Golden Valley Road Bridge Location Hydraulic Study

Prepared For:
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March 31, 2005

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GOLDEN VALLEY ROAD BRIDGE LOCATION HYDRAULIC STUDY

1.0 EXECUTIVE SUMMARY

This Location Hydraulic Study was prepared for the City of Santa Clarita for the purpose of determining the impacts to the Santa Clara River from the construction of the Golden Valley Road Bridge.

Previous to this report, a separate study was performed by Pacific Advanced Civil Engineering, Inc. (PACE) titled *River Park Drainage Concept Report Soil Cement Bank Protection- Santa Clara River,* dated August 2004. The study consisted of analyses for potential bank protection downstream of the proposed Golden Valley Road Bridge. Beginning with PACE's analysis and extending the floodplain study further upstream, it was determined that the Golden Valley Road Bridge would raise flood levels by a maximum of 0.9 ft. The rise would lower back into existing conditions 1000 ft upstream and 700 ft downstream of the proposed bridge. All water surface elevations (WSE) and topography contained herein are based on the North American Vertical Datum 1988 (NAVD88).

2.0 PURPOSE OF STUDY

The intent of this study was to quantify impacts to the Santa Clara River due to the construction of the proposed Golden Valley Road Bridge. The study addresses the following:

1.) The Santa Clara River channel 100-year floodplain as it presently exists.
2.) The Santa Clara River channel 100-year floodplain after the construction of the Golden Valley Road Bridge.
3.) Risk assessment associated with any possible encroachment, including impacts on natural and beneficial floodplain values, probable incompatible floodplain development, and special mitigation measures needed (if any) to minimize impacts to the floodplain.

A scour study prepared by Dokken Engineering titled *Golden Valley Road Bridge Scour Study*; March 31, 2005 has incorporated standards from the Los Angeles Flood Control District, Hydraulic Design Manual to determine scour depths and freeboards, in accordance with local floodplain requirements.

3.0 PROJECT LOCATION AND VICINITY MAP

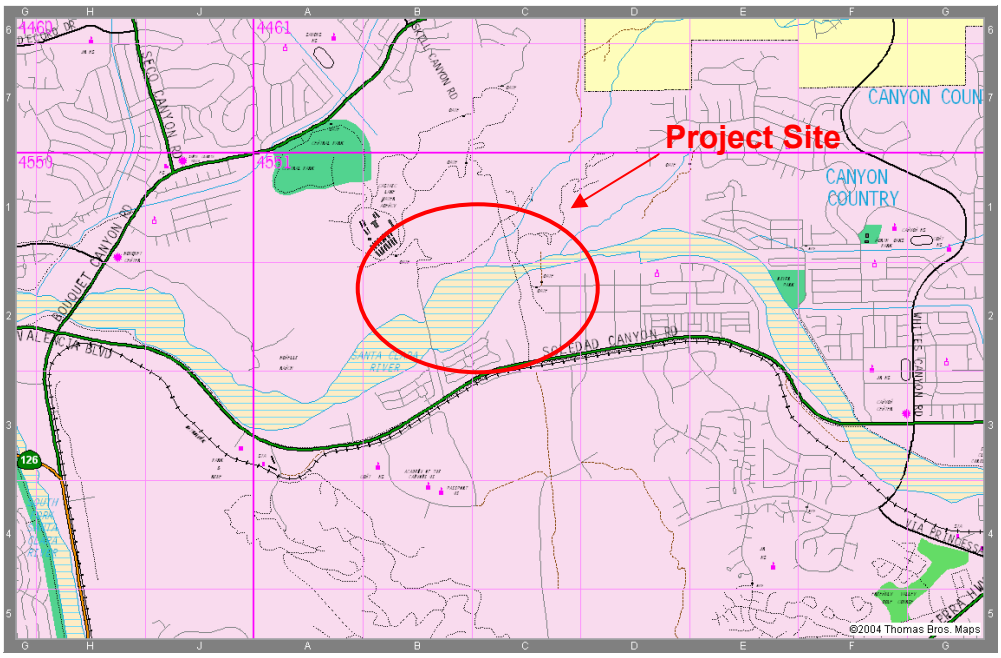


Figure 1: Project Site

The project site is located in central Santa Clarita, CA. North of the project are undeveloped hillsides and the Castaic Lake Water Agency Rio Vista Treatment Plant. Immediately south and to the west of the river, land uses are primarily commercial and residential.

4.0 DESCRIPTION OF BASIN

The total Santa Clara River Basin encompasses 1,634 square miles, consisting primarily of vacant land and unlined river banks. The river lies within the jurisdiction of the Los Angeles County Department of Public Works (LACDPW).

Annual rainfall in this region is approximately 17 inches. Nearly all rainfall in the area occurs from December through March. Precipitation during the summer is infrequent except for the occasional short-duration thunderstorms with major storms occasionally lasting for 4 days or longer.

A document entitled *Geologic and Geotechnical Report, Review of Tentative Tract Map (Dated February 25, 2003), Tentative Tract 53425 River Park Volume I* was completed by Allan E. Seward Engineering Geology, Inc. on April 4, 2003. The document reports recent river-channel deposits in the major tributaries of the Santa Clara River. Based on boring samples obtained for the project, the alluvial deposits consist of interbeds of sandy, silty, and clayey soils with limited inclusion of coarser soils.

5.0 FLOODPLAIN MODELING METHODOLOGY

HYDRAULIC/FLOODPLAIN ANALYSIS

According to the FEMA Flood Insurance Rate Map (FIRM) number 060729 0345C dated September 9, 1989, for the Unincorporated Areas of Los Angeles County, California, the project site lies within a Zone A floodplain. Zone A is defined as an area within the 100-year floodplain, determined by approximate means. Because detailed hydraulic analyses have not been performed for such areas, base flood elevations have not been established.

5.1 HEC-RAS PROGRAM

HEC-RAS River Analysis System v3.1.2 was used to model the Santa Clara River and proposed bridges. HEC-RAS is a graphically based computer program developed by the U.S. Army Corps of Engineers Hydrologic Engineering Center. Input required by the software includes channel cross sectional geometry, channel roughness coefficients, starting water surface elevation, and discharge.

5.11 Cross Sectional Geometry

Cross sections 155-172 of PACE's study were used to model the downstream river and a portion of the upstream section of the river. Cross sections 173 and 174 were created and placed 400 ft upstream, allowing HEC-RAS to measures backwater effects up to 900 ft upstream of the bridge (See Appendix 'A'). These two cross sections were based on a topographic map provided by the County of Los Angeles Department of County Engineer Survey Division, National Geodetic Vertical Datum 1929 (NGVD29) titled *Topographic Map of Flood Plain Mapping Santa Clarita Valley*, March 1977. All elevations for this study were converted to North American Vertical Datum 1988 (NAVD88).

Bridges

Two proposed bridge alternatives are currently under development. Alternative 1 consists of 4 ft wide pier columns, spaced 125 ft apart and alternative 2 consists of 2.5 ft wide pier walls spaced at 185 ft (See Appendix 'A'). The pier widths were doubled from 4 ft to 8 ft and 2.5 ft to 5 ft for alternatives 1 and 2 respectively, to simulate potential clogging from floating debris. For the energy losses through the bridge, the energy (standard step) equation was used. This method allowed HEC-RAS to determine the highest possible energy loss under the bridge.

The two alternatives were modeled in HEC-RAS to determine the shortest allowable bridge lengths without raising the water surface elevation (WSE) above 1 ft and encroaching upon the FEMA 100-yr floodplain. It is the policy of FEMA that a floodplain may be encroached so long as the rise in flood level does not exceed 1 ft.

Contraction and Expansion Coefficients

Contraction and expansion coefficients of 0.1 and 0.3 respectively, were used at the cross sections upstream and downstream of the Golden Valley Road Bridge. These values are typically used where the change in river cross section is gradual. For the cross sections on the upstream and downstream faces of the bridge, contraction and expansion coefficients of 0.3 and 0.5 were used. These values were obtained from Table 3.3 of the *HEC-RAS River Analysis System, Hydraulic Reference Manual*, April 2004.

Ineffective Flow Areas/Levees

Areas in which water was not actively being conveyed were labeled as ineffective flow areas. For existing and proposed conditions, ineffective flow areas were used along the left overbank to account for building structures. However, for the proposed condition, the ineffective flow areas became narrower to account for the abutments on the overbanks (See Appendix 'A').

For the proposed model, levees were used at each of the abutments to prevent water from traveling around the bridge. This forced the full flow of the 100-yr flood to move directly under the bridge, and thus generate a minimum freeboard between the WSE and the bottom soffit of the bridge.

5.1.2 Manning's Roughness Coefficient

Each cross section contains a left over bank, main channel, and right over bank, which represent the different regions of the waterway in terms of roughness coefficients. The main channel represents the base of the river and the left and right slopes represent the overbanks. A Flood Insurance Study (FIS), dated September 9, 1989 for the City of Santa Clarita provided a roughness value (Manning's n value) of 0.06 for the overbanks and an n value of 0.03 for the main channel of the Santa Clara River.

5.1.3 Starting Water Surface Elevation

Normal depth was used for the starting WSE in HEC-RAS. The starting slope of the model was 0.01.

5.1.4 Discharge

According to the report performed by PACE, the peak 100-yr discharge for the Santa Clara River was 15,272 cfs. This value was used throughout the model to determine the rise in WSE upstream and downstream of the Golden Valley Road Bridge as well as any possible encroachment on the existing 100-yr floodplain.

6.0 HEC-RAS OUTPUT

As stated previously, the two bridge alternatives were designed to prevent the existing 100-yr floodplain from rising no more than 1 ft. With the inputted data, different bridge lengths were tested to determine the different rises in WSE. It was concluded that the minimum allowable bridge length for alternative 1 was 1,100 ft. Shortening the bridge any further would raise the WSE above the 1 ft limit. Alternative 2 allowed the bridge length to be adjusted from 1100 ft to 950 ft. The results for comparison are summarized in Figure 2 and Figure 3.

Figure 2: Bridge Descriptions

	Alternative 1	Alternative 2
No. of Bents	8 (Columns)	4 (Pier walls)
Bent Spacing	125 ft	185 ft
Pier Width	4 ft ⇒ 8 ft (doubled for debris)	2.5 ft ⇒ 5 ft (doubled for debris)
Bridge Width	125 ft	125 ft
Bridge Length	1100 ft	950 ft

Figure 3: Changes in Water Surface Elevation (FEMA 100-yr Floodplain)

Cross Section	Exist W.S. Elev (ft)	Alt 1 W.S. Elev (ft)	Δ WSE (Alt1-Exist) (ft)	Alt 2 W.S. Elev (ft)	Δ WSE (Alt2-Exist) (ft)
174	1282.84	1282.84	0	1282.84	0
173	1277	1277	0	1277	0
172	1273.81	1273.81	0	1273.81	0
171	1271.78	1271.4	-0.38	1271.4	-0.38
170	1269.06	1269.06	0	1269.49	0.43
169	1267.64	1267.99	0.35	1268.28	0.64
168	1267.03	1267.1	0.07	1267.16	0.13
167	1265.91	1266.15	0.24	1266.35	0.44
166*	1264.88	1265.72	0.84	1265.79	0.91
165.5**	1263.09	1263.46	0.37	1263.63	0.54
165	1262.36	1263.02	0.66	1262.8	0.44
164	1260.96	1261.37	0.41	1261.37	0.41
163	1260.08	1260.16	0.08	1260.2	0.12
162	1259.16	1259.16	0	1259.2	0.04
161	1257.46	1257.46	0	1257.47	0.01
160	1255.21	1255.21	0	1255.21	0
159	1253.91	1253.91	0	1253.91	0
158	1251.74	1251.74	0	1251.74	0
157	1249.75	1249.75	0	1249.75	0
156	1247.57	1247.57	0	1247.57	0
155	1244.61	1244.61	0	1244.61	0

* = Upstream face of Golden Valley Roadway Bridge
** = Downstream face of Golden Valley Roadway Bridge

The proposed bridge alternatives experienced changes in WSE which were lower than the existing WSE. This is attributed to factors associated with the topography of the main channel and the velocity of flow. At cross section 172, the geometry of the channel changes and the flow path becomes narrower (See Appendix 'A'). As a result, depths approached critical depth indicating a shift between subcritical and supercritical flow. To produce higher WSEs, the model was run strictly using subcritical flow.

6.1 Warning Messages

Warning messages were produced between cross sections 174 and 173, indicating that the cross sections were experiencing divided flow. These warnings are appropriate due to the nature of the topography of the developed and hilly area along the left side of the river. Other warnings indicated that the energy equation could not be balanced for cross sections 170-169 and 158-155. These messages are typical in areas where the flow path becomes narrower, increasing the velocity to supercritical.

Further warnings were generated at cross sections 172, 171 and 165-163, indicating that the energy loss was greater than 1 ft. The program recommended using additional cross sections to resolve the warnings. The interpolated cross section function of HEC-RAS was used to provide the extra sections needed. This feature allowed the changes in energy loss to occur in smaller increments.

7.0 RISK ASSESSMENT

Encroachment is defined by FEMA as "construction, placement of fill, or similar alteration of topography in the floodplain that reduces the area available to convey floodwaters," and by the Federal Highway Administration (FHWA) as "an action within the base floodplain" (*Environmental Handbook Vol. 1*). The construction of the Golden Valley Road Bridge encroaches upon and increases the elevation of the existing floodplain immediately upstream of the proposed bridge (See Appendix 'A'). However, the increase is minimal and will not exceed the FEMA 100-yr floodplain boundary.

7.1 FLOODPLAIN VALUES

The Environmental Handbook Vol.1, 2002 defines floodplain values as fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, groundwater discharge, etc. According to the *Environmental Impact Statement/Environmental Impact Report (EIS/EIR)*, dated August 1998, by the U.S. Army Corps of Engineers and the California Department of Fish and Game, the installation of bridges would cause both temporary and permanent impacts to floodplain values within the Santa Clara River. However, these habitats are mostly small and fragmented remnants of larger, previously undisturbed habitats, and are not likely to support self-sustaining wildlife or sensitive species. In addition, affects to these habitats can be mitigated

through the usage of controlled construction zones, restoration of disturbed streambeds, and temporarily relocating habitats.

8.0 CONCLUSION

Cross sectional data used to model the Santa Clara River was obtained from PACE's report. The proposed Golden Valley Road Bridge consisted of two bridge alternatives: alternative 1 and 2. In order to determine the minimum allowable bridge length, without increasing the water surface elevation by over a 1 ft, each bridge was ran in HEC-RAS using the 100-yr flood. It was determined that the minimum allowable bridge length for alternative 1 was 1100 ft. Alternative 2 allowed the bridge length to be adjusted to 950 ft while maintaining the 1 ft limit. Decreasing the length of each bridge any further would raise the water surface elevation above one ft and potentially infringe upon the existing FEMA 100-yr floodplain. The nature of the surrounding area consists of sparse and fragmented habitats. Therefore the construction of the Golden Valley Road Bridge will not cause any significant impacts to the floodplain values of the area.

9.0 REFERENCES

Allan E. Seward Engineering Geology, Inc., April 4, 2003. *Geologic and Geotechnical Report, Review of Tentative Tract Map (Dated February 25, 2003), Tentative Tract 53425 River Park Volume I.*

County of Los Angeles Department of County Engineer Survey Division, March 1977. *Topographic Map of Floodplain Mapping Santa Clarity Valley.*

Dokken Engineering, March 2005. *Advance Planning Study Alternative (APS) NO.1 &2 Cross Valley Connector.*

Dokken Engineering, March 2005. *Golden Valley Road Bridge Scour Study.*

Federal Emergency Management Agency, *Flood Insurance Rate Map,* September 1989. *City of Santa Clarita, California Los Angeles County*, Panel Number 060729 0345C

PACE, Pacific Advanced Civil Engineering, August 2004. Drainage Concept Report for River Park *Santa Clara River Soil Cement Bank Protection.*

Thomas Guide, 2004. *Los Angeles County and Orange County.*

U.S. Army Corps of Engineers, Los Angeles District Regulatory Branch & California Department of Fish and Game, Region 5, August 1998. *Environmental Impact Statement/Environmental Impact Report.*

U.S. Army Corps of Engineers, Hydrologic Engineering Center, April 2004 *HEC-RAS River Analysis System, Hydraulic Reference Manual.*

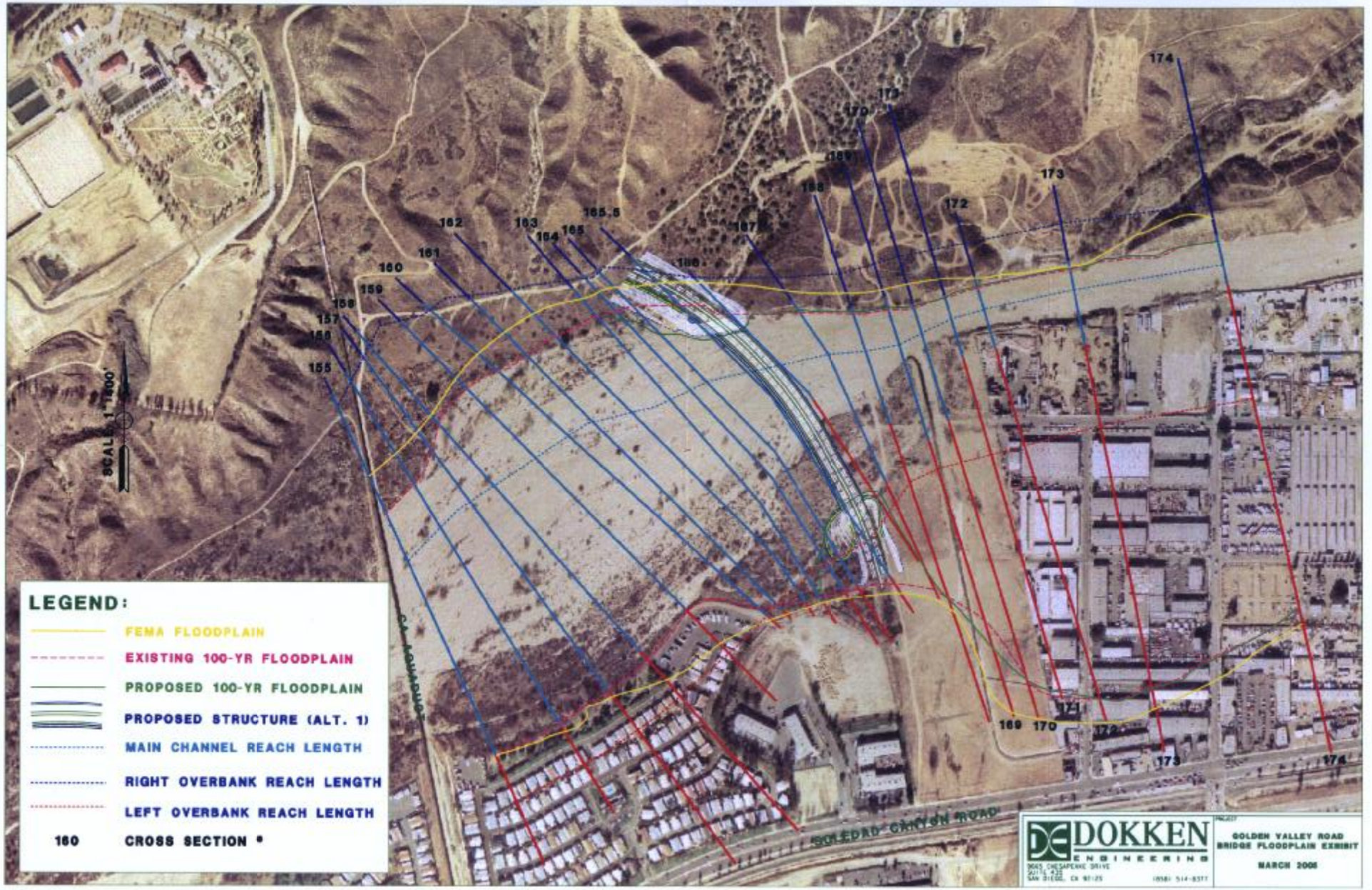
APPENDIX 'A'

Floodplain Exhibit

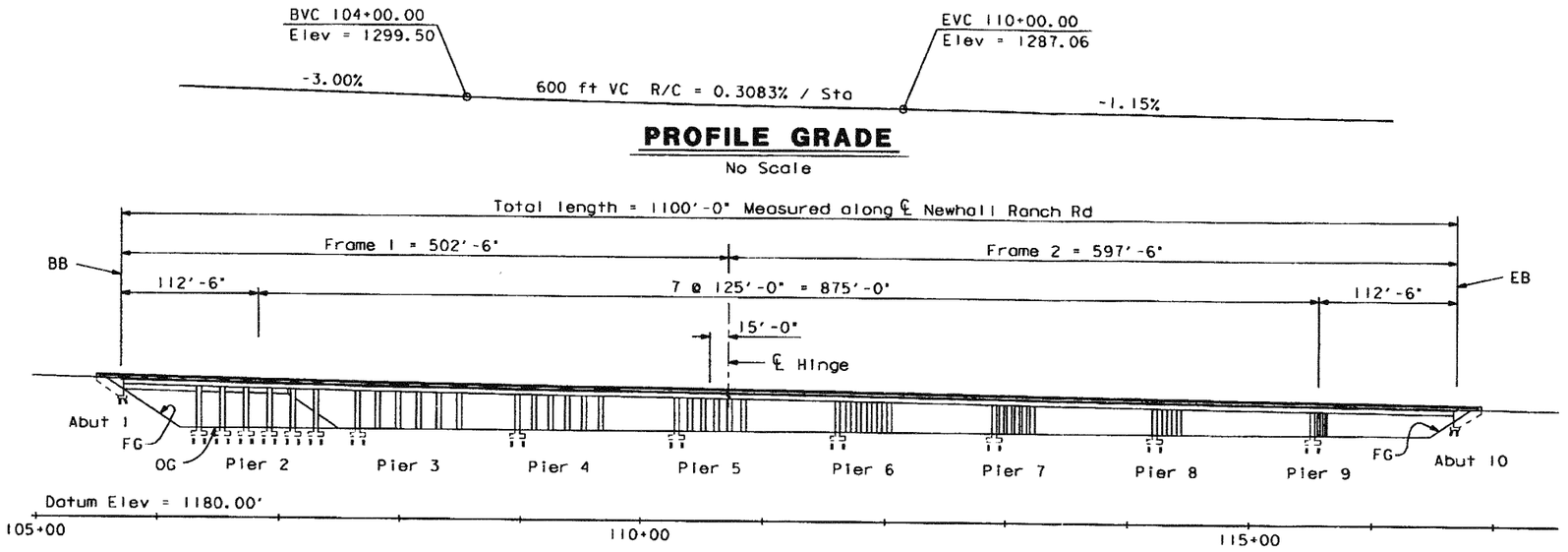
Ineffective Flow Area Exhibit

Bridge Advanced Planning Study (APS)

Flood Insurance Rate Map (FIRM)


LEGEND:
FEMA FLOODPLAIN
EXISTING 100-YR FLOODPLAIN
PROPOSED 100-YR FLOODPLAIN
PROPOSED STRUCTURE (ALT. 1)
MAIN CHANNEL REACH LENGTH
RIGHT OVERBANK REACH LENGTH
LEFT OVERBANK REACH LENGTH
160 CROSS SECTION #
SCALE: 1" = 800'
SOLEDAD CANYON ROAD
DOKKEN ENGINEERING
9245 CHESAPEAKE DRIVE
SUITE 210
SAN DIEGO, CA 92123
(858) 514-8377
PROJECT
GOLDEN VALLEY ROAD
BRIDGE FLOODPLAIN EXHIBIT
MARCH 2005


LEGEND:
PROPOSED INEFFECTIVE FLOW AREA
EXISTING INEFFECTIVE FLOW AREA
SR-14 FREEWAY
GOLDEN CANYON ROAD
SCALE: 1"=400'
DOKKEN ENGINEERING
3945 CHESAPEAKE DRIVE
SUITE 410
SAN DIEGO, CA 92123
(858) 514-8311
PROJECT
GOLDEN VALLEY ROAD BRIDGE
INEFFECTIVE FLOW AREA
EXHIBIT
MARCH 2006



Date of estimate	=	1-20-05
Structure depth	=	5'-0"
Length	=	1100'-0"
Width	=	124'-10"
Area	=	137,316 sq ft
Cost/ □ ft Including 10% mobilization & 10% contingency	=	$128.00
Total Cost	=	$17,570,000

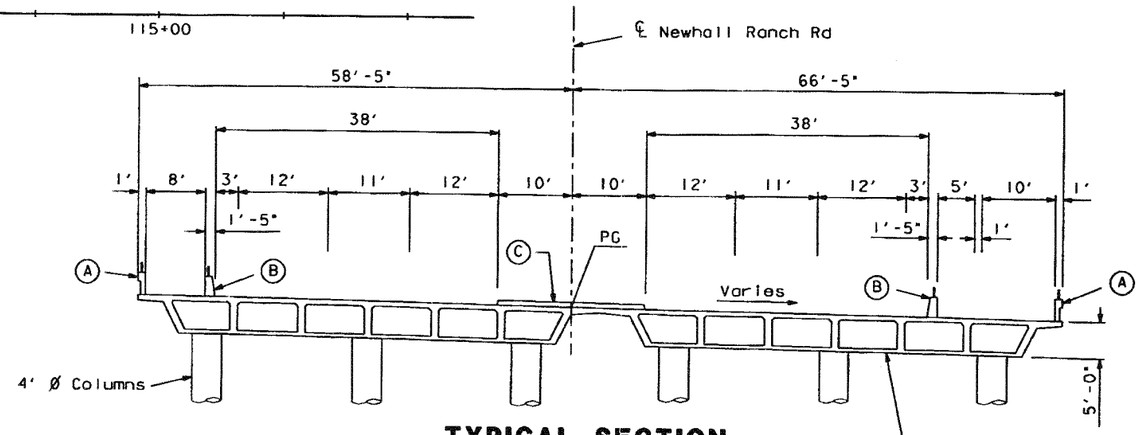
LEGEND

- (A) Concrete Barrier Type 26 (Mod) w/ Tubular Hand Railing
- (B) Concrete Barrier Type 732 w/ Tubular Hand Railing
- (C) Raised median
- (D) Structure Approach Type N(30S)

Assume all piles are driven steel H piles

DEVELOPED ELEVATION

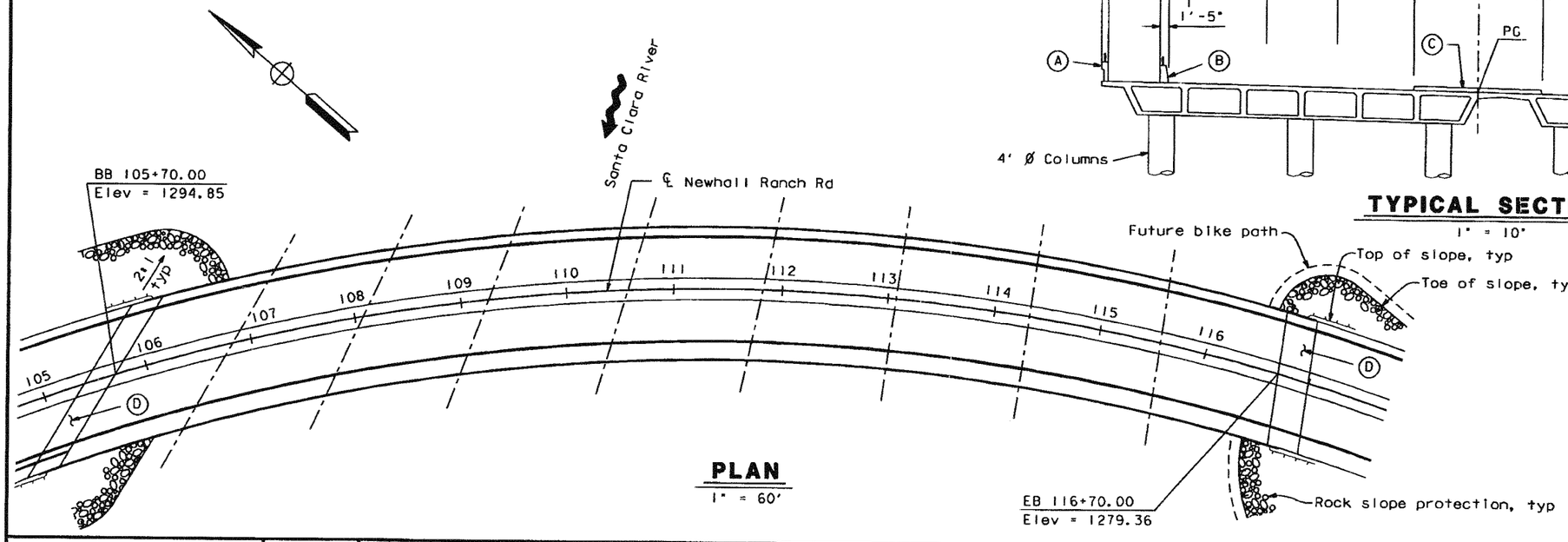
1" = 60'



TYPICAL SECTION

1" = 10'

CIP/Prestressed Concrete Box Girder



PLAN

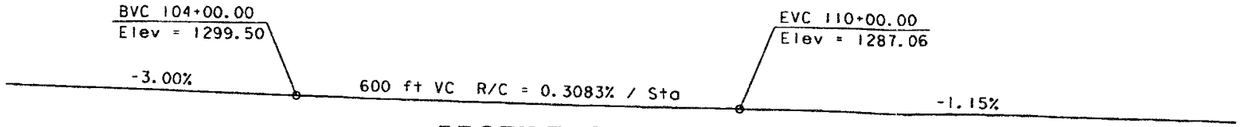
1" = 60'

ALTERNATIVE 1

DOKKEN ENGINEERING	DES. CT				ADVANCE PLANNING STUDY CROSS VALLEY CONNECTOR
	DR. CH				
	CHK.				
	APPD.	NO.	DATE	REVISION BY APPD	

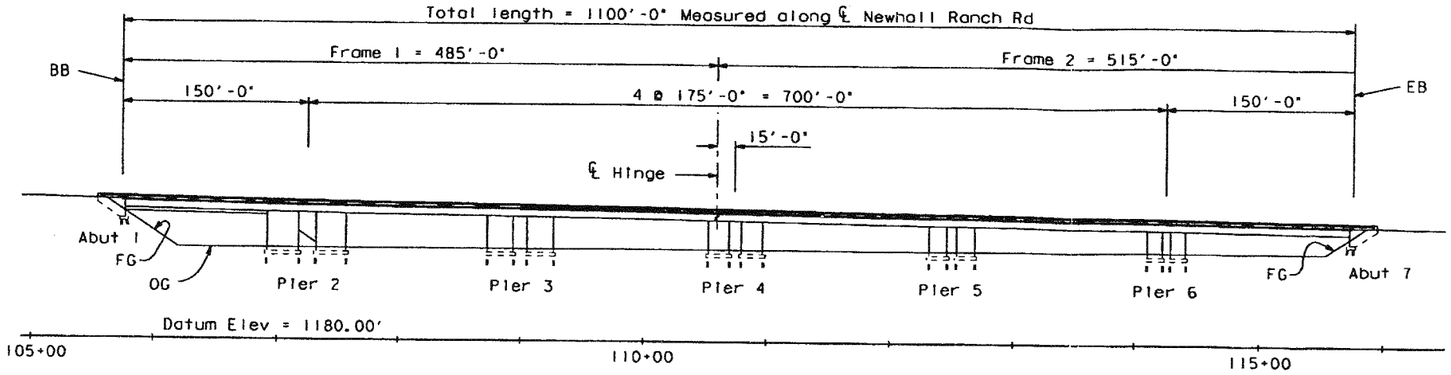
SHEET	1
OF	3
DATE	1-20-05
DWG. NO.	

...\1418apsa.dgn



PROFILE GRADE

No Scale



Assume all piles are driven steel H piles

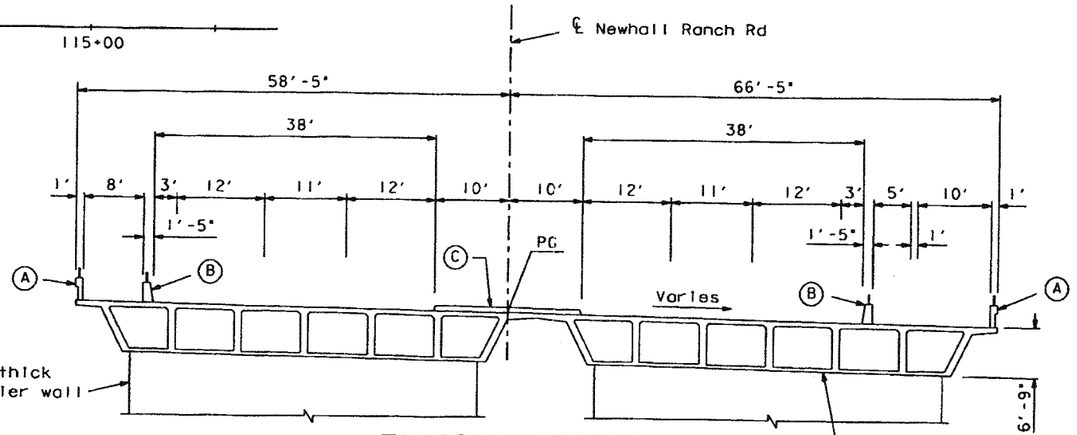
DEVELOPED ELEVATION

1" = 60'

Date of estimate	1-20-05
Structure depth	6'-9"
Length	1000'-0"
Width	124'-10"
Area	124,833 sq ft
Cost/ ^{0} ft including 10% mobilization & 10% contingency	$166.00
Total Cost	$20,699,000

LEGEND

(A) Concrete Barrier Type 26 (Mod) w/ Tubular Hand Railing
(B) Concrete Barrier Type 732 w/ Tubular Hand Railing
(C) Raised median
(D) Structure Approach Type N(30S)



TYPICAL SECTION

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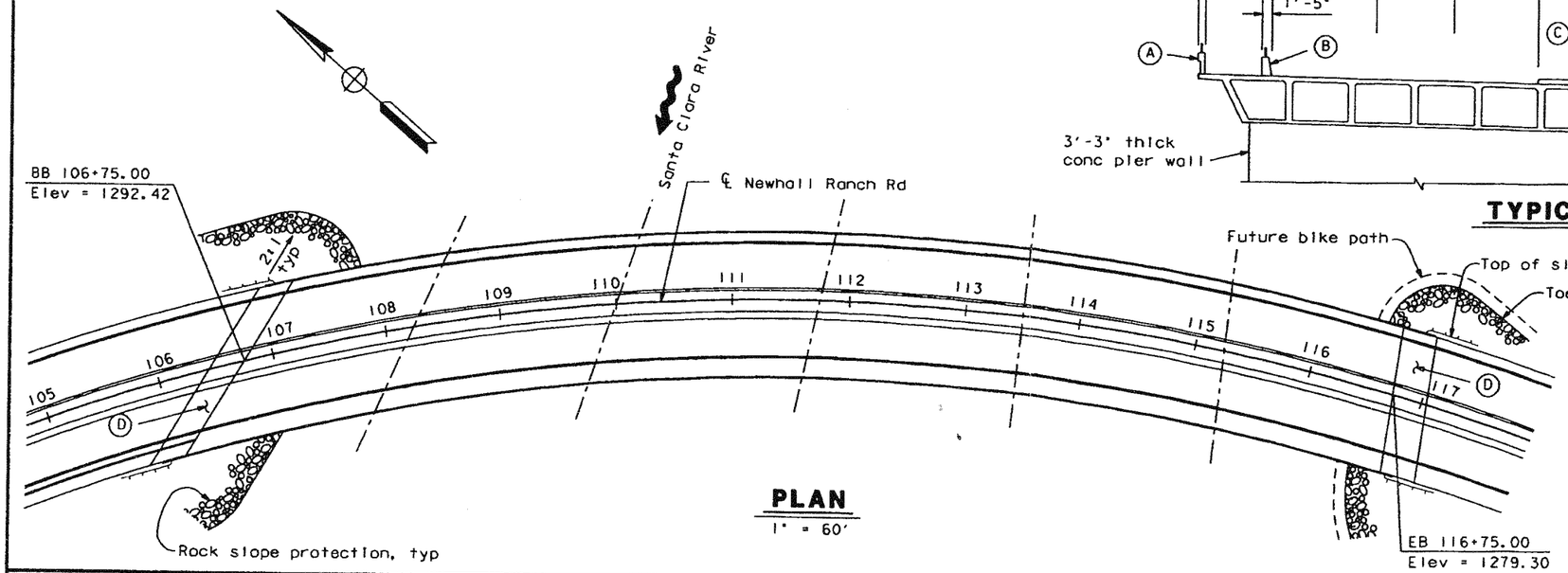

PLAN

1" = 60'

ALTERNATIVE 2

DOKKEN ENGINEERING

DES.	CT
DR.	CH
CHK.	
APPD.	

NO.	DATE	REVISION	BY	APPD

ADVANCE PLANNING STUDY
CROSS VALLEY CONNECTOR

SHEET	2
OF	3
DATE	1-20-05
DWG. NO.	

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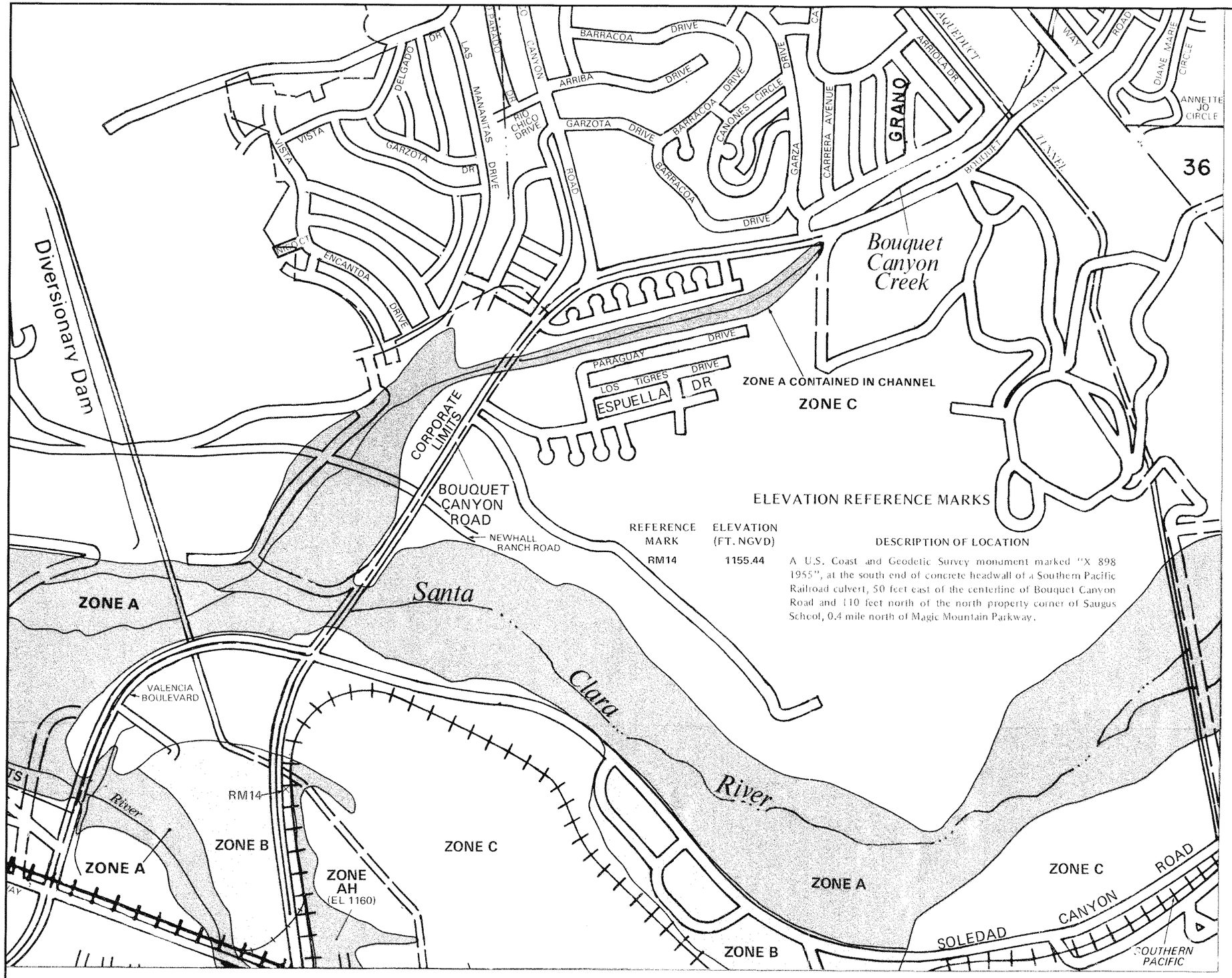


N

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

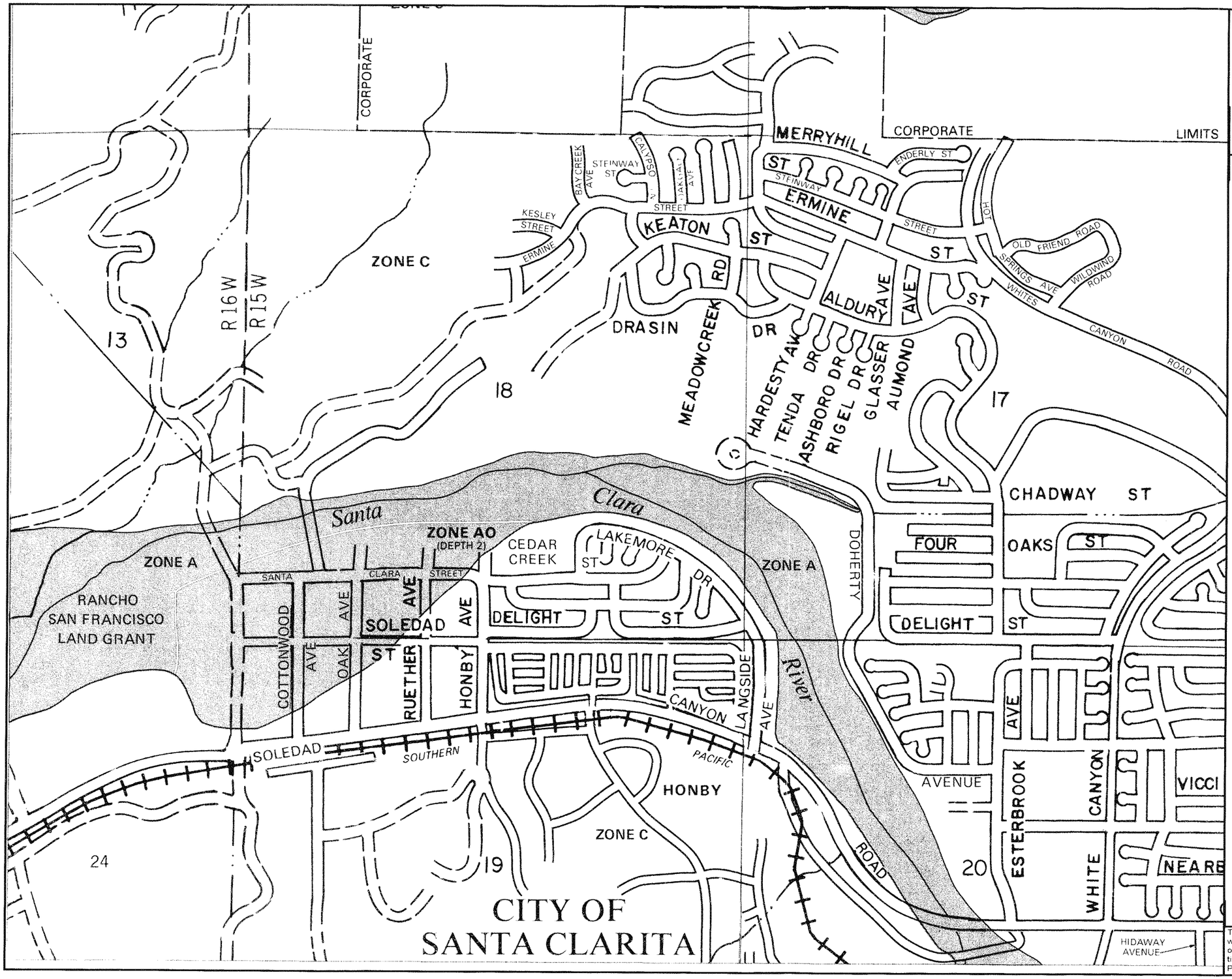
CITY OF
SANTA CLARITA,
CALIFORNIA
LOS ANGELES COUNTY

PANEL 345 OF 1275
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
060729 0345 C

MAP REVISED:
SEPTEMBER 29, 1989

Federal Emergency Management Agency



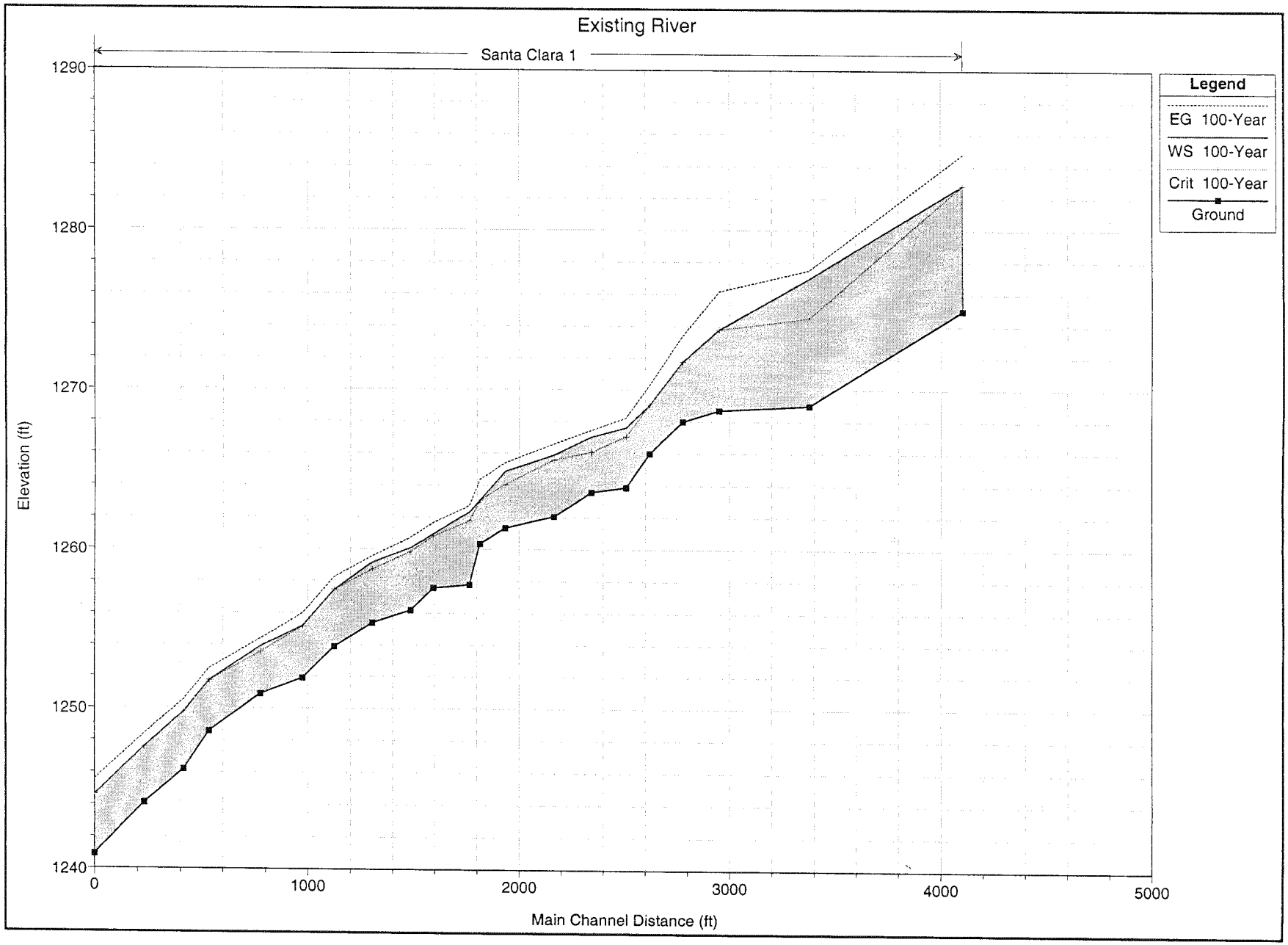
APPENDIX 'B'

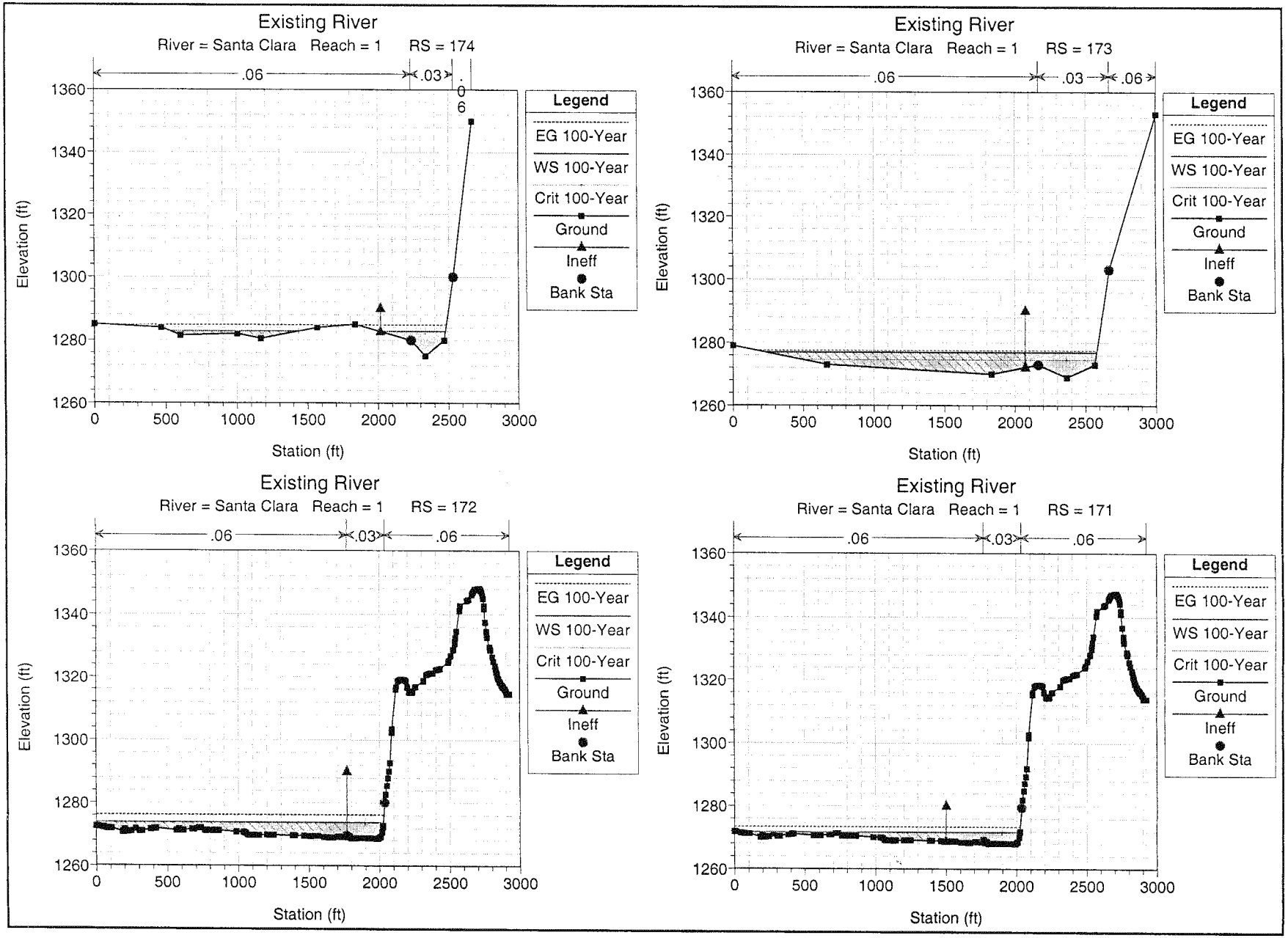
Results Summary

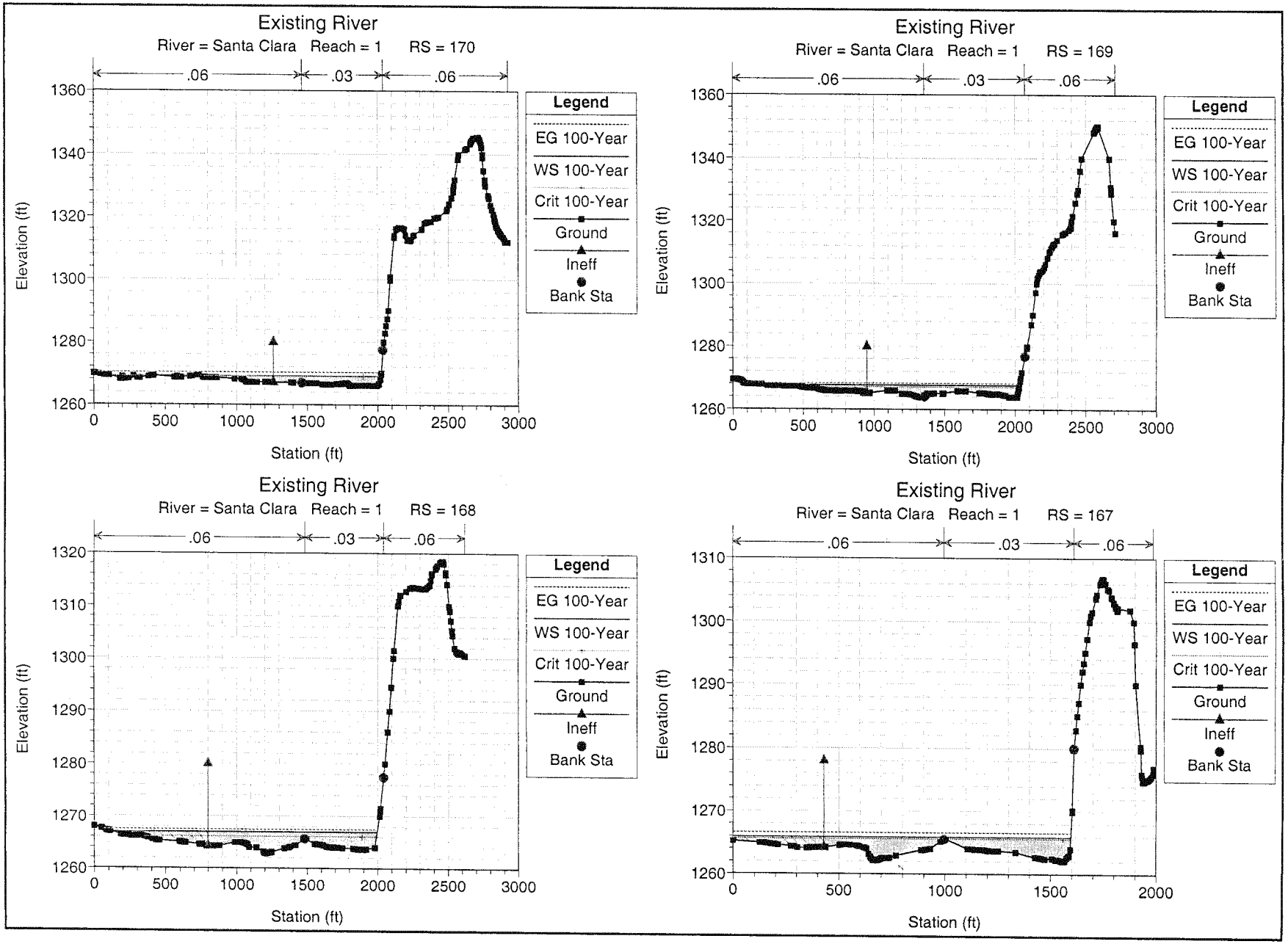
HEC-RAS Cross Section Input/Output

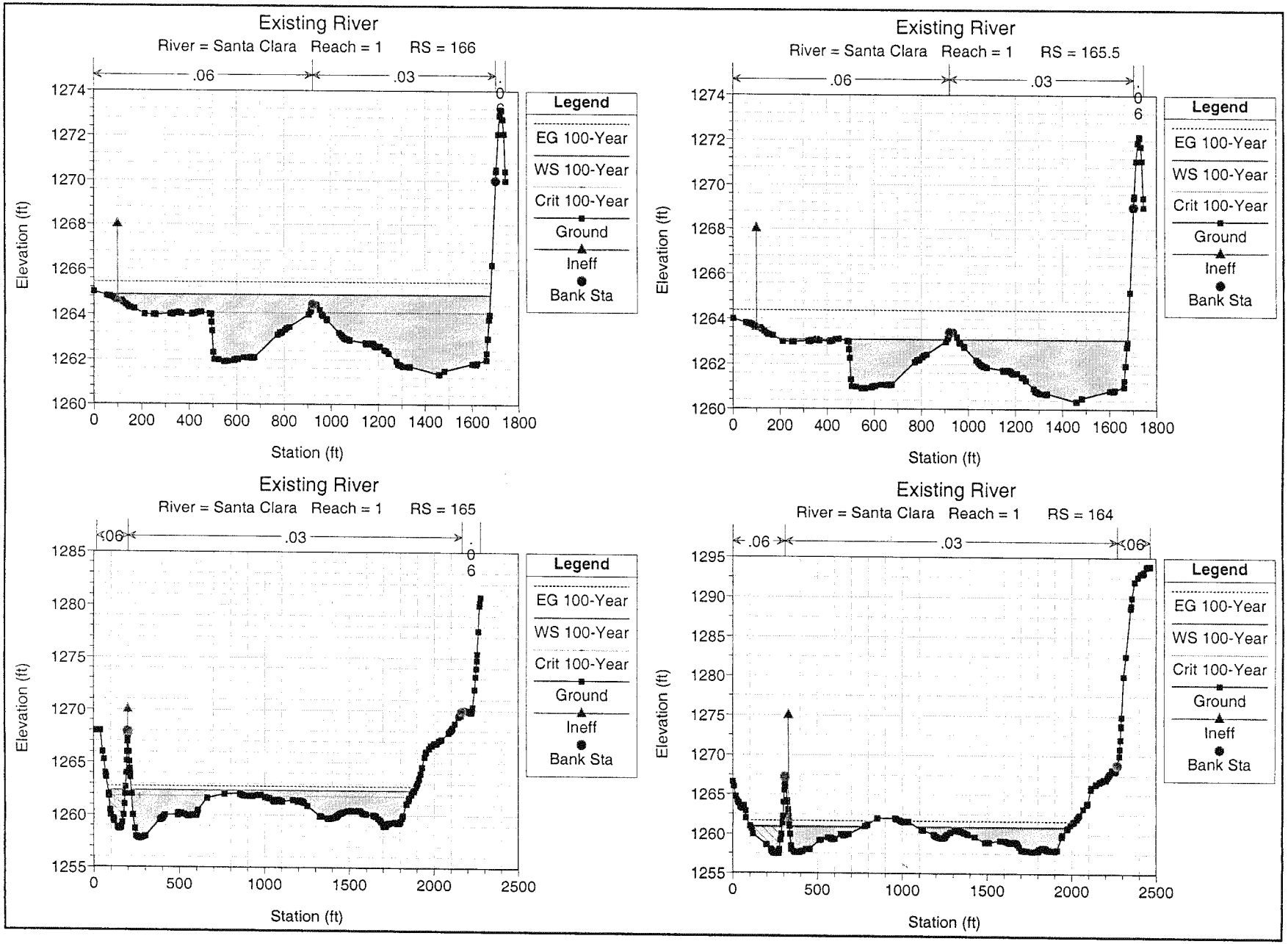
HEC-RAS Plan: Existing River: Santa Clara Reach: 1 Profile: 100-Year

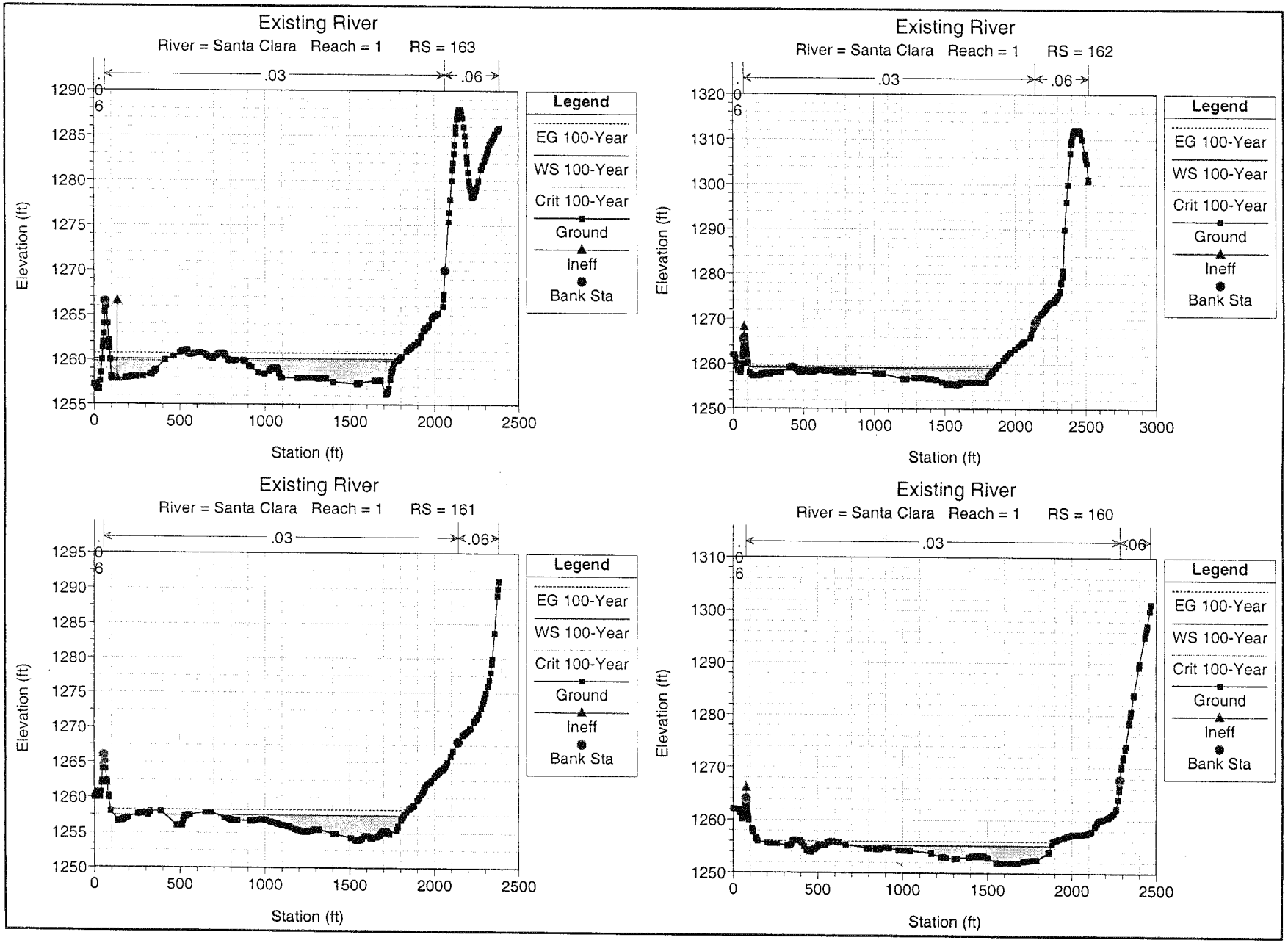
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	174	100-Year	15272.00	1275.00	1282.84	1282.84	1284.78	0.005994	11.47	1583.56	1375.84	0.89
1	173	100-Year	15272.00	1269.00	1277.00	1274.52	1277.51	0.001342	5.90	2830.97	2355.72	0.43
1	172	100-Year	15272.00	1268.71	1273.81	1273.81	1276.18	0.007724	12.36	1235.52	2026.21	0.99
1	171	100-Year	15272.00	1268.00	1271.78	1271.78	1273.40	0.010566	11.75	1754.76	2005.58	1.11
1	170	100-Year	15272.00	1266.00	1269.06	1269.06	1270.29	0.009827	9.32	1879.44	1791.87	1.02
1	169	100-Year	15272.00	1263.90	1267.64	1267.07	1268.23	0.005398	6.82	2762.66	1811.09	0.75
1	168	100-Year	15272.00	1263.60	1267.03	1266.09	1267.46	0.003977	6.26	3414.58	1878.26	0.65
1	167	100-Year	15272.00	1262.08	1265.91	1265.60	1266.60	0.007252	7.57	2672.84	1595.56	0.86
1	166	100-Year	15272.00	1261.35	1264.88	1264.08	1265.43	0.004912	6.48	3157.91	1643.01	0.71
1	165.5	100-Year	15272.00	1260.35	1263.09	1263.09	1264.37	0.016700	9.69	1951.52	1410.77	1.25
1	165	100-Year	15272.00	1257.79	1262.36	1261.79	1262.75	0.004575	5.02	3045.23	1763.22	0.65
1	164	100-Year	15272.00	1257.58	1260.96	1260.83	1261.65	0.008880	6.68	2285.72	1522.36	0.90
1	163	100-Year	15272.00	1256.19	1260.08	1259.84	1260.75	0.007966	6.54	2335.67	1385.69	0.86
1	162	100-Year	15272.00	1255.40	1259.16	1258.72	1259.56	0.004798	5.03	3033.60	1732.99	0.67
1	161	100-Year	15272.00	1253.90	1257.46	1257.46	1258.26	0.011281	7.16	2132.21	1341.81	1.00
1	160	100-Year	15272.00	1251.90	1255.21	1255.18	1255.99	0.010541	7.07	2160.59	1318.22	0.97
1	159	100-Year	15272.00	1250.87	1253.91	1253.54	1254.40	0.005731	5.64	2708.68	1468.79	0.73
1	158	100-Year	15272.00	1248.56	1251.74	1251.74	1252.49	0.011546	6.93	2202.78	1481.18	1.00
1	157	100-Year	15272.00	1246.18	1249.75	1249.75	1250.51	0.011444	7.00	2181.92	1436.14	1.00
1	156	100-Year	15272.00	1244.10	1247.57	1247.57	1248.37	0.011403	7.15	2134.93	1356.49	1.00
1	155	100-Year	15272.00	1240.90	1244.61	1244.61	1245.56	0.010751	7.84	1949.01	1033.46	1.01

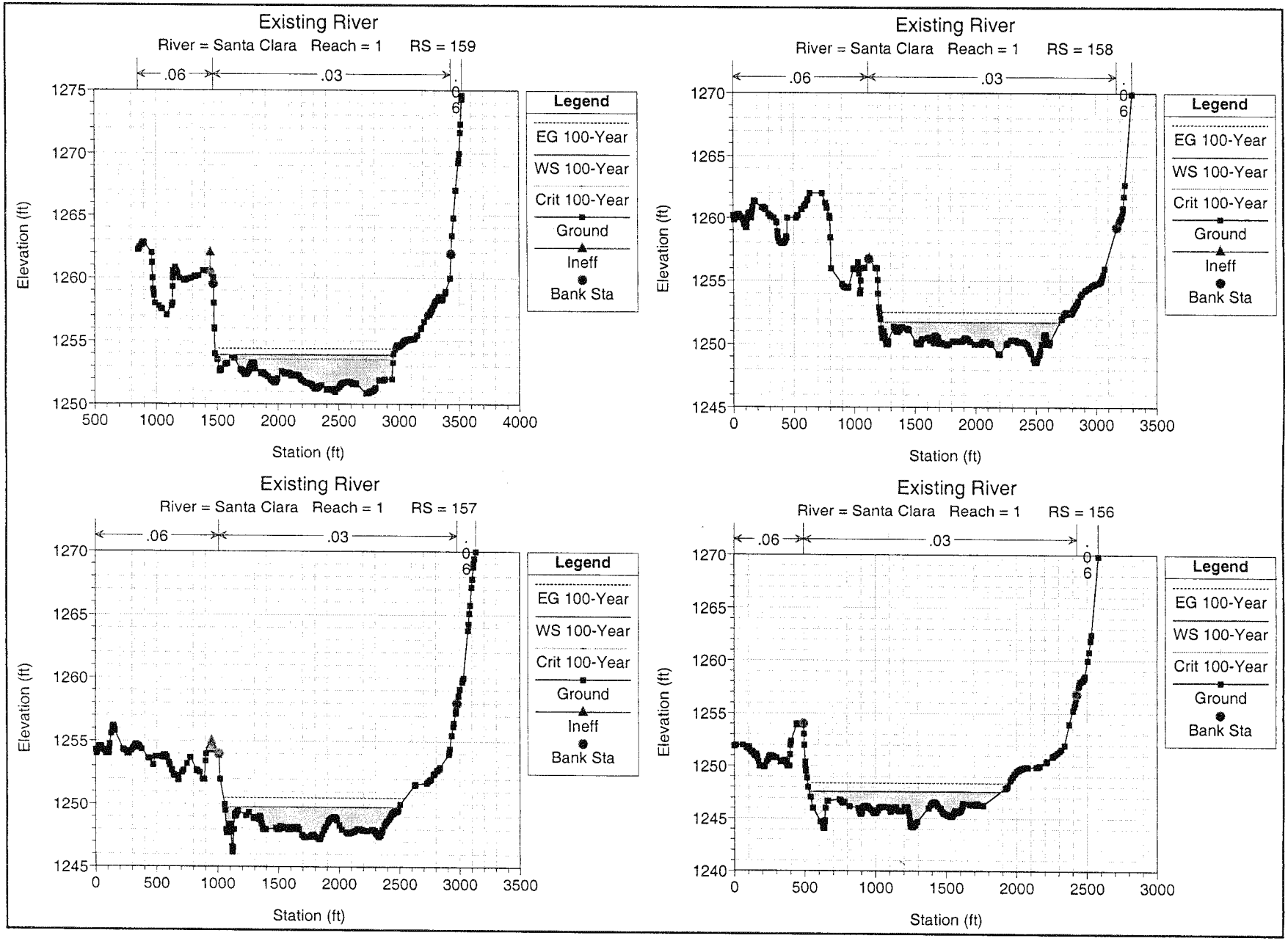

Existing River
Santa Clara 1
1290
1280
1270
1260
1250
1240
Elevation (ft)
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground

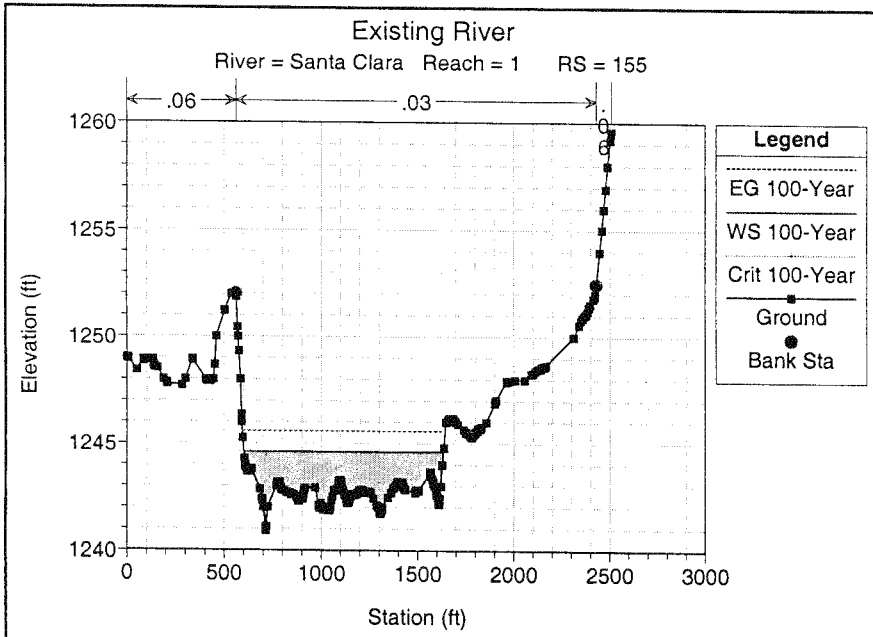

Existing River
River = Santa Clara Reach = 1 RS = 174
.06
.03
.06
Elevation (ft)
1360
1340
1320
1300
1280
1260
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 173
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 172
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 171
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta


Existing River
River = Santa Clara Reach = 1 RS = 170
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 169
Existing River
River = Santa Clara Reach = 1 RS = 168
Existing River
River = Santa Clara Reach = 1 RS = 167


Existing River
River = Santa Clara Reach = 1 RS = 166
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 165.5
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 165
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 164
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta


Existing River
River = Santa Clara Reach = 1 RS = 163
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 162
Existing River
River = Santa Clara Reach = 1 RS = 161
Existing River
River = Santa Clara Reach = 1 RS = 160


Existing River
River = Santa Clara Reach = 1 RS = 159
.06
.03
.06
Elevation (ft)
1275
1270
1265
1260
1255
1250
500
1000
1500
2000
2500
3000
3500
4000
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 158
.06
.03
.06
Elevation (ft)
1270
1265
1260
1255
1250
1245
0
500
1000
1500
2000
2500
3000
3500
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 157
.06
.03
.06
Elevation (ft)
1270
1265
1260
1255
1250
1245
0
500
1000
1500
2000
2500
3000
3500
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Existing River
River = Santa Clara Reach = 1 RS = 156
.06
.03
.06
Elevation (ft)
1270
1265
1260
1255
1250
1245
1240
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta


Existing River
River = Santa Clara Reach = 1 RS = 155
.06
.03
1260
1255
1250
1245
1240
Elevation (ft)
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta

Existing Bridge.rep

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Existing River
Project File : Existing Bridge.prj
Run Date and Time: 4/1/2005 10:10:05 AM

Project in English units

Project Description:
Cross sections cut in LDD and imported 04-30-04

PLAN DATA

Plan Title: Existing Profile
Plan File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Existing Bridge.p03

Geometry Title: Exist Project (banks=0.6, chnl=0.3)
Geometry File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Existing Bridge.g07

Flow Title : Steady Flow
Flow File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Existing Bridge.f01

Plan Summary Information:

Number of:	Cross Sections	= 21	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 0	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

RIVER: Santa Clara
REACH: 1 RS: 173

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1279	667.6	1273	1833	1270	2166	1273	2366	1269
2565	1273	2666	1303	3000	1353				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	2166	.03	2666	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2166	2666	379	427	469	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	2073	1290	F

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 172

INPUT
Description:
Station Elevation Data num= 337

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1272.61	12.11	1272.54	45.45	1272.26	51.09	1272.22	51.69	1272.21
71.31	1272.01	72.31	1272.02	74.24	1272	75.77	1271.98	76.93	1271.97
77.52	1272.01	78.27	1271.96	79.13	1271.96	80.47	1271.95	81.69	1271.95
83.13	1271.91	86.32	1271.95	90.96	1271.95	92.99	1271.91	97.02	1271.95
103.98	1271.95	105.31	1271.91	106.6	1271.95	184.31	1270.79	184.7	1270.8
187.78	1270.71	192.84	1270.71	198.32	1271.51	198.87	1271.44	221.81	1270.85
244.92	1271.01	276.73	1271.78	305.39	1271.12	315.78	1271.12	321.04	1271.11
382.73	1271.62	405.91	1271.88	406.26	1271.87	406.45	1271.86	406.62	1271.81
406.73	1271.85	407.35	1271.85	407.57	1271.81	407.82	1271.87	408.13	1271.88
408.44	1271.88	408.51	1271.87	411.55	1271.91	411.84	1271.86	413.57	1271.87
414.18	1271.88	416.74	1271.89	417.95	1271.91	418.72	1271.89	419.41	1271.89
562.71	1271.34	563.53	1271.31	580.77	1271.68	597.72	1271.33	605.62	1271.33
612.41	1271.31	673.01	1271.69	687.46	1271.68	719.86	1272.11	723.17	1272.11
729.84	1272.09	731.51	1272.08	732.49	1272.11	733.04	1272.08	735.37	1272.09
736.57	1272.09	763.01	1271.38	764.04	1271.41	765.48	1271.36	766.77	1271.35
767.73	1271.32	768.09	1271.3	769.49	1271.31	769.96	1271.26	770.46	1271.27
772.31	1271.31	773.91	1271.31	775.09	1271.38	776.44	1271.4	777.35	1271.41
778.17	1271.41	815.76	1271.21	819.66	1271.23	823.12	1271.23	826.45	1271.26
829.27	1271.31	830.69	1271.3	834.59	1271.3	844.98	1271.28	855.3	1271.21
861.06	1271.23	985.31	1270.83	1033.41	1270.75	1036.93	1270.71	1038.31	1270.72
1038.9	1270.71	1040.28	1270.71	1048.88	1270.49	1049.62	1270.49	1051.24	1270.5
1053.87	1270.43	1054.99	1270.41	1066.75	1269.91	1075.43	1269.83	1079.75	1269.8
1085.08	1269.81	1088.2	1269.76	1106.54	1269.77	1111.89	1269.81	1119.51	1269.76
1121.84	1269.76	1128.71	1269.71	1130.42	1269.74	1144.12	1269.73	1201.06	1269.85
1210.98	1269.85	1221.03	1269.81	1228.01	1269.83	1231.57	1269.82	1244.21	1269.83
1248.82	1269.81	1384.56	1269.69	1389.2	1269.71	1400.26	1269.67	1463.25	1269.59
1507.87	1269.46	1510.58	1269.48	1528.04	1269.48	1530.48	1269.51	1547.74	1269.49
1549.99	1269.5	1556.74	1269.49	1558.96	1269.48	1565.8	1269.51	1605.66	1269.1
1627.2	1269.1	1631.35	1269.11	1635.69	1269.08	1644.53	1269.08	1651.58	1269.06
1660.05	1269.01	1668.44	1269.02	1705.19	1269.32	1708.68	1269.37	1716.17	1269.3
1723.82	1269.21	1726.01	1269.28	1731.42	1269.26	1738.13	1269.34	1742.11	1269.36
1745.14	1269.41	1760.2	1269.49	1768.77	1269.57	1773.53	1269.59	1776.6	1269.61

244.92	1270.3	276.73	1271.07	305.39	1270.41	315.78	1270.41	321.04	1270.4
382.73	1270.91	405.91	1271.17	406.26	1271.16	406.45	1271.15	406.62	1271.1
406.73	1271.14	407.35	1271.14	407.57	1271.1	407.82	1271.16	408.13	1271.17
408.44	1271.17	408.51	1271.16	411.55	1271.2	411.84	1271.15	413.57	1271.16
414.18	1271.17	416.74	1271.18	417.95	1271.2	418.72	1271.18	419.41	1271.18
562.71	1270.63	563.53	1270.6	580.77	1270.97	597.72	1270.62	605.62	1270.62
612.41	1270.6	673.01	1270.98	687.46	1270.97	719.86	1271.4	723.17	1271.4
729.84	1271.38	731.51	1271.37	732.49	1271.4	733.04	1271.37	735.37	1271.38
736.57	1271.38	763.01	1270.67	764.04	1270.7	765.48	1270.65	766.77	1270.64
767.73	1270.61	768.09	1270.59	769.49	1270.6	769.96	1270.55	770.46	1270.56
772.31	1270.6	773.91	1270.6	775.09	1270.67	776.44	1270.69	777.35	1270.7
778.17	1270.7	815.76	1270.5	819.66	1270.52	823.12	1270.52	826.45	1270.55
829.27	1270.6	830.69	1270.59	834.59	1270.59	844.98	1270.57	855.3	1270.5
861.06	1270.52	985.31	1270.12	1033.41	1270.04	1036.93	1270	1038.31	1270.01
1038.9	1270	1040.28	1270	1048.88	1269.78	1049.62	1269.78	1051.24	1269.79
1053.87	1269.72	1054.99	1269.7	1066.75	1269.2	1075.43	1269.12	1079.75	1269.09
1085.08	1269.1	1088.2	1269.05	1106.54	1269.06	1111.89	1269.1	1119.51	1269.05
1121.84	1269.05	1128.71	1269	1130.42	1269.03	1144.12	1269.02	1201.06	1269.14
1210.98	1269.14	1221.03	1269.1	1228.01	1269.12	1231.57	1269.11	1244.21	1269.12
1248.82	1269.1	1384.56	1268.98	1389.2	1269	1400.26	1268.96	1463.25	1268.88
1507.87	1268.75	1510.58	1268.77	1528.04	1268.77	1530.48	1268.8	1547.74	1268.78
1549.99	1268.79	1556.74	1268.78	1558.96	1268.77	1565.8	1268.8	1605.66	1268.39
1627.2	1268.39	1631.35	1268.4	1635.69	1268.37	1644.53	1268.37	1651.58	1268.35
1660.05	1268.3	1668.44	1268.31	1705.19	1268.61	1708.68	1268.66	1716.17	1268.59
1723.82	1268.5	1726.01	1268.57	1731.42	1268.55	1738.13	1268.63	1742.11	1268.65
1745.14	1268.7	1760.2	1268.78	1768.77	1268.86	1773.53	1268.88	1776.6	1268.9
1782.06	1268.78	1786.76	1268.64	1791.31	1268.45	1798.18	1268.1	1799.96	1268
1817.13	1268.07	1822.1	1268.1	1825.91	1268.09	1834.02	1268.1	1837.17	1268.11
1840.39	1268.11	1843.6	1268.1	1847.05	1268.11	1868.17	1268.09	1874.96	1268.1
1879.76	1268.08	1883.99	1268.08	1894.55	1268.1	1920.09	1268.09	1925.31	1268.1
1930.52	1268.08	1964.01	1268.04	1974.58	1268	1986.36	1268.01	1990.6	1268
1993.29	1268.1	2003.25	1268.41	2007.82	1268.6	2018.27	1270	2023.31	1271.57
2024.56	1272	2035.71	1279.46	2041.62	1282	2050.88	1284.8	2058.67	1287.22
2065.74	1289.39	2073.15	1292	2086.82	1301.7	2087.26	1302	2087.57	1302.14
2089.08	1302.78	2117.25	1315.4	2119.26	1316	2129.39	1317.86	2130.34	1318
2137.37	1318.19	2146.22	1318.4	2150.99	1318.48	2154.42	1318.53	2157.12	1318.55
2160.24	1318.54	2165.76	1318.5	2170.51	1318.43	2176.68	1318.32	2183.46	1318.15
2188.68	1318	2197.15	1316.2	2199.03	1316	2210.78	1314.49	2215.37	1314.41
2223.38	1314.41	2225.72	1314.5	2228	1314.38	2229.25	1314.34	2229.92	1314.36
2231.08	1314.4	2232.04	1314.47	2235.22	1314.72	2236.83	1314.81	2250.22	1316
2250.48	1316	2256.99	1316.22	2312.88	1318	2313.65	1318.09	2332.33	1320
2343.19	1320.2	2349.84	1320.36	2353.84	1320.43	2357.22	1320.48	2360.51	1320.51
2364.91	1320.6	2366.72	1320.57	2368.23	1320.57	2371.42	1320.56	2374.85	1320.54
2376.19	1320.5	2378.03	1320.54	2401.57	1321.57	2415.39	1321.74	2425.33	1321.9
2432.5	1322	2489.41	1324	2493.59	1324.6	2506.06	1326	2507.76	1326.18
2523.6	1328	2524.91	1328.2	2535.54	1330	2535.91	1330.2	2537.46	1330.83
2539.95	1332	2546.65	1333.99	2569.74	1340.5	2574.93	1342	2621.29	1343.59
2632.12	1343.9	2633.17	1343.96	2633.46	1343.97	2634.8	1344	2657	1345.52
2661.59	1346	2664.8	1346.24	2670.55	1346.64	2678.86	1347.09	2680.57	1347.2
2682.03	1347.17	2686.39	1347.07	2688.7	1347.21	2693.3	1347.08	2697.41	1347.3
2700.29	1347.22	2705.63	1347.46	2707.89	1347.38	2711.94	1347.42	2715.31	1347.2
2720.71	1346.83	2722.91	1346.6	2728.32	1346	2733.3	1345.15	2736.68	1344.3
2742.76	1342	2743.48	1341.57	2744.32	1341.14	2752.01	1336.86	2760.09	1334
2762.42	1332.94	2765.09	1332	2783.43	1329	2787.89	1328.4	2790.49	1328
2801.46	1325.81	2810.95	1324.38	2822.91	1322.92	2827.01	1322	2827.49	1321.88
2829.48	1321.09	2830.85	1321.03	2832.63	1320.88	2835.24	1320.5	2837.61	1320.04
2839.38	1319.46	2841.1	1319.15	2842.62	1318.95	2843.83	1318.8	2845.38	1318.78
2847.7	1318.73	2851.95	1318	2854.59	1317.78	2855.03	1317.8	2855.85	1317.75
2856.47	1317.73	2857.19	1317.68	2860.3	1317.4	2866.48	1316.9	2867.78	1316.83
2870.18	1316.74	2872.36	1316.71	2875.07	1316.38	2877.01	1316.4	2879.46	1316.08
2880.93	1316	2890.96	1315.66	2894.69	1315.22	2901.22	1314.7	2902.95	1314.51
2904.4	1314	2924.98	1314						

2188.68	1316	2197.15	1314.2	2199.03	1314	2210.78	1312.49	2215.37	1312.41
2223.38	1312.41	2225.72	1312.5	2228	1312.38	2229.25	1312.34	2229.92	1312.36
2231.08	1312.4	2232.04	1312.47	2235.22	1312.72	2236.83	1312.81	2250.22	1314
2250.48	1314	2256.99	1314.22	2312.88	1316	2313.65	1316.09	2332.33	1318
2343.19	1318.2	2349.84	1318.36	2353.84	1318.43	2357.22	1318.48	2360.51	1318.51
2364.91	1318.6	2366.72	1318.57	2368.23	1318.57	2371.42	1318.56	2374.85	1318.54
2376.19	1318.5	2378.03	1318.54	2401.57	1319.57	2415.39	1319.74	2425.33	1319.9
2432.5	1320	2489.41	1322	2493.59	1322.6	2506.06	1324	2507.76	1324.18
2523.6	1326	2524.91	1326.2	2535.54	1328	2535.91	1328.2	2537.46	1328.83
2539.95	1330	2546.65	1331.99	2569.74	1338.5	2574.93	1340	2621.29	1341.59
2632.12	1341.9	2633.17	1341.96	2633.46	1341.97	2634.8	1342	2657	1343.52
2661.59	1344	2664.8	1344.24	2670.55	1344.64	2678.86	1345.09	2680.57	1345.2
2682.03	1345.17	2686.39	1345.07	2688.7	1345.21	2693.3	1345.08	2697.41	1345.3
2700.29	1345.22	2705.63	1345.46	2707.89	1345.38	2711.94	1345.42	2715.31	1345.2
2720.71	1344.83	2722.91	1344.6	2728.32	1344	2733.3	1343.15	2736.68	1342.3
2742.76	1340	2743.48	1339.57	2744.32	1339.14	2752.01	1334.86	2760.09	1332
2762.42	1330.94	2765.09	1330	2783.43	1327	2787.89	1326.4	2790.49	1326
2801.46	1323.81	2810.95	1322.38	2822.91	1320.92	2827.01	1320	2827.49	1319.88
2829.48	1319.09	2830.85	1319.03	2832.63	1318.88	2835.24	1318.5	2837.61	1318.04
2839.38	1317.46	2841.1	1317.15	2842.62	1316.95	2843.83	1316.8	2845.38	1316.78
2847.7	1316.73	2851.95	1316	2854.59	1315.78	2855.03	1315.8	2855.85	1315.75
2856.47	1315.73	2857.19	1315.68	2860.3	1315.4	2866.48	1314.9	2867.78	1314.83
2870.18	1314.74	2872.36	1314.71	2875.07	1314.38	2877.01	1314.4	2879.46	1314.08
2880.93	1314	2890.96	1313.66	2894.69	1313.22	2901.22	1312.7	2902.95	1312.51
2904.4	1312	2924.98	1312						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1463.25	.03	2035.71	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1463.25	2035.71	120	122	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1260	1280	F

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 169

INPUT
Description:
Station Elevation Data num= 359

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1269.4	6.06	1269.37	6.85	1269.38	7.49	1269.39	8.71	1269.42
9.41	1269.4	10.28	1269.43	13.06	1269.43	13.96	1269.4	18.18	1269.36
18.78	1269.35	19.84	1269.36	20.25	1269.4	20.73	1269.37	21.14	1269.4
21.99	1269.43	22.56	1269.44	23.39	1269.4	24.85	1269.43	25.84	1269.42
27.89	1269.38	30.27	1269.35	32.93	1269.3	36.13	1269.26	39.84	1269.2
43.42	1269.15	46.05	1269.12	50.51	1269.1	53.54	1269.04	57.84	1268.98
68.87	1268.61	68.95	1268.33	69.99	1268.3	71.86	1268.22	73.05	1268.21
74.01	1268.2	78.7	1268.06	78.95	1268.1	80.79	1268	97.39	1267.91
99.54	1267.89	102.14	1267.9	103.91	1267.86	117.36	1267.81	122.87	1267.8
126.47	1267.8	132.9	1267.78	168.88	1267.77	183.99	1267.8	191.24	1267.78
195.21	1267.78	198.91	1267.77	203.35	1267.77	245.39	1267.4	278.83	1267.37
287.86	1267.4	290.26	1267.38	295.46	1267.41	296.71	1267.41	300.67	1267.42
303.42	1267.4	308.16	1267.43	313.72	1267.41	320.28	1267.41	323.13	1267.4
362.87	1267.15	367.74	1267.15	372.52	1267.14	380.28	1267.14	394.33	1267.2
399.31	1267.19	401.14	1267.19	406.48	1267.17	411.36	1267.17	416.22	1267.2
459.53	1267.2	466.82	1267.19	468.45	1267.18	473.32	1267.18	477.05	1267.2
484.58	1267.11	486.23	1267.07	491.65	1266.9	495.51	1266.93	497.89	1266.89

Sta L	Sta R	Elev	Permanent
0	950	1280	F

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 168

INPUT
Description:
Station Elevation Data num= 336

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1268	48.14	1267.63	52.54	1267.59	56.06	1267.6	81.29	1267.28
81.4	1267.28	83.16	1267.25	83.86	1267.25	85.07	1267.2	86.93	1267.22
88.83	1267.21	91.01	1267.19	92.2	1267.19	95.16	1267.2	97.21	1267.16
99.01	1267.15	107.33	1267.08	110.37	1267.1	185.52	1266.41	187.62	1266.4
189.71	1266.4	192.8	1266.39	195.21	1266.4	197.77	1266.38	198.44	1266.39
199.9	1266.4	203.33	1266.38	204.4	1266.4	212.14	1266.36	213.36	1266.36
229.32	1266.31	230.77	1266.3	239.05	1266.28	257.35	1266.15	266.21	1266.13
269.66	1266.13	273.3	1266.1	276.76	1266.15	279.7	1266.16	291.08	1266.23
293.31	1266.2	296.85	1266.24	299.41	1266.25	312.18	1266.25	314.62	1266.3
318.48	1266.25	320.88	1266.24	322.99	1266.24	326.76	1266.21	337.58	1266.2
354.43	1266.06	363.32	1266	377.49	1265.84	407.05	1265.56	410.18	1265.54
422.01	1265.5	424.6	1265.5	431.95	1265.36	433.39	1265.34	435.05	1265.3
436.76	1265.31	444.99	1265.28	445.94	1265.28	448.43	1265.3	450.23	1265.31
452.32	1265.31	456.35	1265.29	596.89	1265.06	598.93	1265.06	600.03	1265.05
601.14	1265.05	602.48	1265.1	603.84	1265.05	606.53	1265.05	609.24	1265.04
610.08	1265	611.36	1265.03	612.74	1265.02	614.17	1265.02	619.06	1265
620.76	1264.99	621.81	1264.99	623.86	1264.97	626.14	1264.96	627.75	1264.9
629.03	1264.94	631.26	1264.95	632.65	1264.94	634.58	1264.94	640.95	1264.9
735.21	1264.57	736.35	1264.57	740.29	1264.56	741.43	1264.56	744	1264.5
745.01	1264.55	746.09	1264.55	754.97	1264.6	756.01	1264.58	786.4	1264.21
800.14	1264.21	804.92	1264.2	810.06	1264.21	815.42	1264.2	825.55	1264.2
827.67	1264.22	833.21	1264.25	835.45	1264.25	840.9	1264.3	844.81	1264.27
846.53	1264.28	851.72	1264.28	853.57	1264.3	856.51	1264.29	862.07	1264.28
865.34	1264.29	871.16	1264.28	875.5	1264.3	880.16	1264.28	986.56	1264.91
988.82	1264.91	991.12	1264.92	998.4	1265	1001.67	1264.97	1004.84	1264.98
1013.59	1264.98	1023.05	1265	1026.8	1264.95	1043.79	1264.89	1049.47	1264.86
1052.5	1264.8	1058.42	1264.79	1065.21	1264.72	1073.87	1264.61	1079.9	1264.5
1087.1	1264	1138.63	1264	1141.24	1263.95	1187.88	1263.16	1192.16	1263.1
1194.04	1263.04	1195.65	1263	1196.07	1262.98	1199.12	1262.9	1200.15	1262.89
1201.1	1262.89	1202.3	1262.88	1202.75	1262.88	1203.03	1262.9	1203.59	1262.87
1203.98	1262.86	1204.28	1262.85	1204.49	1262.85	1204.67	1262.8	1204.87	1262.84
1205.92	1262.84	1206.08	1262.8	1206.23	1262.84	1206.57	1262.84	1206.81	1262.85
1206.93	1262.8	1207.04	1262.85	1207.32	1262.87	1207.39	1262.87	1207.46	1262.88
1207.72	1262.9	1207.95	1262.9	1208.37	1262.91	1208.86	1262.92	1209.29	1262.93
1210.58	1262.9	1211.38	1262.94	1212.05	1262.95	1212.44	1262.94	1213.08	1262.94
1213.67	1262.9	1214.81	1262.93	1215.72	1262.93	1227.41	1262.95	1231.67	1263
1234.04	1262.98	1236.35	1262.99	1242.79	1263.03	1246.18	1263.1	1248.99	1263.07
1338.04	1263.8	1367.84	1264	1377.91	1264.12	1411.46	1264.39	1417.07	1264.45
1483.92	1265.67	1551.21	1264.7	1555.57	1264.65	1569.04	1264.63	1574.41	1264.63
1579.8	1264.6	1584.78	1264.61	1592.96	1264.56	1599.14	1264.51	1605.34	1264.5
1614.82	1264.37	1634.98	1264.18	1645.04	1264.11	1652.2	1264.1	1656.4	1264.05
1659.93	1264.02	1671.88	1264.03	1680.08	1264	1688.17	1264.05	1701.5	1264.04
1716.32	1264	1718.7	1263.99	1749.34	1263.9	1824.55	1263.8	1830.9	1263.8
1837.95	1263.76	1854.36	1263.7	1857.58	1263.7	1860.32	1263.68	1864.56	1263.66
1866.33	1263.66	1868.67	1263.7	1871.34	1263.65	1875.45	1263.64	1880.61	1263.64
1881.85	1263.6	1882.76	1263.63	1884.03	1263.62	1885.16	1263.62	1886.04	1263.61
1886.6	1263.6	1887.68	1263.61	1890.4	1263.61	1891.96	1263.6	1893.28	1263.62
1895.47	1263.62	1896.69	1263.6	1897.4	1263.63	1898.42	1263.63	1899.55	1263.64
1906.02	1263.67	1908.59	1263.7	1913.13	1263.7	1916.04	1263.72	1919.29	1263.73
1978.82	1264	2012.45	1270	2015.94	1270.9	2018.48	1271.56	2041.38	1277.47

1246.74	1263.67	1251.93	1263.7	1332.48	1263.48	1425.05	1262.69	1425.96	1262.69
1427	1262.7	1430.63	1262.69	1433.57	1262.69	1441.7	1262.66	1447.43	1262.6
1456.04	1262.56	1471.85	1262.45	1504.52	1262.53	1522.18	1262.3	1523.64	1262.35
1525.32	1262.38	1533.97	1262.28	1536.27	1262.33	1545.93	1262.1	1548.4	1262.23
1552.93	1262.12	1557.17	1262.08	1557.47	1262.1	1562.16	1262.1	1566.9	1262.18
1573.34	1262.62	1580.16	1262.82	1585.3	1262.96	1586.38	1263	1592.92	1264
1601.08	1269.9	1601.23	1270	1601.46	1270.22	1611.23	1280	1619.76	1282.9
1627.12	1285.1	1633.65	1287.2	1642.48	1290	1650.96	1292.1	1656.65	1293.4
1663.8	1295.07	1672.81	1297.29	1683.27	1300	1689.43	1301	1695.88	1301.55
1713.64	1303.74	1718.71	1304.33	1734.5	1305.97	1737.32	1306.2	1739.99	1306.47
1743.38	1306.7	1745.5	1306.8	1746.82	1306.82	1748.16	1306.8	1749.46	1306.75
1751.25	1306.62	1757.72	1306.03	1759.76	1306.07	1768.61	1305.2	1771.49	1305.2
1776.43	1305	1787.23	1303.92	1789.68	1303.76	1797.27	1303.1	1799.33	1302.94
1805.08	1302.6	1807.93	1302.28	1810.7	1302.27	1812.92	1302	1814.21	1301.79
1816.85	1302.03	1817.52	1302.18	1874.6	1301.84	1892.99	1300	1895.83	1296.5
1901.31	1290	1925.51	1280.37	1926.38	1280	1926.5	1279.8	1929.27	1276
1931.54	1275.62	1934.8	1275.16	1934.84	1274.98	1934.85	1274.9	1934.87	1274.85
1936.56	1274.8	1938.11	1274.76	1939.42	1274.76	1940.82	1274.8	1942.16	1274.8
1943.5	1274.84	1946.32	1274.95	1948.12	1275	1950.25	1275	1951.24	1275.04
1954.24	1274.99	1955.85	1274.99	1957.9	1275.02	1960.42	1275.1	1965.05	1275.22
1971.03	1275.42	1975.51	1275.6	1983.03	1276	1985.78	1276.9	1985.81	1276.91

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	996.21	.03	1611.23	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
996.21	1611.23	59.01	231 386.01	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	430	1278	F

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 166

INPUT
Description:
Station Elevation Data num= 153

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1265	54.79	1264.82	64.69	1264.79	67.97	1264.8	71.36	1264.78
78.35	1264.76	85.72	1264.72	88.08	1264.7	91.75	1264.68	95.8	1264.65
109.01	1264.6	115.86	1264.6	121.7	1264.53	132.87	1264.45	141.61	1264.37
148.02	1264.3	153.32	1264.3	169.11	1264.26	210.97	1264	250.46	1263.99
254.76	1264	258.66	1263.98	320.84	1264.02	329.04	1264	332.7	1264.05
347.99	1264.05	354.56	1264.1	367.22	1264.04	411.13	1264	414.71	1264.03
418.87	1264.03	423.13	1264.04	436.86	1264.1	449.32	1264.11	486.14	1264.02
491.41	1264	493.15	1263.66	495.89	1263.27	501.01	1262.32	504.94	1262
510.11	1262	522.53	1261.98	523.62	1261.98	546.15	1261.9	553.64	1261.93
562.44	1261.91	589.35	1261.95	590.11	1261.97	591.55	1262	593.86	1262
598.49	1262.02	604.4	1262.03	604.7	1262	628.36	1262.08	649.24	1262.07
659.71	1262.1	664.67	1262.06	670	1262.07	675.06	1262.09	772.7	1263.09
782.32	1263.2	782.87	1263.16	783.5	1263.16	784.11	1263.17	784.8	1263.17
785.92	1263.2	786.71	1263.18	787.58	1263.18	789.52	1263.2	790.63	1263.2
792.44	1263.22	804.46	1263.31	810.63	1263.4	823.39	1263.44	904.54	1264
912.06	1264.14	914.9	1264.2	919.43	1264.36	921.25	1264.4	922.88	1264.43
926.01	1264.44	929.37	1264.4	932.6	1264.44	935.6	1264.42	938.2	1264.39
951.44	1264.2	960.02	1264	960.68	1263.99	965.02	1263.94	980.54	1263.8
982.64	1263.76	1033.14	1263.19	1042.04	1263.1	1046.81	1263.03	1053.7	1262.97
1056.91	1262.95	1062.72	1262.9	1069.07	1262.9	1077.93	1262.86	1146.34	1262.75
1148.8	1262.7	1152.31	1262.74	1156.76	1262.75	1164.14	1262.75	1168.05	1262.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	921.25	.03	1702.08	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
921.25	1702.08	49	50	232	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	100	1268	F

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 165

INPUT
Description:
Station Elevation Data num= 372

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
17.4	1267.97	17.51	1268	38.95	1268	52.29	1266	58.8	1265.27
68.02	1264	70.87	1263.75	72.3	1263.63	86.7	1262	87	1261.91
87.59	1261.8	94	1260.47	98.34	1260	113.03	1259.68	113.61	1259.62
114.06	1259.6	116.06	1259.49	117.95	1259.42	138.71	1258.86	142.62	1258.77
149.02	1258.7	151.67	1258.81	155.51	1258.76	156.71	1258.82	159.16	1258.82
160.41	1258.9	166.14	1259.29	173.83	1260	178.97	1261.04	183.43	1262
185.84	1262.7	189.97	1264	192.89	1265.16	194.7	1266	197.27	1266.95
198.67	1267.5	198.74	1267.62	198.79	1267.68	198.96	1267.74	199.09	1267.77
199.21	1267.8	199.28	1267.82	199.33	1267.85	199.39	1267.86	199.44	1267.86
199.87	1267.9	199.96	1267.85	200.16	1267.75	200.2	1267.69	200.34	1267.65
200.52	1267.6	200.78	1267.51	204.01	1266	208.02	1265.06	210.25	1264.39
211.72	1264	213.25	1263.62	220.07	1262	226.82	1260	239.75	1258.7
247.26	1258	250.9	1257.95	258.53	1257.87	261.98	1257.81	263.69	1257.8
264.63	1257.79	267.51	1257.79	274.52	1257.82	275.87	1257.8	279.88	1257.87
284.05	1257.89	286.78	1257.89	295.61	1257.93	299.56	1258	301.66	1258
385.42	1259.52	389.5	1259.6	392.06	1259.62	393.31	1259.64	395.58	1259.66
396.82	1259.7	399.4	1259.67	400.17	1259.67	406.54	1259.85	413.42	1260
489.78	1260	490.39	1260.15	491.05	1260.2	492.31	1260.2	493.93	1260.22
495.89	1260.22	502.31	1260.19	506.64	1260.2	509.1	1260.2	521.99	1260.09
527.35	1260.1	540.41	1260	540.86	1260	548.43	1259.95	551.36	1259.9
555.96	1259.94	568.96	1260	569.62	1260	574.1	1260.05	577.16	1260.03
577.75	1260	584.03	1259.97	587.32	1260	591.51	1259.98	598.06	1260
598.87	1260.02	603.43	1260.2	606.69	1260.4	608.44	1260.47	662.51	1261.6
763.47	1262	854.98	1262.05	855.07	1262	858.97	1262	864.76	1261.95
867.75	1261.91	869.56	1261.89	873.57	1261.9	876.96	1261.86	880.95	1261.84
898.72	1261.8	910.47	1261.8	911.66	1261.81	913.63	1261.84	915.6	1261.84
918.16	1261.85	920.83	1261.85	926.48	1261.8	929.07	1261.84	960.12	1261.9
967.06	1261.93	977.04	1261.93	1003.21	1261.7	1004.42	1261.72	1020.41	1261.65
1022.34	1261.63	1028.56	1261.59	1030.45	1261.6	1045.45	1261.43	1052.32	1261.34
1057.28	1261.3	1059.1	1261.32	1061.32	1261.36	1065.23	1261.46	1067.8	1261.5
1074.85	1261.5	1077.78	1261.47	1082.47	1261.45	1085.17	1261.4	1092.82	1261.38
1096.24	1261.33	1098.72	1261.33	1103.11	1261.3	1166.04	1261.45	1195.57	1261.29
1197.33	1261.29	1198.09	1261.3	1198.77	1261.3	1200.47	1261.32	1201.03	1261.33
1201.34	1261.3	1201.52	1261.35	1201.63	1261.36	1201.73	1261.37	1201.85	1261.38
1202.04	1261.4	1202.45	1261.39	1203.37	1261.4	1203.82	1261.41	1204.29	1261.41
1205.18	1261.4	1205.97	1261.42	1206.4	1261.43	1206.99	1261.43	1207.18	1261.4
1207.43	1261.43	1208.08	1261.43	1209.03	1261.4	1209.15	1261.42	1210.5	1261.4
1211.12	1261.4	1211.81	1261.39	1212.45	1261.4	1213.32	1261.38	1214.27	1261.36
1215.4	1261.35	1216.09	1261.34	1216.94	1261.3	1217.95	1261.33	1218.99	1261.32
1220.68	1261.31	1221.5	1261.31	1222.41	1261.3	1225.98	1261.27	1227.87	1261.24
1231.92	1261.19	1251.32	1260.9	1324.54	1259.95	1327.16	1259.92	1330.26	1259.9
1333.85	1259.9	1370.45	1259.74	1375.05	1259.7	1380.64	1259.73	1388.2	1259.73
1393.22	1259.74	1401.93	1259.8	1412.94	1259.82	1416.89	1259.84	1420.53	1259.87

306.6	1266.56	307.36	1266.71	307.99	1266.84	308.4	1267.01	308.7	1267.1
309.02	1267.19	309.31	1267.23	311.75	1267.25	311.98	1267.2	312.23	1267.2
312.29	1267.07	312.37	1266.97	312.79	1266.81	313.39	1266.59	313.48	1266.4
313.59	1266.24	314.38	1266.01	320.94	1264.2	321.87	1264	325.84	1263.04
327.32	1262.68	329.87	1262	332.61	1261.3	334.15	1261.03	338.02	1260
343.32	1258.46	344.88	1258	359.69	1257.7	364.78	1257.65	368.21	1257.59
385.31	1257.58	392.23	1257.63	406.72	1257.7	410.64	1257.77	431.92	1258
450.79	1258	453.56	1258.01	455.05	1258.01	510.75	1259.2	516.03	1259.21
521.97	1259.29	561.14	1259.6	565.23	1259.57	566.83	1259.57	570.6	1259.59
572.69	1259.59	574.9	1259.6	576.85	1259.56	578.13	1259.52	579.56	1259.48
581.56	1259.35	590.63	1259.3	591.5	1259.34	592.77	1259.36	594.2	1259.37
595.71	1259.37	599.86	1259.4	603.32	1259.36	638.42	1260	653.55	1259.84
661.82	1259.9	664.83	1259.9	674.87	1260	685.47	1260	778.7	1261.02
783.36	1261.05	794.38	1261.18	852.52	1262	956.52	1262	963.09	1261.9
983.6	1261.77	994.79	1261.67	999.35	1261.6	999.41	1261.64	1004.35	1261.59
1004.94	1261.58	1006.23	1261.6	1007.32	1261.57	1008.6	1261.57	1010.55	1261.56
1014.28	1261.55	1015.31	1261.6	1016.48	1261.55	1018.01	1261.55	1018.41	1261.6
1019.05	1261.56	1019.69	1261.57	1020.51	1261.57	1021.35	1261.6	1023.08	1261.56
1026.44	1261.56	1028.7	1261.6	1032.29	1261.57	1036.31	1261.57	1113.02	1260.6
1123.56	1260.55	1184.46	1260	1188.28	1259.92	1195.02	1259.8	1198.11	1259.75
1202.23	1259.7	1210.88	1259.61	1213.73	1259.6	1219.18	1259.56	1223.5	1259.55
1227.73	1259.53	1231.14	1259.53	1233.63	1259.5	1236.79	1259.53	1238.95	1259.53
1240.79	1259.54	1243.06	1259.56	1245.87	1259.6	1248.15	1259.62	1249.78	1259.64
1251	1259.68	1252.19	1259.74	1253.66	1259.8	1255.53	1259.87	1262.32	1260
1264.75	1260.05	1281.45	1260.28	1306.92	1260.49	1311.94	1260.5	1314.27	1260.54
1318.82	1260.55	1320.95	1260.56	1323.9	1260.55	1326.05	1260.5	1328.18	1260.54
1331.25	1260.52	1341.94	1260.43	1343.27	1260.41	1358.29	1260.3	1365.08	1260.22
1379.35	1260.09	1387.34	1260	1425.31	1259.7	1488.07	1258.96	1493.39	1258.96
1496.29	1258.97	1498.17	1259	1499.99	1258.97	1504.93	1258.97	1506.13	1259
1508.01	1258.95	1510.7	1258.94	1511.81	1258.94	1576.93	1259.21	1579.61	1259.2
1583.79	1259.21	1586.24	1259.2	1589.63	1259.2	1592.92	1259.21	1596.88	1259.2
1598.74	1259.22	1600.84	1259.22	1606.67	1259.18	1610.42	1259.1	1616.85	1259.08
1624.96	1258.97	1628.69	1258.96	1634.09	1258.9	1636.8	1258.91	1641.92	1258.91
1645.14	1258.92	1648.17	1258.94	1651.79	1259	1654.44	1259	1657.98	1259.06
1660.11	1259.03	1662	1259.05	1666.9	1259	1670.26	1258.95	1673.62	1258.88
1676.08	1258.82	1679.63	1258.7	1687.85	1258.4	1688.63	1258.4	1699.22	1258
1701.4	1257.99	1712.4	1257.96	1721.81	1257.9	1734.99	1257.89	1760.75	1257.82
1766.12	1257.82	1773.83	1257.8	1792.42	1257.84	1796.07	1257.9	1797.95	1257.88
1800.33	1257.94	1803.16	1257.98	1805	1258	1807.8	1258.1	1820.77	1258.23
1823.78	1258.25	1827.29	1258.26	1830.79	1258.3	1833.45	1258.26	1836.48	1258.25
1841.78	1258.21	1843.41	1258.2	1846.52	1258.11	1850.44	1258.01	1850.96	1258
1854.63	1257.98	1859.94	1258	1863.77	1257.94	1866.69	1257.94	1868.42	1257.93
1878.28	1257.92	1879.74	1257.9	1881.91	1257.93	1886.81	1257.93	1890.53	1257.94
1895.88	1257.94	1897.83	1257.9	1901.49	1257.96	1914.1	1258	1940.14	1259.74
1943.77	1260	1972.07	1260.77	1976.6	1260.88	1990.97	1261.27	2005.93	1261.56
2008.51	1261.6	2010.26	1261.65	2011.95	1261.68	2028.62	1262	2029.29	1262.02
2036.78	1262.3	2043.93	1262.49	2065.79	1263.26	2087.92	1263.84	2090.05	1263.91
2093.92	1264	2111.16	1265.75	2114.18	1266	2140.53	1266.37	2142.25	1266.42
2144.18	1266.5	2162.76	1266.68	2165.95	1266.76	2174.38	1266.84	2177.34	1266.9
2186.96	1267.01	2189.11	1267.03	2193.03	1267.03	2195.32	1267.01	2198.68	1267
2199.39	1266.96	2201.19	1266.98	2203.2	1267.03	2209.59	1267.28	2210.44	1267.3
2215.32	1267.51	2218.53	1267.56	2223.6	1267.75	2225.15	1267.77	2235.5	1268.13
2239.28	1268.22	2241.85	1268.25	2242.69	1268.22	2253.14	1268.03	2253.42	1268.03
2253.53	1268	2253.66	1268.03	2253.75	1268.03	2253.8	1268	2253.96	1268.04
2254.03	1268.05	2259.54	1268.12	2263.19	1268.45	2269.78	1268.8	2281.02	1270
2283.61	1270.86	2287.56	1272	2291.8	1273.63	2292.15	1273.8	2294.7	1274.88
2306.89	1280	2319.18	1282.6	2348.34	1288.7	2350.1	1289.01	2354.95	1290
2371.91	1292	2390.21	1292.6	2405.54	1292.97	2407.74	1292.99	2412.64	1292.99
2417.54	1293	2421.35	1293.06	2426.02	1293.19	2426.67	1293.21	2440.68	1293.83
2446.18	1293.9	2455.39	1293.94	2461.35	1293.9	2461.84	1293.88	2463.26	1293.95

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

1542.72	1257.35	1543.52	1257.35	1543.93	1257.3	1544.26	1257.35	1544.81	1257.35
1544.87	1257.4	1544.89	1257.35	1545.76	1257.35	1545.82	1257.34	1545.92	1257.3
1546.04	1257.34	1546.34	1257.34	1557.3	1257.42	1643.76	1257.7	1645.28	1257.71
1647.26	1257.71	1648.54	1257.7	1649.65	1257.7	1650.65	1257.68	1651.92	1257.68
1652.84	1257.67	1653.54	1257.67	1653.96	1257.7	1656.32	1257.67	1658.37	1257.67
1659.26	1257.7	1660.54	1257.67	1661.01	1257.67	1661.89	1257.68	1662.83	1257.68
1680.12	1257.74	1713.48	1256.19	1716.49	1256.33	1717.44	1256.3	1718.72	1256.35
1720.16	1256.45	1724.17	1256.5	1727.05	1256.78	1727.11	1256.8	1737.59	1257.83
1738.72	1257.9	1739.5	1258	1745.33	1258.65	1748.4	1258.8	1752.85	1259.04
1760.84	1259.63	1778.9	1259.92	1779.62	1260	1782.02	1260	1785.99	1260.05
1792.22	1260.15	1792.92	1260.16	1798.7	1260.3	1805.45	1260.4	1831.85	1260.99
1846.31	1261.2	1851.97	1261.3	1860.74	1261.42	1864.67	1261.5	1880.42	1261.72
1882.46	1261.8	1884.03	1261.78	1899.27	1262	1901.71	1262.06	1903.22	1262.13
1916.96	1262.6	1920.63	1262.78	1932.51	1263.26	1935.61	1263.35	1942.27	1263.49
1944.6	1263.6	1949.31	1263.65	1955.87	1263.68	1960.29	1263.77	1966.33	1263.96
1982.07	1264.63	1986.21	1264.79	1989.55	1264.89	1992.67	1264.96	1996.91	1265
2000.79	1265.05	2005.64	1265.05	2007.63	1265.07	2016.57	1265.2	2018.24	1265.26
2049.19	1266	2052.82	1266.84	2054.44	1267.4	2062.67	1270	2083.4	1275.43
2087.91	1276.45	2095.46	1277.9	2104.42	1280	2108.71	1281.2	2111.45	1282
2117.05	1283.03	2120.19	1284	2126.75	1285.34	2128.98	1286	2134.06	1286.88
2136.79	1287.21	2139.86	1287.47	2141.64	1287.67	2146.8	1287.9	2151.62	1287.87
2152.36	1287.92	2155.36	1287.79	2155.86	1287.81	2156.17	1287.8	2156.51	1287.81
2156.92	1287.79	2157.7	1287.75	2158.87	1287.67	2161.54	1287.4	2168.22	1286.97
2176.67	1286	2181.57	1285.04	2186.57	1284	2192.75	1282.7	2195.57	1282
2201.53	1280.95	2206.2	1280	2209.03	1279.5	2211.69	1279.2	2214.72	1279.02
2220.72	1278.33	2224.34	1278.26	2225.1	1278.2	2225.55	1278.2	2225.7	1278.15
2226.01	1278.14	2226.58	1278.14	2227.66	1278.2	2231.2	1278.21	2232.15	1278.24
2233.63	1278.31	2237.8	1278.47	2242.88	1278.8	2247.01	1279	2252.02	1279.3
2261.53	1279.94	2261.85	1279.96	2262.36	1280	2278.36	1281.28	2284.17	1281.63
2286.4	1281.8	2296.64	1282.2	2298.79	1282.37	2306.96	1282.7	2310.94	1283.02
2315.6	1283.24	2319.17	1283.5	2320.43	1283.61	2326.4	1284	2330.23	1284.14
2338.45	1284.34	2341.04	1284.5	2347.95	1284.68	2351.77	1284.83	2355.45	1284.99
2359.21	1285.19	2372.53	1285.5	2374.76	1285.62	2376.01	1285.67	2377.04	1285.7
2378.23	1285.72	2385.63	1285.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	64.64	.03	2062.67	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
64.64	2062.67	76	182	285	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	135	1266.51	F

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 162

INPUT
Description:
Station Elevation Data num= 377

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1262	10	1262	14.3	1261.15	19.95	1260	22.28	1259.8
25.18	1259.3	31.75	1258.45	39.59	1259.4	48.47	1258.47	52.65	1258
54.89	1258.6	60.52	1260	64.64	1261.49	65.86	1262	69.15	1263.16
71.3	1264	75.91	1265.5	77.32	1266	85.38	1266	88.78	1264.9
91.08	1264	94.37	1263.04	98.26	1262	103.91	1260.28	104.94	1260
115.93	1258	129.08	1257.59	136.71	1257.37	139.97	1257.3	183.36	1257.26
183.72	1257.28	183.88	1257.29	186.18	1257.34	188.21	1257.4	191.81	1257.38
192.79	1257.39	193.48	1257.4	194.19	1257.43	194.88	1257.5	196.31	1257.59

2410.22	1311.42	2415.38	1311.7	2416.15	1311.96	2422.53	1311.59	2424.01	1312.11
2430.33	1311.6	2430.96	1311.8	2439.14	1311.94	2440.14	1311.99	2448.01	1312.17
2450.23	1312	2458.2	1311.7	2460.13	1311.75	2461.11	1311.66	2462.49	1311.42
2472.31	1310	2495.29	1306.9	2497.78	1306.39	2501.17	1305.74	2506.99	1304.74
2518.23	1301.19	2519.73	1300.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	75.91	.03	2142.24	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
75.91	2142.24	128	180	197	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	77	1268	F

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 161

INPUT
Description:
Station Elevation Data num= 389

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1260	9.01	1260	9.91	1260.5	15.59	1260.78	17.1	1260
35.27	1260	38.28	1260.79	43.33	1262	44.5	1262.32	49.57	1264
51.09	1264.64	55.36	1266	61.01	1266	62.93	1265	65.32	1264
74.39	1262.47	77.13	1262	82.68	1260.24	83.38	1260	83.46	1259.99
94.51	1258	137	1256.7	138.43	1256.7	139.03	1256.65	146.56	1256.64
146.65	1256.64	147.02	1256.7	147.35	1256.65	147.93	1256.66	148.2	1256.66
148.31	1256.7	148.42	1256.68	148.65	1256.69	149.01	1256.7	149.41	1256.71
149.66	1256.7	149.95	1256.71	151.65	1256.71	152.3	1256.7	152.99	1256.71
153.31	1256.72	154.27	1256.73	154.61	1256.73	154.92	1256.7	155.38	1256.72
155.62	1256.72	155.91	1256.7	156.25	1256.7	156.69	1256.69	157.75	1256.69
158.35	1256.7	161.93	1256.75	163.6	1256.77	165.53	1256.8	168.56	1256.82
170.43	1256.84	172.58	1256.87	179.33	1257	183.28	1257.03	185.51	1257.06
196.2	1257.16	254.29	1257.63	254.91	1257.6	266.38	1257.73	266.92	1257.73
277.51	1257.83	277.9	1257.83	283.21	1257.9	284.17	1257.87	284.49	1257.87
285.13	1257.86	285.79	1257.86	288.05	1257.9	290.09	1257.84	291.72	1257.8
292.87	1257.76	293.71	1257.66	310.33	1257.5	323.7	1257.91	326.44	1258
387.39	1258	480.08	1256	493.24	1256	493.65	1256.02	496.12	1256.1
498.41	1256.12	500.63	1256.08	502.87	1256	512.29	1256	513.56	1256.14
517.56	1256.64	519.85	1256.93	521.61	1257.1	525.87	1257.33	526.75	1257.37
527.73	1257.4	528.81	1257.43	529.35	1257.4	530.32	1257.46	531.01	1257.45
531.42	1257.44	531.61	1257.42	531.69	1257.3	532.13	1257.31	533.03	1257.29
533.61	1257.29	534.76	1257.31	537.95	1257.3	538.93	1257.32	539.52	1257.36
540.11	1257.44	540.57	1257.47	541.19	1257.5	541.96	1257.5	543.45	1257.51
547.26	1257.51	548.01	1257.5	548.67	1257.52	549.72	1257.55	551.83	1257.55
557.16	1257.5	557.68	1257.52	647.48	1257.88	653.09	1257.88	656.79	1257.9
659.54	1257.87	664.53	1257.87	665.86	1257.86	667.14	1257.9	667.73	1257.86
669.52	1257.86	670.33	1257.9	671.1	1257.86	672.38	1257.86	672.68	1257.9
672.87	1257.86	673.64	1257.86	674.23	1257.9	674.76	1257.86	675.59	1257.86
676.39	1257.9	678.33	1257.86	679.1	1257.87	680.26	1257.87	681.07	1257.9
759.46	1257.12	762.8	1257.12	767.18	1257.11	770.71	1257.11	777.48	1257.09
779.5	1257.08	784.14	1257.03	788.8	1256.94	791.71	1256.89	796.9	1256.81
800.12	1256.81	802.26	1256.8	804.59	1256.77	808.67	1256.74	810.59	1256.72
812.95	1256.7	814.84	1256.7	816.34	1256.67	820.15	1256.71	823.76	1256.74
829.21	1256.8	834.44	1256.8	836.85	1256.76	912.58	1256.69	918.61	1256.72
924.37	1256.7	942.88	1256.8	977.32	1256.84	982.22	1256.9	987.01	1256.86
991.22	1256.87	994.2	1256.87	997.86	1256.86	1001.4	1256.8	1004.93	1256.82
1030.92	1256.58	1037.95	1256.5	1051.6	1256.41	1068.11	1256.34	1071.67	1256.32

35.86	1261.5	41.77	1261.21	52.01	1260.19	55.51	1260.81	57.71	1260.71
61.68	1262	65.08	1263.15	67.7	1264	76.94	1264	77.73	1263.5
78.21	1263.39	79.49	1262.82	81.09	1262	85.47	1261.14	88.15	1260.6
90.86	1260	111.76	1258.25	114.68	1258	116.38	1257.88	119.62	1257.7
132.75	1256.73	135.93	1256.52	136.88	1256.47	137.69	1256.45	139.98	1256.4
143.22	1256	202.42	1255.62	207.09	1255.6	218.73	1255.57	219.85	1255.57
222.07	1255.56	225.65	1255.5	227.24	1255.54	230.36	1255.53	231.53	1255.53
235.25	1255.5	248.5	1255.5	249.76	1255.51	252.66	1255.51	253.72	1255.5
257.03	1255.53	258.44	1255.54	318.43	1255.05	322.29	1255.07	326.32	1255.1
330.12	1255.14	333.96	1255.2	336.65	1255.26	339.34	1255.35	343.5	1255.5
351.24	1255.96	352.19	1256	354.83	1256.12	358.18	1256.2	363.22	1256.29
366.11	1256.28	371.68	1256.15	372.17	1256.16	375.58	1256.1	382.96	1256.14
390.56	1256.11	394.78	1256.05	396.59	1256	404.31	1255.7	406.58	1255.6
419.17	1255.03	433.95	1254.3	436	1254.27	437.29	1254.39	439.58	1254.38
442.83	1254.29	450.22	1254	457.61	1254	478.19	1254.45	479.9	1254.5
486.19	1254.66	495.41	1254.93	497.6	1254.98	502.32	1255.13	505.81	1255.2
507.92	1255.25	512.28	1255.37	515.49	1255.45	521.4	1255.4	524.57	1255.34
530.24	1255.33	532.02	1255.3	535.73	1255.21	537.03	1255.2	538.75	1255.22
543.22	1255.31	556.55	1255.67	561.68	1255.8	567.17	1255.88	567.99	1255.89
572.96	1255.96	573.2	1255.97	577.53	1256	585.2	1256	605.13	1255.88
615.31	1255.78	625.9	1255.74	627.13	1255.7	627.98	1255.73	664.79	1255.33
786.26	1254.69	786.44	1254.7	786.73	1254.69	787.2	1254.69	787.63	1254.7
791.59	1254.7	791.78	1254.68	792.05	1254.67	792.49	1254.65	792.88	1254.6
793.82	1254.62	794.53	1254.61	795.4	1254.61	796.3	1254.6	797.18	1254.6
798.24	1254.61	799.76	1254.62	842.38	1254.51	845.09	1254.51	850.19	1254.5
861.61	1254.54	867.45	1254.58	887.05	1254.75	891.36	1254.8	894.59	1254.82
897.64	1254.83	904.16	1254.83	906.92	1254.8	908.99	1254.8	912.72	1254.74
920.27	1254.7	975	1254.28	983.15	1254.28	986.58	1254.3	989.67	1254.29
992.16	1254.3	997.62	1254.3	999.1	1254.31	1003.69	1254.31	1004.97	1254.3
1006.17	1254.32	1009.2	1254.32	1010.1	1254.3	1011.24	1254.32	1015.2	1254.32
1016.09	1254.3	1017.33	1254.31	1018.25	1254.31	1027.03	1254.28	1036.63	1254.3
1043.29	1254.23	1167.89	1253.77	1226.13	1253.04	1230.06	1253.04	1234.36	1253.1
1236.02	1253.05	1237.47	1253.05	1243.46	1253	1245.13	1252.96	1250.2	1252.93
1254.47	1252.93	1255.56	1252.9	1304.3	1252.73	1310.65	1252.77	1311.98	1252.77
1316.46	1252.8	1318.32	1252.8	1389.41	1253.02	1403.78	1253.14	1409.58	1253.2
1413.19	1253.21	1419.22	1253.26	1430.41	1253.3	1431.5	1253.3	1441.7	1253.15
1442.14	1253.11	1442.88	1253.1	1445.34	1253.1	1450.27	1253.13	1452.73	1253.2
1453.67	1253.16	1455.58	1253.2	1457.61	1253.25	1459.3	1253.3	1461.19	1253.3
1462.05	1253.34	1462.76	1253.35	1464.87	1253.35	1465.75	1253.4	1467.01	1253.35
1472.96	1253.3	1475.56	1253.26	1477.98	1253.23	1495.29	1252.98	1502.18	1252.9
1549.65	1252.02	1550.9	1252	1551.36	1251.98	1552.57	1252	1555.27	1251.96
1558.61	1251.95	1565.52	1251.95	1570.51	1251.9	1574.05	1251.95	1605.13	1251.97
1612.59	1252	1616.29	1251.98	1624.56	1251.98	1628.38	1251.97	1631.2	1252
1632.88	1251.96	1633.09	1251.95	1659.06	1251.94	1663.96	1251.95	1670.05	1252
1676.76	1251.99	1678.73	1252	1710.61	1252.21	1721.04	1252.3	1731.65	1252.35
1738.89	1252.41	1744.05	1252.44	1746.72	1252.45	1749.18	1252.5	1750.78	1252.47
1752.27	1252.47	1754.29	1252.48	1757.86	1252.48	1759.56	1252.5	1760.68	1252.48
1765.03	1252.5	1768.91	1252.5	1771.89	1252.51	1775.68	1252.51	1776.14	1252.52
1777.03	1252.5	1777.76	1252.53	1778.4	1252.54	1780.01	1252.54	1781.37	1252.5
1782.7	1252.53	1784.98	1252.53	1785.53	1252.52	1787.61	1252.5	1788.52	1252.5
1860.34	1253.88	1864.12	1254	1879.71	1255.56	1885.2	1256	1900.49	1256.24
1910.66	1256.35	1925.15	1256.55	1954.74	1256.9	1972.59	1257.06	1979.21	1257.13
1982.89	1257.15	1985.49	1257.2	1990.44	1257.21	1996.76	1257.3	2001.7	1257.38
2003.51	1257.4	2005.88	1257.4	2007.66	1257.43	2009.41	1257.44	2011.08	1257.44
2016.05	1257.43	2018.99	1257.4	2022.23	1257.41	2025.62	1257.4	2039.19	1257.43
2041.97	1257.4	2051.81	1257.45	2057.51	1257.43	2079	1257.54	2081.43	1257.5
2086.97	1257.57	2094.61	1257.64	2102.65	1257.74	2107.08	1257.81	2115.35	1258
2115.44	1257.99	2116.01	1258	2133.78	1258.83	2138.21	1259.08	2148.5	1259.6
2154.82	1259.89	2157.8	1260	2159.89	1260.04	2164.23	1260.1	2172.4	1260.1
2180.26	1260.17	2181.21	1260.19	2182.09	1260.2	2183.39	1260.22	2206.24	1260.5
2209.46	1260.53	2211.4	1260.57	2218.14	1260.67	2227.04	1260.92	2231.07	1261
2237.59	1261.24	2242.27	1261.37	2244.16	1261.41	2245.15	1261.42	2247.61	1261.4
2258.49	1262	2260.5	1262.29	2273.04	1264	2278.95	1265.64	2280.6	1266

1777.64	1253.1	1778.99	1253.1	1780	1253.14	1781.07	1253.22	1781.6	1253.24
1782.46	1253.3	1783.96	1253.28	1786.5	1253.32	1787.54	1253.33	1788.65	1253.33
1790.75	1253.3	1791.72	1253.33	1792.58	1253.32	1794.05	1253.3	1795.72	1253.27
1796.69	1253.3	1798.45	1253.26	1799.67	1253.25	1800.67	1253.23	1801.39	1253.22
1803.27	1253.1	1804.4	1253.09	1805.56	1253	1806.96	1252.9	1808.03	1252.86
1809.31	1252.8	1810.29	1252.85	1857.97	1252.46	1858.5	1252.46	1860.63	1252.48
1861.18	1252.5	1862.84	1252.5	1863.25	1252.51	1864.09	1252.51	1865.42	1252.52
1867.23	1252.52	1868.38	1252.5	1869.22	1252.52	1869.75	1252.53	1870.41	1252.53
1870.69	1252.5	1871.06	1252.53	1871.62	1252.53	1872.09	1252.5	1872.67	1252.53
1873.75	1252.52	1874.74	1252.52	1874.87	1252.5	1874.97	1252.51	1875.18	1252.5
1876.55	1252.48	1878.22	1252.5	1881.44	1252.43	1883.38	1252.41	1895.97	1252.31
1914.58	1252.2	1935.65	1252	1940.28	1251.94	1948.23	1251.86	1954.95	1251.81
1965.72	1251.7	1970.05	1251.72	1973.14	1251.72	1978.8	1251.74	1982.09	1251.76
1984.77	1251.8	1986.92	1251.84	1991.65	1252	1995.06	1252.05	2029.59	1252.6
2051.22	1252.53	2051.33	1252.49	2052.43	1252.45	2054.56	1252.42	2057.52	1252.4
2060.44	1252.4	2062.41	1252.41	2067.88	1252.43	2069.76	1252.44	2075.89	1252.5
2081.78	1252.5	2086.34	1252.51	2089.96	1252.51	2096.53	1252.46	2099.14	1252.4
2106.46	1252.29	2108.7	1252.31	2112.01	1252.27	2113.05	1252.3	2116.95	1252.27
2117.76	1252.27	2125.85	1252.26	2126.66	1252.26	2130.47	1252.3	2141.82	1252.35
2146.22	1252.36	2166.04	1252.3	2172.62	1252.23	2177.66	1252.16	2186.19	1252
2193.55	1251.9	2207.8	1251.84	2225.13	1251.71	2230.06	1251.69	2235.96	1251.7
2243.33	1251.65	2264.45	1251.64	2268.34	1251.6	2272.24	1251.61	2278.29	1251.56
2280.2	1251.53	2281.31	1251.5	2282.4	1251.44	2297.85	1251.28	2299.57	1251.28
2300.96	1251.27	2305.05	1251.3	2306.63	1251.25	2311.03	1251.24	2314.77	1251.24
2316.01	1251.2	2319.22	1251.25	2321.65	1251.26	2328.07	1251.3	2331.85	1251.35
2335.09	1251.37	2342.55	1251.43	2356.99	1251.5	2400.65	1251.15	2408.42	1251.18
2412.52	1251.15	2414.84	1251.2	2417.5	1251.15	2435.15	1251.19	2441.29	1251.19
2443.01	1251.2	2446.16	1251.2	2447.5	1251.21	2449.68	1251.2	2451.32	1251.17
2452.35	1251.1	2452.67	1251.1	2470.39	1250.98	2489.58	1251.25	2505.42	1251.4
2512.17	1251.51	2517.5	1251.57	2521.85	1251.6	2525.07	1251.64	2526.92	1251.7
2531.11	1251.68	2535.01	1251.72	2540.99	1251.74	2541.76	1251.7	2545.22	1251.75
2581.94	1251.81	2590.44	1251.79	2594.69	1251.8	2598.36	1251.75	2606.83	1251.69
2609.06	1251.68	2612.5	1251.7	2614.7	1251.63	2615.26	1251.63	2616.06	1251.62
2616.18	1251.6	2616.32	1251.61	2617.5	1251.61	2617.86	1251.6	2618.45	1251.61
2621.78	1251.61	2622.66	1251.6	2623.58	1251.61	2625.06	1251.61	2625.54	1251.6
2625.9	1251.61	2629.44	1251.61	2630.07	1251.6	2630.86	1251.61	2631.74	1251.61
2632.61	1251.62	2633.57	1251.62	2634.47	1251.6	2635.9	1251.63	2637.59	1251.63
2639.58	1251.64	2641.04	1251.64	2642.69	1251.6	2643.88	1251.65	2726.84	1250.87
2729.91	1250.87	2731.64	1250.88	2738.1	1250.9	2740.83	1250.89	2746.21	1250.9
2748.65	1250.9	2750.21	1250.92	2753.67	1251	2757.39	1250.99	2762.16	1251
2768.81	1251.03	2772.83	1251	2779.38	1251.07	2786.14	1251.08	2788.71	1251.1
2790.81	1251.13	2797.91	1251.2	2802.69	1251.29	2805.06	1251.3	2834.39	1251.92
2836.5	1251.92	2839.05	1251.9	2841.73	1251.93	2845.71	1251.92	2851.53	1251.92
2853.09	1251.9	2853.46	1251.91	2853.64	1251.9	2854.37	1251.89	2855.08	1251.89
2857.16	1251.9	2861.56	1251.9	2863.99	1251.91	2866.29	1251.91	2869.12	1251.9
2871.36	1251.94	2873.91	1251.95	2877.1	1251.98	2881.57	1252	2941.59	1252
2950.32	1253.32	2954.28	1254	2966.93	1254.35	2974.99	1254.54	2979.87	1254.62
2983.55	1254.7	2986.48	1254.65	2995.66	1254.57	2997.41	1254.6	3001.09	1254.61
3003	1254.6	3007.97	1254.67	3009.99	1254.68	3015.99	1254.75	3022.67	1254.75
3027.46	1254.8	3031.75	1254.92	3036.45	1254.91	3040.55	1254.99	3046.79	1255.07
3052.63	1255	3058.32	1255.11	3064.38	1255.08	3069.83	1255.14	3075.23	1255.13
3080.53	1255.1	3084.86	1255.17	3090.9	1255.15	3094.49	1255.2	3100.69	1255.18
3108.21	1255.2	3118.78	1255.17	3122.2	1255.18	3129.92	1255.25	3130.11	1255.2
3145.87	1255.43	3152.33	1255.51	3181.55	1256	3184.24	1256.06	3207.69	1256.55
3231.61	1256.97	3238.49	1257.1	3242.01	1257.11	3244.87	1257.13	3247.24	1257.14
3252.3	1257.11	3256.88	1257.3	3259.37	1257.28	3262.78	1257.38	3265.86	1257.4
3269.8	1257.49	3277.45	1257.6	3279.33	1257.67	3287.79	1257.84	3288.46	1257.85
3294.64	1258	3298.45	1258.1	3298.9	1258.07	3308.32	1258.22	3322.57	1258.39
3329.9	1258.5	3333.45	1258.54	3335.69	1258.55	3338.6	1258.54	3340.95	1258.5
3341.85	1258.5	3345.31	1258.33	3347.86	1258.25	3350.55	1258.27	3352.05	1258.25
3354.01	1258.3	3355.71	1258.29	3358.04	1258.32	3361.26	1258.39	3363.83	1258.43
3381.99	1258.8	3385.7	1258.93	3422.68	1260	3432.67	1261.9	3441.07	1263.37
3454.69	1264.8	3471.25	1267.04	3496.22	1269.27	3498.42	1269.5	3503.73	1270

1515.29	1250.1	1518.25	1250.13	1521.23	1250.1	1525.71	1250	1545.67	1250
1548.15	1250.07	1552.51	1250.27	1554.78	1250.3	1559.15	1250.42	1602.98	1250.51
1603.24	1250.48	1603.98	1250.47	1605.4	1250.5	1611.1	1250.54	1613.16	1250.55
1615.01	1250.55	1616.47	1250.53	1618.11	1250.5	1621.67	1250.34	1623.14	1250.3
1625.16	1250.29	1627.51	1250.3	1637.01	1250.4	1639.38	1250.38	1641.71	1250.38
1645.72	1250.34	1647.46	1250.3	1652.62	1250.13	1654.78	1250.09	1656.82	1250.09
1657.78	1250.1	1658.44	1250.26	1659.75	1250.35	1661.97	1250.66	1662.58	1250.7
1663.59	1250.71	1666.37	1250.71	1670.57	1250.65	1677.63	1250.6	1683.77	1250.53
1687.4	1250.51	1689.06	1250.49	1690.21	1250.46	1692.41	1250.3	1694.68	1250.17
1696.79	1250.11	1699.46	1250.06	1702.15	1250.03	1716.23	1250.12	1719.09	1250.08
1721.58	1250.07	1722.89	1250.1	1739.45	1250	1760.9	1250	1763.85	1249.92
1776.5	1250	1779.89	1250	1782.22	1250.02	1810.43	1250.2	1814.08	1250.2
1817.46	1250.23	1820.45	1250.23	1823.01	1250.24	1826.17	1250.23	1830.66	1250.2
1841.46	1250.2	1853.67	1250.23	1855.97	1250.2	1860.4	1250.23	1870.04	1250.23
1874.23	1250.22	1882.12	1250.22	1884.91	1250.2	1888.29	1250.24	1892.49	1250.26
1900.36	1250.32	1902.99	1250.35	1904.97	1250.4	1906.75	1250.41	1910.85	1250.45
1912.47	1250.45	1914.33	1250.5	1917.32	1250.46	1920.3	1250.45	1923.07	1250.45
1925.59	1250.44	1927.18	1250.4	1929.6	1250.42	1937.78	1250.37	1955.35	1250.2
1990.12	1250	1999.27	1249.99	2048.89	1250	2052.68	1250.1	2056.19	1250.13
2058.27	1250.16	2060.79	1250.19	2062.88	1250.2	2066.89	1250.2	2071.43	1250.22
2076.02	1250.22	2086.54	1250.2	2093.04	1250.2	2116.48	1250.08	2128.38	1250
2188.26	1249.27	2191.25	1249.23	2192.18	1249.2	2192.96	1249.21	2193.52	1249.2
2193.99	1249.19	2194.59	1249.19	2194.79	1249.2	2194.92	1249.18	2195.71	1249.18
2195.95	1249.2	2196.13	1249.18	2196.38	1249.18	2196.85	1249.19	2197.27	1249.2
2198.29	1249.2	2199.08	1249.21	2199.54	1249.21	2200.48	1249.2	2200.77	1249.23
2255.91	1250	2265.54	1250.1	2290.87	1250.29	2296.18	1250.32	2299.74	1250.3
2305.15	1250.35	2323.07	1250.35	2327.22	1250.3	2332.06	1250.31	2340.95	1250.25
2341.09	1250.25	2350.74	1250.19	2354.76	1250.2	2359.54	1250.17	2383.29	1250.18
2390.22	1250.2	2397.31	1250.14	2410.16	1250.09	2423.91	1250	2430.78	1249.9
2438.74	1249.71	2439.42	1249.7	2447.93	1249.49	2452.41	1249.43	2457.65	1249.3
2460.06	1249.29	2478.28	1248.87	2484.62	1248.69	2486.88	1248.6	2488.05	1248.6
2489.26	1248.58	2490.52	1248.57	2491.48	1248.56	2493.08	1248.6	2496.24	1248.57
2498.75	1248.58	2501.56	1248.6	2502.8	1248.6	2503.82	1248.65	2508.72	1248.81
2510.79	1248.86	2513.36	1248.9	2526.31	1249.14	2529.54	1249.26	2534.46	1249.48
2535.55	1249.48	2545.75	1250	2560.9	1250.55	2563.78	1250.63	2567.48	1250.71
2570.33	1250.8	2572.07	1250.78	2573.13	1250.79	2575.34	1250.78	2576.81	1250.77
2579.47	1250.7	2581.09	1250.71	2582.66	1250.66	2584.1	1250.56	2584.81	1250.45
2585.66	1250.3	2587.32	1250.22	2590.65	1250.11	2595.24	1250	2605.74	1250
2617	1250.19	2710.94	1252	2713.39	1252.05	2727.16	1252.31	2733	1252.4
2740.92	1252.5	2752.61	1252.55	2755.52	1252.55	2770.65	1252.5	2771.47	1252.47
2783.1	1252.41	2785.73	1252.43	2789.87	1252.43	2792.74	1252.5	2795.32	1252.49
2797.89	1252.52	2801.41	1252.6	2804.29	1252.7	2807.97	1252.76	2812.03	1252.78
2816.36	1252.89	2822.03	1252.94	2827.64	1253.1	2834.91	1253.15	2842.99	1253.34
2848.81	1253.44	2867.21	1253.8	2868.12	1253.81	2869.02	1253.84	2879.49	1254
2903.19	1254.22	2904.5	1254.2	2913.85	1254.31	2933.68	1254.42	2935.06	1254.4
2941.75	1254.47	2943.21	1254.48	2959.32	1254.61	2961.01	1254.62	2967.94	1254.7
2972.09	1254.67	2977.93	1254.69	2981.76	1254.71	2989.04	1254.8	2994.49	1254.8
3009.24	1254.83	3012.46	1254.83	3014.12	1254.8	3014.69	1254.81	3017.8	1254.83
3028.66	1254.92	3031.15	1254.95	3033.66	1255	3036.26	1255.03	3040.01	1255.12
3044.8	1255.25	3053.67	1255.52	3066.92	1256	3168.65	1259.25	3182.98	1259.6
3189.47	1259.8	3197.42	1259.92	3204.45	1260	3211.48	1260.19	3217.73	1260.5
3218.18	1260.54	3218.55	1260.55	3218.83	1260.57	3219.33	1260.61	3220.32	1260.7
3221.05	1260.77	3221.73	1260.84	3229.41	1261.78	3238.18	1262.7	3296.26	1269.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1119.8	.03	3168.65	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1119.8	3168.65	246	120	52 .1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1125.27	1256.75	F

1566.96	1248.17	1568.79	1248.14	1580.49	1248	1592.2	1248	1606.29	1248.13
1615.51	1248.08	1616.3	1248.1	1618.25	1248.04	1620.49	1248.05	1623.47	1248.07
1625.87	1248.12	1627.2	1248.2	1653.02	1248.19	1653.9	1248.18	1666.8	1248
1668.02	1248	1692.29	1247.59	1697.36	1247.52	1708.46	1247.41	1712.72	1247.4
1718.03	1247.36	1721.61	1247.35	1750.9	1247.4	1759.1	1247.4	1767.9	1247.5
1773.95	1247.52	1774.55	1247.52	1780.51	1247.53	1781.08	1247.5	1781.32	1247.54
1782.62	1247.58	1783.06	1247.59	1783.71	1247.59	1784.82	1247.6	1785.93	1247.59
1787.94	1247.56	1789.16	1247.5	1790.57	1247.49	1792.19	1247.46	1793.35	1247.45
1798.69	1247.44	1815.17	1247.37	1816.11	1247.37	1824.97	1247.35	1828.63	1247.32
1833.48	1247.2	1835.5	1247.24	1837.98	1247.25	1842.26	1247.29	1845.54	1247.34
1859.44	1247.62	1872.67	1247.94	1875.3	1248	1885.95	1248.2	1903.83	1248.49
1909.84	1248.62	1913.91	1248.69	1917.05	1248.7	1923.32	1248.81	1933.38	1248.9
1940.09	1248.93	1944.36	1248.9	1948.56	1248.95	1955.93	1248.97	1958.51	1248.97
1961.28	1249	1964.22	1248.95	1967.95	1248.93	1973.98	1248.86	1976.61	1248.8
1981.32	1248.74	2000.42	1248.34	2019.04	1248	2054.8	1247.81	2054.95	1247.81
2065.62	1247.75	2067.86	1247.7	2070.07	1247.74	2072.97	1247.73	2075.22	1247.73
2077.45	1247.72	2080.36	1247.7	2083.24	1247.73	2093.65	1247.74	2096.65	1247.75
2099.6	1247.8	2113.68	1247.79	2120.86	1247.82	2123.69	1247.84	2129.63	1247.9
2146.56	1248	2147.13	1248.01	2153.06	1248	2159	1248.06	2167.75	1248.03
2172.05	1248	2181.72	1248	2189.1	1247.95	2212.88	1247.93	2213.05	1247.9
2213.26	1247.93	2213.74	1247.93	2213.82	1247.9	2213.99	1247.93	2214.39	1247.93
2227.25	1247.9	2232.87	1247.93	2269.83	1248	2275.2	1247.99	2287.49	1247.93
2292.5	1247.89	2295.67	1247.9	2299.58	1247.79	2302.97	1247.74	2306.27	1247.7
2309.42	1247.68	2312.51	1247.6	2314.9	1247.61	2322.9	1247.47	2326.65	1247.42
2340.43	1247.5	2340.52	1247.5	2341.33	1247.53	2343.14	1247.56	2354.09	1247.8
2356.06	1247.92	2357.94	1248	2374.68	1248.33	2384.27	1248.5	2391.98	1248.61
2397.85	1248.68	2410.77	1248.81	2414.94	1248.87	2420.83	1249	2424.51	1249.04
2430.33	1249.16	2433.93	1249.22	2435.97	1249.25	2437.86	1249.3	2440.06	1249.28
2447.65	1249.28	2450.62	1249.34	2452.52	1249.4	2455.87	1249.4	2457.23	1249.41
2460.68	1249.45	2463.97	1249.46	2471.16	1249.4	2478.3	1249.44	2481.35	1249.47
2484.6	1249.51	2486.29	1249.55	2489.96	1249.6	2502.21	1250	2623.42	1251.52
2626.91	1251.6	2627.8	1251.57	2628.06	1251.58	2628.77	1251.58	2629.02	1251.6
2629.19	1251.59	2629.92	1251.59	2630.13	1251.6	2630.25	1251.59	2630.83	1251.59
2631.18	1251.6	2631.38	1251.59	2632.52	1251.59	2722.92	1251.7	2730.74	1251.8
2748.33	1251.92	2757.38	1252	2758.84	1252.02	2758.99	1252.02	2779.04	1252.35
2780.83	1252.36	2782.12	1252.4	2787.58	1252.46	2792.67	1252.48	2807.19	1252.72
2809.26	1252.72	2810.08	1252.7	2813.34	1252.73	2826.58	1252.83	2830.95	1252.9
2835.48	1252.93	2908.42	1254	2909.56	1254.1	2910.95	1254.19	2914.43	1254.4
2930.29	1255.48	2945.51	1256.2	2950.33	1256.47	2965.47	1257.26	2968.29	1257.42
2977.45	1258	2989.39	1258.6	3000.08	1259.11	3020.04	1259.68	3024.91	1259.86
3030.38	1260	3067.65	1263.78	3071.72	1264.3	3079.49	1265.16	3084.86	1265.77
3096.83	1267.2	3102.18	1267.83	3112.09	1268.78	3114.32	1269.06	3119.88	1269.44
3135	1270								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1008.28	.03	2977.45	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1008.28	2977.45	298	184	118	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	949.64	1255	F

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 156

INPUT
Description:
Station Elevation Data num= 466

1388.02	1246.3	1395.12	1246.42	1399	1246.47	1403.18	1246.51	1407.8	1246.54
1412.72	1246.6	1417.33	1246.55	1420	1246.54	1423.53	1246.51	1431.16	1246.4
1438.76	1246.19	1454.1	1246.02	1455.44	1246	1459.07	1245.93	1459.24	1245.93
1469.96	1245.69	1476.13	1245.57	1480.68	1245.5	1484.94	1245.47	1499.06	1245.41
1499.86	1245.41	1509.3	1245.3	1512.14	1245.31	1519.61	1245.3	1521.85	1245.28
1527.35	1245.22	1529.79	1245.2	1533.51	1245.21	1537.17	1245.23	1539.67	1245.26
1543.45	1245.32	1549.38	1245.4	1553.18	1245.5	1557.32	1245.55	1558.02	1245.57
1558.34	1245.58	1559.57	1245.6	1561.17	1245.68	1561.93	1245.72	1562.25	1245.73
1562.78	1245.74	1563	1245.7	1563.18	1245.76	1568.59	1245.77	1568.69	1245.7
1568.8	1245.67	1569.08	1245.66	1569.81	1245.66	1570.55	1245.7	1571.07	1245.68
1571.59	1245.68	1572.01	1245.67	1572.16	1245.66	1572.68	1245.6	1573.31	1245.61
1574.71	1245.57	1578.81	1245.61	1579.39	1245.6	1588.23	1245.6	1597.64	1245.7
1601.62	1245.78	1605.3	1245.88	1608.68	1246	1612.12	1246.1	1613.86	1246.14
1615.07	1246.25	1616.1	1246.35	1618.17	1246.44	1664.93	1246.4	1666.46	1246.34
1667.86	1246.33	1670.44	1246.32	1686.25	1246.31	1687.12	1246.3	1697.24	1246.3
1706.4	1246.39	1714.95	1246.44	1717.48	1246.4	1719.43	1246.43	1723.28	1246.34
1725.36	1246.31	1729.47	1246.28	1732.49	1246.3	1734.26	1246.27	1757.51	1246.26
1760.41	1246.27	1918.86	1247.9	1927.27	1247.97	1932.07	1248	1936.32	1248.2
1952.54	1248.63	1958.55	1248.77	1968.39	1248.98	1972.49	1249	1981.3	1249.23
1988.71	1249.31	1999.44	1249.52	2013.62	1249.6	2016.76	1249.67	2026.53	1249.73
2028.25	1249.76	2033.88	1249.77	2035.25	1249.8	2036.2	1249.8	2037.47	1249.82
2042.71	1249.82	2056.25	1249.88	2068.61	1249.9	2080.71	1249.86	2138.66	1249.93
2149.25	1249.9	2160.42	1249.99	2160.74	1249.99	2162.97	1250	2207.11	1250.37
2211.62	1250.4	2214.9	1250.49	2252.55	1250.89	2255.69	1250.93	2261.52	1250.99
2274.55	1251.1	2289.57	1251.29	2303.87	1251.43	2317.96	1251.6	2340.4	1252
2373.38	1254	2401.25	1255.3	2409.77	1255.71	2416.64	1256	2422.9	1256.46
2428.92	1256.81	2440.74	1257.54	2442.74	1257.63	2443.77	1257.67	2443.98	1257.68
2445.94	1257.7	2450.29	1257.94	2453.62	1258	2454.94	1258.02	2463.63	1258.08
2471.83	1258.1	2471.96	1258.15	2475.88	1258.29	2476.51	1258.33	2477.18	1258.33
2478.99	1258.28	2479.78	1258.29	2481.22	1258.32	2481.99	1258.34	2483.61	1258.4
2485.78	1258.54	2505.32	1260	2514.76	1260.81	2526.12	1261.88	2530.74	1262.46
2581.77	1269.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	492.24	.03	2428.92	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
492.24	2428.92	121	232	363	.1	.3

CROSS SECTION

RIVER: Santa Clara
REACH: 1 RS: 155

INPUT
Description:
Station Elevation Data num= 500

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1249	3.13	1249	4.36	1248.99	7.16	1248.95	50.28	1248.42
83.9	1248.9	85.02	1248.86	88.15	1248.91	132.31	1248.91	136.53	1248.69
138.99	1248.6	141.01	1248.59	144.81	1248.54	147.45	1248.53	148.23	1248.53
158.37	1248.5	187.75	1248	203.34	1247.86	205.94	1247.81	206.45	1247.79
281.61	1247.7	299.85	1248	336.41	1248.93	336.49	1248.93	336.59	1248.93
336.83	1248.93	338.54	1248.9	404.32	1248	405.32	1248	409.13	1247.94
411.47	1247.93	413.05	1247.91	414.34	1247.9	416.01	1247.9	424.44	1247.95
426.55	1247.95	428.55	1247.9	433.49	1248	444.93	1248	450.39	1248.68
459.92	1250	503.48	1251.2	537.35	1252	561.81	1252	561.97	1251.9
562.35	1251.86	568.48	1250.44	570.73	1250	575.1	1249.31	583.25	1248
587.9	1246.36	588.98	1246	594.99	1245.27	603.26	1244.28	605.38	1244
606.22	1243.97	609.41	1243.88	615	1243.76	616.18	1243.7	617.07	1243.7
617.59	1243.69	618.24	1243.68	619	1243.68	619.8	1243.7	620.58	1243.68

1611.15	1242.2	1611.23	1242.18	1611.31	1242.18	1611.43	1242.21	1611.59	1242.23
1612.02	1242.3	1612.58	1242.3	1613.29	1242.34	1613.63	1242.36	1614.39	1242.43
1619.87	1243	1628.21	1244	1635.72	1244.79	1646	1246	1648.33	1246
1654.09	1246.1	1659.35	1246.14	1662.23	1246.15	1666.08	1246.2	1669.98	1246.17
1676.63	1246.17	1679.6	1246.16	1682	1246.2	1682.28	1246.15	1690.59	1246.09
1693.8	1246.06	1698.18	1246	1708.4	1245.9	1739.14	1245.65	1749.19	1245.55
1751.84	1245.5	1751.94	1245.53	1762.09	1245.49	1765.18	1245.5	1767.11	1245.46
1770.45	1245.44	1771.91	1245.42	1772.79	1245.41	1773.28	1245.4	1773.5	1245.4
1773.71	1245.37	1776.21	1245.36	1777.2	1245.36	1777.93	1245.4	1778.55	1245.36
1779.74	1245.35	1780.28	1245.35	1781.27	1245.34	1781.98	1245.3	1782.63	1245.34
1783.22	1245.34	1783.71	1245.35	1784.02	1245.35	1784.55	1245.4	1785.15	1245.38
1786.92	1245.41	1789.46	1245.44	1792.06	1245.5	1795.01	1245.47	1800.39	1245.52
1805.29	1245.59	1809.65	1245.6	1812.29	1245.68	1817.33	1245.72	1823.05	1245.73
1826.48	1245.7	1830.4	1245.78	1832.63	1245.79	1855.72	1246	1900.64	1246.91
1903.16	1247	1906.86	1247.05	1961.75	1247.94	1965.1	1247.94	1967.81	1247.9
1970.67	1247.94	1974.72	1247.95	2005.92	1248	2055.7	1248	2089.72	1248.26
2100.07	1248.3	2111.08	1248.4	2122.43	1248.47	2131.89	1248.51	2139.74	1248.5
2142.58	1248.56	2146.87	1248.58	2150.66	1248.61	2153.58	1248.62	2158.19	1248.6
2161.63	1248.65	2162.9	1248.65	2166.67	1248.66	2167.59	1248.67	2311.19	1250
2312.15	1250	2339.58	1250.57	2350.42	1250.78	2356.52	1250.88	2360.11	1250.9
2366.08	1250.99	2370.86	1251.04	2371.17	1251.04	2378.01	1251.09	2384.08	1251.2
2389.53	1251.37	2391.07	1251.39	2398.48	1251.53	2415.71	1251.8	2423.08	1251.9
2425.81	1252	2429.91	1252.46	2448.54	1254	2460.33	1255.04	2469.27	1256
2479.6	1256.94	2488.11	1258	2503.73	1259.2	2507.86	1259.5	2509.42	1259.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	561.81	.03	2429.91	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
561.81	2429.91	745	220	330	.1	.3

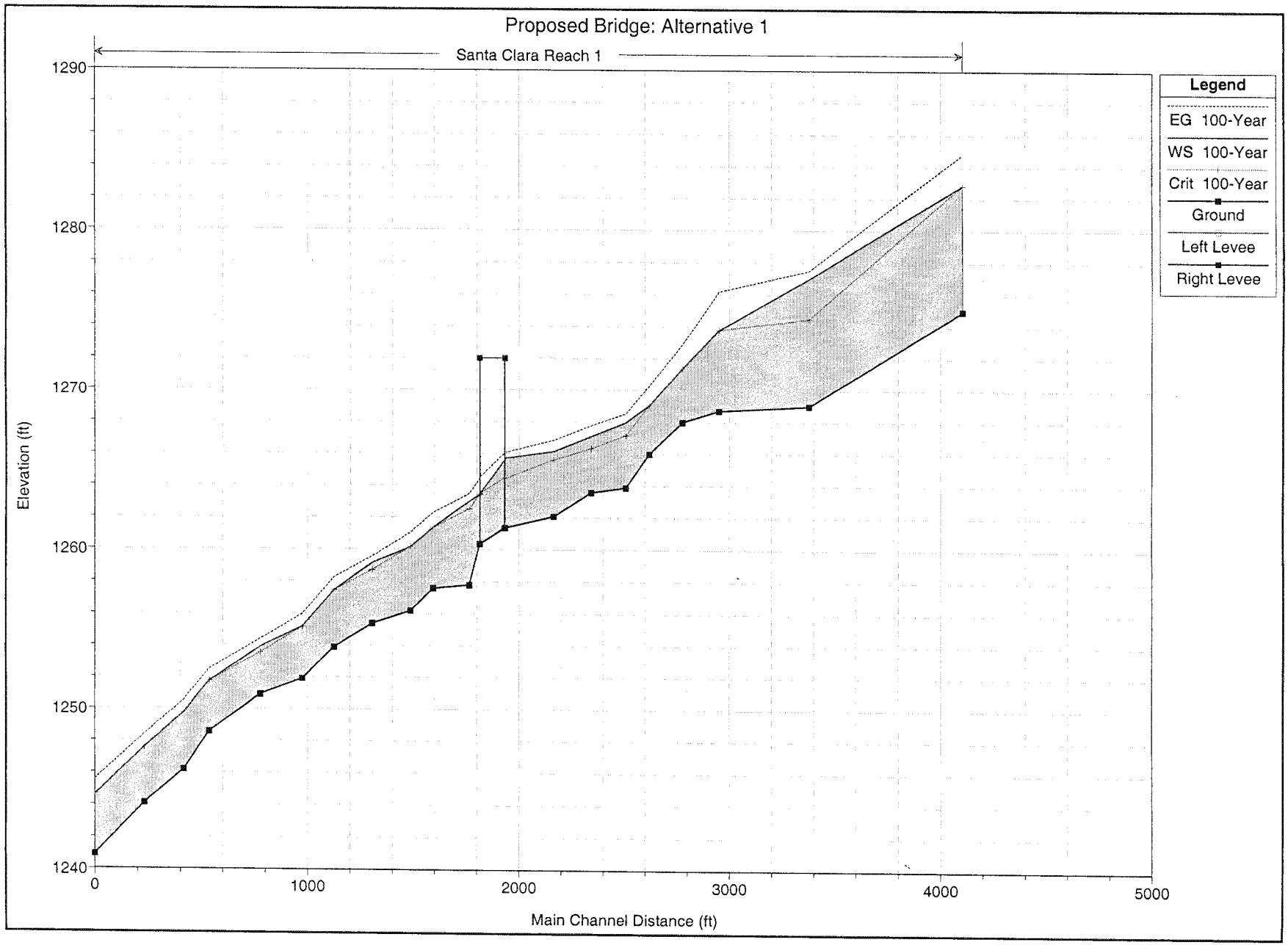
SUMMARY OF MANNING'S N VALUES

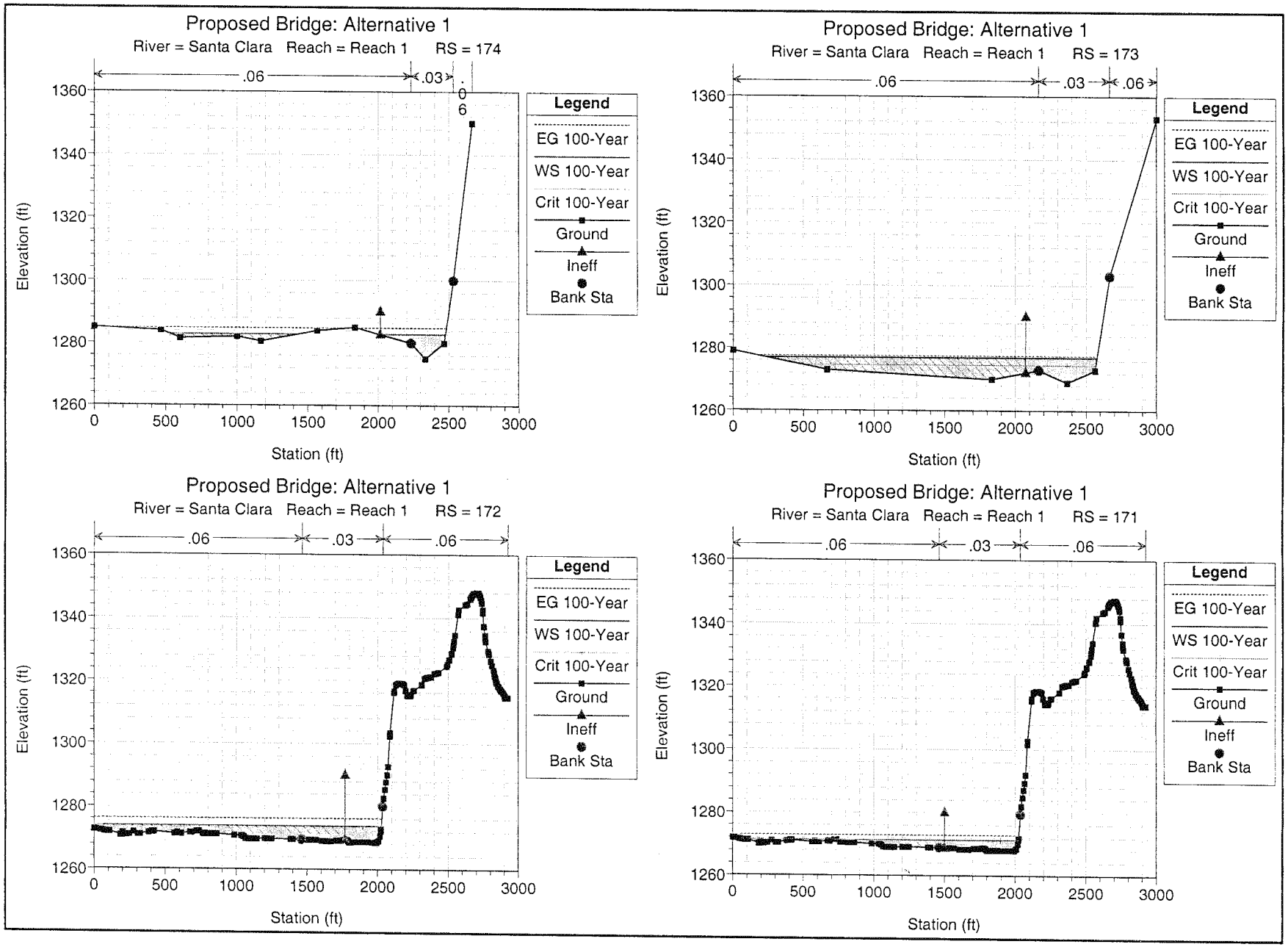
River:Santa Clara

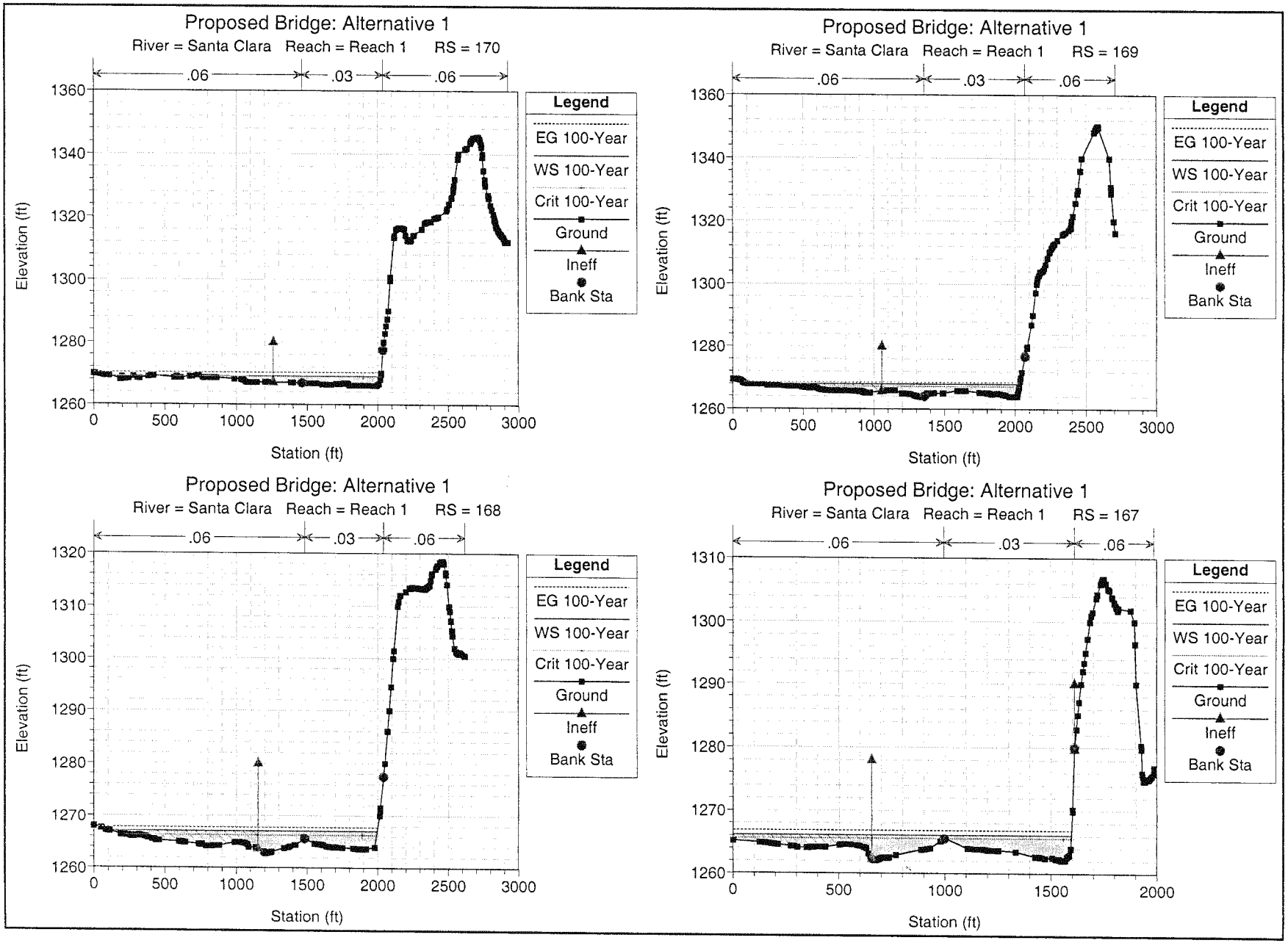
Reach	River Sta.	n1	n2	n3
1	174	.06	.03	.06
1	173	.06	.03	.06
1	172	.06	.03	.06
1	171	.06	.03	.06
1	170	.06	.03	.06
1	169	.06	.03	.06
1	168	.06	.03	.06
1	167	.06	.03	.06
1	166	.06	.03	.06
1	165.5	.06	.03	.06
1	165	.06	.03	.06
1	164	.06	.03	.06
1	163	.06	.03	.06
1	162	.06	.03	.06
1	161	.06	.03	.06
1	160	.06	.03	.06
1	159	.06	.03	.06
1	158	.06	.03	.06
1	157	.06	.03	.06
1	156	.06	.03	.06
1	155	.06	.03	.06

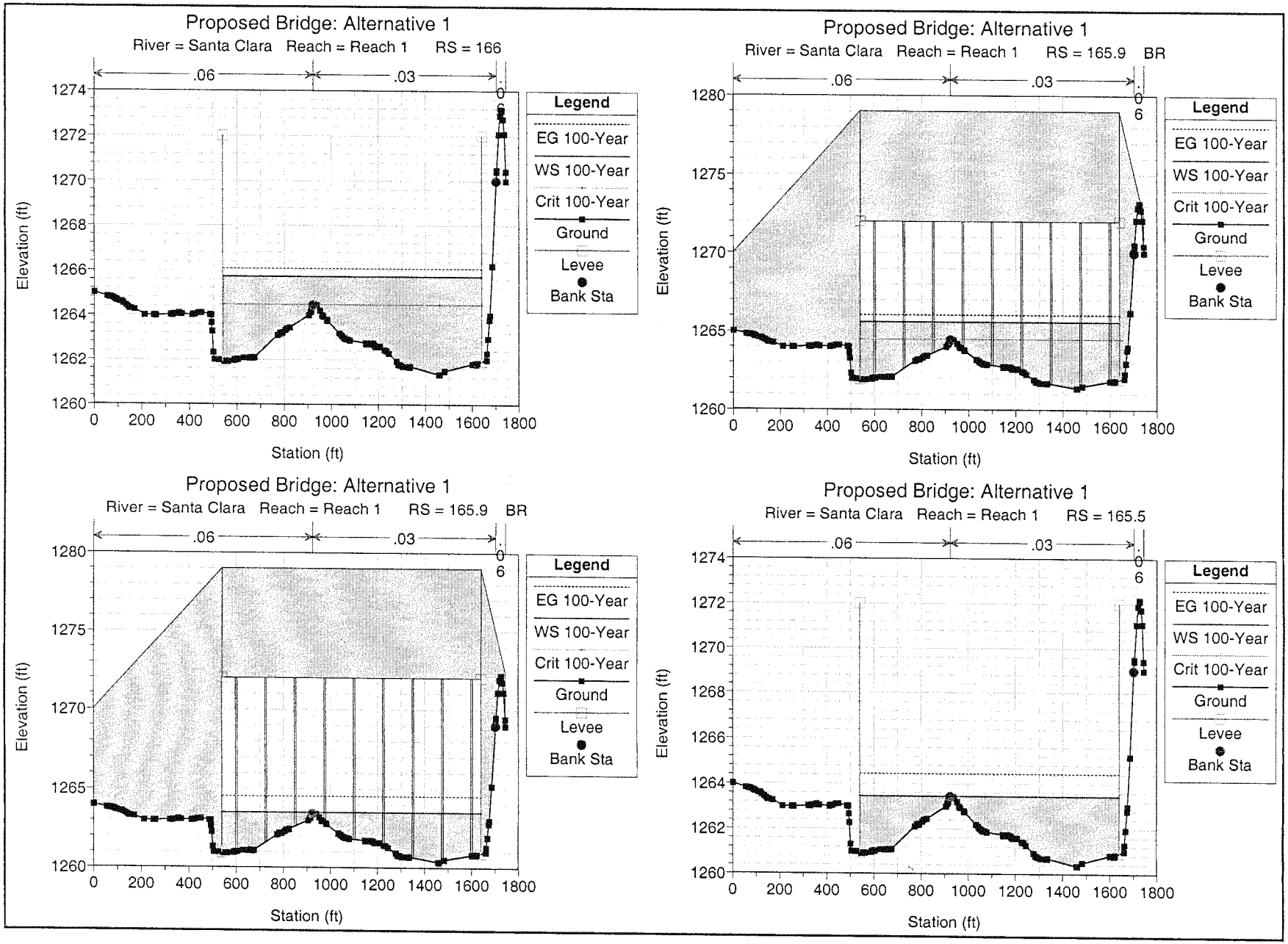
HEC-RAS Plan: Alt. 1 River: Santa Clara Reach: Reach 1 Profile: 100-Year

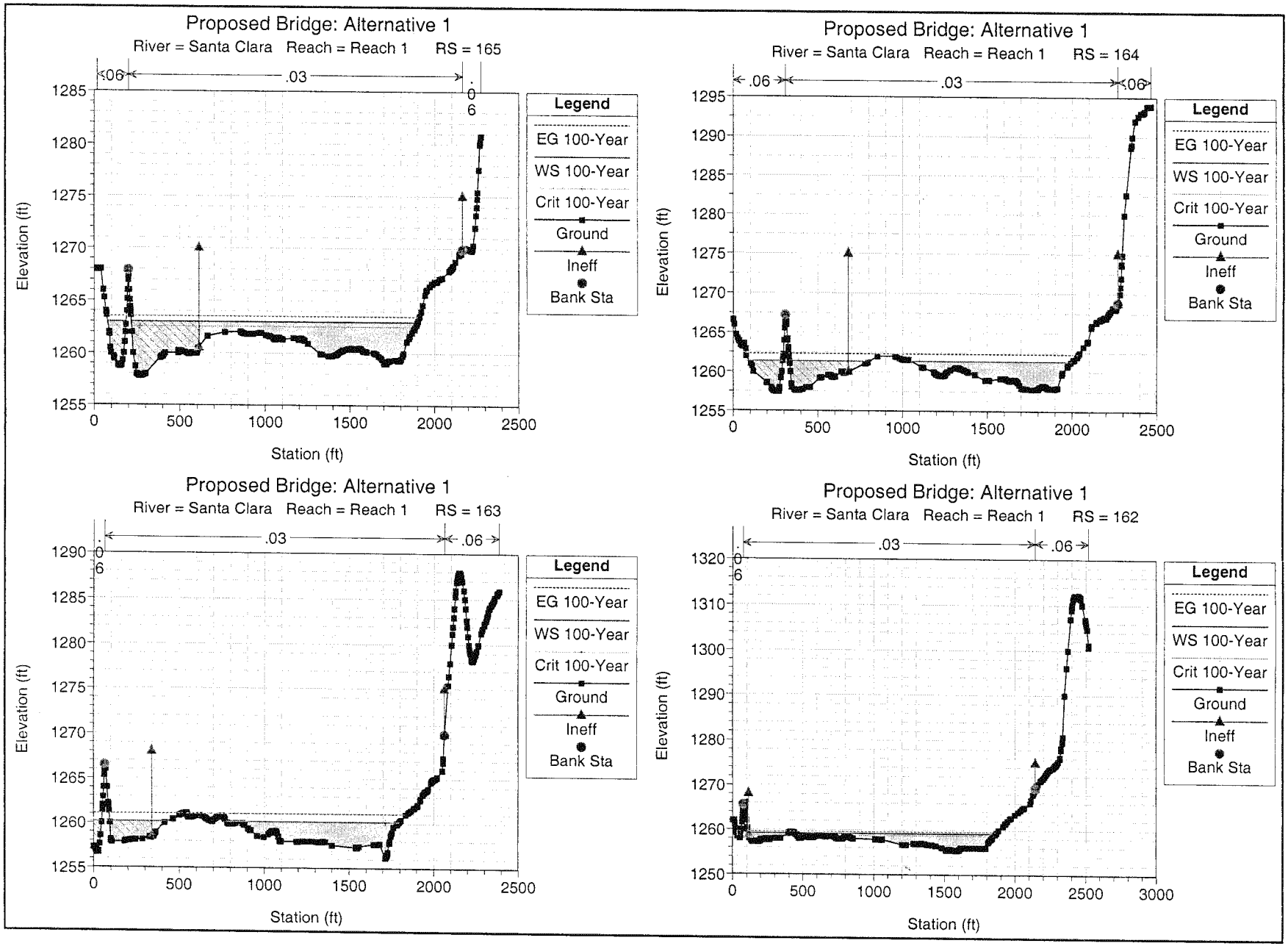
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	174	100-Year	15272.00	1275.00	1282.84	1282.84	1284.78	0.005994	11.47	1583.56	1375.84	0.89
Reach 1	173	100-Year	15272.00	1269.00	1277.00	1274.52	1277.51	0.001339	5.89	2832.70	2356.12	0.43
Reach 1	172	100-Year	15272.00	1268.71	1273.81	1273.81	1276.19	0.007741	12.37	1234.26	2026.21	1.00
Reach 1	171	100-Year	15272.00	1268.00	1271.40	1271.40	1272.89	0.009201	9.82	1554.86	1955.56	1.00
Reach 1	170	100-Year	15272.00	1266.00	1269.06	1269.06	1270.29	0.009827	9.32	1879.44	1791.87	1.02
Reach 1	169	100-Year	15272.00	1263.90	1267.99	1267.15	1268.52	0.003905	6.31	2863.50	1948.31	0.65
Reach 1	168	100-Year	15272.00	1263.60	1267.10	1266.34	1267.78	0.005388	7.39	2558.50	1891.44	0.76
Reach 1	167	100-Year	15272.00	1262.08	1266.15	1265.62	1266.85	0.006069	7.37	2528.21	1595.89	0.80
Reach 1	166	100-Year	15272.00	1261.35	1265.72	1264.46	1266.08	0.002157	5.18	3561.03	1100.00	0.50
Reach 1	165.9		Bridge									
Reach 1	165.5	100-Year	15272.00	1260.35	1263.46	1263.46	1264.43	0.010667	8.47	2171.13	1100.00	1.02
Reach 1	165	100-Year	15272.00	1257.79	1263.02	1262.53	1263.50	0.004707	5.60	2724.85	1791.63	0.68
Reach 1	164	100-Year	15272.00	1257.58	1261.37	1261.37	1262.29	0.010758	7.73	1976.16	1619.11	1.00
Reach 1	163	100-Year	15272.00	1256.19	1260.16	1260.16	1261.05	0.010590	7.58	2014.97	1403.98	0.99
Reach 1	162	100-Year	15272.00	1255.40	1259.16	1258.72	1259.56	0.004798	5.04	3031.80	1732.89	0.67
Reach 1	161	100-Year	15272.00	1253.90	1257.46	1257.46	1258.26	0.011281	7.16	2132.21	1341.81	1.00
Reach 1	160	100-Year	15272.00	1251.90	1255.21	1255.18	1255.99	0.010541	7.07	2160.59	1318.22	0.97
Reach 1	159	100-Year	15272.00	1250.87	1253.91	1253.54	1254.40	0.005731	5.64	2708.68	1468.79	0.73
Reach 1	158	100-Year	15272.00	1248.56	1251.74	1251.74	1252.49	0.011546	6.93	2202.78	1481.18	1.00
Reach 1	157	100-Year	15272.00	1246.18	1249.75	1249.75	1250.51	0.011444	7.00	2181.92	1436.14	1.00
Reach 1	156	100-Year	15272.00	1244.10	1247.57	1247.57	1248.37	0.011403	7.15	2134.93	1356.49	1.00
Reach 1	155	100-Year	15272.00	1240.90	1244.61	1244.61	1245.56	0.010751	7.84	1949.01	1033.46	1.01

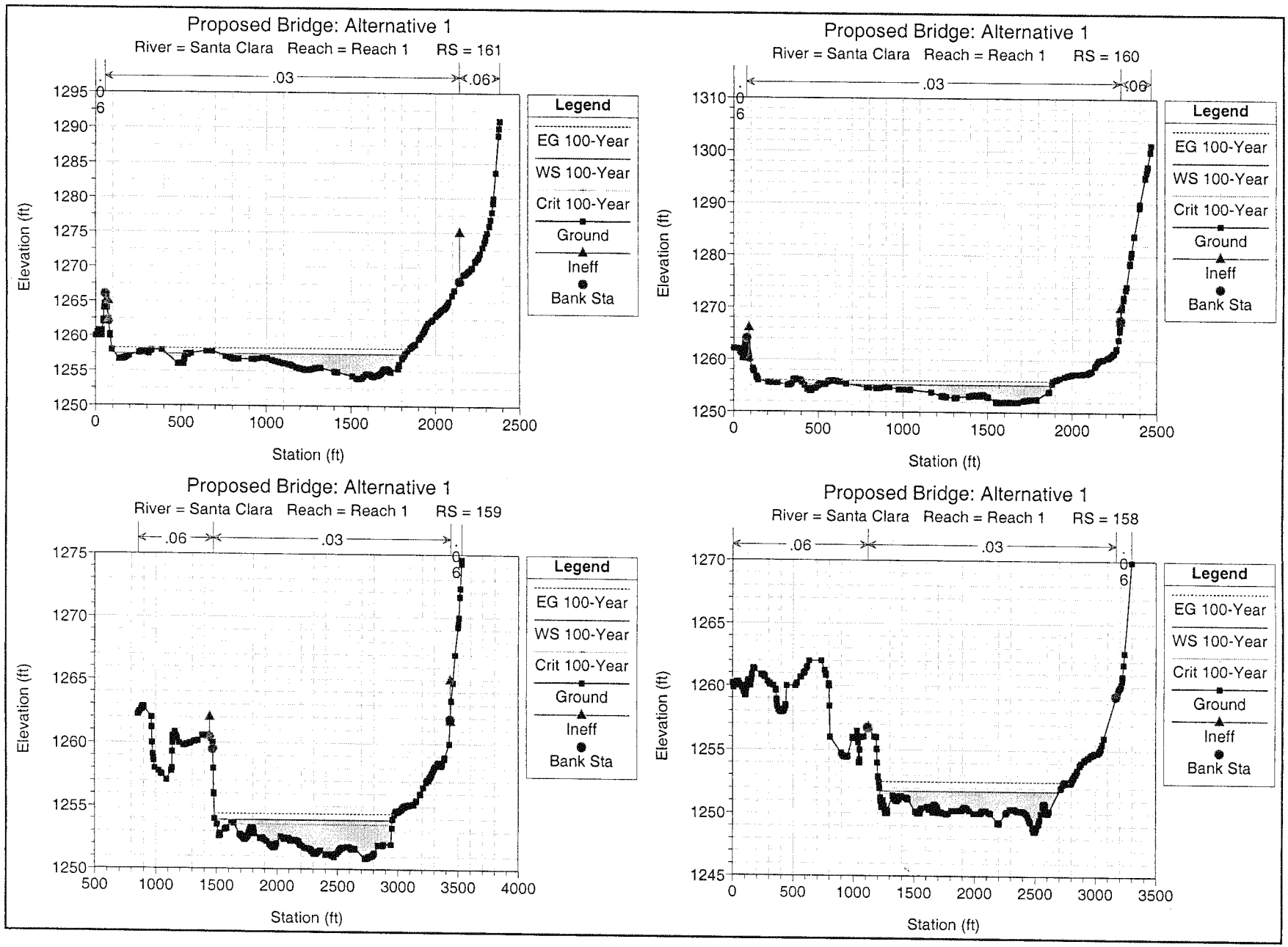

Proposed Bridge: Alternative 1
Santa Clara Reach 1
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Left Levee
Right Levee
Elevation (ft)
1290
1280
1270
1260
1250
1240
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)

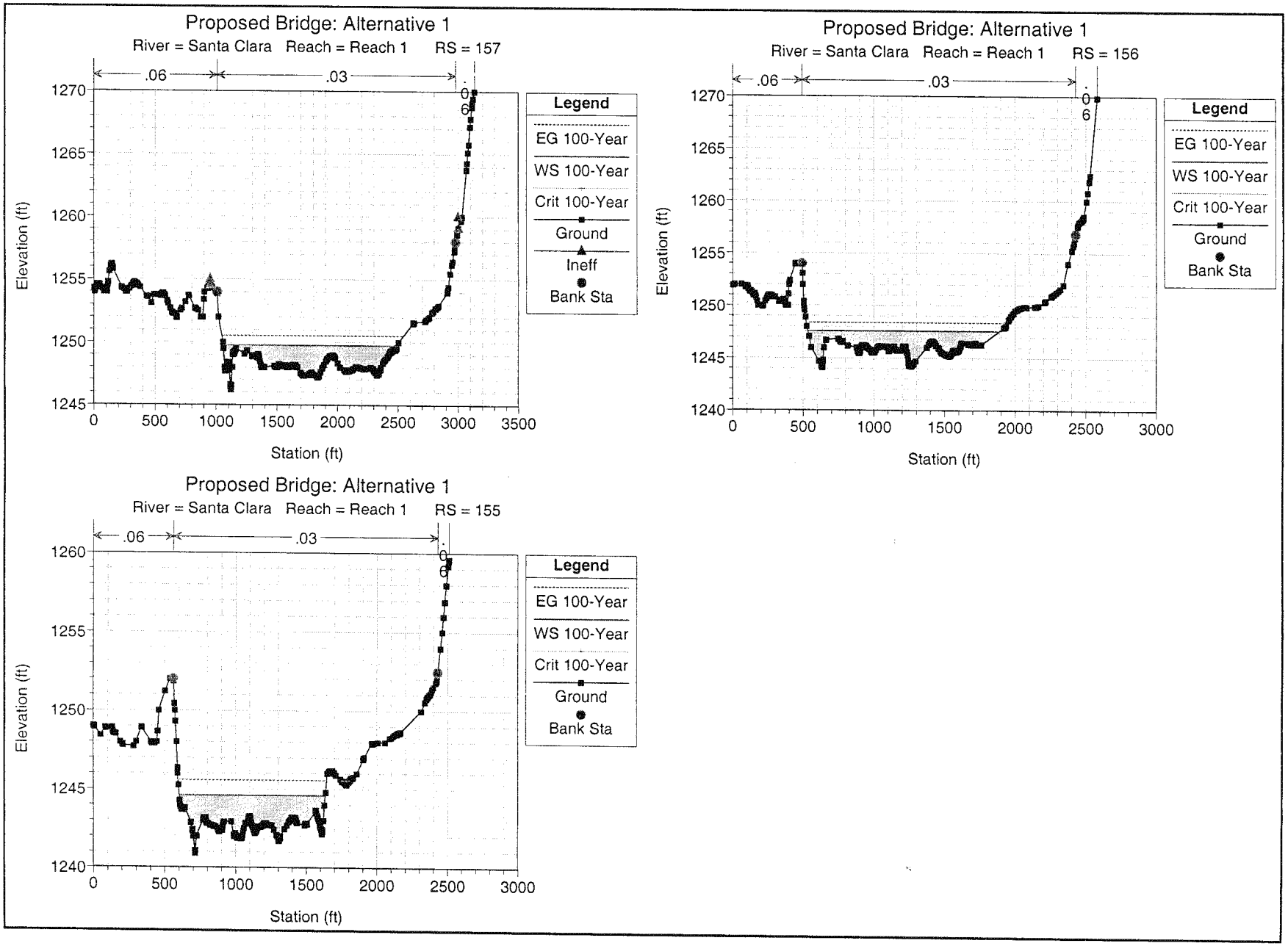

Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 174
.06
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 173
.06
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 172
.06
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 171
.06
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 170
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 169
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 168
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 167


Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 166
.06
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 165.9 BR
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 165.9 BR
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 165.5


Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 165
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 164
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 163
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 162
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta


Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 161
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 160
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 159
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 158
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta


Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 157
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 156
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Proposed Bridge: Alternative 1
River = Santa Clara Reach = Reach 1 RS = 155
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta

Alernative 1.rep

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X     X
X     X  X        X           X   X     X   X    X
XXXXXXX  XXXX     X       XXX XXXX      XXXXXX   XXXX
X     X  X        X           X  X      X    X       X
X     X  X        X    X      X   X     X    X       X
X     X  XXXXXX    XXXX       X    X    X    X   XXXXX
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PROJECT DATA
Project Title: Proposed Bridge: Alternative 1
Project File : Alernative 1.prj
Run Date and Time: 4/1/2005 8:07:17 AM

Project in English units

Project Description:
Cross sections cut in LDD and imported 04-30-04

PLAN DATA

Plan Title: River Profile
Plan File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Alernative 1.p03

Geometry Title: Exist Project (banks=0.6, chnl=0.3)
Geometry File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Alernative 1.g07

Flow Title : Steady Flow
Flow File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Alernative 1.f01

Plan Summary Information:

Number of:	Cross Sections	= 21	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 1	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

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 173

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1279	667.6	1273	1833	1270	2166	1273	2366	1269
2565	1273	2666	1303	3000	1353				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	2166	.03	2666	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2166	2666	379	427	469	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	2073	1290	F

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 172

INPUT
Description:
Station Elevation Data num= 337

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1272.61	12.11	1272.54	45.45	1272.26	51.09	1272.22	51.69	1272.21
71.31	1272.01	72.31	1272.02	74.24	1272	75.77	1271.98	76.93	1271.97
77.52	1272.01	78.27	1271.96	79.13	1271.96	80.47	1271.95	81.69	1271.95
83.13	1271.91	86.32	1271.95	90.96	1271.95	92.99	1271.91	97.02	1271.95
103.98	1271.95	105.31	1271.91	106.6	1271.95	184.31	1270.79	184.7	1270.8
187.78	1270.71	192.84	1270.71	198.32	1271.51	198.87	1271.44	221.81	1270.85
244.92	1271.01	276.73	1271.78	305.39	1271.12	315.78	1271.12	321.04	1271.11
382.73	1271.62	405.91	1271.88	406.26	1271.87	406.45	1271.86	406.62	1271.81
406.73	1271.85	407.35	1271.85	407.57	1271.81	407.82	1271.87	408.13	1271.88
408.44	1271.88	408.51	1271.87	411.55	1271.91	411.84	1271.86	413.57	1271.87
414.18	1271.88	416.74	1271.89	417.95	1271.91	418.72	1271.89	419.41	1271.89
562.71	1271.34	563.53	1271.31	580.77	1271.68	597.72	1271.33	605.62	1271.33
612.41	1271.31	673.01	1271.69	687.46	1271.68	719.86	1272.11	723.17	1272.11
729.84	1272.09	731.51	1272.08	732.49	1272.11	733.04	1272.08	735.37	1272.09
736.57	1272.09	763.01	1271.38	764.04	1271.41	765.48	1271.36	766.77	1271.35
767.73	1271.32	768.09	1271.3	769.49	1271.31	769.96	1271.26	770.46	1271.27
772.31	1271.31	773.91	1271.31	775.09	1271.38	776.44	1271.4	777.35	1271.41
778.17	1271.41	815.76	1271.21	819.66	1271.23	823.12	1271.23	826.45	1271.26
829.27	1271.31	830.69	1271.3	834.59	1271.3	844.98	1271.28	855.3	1271.21
861.06	1271.23	985.31	1270.83	1033.41	1270.75	1036.93	1270.71	1038.31	1270.72
1038.9	1270.71	1040.28	1270.71	1048.88	1270.49	1049.62	1270.49	1051.24	1270.5
1053.87	1270.43	1054.99	1270.41	1066.75	1269.91	1075.43	1269.83	1079.75	1269.8
1085.08	1269.81	1088.2	1269.76	1106.54	1269.77	1111.89	1269.81	1119.51	1269.76
1121.84	1269.76	1128.71	1269.71	1130.42	1269.74	1144.12	1269.73	1201.06	1269.85
1210.98	1269.85	1221.03	1269.81	1228.01	1269.83	1231.57	1269.82	1244.21	1269.83
1248.82	1269.81	1384.56	1269.69	1389.2	1269.71	1400.26	1269.67	1463.25	1269.59
1507.87	1269.46	1510.58	1269.48	1528.04	1269.48	1530.48	1269.51	1547.74	1269.49
1549.99	1269.5	1556.74	1269.49	1558.96	1269.48	1565.8	1269.51	1605.66	1269.1
1627.2	1269.1	1631.35	1269.11	1635.69	1269.08	1644.53	1269.08	1651.58	1269.06

83.13	1271.2	86.32	1271.24	90.96	1271.24	92.99	1271.2	97.02	1271.24
103.98	1271.24	105.31	1271.2	106.6	1271.24	184.31	1270.08	184.7	1270.09
187.78	1270	192.84	1270	198.32	1270.8	198.87	1270.73	221.81	1270.14
244.92	1270.3	276.73	1271.07	305.39	1270.41	315.78	1270.41	321.04	1270.4
382.73	1270.91	405.91	1271.17	406.26	1271.16	406.45	1271.15	406.62	1271.1
406.73	1271.14	407.35	1271.14	407.57	1271.1	407.82	1271.16	408.13	1271.17
408.44	1271.17	408.51	1271.16	411.55	1271.2	411.84	1271.15	413.57	1271.16
414.18	1271.17	416.74	1271.18	417.95	1271.2	418.72	1271.18	419.41	1271.18
562.71	1270.63	563.53	1270.6	580.77	1270.97	597.72	1270.62	605.62	1270.62
612.41	1270.6	673.01	1270.98	687.46	1270.97	719.86	1271.4	723.17	1271.4
729.84	1271.38	731.51	1271.37	732.49	1271.4	733.04	1271.37	735.37	1271.38
736.57	1271.38	763.01	1270.67	764.04	1270.7	765.48	1270.65	766.77	1270.64
767.73	1270.61	768.09	1270.59	769.49	1270.6	769.96	1270.55	770.46	1270.56
772.31	1270.6	773.91	1270.6	775.09	1270.67	776.44	1270.69	777.35	1270.7
778.17	1270.7	815.76	1270.5	819.66	1270.52	823.12	1270.52	826.45	1270.55
829.27	1270.6	830.69	1270.59	834.59	1270.59	844.98	1270.57	855.3	1270.5
861.06	1270.52	985.31	1270.12	1033.41	1270.04	1036.93	1270	1038.31	1270.01
1038.9	1270	1040.28	1270	1048.88	1269.78	1049.62	1269.78	1051.24	1269.79
1053.87	1269.72	1054.99	1269.7	1066.75	1269.2	1075.43	1269.12	1079.75	1269.09
1085.08	1269.1	1088.2	1269.05	1106.54	1269.06	1111.89	1269.1	1119.51	1269.05
1121.84	1269.05	1128.71	1269	1130.42	1269.03	1144.12	1269.02	1201.06	1269.14
1210.98	1269.14	1221.03	1269.1	1228.01	1269.12	1231.57	1269.11	1244.21	1269.12
1248.82	1269.1	1384.56	1268.98	1389.2	1269	1400.26	1268.96	1463.25	1268.88
1507.87	1268.75	1510.58	1268.77	1528.04	1268.77	1530.48	1268.8	1547.74	1268.78
1549.99	1268.79	1556.74	1268.78	1558.96	1268.77	1565.8	1268.8	1605.66	1268.39
1627.2	1268.39	1631.35	1268.4	1635.69	1268.37	1644.53	1268.37	1651.58	1268.35
1660.05	1268.3	1668.44	1268.31	1705.19	1268.61	1708.68	1268.66	1716.17	1268.59
1723.82	1268.5	1726.01	1268.57	1731.42	1268.55	1738.13	1268.63	1742.11	1268.65
1745.14	1268.7	1760.2	1268.78	1768.77	1268.86	1773.53	1268.88	1776.6	1268.9
1782.06	1268.78	1786.76	1268.64	1791.31	1268.45	1798.18	1268.1	1799.96	1268
1817.13	1268.07	1822.1	1268.1	1825.91	1268.09	1834.02	1268.1	1837.17	1268.11
1840.39	1268.11	1843.6	1268.1	1847.05	1268.11	1868.17	1268.09	1874.96	1268.1
1879.76	1268.08	1883.99	1268.08	1894.55	1268.1	1920.09	1268.09	1925.31	1268.1
1930.52	1268.08	1964.01	1268.04	1974.58	1268	1986.36	1268.01	1990.6	1268
1993.29	1268.1	2003.25	1268.41	2007.82	1268.6	2018.27	1270	2023.31	1271.57
2024.56	1272	2035.71	1279.46	2041.62	1282	2050.88	1284.8	2058.67	1287.22
2065.74	1289.39	2073.15	1292	2086.82	1301.7	2087.26	1302	2087.57	1302.14
2089.08	1302.78	2117.25	1315.4	2119.26	1316	2129.39	1317.86	2130.34	1318
2137.37	1318.19	2146.22	1318.4	2150.99	1318.48	2154.42	1318.53	2157.12	1318.55
2160.24	1318.54	2165.76	1318.5	2170.51	1318.43	2176.68	1318.32	2183.46	1318.15
2188.68	1318	2197.15	1316.2	2199.03	1316	2210.78	1314.49	2215.37	1314.41
2223.38	1314.41	2225.72	1314.5	2228	1314.38	2229.25	1314.34	2229.92	1314.36
2231.08	1314.4	2232.04	1314.47	2235.22	1314.72	2236.83	1314.81	2250.22	1316
2250.48	1316	2256.99	1316.22	2312.88	1318	2313.65	1318.09	2332.33	1320
2343.19	1320.2	2349.84	1320.36	2353.84	1320.43	2357.22	1320.48	2360.51	1320.51
2364.91	1320.6	2366.72	1320.57	2368.23	1320.57	2371.42	1320.56	2374.85	1320.54
2376.19	1320.5	2378.03	1320.54	2401.57	1321.57	2415.39	1321.74	2425.33	1321.9
2432.5	1322	2489.41	1324	2493.59	1324.6	2506.06	1326	2507.76	1326.18
2523.6	1328	2524.91	1328.2	2535.54	1330	2535.91	1330.2	2537.46	1330.83
2539.95	1332	2546.65	1333.99	2569.74	1340.5	2574.93	1342	2621.29	1343.59
2632.12	1343.9	2633.17	1343.96	2633.46	1343.97	2634.8	1344	2657	1345.52
2661.59	1346	2664.8	1346.24	2670.55	1346.64	2678.86	1347.09	2680.57	1347.2
2682.03	1347.17	2686.39	1347.07	2688.7	1347.21	2693.3	1347.08	2697.41	1347.3
2700.29	1347.22	2705.63	1347.46	2707.89	1347.38	2711.94	1347.42	2715.31	1347.2
2720.71	1346.83	2722.91	1346.6	2728.32	1346	2733.3	1345.15	2736.68	1344.3
2742.76	1342	2743.48	1341.57	2744.32	1341.14	2752.01	1336.86	2760.09	1334
2762.42	1332.94	2765.09	1332	2783.43	1329	2787.89	1328.4	2790.49	1328
2801.46	1325.81	2810.95	1324.38	2822.91	1322.92	2827.01	1322	2827.49	1321.88
2829.48	1321.09	2830.85	1321.03	2832.63	1320.88	2835.24	1320.5	2837.61	1320.04
2839.38	1319.46	2841.1	1319.15	2842.62	1318.95	2843.83	1318.8	2845.38	1318.78
2847.7	1318.73	2851.95	1318	2854.59	1317.78	2855.03	1317.8	2855.85	1317.75
2856.47	1317.73	2857.19	1317.68	2860.3	1317.4	2866.48	1316.9	2867.78	1316.83
2870.18	1316.74	2872.36	1316.71	2875.07	1316.38	2877.01	1316.4	2879.46	1316.08

2089.08	1300.78	2117.25	1313.4	2119.26	1314	2129.39	1315.86	2130.34	1316
2137.37	1316.19	2146.22	1316.4	2150.99	1316.48	2154.42	1316.53	2157.12	1316.55
2160.24	1316.54	2165.76	1316.5	2170.51	1316.43	2176.68	1316.32	2183.46	1316.15
2188.68	1316	2197.15	1314.2	2199.03	1314	2210.78	1312.49	2215.37	1312.41
2223.38	1312.41	2225.72	1312.5	2228	1312.38	2229.25	1312.34	2229.92	1312.36
2231.08	1312.4	2232.04	1312.47	2235.22	1312.72	2236.83	1312.81	2250.22	1314
2250.48	1314	2256.99	1314.22	2312.88	1316	2313.65	1316.09	2332.33	1318
2343.19	1318.2	2349.84	1318.36	2353.84	1318.43	2357.22	1318.48	2360.51	1318.51
2364.91	1318.6	2366.72	1318.57	2368.23	1318.57	2371.42	1318.56	2374.85	1318.54
2376.19	1318.5	2378.03	1318.54	2401.57	1319.57	2415.39	1319.74	2425.33	1319.9
2432.5	1320	2489.41	1322	2493.59	1322.6	2506.06	1324	2507.76	1324.18
2523.6	1326	2524.91	1326.2	2535.54	1328	2535.91	1328.2	2537.46	1328.83
2539.95	1330	2546.65	1331.99	2569.74	1338.5	2574.93	1340	2621.29	1341.59
2632.12	1341.9	2633.17	1341.96	2633.46	1341.97	2634.8	1342	2657	1343.52
2661.59	1344	2664.8	1344.24	2670.55	1344.64	2678.86	1345.09	2680.57	1345.2
2682.03	1345.17	2686.39	1345.07	2688.7	1345.21	2693.3	1345.08	2697.41	1345.3
2700.29	1345.22	2705.63	1345.46	2707.89	1345.38	2711.94	1345.42	2715.31	1345.2
2720.71	1344.83	2722.91	1344.6	2728.32	1344	2733.3	1343.15	2736.68	1342.3
2742.76	1340	2743.48	1339.57	2744.32	1339.14	2752.01	1334.86	2760.09	1332
2762.42	1330.94	2765.09	1330	2783.43	1327	2787.89	1326.4	2790.49	1326
2801.46	1323.81	2810.95	1322.38	2822.91	1320.92	2827.01	1320	2827.49	1319.88
2829.48	1319.09	2830.85	1319.03	2832.63	1318.88	2835.24	1318.5	2837.61	1318.04
2839.38	1317.46	2841.1	1317.15	2842.62	1316.95	2843.83	1316.8	2845.38	1316.78
2847.7	1316.73	2851.95	1316	2854.59	1315.78	2855.03	1315.8	2855.85	1315.75
2856.47	1315.73	2857.19	1315.68	2860.3	1315.4	2866.48	1314.9	2867.78	1314.83
2870.18	1314.74	2872.36	1314.71	2875.07	1314.38	2877.01	1314.4	2879.46	1314.08
2880.93	1314	2890.96	1313.66	2894.69	1313.22	2901.22	1312.7	2902.95	1312.51
2904.4	1312	2924.98	1312						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1463.25	.03	2035.71	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1463.25	2035.71	120	112	122	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1260	1280	F

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 169

INPUT
Description:
Station Elevation Data num= 359

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1269.4	6.06	1269.37	6.85	1269.38	7.49	1269.39	8.71	1269.42
9.41	1269.4	10.28	1269.43	13.06	1269.43	13.96	1269.4	18.18	1269.36
18.78	1269.35	19.84	1269.36	20.25	1269.4	20.73	1269.37	21.14	1269.4
21.99	1269.43	22.56	1269.44	23.39	1269.4	24.85	1269.43	25.84	1269.42
27.89	1269.38	30.27	1269.35	32.93	1269.3	36.13	1269.26	39.84	1269.2
43.42	1269.15	46.05	1269.12	50.51	1269.1	53.54	1269.04	57.84	1268.98
68.87	1268.61	68.95	1268.33	69.99	1268.3	71.86	1268.22	73.05	1268.21
74.01	1268.2	78.7	1268.06	78.95	1268.1	80.79	1268	97.39	1267.91
99.54	1267.89	102.14	1267.9	103.91	1267.86	117.36	1267.81	122.87	1267.8
126.47	1267.8	132.9	1267.78	168.88	1267.77	183.99	1267.8	191.24	1267.78
195.21	1267.78	198.91	1267.77	203.35	1267.77	245.39	1267.4	278.83	1267.37
287.86	1267.4	290.26	1267.38	295.46	1267.41	296.71	1267.41	300.67	1267.42
303.42	1267.4	308.16	1267.43	313.72	1267.41	320.28	1267.41	323.13	1267.4
362.87	1267.15	367.74	1267.15	372.52	1267.14	380.28	1267.14	394.33	1267.2

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1358.13	2069.96	140	165	155	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1056	1280	F

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 168

INPUT
Description:
Station Elevation Data num= 336

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1268	48.14	1267.63	52.54	1267.59	56.06	1267.6	81.29	1267.28
81.4	1267.28	83.16	1267.25	83.86	1267.25	85.07	1267.2	86.93	1267.22
88.83	1267.21	91.01	1267.19	92.2	1267.19	95.16	1267.2	97.21	1267.16
99.01	1267.15	107.33	1267.08	110.37	1267.1	185.52	1266.41	187.62	1266.4
189.71	1266.4	192.8	1266.39	195.21	1266.4	197.77	1266.38	198.44	1266.39
199.9	1266.4	203.33	1266.38	204.4	1266.4	212.14	1266.36	213.36	1266.36
229.32	1266.31	230.77	1266.3	239.05	1266.28	257.35	1266.15	266.21	1266.13
269.66	1266.13	273.3	1266.1	276.76	1266.15	279.7	1266.16	291.08	1266.23
293.31	1266.2	296.85	1266.24	299.41	1266.25	312.18	1266.25	314.62	1266.3
318.48	1266.25	320.88	1266.24	322.99	1266.24	326.76	1266.21	337.58	1266.2
354.43	1266.06	363.32	1266	377.49	1265.84	407.05	1265.56	410.18	1265.54
422.01	1265.5	424.6	1265.5	431.95	1265.36	433.39	1265.34	435.05	1265.3
436.76	1265.31	444.99	1265.28	445.94	1265.28	448.43	1265.3	450.23	1265.31
452.32	1265.31	456.35	1265.29	596.89	1265.06	598.93	1265.06	600.03	1265.05
601.14	1265.05	602.48	1265.1	603.84	1265.05	606.53	1265.05	609.24	1265.04
610.08	1265	611.36	1265.03	612.74	1265.02	614.17	1265.02	619.06	1265
620.76	1264.99	621.81	1264.99	623.86	1264.97	626.14	1264.96	627.75	1264.9
629.03	1264.94	631.26	1264.95	632.65	1264.94	634.58	1264.94	640.95	1264.9
735.21	1264.57	736.35	1264.57	740.29	1264.56	741.43	1264.56	744	1264.5
745.01	1264.55	746.09	1264.55	754.97	1264.6	756.01	1264.58	786.4	1264.21
800.14	1264.21	804.92	1264.2	810.06	1264.21	815.42	1264.2	825.55	1264.2
827.67	1264.22	833.21	1264.25	835.45	1264.25	840.9	1264.3	844.81	1264.27
846.53	1264.28	851.72	1264.28	853.57	1264.3	856.51	1264.29	862.07	1264.28
865.34	1264.29	871.16	1264.28	875.5	1264.3	880.16	1264.28	986.56	1264.91
988.82	1264.91	991.12	1264.92	998.4	1265	1001.67	1264.97	1004.84	1264.98
1013.59	1264.98	1023.05	1265	1026.8	1264.95	1043.79	1264.89	1049.47	1264.86
1052.5	1264.8	1058.42	1264.79	1065.21	1264.72	1073.87	1264.61	1079.9	1264.5
1087.1	1264	1138.63	1264	1141.24	1263.95	1187.88	1263.16	1192.16	1263.1
1194.04	1263.04	1195.65	1263	1196.07	1262.98	1199.12	1262.9	1200.15	1262.89
1201.1	1262.89	1202.3	1262.88	1202.75	1262.88	1203.03	1262.9	1203.59	1262.87
1203.98	1262.86	1204.28	1262.85	1204.49	1262.85	1204.67	1262.8	1204.87	1262.84
1205.92	1262.84	1206.08	1262.8	1206.23	1262.84	1206.57	1262.84	1206.81	1262.85
1206.93	1262.8	1207.04	1262.85	1207.32	1262.87	1207.39	1262.87	1207.46	1262.88
1207.72	1262.9	1207.95	1262.9	1208.37	1262.91	1208.86	1262.92	1209.29	1262.93
1210.58	1262.9	1211.38	1262.94	1212.05	1262.95	1212.44	1262.94	1213.08	1262.94
1213.67	1262.9	1214.81	1262.93	1215.72	1262.93	1227.41	1262.95	1231.67	1263
1234.04	1262.98	1236.35	1262.99	1242.79	1263.03	1246.18	1263.1	1248.99	1263.07
1338.04	1263.8	1367.84	1264	1377.91	1264.12	1411.46	1264.39	1417.07	1264.45
1483.92	1265.67	1551.21	1264.7	1555.57	1264.65	1569.04	1264.63	1574.41	1264.63
1579.8	1264.6	1584.78	1264.61	1592.96	1264.56	1599.14	1264.51	1605.34	1264.5
1614.82	1264.37	1634.98	1264.18	1645.04	1264.11	1652.2	1264.1	1656.4	1264.05
1659.93	1264.02	1671.88	1264.03	1680.08	1264	1688.17	1264.05	1701.5	1264.04
1716.32	1264	1718.7	1263.99	1749.34	1263.9	1824.55	1263.8	1830.9	1263.8
1837.95	1263.76	1854.36	1263.7	1857.58	1263.7	1860.32	1263.68	1864.56	1263.66
1866.33	1263.66	1868.67	1263.7	1871.34	1263.65	1875.45	1263.64	1880.61	1263.64
1881.85	1263.6	1882.76	1263.63	1884.03	1263.62	1885.16	1263.62	1886.04	1263.61
1886.6	1263.6	1887.68	1263.61	1890.4	1263.61	1891.96	1263.6	1893.28	1263.62

1149.07	1263.94	1157.18	1263.94	1170.46	1263.9	1176.2	1263.9	1182.92	1263.84
1188.21	1263.82	1199.22	1263.75	1202.66	1263.7	1206.06	1263.72	1208.48	1263.71
1212.59	1263.71	1216.04	1263.7	1220.2	1263.71	1230.87	1263.71	1244.78	1263.67
1246.74	1263.67	1251.93	1263.7	1332.48	1263.48	1425.05	1262.69	1425.96	1262.69
1427	1262.7	1430.63	1262.69	1433.57	1262.69	1441.7	1262.66	1447.43	1262.6
1456.04	1262.56	1471.85	1262.45	1504.52	1262.53	1522.18	1262.3	1523.64	1262.35
1525.32	1262.38	1533.97	1262.28	1536.27	1262.33	1545.93	1262.1	1548.4	1262.23
1552.93	1262.12	1557.17	1262.08	1557.47	1262.1	1562.16	1262.1	1566.9	1262.18
1573.34	1262.62	1580.16	1262.82	1585.3	1262.96	1586.38	1263	1592.92	1264
1601.08	1269.9	1601.23	1270	1601.46	1270.22	1611.23	1280	1619.76	1282.9
1627.12	1285.1	1633.65	1287.2	1642.48	1290	1650.96	1292.1	1656.65	1293.4
1663.8	1295.07	1672.81	1297.29	1683.27	1300	1689.43	1301	1695.88	1301.55
1713.64	1303.74	1718.71	1304.33	1734.5	1305.97	1737.32	1306.2	1739.99	1306.47
1743.38	1306.7	1745.5	1306.8	1746.82	1306.82	1748.16	1306.8	1749.46	1306.75
1751.25	1306.62	1757.72	1306.03	1759.76	1306.07	1768.61	1305.2	1771.49	1305.2
1776.43	1305	1787.23	1303.92	1789.68	1303.76	1797.27	1303.1	1799.33	1302.94
1805.08	1302.6	1807.93	1302.28	1810.7	1302.27	1812.92	1302	1814.21	1301.79
1816.85	1302.03	1817.52	1302.18	1874.6	1301.84	1892.99	1300	1895.83	1296.5
1901.31	1290	1925.51	1280.37	1926.38	1280	1926.5	1279.8	1929.27	1276
1931.54	1275.62	1934.8	1275.16	1934.84	1274.98	1934.85	1274.9	1934.87	1274.85
1936.56	1274.8	1938.11	1274.76	1939.42	1274.76	1940.82	1274.8	1942.16	1274.8
1943.5	1274.84	1946.32	1274.95	1948.12	1275	1950.25	1275	1951.24	1275.04
1954.24	1274.99	1955.85	1274.99	1957.9	1275.02	1960.42	1275.1	1965.05	1275.22
1971.03	1275.42	1975.51	1275.6	1983.03	1276	1985.78	1276.9	1985.81	1276.91

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	996.21	.03	1611.23	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
996.21	1611.23	59.01	231 386.01	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	655	1278	F
1611	1985.81	1290	F

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 166

INPUT
Description:
Station Elevation Data num= 153

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1265	54.79	1264.82	64.69	1264.79	67.97	1264.8	71.36	1264.78
78.35	1264.76	85.72	1264.72	88.08	1264.7	91.75	1264.68	95.8	1264.65
109.01	1264.6	115.86	1264.6	121.7	1264.53	132.87	1264.45	141.61	1264.37
148.02	1264.3	153.32	1264.3	169.11	1264.26	210.97	1264	250.46	1263.99
254.76	1264	258.66	1263.98	320.84	1264.02	329.04	1264	332.7	1264.05
347.99	1264.05	354.56	1264.1	367.22	1264.04	411.13	1264	414.71	1264.03
418.87	1264.03	423.13	1264.04	436.86	1264.1	449.32	1264.11	486.14	1264.02
491.41	1264	493.15	1263.66	495.89	1263.27	501.01	1262.32	504.94	1262
510.11	1262	522.53	1261.98	523.62	1261.98	546.15	1261.9	553.64	1261.93
562.44	1261.91	589.35	1261.95	590.11	1261.97	591.55	1262	593.86	1262
598.49	1262.02	604.4	1262.03	604.7	1262	628.36	1262.08	649.24	1262.07
659.71	1262.1	664.67	1262.06	670	1262.07	675.06	1262.09	772.7	1263.09
782.32	1263.2	782.87	1263.16	783.5	1263.16	784.11	1263.17	784.8	1263.17
785.92	1263.2	786.71	1263.18	787.58	1263.18	789.52	1263.2	790.63	1263.2
792.44	1263.22	804.46	1263.31	810.63	1263.4	823.39	1263.44	904.54	1264
912.06	1264.14	914.9	1264.2	919.43	1264.36	921.25	1264.4	922.88	1264.43
926.01	1264.44	929.37	1264.4	932.6	1264.44	935.6	1264.42	938.2	1264.39

1148.8	1262.7	1152.31	1262.74	1156.76	1262.75	1164.14	1262.75	1168.05	1262.7
1172.97	1262.73	1175.52	1262.72	1177.79	1262.7	1181.54	1262.66	1185.68	1262.6
1191.45	1262.58	1193.7	1262.58	1198.16	1262.6	1202.46	1262.6	1202.76	1262.61
1207.28	1262.59	1226.3	1262.44	1234.27	1262.4	1243.47	1262.28	1276.72	1261.93
1284.16	1261.8	1289.61	1261.78	1293.91	1261.75	1304.5	1261.7	1325.54	1261.69
1333.57	1261.67	1334.64	1261.7	1458.45	1261.35	1461.01	1261.35	1482.63	1261.5
1601.16	1261.82	1611.88	1261.83	1616.73	1261.8	1621.72	1261.86	1660.76	1262
1662.48	1262.3	1667.3	1262.95	1673.46	1263.8	1675.01	1264	1684.93	1266.21
1702.08	1270	1703.78	1270.43	1704.06	1270.48	1704.29	1270.51	1712.69	1272.09
1718.53	1272.9	1720.13	1272.91	1724.22	1273.17	1727.04	1273.13	1731.43	1272.74
1736.15	1272.1	1742.18	1270.43	1743.42	1270				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	922.88	.03	1702.08	.06

Bank Sta: Left Right Coeff Contr. Expan.
922.88 1702.08 .3 .5
Left Levee Station= 540 Elevation= 1272
Right Levee Station= 1640 Elevation= 1272

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
540	1279	1272	1640	1279	1272

Downstream Bridge Cross Section Data
Station Elevation Data num= 153

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1264	54.79	1263.82	64.69	1263.79	67.97	1263.8	71.36	1263.78
78.35	1263.76	85.72	1263.72	88.08	1263.7	91.75	1263.68	95.8	1263.65
109.01	1263.6	115.86	1263.6	121.7	1263.53	132.87	1263.45	141.61	1263.37
148.02	1263.3	153.32	1263.3	169.11	1263.26	210.97	1263	250.46	1262.99
254.76	1263	258.66	1262.98	320.84	1263.02	329.04	1263	332.7	1263.05
347.99	1263.05	354.56	1263.1	367.22	1263.04	411.13	1263	414.71	1263.03
418.87	1263.03	423.13	1263.04	436.86	1263.1	449.32	1263.11	486.14	1263.02
491.41	1263	493.15	1262.66	495.89	1262.27	501.01	1261.32	504.94	1261
510.11	1261	522.53	1260.98	523.62	1260.98	546.15	1260.9	553.64	1260.93
562.44	1260.91	589.35	1260.95	590.11	1260.97	591.55	1261	593.86	1261
598.49	1261.02	604.4	1261.03	604.7	1261	628.36	1261.08	649.24	1261.07
659.71	1261.1	664.67	1261.06	670	1261.07	675.06	1261.09	772.7	1262.09
782.32	1262.2	782.87	1262.16	783.5	1262.16	784.11	1262.17	784.8	1262.17
785.92	1262.2	786.71	1262.18	787.58	1262.18	789.52	1262.2	790.63	1262.2
792.44	1262.22	804.46	1262.31	810.63	1262.4	823.39	1262.44	904.54	1263
912.06	1263.14	914.9	1263.2	919.43	1263.36	921.25	1263.4	922.88	1263.43
926.01	1263.44	929.37	1263.4	932.6	1263.44	935.6	1263.42	938.2	1263.39
951.44	1263.2	960.02	1263	960.68	1262.99	965.02	1262.94	980.54	1262.8
982.64	1262.76	1033.14	1262.19	1042.04	1262.1	1046.81	1262.03	1053.7	1261.97
1056.91	1261.95	1062.72	1261.9	1069.07	1261.9	1077.93	1261.86	1146.34	1261.75
1148.8	1261.7	1152.31	1261.74	1156.76	1261.75	1164.14	1261.75	1168.05	1261.7
1172.97	1261.73	1175.52	1261.72	1177.79	1261.7	1181.54	1261.66	1185.68	1261.6
1191.45	1261.58	1193.7	1261.58	1198.16	1261.6	1202.46	1261.6	1202.76	1261.61
1207.28	1261.59	1226.3	1261.44	1234.27	1261.4	1243.47	1261.28	1276.72	1260.93
1284.16	1260.8	1289.61	1260.78	1293.91	1260.75	1304.5	1260.7	1325.54	1260.69
1333.57	1260.67	1334.64	1260.7	1458.45	1260.35	1461.01	1260.35	1482.63	1260.5
1601.16	1260.82	1611.88	1260.83	1616.73	1260.8	1621.72	1260.86	1660.76	1261
1662.48	1261.3	1667.3	1261.95	1673.46	1262.8	1675.01	1263	1684.93	1265.21
1702.08	1269	1703.78	1269.43	1704.06	1269.48	1704.29	1269.51	1712.69	1271.09
1718.53	1271.9	1720.13	1271.91	1724.22	1272.17	1727.04	1272.13	1731.43	1271.74
1736.15	1271.1	1742.18	1269.43	1743.42	1269				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

Pier Station Upstream= 350 Downstream= 350
Upstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Downstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Pier Data
Pier Station Upstream= 475 Downstream= 475
Upstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Downstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Pier Data
Pier Station Upstream= 600 Downstream= 600
Upstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Downstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Pier Data
Pier Station Upstream= 725 Downstream= 725
Upstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Downstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Pier Data
Pier Station Upstream= 850 Downstream= 850
Upstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Downstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Pier Data
Pier Station Upstream= 975 Downstream= 975
Upstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Downstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Pier Data
Pier Station Upstream= 1100 Downstream= 1100
Upstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Downstream num= 2

Width	Elev	Width	Elev
8	1250	8	1275

Pier Data

RIVER: Santa Clara
REACH: Reach 1 RS: 165.5

INPUT
Description:
Station Elevation Data num= 153

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1264	54.79	1263.82	64.69	1263.79	67.97	1263.8	71.36	1263.78
78.35	1263.76	85.72	1263.72	88.08	1263.7	91.75	1263.68	95.8	1263.65
109.01	1263.6	115.86	1263.6	121.7	1263.53	132.87	1263.45	141.61	1263.37
148.02	1263.3	153.32	1263.3	169.11	1263.26	210.97	1263	250.46	1262.99
254.76	1263	258.66	1262.98	320.84	1263.02	329.04	1263	332.7	1263.05
347.99	1263.05	354.56	1263.1	367.22	1263.04	411.13	1263	414.71	1263.03
418.87	1263.03	423.13	1263.04	436.86	1263.1	449.32	1263.11	486.14	1263.02
491.41	1263	493.15	1262.66	495.89	1262.27	501.01	1261.32	504.94	1261
510.11	1261	522.53	1260.98	523.62	1260.98	546.15	1260.9	553.64	1260.93
562.44	1260.91	589.35	1260.95	590.11	1260.97	591.55	1261	593.86	1261
598.49	1261.02	604.4	1261.03	604.7	1261	628.36	1261.08	649.24	1261.07
659.71	1261.1	664.67	1261.06	670	1261.07	675.06	1261.09	772.7	1262.09
782.32	1262.2	782.87	1262.16	783.5	1262.16	784.11	1262.17	784.8	1262.17
785.92	1262.2	786.71	1262.18	787.58	1262.18	789.52	1262.2	790.63	1262.2
792.44	1262.22	804.46	1262.31	810.63	1262.4	823.39	1262.44	904.54	1263
912.06	1263.14	914.9	1263.2	919.43	1263.36	921.25	1263.4	922.88	1263.43
926.01	1263.44	929.37	1263.4	932.6	1263.44	935.6	1263.42	938.2	1263.39
951.44	1263.2	960.02	1263	960.68	1262.99	965.02	1262.94	980.54	1262.8
982.64	1262.76	1033.14	1262.19	1042.04	1262.1	1046.81	1262.03	1053.7	1261.97
1056.91	1261.95	1062.72	1261.9	1069.07	1261.9	1077.93	1261.86	1146.34	1261.75
1148.8	1261.7	1152.31	1261.74	1156.76	1261.75	1164.14	1261.75	1168.05	1261.7
1172.97	1261.73	1175.52	1261.72	1177.79	1261.7	1181.54	1261.66	1185.68	1261.6
1191.45	1261.58	1193.7	1261.58	1198.16	1261.6	1202.46	1261.6	1202.76	1261.61
1207.28	1261.59	1226.3	1261.44	1234.27	1261.4	1243.47	1261.28	1276.72	1260.93
1284.16	1260.8	1289.61	1260.78	1293.91	1260.75	1304.5	1260.7	1325.54	1260.69
1333.57	1260.67	1334.64	1260.7	1458.45	1260.35	1461.01	1260.35	1482.63	1260.5
1601.16	1260.82	1611.88	1260.83	1616.73	1260.8	1621.72	1260.86	1660.76	1261
1662.48	1261.3	1667.3	1261.95	1673.46	1262.8	1675.01	1263	1684.93	1265.21
1702.08	1269	1703.78	1269.43	1704.06	1269.48	1704.29	1269.51	1712.69	1271.09
1718.53	1271.9	1720.13	1271.91	1724.22	1272.17	1727.04	1272.13	1731.43	1271.74
1736.15	1271.1	1742.18	1269.43	1743.42	1269				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	922.88	.03	1702.08	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
922.88	1702.08	49	50	232	.3	.5

Left Levee Station= 540 Elevation= 1272
Right Levee Station= 1640 Elevation= 1272

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 165

INPUT
Description:
Station Elevation Data num= 372

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
17.4	1267.97	17.51	1268	38.95	1268	52.29	1266	58.8	1265.27
68.02	1264	70.87	1263.75	72.3	1263.63	86.7	1262	87	1261.91
87.59	1261.8	94	1260.47	98.34	1260	113.03	1259.68	113.61	1259.62
114.06	1259.6	116.06	1259.49	117.95	1259.42	138.71	1258.86	142.62	1258.77
149.02	1258.7	151.67	1258.81	155.51	1258.76	156.71	1258.82	159.16	1258.82

2153.38	1269.6	2154.82	1269.59	2155.67	1269.6	2157.11	1269.53	2157.45	1269.52
2164.35	1269.88	2164.55	1269.89	2167.46	1270	2170.89	1270.06	2174.25	1270.08
2179.2	1270.07	2187.19	1270.02	2189.04	1270	2196.34	1269.88	2199.45	1269.87
2207.72	1269.91	2216.43	1269.85	2219.53	1269.8	2221.09	1269.86	2222.71	1269.89
2225.06	1270	2228	1270.31	2240.4	1272	2245.98	1273.22	2250.37	1274
2252.67	1274.8	2254.27	1275.44	2261.16	1277.6	2267.41	1280	2268.98	1280.24
2269.1	1280.26	2273.4	1280.79						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
17.4	.06	199.87	.03	2164.35	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
199.87	2164.35	146	171	76.5	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
17.4	612	1270	F
2164.35	2273.4	1275	F

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 164

INPUT
Description:
Station Elevation Data num= 350

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1266.6	.24	1266.58	5.16	1266	17.42	1264.7	24.49	1264.22
29.08	1264	34.13	1263.9	34.33	1263.89	34.89	1263.85	42.44	1263.43
43.5	1263.4	48.65	1263.28	51.12	1263.36	55.46	1263.19	58.57	1263.29
61.18	1263.4	63.92	1263.58	73.79	1262.88	75.48	1262	101.7	1260.99
110.56	1260.7	118.58	1260	196.89	1258.62	200.36	1258.57	225.13	1258
228.78	1257.79	230.84	1257.7	237.35	1257.56	240.44	1257.52	242.15	1257.51
247.53	1257.5	251.21	1257.46	263.62	1257.44	266.49	1257.45	267.6	1257.5
269.24	1257.48	270.37	1257.52	271.47	1257.6	272.05	1257.7	272.74	1257.8
274.2	1258	281.7	1259.21	287.25	1260	292.6	1261.39	294.76	1262
295.51	1262.21	300.81	1264	304.16	1265.55	305.47	1266	305.65	1266.2
306.6	1266.56	307.36	1266.71	307.99	1266.84	308.4	1267.01	308.7	1267.1
309.02	1267.19	309.31	1267.23	311.75	1267.25	311.98	1267.2	312.23	1267.2
312.29	1267.07	312.37	1266.97	312.79	1266.81	313.39	1266.59	313.48	1266.4
313.59	1266.24	314.38	1266.01	320.94	1264.2	321.87	1264	325.84	1263.04
327.32	1262.68	329.87	1262	332.61	1261.3	334.15	1261.03	338.02	1260
343.32	1258.46	344.88	1258	359.69	1257.7	364.78	1257.65	368.21	1257.59
385.31	1257.58	392.23	1257.63	406.72	1257.7	410.64	1257.77	431.92	1258
450.79	1258	453.56	1258.01	455.05	1258.01	510.75	1259.2	516.03	1259.21
521.97	1259.29	561.14	1259.6	565.23	1259.57	566.83	1259.57	570.6	1259.59
572.69	1259.59	574.9	1259.6	576.85	1259.56	578.13	1259.52	579.56	1259.48
581.56	1259.35	590.63	1259.3	591.5	1259.34	592.77	1259.36	594.2	1259.37
595.71	1259.37	599.86	1259.4	603.32	1259.36	638.42	1260	653.55	1259.84
661.82	1259.9	664.83	1259.9	674.87	1260	685.47	1260	778.7	1261.02
783.36	1261.05	794.38	1261.18	852.52	1262	956.52	1262	963.09	1261.9
983.6	1261.77	994.79	1261.67	999.35	1261.6	999.41	1261.64	1004.35	1261.59
1004.94	1261.58	1006.23	1261.6	1007.32	1261.57	1008.6	1261.57	1010.55	1261.56
1014.28	1261.55	1015.31	1261.6	1016.48	1261.55	1018.01	1261.55	1018.41	1261.6
1019.05	1261.56	1019.69	1261.57	1020.51	1261.57	1021.35	1261.6	1023.08	1261.56
1026.44	1261.56	1028.7	1261.6	1032.29	1261.57	1036.31	1261.57	1113.02	1260.6
1123.56	1260.55	1184.46	1260	1188.28	1259.92	1195.02	1259.8	1198.11	1259.75
1202.23	1259.7	1210.88	1259.61	1213.73	1259.6	1219.18	1259.56	1223.5	1259.55
1227.73	1259.53	1231.14	1259.53	1233.63	1259.5	1236.79	1259.53	1238.95	1259.53
1240.79	1259.54	1243.06	1259.56	1245.87	1259.6	1248.15	1259.62	1249.78	1259.64
1251	1259.68	1252.19	1259.74	1253.66	1259.8	1255.53	1259.87	1262.32	1260

51.96	1262	55.21	1262.91	58.51	1264	61.32	1265.35	62.7	1266
62.86	1266.07	63.46	1266.32	64.09	1266.42	64.64	1266.51	69.44	1266.5
69.88	1266.45	70.37	1266.35	70.49	1266.19	70.64	1266	70.7	1266
78.09	1264	85.81	1262.2	86.48	1262	89.17	1261.3	93.61	1260
99.21	1258.15	99.72	1258	100.2	1257.99	105.46	1257.85	180.4	1257.9
180.69	1257.92	184.31	1258	188.95	1258.01	200.01	1258	210.02	1258.06
212.7	1258.07	215.02	1258.07	218.5	1258.09	223.11	1258.1	227.52	1258.12
229.28	1258.12	229.85	1258.1	230.88	1258.13	232.33	1258.12	232.88	1258.13
233.99	1258.13	234.99	1258.1	235.36	1258.13	236.97	1258.13	237.76	1258.1
238.5	1258.13	241.72	1258.13	242.77	1258.1	243.73	1258.13	284.67	1258.14
325.72	1258.42	326.18	1258.42	327	1258.4	327.33	1258.42	328.95	1258.42
329.34	1258.4	329.59	1258.41	329.88	1258.4	330.28	1258.37	332.07	1258.37
332.25	1258.4	332.5	1258.37	332.78	1258.38	333.07	1258.38	333.89	1258.37
334.56	1258.4	350.18	1258.65	350.99	1258.69	352.18	1258.73	354.42	1258.79
356.33	1258.8	359.98	1258.91	413.75	1260	460.78	1260.4	463.4	1260.44
498.39	1260.83	507.78	1260.9	512.28	1260.99	524.05	1261.09	529.39	1261.1
536.32	1261.15	540.03	1261.15	542.01	1261.1	543.13	1261.13	544.95	1261.03
545.56	1260.95	546.28	1260.85	547.44	1260.8	549.06	1260.7	551.98	1260.65
555.02	1260.62	560	1260.59	564.08	1260.7	572.14	1260.66	574.24	1260.7
580.92	1260.7	583.12	1260.74	590.39	1260.8	597.41	1260.78	599.5	1260.81
605.17	1260.82	612.88	1260.82	614.76	1260.8	622.23	1260.83	635.38	1260.72
637	1260.72	648.83	1260.6	653.35	1260.54	655.48	1260.52	659.37	1260.45
669.73	1260.34	672.22	1260.3	673.78	1260.28	678.63	1260.26	680.04	1260.24
680.7	1260.24	682.14	1260.3	682.73	1260.25	690.09	1260.15	693.8	1260.2
704.34	1260.38	712.22	1260.5	717.14	1260.59	722.92	1260.66	728.62	1260.71
732.72	1260.73	739.5	1260.8	741.86	1260.78	747.44	1260.78	749.79	1260.8
751.98	1260.75	755.46	1260.72	757.72	1260.69	760.99	1260.62	762.83	1260.6
765.33	1260.48	768.38	1260.38	780.09	1260.03	781.42	1260	783.67	1260
786.26	1259.95	790.64	1259.92	800.1	1259.9	811.5	1259.9	822.82	1259.93
830.78	1260	870.02	1260	872.68	1259.94	878.23	1259.8	883.4	1259.77
903.24	1259.39	913.48	1259.21	918.45	1259.2	956.38	1258.56	995.71	1258.45
1022.56	1258.78	1030.8	1258.94	1034.68	1258.93	1041.09	1259.1	1044.89	1259.08
1047.94	1259.14	1051.46	1259.14	1054.4	1259.13	1058.56	1259.1	1063.23	1259.17
1066.38	1259.13	1069.46	1259.07	1071.81	1259	1074.11	1258.9	1080.31	1258.49
1081.07	1258.5	1082.25	1258.5	1088.83	1258.06	1088.94	1258.1	1089.89	1258
1093.31	1258	1098.36	1257.99	1187.98	1257.99	1194.24	1257.94	1225.92	1257.97
1226.23	1258	1238.95	1257.98	1240.82	1257.99	1276.67	1258	1307.77	1257.95
1312.23	1257.95	1317.84	1257.9	1322.74	1257.95	1341.21	1257.95	1345.35	1258
1350.52	1257.95	1359.12	1257.93	1398.09	1257.55	1540.71	1257.3	1540.81	1257.35
1541.2	1257.35	1541.56	1257.4	1541.71	1257.35	1542.19	1257.35	1542.43	1257.4
1542.72	1257.35	1543.52	1257.35	1543.93	1257.3	1544.26	1257.35	1544.81	1257.35
1544.87	1257.4	1544.89	1257.35	1545.76	1257.35	1545.82	1257.34	1545.92	1257.3
1546.04	1257.34	1546.34	1257.34	1557.3	1257.42	1643.76	1257.7	1645.28	1257.71
1647.26	1257.71	1648.54	1257.7	1649.65	1257.7	1650.65	1257.68	1651.92	1257.68
1652.84	1257.67	1653.54	1257.67	1653.96	1257.7	1656.32	1257.67	1658.37	1257.67
1659.26	1257.7	1660.54	1257.67	1661.01	1257.67	1661.89	1257.68	1662.83	1257.68
1680.12	1257.74	1713.48	1256.19	1716.49	1256.33	1717.44	1256.3	1718.72	1256.35
1720.16	1256.45	1724.17	1256.5	1727.05	1256.78	1727.11	1256.8	1737.59	1257.83
1738.72	1257.9	1739.5	1258	1745.33	1258.65	1748.4	1258.8	1752.85	1259.04
1760.84	1259.63	1778.9	1259.92	1779.62	1260	1782.02	1260	1785.99	1260.05
1792.22	1260.15	1792.92	1260.16	1798.7	1260.3	1805.45	1260.4	1831.85	1260.99
1846.31	1261.2	1851.97	1261.3	1860.74	1261.42	1864.67	1261.5	1880.42	1261.72
1882.46	1261.8	1884.03	1261.78	1899.27	1262	1901.71	1262.06	1903.22	1262.13
1916.96	1262.6	1920.63	1262.78	1932.51	1263.26	1935.61	1263.35	1942.27	1263.49
1944.6	1263.6	1949.31	1263.65	1955.87	1263.68	1960.29	1263.77	1966.33	1263.96
1982.07	1264.63	1986.21	1264.79	1989.55	1264.89	1992.67	1264.96	1996.91	1265
2000.79	1265.05	2005.64	1265.05	2007.63	1265.07	2016.57	1265.2	2018.24	1265.26
2049.19	1266	2052.82	1266.84	2054.44	1267.4	2062.67	1270	2083.4	1275.43
2087.91	1276.45	2095.46	1277.9	2104.42	1280	2108.71	1281.2	2111.45	1282
2117.05	1283.03	2120.19	1284	2126.75	1285.34	2128.98	1286	2134.06	1286.88
2136.79	1287.21	2139.86	1287.47	2141.64	1287.67	2146.8	1287.9	2151.62	1287.87
2152.36	1287.92	2155.36	1287.79	2155.86	1287.81	2156.17	1287.8	2156.51	1287.81
2156.92	1287.79	2157.7	1287.75	2158.87	1287.67	2161.54	1287.4	2168.22	1286.97

653.5	1258.44	658.14	1258.42	684.22	1258.52	687.02	1258.51	688.4	1258.5
694.6	1258.53	701.69	1258.53	714.99	1258.5	720.12	1258.41	725.04	1258.34
729.97	1258.24	736.32	1258.07	736.51	1258.1	740.01	1258	746.1	1258
748.6	1257.99	751.39	1258	771.98	1257.99	775.92	1258	778.33	1258
779.25	1258.02	784.8	1258.2	792.28	1258.39	794.48	1258.43	796.24	1258.4
798.33	1258.46	801.87	1258.47	805.44	1258.47	810.07	1258.46	813.57	1258.4
818.16	1258.43	831.18	1258.31	837.03	1258.2	847.12	1258.09	852.67	1258
1010.78	1257.86	1014.26	1257.9	1017.16	1257.85	1032.56	1257.84	1034.3	1257.8
1035.65	1257.84	1042.29	1257.84	1043.21	1257.8	1044.14	1257.84	1047.07	1257.84
1047.97	1257.8	1048.71	1257.84	1049.9	1257.84	1050.28	1257.8	1050.66	1257.84
1052.69	1257.84	1053.36	1257.8	1054.19	1257.84	1057.82	1257.84	1059.7	1257.8
1199.96	1256.68	1211.12	1256.69	1223.71	1256.66	1227.96	1256.7	1280.3	1256.98
1286.99	1256.95	1288.85	1256.93	1291.88	1256.88	1294.56	1256.9	1297.69	1256.85
1305.22	1256.85	1311.29	1256.87	1314.14	1256.9	1318.27	1256.91	1322.11	1256.94
1322.64	1256.95	1333.64	1257	1336.22	1257	1351.04	1256.92	1356.66	1256.9
1372.73	1256.76	1385.42	1256.7	1393.35	1256.71	1401.39	1256.7	1411.35	1256.65
1437.97	1256.43	1479.35	1256	1509.4	1255.51	1512.76	1255.48	1515.95	1255.5
1518.81	1255.46	1520.61	1255.47	1521.47	1255.5	1523	1255.62	1525.26	1255.6
1528.64	1255.67	1532.56	1255.68	1536.8	1255.67	1551.85	1255.6	1558.46	1255.53
1564.61	1255.48	1569.83	1255.45	1577.55	1255.43	1583.8	1255.4	1593.13	1255.44
1599.27	1255.51	1603.03	1255.6	1605.68	1255.67	1611.8	1255.9	1614.85	1256
1635.67	1256	1646.07	1255.98	1672.99	1255.97	1676.94	1256	1682.88	1255.97
1702.29	1255.96	1709.85	1256	1712.63	1255.95	1721.06	1255.95	1726.7	1256
1729.37	1255.95	1738.97	1255.95	1741.41	1256	1743.32	1255.95	1744.53	1255.95
1745.38	1255.94	1757.35	1255.94	1763.69	1255.9	1766.11	1255.95	1791.06	1256
1808.25	1257.21	1815.45	1257.53	1824.1	1257.84	1828.38	1258	1834.88	1258.2
1836.49	1258.23	1838.82	1258.33	1858.22	1259.02	1866.24	1259.39	1880.28	1260
1913.4	1260.89	1927.49	1261.39	1932.13	1261.52	1944.82	1262	1961.6	1262.5
1969.12	1262.68	1996.46	1263.43	2018.54	1263.93	2021.43	1264	2037.08	1264.4
2048.02	1264.76	2052.34	1264.87	2056.21	1264.96	2061	1265.05	2065.04	1265.1
2105.27	1266	2112.02	1266.76	2125.04	1268	2130.42	1268.4	2134.94	1268.79
2142.24	1269.38	2147.82	1270	2155.73	1270.32	2158.36	1270.4	2176.58	1271.07
2183.22	1271.26	2195.17	1271.63	2206.23	1272	2211.7	1272.37	2215.92	1272.55
2221.62	1272.84	2231.35	1273.16	2239.54	1273.5	2246.6	1273.66	2249.36	1273.76
2265.41	1273.94	2268.53	1274	2269.1	1274.02	2269.29	1274.02	2274.17	1274.27
2275.28	1274.29	2279.35	1274.5	2281.52	1274.55	2283.75	1274.56	2285.84	1274.59
2287.85	1274.65	2290.96	1274.8	2295.94	1275.01	2303.05	1275.38	2314.29	1276
2315.57	1276.36	2322.49	1278	2325.1	1278.34	2332.6	1279.56	2334.46	1279.86
2335.34	1280	2336.33	1280.9	2349.47	1290	2363.68	1296.14	2373.56	1300
2391.32	1307.03	2397.77	1309	2398.83	1309.32	2399.24	1309.43	2399.63	1309.51
2399.92	1309.55	2400.2	1309.6	2400.5	1309.56	2401.82	1310	2406.49	1310.96
2410.22	1311.42	2415.38	1311.7	2416.15	1311.96	2422.53	1311.59	2424.01	1312.11
2430.33	1311.6	2430.96	1311.8	2439.14	1311.94	2440.14	1311.99	2448.01	1312.17
2450.23	1312	2458.2	1311.7	2460.13	1311.75	2461.11	1311.66	2462.49	1311.42
2472.31	1310	2495.29	1306.9	2497.78	1306.39	2501.17	1305.74	2506.99	1304.74
2518.23	1301.19	2519.73	1300.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	75.91	.03	2142.24	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
75.91	2142.24	128	180	197	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	112	1268	F
2142.24	2519.73	1275	F

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 161

1724.99	1255.1	1728.23	1254.98	1734.15	1254.87	1777.3	1255.49	1778.04	1255.44
1784.78	1256	1784.9	1255.95	1785.35	1256	1802.4	1256.84	1813.06	1257.25
1820.32	1257.6	1834.31	1258	1849.68	1258.37	1851.85	1258.44	1859.18	1258.59
1861.89	1258.7	1871.24	1258.84	1878.51	1258.97	1898.59	1259.66	1900.6	1259.72
1909.05	1260	1910.03	1260.04	1922.05	1260.49	1922.13	1260.5	1929.65	1260.78
1934.17	1261	1937.46	1261.21	1943.95	1261.52	1945.5	1261.62	1954.79	1261.97
1955.44	1262	1972.01	1262.28	1981.36	1262.48	1998.46	1263.01	2006.08	1263.2
2009.93	1263.29	2012.97	1263.35	2017.37	1263.4	2022.64	1263.62	2024.06	1263.6
2025.28	1263.63	2028.35	1263.76	2029.8	1263.74	2033.61	1263.88	2034	1263.9
2042.28	1264	2047.22	1264.03	2047.31	1264.03	2047.65	1264.04	2047.8	1264
2047.95	1264.05	2048.11	1264.06	2048.4	1264.08	2055.6	1264.22	2056.27	1264.3
2057.99	1264.34	2063.78	1264.54	2069.2	1264.79	2077.06	1265.11	2096.97	1266
2109.25	1266.69	2141.09	1268	2141.88	1268.05	2142.07	1268.06	2142.31	1268.1
2142.71	1268.07	2164.72	1268.97	2170.06	1269.02	2175.2	1269.08	2181.01	1269.2
2190.13	1269.41	2199.48	1269.59	2211.26	1269.9	2211.78	1269.9	2215.34	1270
2232.76	1270.85	2236.72	1270.98	2245.7	1271.2	2250.09	1271.36	2252.68	1271.44
2256.03	1271.61	2263.08	1272	2276.22	1272.9	2287.44	1273.62	2292.69	1274
2296.49	1274.48	2303.79	1275	2304.17	1275.01	2318.49	1276	2325.16	1276.9
2335.72	1278	2340.7	1279.3	2342.42	1279.78	2343.52	1280	2356.67	1283.7
2372.79	1288.98	2372.93	1289	2375.97	1290	2379.75	1291.04		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	55.36	.03	2141.09	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
55.36	2141.09	79	150	223	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	75	1265	F
2142	2379.75	1275	F

CROSS SECTION

RIVER: Santa Clara
REACH: Reach 1 RS: 160

INPUT
Description:
Station Elevation Data num= 347

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1262.1	11.25	1262.04	25.68	1262	26	1261.99	35.21	1261.58
35.86	1261.5	41.77	1261.21	52.01	1260.19	55.51	1260.81	57.71	1260.71
61.68	1262	65.08	1263.15	67.7	1264	76.94	1264	77.73	1263.5
78.21	1263.39	79.49	1262.82	81.09	1262	85.47	1261.14	88.15	1260.6
90.86	1260	111.76	1258.25	114.68	1258	116.38	1257.88	119.62	1257.7
132.75	1256.73	135.93	1256.52	136.88	1256.47	137.69	1256.45	139.98	1256.4
143.22	1256	202.42	1255.62	207.09	1255.6	218.73	1255.57	219.85	1255.57
222.07	1255.56	225.65	1255.5	227.24	1255.54	230.36	1255.53	231.53	1255.53
235.25	1255.5	248.5	1255.5	249.76	1255.51	252.66	1255.51	253.72	1255.5
257.03	1255.53	258.44	1255.54	318.43	1255.05	322.29	1255.07	326.32	1255.1
330.12	1255.14	333.96	1255.2	336.65	1255.26	339.34	1255.35	343.5	1255.5
351.24	1255.96	352.19	1256	354.83	1256.12	358.18	1256.2	363.22	1256.29
366.11	1256.28	371.68	1256.15	372.17	1256.16	375.58	1256.1	382.96	1256.14
390.56	1256.11	394.78	1256.05	396.59	1256	404.31	1255.7	406.58	1255.6
419.17	1255.03	433.95	1254.3	436	1254.27	437.29	1254.39	439.58	1254.38
442.83	1254.29	450.22	1254	457.61	1254	478.19	1254.45	479.9	1254.5
486.19	1254.66	495.41	1254.93	497.6	1254.98	502.32	1255.13	505.81	1255.2
507.92	1255.25	512.28	1255.37	515.49	1255.45	521.4	1255.4	524.57	1255.34
530.24	1255.33	532.02	1255.3	535.73	1255.21	537.03	1255.2	538.75	1255.22
543.22	1255.31	556.55	1255.67	561.68	1255.8	567.17	1255.88	567.99	1255.89
572.96	1255.96	573.2	1255.97	577.53	1256	585.2	1256	605.13	1255.88

RIVER: Santa Clara
REACH: Reach 1 RS: 159

INPUT
Description:
Station Elevation Data num= 499

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
853.47	1262.22	860.14	1262.3	865.46	1262.41	868.19	1262.45	882.04	1262.6
886.28	1262.64	889.1	1262.69	889.8	1262.72	890.23	1262.7	890.61	1262.77
891.2	1262.79	891.61	1262.8	892.84	1262.82	893.94	1262.8	894.38	1262.83
895.47	1262.82	898.24	1262.81	898.92	1262.8	900.61	1262.8	902.53	1262.76
964.66	1262	966.95	1261.2	970.47	1260	977.33	1259.09	980.59	1258.8
982.5	1258.59	990.97	1258	1023.14	1257.76	1041.36	1257.57	1043.7	1257.55
1048.09	1257.52	1049.26	1257.5	1086.28	1257.07	1126.49	1257.78	1134.13	1258
1135.78	1259.29	1137.07	1260	1137.27	1260.18	1138.98	1260.56	1156.73	1260.85
1162.72	1260.62	1166.43	1260.5	1170.6	1260.45	1177.09	1260.36	1191.48	1260
1227.08	1259.81	1228.25	1259.8	1229.38	1259.8	1233.09	1259.81	1238.8	1259.84
1244.89	1259.85	1251.31	1259.9	1257.66	1259.89	1274.77	1259.93	1278.42	1259.95
1284.32	1260	1286.79	1260	1314	1260.11	1319.18	1260.1	1323.7	1260.14
1346.51	1260.19	1383.99	1260.57	1394.9	1260.6	1401.13	1260.6	1414.86	1260.56
1420.57	1260.6	1426.36	1260.55	1428.76	1260.54	1430.35	1260.53	1433.08	1260.5
1434.15	1260.5	1435.66	1260.52	1436.83	1260.52	1438.95	1260.53	1445.31	1260.52
1446.51	1260.5	1449.16	1260.46	1455.5	1260.32	1467.16	1260.04	1468.26	1260
1469.44	1259.5	1471.8	1258	1476.64	1256.06	1476.77	1256	1476.86	1255.96
1480.89	1254	1500.15	1253.55	1518.79	1252.64	1519.37	1252.64	1520.27	1252.67
1521.64	1252.7	1522.43	1252.74	1522.53	1252.74	1522.86	1252.76	1523.32	1252.78
1523.68	1252.8	1524.3	1252.8	1524.64	1252.81	1524.8	1252.81	1524.94	1252.82
1525.05	1252.8	1525.22	1252.82	1526.33	1252.82	1527.18	1252.81	1527.5	1252.8
1528.02	1252.8	1528.43	1252.78	1528.84	1252.77	1529.38	1252.7	1529.79	1252.74
1530.25	1252.73	1530.57	1252.73	1566.43	1253.14	1570.96	1253.2	1575.75	1253.2
1578.18	1253.21	1580.57	1253.26	1582.86	1253.25	1620.1	1253.7	1625.75	1253.69
1640.39	1253.64	1689.21	1252.78	1694.36	1252.73	1698.86	1252.7	1700.92	1252.66
1704.54	1252.64	1707.99	1252.6	1710.41	1252.6	1714.39	1252.55	1717.34	1252.53
1718.38	1252.52	1720.2	1252.49	1721.1	1252.5	1722.49	1252.47	1723.6	1252.46
1725.34	1252.43	1726.77	1252.42	1727.43	1252.4	1728.55	1252.38	1729.16	1252.38
1730.63	1252.36	1732.14	1252.36	1732.89	1252.4	1733.28	1252.35	1733.58	1252.36
1733.94	1252.38	1734.25	1252.4	1734.61	1252.4	1734.99	1252.44	1735.56	1252.45
1736.33	1252.46	1737.64	1252.46	1739.27	1252.5	1739.98	1252.46	1741.61	1252.49
1742.99	1252.49	1743.98	1252.5	1744.5	1252.48	1744.78	1252.47	1744.91	1252.45
1745.32	1252.45	1745.96	1252.5	1747.03	1252.48	1750.64	1252.57	1751.87	1252.59
1753.74	1252.6	1754.85	1252.64	1756.63	1252.66	1758.41	1252.7	1760.76	1252.76
1763.28	1252.9	1764.45	1252.88	1770.42	1253	1772.06	1253.05	1772.26	1253.07
1774.07	1253.1	1774.82	1253.15	1775.68	1253.14	1776.3	1253.13	1776.86	1253.08
1777.64	1253.1	1778.99	1253.1	1780	1253.14	1781.07	1253.22	1781.6	1253.24
1782.46	1253.3	1783.96	1253.28	1786.5	1253.32	1787.54	1253.33	1788.65	1253.33
1790.75	1253.3	1791.72	1253.33	1792.58	1253.32	1794.05	1253.3	1795.72	1253.27
1796.69	1253.3	1798.45	1253.26	1799.67	1253.25	1800.67	1253.23	1801.39	1253.22
1803.27	1253.1	1804.4	1253.09	1805.56	1253	1806.96	1252.9	1808.03	1252.86
1809.31	1252.8	1810.29	1252.85	1857.97	1252.46	1858.5	1252.46	1860.63	1252.48
1861.18	1252.5	1862.84	1252.5	1863.25	1252.51	1864.09	1252.51	1865.42	1252.52
1867.23	1252.52	1868.38	1252.5	1869.22	1252.52	1869.75	1252.53	1870.41	1252.53
1870.69	1252.5	1871.06	1252.53	1871.62	1252.53	1872.09	1252.5	1872.67	1252.53
1873.75	1252.52	1874.74	1252.52	1874.87	1252.5	1874.97	1252.51	1875.18	1252.5
1876.55	1252.48	1878.22	1252.5	1881.44	1252.43	1883.38	1252.41	1895.97	1252.31
1914.58	1252.2	1935.65	1252	1940.28	1251.94	1948.23	1251.86	1954.95	1251.81
1965.72	1251.7	1970.05	1251.72	1973.14	1251.72	1978.8	1251.74	1982.09	1251.76
1984.77	1251.8	1986.92	1251.84	1991.65	1252	1995.06	1252.05	2029.59	1252.6
2051.22	1252.53	2051.33	1252.49	2052.43	1252.45	2054.56	1252.42	2057.52	1252.4
2060.44	1252.4	2062.41	1252.41	2067.88	1252.43	2069.76	1252.44	2075.89	1252.5
2081.78	1252.5	2086.34	1252.51	2089.96	1252.51	2096.53	1252.46	2099.14	1252.4
2106.46	1252.29	2108.7	1252.31	2112.01	1252.27	2113.05	1252.3	2116.95	1252.27
2117.76	1252.27	2125.85	1252.26	2126.66	1252.26	2130.47	1252.3	2141.82	1252.35

INPUT
Description:
Station Elevation Data num= 470

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1260.2	4.2	1260	7.56	1259.83	17.76	1260	33.31	1260.31
38.29	1260.3	43.02	1260.31	47.67	1260.27	54.92	1260.15	59.74	1260.01
60.63	1260	61.34	1259.99	68.7	1259.99	68.94	1260	75.54	1260
79.16	1259.86	83.2	1259.77	88.48	1259.6	92.58	1259.46	102.12	1259.22
103.98	1259.21	108.37	1259.26	110.32	1259.4	112.07	1259.48	115.72	1259.89
117.55	1260	123.65	1260.3	129.26	1260.44	131.93	1260.45	134.08	1260.38
139.32	1260	149.02	1260	153.38	1260.46	155.82	1260.63	158.68	1260.8
159.89	1260.85	160.15	1260.89	168.63	1261.33	169.97	1261.35	171.34	1261.4
173.35	1261.35	174.69	1261.35	178.63	1261.32	179.93	1261.32	181.19	1261.3
236.56	1260.85	240.47	1260.87	245.84	1260.87	247.64	1260.9	252.51	1260.84
254.12	1260.79	254.72	1260.79	263.09	1260.8	264.82	1260.73	267.74	1260.69
289.39	1260.35	304.29	1260.19	308.1	1260.16	308.55	1260.16	309.37	1260.1
335.47	1260	355.99	1259.7	356.27	1259.68	358.9	1259.6	364.07	1258.9
365.6	1258.81	366.77	1258.82	367.71	1258.59	368.51	1258.55	370.53	1258.4
371.8	1258.36	380.27	1258.13	380.6	1258.13	389.27	1258.08	389.87	1258.1
391.84	1258	393.63	1257.98	404.31	1257.95	413.21	1257.97	419.44	1258
423.4	1258.06	423.53	1258.06	432.97	1258.21	435.61	1258.5	441.28	1258.41
448.03	1260	520.17	1260	530.56	1260.2	531.33	1260.21	534.1	1260.24
561.26	1260.68	563.81	1260.7	568.8	1260.7	587.28	1260.98	592.27	1261.02
595.62	1261.06	599.05	1261.12	611.18	1261.4	618.45	1261.53	633.54	1262
736.14	1262	762.91	1261.24	771.71	1260.95	775.27	1260.84	795.18	1260.17
796.13	1260.1	800.11	1260	803.49	1258.43	808.44	1256	898.37	1254.75
906.4	1254.6	915.38	1254.53	919.99	1254.47	920.19	1254.5	937.47	1254.53
938.13	1254.5	939.19	1254.5	940.81	1254.45	942.23	1254.42	942.72	1254.42
943.27	1254.5	943.86	1254.48	944.78	1254.49	945.81	1254.51	947.01	1254.49
948.01	1254.5	948.76	1254.48	949.67	1254.46	950.05	1254.46	951.49	1254.52
991.54	1255.9	992.4	1256	993.59	1255.91	993.67	1255.92	993.86	1255.94
995.88	1256	1031.02	1256.46	1036.88	1256.05	1037.55	1256	1039.01	1255.57
1044.21	1254	1048.42	1254	1049.36	1254.23	1052.58	1255.01	1057.08	1256
1059.98	1256.01	1075.16	1256.03	1082.32	1256.05	1084.56	1256.05	1119.8	1256.7
1125.27	1256.75	1172.57	1256.03	1189.55	1256	1192.3	1255.07	1194.52	1254
1202.54	1252.9	1207.76	1252.47	1213.87	1252	1220.57	1251.24	1222.91	1251
1224.7	1250.96	1229.7	1250.48	1230.24	1250.57	1241.22	1251.02	1250.68	1250.6
1256.21	1250.31	1261.54	1250	1275.91	1250	1278	1250.14	1278.42	1250.14
1278.6	1250.13	1279.86	1250.23	1322.89	1251.4	1326.09	1251.35	1333.39	1251.27
1335.63	1251.22	1340.04	1251.1	1343.01	1251.07	1345.09	1251.04	1350.32	1251
1354.49	1251	1355.31	1250.95	1356.59	1250.96	1357.45	1250.97	1358.7	1250.97
1371.83	1251.1	1372.35	1251.12	1375.19	1251.2	1381.76	1251.31	1383.73	1251.3
1384.38	1251.33	1385.55	1251.34	1394.39	1251.37	1432.68	1251.24	1434.13	1251.2
1435.82	1251.23	1441.15	1251.17	1443.86	1251.13	1444.93	1251.1	1446.62	1251.11
1449.2	1251.09	1510.43	1250.15	1511.21	1250.15	1512.06	1250.1	1512.4	1250.13
1515.29	1250.1	1518.25	1250.13	1521.23	1250.1	1525.71	1250	1545.67	1250
1548.15	1250.07	1552.51	1250.27	1554.78	1250.3	1559.15	1250.42	1602.98	1250.51
1603.24	1250.48	1603.98	1250.47	1605.4	1250.5	1611.1	1250.54	1613.16	1250.55
1615.01	1250.55	1616.47	1250.53	1618.11	1250.5	1621.67	1250.34	1623.14	1250.3
1625.16	1250.29	1627.51	1250.3	1637.01	1250.4	1639.38	1250.38	1641.71	1250.38
1645.72	1250.34	1647.46	1250.3	1652.62	1250.13	1654.78	1250.09	1656.82	1250.09
1657.78	1250.1	1658.44	1250.26	1659.75	1250.35	1661.97	1250.66	1662.58	1250.7
1663.59	1250.71	1666.37	1250.71	1670.57	1250.65	1677.63	1250.6	1683.77	1250.53
1687.4	1250.51	1689.06	1250.49	1690.21	1250.46	1692.41	1250.3	1694.68	1250.17
1696.79	1250.11	1699.46	1250.06	1702.15	1250.03	1716.23	1250.12	1719.09	1250.08
1721.58	1250.07	1722.89	1250.1	1739.45	1250	1760.9	1250	1763.85	1249.92
1776.5	1250	1779.89	1250	1782.22	1250.02	1810.43	1250.2	1814.08	1250.2
1817.46	1250.23	1820.45	1250.23	1823.01	1250.24	1826.17	1250.23	1830.66	1250.2
1841.46	1250.2	1853.67	1250.23	1855.97	1250.2	1860.4	1250.23	1870.04	1250.23
1874.23	1250.22	1882.12	1250.22	1884.91	1250.2	1888.29	1250.24	1892.49	1250.26
1900.36	1250.32	1902.99	1250.35	1904.97	1250.4	1906.75	1250.41	1910.85	1250.45
1912.47	1250.45	1914.33	1250.5	1917.32	1250.46	1920.3	1250.45	1923.07	1250.45
1925.59	1250.44	1927.18	1250.4	1929.6	1250.42	1937.78	1250.37	1955.35	1250.2

257.47	1254	270.86	1254	289.37	1254.23	301.07	1254.4	308.62	1254.47
316.63	1254.56	318.88	1254.58	322.22	1254.63	325.1	1254.7	327.45	1254.68
328.62	1254.7	330.1	1254.72	330.78	1254.72	331.4	1254.7	332.47	1254.74
349.32	1254.66	349.55	1254.65	350.51	1254.63	351.61	1254.6	355.56	1254.54
357.14	1254.52	359.18	1254.5	361.59	1254.47	375.34	1254.35	430.19	1253.66
437.96	1253.6	469.52	1253.11	488.23	1253.77	538.96	1253.77	542.58	1253.75
544.68	1253.7	547.26	1253.76	553.06	1253.82	557.73	1253.85	557.89	1253.85
558.17	1253.9	558.57	1253.87	560.9	1253.89	560.97	1253.9	561.26	1253.9
566.38	1253.88	566.49	1253.88	566.57	1253.87	566.64	1253.9	566.73	1253.87
571.5	1253.77	571.68	1253.76	576.44	1253.75	576.67	1253.7	577.02	1253.73
577.78	1253.72	578.31	1253.7	582.57	1253.65	597.82	1253.3	606.4	1253.08
622.56	1252.72	624.09	1252.71	626.01	1252.67	638.23	1252.38	638.64	1252.36
639.58	1252.35	641.41	1252.31	642.94	1252.3	645.14	1252.26	645.99	1252.28
662.24	1252.26	672.37	1252	673.84	1252	675.56	1251.93	676.69	1251.92
677.9	1251.92	678.92	1251.98	679.4	1252	705.81	1252.53	717.26	1252.7
746.24	1253.2	771.63	1253.7	772.48	1253.71	774.45	1253.71	776.38	1253.7
824.53	1252.7	826.21	1252.72	833.65	1252.63	834.02	1252.64	852.22	1252.53
874.21	1252	890.1	1252	898.64	1253.4	902.54	1254	927.57	1254.28
930.68	1254.32	932.95	1254.3	935.42	1254.37	937.09	1254.39	940.13	1254.42
941.84	1254.4	942.58	1254.44	943.35	1254.44	944.22	1254.45	945.02	1254.4
945.34	1254.45	946.19	1254.45	946.52	1254.5	946.87	1254.45	949.15	1254.45
949.64	1254.5	950.06	1254.45	950.54	1254.45	950.72	1254.4	950.82	1254.45
952.47	1254.43	953.02	1254.43	953.69	1254.42	954.5	1254.4	955.41	1254.41
956.19	1254.41	957.17	1254.4	959.75	1254.38	963.62	1254.3	965.51	1254.33
1008.28	1254	1009.1	1253.86	1019.65	1252	1056.69	1250	1060.14	1249.5
1069.09	1248	1071.54	1247.71	1082.67	1247.75	1082.84	1248	1084.79	1248.1
1087.52	1248.28	1089.66	1248.36	1092.3	1248.41	1093.72	1248.42	1096.39	1248.4
1098.53	1248.41	1101.16	1248.33	1102.75	1248.24	1105.73	1248	1106.98	1247.8
1116.03	1246.61	1117.08	1246.44	1117.67	1246.34	1118	1246.31	1118.42	1246.3
1119.59	1246.2	1120.08	1246.18	1120.42	1246.18	1120.55	1246.2	1120.64	1246.18
1120.87	1246.19	1120.93	1246.2	1121.04	1246.3	1121.29	1246.31	1122.79	1246.52
1123.99	1246.55	1132.04	1248	1135.48	1249.03	1136.22	1249.08	1137.17	1249.12
1138.27	1249.14	1140.47	1249.2	1142.29	1249.12	1144.67	1249.06	1147.16	1249.28
1151.92	1249.12	1154.52	1249.3	1156	1249.32	1157.43	1249.36	1160.51	1249.44
1161.91	1249.48	1231.46	1249.1	1252.76	1249.33	1291.86	1248.95	1295.01	1248.89
1296.41	1248.86	1335.79	1248.8	1337.16	1248.78	1338.26	1248.78	1339.31	1248.8
1340.42	1248.85	1341.61	1248.9	1342.63	1249.02	1343.35	1249.04	1344.36	1249.05
1345.42	1249.04	1346.31	1249	1347.28	1249	1350.69	1248.89	1351.61	1248.84
1352.5	1248.73	1353.54	1248.7	1358.79	1248.45	1365.9	1248.18	1366.38	1248.18
1371.57	1248	1386.26	1248	1389.73	1248.02	1392.91	1248.03	1394.91	1248
1478.23	1248.12	1478.69	1248.09	1479.9	1248.07	1481.87	1248.06	1484.23	1248.1
1489.27	1248.12	1493.44	1248.12	1494.57	1248.09	1494.67	1248	1501.69	1248
1503.84	1248.08	1505.75	1248.11	1506.99	1248.1	1511.65	1248.12	1513.35	1248.15
1514.92	1248.22	1516.07	1248.24	1517.89	1248.2	1519.78	1248.24	1521.24	1248.23
1521.57	1248.21	1525.7	1248.13	1527.69	1248.1	1529.16	1248.11	1529.3	1248.16
1566.96	1248.17	1568.79	1248.14	1580.49	1248	1592.2	1248	1606.29	1248.13
1615.51	1248.08	1616.3	1248.1	1618.25	1248.04	1620.49	1248.05	1623.47	1248.07
1625.87	1248.12	1627.2	1248.2	1653.02	1248.19	1653.9	1248.18	1666.8	1248
1668.02	1248	1692.29	1247.59	1697.36	1247.52	1708.46	1247.41	1712.72	1247.4
1718.03	1247.36	1721.61	1247.35	1750.9	1247.4	1759.1	1247.4	1767.9	1247.5
1773.95	1247.52	1774.55	1247.52	1780.51	1247.53	1781.08	1247.5	1781.32	1247.54
1782.62	1247.58	1783.06	1247.59	1783.71	1247.59	1784.82	1247.6	1785.93	1247.59
1787.94	1247.56	1789.16	1247.5	1790.57	1247.49	1792.19	1247.46	1793.35	1247.45
1798.69	1247.44	1815.17	1247.37	1816.11	1247.37	1824.97	1247.35	1828.63	1247.32
1833.48	1247.2	1835.5	1247.24	1837.98	1247.25	1842.26	1247.29	1845.54	1247.34
1859.44	1247.62	1872.67	1247.94	1875.3	1248	1885.95	1248.2	1903.83	1248.49
1909.84	1248.62	1913.91	1248.69	1917.05	1248.7	1923.32	1248.81	1933.38	1248.9
1940.09	1248.93	1944.36	1248.9	1948.56	1248.95	1955.93	1248.97	1958.51	1248.97
1961.28	1249	1964.22	1248.95	1967.95	1248.93	1973.98	1248.86	1976.61	1248.8
1981.32	1248.74	2000.42	1248.34	2019.04	1248	2054.8	1247.81	2054.95	1247.81
2065.62	1247.75	2067.86	1247.7	2070.07	1247.74	2072.97	1247.73	2075.22	1247.73
2077.45	1247.72	2080.36	1247.7	2083.24	1247.73	2093.65	1247.74	2096.65	1247.75
2099.6	1247.8	2113.68	1247.79	2120.86	1247.82	2123.69	1247.84	2129.63	1247.9

506.11	1249.68	507.15	1249.61	507.97	1249.53	513.91	1248.9	522.96	1248
539.17	1247.05	555.16	1246	609.84	1244.7	626.52	1244.27	630.72	1244.17
632.15	1244.13	632.77	1244.12	633	1244.1	636.35	1244.14	636.53	1244.21
639.54	1244.83	639.92	1244.7	645.3	1246	658.88	1246.69	660.31	1246.68
661.49	1246.7	744.94	1246.83	747.44	1246.81	750.03	1246.78	752.66	1246.74
758.63	1246.6	761.71	1246.6	762.6	1246.58	763.46	1246.58	765.35	1246.56
766.02	1246.6	766.62	1246.55	768.13	1246.52	768.6	1246.52	769.09	1246.51
769.79	1246.5	770.19	1246.51	770.47	1246.52	770.63	1246.52	770.85	1246.54
771.08	1246.5	771.27	1246.55	772.51	1246.55	772.88	1246.5	773.15	1246.53
773.93	1246.5	774.8	1246.5	775.11	1246.51	775.74	1246.52	776.07	1246.53
777.06	1246.6	778.35	1246.59	779.48	1246.61	815.04	1246.18	875.97	1246
878.22	1246	883.2	1245.74	885.25	1245.67	888.57	1245.6	892.18	1245.49
893.98	1245.46	895.8	1245.45	897.31	1245.45	897.77	1245.5	899.43	1245.54
902.36	1245.59	904.26	1245.71	904.87	1245.88	905.29	1246	909.1	1246.08
913.32	1246.15	916.23	1246.19	919.19	1246.21	922.26	1246.2	926.75	1246.23
940.69	1246.19	947.01	1246.1	949.74	1246.01	950.77	1246	955.3	1245.95
965.16	1245.86	974.16	1245.8	978.42	1245.7	979.87	1245.64	981.15	1245.61
984.83	1245.6	989.52	1245.51	991.11	1245.5	992.77	1245.5	994.32	1245.51
998.14	1245.6	1000.04	1245.6	1001.79	1245.59	1004.45	1245.55	1006.26	1245.55
1007.97	1245.6	1015.67	1245.76	1024.52	1246	1026.18	1246.01	1028.97	1246
1031.34	1246.06	1037.49	1246.09	1040.6	1246.1	1042.19	1246.1	1044.3	1246.12
1046.18	1246.13	1047.55	1246.14	1048.41	1246.14	1050.47	1246.1	1052.55	1246.14
1054.49	1246.14	1057.07	1246.13	1058.15	1246.13	1059.48	1246.1	1060.96	1246.11
1062.98	1246.11	1065.24	1246.1	1074.39	1246.1	1077.59	1246.08	1085.37	1246.08
1087.16	1246.1	1093.7	1246.01	1094.96	1246	1102.86	1245.72	1105.03	1245.7
1106.9	1245.66	1107.93	1245.68	1108.48	1245.71	1108.69	1245.83	1108.91	1246
1109.57	1246	1110.68	1246.01	1114.07	1246.03	1116.81	1246.02	1117.89	1246
1119.01	1245.99	1123.51	1245.9	1126.48	1245.86	1129.08	1245.85	1130.5	1245.9
1132.12	1246	1135.23	1246.06	1138.14	1246.1	1143.34	1246.1	1144.11	1246.07
1145.27	1246	1152.21	1245.82	1154.35	1245.8	1163.28	1245.75	1166.53	1245.7
1170.01	1245.7	1178.76	1245.74	1185.29	1245.7	1188.21	1245.76	1202.65	1246
1205.35	1246.1	1207.86	1246.13	1210.58	1246.14	1210.98	1246.14	1220.25	1246.12
1222.62	1246.1	1226	1246.04	1227.62	1246	1232.44	1245.59	1234.63	1245.55
1237.96	1245.3	1242.88	1244.79	1244.37	1244.61	1244.99	1244.53	1245.46	1244.46
1246.31	1244.4	1247.1	1244.3	1247.32	1244.29	1248.3	1244.29	1248.62	1244.3
1248.75	1244.3	1248.91	1244.31	1249.1	1244.35	1249.35	1244.42	1249.38	1244.5
1249.65	1244.55	1250.19	1244.56	1250.83	1244.56	1251.73	1244.58	1252.34	1244.5
1252.9	1244.46	1253.31	1244.39	1254	1244.31	1254.31	1244.28	1254.54	1244.3
1254.94	1244.27	1255.16	1244.26	1255.48	1244.26	1255.81	1244.27	1255.96	1244.3
1256.98	1244.29	1257.38	1244.3	1257.91	1244.3	1258.76	1244.31	1259.54	1244.3
1259.94	1244.3	1260.21	1244.29	1260.35	1244.29	1260.45	1244.27	1260.54	1244.3
1260.8	1244.24	1261.41	1244.24	1262.17	1244.25	1263.05	1244.2	1263.87	1244.25
1264.25	1244.25	1264.63	1244.26	1264.99	1244.26	1265.51	1244.3	1266.67	1244.31
1267.95	1244.35	1269.57	1244.39	1270.33	1244.41	1271.17	1244.4	1272.16	1244.42
1272.61	1244.41	1273.11	1244.39	1273.57	1244.37	1274.09	1244.4	1275.22	1244.36
1277.06	1244.36	1277.53	1244.4	1281.39	1244.43	1295.34	1244.7	1375.09	1246
1388.02	1246.3	1395.12	1246.42	1399	1246.47	1403.18	1246.51	1407.8	1246.54
1412.72	1246.6	1417.33	1246.55	1420	1246.54	1423.53	1246.51	1431.16	1246.4
1438.76	1246.19	1454.1	1246.02	1455.44	1246	1459.07	1245.93	1459.24	1245.93
1469.96	1245.69	1476.13	1245.57	1480.68	1245.5	1484.94	1245.47	1499.06	1245.41
1499.86	1245.41	1509.3	1245.3	1512.14	1245.31	1519.61	1245.3	1521.85	1245.28
1527.35	1245.22	1529.79	1245.2	1533.51	1245.21	1537.17	1245.23	1539.67	1245.26
1543.45	1245.32	1549.38	1245.4	1553.18	1245.5	1557.32	1245.55	1558.02	1245.57
1558.34	1245.58	1559.57	1245.6	1561.17	1245.68	1561.93	1245.72	1562.25	1245.73
1562.78	1245.74	1563	1245.7	1563.18	1245.76	1568.59	1245.77	1568.69	1245.7
1568.8	1245.67	1569.08	1245.66	1569.81	1245.66	1570.55	1245.7	1571.07	1245.68
1571.59	1245.68	1572.01	1245.67	1572.16	1245.66	1572.68	1245.6	1573.31	1245.61
1574.71	1245.57	1578.81	1245.61	1579.39	1245.6	1588.23	1245.6	1597.64	1245.7
1601.62	1245.78	1605.3	1245.88	1608.68	1246	1612.12	1246.1	1613.86	1246.14
1615.07	1246.25	1616.1	1246.35	1618.17	1246.44	1664.93	1246.4	1666.46	1246.34
1667.86	1246.33	1670.44	1246.32	1686.25	1246.31	1687.12	1246.3	1697.24	1246.3
1706.4	1246.39	1714.95	1246.44	1717.48	1246.4	1719.43	1246.43	1723.28	1246.34
1725.36	1246.31	1729.47	1246.28	1732.49	1246.3	1734.26	1246.27	1757.51	1246.26

905.41	1242.49	906.02	1242.55	906.79	1242.6	907.93	1242.72	909.51	1242.8
910.78	1242.79	913.59	1242.9	915.7	1242.9	917.33	1242.91	966.39	1242.93
985.27	1242.1	985.85	1242.1	988.27	1242	989.01	1241.99	991.14	1241.99
991.79	1242	993.17	1242.13	994.5	1242.18	996.28	1242.19	1000.16	1242.07
1001.75	1242	1007.32	1241.9	1021.41	1242	1028.85	1242	1033.1	1241.89
1035.4	1241.86	1038.08	1241.85	1043.9	1241.9	1046.38	1242	1047	1242.03
1053.2	1242.33	1056.9	1242.5	1057.62	1242.51	1065.58	1242.77	1067.55	1242.81
1069.43	1242.83	1071.98	1242.8	1076.11	1242.79	1077.78	1242.79	1080.5	1242.81
1084.86	1242.89	1085.86	1242.9	1087.6	1243.06	1087.93	1243.08	1091.1	1243.21
1092.22	1243.23	1092.65	1243.2	1095.78	1243.27	1096.68	1243.28	1097.86	1243.27
1099.05	1243.25	1100.56	1243.2	1102	1243.18	1102.72	1243.15	1104.56	1243.04
1108.42	1242.87	1111.83	1242.8	1114.44	1242.68	1116.72	1242.65	1117.91	1242.63
1120.5	1242.56	1125.55	1242.4	1127.63	1242.4	1130.02	1242.36	1130.58	1242.34
1131.22	1242.33	1131.94	1242.3	1132.72	1242.27	1133.35	1242.24	1133.65	1242.24
1133.86	1242.23	1134.06	1242.2	1134.22	1242.24	1134.3	1242.24	1134.4	1242.28
1134.58	1242.3	1134.79	1242.29	1135.1	1242.3	1135.46	1242.3	1135.92	1242.29
1136.24	1242.3	1136.6	1242.26	1136.77	1242.24	1138.06	1242.26	1138.14	1242.26
1138.36	1242.3	1138.66	1242.27	1139.42	1242.27	1139.89	1242.25	1140.08	1242.3
1140.25	1242.26	1140.59	1242.27	1141.12	1242.29	1141.72	1242.31	1142.28	1242.3
1142.9	1242.35	1143.62	1242.37	1144.21	1242.38	1145.61	1242.38	1146.23	1242.4
1147.11	1242.39	1148.48	1242.41	1152.52	1242.52	1154.48	1242.56	1156.84	1242.6
1161.92	1242.62	1170.2	1242.58	1172.44	1242.6	1176.57	1242.62	1180.3	1242.63
1182.33	1242.62	1184.45	1242.64	1186.75	1242.7	1189.76	1242.7	1193.09	1242.69
1194.91	1242.7	1196.98	1242.8	1199.23	1242.79	1204.79	1242.83	1209.21	1242.84
1211.52	1242.8	1215.39	1242.82	1229.94	1242.75	1235.1	1242.7	1241.2	1242.74
1243.7	1242.72	1249.49	1242.69	1252.93	1242.7	1255.03	1242.67	1268.68	1242.43
1285.03	1242.1	1290.23	1242.06	1293.35	1242	1301.11	1241.76	1303.27	1241.7
1305.51	1241.72	1306.99	1241.74	1309.54	1241.82	1314.36	1241.89	1315.22	1241.9
1315.34	1242	1344.23	1242.46	1360.44	1242.69	1373.01	1242.9	1376.06	1242.92
1382.9	1242.99	1387.72	1243.05	1389.63	1243.08	1394.53	1243.2	1396.2	1243.19
1398.83	1243.21	1401.39	1243.21	1401.76	1243.2	1405.48	1243.07	1406.67	1243.05
1408.51	1243.05	1410.41	1243.1	1413.47	1243.09	1414.82	1243.1	1416.87	1243.1
1418.29	1243.2	1419.13	1243.16	1419.96	1243.15	1420.84	1243.13	1425.14	1243.01
1427.49	1242.9	1430.21	1242.86	1430.86	1242.87	1433.06	1242.83	1434.76	1242.83
1486.44	1242.7	1487.07	1242.73	1490.41	1242.78	1491.4	1242.79	1491.94	1242.8
1494.49	1242.8	1494.76	1242.81	1494.93	1242.81	1495.13	1242.8	1495.56	1242.81
1496.43	1242.81	1496.55	1242.8	1496.65	1242.81	1496.74	1242.82	1497.47	1242.82
1498.03	1242.8	1498.76	1242.81	1499.91	1242.81	1500.82	1242.8	1501.21	1242.8
1502.11	1242.79	1503.48	1242.78	1505.36	1242.77	1564.12	1243.6	1565.6	1243.66
1566.29	1243.63	1570.54	1243.49	1574.63	1243.3	1576.75	1243.29	1579.64	1243.18
1581.03	1243.14	1585	1243.01	1593.26	1242.7	1597.62	1242.6	1599.16	1242.59
1601.76	1242.5	1602.65	1242.48	1603.91	1242.5	1604.54	1242.47	1605.11	1242.42
1605.26	1242.36	1605.64	1242.28	1605.83	1242.3	1606.19	1242.25	1606.59	1242.22
1606.9	1242.2	1607.04	1242.19	1607.25	1242.2	1607.51	1242.19	1607.64	1242.19
1608.07	1242.2	1608.71	1242.2	1608.92	1242.19	1608.98	1242.19	1609.12	1242.18
1609.3	1242.17	1609.66	1242.2	1609.87	1242.16	1610.13	1242.17	1610.64	1242.17
1611.15	1242.2	1611.23	1242.18	1611.31	1242.18	1611.43	1242.21	1611.59	1242.23
1612.02	1242.3	1612.58	1242.3	1613.29	1242.34	1613.63	1242.36	1614.39	1242.43
1619.87	1243	1628.21	1244	1635.72	1244.79	1646	1246	1648.33	1246
1654.09	1246.1	1659.35	1246.14	1662.23	1246.15	1666.08	1246.2	1669.98	1246.17
1676.63	1246.17	1679.6	1246.16	1682	1246.2	1682.28	1246.15	1690.59	1246.09
1693.8	1246.06	1698.18	1246	1708.4	1245.9	1739.14	1245.65	1749.19	1245.55
1751.84	1245.5	1751.94	1245.53	1762.09	1245.49	1765.18	1245.5	1767.11	1245.46
1770.45	1245.44	1771.91	1245.42	1772.79	1245.41	1773.28	1245.4	1773.5	1245.4
1773.71	1245.37	1776.21	1245.36	1777.2	1245.36	1777.93	1245.4	1778.55	1245.36
1779.74	1245.35	1780.28	1245.35	1781.27	1245.34	1781.98	1245.3	1782.63	1245.34
1783.22	1245.34	1783.71	1245.35	1784.02	1245.35	1784.55	1245.4	1785.15	1245.38
1786.92	1245.41	1789.46	1245.44	1792.06	1245.5	1795.01	1245.47	1800.39	1245.52
1805.29	1245.59	1809.65	1245.6	1812.29	1245.68	1817.33	1245.72	1823.05	1245.73
1826.48	1245.7	1830.4	1245.78	1832.63	1245.79	1855.72	1246	1900.64	1246.91
1903.16	1247	1906.86	1247.05	1961.75	1247.94	1965.1	1247.94	1967.81	1247.9
1970.67	1247.94	1974.72	1247.95	2005.92	1248	2055.7	1248	2089.72	1248.26
2100.07	1248.3	2111.08	1248.4	2122.43	1248.47	2131.89	1248.51	2139.74	1248.5

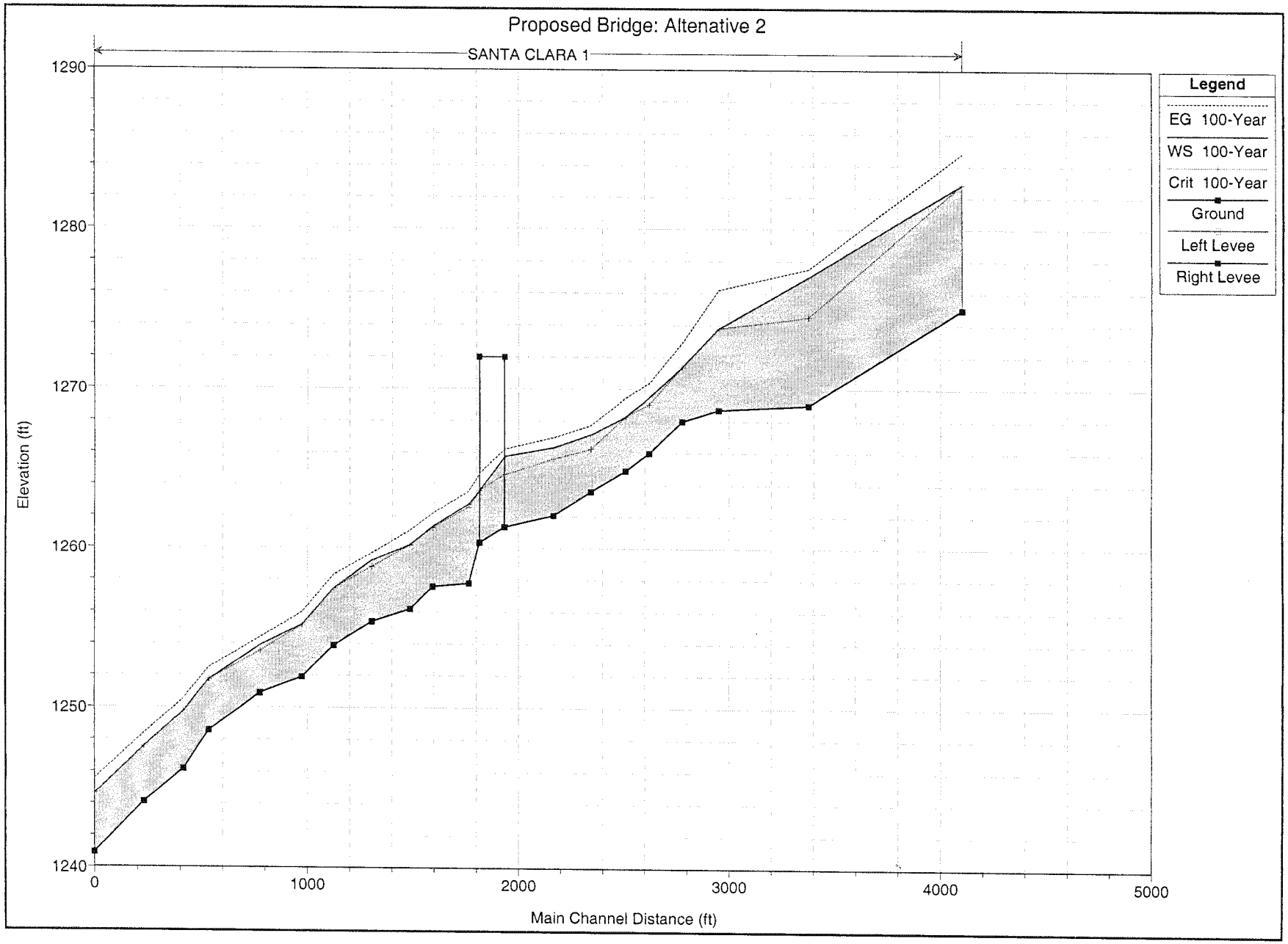
Reach 1	166	120	120	120
Reach 1	165.9	Bridge		
Reach 1	165.5	49	50	232
Reach 1	165	146	171	76.5
Reach 1	164	75	107	69
Reach 1	163	76	182	285
Reach 1	162	128	180	197
Reach 1	161	79	150	223
Reach 1	160	250	198	139
Reach 1	159	312	240	210
Reach 1	158	246	120	52
Reach 1	157	298	184	118
Reach 1	156	121	232	363
Reach 1	155	745	220	330

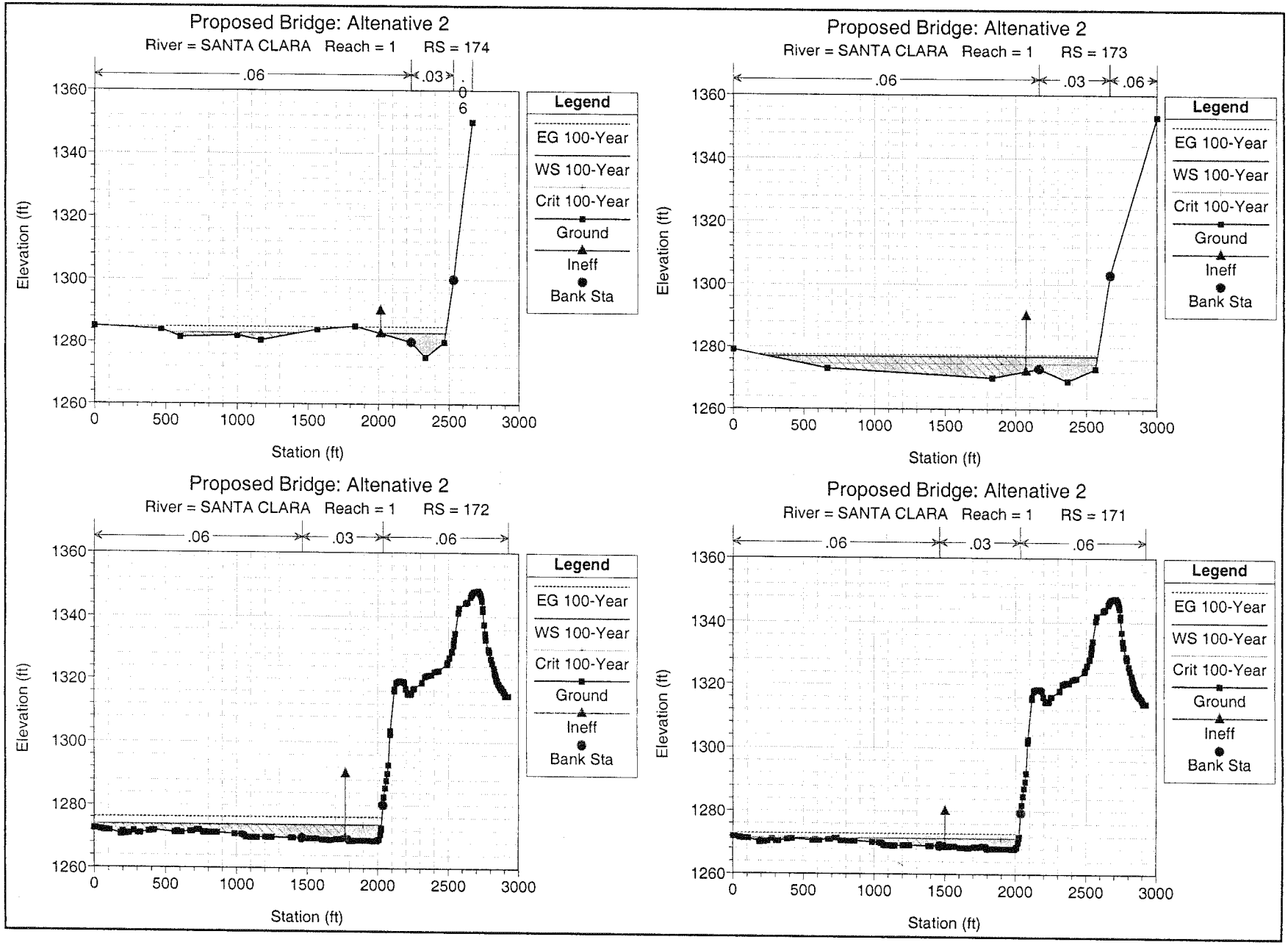
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Santa Clara

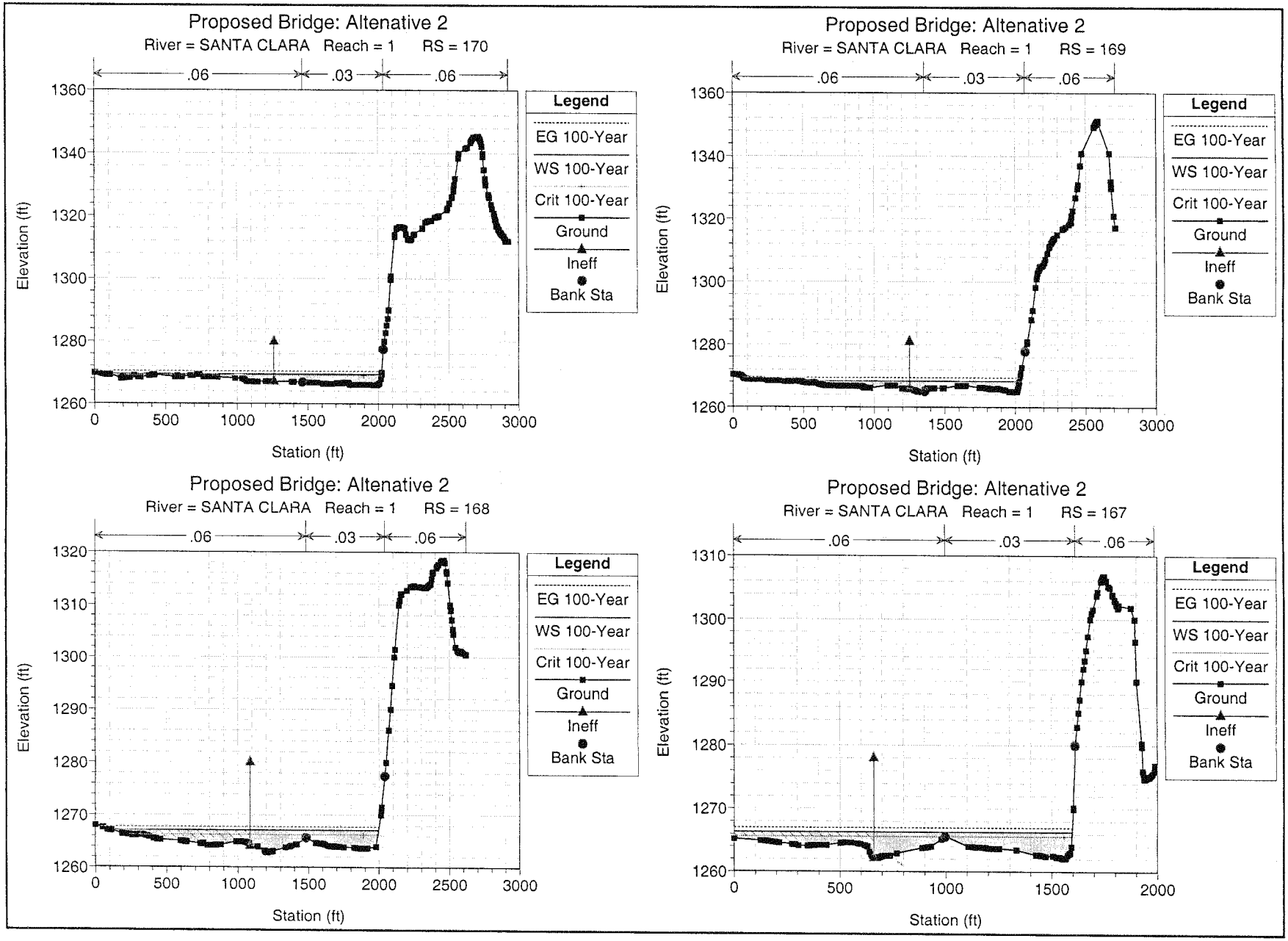
Reach	River Sta.	Contr.	Expan.
Reach 1	174	.1	.3
Reach 1	173	.1	.3
Reach 1	172	.1	.3
Reach 1	171	.1	.3
Reach 1	170	.1	.3
Reach 1	169	.1	.3
Reach 1	168	.1	.3
Reach 1	167	.1	.3
Reach 1	166	.3	.5
Reach 1	165.9	Bridge	
Reach 1	165.5	.3	.5
Reach 1	165	.1	.3
Reach 1	164	.1	.3
Reach 1	163	.1	.3
Reach 1	162	.1	.3
Reach 1	161	.1	.3
Reach 1	160	.1	.3
Reach 1	159	.1	.3
Reach 1	158	.1	.3
Reach 1	157	.1	.3
Reach 1	156	.1	.3
Reach 1	155	.1	.3

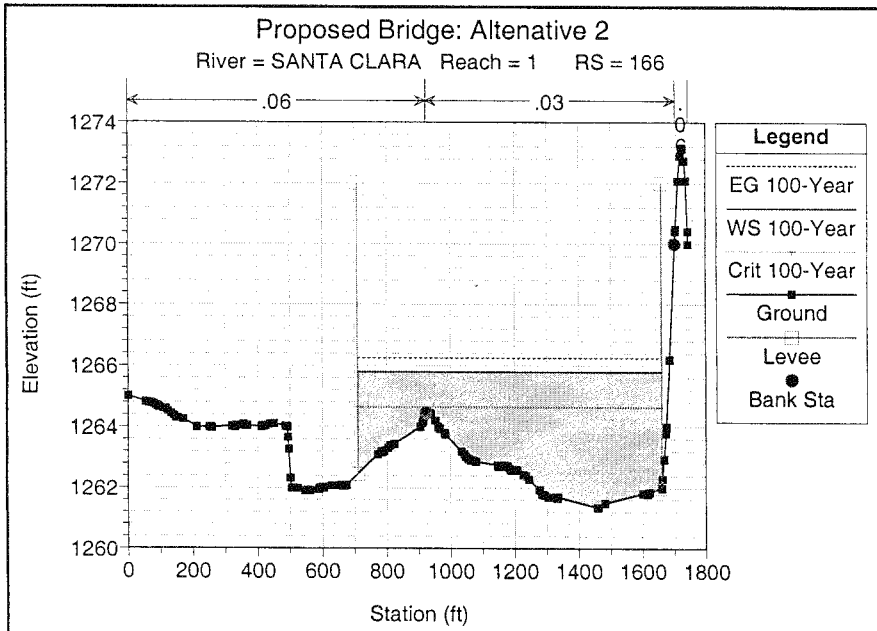
HEC-RAS Plan: Alt 2 River: SANTA CLARA Reach: 1 Profile: 100-Year

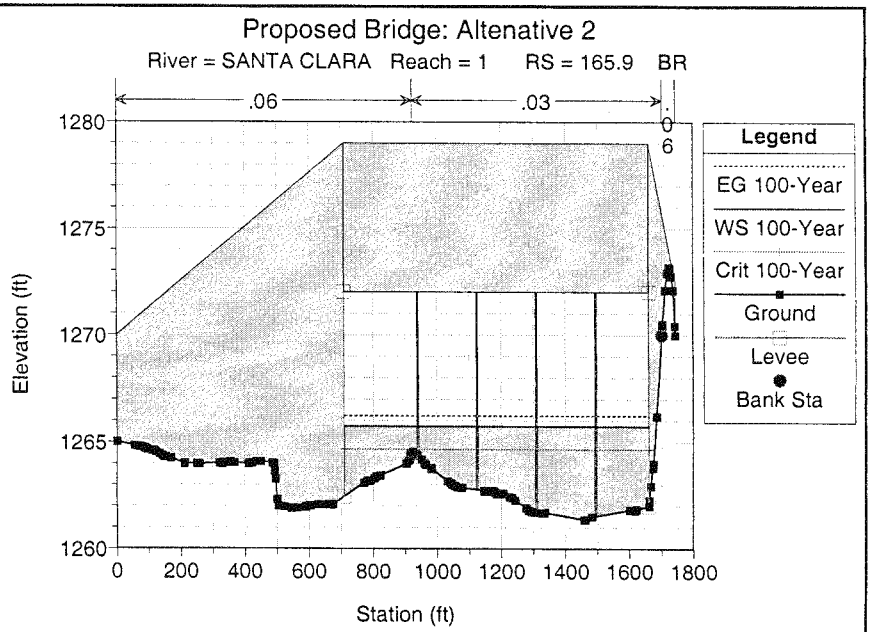
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	174	100-Year	15272.00	1275.00	1282.84	1282.84	1284.78	0.005994	11.47	1583.56	1375.84	0.89
1	173	100-Year	15272.00	1269.00	1277.00	1274.52	1277.51	0.001339	5.89	2832.70	2356.12	0.43
1	172	100-Year	15272.00	1268.71	1273.81	1273.81	1276.19	0.007741	12.37	1234.26	2026.21	1.00
1	171	100-Year	15272.00	1268.00	1271.40	1271.40	1272.89	0.009201	9.82	1554.86	1955.56	1.00
1	170	100-Year	15272.00	1266.00	1269.43	1269.06	1270.36	0.006222	8.10	2165.47	1964.59	0.83
1	169	100-Year	15272.00	1264.90	1268.23	1268.23	1269.38	0.011939	9.04	1840.95	1677.51	1.08
1	168	100-Year	15272.00	1263.60	1267.11	1266.54	1267.91	0.006062	7.85	2352.10	1892.32	0.81
1	167	100-Year	15272.00	1262.08	1266.35	1265.64	1266.96	0.004841	6.91	2693.50	1596.16	0.72
1	166	100-Year	15272.00	1261.35	1265.79	1264.65	1266.24	0.002362	5.51	3083.87	950.00	0.52
1	165.9		Bridge									
1	165.5	100-Year	15272.00	1260.35	1263.63	1263.63	1264.70	0.009648	8.50	1974.99	950.00	0.98
1	165	100-Year	15272.00	1257.79	1262.80	1262.57	1263.62	0.007356	7.23	2111.25	1783.03	0.86
1	164	100-Year	15272.00	1257.58	1261.37	1261.29	1262.19	0.009571	7.25	2107.25	1620.23	0.94
1	163	100-Year	15272.00	1256.19	1260.20	1260.18	1261.11	0.010378	7.66	1992.65	1417.47	0.99
1	162	100-Year	15272.00	1255.40	1259.20	1258.80	1259.66	0.005300	5.43	2811.70	1739.32	0.70
1	161	100-Year	15272.00	1253.90	1257.47	1257.47	1258.29	0.011044	7.31	2089.04	1342.80	1.00
1	160	100-Year	15272.00	1251.90	1255.21	1255.18	1255.99	0.010541	7.07	2160.59	1318.22	0.97
1	159	100-Year	15272.00	1250.87	1253.91	1253.54	1254.40	0.005731	5.64	2708.68	1468.79	0.73
1	158	100-Year	15272.00	1248.56	1251.74	1251.74	1252.49	0.011546	6.93	2202.78	1481.18	1.00
1	157	100-Year	15272.00	1246.18	1249.75	1249.75	1250.51	0.011444	7.00	2181.92	1436.14	1.00
1	156	100-Year	15272.00	1244.10	1247.57	1247.57	1248.37	0.011403	7.15	2134.93	1356.49	1.00
1	155	100-Year	15272.00	1240.90	1244.61	1244.61	1245.56	0.010751	7.84	1949.01	1033.46	1.01

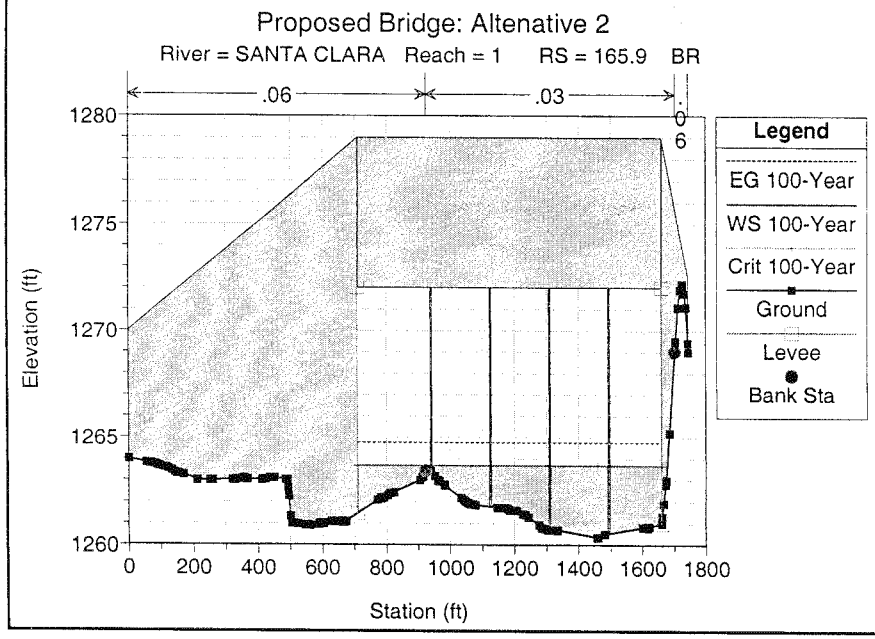

Proposed Bridge: Altenative 2
SANTA CLARA 1
1290
1280
1270
1260
1250
1240
Elevation (ft)
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Left Levee
Right Levee

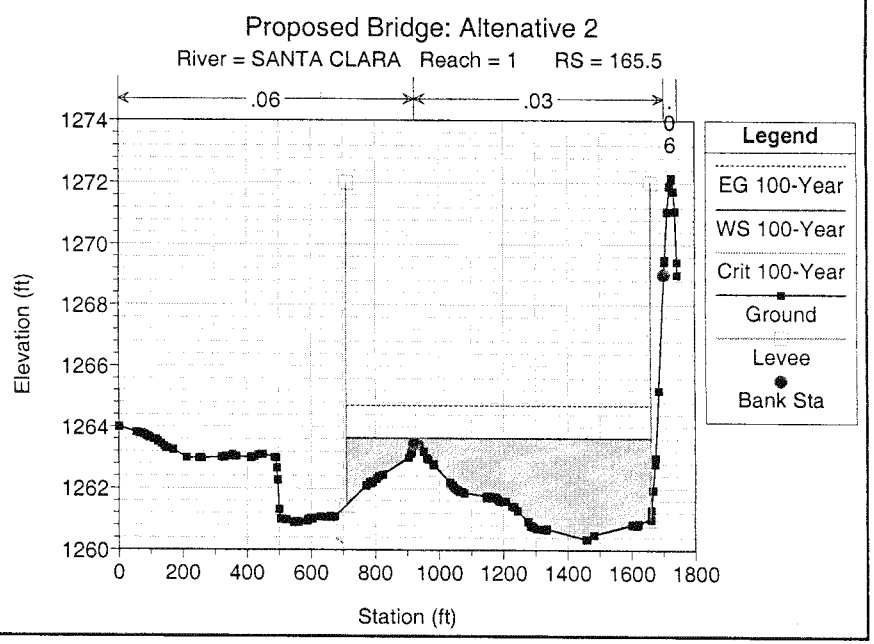

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 174
.06
.03
.06
Elevation (ft)
1360
1340
1320
1300
1280
1260
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 173
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 172
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 171
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta

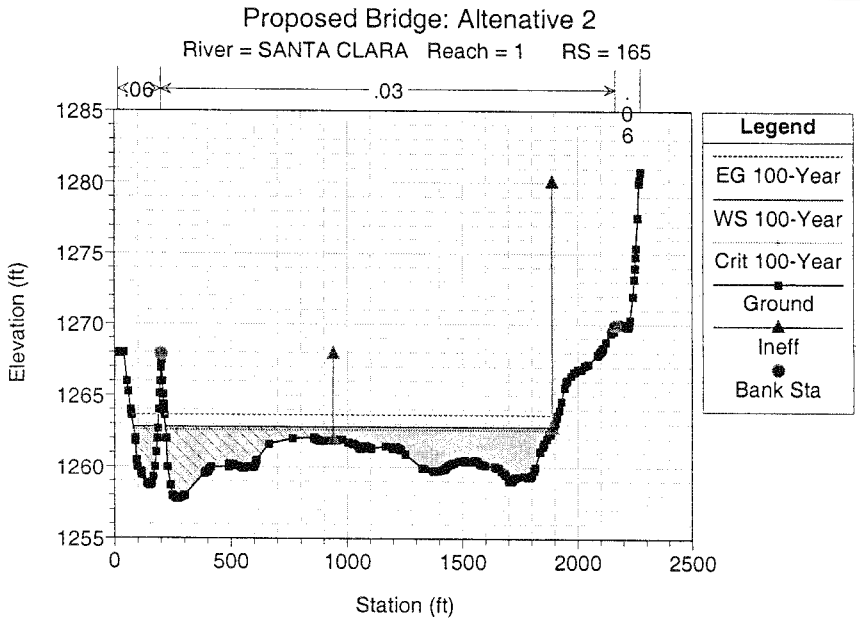

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 170
.06
.03
.06
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 169
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 168
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 167

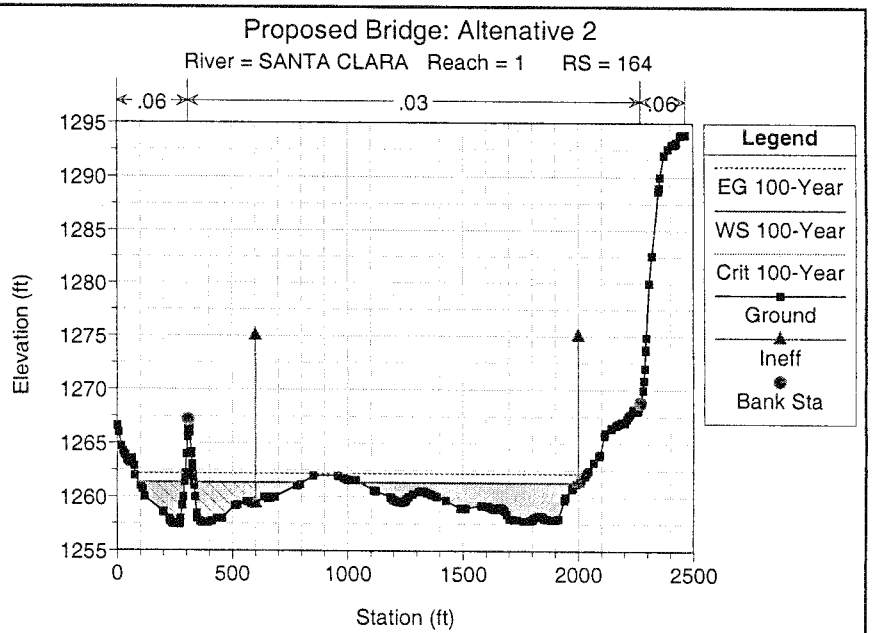

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 166
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Levee
Bank Sta

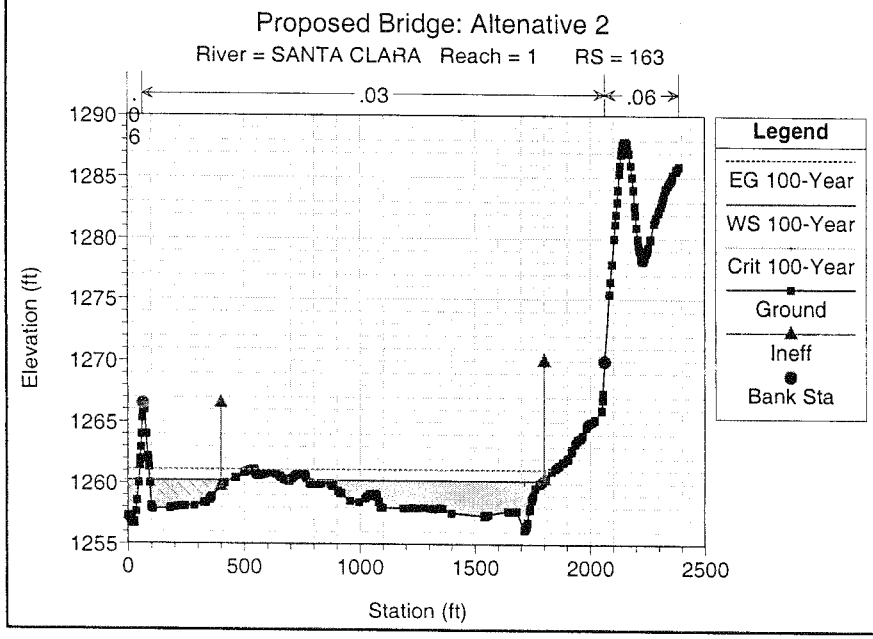

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 165.9 BR
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Levee
Bank Sta

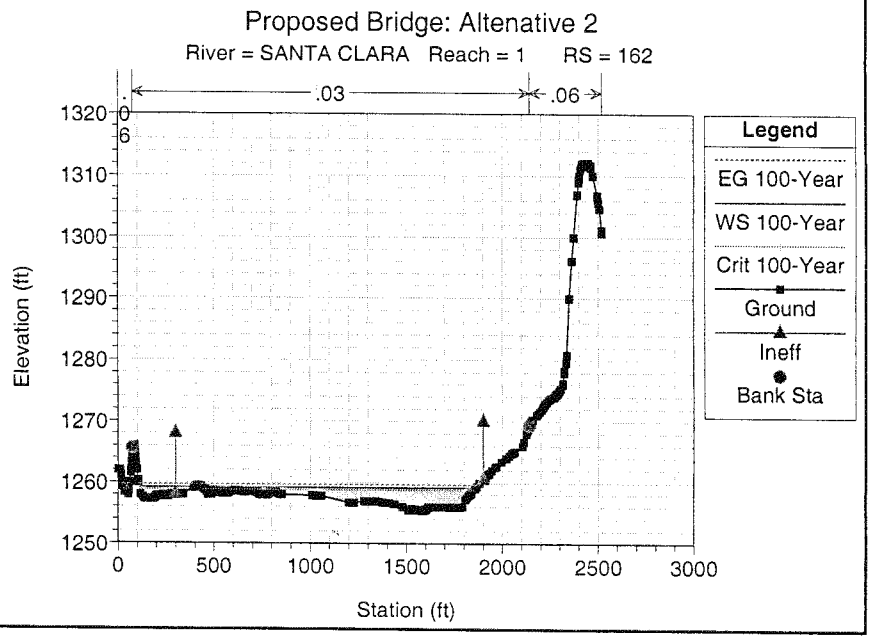

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 165.9 BR
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Levee
Bank Sta

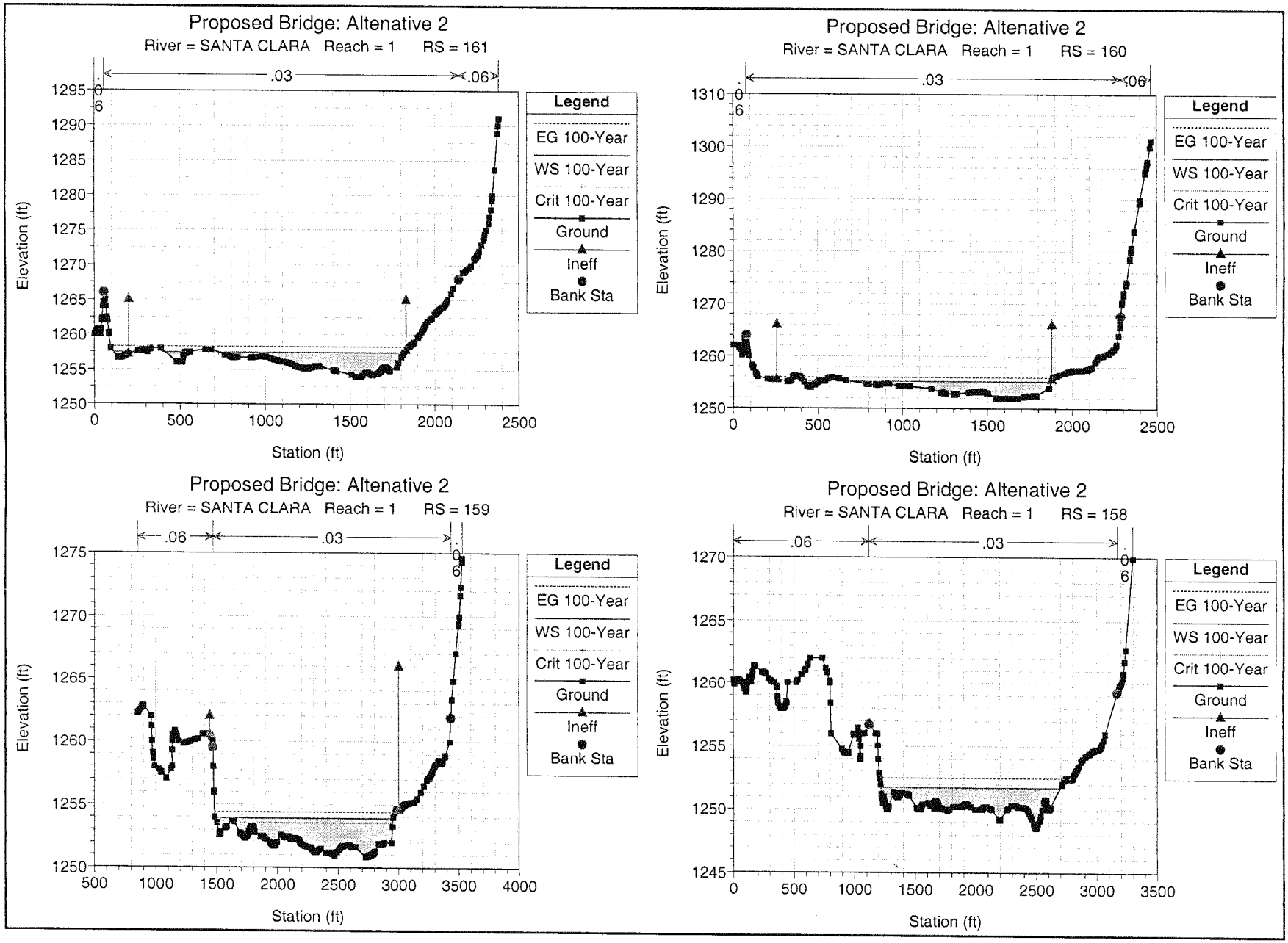

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 165.5
.06
.03
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Levee
Bank Sta

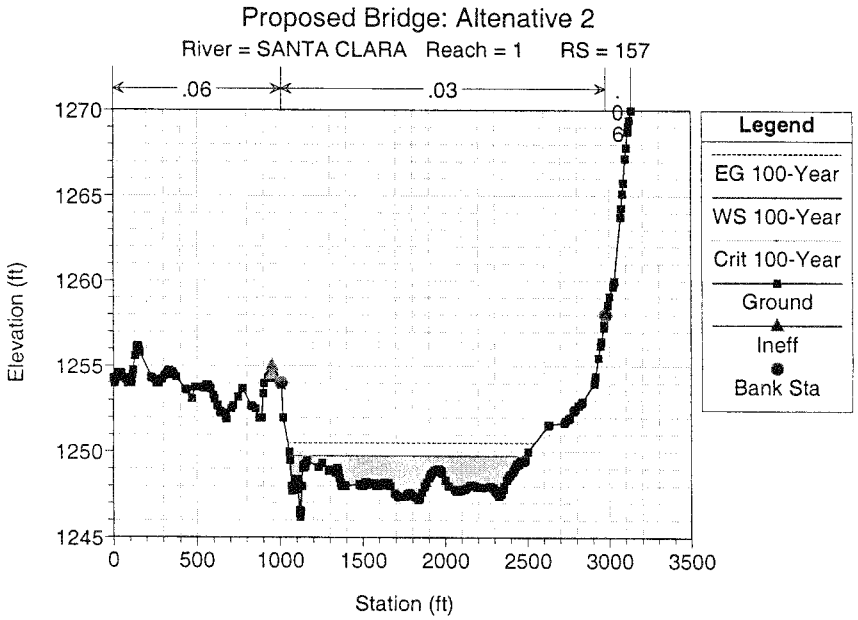

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 165
.06
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

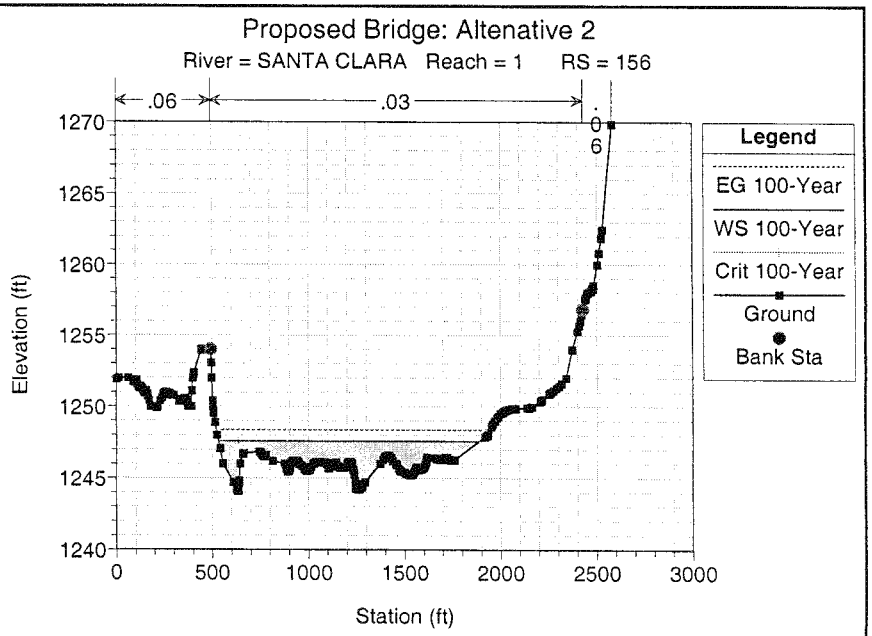

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 164
.06
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

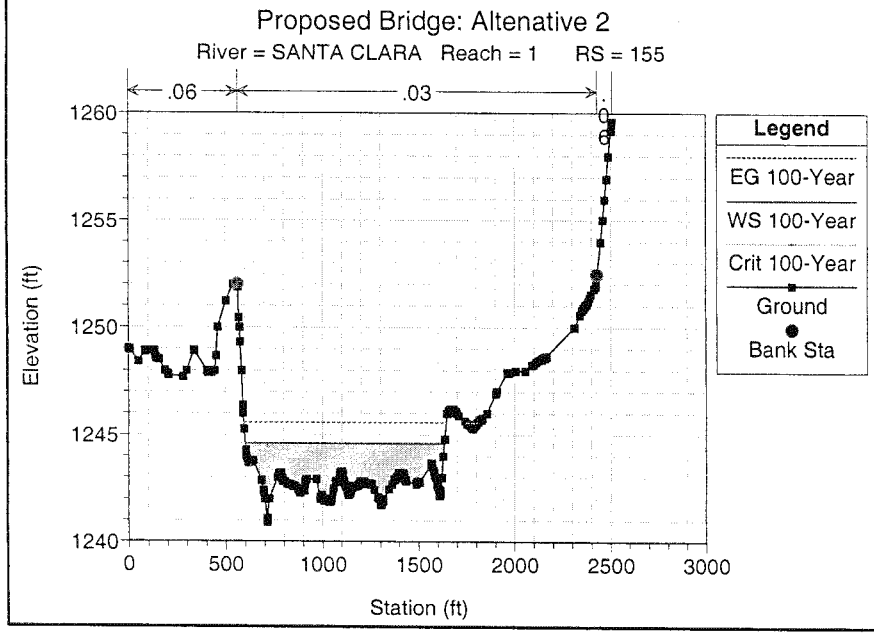

Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 163
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 162
.03
.06
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 161
.03
.06
0
6
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 160
.03
.06
0
6
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 159
.06
.03
0
6
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 158
.06
.03
0
6
Elevation (ft)
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta


Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 157
.06
.03
.06
Elevation (ft)
1270
1265
1260
1255
1250
1245
0
500
1000
1500
2000
2500
3000
3500
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta


Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 156
.06
.03
.06
Elevation (ft)
1270
1265
1260
1255
1250
1245
1240
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta


Proposed Bridge: Altenative 2
River = SANTA CLARA Reach = 1 RS = 155
.06
.03
.06
Elevation (ft)
1260
1255
1250
1245
1240
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta

Alernative 2.rep

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Proposed Bridge: Altenative 2
Project File : Alernative 2.prj
Run Date and Time: 4/1/2005 8:13:55 AM

Project in English units

Project Description:
Cross sections cut in LDD and imported 04-30-04

PLAN DATA

Plan Title: River Profile
Plan File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Alernative 2.p03

Geometry Title: Exist Project (banks=0.6, chnl=0.3)
Geometry File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Alernative 2.g07

Flow Title : Steady Flow
Flow File : p:\1418_CVC\410_Drainage_Studies\Location Hydraulic Study\HEC-RAS 3_11_05\Alernative 2.f01

Plan Summary Information:

Number of:	Cross Sections	= 21	Multiple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 1	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

RIVER: SANTA CLARA
REACH: 1 RS: 173

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1279	667.6	1273	1833	1270	2166	1273	2366	1269
2565	1273	2666	1303	3000	1353				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	2166	.03	2666	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2166	2666	379 426.95	469	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	2073	1290	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 172

INPUT
Description:
Station Elevation Data num= 337

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1272.61	12.11	1272.54	45.45	1272.26	51.09	1272.22	51.69	1272.21
71.31	1272.01	72.31	1272.02	74.24	1272	75.77	1271.98	76.93	1271.97
77.52	1272.01	78.27	1271.96	79.13	1271.96	80.47	1271.95	81.69	1271.95
83.13	1271.91	86.32	1271.95	90.96	1271.95	92.99	1271.91	97.02	1271.95
103.98	1271.95	105.31	1271.91	106.6	1271.95	184.31	1270.79	184.7	1270.8
187.78	1270.71	192.84	1270.71	198.32	1271.51	198.87	1271.44	221.81	1270.85
244.92	1271.01	276.73	1271.78	305.39	1271.12	315.78	1271.12	321.04	1271.11
382.73	1271.62	405.91	1271.88	406.26	1271.87	406.45	1271.86	406.62	1271.81
406.73	1271.85	407.35	1271.85	407.57	1271.81	407.82	1271.87	408.13	1271.88
408.44	1271.88	408.51	1271.87	411.55	1271.91	411.84	1271.86	413.57	1271.87
414.18	1271.88	416.74	1271.89	417.95	1271.91	418.72	1271.89	419.41	1271.89
562.71	1271.34	563.53	1271.31	580.77	1271.68	597.72	1271.33	605.62	1271.33
612.41	1271.31	673.01	1271.69	687.46	1271.68	719.86	1272.11	723.17	1272.11
729.84	1272.09	731.51	1272.08	732.49	1272.11	733.04	1272.08	735.37	1272.09
736.57	1272.09	763.01	1271.38	764.04	1271.41	765.48	1271.36	766.77	1271.35
767.73	1271.32	768.09	1271.3	769.49	1271.31	769.96	1271.26	770.46	1271.27
772.31	1271.31	773.91	1271.31	775.09	1271.38	776.44	1271.4	777.35	1271.41
778.17	1271.41	815.76	1271.21	819.66	1271.23	823.12	1271.23	826.45	1271.26
829.27	1271.31	830.69	1271.3	834.59	1271.3	844.98	1271.28	855.3	1271.21
861.06	1271.23	985.31	1270.83	1033.41	1270.75	1036.93	1270.71	1038.31	1270.72
1038.9	1270.71	1040.28	1270.71	1048.88	1270.49	1049.62	1270.49	1051.24	1270.5
1053.87	1270.43	1054.99	1270.41	1066.75	1269.91	1075.43	1269.83	1079.75	1269.8
1085.08	1269.81	1088.2	1269.76	1106.54	1269.77	1111.89	1269.81	1119.51	1269.76
1121.84	1269.76	1128.71	1269.71	1130.42	1269.74	1144.12	1269.73	1201.06	1269.85
1210.98	1269.85	1221.03	1269.81	1228.01	1269.83	1231.57	1269.82	1244.21	1269.83
1248.82	1269.81	1384.56	1269.69	1389.2	1269.71	1400.26	1269.67	1463.25	1269.59
1507.87	1269.46	1510.58	1269.48	1528.04	1269.48	1530.48	1269.51	1547.74	1269.49
1549.99	1269.5	1556.74	1269.49	1558.96	1269.48	1565.8	1269.51	1605.66	1269.1
1627.2	1269.1	1631.35	1269.11	1635.69	1269.08	1644.53	1269.08	1651.58	1269.06
1660.05	1269.01	1668.44	1269.02	1705.19	1269.32	1708.68	1269.37	1716.17	1269.3
1723.82	1269.21	1726.01	1269.28	1731.42	1269.26	1738.13	1269.34	1742.11	1269.36
1745.14	1269.41	1760.2	1269.49	1768.77	1269.57	1773.53	1269.59	1776.6	1269.61

244.92	1270.3	276.73	1271.07	305.39	1270.41	315.78	1270.41	321.04	1270.4
382.73	1270.91	405.91	1271.17	406.26	1271.16	406.45	1271.15	406.62	1271.1
406.73	1271.14	407.35	1271.14	407.57	1271.1	407.82	1271.16	408.13	1271.17
408.44	1271.17	408.51	1271.16	411.55	1271.2	411.84	1271.15	413.57	1271.16
414.18	1271.17	416.74	1271.18	417.95	1271.2	418.72	1271.18	419.41	1271.18
562.71	1270.63	563.53	1270.6	580.77	1270.97	597.72	1270.62	605.62	1270.62
612.41	1270.6	673.01	1270.98	687.46	1270.97	719.86	1271.4	723.17	1271.4
729.84	1271.38	731.51	1271.37	732.49	1271.4	733.04	1271.37	735.37	1271.38
736.57	1271.38	763.01	1270.67	764.04	1270.7	765.48	1270.65	766.77	1270.64
767.73	1270.61	768.09	1270.59	769.49	1270.6	769.96	1270.55	770.46	1270.56
772.31	1270.6	773.91	1270.6	775.09	1270.67	776.44	1270.69	777.35	1270.7
778.17	1270.7	815.76	1270.5	819.66	1270.52	823.12	1270.52	826.45	1270.55
829.27	1270.6	830.69	1270.59	834.59	1270.59	844.98	1270.57	855.3	1270.5
861.06	1270.52	985.31	1270.12	1033.41	1270.04	1036.93	1270	1038.31	1270.01
1038.9	1270	1040.28	1270	1048.88	1269.78	1049.62	1269.78	1051.24	1269.79
1053.87	1269.72	1054.99	1269.7	1066.75	1269.2	1075.43	1269.12	1079.75	1269.09
1085.08	1269.1	1088.2	1269.05	1106.54	1269.06	1111.89	1269.1	1119.51	1269.05
1121.84	1269.05	1128.71	1269	1130.42	1269.03	1144.12	1269.02	1201.06	1269.14
1210.98	1269.14	1221.03	1269.1	1228.01	1269.12	1231.57	1269.11	1244.21	1269.12
1248.82	1269.1	1384.56	1268.98	1389.2	1269	1400.26	1268.96	1463.25	1268.88
1507.87	1268.75	1510.58	1268.77	1528.04	1268.77	1530.48	1268.8	1547.74	1268.78
1549.99	1268.79	1556.74	1268.78	1558.96	1268.77	1565.8	1268.8	1605.66	1268.39
1627.2	1268.39	1631.35	1268.4	1635.69	1268.37	1644.53	1268.37	1651.58	1268.35
1660.05	1268.3	1668.44	1268.31	1705.19	1268.61	1708.68	1268.66	1716.17	1268.59
1723.82	1268.5	1726.01	1268.57	1731.42	1268.55	1738.13	1268.63	1742.11	1268.65
1745.14	1268.7	1760.2	1268.78	1768.77	1268.86	1773.53	1268.88	1776.6	1268.9
1782.06	1268.78	1786.76	1268.64	1791.31	1268.45	1798.18	1268.1	1799.96	1268
1817.13	1268.07	1822.1	1268.1	1825.91	1268.09	1834.02	1268.1	1837.17	1268.11
1840.39	1268.11	1843.6	1268.1	1847.05	1268.11	1868.17	1268.09	1874.96	1268.1
1879.76	1268.08	1883.99	1268.08	1894.55	1268.1	1920.09	1268.09	1925.31	1268.1
1930.52	1268.08	1964.01	1268.04	1974.58	1268	1986.36	1268.01	1990.6	1268
1993.29	1268.1	2003.25	1268.41	2007.82	1268.6	2018.27	1270	2023.31	1271.57
2024.56	1272	2035.71	1279.46	2041.62	1282	2050.88	1284.8	2058.67	1287.22
2065.74	1289.39	2073.15	1292	2086.82	1301.7	2087.26	1302	2087.57	1302.14
2089.08	1302.78	2117.25	1315.4	2119.26	1316	2129.39	1317.86	2130.34	1318
2137.37	1318.19	2146.22	1318.4	2150.99	1318.48	2154.42	1318.53	2157.12	1318.55
2160.24	1318.54	2165.76	1318.5	2170.51	1318.43	2176.68	1318.32	2183.46	1318.15
2188.68	1318	2197.15	1316.2	2199.03	1316	2210.78	1314.49	2215.37	1314.41
2223.38	1314.41	2225.72	1314.5	2228	1314.38	2229.25	1314.34	2229.92	1314.36
2231.08	1314.4	2232.04	1314.47	2235.22	1314.72	2236.83	1314.81	2250.22	1316
2250.48	1316	2256.99	1316.22	2312.88	1318	2313.65	1318.09	2332.33	1320
2343.19	1320.2	2349.84	1320.36	2353.84	1320.43	2357.22	1320.48	2360.51	1320.51
2364.91	1320.6	2366.72	1320.57	2368.23	1320.57	2371.42	1320.56	2374.85	1320.54
2376.19	1320.5	2378.03	1320.54	2401.57	1321.57	2415.39	1321.74	2425.33	1321.9
2432.5	1322	2489.41	1324	2493.59	1324.6	2506.06	1326	2507.76	1326.18
2523.6	1328	2524.91	1328.2	2535.54	1330	2535.91	1330.2	2537.46	1330.83
2539.95	1332	2546.65	1333.99	2569.74	1340.5	2574.93	1342	2621.29	1343.59
2632.12	1343.9	2633.17	1343.96	2633.46	1343.97	2634.8	1344	2657	1345.52
2661.59	1346	2664.8	1346.24	2670.55	1346.64	2678.86	1347.09	2680.57	1347.2
2682.03	1347.17	2686.39	1347.07	2688.7	1347.21	2693.3	1347.08	2697.41	1347.3
2700.29	1347.22	2705.63	1347.46	2707.89	1347.38	2711.94	1347.42	2715.31	1347.2
2720.71	1346.83	2722.91	1346.6	2728.32	1346	2733.3	1345.15	2736.68	1344.3
2742.76	1342	2743.48	1341.57	2744.32	1341.14	2752.01	1336.86	2760.09	1334
2762.42	1332.94	2765.09	1332	2783.43	1329	2787.89	1328.4	2790.49	1328
2801.46	1325.81	2810.95	1324.38	2822.91	1322.92	2827.01	1322	2827.49	1321.88
2829.48	1321.09	2830.85	1321.03	2832.63	1320.88	2835.24	1320.5	2837.61	1320.04
2839.38	1319.46	2841.1	1319.15	2842.62	1318.95	2843.83	1318.8	2845.38	1318.78
2847.7	1318.73	2851.95	1318	2854.59	1317.78	2855.03	1317.8	2855.85	1317.75
2856.47	1317.73	2857.19	1317.68	2860.3	1317.4	2866.48	1316.9	2867.78	1316.83
2870.18	1316.74	2872.36	1316.71	2875.07	1316.38	2877.01	1316.4	2879.46	1316.08
2880.93	1316	2890.96	1315.66	2894.69	1315.22	2901.22	1314.7	2902.95	1314.51
2904.4	1314	2924.98	1314						

2188.68	1316	2197.15	1314.2	2199.03	1314	2210.78	1312.49	2215.37	1312.41
2223.38	1312.41	2225.72	1312.5	2228	1312.38	2229.25	1312.34	2229.92	1312.36
2231.08	1312.4	2232.04	1312.47	2235.22	1312.72	2236.83	1312.81	2250.22	1314
2250.48	1314	2256.99	1314.22	2312.88	1316	2313.65	1316.09	2332.33	1318
2343.19	1318.2	2349.84	1318.36	2353.84	1318.43	2357.22	1318.48	2360.51	1318.51
2364.91	1318.6	2366.72	1318.57	2368.23	1318.57	2371.42	1318.56	2374.85	1318.54
2376.19	1318.5	2378.03	1318.54	2401.57	1319.57	2415.39	1319.74	2425.33	1319.9
2432.5	1320	2489.41	1322	2493.59	1322.6	2506.06	1324	2507.76	1324.18
2523.6	1326	2524.91	1326.2	2535.54	1328	2535.91	1328.2	2537.46	1328.83
2539.95	1330	2546.65	1331.99	2569.74	1338.5	2574.93	1340	2621.29	1341.59
2632.12	1341.9	2633.17	1341.96	2633.46	1341.97	2634.8	1342	2657	1343.52
2661.59	1344	2664.8	1344.24	2670.55	1344.64	2678.86	1345.09	2680.57	1345.2
2682.03	1345.17	2686.39	1345.07	2688.7	1345.21	2693.3	1345.08	2697.41	1345.3
2700.29	1345.22	2705.63	1345.46	2707.89	1345.38	2711.94	1345.42	2715.31	1345.2
2720.71	1344.83	2722.91	1344.6	2728.32	1344	2733.3	1343.15	2736.68	1342.3
2742.76	1340	2743.48	1339.57	2744.32	1339.14	2752.01	1334.86	2760.09	1332
2762.42	1330.94	2765.09	1330	2783.43	1327	2787.89	1326.4	2790.49	1326
2801.46	1323.81	2810.95	1322.38	2822.91	1320.92	2827.01	1320	2827.49	1319.88
2829.48	1319.09	2830.85	1319.03	2832.63	1318.88	2835.24	1318.5	2837.61	1318.04
2839.38	1317.46	2841.1	1317.15	2842.62	1316.95	2843.83	1316.8	2845.38	1316.78
2847.7	1316.73	2851.95	1316	2854.59	1315.78	2855.03	1315.8	2855.85	1315.75
2856.47	1315.73	2857.19	1315.68	2860.3	1315.4	2866.48	1314.9	2867.78	1314.83
2870.18	1314.74	2872.36	1314.71	2875.07	1314.38	2877.01	1314.4	2879.46	1314.08
2880.93	1314	2890.96	1313.66	2894.69	1313.22	2901.22	1312.7	2902.95	1312.51
2904.4	1312	2924.98	1312						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1463.25	.03	2035.71	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1463.25	2035.71	120	111.98	122.02	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1260	1280	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 169

INPUT
Description:
Station Elevation Data num= 359

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1270.4	6.06	1270.37	6.85	1270.38	7.49	1270.39	8.71	1270.42
9.41	1270.4	10.28	1270.43	13.06	1270.43	13.96	1270.4	18.18	1270.36
18.78	1270.35	19.84	1270.36	20.25	1270.4	20.73	1270.37	21.14	1270.4
21.99	1270.43	22.56	1270.44	23.39	1270.4	24.85	1270.43	25.84	1270.42
27.89	1270.38	30.27	1270.35	32.93	1270.3	36.13	1270.26	39.84	1270.2
43.42	1270.15	46.05	1270.12	50.51	1270.1	53.54	1270.04	57.84	1269.98
68.87	1269.61	68.95	1269.33	69.99	1269.3	71.86	1269.22	73.05	1269.21
74.01	1269.2	78.7	1269.06	78.95	1269.1	80.79	1269	97.39	1268.91
99.54	1268.89	102.14	1268.9	103.91	1268.86	117.36	1268.81	122.87	1268.8
126.47	1268.8	132.9	1268.78	168.88	1268.77	183.99	1268.8	191.24	1268.78
195.21	1268.78	198.91	1268.77	203.35	1268.77	245.39	1268.4	278.83	1268.37
287.86	1268.4	290.26	1268.38	295.46	1268.41	296.71	1268.41	300.67	1268.42
303.42	1268.4	308.16	1268.43	313.72	1268.41	320.28	1268.41	323.13	1268.4
362.87	1268.15	367.74	1268.15	372.52	1268.14	380.28	1268.14	394.33	1268.2
399.31	1268.19	401.14	1268.19	406.48	1268.17	411.36	1268.17	416.22	1268.2
459.53	1268.2	466.82	1268.19	468.45	1268.18	473.32	1268.18	477.05	1268.2
484.58	1268.11	486.23	1268.07	491.65	1267.9	495.51	1267.93	497.89	1267.89

Sta L	Sta R	Elev	Permanent
0	1250	1281	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 168

INPUT
Description:
Station Elevation Data num= 336

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1268	48.14	1267.63	52.54	1267.59	56.06	1267.6	81.29	1267.28
81.4	1267.28	83.16	1267.25	83.86	1267.25	85.07	1267.2	86.93	1267.22
88.83	1267.21	91.01	1267.19	92.2	1267.19	95.16	1267.2	97.21	1267.16
99.01	1267.15	107.33	1267.08	110.37	1267.1	185.52	1266.41	187.62	1266.4
189.71	1266.4	192.8	1266.39	195.21	1266.4	197.77	1266.38	198.44	1266.39
199.9	1266.4	203.33	1266.38	204.4	1266.4	212.14	1266.36	213.36	1266.36
229.32	1266.31	230.77	1266.3	239.05	1266.28	257.35	1266.15	266.21	1266.13
269.66	1266.13	273.3	1266.1	276.76	1266.15	279.7	1266.16	291.08	1266.23
293.31	1266.2	296.85	1266.24	299.41	1266.25	312.18	1266.25	314.62	1266.3
318.48	1266.25	320.88	1266.24	322.99	1266.24	326.76	1266.21	337.58	1266.2
354.43	1266.06	363.32	1266	377.49	1265.84	407.05	1265.56	410.18	1265.54
422.01	1265.5	424.6	1265.5	431.95	1265.36	433.39	1265.34	435.05	1265.3
436.76	1265.31	444.99	1265.28	445.94	1265.28	448.43	1265.3	450.23	1265.31
452.32	1265.31	456.35	1265.29	596.89	1265.06	598.93	1265.06	600.03	1265.05
601.14	1265.05	602.48	1265.1	603.84	1265.05	606.53	1265.05	609.24	1265.04
610.08	1265	611.36	1265.03	612.74	1265.02	614.17	1265.02	619.06	1265
620.76	1264.99	621.81	1264.99	623.86	1264.97	626.14	1264.96	627.75	1264.9
629.03	1264.94	631.26	1264.95	632.65	1264.94	634.58	1264.94	640.95	1264.9
735.21	1264.57	736.35	1264.57	740.29	1264.56	741.43	1264.56	744	1264.5
745.01	1264.55	746.09	1264.55	754.97	1264.6	756.01	1264.58	786.4	1264.21
800.14	1264.21	804.92	1264.2	810.06	1264.21	815.42	1264.2	825.55	1264.2
827.67	1264.22	833.21	1264.25	835.45	1264.25	840.9	1264.3	844.81	1264.27
846.53	1264.28	851.72	1264.28	853.57	1264.3	856.51	1264.29	862.07	1264.28
865.34	1264.29	871.16	1264.28	875.5	1264.3	880.16	1264.28	986.56	1264.91
988.82	1264.91	991.12	1264.92	998.4	1265	1001.67	1264.97	1004.84	1264.98
1013.59	1264.98	1023.05	1265	1026.8	1264.95	1043.79	1264.89	1049.47	1264.86
1052.5	1264.8	1058.42	1264.79	1065.21	1264.72	1073.87	1264.61	1079.9	1264.5
1087.1	1264	1138.63	1264	1141.24	1263.95	1187.88	1263.16	1192.16	1263.1
1194.04	1263.04	1195.65	1263	1196.07	1262.98	1199.12	1262.9	1200.15	1262.89
1201.1	1262.89	1202.3	1262.88	1202.75	1262.88	1203.03	1262.9	1203.59	1262.87
1203.98	1262.86	1204.28	1262.85	1204.49	1262.85	1204.67	1262.8	1204.87	1262.84
1205.92	1262.84	1206.08	1262.8	1206.23	1262.84	1206.57	1262.84	1206.81	1262.85
1206.93	1262.8	1207.04	1262.85	1207.32	1262.87	1207.39	1262.87	1207.46	1262.88
1207.72	1262.9	1207.95	1262.9	1208.37	1262.91	1208.86	1262.92	1209.29	1262.93
1210.58	1262.9	1211.38	1262.94	1212.05	1262.95	1212.44	1262.94	1213.08	1262.94
1213.67	1262.9	1214.81	1262.93	1215.72	1262.93	1227.41	1262.95	1231.67	1263
1234.04	1262.98	1236.35	1262.99	1242.79	1263.03	1246.18	1263.1	1248.99	1263.07
1338.04	1263.8	1367.84	1264	1377.91	1264.12	1411.46	1264.39	1417.07	1264.45
1483.92	1265.67	1551.21	1264.7	1555.57	1264.65	1569.04	1264.63	1574.41	1264.63
1579.8	1264.6	1584.78	1264.61	1592.96	1264.56	1599.14	1264.51	1605.34	1264.5
1614.82	1264.37	1634.98	1264.18	1645.04	1264.11	1652.2	1264.1	1656.4	1264.05
1659.93	1264.02	1671.88	1264.03	1680.08	1264	1688.17	1264.05	1701.5	1264.04
1716.32	1264	1718.7	1263.99	1749.34	1263.9	1824.55	1263.8	1830.9	1263.8
1837.95	1263.76	1854.36	1263.7	1857.58	1263.7	1860.32	1263.68	1864.56	1263.66
1866.33	1263.66	1868.67	1263.7	1871.34	1263.65	1875.45	1263.64	1880.61	1263.64
1881.85	1263.6	1882.76	1263.63	1884.03	1263.62	1885.16	1263.62	1886.04	1263.61
1886.6	1263.6	1887.68	1263.61	1890.4	1263.61	1891.96	1263.6	1893.28	1263.62
1895.47	1263.62	1896.69	1263.6	1897.4	1263.63	1898.42	1263.63	1899.55	1263.64
1906.02	1263.67	1908.59	1263.7	1913.13	1263.7	1916.04	1263.72	1919.29	1263.73
1978.82	1264	2012.45	1270	2015.94	1270.9	2018.48	1271.56	2041.38	1277.47

1246.74	1263.67	1251.93	1263.7	1332.48	1263.48	1425.05	1262.69	1425.96	1262.69
1427	1262.7	1430.63	1262.69	1433.57	1262.69	1441.7	1262.66	1447.43	1262.6
1456.04	1262.56	1471.85	1262.45	1504.52	1262.53	1522.18	1262.3	1523.64	1262.35
1525.32	1262.38	1533.97	1262.28	1536.27	1262.33	1545.93	1262.1	1548.4	1262.23
1552.93	1262.12	1557.17	1262.08	1557.47	1262.1	1562.16	1262.1	1566.9	1262.18
1573.34	1262.62	1580.16	1262.82	1585.3	1262.96	1586.38	1263	1592.92	1264
1601.08	1269.9	1601.23	1270	1601.46	1270.22	1611.23	1280	1619.76	1282.9
1627.12	1285.1	1633.65	1287.2	1642.48	1290	1650.96	1292.1	1656.65	1293.4
1663.8	1295.07	1672.81	1297.29	1683.27	1300	1689.43	1301	1695.88	1301.55
1713.64	1303.74	1718.71	1304.33	1734.5	1305.97	1737.32	1306.2	1739.99	1306.47
1743.38	1306.7	1745.5	1306.8	1746.82	1306.82	1748.16	1306.8	1749.46	1306.75
1751.25	1306.62	1757.72	1306.03	1759.76	1306.07	1768.61	1305.2	1771.49	1305.2
1776.43	1305	1787.23	1303.92	1789.68	1303.76	1797.27	1303.1	1799.33	1302.94
1805.08	1302.6	1807.93	1302.28	1810.7	1302.27	1812.92	1302	1814.21	1301.79
1816.85	1302.03	1817.52	1302.18	1874.6	1301.84	1892.99	1300	1895.83	1296.5
1901.31	1290	1925.51	1280.37	1926.38	1280	1926.5	1279.8	1929.27	1276
1931.54	1275.62	1934.8	1275.16	1934.84	1274.98	1934.85	1274.9	1934.87	1274.85
1936.56	1274.8	1938.11	1274.76	1939.42	1274.76	1940.82	1274.8	1942.16	1274.8
1943.5	1274.84	1946.32	1274.95	1948.12	1275	1950.25	1275	1951.24	1275.04
1954.24	1274.99	1955.85	1274.99	1957.9	1275.02	1960.42	1275.1	1965.05	1275.22
1971.03	1275.42	1975.51	1275.6	1983.03	1276	1985.78	1276.9	1985.81	1276.91

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	996.21	.03	1611.23	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
996.21	1611.23	59.01	231 386.01	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	660	1278	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 166

INPUT
Description:
Station Elevation Data num= 153

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1265	54.79	1264.82	64.69	1264.79	67.97	1264.8	71.36	1264.78
78.35	1264.76	85.72	1264.72	88.08	1264.7	91.75	1264.68	95.8	1264.65
109.01	1264.6	115.86	1264.6	121.7	1264.53	132.87	1264.45	141.61	1264.37
148.02	1264.3	153.32	1264.3	169.11	1264.26	210.97	1264	250.46	1263.99
254.76	1264	258.66	1263.98	320.84	1264.02	329.04	1264	332.7	1264.05
347.99	1264.05	354.56	1264.1	367.22	1264.04	411.13	1264	414.71	1264.03
418.87	1264.03	423.13	1264.04	436.86	1264.1	449.32	1264.11	486.14	1264.02
491.41	1264	493.15	1263.66	495.89	1263.27	501.01	1262.32	504.94	1262
510.11	1262	522.53	1261.98	523.62	1261.98	546.15	1261.9	553.64	1261.93
562.44	1261.91	589.35	1261.95	590.11	1261.97	591.55	1262	593.86	1262
598.49	1262.02	604.4	1262.03	604.7	1262	628.36	1262.08	649.24	1262.07
659.71	1262.1	664.67	1262.06	670	1262.07	675.06	1262.09	772.7	1263.09
782.32	1263.2	782.87	1263.16	783.5	1263.16	784.11	1263.17	784.8	1263.17
785.92	1263.2	786.71	1263.18	787.58	1263.18	789.52	1263.2	790.63	1263.2
792.44	1263.22	804.46	1263.31	810.63	1263.4	823.39	1263.44	904.54	1264
912.06	1264.14	914.9	1264.2	919.43	1264.36	921.25	1264.4	922.88	1264.43
926.01	1264.44	929.37	1264.4	932.6	1264.44	935.6	1264.42	938.2	1264.39
951.44	1264.2	960.02	1264	960.68	1263.99	965.02	1263.94	980.54	1263.8
982.64	1263.76	1033.14	1263.19	1042.04	1263.1	1046.81	1263.03	1053.7	1262.97
1056.91	1262.95	1062.72	1262.9	1069.07	1262.9	1077.93	1262.86	1146.34	1262.75
1148.8	1262.7	1152.31	1262.74	1156.76	1262.75	1164.14	1262.75	1168.05	1262.7

1284.16	1261.8	1289.61	1261.78	1293.91	1261.75	1304.5	1261.7	1325.54	1261.69
1333.57	1261.67	1334.64	1261.7	1458.45	1261.35	1461.01	1261.35	1482.63	1261.5
1601.16	1261.82	1611.88	1261.83	1616.73	1261.8	1621.72	1261.86	1660.76	1262
1662.48	1262.3	1667.3	1262.95	1673.46	1263.8	1675.01	1264	1684.93	1266.21
1702.08	1270	1703.78	1270.43	1704.06	1270.48	1704.29	1270.51	1712.69	1272.09
1718.53	1272.9	1720.13	1272.91	1724.22	1273.17	1727.04	1273.13	1731.43	1272.74
1736.15	1272.1	1742.18	1270.43	1743.42	1270				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	922.88	.03	1702.08	.06

Bank Sta: Left	Right	Coeff Contr.	Expan.
922.88	1702.08	.3	.5

Left Levee Station= 710 Elevation= 1272
Right Levee Station= 1660 Elevation= 1272

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
710	1279	1272	1660	1279	1272

Downstream Bridge Cross Section Data
Station Elevation Data num= 153

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1264	54.79	1263.82	64.69	1263.79	67.97	1263.8	71.36	1263.78
78.35	1263.76	85.72	1263.72	88.08	1263.7	91.75	1263.68	95.8	1263.65
109.01	1263.6	115.86	1263.6	121.7	1263.53	132.87	1263.45	141.61	1263.37
148.02	1263.3	153.32	1263.3	169.11	1263.26	210.97	1263	250.46	1262.99
254.76	1263	258.66	1262.98	320.84	1263.02	329.04	1263	332.7	1263.05
347.99	1263.05	354.56	1263.1	367.22	1263.04	411.13	1263	414.71	1263.03
418.87	1263.03	423.13	1263.04	436.86	1263.1	449.32	1263.11	486.14	1263.02
491.41	1263	493.15	1262.66	495.89	1262.27	501.01	1261.32	504.94	1261
510.11	1261	522.53	1260.98	523.62	1260.98	546.15	1260.9	553.64	1260.93
562.44	1260.91	589.35	1260.95	590.11	1260.97	591.55	1261	593.86	1261
598.49	1261.02	604.4	1261.03	604.7	1261	628.36	1261.08	649.24	1261.07
659.71	1261.1	664.67	1261.06	670	1261.07	675.06	1261.09	772.7	1262.09
782.32	1262.2	782.87	1262.16	783.5	1262.16	784.11	1262.17	784.8	1262.17
785.92	1262.2	786.71	1262.18	787.58	1262.18	789.52	1262.2	790.63	1262.2
792.44	1262.22	804.46	1262.31	810.63	1262.4	823.39	1262.44	904.54	1263
912.06	1263.14	914.9	1263.2	919.43	1263.36	921.25	1263.4	922.88	1263.43
926.01	1263.44	929.37	1263.4	932.6	1263.44	935.6	1263.42	938.2	1263.39
951.44	1263.2	960.02	1263	960.68	1262.99	965.02	1262.94	980.54	1262.8
982.64	1262.76	1033.14	1262.19	1042.04	1262.1	1046.81	1262.03	1053.7	1261.97
1056.91	1261.95	1062.72	1261.9	1069.07	1261.9	1077.93	1261.86	1146.34	1261.75
1148.8	1261.7	1152.31	1261.74	1156.76	1261.75	1164.14	1261.75	1168.05	1261.7
1172.97	1261.73	1175.52	1261.72	1177.79	1261.7	1181.54	1261.66	1185.68	1261.6
1191.45	1261.58	1193.7	1261.58	1198.16	1261.6	1202.46	1261.6	1202.76	1261.61
1207.28	1261.59	1226.3	1261.44	1234.27	1261.4	1243.47	1261.28	1276.72	1260.93
1284.16	1260.8	1289.61	1260.78	1293.91	1260.75	1304.5	1260.7	1325.54	1260.69
1333.57	1260.67	1334.64	1260.7	1458.45	1260.35	1461.01	1260.35	1482.63	1260.5
1601.16	1260.82	1611.88	1260.83	1616.73	1260.8	1621.72	1260.86	1660.76	1261
1662.48	1261.3	1667.3	1261.95	1673.46	1262.8	1675.01	1263	1684.93	1265.21
1702.08	1269	1703.78	1269.43	1704.06	1269.48	1704.29	1269.51	1712.69	1271.09
1718.53	1271.9	1720.13	1271.91	1724.22	1272.17	1727.04	1272.13	1731.43	1271.74
1736.15	1271.1	1742.18	1269.43	1743.42	1269				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	922.88	.03	1702.08	.06

Bank Sta: Left	Right	Coeff Contr.	Expan.
922.88	1702.08	.3	.5

Downstream num= 2

Width	Elev	Width	Elev
5	1250	5	1275

Pier Data
Pier Station Upstream= 1680 Downstream= 1680
Upstream num= 2

Width	Elev	Width	Elev
5	1250	5	1275

Downstream num= 2

Width	Elev	Width	Elev
5	1250	5	1275

Pier Data
Pier Station Upstream= 1865 Downstream= 1865
Upstream num= 2

Width	Elev	Width	Elev
5	1250	5	1275

Downstream num= 2

Width	Elev	Width	Elev
5	1250	5	1275

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Energy Only

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B 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: SANTA CLARA
REACH: 1 RS: 165.5

INPUT
Description:
Station Elevation Data num= 153

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1264	54.79	1263.82	64.69	1263.79	67.97	1263.8	71.36	1263.78
78.35	1263.76	85.72	1263.72	88.08	1263.7	91.75	1263.68	95.8	1263.65
109.01	1263.6	115.86	1263.6	121.7	1263.53	132.87	1263.45	141.61	1263.37
148.02	1263.3	153.32	1263.3	169.11	1263.26	210.97	1263	250.46	1262.99
254.76	1263	258.66	1262.98	320.84	1263.02	329.04	1263	332.7	1263.05
347.99	1263.05	354.56	1263.1	367.22	1263.04	411.13	1263	414.71	1263.03
418.87	1263.03	423.13	1263.04	436.86	1263.1	449.32	1263.11	486.14	1263.02
491.41	1263	493.15	1262.66	495.89	1262.27	501.01	1261.32	504.94	1261
510.11	1261	522.53	1260.98	523.62	1260.98	546.15	1260.9	553.64	1260.93
562.44	1260.91	589.35	1260.95	590.11	1260.97	591.55	1261	593.86	1261
598.49	1261.02	604.4	1261.03	604.7	1261	628.36	1261.08	649.24	1261.07
659.71	1261.1	664.67	1261.06	670	1261.07	675.06	1261.09	772.7	1262.09
782.32	1262.2	782.87	1262.16	783.5	1262.16	784.11	1262.17	784.8	1262.17
785.92	1262.2	786.71	1262.18	787.58	1262.18	789.52	1262.2	790.63	1262.2
792.44	1262.22	804.46	1262.31	810.63	1262.4	823.39	1262.44	904.54	1263

967.06	1261.93	977.04	1261.93	1003.21	1261.7	1004.42	1261.72	1020.41	1261.65
1022.34	1261.63	1028.56	1261.59	1030.45	1261.6	1045.45	1261.43	1052.32	1261.34
1057.28	1261.3	1059.1	1261.32	1061.32	1261.36	1065.23	1261.46	1067.8	1261.5
1074.85	1261.5	1077.78	1261.47	1082.47	1261.45	1085.17	1261.4	1092.82	1261.38
1096.24	1261.33	1098.72	1261.33	1103.11	1261.3	1166.04	1261.45	1195.57	1261.29
1197.33	1261.29	1198.09	1261.3	1198.77	1261.3	1200.47	1261.32	1201.03	1261.33
1201.34	1261.3	1201.52	1261.35	1201.63	1261.36	1201.73	1261.37	1201.85	1261.38
1202.04	1261.4	1202.45	1261.39	1203.37	1261.4	1203.82	1261.41	1204.29	1261.41
1205.18	1261.4	1205.97	1261.42	1206.4	1261.43	1206.99	1261.43	1207.18	1261.4
1207.43	1261.43	1208.08	1261.43	1209.03	1261.4	1209.15	1261.42	1210.5	1261.4
1211.12	1261.4	1211.81	1261.39	1212.45	1261.4	1213.32	1261.38	1214.27	1261.36
1215.4	1261.35	1216.09	1261.34	1216.94	1261.3	1217.95	1261.33	1218.99	1261.32
1220.68	1261.31	1221.5	1261.31	1222.41	1261.3	1225.98	1261.27	1227.87	1261.24
1231.92	1261.19	1251.32	1260.9	1324.54	1259.95	1327.16	1259.92	1330.26	1259.9
1333.85	1259.9	1370.45	1259.74	1375.05	1259.7	1380.64	1259.73	1388.2	1259.73
1393.22	1259.74	1401.93	1259.8	1412.94	1259.82	1416.89	1259.84	1420.53	1259.87
1423.05	1259.9	1425.72	1259.9	1427.77	1260	1428.74	1260.01	1435.79	1260.1
1443.2	1260.18	1450.08	1260.2	1455.02	1260.27	1461.14	1260.31	1483.22	1260.4
1489.1	1260.44	1492.15	1260.45	1504.61	1260.45	1508.15	1260.5	1512.47	1260.44
1519.01	1260.41	1522.78	1260.4	1535.26	1260.4	1544.28	1260.42	1550.11	1260.46
1551.93	1260.5	1554.49	1260.47	1556.05	1260.46	1559.23	1260.45	1562.3	1260.42
1565.07	1260.4	1576.09	1260.25	1580.29	1260.21	1584.52	1260.18	1589.25	1260.2
1597.81	1260.13	1639.58	1260.06	1645.85	1260	1651.27	1260	1652.35	1259.96
1656.14	1259.93	1669.27	1259.73	1679.79	1259.6	1686.48	1259.43	1697.75	1259.21
1698.48	1259.19	1700.17	1259.15	1701.21	1259.1	1702.01	1259.09	1702.64	1259.07
1703.34	1259.05	1703.89	1259.05	1704.38	1259	1705.22	1259.04	1706.52	1259.04
1708.68	1259.03	1710.76	1259.03	1713.05	1259	1713.59	1259.03	1715.07	1259.03
1715.84	1259.04	1716.81	1259.1	1718.53	1259.12	1726.33	1259.24	1729.7	1259.28
1735.22	1259.32	1738.02	1259.31	1769.61	1259.4	1774.54	1259.37	1782.53	1259.3
1791.92	1259.3	1795.08	1259.32	1796.97	1259.34	1802.15	1259.46	1810.69	1259.79
1810.83	1259.78	1815.31	1260	1837.17	1261.1	1849.27	1261.46	1853.91	1261.67
1866.59	1262	1876.26	1262.34	1877.1	1262.3	1878.13	1262.33	1878.83	1262.31
1879.41	1262.31	1880.13	1262.34	1883.87	1262.5	1891.89	1262.74	1896.21	1262.95
1901.72	1263.12	1909.05	1263.49	1912.29	1263.6	1921.02	1264	1929.06	1264.62
1942.64	1265.58	1949.65	1266	1952.79	1266.08	1952.85	1266.08	1953.23	1266.09
1968.69	1266.4	1970.46	1266.4	1982.4	1266.65	1987.78	1266.65	1999.09	1266.86
2002.24	1266.8	2005.25	1266.82	2008.46	1266.82	2011.11	1266.83	2016.58	1266.87
2028.27	1267.1	2039.14	1267.17	2045.32	1267.25	2085.25	1267.85	2085.9	1267.9
2087.29	1267.88	2094.27	1268	2097.66	1268.1	2098.84	1268.11	2102.66	1268.2
2104.56	1268.22	2105.23	1268.23	2105.8	1268.23	2108.03	1268.3	2110.44	1268.37
2122.27	1268.76	2143.69	1269.38	2147.49	1269.5	2150.61	1269.56	2152.43	1269.59
2153.38	1269.6	2154.82	1269.59	2155.67	1269.6	2157.11	1269.53	2157.45	1269.52
2164.35	1269.88	2164.55	1269.89	2167.46	1270	2170.89	1270.06	2174.25	1270.08
2179.2	1270.07	2187.19	1270.02	2189.04	1270	2196.34	1269.88	2199.45	1269.87
2207.72	1269.91	2216.43	1269.85	2219.53	1269.8	2221.09	1269.86	2222.71	1269.89
2225.06	1270	2228	1270.31	2240.4	1272	2245.98	1273.22	2250.37	1274
2252.67	1274.8	2254.27	1275.44	2261.16	1277.6	2267.41	1280	2268.98	1280.24
2269.1	1280.26	2273.4	1280.79						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
17.4	.06	199.87	.03	2164.35	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
199.87	2164.35	146	171	76.48	.1 .3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
17.4	940	1267.9	F
1890	2273.4	1280	F

CROSS SECTION

2036.78	1262.3	2043.93	1262.49	2065.79	1263.26	2087.92	1263.84	2090.05	1263.91
2093.92	1264	2111.16	1265.75	2114.18	1266	2140.53	1266.37	2142.25	1266.42
2144.18	1266.5	2162.76	1266.68	2165.95	1266.76	2174.38	1266.84	2177.34	1266.9
2186.96	1267.01	2189.11	1267.03	2193.03	1267.03	2195.32	1267.01	2198.68	1267
2199.39	1266.96	2201.19	1266.98	2203.2	1267.03	2209.59	1267.28	2210.44	1267.3
2215.32	1267.51	2218.53	1267.56	2223.6	1267.75	2225.15	1267.77	2235.5	1268.13
2239.28	1268.22	2241.85	1268.25	2242.69	1268.22	2253.14	1268.03	2253.42	1268.03
2253.53	1268	2253.66	1268.03	2253.75	1268.03	2253.8	1268	2253.96	1268.04
2254.03	1268.05	2259.54	1268.12	2263.19	1268.45	2269.78	1268.8	2281.02	1270
2283.61	1270.86	2287.56	1272	2291.8	1273.63	2292.15	1273.8	2294.7	1274.88
2306.89	1280	2319.18	1282.6	2348.34	1288.7	2350.1	1289.01	2354.95	1290
2371.91	1292	2390.21	1292.6	2405.54	1292.97	2407.74	1292.99	2412.64	1292.99
2417.54	1293	2421.35	1293.06	2426.02	1293.19	2426.67	1293.21	2440.68	1293.83
2446.18	1293.9	2455.39	1293.94	2461.35	1293.9	2461.84	1293.88	2463.26	1293.95

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	309.02	.03	2269.78	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
309.02	2269.78	75	107.02	69	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	600	1275	F
2000	2463.26	1275	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 163

INPUT
Description:
Station Elevation Data num= 392

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1257.3	3.26	1257.2	9.53	1257.02	12.45	1256.92	13.43	1256.88
14.74	1256.8	15.39	1256.78	16.54	1256.75	17.42	1256.73	18.38	1256.72
18.91	1256.7	20.57	1256.71	21.71	1256.7	23.38	1256.69	25.49	1256.69
26.36	1256.7	27.19	1256.7	27.53	1256.71	27.86	1256.74	28.04	1256.8
28.24	1256.8	34.71	1257.65	39.24	1258.56	45.75	1260	49.93	1261.4
51.96	1262	55.21	1262.91	58.51	1264	61.32	1265.35	62.7	1266
62.86	1266.07	63.46	1266.32	64.09	1266.42	64.64	1266.51	69.44	1266.5
69.88	1266.45	70.37	1266.35	70.49	1266.19	70.64	1266	70.7	1266
78.09	1264	85.81	1262.2	86.48	1262	89.17	1261.3	93.61	1260
99.21	1258.15	99.72	1258	100.2	1257.99	105.46	1257.85	180.4	1257.9
180.69	1257.92	184.31	1258	188.95	1258.01	200.01	1258	210.02	1258.06
212.7	1258.07	215.02	1258.07	218.5	1258.09	223.11	1258.1	227.52	1258.12
229.28	1258.12	229.85	1258.1	230.88	1258.13	232.33	1258.12	232.88	1258.13
233.99	1258.13	234.99	1258.1	235.36	1258.13	236.97	1258.13	237.76	1258.1
238.5	1258.13	241.72	1258.13	242.77	1258.1	243.73	1258.13	284.67	1258.14
325.72	1258.42	326.18	1258.42	327	1258.4	327.33	1258.42	328.95	1258.42
329.34	1258.4	329.59	1258.41	329.88	1258.4	330.28	1258.37	332.07	1258.37
332.25	1258.4	332.5	1258.37	332.78	1258.38	333.07	1258.38	333.89	1258.37
334.56	1258.4	350.18	1258.65	350.99	1258.69	352.18	1258.73	354.42	1258.79
356.33	1258.8	359.98	1258.91	413.75	1260	460.78	1260.4	463.4	1260.44
498.39	1260.83	507.78	1260.9	512.28	1260.99	524.05	1261.09	529.39	1261.1
536.32	1261.15	540.03	1261.15	542.01	1261.1	543.13	1261.13	544.95	1261.03
545.56	1260.95	546.28	1260.85	547.44	1260.8	549.06	1260.7	551.98	1260.65
555.02	1260.62	560	1260.59	564.08	1260.7	572.14	1260.66	574.24	1260.7
580.92	1260.7	583.12	1260.74	590.39	1260.8	597.41	1260.78	599.5	1260.81
605.17	1260.82	612.88	1260.82	614.76	1260.8	622.23	1260.83	635.38	1260.72
637	1260.72	648.83	1260.6	653.35	1260.54	655.48	1260.52	659.37	1260.45

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 162

INPUT
Description:
Station Elevation Data num= 377

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1262	10	1262	14.3	1261.15	19.95	1260	22.28	1259.8
25.18	1259.3	31.75	1258.45	39.59	1259.4	48.47	1258.47	52.65	1258
54.89	1258.6	60.52	1260	64.64	1261.49	65.86	1262	69.15	1263.16
71.3	1264	75.91	1265.5	77.32	1266	85.38	1266	88.78	1264.9
91.08	1264	94.37	1263.04	98.26	1262	103.91	1260.28	104.94	1260
115.93	1258	129.08	1257.59	136.71	1257.37	139.97	1257.3	183.36	1257.26
183.72	1257.28	183.88	1257.29	186.18	1257.34	188.21	1257.4	191.81	1257.38
192.79	1257.39	193.48	1257.4	194.19	1257.43	194.88	1257.5	196.31	1257.59
198.61	1257.67	201.14	1257.72	202.78	1257.74	204.59	1257.8	208.31	1257.77
213.73	1257.75	215.77	1257.75	220.11	1257.76	224.75	1257.8	226.94	1257.81
233.58	1257.89	235.93	1257.91	238.1	1257.91	241.37	1257.9	243.06	1257.85
245.09	1257.73	246.12	1257.72	247.54	1257.71	254.31	1257.69	258.48	1257.71
262.94	1257.76	279.6	1258	280.11	1258	294.47	1258.03	296.21	1258
299.82	1258.03	302.98	1258.04	305.16	1258.04	306.39	1258.05	307.62	1258.1
309.04	1258.06	321.04	1258.07	326.06	1258.1	328.44	1258.07	331.54	1258.07
332.3	1258.1	333.22	1258.07	334.17	1258.06	335.16	1258.06	336.09	1258.05
337.32	1258.1	338.77	1258.05	340.26	1258.05	393.58	1259.15	396.97	1259.21
398.11	1259.2	402.22	1259.28	409.12	1259.38	411.26	1259.42	416.74	1259.5
430.35	1259.4	430.46	1259.36	431.06	1259.3	431.7	1259.26	432.76	1259.2
434.5	1259.27	435.84	1259.3	439.26	1259.19	443.14	1259.02	446.41	1259.1
451.25	1258.82	453.43	1258.87	455.68	1258.89	461.53	1258.46	462.44	1258.5
469.65	1258.01	469.76	1258	485.62	1258	487.31	1258.11	493.15	1258.57
496.6	1258.67	498.45	1258.7	501.68	1258.69	505.02	1258.67	520.27	1258.49
524.78	1258.4	528.51	1258.36	537.14	1258.32	539.64	1258.27	544.79	1258.26
546.31	1258.2	547.22	1258.22	548.11	1258.21	548.76	1258.2	549.6	1258.19
550.81	1258.2	551.73	1258.18	565.68	1258.24	569.27	1258.26	573.38	1258.3
577.4	1258.4	578.44	1258.37	590.03	1258.53	591.33	1258.57	593.66	1258.61
596.16	1258.6	597.84	1258.67	599.46	1258.67	600.99	1258.68	602.32	1258.68
603.43	1258.7	605.77	1258.63	607.18	1258.62	609.47	1258.62	611.22	1258.63
611.98	1258.6	624.23	1258.71	627.11	1258.68	627.17	1258.68	638.78	1258.55
653.5	1258.44	658.14	1258.42	684.22	1258.52	687.02	1258.51	688.4	1258.5
694.6	1258.53	701.69	1258.53	714.99	1258.5	720.12	1258.41	725.04	1258.34
729.97	1258.24	736.32	1258.07	736.51	1258.1	740.01	1258	746.1	1258
748.6	1257.99	751.39	1258	771.98	1257.99	775.92	1258	778.33	1258
779.25	1258.02	784.8	1258.2	792.28	1258.39	794.48	1258.43	796.24	1258.4
798.33	1258.46	801.87	1258.47	805.44	1258.47	810.07	1258.46	813.57	1258.4
818.16	1258.43	831.18	1258.31	837.03	1258.2	847.12	1258.09	852.67	1258
1010.78	1257.86	1014.26	1257.9	1017.16	1257.85	1032.56	1257.84	1034.3	1257.8
1035.65	1257.84	1042.29	1257.84	1043.21	1257.8	1044.14	1257.84	1047.07	1257.84
1047.97	1257.8	1048.71	1257.84	1049.9	1257.84	1050.28	1257.8	1050.66	1257.84
1052.69	1257.84	1053.36	1257.8	1054.19	1257.84	1057.82	1257.84	1059.7	1257.8
1199.96	1256.68	1211.12	1256.69	1223.71	1256.66	1227.96	1256.7	1280.3	1256.98
1286.99	1256.95	1288.85	1256.93	1291.88	1256.88	1294.56	1256.9	1297.69	1256.85
1305.22	1256.85	1311.29	1256.87	1314.14	1256.9	1318.27	1256.91	1322.11	1256.94
1322.64	1256.95	1333.64	1257	1336.22	1257	1351.04	1256.92	1356.66	1256.9
1372.73	1256.76	1385.42	1256.7	1393.35	1256.71	1401.39	1256.7	1411.35	1256.65
1437.97	1256.43	1479.35	1256	1509.4	1255.51	1512.76	1255.48	1515.95	1255.5
1518.81	1255.46	1520.61	1255.47	1521.47	1255.5	1523	1255.62	1525.26	1255.6
1528.64	1255.67	1532.56	1255.68	1536.8	1255.67	1551.85	1255.6	1558.46	1255.53
1564.61	1255.48	1569.83	1255.45	1577.55	1255.43	1583.8	1255.4	1593.13	1255.44
1599.27	1255.51	1603.03	1255.6	1605.68	1255.67	1611.8	1255.9	1614.85	1256
1635.67	1256	1646.07	1255.98	1672.99	1255.97	1676.94	1256	1682.88	1255.97

498.41	1256.12	500.63	1256.08	502.87	1256	512.29	1256	513.56	1256.14
517.56	1256.64	519.85	1256.93	521.61	1257.1	525.87	1257.33	526.75	1257.37
527.73	1257.4	528.81	1257.43	529.35	1257.4	530.32	1257.46	531.01	1257.45
531.42	1257.44	531.61	1257.42	531.69	1257.3	532.13	1257.31	533.03	1257.29
533.61	1257.29	534.76	1257.31	537.95	1257.3	538.93	1257.32	539.52	1257.36
540.11	1257.44	540.57	1257.47	541.19	1257.5	541.96	1257.5	543.45	1257.51
547.26	1257.51	548.01	1257.5	548.67	1257.52	549.72	1257.55	551.83	1257.55
557.16	1257.5	557.68	1257.52	647.48	1257.88	653.09	1257.88	656.79	1257.9
659.54	1257.87	664.53	1257.87	665.86	1257.86	667.14	1257.9	667.73	1257.86
669.52	1257.86	670.33	1257.9	671.1	1257.86	672.38	1257.86	672.68	1257.9
672.87	1257.86	673.64	1257.86	674.23	1257.9	674.76	1257.86	675.59	1257.86
676.39	1257.9	678.33	1257.86	679.1	1257.87	680.26	1257.87	681.07	1257.9
759.46	1257.12	762.8	1257.12	767.18	1257.11	770.71	1257.11	777.48	1257.09
779.5	1257.08	784.14	1257.03	788.8	1256.94	791.71	1256.89	796.9	1256.81
800.12	1256.81	802.26	1256.8	804.59	1256.77	808.67	1256.74	810.59	1256.72
812.95	1256.7	814.84	1256.7	816.34	1256.67	820.15	1256.71	823.76	1256.74
829.21	1256.8	834.44	1256.8	836.85	1256.76	912.58	1256.69	918.61	1256.72
924.37	1256.7	942.88	1256.8	977.32	1256.84	982.22	1256.9	987.01	1256.86
991.22	1256.87	994.2	1256.87	997.86	1256.86	1001.4	1256.8	1004.93	1256.82
1030.92	1256.58	1037.95	1256.5	1051.6	1256.41	1068.11	1256.34	1071.67	1256.32
1080.47	1256.2	1097.63	1256.12	1105.39	1256.1	1106.21	1256.1	1127.82	1256
1130.5	1255.98	1130.57	1255.98	1138.02	1255.92	1138.44	1255.9	1138.83	1255.92
1139.09	1255.93	1139.48	1255.93	1139.75	1255.9	1140.05	1255.92	1140.47	1255.92
1140.68	1255.91	1141.45	1255.9	1141.96	1255.9	1153.46	1255.78	1154.84	1255.76
1175.88	1255.54	1192.41	1255.4	1194.26	1255.42	1208.85	1255.33	1210.95	1255.32
1215.19	1255.28	1217.61	1255.3	1224.5	1255.2	1228.72	1255.17	1232.74	1255.15
1236.94	1255.15	1241.15	1255.2	1247.94	1255.17	1251.37	1255.19	1257.01	1255.25
1263.17	1255.3	1266.08	1255.3	1266.95	1255.31	1270.33	1255.32	1286.23	1255.44
1289.62	1255.45	1293.89	1255.5	1296.56	1255.48	1300.81	1255.48	1308.95	1255.54
1313.29	1255.52	1313.86	1255.5	1319.23	1255.48	1400.53	1254.96	1407.32	1254.9
1409.94	1254.87	1411.13	1254.86	1412.93	1254.86	1414.76	1254.9	1416.55	1254.86
1417.28	1254.85	1417.91	1254.85	1418.41	1254.84	1507.02	1254.3	1530.08	1254.05
1533.84	1254	1534.99	1253.98	1541.56	1253.9	1545.01	1253.92	1558.51	1253.98
1561.12	1254	1562.59	1254	1562.64	1254.03	1572.81	1254.24	1586.59	1254.56
1593.37	1254.64	1597.23	1254.66	1601.21	1254.66	1605.03	1254.64	1612.17	1254.56
1620.03	1254.42	1624.88	1254.31	1628.1	1254.26	1628.38	1254.3	1630.31	1254.24
1634.62	1254.24	1657.08	1254.41	1661.82	1254.5	1667.99	1254.55	1675.1	1254.7
1678.54	1254.79	1685.69	1255	1688.51	1255.1	1690.35	1255.16	1691.89	1255.22
1694.98	1255.3	1696.51	1255.3	1697.76	1255.34	1699.73	1255.35	1702.92	1255.36
1705.09	1255.36	1707.19	1255.4	1710.27	1255.36	1713.17	1255.34	1714.51	1255.32
1716.25	1255.3	1717.42	1255.27	1718.84	1255.24	1720.53	1255.18	1722.56	1255.12
1724.99	1255.1	1728.23	1254.98	1734.15	1254.87	1777.3	1255.49	1778.04	1255.44
1784.78	1256	1784.9	1255.95	1785.35	1256	1802.4	1256.84	1813.06	1257.25
1820.32	1257.6	1834.31	1258	1849.68	1258.37	1851.85	1258.44	1859.18	1258.59
1861.89	1258.7	1871.24	1258.84	1878.51	1258.97	1898.59	1259.66	1900.6	1259.72
1909.05	1260	1910.03	1260.04	1922.05	1260.49	1922.13	1260.5	1929.65	1260.78
1934.17	1261	1937.46	1261.21	1943.95	1261.52	1945.5	1261.62	1954.79	1261.97
1955.44	1262	1972.01	1262.28	1981.36	1262.48	1998.46	1263.01	2006.08	1263.2
2009.93	1263.29	2012.97	1263.35	2017.37	1263.4	2022.64	1263.62	2024.06	1263.6
2025.28	1263.63	2028.35	1263.76	2029.8	1263.74	2033.61	1263.88	2034	1263.9
2042.28	1264	2047.22	1264.03	2047.31	1264.03	2047.65	1264.04	2047.8	1264
2047.95	1264.05	2048.11	1264.06	2048.4	1264.08	2055.6	1264.22	2056.27	1264.3
2057.99	1264.34	2063.78	1264.54	2069.2	1264.79	2077.06	1265.11	2096.97	1266
2109.25	1266.69	2141.09	1268	2141.88	1268.05	2142.07	1268.06	2142.31	1268.1
2142.71	1268.07	2164.72	1268.97	2170.06	1269.02	2175.2	1269.08	2181.01	1269.2
2190.13	1269.41	2199.48	1269.59	2211.26	1269.9	2211.78	1269.9	2215.34	1270
2232.76	1270.85	2236.72	1270.98	2245.7	1271.2	2250.09	1271.36	2252.68	1271.44
2256.03	1271.61	2263.08	1272	2276.22	1272.9	2287.44	1273.62	2292.69	1274
2296.49	1274.48	2303.79	1275	2304.17	1275.01	2318.49	1276	2325.16	1276.9
2335.72	1278	2340.7	1279.3	2342.42	1279.78	2343.52	1280	2356.67	1283.7
2372.79	1288.98	2372.93	1289	2375.97	1290	2379.75	1291.04		

Manning's n Values num= 3

1612.59	1252	1616.29	1251.98	1624.56	1251.98	1628.38	1251.97	1631.2	1252
1632.88	1251.96	1633.09	1251.95	1659.06	1251.94	1663.96	1251.95	1670.05	1252
1676.76	1251.99	1678.73	1252	1710.61	1252.21	1721.04	1252.3	1731.65	1252.35
1738.89	1252.41	1744.05	1252.44	1746.72	1252.45	1749.18	1252.5	1750.78	1252.47
1752.27	1252.47	1754.29	1252.48	1757.86	1252.48	1759.56	1252.5	1760.68	1252.48
1765.03	1252.5	1768.91	1252.5	1771.89	1252.51	1775.68	1252.51	1776.14	1252.52
1777.03	1252.5	1777.76	1252.53	1778.4	1252.54	1780.01	1252.54	1781.37	1252.5
1782.7	1252.53	1784.98	1252.53	1785.53	1252.52	1787.61	1252.5	1788.52	1252.5
1860.34	1253.88	1864.12	1254	1879.71	1255.56	1885.2	1256	1900.49	1256.24
1910.66	1256.35	1925.15	1256.55	1954.74	1256.9	1972.59	1257.06	1979.21	1257.13
1982.89	1257.15	1985.49	1257.2	1990.44	1257.21	1996.76	1257.3	2001.7	1257.38
2003.51	1257.4	2005.88	1257.4	2007.66	1257.43	2009.41	1257.44	2011.08	1257.44
2016.05	1257.43	2018.99	1257.4	2022.23	1257.41	2025.62	1257.4	2039.19	1257.43
2041.97	1257.4	2051.81	1257.45	2057.51	1257.43	2079	1257.54	2081.43	1257.5
2086.97	1257.57	2094.61	1257.64	2102.65	1257.74	2107.08	1257.81	2115.35	1258
2115.44	1257.99	2116.01	1258	2133.78	1258.83	2138.21	1259.08	2148.5	1259.6
2154.82	1259.89	2157.8	1260	2159.89	1260.04	2164.23	1260.1	2172.4	1260.1
2180.26	1260.17	2181.21	1260.19	2182.09	1260.2	2183.39	1260.22	2206.24	1260.5
2209.46	1260.53	2211.4	1260.57	2218.14	1260.67	2227.04	1260.92	2231.07	1261
2237.59	1261.24	2242.27	1261.37	2244.16	1261.41	2245.15	1261.42	2247.61	1261.4
2258.49	1262	2260.5	1262.29	2273.04	1264	2278.95	1265.64	2280.6	1266
2281.37	1266.39	2282.32	1266.83	2284.52	1267.68	2291.38	1270	2293.44	1270.4
2301.29	1271.68	2303.49	1272.15	2313.73	1273.58	2319.17	1274.15	2338.71	1278.4
2340.38	1278.68	2346.61	1280	2349.27	1280.6	2350.01	1280.76	2364.65	1283.8
2365.69	1283.92	2396.32	1289.28	2398.69	1289.7	2398.82	1289.72	2399.92	1290
2429.63	1295.04	2430.83	1295.2	2436.91	1296.09	2441.06	1296.73	2444.74	1297.2
2459.88	1300	2463.3	1301.21						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	76.94	.03	2284.52	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
76.94	2284.52	250	198	139	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	257	1266	F
1880	2463.3	1266	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 159

INPUT
Description:
Station Elevation Data num= 499

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
853.47	1262.22	860.14	1262.3	865.46	1262.41	868.19	1262.45	882.04	1262.6
886.28	1262.64	889.1	1262.69	889.8	1262.72	890.23	1262.7	890.61	1262.77
891.2	1262.79	891.61	1262.8	892.84	1262.82	893.94	1262.8	894.38	1262.83
895.47	1262.82	898.24	1262.81	898.92	1262.8	900.61	1262.8	902.53	1262.76
964.66	1262	966.95	1261.2	970.47	1260	977.33	1259.09	980.59	1258.8
982.5	1258.59	990.97	1258	1023.14	1257.76	1041.36	1257.57	1043.7	1257.55
1048.09	1257.52	1049.26	1257.5	1086.28	1257.07	1126.49	1257.78	1134.13	1258
1135.78	1259.29	1137.07	1260	1137.27	1260.18	1138.98	1260.56	1156.73	1260.85
1162.72	1260.62	1166.43	1260.5	1170.6	1260.45	1177.09	1260.36	1191.48	1260
1227.08	1259.81	1228.25	1259.8	1229.38	1259.8	1233.09	1259.81	1238.8	1259.84
1244.89	1259.85	1251.31	1259.9	1257.66	1259.89	1274.77	1259.93	1278.42	1259.95
1284.32	1260	1286.79	1260	1314	1260.11	1319.18	1260.1	1323.7	1260.14
1346.51	1260.19	1383.99	1260.57	1394.9	1260.6	1401.13	1260.6	1414.86	1260.56
1420.57	1260.6	1426.36	1260.55	1428.76	1260.54	1430.35	1260.53	1433.08	1260.5

2790.81	1251.13	2797.91	1251.2	2802.69	1251.29	2805.06	1251.3	2834.39	1251.92
2836.5	1251.92	2839.05	1251.9	2841.73	1251.93	2845.71	1251.92	2851.53	1251.92
2853.09	1251.9	2853.46	1251.91	2853.64	1251.9	2854.37	1251.89	2855.08	1251.89
2857.16	1251.9	2861.56	1251.9	2863.99	1251.91	2866.29	1251.91	2869.12	1251.9
2871.36	1251.94	2873.91	1251.95	2877.1	1251.98	2881.57	1252	2941.59	1252
2950.32	1253.32	2954.28	1254	2966.93	1254.35	2974.99	1254.54	2979.87	1254.62
2983.55	1254.7	2986.48	1254.65	2995.66	1254.57	2997.41	1254.6	3001.09	1254.61
3003	1254.6	3007.97	1254.67	3009.99	1254.68	3015.99	1254.75	3022.67	1254.75
3027.46	1254.8	3031.75	1254.92	3036.45	1254.91	3040.55	1254.99	3046.79	1255.07
3052.63	1255	3058.32	1255.11	3064.38	1255.08	3069.83	1255.14	3075.23	1255.13
3080.53	1255.1	3084.86	1255.17	3090.9	1255.15	3094.49	1255.2	3100.69	1255.18
3108.21	1255.2	3118.78	1255.17	3122.2	1255.18	3129.92	1255.25	3130.11	1255.2
3145.87	1255.43	3152.33	1255.51	3181.55	1256	3184.24	1256.06	3207.69	1256.55
3231.61	1256.97	3238.49	1257.1	3242.01	1257.11	3244.87	1257.13	3247.24	1257.14
3252.3	1257.11	3256.88	1257.3	3259.37	1257.28	3262.78	1257.38	3265.86	1257.4
3269.8	1257.49	3277.45	1257.6	3279.33	1257.67	3287.79	1257.84	3288.46	1257.85
3294.64	1258	3298.45	1258.1	3298.9	1258.07	3308.32	1258.22	3322.57	1258.39
3329.9	1258.5	3333.45	1258.54	3335.69	1258.55	3338.6	1258.54	3340.95	1258.5
3341.85	1258.5	3345.31	1258.33	3347.86	1258.25	3350.55	1258.27	3352.05	1258.25
3354.01	1258.3	3355.71	1258.29	3358.04	1258.32	3361.26	1258.39	3363.83	1258.43
3381.99	1258.8	3385.7	1258.93	3422.68	1260	3432.67	1261.9	3441.07	1263.37
3454.69	1264.8	3471.25	1267.04	3496.22	1269.27	3498.42	1269.5	3503.73	1270
3512.06	1271.67	3515.05	1272.32	3524.68	1274.3	3526.23	1274.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
853.47	.06	1469.44	.03	3432.67	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1469.44	3432.67	312	240	210	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
853.47	1445	1262	F
3000	3526.23	1266	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 158

INPUT
Description:
Station Elevation Data num= 470

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1260.2	4.2	1260	7.56	1259.83	17.76	1260	33.31	1260.31
38.29	1260.3	43.02	1260.31	47.67	1260.27	54.92	1260.15	59.74	1260.01
60.63	1260	61.34	1259.99	68.7	1259.99	68.94	1260	75.54	1260
79.16	1259.86	83.2	1259.77	88.48	1259.6	92.58	1259.46	102.12	1259.22
103.98	1259.21	108.37	1259.26	110.32	1259.4	112.07	1259.48	115.72	1259.89
117.55	1260	123.65	1260.3	129.26	1260.44	131.93	1260.45	134.08	1260.38
139.32	1260	149.02	1260	153.38	1260.46	155.82	1260.63	158.68	1260.8
159.89	1260.85	160.15	1260.89	168.63	1261.33	169.97	1261.35	171.34	1261.4
173.35	1261.35	174.69	1261.35	178.63	1261.32	179.93	1261.32	181.19	1261.3
236.56	1260.85	240.47	1260.87	245.84	1260.87	247.64	1260.9	252.51	1260.84
254.12	1260.79	254.72	1260.79	263.09	1260.8	264.82	1260.73	267.74	1260.69
289.39	1260.35	304.29	1260.19	308.1	1260.16	308.55	1260.16	309.37	1260.1
335.47	1260	355.99	1259.7	356.27	1259.68	358.9	1259.6	364.07	1258.9
365.6	1258.81	366.77	1258.82	367.71	1258.59	368.51	1258.55	370.53	1258.4
371.8	1258.36	380.27	1258.13	380.6	1258.13	389.27	1258.08	389.87	1258.1
391.84	1258	393.63	1257.98	404.31	1257.95	413.21	1257.97	419.44	1258
423.4	1258.06	423.53	1258.06	432.97	1258.21	435.61	1258.5	441.28	1258.41
448.03	1260	520.17	1260	530.56	1260.2	531.33	1260.21	534.1	1260.24

2783.1	1252.41	2785.73	1252.43	2789.87	1252.43	2792.74	1252.5	2795.32	1252.49
2797.89	1252.52	2801.41	1252.6	2804.29	1252.7	2807.97	1252.76	2812.03	1252.78
2816.36	1252.89	2822.03	1252.94	2827.64	1253.1	2834.91	1253.15	2842.99	1253.34
2848.81	1253.44	2867.21	1253.8	2868.12	1253.81	2869.02	1253.84	2879.49	1254
2903.19	1254.22	2904.5	1254.2	2913.85	1254.31	2933.68	1254.42	2935.06	1254.4
2941.75	1254.47	2943.21	1254.48	2959.32	1254.61	2961.01	1254.62	2967.94	1254.7
2972.09	1254.67	2977.93	1254.69	2981.76	1254.71	2989.04	1254.8	2994.49	1254.8
3009.24	1254.83	3012.46	1254.83	3014.12	1254.8	3014.69	1254.81	3017.8	1254.83
3028.66	1254.92	3031.15	1254.95	3033.66	1255	3036.26	1255.03	3040.01	1255.12
3044.8	1255.25	3053.67	1255.52	3066.92	1256	3168.65	1259.25	3182.98	1259.6
3189.47	1259.8	3197.42	1259.92	3204.45	1260	3211.48	1260.19	3217.73	1260.5
3218.18	1260.54	3218.55	1260.55	3218.83	1260.57	3219.33	1260.61	3220.32	1260.7
3221.05	1260.77	3221.73	1260.84	3229.41	1261.78	3238.18	1262.7	3296.26	1269.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1119.8	.03	3168.65	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1119.8	3168.65	246	120	52	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1125.27	1256.75	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 157

INPUT
Description:
Station Elevation Data num= 471

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1254.3	5.94	1254	8.91	1254.12	15.16	1254.31	19.38	1254.41
27.93	1254.56	31.26	1254.59	34.7	1254.6	40.38	1254.6	46.44	1254.54
55.98	1254.32	67.29	1254.3	72.64	1254.21	81.19	1254	86.6	1254.3
88.18	1254	104.82	1254	106.15	1254.07	107.04	1254.14	111.77	1254.48
115.7	1254.74	127.48	1255.6	136.04	1256	138.63	1256.04	140.98	1256.12
143.03	1256.16	145.48	1256.2	147.98	1256.12	149.61	1256	155.08	1255.88
156.81	1255.8	224.58	1254.36	229.34	1254.27	230.58	1254.27	248.9	1254.2
257.47	1254	270.86	1254	289.37	1254.23	301.07	1254.4	308.62	1254.47
316.63	1254.56	318.88	1254.58	322.22	1254.63	325.1	1254.7	327.45	1254.68
328.62	1254.7	330.1	1254.72	330.78	1254.72	331.4	1254.7	332.47	1254.74
349.32	1254.66	349.55	1254.65	350.51	1254.63	351.61	1254.6	355.56	1254.54
357.14	1254.52	359.18	1254.5	361.59	1254.47	375.34	1254.35	430.19	1253.66
437.96	1253.6	469.52	1253.11	488.23	1253.77	538.96	1253.77	542.58	1253.75
544.68	1253.7	547.26	1253.76	553.06	1253.82	557.73	1253.85	557.89	1253.85
558.17	1253.9	558.57	1253.87	560.9	1253.89	560.97	1253.9	561.26	1253.9
566.38	1253.88	566.49	1253.88	566.57	1253.87	566.64	1253.9	566.73	1253.87
571.5	1253.77	571.68	1253.76	576.44	1253.75	576.67	1253.7	577.02	1253.73
577.78	1253.72	578.31	1253.7	582.57	1253.65	597.82	1253.3	606.4	1253.08
622.56	1252.72	624.09	1252.71	626.01	1252.67	638.23	1252.38	638.64	1252.36
639.58	1252.35	641.41	1252.31	642.94	1252.3	645.14	1252.26	645.99	1252.28
662.24	1252.26	672.37	1252	673.84	1252	675.56	1251.93	676.69	1251.92
677.9	1251.92	678.92	1251.98	679.4	1252	705.81	1252.53	717.26	1252.7
746.24	1253.2	771.63	1253.7	772.48	1253.71	774.45	1253.71	776.38	1253.7
824.53	1252.7	826.21	1252.72	833.65	1252.63	834.02	1252.64	852.22	1252.53
874.21	1252	890.1	1252	898.64	1253.4	902.54	1254	927.57	1254.28
930.68	1254.32	932.95	1254.3	935.42	1254.37	937.09	1254.39	940.13	1254.42
941.84	1254.4	942.58	1254.44	943.35	1254.44	944.22	1254.45	945.02	1254.4
945.34	1254.45	946.19	1254.45	946.52	1254.5	946.87	1254.45	949.15	1254.45
949.64	1254.5	950.06	1254.45	950.54	1254.45	950.72	1254.4	950.82	1254.45

3030.38	1260	3067.65	1263.78	3071.72	1264.3	3079.49	1265.16	3084.86	1265.77
3096.83	1267.2	3102.18	1267.83	3112.09	1268.78	3114.32	1269.06	3119.88	1269.44
3135	1270								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1008.28	.03	2977.45	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1008.28	2977.45	298	184	118	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	949.64	1255	F

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 156

INPUT
Description:
Station Elevation Data num= 466

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1251.9	11	1252	61.03	1252	87.84	1251.74	92.65	1251.7
98.23	1251.85	100.97	1251.83	101.43	1251.82	102.38	1251.82	103.33	1251.8
107.88	1251.6	108.08	1251.57	116.24	1251.37	118.92	1251.32	123.66	1251.4
127.4	1251.33	134.15	1251.26	134.79	1251.24	138.57	1251.11	143.4	1250.99
147.85	1250.94	150.67	1250.94	152.2	1251.03	153.87	1251.1	155.37	1251.04
160.83	1250.87	164.94	1250.71	170.95	1250.4	177.03	1250	180.09	1250
208.77	1249.9	211.82	1249.95	214.03	1250	228.62	1250.4	237.29	1250.61
243.78	1250.79	247.05	1250.85	249.3	1250.91	251.19	1250.9	253.1	1250.97
257.61	1250.99	260.67	1250.98	268.32	1250.9	272.67	1250.92	276.67	1250.88
285.73	1250.82	290.43	1250.78	296.64	1250.78	300.61	1250.79	326.28	1250.4
327.22	1250.36	328.22	1250.37	331.83	1250.49	355.98	1250.59	357.37	1250.5
357.69	1250.52	366.81	1250.42	371.13	1250.21	374.57	1250.05	375.83	1250
389.97	1250	393.24	1251.08	396.38	1252	401.08	1252.2	404.71	1252.38
441.63	1253.94	443.3	1254	445.81	1254.01	451.67	1254.01	455.23	1254.02
462.88	1254	478.34	1254.03	487.43	1254.03	489.66	1254	490.68	1254.02
492.24	1254	494.35	1253.05	496.5	1252	502.24	1250.4	503.61	1250
506.11	1249.68	507.15	1249.61	507.97	1249.53	513.91	1248.9	522.96	1248
539.17	1247.05	555.16	1246	609.84	1244.7	626.52	1244.27	630.72	1244.17
632.15	1244.13	632.77	1244.12	633	1244.1	636.35	1244.14	636.53	1244.21
639.54	1244.83	639.92	1244.7	645.3	1246	658.88	1246.69	660.31	1246.68
661.49	1246.7	744.94	1246.83	747.44	1246.81	750.03	1246.78	752.66	1246.74
758.63	1246.6	761.71	1246.6	762.6	1246.58	763.46	1246.58	765.35	1246.56
766.02	1246.6	766.62	1246.55	768.13	1246.52	768.6	1246.52	769.09	1246.51
769.79	1246.5	770.19	1246.51	770.47	1246.52	770.63	1246.52	770.85	1246.54
771.08	1246.5	771.27	1246.55	772.51	1246.55	772.88	1246.5	773.15	1246.53
773.93	1246.5	774.8	1246.5	775.11	1246.51	775.74	1246.52	776.07	1246.53
777.06	1246.6	778.35	1246.59	779.48	1246.61	815.04	1246.18	875.97	1246
878.22	1246	883.2	1245.74	885.25	1245.67	888.57	1245.6	892.18	1245.49
893.98	1245.46	895.8	1245.45	897.31	1245.45	897.77	1245.5	899.43	1245.54
902.36	1245.59	904.26	1245.71	904.87	1245.88	905.29	1246	909.1	1246.08
913.32	1246.15	916.23	1246.19	919.19	1246.21	922.26	1246.2	926.75	1246.23
940.69	1246.19	947.01	1246.1	949.74	1246.01	950.77	1246	955.3	1245.95
965.16	1245.86	974.16	1245.8	978.42	1245.7	979.87	1245.64	981.15	1245.61
984.83	1245.6	989.52	1245.51	991.11	1245.5	992.77	1245.5	994.32	1245.51
998.14	1245.6	1000.04	1245.6	1001.79	1245.59	1004.45	1245.55	1006.26	1245.55
1007.97	1245.6	1015.67	1245.76	1024.52	1246	1026.18	1246.01	1028.97	1246
1031.34	1246.06	1037.49	1246.09	1040.6	1246.1	1042.19	1246.1	1044.3	1246.12
1046.18	1246.13	1047.55	1246.14	1048.41	1246.14	1050.47	1246.1	1052.55	1246.14
1054.49	1246.14	1057.07	1246.13	1058.15	1246.13	1059.48	1246.1	1060.96	1246.11

CROSS SECTION

RIVER: SANTA CLARA
REACH: 1 RS: 155

INPUT
Description:
Station Elevation Data num= 500

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1249	3.13	1249	4.36	1248.99	7.16	1248.95	50.28	1248.42
83.9	1248.9	85.02	1248.86	88.15	1248.91	132.31	1248.91	136.53	1248.69
138.99	1248.6	141.01	1248.59	144.81	1248.54	147.45	1248.53	148.23	1248.53
158.37	1248.5	187.75	1248	203.34	1247.86	205.94	1247.81	206.45	1247.79
281.61	1247.7	299.85	1248	336.41	1248.93	336.49	1248.93	336.59	1248.93
336.83	1248.93	338.54	1248.9	404.32	1248	405.32	1248	409.13	1247.94
411.47	1247.93	413.05	1247.91	414.34	1247.9	416.01	1247.9	424.44	1247.95
426.55	1247.95	428.55	1247.9	433.49	1248	444.93	1248	450.39	1248.68
459.92	1250	503.48	1251.2	537.35	1252	561.81	1252	561.97	1251.9
562.35	1251.86	568.48	1250.44	570.73	1250	575.1	1249.31	583.25	1248
587.9	1246.36	588.98	1246	594.99	1245.27	603.26	1244.28	605.38	1244
606.22	1243.97	609.41	1243.88	615	1243.76	616.18	1243.7	617.07	1243.7
617.59	1243.69	618.24	1243.68	619	1243.68	619.8	1243.7	620.58	1243.68
623.22	1243.7	624.86	1243.72	626.9	1243.7	629.11	1243.77	632.04	1243.79
635.2	1243.8	640.81	1243.8	681.87	1242.86	691.73	1242.41	693.25	1242.38
694.89	1242.33	700.7	1242	712.24	1241.06	713.22	1240.99	713.62	1240.97
713.97	1240.95	714.1	1240.9	714.48	1240.95	714.69	1241	715.32	1241.08
723.6	1242	767.85	1243.02	773.43	1243.16	774.71	1243.19	785.92	1243.2
786.04	1243.14	786.28	1243.11	788.87	1242.96	790.07	1242.91	791.73	1242.9
792.83	1242.85	795.66	1242.82	803.49	1242.8	806.79	1242.8	816.07	1242.72
817.5	1242.72	819.06	1242.71	822.96	1242.7	825.35	1242.7	826.95	1242.69
829.97	1242.69	835.46	1242.68	843.35	1242.65	844.79	1242.6	851.35	1242.62
856.22	1242.59	872.17	1242.47	873.35	1242.5	874.98	1242.44	876.85	1242.41
878.42	1242.39	880.07	1242.36	880.93	1242.3	881.49	1242.34	882.09	1242.33
882.67	1242.34	883.17	1242.34	883.93	1242.3	884.35	1242.35	884.63	1242.36
884.79	1242.37	884.96	1242.4	885.18	1242.4	885.73	1242.44	886.25	1242.45
886.59	1242.46	886.98	1242.46	891.1	1242.4	891.49	1242.43	893.62	1242.43
894.04	1242.4	894.56	1242.46	896.3	1242.49	896.95	1242.5	897.48	1242.5
898.33	1242.44	899.56	1242.44	900.64	1242.4	901.36	1242.45	901.94	1242.44
902.9	1242.43	903.53	1242.42	904.19	1242.4	904.5	1242.44	904.96	1242.45
905.41	1242.49	906.02	1242.55	906.79	1242.6	907.93	1242.72	909.51	1242.8
910.78	1242.79	913.59	1242.9	915.7	1242.9	917.33	1242.91	966.39	1242.93
985.27	1242.1	985.85	1242.1	988.27	1242	989.01	1241.99	991.14	1241.99
991.79	1242	993.17	1242.13	994.5	1242.18	996.28	1242.19	1000.16	1242.07
1001.75	1242	1007.32	1241.9	1021.41	1242	1028.85	1242	1033.1	1241.89
1035.4	1241.86	1038.08	1241.85	1043.9	1241.9	1046.38	1242	1047	1242.03
1053.2	1242.33	1056.9	1242.5	1057.62	1242.51	1065.58	1242.77	1067.55	1242.81
1069.43	1242.83	1071.98	1242.8	1076.11	1242.79	1077.78	1242.79	1080.5	1242.81
1084.86	1242.89	1085.86	1242.9	1087.6	1243.06	1087.93	1243.08	1091.1	1243.21
1092.22	1243.23	1092.65	1243.2	1095.78	1243.27	1096.68	1243.28	1097.86	1243.27
1099.05	1243.25	1100.56	1243.2	1102	1243.18	1102.72	1243.15	1104.56	1243.04
1108.42	1242.87	1111.83	1242.8	1114.44	1242.68	1116.72	1242.65	1117.91	1242.63
1120.5	1242.56	1125.55	1242.4	1127.63	1242.4	1130.02	1242.36	1130.58	1242.34
1131.22	1242.33	1131.94	1242.3	1132.72	1242.27	1133.35	1242.24	1133.65	1242.24
1133.86	1242.23	1134.06	1242.2	1134.22	1242.24	1134.3	1242.24	1134.4	1242.28
1134.58	1242.3	1134.79	1242.29	1135.1	1242.3	1135.46	1242.3	1135.92	1242.29
1136.24	1242.3	1136.6	1242.26	1136.77	1242.24	1138.06	1242.26	1138.14	1242.26
1138.36	1242.3	1138.66	1242.27	1139.42	1242.27	1139.89	1242.25	1140.08	1242.3
1140.25	1242.26	1140.59	1242.27	1141.12	1242.29	1141.72	1242.31	1142.28	1242.3
1142.9	1242.35	1143.62	1242.37	1144.21	1242.38	1145.61	1242.38	1146.23	1242.4
1147.11	1242.39	1148.48	1242.41	1152.52	1242.52	1154.48	1242.56	1156.84	1242.6
1161.92	1242.62	1170.2	1242.58	1172.44	1242.6	1176.57	1242.62	1180.3	1242.63
1182.33	1242.62	1184.45	1242.64	1186.75	1242.7	1189.76	1242.7	1193.09	1242.69

1	174	.06	.03	.06
1	173	.06	.03	.06
1	172	.06	.03	.06
1	171	.06	.03	.06
1	170	.06	.03	.06
1	169	.06	.03	.06
1	168	.06	.03	.06
1	167	.06	.03	.06
1	166	.06	.03	.06
1	165.9	Bridge		
1	165.5	.06	.03	.06
1	165	.06	.03	.06
1	164	.06	.03	.06
1	163	.06	.03	.06
1	162	.06	.03	.06
1	161	.06	.03	.06
1	160	.06	.03	.06
1	159	.06	.03	.06
1	158	.06	.03	.06
1	157	.06	.03	.06
1	156	.06	.03	.06
1	155	.06	.03	.06

SUMMARY OF REACH LENGTHS

River: SANTA CLARA

Reach	River Sta.	Left	Channel	Right
1	174	730.96	727.04	709.04
1	173	379	426.95	469
1	172	150	173.52	161
1	171	151	157	160
1	170	120	111.98	122.02
1	169	140	165	155
1	168	121	178	319
1	167	59.01	231	386.01
1	166	120	120	120
1	165.9	Bridge		
1	165.5	49	50	232
1	165	146	171	76.48
1	164	75	107.02	69
1	163	76	182	285
1	162	128	180	197
1	161	78.98	150	223
1	160	250	198	139
1	159	312	240	210
1	158	246	120	52
1	157	298	184	118
1	156	120.99	231.99	363
1	155	745	220	330

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: SANTA CLARA

Reach	River Sta.	Contr.	Expan.

APPENDIX 'C'

Location Hydraulic Study Form

Floodplain Evaluation Form

LOCATION HYDRAULIC STUDY FORM

Dist. 7 Co. *LA* Rte. ***Cross Valley Connector*** K.P.
EA Bridge No.
Floodplain Description:
Shallow river with steep hills on the right overbank and developed land on the left overbank. Location of interest: Santa Clara River 2000 ft upstream of the CA aqueduct.

1. Description of Proposal (include any physical barriers i.e. concrete barriers, soundwalls, etc. and design elements to minimize floodplain impacts)

This project includes placement of fill and construction of the Golden Valley Road Bridge within the existing floodplain. The proposed construction would have minor impacts on the existing floodplain.

2. ADT: Current **N/A** Projected_____

3. Hydraulic Data: Base Flood Q_{100}= ***15,272*** m^3 / s ***(Taken from report titled Drainage Concept Report for River Park Santa Clara River Soil Cement Bank Protection, August 2004 by PACE, Pacific Advanced Civil Engineering, Inc.)***

WSE_{100}= ***(See Appendix 'B')*** The flood of record, if greater than Q_{100}:
Q= ***N/A*** m^3 / s WSE= ***N/A***
Overtopping flood Q=***N/A*** m^3 / s
WSE=***N/A***

Are NFIP maps and studies available? YES **X** NO_____

4. Is the highway location alternative within a regulatory floodway?
YES_____ NO ***X***

5. Attach map with flood limits outlined showing all buildings or other improvements within the base floodplain. ***(See Appendix 'A')***

Potential Q_{100} backwater damages:

A. Residences? NO___YES ***(no increase from existing condition)***
B. Other Bldgs? NO___YES ***(no increase from existing condition)***
C. Crops? NO___YES ***(no increase from existing condition)***
D. Natural and beneficial

FLOODPLAIN VALUES? NO **X** YES_____

6. Type of Traffic:

A. Emergency supply or evacuation route? NO_____YES **X**

B. Emergency vehicle access? NO_____YES__**X**____
C. Practicable detour available? NO_____YES__**X**____
D. School bus or mail route? NO_____YES__**X**____

7. Estimated duration of traffic interruption for 100-year event hours: ***N/A (The Golden Valley Road Bridge would be entirely above floodplain).***

8. Estimated value of Q_{100} flood damages (if any) – moderate risk level.

A. Roadway $ ***(no increase from existing condition)***
B Property $ ***(no increase from existing condition)***
Total $ ***(no increase from existing condition)***

9. Assessment of Level of Risk Low__**X**____
Moderate____
High_____

For High Risk projects, during design phase, additional Design Study Risk Analysis May be necessary to determine design alternative.

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible
Floodplain development? NO_____YES ***(encroachment with minor impacts)***

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113 ***(See report)***

Information developed to comply with the Federal requirement for the Location Hydraulic Study shall be retained in the project files.

Signature – Hydraulic/Project Engineer Glen Parker Date 3/31/05

FLOODPLAIN ENCROACHMENT REPORT SUMMARY

Dist. 7 Co. *LA* Rte. ***Cross Valley Connector*** K.P.
Bridge No.
Limits: ***Santa Clara River between Bouquet Canyon Road and Whites Canyon Road.***

Floodplain Description: ***Shallow river with steep hills on the right overbank and developed land on the left overbank. Location of interest: Santa Clara River 2000 ft upstream of the CA aqueduct.***

		No	Yes
1.	Is the proposed action a longitudinal encroachment of the base floodplain?		*No impacts*
2.	Are the risks associated with the implementation of the proposed action significant?	X	
3.	Will the proposed action support probable incompatible floodplain development?	X	
4.	Are there any significant impacts on natural and beneficial floodplain values?	X	
5.	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	X	
6.	Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).	X	
7.	Are Location Hydraulic Studies that document the above answers on file? If not explain.		X

PREPARED BY:

Glen Parker — 3/31/05

Signature – Hydraulic/Project Engineer — Date

APPROVED BY:

Signature – City Project Manager — Date

CONCURRED BY:

Signature – District Local Assistance Engineer — Date

Signature – FHWA Transportation Engineer — Date