHANNEL

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTVANGLE.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
5887.450	1423.777	5.795	1429.572	2066.00	3.10	.15	1429.72	.01	2.57	142.36	10.000	100.000	4.00	0 .0
328.311	.0010					.0004	.12	5.80	.25	4.36	.025	-6.00	4.00	TRAP
6215.761	1424.105	5.576	1429.681	2066.00	3.25	.16	1429.85	.01	2.57	140.61	10.000	100.000	4.00	0 .0
345.743	.0010					.0004	.15	5.58	.27	4.36	.025	-6.00	4.00	TRAP
6561.503	1424.451	5.364	1429.815	2066.00	3.41	.18	1430.00	.01	2.57	138.91	10.000	100.000	4.00	0 .0
338.496	.0010					.0005	.17	5.37	.29	4.36	.025	-6.00	4.00	TRAP
6900.000	1424.790	5.178	1429.968	2066.00	3.56	.20	1430.16	.01	2.57	137.42	10.000	100.000	4.00	0 .0
50.000	.0010					.0002	.01	5.19	.31	3.19	.014	-6.00	4.00	TRAP
6950.000	1424.840	5.132	1429.972	2066.00	3.60	.20	1430.17	.00	2.57	137.06	10.000	100.000	4.00	0 .0
150.000	.0010					.0006	.08	5.14	.31	4.36	.025	-6.00	4.00	TRAP
7100.000	1424.990	5.060	1430.050	2066.00	3.66	.21	1430.26	.01	2.57	136.48	10.000	100.000	4.00	0 .0
106.840	.0010					.0006	.06	5.07	.32	4.36	.025	-6.00	4.00	TRAP
7206.840	1425.097	5.012	1430.109	2066.00	3.70	.21	1430.32	.00	2.57	136.10	10.000	100.000	4.00	0 .0
475.920	.0010					.0006	.31	5.01	.32	4.36	.025	-6.00	4.00	TRAP
7682.760	1425.573	4.822	1430.395	2066.00	3.88	.23	1430.63	.00	2.57	134.58	10.000	100.000	4.00	0 .0
TRANS STR	.0010					.0009	.32	4.82	.34		.025	-4.80	4.00	TRAP
8034.350	1425.925	4.691	1430.616	2066.00	4.77	.35	1430.97	.00	2.85	114.33	10.000	80.000	4.00	0 .0
6.750	.0010					.0011	.01	4.69	.43	4.78	.025	-4.80	4.00	TRAP

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:15:10

MENIFEE VALLEY ADP - REGIONAL CHANNEL

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTVANGLE.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip	
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	

8041.100	1425.932	4.692	1430.624	2066.00	4.77	.35	1430.98	.00	2.85	114.34	10.000	80.000	4.00	0	.0
TRANS STR	.0010					.0011	.07	4.69	.43		.025	-4.80	4.00	TRAP	
8105.370	1425.996	4.701	1430.697	2066.00	4.76	.35	1431.05	.00	2.85	114.41	10.000	80.000	4.00	0	.0
TRANS STR	.0010					.0011	.04	4.70	.43		.025	-4.80	4.00	TRAP	
8139.690	1426.030	4.706	1430.736	2066.00	4.75	.35	1431.09	.00	2.85	114.45	10.000	80.000	4.00	0	.0
TRANS STR	.0010					.0011	.18	4.71	.43		.025	-4.68	4.00	TRAP	
8301.730	1426.192	4.715	1430.907	2066.00	4.83	.36	1431.27	.00	2.89	112.60	10.000	78.000	4.00	0	.0
1008.609	.0010					.0011	1.10	4.72	.44	4.87	.025	-4.68	4.00	TRAP	
9310.340	1427.201	4.822	1432.023	2066.00	4.70	.34	1432.37	.00	2.89	113.45	10.000	78.000	4.00	0	.0
TRANS STR	.0010					.0009	.03	4.82	.42		.025	-5.70	4.00	TRAP	
9343.910	1427.235	4.948	1432.183	2066.00	3.92	.24	1432.42	.00	2.63	130.78	10.000	95.000	4.00	0	.0
TRANS STR	.0242					.0033	.21	4.95	.34		.025	-4.86	4.00	TRAP	
9408.490	1428.797	2.968	1431.765	2066.00	8.25	1.06	1432.82	.00	2.84	101.50	10.000	81.000	4.00	0	.0
1.730	.0010					.0146	.03	2.97	.93	6.27	.041	-4.86	4.00	TRAP	
9410.221	1428.799	3.088	1431.886	2066.00	7.87	.96	1432.85	.00	2.84	102.46	10.000	81.000	4.00	0	.0
3.176	.0010					.0126	.04	3.09	.87	6.27	.041	-4.86	4.00	TRAP	
9413.396	1428.802	3.212	1432.014	2066.00	7.50	.87	1432.89	.00	2.84	103.46	10.000	81.000	4.00	0	.0
5.006	.0010					.0109	.05	3.21	.81	6.27	.041	-4.86	4.00	TRAP	

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:15:10

MENIFEE VALLEY ADP - REGIONAL CHANNEL

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTVANGLE.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
9418.402	1428.807	3.341	1432.148	2066.00	7.16	.79	1432.94	.00	2.84	104.49	10.000	81.000	4.00	0 .0
7.319	.0010					.0095	.07	3.34	.76	6.27	.041	-4.86	4.00	TRAP
9425.722	1428.814	3.476	1432.290	2066.00	6.82	.72	1433.01	.00	2.84	105.57	10.000	81.000	4.00	0 .0
10.241	.0010					.0082	.08	3.48	.71	6.27	.041	-4.86	4.00	TRAP
9435.963	1428.824	3.615	1432.439	2066.00	6.50	.66	1433.10	.00	2.84	106.68	10.000	81.000	4.00	0 .0
13.938	.0010					.0071	.10	3.61	.66	6.27	.041	-4.86	4.00	TRAP
9449.900	1428.838	3.759	1432.598	2066.00	6.20	.60	1433.20	.00	2.84	107.84	10.000	81.000	4.00	0 .0
6.591	.0010					.0064	.04	3.76	.62	6.27	.041	-4.86	4.00	TRAP
9456.490	1428.845	3.817	1432.662	2066.00	6.09	.58	1433.24	.00	2.84	108.29	10.000	81.000	4.00	0 .0
JUNCT STR	.0010					.0039	.01	3.82	.61		.041	-4.86	4.00	TRAP
9458.490	1428.847	4.376	1433.223	1367.00	3.41	.18	1433.40	.00	2.22	112.77	10.000	81.000	4.00	0 .0
TRANS STR	.0010					.0003	.01	4.38	.32		.014	.00	4.00	TRAP
9499.470	1428.888	4.203	1433.091	1367.00	5.51	.47	1433.56	.22	2.55	59.00	10.000	59.000	.00	0 .0
BRIDGE EXIT														
9499.470	1428.888	4.131	1433.019	1367.00	5.91	.54	1433.56	.12	2.65	59.00	7.000	59.000	.00	3 1.0
90.620	.0010					.0009	.08	4.25	.53	3.92	.014	.00	.00	BOX
9590.090	1428.979	4.115	1433.094	1367.00	5.93	.55	1433.64	.00	2.65	59.00	7.000	59.000	.00	3 1.0
40.000	.0010					.0009	.04	4.11	.53	3.93	.014	.00	.00	BOX

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:15:10

MENIFEE VALLEY ADP - REGIONAL CHANNEL

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTVANGLE.WSW

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | | | | | | | | | |
*****
9630.090 | 1429.019 | 4.108 | 1433.127 | 1367.00 | 5.94 | .55 | 1433.68 | .12 | 2.65 | 59.00 | 7.000 | 59.000 | .00 | 3 1.0
| | | | | | | | | | | | | | |
91.870 | .0010 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
9721.960 | 1429.111 | 4.094 | 1433.205 | 1367.00 | 5.96 | .55 | 1433.76 | .25 | 2.65 | 59.00 | 7.000 | 59.000 | .00 | 3 1.0
| | | | | | | | | | | | | | |
WALL ENTRANCE
| | | | | | | | | | | | | | |
9721.960 | 1429.111 | 4.234 | 1433.345 | 1367.00 | 5.47 | .46 | 1433.81 | .22 | 2.55 | 59.00 | 10.000 | 59.000 | .00 | 0 .0
| | | | | | | | | | | | | | |

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WSPGW Analysis for Channel B
Interim (Velocity) Analysis

[illegible]

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:41:35

MENIFEE VALLEY ADP - CHANNEL B

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
9721.960	1429.111	4.234	1433.345	1367.00	3.73	.22	1433.56	.00	2.24	102.06	10.000	81.000	3.00	0 .0
TRANS STR	.0010					.0002	.00	4.23	.35		.014	-7.02	2.50	TRAP
9745.070	1429.134	4.322	1433.456	1367.00	2.90	.13	1433.59	.00	1.91	116.98	7.000	116.980	.00	0 .0
TRANS STR	.0010					.0003	.00	4.32	.25		.014	-3.85	.00	TRAP
****CHANGE IN STATIONING STATION = 9756.750 = NEW STATION 1035.000****														
1035.000	1429.146	4.159	1433.305	1367.00	5.33	.44	1433.75	.00	2.58	64.17	7.000	64.170	.00	0 .0
JUNCT STR	.0156					.0010	.06	4.16	.47		.025	-3.00	.00	TRAP
1100.000	1430.160	3.911	1434.071	626.80	2.58	.10	1434.17	.00	1.76	79.29	7.500	50.000	4.00	0 .0
230.000	.0010					.0005	.11	3.91	.26	3.11	.025	-3.00	4.00	TRAP
1330.000	1430.390	3.778	1434.168	626.80	2.70	.11	1434.28	.00	1.76	78.22	7.500	50.000	4.00	0 .0
JUNCT STR	.0010					.0005	.00	3.78	.28		.025	-3.00	4.00	TRAP
1340.000	1430.400	3.781	1434.181	614.10	2.64	.11	1434.29	.00	1.74	78.25	7.500	50.000	4.00	0 .0
258.568	.0010					.0005	.13	3.78	.27	3.08	.025	-3.00	4.00	TRAP
1598.568	1430.659	3.642	1434.301	614.10	2.77	.12	1434.42	.00	1.74	77.14	7.500	50.000	4.00	0 .0
1.432	.0010					.0005	.00	3.64	.29	3.08	.025	-3.00	4.00	TRAP
1600.000	1430.660	3.641	1434.301	614.10	2.77	.12	1434.42	.00	1.74	77.13	7.500	50.000	4.00	0 .0
JUNCT STR	.0010					.0005	.02	3.64	.29		.025	-3.00	4.00	TRAP
1630.000	1430.690	3.628	1434.318	612.10	2.77	.12	1434.44	.00	1.74	77.02	7.500	50.000	4.00	0 .0
TRANS STR	.0009					.0013	.01	3.63	.29		.025	.00	4.00	TRAP

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:41:35

MENIFEE VALLEY ADP - CHANNEL B

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip	
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	

1641.000	1430.700	3.455	1434.155	612.10	5.54	.48	1434.63	.00	2.25	32.00	5.000	32.000	.00	0	.0
BRIDGE EXIT															
1641.000	1430.700	3.352	1434.052	612.10	6.09	.58	1434.63	.00	2.35	32.00	5.000	32.000	.00	2	1.0
31.740	.0009					.0013	.04	3.35	.61	3.76	.014	.00	.00	BOX	
1672.740	1430.730	3.369	1434.099	612.10	6.06	.57	1434.67	.00	2.35	32.00	5.000	32.000	.00	2	1.0
JUNCT STR .0014															
1680.000	1430.740	3.376	1434.116	610.40	6.03	.56	1434.68	.00	2.34	32.00	5.000	32.000	.00	2	1.0
25.000	.0012					.0013	.03	3.38	.60	3.44	.014	.00	.00	BOX	
1705.000	1430.770	3.379	1434.149	610.40	6.02	.56	1434.71	.00	2.34	32.00	5.000	32.000	.00	2	1.0
JUNCT STR .0014															
1712.070	1430.780	3.421	1434.202	598.50	5.83	.53	1434.73	.00	2.31	32.00	5.000	32.000	.00	2	1.0
29.930	.0007					.0012	.03	3.42	.57	4.19	.014	.00	.00	BOX	
1742.000	1430.800	3.443	1434.243	598.50	5.79	.52	1434.76	.00	2.31	32.00	5.000	32.000	.00	2	1.0
BRIDGE ENTRANCE															
1742.000	1430.800	3.571	1434.371	598.50	5.24	.43	1434.80	.00	2.21	32.00	5.000	32.000	.00	0	.0
TRANS STR .0010															
1762.000	1430.820	3.995	1434.815	598.50	2.40	.09	1434.90	.00	1.72	79.96	7.500	50.000	4.00	0	.0
150.000	.0010					.0004	.06	3.99	.24	3.04	.025	-3.00	4.00	TRAP	

Date: 5-25-2007 Time:11:41:35

MENIFEE VALLEY ADP - CHANNEL B

6

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTVEL.WSW

[illegible]

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:41:35

MENIFEE VALLEY ADP - CHANNEL B

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
2518.000	1431.580	3.378	1434.958	558.10	5.51	.47	1435.43	.00	2.21	32.00	5.000	32.000	.00	2 1.0
15.000	.0007					.0010	.02	3.38	.55	3.99	.014	.00	.00	BOX
2533.000	1431.590	3.387	1434.977	558.10	5.49	.47	1435.45	.00	2.21	32.00	5.000	32.000	.00	2 1.0
JUNCT STR	.0010					.0010	.01	3.39	.54		.014	.00	.00	BOX
2543.000	1431.600	3.396	1434.996	556.20	5.46	.46	1435.46	.00	2.20	32.00	5.000	32.000	.00	2 1.0
15.000	.0013					.0010	.02	3.40	.54	3.10	.014	.00	.00	BOX
2558.000	1431.620	3.390	1435.010	556.20	5.47	.46	1435.47	.00	2.20	32.00	5.000	32.000	.00	2 1.0
JUNCT STR	.0010					.0009	.01	3.39	.54		.014	.00	.00	BOX
2568.000	1431.630	3.459	1435.089	539.80	5.20	.42	1435.51	.00	2.16	32.00	5.000	32.000	.00	2 1.0
42.000	.0010					.0009	.04	3.46	.51	3.42	.014	.00	.00	BOX
2610.000	1431.670	3.458	1435.128	539.80	5.20	.42	1435.55	.05	2.16	32.00	5.000	32.000	.00	2 1.0
BRIDGE ENTRANCE														
2610.000	1431.670	3.555	1435.225	539.80	4.75	.35	1435.57	.05	2.07	32.00	5.000	32.000	.00	0 .0
TRANS STR	.0010					.0010	.15	3.60	.44		.025	-2.70	.00	BOX
2769.540	1431.830	3.831	1435.661	539.80	2.46	.09	1435.76	.00	1.70	73.85	6.000	45.000	4.00	0 .0
158.070	.0010					.0004	.07	3.83	.25	3.00	.025	-2.70	4.00	TRAP
2927.610	1431.990	3.733	1435.723	539.80	2.54	.10	1435.82	.00	1.70	73.06	6.000	45.000	4.00	0 .0
69.720	.0010					.0005	.03	3.73	.26	3.01	.025	-2.70	4.00	TRAP

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:41:35

MENIFEE VALLEY ADP - CHANNEL B

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2997.330	1432.060	3.692	1435.752	539.80	2.58	.10	1435.86	.04	1.70	72.74	6.000	45.000	4.00	0 .0
258.548	.0010					.0005	.13	3.74	.27	3.02	.025	-2.70	4.00	TRAP
3255.878	1432.315	3.557	1435.872	539.80	2.71	.11	1435.99	.05	1.70	71.66	6.000	45.000	4.00	0 .0
46.122	.0010					.0005	.03	3.60	.29	3.02	.025	-2.70	4.00	TRAP
3302.000	1432.360	3.535	1435.896	539.80	2.73	.12	1436.01	.00	1.70	71.48	6.000	45.000	4.00	0 .0
116.840	.0010					.0006	.07	3.54	.29	2.99	.025	-2.70	4.00	TRAP
3418.840	1432.480	3.477	1435.957	539.80	2.79	.12	1436.08	.00	1.70	71.01	6.000	45.000	4.00	0 .0
103.650	.0010					.0006	.06	3.48	.30	3.04	.025	-2.70	4.00	TRAP
3522.490	1432.580	3.435	1436.015	539.80	2.83	.12	1436.14	.06	1.70	70.68	6.000	45.000	4.00	0 .0
64.740	.0011					.0006	.04	3.49	.30	2.95	.025	-2.70	4.00	TRAP
3587.230	1432.650	3.403	1436.053	539.80	2.86	.13	1436.18	.00	1.70	70.42	6.000	45.000	4.00	0 .0
TRANS STR	.0009					.0005	.04	3.40	.31		.025	-4.14	4.00	TRAP
3682.690	1432.740	3.428	1436.168	539.80	2.05	.07	1436.23	.14	1.40	93.67	6.000	69.000	4.00	0 .0
TRANS STR	.0010					.0002	.02	3.57	.22		.025	-7.20	4.00	TRAP
3780.000	1432.840	3.398	1436.238	539.80	1.34	.03	1436.27	.05	1.16	142.38	6.000	120.000	4.00	0 .0
JUNCT STR	.0010					.0001	.00	3.45	.14		.025	-6.30	4.00	TRAP
3790.000	1432.850	3.368	1436.218	450.20	1.26	.02	1436.24	.08	1.09	127.74	7.000	105.000	4.00	0 .0
TRANS STR	.0010					.0001	.01	3.45	.13		.025	-4.86	4.00	TRAP

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:41:35

MENIFEE VALLEY ADP - CHANNEL B

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3837.740	1432.900	3.319	1436.219	450.20	1.57	.04	1436.26	.00	1.18	104.31	10.000	81.000	4.00	0 .0
TRANS STR	.0010					.0002	.01	3.32	.17		.025	-4.32	4.00	TRAP
3900.000	1432.960	3.265	1436.224	450.20	1.76	.05	1436.27	.00	1.24	95.24	9.000	72.000	4.00	0 .0
57.000	.0011					.0002	.01	3.26	.19	2.18	.025	-4.32	4.00	TRAP
3957.000	1433.020	3.217	1436.237	450.20	1.79	.05	1436.29	.00	1.24	94.85	9.000	72.000	4.00	0 .0
TRANS STR	.0010					.0002	.02	3.22	.19		.025	-9.90	4.00	TRAP
4100.000	1433.160	3.145	1436.305	450.20	.95	.01	1436.32	.00	1.03	183.56	8.000	165.000	4.00	0 .0
JUNCT STR	.0010					.0001	.01	3.15	.10		.025	-9.90	4.00	TRAP
4189.000	1433.250	3.064	1436.314	428.00	.94	.01	1436.33	.00	1.01	182.91	8.000	165.000	4.00	0 .0
TRANS STR	.0017					.0001	.00	3.06	.10		.025	.00	4.00	TRAP
4195.000	1433.260	2.777	1436.037	428.00	6.16	.59	1436.63	.00	2.09	25.00	4.500	25.000	.00	0 .0
BRIDGE EXIT														
4195.000	1433.260	2.675	1435.935	428.00	6.67	.69	1436.63	.00	2.15	25.00	4.500	25.000	.00	1 1.0
33.420	.0009					.0016	.05	2.67	.73	3.36	.014	.00	.00	BOX
4228.420	1433.290	2.728	1436.018	428.00	6.54	.66	1436.68	.68	2.15	25.00	4.500	25.000	.00	1 1.0
36.980	.0011					.0016	.06	3.40	.71	3.15	.014	.00	.00	BOX
4265.400	1433.330	2.766	1436.096	428.00	6.45	.65	1436.74	.00	2.15	25.00	4.500	25.000	.00	1 1.0
15.650	.0006					.0015	.02	2.77	.70	3.79	.014	.00	.00	BOX

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:41:35

MENIFEE VALLEY ADP - CHANNEL B

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTVEL.WSW

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | | | | | | | | | |
*****
4281.050 | 1433.340 | 2.792 | 1436.132 | 428.00 | 6.39 | .63 | 1436.77 | .00 | 2.15 | 25.00 | 4.500 | 25.000 | .00 | 1 1.0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
BRIDGE ENTRANCE
4281.050 | 1433.340 | 2.915 | 1436.255 | 428.00 | 5.87 | .54 | 1436.79 | .00 | 2.09 | 25.00 | 4.500 | 25.000 | .00 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
TRANS STR .0030 | | | | | | | | | | | | | | |
.0005 | .01 | 2.92 | .61 | .014 | -3.00 | .00 | BOX
4301.050 | 1433.400 | 3.454 | 1436.854 | 428.00 | 2.06 | .07 | 1436.92 | .00 | 1.41 | 75.63 | 7.500 | 50.000 | 4.00 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -

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WSPGW Analysis for Channel A
Interim (Velocity) Analysis

T1 MENIFEE VALLEY ADP - CHANNEL A 0
 T2 VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER
 T3 JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTVEL.WSW
 SO 1100.0001430.000 1 1434.071
 R 1200.0001430.130 1 .000
 JX 1210.0001430.140 1 7.025 4.300 1432.000 79.3 .000
 TS 1480.0001430.490 1 .000
 JX 1490.0001430.500 1 7.025 4.200 1432.000 68.0 .000
 TS 1716.1501430.790 3 .025 .000
 JX 1797.0001430.900 1 7.025 4.200 1432.000 68.0 .000
 TS 2050.0001431.230 5 .000
 JX 2062.0001431.250 5 7.025 2.900 1432.000 73.0 .000
 TS 2170.0001431.380 6 .025 .000
 R 2200.0001431.410 6 .025 .000
 JX 2260.0001431.490 9 10.025 33.400 1433.230 90.0 .000
 TS 2291.0001431.530 11 .025 .000
 BX 2291.0001431.530 2
 R 2295.0001431.560 2 .014 .000
 JX 2337.0001431.830 2 7 .014 2.000 1432.000 -73.7 .000
 R 2369.0001432.030 2 .014 .000
 R 2382.0001432.110 2 .014 90.000
 BE 2382.0001432.110 12 .500
 TS 2417.1401432.220 13 .014 .000
 SH 2417.1401432.220 13 1432.220
 CD 1 1 0 .000 10.000 28.000 4.000 4.000 1.68
 CD 2 3 2 1.000 4.000 29.000 .000 .000 .00
 CD 3 1 0 .000 10.000 29.000 4.000 4.000 1.74
 CD 5 1 0 .000 10.000 27.000 4.000 4.000 1.62
 CD 6 1 0 .000 10.000 25.000 4.000 4.000 1.50
 CD 7 4 1 .000 2.000 .000 .000 .000 .00
 CD 9 1 0 .000 8.500 29.000 4.000 4.000 1.74
 CD 10 1 0 .000 5.000 23.000 4.000 4.000 .00
 CD 11 1 .000 3.500 29.000 .000 .000 .00
 CD 12 2 0 .000 5.000 29.000 .000 .000 .00
 CD 13 1 0 .000 4.600 10.000 1.000 1.000 .00
 Q 677.000 .0

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:47:58

MENIFEE VALLEY ADP - CHANNEL A

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1100.000	1430.000	4.071	1434.071	728.00	4.19	.27	1434.34	.00	2.53	59.45	10.000	28.000	4.00	0 .0
100.000	.0013					.0004	.04	4.07	.43	2.96	.014	-1.68	4.00	TRAP
1200.000	1430.130	3.959	1434.089	728.00	4.35	.29	1434.38	.00	2.53	58.56	10.000	28.000	4.00	0 .0
JUNCT STR	.0010					.0013	.01	3.96	.45		.025	-1.68	4.00	TRAP
1210.000	1430.140	3.972	1434.112	723.70	4.31	.29	1434.40	.00	2.52	58.66	10.000	28.000	4.00	0 .0
TRANS STR	.0013					.0005	.13	3.97	.45		.014	-1.68	4.00	TRAP
1480.000	1430.490	3.702	1434.192	723.70	4.75	.35	1434.54	.00	2.52	56.50	10.000	28.000	4.00	0 .0
JUNCT STR	.0010					.0017	.02	3.70	.51		.025	-1.68	4.00	TRAP
1490.000	1430.500	3.722	1434.222	719.50	4.69	.34	1434.56	.00	2.52	56.65	10.000	28.000	4.00	0 .0
TRANS STR	.0013					.0016	.35	3.72	.50		.025	-1.74	4.00	TRAP
1716.150	1430.790	3.826	1434.616	719.50	4.41	.30	1434.92	.00	2.48	58.45	10.000	29.000	4.00	0 .0
JUNCT STR	.0014					.0015	.12	3.83	.47		.025	-1.68	4.00	TRAP
1797.000	1430.900	3.828	1434.728	715.30	4.48	.31	1435.04	.00	2.51	57.50	10.000	28.000	4.00	0 .0
TRANS STR	.0013					.0006	.14	3.83	.47		.014	-1.62	4.00	TRAP
2050.000	1431.230	3.572	1434.802	715.30	5.04	.39	1435.20	.00	2.55	54.50	10.000	27.000	4.00	0 .0
JUNCT STR	.0017					.0020	.02	3.57	.55		.025	-1.62	4.00	TRAP
2062.000	1431.250	3.587	1434.837	712.40	4.99	.39	1435.22	.00	2.54	54.62	10.000	27.000	4.00	0 .0
TRANS STR	.0012					.0020	.22	3.59	.54		.025	-1.50	4.00	TRAP

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:47:58

MENIFEE VALLEY ADP - CHANNEL A

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2170.000	1431.380	3.666	1435.046	712.40	5.08	.40	1435.45	.00	2.63	53.33	10.000	25.000	4.00	0 .0
30.000	.0010					.0020	.06	3.67	.55	4.40	.025	-1.50	4.00	TRAP
2200.000	1431.410	3.709	1435.119	712.40	5.00	.39	1435.51	.00	2.63	53.67	10.000	25.000	4.00	0 .0
JUNCT STR	.0013					.0016	.10	3.71	.54		.025	-1.74	4.00	TRAP
2260.000	1431.490	3.883	1435.373	679.00	4.08	.26	1435.63	.00	2.40	58.90	8.500	29.000	4.00	0 .0
TRANS STR	.0013							3.88	.43		.025	.00	4.00	TRAP
2291.000	1431.530	1.731	1433.261	679.00	13.53	2.84	1436.10	.00	2.57	29.00	3.500	29.000	.00	0 .0
BRIDGE EXIT														
2291.000	1431.530	1.923	1433.453	679.00	13.08	2.66	1436.11	.00	2.70	29.00	4.000	29.000	.00	2 1.0
4.000	.0075					.0103	.04	1.92	1.72	2.14	.014	.00	.00	BOX
2295.000	1431.560	1.916	1433.476	679.00	13.12	2.67	1436.15	.00	2.70	29.00	4.000	29.000	.00	2 1.0
JUNCT STR	.0064					.0113	.47	1.92	1.73		.014	.00	.00	BOX
2337.000	1431.830	1.800	1433.630	677.00	13.93	3.01	1436.64	.00	2.69	29.00	4.000	29.000	.00	2 1.0
1.026	.0063					.0123	.01	1.80	1.90	2.27	.014	.00	.00	BOX
2338.026	1431.836	1.798	1433.634	677.00	13.95	3.02	1436.66	.00	2.69	29.00	4.000	29.000	.00	2 1.0
30.974	.0063					.0133	.41	1.80	1.90	2.27	.014	.00	.00	BOX
2369.000	1432.030	1.714	1433.744	677.00	14.63	3.32	1437.07	4.00	2.69	29.00	4.000	29.000	.00	2 1.0
13.000	.0062					.0147	.19	4.00	2.04	2.28	.014	.00	.00	BOX

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:47:58

MENIFEE VALLEY ADP - CHANNEL A

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTVEL.WSW

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope | | | | | | | | | | | | | | |
*****
2382.000 | 1432.110 | 1.676 | 1433.786 | 677.00 | 14.96 | 3.47 | 1437.26 | .00 | 2.69 | 29.00 | 4.000 | 29.000 | .00 | 2 1.0
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
BRIDGE ENTRANCE
2382.000 | 1432.110 | 1.466 | 1433.576 | 677.00 | 15.93 | 3.94 | 1437.51 | .00 | 2.57 | 29.00 | 5.000 | 29.000 | .00 | 0 .0
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
TRANS STR .0031 | | | | | | | | | | | | | | |
2417.140 | 1432.220 | 4.465 | 1436.685 | 677.00 | 10.49 | 1.71 | 1438.39 | .00 | 4.47 | 18.93 | 4.600 | 10.000 | 1.00 | 0 .0
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -

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WSPGW Analysis for Channel C
Interim (Velocity) Analysis

T1 MENIFEE VALLEY ADP - CHANNEL C 0
 T2 VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER
 T3 JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTVEL.WSW
 SO 1100.0001430.020 1 1434.071
 R 1232.0001430.262 1 .025 .000
 JX 1235.0001430.268 1 2.025 4.3 1430.286 -90.0 .000
 R 1297.0001430.388 1 .025 .000
 TS 1345.0001430.497 3 .025 .000
 TS 1628.0001431.055 4 .025 .000
 R 1655.0001431.107 4 .025 .000
 JX 1658.0001431.113 4 2.025 9.1 1431.113 -90.0 .000
 R 1673.0001431.142 4 .025 .000
 JX 1683.0001431.162 4 2.025 5.6 1431.162 -90.0 .000
 R 1739.0001431.277 4 .025 .000
 JX 1742.0001431.283 4 2.025 2.4 1431.283 82.0 .000
 R 2003.0001431.796 4 .025 .000
 TS 2056.0001431.900 7 .025 .000
 TS 2215.0001432.209 8 .025 .000
 R 2230.0001432.239 8 .041 .000
 JX 2245.0001432.284 9 9 2.014 3.8 1.8 1432.2841432.284 .0 34.4 .000
 R 2248.5001432.295 9 .014 .000
 WX 2248.5001432.295 11
 R 2322.0001432.516 11 .014 .000
 WE 2322.0001432.516 12 .500
 TS 2335.2401432.556 12 .014 .000
 SH 2335.2401432.556 12 1432.556
 CD 1 1 0 .000 10.000 32.700 4.000 4.000 1.96
 CD 2 4 1 .000 2.000 .000 .000 .000 .00
 CD 3 1 0 .000 10.000 17.100 4.000 4.000 1.03
 CD 4 1 0 .000 10.000 28.000 4.000 4.000 1.68
 CD 7 1 0 .000 10.000 43.200 4.000 4.000 2.59
 CD 8 1 0 .000 10.000 45.300 4.000 4.000 2.72
 CD 9 2 0 .000 10.000 7.000 .000 .000 .00
 CD 11 4 2 .000 3.000 .000 .000 .000 .00
 CD 12 2 0 .000 10.000 8.000 .000 .000 .00
 Q 42.800 .0

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:52:37

MENIFEE VALLEY ADP - CHANNEL C

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1100.000	1430.020	4.051	1434.071	69.80	.37	.00	1434.07	.00	.60	63.80	10.000	32.700	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76.675	.0018					.0000	.00	4.05	.04	.97	.025	-1.96	4.00	TRAP
1176.675	1430.161	3.911	1434.072	69.80	.38	.00	1434.07	.00	.60	62.68	10.000	32.700	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55.325	.0018					.0000	.00	3.91	.04	.97	.025	-1.96	4.00	TRAP
1232.000	1430.262	3.810	1434.072	69.80	.40	.00	1434.07	.00	.60	61.87	10.000	32.700	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUNCT STR	.0020					.0000	.00	3.81	.04		.025	-1.96	4.00	TRAP
1235.000	1430.268	3.805	1434.073	65.50	.37	.00	1434.07	.00	.58	61.83	10.000	32.700	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62.000	.0019					.0000	.00	3.80	.04	.92	.025	-1.96	4.00	TRAP
1297.000	1430.388	3.685	1434.073	65.50	.39	.00	1434.08	.00	.58	60.88	10.000	32.700	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRANS STR	.0023					.0000	.00	3.69	.04		.025	-1.03	4.00	TRAP
1345.000	1430.497	3.576	1434.073	65.50	.60	.01	1434.08	.00	.78	45.02	10.000	17.100	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRANS STR	.0020					.0000	.01	3.58	.07		.025	-1.68	4.00	TRAP
1628.000	1431.055	3.028	1434.083	65.50	.56	.00	1434.09	.00	.62	51.10	10.000	28.000	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.000	.0019					.0000	.00	3.03	.07	.99	.025	-1.68	4.00	TRAP
1655.000	1431.107	2.976	1434.083	65.50	.58	.01	1434.09	.00	.62	50.69	10.000	28.000	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUNCT STR	.0020					.0000	.00	2.98	.07		.025	-1.68	4.00	TRAP
1658.000	1431.113	2.973	1434.086	56.40	.50	.00	1434.09	.00	.57	50.66	10.000	28.000	4.00	0 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.000	.0019					.0000	.00	2.97	.06	.91	.025	-1.68	4.00	TRAP

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:52:37

MENIFEE VALLEY ADP - CHANNEL C

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1673.000	1431.142	2.944	1434.086	56.40	.50	.00	1434.09	.00	.57	50.43	10.000	28.000	4.00	0 .0
JUNCT STR	.0020					.0000	.00	2.94	.06		.025	-1.68	4.00	TRAP
1683.000	1431.162	2.926	1434.088	50.80	.46	.00	1434.09	.00	.53	50.29	10.000	28.000	4.00	0 .0
50.844	.0021					.0000	.00	2.93	.05	.85	.025	-1.68	4.00	TRAP
1733.844	1431.266	2.822	1434.089	50.80	.48	.00	1434.09	.00	.53	49.46	10.000	28.000	4.00	0 .0
5.156	.0021					.0000	.00	2.82	.06	.85	.025	-1.68	4.00	TRAP
1739.000	1431.277	2.812	1434.089	50.80	.48	.00	1434.09	.00	.53	49.37	10.000	28.000	4.00	0 .0
JUNCT STR	.0020					.0000	.00	2.81	.06		.025	-1.68	4.00	TRAP
1742.000	1431.283	2.806	1434.089	48.40	.46	.00	1434.09	.00	.52	49.33	10.000	28.000	4.00	0 .0
51.285	.0020					.0000	.00	2.81	.06	.84	.025	-1.68	4.00	TRAP
1793.285	1431.384	2.706	1434.090	48.40	.48	.00	1434.09	.00	.52	48.53	10.000	28.000	4.00	0 .0
49.766	.0020					.0000	.00	2.71	.06	.84	.025	-1.68	4.00	TRAP
1843.051	1431.482	2.610	1434.091	48.40	.51	.00	1434.10	.00	.52	47.76	10.000	28.000	4.00	0 .0
48.289	.0020					.0000	.00	2.61	.06	.84	.025	-1.68	4.00	TRAP
1891.340	1431.577	2.516	1434.092	48.40	.53	.00	1434.10	.00	.52	47.01	10.000	28.000	4.00	0 .0
46.857	.0020					.0000	.00	2.52	.07	.84	.025	-1.68	4.00	TRAP
1938.197	1431.669	2.425	1434.094	48.40	.56	.00	1434.10	.00	.52	46.28	10.000	28.000	4.00	0 .0
45.468	.0020					.0000	.00	2.42	.07	.84	.025	-1.68	4.00	TRAP

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:52:37

MENIFEE VALLEY ADP - CHANNEL C

0

VELOCITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTVEL.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1983.665	1431.758	2.337	1434.095	48.40	.58	.01	1434.10	.00	.52	45.58	10.000	28.000	4.00	0 .0
19.335	.0020					.0000	.00	2.34	.08	.84	.025	-1.68	4.00	TRAP
2003.000	1431.796	2.300	1434.096	48.40	.60	.01	1434.10	.00	.52	45.28	10.000	28.000	4.00	0 .0
TRANS STR	.0020					.0000	.00	2.30	.08		.025	-2.59	4.00	TRAP
2056.000	1431.900	2.201	1434.101	48.40	.46	.00	1434.10	.00	.45	59.08	10.000	43.200	4.00	0 .0
TRANS STR	.0019					.0000	.01	2.20	.06		.025	-2.72	4.00	TRAP
2215.000	1432.209	1.897	1434.106	48.40	.53	.00	1434.11	.00	.44	58.66	10.000	45.300	4.00	0 .0
15.000	.0020					.0001	.00	1.90	.07	.89	.041	-2.72	4.00	TRAP
2230.000	1432.239	1.869	1434.108	48.40	.54	.00	1434.11	.00	.44	58.44	10.000	45.300	4.00	0 .0
JUNCT STR	.0030					.0004	.01	1.87	.08		.014	.00	4.00	TRAP
----- WARNING - Junction Analysis - Change in Channel Type -----														
2245.000	1432.284	1.754	1434.038	42.80	3.49	.19	1434.23	.00	1.05	7.00	10.000	7.000	.00	0 .0
3.500	.0031					.0009	.00	1.75	.46	1.14	.014	.00	.00	RECTANG
2248.500	1432.295	1.744	1434.039	42.80	3.51	.19	1434.23	.00	1.05	7.00	10.000	7.000	.00	0 .0
HYDRAULIC JUMP														
2248.500	1432.295	1.487	1433.782	42.80	6.12	.58	1434.36	.00	1.49	3.00	3.000	.000	.00	2 .0
2248.500	1432.295	1.745	1434.040	42.80	5.02	.39	1434.43	.00	1.49	2.96	3.000	.000	.00	2 .0
73.500	.0030					.0029	.22	1.74	.52	1.73	.014	.00	.00	PIPE

Date: 5-25-2007 Time:11:52:37

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JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTVEL.WSW

[illegible]

APPENDIX H

WSPGW Analysis for Ultimate (Capacity) Condition

Culvert at Briggs & Holland

Regional (RCFC) Channel

Channel B

Channel A

Channel C

WSPGW Analysis for Culvert at Briggs & Holland
Ultimate (Capacity) Analysis

T1	MENIFEE VALLEY ADP - Ultimate Condition										0
T2	Culvert Crossing under Briggs and Holland (5)-14'x8.5' RCB										
T3	JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCULBRIGHOL.WSW										
SO	3446.790	1422.000	1							1429.860	
TS	3448.790	1422.000	3		.030						.000
BX	3448.790	1422.000	2								
R	3570.000	1422.000	2		.014						7.000
R	3709.220	1422.000	2		.014						.000
JX	3719.220	1422.000	2		4.014		282.000		1422.000	90.0	.000
R	3755.000	1422.000	2		.014					-3.5000	
R	4059.580	1422.000	2		.014					.000	
WE	4059.580	1422.000	2		.500						
TS	4072.770	1422.000	5		.014						.000
SH	4072.770	1422.000	5						1422.000		
CD	1	1	0	.000	10.000	92.500	3.000	3.000	.00		
CD	2	3	4	1.000	8.500	74.000	.000	.000	.00		
CD	3	1	0	.000	10.000	74.000	.000	.000	.00		
CD	4	3	0	.000	8.000	10.000	.000	.000	.00		
CD	5	2	4	1.000	10.000	74.000	.000	.000	.00		
Q				2066.000	.0						

WATER SURFACE PROFILE LISTING

Date: 5-17-2007 Time: 4:10:24

MENIFEE VALLEY ADP - Ultimate Condition

0

Culvert Crossing under Briggs and Holland (5)-14'x8.5' RCB

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCULBRIGHOL.WSW

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*****
Station   | Invert | Depth | Water | Q   | Vel  | Vel  | Energy | Super | Critical | Flow Top | Height/ | Base Wt |   | No Wth
L/Elem    | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev  | Depth   | Width   | Dia.-FT | or I.D. | ZL | Prs/Pip
*****
| Ch Slope |         |         |         |         |         | SF Ave | HF      | SE Dpth | Froude N | Norm Dp | "N"     | X-Fall  | ZR | Type Ch
*****
3446.790 | 1422.000 | 7.860 | 1429.860 | 2348.00 | 2.57 | .10 | 1429.96 | .00 | 2.64 | 139.66 | 10.000 | 92.500 | 3.00 | 0 .0
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
TRANS STR | .0000 |         |         |         |         |         | .0004 | .00 | 7.86 | .18 |         | .030 | .00 | 3.00 | TRAP
3448.790 | 1422.000 | 7.783 | 1429.783 | 2348.00 | 4.08 | .26 | 1430.04 | .05 | 3.15 | 74.00 | 10.000 | 74.000 | .00 | 0 .0
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
BRIDGE EXIT
3448.790 | 1422.000 | 7.749 | 1429.749 | 2348.00 | 4.33 | .29 | 1430.04 | .04 | 3.27 | 74.00 | 8.500 | 74.000 | .00 | 4 1.0
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
121.210 | .0000 |         |         |         |         |         | .0003 | .04 | 7.79 | .28 | .00 | .014 | .00 | .00 | BOX
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
----- WARNING - Flow depth near top of box conduit -----
3570.000 | 1422.000 | 7.788 | 1429.788 | 2348.00 | 4.31 | .29 | 1430.08 | .00 | 3.27 | 74.00 | 8.500 | 74.000 | .00 | 4 1.0
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
139.220 | .0000 |         |         |         |         |         | .0003 | .04 | 7.79 | .28 | .00 | .014 | .00 | .00 | BOX
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
----- WARNING - Flow depth near top of box conduit -----
3709.220 | 1422.000 | 7.831 | 1429.831 | 2348.00 | 4.28 | .28 | 1430.12 | .00 | 3.27 | 74.00 | 8.500 | 74.000 | .00 | 4 1.0
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
JUNCT STR | .0000 |         |         |         |         |         | .0002 | .00 | 7.90 | .28 |         | .014 | .00 | .00 | BOX
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
----- WARNING - Flow depth near top of box conduit -----
3719.220 | 1422.000 | 7.968 | 1429.968 | 2066.00 | 3.70 | .21 | 1430.18 | .05 | 3.00 | 74.00 | 8.500 | 74.000 | .00 | 4 1.0
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
35.780 | .0000 |         |         |         |         |         | .0002 | .01 | 8.02 | .24 | .00 | .014 | .00 | .00 | BOX
|         |         |         |         |         |         |         |         |         |         |         |         |         |         |
----- WARNING - Flow depth near top of box conduit -----

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Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-17-2007 Time: 4:10:24

MENIFEE VALLEY ADP - Ultimate Condition

0

Culvert Crossing under Briggs and Holland (5)-14'x8.5' RCB

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCULBRIGHOL.WSW

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
L/Elem | Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | *****
3755.000 | 1422.000 | 7.976 | 1429.976 | 2066.00 | 3.70 | .21 | 1430.19 | .00 | 3.00 | 74.00 | 8.500 | 74.000 | .00 | 4 1.0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
304.580 | .0000 | | | | | | | | | | | | | | | |
----- WARNING - Flow depth near top of box conduit -----
4059.580 | 1422.000 | 8.043 | 1430.043 | 2066.00 | 3.67 | .21 | 1430.25 | .00 | 3.00 | 74.00 | 8.500 | 74.000 | .00 | 4 1.0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
WALL ENTRANCE
----- WARNING - Flow depth near top of box conduit -----
4059.580 | 1422.000 | 8.089 | 1430.089 | 2066.00 | 3.45 | .18 | 1430.27 | .00 | 2.89 | 74.00 | 8.500 | 74.000 | .00 | 0 .0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
TRANS STR .0000 | | | | | | | | | | | | | | | |
----- WARNING - Flow depth near top of box conduit -----
4072.770 | 1422.000 | 8.074 | 1430.074 | 2066.00 | 3.66 | .21 | 1430.28 | .00 | 3.00 | 74.00 | 10.000 | 74.000 | .00 | 4 1.0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -

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**WSPGW Analysis for Regional (RCFC) Channel
Ultimate (Capacity) Analysis**

T1	MENIFEE VALLEY ADP - REGIONAL CHANNEL										0
T2	CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER										
T3	JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCANGLE.WSW										
SO	4072.770	1422.000	1							1430.134	
TS	4200.000	1422.090	3	.014							.000
TS	4295.100	1422.190	5	.014							-0.600
TS	4419.040	1422.308	5	.035							-0.032
TS	4500.710	1422.390	5	.035							-2.028
R	5429.800	1423.309	5	.035							-15.200
R	5642.650	1423.532	5	.035							-3.480
R	5887.450	1423.777	5	.035							-3.860
R	6900.000	1424.790	5	.035							-16.700
TS	6950.000	1424.840	7	.014							-0.819
BX	6950.000	1424.840	8								
R	7050.000	1424.940	8	.014							.000
BE	7050.000	1424.940	7	.500							
TS	7100.000	1424.990	5	.035							-0.819
R	7206.840	1425.097	5	.035							-1.750
R	7682.760	1425.573	5	.035							.000
TS	8034.350	1425.925	9	.035							.000
R	8041.100	1425.932	9	.035							.000
TS	8105.370	1425.996	10	.035							.000
TS	8139.690	1426.030	11	.035							.000
TS	8301.730	1426.192	12	.035							.000
R	9310.340	1427.201	12	.035							.000
TS	9343.910	1427.235	14	.035							.000
TS	9408.490	1428.797	16	.035							.000
R	9456.490	1428.845	16	.041							.000
JX	9458.490	1428.847	16	16.041		699.0		1428.847		00.0	.000
TS	9499.470	1428.888	17	.014							.000
BX	9499.470	1428.888	18								
R	9590.090	1428.979	18	.014							-20.600
R	9630.090	1429.019	18	.014							.000
R	9721.960	1429.111	18	.014							20.900
WE	9721.960	1429.111	19	.500							
SH	9721.960	1429.111	19					1429.111			
CD	1	1	0	.000	10.000	74.000	.300	.300	4.44		
CD	3	1	0	.000	10.000	87.000	2.000	2.000	5.22		
CD	5	1	0	.000	10.000	100.000	4.000	4.000	6.00		
CD	7	1	0	.000	8.500	74.000	.000	.000	.00		
CD	8	3	4	1.000	7.500	74.000	.000	.000	.00		
CD	9	1	0	.000	10.000	80.000	4.000	4.000	4.80		
CD	10	1	0	.000	10.000	80.000	4.000	4.000	4.80		
CD	11	1	0	.000	10.000	80.000	4.000	4.000	4.80		
CD	12	1	0	.000	10.000	78.000	4.000	4.000	4.68		
CD	14	1	0	.000	10.000	95.000	4.000	4.000	5.70		
CD	15	1	0	.000	10.000	81.000	4.000	4.000	4.86		
CD	16	1	0	.000	10.000	81.000	4.000	4.000	4.86		
CD	17	2	0	.000	10.000	59.000	.000	.000	.00		
CD	18	3	3	1.000	7.000	59.000	.000	.000	.00		
CD	19	2	3	1.000	10.000	59.000	.000	.000	.00		
Q	1367.000										

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:15:23

MENIFEE VALLEY ADP - REGIONAL CHANNEL

0

CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCANGLE.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
4072.770	1422.000	8.134	1430.134	2066.00	3.41	.18	1430.31	.00	3.07	78.66	10.000	74.000	.30	0 .0
TRANS STR	.0007					.0001	.01	8.13	.22		.014	-5.22	.30	TRAP
4200.000	1422.090	8.139	1430.229	2066.00	2.56	.10	1430.33	.00	2.78	117.82	10.000	87.000	2.00	0 .0
TRANS STR	.0011					.0000	.00	8.14	.17		.014	-6.00	2.00	TRAP
4295.100	1422.190	8.084	1430.274	2066.00	2.04	.06	1430.34	.00	2.57	160.68	10.000	100.000	4.00	0 .0
TRANS STR	.0010					.0002	.03	8.08	.14		.035	-6.00	4.00	TRAP
4419.040	1422.308	7.990	1430.298	2066.00	2.07	.07	1430.36	.01	2.57	159.92	10.000	100.000	4.00	0 .0
TRANS STR	.0010					.0002	.02	8.00	.15		.035	-6.00	4.00	TRAP
4500.710	1422.390	7.925	1430.315	2066.00	2.09	.07	1430.38	.00	2.57	159.40	10.000	100.000	4.00	0 .0
375.049	.0010					.0002	.09	7.93	.15	5.25	.035	-6.00	4.00	TRAP
4875.759	1422.761	7.635	1430.396	2066.00	2.19	.07	1430.47	.00	2.57	157.08	10.000	100.000	4.00	0 .0
379.018	.0010					.0003	.10	7.64	.16	5.25	.035	-6.00	4.00	TRAP
5254.776	1423.136	7.354	1430.490	2066.00	2.30	.08	1430.57	.00	2.57	154.83	10.000	100.000	4.00	0 .0
175.024	.0010					.0003	.05	7.36	.17	5.25	.035	-6.00	4.00	TRAP
5429.800	1423.309	7.229	1430.538	2066.00	2.35	.09	1430.62	.00	2.57	153.83	10.000	100.000	4.00	0 .0
212.850	.0010					.0003	.07	7.23	.17	5.17	.035	-6.00	4.00	TRAP
5642.650	1423.532	7.068	1430.600	2066.00	2.42	.09	1430.69	.00	2.57	152.55	10.000	100.000	4.00	0 .0
244.800	.0010					.0003	.08	7.07	.18	5.23	.035	-6.00	4.00	TRAP

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:15:23

MENIFEE VALLEY ADP - REGIONAL CHANNEL

0

CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCANGLE.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
5887.450	1423.777	6.902	1430.679	2066.00	2.49	.10	1430.78	.00	2.57	151.22	10.000	100.000	4.00	0 .0
403.939	.0010					.0004	.16	6.91	.19	5.23	.035	-6.00	4.00	TRAP
6291.389	1424.181	6.646	1430.827	2066.00	2.61	.11	1430.93	.01	2.57	149.16	10.000	100.000	4.00	0 .0
429.349	.0010					.0004	.19	6.65	.20	5.23	.035	-6.00	4.00	TRAP
6720.738	1424.611	6.397	1431.008	2066.00	2.74	.12	1431.12	.01	2.57	147.18	10.000	100.000	4.00	0 .0
179.263	.0010					.0005	.09	6.40	.21	5.23	.035	-6.00	4.00	TRAP
6900.000	1424.790	6.302	1431.092	2066.00	2.79	.12	1431.21	.01	2.57	146.41	10.000	100.000	4.00	0 .0
TRANS STR	.0010					.0001	.01	6.31	.22		.014	.00	4.00	TRAP
6950.000	1424.840	6.160	1431.000	2066.00	4.53	.32	1431.32	.00	2.89	74.00	8.500	74.000	.00	0 .0
BRIDGE EXIT														
6950.000	1424.840	6.116	1430.956	2066.00	4.83	.36	1431.32	.00	3.00	74.00	7.500	74.000	.00	4 1.0
100.000	.0010					.0004	.04	6.12	.35	4.49	.014	.00	.00	BOX
7050.000	1424.940	6.052	1430.992	2066.00	4.88	.37	1431.36	.01	3.00	74.00	7.500	74.000	.00	4 1.0
BRIDGE ENTRANCE														
7050.000	1424.940	6.118	1431.058	2066.00	4.56	.32	1431.38	.02	2.89	74.00	8.500	74.000	.00	0 .0
TRANS STR	.0010					.0009	.04	6.14	.33		.035	-6.00	.00	TRAP
7100.000	1424.990	6.368	1431.358	2066.00	2.76	.12	1431.48	.01	2.57	146.95	10.000	100.000	4.00	0 .0
106.840	.0010					.0005	.05	6.37	.22	5.23	.035	-6.00	4.00	TRAP

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:15:23

MENIFEE VALLEY ADP - REGIONAL CHANNEL

0

CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCANGLE.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
7206.840	1425.097	6.312	1431.409	2066.00	2.79	.12	1431.53	.00	2.57	146.49	10.000	100.000	4.00	0 .0
475.920	.0010					.0005	.26	6.31	.22	5.24	.035	-6.00	4.00	TRAP
7682.760	1425.573	6.081	1431.654	2066.00	2.92	.13	1431.79	.00	2.57	144.65	10.000	100.000	4.00	0 .0
TRANS STR	.0010					.0007	.26	6.08	.23		.035	-4.80	4.00	TRAP
8034.350	1425.925	5.939	1431.864	2066.00	3.55	.20	1432.06	.00	2.85	124.31	10.000	80.000	4.00	0 .0
6.750	.0010					.0009	.01	5.94	.29	5.74	.035	-4.80	4.00	TRAP
8041.100	1425.932	5.938	1431.870	2066.00	3.55	.20	1432.07	.00	2.85	124.31	10.000	80.000	4.00	0 .0
TRANS STR	.0010					.0009	.06	5.94	.29		.035	-4.80	4.00	TRAP
8105.370	1425.996	5.933	1431.929	2066.00	3.56	.20	1432.13	.00	2.85	124.26	10.000	80.000	4.00	0 .0
TRANS STR	.0010					.0009	.03	5.93	.29		.035	-4.80	4.00	TRAP
8139.690	1426.030	5.930	1431.960	2066.00	3.56	.20	1432.16	.00	2.85	124.24	10.000	80.000	4.00	0 .0
TRANS STR	.0010					.0009	.15	5.93	.29		.035	-4.68	4.00	TRAP
8301.730	1426.192	5.913	1432.105	2066.00	3.64	.21	1432.31	.00	2.89	122.18	10.000	78.000	4.00	0 .0
1008.609	.0010					.0010	.98	5.91	.30	5.85	.035	-4.68	4.00	TRAP
9310.340	1427.201	5.880	1433.081	2066.00	3.66	.21	1433.29	.00	2.89	121.92	10.000	78.000	4.00	0 .0
TRANS STR	.0010					.0008	.03	5.88	.30		.035	-5.70	4.00	TRAP
9343.910	1427.235	5.946	1433.181	2066.00	3.12	.15	1433.33	.00	2.63	138.77	10.000	95.000	4.00	0 .0
TRANS STR	.0242					.0018	.12	5.95	.25		.035	-4.86	4.00	TRAP

Date: 5-25-2007 Time:11:15:23

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JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCANGLE.WSW

[illegible]

Date: 5-25-2007 Time:11:15:23

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JN 14795B, 05-17-07 REVISED PER ACD PLANS, FN: ULTCANGLE.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
9721.960	1429.111	4.639	1433.750	1367.00	4.99	.39	1434.14	.18	2.55	59.00	10.000	59.000	.00	0 .0

WSPGW Analysis for Channel B
Ultimate (Capacity) Analysis

T1	MENIFEE VALLEY ADP - CHANNEL B										0
T2	CAPACITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER										
T3	JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW										
SO	9721.960	1429.111	8					1433.750			
TS	9745.070	1429.134	22		.014				.000		
TS	9756.750	1429.146	27		.014				.000		
EQ	1035.000										
JX	1100.000	1430.160	224	25.035	66.620	673.580	1430.160	1430.160	90.0-90.0	.000	
R	1330.000	1430.390	2	.035					.000		
JX	1340.000	1430.400	2	11.035		12.700		1430.400	83.5	.000	
R	1600.000	1430.660	2	.035					.000		
JX	1630.000	1430.690	2	2.035		2.000		1430.690	.0	.000	
TS	1641.000	1430.700	18	.035					.000		
BX	1641.000	1430.700	3								
R	1672.740	1430.730	3	.014					.000		
JX	1680.000	1430.740	3	11.014		1.700		1430.740	55.9	.000	
R	1705.000	1430.770	3	.014					.000		
JX	1712.070	1430.780	3	11.014		11.900		1430.780	23.4	.000	
R	1742.000	1430.800	3	.014					.000		
BE	1742.000	1430.800	18	.500							
TS	1762.000	1430.820	2	.035					.000		
R	1912.000	1430.970	2	.035					.000		
JX	1919.840	1430.990	2	2.035		1.300		1430.990	.0	.000	
JX	2024.900	1431.080	2 1	11.035	31.500	5.900	1431.800	1431.800-20.0-39.1	52.508		
R	2084.890	1431.140	2	.035					.000		
R	2442.900	1431.500	2	.035					-16.245		
R	2500.000	1431.560	2	.035					-3.146		
JX	2510.000	1431.570	2	2.035		1.700		1431.570	.0	-1.061	
TS	2518.000	1431.580	18	.035					.000		
BX	2518.000	1431.580	3								
R	2533.000	1431.590	3	.014					.000		
JX	2543.000	1431.600	3	11.014		1.900		1431.600	85.9	.000	
R	2558.000	1431.620	3	.014					.000		
JX	2568.000	1431.630	3	12.014		16.400		1431.630	85.0	.000	
R	2610.000	1431.670	3	.014					.000		
BE	2610.000	1431.670	3	.500							
TS	2769.540	1431.830	4	.035					-19.009		
R	2927.610	1431.990	4	.035					.000	.000 0	
R	2997.330	1432.060	4	.035					.000	-5.771 0	
R	3302.000	1432.360	4	.035					86.873		
R	3418.840	1432.480	4	.035					.000	.000 0	
R	3522.490	1432.580	4	.035					.000	-4.465 0	
R	3587.230	1432.650	4	.035					-20.187	.000 0	
TS	3682.690	1432.740	15	.035					.000	.000 0	
TS	3780.000	1432.840	5	.035					-48.542		
JX	3790.000	1432.850	16	13.035		89.600		1432.850	42.8	-2.947	
TS	3837.740	1432.900	6	.035					-27.337		
TS	3900.000	1432.960	17	.035							
R	3957.000	1433.020	17	.035							
TS	4100.000	1433.160	7	.035							
JX	4189.000	1433.250	7 10	.035	22.200		1433.250	1433.250-90.0	41.2	.000	
TS	4195.000	1433.260	19	.035					.000		
BX	4195.000	1433.260	9								
R	4228.420	1433.290	9	.014					.000	.000 0	
R	4265.400	1433.330	9	.014					-90.000		
R	4281.050	1433.340	9	.014					.000		
BE	4281.050	1433.340	9	.500							
TS	4301.050	1433.400	26	.014					.000		
SH	4301.050	1433.400	26				1433.400				
CD	1 1 0	.000	6.000	21.000	4.000	4.000	1.26				
CD	2 1 0	.000	7.500	50.000	4.000	4.000	3.00				
CD	3 3 2	1.000	5.000	32.000	.000	.000	.00				
CD	4 1 0	.000	6.000	45.000	4.000	4.000	2.70				
CD	5 1 0	.000	6.000	120.000	4.000	4.000	7.20				
CD	6 1 0	.000	10.000	81.000	4.000	4.000	4.86				
CD	7 1 0	.000	8.000	165.000	4.000	4.000	9.90				
CD	8 1 0	.000	10.000	81.000	3.000	2.500	4.86				
CD	9 3 1	1.000	4.500	25.000	.000	.000	.00				
CD	10 1 0	.000	5.000	123.000	4.000	4.000	7.38				
CD	11 4 1	.000	2.000	.000	.000	.000	.00				

CD	12	4	1	.000	3.000	.000	.000	.000	.00
CD	13	4	2	.000	3.000	.000	.000	.000	.00
CD	14	4	1	.000	3.000	10.000	.000	.000	.00
CD	15	1	0	.000	6.000	69.000	4.000	4.000	4.14
CD	16	1	0	.000	7.000	105.000	4.000	4.000	6.30
CD	17	1	0	.000	9.000	72.000	4.000	4.000	4.32
CD	18	2	0	.000	5.000	32.000	.000	.000	.00
CD	19	3	0	.000	4.500	25.000	.000	.000	.00
CD	20	2	0	.000	8.000	60.000	.000	.000	.00
CD	21	1	3	1.000	7.000	60.000	.000	.000	3.60
CD	22	1	0	.000	7.000	116.980	.000	.000	7.02
CD	23	3	3	1.000	7.000	60.000	.000	.000	.00
CD	24	1	0	.000	7.000	40.000	4.000	4.000	2.40
CD	25	1	0	.000	7.000	28.000	4.000	4.000	1.68
CD	26	1	0	.000	5.000	15.000	1.000	1.000	0.90
CD	27	1	0	.000	7.000	64.170	.000	.000	3.85
Q				428.000	.0				

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MENIFEE VALLEY ADP - CHANNEL B

©

CAPACITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW

*****															*****	
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/ or I.D.	ZL	No Wth Prs/Pip		
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch		
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****		
9721.960	1429.111	4.639	1433.750	1367.00	3.35	.17	1433.92	.00	2.24	104.29	10.000	81.000	3.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TRANS STR	.0010					.0001	.00	4.64	.30		.014	-7.02	2.50	TRAP		
9745.070	1429.134	4.700	1433.834	1367.00	2.65	.11	1433.94	.00	1.91	116.98	7.000	116.980	.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TRANS STR	.0010					.0002	.00	4.70	.22		.014	-3.85	.00	TRAP		
****CHANGE IN STATIONING STATION = 9756.750 = NEW STATION 1035.000****																
1035.000	1429.146	4.564	1433.710	1367.00	4.84	.36	1434.07	.00	2.58	64.17	7.000	64.170	.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
JUNCT STR	.0156					.0014	.09	4.56	.41		.035	-3.00	.00	TRAP		
1100.000	1430.160	4.220	1434.380	626.80	2.34	.09	1434.47	.00	1.76	81.76	7.500	50.000	4.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
230.000	.0010					.0007	.15	4.22	.23	3.74	.035	-3.00	4.00	TRAP		
1330.000	1430.390	4.138	1434.528	626.80	2.40	.09	1434.62	.00	1.76	81.10	7.500	50.000	4.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
JUNCT STR	.0010					.0007	.01	4.14	.24		.035	-3.00	4.00	TRAP		
1340.000	1430.400	4.141	1434.541	614.10	2.35	.09	1434.63	.00	1.74	81.13	7.500	50.000	4.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
260.000	.0010					.0007	.18	4.14	.23	3.69	.035	-3.00	4.00	TRAP		
1600.000	1430.660	4.053	1434.713	614.10	2.42	.09	1434.80	.00	1.74	80.43	7.500	50.000	4.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
JUNCT STR	.0010					.0007	.02	4.05	.24		.035	-3.00	4.00	TRAP		
1630.000	1430.690	4.045	1434.735	612.10	2.41	.09	1434.83	.00	1.74	80.36	7.500	50.000	4.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TRANS STR	.0009					.0018	.02	4.05	.24		.035	.00	4.00	TRAP		
1641.000	1430.700	3.915	1434.615	612.10	4.89	.37	1434.99	.00	2.25	32.00	5.000	32.000	.00	0 .0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BRIDGE EXIT																

WATER SURFACE PROFILE LISTING

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MENIFEE VALLEY ADP - CHANNEL B

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CAPACITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1641.000	1430.700	3.846	1434.546	612.10	5.31	.44	1434.98	.00	2.35	32.00	5.000	32.000	.00	2 1.0
31.740	.0009					.0009	.03	3.85	.49	3.76	.014	.00	.00	BOX
1672.740	1430.730	3.844	1434.574	612.10	5.31	.44	1435.01	.00	2.35	32.00	5.000	32.000	.00	2 1.0
JUNCT STR	.0014					.0009	.01	3.84	.49		.014	.00	.00	BOX
1680.000	1430.740	3.846	1434.586	610.40	5.29	.43	1435.02	.00	2.34	32.00	5.000	32.000	.00	2 1.0
25.000	.0012					.0009	.02	3.85	.49	3.44	.014	.00	.00	BOX
1705.000	1430.770	3.835	1434.605	610.40	5.30	.44	1435.04	.00	2.34	32.00	5.000	32.000	.00	2 1.0
JUNCT STR	.0014					.0008	.01	3.84	.49		.014	.00	.00	BOX
1712.070	1430.780	3.859	1434.639	598.50	5.17	.41	1435.05	.00	2.31	32.00	5.000	32.000	.00	2 1.0
29.930	.0007					.0008	.03	3.86	.48	4.19	.014	.00	.00	BOX
1742.000	1430.800	3.866	1434.666	598.50	5.16	.41	1435.08	.00	2.31	32.00	5.000	32.000	.00	2 1.0
BRIDGE ENTRANCE														
1742.000	1430.800	3.959	1434.759	598.50	4.72	.35	1435.11	.00	2.21	32.00	5.000	32.000	.00	0 .0
TRANS STR	.0010					.0016	.03	3.96	.42		.035	-3.00	.00	RECTANG
1762.000	1430.820	4.313	1435.133	598.50	2.17	.07	1435.21	.00	1.72	82.50	7.500	50.000	4.00	0 .0
150.000	.0010					.0006	.08	4.31	.21	3.64	.035	-3.00	4.00	TRAP
1912.000	1430.970	4.243	1435.213	598.50	2.22	.08	1435.29	.14	1.72	81.94	7.500	50.000	4.00	0 .0
JUNCT STR	.0026					.0006	.00	4.38	.22		.035	-3.00	4.00	TRAP

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MENIFEE VALLEY ADP - CHANNEL B

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CAPACITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1919.840	1430.990	4.227	1435.217	597.20	2.23	.08	1435.29	.14	1.72	81.81	7.500	50.000	4.00	0 .0
JUNCT STR	.0009					.0005	.06	4.37	.22		.035	-3.00	4.00	TRAP
2024.900	1431.080	4.263	1435.343	559.80	2.06	.07	1435.41	.00	1.65	82.10	7.500	50.000	4.00	0 .0
59.990	.0010					.0005	.03	4.26	.20	3.51	.035	-3.00	4.00	TRAP
2084.890	1431.140	4.231	1435.371	559.80	2.08	.07	1435.44	.01	1.65	81.85	7.500	50.000	4.00	0 .0
315.238	.0010					.0005	.17	4.24	.20	3.51	.035	-3.00	4.00	TRAP
2400.128	1431.457	4.077	1435.534	559.80	2.19	.07	1435.61	.01	1.65	80.62	7.500	50.000	4.00	0 .0
42.772	.0010					.0006	.02	4.08	.22	3.51	.035	-3.00	4.00	TRAP
2442.900	1431.500	4.058	1435.558	559.80	2.20	.08	1435.63	.01	1.65	80.47	7.500	50.000	4.00	0 .0
57.100	.0011					.0006	.03	4.07	.22	3.47	.035	-3.00	4.00	TRAP
2500.000	1431.560	4.031	1435.591	559.80	2.22	.08	1435.67	.03	1.65	80.25	7.500	50.000	4.00	0 .0
JUNCT STR	.0010					.0006	.01	4.06	.22		.035	-3.00	4.00	TRAP
2510.000	1431.570	4.028	1435.598	558.10	2.21	.08	1435.67	.00	1.65	80.22	7.500	50.000	4.00	0 .0
TRANS STR	.0013					.0015	.01	4.03	.22		.035	.00	4.00	TRAP
2518.000	1431.580	3.914	1435.494	558.10	4.46	.31	1435.80	.00	2.11	32.00	5.000	32.000	.00	0 .0
BRIDGE EXIT														
2518.000	1431.580	3.859	1435.439	558.10	4.82	.36	1435.80	.00	2.21	32.00	5.000	32.000	.00	2 1.0
15.000	.0007					.0007	.01	3.86	.45	3.99	.014	.00	.00	BOX

Program Package Serial Number: 1462

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MENIFEE VALLEY ADP - CHANNEL B

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CAPACITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
2533.000	1431.590	3.860	1435.450	558.10	4.82	.36	1435.81	.00	2.21	32.00	5.000	32.000	.00	2 1.0
JUNCT STR	.0010					.0007	.01	3.86	.45		.014	.00	.00	BOX
2543.000	1431.600	3.863	1435.463	556.20	4.80	.36	1435.82	.00	2.20	32.00	5.000	32.000	.00	2 1.0
15.000	.0013					.0007	.01	3.86	.44	3.10	.014	.00	.00	BOX
2558.000	1431.620	3.852	1435.472	556.20	4.81	.36	1435.83	.00	2.20	32.00	5.000	32.000	.00	2 1.0
JUNCT STR	.0010					.0007	.01	3.85	.45		.014	.00	.00	BOX
2568.000	1431.630	3.897	1435.527	539.80	4.62	.33	1435.86	.00	2.16	32.00	5.000	32.000	.00	2 1.0
42.000	.0010					.0007	.03	3.90	.43	3.42	.014	.00	.00	BOX
2610.000	1431.670	3.883	1435.553	539.80	4.63	.33	1435.89	.04	2.16	32.00	5.000	32.000	.00	2 1.0
BRIDGE ENTRANCE														
2610.000	1431.670	3.955	1435.625	539.80	4.27	.28	1435.91	.04	2.07	32.00	5.000	32.000	.00	0 .0
TRANS STR	.0010					.0014	.22	3.99	.38		.035	-2.70	.00	BOX
2769.540	1431.830	4.243	1436.073	539.80	2.16	.07	1436.15	.00	1.70	77.15	6.000	45.000	4.00	0 .0
158.070	.0010					.0006	.09	4.24	.21	3.60	.035	-2.70	4.00	TRAP
2927.610	1431.990	4.169	1436.159	539.80	2.21	.08	1436.23	.00	1.70	76.56	6.000	45.000	4.00	0 .0
69.720	.0010					.0006	.04	4.17	.22	3.60	.035	-2.70	4.00	TRAP
2997.330	1432.060	4.139	1436.199	539.80	2.23	.08	1436.28	.03	1.70	76.32	6.000	45.000	4.00	0 .0
304.670	.0010					.0006	.19	4.17	.22	3.62	.035	-2.70	4.00	TRAP

Program Package Serial Number: 1462

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MENIFEE VALLEY ADP - CHANNEL B

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CAPACITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3302.000	1432.360	4.026	1436.386	539.80	2.31	.08	1436.47	.00	1.70	75.41	6.000	45.000	4.00	0 .0
116.840	.0010					.0007	.08	4.03	.23	3.58	.035	-2.70	4.00	TRAP
3418.840	1432.480	3.983	1436.463	539.80	2.34	.09	1436.55	.00	1.70	75.07	6.000	45.000	4.00	0 .0
103.650	.0010					.0007	.07	3.98	.24	3.64	.035	-2.70	4.00	TRAP
3522.490	1432.580	3.954	1436.534	539.80	2.36	.09	1436.62	.04	1.70	74.84	6.000	45.000	4.00	0 .0
64.740	.0011					.0007	.05	3.99	.24	3.53	.035	-2.70	4.00	TRAP
3587.230	1432.650	3.929	1436.579	539.80	2.38	.09	1436.67	.00	1.70	74.64	6.000	45.000	4.00	0 .0
TRANS STR	.0009					.0005	.05	3.93	.24		.035	-4.14	4.00	TRAP
3682.690	1432.740	3.939	1436.679	539.80	1.73	.05	1436.73	.10	1.40	97.76	6.000	69.000	4.00	0 .0
TRANS STR	.0010					.0003	.02	4.04	.17		.035	-7.20	4.00	TRAP
3780.000	1432.840	3.898	1436.738	539.80	1.14	.02	1436.76	.04	1.16	146.38	6.000	120.000	4.00	0 .0
JUNCT STR	.0010					.0001	.00	3.94	.11		.035	-6.30	4.00	TRAP
3790.000	1432.850	3.869	1436.719	450.20	1.06	.02	1436.74	.06	1.09	131.76	7.000	105.000	4.00	0 .0
TRANS STR	.0010					.0002	.01	3.93	.10		.035	-4.86	4.00	TRAP
3837.740	1432.900	3.824	1436.724	450.20	1.32	.03	1436.75	.00	1.18	108.35	10.000	81.000	4.00	0 .0
TRANS STR	.0010					.0002	.02	3.82	.13		.035	-4.32	4.00	TRAP
3900.000	1432.960	3.775	1436.734	450.20	1.47	.03	1436.77	.00	1.24	99.32	9.000	72.000	4.00	0 .0
57.000	.0011					.0003	.02	3.77	.15	2.61	.035	-4.32	4.00	TRAP

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:41:45

MENIFEE VALLEY ADP - CHANNEL B

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CAPACITY RUN BASED ON INTERIM COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3957.000	1433.020	3.729	1436.749	450.20	1.50	.03	1436.78	.00	1.24	98.95	9.000	72.000	4.00	0 .0
TRANS STR	.0010					.0002	.03	3.73	.15		.035	-9.90	4.00	TRAP
4100.000	1433.160	3.647	1436.807	450.20	.80	.01	1436.82	.00	1.03	187.58	8.000	165.000	4.00	0 .0
JUNCT STR	.0010					.0001	.01	3.65	.08		.035	-9.90	4.00	TRAP
4189.000	1433.250	3.566	1436.816	428.00	.78	.01	1436.83	.00	1.01	186.93	8.000	165.000	4.00	0 .0
TRANS STR	.0017					.0001	.00	3.57	.08		.035	.00	4.00	TRAP
4195.000	1433.260	3.373	1436.633	428.00	5.08	.40	1437.03	.00	2.09	25.00	4.500	25.000	.00	0 .0
BRIDGE EXIT														
4195.000	1433.260	3.325	1436.585	428.00	5.36	.45	1437.03	.00	2.15	25.00	4.500	25.000	.00	1 1.0
33.420	.0009					.0009	.03	3.32	.53	3.36	.014	.00	.00	BOX
4228.420	1433.290	3.326	1436.616	428.00	5.36	.45	1437.06	.46	2.15	25.00	4.500	25.000	.00	1 1.0
36.980	.0011					.0009	.03	3.78	.53	3.15	.014	.00	.00	BOX
4265.400	1433.330	3.319	1436.649	428.00	5.37	.45	1437.10	.00	2.15	25.00	4.500	25.000	.00	1 1.0
15.650	.0006					.0009	.01	3.32	.53	3.79	.014	.00	.00	BOX
4281.050	1433.340	3.325	1436.665	428.00	5.36	.45	1437.11	.00	2.15	25.00	4.500	25.000	.00	1 1.0
BRIDGE ENTRANCE														
4281.050	1433.340	3.395	1436.735	428.00	5.04	.39	1437.13	.00	2.09	25.00	4.500	25.000	.00	0 .0
TRANS STR	.0030					.0003	.01	3.40	.48		.014	-3.00	.00	BOX

Date: 5-25-2007 Time:11:41:45

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JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANBULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
4301.050	1433.400	3.770	1437.170	428.00	1.85	.05	1437.22	.00	1.41	78.16	7.500	50.000	4.00	0 .0

WSPGW Analysis for Channel A
Ultimate (Capacity) Analysis

T1 MENIFEE VALLEY ADP - CHANNEL A										0
T2 CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER										
T3 JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTCAP.WSW										
S0	1100.000	1430.000	1						1434.380	
R	1200.000	1430.130	1					.000		
JX	1210.000	1430.140	1	7.035		4.300		1432.000	79.3	.000
TS	1480.000	1430.490	1					.000		
JX	1490.000	1430.500	1	7.035		4.200		1432.000	68.0	.000
TS	1716.150	1430.790	3	.035				.000		
JX	1797.000	1430.900	1	7.035		4.200		1432.000	68.0	.000
TS	2050.000	1431.230	5					.000		
JX	2062.000	1431.250	5	7.035		2.900		1432.000	73.0	.000
TS	2170.000	1431.380	6	.035				.000		
R	2200.000	1431.410	6	.035				.000		
JX	2260.000	1431.490	9	10.035		33.400		1433.230	90.0	.000
TS	2291.000	1431.530	11	.035				.000		
BX	2291.000	1431.530	2							
R	2295.000	1431.560	2	.014				.000		
JX	2337.000	1431.830	2	7 .014	2.000		1432.000	-73.7		.000
R	2369.000	1432.030	2	.014				.000		
R	2382.000	1432.110	2	.014				90.000		
BE	2382.000	1432.110	12	.500						
TS	2417.140	1432.220	13	.014				.000		
SH	2417.140	1432.220	13				1432.220			
CD	1	1	0	.000	10.000	28.000	4.000	4.000	1.68	
CD	2	3	2	1.000	4.000	29.000	.000	.000	.00	
CD	3	1	0	.000	10.000	29.000	4.000	4.000	1.74	
CD	5	1	0	.000	10.000	27.000	4.000	4.000	1.62	
CD	6	1	0	.000	10.000	25.000	4.000	4.000	1.50	
CD	7	4	1	.000	2.000	.000	.000	.000	.00	
CD	9	1	0	.000	8.500	29.000	4.000	4.000	1.74	
CD	10	1	0	.000	5.000	23.000	4.000	4.000	.00	
CD	11	1		.000	3.500	29.000	.000	.000	.00	
CD	12	2	0	.000	5.000	29.000	.000	.000	.00	
CD	13	1	0	.000	4.600	10.000	1.000	1.000	.00	
Q		677.000	.0							

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:48: 9

MENIFEE VALLEY ADP - CHANNEL A

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CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1100.000	1430.000	4.380	1434.380	728.00	3.78	.22	1434.60	.00	2.53	61.92	10.000	28.000	4.00	0 .0
100.000	.0013					.0003	.03	4.38	.38	2.96	.014	-1.68	4.00	TRAP
1200.000	1430.130	4.263	1434.393	728.00	3.93	.24	1434.63	.00	2.53	60.98	10.000	28.000	4.00	0 .0
JUNCT STR	.0010					.0020	.02	4.26	.40		.035	-1.68	4.00	TRAP
1210.000	1430.140	4.280	1434.420	723.70	3.88	.23	1434.65	.00	2.52	61.12	10.000	28.000	4.00	0 .0
TRANS STR	.0013					.0004	.10	4.28	.39		.014	-1.68	4.00	TRAP
1480.000	1430.490	3.987	1434.477	723.70	4.29	.29	1434.76	.00	2.52	58.78	10.000	28.000	4.00	0 .0
JUNCT STR	.0010					.0025	.03	3.99	.45		.035	-1.68	4.00	TRAP
1490.000	1430.500	4.013	1434.513	719.50	4.22	.28	1434.79	.00	2.52	58.98	10.000	28.000	4.00	0 .0
TRANS STR	.0013					.0021	.49	4.01	.44		.035	-1.74	4.00	TRAP
1716.150	1430.790	4.267	1435.057	719.50	3.79	.22	1435.28	.00	2.48	61.98	10.000	29.000	4.00	0 .0
JUNCT STR	.0014					.0018	.15	4.27	.38		.035	-1.68	4.00	TRAP
1797.000	1430.900	4.307	1435.207	715.30	3.80	.22	1435.43	.00	2.51	61.34	10.000	28.000	4.00	0 .0
TRANS STR	.0013					.0004	.09	4.31	.38		.014	-1.62	4.00	TRAP
2050.000	1431.230	4.018	1435.248	715.30	4.28	.28	1435.53	.00	2.55	58.07	10.000	27.000	4.00	0 .0
JUNCT STR	.0017					.0025	.03	4.02	.45		.035	-1.62	4.00	TRAP
2062.000	1431.250	4.036	1435.286	712.40	4.24	.28	1435.57	.00	2.54	58.21	10.000	27.000	4.00	0 .0
TRANS STR	.0012					.0025	.26	4.04	.44		.035	-1.50	4.00	TRAP

Date: 5-25-2007 Time:11:48: 9

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JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTCAP.WSW

JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTCAP.WSW

HYDRAULIC JUMP

Date: 5-25-2007 Time:11:48: 9

MENIFEE VALLEY ADP - CHANNEL A

0

CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-22-07 REVISED PER ACD PLANS, FN: CHANAULTCAP.WSW

[illegible]

WSPGW Analysis for Channel C
Ultimate (Capacity) Analysis

T1 MENIFEE VALLEY ADP - CHANNEL C										0
T2 CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER										
T3 JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTCAP.WSW										
S0	1100.000	1430.020	1							1434.380
R	1232.000	1430.262	1	.035						.000
JX	1235.000	1430.268	1	2.035		4.3		1430.286	-90.0	.000
R	1297.000	1430.388	1	.035						.000
TS	1345.000	1430.497	3	.035						.000
TS	1628.000	1431.055	4	.035						.000
R	1655.000	1431.107	4	.035						.000
JX	1658.000	1431.113	4	2.035		9.1		1431.113	-90.0	.000
R	1673.000	1431.142	4	.035						.000
JX	1683.000	1431.162	4	2.035		5.6		1431.162	-90.0	.000
R	1739.000	1431.277	4	.035						.000
JX	1742.000	1431.283	4	2.035		2.4		1431.283	82.0	.000
R	2003.000	1431.796	4	.035						.000
TS	2056.000	1431.900	7	.035						.000
TS	2215.000	1432.209	8	.035						.000
R	2230.000	1432.239	8	.041						.000
JX	2245.000	1432.284	9 9	2.014	3.8	1.8	1432.284	1432.284	.0 34.4	.000
R	2248.500	1432.295	9	.014						.000
WX	2248.500	1432.295	11							
R	2322.000	1432.516	11	.014						.000
WE	2322.000	1432.516	12	.500						
TS	2335.240	1432.556	12	.014						.000
SH	2335.240	1432.556	12				1432.556			
CD	1	1	0	.000	10.000	32.700	4.000	4.000	1.96	
CD	2	4	1	.000	2.000	.000	.000	.000	.00	
CD	3	1	0	.000	10.000	17.100	4.000	4.000	1.03	
CD	4	1	0	.000	10.000	28.000	4.000	4.000	1.68	
CD	7	1	0	.000	10.000	43.200	4.000	4.000	2.59	
CD	8	1	0	.000	10.000	45.300	4.000	4.000	1.72	
CD	9	2	0	.000	10.000	7.000	.000	.000	.00	
CD	11	4	2	.000	3.000	.000	.000	.000	.00	
CD	12	2	0	.000	10.000	8.000	.000	.000	.00	
Q		42.800	.0							

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WATER SURFACE PROFILE LISTING

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MENIFEE VALLEY ADP - CHANNEL C

0

CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1100.000	1430.020	4.360	1434.380	69.80	.33	.00	1434.38	.00	.60	66.27	10.000	32.700	4.00	0 .0
81.865	.0018					.0000	.00	4.36	.03	1.16	.035	-1.96	4.00	TRAP
1181.865	1430.170	4.211	1434.381	69.80	.35	.00	1434.38	.00	.60	65.08	10.000	32.700	4.00	0 .0
50.135	.0018					.0000	.00	4.21	.03	1.16	.035	-1.96	4.00	TRAP
1232.000	1430.262	4.120	1434.382	69.80	.36	.00	1434.38	.00	.60	64.35	10.000	32.700	4.00	0 .0
JUNCT STR	.0020					.0000	.00	4.12	.04		.035	-1.96	4.00	TRAP
1235.000	1430.268	4.114	1434.382	65.50	.34	.00	1434.38	.00	.58	64.31	10.000	32.700	4.00	0 .0
62.000	.0019					.0000	.00	4.11	.03	1.11	.035	-1.96	4.00	TRAP
1297.000	1430.388	3.995	1434.383	65.50	.35	.00	1434.39	.00	.58	63.35	10.000	32.700	4.00	0 .0
TRANS STR	.0023					.0000	.00	4.00	.04		.035	-1.03	4.00	TRAP
1345.000	1430.497	3.887	1434.384	65.50	.53	.00	1434.39	.00	.78	47.51	10.000	17.100	4.00	0 .0
TRANS STR	.0020					.0000	.01	3.89	.06		.035	-1.68	4.00	TRAP
1628.000	1431.055	3.343	1434.398	65.50	.49	.00	1434.40	.00	.62	53.62	10.000	28.000	4.00	0 .0
27.000	.0019					.0000	.00	3.34	.06	1.19	.035	-1.68	4.00	TRAP
1655.000	1431.107	3.292	1434.399	65.50	.50	.00	1434.40	.00	.62	53.21	10.000	28.000	4.00	0 .0
JUNCT STR	.0020					.0000	.00	3.29	.06		.035	-1.68	4.00	TRAP
1658.000	1431.113	3.288	1434.401	56.40	.43	.00	1434.40	.00	.57	53.18	10.000	28.000	4.00	0 .0
15.000	.0019					.0000	.00	3.29	.05	1.10	.035	-1.68	4.00	TRAP

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

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MENIFEE VALLEY ADP - CHANNEL C

0

CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1673.000	1431.142	3.259	1434.401	56.40	.44	.00	1434.40	.00	.57	52.96	10.000	28.000	4.00	0 .0
JUNCT STR	.0020					.0000	.00	3.26	.05		.035	-1.68	4.00	TRAP
1683.000	1431.162	3.241	1434.403	50.80	.40	.00	1434.41	.00	.53	52.81	10.000	28.000	4.00	0 .0
55.773	.0021					.0000	.00	3.24	.05	1.02	.035	-1.68	4.00	TRAP
1738.773	1431.276	3.128	1434.404	50.80	.42	.00	1434.41	.00	.53	51.90	10.000	28.000	4.00	0 .0
.227	.0021					.0000	.00	3.13	.05	1.02	.035	-1.68	4.00	TRAP
1739.000	1431.277	3.127	1434.404	50.80	.42	.00	1434.41	.00	.53	51.90	10.000	28.000	4.00	0 .0
JUNCT STR	.0020					.0000	.00	3.13	.05		.035	-1.68	4.00	TRAP
1742.000	1431.283	3.122	1434.405	48.40	.40	.00	1434.41	.00	.52	51.85	10.000	28.000	4.00	0 .0
56.492	.0020					.0000	.00	3.12	.05	1.00	.035	-1.68	4.00	TRAP
1798.492	1431.394	3.012	1434.406	48.40	.42	.00	1434.41	.00	.52	50.98	10.000	28.000	4.00	0 .0
54.895	.0020					.0000	.00	3.01	.05	1.00	.035	-1.68	4.00	TRAP
1853.388	1431.502	2.906	1434.408	48.40	.44	.00	1434.41	.00	.52	50.13	10.000	28.000	4.00	0 .0
53.348	.0020					.0000	.00	2.91	.05	1.00	.035	-1.68	4.00	TRAP
1906.735	1431.607	2.803	1434.410	48.40	.46	.00	1434.41	.00	.52	49.30	10.000	28.000	4.00	0 .0
51.851	.0020					.0000	.00	2.80	.06	1.00	.035	-1.68	4.00	TRAP
1958.586	1431.709	2.703	1434.412	48.40	.48	.00	1434.42	.00	.52	48.51	10.000	28.000	4.00	0 .0
44.414	.0020					.0001	.00	2.70	.06	1.00	.035	-1.68	4.00	TRAP

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:52:47

MENIFEE VALLEY ADP - CHANNEL C

0

CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTCAP.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2003.000	1431.796	2.618	1434.414	48.40	.50	.00	1434.42	.00	.52	47.82	10.000	28.000	4.00	0 .0
TRANS STR	.0020					.0000	.00	2.62	.06		.035	-2.59	4.00	TRAP
2056.000	1431.900	2.519	1434.419	48.40	.39	.00	1434.42	.00	.45	61.62	10.000	43.200	4.00	0 .0
TRANS STR	.0019					.0000	.01	2.52	.05		.035	-1.72	4.00	TRAP
2215.000	1432.209	2.216	1434.425	48.40	.42	.00	1434.43	.00	.40	61.88	10.000	45.300	4.00	0 .0
15.000	.0020					.0001	.00	2.22	.05	.85	.041	-1.72	4.00	TRAP
2230.000	1432.239	2.187	1434.426	48.40	.43	.00	1434.43	.00	.40	61.65	10.000	45.300	4.00	0 .0
JUNCT STR	.0030					.0003	.00	2.19	.06		.014	.00	4.00	TRAP
----- WARNING - Junction Analysis - Change in Channel Type -----														
2245.000	1432.284	2.094	1434.378	42.80	2.92	.13	1434.51	.00	1.05	7.00	10.000	7.000	.00	0 .0
3.500	.0031					.0005	.00	2.09	.36	1.14	.014	.00	.00	RECTANG
2248.500	1432.295	2.085	1434.380	42.80	2.93	.13	1434.51	.00	1.05	7.00	10.000	7.000	.00	0 .0
HYDRAULIC JUMP														
2248.500	1432.295	1.487	1433.782	42.80	6.12	.58	1434.36	.00	1.49	3.00	3.000	.000	.00	2 .0
2248.500	1432.295	2.086	1434.381	42.80	4.08	.26	1434.64	.00	1.49	2.76	3.000	.000	.00	2 .0
52.991	.0030					.0018	.10	2.09	.37	1.73	.014	.00	.00	PIPE
2301.491	1432.454	1.998	1434.452	42.80	4.28	.28	1434.74	.00	1.49	2.83	3.000	.000	.00	2 .0
20.509	.0030					.0020	.04	2.00	.40	1.73	.014	.00	.00	PIPE

Program Package Serial Number: 1462

WATER SURFACE PROFILE LISTING

Date: 5-25-2007 Time:11:52:47

MENIFEE VALLEY ADP - CHANNEL C

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CAPACITY RUN BASED ON ULTIMATE COND FOR ANGLED CULVERT @ LINDENBERGER

JN 14795B, 05-24-07 REVISED PER ACD PLANS, FN: CHANCULTCAP.WSW

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
L/Elem | Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | *****
2322.000 | 1432.516 | 1.967 | 1434.483 | 42.80 | 4.36 | .29 | 1434.78 | .00 | 1.49 | 2.85 | 3.000 | .000 | .00 | 2 .0
WALL ENTRANCE
2322.000 | 1432.516 | 2.676 | 1435.192 | 42.80 | 2.00 | .06 | 1435.25 | .00 | .96 | 8.00 | 10.000 | 8.000 | .00 | 0 .0
TRANS STR .0030 | .0002 | .00 | 2.68 | .22 | .014 | .00 | .00 | RECTANG
2335.240 | 1432.556 | 2.637 | 1435.193 | 42.80 | 2.03 | .06 | 1435.26 | .00 | .96 | 8.00 | 10.000 | 8.000 | .00 | 0 .0

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APPENDIX I

Plancheck Letter From RCFC&WCD dated February 13, 2007



February 13, 2007

Mr. Alan French, P.E.
Senior Civil Engineer
Riverside County
Transportation Department
County Administrative Center
Riverside, California

Dear Mr. Othman:

Re: Tracts 31008 and 31229
Preliminary Plans for Lake and Channels
Account Nos. 137-0-3-8039 and 137-0-3-74766
(Improvement Plan Ck. #2)

As requested by the Riverside County Flood Control and Water Conservation District, *CValdo Corporation* have completed plan check number 2 for the subject project.

The following preliminary plans and supporting report, as prepared by Artiga Civil Design have been submitted to the District for review:

1. Tracts 31008 and 31229 Revised Hydrologic and Hydraulic Report for Off-Site and On-Site Lake and Channels (prepared by Artiga Civil Design and Rick Engineering Company), dated December 13, 2006, received by the District on February 5, 2007.
2. Tracts 31008 and 31229 Lake and Channel Preliminary plans, dated January 29, 2007, consisting of 7 sheets, received by the District on February 5, 2007.

The District has reviewed the plans submitted and has the following comments:

HYDROGOLIC AND HYDRAULIC REPORT

1. Provide a Revised Hydrologic and Hydraulic Report Signed and Stamped by a Registered Civil Engineer.
2. Because this document will be used as a basis for Conditions of Approval for multiple projects, it is important that the details in the narrative match the calculations. In the Introduction Section, on pages 18 and 20, change the water surface elevation for the Tract 31229 Lake to "varies from 1429.00-feet to 1429.80-feet" to match the Hydraulic calculations in the Report; on page 20, change the water surface elevation for Channels A and B at Station 10+35 to 1432.96-feet to match the Hydraulic calculations in the Report; and on page 24, only show Earth Channel reaches (not Culverts and Concrete Transition Structures) where velocities exceed 6-feet per second [from the Hydraulic calculations, Channel A is the only Earth Channel that has velocities greater than 6 feet per second (6.59-feet per second)].

Mr. Alan French, P.E.
County of Riverside
TR 31008 and TR 31229
February 13, 2007
Page 2 of 3

3. For the On-Site and Off-Site Hydrology Map in Map Pocket 1, revise the Map to clearly show the contours; show the Sub-Drainage Areas and their acres for the On-Site Tract 31008 flows; and show where the Off-Site Drainage Area B flows into Tract 31008 (show which portion of Area B flows into Tract 31008 at Eucalyptus Road and which portion of Area B flows directly to the intersection of Craig Avenue and Leon Road).

LAKE AND CHANNEL PLANS

4. Address all red line comments.
5. Provide a Plan and Profile for channel that intercepts the flow from the intersection of Craig Avenue and Leon Road. The flow line grade for this channel is important, since this channel needs to be deep enough to accommodate the upstream Storm Drain for the flow south of Craig Avenue.
6. On sheet 2, provide the revised plans for the Lindemberger Road Culvert (the Culvert Headwalls must intercept and outlet flows perpendicular to the Lake inflow and outflow).
7. On sheet 3, change the slope for the Channel between the two Culverts to 4 to 1 for the Earth Channel or provide a concrete or rip rap lining on the Channel slopes; and provide an invert access ramp and maintenance roads for the channel between the two culverts.
8. On sheet 5, increase the Channel height from 6.19-feet to 7-feet to provide 1-foot of freeboard; and remove the callout for the 33-inch sanitary sewer from the District's right of way, the sewer will not be allowed to be constructed in the District's right of way.
9. On sheet 6, increase the height of the 10-foot wide by 3-foot high RC Box Culvert to 4-feet high (the District's minimum allowable height) and add a Profile of the Culvert to the Plan.
10. On sheet 7, flatten the invert slopes for the Channel so that the height of the Holland Road Culvert can be increased to 4-feet (the District's minimum allowable height for RC Box Culverts) and the velocities can be reduced to less than 6 feet per second (the District's maximum allowable velocity for Earth Channels).

GENERAL

11. Once the items above have been addressed satisfactorily and the District has provided technical endorsement of the plan, Tracts 31008 and 31229 must provide written endorsement of the plan prior to issuance of Conditions of Approval for the remainder of the Tentative Tracts in the study area.
12. It is noted that the plan presented has integrated the lake feature proposed by Tract 31229. This "lake reach" between Briggs Road and Leon Road cannot be maintained by the Flood Control District. However, the proposal is a logical extension of the approach to flood control used downstream and the District has no objection to this.

Mr. Alan French, P.E.
County of Riverside
TR 31008 and TR 31229
February 13, 2007
Page 3 of 3

Since the construction of the Briggs Road to Lindendurger Road reach will likely precede development of Tract 31229, this report shall identify responsible parties for the maintenance of the Lake.

During the Final Design of the Project, a Lake Operating and Maintenance Manual that addresses Water Quality, Sedimentation and other Maintenance issues must be submitted the District for review and approval.

13. Checked plans have been returned to the engineer for corrections. The re-submittals should be date stamped by the engineer and 2 sets of folded (9" x 12") with the title block showing and must include all checked prints and calculations.
14. All comments, either written in red on the plans, or contained in this letter, must be addressed or mutually resolved by the engineer and the plan checker, prior to resubmittal. Failure to will result in the plans being returned to the engineer, with no further action taken.
15. To aid with the next review, we request a response letter prepared by the engineer of work, directly addressing the above comments following the same alphanumeric order of this letter.

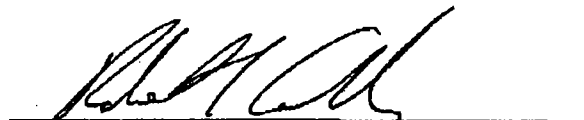
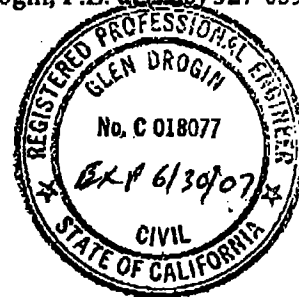
The Lake and Channel plans have been returned to the Engineer for correction.

If you have any questions regarding this plan check, please call Glen Drogin, P.E. at (760) 327-0397.

Sincerely,



Glen Drogin, P.E.
Wolfe Engineering and Design Inc. for CValdo Corporation



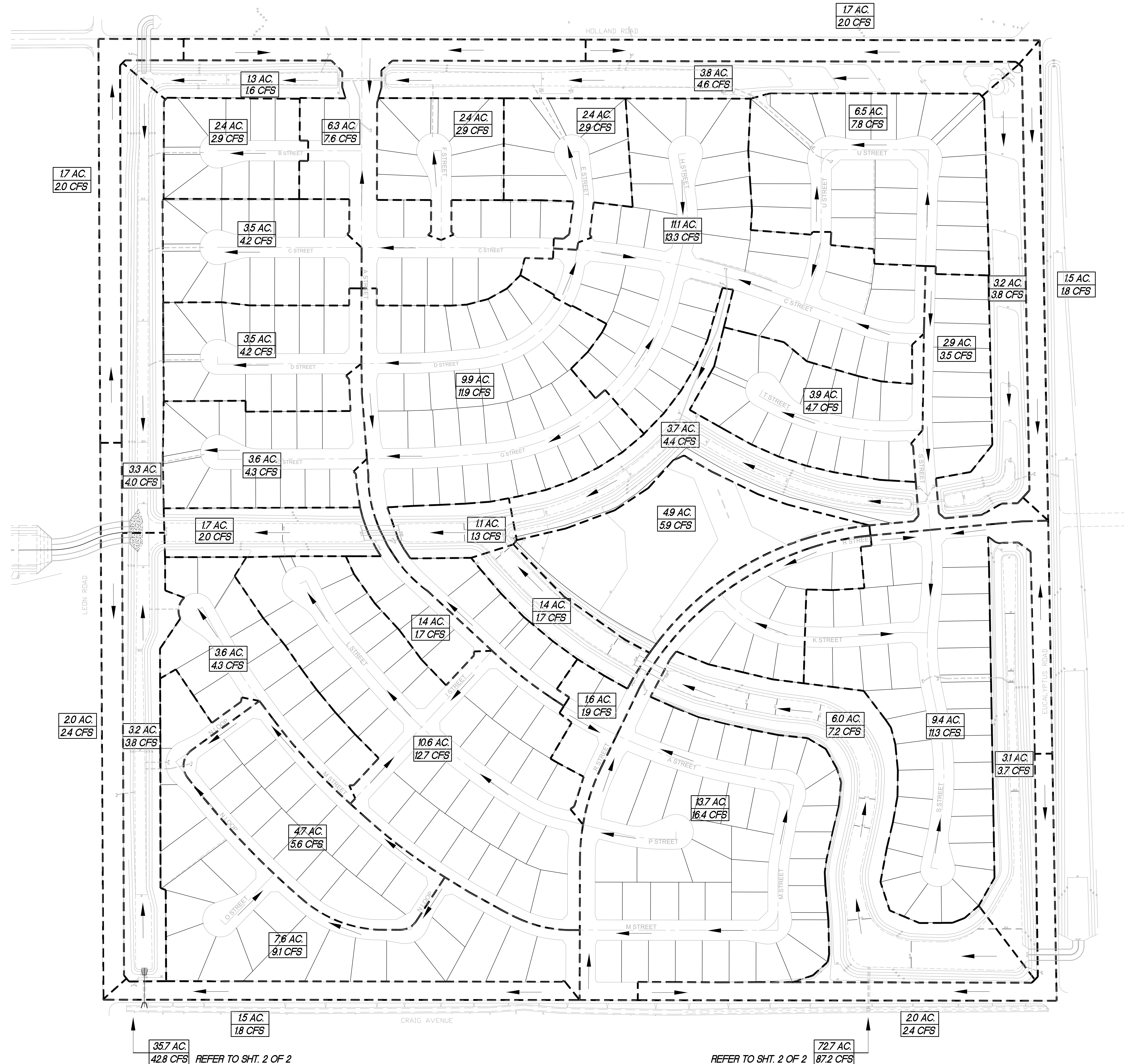
ROBERT CULLEN, SENIOR CIVIL ENGINEER
RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

Cc Artiga Civil Design
ATTN: Frank Artiga, P.E.
Rancon Winchester Valley 155, LLC
Leon Road, LLC
Department of Building and Safety
ATTN: Kack Sung

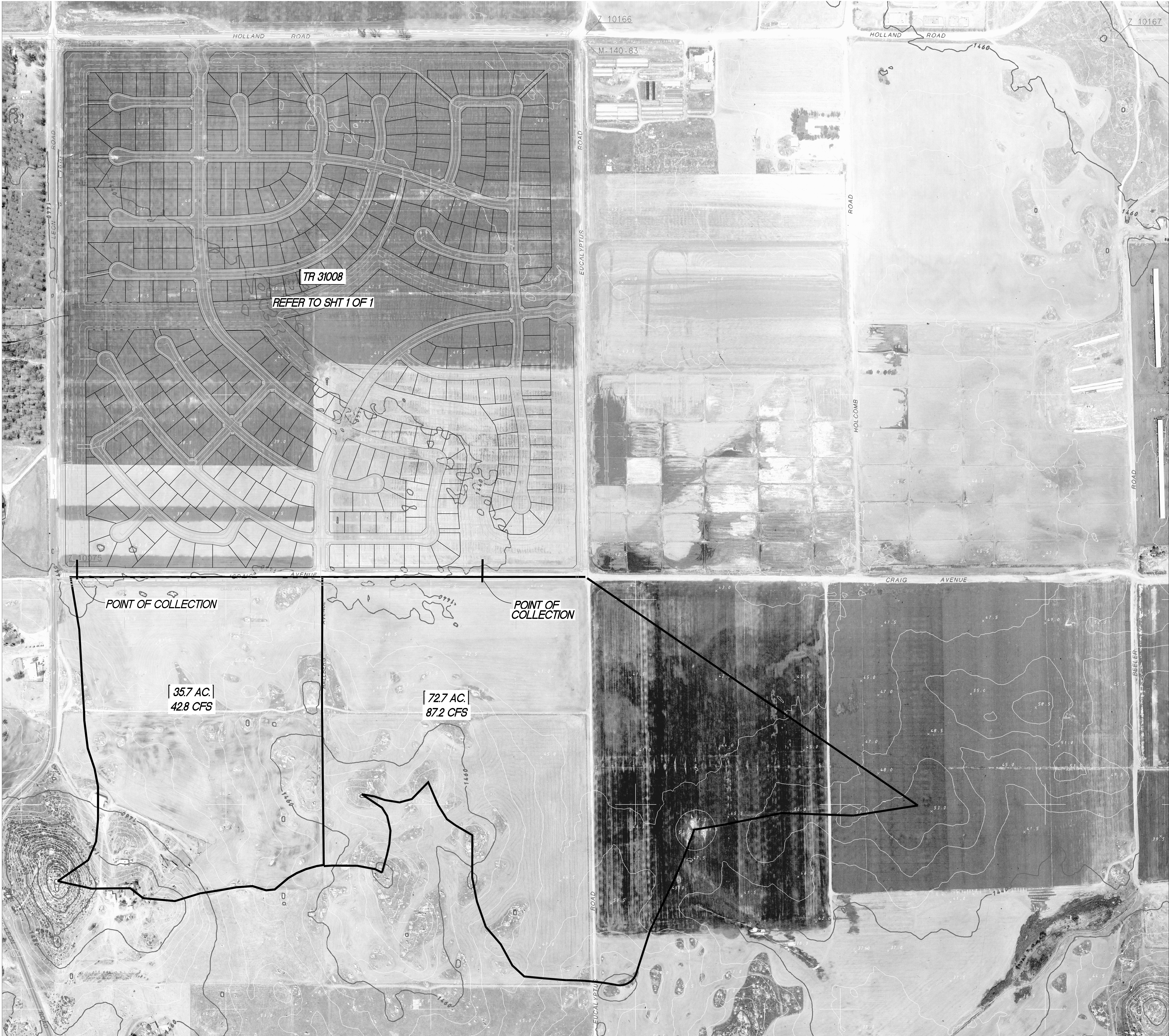
MAP POCKET 1

On-site Hydrology Map and Off-site Hydrology Map (for Tr. 31008)

ON-SITE HYDROLOGY MAP

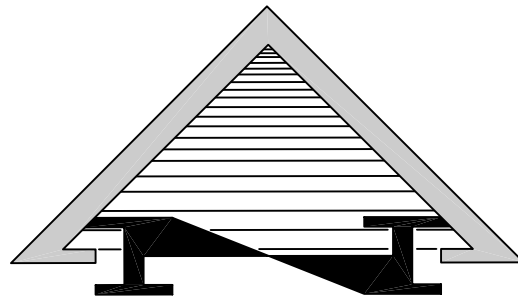


OFF-SITE HYDROLOGY MAP



LEGEND

- DRAINAGE SUB-AREA
- SUB-AREA ACREAGE
- FLOW-RATE YIELD (SUB-AREA X 1.2 CFS/AC)



0 100 200 400 600
SCALE 1"= 200'

ARTIGA
DESIGN
land development planning & engineering
43430 BUSINESS PARK DRIVE TEMECULA, CA 92590
TEL: 951.506.1425 FAX: 951.506.1426

PREPARED BY: FRANK A. ARTIGA
EXP. DATE: 09-30-07
R.C.E. NO. 61860
DATE: _____

OFF-SITE HYDROLOGY
MAP

SHEET 2 OF 2

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: FAA
DRAWN BY: FAA
CHECKED BY: FAA

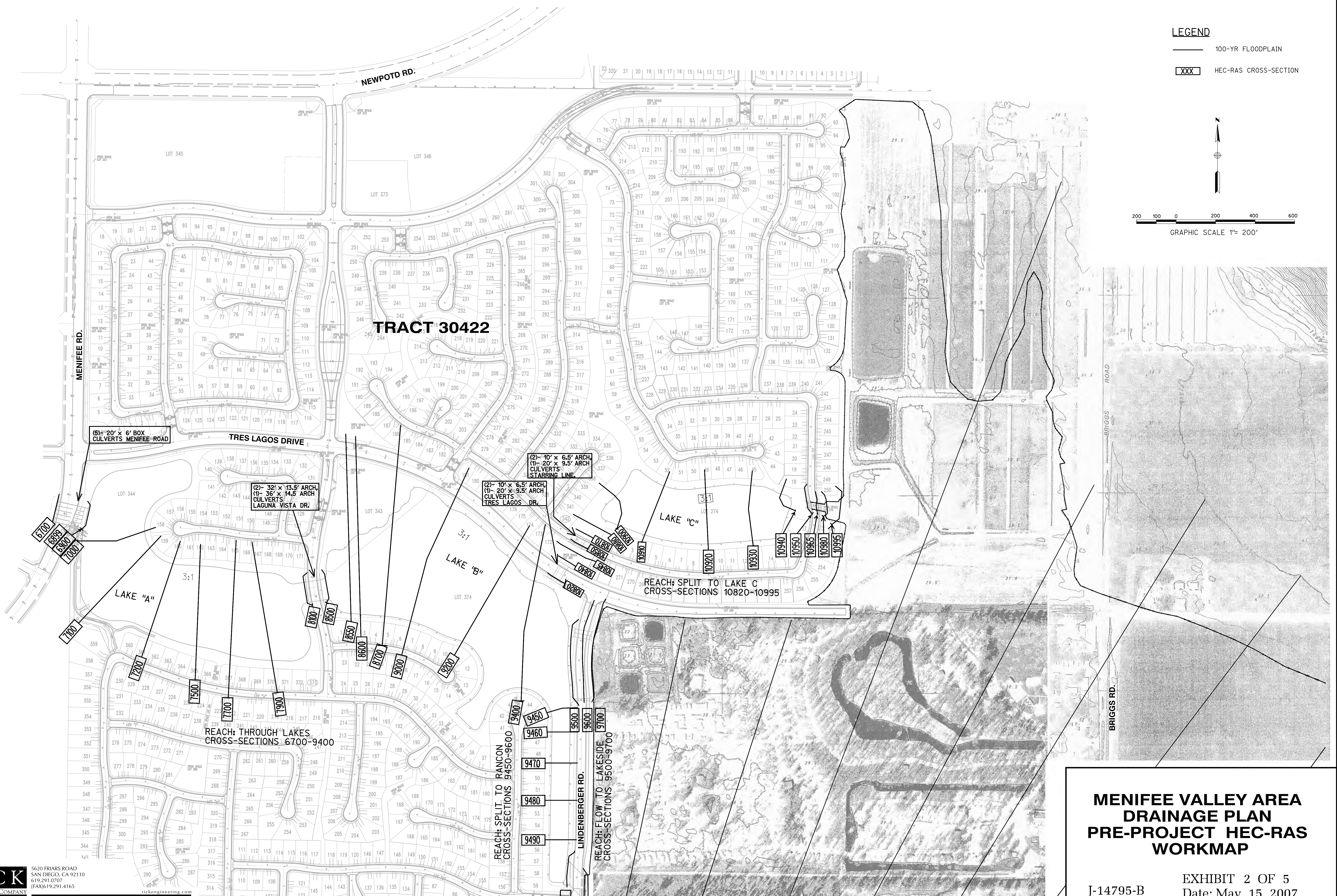
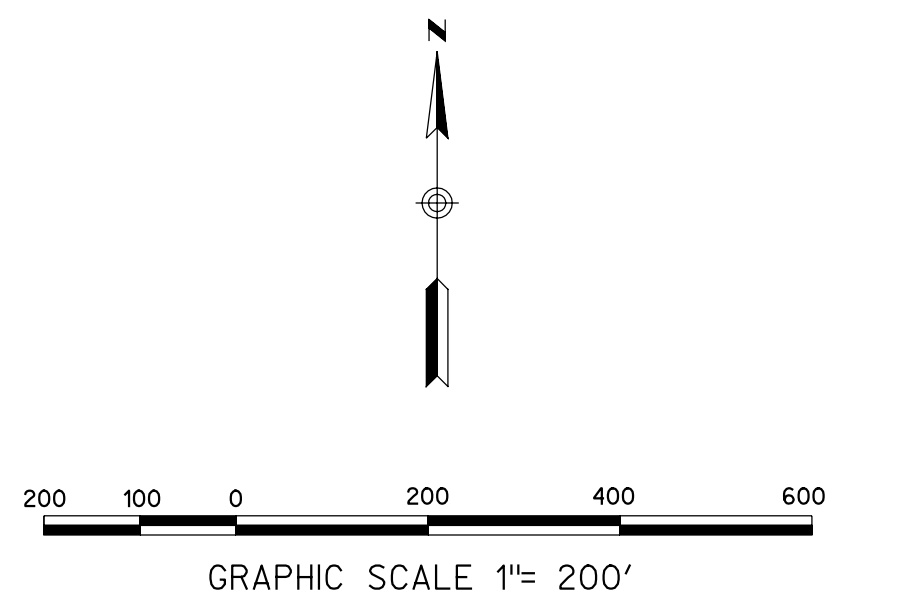
MAP POCKET 2

Pre-Project HEC-RAS Workmaps (5 Sheets)

LEGEND

100-YR FLOODPLAIN

HEC-RAS CROSS-SECTION

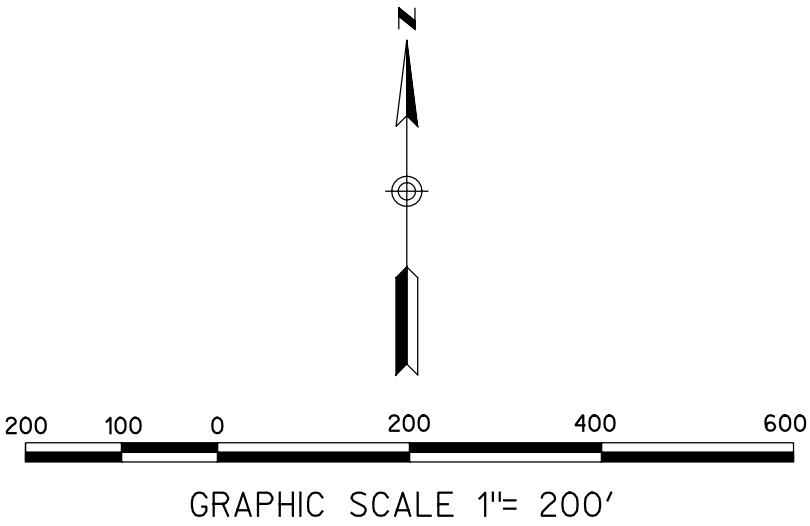




LEGEND

100-YR FLOODPLAIN

HEC-RAS CROSS-SECTION



TRACT 30422

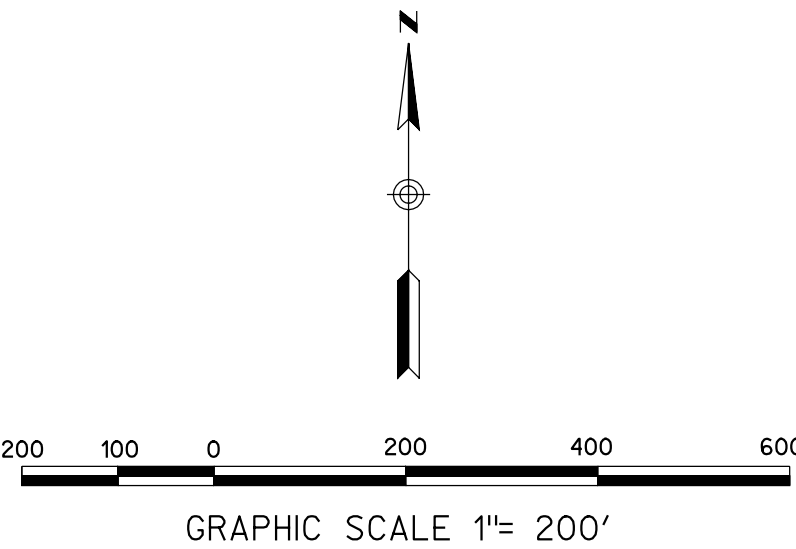
MENIFEE VALLEY AREA
DRAINAGE PLAN
PRE-PROJECT HEC-RAS
WORKMAP

J-14795-B
EXHIBIT 3 OF 5
Date: May 15, 2007

LEGEND

100-YR FLOODPLAIN

HEC-RAS CROSS-SECTION



**MENIFEE VALLEY AREA
DRAINAGE PLAN
PRE-PROJECT HEC-RAS
WORKMAP**

J-14795-B

EXHIBIT 5 OF 5
Date: May 15, 2007

RICK
ENGINEERING COMPANY

5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX) 619.291.4165

rickengineering.com

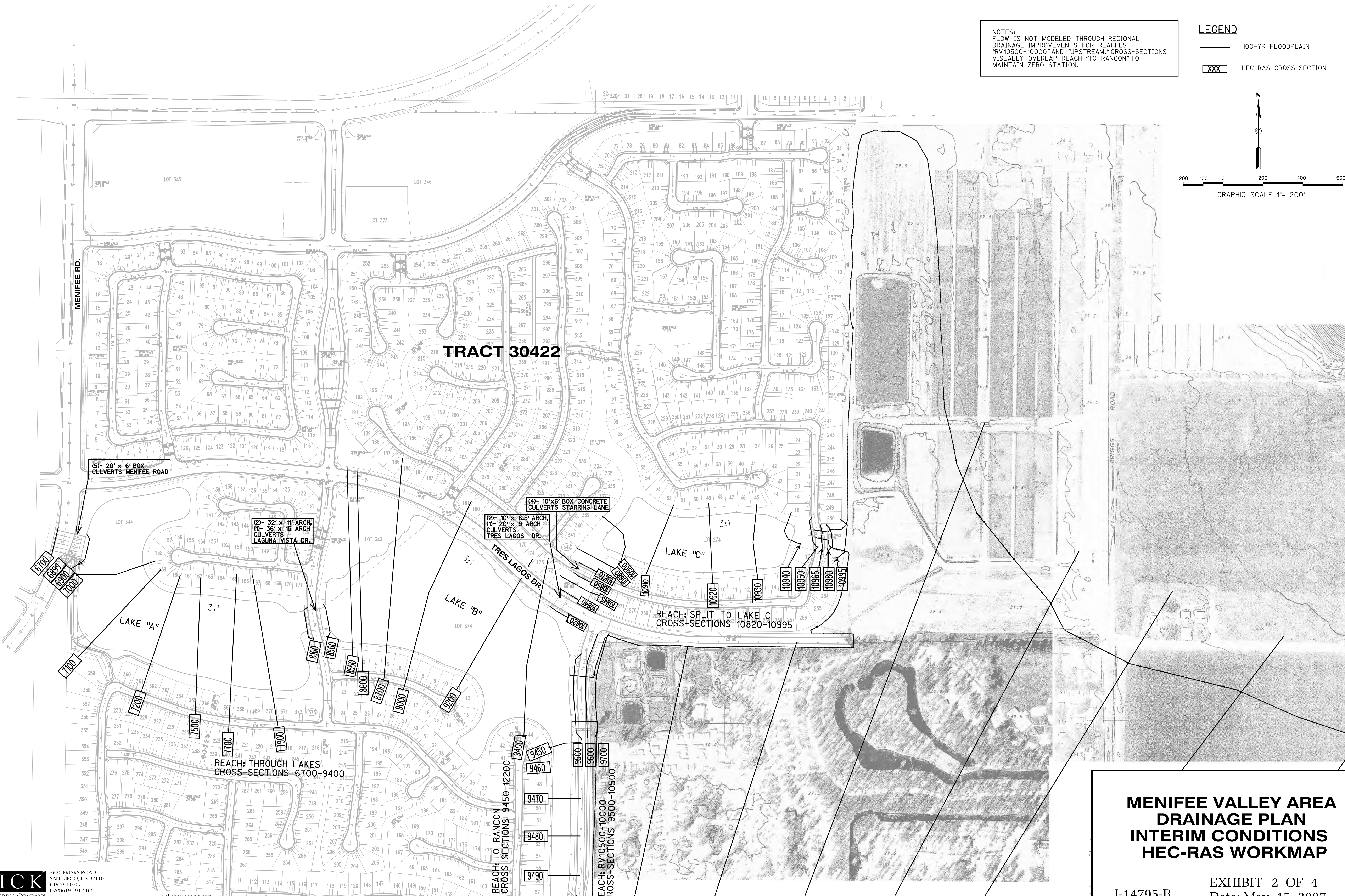
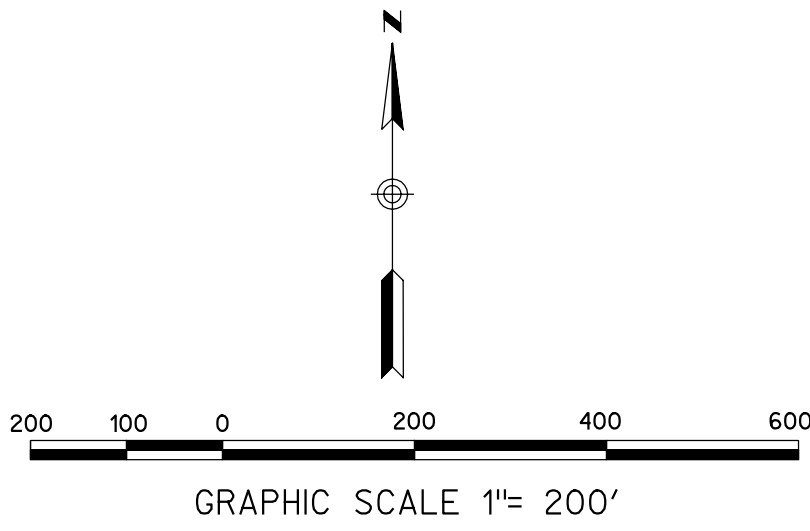
San Diego Riverside Sacramento Orange Phoenix Tucson

MAP POCKET 3

Interim Post-Project Condition HEC-RAS Workmaps (4 Sheets)

NOTES:
FLOW IS NOT MODELED THROUGH REGIONAL
DRAINAGE IMPROVEMENTS FOR REACHES
RV10500-10000* AND *UPSTREAM.* CROSS-SECTIONS
VISUALLY OVERLAP REACH *TO RANCON* TO
MAINTAIN ZERO STATION.

LEGEND
100-YR FLOODPLAIN
HEC-RAS CROSS-SECTION



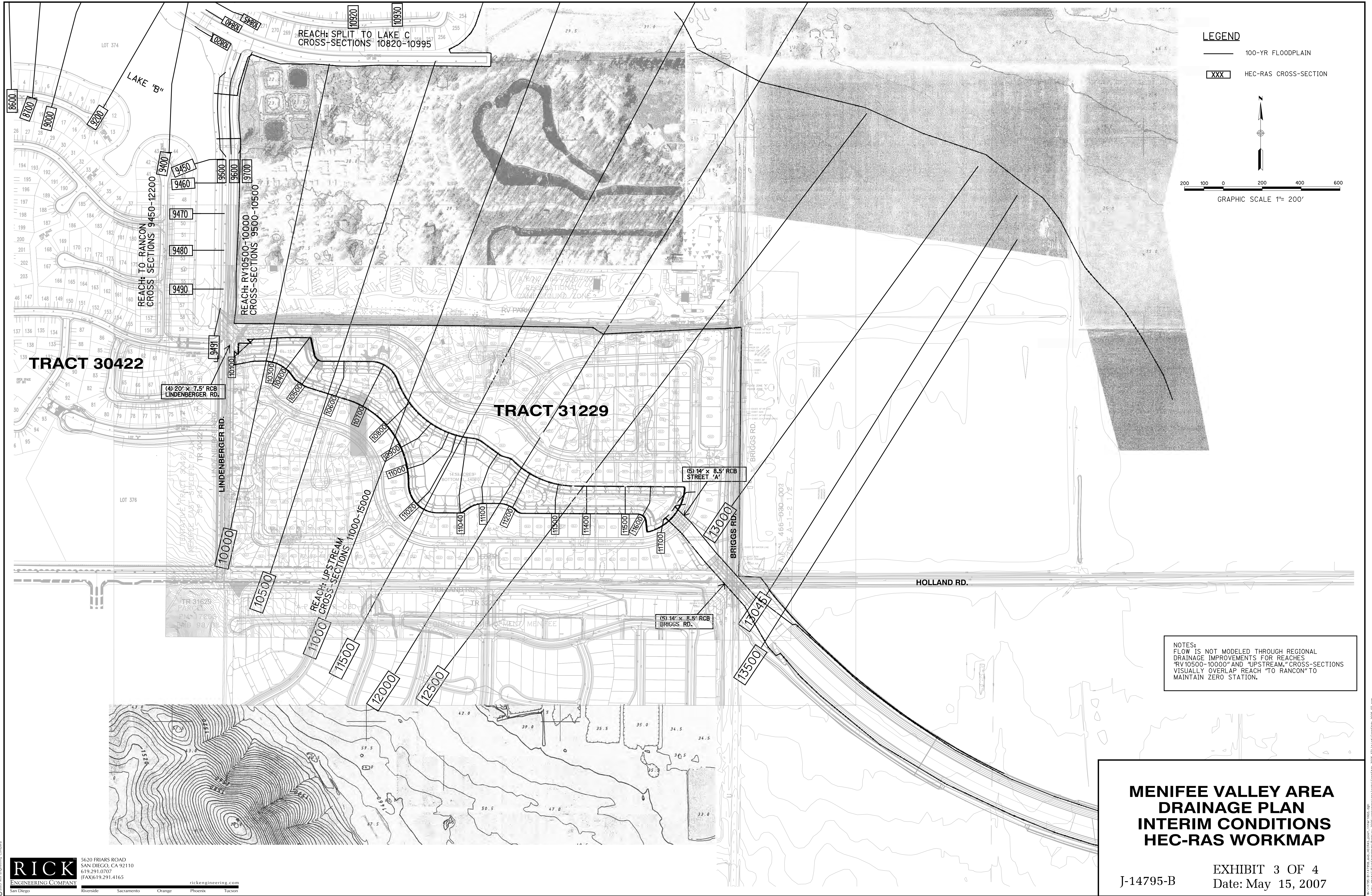
5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX) 619.291.4165

rickengineering.com

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**MENIFEE VALLEY AREA
DRAINAGE PLAN
INTERIM CONDITIONS
HEC-RAS WORKMAP**

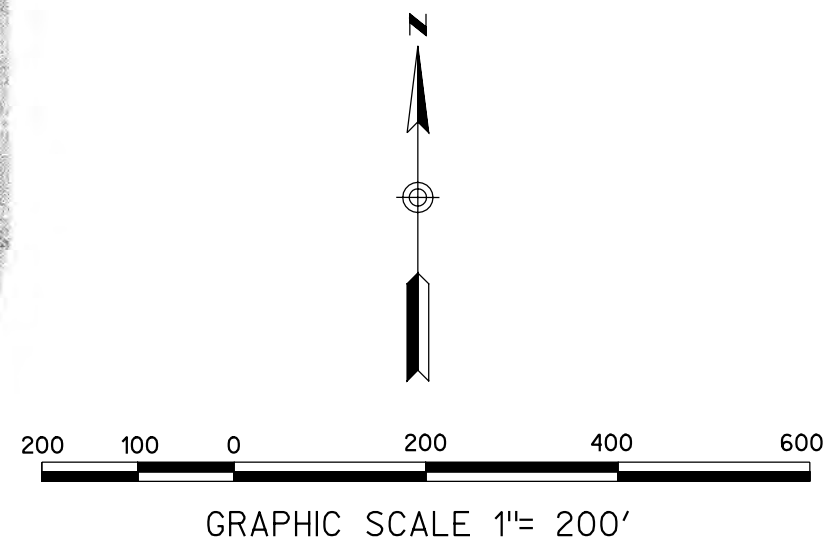
J-14795-B
EXHIBIT 2 OF 4
Date: May 15, 2007



LEGEND

100-YR FLOODPLAIN

XXX HEC-RAS CROSS-SECTION



NOTES:
FLOW IS NOT MODELED THROUGH REGIONAL DRAINAGE IMPROVEMENTS FOR REACHES "RV10500-10000" AND "UPSTREAM." CROSS-SECTIONS VISUALLY OVERLAP REACH "TO RANCON" TO MAINTAIN ZERO STATION.

**MENIFEE VALLEY AREA
DRAINAGE PLAN
INTERIM CONDITIONS
HEC-RAS WORKMAP**

J-14795-B

EXHIBIT 3 OF 4
Date: May 15, 2007

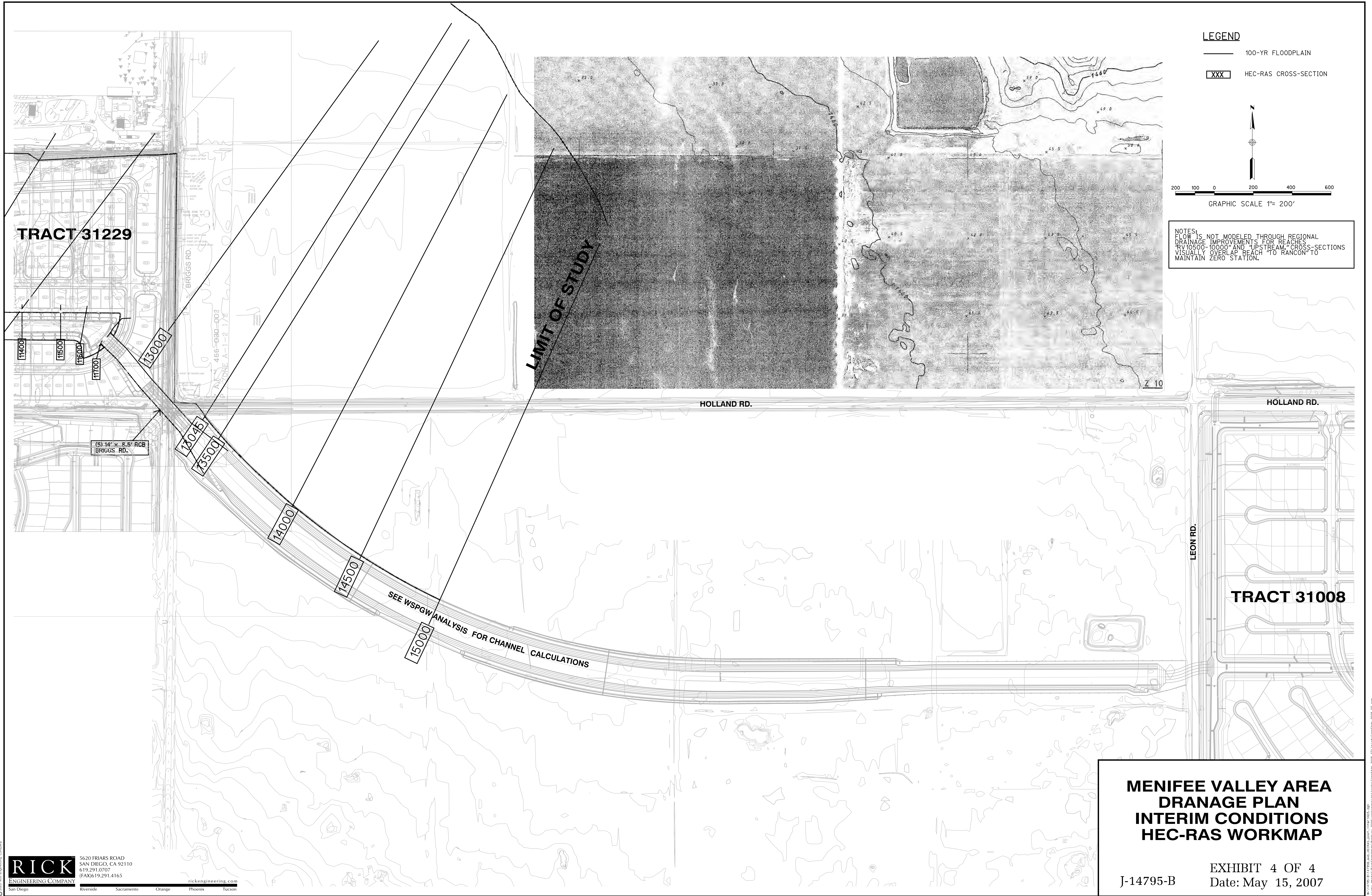
RICK
ENGINEERING COMPANY

5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX) 619.291.4165

rickengineering.com

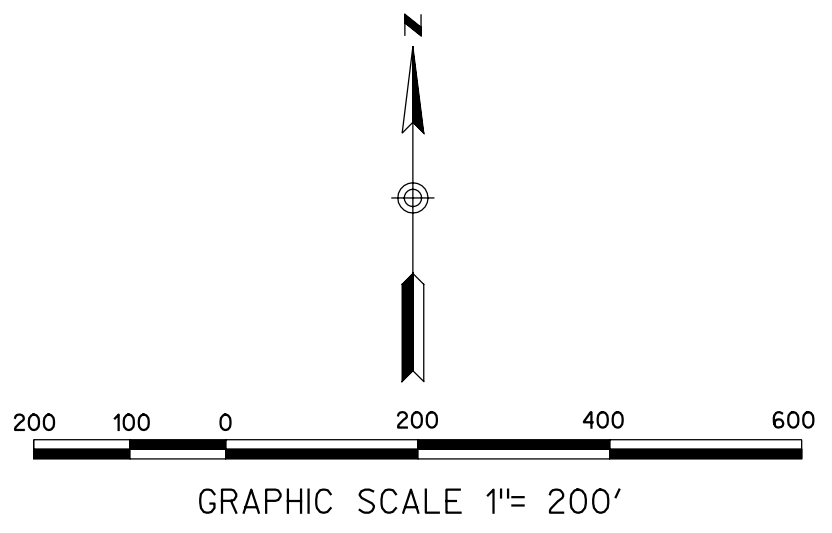
San Diego Riverside Sacramento Orange Phoenix Tucson

BY: J-14795-B (1/15/08) AND: HEC-RAS (2/20/07) - INTERIM DRAINAGE PLAN
15-MAY-2007 09:50



LEGEND

- 100-YR FLOODPLAIN
- HEC-RAS CROSS-SECTION



NOTES:
FLOW IS NOT MODELED THROUGH REGIONAL DRAINAGE IMPROVEMENTS FOR REACHES "RV10500-10000" AND "UPSTREAM" CROSS-SECTIONS VISUALLY OVERLAP REACH "TO RANCON" TO MAINTAIN ZERO STATION.

MENIFEE VALLEY AREA
DRANAGE PLAN
INTERIM CONDITIONS
HEC-RAS WORKMAP

J-14795-B EXHIBIT 4 OF 4
Date: May 15, 2007

RICK
ENGINEERING COMPANY
San Diego

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SAN DIEGO, CA 92110
619.291.0707
(FAX) 619.291.4165

Riverside

Sacramento

Orange

Phoenix

Tucson

rickengineering.com

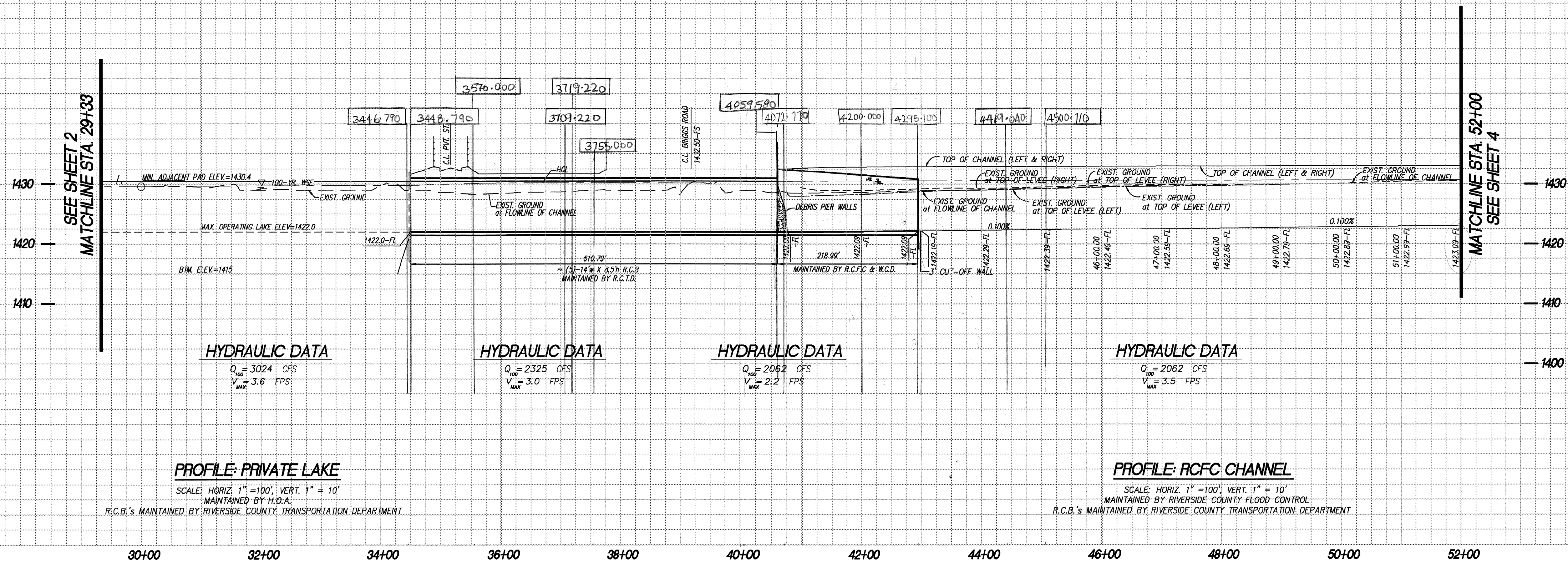
MAP POCKET 4

Ultimate Post-Project Condition HEC-RAS Workmaps (1 Sheet)



MAP POCKET 5

**Interim & Ultimate Condition WSPGW Workmaps
For
Culvert at Briggs & Holland Road Crossing
&
Regional Channel
(3 Sheets)**



PROFILE: PRIVATE LAKE

SCALE: HORIZ. 1" = 100', VERT. 1" = 10'

MAINTAINED BY H.O.A.

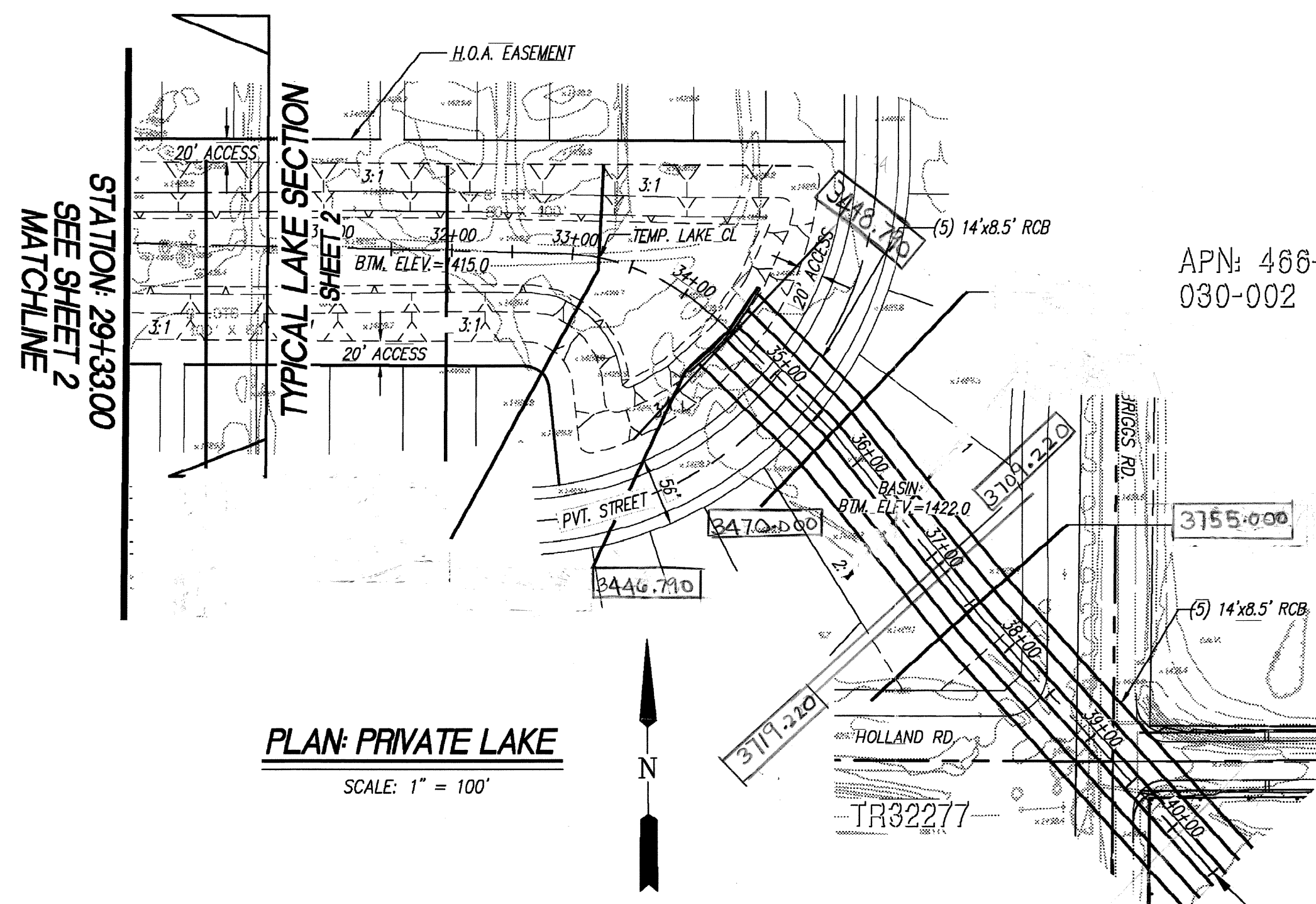
R.C.B.'s MAINTAINED BY RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT

PROFILE: RCFC CHANNEL

SCALE: HORIZ. 1" = 100', VERT. 1" = 10'

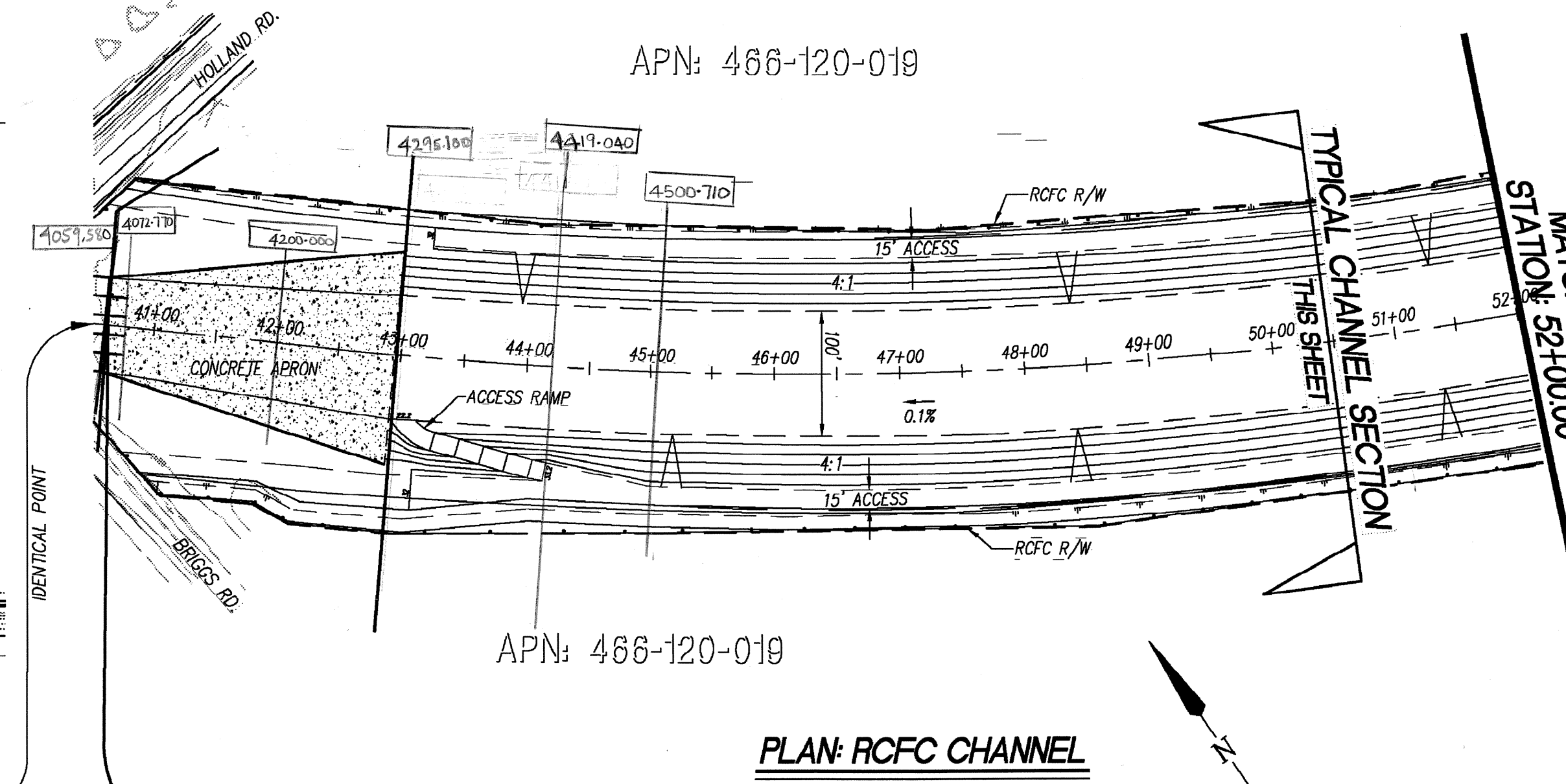
MAINTAINED BY RIVERSIDE COUNTY FLOOD CONTROL

R.C.B.'s MAINTAINED BY RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT



PLAN: PRIVATE LAKE

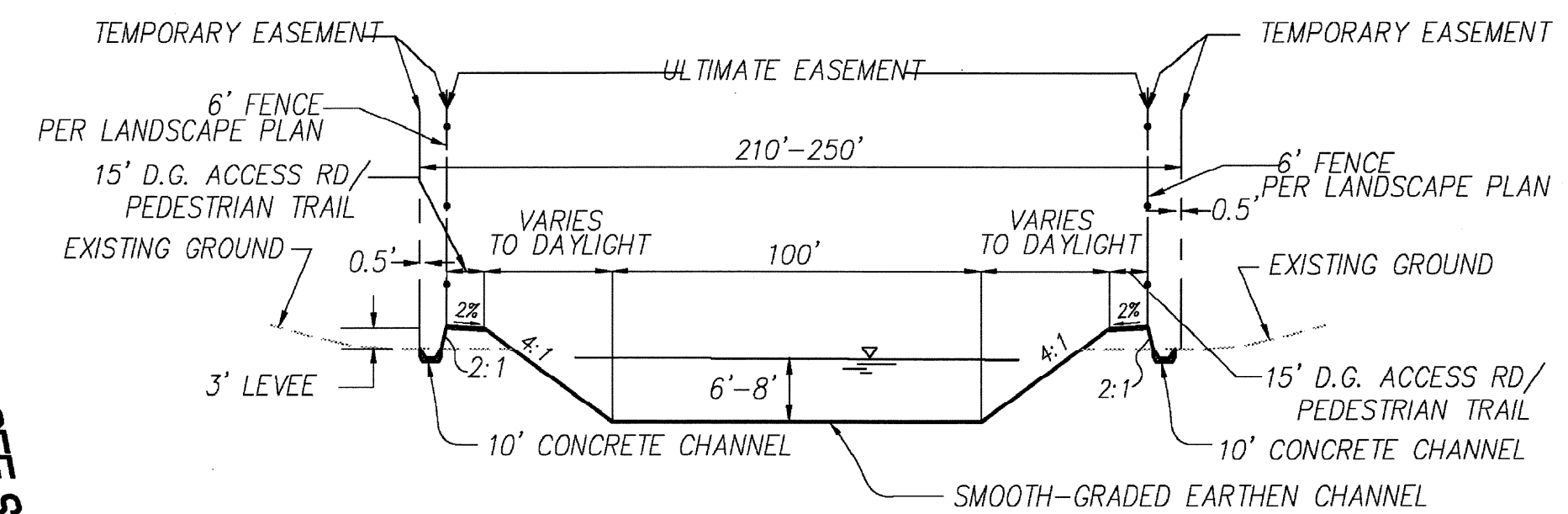
SCALE: 1" = 100'



PLAN: RCFC CHANNEL

SCALE: 1" = 100'

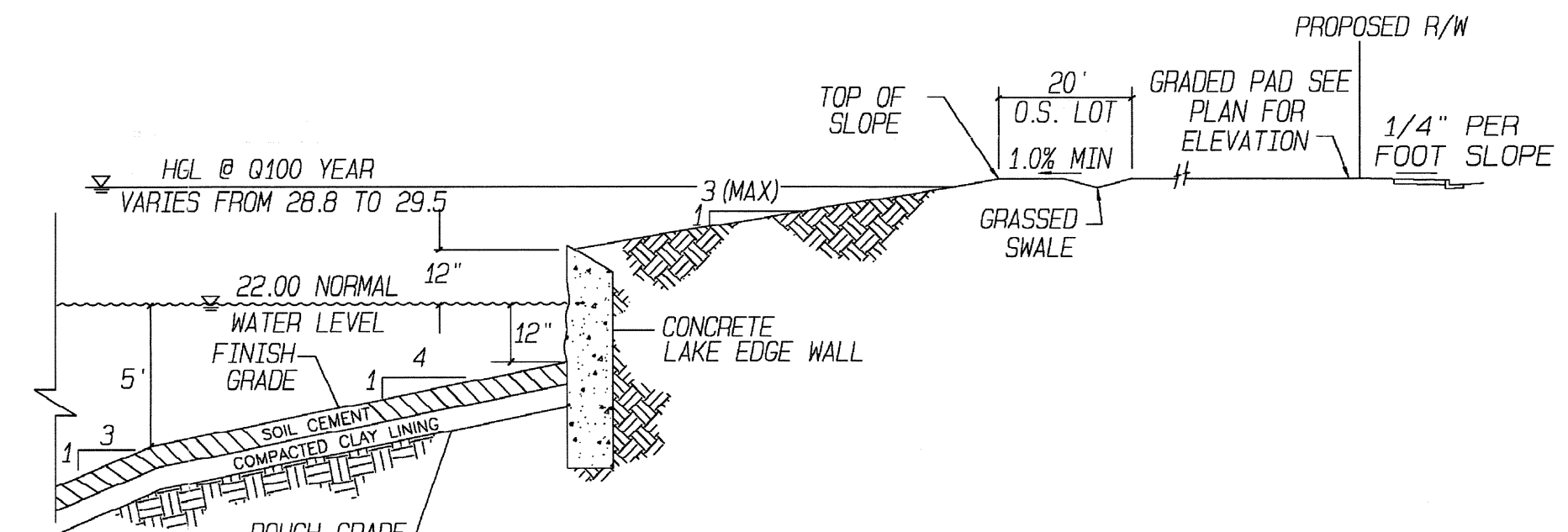
STATION EQUATION:
END HEC CALCULATIONS (HEC STA. 12100),
BEGIN WSPG CALCULATIONS (WSPG STA. 4072.77)



CHANNEL SECTION - WITH LEVEE CONDITION

*STA. 41+35.58 TO 76+82.76

NO SCALE
*NOTE: NO LEVEE ON NORTH SIDE OF CHANNEL BETWEEN 41+35.58 TO 60+93.51,
AND BETWEEN STATIONS 54+09.56 TO 58+98.10 ON THE SOUTH SIDE



DETAIL 'A' - LAKE EDGE

NO SCALE

Underground Service Alert



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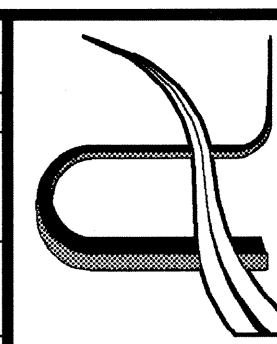


Designed By F.A.A. Drawn By F.A.A. Checked By F.A.A.

Plans Prepared Under Supervision Of

FRANK A. ARTIGA Date:

R.C.E. No. 61860 Expires 09/30/07



ARTIGA CIVIL DESIGN

43020 BLACKHEEN LOOP, #201
TEMECULA, CA 92590
T: 951.587.9841
F: 951.587.9842

REVISIONS

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL

APPROVED BY:

PLANNING ENGINEER CHIEF ENGINEER

DATE: DATE:

COUNTY OF RIVERSIDE, TRANSPORTATION DEPARTMENT

RECOMMENDED BY:

APPROVED BY: Date

KHALED O. HANAN Director of Transportation Date

R.C.E. 19744 Expires 09-30-2007

MENIFEE VALLEY DRAINAGE PLAN

PROPOSED LAKE & CHANNEL PLAN

PRIVATE LAKE THRU TRACT 31229/

RCFC CHANNEL

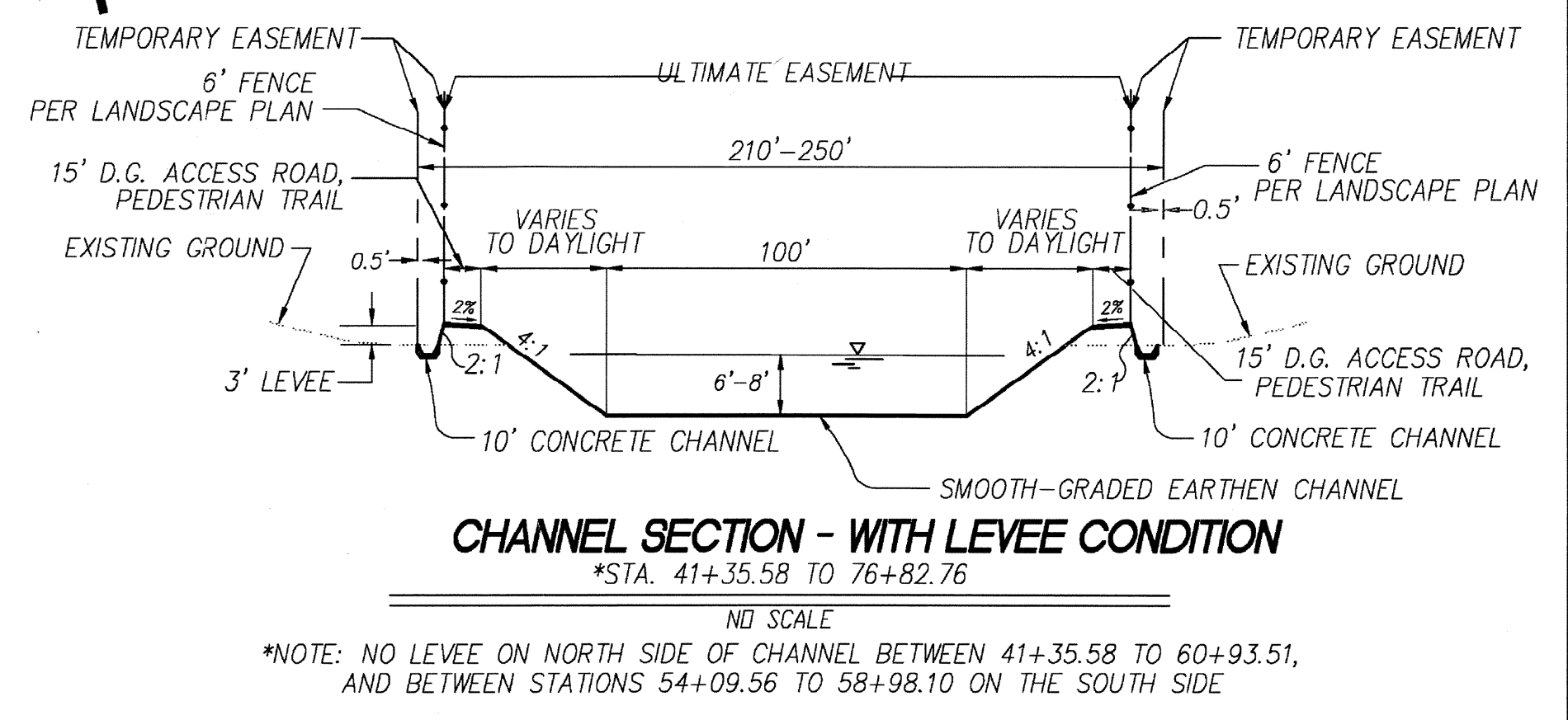
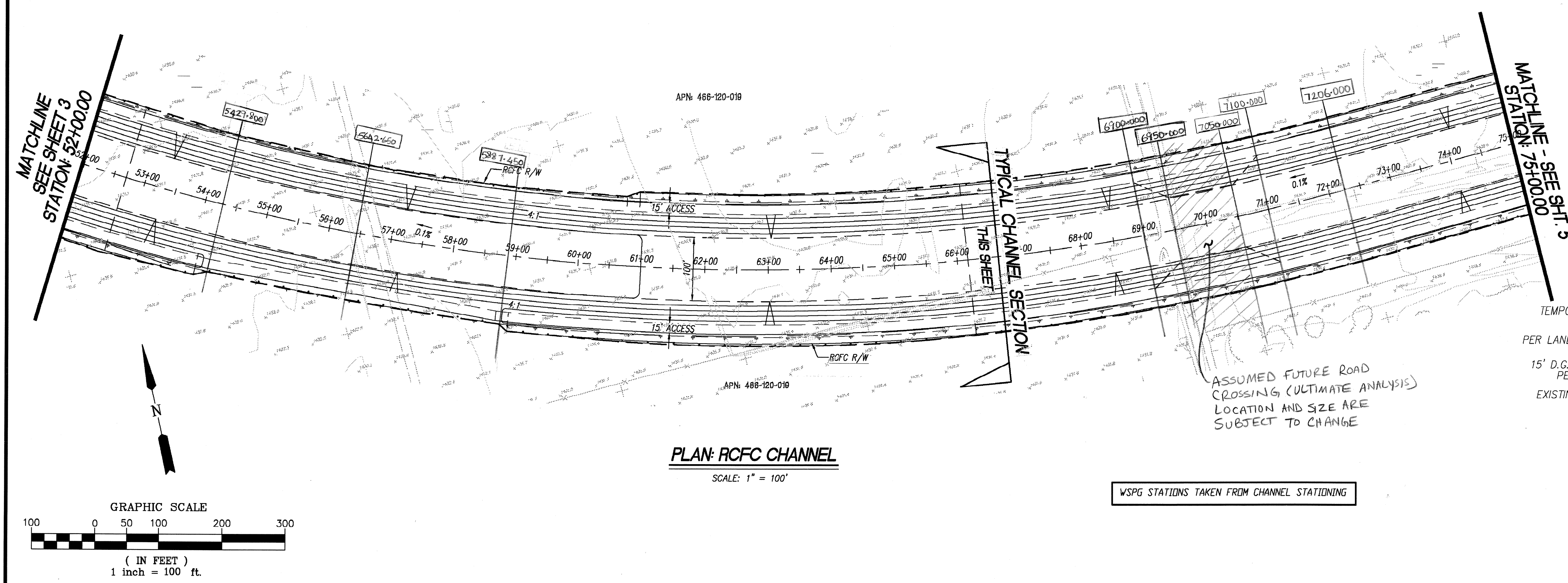
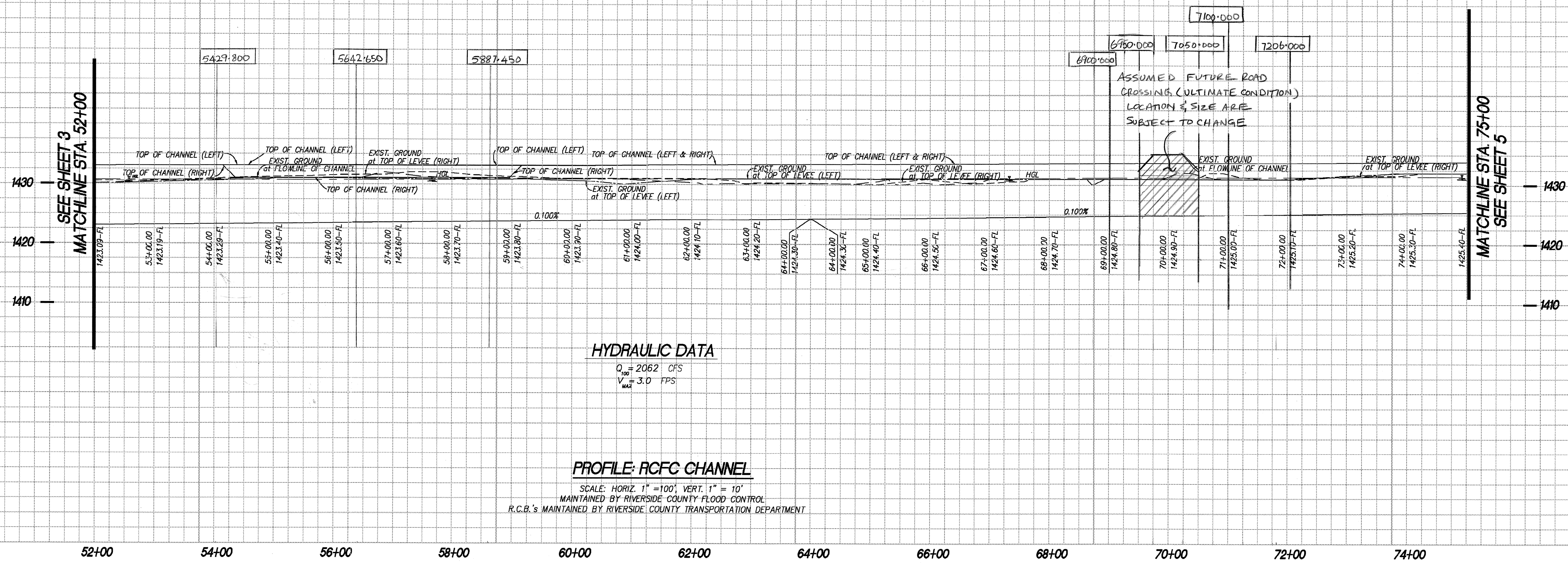
29+33.00 TO 52+00.00

PROJECT NO.

DRAWING NO.

SHEET NO.

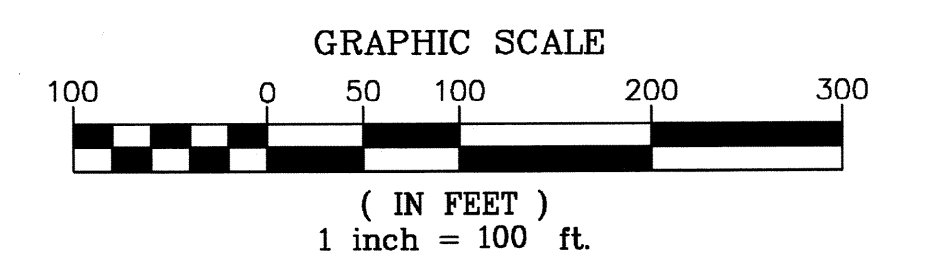
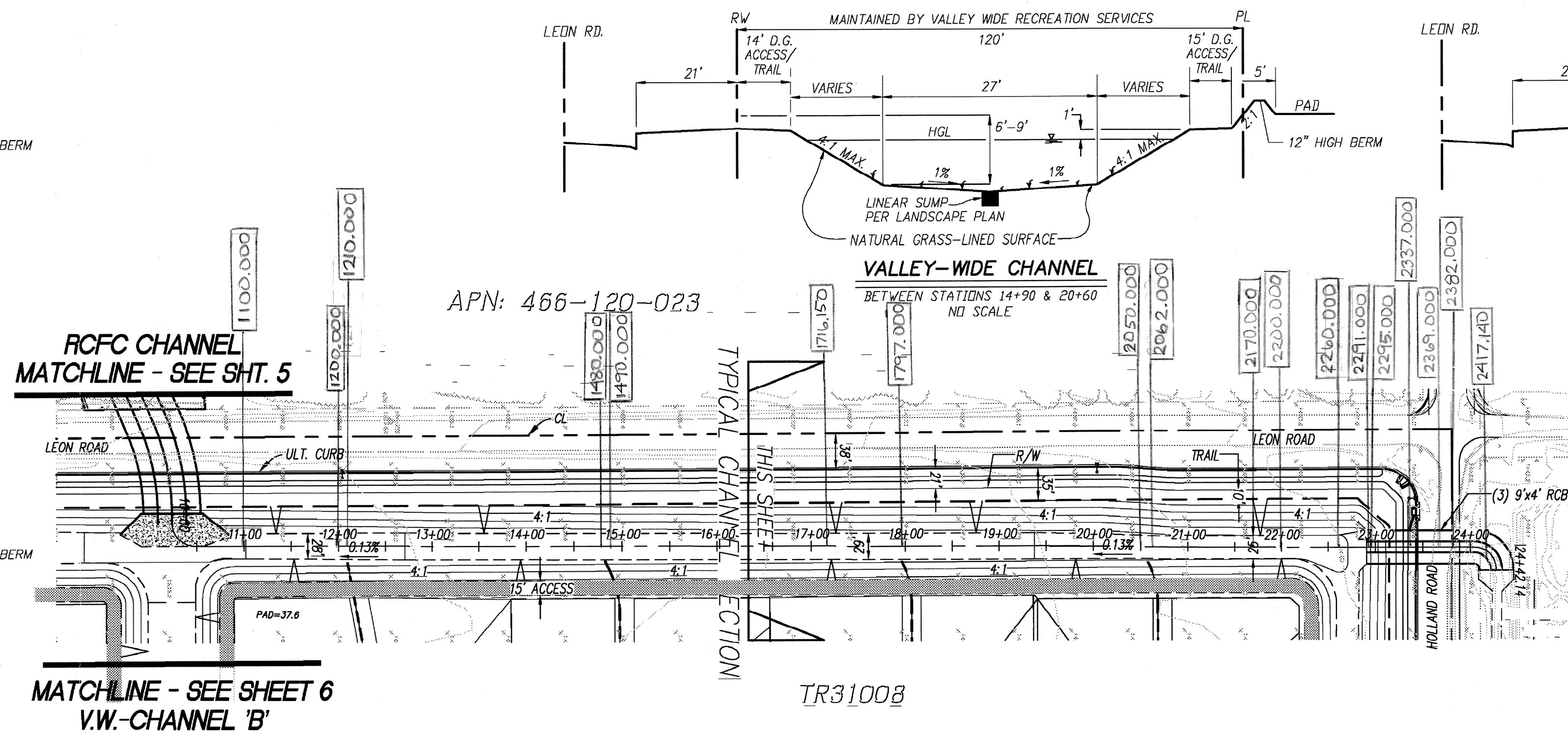
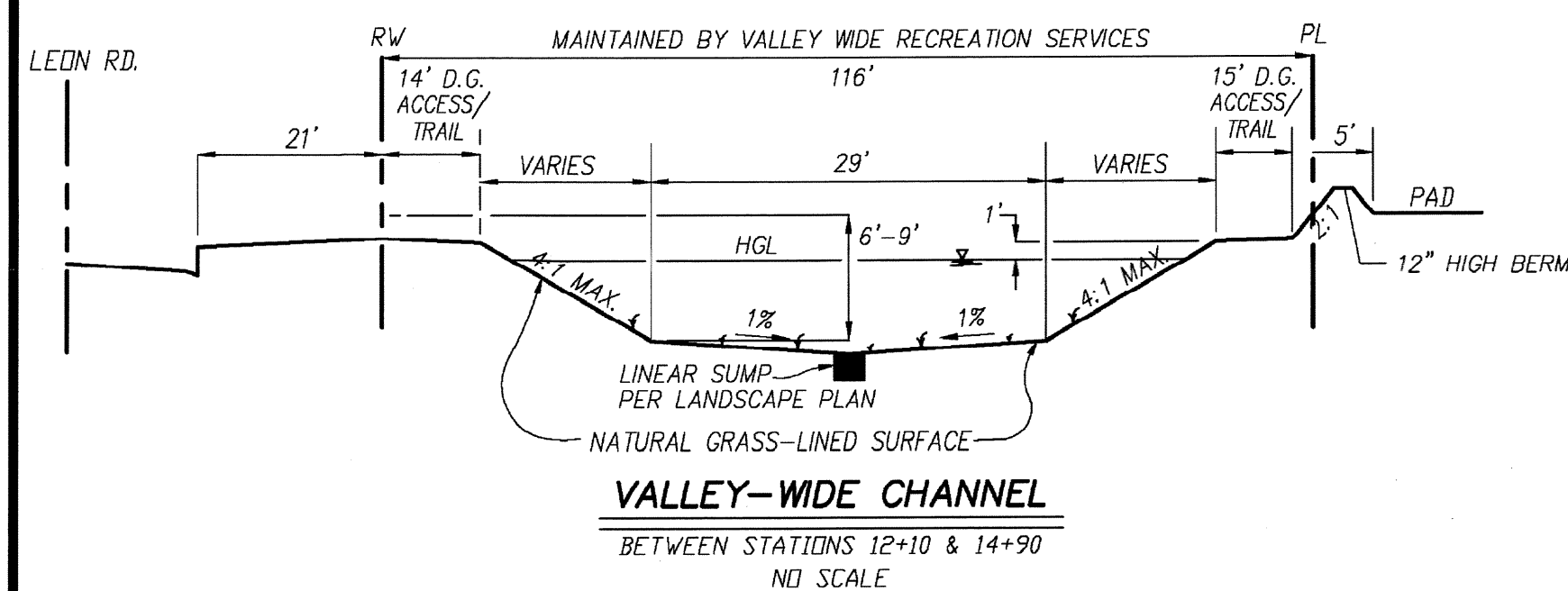
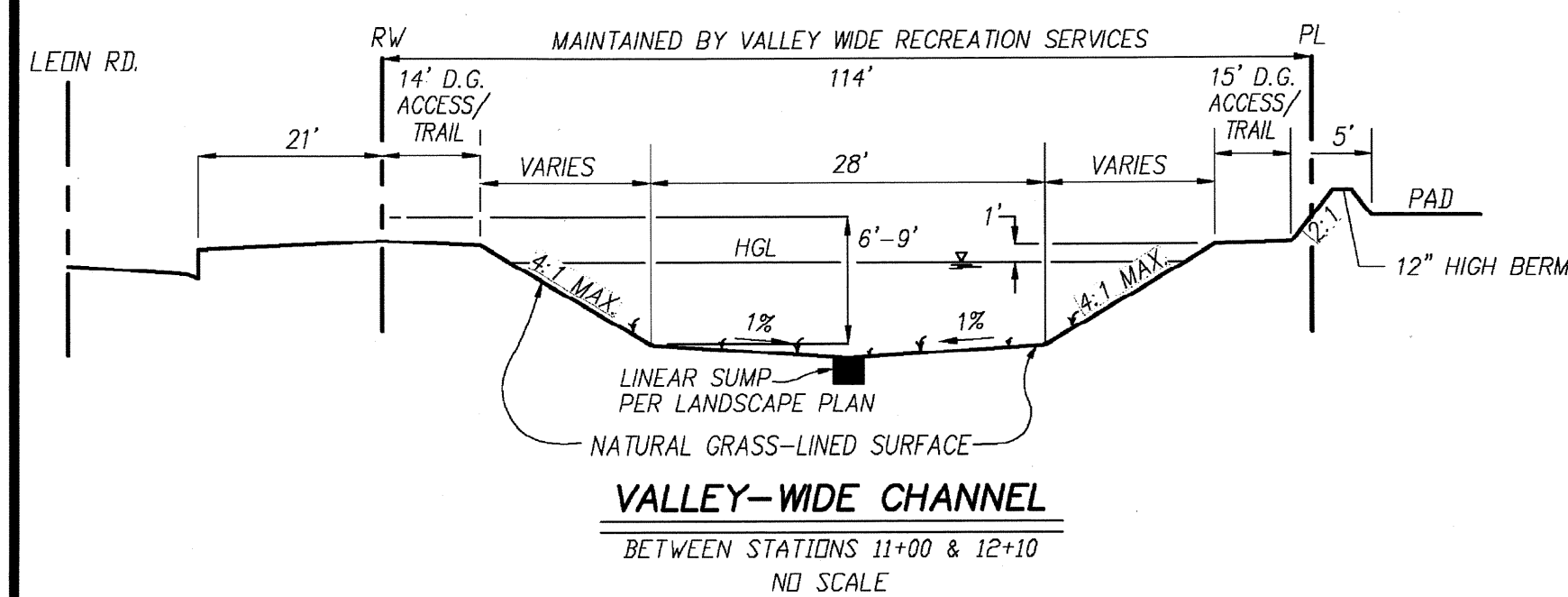
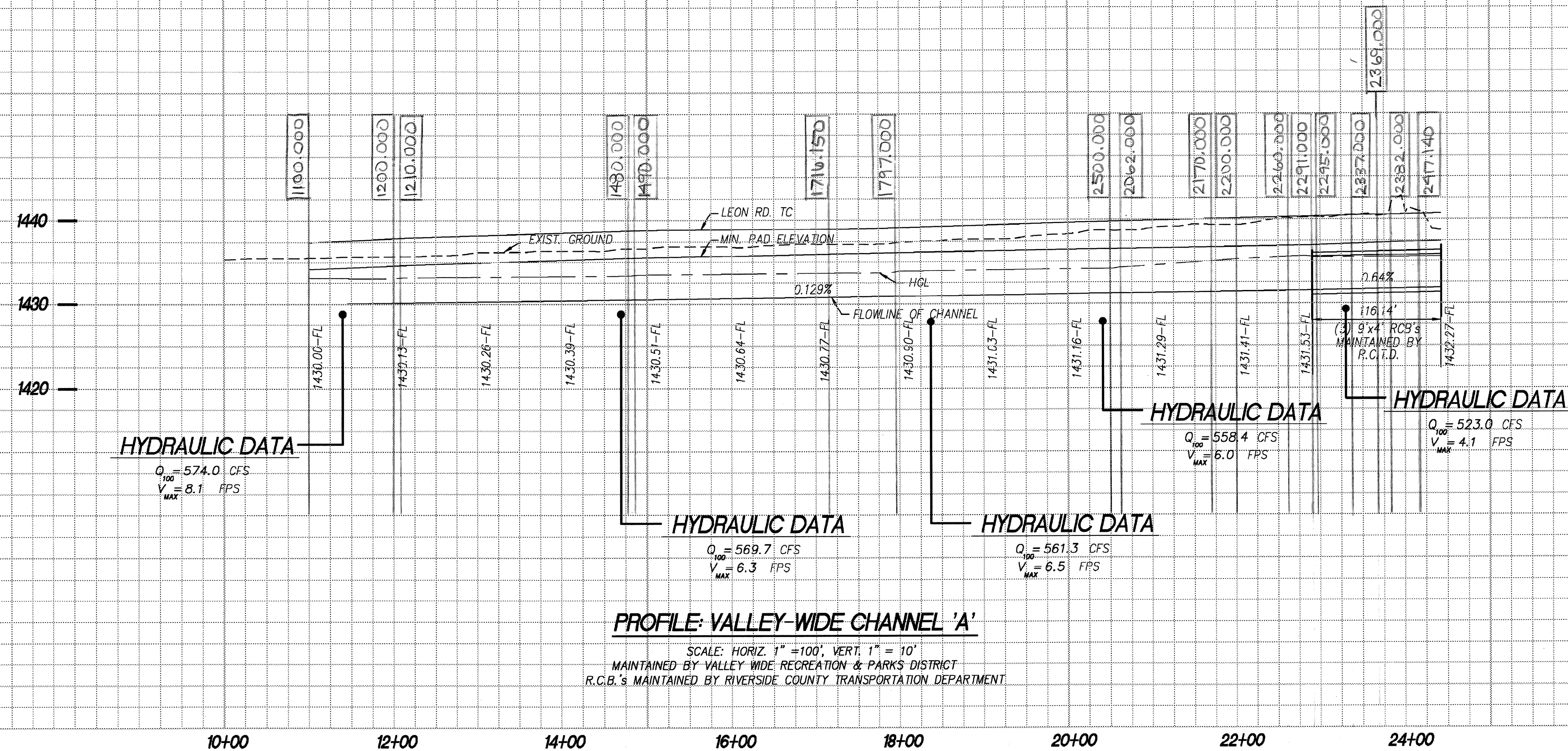
3 OF 8



Underground Service Alert Call: TOLL FREE 1-800 227-2600 TWO WORKING DAYS BEFORE YOU DIG	SEAL-ENGINEER FRANK A. ARTIGA REGISTERED PROFESSIONAL ENGINEER No. C 61860 EXP. 9/30/07 CIVIL STATE OF CALIFORNIA	Designed By F.A.A.	Drawn By F.A.A.	Checked By F.A.A.
		Plans Prepared Under Supervision Of FRANK A. ARTIGA Date: 09/30/07 R.C.E. No. 61860 Expires 09/30/07		
ARTIGA CIVIL DESIGN 43020 BLACKBEAR LOOP, #201 TEMECULA, CA 92590 T: 951.507.9841 F: 951.507.9842		REVISIONS		RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RECOMMENDED FOR APPROVAL PLANNING ENGINEER DATE: _____
				APPROVED BY: CHIEF ENGINEER DATE: _____
		COUNTY OF RIVERSIDE, TRANSPORTATION DEPARTMENT RECOMMENDED BY: APPROVED BY: KHALED OTHMAN, Director of Transportation R.C.E. 19744 Expires 09-30-2007		MANIFEE VALLEY DRAINAGE PLAN PROPOSED LAKE & CHANNEL PLAN RCFC CHANNEL 52+00.00 TO 75+00.00
				PROJECT NO. DRAWING NO. SHEET NO. 4 OF 8

MAP POCKET 6

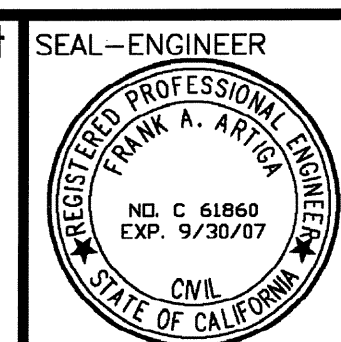
**Interim & Ultimate Condition WSPGW Workmaps
For
Channel B
Channel A
&
Channel C
(3 Sheets)**



Underground Service Alert

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Designed By
F.A.A.
Plans Prepared Under Supervision Of
FRANK A. ARTIGA
Date: 09/30/07
R.C.E. No. 61860 Expires 09/30/07

ARTIGA CIVIL DESIGN

43020 BLACKDEER LOOP, #201
TEMECULA, CA 92590
T: 951.587.0041
F: 951.587.0042

REVISIONS		
REF.	DESCRIPTION	APPR. DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY: **PRELIMINARY**

PLANNING ENGINEER
DATE:

CHIEF ENGINEER
DATE:

COUNTY OF RIVERSIDE, TRANSPORTATION DEPARTMENT

RECOMMENDED BY: **PRELIMINARY**

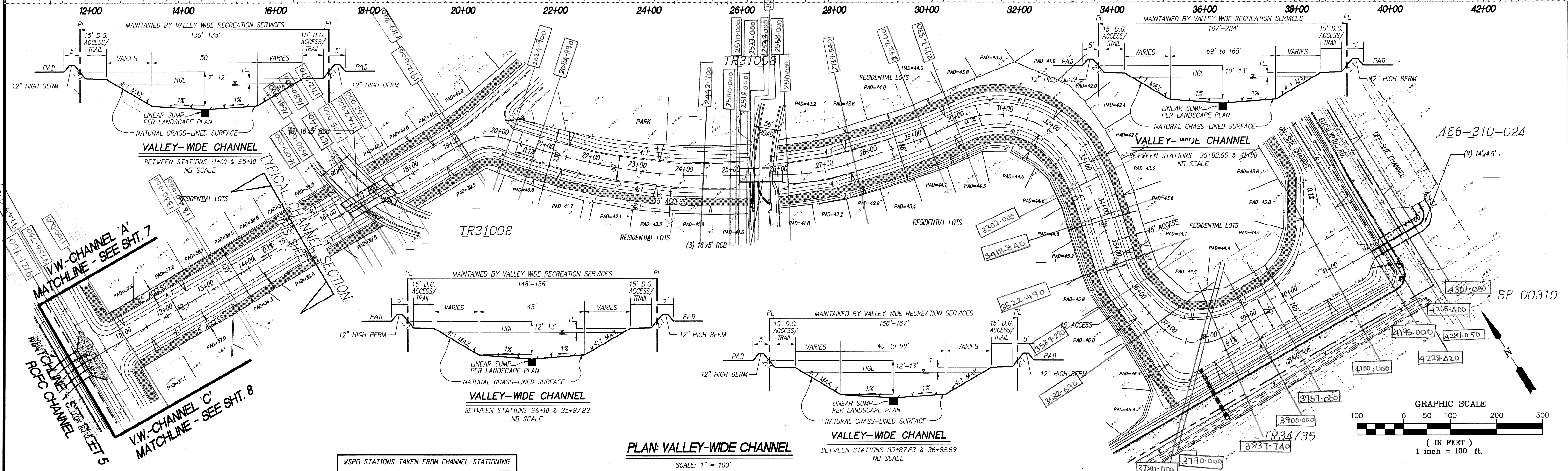
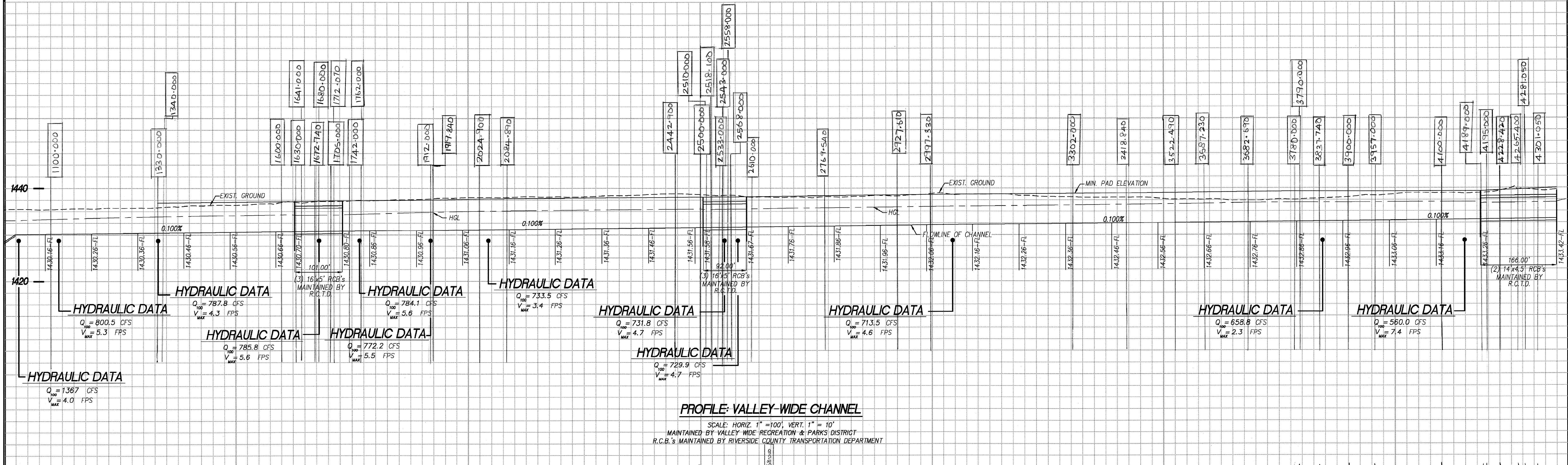
APPROVED BY: **PRELIMINARY**
KHALED O. MAN
R.C.E. 19744
Director of Transportation
Expires 09-30-2007

MENIFEE VALLEY DRAINAGE PLAN

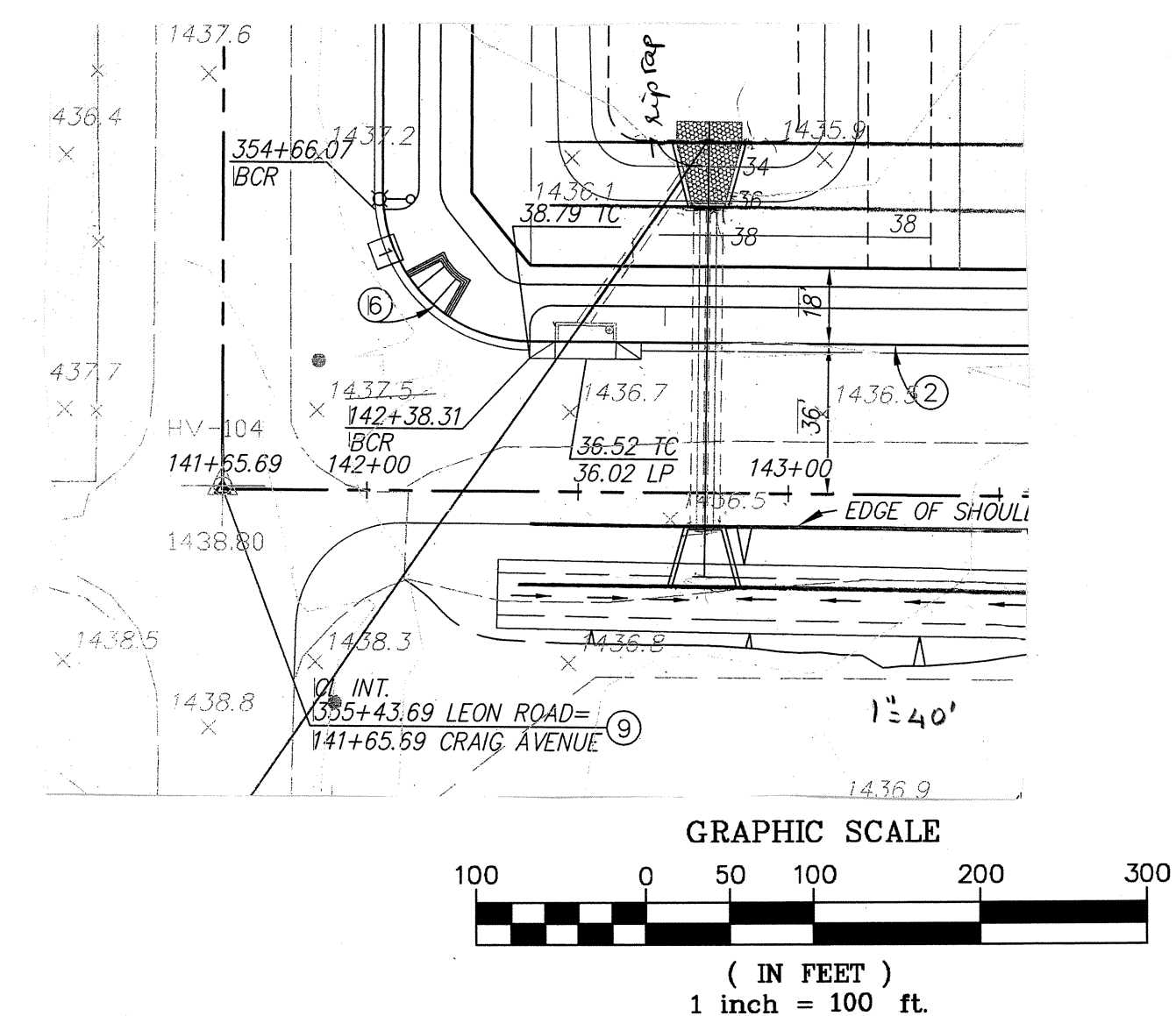
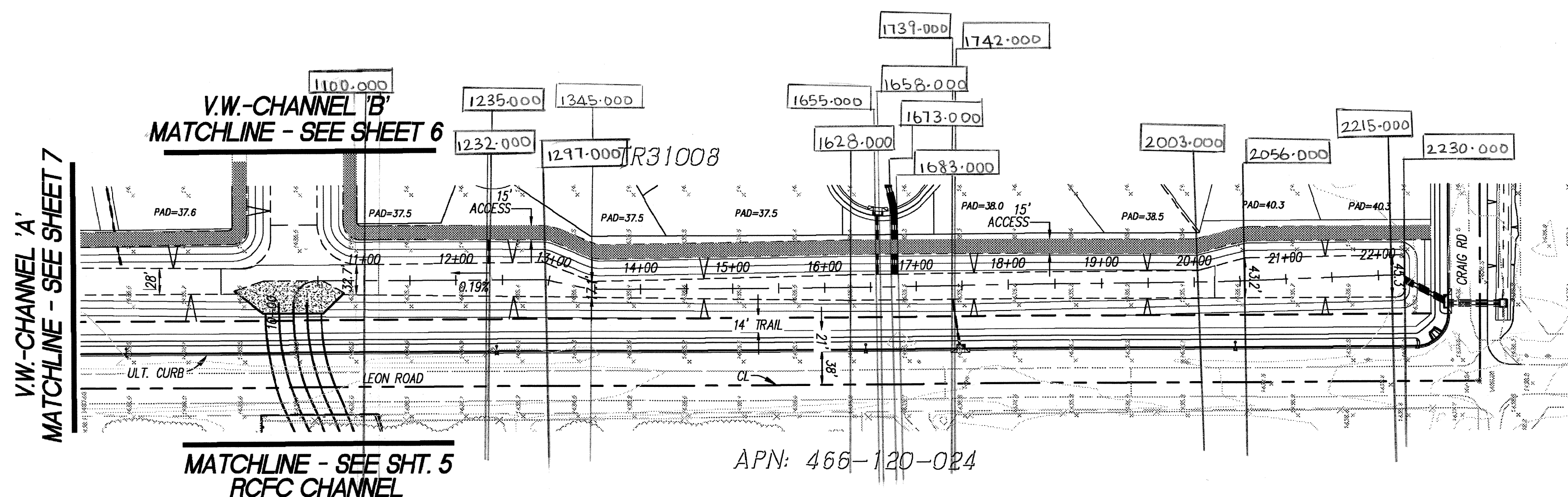
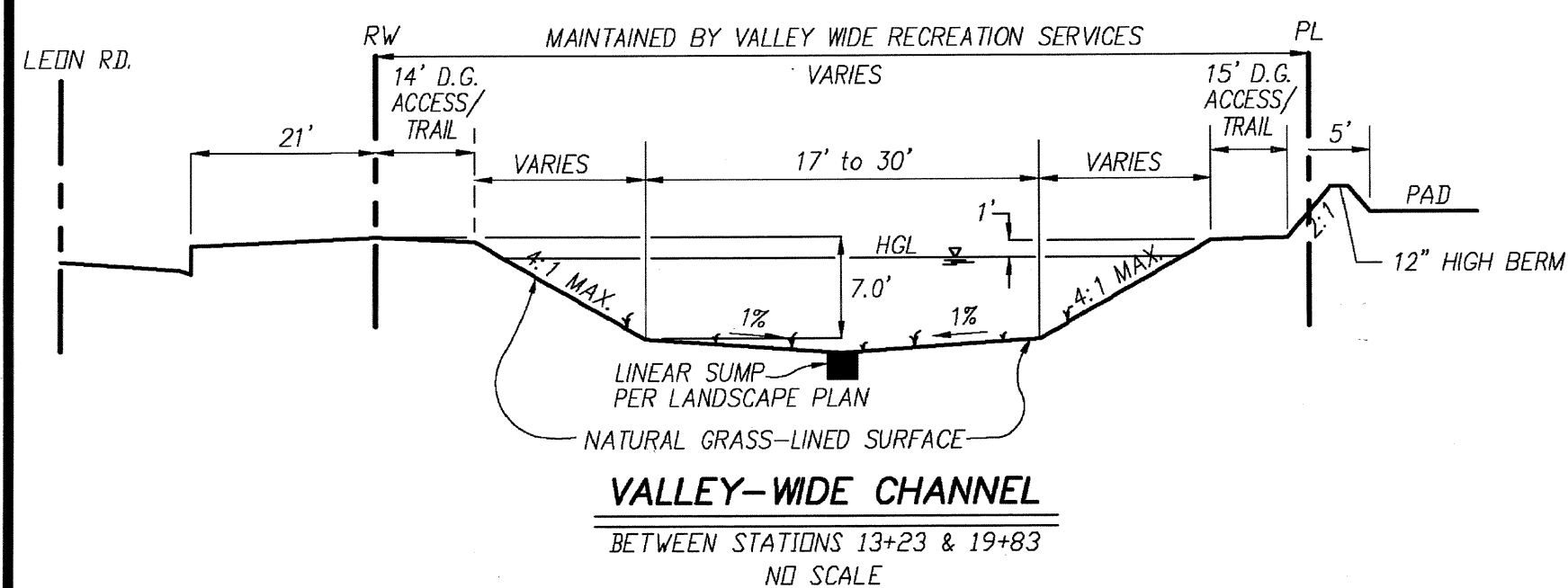
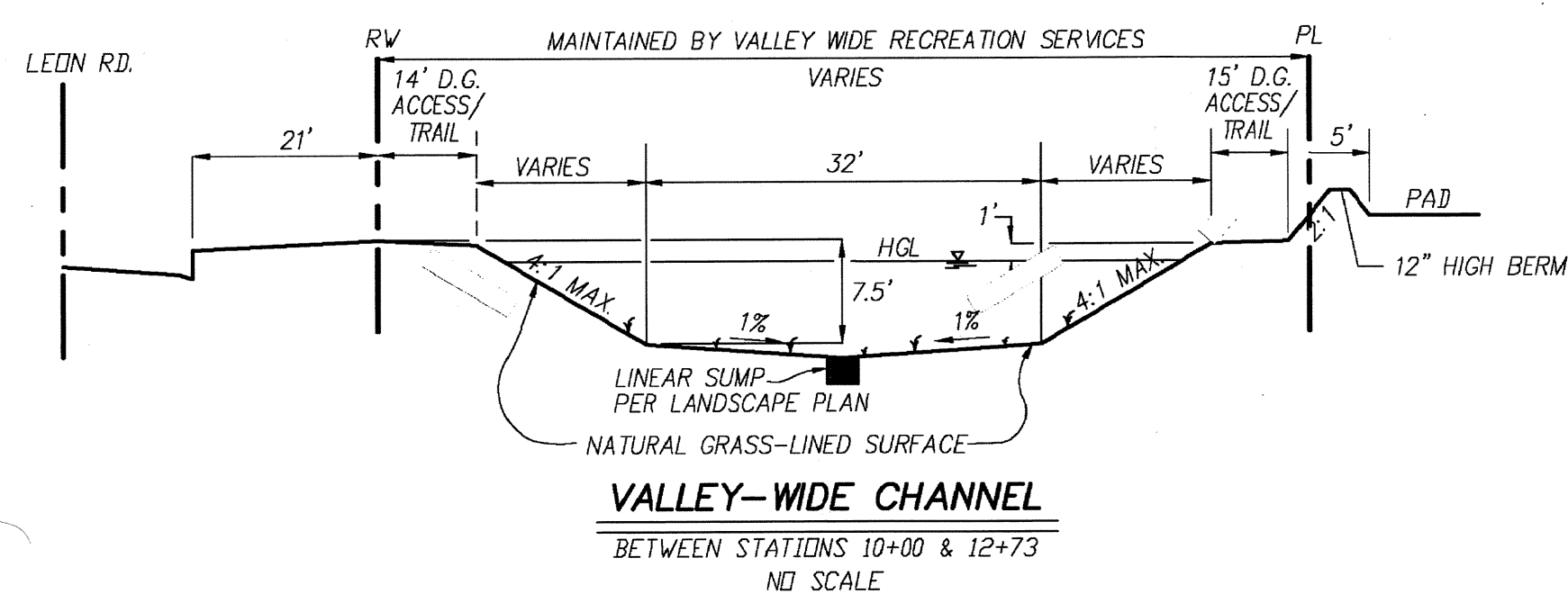
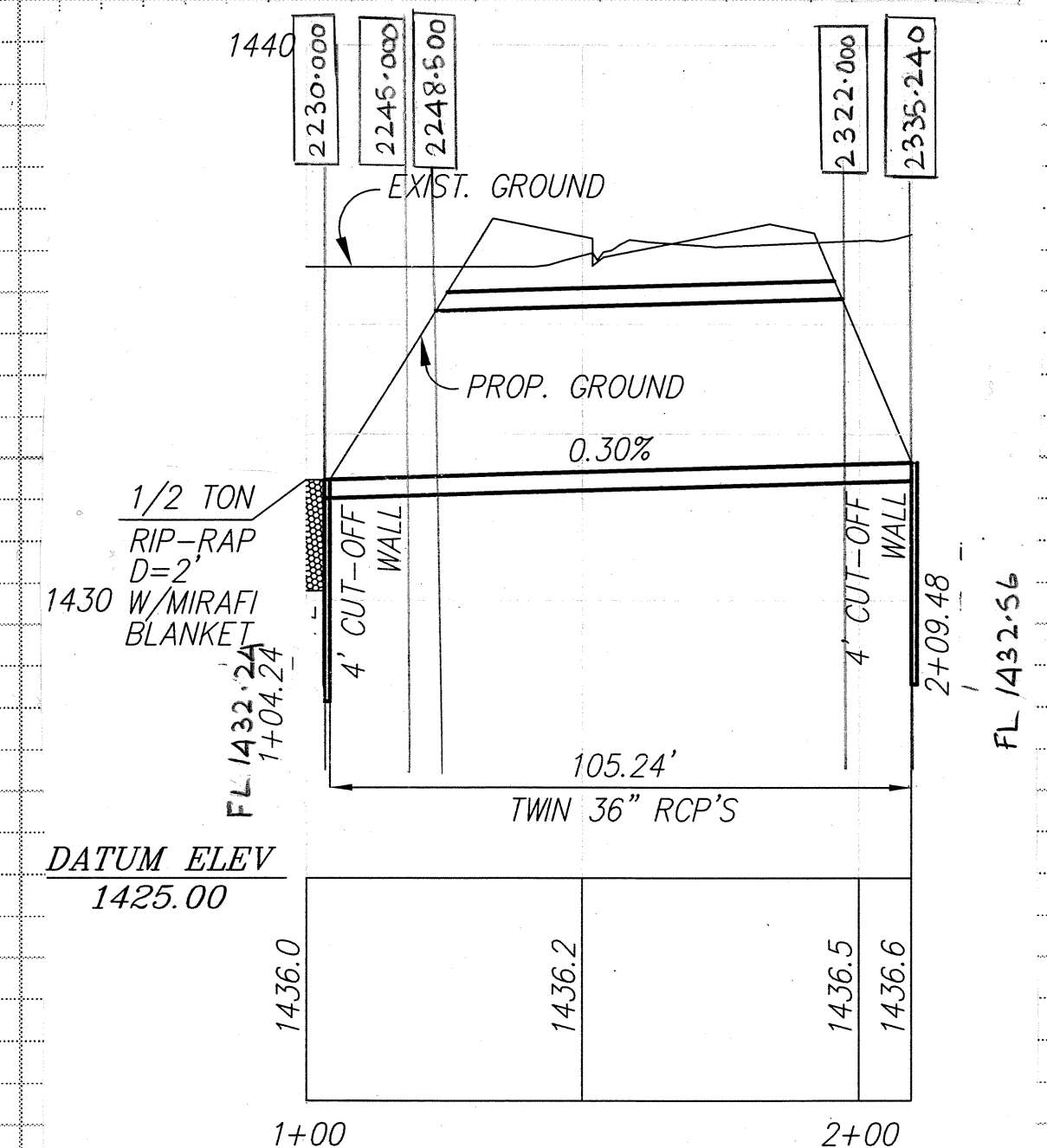
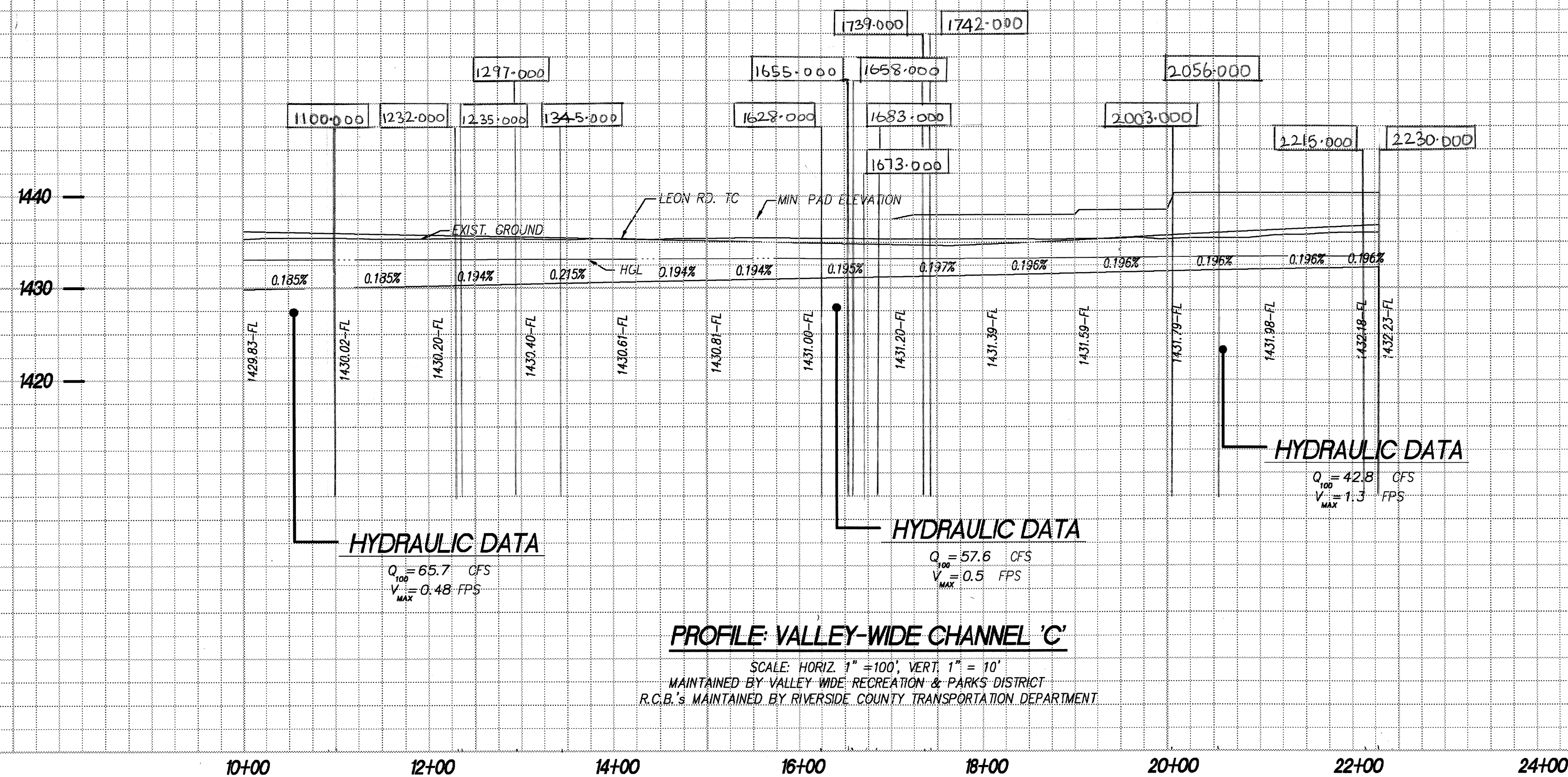
PROPOSED LAKE & CHANNEL PLAN

VALLEY-WIDE CHANNEL 'A'

PROJECT NO.
DRAWING NO.
SHEET NO.
7 OF 8



Underground Service Alert Call: TOLL FREE 1-800-227-2600 TWO WORKING DAYS BEFORE YOU DIG		SEAL-ENGINEER DESIGNED BY: FRANK A. ARTIGA DRAWN BY: FRANK A. ARTIGA CHECKED BY: FRANK A. ARTIGA DATE: 09/30/07 R.C.E. No. 61880 Expires 09/30/07		ARTIGA CIVIL DESIGN 43020 BLACKHEER LOOP, #201 TEMECULA, CA 92590 T: 951.587.8841 F: 951.587.8842		REVISIONS <table border="1"> <thead> <tr> <th>REF.</th> <th>DESCRIPTION</th> <th>APPR.</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		REF.	DESCRIPTION	APPR.	DATE													RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RECOMMENDED FOR APPROVAL: PRELIMINARY PLANNING ENGINEER: DATE: CHIEF ENGINEER: DATE:		COUNTY OF RIVERSIDE, TRANSPORTATION DEPARTMENT RECOMMENDED BY: PRELIMINARY APPROVED BY: KHALED AL-THANIR, Director of Transportation R.C.E. 19744 Expires 09-30-2007		MENIFEE VALLEY DRAINAGE PLAN PROPOSED LAKE & CHANNEL PLAN VALLEY-WIDE CHANNEL 'B' PROJECT NO. DRAWING NO. SHEET NO. 6 OF 8	
REF.	DESCRIPTION	APPR.	DATE																										



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SEAL-ENGINEER
 REGISTERED PROFESSIONAL ENGINEER
 NO. C 61860
 EXP. 9/30/07
 CIVIL
 STATE OF CALIFORNIA

Designed By
 F.A.A.
 Plans Prepared Under Supervision Of
 FRANK A. ARTIGA
 Date: _____
 R.C.E. No. 61860 Expires 09/30/07

ARTIGA CIVIL DESIGN
 43020 BLACKBERRY LOOP, #201
 TEMECULA, CA 92590
 T: 951.587.8841
 F: 951.587.8842

REVISIONS		
REF.	DESCRIPTION	APPR. DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
 RECOMMENDED FOR APPROVAL
 PLANNING ENGINEER
 DATE: _____
 CHIEF ENGINEER
 DATE: _____

COUNTY OF RIVERSIDE, TRANSPORTATION DEPARTMENT
 RECOMMENDED BY:
 APPROVED BY:
 KHALED O. MAN
 Director of Transportation
 B.O.E. 19744
 Expires 09-30-2007

MENIFEE VALLEY DRAINAGE PLAN
PROPOSED LAKE & CHANNEL PLAN
VALLEY-WIDE CHANNEL 'C'
 PROJECT NO.
 DRAWING NO.
 SHEET NO.
8 OF 8

MAP POCKET 7

**Preliminary Channel and Lake Drainage Plans for Holland Channel
(8 Sheets)**