Flood Control District of Maricopa County
Contract FCD 89-79

WICKENBURG AREA DRAINAGE MASTER STUDY

TECHNICAL DOCUMENTATION REPORT

HYDROLOGIC ANALYSES

FLOODLAIN DELINEATION

Submitted to the
Federal Emergency Management Agency
on Behalf of the
Flood Control District of Maricopa County

BLACK & VEATCH
PROGRESS BY DESIGN

Project No. 17676

May 1994

COE & VAN LOO
PLANNING • ENGINEERING
LANDSCAPE ARCHITECTURE

CVL No. 1197-02

FEDERAL EMERGENCY MANAGEMENT AGENCY **HYDROLOGIC ANALYSIS FORM**	*O.M.B. Burden No. 3067-0148* *Expires July 31, 1994*	*FEMA USE ONLY*

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.67 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: Wash S : Little San Domingo Wash
(One form for each flooding source)

Project Name /Identifier: Wickenburg ADMS FCD 89-79

1. HYDROLOGIC ANALYSIS IN FIS

☐ Approximate study stream (Zone A)
☒ Detailed study stream (briefly explain methodology) HEC-1 analysis based on Flood Control District of Maricopa County Methodologies.

2. REASON FOR NEW HYDROLOGIC ANALYSIS

☐ No existing analysis
☐ Improved data *(see data revision on page 3)*
☐ Changed physical conditions of watershed *(explain)* _____

☐ Alternative methodology *(justify why the revised model is better than model used in the effective FIS)*

☐ Evaluation of proposed conditions (CLOMRs only) (explain) _____

☒ Other No existing analysis or analysis being updated to reflect existing conditions.

If a computer program/model was used in revising the hydrologic analysis, please provide a diskette with the input files for the 10-, 50-, 100 - and 500-year recurrence intervals.

Only the 100-year recurrence interval need be included for SFHAs designated as Zone A.

3. APPROVAL OF ANALYSIS

☒ Approval of hydrologic analysis, including the resulting peak discharge value (s) has been provided by the appropriate local, state, or Federal Agency. (i.e., Flood Control District of Maricopa County)
Attach evidence of approval.

☐ Approval of the hydrologic analysis is not required by any local, State, or Federal Agency.

4. REVIEW OF RESULTS

Stream: _____

Comparison of 100-year Discharges

Location:	Drainage area (Sq mi.)	FIS (cfs):	Revised (cfs):
	8.78 Sq. mi.		3403 cfs

Note: When revised discharges are not significantly different than FIS discharges, FEMA may require a confidence limits analysis on attachment D at a later date to complete the review.

As is often the case with revision requests, only a portion of a stream may actually be revised or be affected by a revision. Therefore, transition to the unrevised portion is important to maintain the continuity of the study. NFIP regulations stipulate that such a transition must be assured. What is the transition from the proposed discharges to the effective discharges? Please explain how the transition was made *(attach separate sheet if necessary)*

No existing analysis or updated analysis to reflect existing conditions.

ATTACH A COMPLETED REVIEW OF RESULTS PAGE FOR EACH FLOODING SOURCE.

Is the new hydrologic analysis being developed solely to revise the flow values presented in the FIS *(i.e. no changed hydraulic conditions)*? ☐ Yes ☒ No

If yes, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

FEMA does not normally revise NFIP maps solely due to insignificant flow changes where changes in 100-year water surface elevation are less than 1.0 foot.

5. HISTORICAL FLOODING INFORMATION

Is historical data available for the flooding source? ☐ Yes ☒ No

If yes, provide the following:

Location along flooding source: _____

Maximum peak discharge: _____ cfs

Second highest peak discharge: _____ cfs

Source of information: _____

6. GAGE RECORD INFORMATION

Location of nearest gage to project site *(along flooding source or similar watershed; specify)*

NA

Gaging Station: _____

Drainage area at gage: _____ mi^2

Number of years of data: _____

7. DATA REVISION

Please use the following table to list all the data and/or parameters affected by this request and identify them as new data (*New*) or as revising existing data (*Revised*). *(If necessary, attach a separate sheet.)*

Data Parameter	New	Revised	Data Source
NA	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	

- Data source can be from a Federal, State, or local government agency, or from a private source. Some State and local governments may have less strict data requirements than Federal agencies, in which case the hydrologic data may not be accepted by FEMA unless it is demonstrated that the data give a better estimate of the flood discharge.
- Attach documentation corroborating each data source *(i.e., certified statement, report, bibliographical reference to a published document)*. In the case of a published document or a government report, providing copies of the cover and pertinent pages may be helpful.

8. METHODOLOGY FOR NEW ANALYSIS

☐ Statistical Analysis of Gage Records (*use Attachment A*)

☐ Regional Regression Equations *(use Attachment B)*

☒ Precipitation/Runoff Model *(use Attachment C)*

☐ Other *(specify; attach backup computations and supporting data)* _____

ATTACHMENT A: STATISTICAL ANALYSIS OF GAGE RECORDS

Gaging Station: NA

Gage Location (latitude and longitude): _____

	FIS:	Revised:
1. Number of years of data		
Systematic		
Historical		
2. Homogeneous data	☐ Yes ☐ No	☐ Yes ☐ No
3. Data adjustments	☐ Yes ☐ No	☐ Yes ☐ No
4. Number of high outliers		
Low outliers		
Zero events		
5. Generalized skew		
6. Station skew		
7. Adopted skew		
8. Probability distribution used (justify if log-Pearson III was not used)		
9. Transfer equations to ungaged sites		☐ Yes ☐ No

If yes, specify method

_____

_____

_____

10. Expected probability*	☐ Yes ☐ No
11. Comparison of results with other analyses	☐ Yes ☐ No

If yes, describe comparison

_____

_____

_____

*FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data is not available, indicate by N/A.

Attach analysis including plot of flood frequency curve.

Stream: NA - No flow records

Select one location for Confidence Limits Evaluation (*describe location*): _____

_____

Discharges for selected location:

Exceedance Probability		FIS	Revised
10%	(10-year)	_____ cfs	_____ cfs
2%	(50-year)	_____ cfs	_____ cfs
1%	(100-year)	_____ cfs	_____ cfs
0.2%	(500-year)	_____ cfs	_____ cfs

1% (100-year) Flood Confidence Intervals

90% Confidence Interval: 5% limit _____ cfs

95% limit _____ cfs

50% Confidence Interval: 25% limit _____ cfs

75% limit _____ cfs

If the value of the 100-year frequency flood in the FIS is beyond the 50% confidence interval but within the 90% confidence interval, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

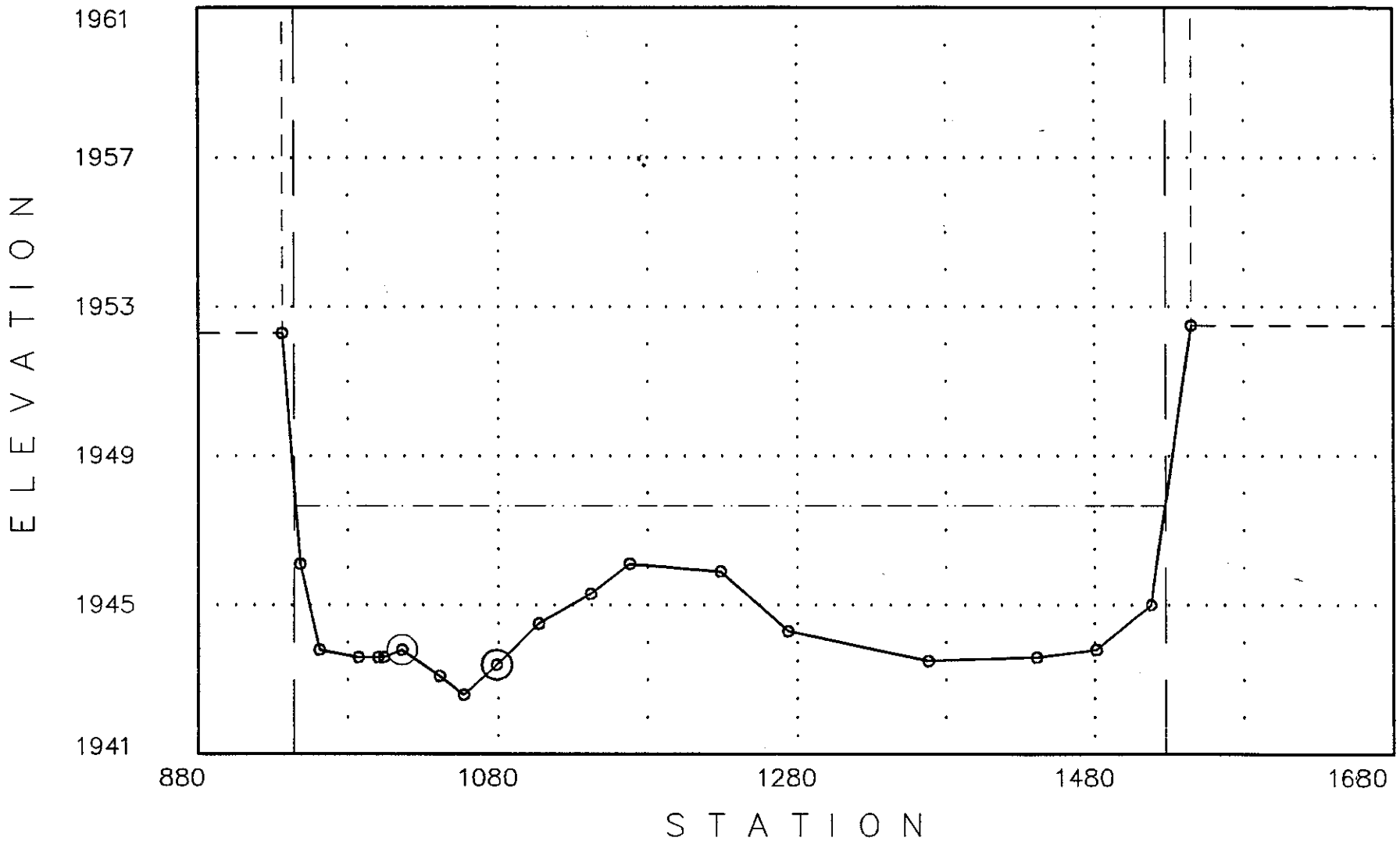
An example of confidence limits analysis can be found in Appendix 9 of Bulletin 17B.

Attach Confidence Limits Analysis.

<<<<<< Cross Section: 1.345: (FN = WASHT.O) >>>>>>

Q1= 13132 WS1= 1947.66
Q2= 13132 WS2= 1947.66

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

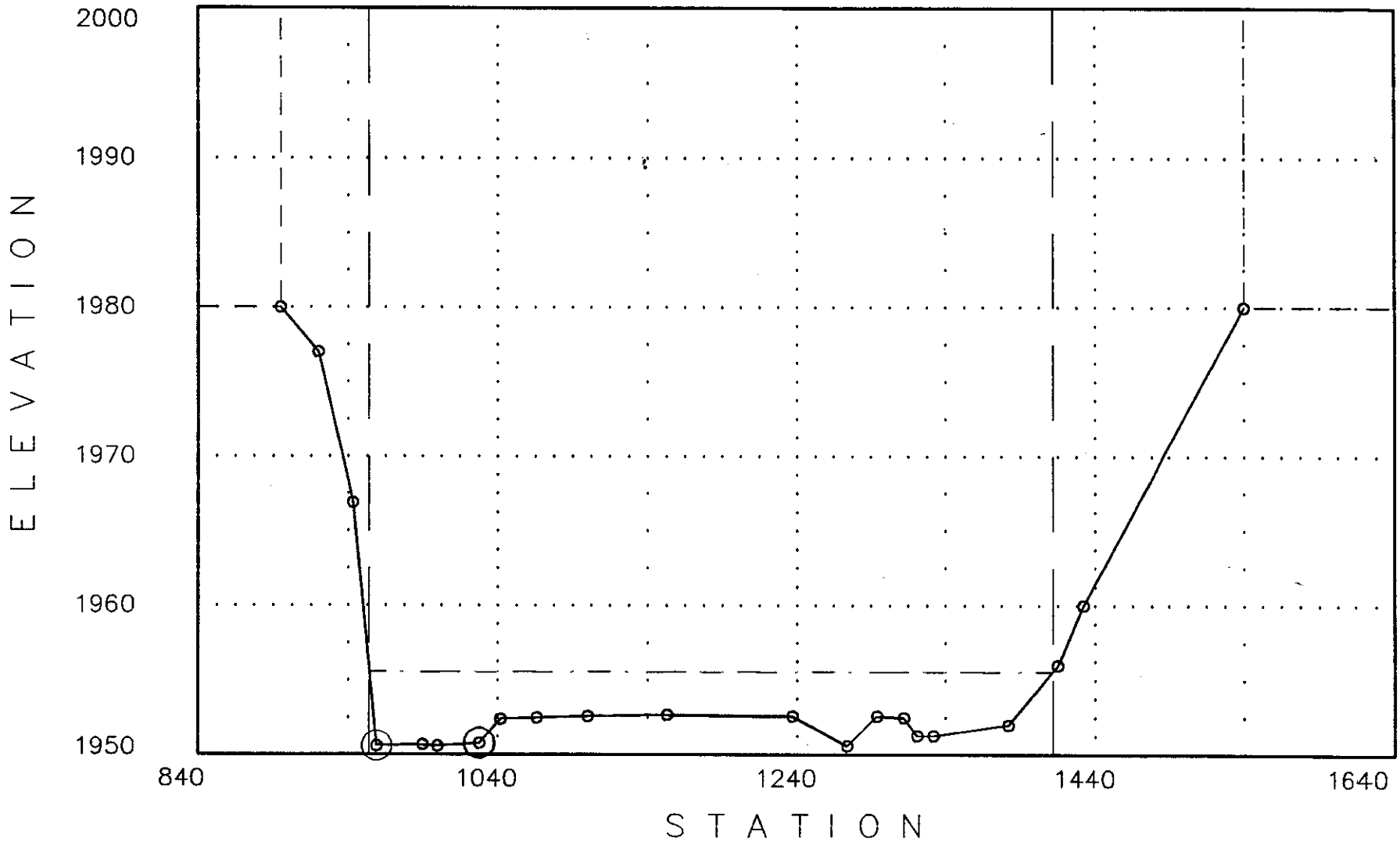


08-20-1992

<<<<<< Cross Section: 1.44: (FN = WASHT.O) >>>>>>

Q1= 13132 WS1= 1955.57
Q2= 13132 WS2= 1955.59

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

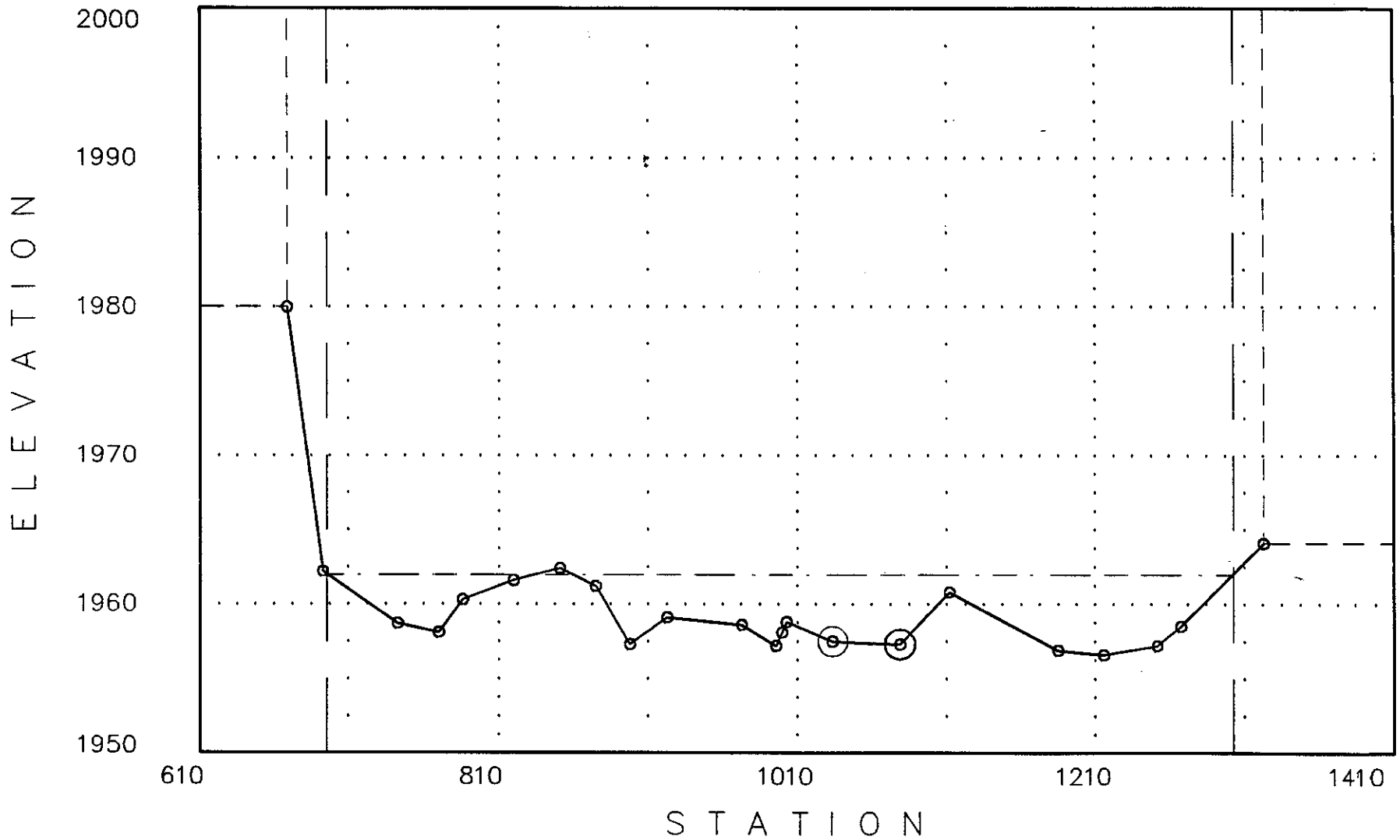


08-20-1992

<<<<<< Cross Section: 1.53: (FN = WASHT.O) >>>>>>

Q1= 13021 WS1= 1961.98
Q2= 13021 WS2= 1961.96

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

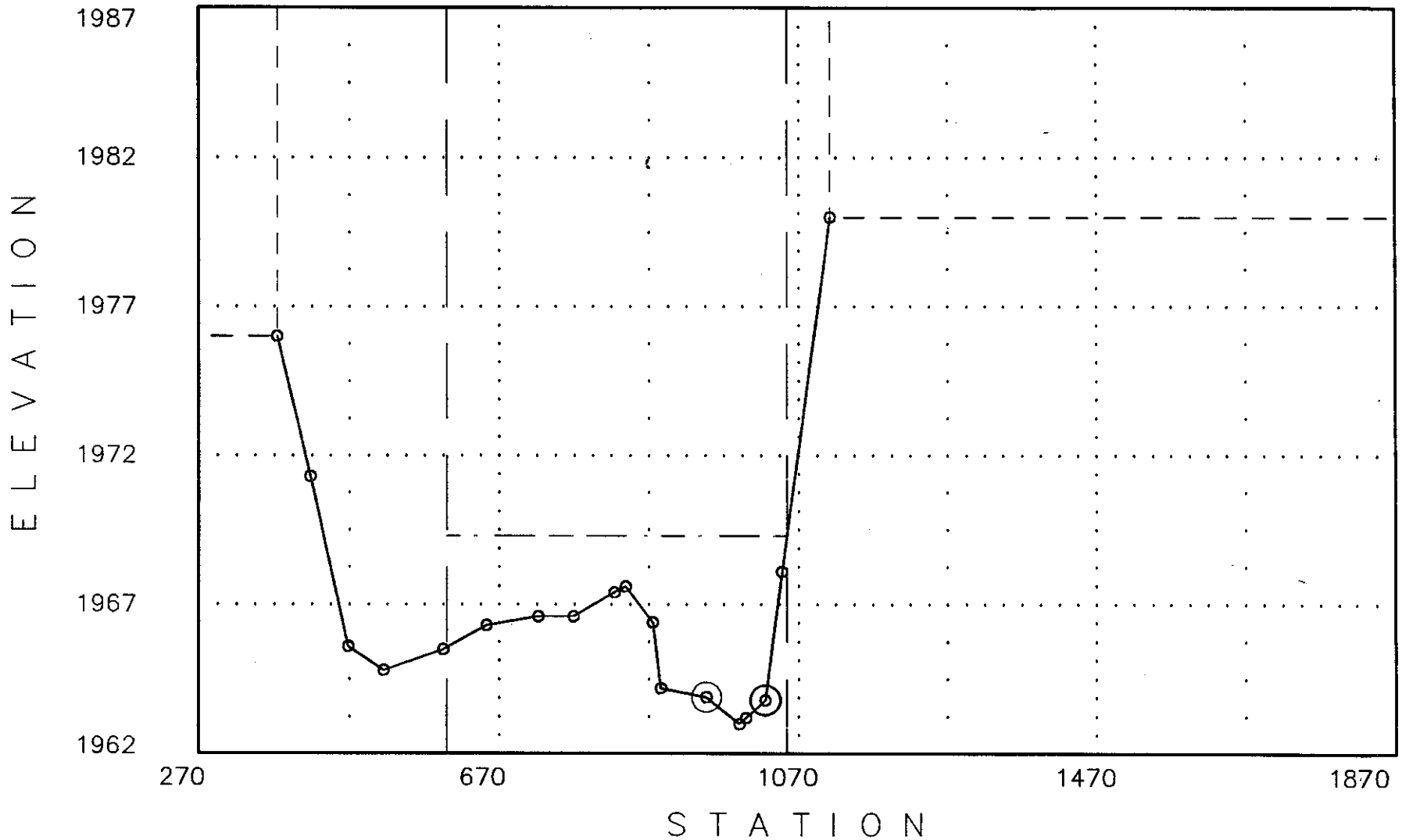


08-20-1992

<<<<<< Cross Section: 1.624: (FN = WASHT.O) >>>>>>

Q1= 13021 WS1= 1969.3
Q2= 13021 WS2= 1969.3

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

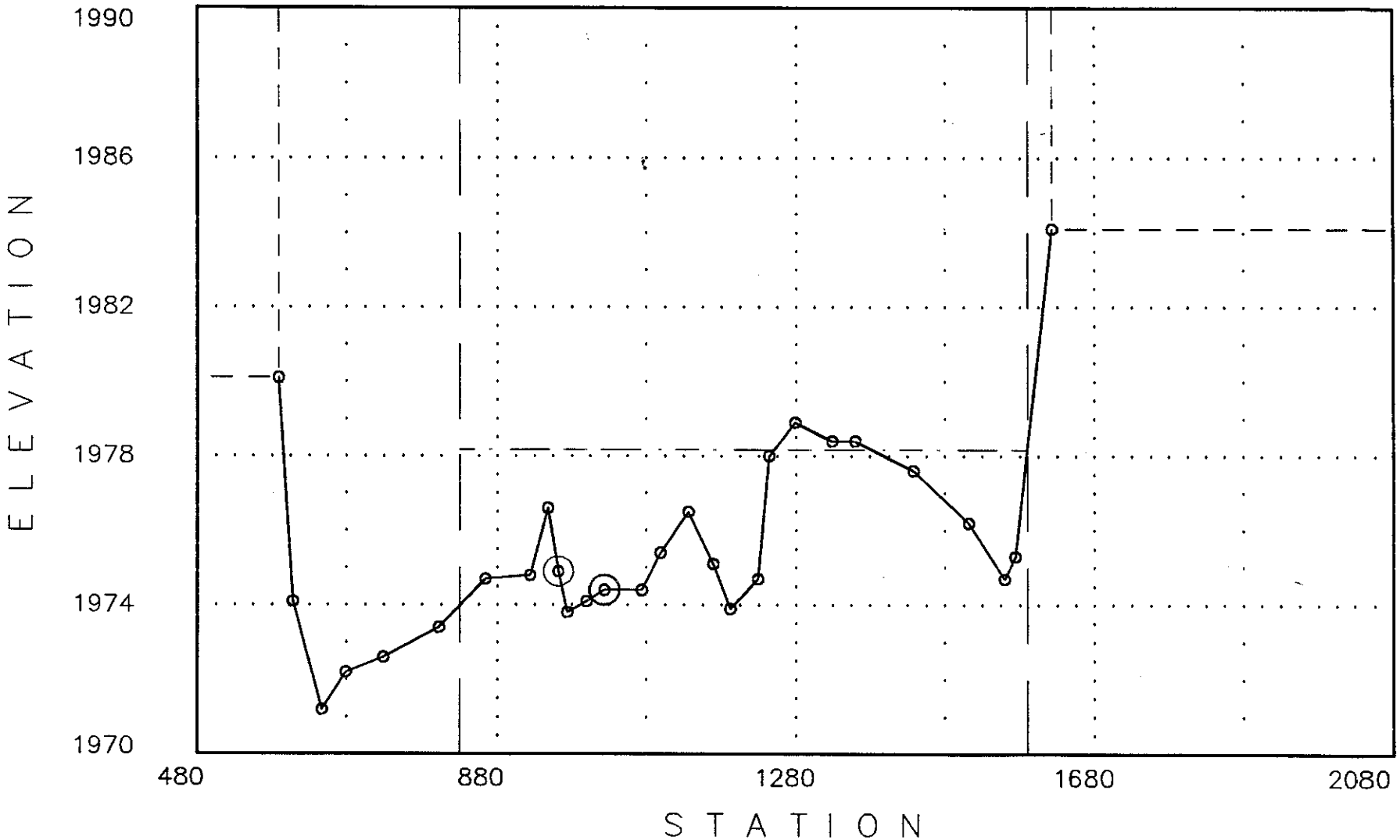


08-20-1992

<<<<<< Cross Section: 1.727: (FN = WASHT.O) >>>>>>

Q1= 13021 WS1= 1978.17
Q2= 13021 WS2= 1978.17

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

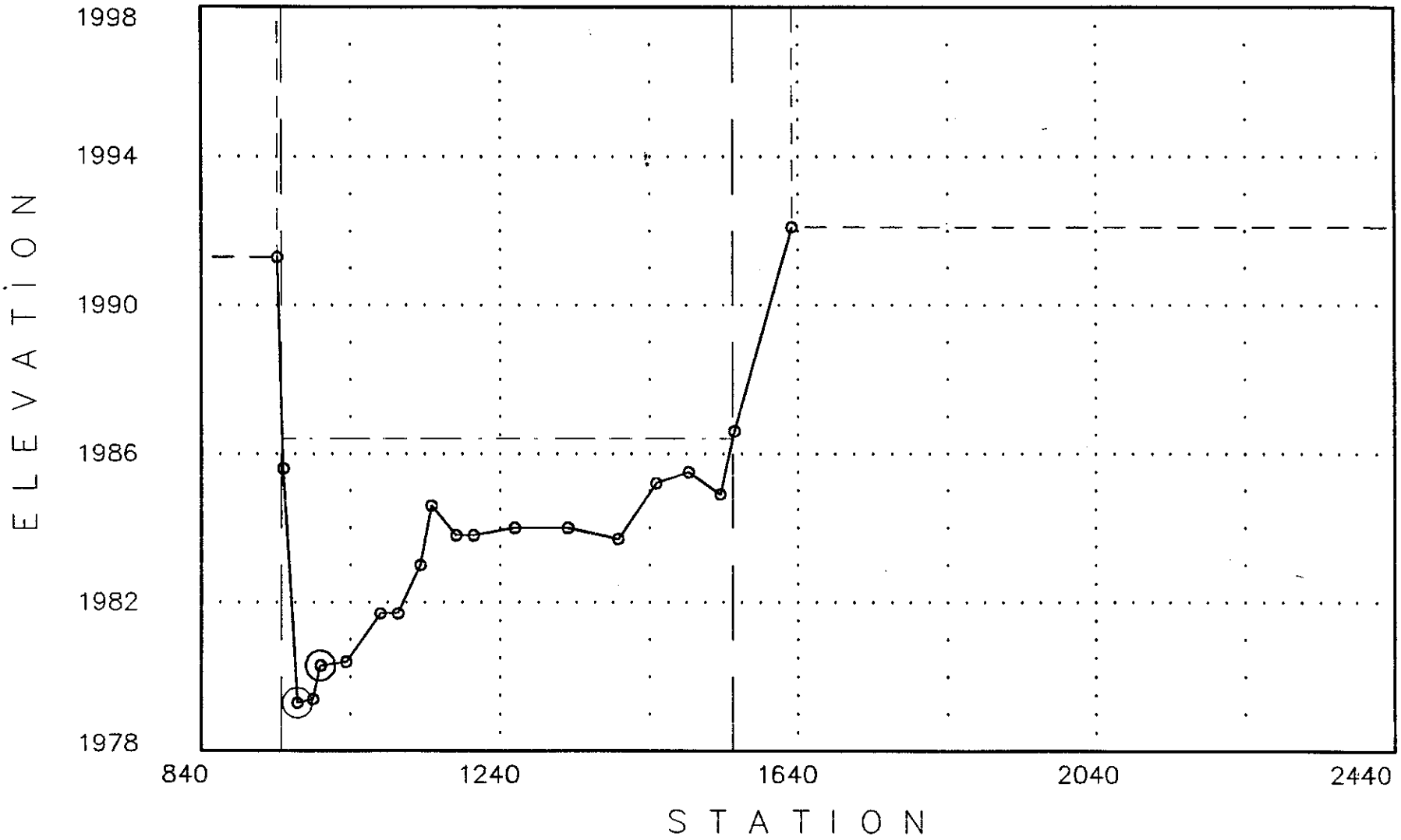


08-20-1992

<<<<<< Cross Section: 1.814: (FN = WASHT.O) >>>>>>

Q1= 12911 WS1= 1986.41
Q2= 12911 WS2= 1986.41

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

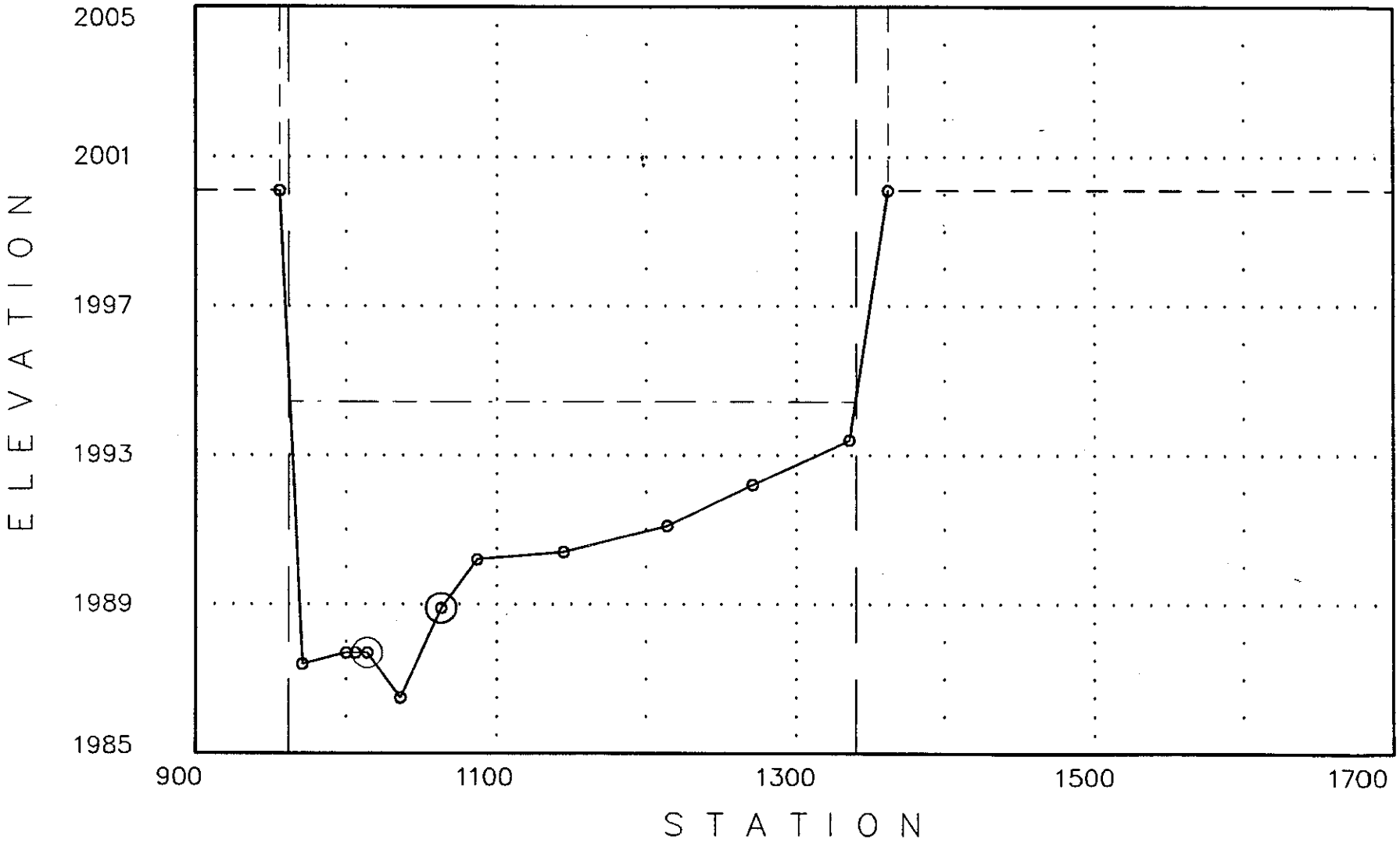


08-20-1992

<<<<<< Cross Section: 1.912: (FN = WASHT.O) >>>>>>

Q1= 12911 WS1= 1994.44
Q2= 12911 WS2= 1994.44

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

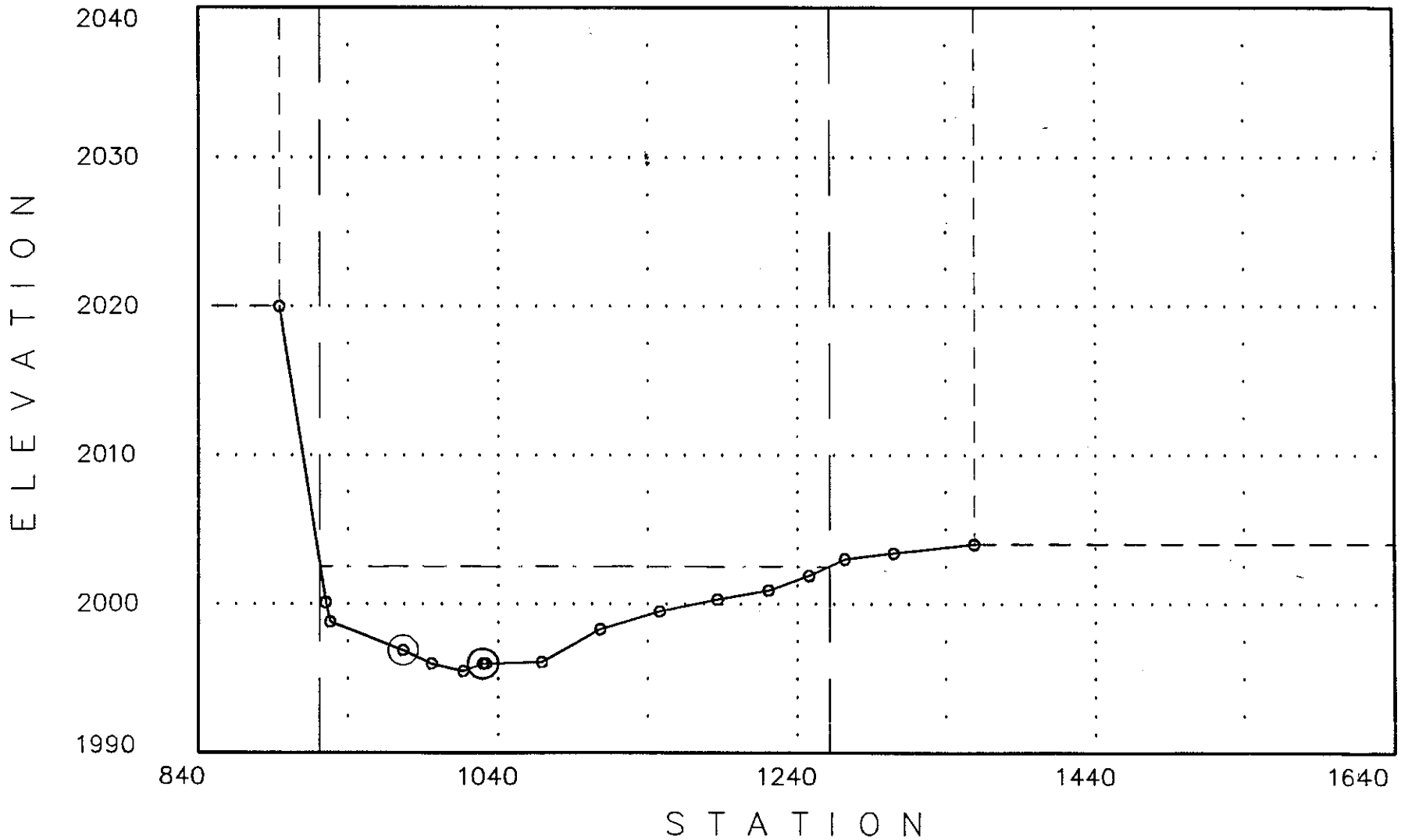


08-20-1992

<<<<<< Cross Section: 2.011: (FN = WASHT.O) >>>>>>

Q1= 12911 WS1= 2002.52
Q2= 12911 WS2= 2002.53

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

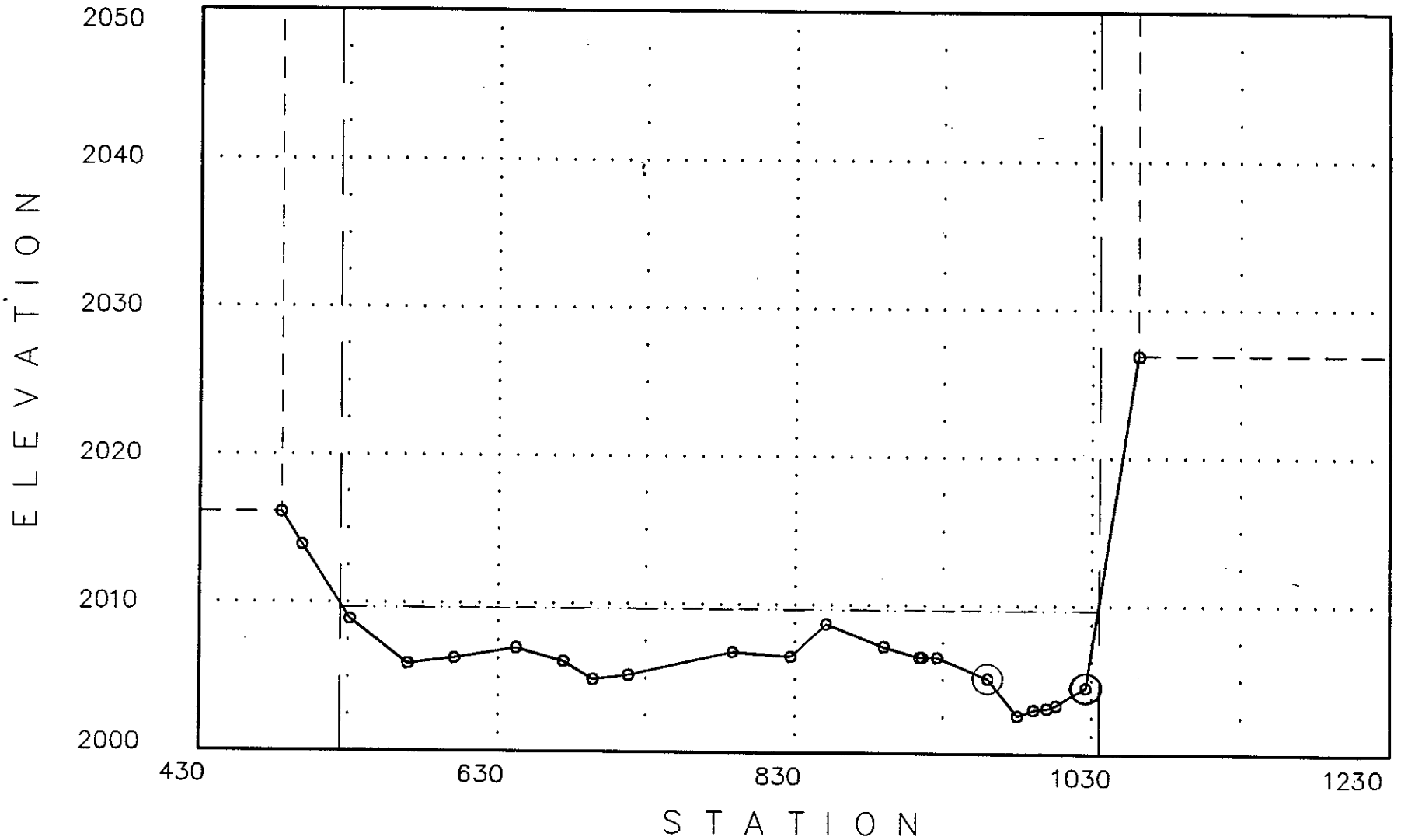


08-20-1992

<<<<<< Cross Section: 2.124: (FN = WASHT.O) >>>>>>

Q1= 12911 WS1= 2009.69
Q2= 12911 WS2= 2009.68

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

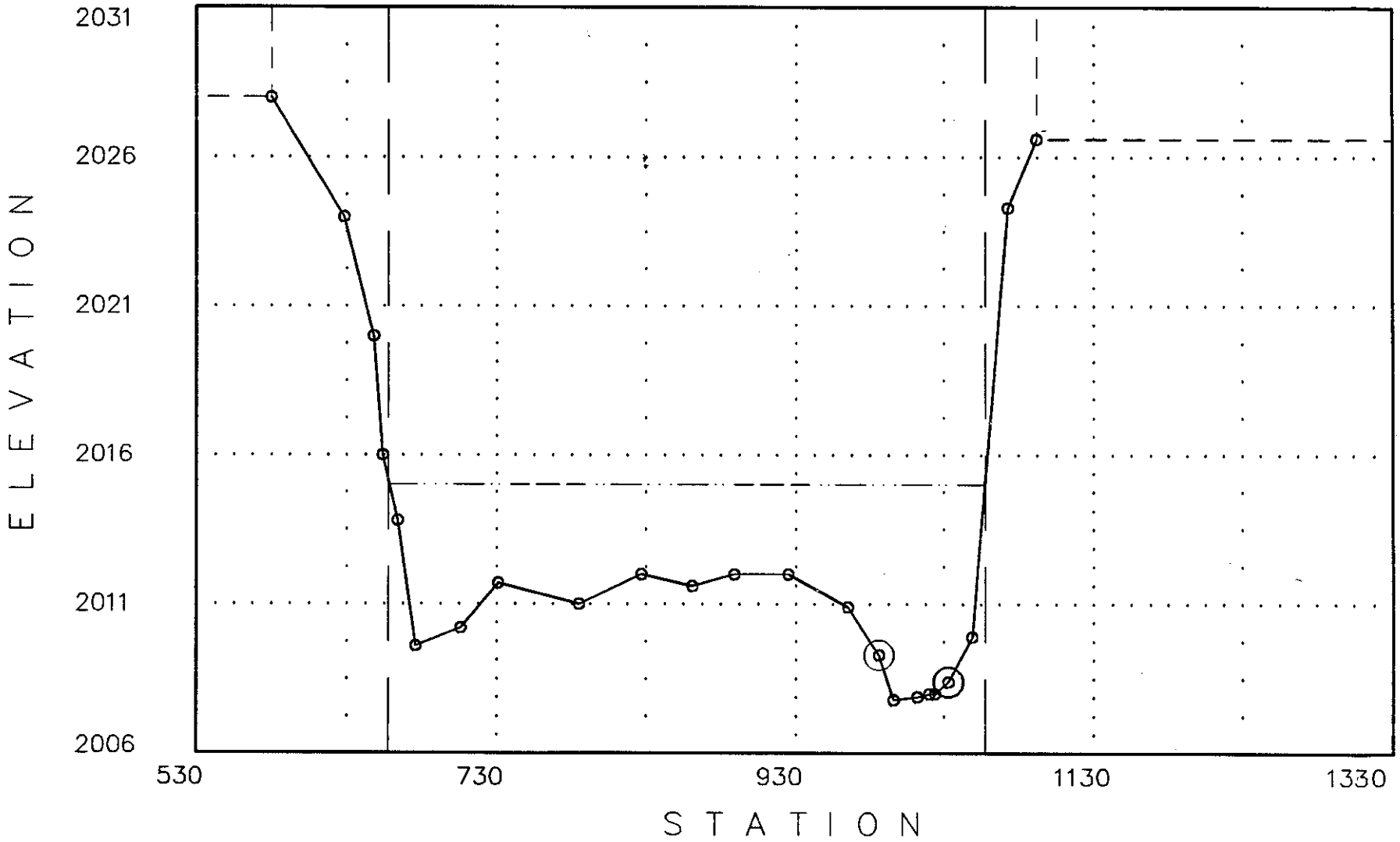


08-20-1992

<<<<<< Cross Section: 2.195: (FN = WASHT.0) >>>>>>

Q1= 12911 WS1= 2015.01
Q2= 12911 WS2= 2015.01

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

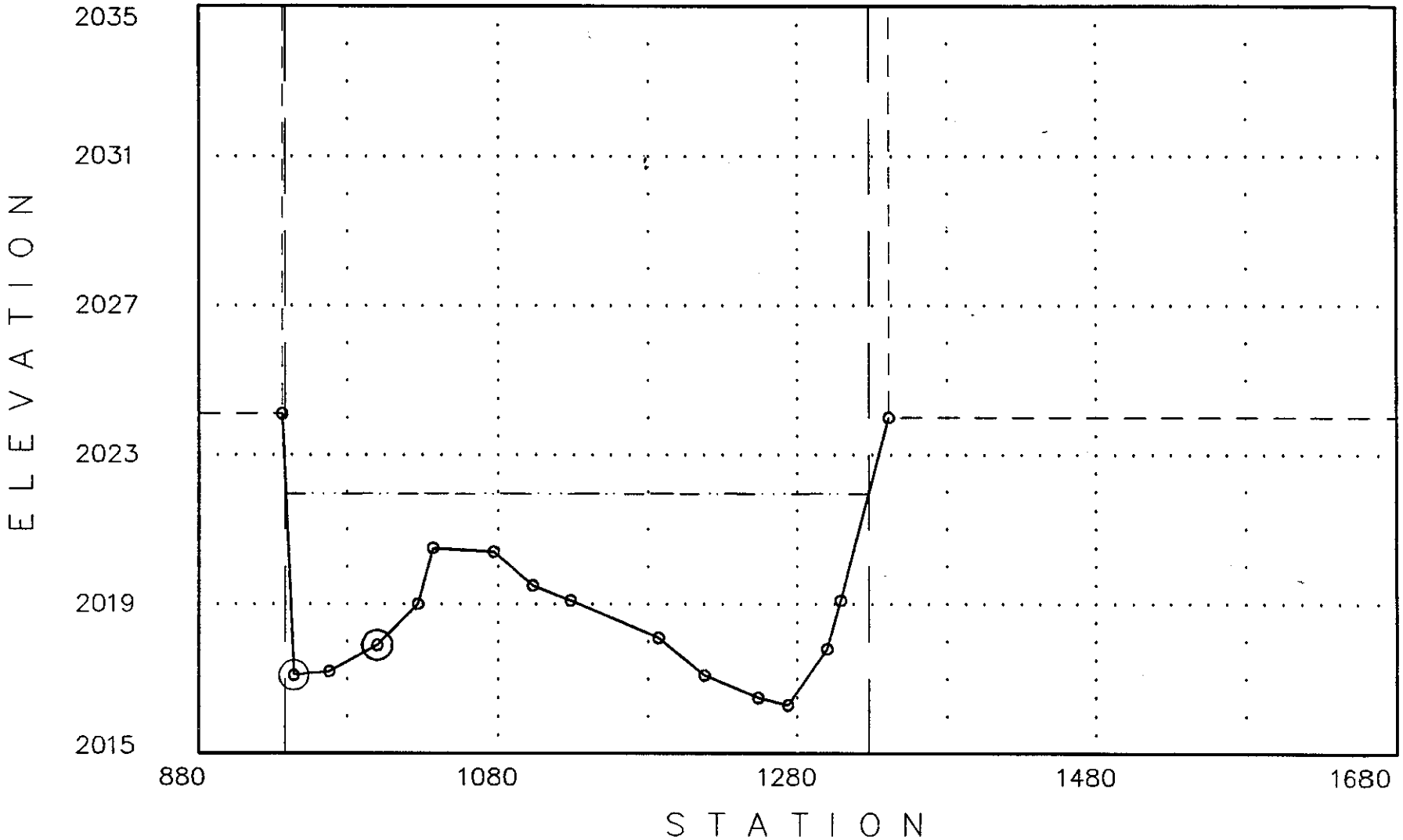


08-20-1992

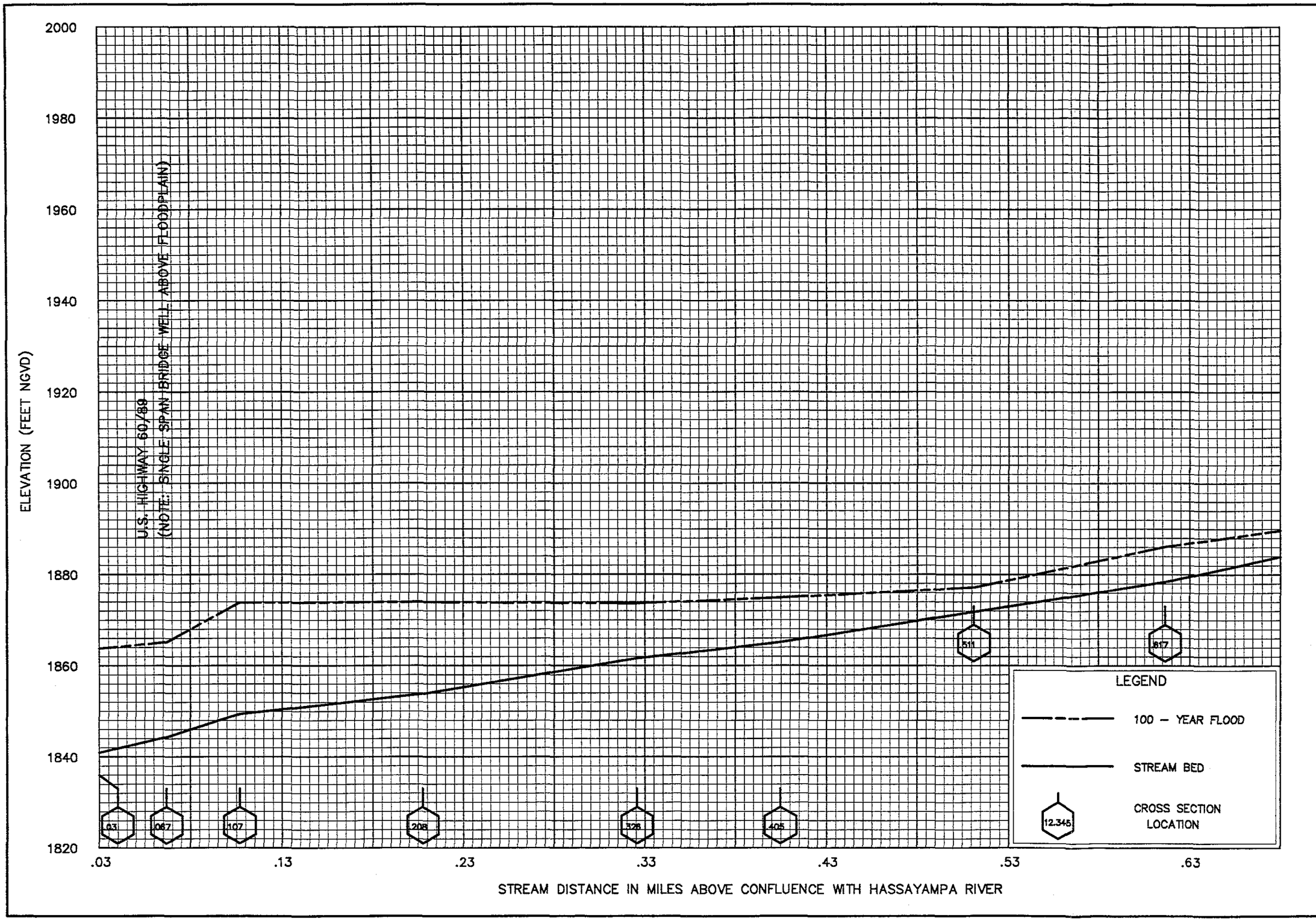
<<<<<< Cross Section: 2.25: (FN = WASHT.O) >>>>>>

Q1= 12911 WS1= 2021.96
Q2= 12911 WS2= 2021.97

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06



08-20-1992

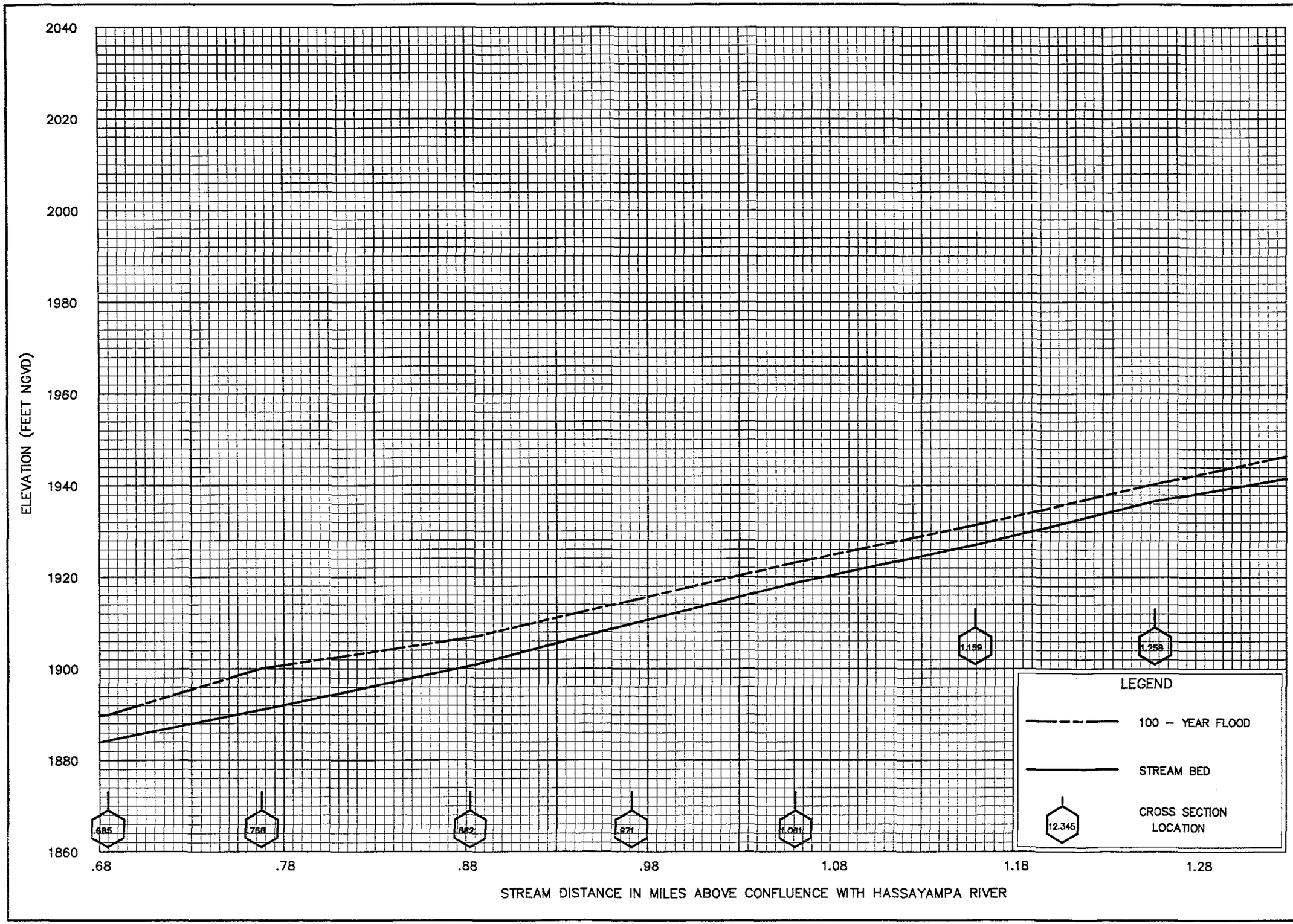


FLOOD PROFILES

SAN DOMINGO WASH (WASH T)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



FLOOD PROFILES

SAN DOMINGO WASH (WASH T)

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
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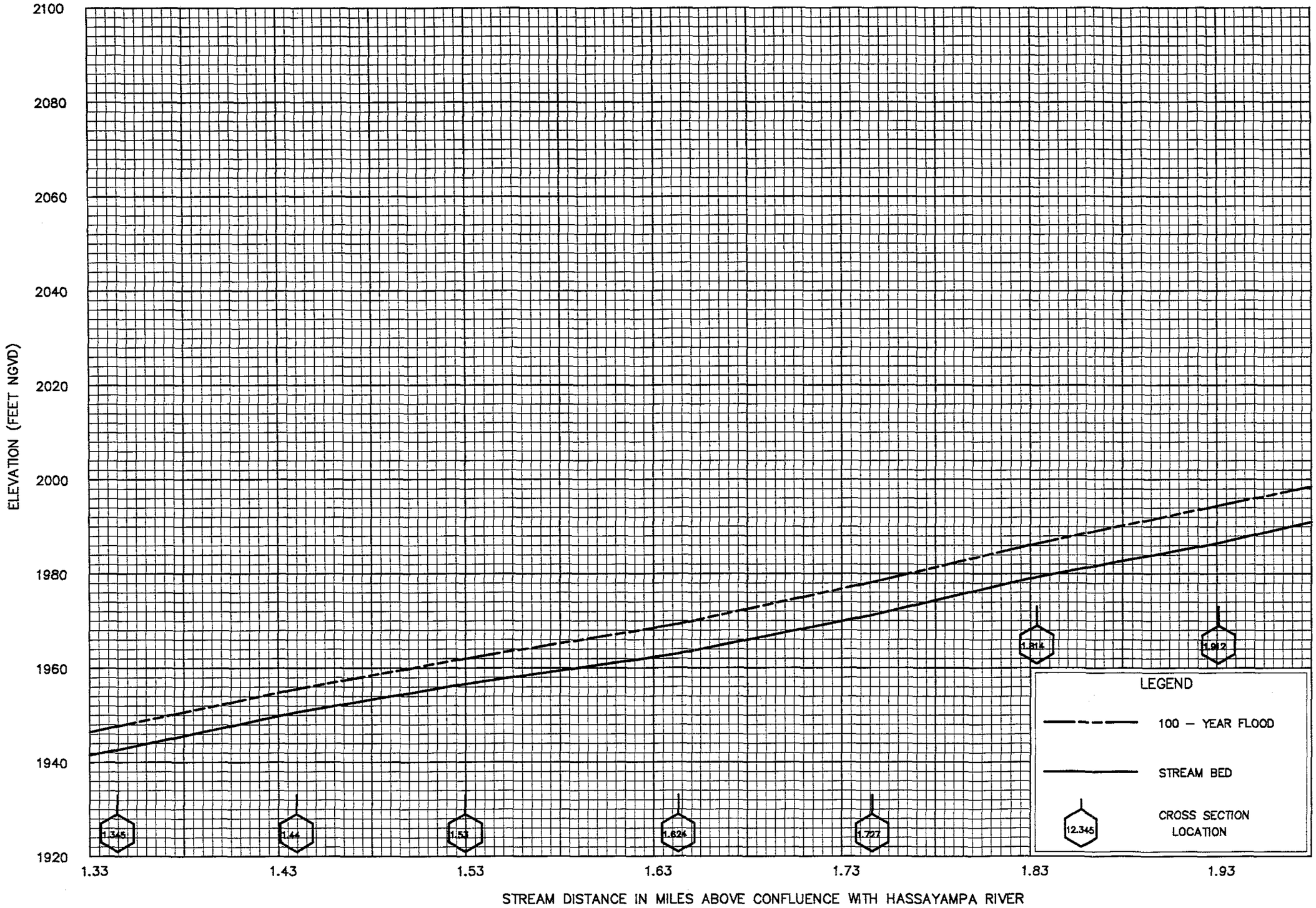
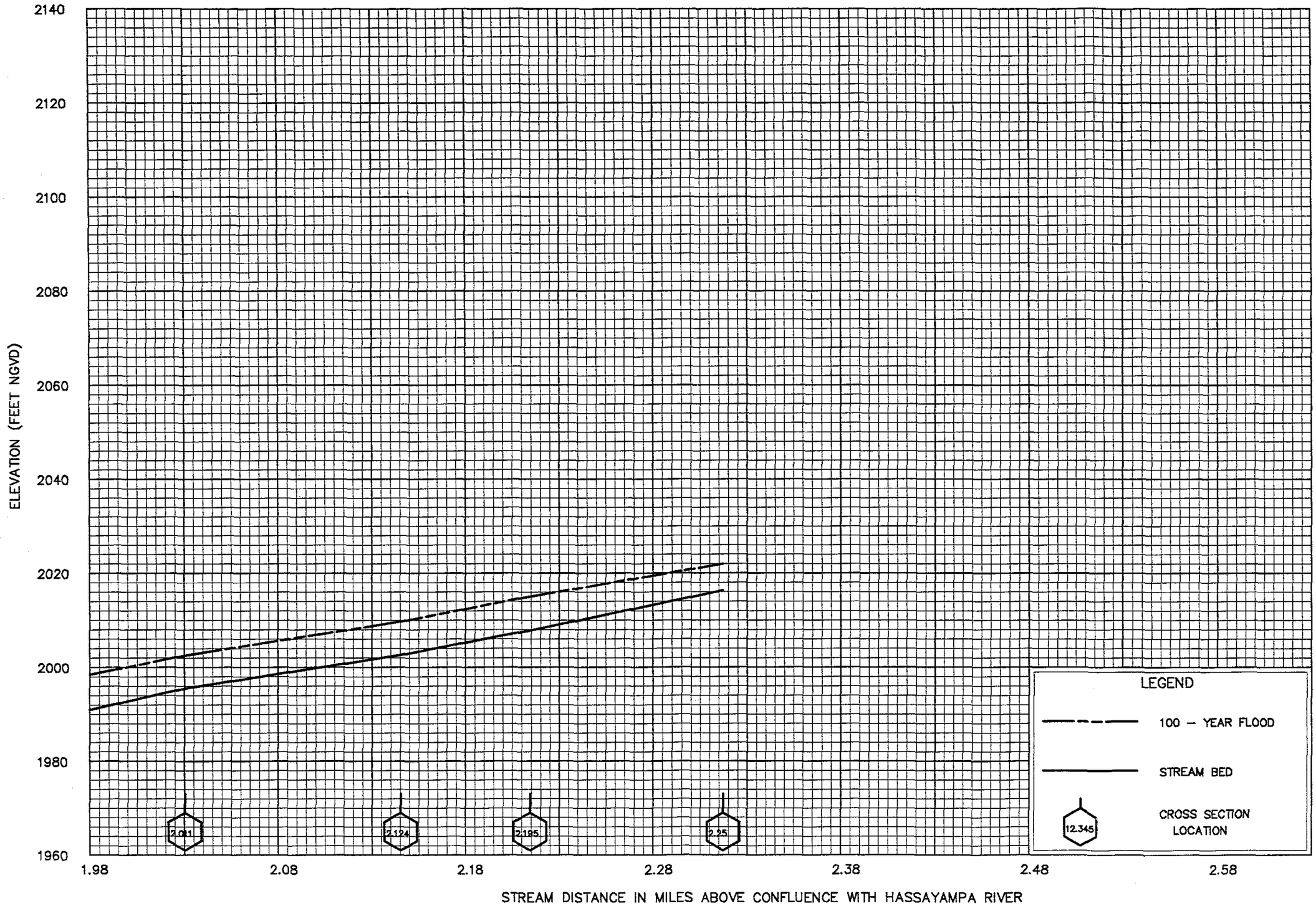


FLOOD PROFILES

SAN DOMINGO WASH (WASH T)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



FLOOD PROFILES

SAN DOMINGO WASH (WASH T)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

Appendix # 6.16

FEDERAL EMERGENCY MANAGEMENT AGENCY **RIVERINE HYDRAULIC ANALYSIS FORM**	*O.M.B. Burden No. 3067-0148* *Expires July 31, 1994*	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

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Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: Wash S: Little San Domingo Wash
(One form for each flooding source)

Project Name/Identifier: Wickenburg ADMS - FCD 89-79

1. REACH TO BE REVISED

Downstream limit: Station 0.102

Upstream limit: Station 3.809

2. EFFECTIVE FIS

☐ Not studied

☐ Studied by approximate methods

Downstream limit of study _____

Upstream limit of study _____

☒ Studied by detailed methods

Downstream limit of study Confluence with Hassayampa River

Upstream limit of study Station 3.809

☐ Floodway delineated

Downstream limit of Floodway _____

Upstream limit of Floodway _____

3. HYDRAULIC ANALYSIS

Why is the hydraulic analysis different from that used to develop the FIRM. *(Check all that apply)*

☐ Not studied in FIS

☐ Improved hydrologic data/analysis. Explain: _____

☐ Improved hydraulic analysis. Explain: _____

☐ Flood control structure. Explain: _____

☐ Other. Explain: _____

Full input and output listings along with files on diskette *(if available)* for each of the models listed below and summary of the source of input parameters used in the models must be provided. The summary must include a complete description of any changes made from model to model (*e.g. duplicate effective model to corrected effective model*). Only the Duplicate Effective and the Revised or Post-Project Conditions models must be submitted. See instructions for directions on when other models may be required. Only the 100-year flood profile is required for SFHAs with a Zone A designation. For areas which do not have detailed flooding, a hydraulic model is not required; however BFE's may not be added to the revised FIRM.

☐ Duplicate Effective Model — Natural ☐ Floodway ☐

Copies of the hydraulic analysis used in the effective FIS, referred to as the effective models *(10-, 50-, 100-, and 500-year multi-profile runs and the floodway run)* must be obtained and then reproduced on the requestor's equipment to produce the duplicate effective model. This is required to assure that the effective model input data has been transferred correctly to the requestor's equipment and to assure that the revised data will be integrated into the effective data to provide a continuous FIS model upstream and downstream of the revised reach.

☐ Corrected Effective Model — Natural ☐ Floodway ☐

The corrected effective model is the model that corrects any errors that occur in the duplicate effective model, adds any additional cross sections to the duplicate effective model, or incorporates more detailed topographic information than that used in the currently effective model. The corrected effective model must not reflect any man-made physical changes since the date of the effective model. An error could be a technical error in the modeling procedures, or any construction in the floodplain that occurred prior to the date of the effective model but was not incorporated into the effective model.

☐ Existing or Pre-Project Conditions Model — Natural ☐ Floodway ☐

The duplicate effective or corrected model is modified to produce the existing or pre-project conditions model to reflect any modifications that have occurred within the floodplain since the date of the effective model but prior to the construction of the project for which the revision is being requested. If no modification has occurred since the date of the effective model, then this model would be identical to the corrected effective or duplicate effective model.

☐ Revised or Post-Project Conditions Model — Natural ☐ Floodway ☐

The existing or pre-project conditions model *(or duplicate effective or corrected effective model, as appropriate)* is revised to reflect revised or post-project conditions. This model must incorporate any physical changes to the floodplain since the effective model was produced as well as the effects of the project. When the request is for proposed project this model should reflect proposed conditions.

☒ Other: Please attach a sheet describing all other models or calculations submitted. — Natural ☒ Floodway ☒

New Model (Proposed Effective Model)

4. MODEL PARAMETERS *(from model used to revise 100-year water surface elevation)*

Discharges:	Upstream Limit	Downstream Limit
10-year	1585 cfs	1668 cfs
50-year	2467 cfs	2847 cfs
100-year	2849 cfs	3403 cfs
500-year	—	—

Attach diagram showing changes in 100-year discharge

2. Explain how the starting water surface elevations were determined Starting water surface elevations determined by the slope-area method.

3. Give range of friction loss coefficients (*Manning's "N"*) Channel ..... 0.025 ~ 0.035

Overbanks ..... 0.05 ~ 0.070

If friction loss coefficients are different anywhere along the revised reach from those used to develop the FIRM, give location, value used in the effective FIS, and revised values and an explanation as to how the revised values were determined.

Location	FIS	Revised

Explain:

4. Describe how the cross section geometry data were determined (*e.g., field survey, topographic map, taken from previous study*) and list cross sections that were added.

Data points for cross-sections are based on photogrammetric models for the topographic maps.

5. Explain how reach lengths for channel and overbanks were determined:

All reach lengths were measured from floodplain work maps.

5. RESULTS (from model used to revise 100-year water surface elevations)

1. Do the results indicate:

a. Water surface elevations higher than end points of cross sections? ..... ☐ Yes ☒ No

b. Supercritical depth? ..... ☐ Yes ☒ No

c. Critical depth? ..... ☒ Yes ☐ No

d. Other unique situations ..... ☐ Yes ☐ No

If yes, special problems report attached.

If yes to any of the above, attach an explanation that discusses the situation and how it is presented on the profiles, tables, and maps.

2. What is the maximum change in energy gradient between cross-sections? ..... 0.0191 ft/ft

Specify location 0.903

3. What is the distance between the cross-sections in 2 above? ..... 512 ft

Specify location 1.000

4. What is the maximum distance between cross-sections? ..... 554 ft

Specify location 0.722

5. Floodway determination

a. What is the maximum surcharge allowed by the community or State? ..... 1.0 foot

b. What is the maximum surcharge for the revised conditions? ..... 0.0 foot

Specify location ..... N/A

c. What is the maximum velocity? ..... 16.52 fps

Specify location 2.646

Explain:

d. Are there any negeative surcharge values at any cross-section ☒ Yes ☐ No

If yes, the floodway may need to widen. If it is not widened, please explain and indicate the maximum negative surcharge. A negative surcharge of -0.1 ft occurs at station 0.344, due to the limits of effective flow area set because of the presence of a structure in the left overbank.

6. Is the discharge value used to determine the floodway anywhere different from that used to determine the natural 100-year flood elevations? ..... ☐ Yes ☐ No

If Yes, explain:

_____

_____

_____

7. Do 100-year water surface elevations increase at any location? ..... ☐ Yes ☐ No

If yes, please attach a list of the locations where the increases occur, state whether or not the increases are located on the requestor's property, and provide an explanation of the reason for the increases.

_____

_____

_____

Please attach a completed comparison table entitled: Water Surface Elevation Check (See page 6)

6. REVISED FIRM/FBFM AND FLOOD PROFILES

A. The revised water surface elevations tie into those computed by the effective FIS Model *(10-, 50-, 100-, and 500-year)*, downstream of the project at cross-section_____ within_____feet and upstream of the project at cross section_____within_____feet.

B. The revised floodway elevations tie into those computed by the effective FIS model, dowstream of the project at cross section_____within_____feet and upstream of the project at cross section_____ within_____feet.

C. Attach profiles, at the same vertical and horizontal scale as the profiles in the effective FIS report, showing stream bed and profiles of all floods studied (without encroachment). Also, label all cross sections, road crossings (including low chord and top-of-road data), culverts, tributaries, corporate limits, and study limits. If channel distance has changed, the stationing should be revised for all profile sheets.

D. Attach a Floodway Data Table showing data for each cross section listed in the published Floodway Data Table in the FIS report.

Proceed to Riverine /Coastal Mapping Form

FEDERAL EMERGENCY MANAGMENT AGENCY

WATER SURFACE ELEVATION CHECK

COMMUNITY NAME	FLOODIND SOURCE	PROJECT NAME /IDENTIFIER
Unincorporated Maricopa County / Town of Wickenburg	Little San Wash S: Domingo Wash	Wickenburg ADMS-FCD 89-79

	EFFECTIVE			DUPLICATE EFFECTIVE			CORRECTED EFFECTIVE			EXISTING/PRE-PROJECT			REVISED/PROJECT		
SECNO	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]

COMMENTS:

New Model- See following Floodway Data Table

1-100-year (natural) Water Surface Elevation 2-Encroachment (floodway) Water Surface Elevation 3-Surcharge Value

Include all cross sections in the models between tie-in points. Any interpolated values should be indicated in parentheses.

FLOODWAY DATA, WASH S: LITTLE SAN DOMIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
41.290	762.	794.	4.3	1780.7	1780.7	.0
.102	203.	539.	6.3	1786.2	1786.2	.0
.160	161.	454.	7.5	1791.6	1791.6	.0
.254	215.	465.	7.3	1798.6	1798.6	.0
.344	243.	500.	6.8	1805.6	1805.7	-.1
.427	281.	510.	6.7	1812.6	1812.6	.0
.518	259.	513.	6.6	1817.9	1817.9	.0
.617	521.	471.	7.2	1825.3	1825.3	.0
.722	896.	647.	5.3	1834.6	1834.6	.0
.817	892.	638.	5.3	1844.1	1844.1	.0
.903	656.	949.	3.6	1848.0	1848.0	.0
1.000	432.	544.	6.3	1856.5	1856.5	.0
1.096	453.	692.	4.9	1864.4	1864.4	.0
1.189	385.	631.	5.2	1870.8	1870.8	.0
1.283	171.	435.	7.6	1880.8	1880.8	.0
1.375	207.	483.	6.8	1888.9	1888.9	.0
1.470	164.	471.	7.0	1898.5	1898.5	.0
1.563	362.	709.	4.7	1905.1	1905.1	.0
1.662	483.	359.	9.2	1914.7	1914.7	.0
1.754	439.	710.	4.6	1921.5	1921.5	.0
1.847	159.	433.	7.6	1930.2	1930.2	.0
1.912	60.	304.	10.9	1934.7	1934.7	.0
1.931	79.	334.	9.9	1937.5	1937.5	.0
1.932	86.	353.	9.4	1938.4	1938.4	.0
1.933	98.	514.	6.4	1940.2	1940.2	.0
1.934	95.	534.	6.2	1940.5	1940.5	.0
1.936	93.	497.	6.6	1940.5	1940.5	.0
1.939	93.	487.	6.8	1940.5	1940.5	.0
1.980	41.	239.	13.8	1947.4	1947.4	.0
2.053	62.	522.	6.3	1951.4	1951.4	.0
2.054	61.	274.	12.0	1954.3	1954.3	.0
2.056	43.	243.	13.6	1955.6	1955.6	.0
2.097	43.	324.	10.2	1959.1	1959.1	.0
2.131	164.	500.	6.4	1960.9	1960.9	.0
2.194	82.	375.	8.6	1966.3	1966.3	.0
2.267	128.	506.	6.4	1970.0	1970.0	.0
2.360	120.	413.	7.8	1974.9	1974.9	.0
2.455	98.	403.	8.0	1979.5	1979.5	.0
2.550	106.	483.	6.7	1983.8	1983.8	.0
2.646	112.	403.	8.0	1989.0	1989.0	.0
2.746	104.	395.	8.2	1995.9	1995.9	.0
2.838	115.	403.	8.0	2002.1	2002.1	.0

FLOODWAY DATA, WASH S: LITTLE SAN DOMIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
2.894	105.	430.	7.5	2005.8	2005.8	.0
2.945	45.	249.	13.0	2007.6	2007.6	.0
2.946	42.	239.	13.5	2010.7	2010.7	.0
2.966	42.	315.	10.2	2014.7	2014.7	.0
2.970	96.	689.	4.7	2016.3	2016.3	.0
3.019	83.	349.	9.2	2016.5	2016.5	.0
3.073	103.	401.	7.6	2021.4	2021.4	.0
3.150	85.	398.	7.6	2024.9	2024.9	.0
3.247	102.	377.	8.0	2030.1	2030.1	.0
3.344	140.	405.	7.5	2036.1	2036.1	.0
3.438	110.	414.	7.3	2042.7	2042.7	.0
3.534	91.	455.	6.7	2047.0	2047.0	.0
3.627	130.	438.	6.9	2051.8	2051.8	.0
3.723	126.	426.	6.7	2057.2	2057.2	.0
3.809	209.	530.	5.4	2062.0	2062.0	.0
-.817	892.	638.	5.3	1844.1	1844.1	.0
.060	133.	85.	4.9	1848.3	1848.3	.0
.110	94.	112.	3.8	1854.0	1853.9	.1

FEDERAL EMERGENCY MANAGEMENT AGENCY **RIVERINE/COASTAL MAPPING FORM**	*O.M.B. Burden No. 3067-0148* *Expires July 31, 1994*	*FEMA USE ONLY*

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: Wash S: Little San Domingo Wash

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. MAPPING CHANGES

1. A topographic work map of suitable scale, contour interval, and planimetric definition must be submitted showing *(indicate N/A when not applicable)*:

		Included		
A.	Revised approximate 100-year floodplain boundaries (Zone A)	☐ Yes	☒ No	☐ N/A
B.	Revised detailed 100- and 500-year floodplain boundaries	☒ Yes	☐ No	☐ N/A
C.	Revised 100-year floodway boundaries	☒ Yes	☐ No	☐ N/A
D.	Location and alignment of all cross sections used in the revised hydraulic model with stationing control indicated	☒ Yes	☐ No	☐ N/A
E.	Stream alignments, road and dam alignments	☒ Yes	☐ No	☐ N/A
F.	Current community boundaries	☒ Yes	☐ No	☐ N/A
G.	Effective 100- and 500-year floodplain and 100-year floodway boundaries from the FIRM/FBFM reduced or enlarged to the scale of the topographic work map	☐ Yes	☐ No	☒ N/A
H.	Tie-ins between the effective and revised 100- and 500-year floodplains and 100-year floodway boundaries	☐ Yes	☐ No	☒ N/A
I.	The requestor's property boundaries and community easements	☐ Yes	☐ No	☒ N/A
J.	The signed certification of a registered professional engineer	☒ Yes	☐ No	☐ N/A
K.	Location and description of reference marks	☒ Yes	☐ No	☐ N/A
L.	Vertical datum (example: NGVD, NAVD etc.)	☒ Yes	☐ No	☐ N/A
M.	Coastal zone designations tie into adjacent areas not being revised	☐ Yes	☐ No	☒ N/A
N.	Location and alignment of all coastal transects used to revise the coastal analyses	☐ Yes	☐ No	☒ N/A

If any of the items above are marked no or N/A, please explain: No Zone A, 500-year or coastal zones revised or delineated. Revised 100-year floodplains tie into effective Hassayampa River floodplain.

2. What is the source and date of the updated topographic information *(example: orthophoto maps, July 1985; field survey, May 1979, beach profiles, June 1987, etc.)*? Photo: Jan 1991 (E), Oct 1990 (W); Maps 1992

3. What is the scale and contour interval of the following workmaps?
   a. Effective FIS unknown scale unknown Contour interval
   b. Revision Request 1" = 200' scale 4' Contour interval

NOTE: Revised topographic information must be of equal or greater detail.

4. Attach an annotated FIRM and FBFM at the scale of the effective FIRM and FBFM showing the revised 100-year and 500-year floodplains and the 100-year floodway boundaries and how they tie into those shown on the effective FIRM and FBFM downstream and upstream of the revision or adjacent to the area of revision for coastal studies.

Attach additional pages if needed.

5. Flood Boundaries and 100-year water surface elevations:

Has the 100-year floodplain been shifted or increased or the 100-year water surface elevation increased at any location on property other than the requestor's or community's ? ☐ Yes ☒ No

If yes, please give the location of shift or increase and an explanation for the increase.

Revised detailed 100-year floodplain replaces effective zone AE floodplain.

a. Have the affected property owners been notified of this shift or increase and the effect it will have on their property? ..... ☐ Yes ☒ No

If yes, please attach letters from these property owners stating they have no objections to the revised flood boundaries if a LOMR is being requested.

b. What is the number of insurable structures that will be impacted by this shift or increase? _____

6. Have the floodway boundaries shifted or increased at any location compared to those shown on the effective FBFM or FIRM? ..... ☐ Yes ☒ No

If yes, explain:

7. If a V- zone has been designated, has it been delineated to extend landward to the heel of the primary frontal dune? ☐ Yes ☒ No

If no, explain:

NA

8. Manual or digital map submission:

☒ Manual

☐ Digital

Digital map submissions may be used to update digital FIRMs (DFIRMs). For updating DFIRMs, these submissions must be coordinated with FEMA Headquarters as far in advance of submission as possible.

2. EARTH FILL PLACEMENT

1. The fill is: ☐ Existing ☐ Proposed ☒ N/A

2. Has fill been/will be placed in the regulatory floodway? ..... ☐ Yes ☒ No
   If yes, please attach completed Riverine Hydraulic Analysis Form.

3. Has fill been/will be placed in floodway fringe *(area between the floodway and 100-year floodplain boundaries)*? ..... ☐ Yes ☒ No

   If yes, then complete A, B, C, and D below.

   A. Are fill slopes for granular materials steeper than one vertical on one-and-one-half horizontal? ..... ☐ Yes ☐ No

   If yes, justify steeper slopes_____

   B. Is adequate erosion protection provided for fill slopes exposed to moving flood waters? *(Slopes exposed to flows with velocities of up to 5 feet per second (fps) during the 100-year flood must, at a minimum, be protected by a cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the 100-year flood must, at a minimum, be protected by stone or rock riprap.)* ..... ☐ Yes ☐ No

   If no, describe erosion protection provided_____

   C. Has all fill placed in revised 100-year floodplain been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test Method or acceptable equivalent method? ☐ Yes ☐ No

   D. Can structures conceivably be constructed on the fill at any time in the future? ☐ Yes ☐ No

   If yes, provide certification of fill compaction (item C. above) by the community's NFIP permit official, a registered professional engineer, or an accredited soils engineer.

4. Has fill been/will be placed in a V-zone? ☐ Yes ☒ No

   If yes, is the fill protected from erosion by a flood control structure such as a revetment or seawall? ☐ Yes ☐ No

   If yes, attach the coastal structures form.

FEDERAL EMERGENCY MANAGEMENT AGENCY BRIDGE/CULVERT FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: Wash S : Little San Domingo Wash

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. IDENTIFIER

1. Name of roadway, railroad, etc.: U.S. Highway 60-89
2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): Station 2.056 to Station 2.097
3. This revision reflects *(check one of the following)*:

   ☒ New bridge/culvert not modeled in the FIS

   ☐ Modified bridge/culvert previously modeled in the FIS

   ☐ New analysis of bridge/culvert previously modeled in the FIS

   (Explain why new analysis was performed)

2. BACKGROUND

Provide the following information about the structure:

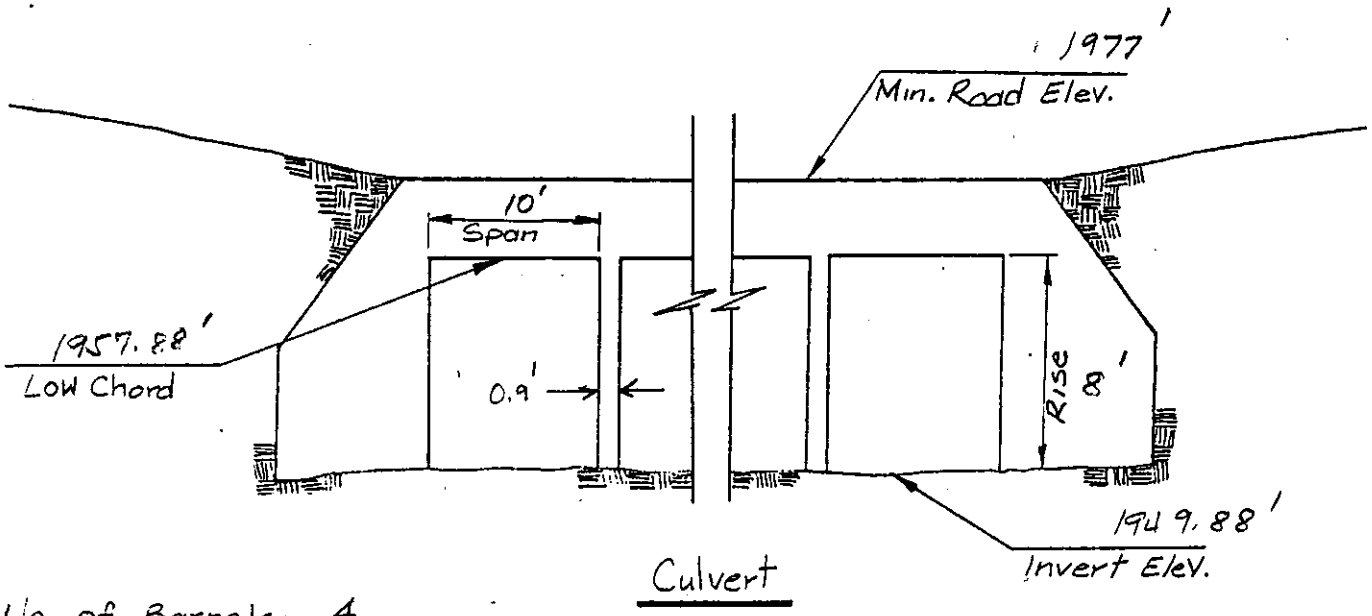
1. Dimension, material, and shape (e.g. two 10 x 5 feet reinforced concrete box culvert; three 30-foot span bridge with 2 rows of two 3- foot diameter circular piers; 40-foot wide ogee shape spillway) four 10'x 8'x 217' concrete box culvert sk 30°
2. Entrance geometry of culvert/type of bridge opening (e.g. 30° - 75° wing walls with square top edge, sloping embankments and vertical abutments) With wingwalls with square top edge.
3. Hydraulic model used to analyze the structure (*e.g., HEC-2 with special bridge routine, WSPRO, HY8*) HEC-2 with special bridge routine

If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structure(s). *(Attach justification)*

Note: If any items do not apply to submitted hydraulic analysis, indicate by N/A

* One form per new/revised bridge/culvert

Sketch the downstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, minimum top of road elevation, and ineffective flow widths.



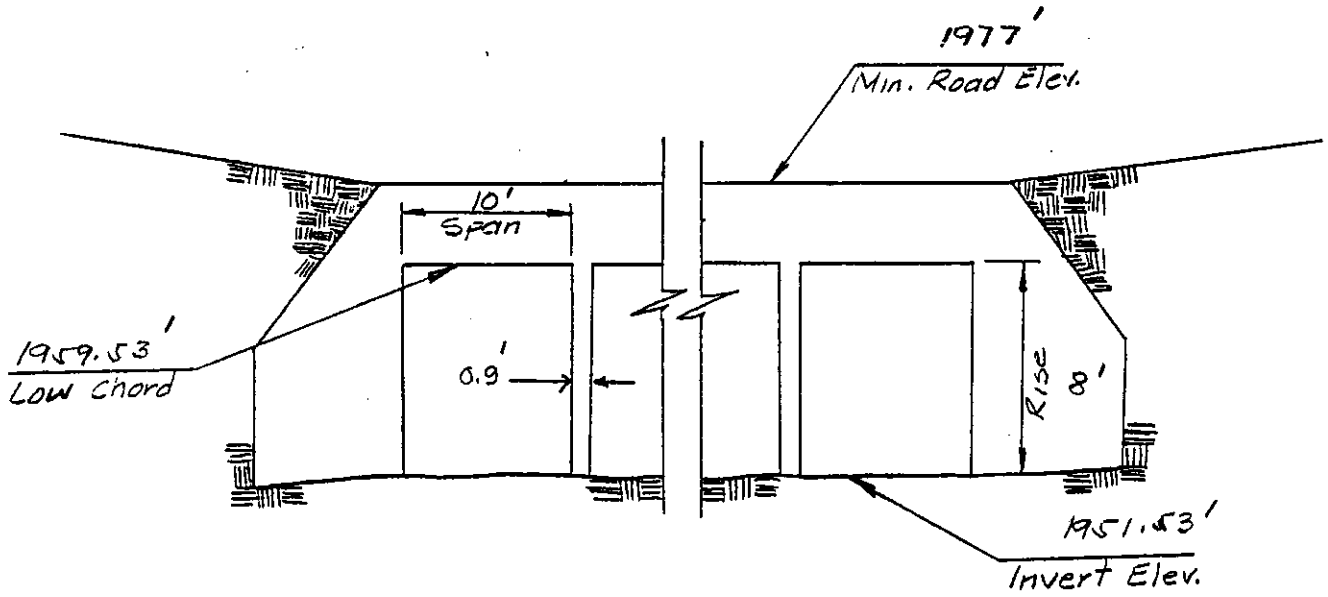
Culvert

No. of Barrels: 4

Culvert Size: 10'x8'x217'

Approx. Depth of Sediment in Culvert: 0' See Cross Section # 2.056

Sketch the upstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, and minimum top of road elevation.



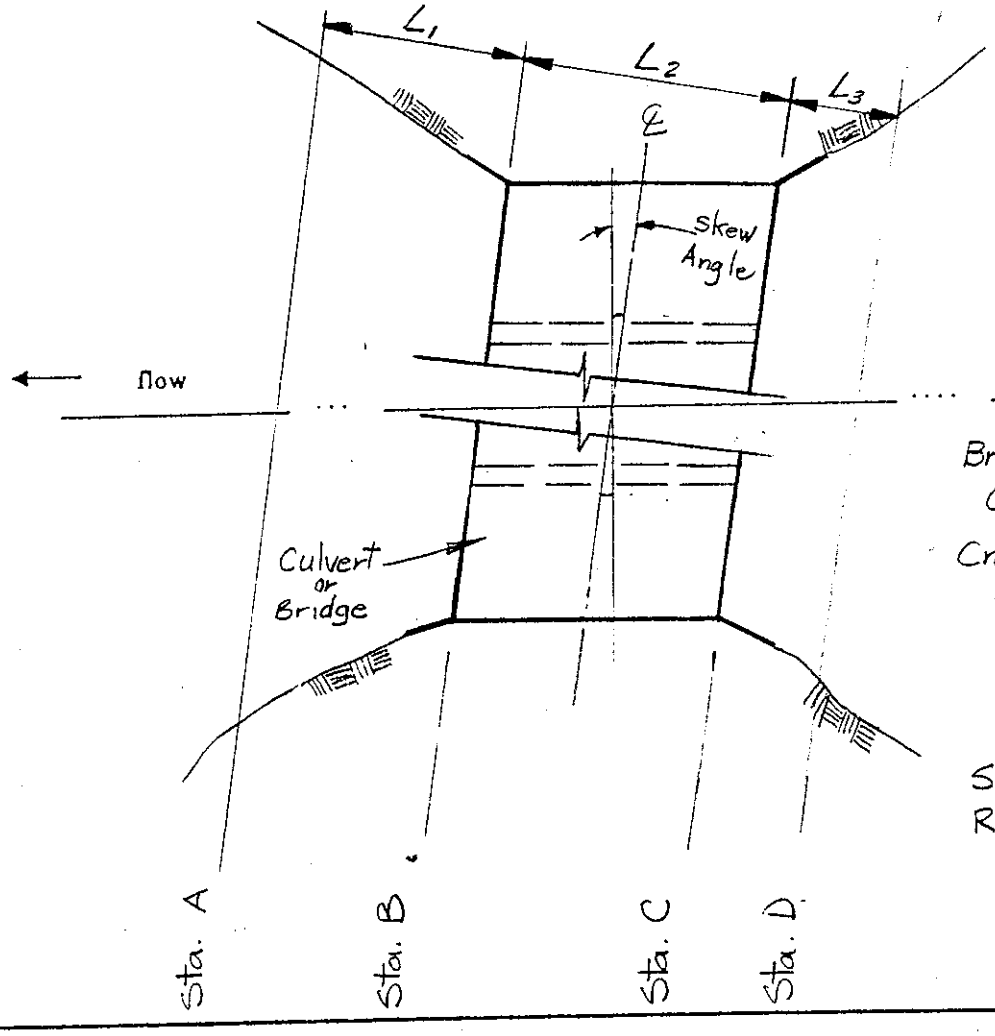
No of Barrels: 4

Culvert

Culvert Size: 10'x8'x217'

Approx. Depth of Sediment in Culvert: 0' See Cross Section # 2.097

Sketch the plan view of the structure(s) Show, at a minimum, the skew angle, cross-section locations, distances between cross sections, and length of structure (s).



Bridge Width / Culvert Length: 217'

Cross Section Stations

Sta. A = 2.054

Sta. B = 2.056

Sta. C = 2.097

Sta. D = 2.121

Skew Angle: 30°

Reach Lengths:

L1 = 12 ft.

L2 = 217 ft.

L3 = 182 ft.

Attach plans of the structure (s) certified by a registered Professional Engineer.

Culvert length or bridge width (ft)	217'
Calculated culvert/bridge area (ft²) by the hydraulic model, if applicable	320 ft²
Total culvert/bridge area (ft²)	298 ft²

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face (STA 2.097)	1980.8	1977.0
Downstream face (STA 2.056)	1963.8	1965.6

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	1980.8	1977.0
Downstream face	1980.8	1977.0

100-Year Elevations	Water Surface Elevations	Energy Gradient Elevations
Upstream face	1959.11	1960.72
Downstream face	1955.56	1958.43

Discharge	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)	3299	—	—	3299 cfs

The maximum depth of flow over the roadway/railroad (ft.) 0

Weir length (ft.) 0

Top Widths

	Floodplain	Floodway
Upstream face	44	44
Downstream face	44	44

Top Widths

	Effective Flow	Effective and Ineffective Flow
Upstream face	44	44+265 = 309
Downstream face	44	44

Loss Coefficients

Entrance loss coefficient	0.50
Manning's "n" value assigned to the structure(s)	0.030
Friction loss coefficient through structure (s)	0.250
Other loss coefficients (e.g., bend manhole, etc.) (Intermediate Bars)	0.05
Total loss coefficient	1.80
Weir coefficient	3.00
Pier coefficient	1.25
Contraction loss coefficient	0.60
Expansion loss coefficient	0.80

4. SEDIMENT TRANSPORT CONSIDERATIONS

1. A. Is there any indication from historical records that sediment transport (*including scour and deposition*) can affect the 100-year water surface elevations? ..... ☐ Yes ☐ No

B Based on the conditions (*such as geomorphology, vegetative cover and development of the watershed and stream bed, and bank conditions*), is there a potential for debris and sediment transport (*including scour and deposition*) to affect the 100-year water surface elevations and/or conveyance capacity through the bridge/culvert? ..... ☐ Yes ☐ No

If the answer to either 1A or 1B is yes:

A. What is the estimated sediment (*bed material*) load?
_____cfs (*attach gradation curve*)

Explain method used to estimate the sediment transport and the depth of scour and/or deposition NA - Sediment transport not considered in analysis.

B. Will sediment accumulate anywhere through the bridge/culvert? ☐ Yes ☐ No

If yes, explain the impact on the conveyance capacity through the bridge/culvert?_____

5. FLOODWAY ANALYSIS

Explain method of bridge encroachment (floodway run) Method I of bridge encroachment is used where encroachment stations are defined by ET (i.e., STENCL, STENCR) and effective elevations are defined by XS (i.e., ELLEA, ELREA) for effective flow calculations.

Comments (*explain any unusual situations*):

Attach analysis.

FEDERAL EMERGENCY MANAGEMENT AGENCY BRIDGE/CULVERT FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: Wash S: Little San Domingo Wash

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. IDENTIFIER

1. Name of roadway, railroad, etc.: Atchison - Topeka and Santa Fe Railroad
2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): Station 1.936 to Station 1.939
3. This revision reflects *(check one of the following)*:

   ☒ New bridge/culvert not modeled in the FIS

   ☐ Modified bridge/culvert previously modeled in the FIS

   ☐ New analysis of bridge/culvert previously modeled in the FIS

   (Explain why new analysis was performed)

2. BACKGROUND

Provide the following information about the structure:

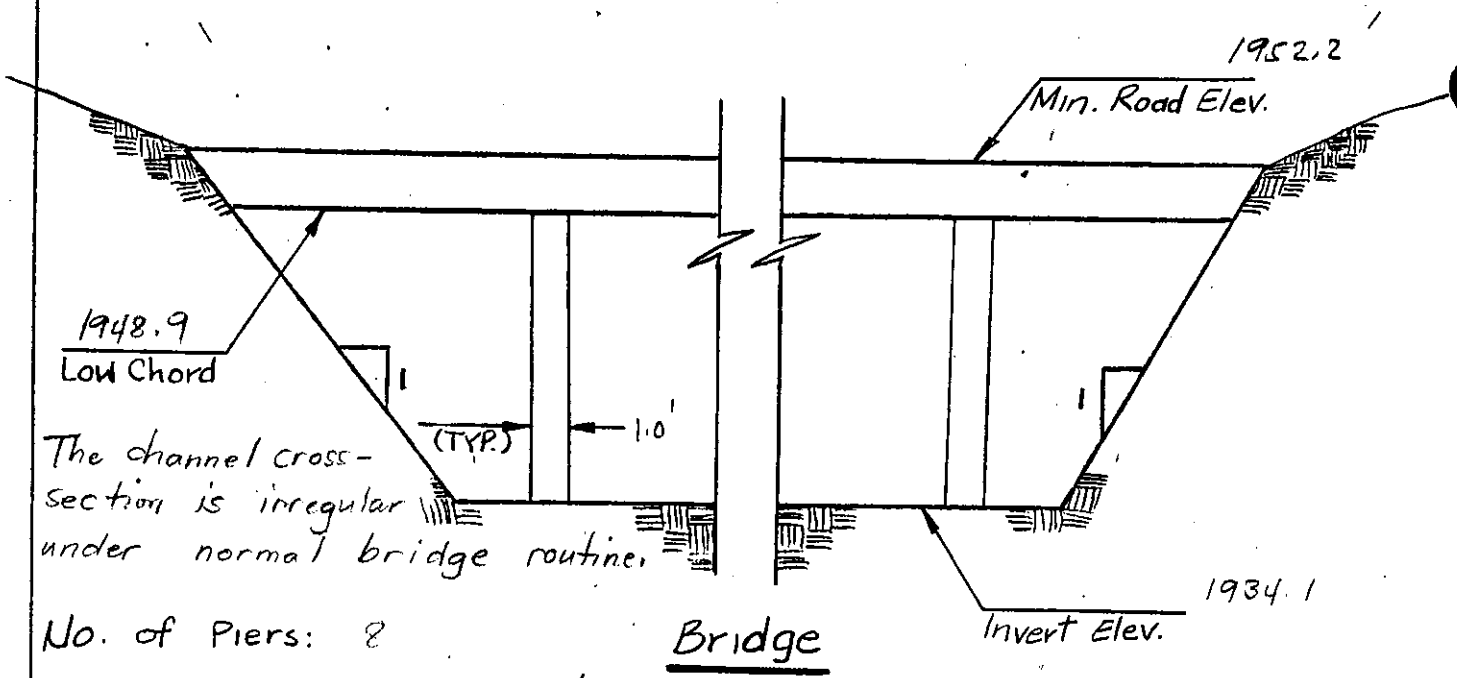
1. Dimension, material, and shape (e.g. two 10 x 5 feet reinforced concrete box culvert; three 30-foot span bridge with 2 rows of two 3- foot diameter circular piers; 40-foot wide ogee shape spillway) Irregular cross-section with eight rows of three one-foot piers.
2. Entrance geometry of culvert/type of bridge opening (e.g. 30° - 75° wing walls with square top edge, sloping embankments and vertical abutments) Semi-trapezoidal bridge opening with sloping embankments.
3. Hydraulic model used to analyze the structure (*e.g., HEC-2 with special bridge routine, WSPRO, HY8*) HEC-2 with Normal Bridge Routine

If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structure(s). *(Attach justification)*

Note: If any items do not apply to submitted hydraulic analysis, indicate by N/A

* One form per new/revised bridge/culvert

Sketch the downstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, minimum top of road elevation, and ineffective flow widths.



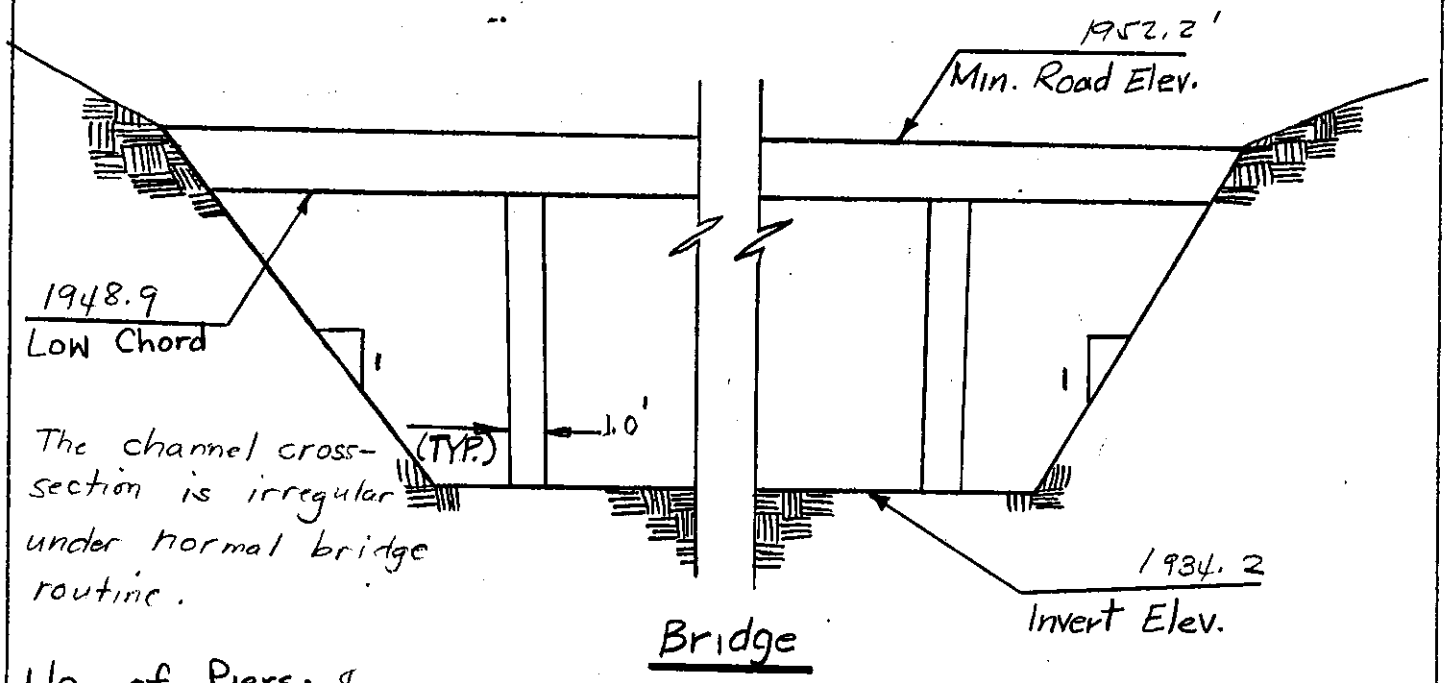
The channel cross-section is irregular under normal bridge routine.

No. of Piers: 8

Total Width of Piers: 8'

See Cross Section # 1.936

Sketch the upstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, and minimum top of road elevation.



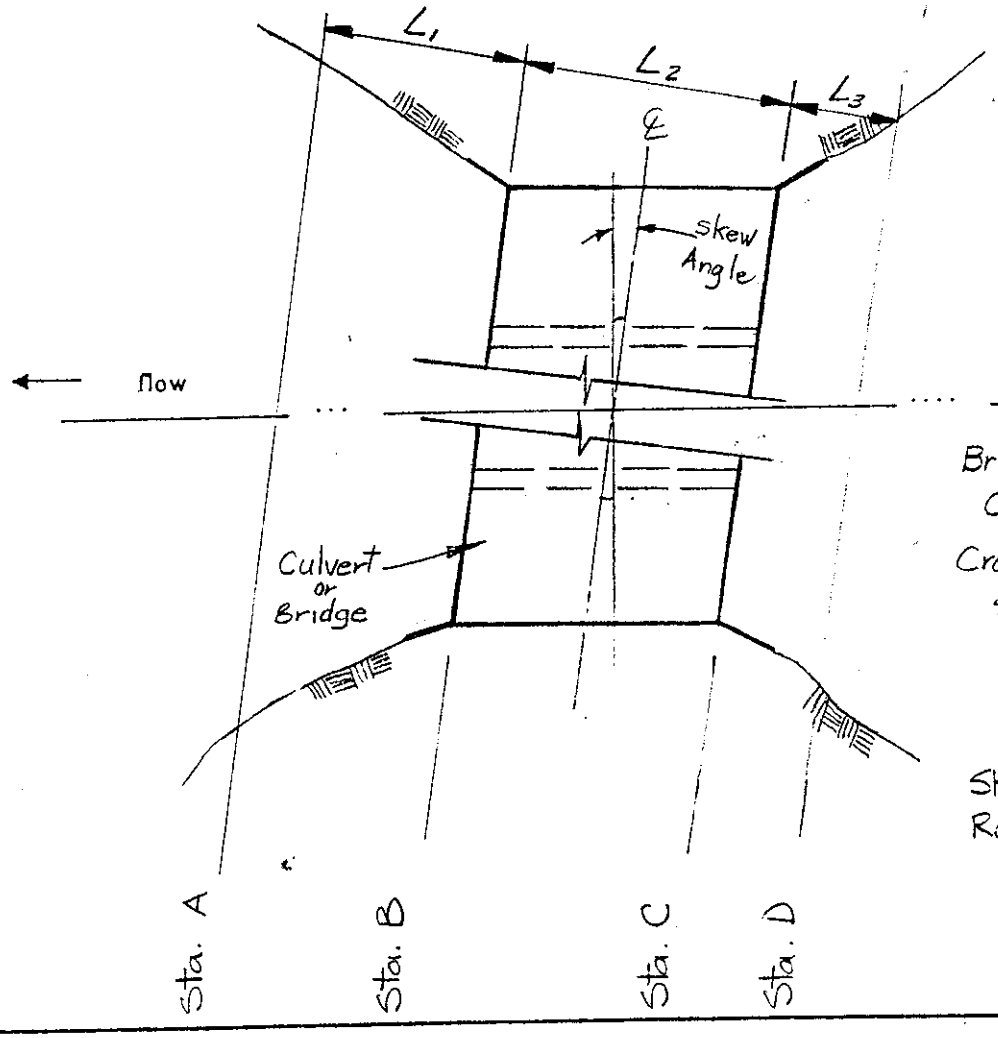
The channel cross-section is irregular under normal bridge routine.

No. of Piers: 8

Total Width of Piers: 8'

See Cross Section # 1.939

Sketch the plan view of the structure(s) Show, at a minimum, the skew angle, cross-section locations, distances between cross sections, and length of structure (s).



Bridge Width / Culvert Length:

Cross Section Stations

Sta. A = 1.934

Sta. B = 1.936

Sta. C = 1.939

Sta. D = 1.980

Skew Angle:

Reach Lengths:

L1 = 14.5 ft.

L2 = 14.7 ft.

L3 = 206 ft.

Attach plans of the structure (s) certified by a registered Professional Engineer.

Culvert length or bridge width (ft)	14.5 ft
Calculated culvert/bridge area (ft²) by the hydraulic model, if applicable	—
Total culvert/bridge area (ft²)	1476.9 ft²

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face (STA 1.939)	1952.2	1952.2
Downstream face (STA 1.936)	1952.2	1952.2

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	1952.2	1952.2
Downstream face	1952.2	1952.2

100-Year Elevations	Water Surface Elevations	Energy Gradient Elevations
Upstream face	1940.48	1941.19
Downstream face	1940.46	1941.15

Discharge	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)	3299	0	0	3299 cfs

The maximum depth of flow over the roadway/railroad (ft.) 0

Weir length (ft.) 0

Top Widths

	Floodplain	Floodway
Upstream face	105'	93'
Downstream face	110'	93'

Top Widths

	Effective Flow	Effective and Ineffective Flow
Upstream face	93'	105'
Downstream face	93'	110'

Loss Coefficients

Entrance loss coefficient	—
Manning's "n" value assigned to the structure(s)	0.030
Friction loss coefficient through structure (s)	—
Other loss coefficients (e.g., bend manhole, etc.) Drag Coefficient	2.000
Total loss coefficient	—
Weir coefficient	—
Pier coefficient	—
Contraction loss coefficient	0.3
Expansion loss coefficient	0.5

4. SEDIMENT TRANSPORT CONSIDERATIONS

1. A. Is there any indication from historical records that sediment transport *(including scour and deposition)* can affect the 100-year water surface elevations? ..... ☐ Yes ☐ No

B Based on the conditions *(such as geomorphology, vegetative cover and development of the watershed and stream bed, and bank conditions)*, is there a potential for debris and sediment transport *(including scour and deposition)* to affect the 100-year water surface elevations and/or conveyance capacity through the bridge/culvert? ..... ☐ Yes ☐ No

.. If the answer to either 1A or 1B is yes:

A. What is the estimated sediment *(bed material)* load?
_____cfs *(attach gradation curve)*

Explain method used to estimate the sediment transport and the depth of scour and/or deposition NA - Sediment transport not considered in analysis.

B. Will sediment accumulate anywhere through the bridge/culvert? ☐ Yes ☐ No

If yes, explain the impact on the conveyance capacity through the bridge/culvert?_____

5. FLOODWAY ANALYSIS

Explain method of bridge encroachment (floodway run) Method I of bridge encroachment is used where encroachment stations are defined by ET (i.e., STENCL, STENCR) and effective elevations are defined by X3 (i.e. ELLEX, ELREX) for effective flow calculations.

Comments *(explain any unusual situations)*:

Attach analysis.

FEDERAL EMERGENCY MANAGEMENT AGENCY BRIDGE/CULVERT FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

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Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: Wash S: Little San Domingo Wash

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. IDENTIFIER

1. Name of roadway, railroad, etc.: U.S. Highway 60-89
2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): Station 2.946 to Station 2.966
3. This revision reflects *(check one of the following)*:
   - ☒ New bridge/culvert not modeled in the FIS
   - ☐ Modified bridge/culvert previously modeled in the FIS
   - ☐ New analysis of bridge/culvert previously modeled in the FIS

   (Explain why new analysis was performed)

2. BACKGROUND

Provide the following information about the structure:

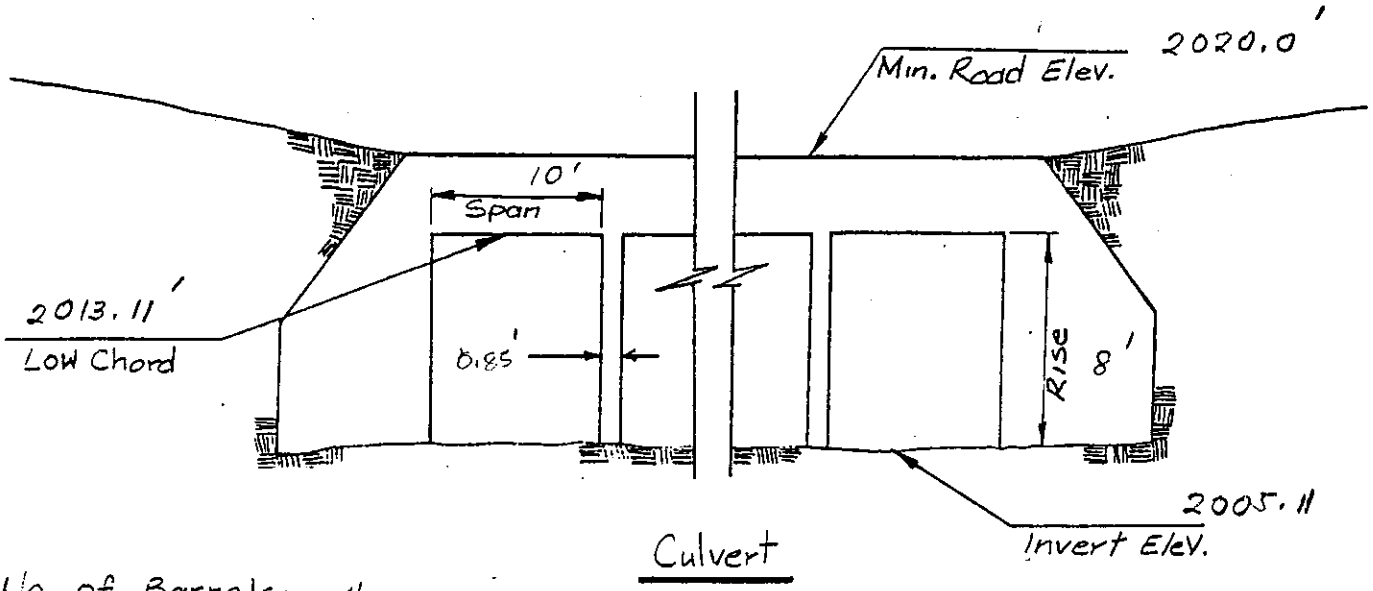
1. Dimension, material, and shape (e.g. two 10 x 5 feet reinforced concrete box culvert; three 30-foot span bridge with 2 rows of two 3- foot diameter circular piers; 40-foot wide ogee shape spillway) four 10' x 8' x 108' concrete box culvert (CBC) sk 30°
2. Entrance geometry of culvert/type of bridge opening (e.g. 30° - 75° wing walls with square top edge, sloping embankments and vertical abutments) With wingwalls with square top edge.
3. Hydraulic model used to analyze the structure (*e.g., HEC-2 with special bridge routine, WSPRO, HY8*) HEC-2 with special bridge routine

If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structure(s). *(Attach justification)*

Note: If any items do not apply to submitted hydraulic analysis, indicate by N/A

* One form per new/revised bridge/culvert

Sketch the downstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, minimum top of road elevation, and ineffective flow widths.

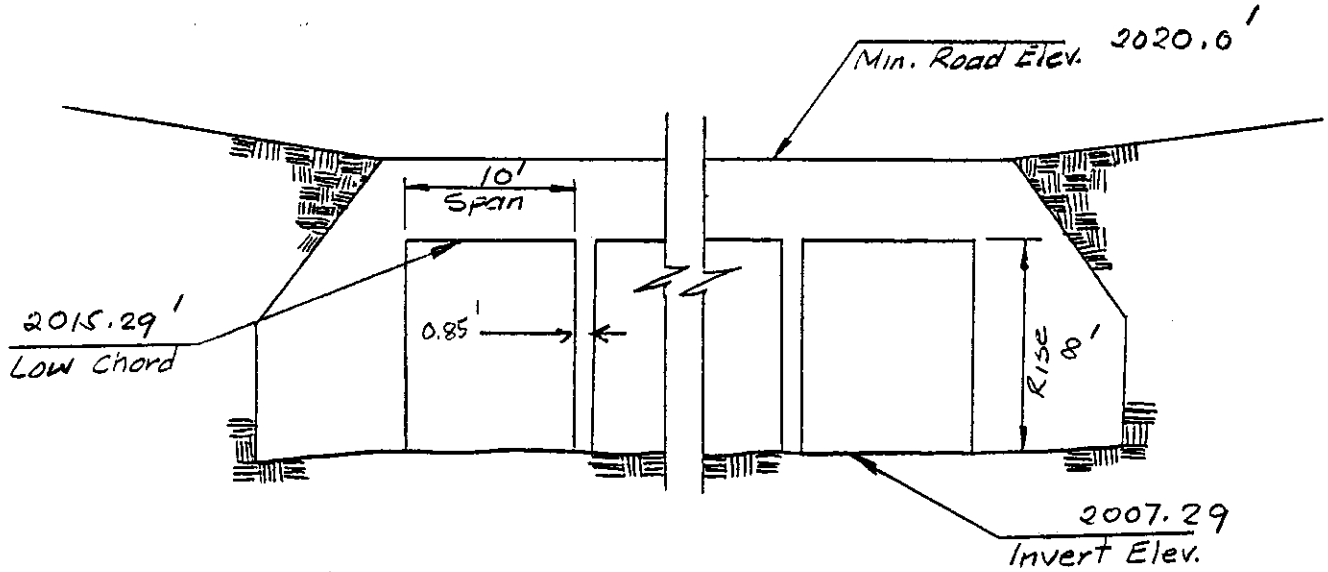


No. of Barrels: 4

Culvert Size: 10' x 8' x 108'

Approx. Sediment Depth in Culvert: 0' See Cross Section # 2.946

Sketch the upstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, and minimum top of road elevation.

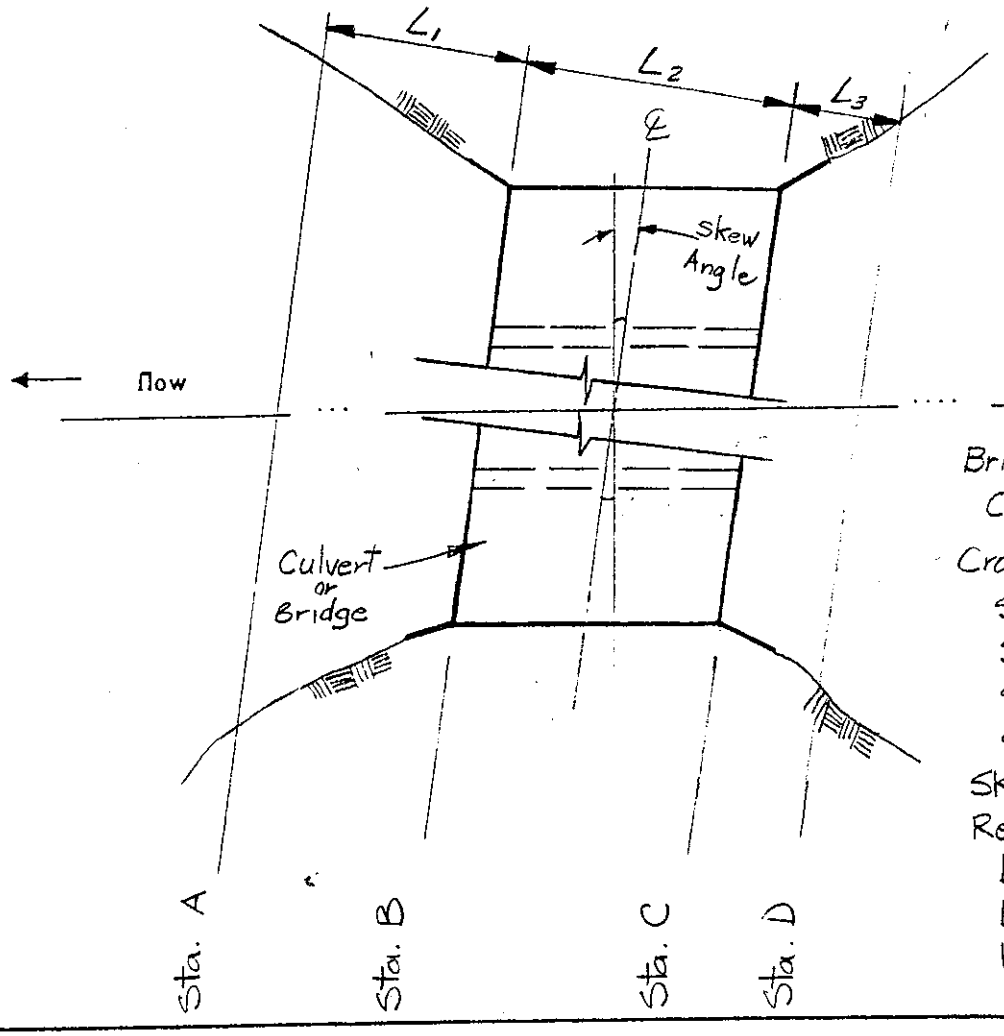


No of Barrels: 4

Culvert Size: 10' x 8' x 108'

Approx. Sediment Depth in Culvert: 0' See Cross Section # 2.966

Sketch the plan view of the structure(s) Show, at a minimum, the skew angle, cross-section locations, distances between cross sections, and length of structure (s).



Bridge Width / Culvert Length: 108.1'

Cross Section Stations

Sta. A = 2.945

Sta. B = 2.946

Sta. C = 2.966

Sta. D = 2.970

Skew Angle: 30°

Reach Lengths:

L_1 = 0.9 ft.

L_2 = 108.1 ft.

L_3 = 32 ft.

Attach plans of the structure (s) certified by a registered Professional Engineer.

Culvert length or bridge width (ft)	108.1'
Calculated culvert/bridge area (ft^2) by the hydraulic model, if applicable	340 ft^2
Total culvert/bridge area (ft^2)	340.4 ft^2

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face (STA 2.966)	2022.2	2020.0
Downstream face (STA 2.946)	2013.1	2013.11

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	2023.1	2020.0
Downstream face	2023.1	2020.0

100-Year Elevations	Water Surface Elevations	Energy Gradient Elevations
Upstream face	2014.72	2016.35
Downstream face	2010.75	2013.57

Discharge	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)	3224	—	—	3224

The maximum depth of flow over the roadway/railroad (ft.) 0

Weir length (ft.) 0

Top Widths

	Floodplain	Floodway
Upstream face	44	44
Downstream face	44	44

Top Widths

	Effective Flow	Effective and Ineffective Flow
Upstream face	44	44
Downstream face	44	44

Loss Coefficients

Entrance loss coefficient	0.500
Manning's "n" value assigned to the structure(s)	0.025
Friction loss coefficient through structure (s)	0.250
Other loss coefficients (e.g., bend manhole, etc.) (intermediate piers)	0.05
Total loss coefficient	1.80
Weir coefficient	3.00
Pier coefficient	1.25
Contraction loss coefficient	0.60
Expansion loss coefficient	0.80

4. SEDIMENT TRANSPORT CONSIDERATIONS

1. A. Is there any indication from historical records that sediment transport (*including scour and deposition*) can affect the 100-year water surface elevations? ..... ☐ Yes ☐ No

B Based on the conditions (*such as geomorphology, vegetative cover and development of the watershed and stream bed, and bank conditions*), is there a potential for debris and sediment transport (*including scour and deposition*) to affect the 100-year water surface elevations and/or conveyance capacity through the bridge/culvert? ..... ☐ Yes ☐ No

If the answer to either 1A or 1B is yes:

A. What is the estimated sediment (*bed material*) load?
_____cfs (*attach gradation curve*)

Explain method used to estimate the sediment transport and the depth of scour and/or deposition NA - Sediment transport not considered in analysis.

B. Will sediment accumulate anywhere through the bridge/culvert? ☐ Yes ☐ No

If yes, explain the impact on the conveyance capacity through the bridge/culvert?_____

5. FLOODWAY ANALYSIS

Explain method of bridge encroachment (floodway run) Method 2 of bridge encroachment is used where encroachment stations are defined by ET (i.e., STENCL, STENCR) and effective elevations are defined by X3 (i.e., ELLEFT, ELREA) for effective flow calculations.

Comments *(explain any unusual situations)*:

Attach analysis.

Flood Control District of Maricopa County
Contract FCD 89-79

WICKENBURG AREA DRAINAGE MASTER STUDY

TECHNICAL DOCUMENTATION REPORT

Appendix 6.16: HEC-2 Models & Cross Section Plots for East Area Wash
LITTLE SAN DOMINGO WASH (Wash s)

Submitted to the
Federal Emergency Management Agency
on Behalf of the
Flood Control District of Maricopa County

N:\1197\02\ADMIN\119702RP.063

May 1994

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*******************************************
*  HEC-2 WATER SURFACE PROFILES           *
*                                         *
   Version   4.6.2;  May 1991             *
                                          *
*  RUN DATE    04MAY92    TIME   15:25:31 *
*******************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
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```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

THIS RUN EXECUTED 04MAY92 15:25:31

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


T1      WICKENBURG ADMS: MARICOPA COUNTY - CONTRACT FCDMC 89-79
T2      BLACK & VEATCH PN 17676:  COE & VAN LOO JN 1197-02
T3      WASH S: LITTLE SAN DOMINGO WASH          (WASHS.O)

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0        2        0        0   0.00707       0        0        0   1785.14      0

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

      1        0       -1        0        0        0       -1        0        0       15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150      200

QT       2     3403     3403
NC     .04      .04      .03
            HASSAYAMPA RIVER FIS CROSS SECTION 41.29 (CBA 1988, NO DATUM CHANGE)
            CONFLUENCE WITH WASH S - LITTLE SAN DOMINGO WASH, AN EAST TRIBUTARY.
            NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA.
X1    41.29       12   1400.0   2280.0      0.0      0.0      0.0
GR   1840.0   1000.0   1788.0   1100.0   1784.0   1260.0   1782.0   1400.0   1780.0   1580.0
GR   1779.0   1720.0   1780.0   2200.0   1780.0   2280.0   1788.0   2310.0   1792.0   2430.0
GR   1796.0   2490.0   1820.0   2570.0

NC   0.065    0.065    0.035       .1       .3
ET             7.1      9.1                                 956     1160      956     1160
X1   0.102       21     1112     1130      200      900      500
GR  1800.2     925.   1797.6     931.   1784.1     961.   1782.9    1000.   1783.8    1013.
GR  1784.0    1032.   1783.5    1066.   1783.1    1092.   1782.7    1112.   1780.5    1124.
GR  1782.0    1130.   1785.1    1143.   1786.7    1167.   1787.0    1191.   1786.4    1222.
GR  1786.0    1233.   1786.7    1294.   1788.0    1338.   1791.2    1377.   1793.8    1414.
GR  1796.1    1434.

NC   0.060    0.060    0.035       .1       .3
ET                      9.1                                                  948     1110
X1   0.160       12      967     1018      306      306      306
GR  1800.1     939.   1792.2     946.   1786.7     967.   1787.0     983.   1787.1    1000.
GR  1787.1    1002.   1787.5    1018.   1788.9    1029.   1789.7    1066.   1790.6    1105.
GR  1793.1    1117.   1800.1    1158.
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NC    0.050     0.050     0.035       .1        .3
ET                7.1       9.1                                   710      1042       826      1042.
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
          AREA UPSTREAM OF THIS SECTION TO SECTION 0.518 HAS
          STRUCTURES LOCATED WITHIN THE LEFT OVERBANK.
X1    0.254        25      1000      1035       550       496       496
GR   1808.0      421.    1800.5      437.    1797.9      459.    1797.9      506.    1798.6      554.
GR   1797.9      621.    1797.6      697.    1797.3      753.    1797.2      769.    1797.3      802.
GR   1798.2      826.    1797.3      846.    1795.9      864.    1796.5      882.    1796.3      908.
GR   1797.0      933.    1799.8      951.    1799.9      962.    1797.2      968.    1794.7      979.
GR   1795.3     1000.    1795.4     1003.    1793.8     1023.    1795.0     1035.    1812.1     1065.

NC    0.055     0.055     0.035       .1        .3
ET                7.1       9.1                                   747      1023       780      1023
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.344        29       959      1018       474       474       474
GR   1815.4      192.    1814.0      193.    1802.6      217.    1802.8      286.    1804.1      363.
GR   1804.3      389.    1805.0      440.    1804.3      528.    1803.9      571.    1804.4      610.
GR   1804.4      655.    1806.8      667.    1806.9      677.    1806.0      706.    1805.6      772.
GR   1804.3      821.    1802.9      837.    1803.6      859.    1804.6      872.    1805.6      922.
     1806.2      934.    1804.1      940.    1801.8      959.    1802.1      968.    1801.8      981.
     1801.1      995.    1800.9     1000.    1800.3     1018.    1828.0     1043.

ET                7.1       9.1                                   775      1057       775      1057
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.427        29       947      1000       438       438       438
GR   1816.1      233.    1813.0      252.    1810.7      271.    1810.1      287.    1811.6      356.
GR   1812.1      388.    1811.2      487.    1812.1      533.    1812.2      587.    1812.5      598.
GR   1811.4      611.    1812.3      630.    1812.4      684.    1813.0      760.    1811.7      808.
GR   1810.1      825.    1811.3      840.    1812.3      854.    1812.6      879.    1812.1      886.
GR   1812.0      925.    1807.9      947.    1807.8      963.    1807.1      989.    1807.2      999.
GR   1807.4     1000.    1811.5     1016.    1812.8     1064.    1824.1     1099.

NC    0.055     0.055     0.035       .3        .5
ET                7.1       9.1                                   796      1057       796      1057
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.518        39       920      1011       490       420       480
GR   1832.2      150.    1828.8      161.    1828.0      192.    1825.6      209.    1819.5      232.
GR   1819.7      279.    1821.5      329.    1820.5      395.    1819.8      402.    1819.4      429.
GR   1819.1      472.    1819.7      531.    1820.3      577.    1820.8      598.    1820.4      670.
GR   1819.6      756.    1818.4      794.    1815.0      814.    1816.2      835.    1817.5      842.
GR   1816.3      848.    1816.3      855.    1816.4      869.    1816.3      888.    1817.6      909.
     1815.6      920.    1814.2      941.    1814.6      958.    1815.9      965.    1815.0      980.
GR   1814.3      996.    1814.4     1000.    1815.0     1011.    1817.1     1025.    1817.1     1046.
GR   1818.8     1067.    1820.8     1097.    1824.1     1116.    1828.2     1153.
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NC    0.055     0.065     0.035       .1        .3
ET              7.1       9.1                                685       1208      685       1208
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.617       49       933      1040       470       595       523
GR  1836.0      320.    1834.2      335.    1832.8      347.    1832.8      363.    1831.6      373.
GR  1829.1      394.    1827.0      435.    1826.0      455.    1826.0      466.    1827.1      494.
GR  1826.2      522.    1826.2      535.    1826.5      567.    1827.0      624.    1827.1      654.
GR  1825.8      660.    1824.9      703.    1823.8      723.    1822.7      746.    1822.2      764.
GR  1822.9      787.    1825.7      796.    1825.6      836.    1825.9      887.    1825.9      933.
GR  1822.2      938.    1823.8      964.    1824.3      987.    1824.6      993.    1823.9     1000.
GR  1823.3     1005.    1822.9     1019.    1822.8     1037.    1824.0     1040.    1826.8     1054.
GR  1825.6     1082.    1825.9     1105.    1825.5     1131.    1825.6     1148.    1824.0     1171.
GR  1822.5     1183.    1823.0     1200.    1825.8     1209.    1826.8     1224.    1827.3     1276.
GR  1829.4     1299.    1831.0     1328.    1837.7     1359.    1840.0     1382.

ET              7.1       9.1                                503       1401      503       1401
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.722       59       972      1094       620       450       554
GR  1860.0      329.    1851.9      333.    1836.6      354.    1837.7      375.    1839.1      410.
GR  1839.6      473.    1840.0      489.    1838.9      493.    1832.8      509.    1833.4      515.
    1836.6      522.    1837.5      544.    1836.7      575.    1834.8      589.    1833.9      599.
    1836.2      608.    1837.1      635.    1838.4      664.    1838.1      687.    1836.9      722.
GR  1838.6      749.    1839.1      783.    1836.2      800.    1834.9      816.    1837.8      839.
GR  1837.8      866.    1837.6      879.    1835.6      930.    1835.9      953.    1835.1      965.
GR  1832.2      972.    1832.7      996.    1832.9     1000.    1833.1     1009.    1832.3     1038.
GR  1833.3     1070.    1833.4     1086.    1833.9     1094.    1834.3     1118.    1835.5     1133.
GR  1834.0     1153.    1833.7     1167.    1833.0     1183.    1834.5     1202.    1833.8     1231.
GR  1832.6     1251.    1830.5     1257.    1833.1     1265.    1833.8     1274.    1831.9     1287.
GR  1830.0     1299.    1830.8     1311.    1833.7     1323.    1832.9     1341.    1831.6     1349.
GR  1833.6     1357.    1833.0     1370.    1833.7     1392.    1840.0     1452.

ET              7.1       9.1                                246       1139      246       1139
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.817       73       962      1043       550       775       502
GR  1852.0       88.    1845.9      103.    1844.2      122.    1844.6      187.    1845.2      226.
GR  1844.7      242.    1842.7      258.    1841.9      278.    1842.6      292.    1843.0      308.
GR  1844.5      329.    1844.7      357.    1842.1      376.    1842.5      389.    1843.1      413.
GR  1845.2      424.    1845.4      437.    1845.5      481.    1844.4      512.    1844.1      535.
GR  1845.5      558.    1844.5      589.    1844.5      626.    1844.5      656.    1843.9      667.
GR  1843.6      702.    1844.0      756.    1844.5      777.    1844.6      784.    1843.6      820.
GR  1842.5      840.    1841.2      853.    1840.1      864.    1841.3      872.    1842.9      878.
GR  1843.6      899.    1844.4      929.    1844.9      947.    1844.7      962.    1841.2      975.
GR  1840.2     1000.    1840.1     1019.    1840.7     1030.    1844.9     1043.    1843.5     1075.
GR  1843.6     1090.    1844.6     1113.    1843.2     1125.    1842.1     1132.    1844.4     1139.
    1845.0     1164.    1844.2     1200.    1844.3     1226.    1845.5     1239.    1846.0     1277.
GR  1844.1     1303.    1842.5     1308.    1841.5     1316.    1842.6     1325.    1844.7     1331.
GR  1844.0     1349.    1843.5     1361.    1843.2     1386.    1843.8     1397.    1842.5     1433.
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     1841.2     1445.     1841.6     1454.     1842.9     1472.     1842.4     1494.     1840.0     1498.
GR   1840.4     1510.     1842.0     1520.     1848.1     1539.

ET               7.1        9.1                                     509       1165       509       1165
            ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
            SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
            WSEL AND THE TOPOGRAPHY.
X1   0.903       46       1066       1098       335       530       454
GR   1856.0      35.      1851.8      65.      1849.7     105.      1848.3     147.      1847.1     163.
GR   1845.2     176.      1847.0     185.      1849.9     202.      1850.0     229.      1848.7     250.
GR   1846.7     270.      1849.5     285.      1850.3     297.      1850.2     337.      1849.5     372.
GR   1849.1     405.      1849.8     439.      1848.6     449.      1847.4     459.      1849.1     468.
GR   1849.6     484.      1849.0     502.      1847.1     516.      1845.2     533.      1845.5     577.
GR   1846.1     610.      1847.0     626.      1847.6     680.      1847.4     731.      1846.8     755.
GR   1846.3     815.      1846.0     871.      1846.1     920.      1846.5     944.      1846.4    1000.
GR   1847.1    1029.      1847.5    1043.      1847.0    1058.      1845.8    1066.      1845.7    1081.
GR   1846.5    1098.      1847.0    1118.      1847.4    1151.      1848.2    1169.      1850.0    1190.
GR   1860.0    1219.

NC   0.060     0.060      0.035       .3         .5
ET               7.1        9.1                                     861       1294       861       1294
            ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
            SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
            WSEL AND THE TOPOGRAPHY.
X1   1.000       36       985        1012       600       420       512
     1860.0     749.      1856.6     766.      1858.2     794.      1859.6     815.      1857.9     839.
     1855.9     870.      1854.3     881.      1853.9     888.      1854.6     898.      1857.7     904.
GR   1859.7     922.      1860.3     945.      1860.9     962.      1854.8     985.      1854.2    1000.
GR   1854.4    1012.      1855.1    1031.      1855.1    1065.      1856.1    1083.      1854.6    1103.
GR   1855.1    1121.      1855.5    1150.      1855.1    1176.      1855.5    1192.      1854.2    1200.
GR   1853.9    1210.      1855.4    1219.      1854.4    1229.      1854.8    1253.      1854.2    1270.
GR   1853.0    1280.      1855.5    1288.      1858.0    1303.      1858.7    1319.      1860.1    1330.
GR   1860.1    1338.

ET               7.1        9.1                                     897       1351       897       1351
            ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
            SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
            WSEL AND THE TOPOGRAPHY.
X1   1.096       37       987        1013       482       520       509
GR   1876.1     892.      1867.9     892.      1862.7     901.      1865.3     912.      1865.4     928.
GR   1863.2     948.      1860.3     957.      1860.0     966.      1861.1     979.      1860.4     987.
GR   1860.0    1000.      1861.6    1013.      1865.0    1023.      1864.7    1051.      1863.5    1065.
GR   1862.5    1092.      1862.4    1121.      1862.2    1140.      1863.3    1164.      1863.3    1199.
GR   1862.3    1208.      1863.5    1221.      1862.4    1258.      1862.9    1290.      1864.0    1338.
GR   1865.3    1376.      1867.4    1389.      1866.8    1395.      1865.1    1399.      1865.2    1426.
GR   1867.4    1440.      1868.6    1456.      1869.7    1490.      1870.8    1510.      1872.0    1540.
GR   1873.9    1560.      1880.1    1577.

QT       2     3299       3299
ET               7.1        9.1                                     905       1292       905       1292
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          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    1.189      22     956    1009     480     535     493
GR   1876.0     890.  1872.8     900.  1869.7     909.  1869.9     935.  1868.7     956.
GR   1868.0    1000.  1869.2    1009.  1869.0    1035.  1869.0    1077.  1869.6    1110.
GR   1869.6    1129.  1869.0    1158.  1868.7    1180.  1869.3    1214.  1869.1    1244.
GR   1869.8    1268.  1869.9    1287.  1873.2    1302.  1872.8    1311.  1866.9    1321.
GR   1867.0    1322.  1880.0    1344.

ET              7.1     9.1                             974    1146     974    1146
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    1.283      29     984    1021     440     532     496
GR   1888.0     671.  1884.8     678.  1884.1     702.  1885.2     730.  1884.1     757.
GR   1881.8     783.  1881.8     795.  1881.3     811.  1878.9     820.  1875.8     857.
GR   1875.5     874.  1875.4     940.  1881.6     973.  1876.4     984.  1877.7     996.
GR   1877.7    1000.  1877.7    1021.  1878.0    1041.  1879.8    1049.  1878.4    1097.
GR   1877.0    1128.  1878.0    1139.  1885.4    1157.  1885.7    1162.  1884.2    1167.
GR   1878.4    1181.  1877.6    1194.  1879.0    1206.  1888.2    1228.

ET                     9.1                                         853    1060
X1    1.375      23     964    1030     350     500     485
GR   1896.0     627.  1889.1     639.  1889.7     663.  1891.0     698.  1890.5     743.
     1890.0     785.  1891.2     830.  1891.7     844.  1885.9     863.  1887.3     893.
     1887.6     921.  1887.6     944.  1887.5     953.  1886.0     964.  1885.3     991.
GR   1885.3    1000.  1885.3    1006.  1885.7    1030.  1886.5    1052.  1891.7    1069.
GR   1890.8    1086.  1891.3    1113.  1896.1    1146.

ET                     9.1                                         878    1043
X1    1.470      28     918     942     805     508     502
GR   1904.0     470.  1902.9     485.  1901.7     531.  1900.9     599.  1901.3     661.
GR   1901.7     697.  1901.7     708.  1902.2     750.  1902.2     771.  1904.6     791.
GR   1905.9     807.  1906.8     828.  1906.9     831.  1903.9     861.  1896.2     886.
GR   1895.7     901.  1893.5     918.  1894.0     942.  1896.1     950.  1895.8     972.
GR   1895.8     981.  1895.0    1000.  1895.8    1010.  1897.6    1038.  1900.4    1054.
GR   1902.7    1075.  1903.6    1087.  1904.2    1105.

ET                     9.1                                         648    1011
X1    1.563      22     977    1006     450     475     494
GR   1908.1     632.  1906.3     639.  1903.5     662.  1901.9     692.  1901.8     707.
GR   1902.5     723.  1902.9     770.  1903.3     785.  1903.5     809.  1903.6     833.
GR   1903.9     852.  1903.9     873.  1903.7     881.  1903.4     911.  1902.3     920.
GR   1903.4     949.  1903.6     966.  1904.0     977.  1903.0     998.  1903.0    1000.
GR   1903.0    1006.  1910.3    1021.

ET                     9.1                                         876    1360
          DIVIDED FLOW AREA, AREA SOUTH OF HILL IS MAIN WASH.
X1    1.662      27     945    1000     430     450     523
     1920.     860.  1916.1     870.  1914.7     877.  1915.2     889.  1915.6     902.
     1915.1    914.  1912.0     922.  1910.9     945.  1910.2     970.  1910.3     998.
GR   1910.9    1000.  1914.0    1009.  1917.1    1036.  1917.2    1068.  1917.5    1111.
GR   1920.0    1118.  1917.8    1168.  1917.1    1221.  1916.2    1268.  1915.0    1318.
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     1915.0     1336.     1914.1     1345.     1915.3     1373.     1914.9     1414.     1915.4     1433.
GR   1916.2     1447.     1924.      1477.

ET               7.1       9.1                                     909        1350      909        1350
            ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
            SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
            WSEL AND THE TOPOGRAPHY.
X1   1.754       32        1151       1179       520        540        491
GR   1924.2     907.      1920.5     911.      1918.8     923.      1918.8     939.      1918.8     958.
GR   1919.3     979.      1919.4     1000.     1919.6     1007.     1923.6     1022.     1923.9     1046.
GR   1920.0     1056.     1920.3     1104.     1921.0     1126.     1920.2     1151.     1917.4     1164.
GR   1918.5     1179.     1918.7     1200.     1918.8     1217.     1920.0     1246.     1921.9     1263.
GR   1921.7     1281.     1920.3     1303.     1918.0     1318.     1919.3     1334.     1922.7     1358.
GR   1924.3     1367.     1922.0     1390.     1918.9     1400.     1917.6     1425.     1918.8     1465.
GR   1921.3     1488.     1923.9     1518.

ET               7.1       9.1                                     940        1100      940        1100
            ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
            SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
            WSEL AND THE TOPOGRAPHY.
X1   1.847       24        981        1012       491        610        491
GR   1940.0     630.      1927.6     661.      1926.7     676.      1924.7     688.      1926.7     752.
GR   1927.0     807.      1928.6     882.      1929.1     911.      1930.3     930.      1930.6     939.
GR   1926.4     953.      1925.4     981.      1925.7     991.      1925.7     1000.     1925.7     1001.
GR   1925.7     1012.     1927.6     1024.     1928.0     1044.     1929.2     1064.     1930.2     1099.
     1931.9     1119.     1932.7     1136.     1932.2     1174.     1932.2     1180.

NC   0.065     0.065     0.035        .3         .5
ET                         9.1                                                                969        1031
X1   1.912        8        973        1000       425        350        343
GR   1956.2     959.      1955.9     959.      1928.4     973.      1928.2     999.      1928.3     1000.
GR   1930.4     1018.     1935.3     1032.     1946.3     1057.

NC   0.065     0.065     0.035        .3         .5
ET               9.1       9.1                                                                948        1028
            ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
            SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
            WSEL AND THE TOPOGRAPHY.
            DOWNSTREAM SECTION OF 3 FOOT DROP STRUCTURE.
X1   1.931       11        987        1018       160        75         100
GR   1952.0     904.      1945.5     912.      1939.1     939.      1935.3     961.      1932.4     987.
GR   1930.0     1000.     1929.4     1004.     1932.5     1018.     1940.6     1033.     1950.9     1050.
GR   1952.2     1058.

ET               9.1       9.1                                                                942        1029
            UPSTREAM SECTION OF 3 FOOT DROP STRUCTURE.
            ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.
X1   1.932       11        987        1018       .1         .1         .1
GR   1952.0     904       1945.5     912       1939.1     939       1935.3     961       1933.0     987
GR   1932.4     1000      1932.4     1004      1932.5     1018      1940.6     1033      1950.9     1050
GR   1952.2     1058
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ET                9.1       9.1                                                933       1033
          DOWNSTREAM SECTION OF 2 FOOT DROP STRUCTURE.
          ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.
X1   1.933        11       961      1018         5         5         5
GR  1952.0       904    1945.5       912    1939.1       939    1935.3       961    1933.0       987
GR  1932.4      1000    1932.4      1004    1932.5      1018    1940.6      1033    1950.9      1050
GR  1952.2      1058

ET                9.1       9.1                                                954       1049
          UPSTREAM SECTION OF 2 FOOT DROP STRUCTURE.
          ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.
X1   1.934        10       938      1069        .1        .1        .1
GR  1952.0       904    1949.0       919    1945.5       938    1938.0       962    1934.0     963.3
GR  1934.0      1000    1934.1    1040.0    1938.1    1044.0    1950.9      1069    1951.9      1087

NC   0.065     0.065     0.030        .3        .5
ET                        9.1                                                954       1047
          DOWNSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.
X1   1.936        11       938    1068.5      14.5      14.5      14.5
X3      10                                                            1952.2    1952.2
BT     -11       912    1952.2    1952.2     931.5    1952.2    1948.9       938    1952.2    1948.9
BT               962    1952.2    1948.9     963.3    1952.2    1948.9      1000    1952.2    1948.9
BT            1038.7    1952.2    1948.9    1038.8    1952.2    1948.9    1040.8    1952.2    1948.9
BT            1068.5    1952.2    1948.9      1069    1952.2    1952.2
     1952.2       912    1948.9     931.5    1945.5       938    1938.0       962   1934.59     963.3
     1934.1      1000   1934.18    1038.7    1938.1    1038.8    1938.1    1040.8    1948.9    1068.5
GR  1952.2      1069

ET                        9.1                                                954       1047
          UPSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.
X1   1.939        11       938    1068.5      14.7      14.7      14.7         0         0         0
X2      0         0         0         0         0         0         0       2.0         0         0
X3      10                                                            1952.2    1952.2
BT     -11       912    1952.2    1952.2     931.5    1952.2    1948.9       938    1952.2    1948.9
BT               962    1952.2    1948.9     963.3    1952.2    1948.9      1000    1952.2    1948.9
BT            1038.7    1952.2    1948.9    1038.8    1952.2    1948.9    1040.8    1952.2    1948.9
BT            1068.5    1952.2    1948.9      1069    1952.2    1952.2
GR  1952.2       912    1948.9     931.5    1945.5       938    1938.0       962   1934.59     963.3
GR  1934.2      1000   1934.59    1038.7    1938.1    1038.8    1938.1    1040.8    1948.9    1068.5
GR  1952.2      1069

NC   0.065     0.065     0.035        .1        .3
ET                        9.1                                                979       1020
X1   1.980        13       975      1026       190       210       206
GR  1952.5      932.    1953.1      951.    1952.5      968.    1950.5      975.    1939.7      989.
GR  1939.0     1000.    1941.1     1012.    1952.4     1026.    1953.0     1041.    1952.1     1051.
GR  1952.4     1064.    1953.8     1075.    1954.2     1097.
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NC    0.065     0.065     0.035       .3        .5
ET                9.1       9.1                                                968      1031
          DOWNSTREAM SECTION OF 8.9 FOOT DROP STRUCTURE AT THE
          OUTLET OF A 4 - 10' x 8' CONC. BOX CULVERT.
X1    2.053        16       998      1030       380       380       380
GR   1974.3      837.    1972.4      847.    1973.3      862.    1975.2      884.    1973.9      898.
GR   1970.4      917.    1965.8      934.    1958.2      949.    1953.7      964.    1944.7      981.
GR   1941.0      998.   1940.98     1000.   1940.98      1030    1954.8    1030.1    1958.6     1050.
GR   1972.0     1127.

ET                9.1       9.1                                                969      1031
          UPSTREAM SECTION OF 8.9 FOOT DROP STRUCTURE AT THE
          OUTLET OF A 4 - 10' x 8' CONC. BOX CULVERT.
X1    2.054        15       970      1030        .1        .1        .1
GR   1974.3       837    1972.4       847    1973.3       862    1975.2       884    1973.9       898
GR   1970.4       917    1965.8       934    1958.2       949    1954.8     969.9    1949.8       970
GR   1949.8      1000    1949.8      1030    1954.8    1031.1    1958.6      1050    1972.0      1127

NC    0.065     0.065     0.030        .6        .8
ET                          9.1                                                978      1022
          DOWNSTREAM SECTION TO S.R. 93(U.S. HWY. 60-89)
          4 - 10' X 8' X 217' CONC. BOX CULVERTS W/HEADWALLS - 30 DEG SKEW
X1    2.056        13     978.6    1021.3        12        12        12         0         0         0
X3       10                                                                  1980.8    1977.0
      1975.8       906    1973.1       915    1971.0       945    1968.7       962    1963.8       978
      1957.9     978.5   1949.88     978.6   1949.88      1000   1949.88    1021.3   1957.88    1021.4
GR   1965.6      1028    1967.6      1069    1972.0      1127

SB    1.25      1.80       3.0         0      42.7       2.7     298.4         0   1951.53   1949.88
ET                          9.1                                                978      1022
          UPSTREAM SECTION OF 4 - 10' X 8' CONC. BOX CULVERT.
X1    2.097        25     978.6    1021.3       217       217       217
X2        0         0         1   1959.53    1977.0         0         0         2       .86         0
X3       10                                                                  1980.8    1977.0
BT      -15       908    1980.9                931    1980.8                978.5    1980.8
BT               978.6    1980.8                1000    1980.6                1002    1980.6
BT              1021.3    1980.4               1021.4    1980.4               1045    1980.2
BT                1063    1980.0                1095    1979.7                1254    1978.5
BT                1353    1977.6                1488    1977.0                1605    1981.9
GR   1980.9       908.    1978.3       931.   1959.53     978.5   1951.53     978.6   1951.53     1000.
GR   1951.5      1002.   1951.53    1021.3   1959.53    1021.4    1960.4     1045.    1966.4     1063.
GR   1967.5      1085.    1964.6     1096.    1954.1     1133.    1953.8     1190.    1953.4     1246.
GR   1953.5      1322.    1953.8     1363.    1959.4     1381.    1963.1     1399.    1966.6     1426.
GR   1968.2      1457.    1972.8     1473.    1977.0     1490.    1978.8     1526.    1981.9     1605.

QT        2      3224      3224
NC    0.065     0.065     0.035        .1        .3
ET                          9.1                                                969      1135
X1    2.131        10       978      1000       182       182       182
GR   1976.0      950.    1954.6      978.    1954.3      987.    1955.1     1000.    1957.7     1015.
GR   1957.9      1056.   1959.1      1102.   1960.3      1124.   1963.1     1171.    1972.1     1203.
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ET                      9.1                                                     989      1072
X1   2.194        9     997     1013     340     343     333
GR   1976.1     979.   1958.7    997.   1958.6   1000.   1958.5   1001.   1959.4    1013.
GR   1961.8    1030.   1963.2   1058.   1964.7   1067.   1980.9   1111.

ET                      9.1                                                     904      1033
X1   2.267       10     1000     1025     365     407     385
GR   1972.0     895.   1969.1    909.   1966.5    932.   1965.4    952.   1966.9     963.
GR   1968.1     976.   1966.1    986.   1963.3   1000.   1963.1   1025.   1984.4    1048.

ET                      9.1                                                     969      1090
X1   2.360       12     973      1001     450     526     491
GR   1980.1     965.   1969.9    973.   1969.8   1000.   1969.8   1001.   1972.2    1020.
GR   1973.0    1042.   1973.5   1051.   1970.1   1062.   1971.3   1077.   1976.9    1096.
GR   1978.4    1105.   1980.1   1133.

ET                      9.1                                                     986      1085
X1   2.455        9     1006     1014     565     440     502
GR   1984.5     975.   1973.7   1000.   1971.0   1006.   1971.6   1014.   1971.7    1030.
GR   1976.4    1040.   1977.8   1061.   1979.2   1083.   1984.0   1106.

ET                      9.1                                                     976      1083
X1   2.550        9     988      1000     505     485     502
GR   1995.9     957.   1976.3    988.   1976.2    998.   1976.4   1000.   1977.7    1013.
     1979.3    1025.   1980.2   1061.   1981.6   1074.   1988.0   1097.

ET                      9.1                                                     924      1037
X1   2.646       10     993      1002     482     515     507
GR   1992.1     904.   1988.5    928.   1984.7    976.   1982.9    993.   1982.9    1000.
GR   1982.9    1002.   1984.1   1019.   1986.3   1031.   1988.0   1035.   2000.0    1060

ET                      9.1                                                     972      1077
X1   2.746        9     980      1000     547     467     528
GR   2004.1     962.   1989.8    980.   1989.7    989.   1990.2   1000.   1991.3    1020.
GR   1992.3    1040.   1995.3   1072.   1998.2   1094.   2000.2   1104.

ET                      9.1                                                     910      1026
X1   2.838       10     998      1018     388     505     485
GR   2012.0     868.   2009.8    885.   1998.1    924.   1999.2    952.   1999.0     977.
GR   1997.1     992.   1997.1    998.   1997.1   1000.   1997.4   1018.   2012.1    1041.

ET                      9.1                                                     954      1060
X1   2.894        8     987      1002     300     297     294
GR   2019.8     925.   2015.6    930.   2001.0    967.   2000.0    987.   2000.0    1000.
GR   2000.0    1002.   2002.4   1039.   2012.0   1096.

ET              7.1     9.1                             978      1023     978      1023
          ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.
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          DOWNSTREAM SECTION OF 4'+/- DROP STRUCTURE AT OUTLET
          OF 4 - 10' x 8' CONC. BOX CULVERT.
X1   2.945      18      979     1022      310      235      271
GR   2022.4     778.    2023.3  822.    2022.9    851.    2021.5   873.    2020.0   887.
GR   2014.6     903.    2012.8  919.    2008.8    938.    2005.5   957.    2002.4   979.
GR   2001.7    1000.    2002.25 1022.   2002.7   1040.    2006.7  1061.    2006.7  1100.
GR   2006.7    1185.    2007.1  1203.   2012.2   1214.

NC   0.065    0.065     0.025     .6       .8
ET                      9.1                                                 978     1022
          UPSTREAM SECTION OF 4' +/- DROP STRUCTURE.
          DOWNSTREAM SECTION TO HWY 74
          4 - 10' X 8' X 108' CONC. BOX CULVERT W/ HEADWALLS - 30 DEG SKEW
X1   2.946      20      978.8   1021.2    .9       .9       .9
X3   10                                                            2022.0   2020.0
GR   2022.4     778     2023.3  822     2022.9    851     2021.5   873     2020.7   880
GR   2020.0     887     2014.6  903     2014.0    919     2013.8   938     2013.5   957
GR   2013.1    978.7    2005.11 978.8   2005.11   1000    2005.11  1021.2  2013.11  1021.3
GR   2014.0    1061.    2016.0  1100    2017.0    1185    2018.0   1203    2020.0   1214

SB   1.25     1.80      3.      0       42.55     2.55    340.4    0       2007.29  2005.11
ET                      9.1                                                 978     1022
          UPSTREAM SECTION OF 4 - 10' x 8' CONC.BOX CULVERT.
X1   2.966      18      978.8   1021.2  108.1     108.1   108.1    0       0        0
X2   0          0       1       2015.8  2021.9    0       0        2.0     .86      0
     10                                                            2022.0   2020.0
     -18        816     2024.0          841       2023.6          866     2023.3
BT              882     2023.2          895       2023.1          978.7   2022.2
BT              978.8   2022.2          1000      2022.0          1021.2  2021.9
BT              1021.3  2021.9          1051      2021.9          1060    2021.9
BT              1079    2021.9          1117      2022.0          1159    2022.0
BT              1232    2021.5          1291      2020.4          1299.4  2020.0
GR   2024.0     816     2020.7  841     2019.4    866     2018.1   882     2015.8   895
GR   2015.3    978.7    2007.29 978.8   2007.29   1000    2007.29  1021.2  2015.29  1021.3
GR   2017.2    1051     2015.8  1060    2011.8    1079    2012.8   1117    2012.5   1159
GR   2011.5    1232     2015.8  1291    2020.0    1299.4

NC   0.055    0.065     0.035     .3       .5
ET              7.1     9.1                                 953     1050     953      1050
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1   2.970      20      989     1024    11        50      32
GR   2024.0     816.    2020.7  841.    2019.4    866.    2018.1   882.    2015.8   895.
GR   2013.5     918.    2012.8  953.    2007.7    967.    2007.7   989.    2007.7   998.
GR   2007.7    1000.    2007.9  1024.   2012.9    1042.   2017.2   1051.   2015.8   1060.
GR   2011.8    1079.    2012.8  1117.   2012.5    1159.   2011.5   1232.   2015.8   1291.

NC   0.060    0.070     0.035     .1       .3
ET              7.1     9.1                                 968     1052     968      1052
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          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    3.019      18     984    1011     250     240     260
GR   2028.2     904.  2028.1    927.  2025.4    946.  2010.4    984.  2010.3    995.
GR   2010.3    1000.  2010.5   1011.  2012.3   1027.  2016.6   1052.  2017.4   1070.
GR   2019.1    1092.  2019.9   1131.  2018.7   1154.  2015.9   1174.  2019.4   1184.
GR   2022.5    1199.  2024.1   1231.  2024.1   1270.

QT       2    3037    3037
ET                     9.1                                            975    1079
X1    3.073      14     991    1003     285     260     285
GR   2032.0     914.  2031.6    934.  2029.6    954.  2024.8    971.  2013.8    984.
GR   2013.0     991.  2013.3   1000.  2013.4   1003.  2016.7   1011.  2019.0   1042.
GR   2020.4    1071.  2024.0   1098.  2026.1   1161.  2028.0   1196.

ET                     9.1                                            926    1012
X1    3.150      15     982    1000     420     390     407
GR   2032.0     874.  2031.9    889.  2031.2    906.  2027.7    917.  2021.9    936.
GR   2020.7     962.  2019.0    974.  2017.9    982.  2017.8    997.  2018.3   1000.
GR   2019.4    1007.  2035.6   1021.  2036.4   1032.  2035.0   1050.  2031.3   1073.

ET                     9.1                                            959    1062
X1    3.247      15     992    1002     434     548     512
GR   2036.0     904.  2035.4    923.  2034.3    943.  2031.0    955.  2027.1    975.
     2023.9     992.  2023.9   1000.  2023.9   1002.  2024.0   1014.  2026.5   1025.
     2028.5    1054.  2032.0   1070.  2033.3   1091.  2033.5   1116.  2036.0   1159.

ET                     9.1                                            924    1065
X1    3.344      17     998    1006     500     535     512
GR   2040.0     917.  2035.8    925.  2034.4    946.  2033.0    974.  2030.9    986.
GR   2027.9     998.  2027.9   1000.  2027.9   1006.  2029.0   1016.  2037.8   1026.
GR   2037.1    1036.  2034.7   1047.  2035.3   1058.  2036.8   1070.  2038.4   1090.
GR   2038.6    1099.  2040.4   1106.

NC   0.070    0.070   0.035     .1      .3
ET                     9.1                                            968    1079
X1    3.438      11     988    1000     510     420     497
GR   2044.2     964.  2036.4    988.  2035.8    999.  2035.9   1000.  2038.1   1018.
GR   2039.4    1030.  2039.5   1060.  2042.2   1074.  2045.6   1107.  2045.8   1136.
GR   2046.8    1148.

ET                     9.1                                            939    1030
X1    3.534      15     996    1018     509     495     509
GR   2052.1     918.  2050.3    932.  2043.8    946.  2041.8    971.  2041.5    987.
GR   2040.1     996.  2040.0   1000.  2039.9   1003.  2040.1   1018.  2044.5   1027.
GR   2054.5    1038.  2055.2   1048.  2055.8   1064.  2053.8   1082.  2053.0   1095.

ET                     9.1                                            979    1110
X1    3.627      13     984    1003     480     500     492
GR   2056.0     971.  2055.0    976.  2046.7    984.  2046.6    995.  2046.6   1000.
     2046.6    1003.  2047.9   1011.  2048.6   1038.  2049.2   1060.  2048.4   1087.
GR   2049.6    1105.  2051.7   1109.  2056.1   1128.
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QT      2     2849     2849
ET                     9.1                                                  899      1026
X1  3.723       11      996     1015      500      480      506
GR 2060.0     888.   2054.5     910.   2055.2     936.   2054.1     954.  2053.7     971.
GR 2052.5     984.   2051.7     996.   2051.7    1000.   2051.7    1005.  2051.6    1015.
GR 2060.2    1031.

NC  0.065    0.065    0.035      .3       .5
ET                     9.1                                                  974      1183
X1  3.809       15      983     1002      380      480      455
GR 2071.8     961.   2068.9     962.   2056.9     983.   2056.9     994.  2057.2    1000.
GR 2057.3    1002.   2058.6    1013.   2059.3    1051.   2059.7    1085.  2060.1    1118.
GR 2060.3    1164.   2061.2    1181.   2064.6    1189.   2068.5    1201.  2072.0    1241.

QT      2     3403     3403
ET                     7.1      9.1                                  246      1139      246      1139
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1 -0.817       73      962     1043      550      775      502
GR 1852.0     88.   1845.9     103.   1844.2     122.   1844.6     187.  1845.2     226.
GR 1844.7    242.   1842.7     258.   1841.9     278.   1842.6     292.  1843.0     308.
GR 1844.5    329.   1844.7     357.   1842.1     376.   1842.5     389.  1843.1     413.
GR 1845.2    424.   1845.4     437.   1845.5     481.   1844.4     512.  1844.1     535.
   1845.5    558.   1844.5     589.   1844.5     626.   1844.5     656.  1843.9     667.
   1843.6    702.   1844.0     756.   1844.5     777.   1844.6     784.  1843.6     820.
GR 1842.5    840.   1841.2     853.   1840.1     864.   1841.3     872.  1842.9     878.
GR 1843.6    899.   1844.4     929.   1844.9     947.   1844.7     962.  1841.2     975.
GR 1840.2   1000.   1840.1    1019.   1840.7    1030.   1844.9    1043.  1843.5    1075.
GR 1843.6   1090.   1844.6    1113.   1843.2    1125.   1842.1    1132.  1844.4    1139.
GR 1845.0   1164.   1844.2    1200.   1844.3    1226.   1845.5    1239.  1846.0    1277.
GR 1844.1   1303.   1842.5    1308.   1841.5    1316.   1842.6    1325.  1844.7    1331.
GR 1844.0   1349.   1843.5    1361.   1843.2    1386.   1843.8    1397.  1842.5    1433.
GR 1841.2   1445.   1841.6    1454.   1842.9    1472.   1842.4    1494.  1840.0    1498.
GR 1840.4   1510.   1842.0    1520.   1848.1    1539.

QT      2      420      420
NC  0.055    0.065    0.035      .1       .3
ET                     7.1      9.1                                  145       279      145       279
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1   0.06       46      163      185      270      360      320
GR 1856.0     35.   1851.8      65.   1849.7     105.   1848.3     147.  1847.1     163.
GR 1845.2    176.   1847.0     185.   1849.9     202.   1850.0     229.  1848.7     250.
GR 1846.7    270.   1849.5     285.   1850.3     297.   1850.2     337.  1849.5     372.
GR 1849.1    405.   1849.8     439.   1848.6     449.   1847.4     459.  1849.1     468.
GR 1849.6    484.   1849.0     502.   1847.1     516.   1845.2     533.  1845.5     577.
GR 1846.1    610.   1847.0     626.   1847.6     680.   1847.4     731.  1846.8     755.
   1846.3    815.   1846.0     871.   1846.1     920.   1846.5     944.  1846.4    1000.
   1847.1   1029.   1847.5    1043.   1847.0    1058.   1845.8    1066.  1845.7    1081.
GR 1846.5   1098.   1847.0    1118.   1847.4    1151.   1848.2    1169.  1850.0    1190.
GR 1860.0   1219.
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ET                    9.1                                                    164       258
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1     0.11       11      195      208      240      440      280
GR   1868.0      60.   1864.0      75.   1860.0      93.   1856.0      130.   1852.0      195.
GR   1851.3     200.   1852.0     208.   1856.0     315.   1860.0      338.   1864.0      342.
GR   1868.0     350.
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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

*SECNO 41.290
          HASSAYAMPA RIVER FIS CROSS SECTION 41.29 (CBA 1988, NO DATUM CHANGE)
          CONFLUENCE WITH WASH S - LITTLE SAN DOMINGO WASH, AN EAST TRIBUTARY.
          NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA.
  41.290     1.66   1780.66   1780.45   1785.14   1780.95       .29       .00       .00   1782.00
  3403.0       .0    3401.8       1.2        .0     793.7        .8        .0        .0   1780.00
     .00      .00      4.29      1.46      .000      .030      .040      .000   1779.00   1520.36
 .007063       0.        0.        0.         0        17         7       .00    762.13   2282.49


FLOW DISTRIBUTION FOR SECNO=     41.29          CWSEL=   1780.66

STA=    1520.    2280.    2282.
  PER Q=    100.0       .0
   AREA=    793.7       .8
    VEL=      4.3      1.5
  DEPTH=      1.0       .3

CCHV=     .100 CEHV=     .300
*SECNO  .102

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      956.0    1160.0  TYPE=      1  TARGET=      204.000
     .102     5.68   1786.18   1786.18       .00   1787.37      1.19      3.93       .27   1782.70
  3403.0   2087.7    1133.5     181.8     412.0      84.5      42.8       6.4       5.1   1782.00
     .01     5.07     13.42      4.24      .065      .035      .065      .000   1780.50    956.39
 .013073     200.      500.      900.         0        26         0       .00    202.76   1159.15


FLOW DISTRIBUTION FOR SECNO=       .10          CWSEL=   1786.18

STA=     956.     961.    1000.    1013.    1032.    1066.    1092.    1112.    1130.    1143.    1159.
  PER Q=      .4     15.5      5.6      5.7     11.4     11.6     11.1     33.3      4.9       .4
   AREA=     4.8    104.4     36.7     43.3     82.5     74.8     65.5     84.5     34.1      8.7
    VEL=     2.5      5.0      5.2      4.5      4.7      5.3      5.8     13.4      4.9      1.7
  DEPTH=     1.0      2.7      2.8      2.3      2.4      2.9      3.3      4.7      2.6       .5
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


CCHV=     .100 CEHV=     .300
*SECNO  .160
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
      .160      4.86   1791.56   1791.56       .00   1793.01      1.45      3.30       .08   1786.70
    3403.0     187.6    2517.5     698.0      45.0     228.9     177.4       9.9       6.4   1787.50
       .02      4.17     11.00      3.93      .060      .035      .060      .000   1786.70    948.46
   .009064      306.      306.      306.         0        15         0       .00    161.13   1109.59


FLOW DISTRIBUTION FOR SECNO=       .16          CWSEL=   1791.56

STA=     948.     967.    1018.    1029.    1066.    1105.    1110.
  PER Q=      5.5     74.0      5.7      9.9      4.8       .1
   AREA=     45.0    228.9     36.9     83.5     54.8      2.2
    VEL=      4.2     11.0      5.3      4.1      3.0      1.4
  DEPTH=      2.4      4.5      3.4      2.3      1.4       .5

CCHV=     .100 CEHV=     .300
*SECNO  .254

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      710.0    1042.0  TYPE=      1  TARGET=      332.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
           AREA UPSTREAM OF THIS SECTION TO SECTION 0.518 HAS
           STRUCTURES LOCATED WITHIN THE LEFT OVERBANK.
      .254      4.78   1798.58   1798.58       .00   1799.39       .81      4.58       .06   1795.30
    3403.0    1969.2    1391.7      42.0     449.6     139.5      11.2      16.2       9.3   1795.00
       .05      4.38      9.98      3.74      .050      .035      .050      .000   1793.80    710.00
   .008784      550.      496.      496.         0         6         0       .00    309.51   1041.28
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .25 CWSEL= 1798.58

STA=	710.	753.	802.	864.	882.	908.	933.	979.	1000.	1035.	1041.
PER Q=	4.5	6.5	7.2	6.3	7.8	6.1	5.1	14.4	40.9	1.2	
AREA=	50.1	65.2	72.2	42.9	56.7	48.3	39.1	75.2	139.5	11.2	
VEL=	3.0	3.4	3.4	5.0	4.7	4.3	4.5	6.5	10.0	3.7	
DEPTH=	1.2	1.3	1.2	2.4	2.2	1.9	.8	3.6	4.0	1.8	

CCHV= .100 CEHV= .300
*SECNO .344

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 747.0 1023.0 TYPE= 1 TARGET= 276.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.344	5.45	1805.75	1805.75	.00	1806.90	1.15	3.79	.10	1801.80
3403.0	819.8	2537.0	46.2	241.7	260.2	13.4	22.3	12.4	1800.30
.06	3.39	9.75	3.45	.055	.035	.055	.000	1800.30	747.26
.007294	474.	474.	474.	0	8	0	.00	265.37	1022.92

FLOW DISTRIBUTION FOR SECNO= .34 CWSEL= 1805.75

STA=	747.	772.	821.	837.	859.	872.	922.	940.	959.	1018.	1023.
PER Q=	.0	2.3	3.9	6.9	2.0	1.7	.2	7.1	74.6	1.4	
AREA=	1.9	39.2	34.4	55.0	21.4	32.5	4.1	53.2	260.2	13.4	
VEL=	.4	2.0	3.8	4.2	3.2	1.7	1.9	4.6	9.7	3.4	
DEPTH=	.1	.8	2.1	2.5	1.6	.6	.2	2.8	4.4	2.7	

*SECNO .427
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 775.0 1057.0 TYPE= 1 TARGET= 282.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED

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      WSEL AND THE TOPOGRAPHY.
     .427      5.50   1812.60   1812.60      .00   1813.81      1.21      2.93       .02   1807.90
   3403.0     488.1    2657.9     257.0    169.3     269.9      72.9      27.4      15.2   1807.40
     .08      2.88      9.85      3.52     .055      .035      .055      .000   1807.10    775.00
  .006148     438.      438.      438.        0         5         0       .00    281.72   1056.72


FLOW DISTRIBUTION FOR SECNO=       .43          CWSEL=   1812.60

STA=     775.     808.     825.     840.     854.     879.     886.     925.     947.    1000.    1016.    1057.
  PER Q=      .6      2.6      2.7       .6       .1       .0       .9      6.9     78.1      6.6       .9
   AREA=    15.0     29.0     28.5     11.2      3.8      1.8     21.6     58.4    269.9     50.4     22.5
    VEL=     1.3      3.0      3.2      1.8       .6       .8      1.4      4.0      9.8      4.5      1.4
  DEPTH=      .5      1.7      1.9       .8       .2       .3       .6      2.7      5.1      3.2       .6

CCHV=     .300 CEHV=     .500
*SECNO  .518
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      796.0    1057.0  TYPE=      1  TARGET=      261.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
     .518      3.71   1817.91   1817.91      .00   1818.93      1.02      3.74       .06   1815.60
   3403.0     692.3    2556.1     154.6    184.7     280.5      47.3      33.0      18.1   1815.00
     .09      3.75      9.11      3.27     .055      .035      .055      .000   1814.20    796.86
  .010308     490.      480.      420.        0        19         0       .00    259.19   1056.05


FLOW DISTRIBUTION FOR SECNO=       .52          CWSEL=   1817.91

STA=     797.     835.     869.     888.     920.    1011.    1025.    1056.
  PER Q=      9.4      4.7      3.2      3.0     75.1      3.2      1.4
   AREA=    73.6     46.7     29.7     34.7    280.5     26.1     21.2
    VEL=     4.4      3.5      3.7      2.9      9.1      4.1      2.2
  DEPTH=     1.9      1.4      1.6      1.1      3.1      1.9       .7

CCHV=     .100 CEHV=     .300
*SECNO  .617

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      685.0    1208.0  TYPE=      1  TARGET=      523.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
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        WSEL AND THE TOPOGRAPHY.
    .617      3.06   1825.26   1825.23      .00   1826.18      .92      7.23      .01   1825.90
  3403.0    1243.5    1713.9     445.7    189.3     192.3     90.3      38.8     21.3   1824.00
     .11      6.57      8.91      4.93     .055      .035     .065      .000  1822.20    685.83
 .020302      470.      523.      595.        2        11        0       .00   275.55   1207.26


FLOW DISTRIBUTION FOR SECNO=       .62          CWSEL=   1825.26

STA=     686.     703.     723.     746.     764.     787.     795.    1040.    1046.    1171.    1183.    1200.    1207.
  PER Q=      .1      1.9      8.3     11.4     13.7      1.1     50.4       .3       .8      3.7      7.5       .8
   AREA=     3.1     18.2     46.2     50.6     62.3      8.9    192.3      4.0     11.4     24.1     42.7      8.2
    VEL=     1.2      3.6      6.1      7.7      7.5      4.2      8.9      2.4      2.4      5.2      6.0      3.4
  DEPTH=      .2       .9      2.0      2.8      2.7      1.2      1.8       .6       .1      2.0      2.5      1.1

*SECNO  .722

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      503.0    1401.0  TYPE=      1  TARGET=      898.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
    .722      4.60   1834.60   1834.30      .00   1835.14      .54      8.93      .04   1832.20
  3403.0      83.3    1566.0    1753.7     25.6     214.1    406.6      45.5     25.5   1833.90
     .14      3.25      7.32      4.31     .055      .035     .065      .000  1830.00    504.27
 .014037      620.      554.      450.        5        14        0       .00   435.24   1400.61


FLOW DISTRIBUTION FOR SECNO=       .72          CWSEL=   1834.60

STA=     504.     972.    1094.    1183.    1251.    1265.    1287.    1299.    1311.    1323.    1349.    1370.    1401.
  PER Q=      2.4     46.0      3.3      4.6      6.4      3.5      8.2     10.4      3.9      4.9      3.6      2.7
   AREA=     25.6    214.1     45.8     57.5     40.8     33.2     43.9     50.5     28.3     42.3     33.0     31.5
    VEL=      3.3      7.3      2.4      2.7      5.3      3.6      6.4      7.0      4.7      3.9      3.7      3.0
  DEPTH=       .1      1.8       .5       .8      2.9      1.5      3.7      4.2      2.4      1.6      1.6      1.0

*SECNO  .817

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      246.0    1139.0  TYPE=      1  TARGET=      893.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
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        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
     .817      4.13   1844.13   1844.13      .00   1844.89      .76      6.58      .07   1844.70
   3403.0    1305.6    2029.1      68.3    364.6     236.5     36.8      54.5     32.1   1844.90
     .16      3.58      8.58      1.86     .055      .035     .065      .000  1840.00    246.56
  .009216     550.      502.      775.        0        11        0       .00   493.00   1138.18


FLOW DISTRIBUTION FOR SECNO=       .82          CWSEL=   1844.13

STA=     247.     278.     292.     376.     413.     840.     853.     864.     872.     919.    1043.    1138.
  PER Q=      4.7      3.1      3.6      5.7      3.2      3.9      6.7      4.7      2.9     59.6      2.0
   AREA=     44.8     26.3     45.3     55.7     61.4     29.6     38.3     27.4     35.9    236.5     36.8
    VEL=      3.5      3.9      2.7      3.5      1.8      4.5      5.9      5.9      2.8      8.6      1.9
  DEPTH=      1.4      1.9       .5      1.5       .1      2.3      3.5      3.4       .8      3.1       .4

*SECNO  .903

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      509.0    1165.0  TYPE=      1  TARGET=      656.000
        ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
     .903      2.82   1848.02   1847.53      .00   1848.25      .23      3.31      .05   1845.80
   3403.0    2873.3     415.7     114.0    825.8      66.6     56.7      61.3     37.0   1846.50
     .19      3.48      6.24      2.01     .055      .035     .065      .000  1845.20    509.23
  .008124     335.      454.      580.        3        11        0       .00   655.68   1164.91


FLOW DISTRIBUTION FOR SECNO=       .90          CWSEL=   1848.02

STA=     509.     533.     577.     610.     680.     815.     871.     920.     944.    1000.    1029.    1066.    1098.
  PER Q=      3.6     16.2      8.9      4.4     10.9     11.4     10.8      4.2      8.5      3.1      2.5     12.2
   AREA=     34.9    117.4     73.2     62.3    136.6    104.6     96.5     41.2     87.8     36.8     34.5     66.6
    VEL=      3.5      4.7      4.1      2.4      2.7      3.7      3.8      3.5      3.3      2.9      2.5      6.2
  DEPTH=      1.5      2.7      2.2       .9      1.0      1.9      2.0      1.7      1.6      1.3       .9      2.1

STA=    1098.    1151.    1165.
  PER Q=      3.2       .1
   AREA=     52.4      4.3
    VEL=      2.1       .9
  DEPTH=      1.0       .3

CCHV=     .300 CEHV=     .500
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 861.0 1294.0 TYPE= 1 TARGET= 433.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.000	3.46	1856.46	1856.46	.00	1857.24	.77	7.07	.27	1854.80
3403.0	382.2	625.7	2395.1	64.6	55.4	424.1	70.4	43.2	1854.40
.21	5.91	11.30	5.65	.060	.035	.060	.000	1853.00	861.30
.027216	600.	512.	420.	0	11	0	.00	355.34	1293.77

FLOW DISTRIBUTION FOR SECNO= 1.00 CWSEL= 1856.46

STA=	861.	888.	898.	985.	1012.	1031.	1065.	1103.	1121.	1150.	1176.	1200.	1210.
PER Q=	5.8	4.5	.9	18.4	5.6	6.8	4.5	4.8	4.5	4.0	4.6	5.2	
AREA=	34.0	22.1	8.6	55.4	32.5	46.3	37.7	29.0	33.7	30.2	31.5	24.1	
VEL=	5.8	6.9	3.6	11.3	5.8	5.0	4.1	5.6	4.5	4.5	4.9	7.3	
DEPTH=	1.3	2.2	.1	2.1	1.7	1.4	1.0	1.6	1.2	1.2	1.3	2.4	

STA=	1210.	1229.	1253.	1270.	1280.	1288.	1294.
PER Q=	5.4	8.1	6.3	6.9	3.5	.2	
AREA=	31.9	44.7	33.3	28.6	17.7	2.8	
VEL=	5.8	6.2	6.4	8.2	6.7	2.5	
DEPTH=	1.7	1.9	2.0	2.9	2.2	.5	

*SECNO 1.096

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.64

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 897.0 1351.0 TYPE= 1 TARGET= 454.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.096	4.44	1864.44	1864.40	.00	1865.20	.75	7.96	.01	1860.40
3403.0	882.6	1085.7	1434.6	158.7	102.4	431.2	77.7	47.6	1861.60
.24	5.56	10.61	3.33	.060	.035	.060	.000	1860.00	897.99
.010095	482.	509.	520.	3	11	0	.00	391.63	1350.76

FLOW DISTRIBUTION FOR SECNO= 1.10 CWSEL= 1864.44

STA=	898.	957.	966.	979.	987.	1013.	1092.	1121.	1140.	1164.	1199.	1221.	1258.
PER Q=	4.2	7.4	9.1	5.1	31.9	4.9	6.7	4.9	4.2	3.2	3.4	5.2	
AREA=	40.1	38.6	50.5	29.5	102.4	55.7	57.6	40.6	40.5	39.8	34.7	55.0	
VEL=	3.6	6.6	6.1	5.9	10.6	3.0	3.9	4.1	3.5	2.7	3.4	3.2	
DEPTH=	.7	4.3	3.9	3.7	3.9	.7	2.0	2.1	1.7	1.1	1.6	1.5	

STA=	1258.	1290.	1338.	1351.
PER Q=	6.2	3.4	.1	
AREA=	57.2	47.4	2.8	
VEL=	3.7	2.5	.9	
DEPTH=	1.8	1.0	.2	

*SECNO 1.189

3470 ENCROACHMENT STATIONS= 905.0 1292.0 TYPE= 1 TARGET= 387.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.189	3.91	1870.81	1870.80	.00	1871.49	.68	6.27	.02	1868.70
3299.0	212.9	1213.0	1873.1	59.9	128.2	443.3	85.6	52.2	1869.20
.26	3.56	9.46	4.22	.060	.035	.060	.000	1866.90	905.77
.015314	480.	493.	535.	3	10	0	.00	385.37	1291.14

FLOW DISTRIBUTION FOR SECNO= 1.19 CWSEL= 1870.81

STA=	906.	956.	1009.	1035.	1077.	1110.	1158.	1180.	1214.	1244.	1268.	1291.
PER Q=	6.5	36.8	5.9	10.5	6.1	7.8	6.3	8.5	6.2	3.7	1.8	
AREA=	59.9	128.2	44.5	76.1	49.9	66.9	43.2	61.6	48.4	32.7	20.2	
VEL=	3.6	9.5	4.4	4.6	4.0	3.8	4.8	4.6	4.2	3.8	2.9	
DEPTH=	1.2	2.4	1.7	1.8	1.5	1.4	2.0	1.8	1.6	1.4	.9	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.283

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 974.0 1146.0 TYPE= 1 TARGET= 172.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.283	5.37	1880.77	1880.77	.00	1882.06	1.30	8.17	.31	1876.40
3299.0	101.3	1461.5	1736.3	20.2	121.3	293.7	91.9	55.5	1877.70
.28	5.02	12.05	5.91	.060	.035	.060	.000	1875.40	974.76
.016571	440.	496.	532.	0	14	0	.00	170.97	1145.73

FLOW DISTRIBUTION FOR SECNO= 1.28 CWSEL= 1880.77

A=	975.	984.	1021.	1041.	1049.	1097.	1128.	1139.	1146.
PER Q=	3.1	44.3	11.5	2.2	10.9	19.4	7.6	1.1	
AREA=	20.2	121.3	58.4	14.9	80.1	95.1	35.9	9.3	
VEL=	5.0	12.0	6.5	4.8	4.5	6.7	7.0	3.8	
DEPTH=	2.2	3.3	2.9	1.9	1.7	3.1	3.3	1.4	

*SECNO 1.375
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.375	3.59	1888.89	1888.89	.00	1890.04	1.15	6.34	.04	1886.00
3299.0	722.4	2233.9	342.8	188.7	222.5	70.7	96.7	57.5	1885.70
.29	3.83	10.04	4.85	.060	.035	.060	.000	1885.30	853.21
.011057	350.	485.	500.	0	14	0	.00	206.59	1059.81

FLOW DISTRIBUTION FOR SECNO= 1.38 CWSEL= 1888.89

STA=	853.	863.	893.	921.	944.	953.	964.	1030.	1052.	1060.
PER Q=	1.5	9.4	4.0	2.8	1.2	3.1	67.7	9.6	.8	
AREA=	14.6	68.6	40.3	29.6	12.0	23.5	222.5	61.3	9.3	
VEL=	3.3	4.5	3.3	3.1	3.2	4.3	10.0	5.2	2.8	
DEPTH=	1.5	2.3	1.4	1.3	1.3	2.1	3.4	2.8	1.2	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.470
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.470	4.96	1898.46	1898.46	.00	1899.79	1.33	6.33	.09	1893.50
3299.0	629.6	1435.4	1234.0	111.5	113.0	246.5	103.3	60.1	1894.00
.31	5.64	12.70	5.01	.060	.035	.060	.000	1893.50	878.66
.011335	805.	502.	508.	0	14	0	.00	164.25	1042.91

FLOW DISTRIBUTION FOR SECNO= 1.47 CWSEL= 1898.46

STA=	879.	886.	901.	918.	942.	950.	972.	981.	1000.	1010.	1038.	1043.
PER Q=	.7	5.6	12.8	43.5	4.8	8.1	3.7	9.8	5.1	5.7	.1	
AREA=	8.3	37.6	65.6	113.0	27.3	55.2	23.9	58.1	30.6	49.3	2.1	
VEL=	2.8	4.9	6.5	12.7	5.8	4.9	5.1	5.6	5.5	3.8	1.5	
DEPTH=	1.1	2.5	3.9	4.7	3.4	2.5	2.7	3.1	3.1	1.8	.4	

*SECNO 1.563

01 HV CHANGED MORE THAN HVINS

1.563	3.35	1905.15	1904.55	.00	1905.51	.36	5.43	.29	1904.00
3299.0	2930.0	356.4	12.7	652.8	52.1	4.8	109.5	62.9	1903.00
.34	4.49	6.85	2.65	.060	.035	.060	.000	1901.80	648.39
.011929	450.	494.	475.	4	11	0	.00	362.04	1010.43

FLOW DISTRIBUTION FOR SECNO= 1.56 CWSEL= 1905.15

STA=	648.	692.	707.	723.	770.	785.	809.	833.	873.	911.	949.	966.	977.
PER Q=	11.8	9.0	8.2	17.2	4.1	5.0	4.3	5.3	6.5	12.5	3.2	1.5	
AREA=	85.0	49.6	48.1	115.5	30.9	42.2	38.6	53.1	59.1	87.7	28.2	14.9	
VEL=	4.6	6.0	5.6	4.9	4.4	3.9	3.7	3.3	3.6	4.7	3.8	3.3	
DEPTH=	1.9	3.3	3.0	2.5	2.1	1.8	1.6	1.3	1.6	2.3	1.7	1.4	

STA=	977.	1006.	1010.
PER Q=	10.8	.4	
AREA=	52.1	4.8	
VEL=	6.8	2.7	
DEPTH=	1.8	1.1	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.662

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
DIVIDED FLOW AREA, AREA SOUTH OF HILL IS MAIN WASH.

1.662	4.53	1914.73	1914.73	.00	1916.52	1.79	5.29	.72	1910.90
3299.0	451.2	2749.9	97.9	85.2	238.4	29.6	115.1	65.4	1910.90
.35	5.30	11.54	3.31	.060	.035	.060	.000	1910.20	876.83
.010470	430.	523.	450.	0	11	0	.00	122.52	1359.78

FLOW DISTRIBUTION FOR SECNO= 1.66 CWSEL= 1914.73

STA=	877.	922.	945.	1000.	1009.	1015.	1345.	1360.
PER Q=	.9	12.8	83.4	2.6	.1	.1	.2	
AREA=	9.6	75.5	238.4	20.6	2.3	2.0	4.7	
VEL=	3.0	5.6	11.5	4.2	1.3	1.2	1.2	
DEPTH=	.2	3.3	4.3	2.3	.4	.0	.3	

*SECNO 1.754

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 909.0 1350.0 TYPE= 1 TARGET= 441.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.754	4.11	1921.51	1921.09	.00	1921.98	.48	5.07	.39	1920.20
3299.0	1295.0	783.3	1220.6	344.8	88.5	288.8	121.5	68.4	1918.50
.38	3.76	8.85	4.23	.060	.035	.060	.000	1917.40	909.91
.009509	520.	491.	540.	4	15	0	.00	377.11	1349.57

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 1.75 CWSEL= 1921.51

STA=	910.	939.	958.	979.	1000.	1104.	1151.	1179.	1200.	1217.	1246.	1318.	1334.
PER Q=	8.6	7.3	6.9	5.5	8.1	2.8	23.7	9.1	6.7	7.3	5.8	6.7	
AREA=	66.1	51.4	51.6	45.3	88.9	41.5	88.5	61.0	46.9	61.1	56.9	45.7	
VEL=	4.3	4.7	4.4	4.0	3.0	2.2	8.8	4.9	4.7	4.0	3.3	4.9	
DEPTH=	2.3	2.7	2.5	2.2	.9	.9	3.2	2.9	2.8	2.1	.8	2.9	

STA=	1334.	1350.
PER Q=	1.3	
AREA=	17.2	
VEL=	2.6	
DEPTH=	1.1	

*SECNO 1.847

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 940.0 1100.0 TYPE= 1 TARGET= 160.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION; THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.847	5.55	1930.25	1930.25	.00	1931.69	1.44	5.30	.48	1925.40
3299.0	927.7	1733.8	637.5	146.4	142.5	144.3	128.6	71.7	1925.70
.39	6.34	12.17	4.42	.060	.035	.060	.000	1924.70	940.17
.010749	491.	491.	610.	0	11	0	.00	159.39	1099.57

FLOW DISTRIBUTION FOR SECNO= 1.85 CWSEL= 1930.25

STA=	940.	953.	981.	1012.	1024.	1044.	1064.	1099.
PER Q=	2.9	25.2	52.6	7.8	6.9	3.6	1.0	
AREA=	24.7	121.7	142.5	43.2	49.0	33.0	19.2	
VEL=	3.9	6.8	12.2	6.0	4.7	3.6	1.7	
DEPTH=	1.9	4.3	4.6	3.6	2.4	1.6	.5	

CCHV= .300 CEHV= .500

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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1.912

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.912      6.47   1934.67   1934.67       .00   1937.33      2.66      3.70       .61   1928.40
   3299.0      28.9    2510.9     759.2      10.0     172.0     121.7     131.7      72.7   1928.30
      .40      2.89     14.60      6.24      .065      .035      .065      .000   1928.20    969.81
  .010018      425.      343.      350.         0         8         0       .00     60.38   1030.19


FLOW DISTRIBUTION FOR SECNO=      1.91          CWSEL=   1934.67

STA=     970.     973.    1000.    1018.    1030.
  PER Q=       .9     76.1     20.1      2.9
   AREA=     10.0    172.0     95.7     26.0
    VEL=      2.9     14.6      6.9      3.6
  DEPTH=      3.1      6.4      5.3      2.1

CCHV=     .300 CEHV=     .500
*SECNO 1.931
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      948.0    1028.0  TYPE=      1  TARGET=       80.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
           DOWNSTREAM SECTION OF 3 FOOT DROP STRUCTURE.
    1.931      8.07   1937.47   1937.47       .00   1939.83      2.35       .92       .09   1932.40
   3299.0     489.4    2729.5      80.2     107.8     203.9      22.9     132.4      72.8   1932.50
      .40      4.54     13.39      3.50      .065      .035      .065      .000   1929.40    948.43
  .008278      160.      100.       75.         0        11         0       .00     78.77   1027.20


FLOW DISTRIBUTION FOR SECNO=      1.93          CWSEL=   1937.47

STA=     948.     961.     987.    1018.    1027.
  PER Q=       .9     13.9     82.7      2.4
   AREA=     13.6     94.1    203.9     22.9
    VEL=      2.2      4.9     13.4      3.5
  DEPTH=      1.1      3.6      6.6      2.5
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.932
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 942.0 1029.0 TYPE= 1 TARGET= 87.000
UPSTREAM SECTION OF 3 FOOT DROP STRUCTURE.
ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.

1.932	6.01	1938.41	1938.41	.00	1940.58	2.17	.00	.06	1933.00
3299.0	727.1	2436.1	135.7	138.6	181.6	32.3	132.4	72.8	1932.50
.40	5.25	13.41	4.20	.065	.035	.065	.000	1932.40	943.01
.009456	0.	0.	0.	0	15	0	.00	85.92	1028.94

FLOW DISTRIBUTION FOR SECNO= 1.93 CWSEL= 1938.41

STA=	943.	961.	987.	1018.	1029.
PER Q=	2.5	19.5	73.8	4.1	
AREA=	27.9	110.7	181.6	32.3	
VEL=	3.0	5.8	13.4	4.2	
DEPTH=	1.6	4.3	5.9	3.0	

*SECNO 1.933

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.95

3470 ENCROACHMENT STATIONS= 933.0 1033.0 TYPE= 1 TARGET= 100.000
DOWNSTREAM SECTION OF 2 FOOT DROP STRUCTURE.
ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.

1.933	7.76	1940.16	1937.88	.00	1941.00	.84	.02	.40	1935.30
3299.0	153.5	3006.0	139.5	67.5	392.2	54.3	132.5	72.8	1932.50
.40	2.28	7.67	2.57	.065	.035	.065	.000	1932.40	934.53
.002497	5.	5.	5.	5	11	0	.00	97.65	1032.18

FLOW DISTRIBUTION FOR SECNO= 1.93 CWSEL= 1940.16

STA=	935.	939.	961.	1018.	1032.
PER Q=	.1	4.6	91.1	4.2	
AREA=	2.4	65.1	392.2	54.3	
VEL=	.7	2.3	7.7	2.6	
DEPTH=	.5	3.0	6.9	3.8	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.934

3470 ENCROACHMENT STATIONS= 954.0 1049.0 TYPE= 1 TARGET= 95.000
UPSTREAM SECTION OF 2 FOOT DROP STRUCTURE.
ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.

1.934	6.48	1940.48	1937.82	.00	1941.07	.59	.00	.07	100000.00
3299.0	.0	3299.0	.0	.0	534.0	.0	132.5	72.8	100000.00
.40	.00	6.18	.00	.000	.035	.000	.000	1934.00	954.06
.002272	0.	0.	0.	2	8	0	.00	94.60	1048.65

FLOW DISTRIBUTION FOR SECNO= 1.93 CWSEL= 1940.48

STA= 954. 1069.
PER Q= 100.0
AREA= 534.0
VEL= 6.2
DEPTH= 5.6

HV= .300 CEHV= .500
ECNO 1.936

3370 NORMAL BRIDGE, NRD= 11 MIN ELTRD= 1952.20 MAX ELLC= 1948.90

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1952.20 ELREA= 1952.20

DOWNSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.

1.936	6.36	1940.46	1938.16	.00	1941.15	.69	.03	.05	1945.50
3299.0	.0	3299.0	.0	.0	496.7	.0	132.7	72.9	1948.90
.41	.00	6.64	.00	.000	.030	.000	.000	1934.10	954.12
.002114	15.	15.	15.	2	18	0	.00	92.74	1046.86

FLOW DISTRIBUTION FOR SECNO= 1.94 CWSEL= 1940.46

STA= 954. 1069.
PER Q= 100.0
AREA= 496.7
VEL= 6.6
DEPTH= 5.4

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.939

3370 NORMAL BRIDGE, NRD= 11 MIN ELTRD= 1952.20 MAX ELLC= 1948.90

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1952.20 ELREA= 1952.20

UPSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.

1.939	6.28	1940.48	1938.32	.00	1941.19	.71	.03	.01	1945.50
3299.0	.0	3299.0	.0	.0	487.4	.0	132.8	72.9	1948.90
.41	.00	6.77	.00	.000	.030	.000	.000	1934.20	954.04
.002244	15.	15.	15.	1	18	0	.00	92.89	1046.93

FLOW DISTRIBUTION FOR SECNO= 1.94 CWSEL= 1940.48

STA= 954. 1069.
PER Q= 100.0
AREA= 487.4
VEL= 6.8
DEPTH= 5.2

CCHV= .100 CEHV= .300
*SECNO 1.980

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.980	8.37	1947.37	1947.37	.00	1950.34	2.97	.89	.68	1950.50
3299.0	.0	3299.0	.0	.0	238.7	.0	134.5	73.2	1952.40
.41	.00	13.82	.00	.000	.035	.000	.000	1939.00	979.05
.011717	190.	206.	210.	0	11	0	.00	40.72	1019.77

FLOW DISTRIBUTION FOR SECNO= 1.98 CWSEL= 1947.37

STA= 979. 1026.
PER Q= 100.0
AREA= 238.7
VEL= 13.8
DEPTH= 5.9

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .300 CEHV= .500
*SECNO 2.053

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.74

3470 ENCROACHMENT STATIONS= 968.0 1031.0 TYPE= 1 TARGET= 63.000
DOWNSTREAM SECTION OF 8.9 FOOT DROP STRUCTURE AT THE
OUTLET OF A 4 - 10' x 8' CONC. BOX CULVERT.

2.053	10.43	1951.41	1947.26	.00	1952.25	.84	1.28	.64	1941.00
3299.0	622.0	2677.0	.0	188.1	333.7	.4	137.9	73.7	1940.98
.42	3.31	8.02	.10	.065	.035	.065	.000	1940.98	968.32
.001566	380.	380.	380.	2	15	0	.00	61.75	1030.08

FLOW DISTRIBUTION FOR SECNO= 2.05 CWSEL= 1951.41

A=	968.	981.	998.	1030.	1030.
PER Q=	2.4	16.4	81.1	.0	
AREA=	42.5	145.5	333.7	.4	
VEL=	1.9	3.7	8.0	.1	
DEPTH=	3.4	8.6	10.4	5.2	

*SECNO 2.054

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 969.0 1031.0 TYPE= 1 TARGET= 62.000
UPSTREAM SECTION OF 8.9 FOOT DROP STRUCTURE AT THE
OUTLET OF A 4 - 10' x 8' CONC. BOX CULVERT.

2.054	4.53	1954.33	1954.33	.00	1956.61	2.28	.00	.72	1949.80
3299.0	.1	3295.6	3.3	.2	271.7	2.3	137.9	73.7	1949.80
.42	.30	12.13	1.47	.065	.035	.065	.000	1949.80	969.91
.010891	0.	0.	0.	0	14	0	.00	61.09	1031.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 2.05 CWSEL= 1954.33

STA=	970.	970.	1030.	1031.
PER Q=	.0	99.9	.1	
AREA=	.2	271.7	2.3	
VEL=	.3	12.1	1.5	
DEPTH=	2.3	4.5	2.3	

CCHV= .600 CEHV= .800
*SECNO 2.056

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1980.80 ELREA= 1977.00

DOWNSTREAM SECTION TO S.R. 93(U.S. HWY. 60-89)
4 - 10' X 8' X 217' CONC. BOX CULVERTS W/HEADWALLS - 30 DEG SKEW

2.056	5.68	1955.56	1955.56	.00	1958.43	2.87	.11	.47	1949.88
3299.0	.0	3299.0	.0	.0	242.6	.0	137.9	73.7	1949.88
.42	.00	13.60	.00	.000	.030	.000	.000	1949.88	978.60
.007438	12.	12.	12.	0	11	0	.00	42.70	1021.30

FLOW DISTRIBUTION FOR SECNO= 2.06 CWSEL= 1955.56

STA=	979.	1021.
PER Q=	100.0	
AREA=	242.6	
VEL=	13.6	
DEPTH=	5.7	

SPECIAL BRIDGE

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

5227 DOWNSTREAM ELEV IS 1954.56 , NOT 1955.56 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.80	3.00	.00	42.70	2.70	298.40	.00	1951.53	1949.88

*SECNO 2.097

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.62

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1956.66 BRIDGE VELOCITY= 13.85 CALCULATED CHANNEL AREA= 205.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1958.98	1960.72	.00	0.	3299.	298.	320.	1959.53	1977.00	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1980.80 ELREA= 1977.00

UPSTREAM SECTION OF 4 - 10' X 8' CONC. BOX CULVERT.

2.097	7.61	1959.11	.00	.00	1960.72	1.61	2.29	.00	1951.53
3299.0	.0	3299.0	.0	.0	324.2	.0	139.3	73.9	1951.53
.43	.00	10.18	.00	.000	.030	.000	.000	1951.50	978.60
.002828	217.	217.	217.	0	0	0	.00	42.70	1021.30

FLOW DISTRIBUTION FOR SECNO= 2.10 CWSEL= 1959.11

STA= 979. 1021.
PER Q= 100.0
AREA= 324.2
VEL= 10.2
DEPTH= 7.6

CCHV= .100 CEHV= .300
*SECNO 2.131
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.131	6.60	1960.90	1960.90	.00	1962.38	1.49	.79	.01	1954.60
3224.0	96.0	1761.4	1366.6	26.0	138.6	334.2	141.1	74.3	1955.10
.44	3.70	12.71	4.09	.065	.035	.065	.000	1954.30	969.76
.007710	182.	182.	182.	0	15	0	.00	164.29	1134.04

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 2.13 CWSEL= 1960.90

STA=	970.	978.	1000.	1015.	1056.	1102.	1124.	1134.
PER Q=	3.0	54.6	11.3	16.8	12.3	1.9	.1	
AREA=	26.0	138.6	67.5	127.0	110.3	26.4	3.0	
VEL=	3.7	12.7	5.4	4.3	3.6	2.3	.9	
DEPTH=	3.1	6.3	4.5	3.1	2.4	1.2	.3	

*SECNO 2.194

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.194	7.76	1966.26	1966.26	.00	1968.50	2.24	2.80	.22	1958.70
3224.0	124.9	1804.2	1294.8	29.6	118.3	225.9	144.5	75.3	1959.40
.45	4.22	15.25	5.73	.065	.035	.065	.000	1958.50	989.17
.008979	340.	333.	343.	0	11	0	.00	82.07	1071.25

FLOW DISTRIBUTION FOR SECNO= 2.19 CWSEL= 1966.26

STA=	989.	997.	1013.	1030.	1058.	1067.	1071.
PER Q=	3.9	56.0	20.4	17.1	2.4	.2	
AREA=	29.6	118.3	96.3	105.4	20.8	3.3	
VEL=	4.2	15.2	6.8	5.2	3.8	1.8	
DEPTH=	3.8	7.4	5.7	3.8	2.3	.8	

*SECNO 2.267

3301 HV CHANGED MORE THAN HVINS

2.267	6.89	1969.99	1969.42	.00	1971.25	1.25	2.65	.10	1963.30
3224.0	1237.0	1906.7	80.3	311.2	169.9	25.7	148.3	76.2	1963.10
.46	3.98	11.22	3.13	.065	.035	.065	.000	1963.10	904.68
.005429	365.	385.	407.	2	15	0	.00	127.77	1032.45

FLOW DISTRIBUTION FOR SECNO= 2.27 CWSEL= 1969.99

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA=	905.	909.	932.	952.	963.	976.	986.	1000.	1025.	1032.
PER Q=	.1	4.4	10.7	5.4	3.1	3.0	11.6	59.1	2.5	
AREA=	1.9	50.5	80.9	42.3	32.4	29.0	74.1	169.9	25.7	
VEL=	1.0	2.8	4.3	4.1	3.1	3.4	5.1	11.2	3.1	
DEPTH=	.4	2.2	4.0	3.8	2.5	2.9	5.3	6.8	3.4	

*SECNO 2.360
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.360	5.12	1974.92	1974.92	.00	1976.61	1.69	3.65	.13	1969.90
3224.0	31.5	1852.8	1339.7	9.9	142.0	260.5	153.5	77.6	1969.80
.47	3.19	13.05	5.14	.065	.035	.065	.000	1969.80	969.06
.010831	450.	491.	526.	0	19	0	.00	120.22	1089.28

FLOW DISTRIBUTION FOR SECNO= 2.36 CWSEL= 1974.92

STA=	969.	973.	1001.	1020.	1042.	1051.	1062.	1077.	1089.
PER Q=	1.0	57.5	13.6	6.6	1.6	5.2	12.2	2.4	
AREA=	9.9	142.0	74.5	51.1	15.0	34.3	63.3	22.2	
VEL=	3.2	13.0	5.9	4.2	3.3	4.9	6.2	3.4	
DEPTH=	2.5	5.1	3.9	2.3	1.7	3.1	4.2	1.8	

*SECNO 2.455

2.455	8.53	1979.53	1979.20	.00	1981.32	1.79	4.68	.03	1971.00
3224.0	487.7	1070.9	1665.5	82.4	65.8	254.7	157.9	78.8	1971.60
.49	5.92	16.27	6.54	.065	.035	.065	.000	1971.00	986.51
.008869	565.	502.	440.	3	14	0	.00	98.07	1084.57

FLOW DISTRIBUTION FOR SECNO= 2.45 CWSEL= 1979.53

STA=	987.	1000.	1006.	1014.	1030.	1040.	1061.	1083.	1085.
PER Q=	5.1	10.1	33.2	33.3	10.6	6.1	1.5	.0	
AREA=	39.3	43.1	65.8	126.1	54.8	51.0	22.6	.3	
VEL=	4.1	7.5	16.3	8.5	6.3	3.9	2.2	.6	
DEPTH=	2.9	7.2	8.2	7.9	5.5	2.4	1.0	.2	

*SECNO 2.550

2.550	7.64	1983.84	1983.13	.00	1985.15	1.31	3.79	.05	1976.30
3224.0	182.1	1219.7	1822.2	44.9	90.9	346.5	162.9	79.9	1976.40
.50	4.05	13.41	5.26	.065	.035	.065	.000	1976.20	976.08
.006713	505.	502.	485.	2	15	0	.00	105.95	1082.04

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 2.55 CWSEL= 1983.84

STA=	976.	988.	1000.	1013.	1025.	1061.	1074.	1082.
PER Q=	5.6	37.8	18.3	11.3	21.8	4.5	.5	
AREA=	44.9	90.9	88.2	64.0	147.1	38.2	9.0	
VEL=	4.1	13.4	6.7	5.7	4.8	3.8	2.0	
DEPTH=	3.8	7.6	6.8	5.3	4.1	2.9	1.1	

*SECNO 2.646
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.646	6.06	1988.96	1988.96	.00	1990.66	1.70	4.69	.11	1982.90
3224.0	1236.1	901.1	1086.8	201.9	54.6	146.2	168.0	81.2	1982.90
.52	6.12	16.52	7.43	.065	.035	.065	.000	1982.90	924.92
.013688	482.	507.	515.	0	15	0	.00	112.09	1037.00

FLOW DISTRIBUTION FOR SECNO= 2.65 CWSEL= 1988.96

STA=	925.	928.	976.	993.	1002.	1019.	1031.	1035.	1037.
PER Q=	.0	16.7	21.7	28.0	23.9	9.0	.8	.0	
AREA=	.7	113.4	87.8	54.6	92.9	45.1	7.2	1.0	
VEL=	1.0	4.7	8.0	16.5	8.3	6.4	3.8	1.5	
DEPTH=	.2	2.4	5.2	6.1	5.5	3.8	1.8	.5	

*SECNO 2.746
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.746	6.18	1995.88	1995.88	.00	1997.74	1.86	5.95	.05	1989.80
3224.0	95.3	1700.3	1428.5	23.2	120.3	251.8	172.6	82.4	1990.20
.53	4.10	14.13	5.67	.065	.035	.065	.000	1989.70	972.35
.010126	547.	528.	467.	0	5	0	.00	104.03	1076.38

FLOW DISTRIBUTION FOR SECNO= 2.75 CWSEL= 1995.88

STA=	972.	980.	1000.	1020.	1040.	1072.	1076.
PER Q=	3.0	52.7	21.7	14.8	7.7	.0	
AREA=	23.2	120.3	102.5	81.5	66.5	1.3	
VEL=	4.1	14.1	6.8	5.9	3.7	1.0	
DEPTH=	3.0	6.0	5.1	4.1	2.1	.3	

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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 2.838
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    2.838      4.99   2002.09   2002.09       .00   2003.78      1.69      5.42       .02   1997.10
   3224.0    1762.2    1389.0      72.8     288.3      97.1      17.2     176.8      83.5   1997.40
      .54      6.11     14.30      4.23      .065      .035      .065      .000   1997.10    910.69
  .013787      388.      485.      505.         0        15         0       .00    114.65   1025.34


FLOW DISTRIBUTION FOR SECNO=      2.84        CWSEL=   2002.09

STA=     911.     924.     952.     977.     992.     998.    1018.    1025.
  PER Q=      3.4      18.3      12.9      12.7       7.3      43.1       2.3
   AREA=     26.6      96.4      74.8      60.6      30.0      97.1      17.2
    VEL=      4.1       6.1       5.6       6.8       7.8      14.3       4.2
  DEPTH=      2.0       3.4       3.0       4.0       5.0       4.9       2.3

*SECNO 2.894
    2.894      5.83   2005.83   2005.28       .00   2007.24      1.41      3.42       .03   2000.00
   3224.0     849.1    1189.1    1185.9     136.1      87.4     206.1     179.6      84.3   2000.00
      .55      6.24     13.60      5.75      .065      .035      .065      .000   2000.00    954.76
  .009784      300.      294.      297.         2         8         0       .00    104.59   1059.35


FLOW DISTRIBUTION FOR SECNO=      2.89        CWSEL=   2005.83

STA=     955.     967.     987.    1002.    1039.    1059.
  PER Q=      3.6      22.8      36.9      33.3       3.5
   AREA=     29.5     106.6      87.4     171.2      34.9
    VEL=      3.9       6.9      13.6       6.3       3.2
  DEPTH=      2.4       5.3       5.8       4.6       1.7

*SECNO 2.945

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      978.0    1023.0  TYPE=      1  TARGET=       45.000
          ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.
          DOWNSTREAM SECTION OF 4'+/- DROP STRUCTURE AT OUTLET
          OF 4 - 10' x 8' CONC. BOX CULVERT.
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
2.945	5.86	2007.56	2007.54	.00	2010.34	2.78	2.69	.41	2002.40
3224.0	10.5	3202.6	10.9	5.1	238.5	5.3	181.7	84.8	2002.25
.56	2.06	13.43	2.06	.065	.035	.065	.000	2001.70	978.00
.010193	310.	271.	235.	3	5	0	.00	45.00	1023.00

FLOW DISTRIBUTION FOR SECNO= 2.94 CWSEL= 2007.56

STA=	978.	979.	1022.	1023.
PER Q=	.3	99.3	.3	
AREA=	5.1	238.5	5.3	
VEL=	2.1	13.4	2.1	
DEPTH=	5.1	5.5	5.3	

CCHV= .600 CEHV= .800
*SECNO 2.946
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

95 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2022.00 ELREA= 2020.00

UPSTREAM SECTION OF 4' +/- DROP STRUCTURE.
DOWNSTREAM SECTION TO HWY 74
4 - 10' X 8' X 108' CONC. BOX CULVERT W/ HEADWALLS - 30 DEG SKEW

2.946	5.64	2010.75	2010.75	.00	2013.57	2.82	.01	.03	2005.11
3224.0	.0	3224.0	.0	.0	239.0	.0	181.7	84.8	2005.11
.56	.00	13.49	.00	.000	.025	.000	.000	2005.11	978.80
.005130	1.	1.	1.	0	8	0	.00	42.40	1021.20

FLOW DISTRIBUTION FOR SECNO= 2.95 CWSEL= 2010.75

STA=	979.	1021.
PER Q=	100.0	
AREA=	239.0	
VEL=	13.5	
DEPTH=	5.6	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 2009.75 , NOT 2010.75 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.80	3.00	.00	42.55	2.55	340.40	.00	2007.29	2005.11

*SECNO 2.966

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.58

CLASS B LOW FLOW

3420 BRIDGE W.S.= 2012.07 BRIDGE VELOCITY= 13.74 CALCULATED CHANNEL AREA= 191.

GPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2013.26	2016.35	.00	0.	3224.	340.	340.	2015.80	2021.90	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2022.00 ELREA= 2020.00

UPSTREAM SECTION OF 4 - 10' x 8' CONC.BOX CULVERT.

2.966	7.43	2014.72	.00	.00	2016.35	1.63	2.77	.00	2007.29
3224.0	.0	3224.0	.0	.0	315.0	.0	182.4	84.9	2007.29
.56	.00	10.23	.00	.000	.025	.000	.000	2007.29	978.80
.002045	108.	108.	108.	0	0	0	.00	42.40	1021.20

FLOW DISTRIBUTION FOR SECNO= 2.97 CWSEL= 2014.72

STA= 979. 1021.
PER Q= 100.0
AREA= 315.0
VEL= 10.2
DEPTH= 7.4

CCHV= .300 CEHV= .500

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 2.970
3280 CROSS SECTION      2.97 EXTENDED       .48 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      953.0    1050.0  TYPE=      1  TARGET=       97.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
    2.970      8.58   2016.28   2012.29       .00   2016.74       .46       .05       .35   2007.70
   3224.0    1008.8    1921.7     293.5     273.2     297.9     117.8     182.7      84.9   2007.90
      .56      3.69      6.45      2.49      .055      .035      .065      .000   2007.70    953.00
  .001328       11.       32.       50.         3        14         0       .00     96.08   1049.08


FLOW DISTRIBUTION FOR SECNO=      2.97          CWSEL=   2016.28

    A=     953.     967.     989.    1024.    1042.    1049.
  PER Q=      7.1     24.2     59.6      8.7       .4
   AREA=     84.4    188.8    297.9    105.9     12.0
    VEL=      2.7      4.1      6.5      2.6      1.1
  DEPTH=      6.0      8.6      8.5      5.9      1.7

CCHV=     .100 CEHV=     .300
*SECNO 3.019

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      968.0    1052.0  TYPE=      1  TARGET=       84.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
    3.019      6.24   2016.54   2016.54       .00   2018.79      2.26       .72       .54   2010.40
   3224.0     230.9    2314.9     678.2      47.7     166.7     134.3     185.7      85.4   2010.50
      .57      4.84     13.89      5.05      .060      .035      .070      .000   2010.30    968.46
  .009441      250.      260.      240.         0        15         0       .00     83.17   1051.63
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 3.02 CWSEL= 2016.54

STA=	968.	984.	1011.	1027.	1052.
PER Q=	7.2	71.8	15.6	5.5	
AREA=	47.7	166.7	82.2	52.2	
VEL=	4.8	13.9	6.1	3.4	
DEPTH=	3.1	6.2	5.1	2.1	

*SECNO 3.073
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3.073	8.37	2021.37	2021.37	.00	2023.38	2.01	2.39	.02	2013.00
3037.0	635.0	1490.9	911.1	89.6	98.0	211.4	188.1	86.0	2013.40
.58	7.09	15.21	4.31	.060	.035	.070	.000	2013.00	975.06
.007810	285.	285.	260.	0	11	0	.00	103.19	1078.25

FLOW DISTRIBUTION FOR SECNO= 3.07 CWSEL= 2021.37

STA=	975.	984.	991.	1003.	1011.	1042.	1071.	1078.
PER Q=	4.9	16.0	49.1	10.1	15.5	4.2	.1	
AREA=	33.8	55.8	98.0	50.5	109.0	48.3	3.5	
VEL=	4.4	8.7	15.2	6.1	4.3	2.6	1.1	
DEPTH=	3.8	8.0	8.2	6.3	3.5	1.7	.5	

*SECNO 3.150

3301 HV CHANGED MORE THAN HVINS

3.150	7.06	2024.86	2024.20	.00	2026.36	1.50	2.93	.05	2017.90
3037.0	1181.0	1584.4	271.6	218.7	125.7	55.0	191.8	86.9	2018.30
.59	5.40	12.61	4.94	.060	.035	.070	.000	2017.80	926.28
.006624	420.	407.	390.	2	15	0	.00	85.44	1011.72

FLOW DISTRIBUTION FOR SECNO= 3.15 CWSEL= 2024.86

STA=	926.	936.	962.	974.	982.	1000.	1007.	1012.
PER Q=	1.2	14.4	11.6	11.7	52.2	7.9	1.1	
AREA=	14.4	92.7	60.2	51.3	125.7	42.1	12.9	
VEL=	2.5	4.7	5.9	6.9	12.6	5.7	2.5	
DEPTH=	1.5	3.6	5.0	6.4	7.0	6.0	2.7	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 3.247
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3.247	6.24	2030.14	2030.14	.00	2031.94	1.80	4.45	.09	2023.90
3037.0	693.5	1014.6	1328.9	102.6	62.4	210.7	196.2	87.9	2023.90
.60	6.76	16.26	6.31	.060	.035	.070	.000	2023.90	959.41
.012770	434.	512.	548.	0	11	0	.00	102.08	1061.49

FLOW DISTRIBUTION FOR SECNO= 3.25 CWSEL= 2030.14

STA=	959.	975.	992.	1002.	1014.	1025.	1054.	1061.
PER Q=	2.8	20.0	33.4	19.8	12.0	11.5	.4	
AREA=	23.7	78.9	62.4	74.3	53.8	76.5	6.1	
VEL=	3.7	7.7	16.3	8.1	6.8	4.6	2.1	
DEPTH=	1.5	4.6	6.2	6.2	4.9	2.6	.8	

*SECNO 3.344

[illegible]5 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3.344	8.17	2036.07	2036.07	.00	2037.82	1.75	5.42	.01	2027.90
3037.0	1255.8	1055.0	726.2	216.0	65.3	122.9	200.8	89.3	2027.90
.62	5.81	16.15	5.91	.060	.035	.070	.000	2027.90	924.49
.008796	500.	512.	535.	0	11	0	.00	122.93	1064.13

FLOW DISTRIBUTION FOR SECNO= 3.34 CWSEL= 2036.07

STA=	924.	946.	974.	986.	998.	1006.	1016.	1024.	1047.	1058.	1064.
PER Q=	1.5	9.0	9.6	21.2	34.7	19.3	3.6	.2	.8	.1	
AREA=	20.3	66.3	49.4	80.0	65.3	76.2	28.4	4.3	11.7	2.3	
VEL=	2.3	4.1	5.9	8.1	16.1	7.7	3.8	1.5	2.1	1.0	
DEPTH=	.9	2.4	4.1	6.7	8.2	7.6	3.5	.2	1.1	.4	

CCHV= .100 CEHV= .300
*SECNO 3.438
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3.438	6.87	2042.67	2042.67	.00	2044.48	1.81	4.61	.02	2036.40
3037.0	278.0	1232.7	1526.4	60.4	79.1	272.1	205.1	90.5	2035.90
.63	4.60	15.59	5.61	.070	.035	.070	.000	2035.80	968.71
.010942	510.	497.	420.	0	15	0	.00	109.83	1078.54

FLOW DISTRIBUTION FOR SECNO= 3.44 CWSEL= 2042.67

STA=	969.	988.	1000.	1018.	1030.	1060.	1074.	1079.
PER Q=	9.2	40.6	23.6	8.5	15.4	2.7	.0	
AREA=	60.4	79.1	102.0	47.0	96.5	25.4	1.1	
VEL=	4.6	15.6	7.0	5.5	4.8	3.3	.8	
DEPTH=	3.1	6.6	5.7	3.9	3.2	1.8	.2	

*SECNO 3.534

3301 HV CHANGED MORE THAN HVINS

02 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

3.534	7.09	2046.99	2045.91	.00	2048.24	1.25	3.71	.06	2040.10
3037.0	1130.2	1732.1	174.8	257.0	153.8	45.6	210.2	91.7	2040.10
.65	4.40	11.26	3.83	.070	.035	.070	.000	2039.90	939.12
.005267	509.	509.	495.	3	15	0	.00	90.62	1029.74

FLOW DISTRIBUTION FOR SECNO= 3.53 CWSEL= 2046.99

STA=	939.	946.	971.	987.	996.	1018.	1027.	1030.
PER Q=	.7	13.8	13.2	9.5	57.0	5.6	.2	
AREA=	11.0	104.8	85.5	55.7	153.8	42.2	3.4	
VEL=	2.0	4.0	4.7	5.2	11.3	4.0	1.5	
DEPTH=	1.6	4.2	5.3	6.2	7.0	4.7	1.2	

*SECNO 3.627
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3.627	5.16	2051.76	2051.76	.00	2053.29	1.53	3.74	.08	2046.70
3037.0	41.7	1346.3	1649.0	12.4	97.6	328.2	215.2	92.9	2046.60
.67	3.38	13.80	5.02	.070	.035	.070	.000	2046.60	979.12
.011922	480.	492.	500.	0	19	0	.00	130.16	1109.28

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 3.63 CWSEL= 2051.76

STA=	979.	984.	1003.	1011.	1038.	1060.	1087.	1105.	1109.
PER Q=	1.4	44.3	7.5	16.7	9.7	12.6	7.5	.3	
AREA=	12.4	97.6	36.1	94.9	63.0	80.0	49.8	4.5	
VEL=	3.4	13.8	6.3	5.4	4.7	4.8	4.6	2.3	
DEPTH=	2.5	5.1	4.5	3.5	2.9	3.0	2.8	1.1	

*SECNO 3.723

3.723	5.60	2057.20	2057.07	.00	2058.65	1.45	5.35	.01	2051.70
2849.0	1364.6	1373.1	111.4	292.1	105.0	29.2	220.1	94.3	2051.60
.68	4.67	13.08	3.82	.070	.035	.070	.000	2051.60	899.21
.009716	500.	506.	480.	2	8	0	.00	126.21	1025.42

FLOW DISTRIBUTION FOR SECNO= 3.72 CWSEL= 2057.20

STA=	899.	910.	936.	954.	971.	984.	996.	1015.	1025.
PER Q=	1.3	7.9	6.3	9.1	10.0	13.3	48.2	3.9	
AREA=	14.6	61.1	45.9	56.1	53.3	61.2	105.0	29.2	
VEL=	2.5	3.7	3.9	4.6	5.3	6.2	13.1	3.8	
DEPTH=	1.3	2.3	2.5	3.3	4.1	5.1	5.5	2.8	

CCHV= .300 CEHV= .500

*SECNO 3.809

3.809	5.06	2061.96	2061.88	.00	2062.96	1.00	4.18	.14	2056.90
2849.0	82.8	1118.3	1647.9	22.4	94.6	412.7	225.0	96.1	2057.30
.70	3.69	11.82	3.99	.065	.035	.065	.000	2056.90	974.14
.009130	380.	455.	480.	1	15	0	.00	208.65	1182.79

FLOW DISTRIBUTION FOR SECNO= 3.81 CWSEL= 2061.96

STA=	974.	983.	1002.	1013.	1051.	1085.	1118.	1164.	1181.	1183.
PER Q=	2.9	39.3	8.5	18.3	11.7	8.5	9.1	1.8	.0	
AREA=	22.4	94.6	44.1	114.4	83.7	68.0	81.0	20.6	.7	
VEL=	3.7	11.8	5.5	4.6	4.0	3.5	3.2	2.5	1.1	
DEPTH=	2.5	5.0	4.0	3.0	2.5	2.1	1.8	1.2	.4	

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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO  -.817
START TRIB COMP
     -.817      .817  1844.130

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      246.0    1139.0  TYPE=      1  TARGET=      893.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
    -.817      4.13   1844.13       .00       .00   1845.00       .87      5.81     -1.49   1844.70
   3403.0    1174.0    2156.3      72.6     364.6     236.5      36.8     233.3     101.1   1844.90
      .72      3.22      9.12      1.97      .065      .035      .065      .000   1840.00    246.56
  .010409      550.      502.      775.         0         0         0       .00    493.00   1138.18


FLOW DISTRIBUTION FOR SECNO=      -.82         CWSEL=   1844.13

 =     247.     278.     308.     389.     702.     853.     864.     872.     919.    1043.    1138.
ER Q=      4.2      4.5      3.9      3.2      5.8      6.0      4.2      2.6     63.4      2.1
 AREA=    44.8     47.6     47.8     48.5     74.4     38.3     27.4     35.9    236.5     36.8
  VEL=      3.2      3.2      2.8      2.3      2.6      5.3      5.3      2.5      9.1      2.0
DEPTH=      1.4      1.6       .6       .2       .5      3.5      3.4       .8      3.1       .4

CCHV=     .100 CEHV=     .300
*SECNO  .060

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      145.0     279.0  TYPE=      1  TARGET=      134.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
     .060      3.14   1848.34   1848.34       .00   1849.01       .67      3.25       .02   1847.10
    420.0      20.7     348.7      50.6      10.3      48.7      26.0     235.8     103.0   1847.00
      .74      2.01      7.16      1.95      .055      .035      .065      .000   1845.20    145.74
  .010066      270.      320.      360.         0        15         0       .00     72.34    278.80
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .06 CWSEL= 1848.34

STA=	146.	163.	185.	193.	270.	279.
PER Q=	4.9	83.0	2.2	6.4	3.4	
AREA=	10.3	48.7	5.3	13.5	7.2	
VEL=	2.0	7.2	1.7	2.0	2.0	
DEPTH=	.6	2.2	.7	.2	.8	

*SECNO .110
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.110	2.56	1853.86	1853.86	.00	1854.44	.58	3.40	.01	1852.00
420.0	80.0	228.5	111.5	28.1	28.7	46.2	236.5	103.6	1852.00
.75	2.85	7.96	2.41	.055	.035	.065	.000	1851.30	164.80
.012320	240.	280.	440.	0	15	0	.00	92.90	257.71

FLOW DISTRIBUTION FOR SECNO= .11 CWSEL= 1853.86

STA=	165.	195.	208.	258.
PER Q=	19.0	54.4	26.6	
AREA=	28.1	28.7	46.2	
VEL=	2.9	8.0	2.4	
DEPTH=	.9	2.2	.9	

T2 FLOODWAY DETERMINATION

T3 WASH S: LITTLE SAN DOMIGO WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	3	0	0	0.00707	0	0	0	1785.14	0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15	0	-1	0	0	0	-1	0	0	0

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

*SECNO 41.290

HASSAYAMPA RIVER FIS CROSS SECTION 41.29 (CBA 1988, NO DATUM CHANGE)
CONFLUENCE WITH WASH S - LITTLE SAN DOMINGO WASH, AN EAST TRIBUTARY.
NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA.

41.290	1.66	1780.66	1780.45	1785.14	1780.95	.29	.00	.00	1782.00
3403.0	.0	3401.8	1.2	.0	793.7	.8	.0	.0	1780.00
.00	.00	4.29	1.46	.000	.030	.040	.000	1779.00	1520.36
.007063	0.	0.	0.	0	17	7	.00	762.13	2282.49

CCHV= .100 CEHV= .300
*SECNO .102

3301 HV CHANGED MORE THAN HVINS

[illegible]5 MINIMUM SPECIFIC ENERGY
[illegible]0 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 956.0 1160.0 TYPE= 1 TARGET= 204.000

.102	5.68	1786.18	1786.18	1786.18	1787.37	1.19	3.93	.27	1782.70
3403.0	2087.7	1133.5	181.8	412.0	84.5	42.8	6.4	5.1	1782.00
.01	5.07	13.42	4.24	.065	.035	.065	.000	1780.50	956.39
.013073	200.	500.	900.	0	26	0	.00	202.76	1159.15

CCHV= .100 CEHV= .300
*SECNO .160
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 948.0 1110.0 TYPE= 1 TARGET= 162.000

.160	4.87	1791.57	1791.57	1791.56	1793.01	1.44	3.28	.07	1786.70
3403.0	187.8	2513.6	701.6	45.3	229.7	178.9	9.9	6.4	1787.50
.02	4.14	10.94	3.92	.060	.035	.060	.000	1786.70	948.40
.008926	306.	306.	306.	0	15	0	.00	161.27	1109.67

CCHV= .100 CEHV= .300

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .254

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 826.0 1042.0 TYPE= 1 TARGET= 216.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.
AREA UPSTREAM OF THIS SECTION TO SECTION 0.518 HAS
STRUCTURES LOCATED WITHIN THE LEFT OVERBANK.

.254	4.78	1798.58	1798.58	1798.58	1799.78	1.20	5.15	.02	1795.30
3403.0	1766.6	1588.4	48.0	314.4	139.5	11.2	15.4	8.6	1795.00
.04	5.62	11.39	4.27	.050	.035	.050	.000	1793.80	826.00
.011442	550.	496.	496.	0	5	0	.00	193.51	1041.28

HV= .100 CEHV= .300
ECNO .344

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 780.0 1023.0 TYPE= 1 TARGET= 243.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.344	5.40	1805.70	1805.70	1805.75	1806.90	1.20	4.40	.00	1801.80
3403.0	802.8	2554.0	46.2	229.3	257.3	13.2	20.6	10.9	1800.30
.06	3.50	9.93	3.52	.055	.035	.055	.000	1800.30	780.00
.007681	474.	474.	474.	0	8	0	.00	231.43	1022.87

*SECNO .427

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 775.0 1057.0 TYPE= 1 TARGET= 282.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.427	5.50	1812.60	1812.60	1812.60	1813.81	1.22	3.01	.01	1807.90
3403.0	486.0	2660.5	256.5	168.1	269.5	72.5	25.7	13.4	1807.40
.07	2.89	9.87	3.54	.055	.035	.055	.000	1807.10	775.00
.006187	438.	438.	438.	0	5	0	.00	281.10	1056.47

CCHV= .300 CEHV= .500
*SECNO .518
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 796.0 1057.0 TYPE= 1 TARGET= 261.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.518	3.72	1817.92	1817.92	1817.91	1818.93	1.02	3.75	.06	1815.60
3403.0	692.7	2555.5	154.8	184.9	280.6	47.4	31.3	16.4	1815.00
.09	3.75	9.11	3.27	.055	.035	.055	.000	1814.20	796.85
.010284	490.	480.	420.	0	19	0	.00	259.22	1056.07

CCHV= .100 CEHV= .300
*SECNO .617

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 685.0 1208.0 TYPE= 1 TARGET= 523.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.617	3.06	1825.26	1825.23	1825.26	1826.17	.92	7.23	.01	1825.90
3403.0	1243.7	1713.7	445.7	189.1	192.1	90.2	37.1	19.5	1824.00
.11	6.58	8.92	4.94	.055	.035	.065	.000	1822.20	685.92
.020369	470.	523.	595.	2	11	0	.00	275.41	1207.26

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .722

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 503.0 1401.0 TYPE= 1 TARGET= 898.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.722	4.61	1834.61	1834.30	1834.60	1835.14	.53	8.93	.04	1832.20
3403.0	83.3	1566.1	1753.6	25.6	214.2	407.0	43.8	23.8	1833.90
.13	3.25	7.31	4.31	.055	.035	.065	.000	1830.00	504.26
.014000	620.	554.	450.	5	14	0	.00	435.33	1400.63

*SECNO .817

3265 DIVIDED FLOW

[illegible]5 MINIMUM SPECIFIC ENERGY
[illegible]20 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 246.0 1139.0 TYPE= 1 TARGET= 893.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.817	4.13	1844.13	1844.13	1844.13	1844.89	.76	6.58	.07	1844.70
3403.0	1305.3	2029.5	68.3	364.4	236.5	36.7	52.8	30.4	1844.90
.16	3.58	8.58	1.86	.055	.035	.065	.000	1840.00	246.57
.009226	550.	502.	775.	0	11	0	.00	492.76	1138.17

*SECNO .903

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 509.0 1165.0 TYPE= 1 TARGET= 656.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.903	2.82	1848.02	1847.53	1848.02	1848.25	.23	3.31	.05	1845.80
3403.0	2873.3	415.7	114.0	826.1	66.7	56.7	59.5	35.2	1846.50
.19	3.48	6.24	2.01	.055	.035	.065	.000	1845.20	509.23
.008116	335.	454.	530.	3	11	0	.00	655.70	1164.92

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .300 CEHV= .500
*SECNO 1.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 861.0 1294.0 TYPE= 1 TARGET= 433.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.000	3.46	1856.46	1856.46	1856.46	1857.24	.77	7.06	.27	1854.80
3403.0	382.2	625.7	2395.1	64.6	55.4	424.1	68.7	41.4	1854.40
.21	5.91	11.30	5.65	.060	.035	.060	.000	1853.00	861.30
.027216	600.	512.	420.	0	11	0	.00	355.34	1293.77

*SECNO 1.096

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.64

3470 ENCROACHMENT STATIONS= 897.0 1351.0 TYPE= 1 TARGET= 454.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.096	4.44	1864.44	1864.40	1864.44	1865.20	.75	7.96	.01	1860.40
3403.0	882.6	1085.7	1434.6	158.7	102.4	431.2	75.9	45.8	1861.60
.23	5.56	10.61	3.33	.060	.035	.060	.000	1860.00	897.99
.010095	482.	509.	520.	3	11	0	.00	391.63	1350.76

*SECNO 1.189

3470 ENCROACHMENT STATIONS= 905.0 1292.0 TYPE= 1 TARGET= 387.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT

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        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
    1.189      3.91   1870.81   1870.80   1870.81   1871.49       .68      6.27       .02   1868.70
   3299.0     212.9    1213.0    1873.1      59.9     128.2     443.3      83.8      50.5   1869.20
      .25      3.56      9.46      4.22      .060      .035      .060      .000   1866.90    905.77
  .015314      480.      493.      535.         3        10         0       .00    385.37   1291.14


*SECNO 1.283

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      974.0    1146.0  TYPE=      1  TARGET=      172.000
        ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
    1.283      5.37   1880.77   1880.77   1880.77   1882.06      1.30      8.17       .31   1876.40
   3299.0     101.3    1461.5    1736.3      20.2     121.3     293.7      90.1      53.8   1877.70
      .27      5.02     12.05      5.91      .060      .035      .060      .000   1875.40    974.76
  .016571      440.      496.      532.         0        14         0       .00    170.97   1145.73


ECNO 1.375
85 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      853.0    1060.0  TYPE=      1  TARGET=      207.000
    1.375      3.59   1888.89   1888.89   1888.89   1890.04      1.14      6.31       .05   1886.00
   3299.0     723.5    2232.6     342.8      189.2     222.9      70.8      95.0      55.7   1885.70
      .29      3.82     10.02      4.84      .060      .035      .060      .000   1885.30    853.20
  .010990      350.      485.      500.         0        14         0       .00    206.63   1059.82


*SECNO 1.470
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      878.0    1043.0  TYPE=      1  TARGET=      165.000
    1.470      4.96   1898.46   1898.46   1898.46   1899.79      1.33      6.31       .09   1893.50
   3299.0     629.6    1434.9    1234.4      111.6     113.1     246.7     101.6      58.4   1894.00
      .31      5.64     12.69      5.00      .060      .035      .060      .000   1893.50    878.66
  .011312      805.      502.      508.         0        14         0       .00    164.27   1042.92


*SECNO 1.563
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 648.0 1011.0 TYPE= 1 TARGET= 363.000

1.563	3.35	1905.15	1904.55	1905.15	1905.51	.36	5.43	.29	1904.00
3299.0	2930.0	356.3	12.7	652.3	52.0	4.8	107.8	61.2	1903.00
.33	4.49	6.85	2.65	.060	.035	.060	.000	1901.80	648.40
.011955	450.	494.	475.	4	11	0	.00	362.03	1010.43

*SECNO 1.662

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
20 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 876.0 1360.0 TYPE= 1 TARGET= 484.000
DIVIDED FLOW AREA, AREA SOUTH OF HILL IS MAIN WASH.

1.662	4.58	1914.78	1914.78	1914.73	1916.52	1.74	5.19	.69	1910.90
3299.0	453.5	2744.1	101.4	86.7	241.1	31.4	113.4	63.7	1910.90
.35	5.23	11.38	3.23	.060	.035	.060	.000	1910.20	876.59
.010046	430.	523.	450.	0	11	0	.00	125.18	1360.00

*SECNO 1.754

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 909.0 1350.0 TYPE= 1 TARGET= 441.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.754	4.08	1921.48	1921.12	1921.51	1921.98	.49	5.08	.37	1920.20
3299.0	1289.2	788.3	1221.4	338.5	87.7	284.3	119.8	66.7	1918.50
.37	3.81	8.99	4.30	.060	.035	.060	.000	1917.40	909.95
.009953	520.	491.	540.	3	16	0	.00	375.90	1349.35

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1.847

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      940.0    1100.0  TYPE=      1  TARGET=      160.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
    1.847      5.55   1930.25   1930.25   1930.25   1931.69      1.44      5.42       .47   1925.40
   3299.0     927.7    1733.9     637.4     146.4     142.5     144.3     126.8      70.0   1925.70
      .39      6.34     12.17      4.42      .060      .035      .060      .000   1924.70    940.17
  .010753      491.      491.      610.         0        11         0       .00    159.39   1099.56


CCHV=     .300 CEHV=     .500
*SECNO 1.912

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      969.0    1031.0  TYPE=      1  TARGET=       62.000
    1.912      6.47   1934.67   1934.67   1934.67   1937.33      2.66      3.70       .61   1928.40
   3299.0      28.9    2511.0     759.1      10.0     171.9     121.7     129.9      70.9   1928.30
      .40      2.89     14.61      6.24      .065      .035      .065      .000   1928.20    969.81
  .010032      425.      343.      350.         0         8         0       .00     60.37   1030.18


CCHV=     .300 CEHV=     .500
*SECNO 1.931
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      948.0    1028.0  TYPE=      1  TARGET=       80.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
          DOWNSTREAM SECTION OF 3 FOOT DROP STRUCTURE.
    1.931      8.07   1937.47   1937.47   1937.47   1939.83      2.35       .92       .09   1932.40
   3299.0     489.4    2729.5      80.1     107.8     203.9      22.9     130.6      71.1   1932.50
      .40      4.54     13.39      3.50      .065      .035      .065      .000   1929.40    948.44
  .008279      160.      100.       75.         0        11         0       .00     78.77   1027.20
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.932
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 942.0 1029.0 TYPE= 1 TARGET= 87.000
UPSTREAM SECTION OF 3 FOOT DROP STRUCTURE.
ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.

1.932	6.01	1938.41	1938.41	1938.41	1940.58	2.17	.00	.06	1933.00
3299.0	727.1	2436.1	135.8	138.6	181.6	32.3	130.6	71.1	1932.50
.40	5.25	13.41	4.20	.065	.035	.065	.000	1932.40	943.01
.009455	0.	0.	0.	0	15	0	.00	85.93	1028.94

*SECNO 1.933

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.95

3470 ENCROACHMENT STATIONS= 933.0 1033.0 TYPE= 1 TARGET= 100.000
DOWNSTREAM SECTION OF 2 FOOT DROP STRUCTURE.
ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.

1.933	7.76	1940.16	1937.88	1940.16	1941.00	.84	.02	.40	1935.30
3299.0	153.5	3006.0	139.5	67.5	392.2	54.3	130.7	71.1	1932.50
.40	2.28	7.67	2.57	.065	.035	.065	.000	1932.40	934.53
.002497	5.	5.	5.	5	11	0	.00	97.65	1032.18

*SECNO 1.934

3470 ENCROACHMENT STATIONS= 954.0 1049.0 TYPE= 1 TARGET= 95.000
UPSTREAM SECTION OF 2 FOOT DROP STRUCTURE.
ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.

1.934	6.48	1940.48	1937.82	1940.48	1941.07	.59	.00	.07	100000.00
3299.0	.0	3299.0	.0	.0	534.0	.0	130.7	71.1	100000.00
.40	.00	6.18	.00	.000	.035	.000	.000	1934.00	954.06
.002272	0.	0.	0.	2	8	0	.00	94.60	1048.65

CCHV= .300 CEHV= .500

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.936

3370 NORMAL BRIDGE, NRD= 11 MIN ELTRD= 1952.20 MAX ELLC= 1948.90

3470 ENCROACHMENT STATIONS= 954.0 1047.0 TYPE= 1 TARGET= 93.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1952.20 ELREA= 1952.20

DOWNSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.

1.936	6.36	1940.46	1938.16	1940.46	1941.15	.69	.03	.05	100000.00
3299.0	.0	3299.0	.0	.0	496.7	.0	130.9	71.2	100000.00
.40	.00	6.64	.00	.000	.030	.000	.000	1934.10	954.12
.002114	15.	15.	15.	2	18	0	.00	92.74	1046.86

*SECNO 1.939

3370 NORMAL BRIDGE, NRD= 11 MIN ELTRD= 1952.20 MAX ELLC= 1948.90

3470 ENCROACHMENT STATIONS= 954.0 1047.0 TYPE= 1 TARGET= 93.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1952.20 ELREA= 1952.20

UPSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.

1.939	6.28	1940.48	1938.32	1940.48	1941.19	.71	.03	.01	100000.00
3299.0	.0	3299.0	.0	.0	487.4	.0	131.0	71.2	100000.00
.40	.00	6.77	.00	.000	.030	.000	.000	1934.20	954.04
.002244	15.	15.	15.	1	18	0	.00	92.89	1046.93

CCHV= .100 CEHV= .300
*SECNO 1.980

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 979.0 1020.0 TYPE= 1 TARGET= 41.000

1.980	8.38	1947.38	1947.38	1947.37	1950.34	2.96	.89	.68	100000.00
3299.0	.0	3299.0	.0	.0	238.7	.0	132.7	71.5	100000.00
.40	.00	13.82	.00	.000	.035	.000	.000	1939.00	979.05
.011705	190.	206.	210.	0	11	0	.00	40.72	1019.77

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


CCHV=     .300 CEHV=     .500
*SECNO 2.053

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.73


3470 ENCROACHMENT STATIONS=      968.0    1031.0  TYPE=      1  TARGET=       63.000
           DOWNSTREAM SECTION OF 8.9 FOOT DROP STRUCTURE AT THE
           OUTLET OF A 4 - 10' x 8' CONC. BOX CULVERT.
    2.053     10.43   1951.41   1947.26   1951.41   1952.25       .84      1.28       .64   1941.00
   3299.0     621.9    2677.0        .0     188.0     333.7        .4     136.1      72.0   1940.98
      .42      3.31      8.02       .10      .065      .035      .065      .000   1940.98    968.33
  .001566     380.      380.      380.         2        15         0       .00     61.75   1030.08


*SECNO 2.054

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      969.0    1031.0  TYPE=      1  TARGET=       62.000
           UPSTREAM SECTION OF 8.9 FOOT DROP STRUCTURE AT THE
           OUTLET OF A 4 - 10' x 8' CONC. BOX CULVERT.
    2.054      4.53   1954.33   1954.33   1954.33   1956.61      2.28       .00       .72   1949.80
   3299.0        .1    3295.6       3.3        .2     271.9       2.3     136.1      72.0   1949.80
      .42       .30     12.12      1.47      .065      .035      .065      .000   1949.80    969.91
  .010870        0.        0.        0.         0        14         0       .00     61.09   1031.00


CCHV=     .600 CEHV=     .800
*SECNO 2.056

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      978.0    1022.0  TYPE=      1  TARGET=       44.000
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1980.80 ELREA= 1977.00

DOWNSTREAM SECTION TO S.R. 93(U.S. HWY. 60-89)
4 - 10' X 8' X 217' CONC. BOX CULVERTS W/HEADWALLS - 30 DEG SKEW

2.056	5.68	1955.56	1955.56	1955.56	1958.43	2.87	.11	.47	1949.88
3299.0	.0	3299.0	.0	.0	242.6	.0	136.1	72.0	1949.88
.42	.00	13.60	.00	.000	.030	.000	.000	1949.88	978.60
.007434	12.	12.	12.	0	11	0	.00	42.70	1021.30

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 1954.56 , NOT 1955.56 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.80	3.00	.00	42.70	2.70	298.40	.00	1951.53	1949.88

SECNO 2.097

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.62

CLASS B LOW FLOW

3420 BRIDGE W.S.= 1956.66 BRIDGE VELOCITY= 13.85 CALCULATED CHANNEL AREA= 205.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
1958.98	1960.72	.00	0.	3299.	298.	320.	1959.53	1977.00	0.

3470 ENCROACHMENT STATIONS= 978.0 1022.0 TYPE= 1 TARGET= 44.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1980.80 ELREA= 1977.00

UPSTREAM SECTION OF 4 - 10' X 8' CONC. BOX CULVERT.

2.097	7.61	1959.11	.00	1959.11	1960.72	1.61	2.29	.00	1951.53
3299.0	.0	3299.0	.0	.0	324.2	.0	137.5	72.2	1951.53
.43	.00	10.18	.00	.000	.030	.000	.000	1951.50	978.60
.002828	217.	217.	217.	0	0	0	.00	42.70	1021.30

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

CCHV=     .100 CEHV=     .300
*SECNO 2.131
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     969.0    1135.0  TYPE=      1  TARGET=      166.000
   2.131      6.60   1960.91   1960.91   1960.90   1962.38      1.48       .79       .01   1954.60
  3224.0      96.0    1759.7    1368.2      26.0     138.8     335.1     139.3      72.6   1955.10
     .43      3.69     12.68      4.08      .065      .035      .065      .000   1954.30    969.75
 .007669      182.      182.      182.         0        15         0       .00    164.40   1134.15

*SECNO 2.194

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     989.0    1072.0  TYPE=      1  TARGET=       83.000
   2.194      7.78   1966.28   1966.28   1966.26   1968.50      2.22      2.79       .22   1958.70
  3224.0     125.0    1802.7    1296.3      29.7     118.5     226.6     142.7      73.6   1959.40
     .44      4.21     15.21      5.72      .065      .035      .065      .000   1958.50    989.16
 .008915      340.      333.      343.         0        11         0       .00     82.12   1071.28

*SECNO 2.267

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     904.0    1033.0  TYPE=      1  TARGET=      129.000
   2.267      6.89   1969.99   1969.42   1969.99   1971.24      1.26      2.65       .10   1963.30
  3224.0    1235.8    1908.0      80.2     310.4     169.7      25.6     146.6      74.5   1963.10
     .45      3.98     11.24      3.13      .065      .035      .065      .000   1963.10    904.71
 .005457      365.      385.      407.         2        15         0       .00    127.72   1032.44

*SECNO 2.360
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     969.0    1090.0  TYPE=      1  TARGET=      121.000
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
2.360	5.13	1974.93	1974.93	1974.92	1976.61	1.69	3.66	.13	1969.90
3224.0	31.5	1852.1	1340.4	9.9	142.2	260.9	151.7	75.9	1969.80
.47	3.18	13.03	5.14	.065	.035	.065	.000	1969.80	969.06
.010790	450.	491.	526.	0	19	0	.00	120.24	1089.30

*SECNO 2.455

3470 ENCROACHMENT STATIONS= 986.0 1085.0 TYPE= 1 TARGET= 99.000

2.455	8.52	1979.52	1979.19	1979.53	1981.32	1.79	4.67	.03	1971.00
3224.0	487.6	1071.2	1665.1	82.3	65.8	254.4	156.1	77.1	1971.60
.48	5.92	16.28	6.54	.065	.035	.065	.000	1971.00	986.52
.008890	565.	502.	440.	3	14	0	.00	98.04	1084.55

*SECNO 2.550

3470 ENCROACHMENT STATIONS= 976.0 1083.0 TYPE= 1 TARGET= 107.000

2.550	7.64	1983.84	1983.13	1983.84	1985.15	1.31	3.79	.05	1976.30
3224.0	182.1	1219.4	1822.5	44.9	91.0	346.7	161.1	78.2	1976.40
.50	4.05	13.41	5.26	.065	.035	.065	.000	1976.20	976.08
.006701	505.	502.	485.	2	15	0	.00	105.97	1082.04

*SECNO 2.646
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 924.0 1037.0 TYPE= 1 TARGET= 113.000

2.646	6.07	1988.97	1988.97	1988.96	1990.66	1.69	4.68	.11	1982.90
3224.0	1236.6	900.8	1086.7	202.1	54.6	146.3	166.2	79.5	1982.90
.51	6.12	16.50	7.43	.065	.035	.065	.000	1982.90	924.90
.013652	482.	507.	515.	0	15	0	.00	112.10	1037.00

*SECNO 2.746
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 972.0 1077.0 TYPE= 1 TARGET= 105.000

2.746	6.18	1995.88	1995.88	1995.88	1997.74	1.86	5.94	.05	1989.80
3224.0	95.3	1700.3	1428.4	23.2	120.3	251.8	170.8	80.7	1990.20
.53	4.10	14.13	5.67	.065	.035	.065	.000	1989.70	972.35
.010129	547.	528.	467.	0	5	0	.00	104.02	1076.37

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 2.838
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      910.0    1026.0  TYPE=      1  TARGET=      116.000
    2.838      4.99   2002.09   2002.09   2002.09   2003.78      1.69      5.42       .02   1997.10
   3224.0    1762.3    1388.8      72.8     288.5      97.2      17.2     175.0      81.8   1997.40
      .54      6.11     14.29      4.23      .065      .035      .065      .000   1997.10    910.69
  .013769      388.      485.      505.         0        15         0       .00    114.66   1025.34


*SECNO 2.894

3470 ENCROACHMENT STATIONS=      954.0    1060.0  TYPE=      1  TARGET=      106.000
    2.894      5.83   2005.83   2005.28   2005.83   2007.24      1.41      3.42       .03   2000.00
   3224.0     849.1    1189.1    1185.8     136.1      87.4     206.0     177.8      82.6   2000.00
      .55      6.24     13.61      5.75      .065      .035      .065      .000   2000.00    954.77
  .009793      300.      294.      297.         2         8         0       .00    104.58   1059.35


SECNO 2.945

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      978.0    1023.0  TYPE=      1  TARGET=       45.000
           ET-DATA FOR BRIDGE AND DROP STRUCTURE TRANSITION.
           DOWNSTREAM SECTION OF 4'+/- DROP STRUCTURE AT OUTLET
           OF 4 - 10' x 8' CONC. BOX CULVERT.
    2.945      5.86   2007.56   2007.54   2007.56   2010.34      2.78      2.69       .41   2002.40
   3224.0      10.5    3202.6      10.9       5.1     238.5       5.3     179.9      83.0   2002.25
      .55      2.06     13.43      2.06      .065      .035      .065      .000   2001.70    978.00
  .010193      310.      271.      235.         3         5         0       .00     45.00   1023.00


CCHV=     .600 CEHV=     .800
*SECNO 2.946
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      978.0    1022.0  TYPE=      1  TARGET=       44.000
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2022.00 ELREA= 2020.00

UPSTREAM SECTION OF 4' +/- DROP STRUCTURE.
DOWNSTREAM SECTION TO HWY 74
4 - 10' X 8' X 108' CONC. BOX CULVERT W/ HEADWALLS - 30 DEG SKEW

2.946	5.64	2010.75	2010.75	2010.75	2013.57	2.82	.01	.03	2005.11
3224.0	.0	3224.0	.0	.0	239.0	.0	179.9	83.0	2005.11
.55	.00	13.49	.00	.000	.025	.000	.000	2005.11	978.80
.005130	1.	1.	1.	0	8	0	.00	42.40	1021.20

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 2009.75 , NOT 2010.75 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.80	3.00	.00	42.55	2.55	340.40	.00	2007.29	2005.11

SECNO 2.966

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.58

CLASS B LOW FLOW

3420 BRIDGE W.S.= 2012.07 BRIDGE VELOCITY= 13.74 CALCULATED CHANNEL AREA= 191.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2013.26	2016.35	.00	0.	3224.	340.	340.	2015.80	2021.90	0.

3470 ENCROACHMENT STATIONS= 978.0 1022.0 TYPE= 1 TARGET= 44.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2022.00 ELREA= 2020.00

UPSTREAM SECTION OF 4 - 10' x 8' CONC.BOX CULVERT.

2.966	7.43	2014.72	.00	2014.72	2016.35	1.63	2.77	.00	2007.29
3224.0	.0	3224.0	.0	.0	315.0	.0	180.6	83.1	2007.29
.56	.00	10.23	.00	.000	.025	.000	.000	2007.29	978.80
.002045	108.	108.	108.	0	0	0	.00	42.40	1021.20

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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CCHV=     .300 CEHV=     .500
*SECNO 2.970
3280 CROSS SECTION      2.97 EXTENDED       .48 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      953.0    1050.0  TYPE=      1  TARGET=       97.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
    2.970      8.58   2016.28   2012.29   2016.28   2016.74       .46       .05       .35   2007.70
   3224.0    1008.8    1921.7     293.5     273.2     297.9     117.8     180.9      83.2   2007.90
      .56      3.69      6.45      2.49      .055      .035      .065      .000   2007.70    953.00
  .001328       11.       32.       50.         3        14         0       .00     96.08   1049.08


CCHV=     .100 CEHV=     .300
*SECNO 3.019

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      968.0    1052.0  TYPE=      1  TARGET=       84.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
    3.019      6.24   2016.54   2016.54   2016.54   2018.79      2.26       .72       .54   2010.40
   3224.0     230.9    2314.9     678.2      47.7     166.7     134.3     183.9      83.7   2010.50
      .57      4.84     13.89      5.05      .060      .035      .070      .000   2010.30    968.46
  .009441      250.      260.      240.         0        15         0       .00     83.17   1051.63


*SECNO 3.073
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      975.0    1079.0  TYPE=      1  TARGET=      104.000
    3.073      8.38   2021.38   2021.38   2021.37   2023.38      2.00      2.38       .03   2013.00
   3037.0     634.5    1488.5     914.0      89.9      98.2     212.7     186.3      84.3   2013.40
      .57      7.06     15.16      4.30      .060      .035      .070      .000   2013.00    975.04
  .007733      285.      285.      260.         0        11         0       .00    103.34   1078.38
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 3.150

3470 ENCROACHMENT STATIONS= 926.0 1012.0 TYPE= 1 TARGET= 86.000

3.150	7.05	2024.85	2024.19	2024.86	2026.35	1.51	2.92	.05	2017.90
3037.0	1179.7	1585.7	271.6	217.9	125.5	54.9	190.0	85.2	2018.30
.59	5.41	12.64	4.95	.060	.035	.070	.000	2017.80	926.33
.006677	420.	407.	390.	2	15	0	.00	85.39	1011.71

*SECNO 3.247
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 959.0 1062.0 TYPE= 1 TARGET= 103.000

3.247	6.26	2030.16	2030.16	2030.14	2031.94	1.79	4.45	.08	2023.90
3037.0	694.2	1013.0	1329.8	103.1	62.6	211.7	194.4	86.2	2023.90
.60	6.73	16.19	6.28	.060	.035	.070	.000	2023.90	959.33
.012616	434.	512.	548.	0	15	0	.00	102.24	1061.57

CNO 3.344

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 924.0 1065.0 TYPE= 1 TARGET= 141.000

3.344	8.17	2036.07	2036.07	2036.07	2037.82	1.75	5.38	.00	2027.90
3037.0	1256.9	1053.9	726.1	216.6	65.4	123.2	199.0	87.6	2027.90
.62	5.80	16.12	5.89	.060	.035	.070	.000	2027.90	924.48
.008750	500.	512.	535.	0	11	0	.00	123.05	1064.19

CCHV= .100 CEHV= .300
*SECNO 3.438
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 968.0 1079.0 TYPE= 1 TARGET= 111.000

3.438	6.89	2042.69	2042.69	2042.67	2044.47	1.78	4.57	.01	2036.40
3037.0	278.4	1229.8	1528.7	60.9	79.3	273.9	203.4	88.8	2035.90
.63	4.57	15.50	5.58	.070	.035	.070	.000	2035.80	968.64
.010767	510.	497.	420.	0	15	0	.00	110.12	1078.76

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 3.534

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.42

3470 ENCROACHMENT STATIONS= 939.0 1030.0 TYPE= 1 TARGET= 91.000

3.534	7.08	2046.98	2045.91	2046.99	2048.23	1.26	3.70	.05	2040.10
3037.0	1129.1	1733.4	174.5	256.0	153.4	45.5	208.4	89.9	2040.10
.65	4.41	11.30	3.84	.070	.035	.070	.000	2039.90	939.16
.005316	509.	509.	495.	3	15	0	.00	90.56	1029.72

*SECNO 3.627
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

70 ENCROACHMENT STATIONS= 979.0 1110.0 TYPE= 1 TARGET= 131.000

3.627	5.17	2051.77	2051.77	2051.76	2053.29	1.52	3.76	.08	2046.70
3037.0	41.7	1346.0	1649.2	12.4	97.6	328.4	213.5	91.2	2046.60
.66	3.37	13.79	5.02	.070	.035	.070	.000	2046.60	979.12
.011905	480.	492.	500.	0	19	0	.00	130.17	1109.28

*SECNO 3.723

3470 ENCROACHMENT STATIONS= 899.0 1026.0 TYPE= 1 TARGET= 127.000

3.723	5.60	2057.20	2057.07	2057.20	2058.65	1.45	5.35	.01	2051.70
2849.0	1364.4	1373.3	111.3	291.9	104.9	29.1	218.4	92.6	2051.60
.68	4.67	13.09	3.82	.070	.035	.070	.000	2051.60	899.21
.009729	500.	506.	480.	2	8	0	.00	126.20	1025.41

CCHV= .300 CEHV= .500
*SECNO 3.809

3470 ENCROACHMENT STATIONS= 974.0 1183.0 TYPE= 1 TARGET= 209.000

3.809	5.06	2061.96	2061.88	2061.96	2062.96	1.00	4.18	.14	2056.90
2849.0	82.8	1117.9	1648.3	22.4	94.6	412.9	223.2	94.4	2057.30
.69	3.69	11.82	3.99	.065	.035	.065	.000	2056.90	974.14
.009116	380.	455.	480.	1	15	0	.00	208.66	1182.80

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO  -.817
START TRIB COMP
     -.817      .817  1844.129

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      246.0     1139.0  TYPE=      1  TARGET=      893.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
    -.817      4.13   1844.13       .00   1844.13   1845.00       .88      5.81     -1.49   1844.70
   3403.0    1173.7    2156.7      72.5     364.4     236.5      36.7     231.6      99.4   1844.90
      .72      3.22      9.12      1.98      .065      .035      .065      .000   1840.00    246.57
  .010420      550.      502.      775.         0         0         0       .00    492.76   1138.17


CCHV=     .100 CEHV=     .300
*SECNO  .060

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      145.0      279.0  TYPE=      1  TARGET=      134.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
     .060      3.14   1848.34   1848.34   1848.34   1849.01       .67      3.25       .02   1847.10
    420.0      20.7     348.7      50.6      10.3      48.7      26.0     234.0     101.3   1847.00
      .73      2.01      7.16      1.95      .055      .035      .065      .000   1845.20    145.74
  .010064      270.      320.      360.         0        15         0       .00     72.35    278.80


*SECNO  .110
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      164.0      258.0  TYPE=      1  TARGET=       94.000
           ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
           SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
           WSEL AND THE TOPOGRAPHY.
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
.110	2.65	1853.95	1853.95	1853.86	1854.44	.48	3.07	.02	1852.00
420.0	83.0	220.0	117.0	30.9	29.9	50.8	234.8	101.9	1852.00
.75	2.68	7.35	2.30	.055	.035	.065	.000	1851.30	164.00
.009956	240.	280.	440.	0	10	0	.00	94.00	258.00

THIS RUN EXECUTED 04MAY92 15:25:57

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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

WASH S: LITTLE SAN DOMIN

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	41.290	.00	.00	.00	1779.00	3403.00	1780.66	1780.45	1780.95	70.63	4.29	794.49	404.92
	41.290	.00	.00	.00	1779.00	3403.00	1780.66	1780.45	1780.95	70.63	4.29	794.49	404.92
*	.102	500.00	.00	.00	1780.50	3403.00	1786.18	1786.18	1787.37	130.73	13.42	539.28	297.63
*	.102	500.00	.00	.00	1780.50	3403.00	1786.18	1786.18	1787.37	130.73	13.42	539.28	297.63
	.160	306.00	.00	.00	1786.70	3403.00	1791.56	1791.56	1793.01	90.64	11.00	451.35	357.45
*	.160	306.00	.00	.00	1786.70	3403.00	1791.57	1791.57	1793.01	89.26	10.94	454.00	360.20
*	.254	496.00	.00	.00	1793.80	3403.00	1798.58	1798.58	1799.39	87.84	9.98	600.34	363.10
*	.254	496.00	.00	.00	1793.80	3403.00	1798.58	1798.58	1799.78	114.42	11.39	465.08	318.13
*	.344	474.00	.00	.00	1800.30	3403.00	1805.75	1805.75	1806.90	72.94	9.75	515.34	398.45
*	.344	474.00	.00	.00	1800.30	3403.00	1805.70	1805.70	1806.90	76.81	9.93	499.74	388.29
*	.427	438.00	.00	.00	1807.10	3403.00	1812.60	1812.60	1813.81	61.48	9.85	512.06	434.01
*	.427	438.00	.00	.00	1807.10	3403.00	1812.60	1812.60	1813.81	61.87	9.87	510.17	432.62
*	.518	480.00	.00	.00	1814.20	3403.00	1817.91	1817.91	1818.93	103.08	9.11	512.42	335.18
*	.518	480.00	.00	.00	1814.20	3403.00	1817.92	1817.92	1818.93	102.84	9.11	512.86	335.56
	.617	523.00	.00	.00	1822.20	3403.00	1825.26	1825.23	1826.18	203.02	8.91	471.94	238.83
	.617	523.00	.00	.00	1822.20	3403.00	1825.26	1825.23	1826.17	203.69	8.92	471.41	238.44
	.722	554.00	.00	.00	1830.00	3403.00	1834.60	1834.30	1835.14	140.37	7.32	646.28	287.22
	.722	554.00	.00	.00	1830.00	3403.00	1834.61	1834.30	1835.14	140.00	7.31	646.92	287.61
*	.817	502.00	.00	.00	1840.00	3403.00	1844.13	1844.13	1844.89	92.16	8.58	637.93	354.47
*	.817	502.00	.00	.00	1840.00	3403.00	1844.13	1844.13	1844.89	92.26	8.58	637.57	354.28
	.903	454.00	.00	.00	1845.20	3403.00	1848.02	1847.53	1848.25	81.24	6.24	949.16	377.55
	.903	454.00	.00	.00	1845.20	3403.00	1848.02	1847.53	1848.25	81.16	6.24	949.48	377.73

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	1.000	512.00	.00	.00	1853.00	3403.00	1856.46	1856.46	1857.24	272.16	11.30	544.09	206.28
*	1.000	512.00	.00	.00	1853.00	3403.00	1856.46	1856.46	1857.24	272.16	11.30	544.09	206.28
*	1.096	509.00	.00	.00	1860.00	3403.00	1864.44	1864.40	1865.20	100.95	10.61	692.31	338.69
*	1.096	509.00	.00	.00	1860.00	3403.00	1864.44	1864.40	1865.20	100.95	10.61	692.31	338.69
	1.189	493.00	.00	.00	1866.90	3299.00	1870.81	1870.80	1871.49	153.14	9.46	631.43	266.59
	1.189	493.00	.00	.00	1866.90	3299.00	1870.81	1870.80	1871.49	153.14	9.46	631.43	266.59
*	1.283	496.00	.00	.00	1875.40	3299.00	1880.77	1880.77	1882.06	165.71	12.05	435.21	256.27
*	1.283	496.00	.00	.00	1875.40	3299.00	1880.77	1880.77	1882.06	165.71	12.05	435.21	256.27
*	1.375	485.00	.00	.00	1885.30	3299.00	1888.89	1888.89	1890.04	110.57	10.04	481.89	313.74
*	1.375	485.00	.00	.00	1885.30	3299.00	1888.89	1888.89	1890.04	109.90	10.02	482.92	314.69
*	1.470	502.00	.00	.00	1893.50	3299.00	1898.46	1898.46	1899.79	113.35	12.70	471.09	309.86
*	1.470	502.00	.00	.00	1893.50	3299.00	1898.46	1898.46	1899.79	113.12	12.69	471.43	310.18
	1.563	494.00	.00	.00	1901.80	3299.00	1905.15	1904.55	1905.51	119.29	6.85	709.60	302.05
	1.563	494.00	.00	.00	1901.80	3299.00	1905.15	1904.55	1905.51	119.55	6.85	709.11	301.72
*	1.662	523.00	.00	.00	1910.20	3299.00	1914.73	1914.73	1916.52	104.70	11.54	353.14	322.41
*	1.662	523.00	.00	.00	1910.20	3299.00	1914.78	1914.78	1916.52	100.46	11.38	359.15	329.14
	1.754	491.00	.00	.00	1917.40	3299.00	1921.51	1921.09	1921.98	95.09	8.85	722.14	338.32
	1.754	491.00	.00	.00	1917.40	3299.00	1921.48	1921.12	1921.98	99.53	8.99	710.42	330.67
*	1.847	491.00	.00	.00	1924.70	3299.00	1930.25	1930.25	1931.69	107.49	12.17	433.21	318.20
*	1.847	491.00	.00	.00	1924.70	3299.00	1930.25	1930.25	1931.69	107.53	12.17	433.13	318.13
*	1.912	343.00	.00	.00	1928.20	3299.00	1934.67	1934.67	1937.33	100.18	14.60	303.70	329.61
*	1.912	343.00	.00	.00	1928.20	3299.00	1934.67	1934.67	1937.33	100.32	14.61	303.55	329.38
*	1.931	100.00	.00	.00	1929.40	3299.00	1937.47	1937.47	1939.83	82.78	13.39	334.52	362.59
*	1.931	100.00	.00	.00	1929.40	3299.00	1937.47	1937.47	1939.83	82.79	13.39	334.50	362.57
*	1.932	.10	.00	.00	1932.40	3299.00	1938.41	1938.41	1940.58	94.56	13.41	352.54	339.26
*	1.932	.10	.00	.00	1932.40	3299.00	1938.41	1938.41	1940.58	94.55	13.41	352.56	339.28
*	1.933	5.00	.00	.00	1932.40	3299.00	1940.16	1937.88	1941.00	24.97	7.67	513.94	660.16
*	1.933	5.00	.00	.00	1932.40	3299.00	1940.16	1937.88	1941.00	24.97	7.67	513.94	660.16
	1.934	.10	.00	.00	1934.00	3299.00	1940.48	1937.82	1941.07	22.72	6.18	533.96	692.10
	1.934	.10	.00	.00	1934.00	3299.00	1940.48	1937.82	1941.07	22.72	6.18	533.96	692.10
	1.936	14.50	1952.20	1948.90	1934.10	3299.00	1940.46	1938.16	1941.15	21.14	6.64	496.69	717.50
	1.936	14.50	1952.20	1948.90	1934.10	3299.00	1940.46	1938.16	1941.15	21.14	6.64	496.69	717.50
	1.939	14.70	1952.20	1948.90	1934.20	3299.00	1940.48	1938.32	1941.19	22.44	6.77	487.37	696.37
	1.939	14.70	1952.20	1948.90	1934.20	3299.00	1940.48	1938.32	1941.19	22.44	6.77	487.37	696.37

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	1.980	206.00	.00	.00	1939.00	3299.00	1947.37	1947.37	1950.34	117.17	13.82	238.65	304.77
*	1.980	206.00	.00	.00	1939.00	3299.00	1947.38	1947.38	1950.34	117.05	13.82	238.74	304.93
*	2.053	380.00	.00	.00	1940.98	3299.00	1951.41	1947.26	1952.25	15.66	8.02	522.20	833.65
*	2.053	380.00	.00	.00	1940.98	3299.00	1951.41	1947.26	1952.25	15.66	8.02	522.14	833.53
*	2.054	.10	.00	.00	1949.80	3299.00	1954.33	1954.33	1956.61	108.91	12.13	274.18	316.12
*	2.054	.10	.00	.00	1949.80	3299.00	1954.33	1954.33	1956.61	108.70	12.12	274.34	316.42
*	2.056	12.00	.00	.00	1949.88	3299.00	1955.56	1955.56	1958.43	74.38	13.60	242.55	382.52
*	2.056	12.00	.00	.00	1949.88	3299.00	1955.56	1955.56	1958.43	74.34	13.60	242.59	382.61
*	2.097	217.00	1977.00	1959.53	1951.50	3299.00	1959.11	.00	1960.72	28.28	10.18	324.19	620.36
*	2.097	217.00	1977.00	1959.53	1951.50	3299.00	1959.11	.00	1960.72	28.28	10.18	324.19	620.36
*	2.131	182.00	.00	.00	1954.30	3224.00	1960.90	1960.90	1962.38	77.10	12.71	498.78	367.17
*	2.131	182.00	.00	.00	1954.30	3224.00	1960.91	1960.91	1962.38	76.69	12.68	499.86	368.15
*	2.194	333.00	.00	.00	1958.50	3224.00	1966.26	1966.26	1968.50	89.79	15.25	373.79	340.23
*	2.194	333.00	.00	.00	1958.50	3224.00	1966.28	1966.28	1968.50	89.15	15.21	374.78	341.45
	2.267	385.00	.00	.00	1963.10	3224.00	1969.99	1969.42	1971.25	54.29	11.22	506.72	437.56
	2.267	385.00	.00	.00	1963.10	3224.00	1969.99	1969.42	1971.24	54.57	11.24	505.75	436.45
	2.360	491.00	.00	.00	1969.80	3224.00	1974.92	1974.92	1976.61	108.31	13.05	412.37	309.79
*	2.360	491.00	.00	.00	1969.80	3224.00	1974.93	1974.93	1976.61	107.90	13.03	412.93	310.37
	2.455	502.00	.00	.00	1971.00	3224.00	1979.53	1979.20	1981.32	88.69	16.27	402.94	342.33
	2.455	502.00	.00	.00	1971.00	3224.00	1979.52	1979.19	1981.32	88.90	16.28	402.53	341.93
	2.550	502.00	.00	.00	1976.20	3224.00	1983.84	1983.13	1985.15	67.13	13.41	482.33	393.50
	2.550	502.00	.00	.00	1976.20	3224.00	1983.84	1983.13	1985.15	67.01	13.41	482.63	393.84
*	2.646	507.00	.00	.00	1982.90	3224.00	1988.96	1988.96	1990.66	136.88	16.52	402.64	275.57
*	2.646	507.00	.00	.00	1982.90	3224.00	1988.97	1988.97	1990.66	136.52	16.50	403.02	275.93
*	2.746	528.00	.00	.00	1989.70	3224.00	1995.88	1995.88	1997.74	101.26	14.13	395.38	320.39
*	2.746	528.00	.00	.00	1989.70	3224.00	1995.88	1995.88	1997.74	101.29	14.13	395.33	320.34
*	2.838	485.00	.00	.00	1997.10	3224.00	2002.09	2002.09	2003.78	137.87	14.30	402.72	274.57
*	2.838	485.00	.00	.00	1997.10	3224.00	2002.09	2002.09	2003.78	137.69	14.29	402.89	274.75
	2.894	294.00	.00	.00	2000.00	3224.00	2005.83	2005.28	2007.24	97.84	13.60	429.64	325.93
	2.894	294.00	.00	.00	2000.00	3224.00	2005.83	2005.28	2007.24	97.93	13.61	429.51	325.79
	2.945	271.00	.00	.00	2001.70	3224.00	2007.56	2007.54	2010.34	101.93	13.43	248.88	319.33
	2.945	271.00	.00	.00	2001.70	3224.00	2007.56	2007.54	2010.34	101.93	13.43	248.88	319.33
	2.946	.90	.00	.00	2005.11	3224.00	2010.75	2010.75	2013.57	51.30	13.49	239.04	450.11
	2.946	.90	.00	.00	2005.11	3224.00	2010.75	2010.75	2013.57	51.30	13.49	239.04	450.11

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	2.966	108.10	2021.90	2015.80	2007.29	3224.00	2014.72	.00	2016.35	20.45	10.23	315.00	712.93
*	2.966	108.10	2021.90	2015.80	2007.29	3224.00	2014.72	.00	2016.35	20.45	10.23	315.00	712.93
	2.970	32.00	.00	.00	2007.70	3224.00	2016.28	2012.29	2016.74	13.28	6.45	688.98	884.81
	2.970	32.00	.00	.00	2007.70	3224.00	2016.28	2012.29	2016.74	13.28	6.45	688.98	884.81
*	3.019	260.00	.00	.00	2010.30	3224.00	2016.54	2016.54	2018.79	94.41	13.89	348.74	331.80
*	3.019	260.00	.00	.00	2010.30	3224.00	2016.54	2016.54	2018.79	94.41	13.89	348.74	331.80
*	3.073	285.00	.00	.00	2013.00	3037.00	2021.37	2021.37	2023.38	78.10	15.21	399.01	343.64
*	3.073	285.00	.00	.00	2013.00	3037.00	2021.38	2021.38	2023.38	77.33	15.16	400.74	345.35
	3.150	407.00	.00	.00	2017.80	3037.00	2024.86	2024.20	2026.36	66.24	12.61	399.38	373.15
	3.150	407.00	.00	.00	2017.80	3037.00	2024.85	2024.19	2026.35	66.77	12.64	398.24	371.67
*	3.247	512.00	.00	.00	2023.90	3037.00	2030.14	2030.14	2031.94	127.70	16.26	375.68	268.75
*	3.247	512.00	.00	.00	2023.90	3037.00	2030.16	2030.16	2031.94	126.16	16.19	377.40	270.39
*	3.344	512.00	.00	.00	2027.90	3037.00	2036.07	2036.07	2037.82	87.96	16.15	404.22	323.83
*	3.344	512.00	.00	.00	2027.90	3037.00	2036.07	2036.07	2037.82	87.50	16.12	405.20	324.67
*	3.438	497.00	.00	.00	2035.80	3037.00	2042.67	2042.67	2044.48	109.42	15.59	411.57	290.33
*	3.438	497.00	.00	.00	2035.80	3037.00	2042.69	2042.69	2044.47	107.67	15.50	414.08	292.68
	3.534	509.00	.00	.00	2039.90	3037.00	2046.99	2045.91	2048.24	52.67	11.26	456.41	418.48
*	3.534	509.00	.00	.00	2039.90	3037.00	2046.98	2045.91	2048.23	53.16	11.30	454.91	416.52
*	3.627	492.00	.00	.00	2046.60	3037.00	2051.76	2051.76	2053.29	119.22	13.80	438.16	278.14
*	3.627	492.00	.00	.00	2046.60	3037.00	2051.77	2051.77	2053.29	119.05	13.79	438.38	278.35
	3.723	506.00	.00	.00	2051.60	2849.00	2057.20	2057.07	2058.65	97.16	13.08	426.19	289.04
	3.723	506.00	.00	.00	2051.60	2849.00	2057.20	2057.07	2058.65	97.29	13.09	425.97	288.84
	3.809	455.00	.00	.00	2056.90	2849.00	2061.96	2061.88	2062.96	91.30	11.82	529.66	298.16
	3.809	455.00	.00	.00	2056.90	2849.00	2061.96	2061.88	2062.96	91.16	11.82	529.96	298.40
	-.817	502.00	.00	.00	1840.00	3403.00	1844.13	.00	1845.00	104.09	9.12	637.93	333.55
	-.817	502.00	.00	.00	1840.00	3403.00	1844.13	.00	1845.00	104.20	9.12	637.57	333.37
*	.060	320.00	.00	.00	1845.20	420.00	1848.34	1848.34	1849.01	100.66	7.16	84.96	41.86
*	.060	320.00	.00	.00	1845.20	420.00	1848.34	1848.34	1849.01	100.64	7.16	84.97	41.87
*	.110	280.00	.00	.00	1851.30	420.00	1853.86	1853.86	1854.44	123.20	7.96	102.94	37.84
*	.110	280.00	.00	.00	1851.30	420.00	1853.95	1853.95	1854.44	99.56	7.35	111.65	42.09

H S: LITTLE SAN DOMIN

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	41.290	3403.00	1780.66	.00	.00	-4.48	762.13	.00
	41.290	3403.00	1780.66	.00	.00	-4.48	762.13	.00
*	.102	3403.00	1786.18	.00	5.51	.00	202.76	500.00
*	.102	3403.00	1786.18	.00	5.51	.00	202.76	500.00
*	.160	3403.00	1791.56	.00	5.38	.00	161.13	306.00
*	.160	3403.00	1791.57	.02	5.40	.02	161.27	306.00
*	.254	3403.00	1798.58	.00	7.02	.00	309.51	496.00
*	.254	3403.00	1798.58	.00	7.01	.00	193.51	496.00
*	.344	3403.00	1805.75	.00	7.17	.00	265.37	474.00
*	.344	3403.00	1805.70	-.05	7.12	-.05	231.43	474.00
*	.427	3403.00	1812.60	.00	6.85	.00	281.72	438.00
*	.427	3403.00	1812.60	-.01	6.90	-.01	281.10	438.00
	.518	3403.00	1817.91	.00	5.31	.00	259.19	480.00
	.518	3403.00	1817.92	.00	5.32	.00	259.22	480.00
	.617	3403.00	1825.26	.00	7.35	.00	275.55	523.00
	.617	3403.00	1825.26	.00	7.34	.00	275.41	523.00
	.722	3403.00	1834.60	.00	9.34	.00	435.24	554.00
	.722	3403.00	1834.61	.00	9.35	.00	435.33	554.00
*	.817	3403.00	1844.13	.00	9.53	.00	493.00	502.00
*	.817	3403.00	1844.13	.00	9.52	.00	492.76	502.00
	.903	3403.00	1848.02	.00	3.89	.00	655.68	454.00
	.903	3403.00	1848.02	.00	3.89	.00	655.70	454.00
*	1.000	3403.00	1856.46	.00	8.44	.00	355.34	512.00
*	1.000	3403.00	1856.46	.00	8.44	.00	355.34	512.00
*	1.096	3403.00	1864.44	.00	7.98	.00	391.63	509.00
*	1.096	3403.00	1864.44	.00	7.98	.00	391.63	509.00
	1.189	3299.00	1870.81	.00	6.37	.00	385.37	493.00
	1.189	3299.00	1870.81	.00	6.37	.00	385.37	493.00
*	1.283	3299.00	1880.77	.00	9.95	.00	170.97	496.00
	1.283	3299.00	1880.77	.00	9.95	.00	170.97	496.00
*	1.375	3299.00	1888.89	.00	8.12	.00	206.59	485.00
*	1.375	3299.00	1888.89	.01	8.13	.01	206.63	485.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	1.470	3299.00	1898.46	.00	9.57	.00	164.25	502.00
*	1.470	3299.00	1898.46	.00	9.57	.00	164.27	502.00
	1.563	3299.00	1905.15	.00	6.69	.00	362.04	494.00
	1.563	3299.00	1905.15	.00	6.69	.00	362.03	494.00
*	1.662	3299.00	1914.73	.00	9.58	.00	122.52	523.00
*	1.662	3299.00	1914.78	.05	9.63	.05	125.18	523.00
	1.754	3299.00	1921.51	.00	6.77	.00	377.11	491.00
	1.754	3299.00	1921.48	-.02	6.70	-.02	375.90	491.00
*	1.847	3299.00	1930.25	.00	8.74	.00	159.39	491.00
*	1.847	3299.00	1930.25	.00	8.77	.00	159.39	491.00
*	1.912	3299.00	1934.67	.00	4.42	.00	60.38	343.00
*	1.912	3299.00	1934.67	.00	4.42	.00	60.37	343.00
*	1.931	3299.00	1937.47	.00	2.80	.00	78.77	100.00
*	1.931	3299.00	1937.47	.00	2.81	.00	78.77	100.00
*	1.932	3299.00	1938.41	.00	.94	.00	85.92	.10
*	1.932	3299.00	1938.41	.00	.94	.00	85.93	.10
	1.933	3299.00	1940.16	.00	1.75	.00	97.65	5.00
*	1.933	3299.00	1940.16	.00	1.75	.00	97.65	5.00
	1.934	3299.00	1940.48	.00	.32	.00	94.60	.10
	1.934	3299.00	1940.48	.00	.32	.00	94.60	.10
	1.936	3299.00	1940.46	.00	-.01	.00	92.74	14.50
	1.936	3299.00	1940.46	.00	-.01	.00	92.74	14.50
	1.939	3299.00	1940.48	.00	.02	.00	92.89	14.70
	1.939	3299.00	1940.48	.00	.02	.00	92.89	14.70
*	1.980	3299.00	1947.37	.00	6.89	.00	40.72	206.00
*	1.980	3299.00	1947.38	.00	6.89	.00	40.72	206.00
*	2.053	3299.00	1951.41	.00	4.04	.00	61.75	380.00
*	2.053	3299.00	1951.41	.00	4.04	.00	61.75	380.00
*	2.054	3299.00	1954.33	.00	2.92	.00	61.09	.10
*	2.054	3299.00	1954.33	.00	2.92	.00	61.09	.10
*	2.056	3299.00	1955.56	.00	1.23	.00	42.70	12.00
*	2.056	3299.00	1955.56	.00	1.23	.00	42.70	12.00
*	2.097	3299.00	1959.11	.00	3.55	.00	42.70	217.00
	2.097	3299.00	1959.11	.00	3.55	.00	42.70	217.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	2.131	3224.00	1960.90	.00	1.78	.00	164.29	182.00
*	2.131	3224.00	1960.91	.01	1.79	.01	164.40	182.00
*	2.194	3224.00	1966.26	.00	5.37	.00	82.07	333.00
*	2.194	3224.00	1966.28	.01	5.37	.01	82.12	333.00
	2.267	3224.00	1969.99	.00	3.73	.00	127.77	385.00
	2.267	3224.00	1969.99	-.01	3.71	-.01	127.72	385.00
*	2.360	3224.00	1974.92	.00	4.93	.00	120.22	491.00
*	2.360	3224.00	1974.93	.00	4.94	.00	120.24	491.00
	2.455	3224.00	1979.53	.00	4.61	.00	98.07	502.00
	2.455	3224.00	1979.52	.00	4.60	.00	98.04	502.00
	2.550	3224.00	1983.84	.00	4.31	.00	105.95	502.00
	2.550	3224.00	1983.84	.00	4.32	.00	105.97	502.00
*	2.646	3224.00	1988.96	.00	5.13	.00	112.09	507.00
*	2.646	3224.00	1988.97	.00	5.13	.00	112.10	507.00
*	2.746	3224.00	1995.88	.00	6.91	.00	104.03	528.00
*	2.746	3224.00	1995.88	.00	6.91	.00	104.02	528.00
	2.838	3224.00	2002.09	.00	6.22	.00	114.65	485.00
*	2.838	3224.00	2002.09	.00	6.22	.00	114.66	485.00
	2.894	3224.00	2005.83	.00	3.74	.00	104.59	294.00
	2.894	3224.00	2005.83	.00	3.73	.00	104.58	294.00
	2.945	3224.00	2007.56	.00	1.73	.00	45.00	271.00
	2.945	3224.00	2007.56	.00	1.73	.00	45.00	271.00
*	2.946	3224.00	2010.75	.00	3.19	.00	42.40	.90
*	2.946	3224.00	2010.75	.00	3.19	.00	42.40	.90
*	2.966	3224.00	2014.72	.00	3.97	.00	42.40	108.10
*	2.966	3224.00	2014.72	.00	3.97	.00	42.40	108.10
	2.970	3224.00	2016.28	.00	1.56	.00	96.08	32.00
	2.970	3224.00	2016.28	.00	1.56	.00	96.08	32.00
*	3.019	3224.00	2016.54	.00	.25	.00	83.17	260.00
*	3.019	3224.00	2016.54	.00	.25	.00	83.17	260.00
*	3.073	3037.00	2021.37	.00	4.83	.00	103.19	285.00
*	3.073	3037.00	2021.38	.02	4.85	.02	103.34	285.00
	3.150	3037.00	2024.86	.00	3.49	.00	85.44	407.00
	3.150	3037.00	2024.85	-.01	3.46	-.01	85.39	407.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	3.247	3037.00	2030.14	.00	5.28	.00	102.08	512.00
*	3.247	3037.00	2030.16	.02	5.31	.02	102.24	512.00
*	3.344	3037.00	2036.07	.00	5.93	.00	122.93	512.00
*	3.344	3037.00	2036.07	.01	5.92	.01	123.05	512.00
*	3.438	3037.00	2042.67	.00	6.60	.00	109.83	497.00
*	3.438	3037.00	2042.69	.02	6.62	.02	110.12	497.00
*	3.534	3037.00	2046.99	.00	4.32	.00	90.62	509.00
*	3.534	3037.00	2046.98	-.02	4.29	-.02	90.56	509.00
*	3.627	3037.00	2051.76	.00	4.77	.00	130.16	492.00
*	3.627	3037.00	2051.77	.00	4.79	.00	130.17	492.00
	3.723	2849.00	2057.20	.00	5.43	.00	126.21	506.00
	3.723	2849.00	2057.20	.00	5.43	.00	126.20	506.00
	3.809	2849.00	2061.96	.00	4.76	.00	208.65	455.00
	3.809	2849.00	2061.96	.00	4.77	.00	208.66	455.00
	-.817	3403.00	1844.13	.00	-217.83	.00	493.00	502.00
	-.817	3403.00	1844.13	.00	-217.83	.00	492.76	502.00
	.060	420.00	1848.34	.00	4.21	.00	72.34	320.00
*	.060	420.00	1848.34	.00	4.21	.00	72.35	320.00
*	.110	420.00	1853.86	.00	5.52	.00	92.90	280.00
*	.110	420.00	1853.95	.09	5.61	.09	94.00	280.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=      .102  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .102  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .102  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .102  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .160  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .160  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .160  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .160  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .254  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .254  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .254  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .254  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .344  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .344  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .344  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .344  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .427  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .427  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .427  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=      .518  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=      .518  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .817  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .817  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .817  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .817  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     1.096  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     1.096  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     1.283  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.283  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.283  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.283  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.375  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.375  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.375  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     1.470  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     1.662  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     1.847  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.847  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.847  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.847  PROFILE=  2  MINIMUM SPECIFIC ENERGY

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CAUTION SECNO=     1.912  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.912  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.912  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.931  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.931  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.931  PROFILE=  2  CRITICAL DEPTH ASSUMED
TION SECNO=        1.931  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.932  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.932  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.932  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.932  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     1.933  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     1.933  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     1.980  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.980  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.980  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.980  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     2.053  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     2.053  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     2.054  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.054  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     2.054  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.054  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     2.056  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.056  PROFILE=  1  MINIMUM SPECIFIC ENERGY
UTION SECNO=       2.056  PROFILE=  2  CRITICAL DEPTH ASSUMED
TION SECNO=        2.056  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     2.097  PROFILE=  1  HYDRAULIC JUMP D.S.
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WARNING SECNO=     2.097  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=     2.097  PROFILE=  2  HYDRAULIC JUMP D.S.
WARNING SECNO=     2.097  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     2.131  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.131  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     2.194  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.194  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     2.646  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     2.838  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.838  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     2.838  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.838  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     2.946  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.946  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     2.946  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.946  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     2.966  PROFILE=  1  HYDRAULIC JUMP D.S.
WARNING SECNO=     2.966  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=     2.966  PROFILE=  2  HYDRAULIC JUMP D.S.
WARNING SECNO=     2.966  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     3.019  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.019  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     3.019  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     3.073  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.073  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     3.247  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.247  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     3.344  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.344  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     3.344  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.344  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     3.438  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.438  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     3.438  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.438  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     3.534  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     3.534  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     3.627  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=      .060  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .060  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .060  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .110  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .110  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .110  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .110  PROFILE=  2  MINIMUM SPECIFIC ENERGY
```

FLOODWAY DATA, WASH S: LITTLE SAN DOMIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
41.290	762.	794.	4.3	1780.7	1780.7	.0
.102	203.	539.	6.3	1786.2	1786.2	.0
.160	161.	454.	7.5	1791.6	1791.6	.0
.254	215.	465.	7.3	1798.6	1798.6	.0
.344	243.	500.	6.8	1805.6	1805.7	-.1
.427	281.	510.	6.7	1812.6	1812.6	.0
.518	259.	513.	6.6	1817.9	1817.9	.0
.617	521.	471.	7.2	1825.3	1825.3	.0
.722	896.	647.	5.3	1834.6	1834.6	.0
.817	892.	638.	5.3	1844.1	1844.1	.0
.903	656.	949.	3.6	1848.0	1848.0	.0
1.000	432.	544.	6.3	1856.5	1856.5	.0
1.096	453.	692.	4.9	1864.4	1864.4	.0
1.189	385.	631.	5.2	1870.8	1870.8	.0
1.283	171.	435.	7.6	1880.8	1880.8	.0
1.375	207.	483.	6.8	1888.9	1888.9	.0
1.470	164.	471.	7.0	1898.5	1898.5	.0
1.563	362.	709.	4.7	1905.1	1905.1	.0
1.662	483.	359.	9.2	1914.7	1914.7	.0
1.754	439.	710.	4.6	1921.5	1921.5	.0
1.847	159.	433.	7.6	1930.2	1930.2	.0
1.912	60.	304.	10.9	1934.7	1934.7	.0
1.931	79.	334.	9.9	1937.5	1937.5	.0
1.932	86.	353.	9.4	1938.4	1938.4	.0
1.933	98.	514.	6.4	1940.2	1940.2	.0
1.934	95.	534.	6.2	1940.5	1940.5	.0
1.936	93.	497.	6.6	1940.5	1940.5	.0
1.939	93.	487.	6.8	1940.5	1940.5	.0
1.980	41.	239.	13.8	1947.4	1947.4	.0
2.053	62.	522.	6.3	1951.4	1951.4	.0
2.054	61.	274.	12.0	1954.3	1954.3	.0
2.056	43.	243.	13.6	1955.6	1955.6	.0
2.097	43.	324.	10.2	1959.1	1959.1	.0
2.131	164.	500.	6.4	1960.9	1960.9	.0
2.194	82.	375.	8.6	1966.3	1966.3	.0
2.267	128.	506.	6.4	1970.0	1970.0	.0
2.360	120.	413.	7.8	1974.9	1974.9	.0
2.455	98.	403.	8.0	1979.5	1979.5	.0
2.550	106.	483.	6.7	1983.8	1983.8	.0
2.646	112.	403.	8.0	1989.0	1989.0	.0
2.746	104.	395.	8.2	1995.9	1995.9	.0
2.838	115.	403.	8.0	2002.1	2002.1	.0

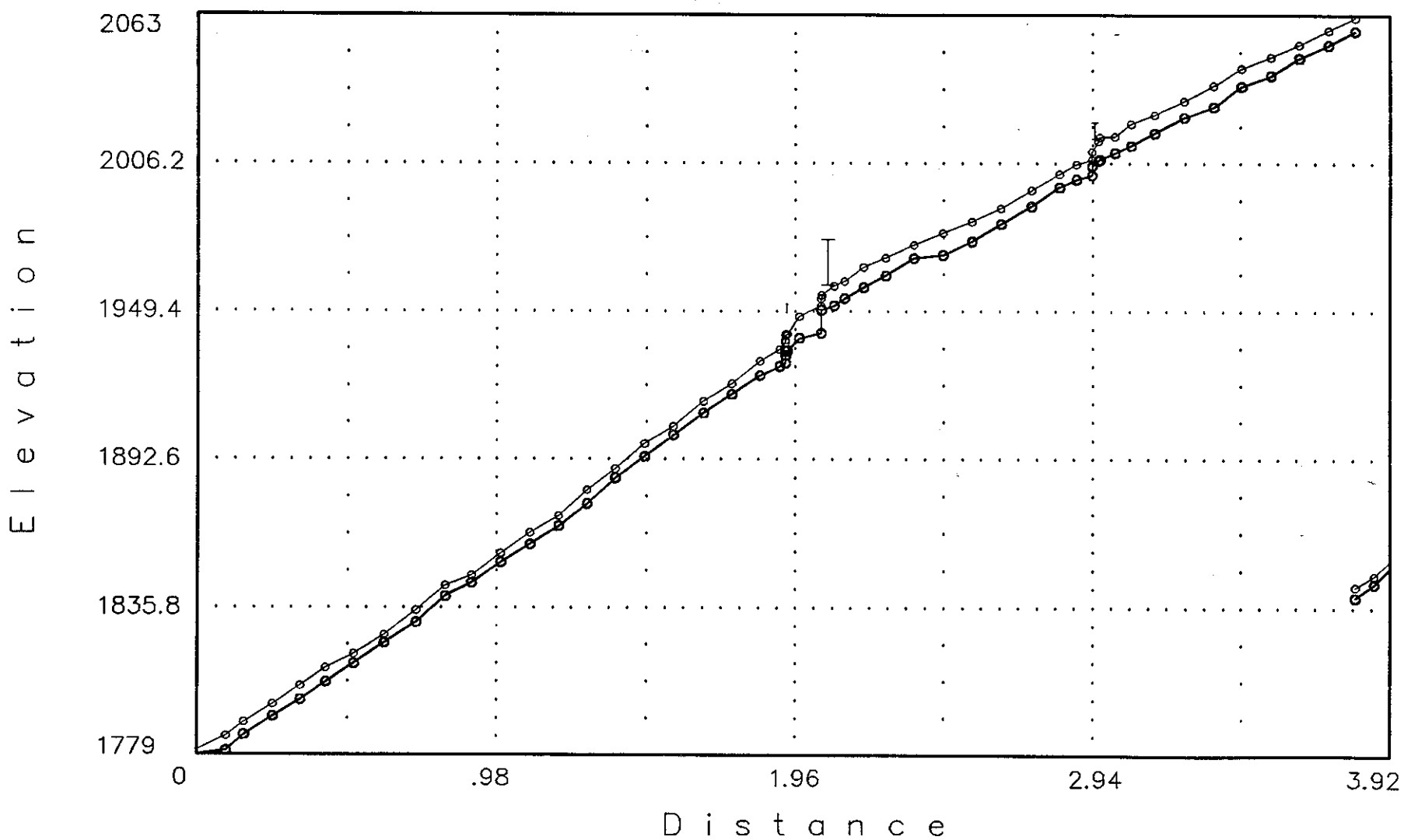
FLOODWAY DATA, WASH S: LITTLE SAN DOMIN
PROFILE NO. 2

STATION	------- FLOODWAY ------- WIDTH	SECTION AREA	MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
2.894	105.	430.	7.5	2005.8	2005.8	.0
2.945	45.	249.	13.0	2007.6	2007.6	.0
2.946	42.	239.	13.5	2010.7	2010.7	.0
2.966	42.	315.	10.2	2014.7	2014.7	.0
2.970	96.	689.	4.7	2016.3	2016.3	.0
3.019	83.	349.	9.2	2016.5	2016.5	.0
3.073	103.	401.	7.6	2021.4	2021.4	.0
3.150	85.	398.	7.6	2024.9	2024.9	.0
3.247	102.	377.	8.0	2030.1	2030.1	.0
3.344	140.	405.	7.5	2036.1	2036.1	.0
3.438	110.	414.	7.3	2042.7	2042.7	.0
3.534	91.	455.	6.7	2047.0	2047.0	.0
3.627	130.	438.	6.9	2051.8	2051.8	.0
3.723	126.	426.	6.7	2057.2	2057.2	.0
3.809	209.	530.	5.4	2062.0	2062.0	.0
-.817	892.	638.	5.3	1844.1	1844.1	.0
.060	133.	85.	4.9	1848.3	1848.3	.0
.110	94.	112.	3.8	1854.0	1853.9	.1

<<<<<< WS ELEV. & BED ELEV. vs DISTANCE(mi) >>>>>>

Profile No. 1
Profile No. 2

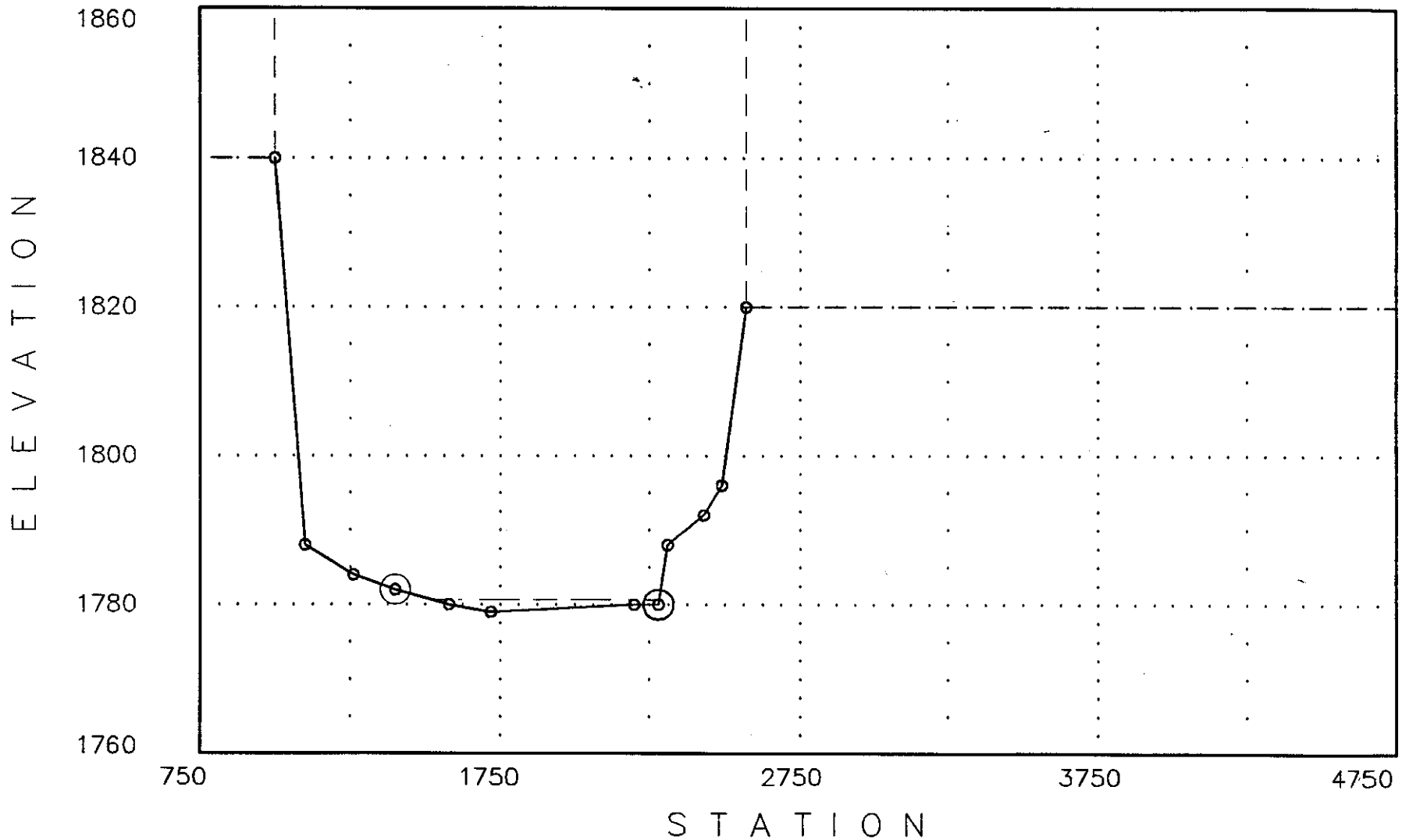
(FN=WASHS.O)



<<<<<< Cross Section: 41.29: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1780.66
Q2= 3403 WS2= 1780.66

Manning-n's: n-lob = .04 n-ch = .03 n-rob = .04

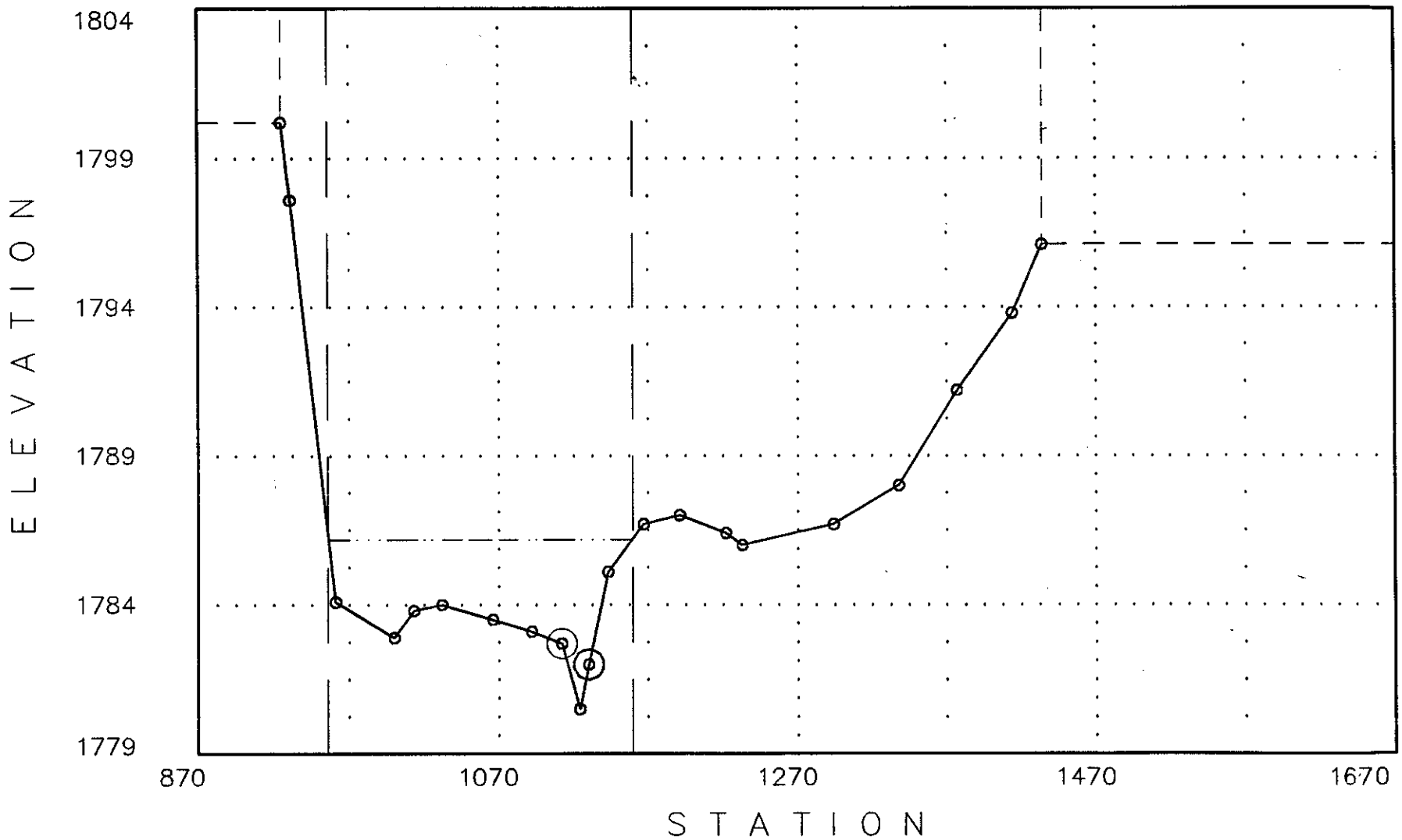


08-19-1992

<<<<<< Cross Section: .102: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1786.18
Q2= 3403 WS2= 1786.18

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

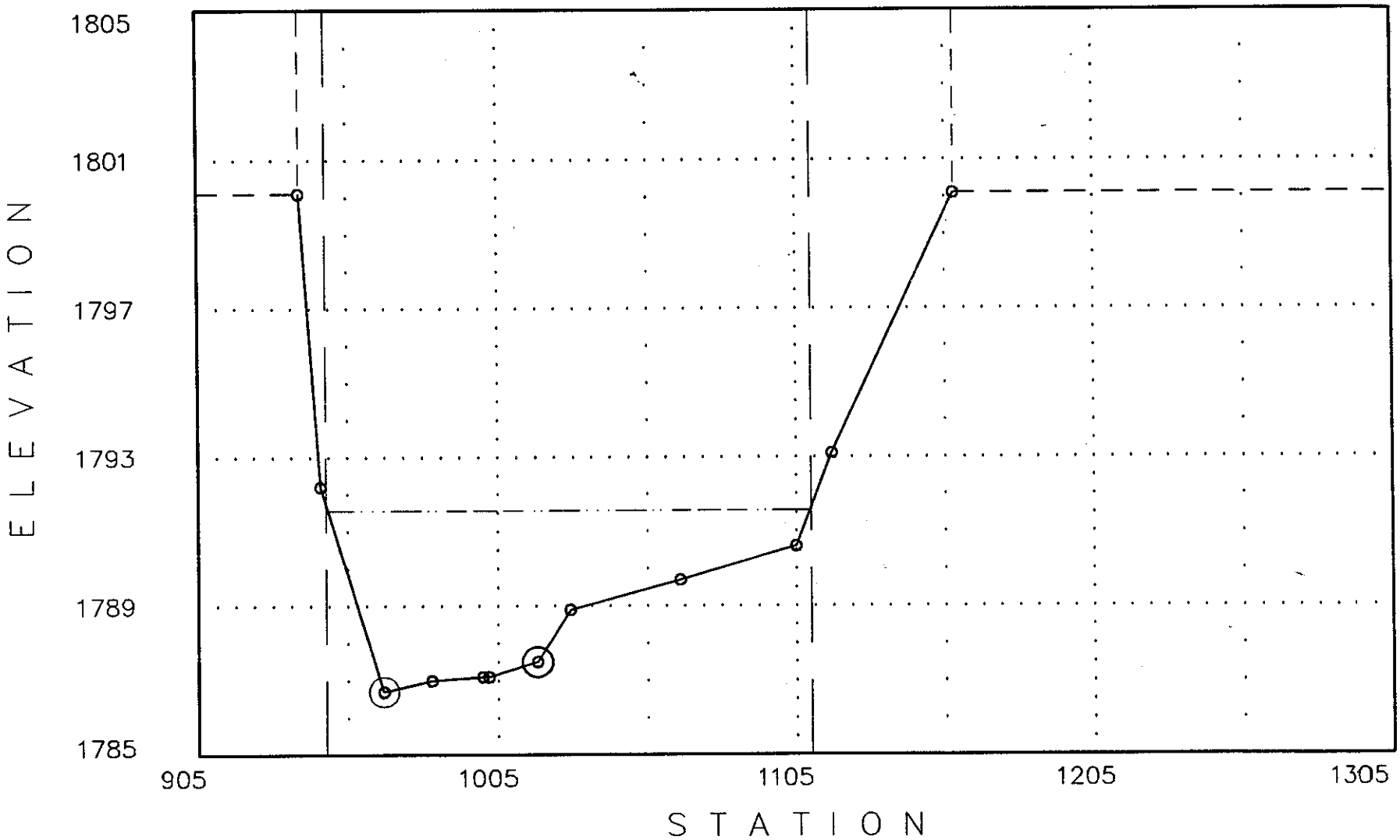


08-19-1992

<<<<<< Cross Section: .16: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1791.56
Q2= 3403 WS2= 1791.57

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

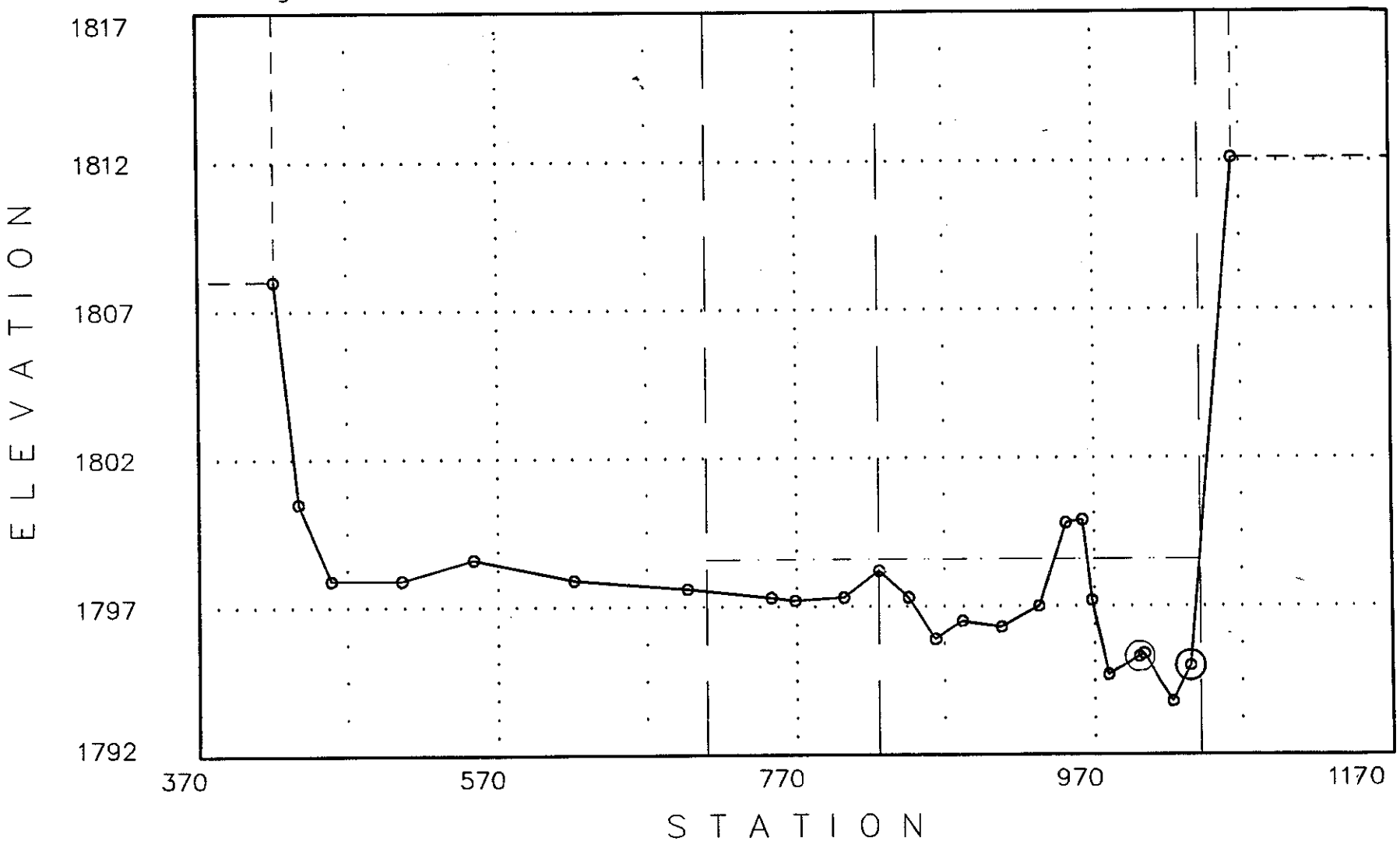


08-19-1992

<<<<<< Cross Section: .254: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1798.58
Q2= 3403 WS2= 1798.58

Manning-n's: n-lob = .05 n-ch = .035 n-rob = .05

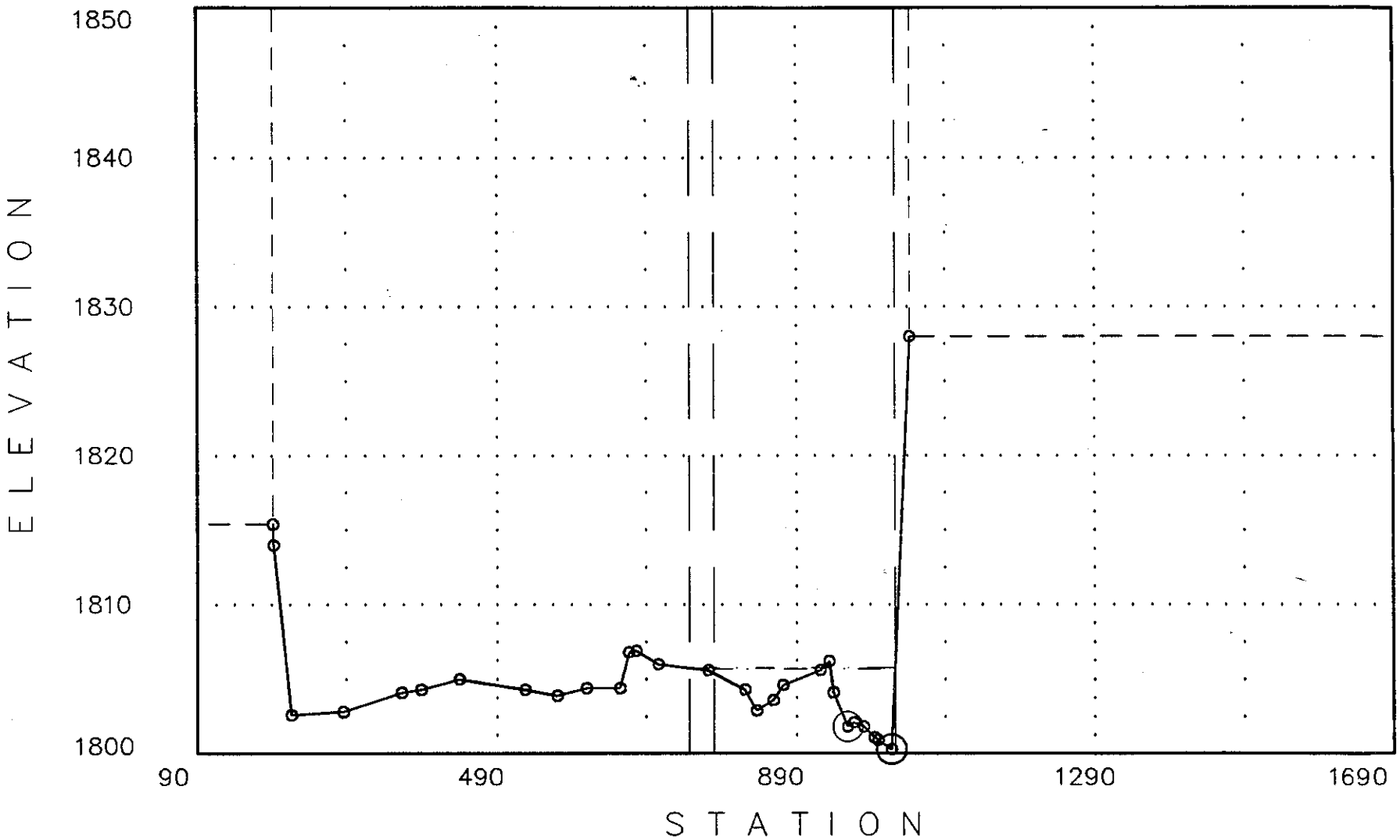


08-19-1992

<<<<<< Cross Section: .344: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1805.75
Q2= 3403 WS2= 1805.7

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .055

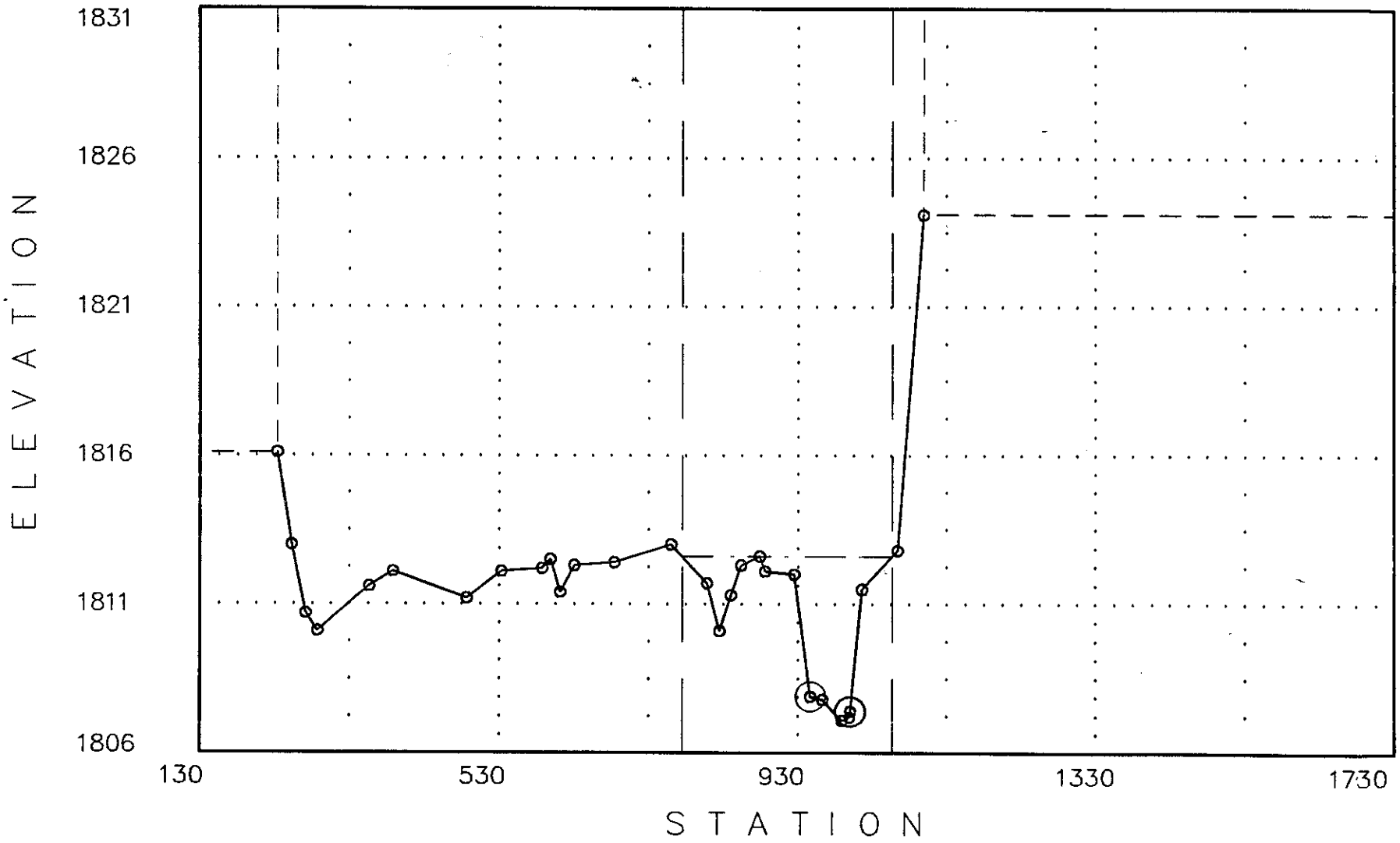


08-19-1992

<<<<<< Cross Section: .427: (FN = WASHS.0) >>>>>>

Q1= 3403 WS1= 1812.6
Q2= 3403 WS2= 1812.6

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .055

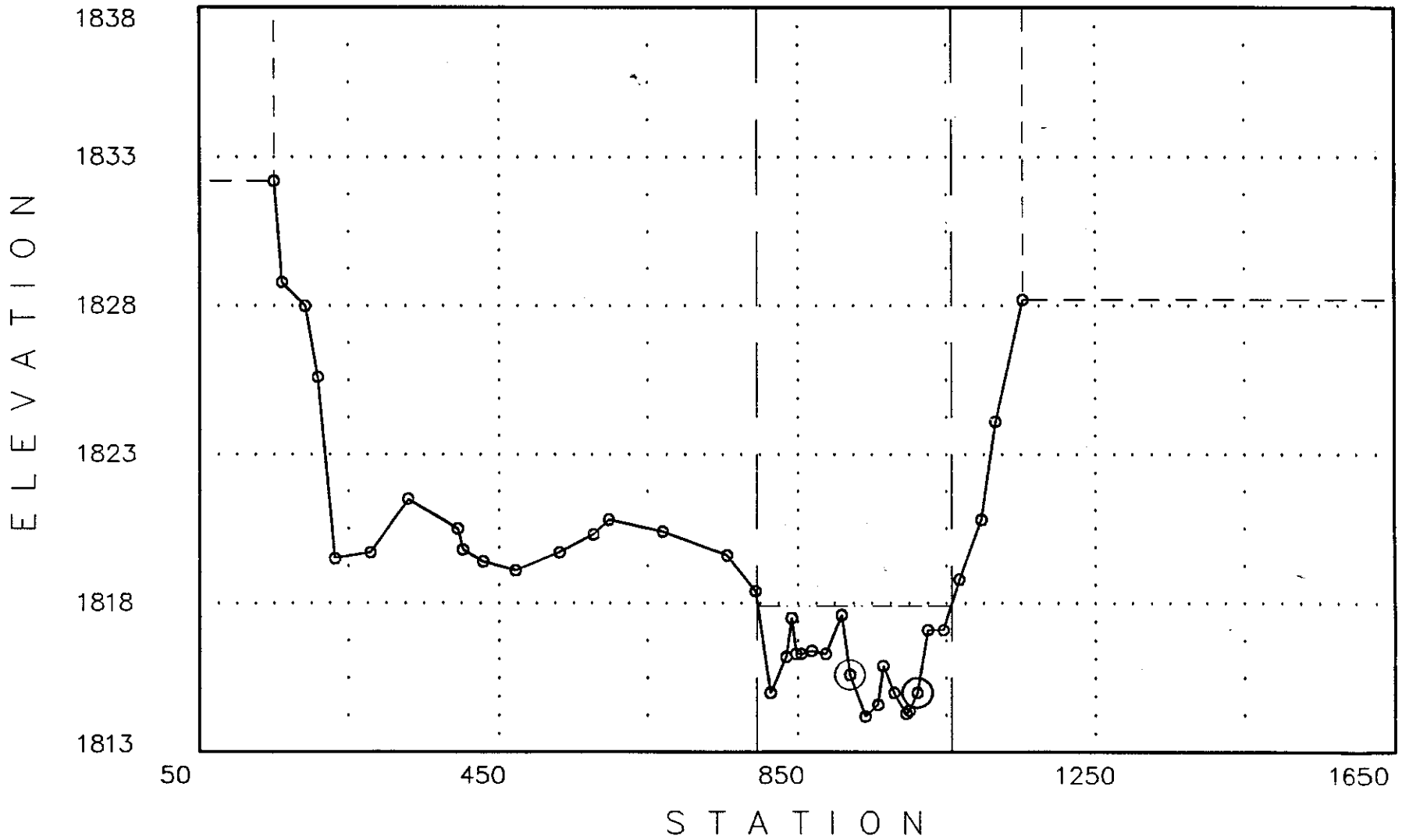


08-19-1992

<<<<<< Cross Section: .518: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1817.91
Q2= 3403 WS2= 1817.92

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .055

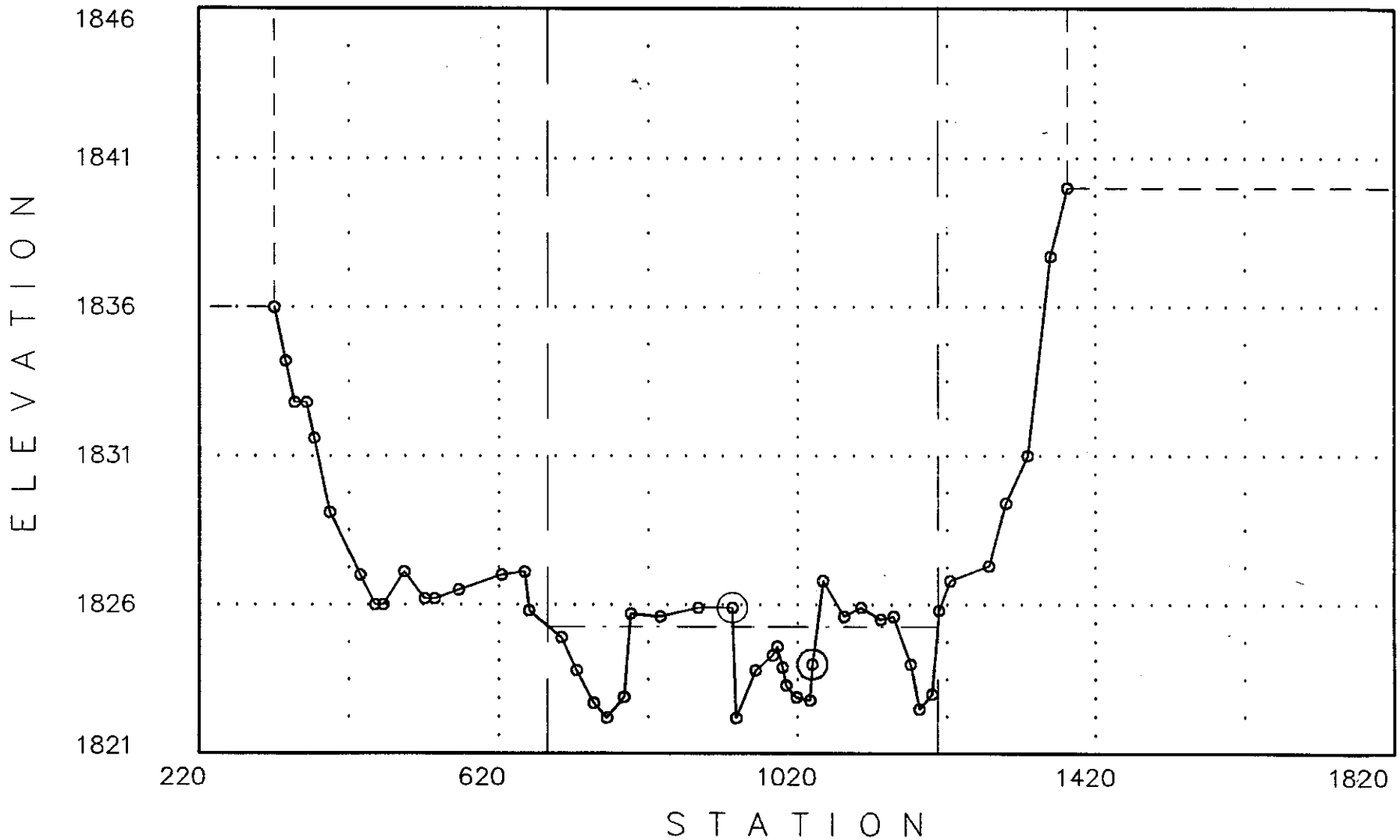


08-19-1992

<<<<<< Cross Section: .617: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1825.26
Q2= 3403 WS2= 1825.26

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .065

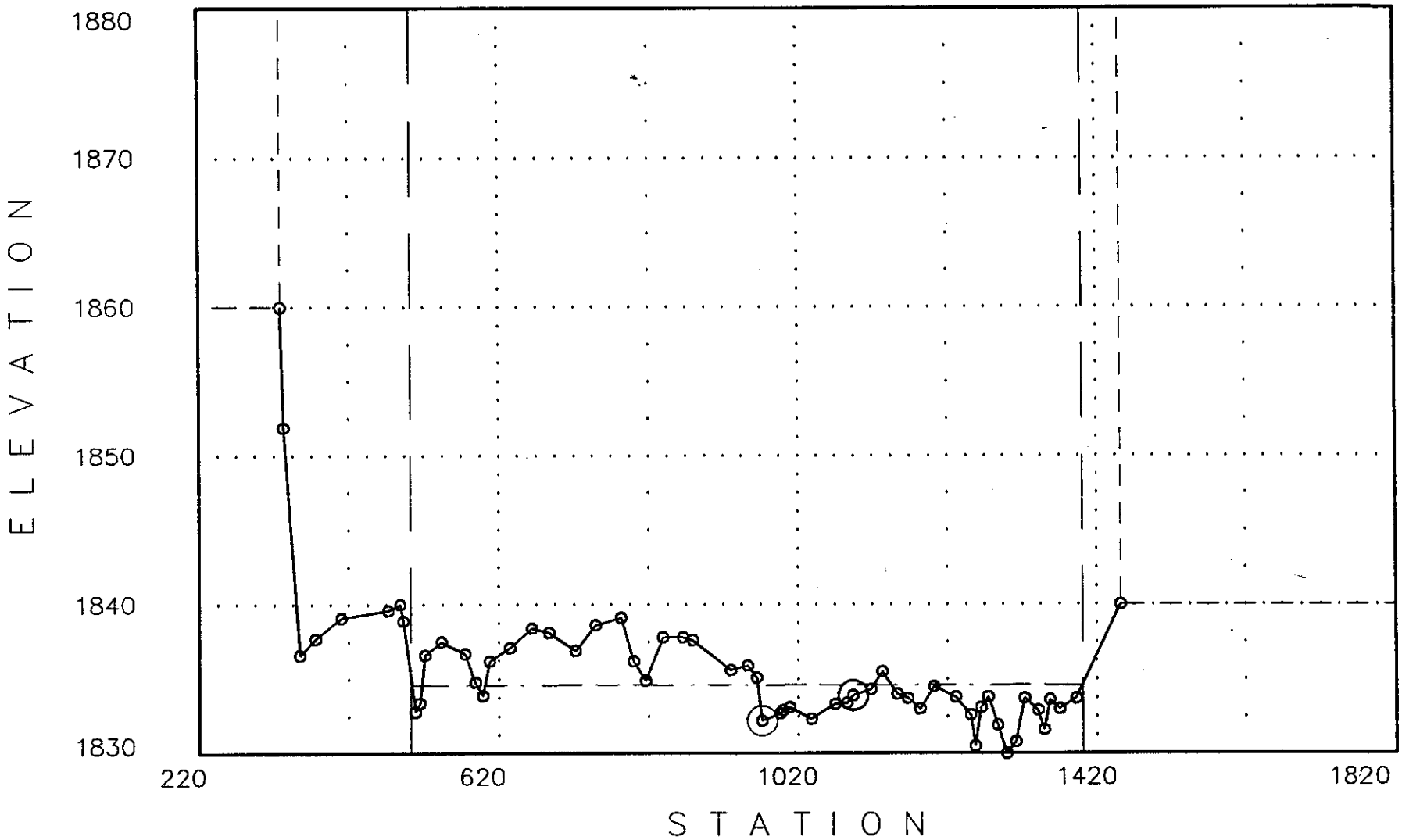


08-19-1992

<<<<<< Cross Section: .722: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1834.6
Q2= 3403 WS2= 1834.61

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .065

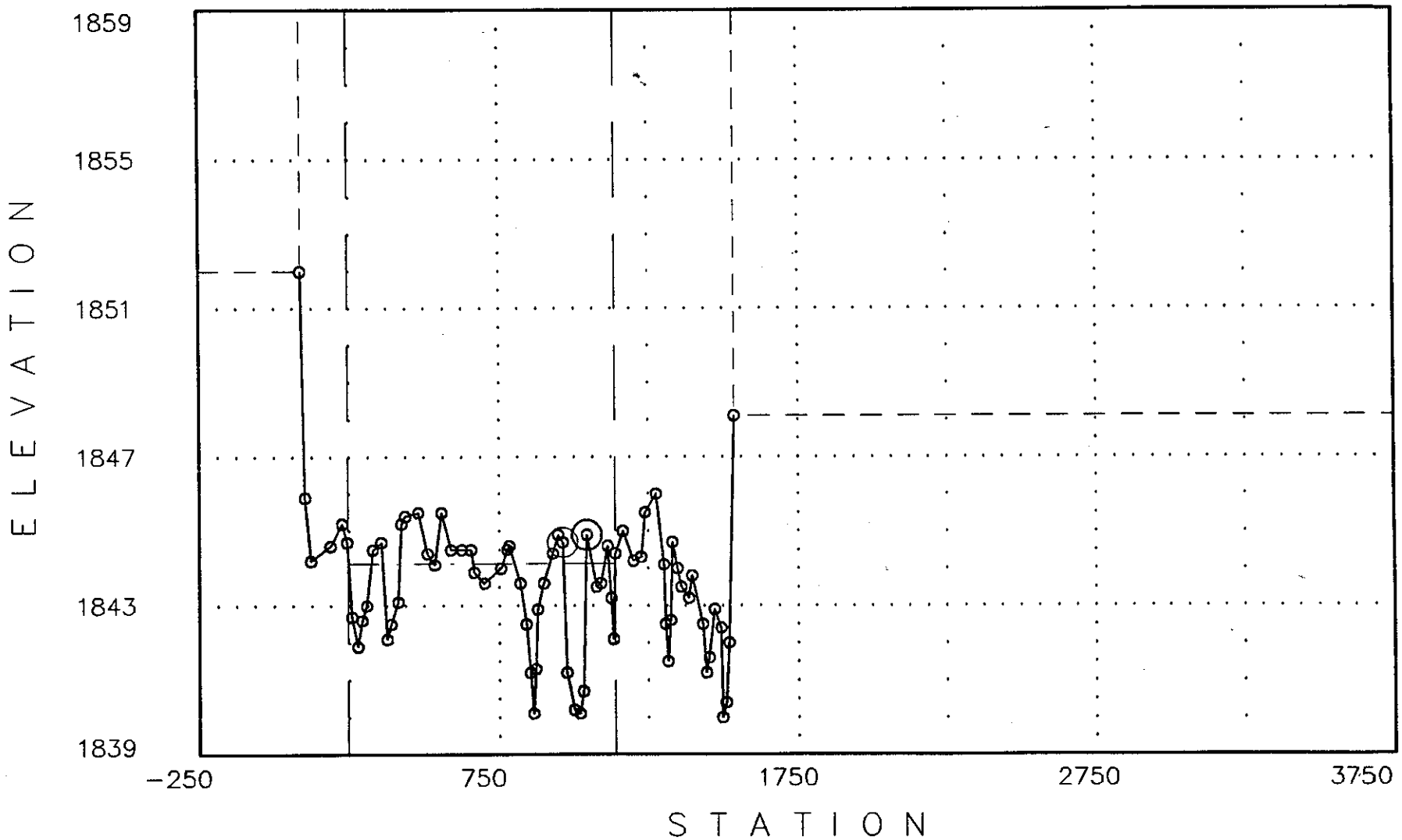


08-19-1992

<<<<<< Cross Section: .817: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1844.13
Q2= 3403 WS2= 1844.13

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .065

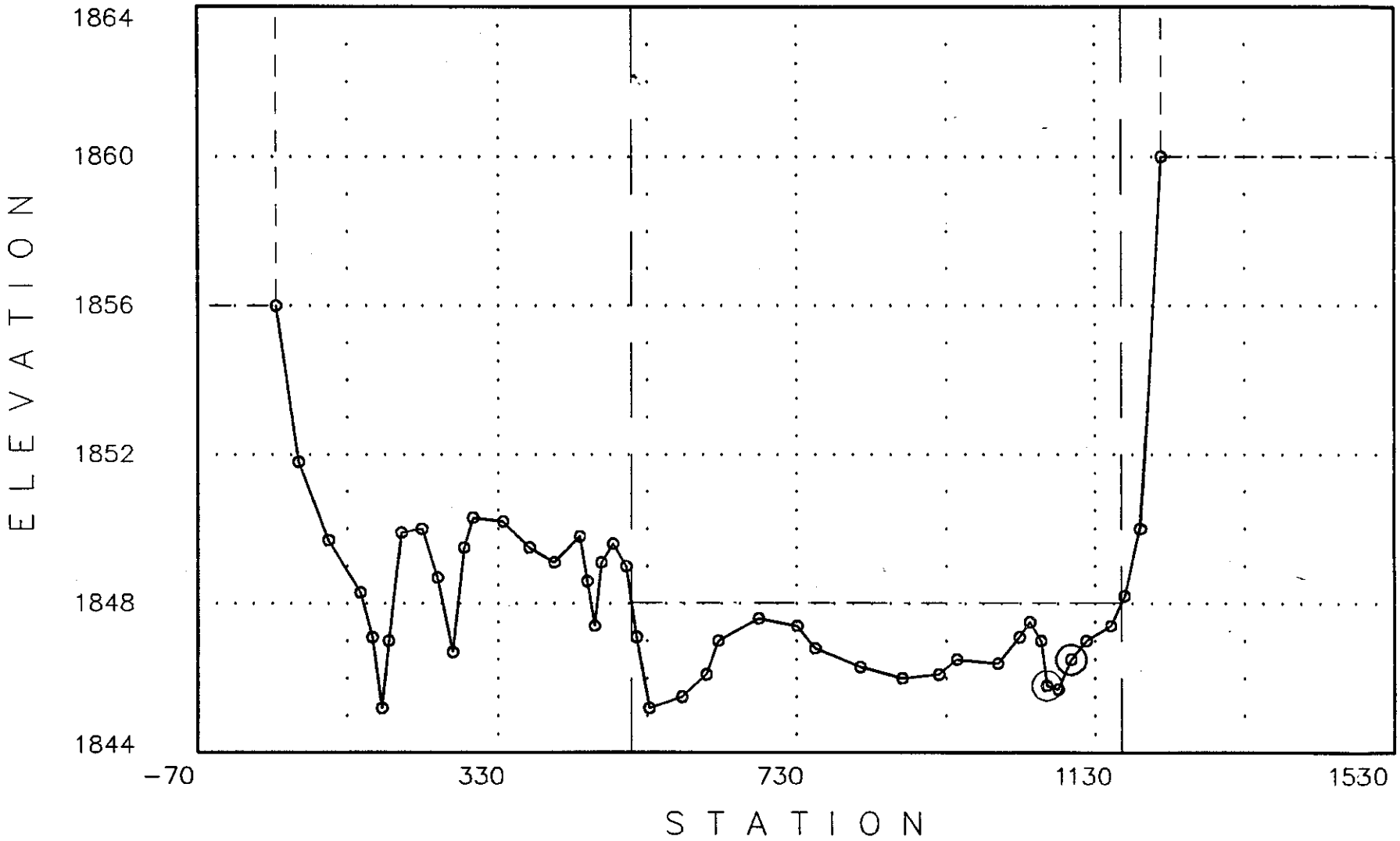


08-19-1992

<<<<<< Cross Section: .903: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1848.02
Q2= 3403 WS2= 1848.02

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .065

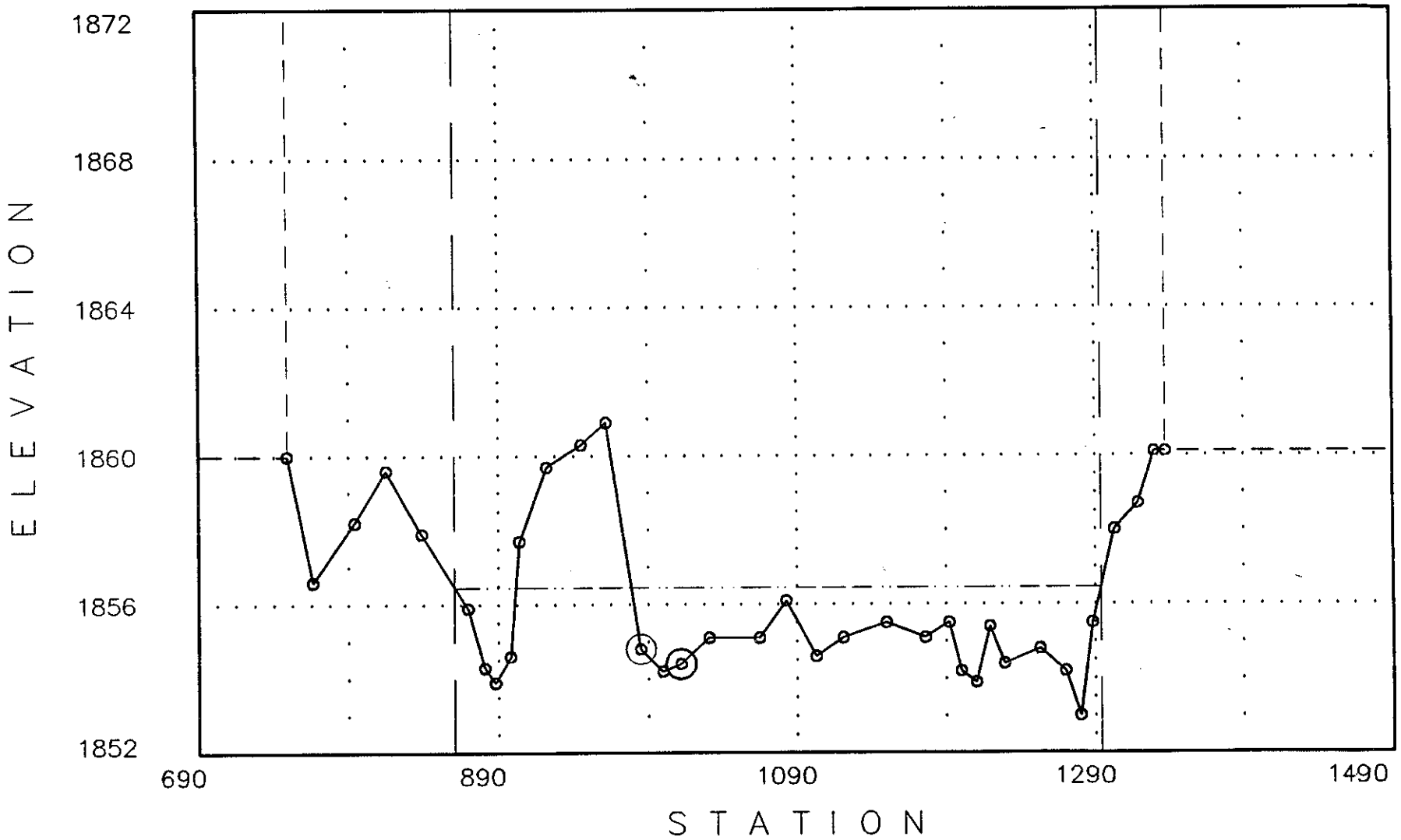


08-19-1992

<<<<<< Cross Section: 1: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1856.46
Q2= 3403 WS2= 1856.46

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

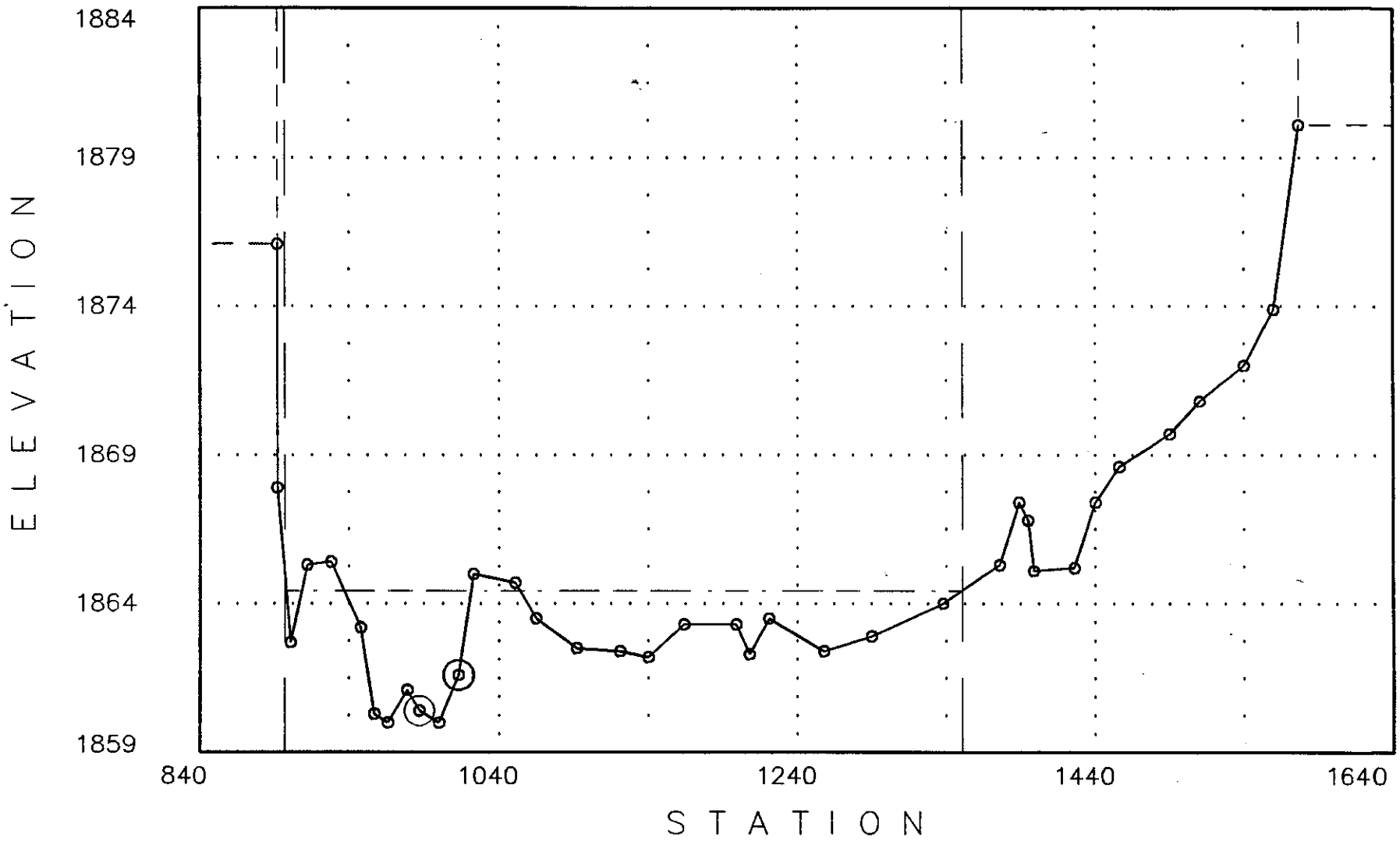


08-19-1992

<<<<<< Cross Section: 1.096: (FN = WASHS.O) >>>>>>

Q1= 3403 WS1= 1864.44
Q2= 3403 WS2= 1864.44

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

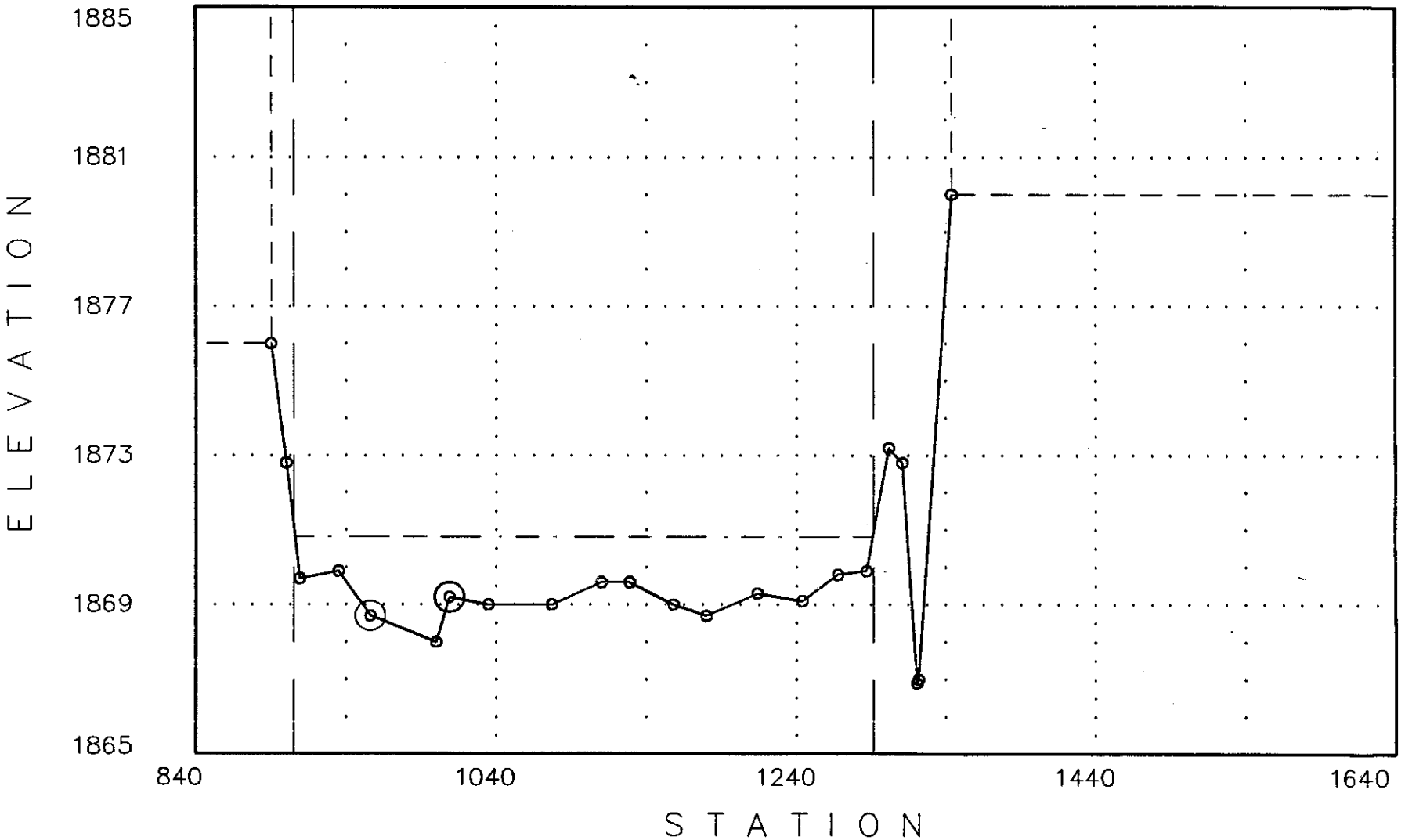


08-19-1992

<<<<<< Cross Section: 1.189: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1870.81
Q2= 3299 WS2= 1870.81

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

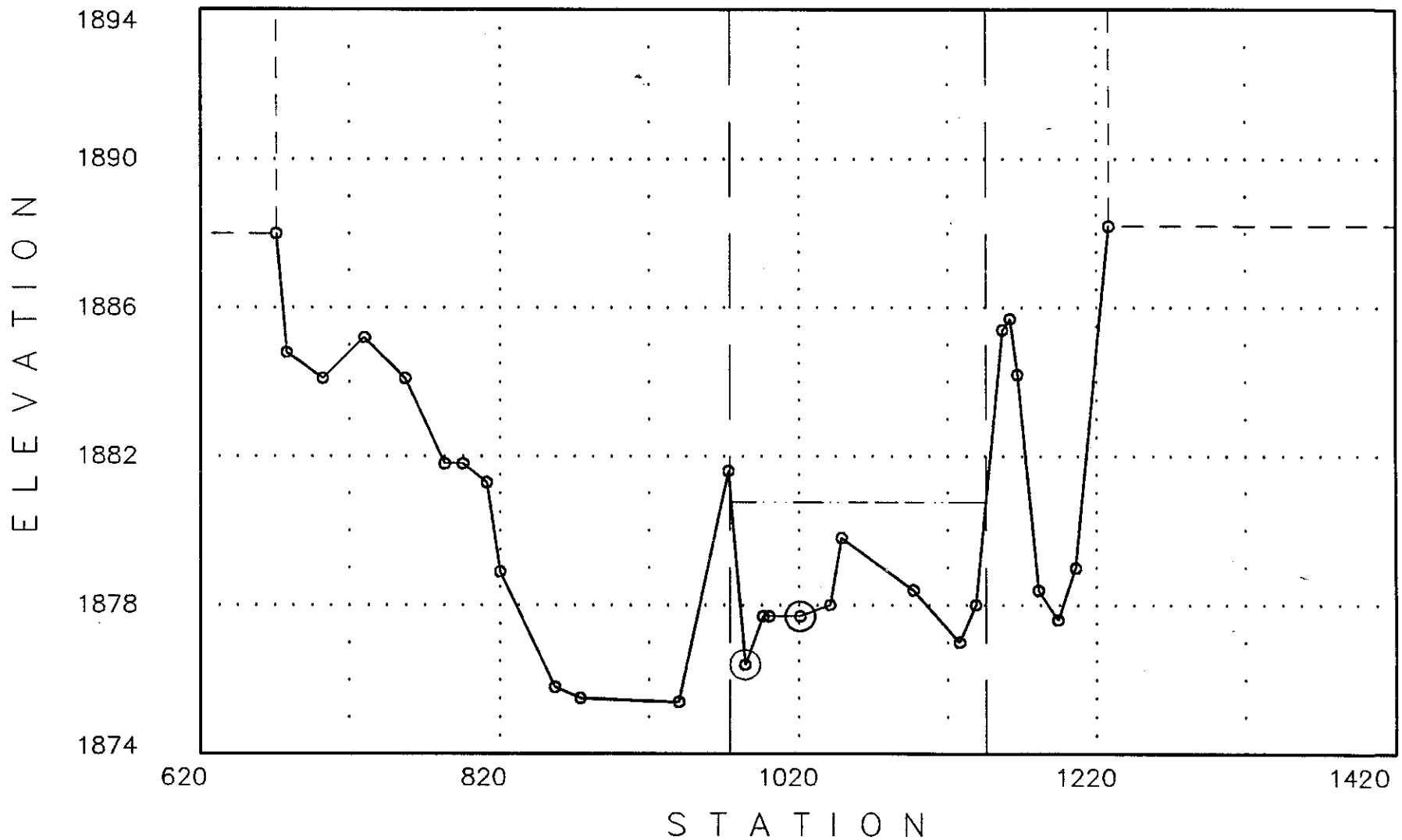


08-19-1992

<<<<<< Cross Section: 1.283: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1880.77
Q2= 3299 WS2= 1880.77

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

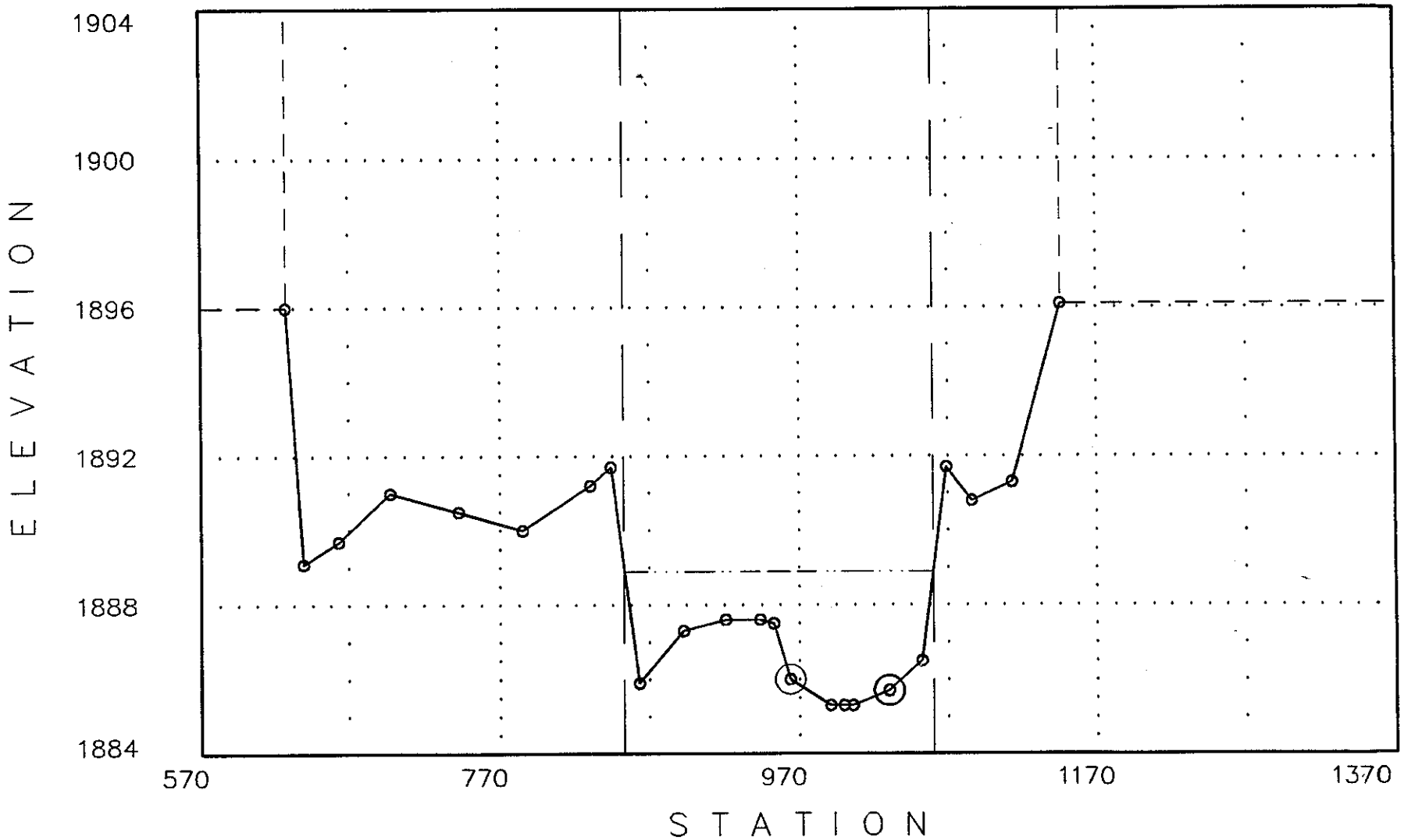


08-19-1992

<<<<<< Cross Section: 1.375: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1888.89
Q2= 3299 WS2= 1888.89

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

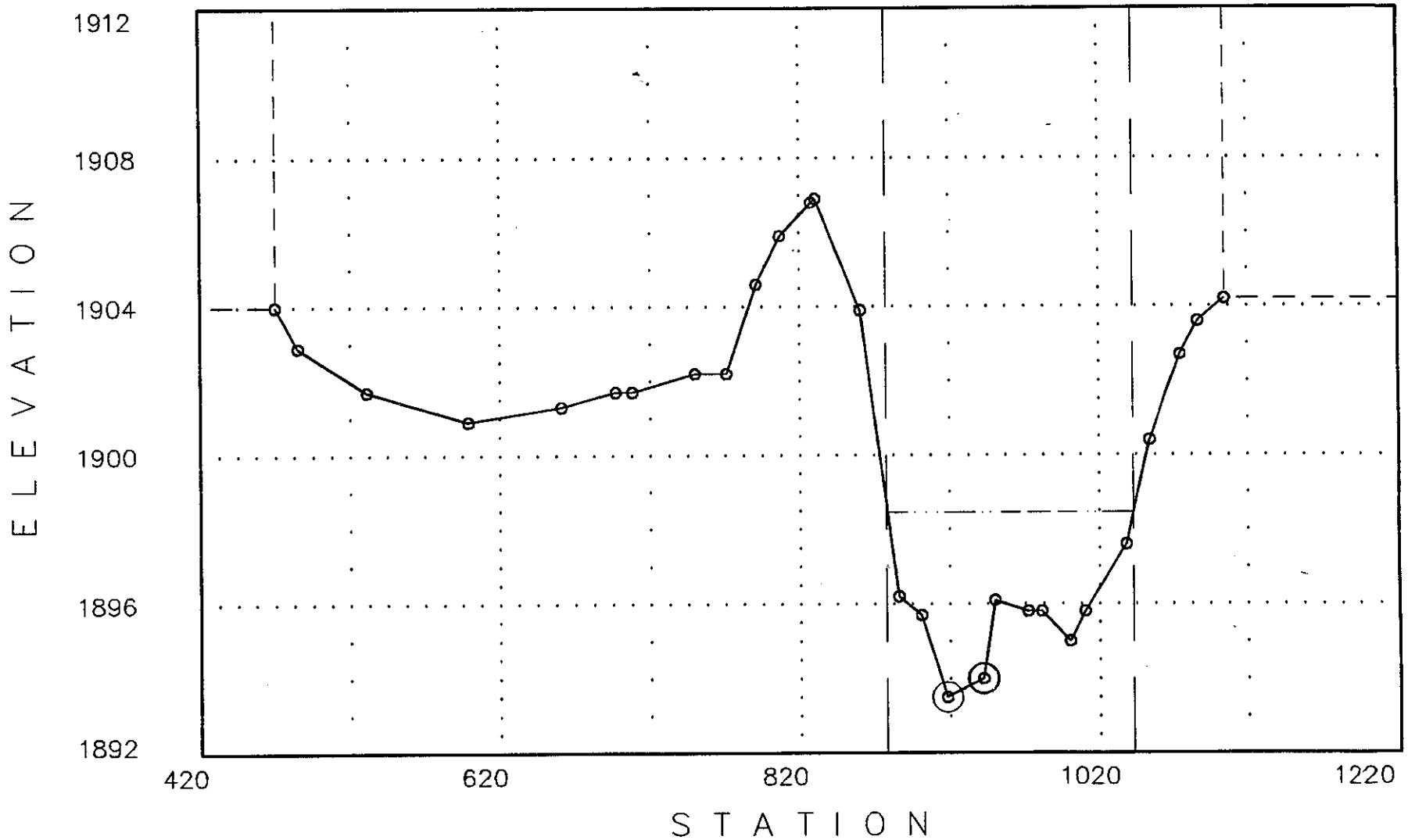


08-19-1992

<<<<<< Cross Section: 1.47: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1898.46
Q2= 3299 WS2= 1898.46

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

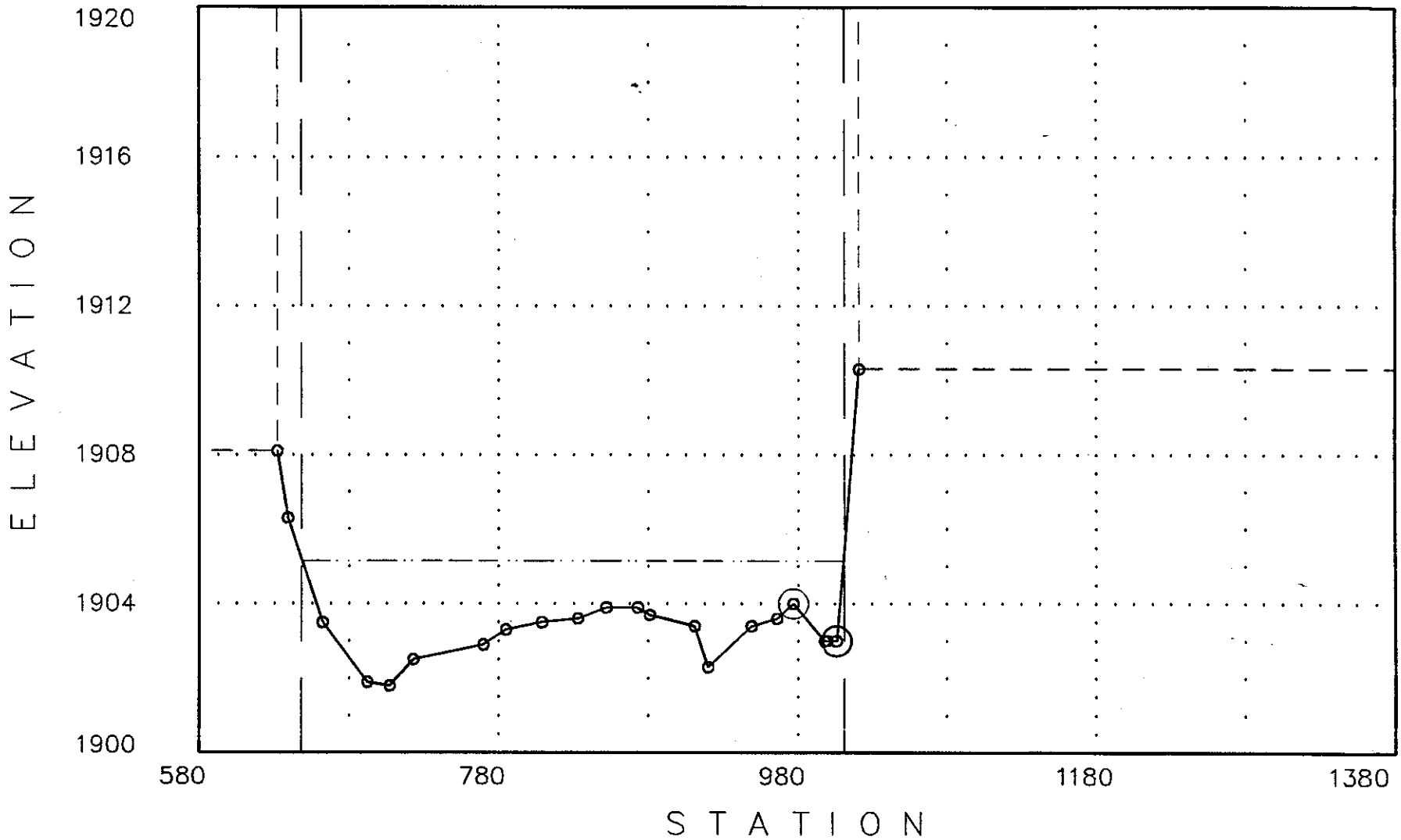


08-19-1992

<<<<<< Cross Section: 1.563: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1905.15
Q2= 3299 WS2= 1905.15

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

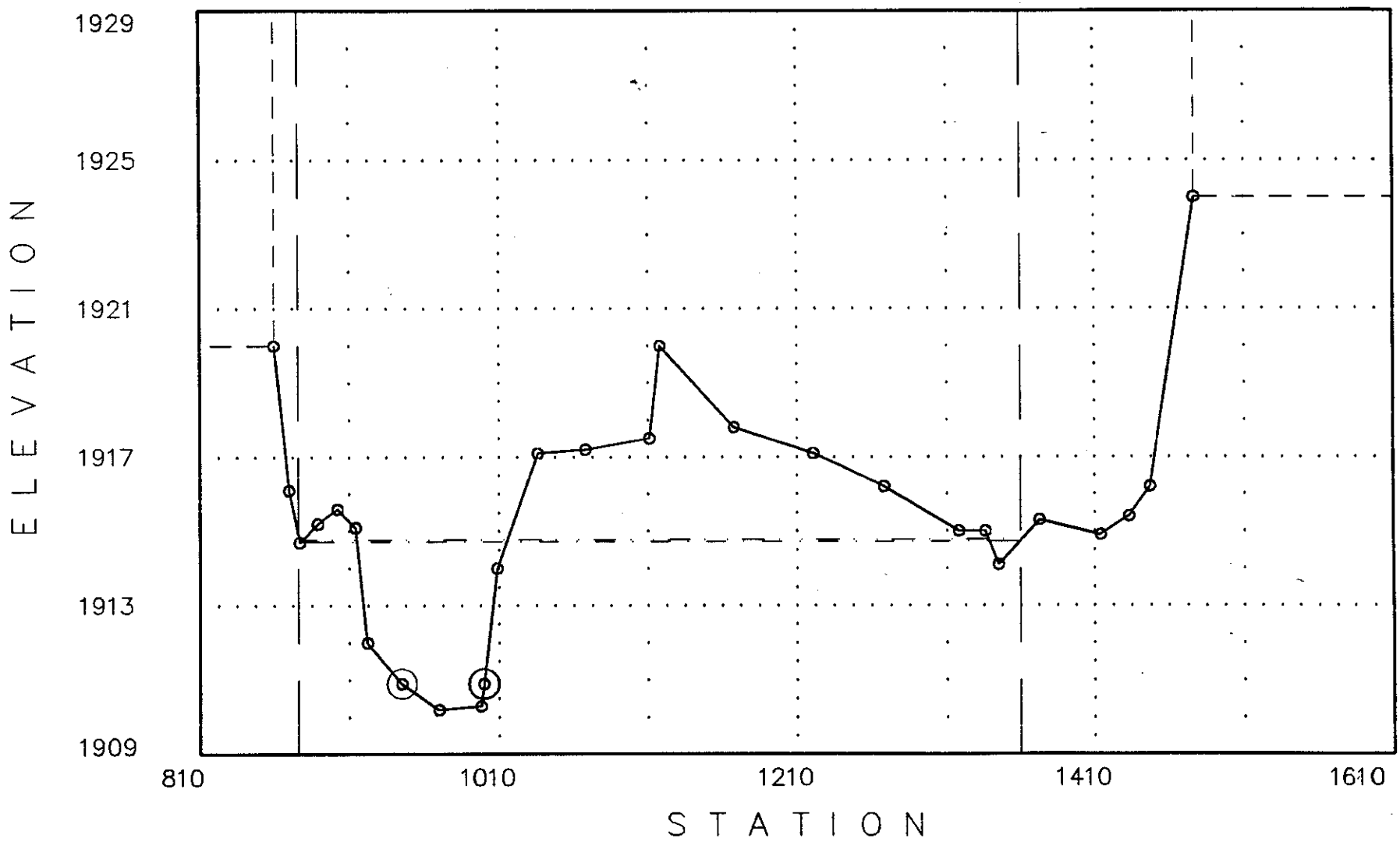


08-19-1992

<<<<<< Cross Section: 1.662: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1914.73
Q2= 3299 WS2= 1914.78

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

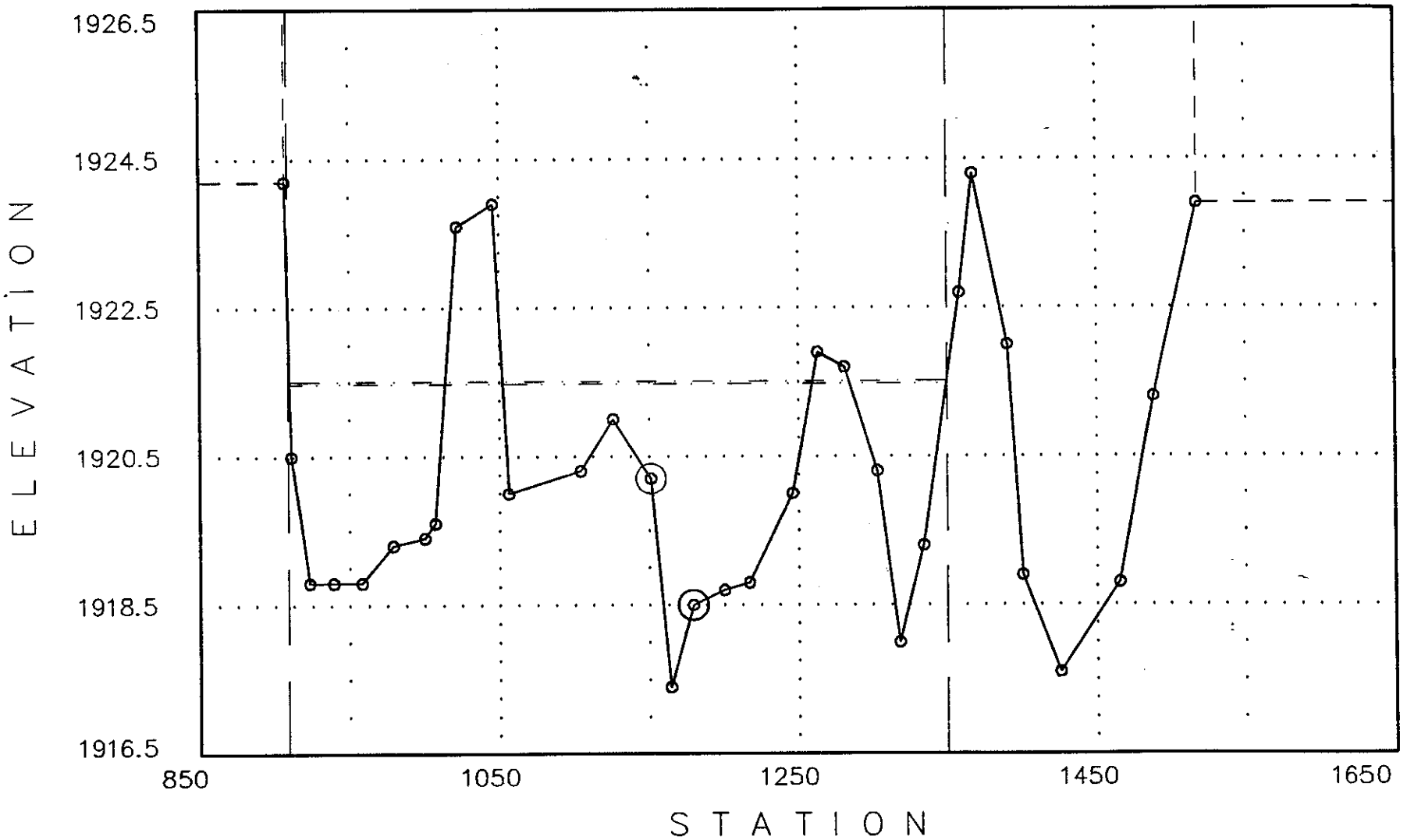


08-19-1992

<<<<<< Cross Section: 1.754: (FN = WASHS.0) >>>>>>

Q1= 3299 WS1= 1921.51
Q2= 3299 WS2= 1921.48

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

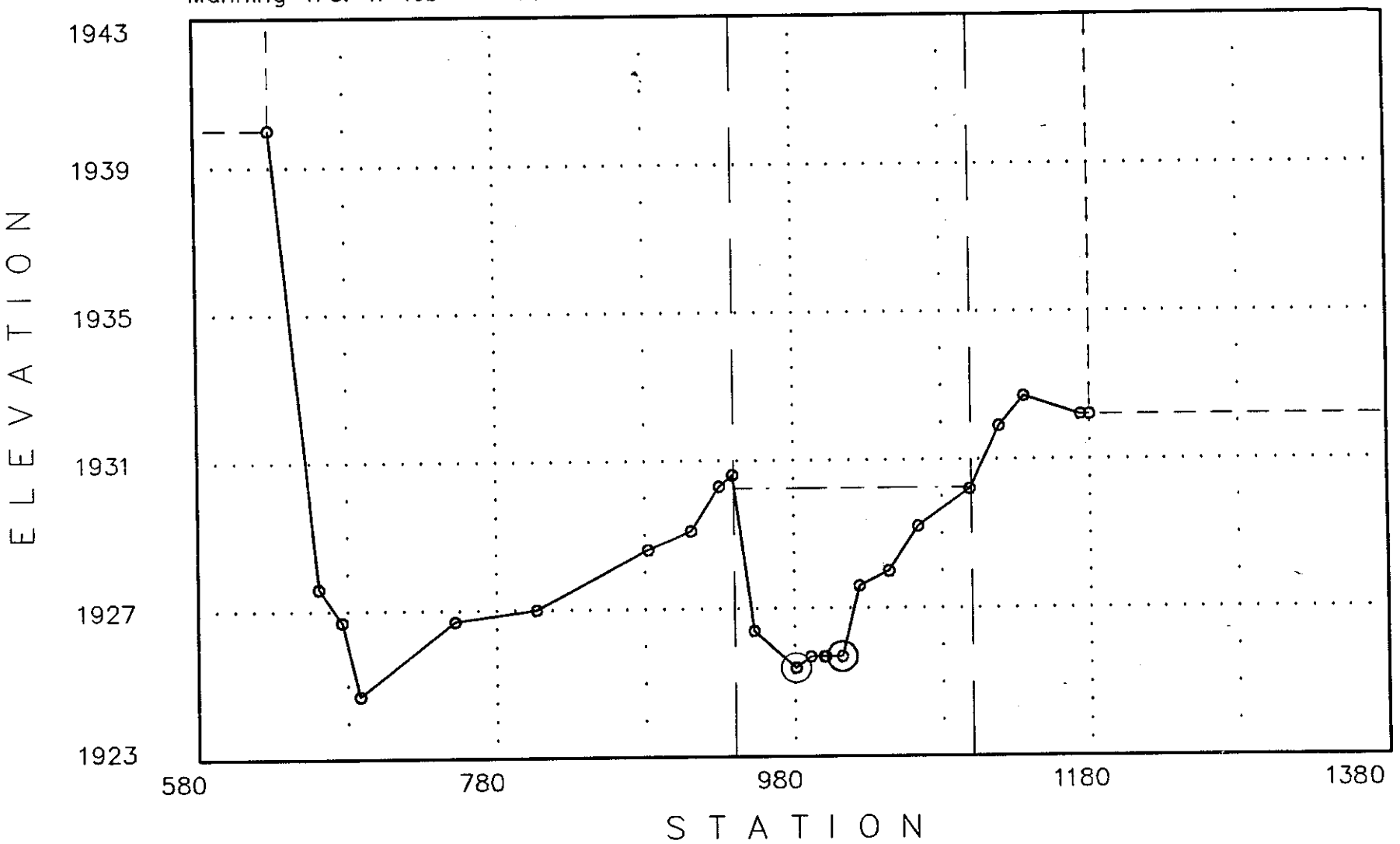


08-19-1992

<<<<<< Cross Section: 1.847: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1930.25
Q2= 3299 WS2= 1930.25

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

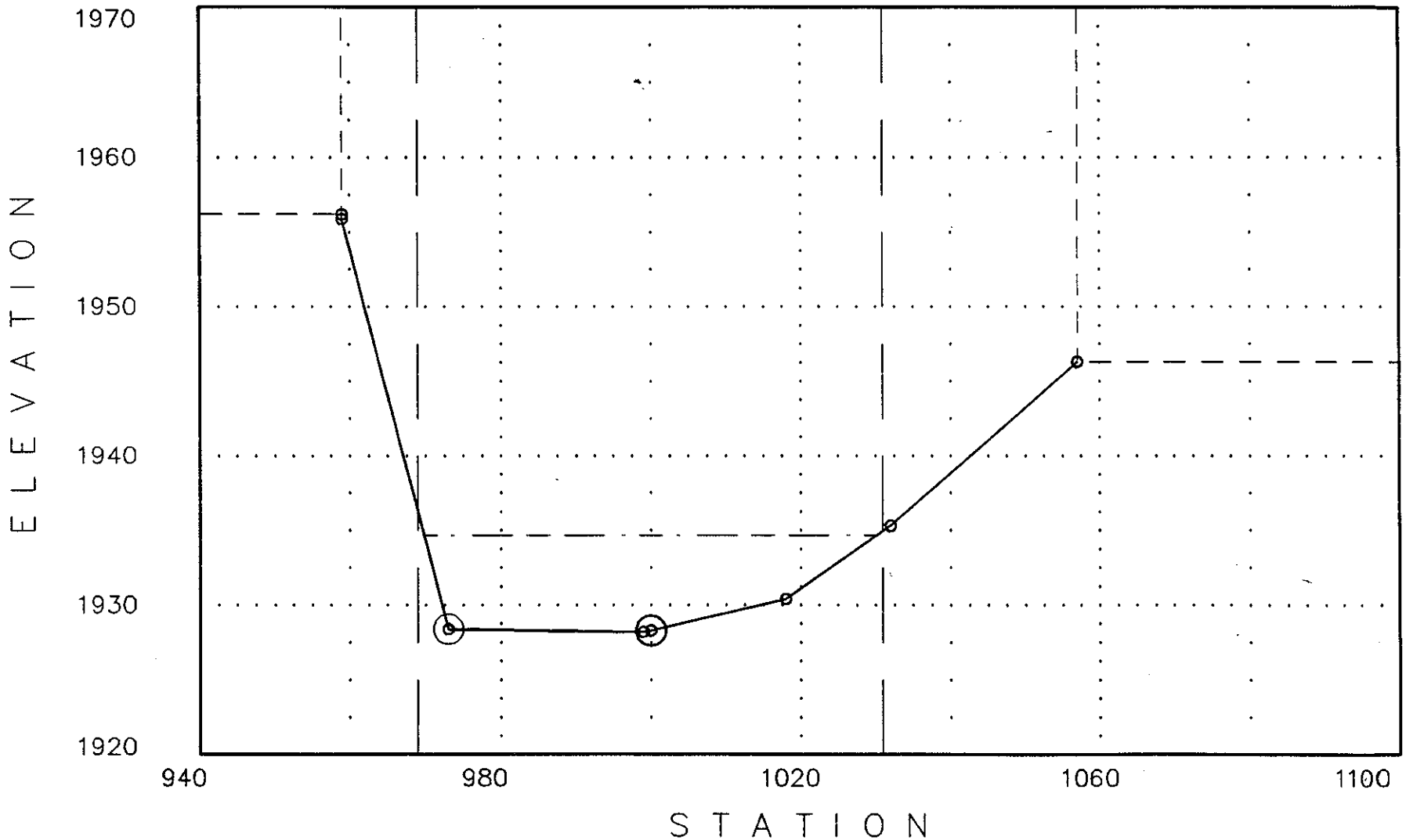


08-19-1992

<<<<<< Cross Section: 1.912: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1934.67
Q2= 3299 WS2= 1934.67

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

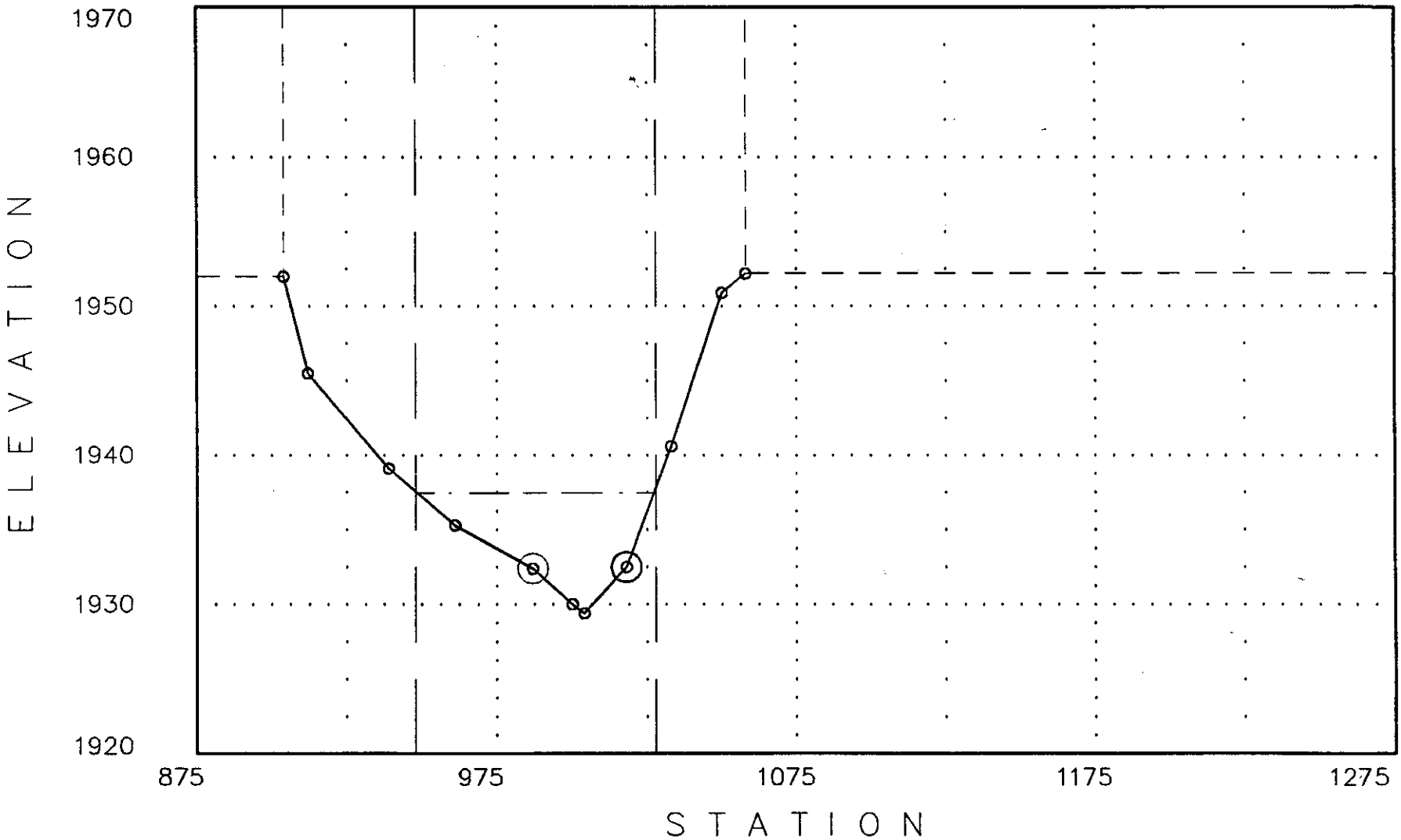


08-19-1992

<<<<<< Cross Section: 1.931: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1937.47
Q2= 3299 WS2= 1937.47

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

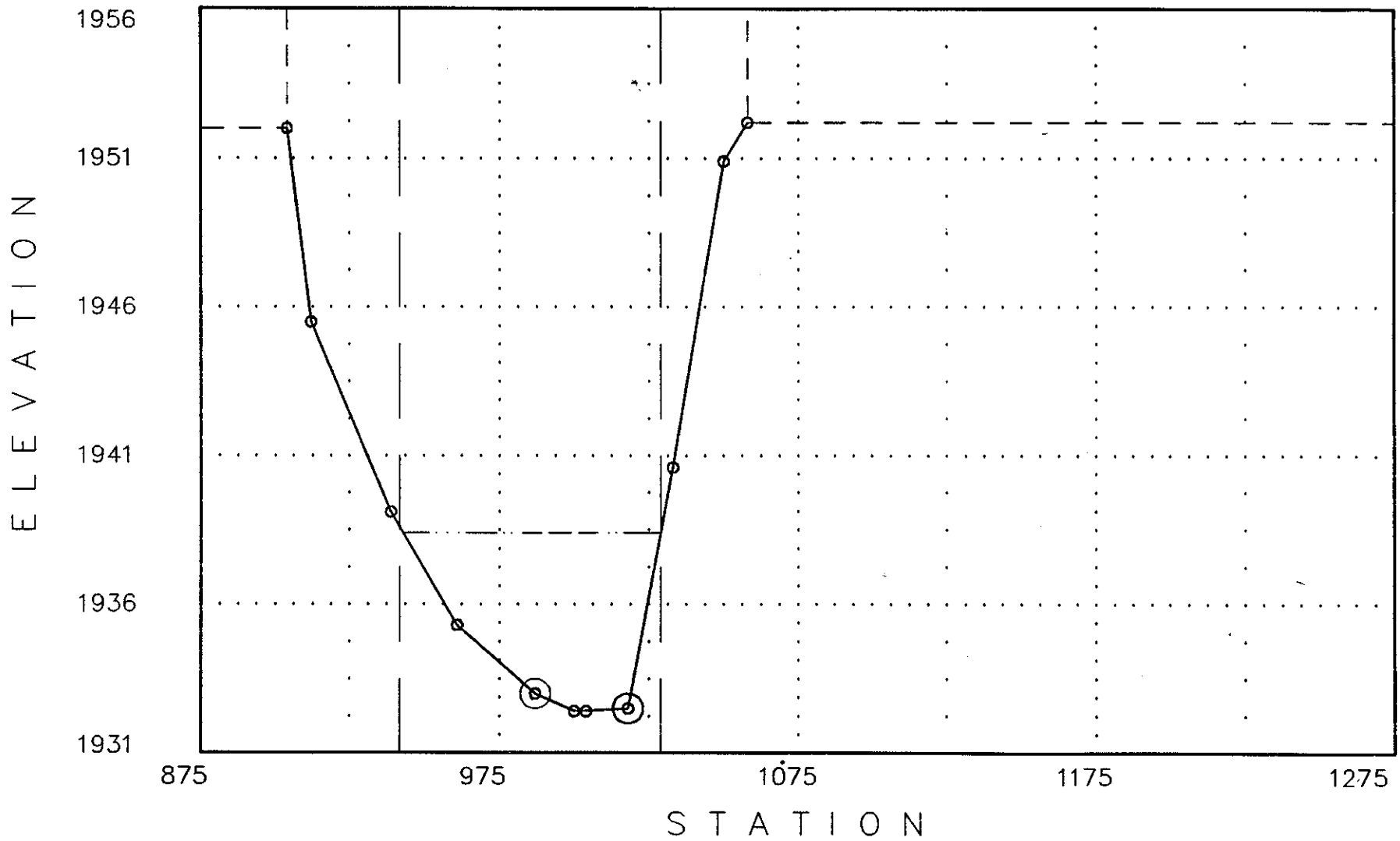


08-19-1992

<<<<<< Cross Section: 1.932: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1938.41
Q2= 3299 WS2= 1938.41

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

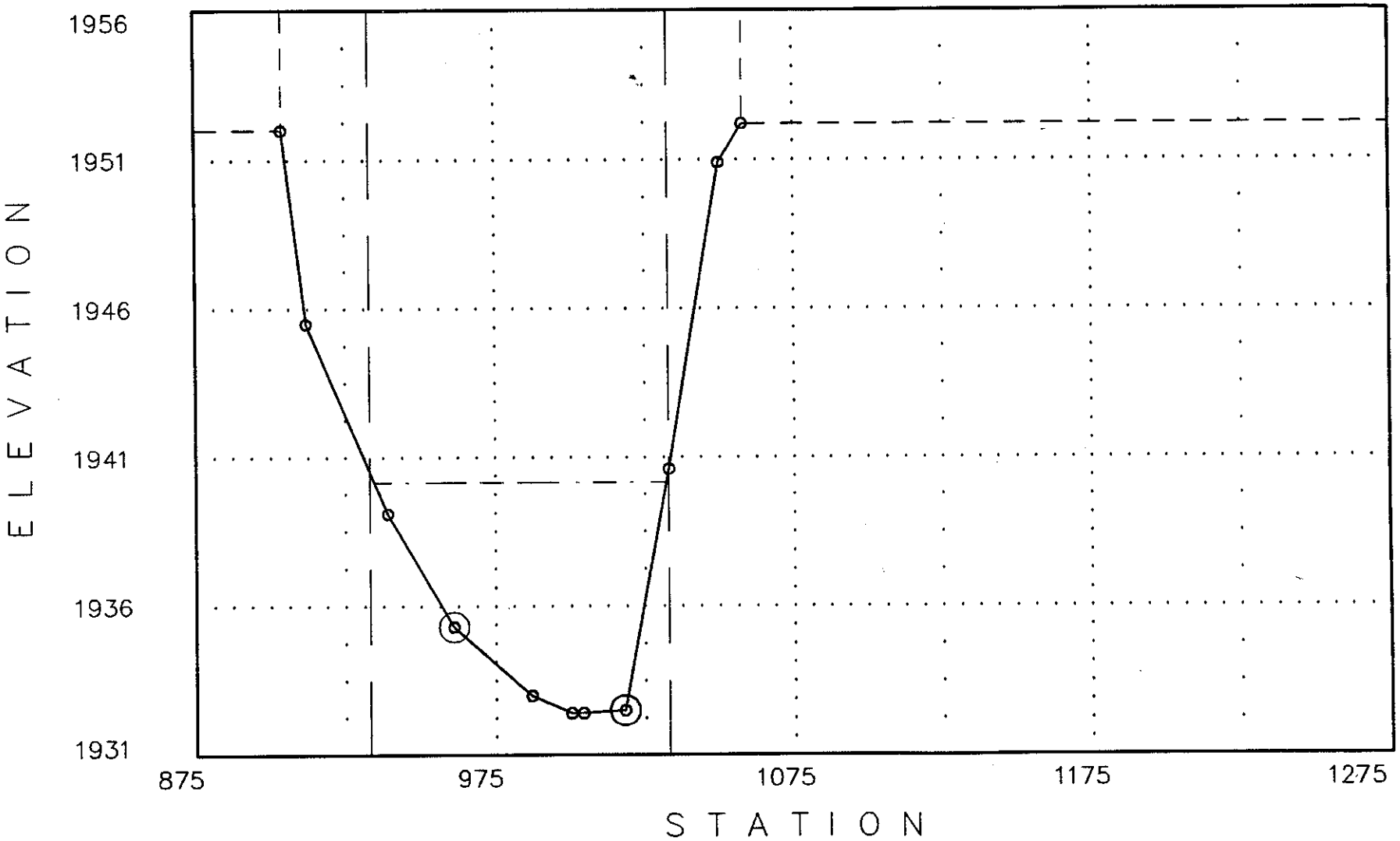


08-19-1992

<<<<<< Cross Section: 1.933: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1940.16
Q2= 3299 WS2= 1940.16

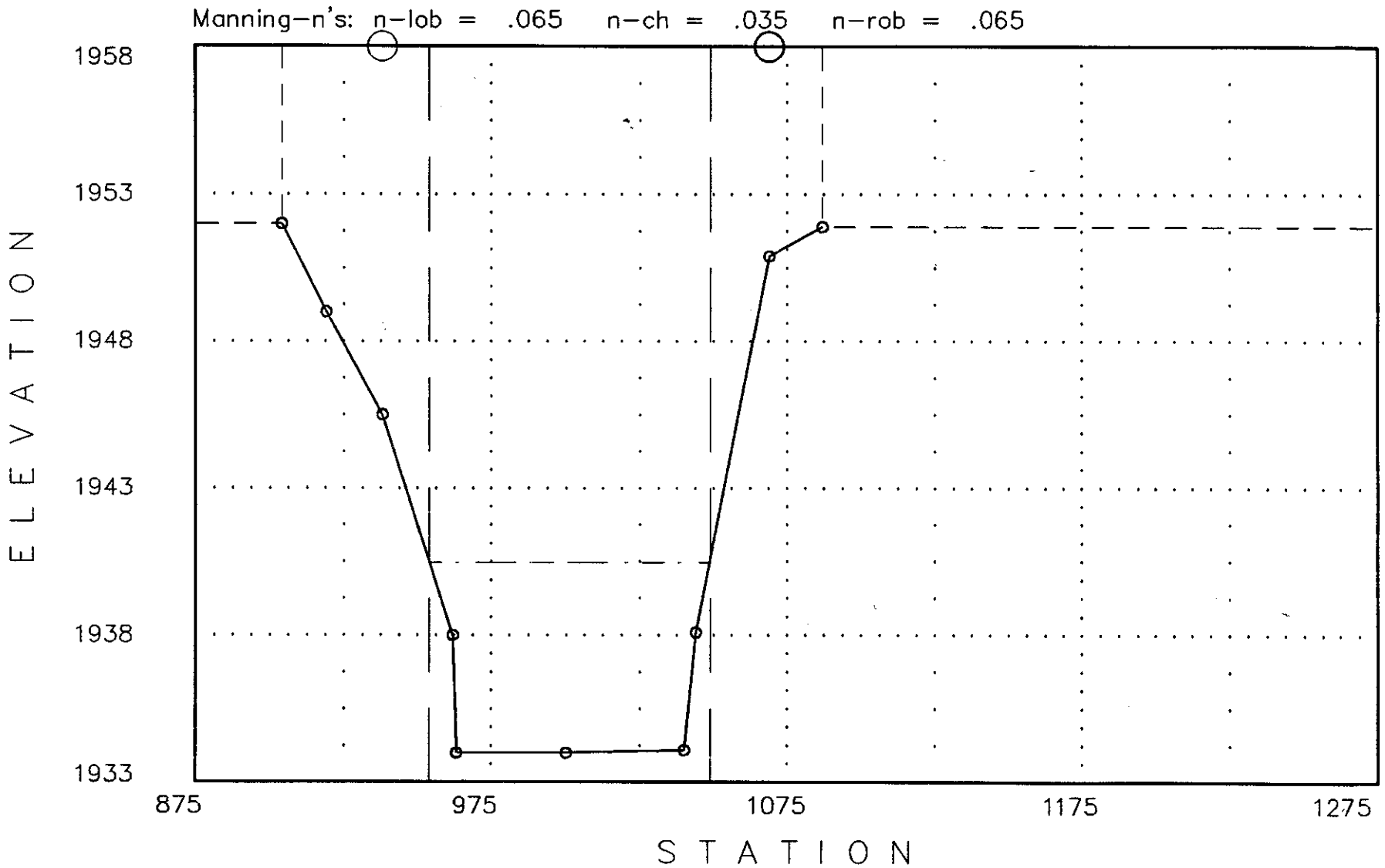
Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065



08-19-1992

<<<<<< Cross Section: 1.934: (FN = WASHS.0) >>>>>>

Q1= 3299 WS1= 1940.48
Q2= 3299 WS2= 1940.48



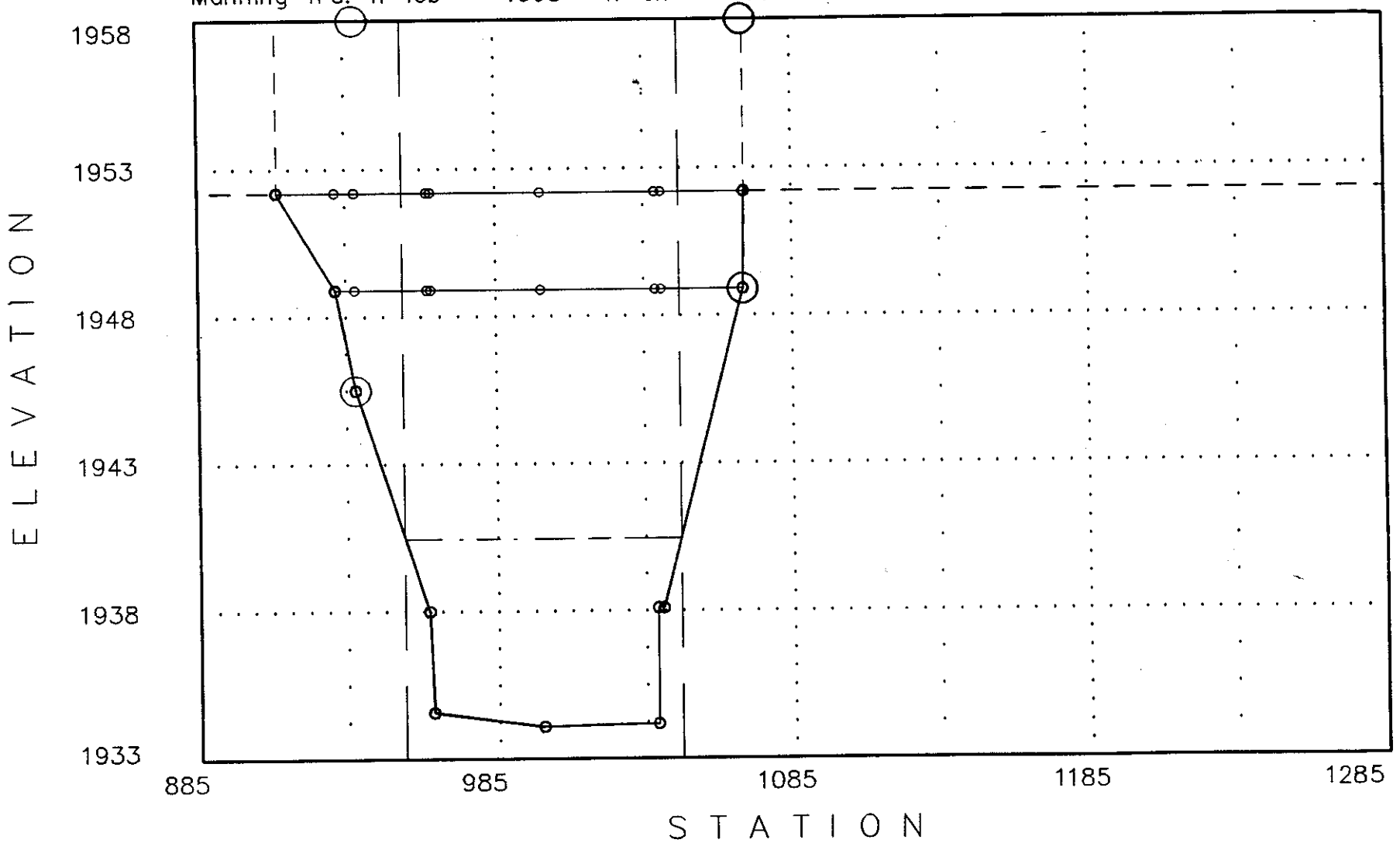
08-19-1992

<<<<<< Cross Section: 1.936: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1940.46
Q2= 3299 WS2= 1940.46

Manning-n's: n-lob = .065 n-ch = .03 n-rob = .065

NORMAL BRIDGE



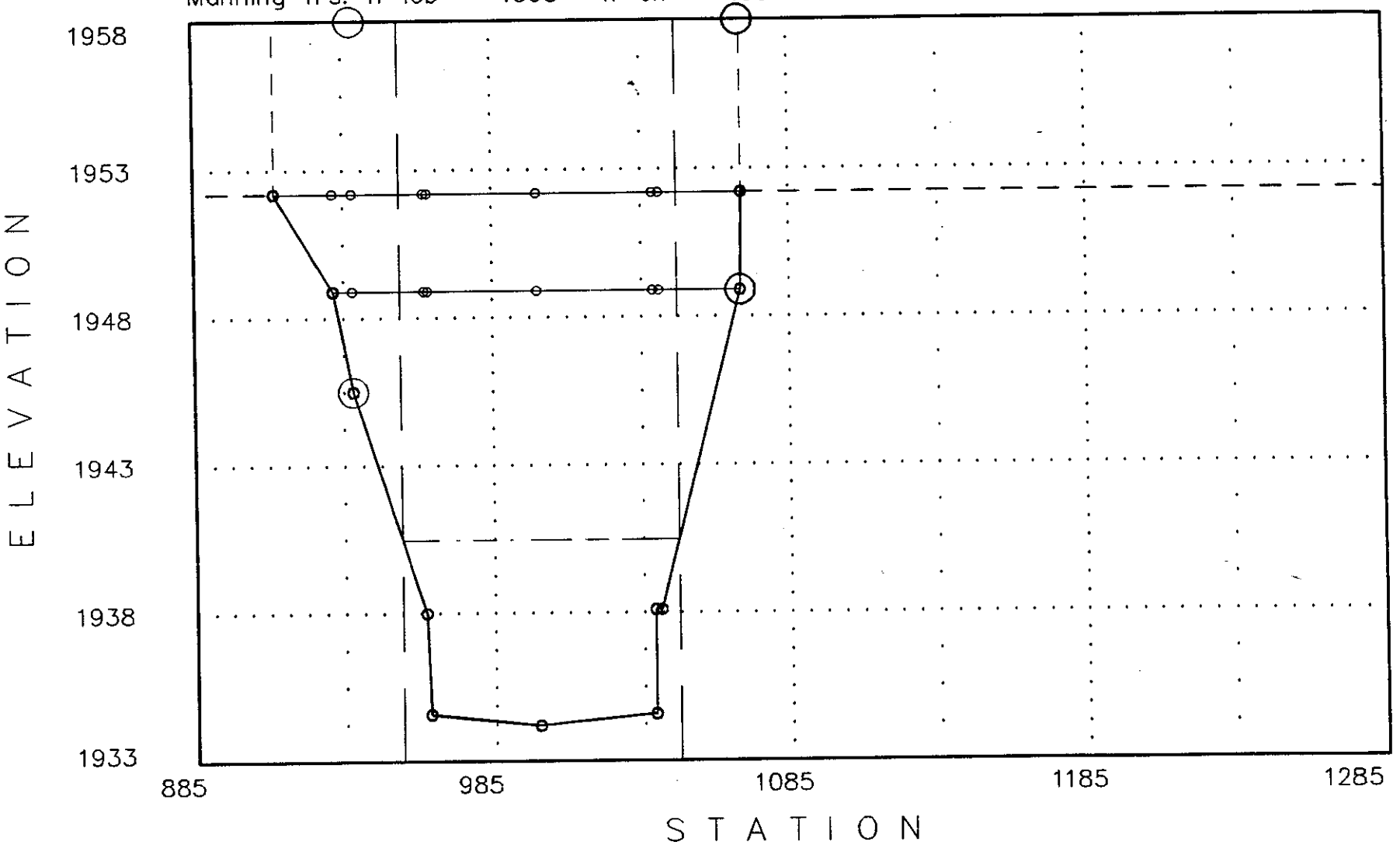
08-19-1992

<<<<<< Cross Section: 1.939: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1940.48
Q2= 3299 WS2= 1940.48

Manning-n's: n-lob = .065 n-ch = .03 n-rob = .065

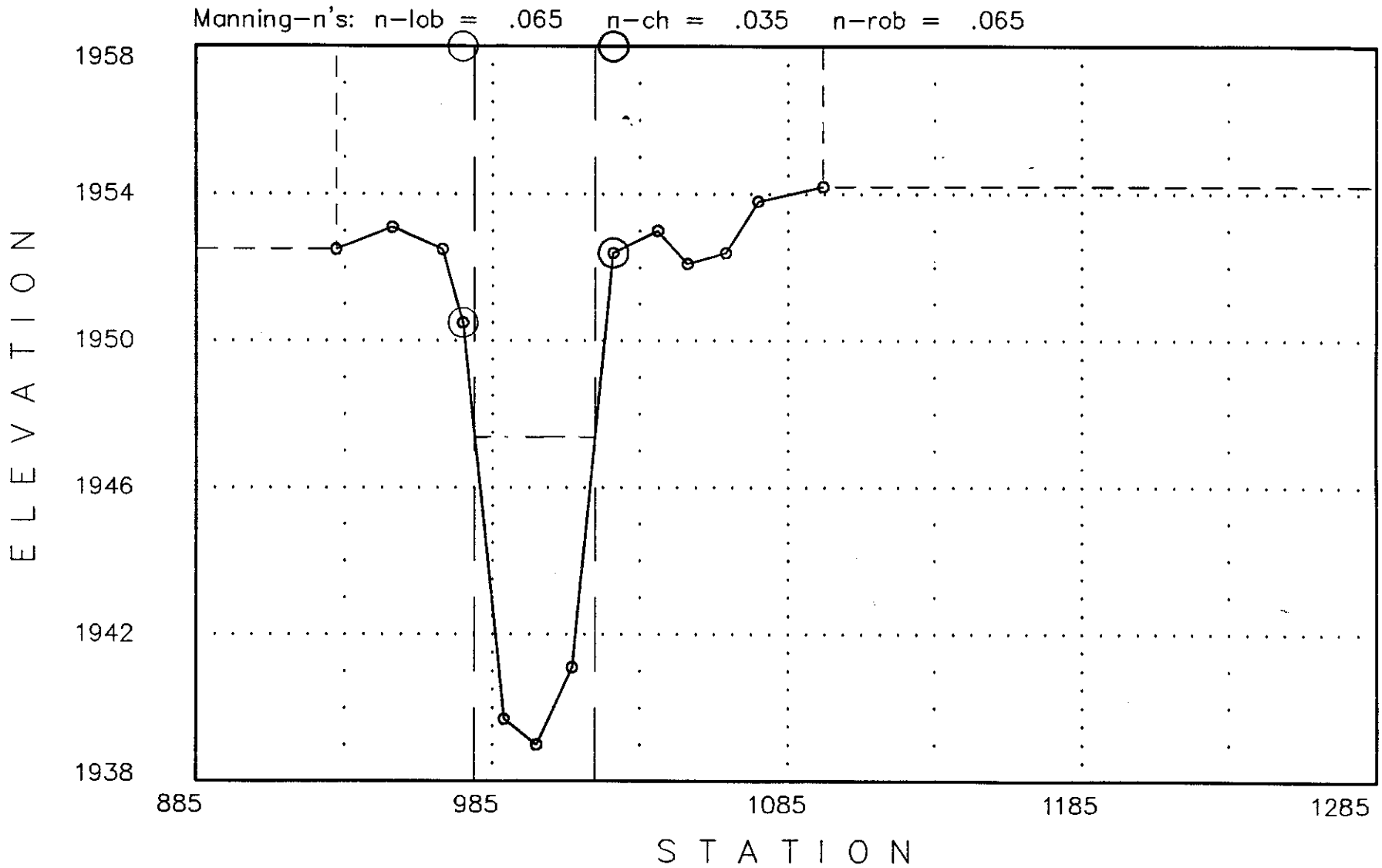
NORMAL BRIDGE



08-19-1992

<<<<<< Cross Section: 1.98: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1947.37
Q2= 3299 WS2= 1947.38

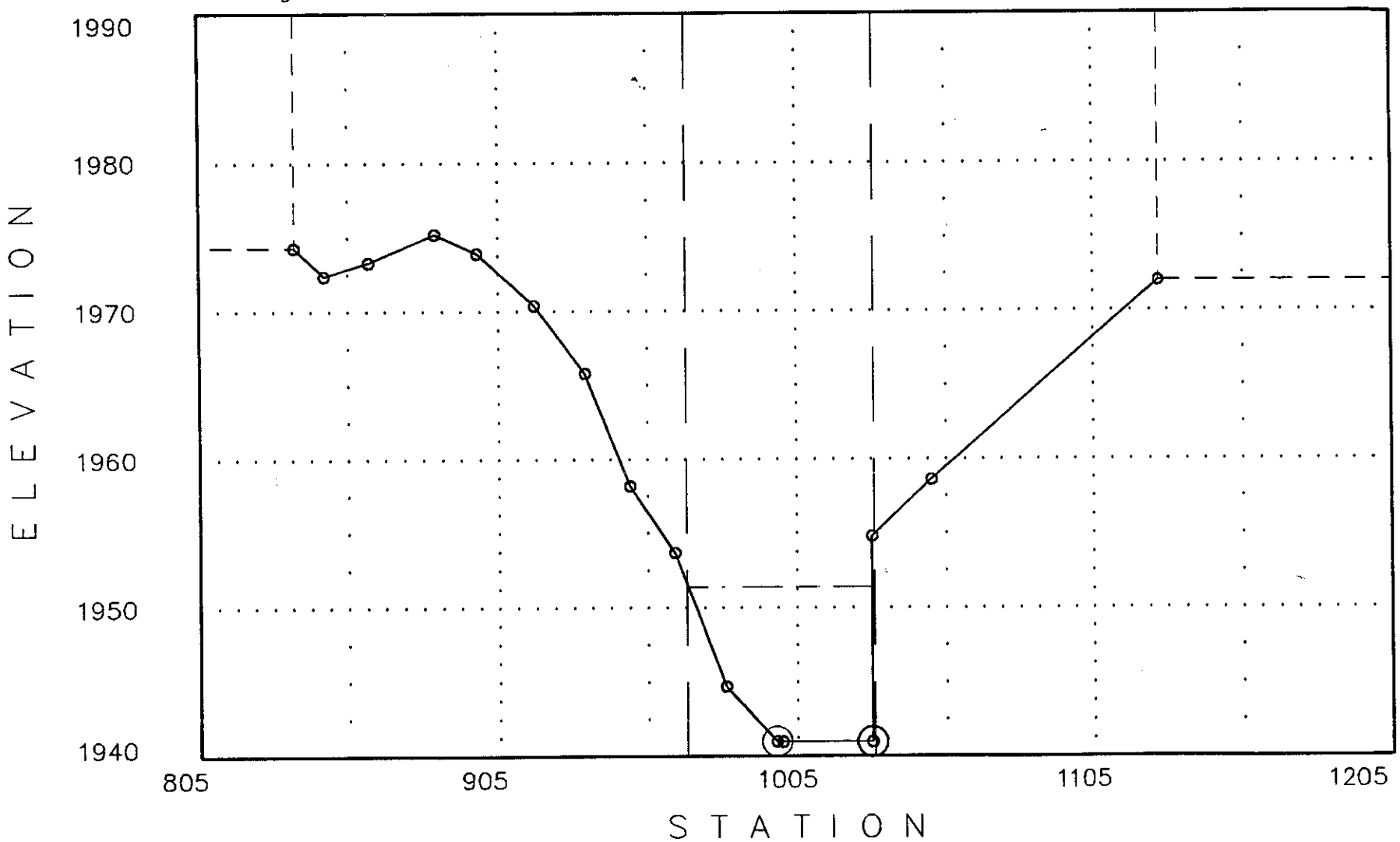


08-19-1992

<<<<<< Cross Section: 2.053: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1951.41
Q2= 3299 WS2= 1951.41

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

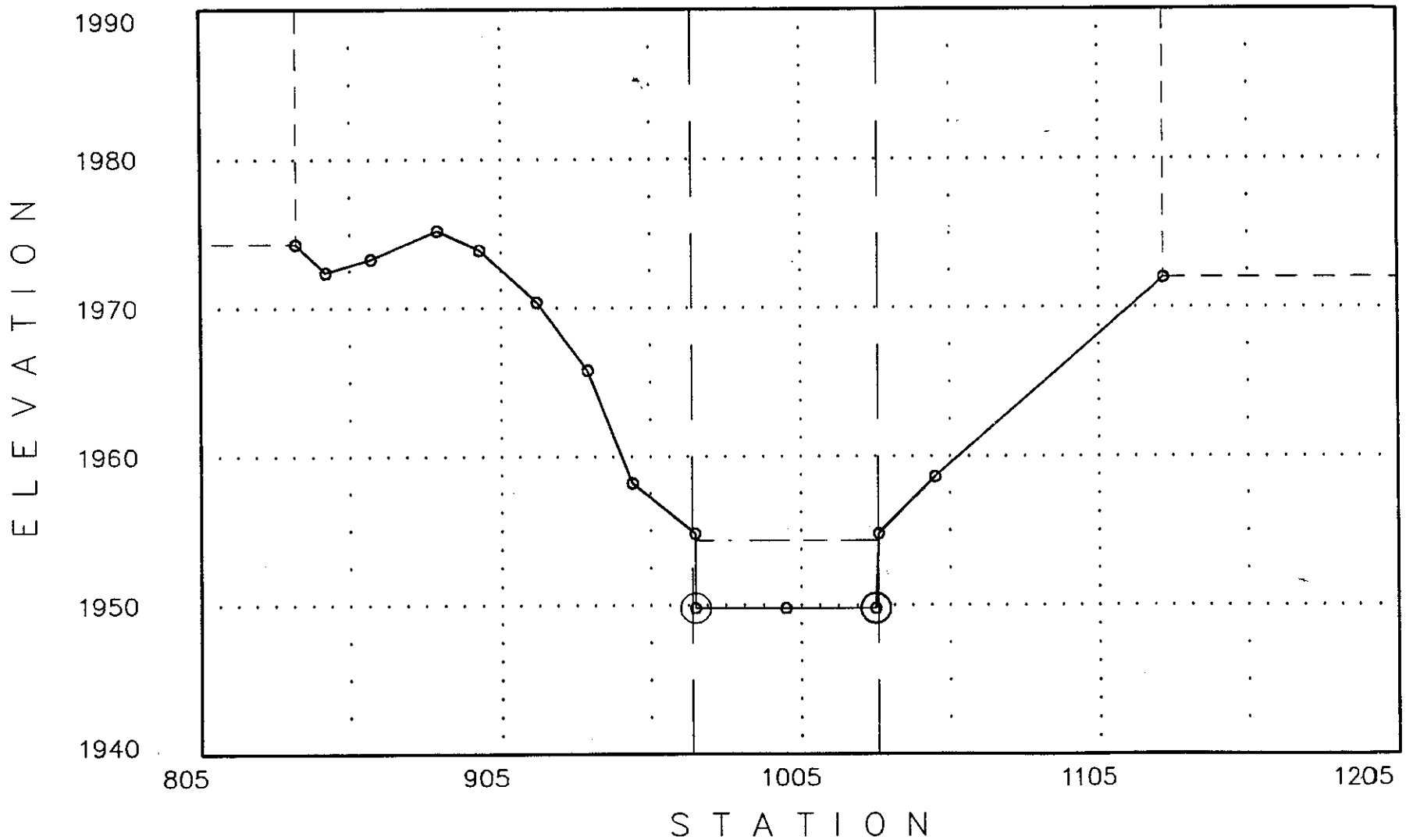


08-19-1992

<<<<<< Cross Section: 2.054: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1954.33
Q2= 3299 WS2= 1954.33

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065



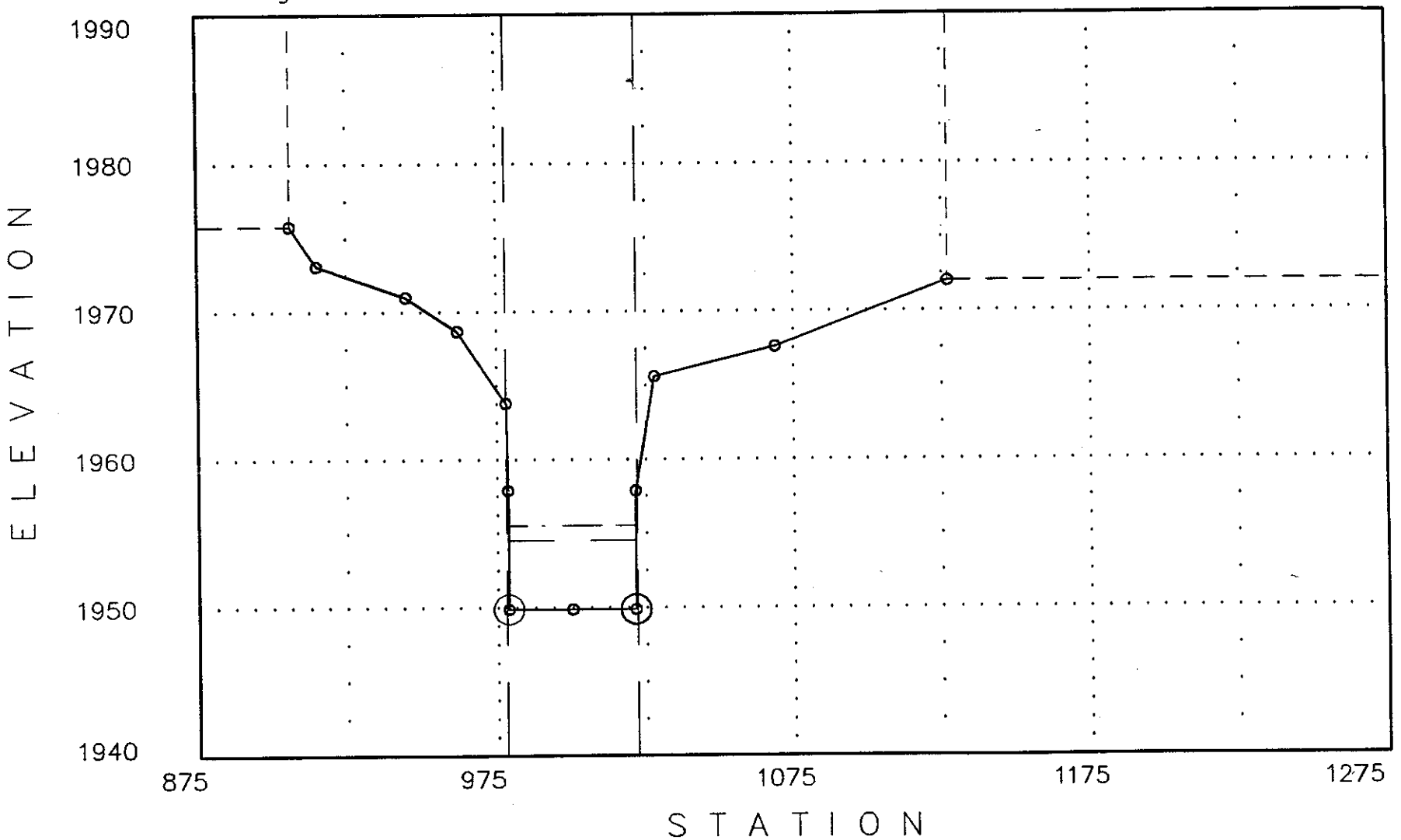
08-19-1992

<<<<<< Cross Section: 2.056: (FN = WASHS.O) >>>>>>

Q1= 3299 WS1= 1955.56
Q2= 3299 WS2= 1955.56

Manning-n's: n-lob = .065 n-ch = .03 n-rob = .065

HYDRAULIC JUMP

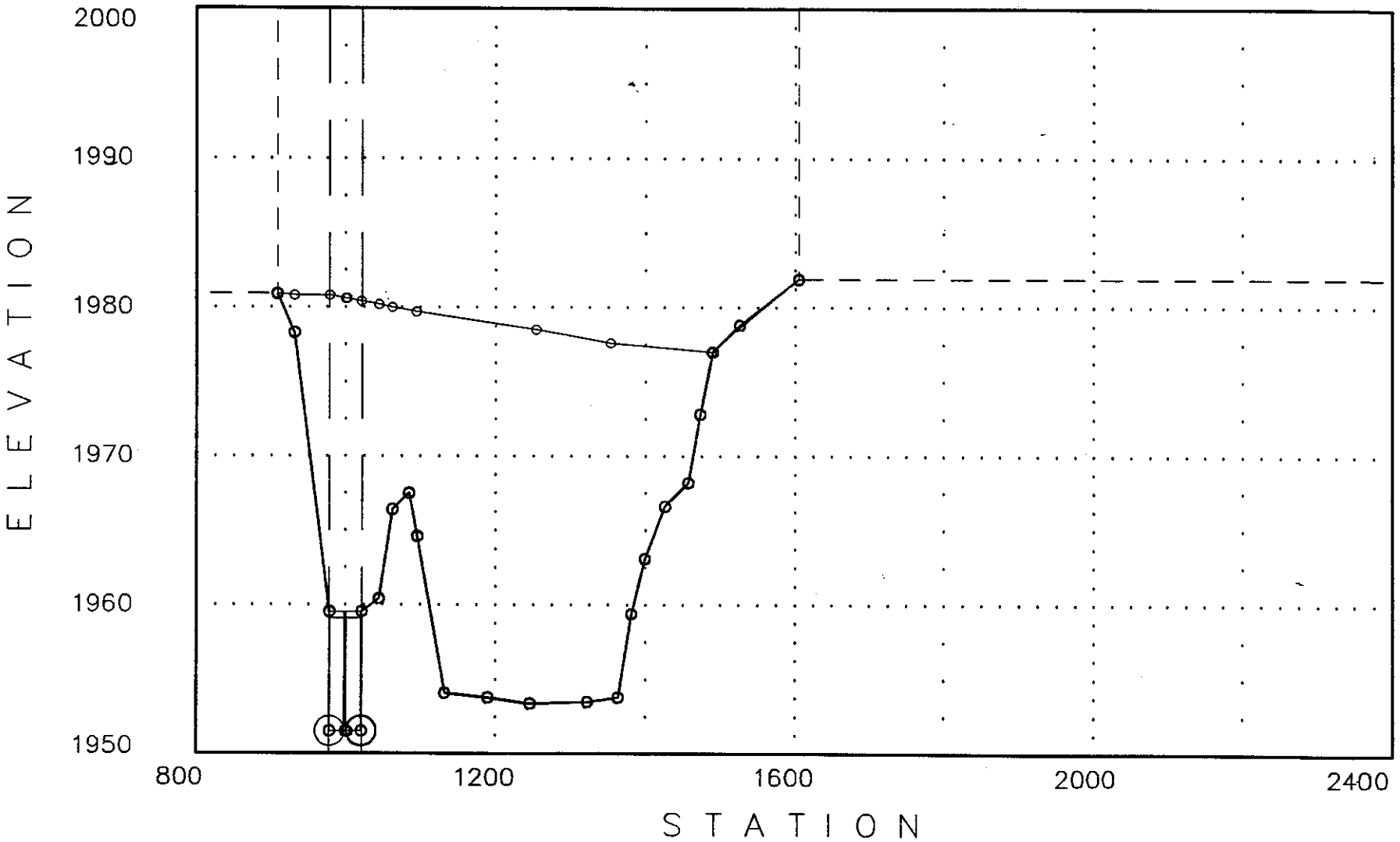


08-19-1992

<<<<<< Cross Section: 2.097: (FN = WASHS.0) >>>>>>

Q1= 3299 WS1= 1959.11
Q2= 3299 WS2= 1959.11

Manning-n's: n-lob = .065 n-ch = .03 n-rob = .065 SPECIAL BRIDGE

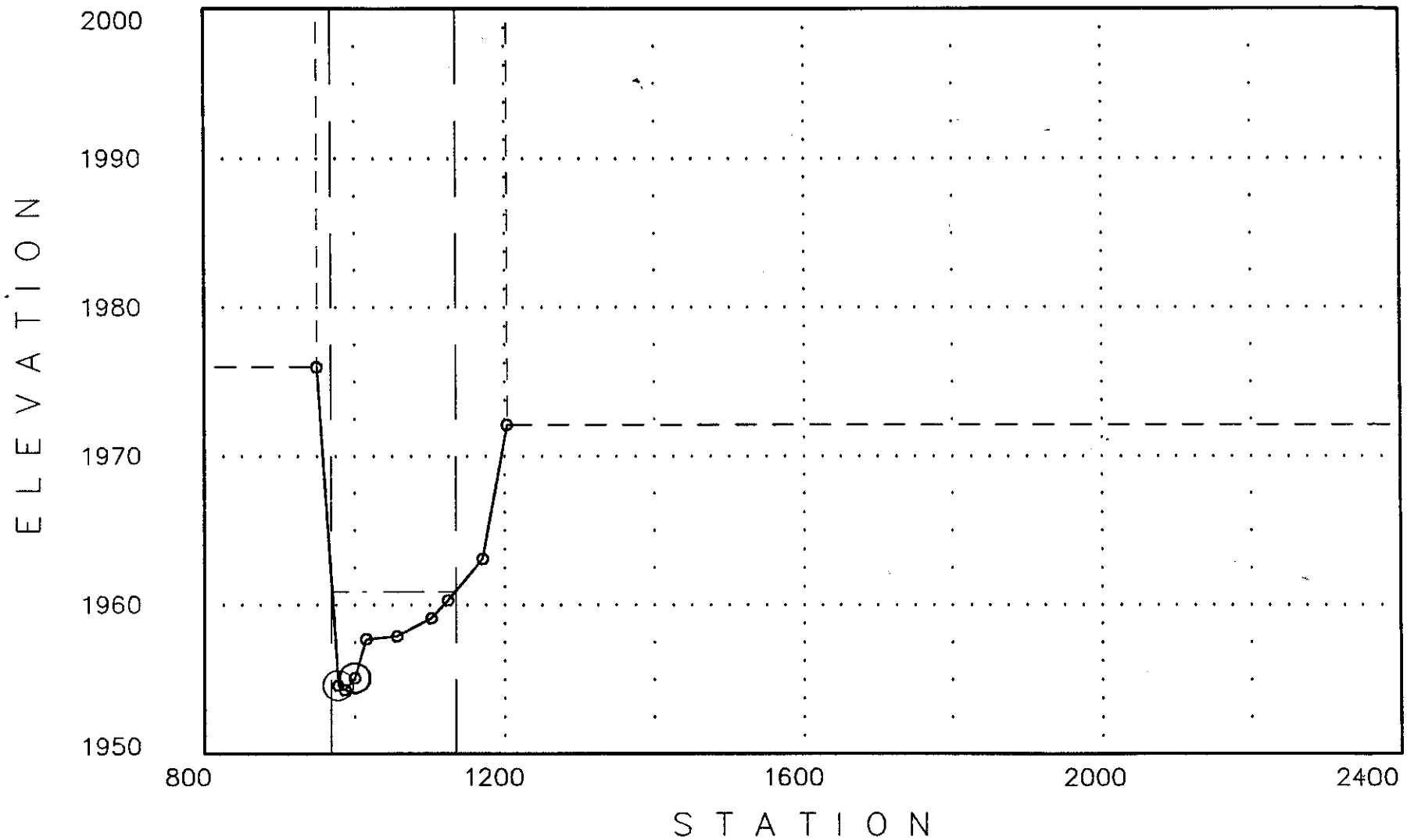


08-19-1992

<<<<<< Cross Section: 2.131: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 1960.9
Q2= 3224 WS2= 1960.91

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

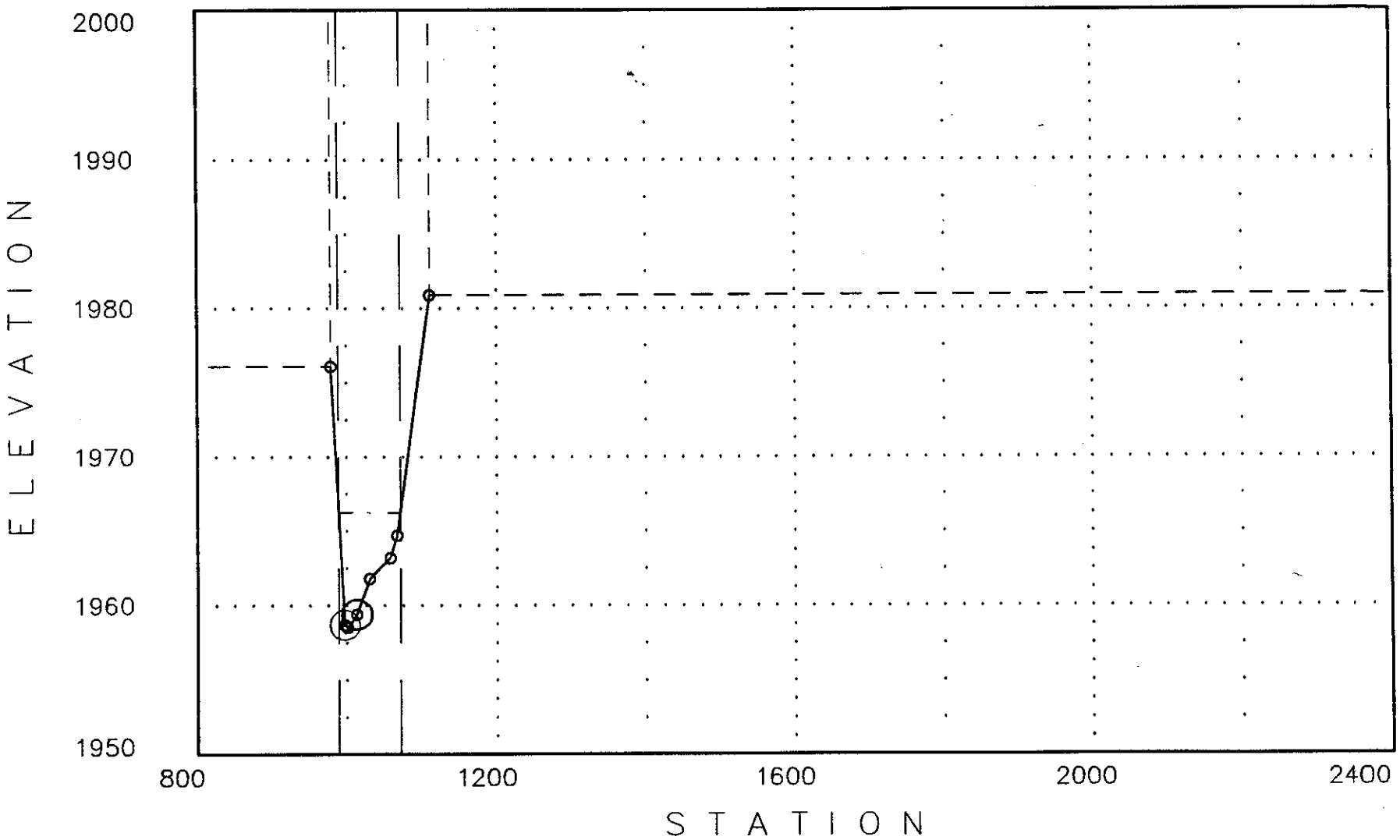


08-19-1992

<<<<<< Cross Section: 2.194: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 1966.26
Q2= 3224 WS2= 1966.28

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

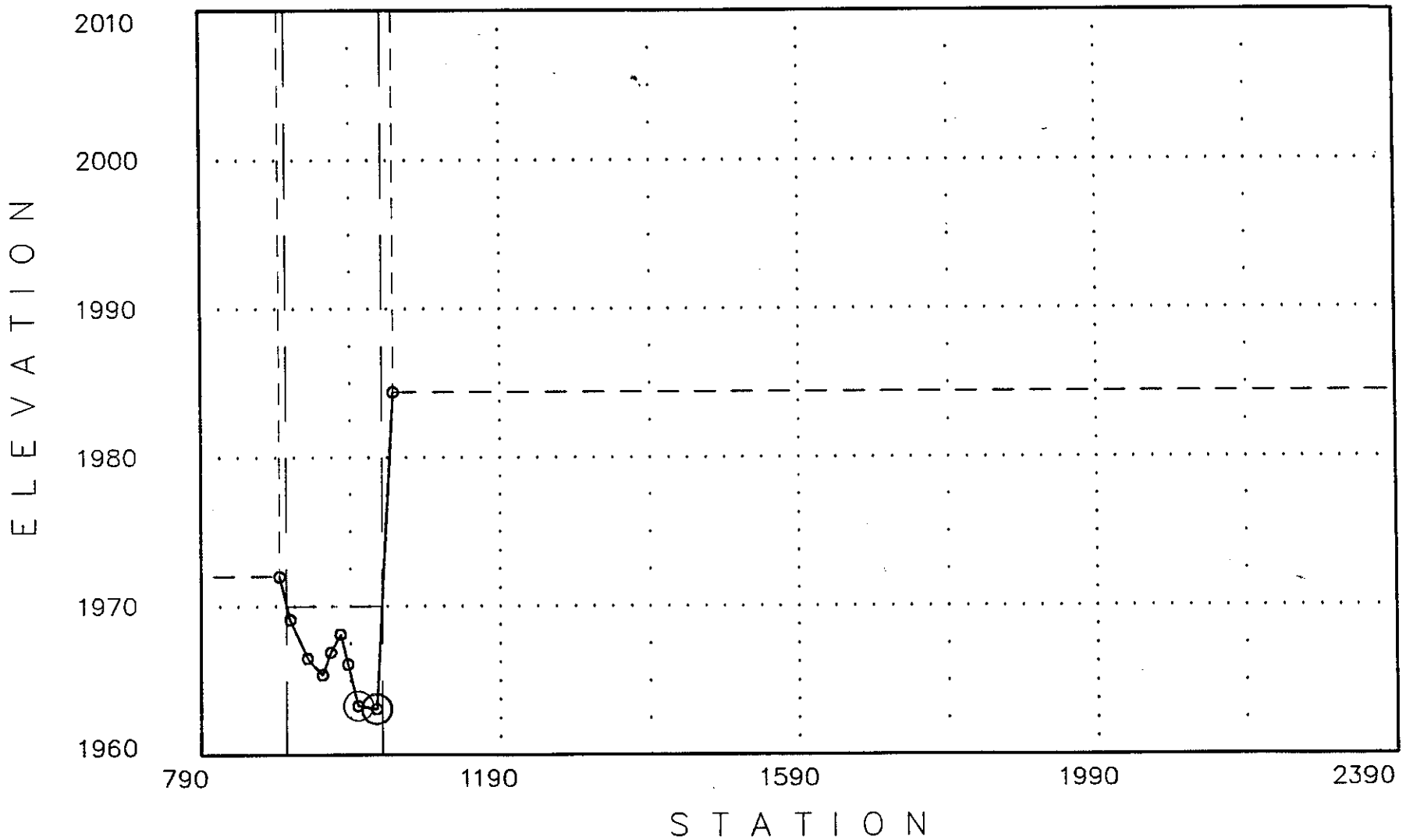


08-19-1992

<<<<<< Cross Section: 2.267: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 1969.99
Q2= 3224 WS2= 1969.99

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

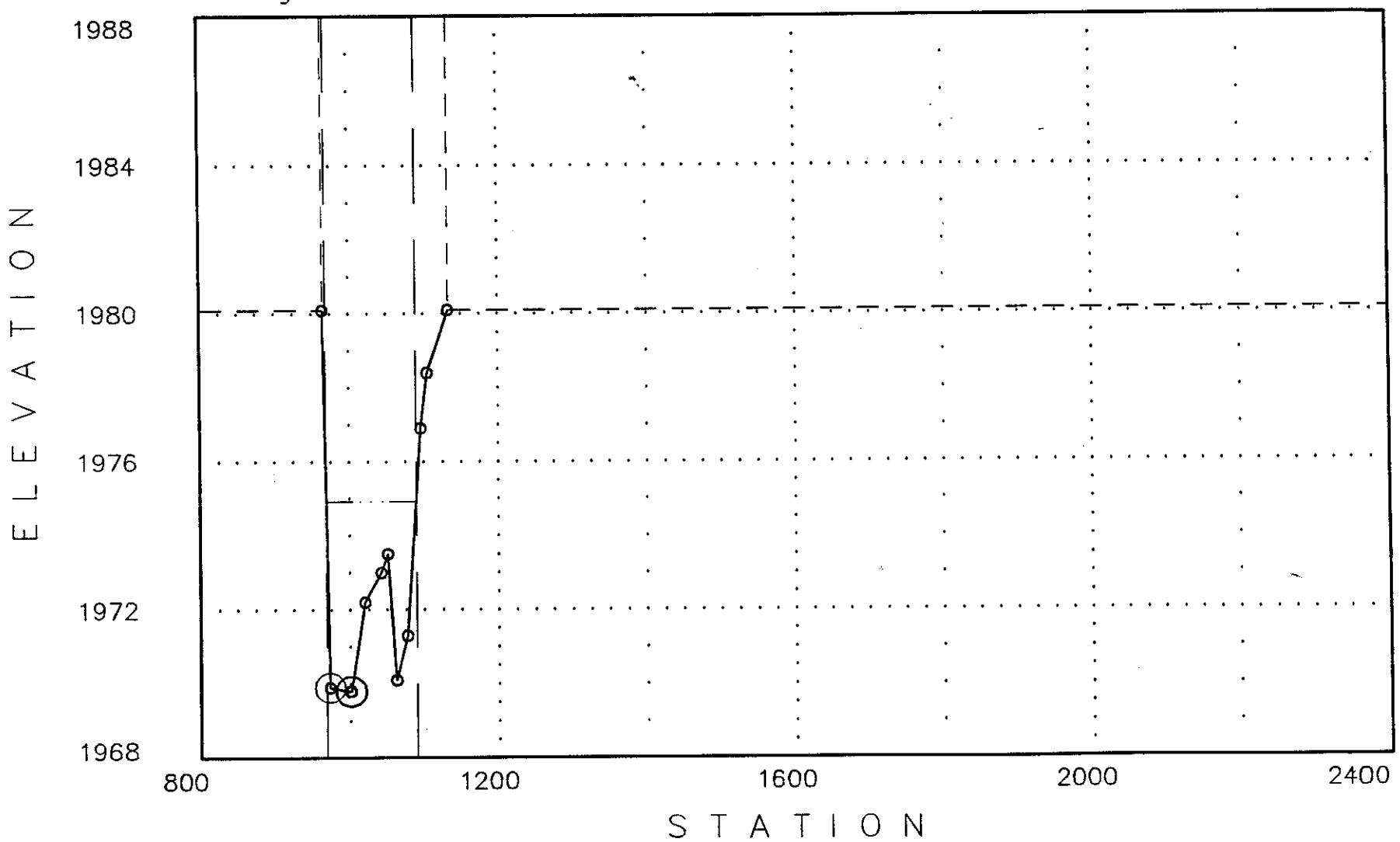


08-19-1992

<<<<<< Cross Section: 2.36: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 1974.92
Q2= 3224 WS2= 1974.93

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

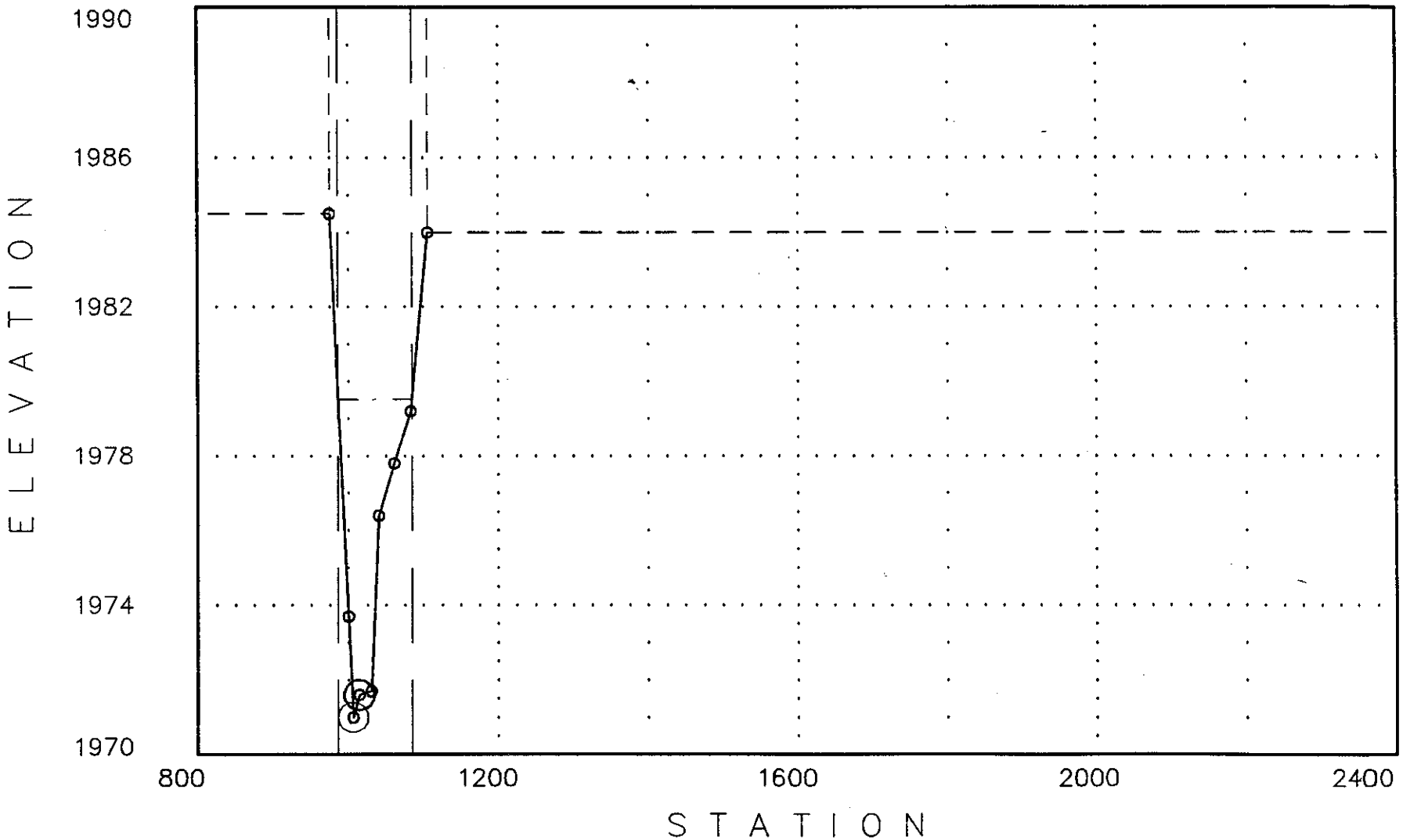


08-19-1992

<<<<<< Cross Section: 2.455: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 1979.53
Q2= 3224 WS2= 1979.52

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

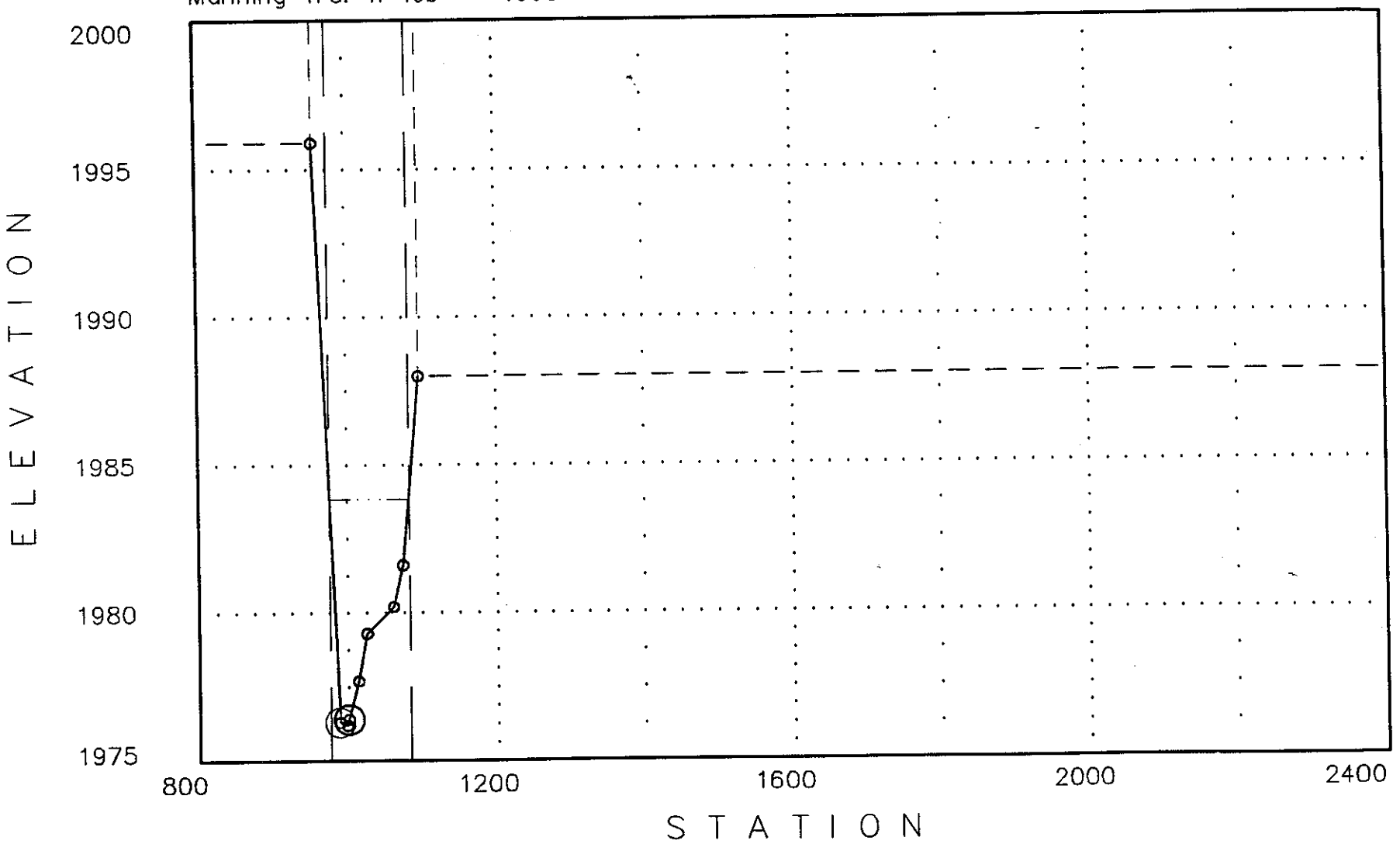


08-19-1992

<<<<<< Cross Section: 2.55: (FN = WASHS.0) >>>>>>

Q1= 3224 WS1= 1983.84
Q2= 3224 WS2= 1983.84

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

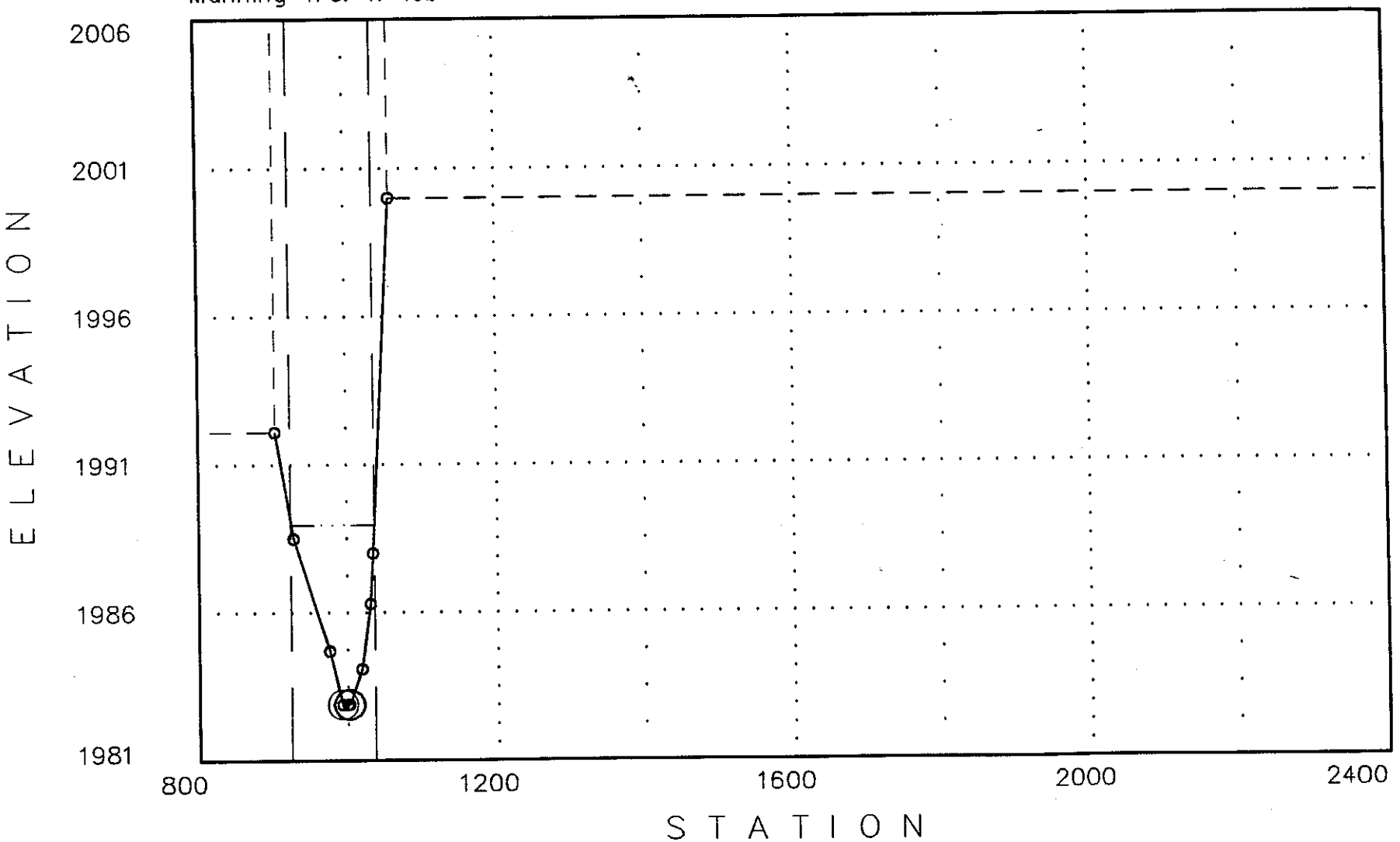


08-19-1992

<<<<<< Cross Section: 2.646: (FN = WASHS.0) >>>>>>

Q1= 3224 WS1= 1988.96
Q2= 3224 WS2= 1988.97

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

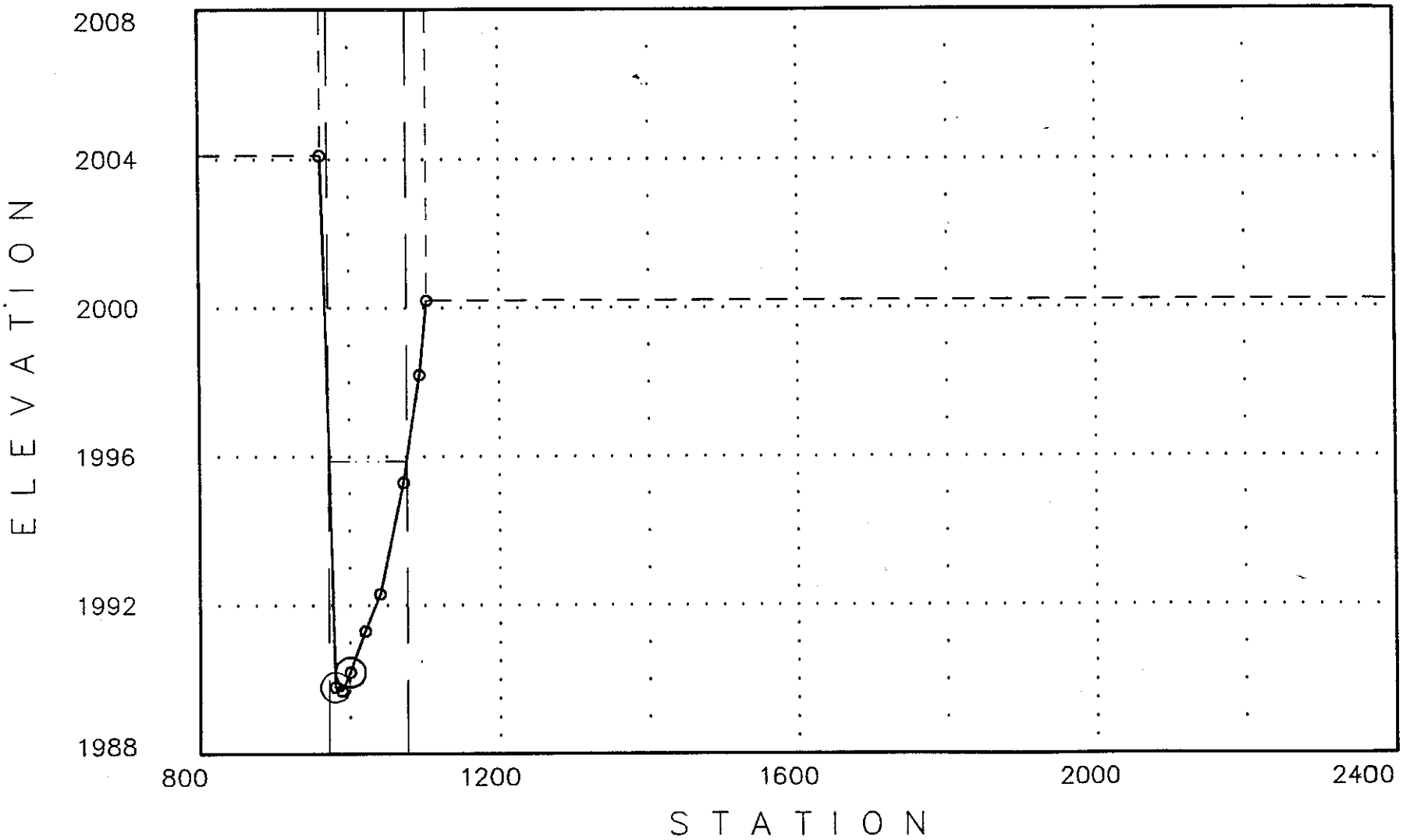


08-19-1992

<<<<<< Cross Section: 2.746: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 1995.88
Q2= 3224 WS2= 1995.88

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

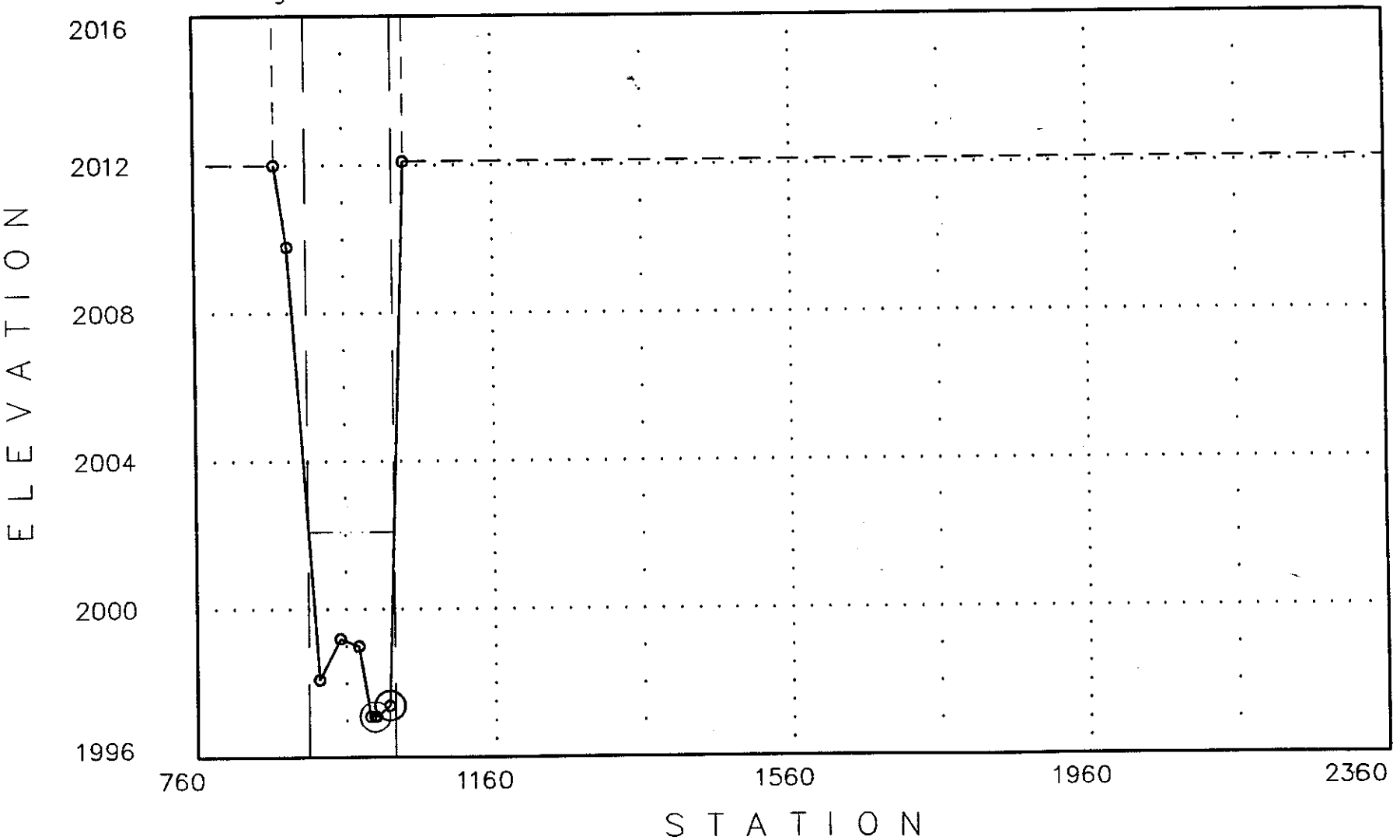


08-19-1992

<<<<<< Cross Section: 2.838: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 2002.09
Q2= 3224 WS2= 2002.09

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

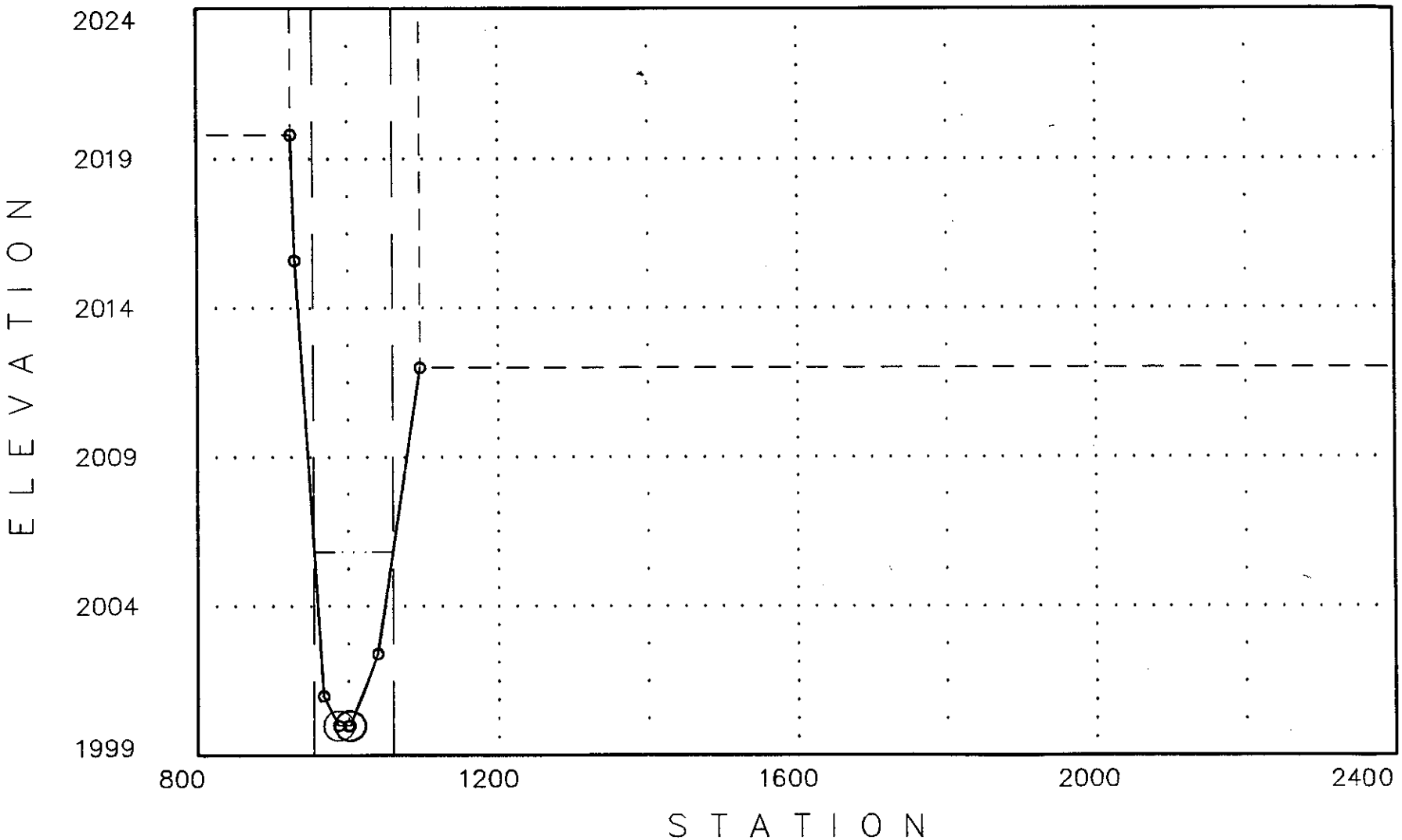


08-19-1992

<<<<<< Cross Section: 2.894: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 2005.83
Q2= 3224 WS2= 2005.83

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

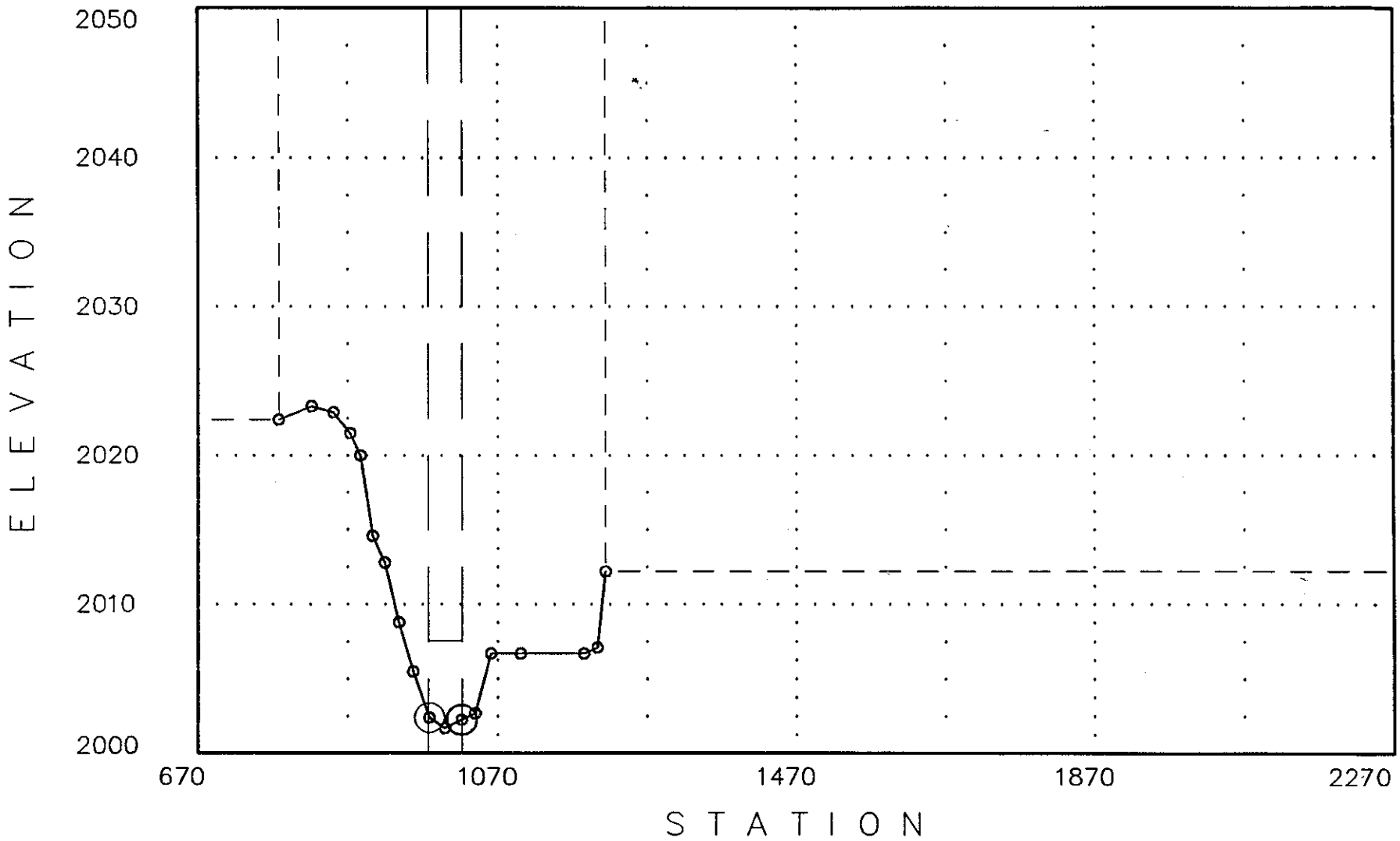


08-19-1992

<<<<<< Cross Section: 2.945: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 2007.56
Q2= 3224 WS2= 2007.56

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065



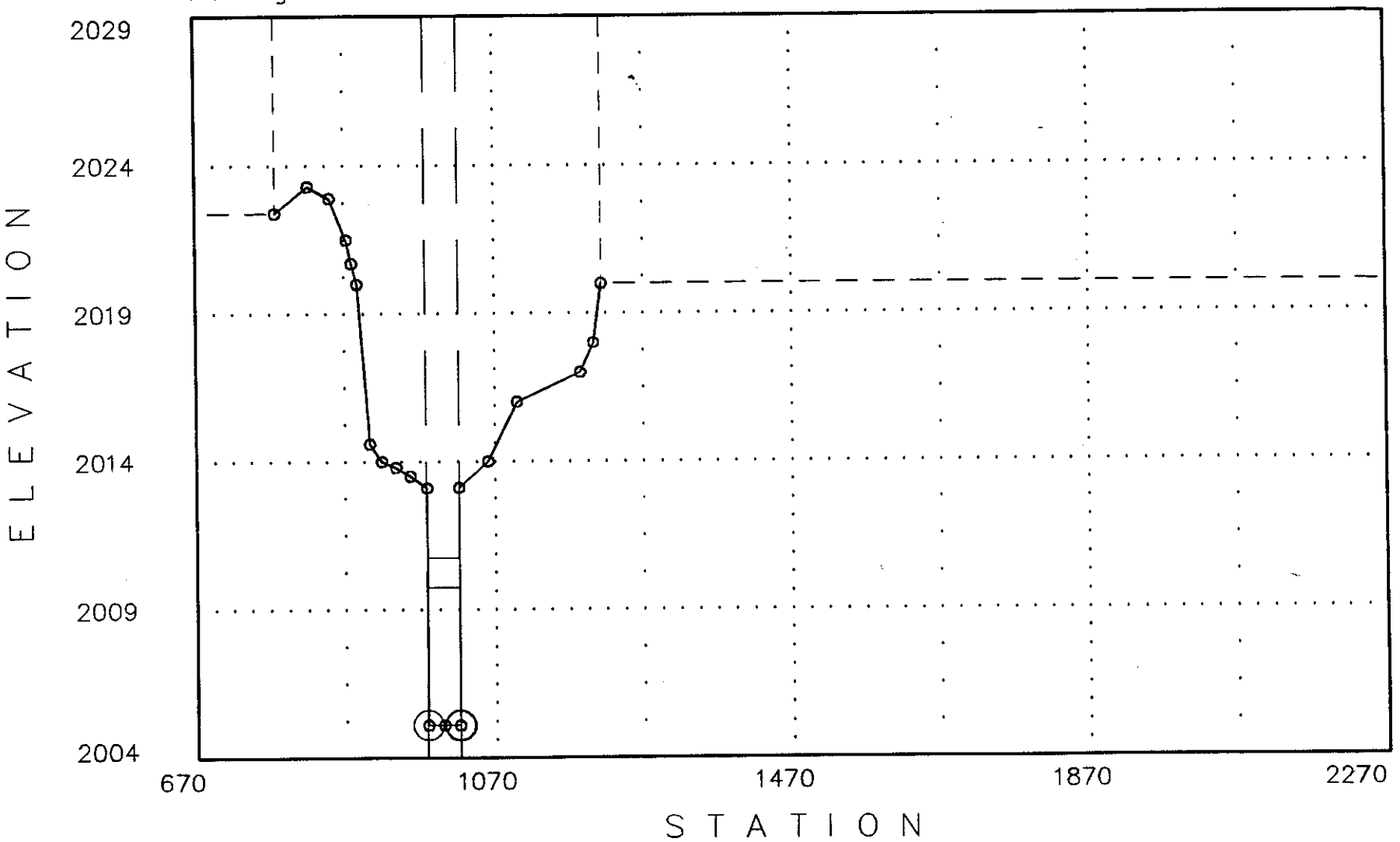
08-19-1992

<<<<<< Cross Section: 2.946: (FN = WASHS.0) >>>>>>

Q1= 3224 WS1= 2010.75
Q2= 3224 WS2= 2010.75

Manning-n's: n-lob = .065 n-ch = .025 n-rob = .065

HYDRAULIC JUMP

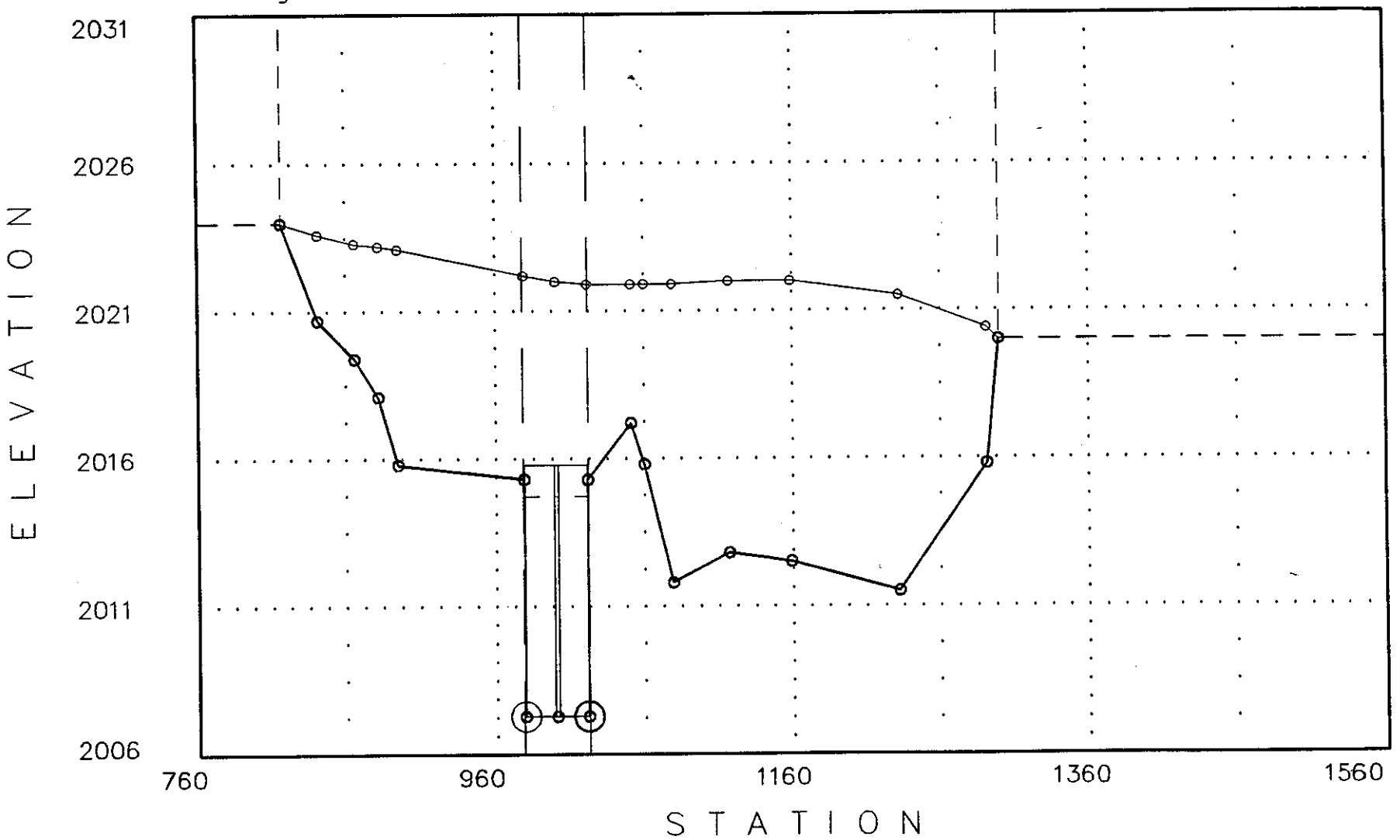


08-19-1992

<<<<<< Cross Section: 2.966: (FN = WASHS.0) >>>>>>

Q1= 3224 WS1= 2014.72
Q2= 3224 WS2= 2014.72

Manning-n's: n-lob = .065 n-ch = .025 n-rob = .065 SPECIAL BRIDGE

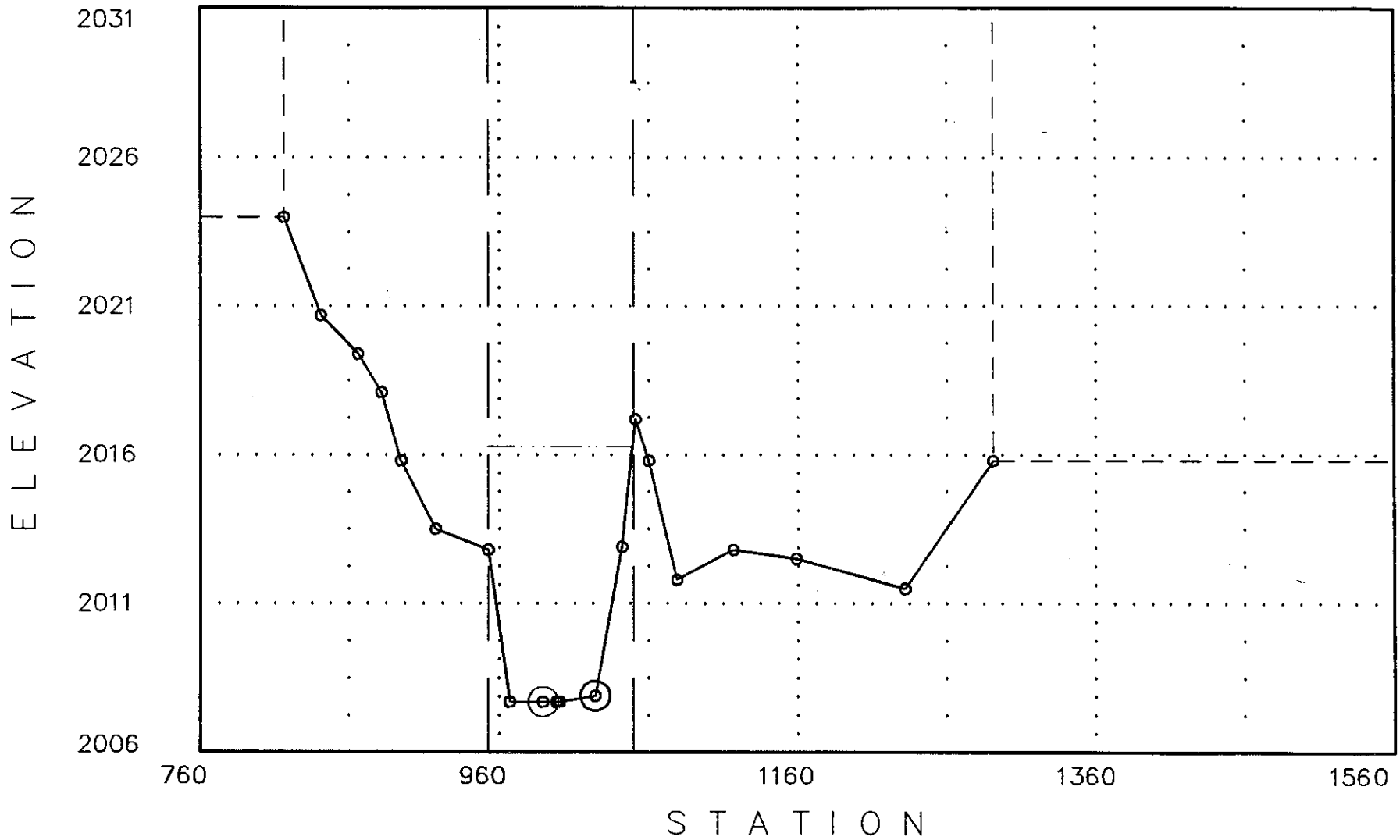


08-19-1992

<<<<<< Cross Section: 2.97: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 2016.28
Q2= 3224 WS2= 2016.28

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .065

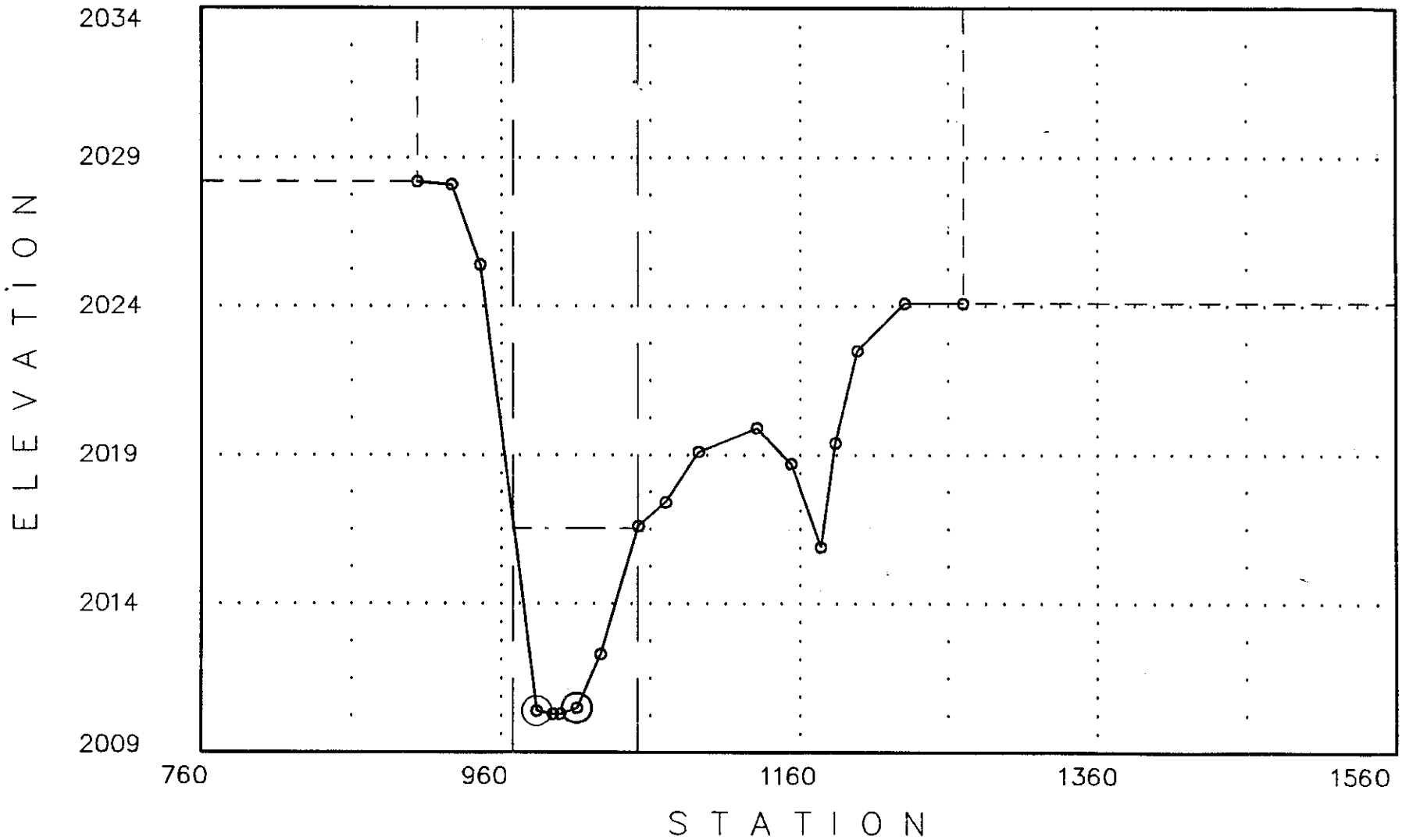


08-19-1992

<<<<<< Cross Section: 3.019: (FN = WASHS.O) >>>>>>

Q1= 3224 WS1= 2016.54
Q2= 3224 WS2= 2016.54

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .07

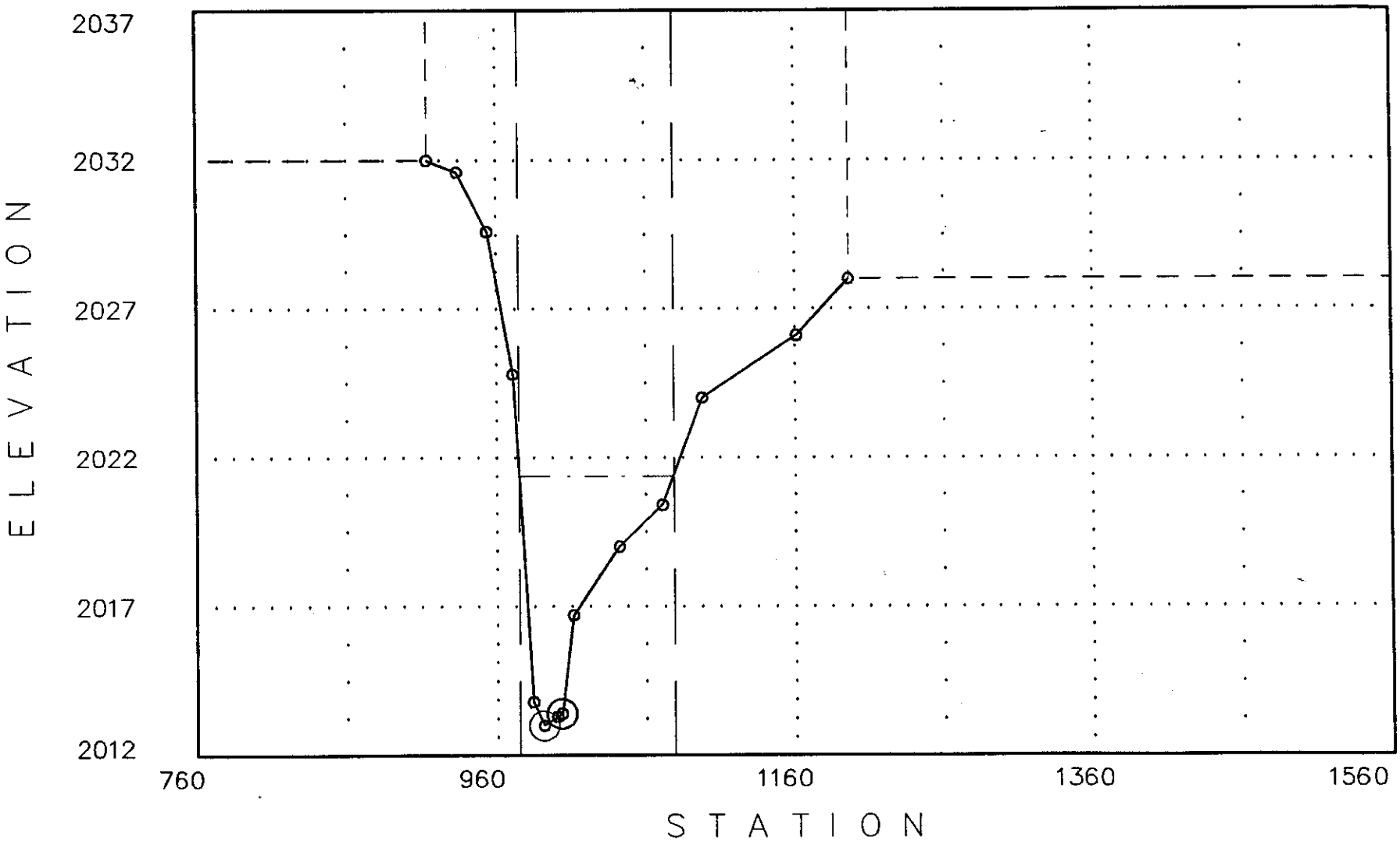


08-19-1992

<<<<<< Cross Section: 3.073: (FN = WASHS.O) >>>>>>

Q1= 3037 WS1= 2021.37
Q2= 3037 WS2= 2021.38

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .07

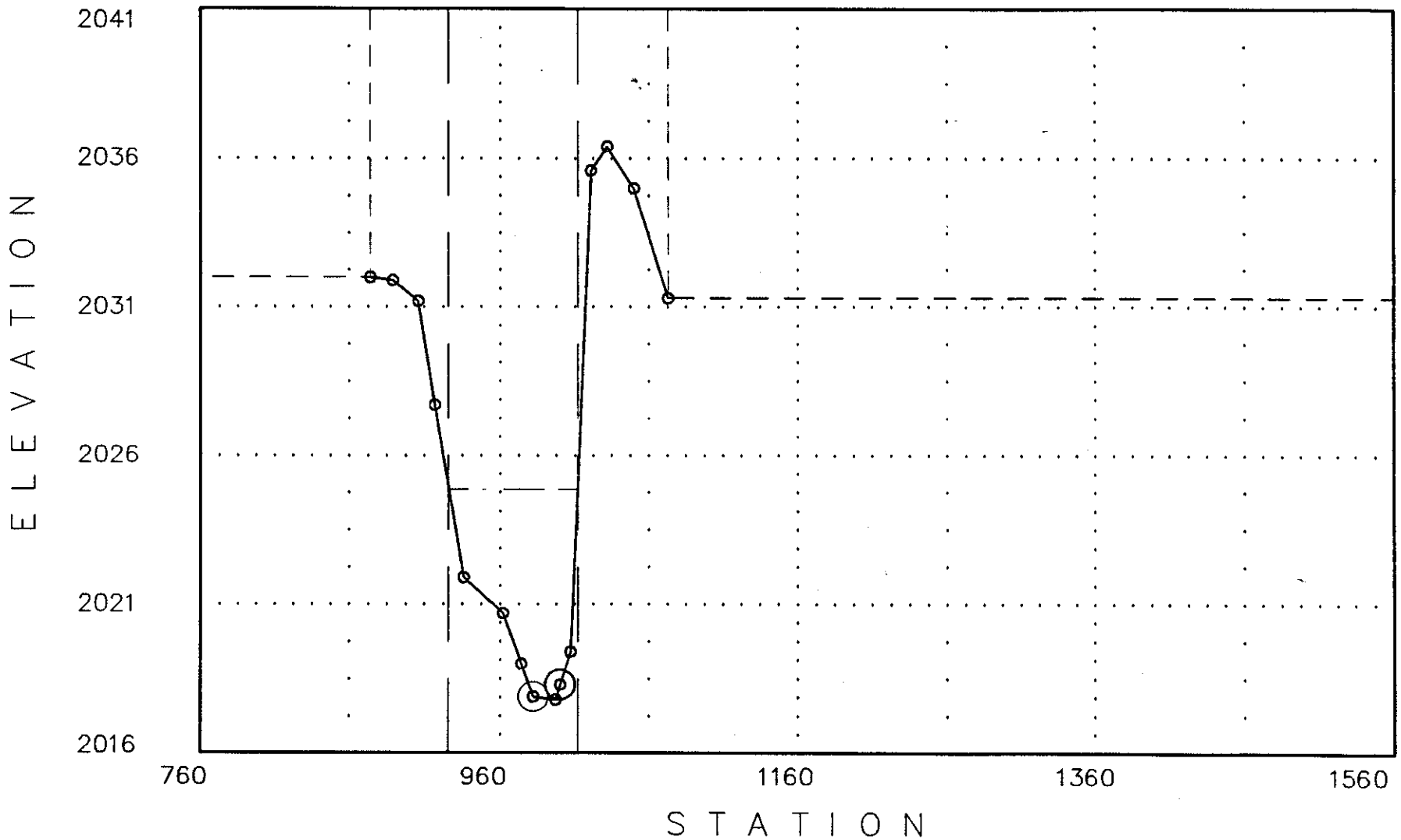


08-19-1992

<<<<<< Cross Section: 3.15: (FN = WASHS.O) >>>>>>

Q1= 3037 WS1= 2024.86
Q2= 3037 WS2= 2024.85

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .07

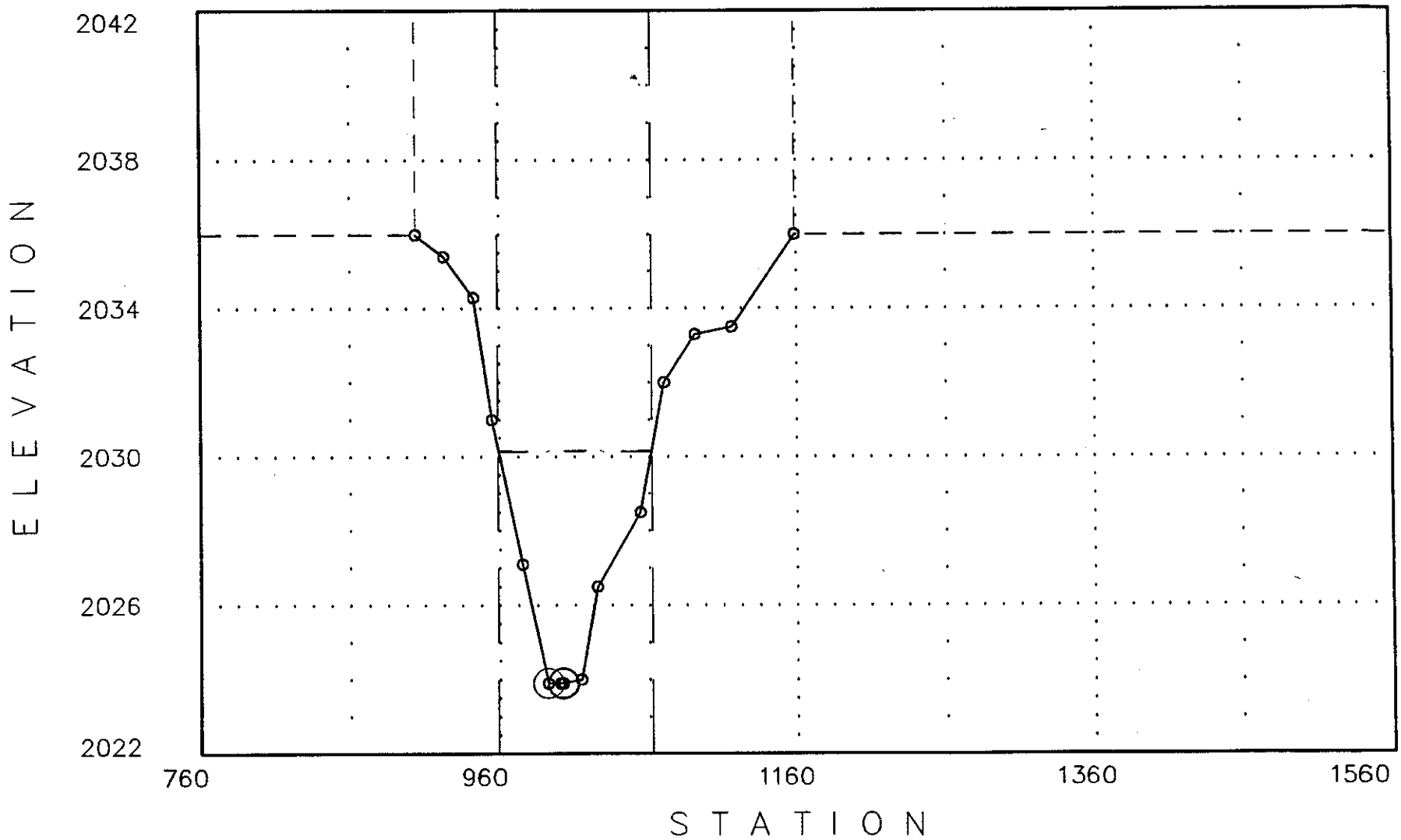


08-19-1992

<<<<<< Cross Section: 3.247: (FN = WASHS.O) >>>>>>

Q1= 3037 WS1= 2030.14
Q2= 3037 WS2= 2030.16

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .07

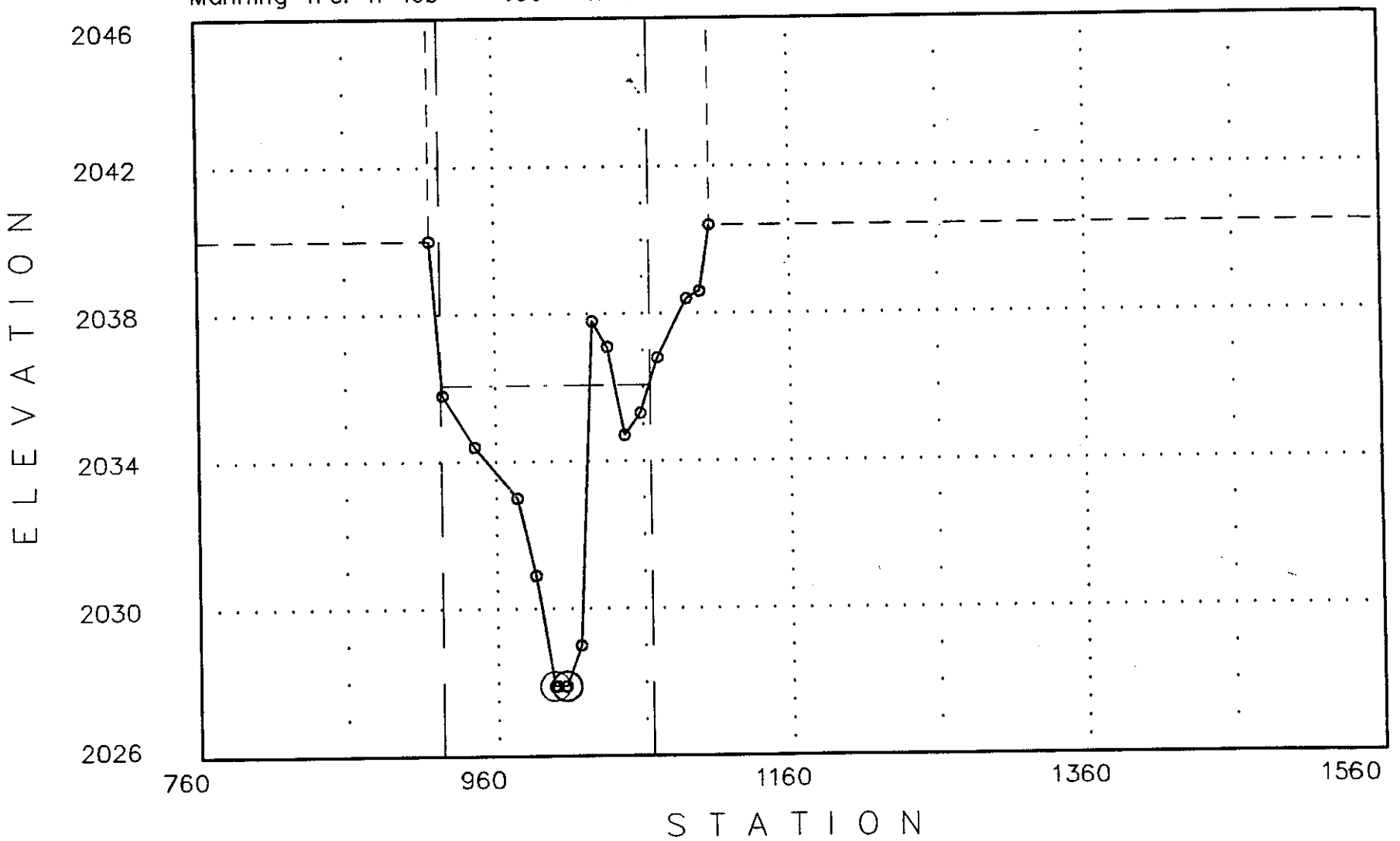


08-19-1992

<<<<<< Cross Section: 3.344: (FN = WASHS.O) >>>>>>

Q1= 3037 WS1= 2036.07
Q2= 3037 WS2= 2036.07

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .07

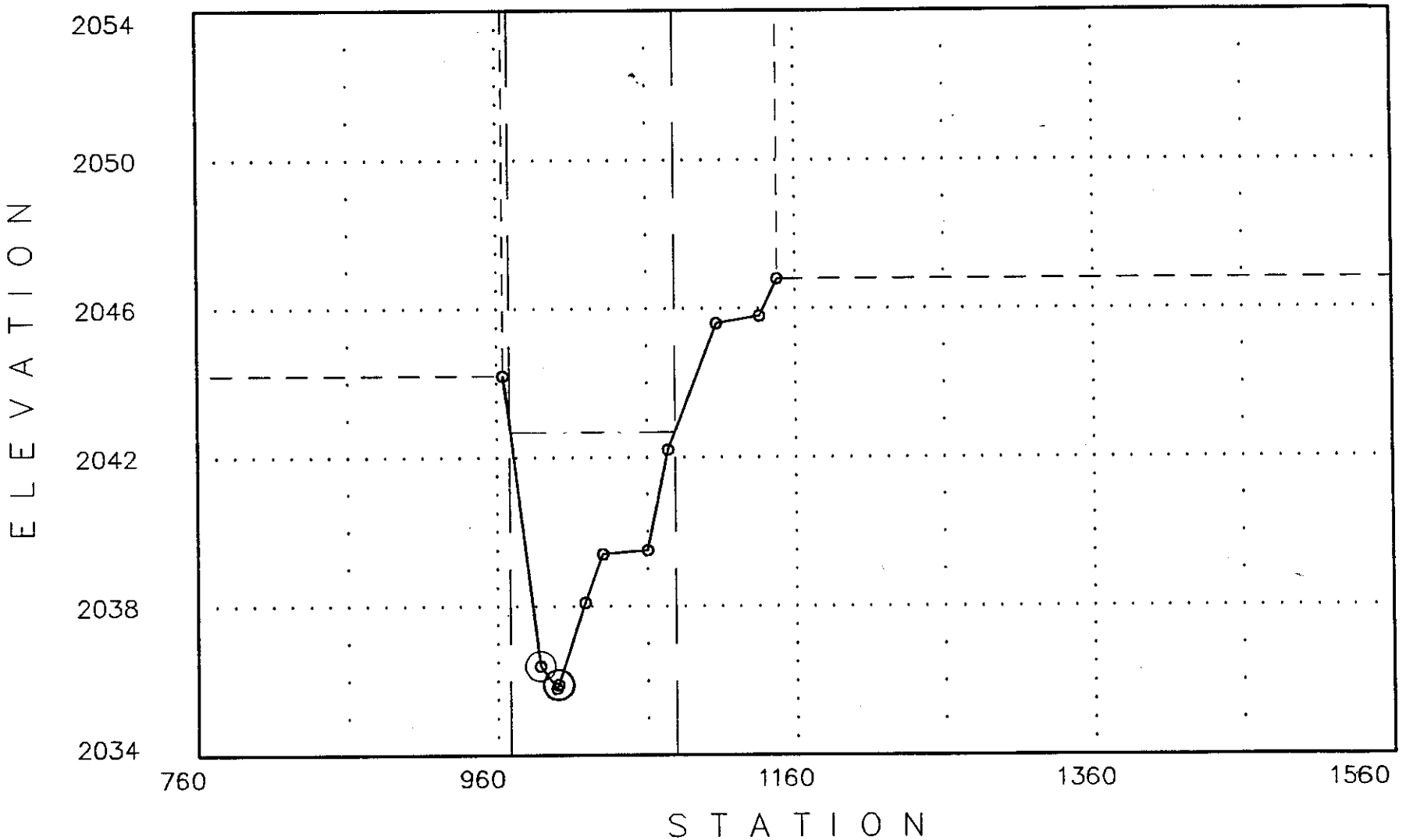


08-19-1992

<<<<<< Cross Section: 3.438: (FN = WASHS.O) >>>>>>

Q1= 3037 WS1= 2042.67
Q2= 3037 WS2= 2042.69

Manning-n's: n-lob = .07 n-ch = .035 n-rob = .07

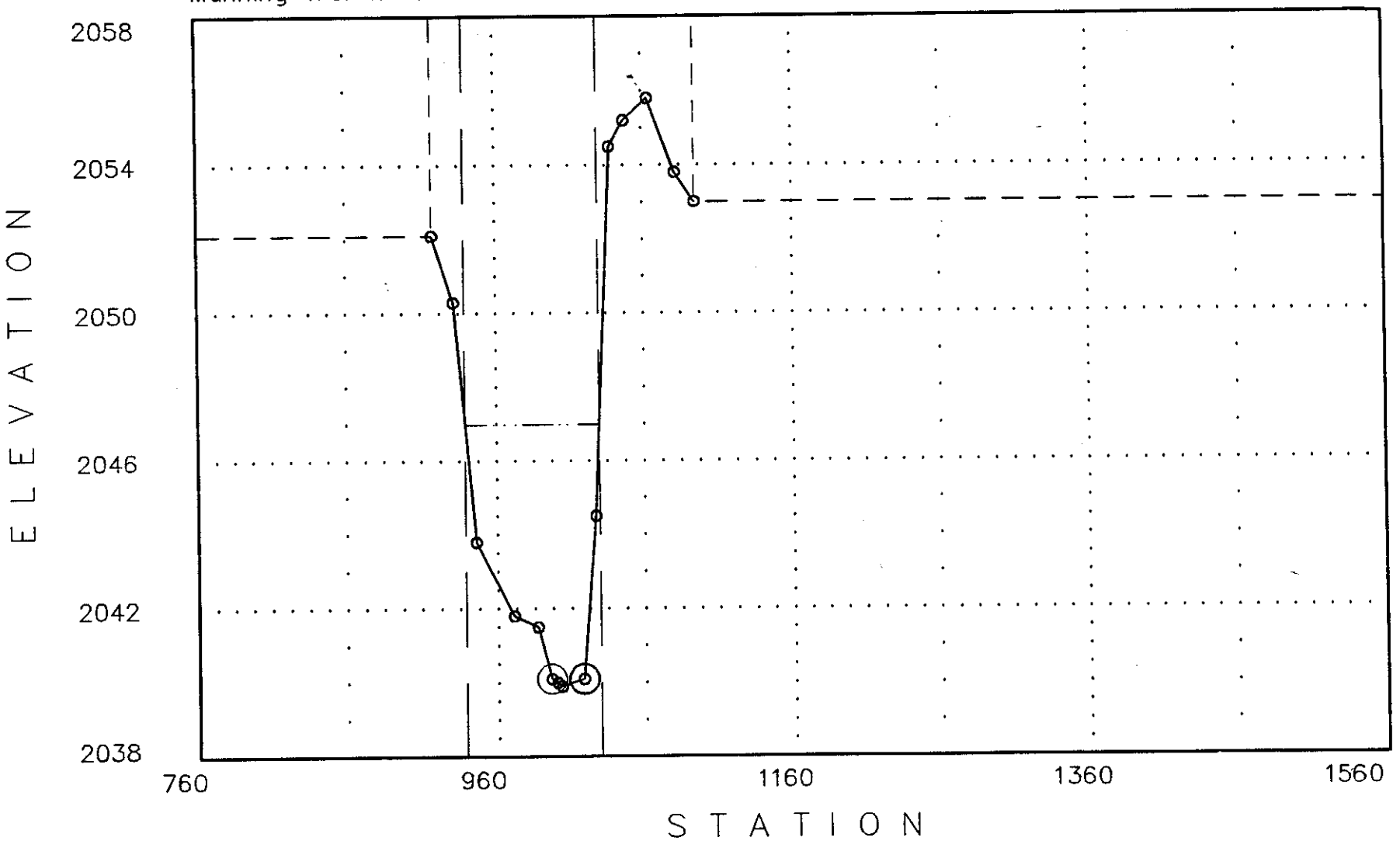


08-19-1992

<<<<<< Cross Section: 3.534: (FN = WASHS.0) >>>>>>

Q1= 3037 WS1= 2046.99
Q2= 3037 WS2= 2046.98

Manning-n's: n-lob = .07 n-ch = .035 n-rob = .07

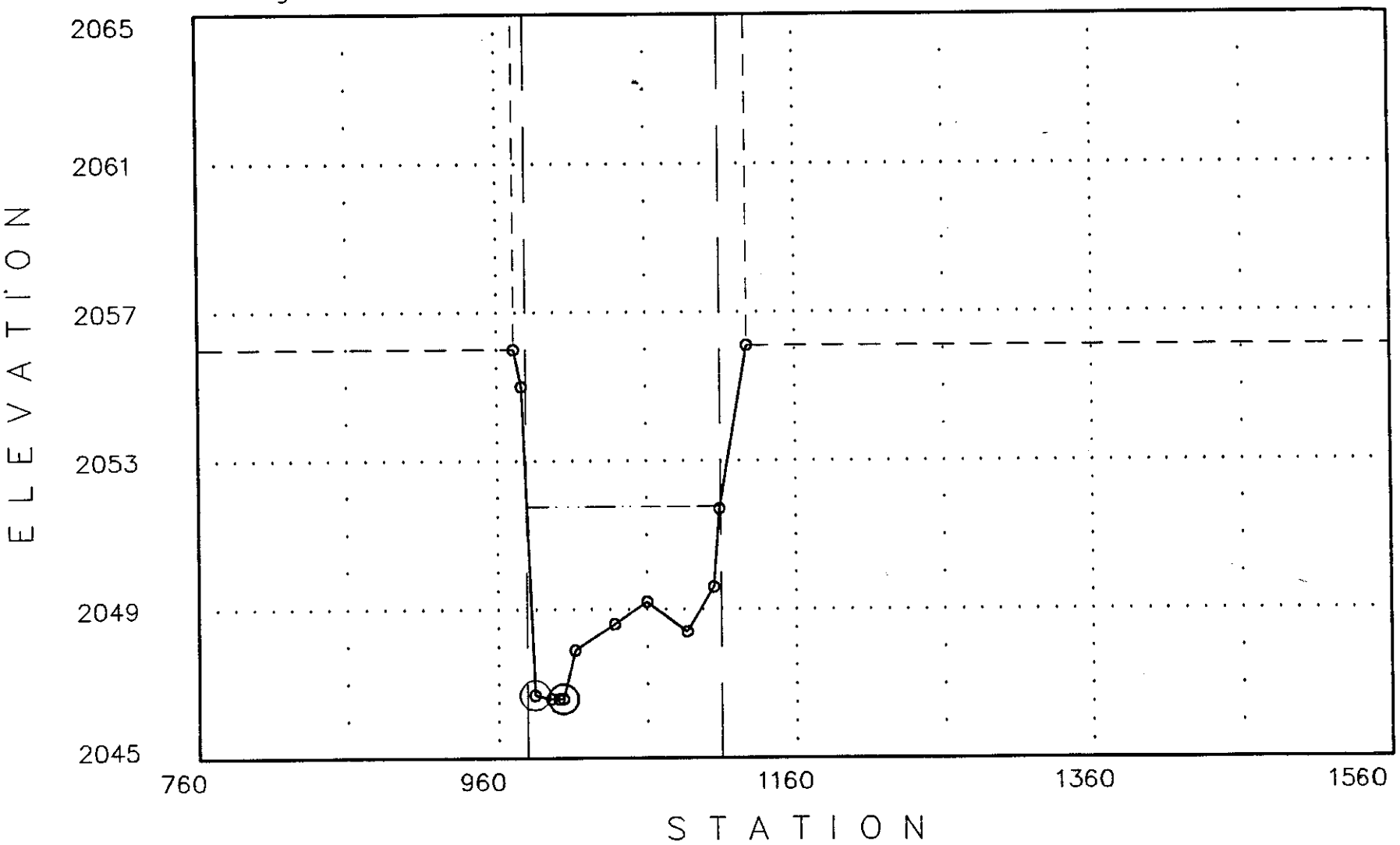


08-19-1992

<<<<<< Cross Section: 3.627: (FN = WASHS.O) >>>>>>

Q1= 3037 WS1= 2051.76
Q2= 3037 WS2= 2051.77

Manning-n's: n-lob = .07 n-ch = .035 n-rob = .07

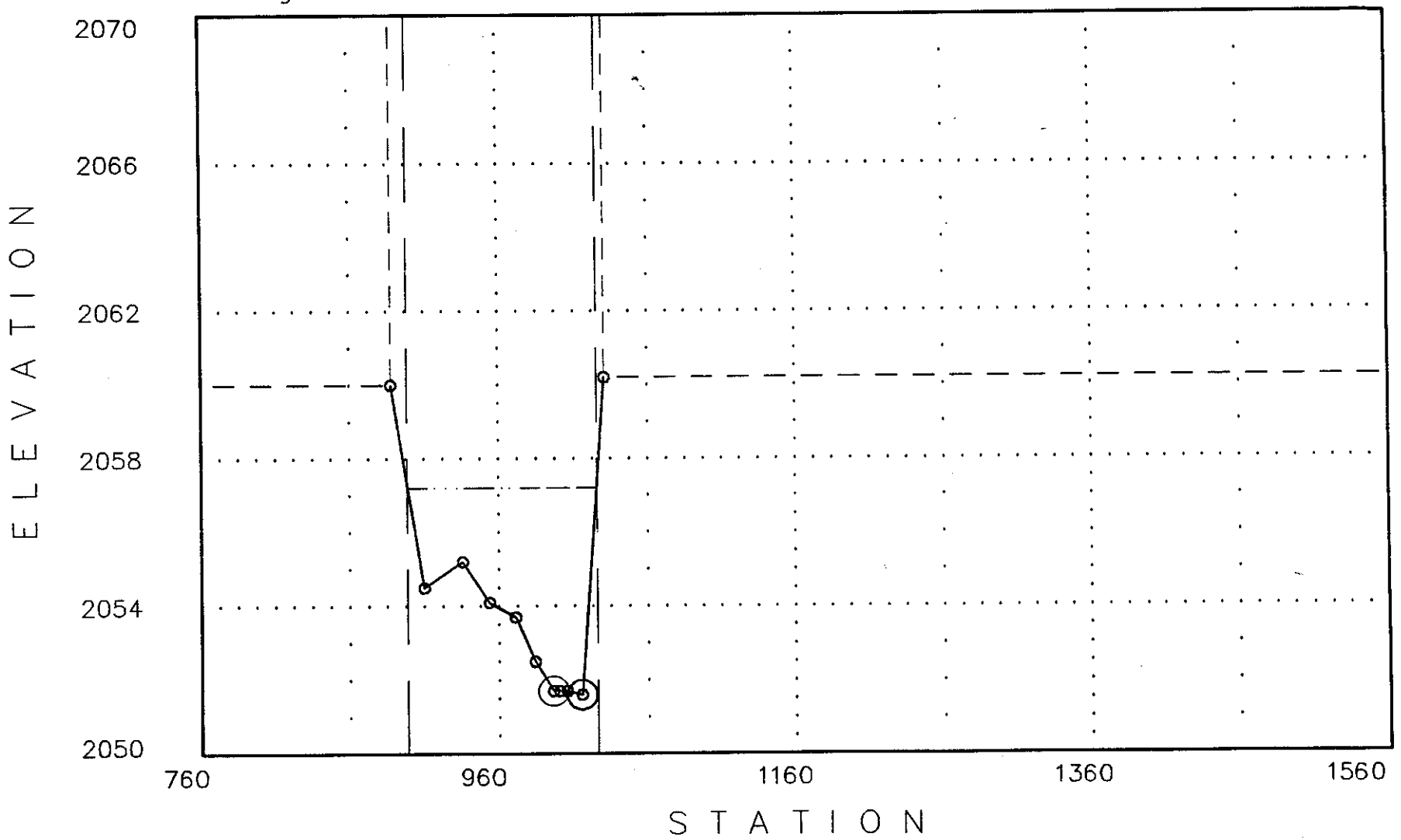


08-19-1992

<<<<<< Cross Section: 3.723: (FN = WASHS.O) >>>>>>

Q1= 2849 WS1= 2057.2
Q2= 2849 WS2= 2057.2

Manning-n's: n-lob = .07 n-ch = .035 n-rob = .07

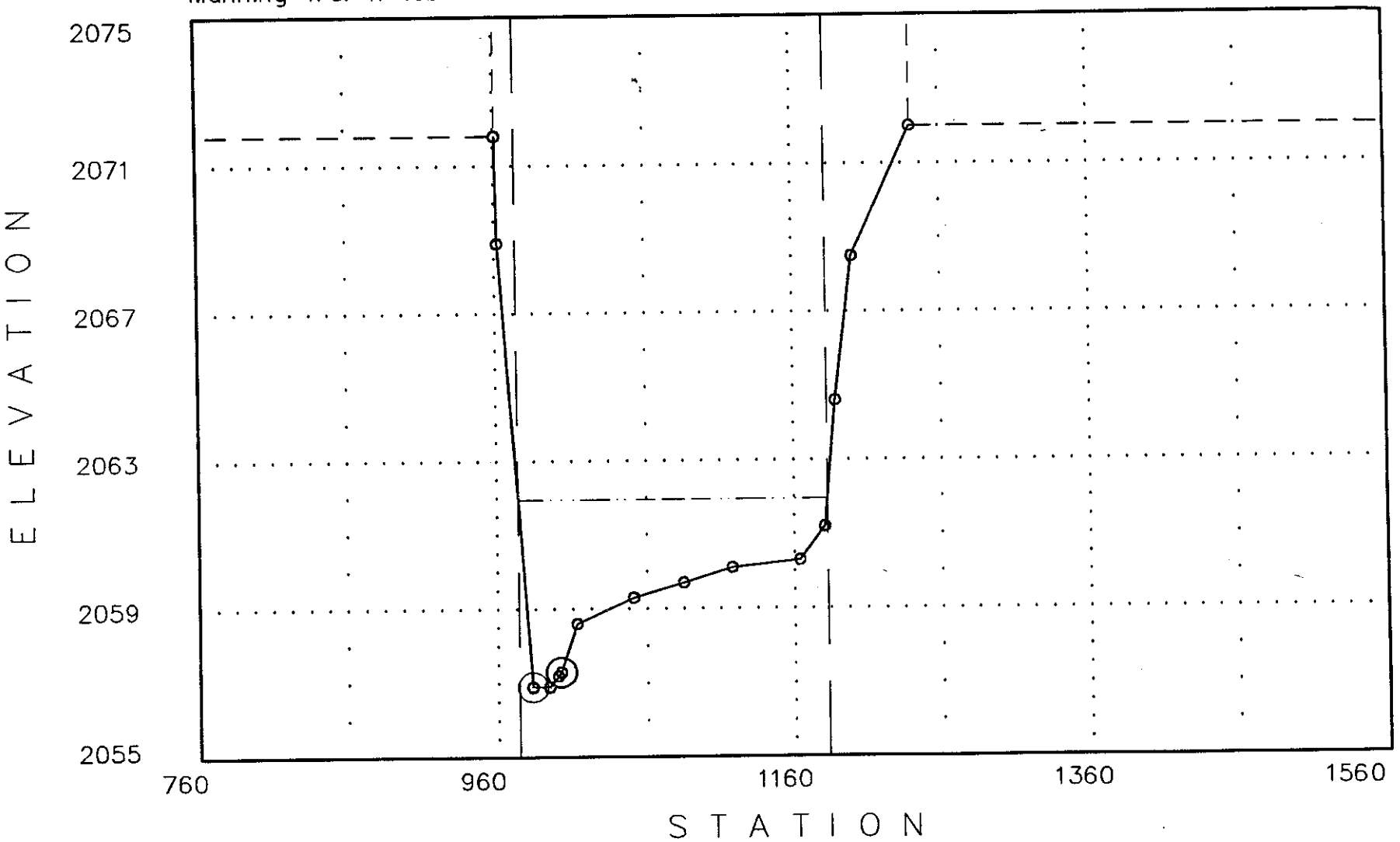


08-19-1992

<<<<<< Cross Section: 3.809: (FN = WASHS.0) >>>>>>

Q1= 2849 WS1= 2061.96
Q2= 2849 WS2= 2061.96

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

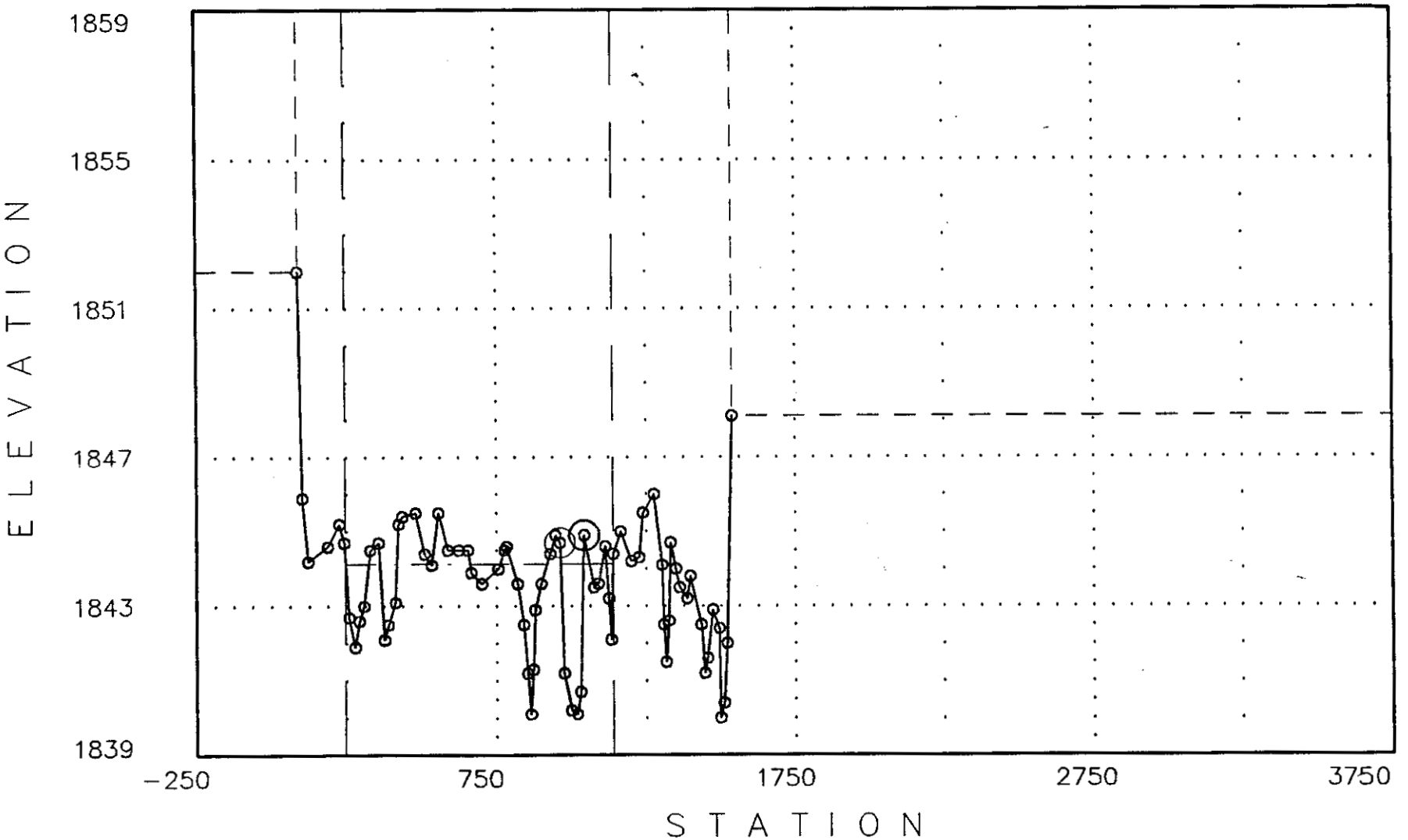


08-19-1992

<<<<<< Cross Section: -.817: (FN = WASHS.0) >>>>>>

Q1= 3403 WS1= 1844.13
Q2= 3403 WS2= 1844.13

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

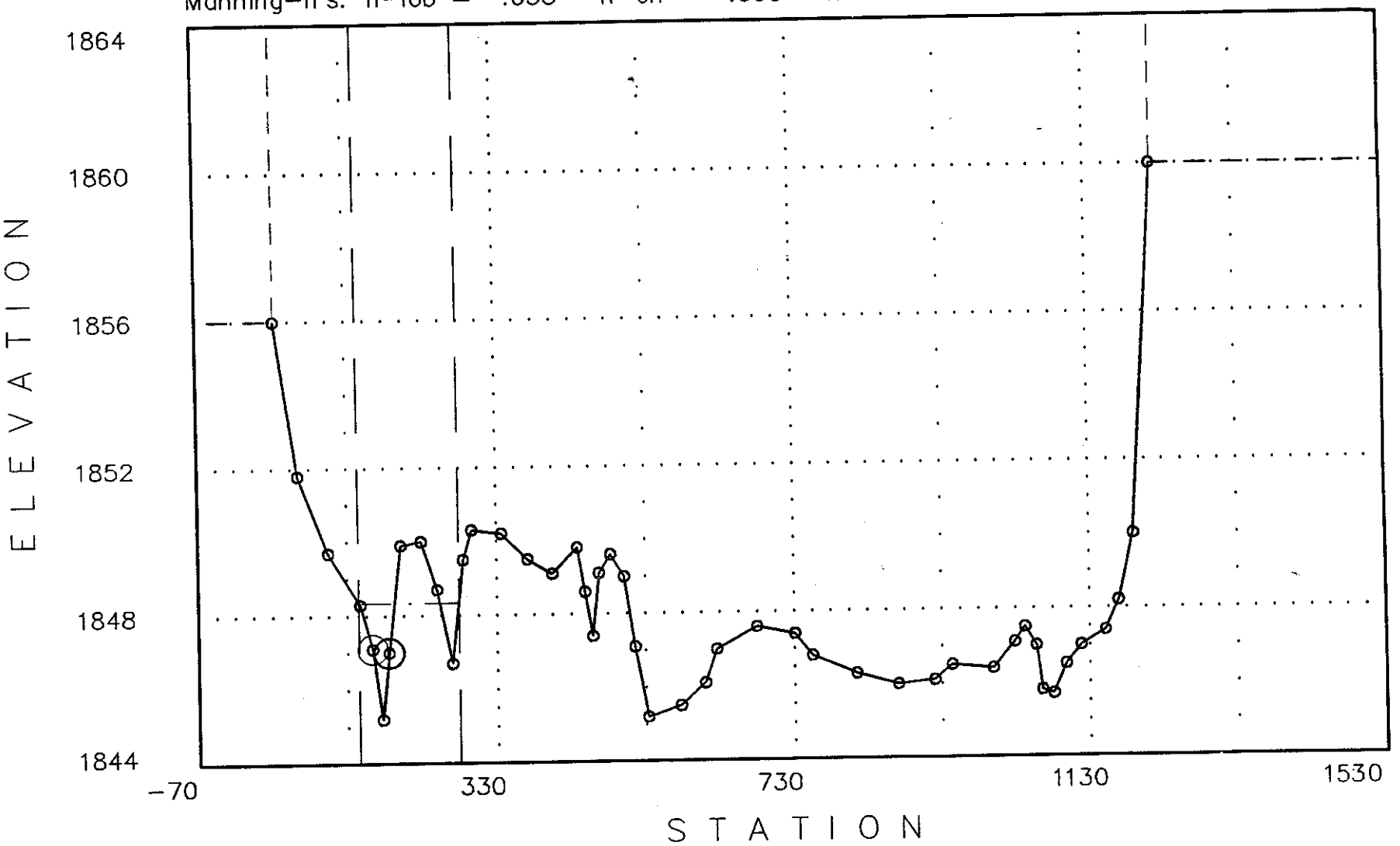


08-19-1992

<<<<<< Cross Section: .06: (FN = WASHS.O) >>>>>>

Q1= 420 WS1= 1848.34
Q2= 420 WS2= 1848.34

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .065

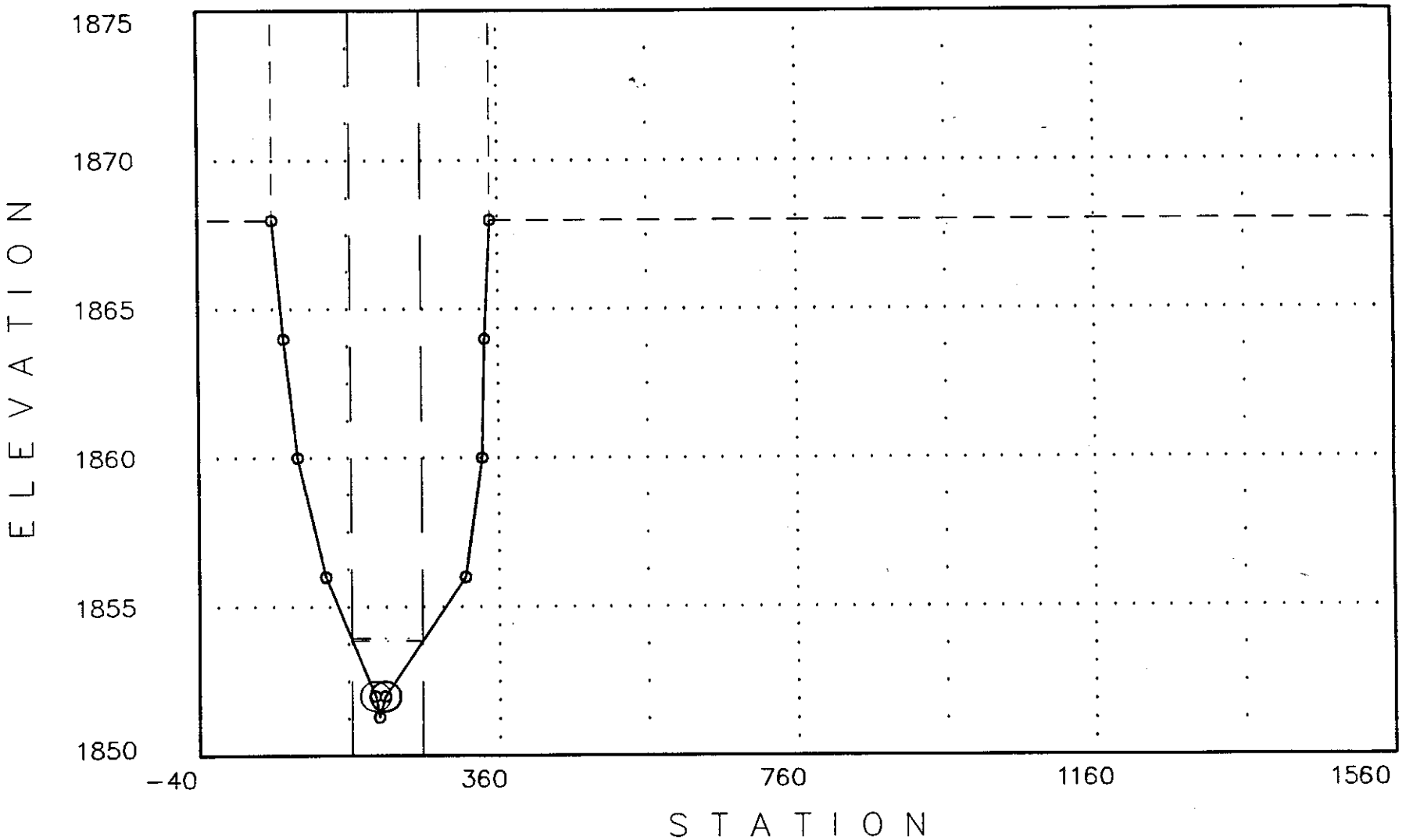


08-19-1992

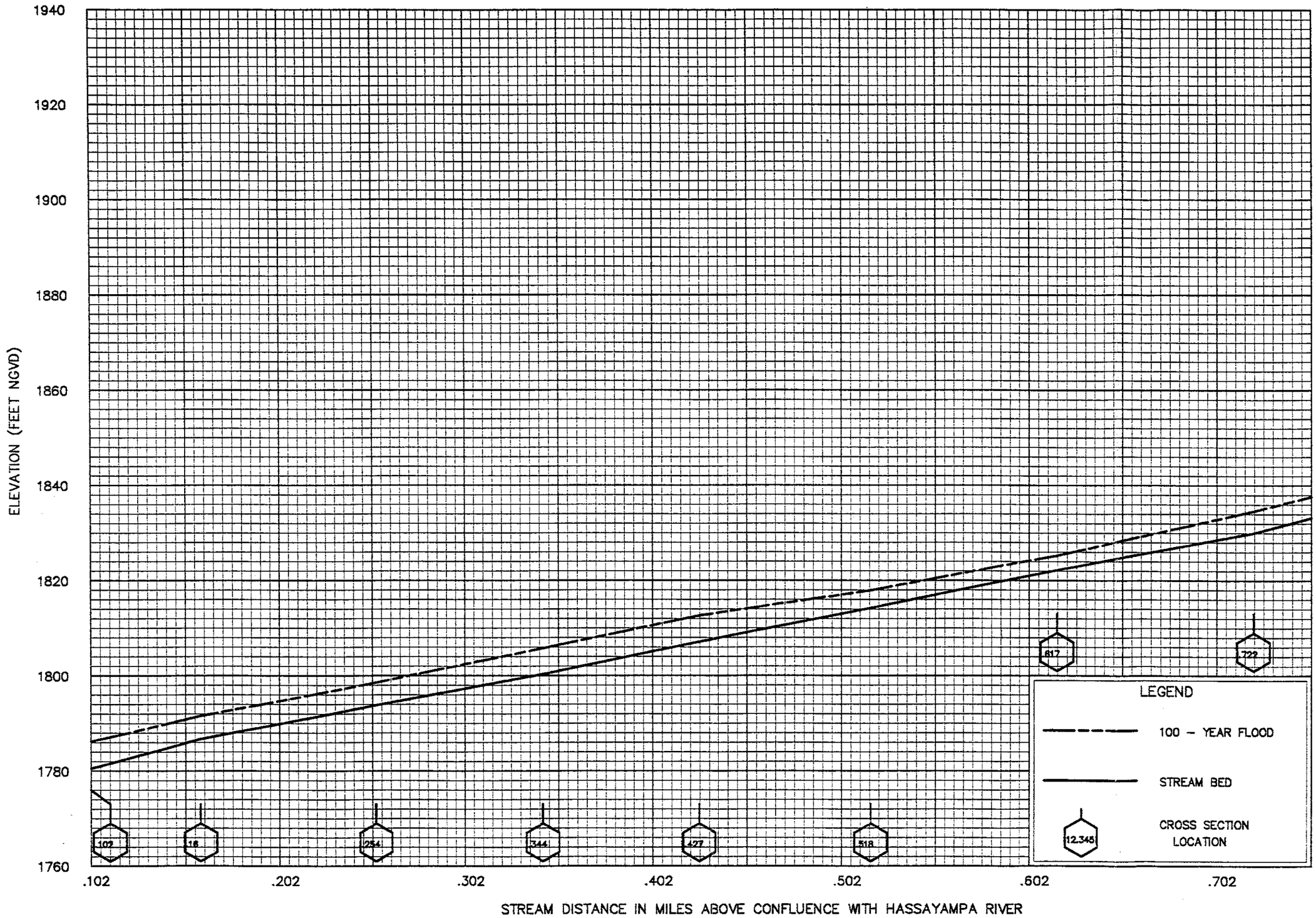
<<<<<< Cross Section: .11: (FN = WASHS.O) >>>>>>

Q1= 420 WS1= 1853.86
Q2= 420 WS2= 1853.95

Manning-n's: n-lob = .055 n-ch = .035 n-rob = .065



08-19-1992

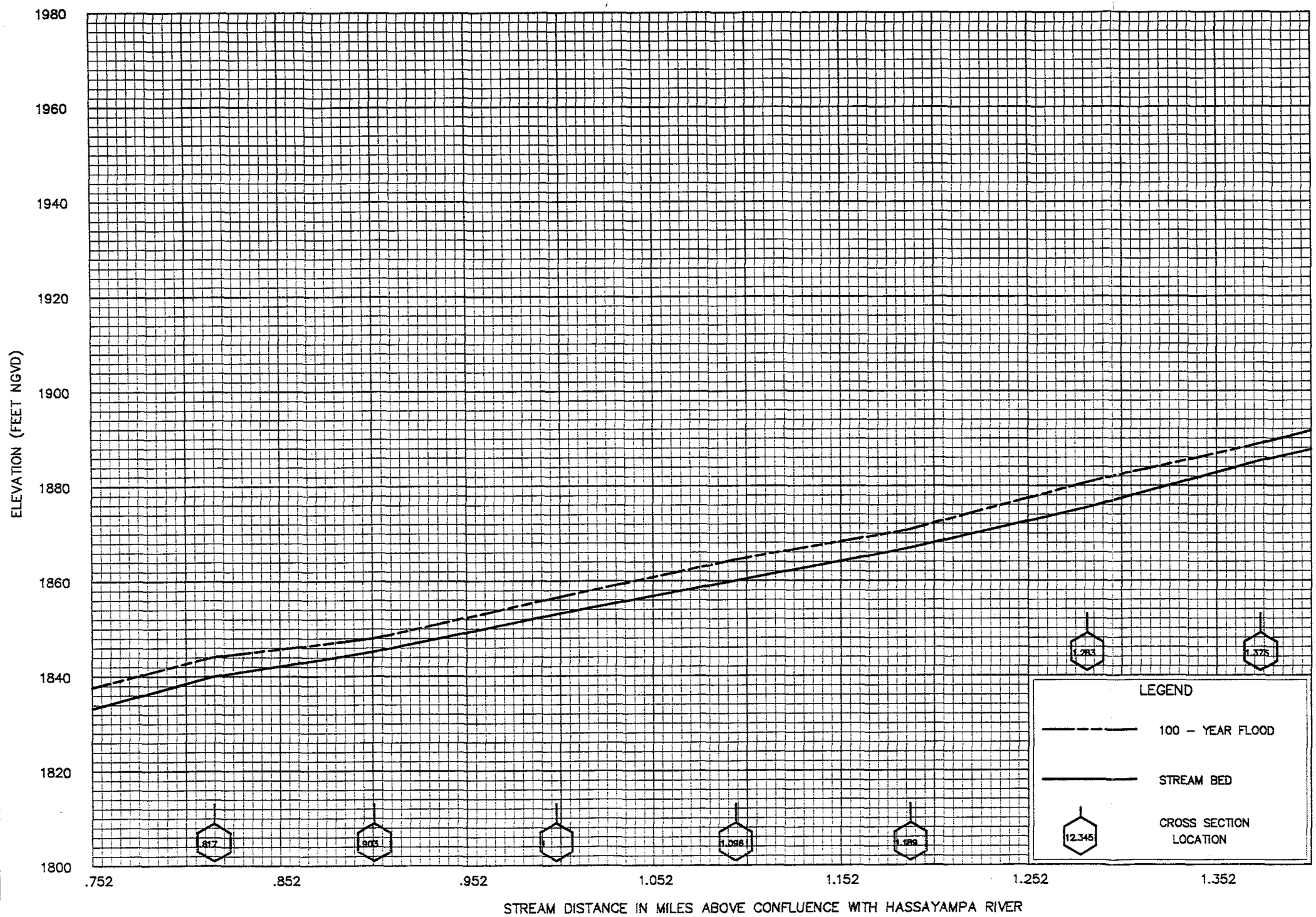


FLOOD PROFILES

LITTLE SAN DOMINGO WASH (WASH S)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

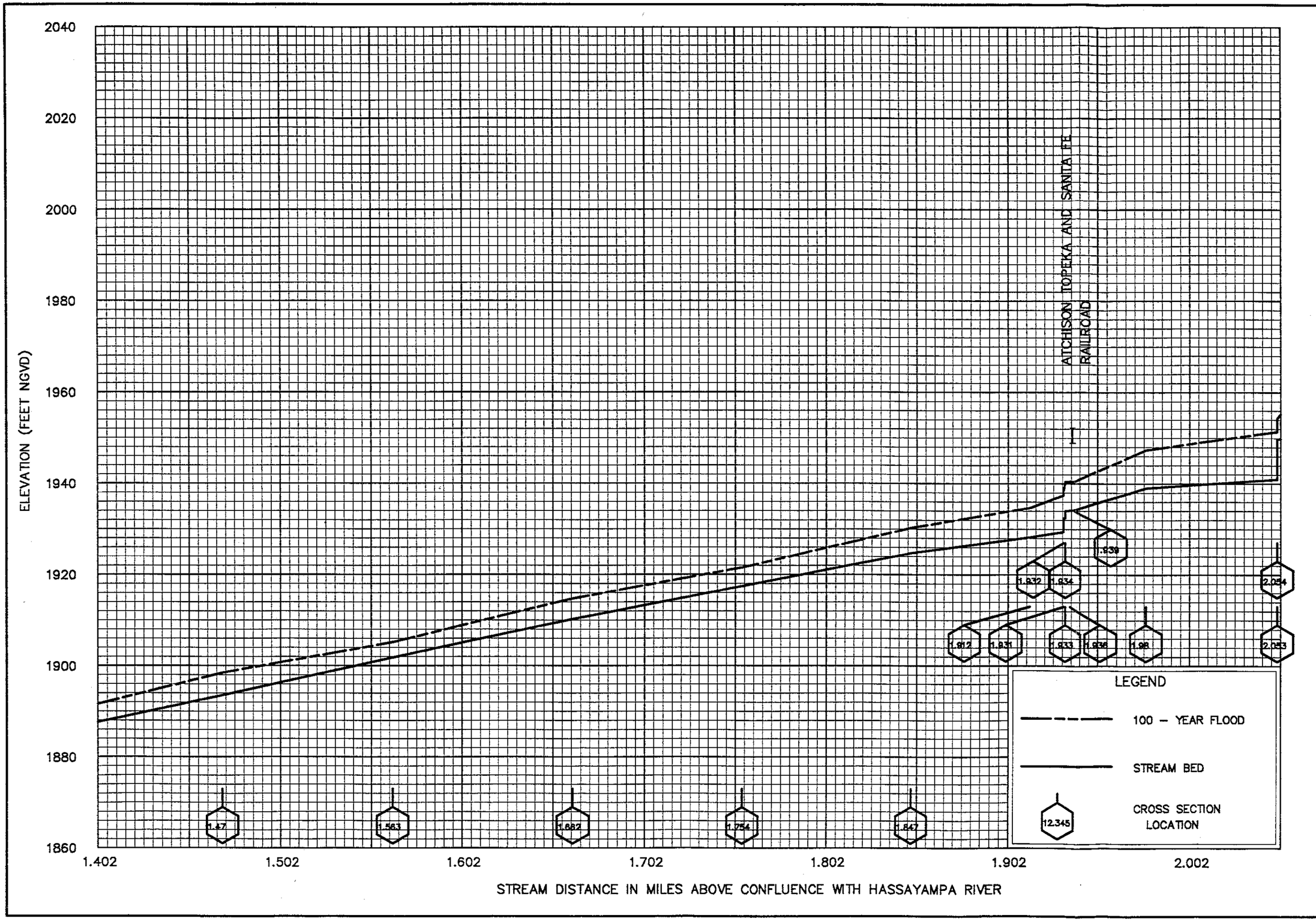


FLOOD PROFILES

LITTLE SAN DOMINGO WASH (WASH S)

FEDERAL EMERGENCY MANAGEMENT AGENCY

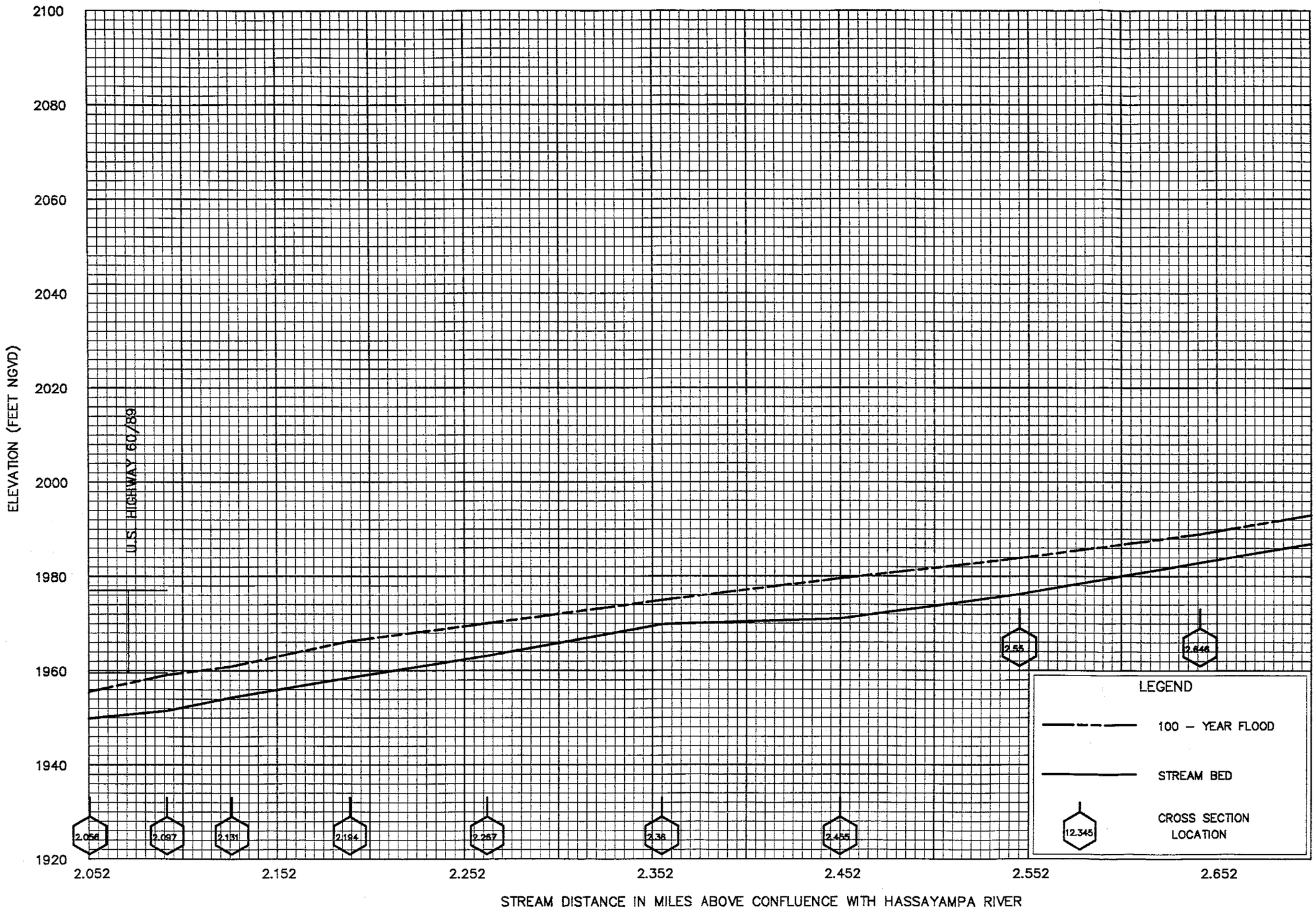
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



FLOOD PROFILES

LITTLE SAN DOMINGO WASH (WASH S)

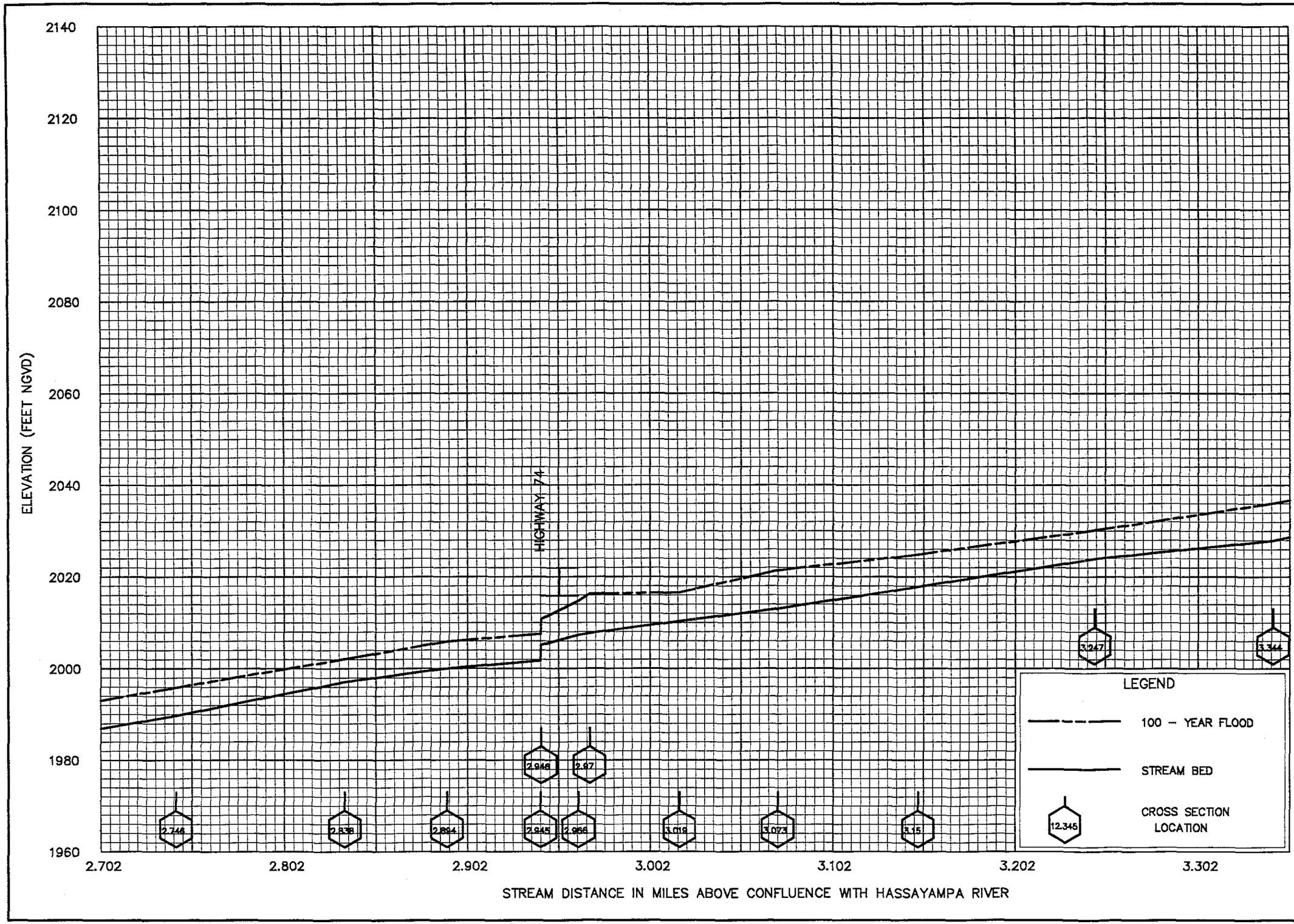
FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



FLOOD PROFILES

LITTLE SAN DOMINGO WASH (WASH S)

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

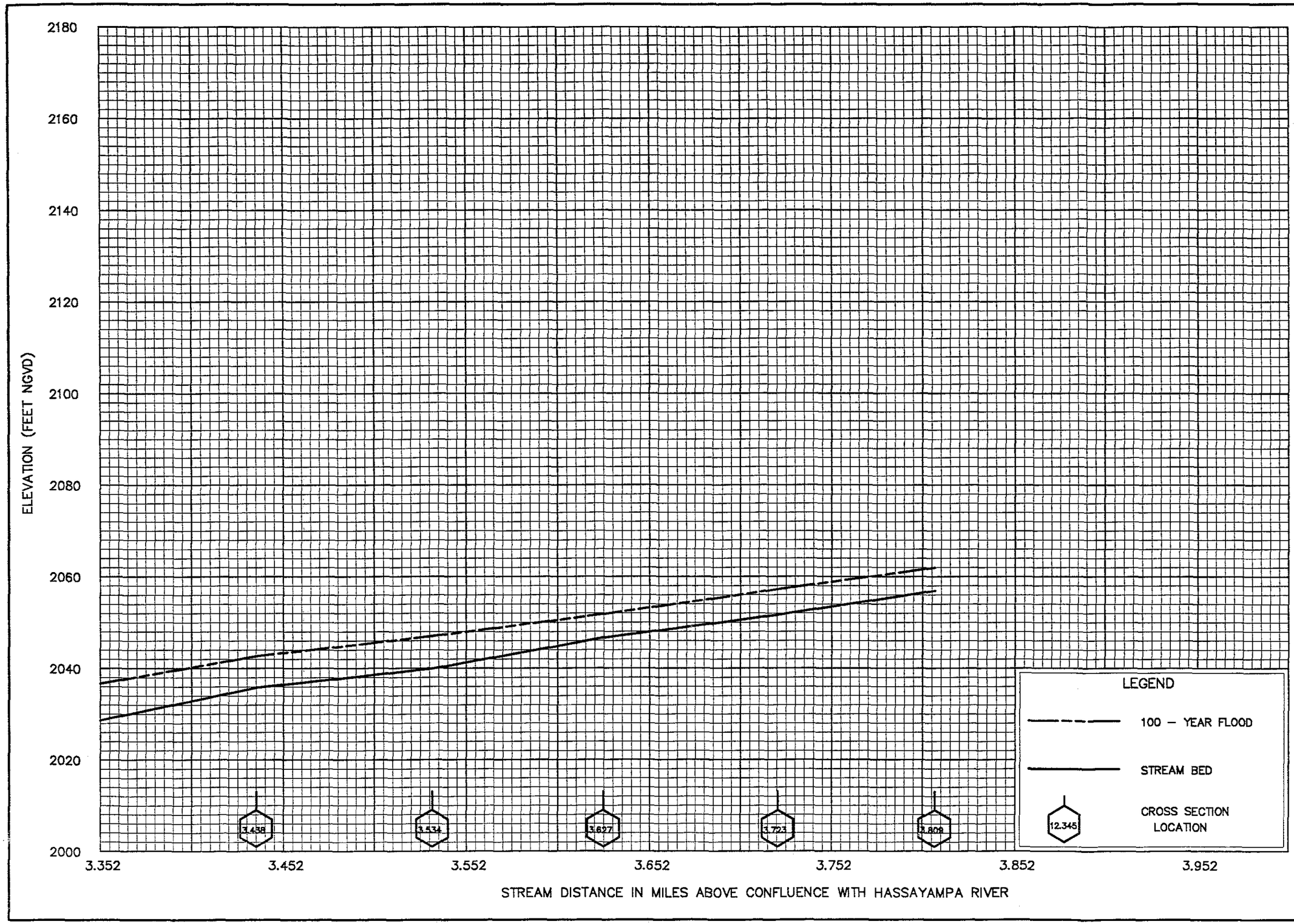


FLOOD PROFILES

LITTLE SAN DOMINGO WASH (WASH S)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



FLOOD PROFILES

LITTLE SAN DOMINGO WASH (WASH S)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

Flood Control District of Maricopa County
Contract FCD 89-79

WICKENBURG AREA DRAINAGE MASTER STUDY

TECHNICAL DOCUMENTATION REPORT

Appendix 6.17: HEC-2 Models & Cross Section Plots for East Area Wash
SAN DOMINGO WASH (Wash t)

Submitted to the
Federal Emergency Management Agency
on Behalf of the
Flood Control District of Maricopa County

N:\1197\02\ADMIN\119702RP.063

May 1994

FEDERAL EMERGENCY MANAGEMENT AGENCY **HYDROLOGIC ANALYSIS FORM**	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.67 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: Wash T : San Domingo Wash
(One form for each flooding source)

Project Name /Identifier: Wickenburg ADMS FCD 89-79

1. HYDROLOGIC ANALYSIS IN FIS

☐ Approximate study stream (Zone A)
☒ Detailed study stream (briefly explain methodology) HEC-1 analysis based on Flood Control District of Maricopa County Methodologies.

2. REASON FOR NEW HYDROLOGIC ANALYSIS

☐ No existing analysis
☐ Improved data *(see data revision on page 3)*
☐ Changed physical conditions of watershed *(explain)* _____

☐ Alternative methodology *(justify why the revised model is better than model used in the effective FIS)*

☐ Evaluation of proposed conditions (CLOMRs only) (explain) _____

☒ Other No existing analysis or analysis being updated to reflect existing conditions.

If a computer program/model was used in revising the hydrologic analysis, please provide a diskette with the input files for the 10-, 50-, 100 - and 500-year recurrence intervals.

Only the 100-year recurrence interval need be included for SFHAs designated as Zone A.

3. APPROVAL OF ANALYSIS

☒ Approval of hydrologic analysis, including the resulting peak discharge value (s) has been provided by the appropriate local, state, or Federal Agency. (i.e., Flood Control District of Maricopa County)
Attach evidence of approval.

☐ Approval of the hydrologic analysis is not required by any local, State, or Federal Agency.

Stream: _____

Comparison of 100-year Discharges

Location:	Drainage area (Sq mi.)	FIS (cfs) :	Revised (cfs) :
Confluence with Hassayampa River	20.33 Sq. mi.	—	12760 cfs

Note: When revised discharges are not significantly different than FIS discharges, FEMA may require a confidence limits analysis on attachment D at a later date to complete the review.

As is often the case with revision requests, only a portion of a stream may actually be revised or be affected by a revision. Therefore, transition to the unrevised portion is important to maintain the continuity of the study. NFIP regulations stipulate that such a transition must be assured. What is the transition from the proposed discharges to the effective discharges? Please explain how the transition was made *(attach separate sheet if necessary)*

No existing analysis or updated analysis to reflect existing conditions.

ATTACH A COMPLETED REVIEW OF RESULTS PAGE FOR EACH FLOODING SOURCE.

Is the new hydrologic analysis being developed solely to revise the flow values presented in the FIS *(i.e. no changed hydraulic conditions)*? ☐ Yes ☒ No

If yes, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

FEMA does not normally revise NFIP maps solely due to insignificant flow changes where changes in 100-year water surface elevation are less than 1.0 foot.

5. HISTORICAL FLOODING INFORMATION

Is historical data available for the flooding source? ☐ Yes ☒ No

If yes, provide the following:

Location along flooding source: _____

Maximum peak discharge: _____ cfs

Second highest peak discharge: _____ cfs

Source of information: _____

6. GAGE RECORD INFORMATION

Location of nearest gage to project site *(along flooding source or similar watershed; specify)*

NA

Gaging Station: _____

Drainage area at gage: _____ mi^2

Number of years of data: _____

7. DATA REVISION

Please use the following table to list all the data and/or parameters affected by this request and identify them as new data (*New*) or as revising existing data (*Revised*). *(If necessary, attach a separate sheet.)*

Data Parameter	New	Revised	Data Source
NA	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	

- Data source can be from a Federal, State, or local government agency, or from a private source. Some State and local governments may have less strict data requirements than Federal agencies, in which case the hydrologic data may not be accepted by FEMA unless it is demonstrated that the data give a better estimate of the flood discharge.
- Attach documentation corroborating each data source *(i.e., certified statement, report, bibliographical reference to a published document)*. In the case of a published document or a government report, providing copies of the cover and pertinent pages may be helpful.

8. METHODOLOGY FOR NEW ANALYSIS

☐ Statistical Analysis of Gage Records (*use Attachment A*)

☐ Regional Regression Equations (*use Attachment B*)

☒ Precipitation/Runoff Model (*use Attachment C*)

☐ Other *(specify; attach backup computations and supporting data)* _____

ATTACHMENT A: STATISTICAL ANALYSIS OF GAGE RECORDS

Gaging Station: NA

Gage Location (latitude and longitude): _____

	FIS:	Revised:
1. Number of years of data		
Systematic		
Historical		
2. Homogeneous data	☐ Yes ☐ No	☐ Yes ☐ No
3. Data adjustments	☐ Yes ☐ No	☐ Yes ☐ No
4. Number of high outliers		
Low outliers		
Zero events		
5. Generalized skew		
6. Station skew		
7. Adopted skew		
8. Probability distribution used (justify if log-Pearson III was not used)		
9. Transfer equations to ungaged sites		☐ Yes ☐ No

If yes, specify method

_____

_____

_____

10. Expected probability*	☐ Yes ☐ No
11. Comparison of results with other analyses	☐ Yes ☐ No

If yes, describe comparison

_____

_____

_____

*FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data is not available, indicate by N/A.

Attach analysis including plot of flood frequency curve.

1. Bibliographical Reference:
NA

(Attach a copy of title page, table of contents, and pertinent pages including equations.)

2. Gaged or ungaged stream: _____

3. Hydrologic region(s): _____
Attach backup map.

4. Provide parameters, values, and source of data used to define parameters.

		FIS:		Revised:	
5.	Urbanized conditions calculations	☐ Yes	☐ No	☐ Yes	☐ No
6	Percent of watershed urbanization	_____		_____	
7.	Is the watershed controlled?	☐ Yes	☐ No	☐ Yes	☐ No
8.	Comparison with other analyses	☐ Yes	☐ No	☐ Yes	☐ No

If the answer to 5, 7, or 8 is yes, explain methodology in Comments.

If data is not available, indicate by N/A.

Comments

Attach computation and supporting maps, delineating the watershed boundary and drainage area divides.

		FIS:	Revised
1.	Method or model used:		HEC-1
	Version:		Ver. 3.0
	Date:		02 AUG. 88
2.	Source of rainfall depth:		NOAA Atlas 2
3.	Source of rainfall distribution:		SCS TYPE II
4.	Rainfall duration:		24 hours
5.	Areal adjustment to precipitation (%):		NWS HYDRO-40
6.	Hydrograph development method:		S-Graph
7.	Loss rate method:		Green-AMPT
	Source of soils information:		SCS
	Source of land use information		Town of Wickenburg
8.	Channel routing method:		Normal Depth
9.	Reservoir routing:	☐ Yes ☐ No	☐ Yes ☒ No
10.	Baseflow considerations:	☐ Yes ☐ No	☐ Yes ☒ No

If yes, explain how baseflow was determined:

11. Snowmelt considerations: ☐ Yes ☐ No ☐ Yes ☒ No

12. Model calibration: ☐ Yes ☐ No ☒ Yes ☐ No

If yes, explain how calibration was performed Computed discharges were compared with DISCHARGE vs DRAINAGE AREA curves and envelopes prepared by the Flood Control District of Maricopa County.

13. Future land use condition: ☐ Yes ☒ No

If yes, explain why

NOTE: FEMA policy is to base flooding on existing conditions.
If data is not available, indicate by N/A.

Attach precipitation/runoff model, hydrologic model schematic, curve number calculations, time of concentration calculations, and supporting maps, delineating the watershed boundary and drainage area divides.

Stream: NA - No flow records

Select one location for Confidence Limits Evaluation (*describe location*): _____

_____

Discharges for selected location:

Exceedance Probability		FIS	Revised
10%	(10-year)	_____ cfs	_____ cfs
2%	(50-year)	_____ cfs	_____ cfs
1%	(100-year)	_____ cfs	_____ cfs
0.2%	(500-year)	_____ cfs	_____ cfs

1% (100-year) Flood Confidence Intervals

90% Confidence Interval: 5% limit _____ cfs

95% limit _____ cfs

50% Confidence Interval: 25% limit _____ cfs

75% limit _____ cfs

If the value of the 100-year frequency flood in the FIS is beyond the 50% confidence interval but within the 90% confidence interval, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

An example of confidence limits analysis can be found in Appendix 9 of Bulletin 17B.

Attach Confidence Limits Analysis.

Appendix # 6.17

FEDERAL EMERGENCY MANAGEMENT AGENCY RIVERINE HYDRAULIC ANALYSIS FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: Wash T: San Domingo Wash
(One form for each flooding source)

Project Name/Identifier: Wickenburg ADMS - FCD 89-79

1. REACH TO BE REVISED

Downstream limit: Station 0.030

Upstream limit: Station 2 250

2. EFFECTIVE FIS

☐ Not studied

☐ Studied by approximate methods

Downstream limit of study _____

Upstream limit of study _____

☒ Studied by detailed methods

Downstream limit of study Confluence with Hassayampa River

Upstream limit of study Station 2.250

☐ Floodway delineated

Downstream limit of Floodway _____

Upstream limit of Floodway _____

3. HYDRAULIC ANALYSIS

Why is the hydraulic analysis different from that used to develop the FIRM. *(Check all that apply)*

☐ Not studied in FIS

☐ Improved hydrologic data/analysis. Explain: _____

☐ Improved hydraulic analysis. Explain: _____

☐ Flood control structure. Explain: _____

☐ Other. Explain: _____

Full input and output listings along with files on diskette *(if available)* for each of the models listed below and summary of the source of input parameters used in the models must be provided. The summary must include a complete description of any changes made from model to model (*e.g. duplicate effective model to corrected effective model).* Only the Duplicate Effective and the Revised or Post-Project Conditions models must be submitted. See instructions for directions on when other models may be required. Only the 100-year flood profile is required for SFHAs with a Zone A designation. For areas which do not have detailed flooding, a hydraulic model is not required; however BFE's may not be added to the revised FIRM.

☐ Duplicate Effective Model — Natural ☐ Floodway ☐

Copies of the hydraulic analysis used in the effective FIS, referred to as the effective models *(10-, 50-, 100-, and 500-year multi-profile runs and the floodway run)* must be obtained and then reproduced on the requestor's equipment to produce the duplicate effective model. This is required to assure that the effective model input data has been transferred correctly to the requestor's equipment and to assure that the revised data will be integrated into the effective data to provide a continuous FIS model upstream and downstream of the revised reach.

☐ Corrected Effective Model — Natural ☐ Floodway ☐

The corrected effective model is the model that corrects any errors that occur in the duplicate effective model, adds any additional cross sections to the duplicate effective model, or incorporates more detailed topographic information than that used in the currently effective model. The corrected effective model must not reflect any man-made physical changes since the date of the effective model. An error could be a technical error in the modeling procedures, or any construction in the floodplain that occurred prior to the date of the effective model but was not incorporated into the effective model.

☐ Existing or Pre-Project Conditions Model — Natural ☐ Floodway ☐

The duplicate effective or corrected model is modified to produce the existing or pre-project conditions model to reflect any modifications that have occurred within the floodplain since the date of the effective model but prior to the construction of the project for which the revision is being requested. If no modification has occurred since the date of the effective model, then this model would be identical to the corrected effective or duplicate effective model.

☐ Revised or Post-Project Conditions Model — Natural ☐ Floodway ☐

The existing or pre-project conditions model *(or duplicate effective or corrected effective model, as appropriate)* is revised to reflect revised or post-project conditions. This model must incorporate any physical changes to the floodplain since the effective model was produced as well as the effects of the project. When the request is for proposed project this model should reflect proposed conditions.

☐ Other: Please attach a sheet describing all other models or calculations submitted. — Natural ☒ Floodway ☒

New Model (Proposed Effective Model)

4. MODEL PARAMETERS *(from model used to revise 100-year water surface elevation)*

Discharges:	Upstream Limit	Downstream Limit
10-year	6090 cfs	5983 cfs
50-year	10878 cfs	10780 cfs
100-year	12911 cfs	12760 cfs
500-year	—	—

Attach diagram showing changes in 100-year discharge

2. Explain how the starting water surface elevations were determined Starting water surface elevations determined by the slope-area method.

3. Give range of friction loss coefficients (*Manning's "N"*) Channel 0.035

Overbanks ..... 0.050 ~ 0.070

If friction loss coefficients are different anywhere along the revised reach from those used to develop the FIRM, give location, value used in the effective FIS, and revised values and an explanation as to how the revised values were determined.

Location	FIS	Revised

Explain:

4. Describe how the cross section geometry data were determined (*e.g., field survey, topographic map, taken from previous study*) and list cross sections that were added.

Data points for cross-sections are based on photogrammetric models for the topographic maps.

5. Explain how reach lengths for channel and overbanks were determined:

All reach lengths were measured from floodplain work maps.

5. RESULTS (from model used to revise 100-year water surface elevations)

1. Do the results indicate:

a. Water surface elevations higher than end points of cross sections? ..... ☐ Yes ☒ No

b. Supercritical depth? ..... ☐ Yes ☒ No

c. Critical depth? ..... ☒ Yes ☐ No

d. Other unique situations ..... ☐ Yes ☐ No

If yes, special problems report attached.

If yes to any of the above, attach an explanation that discusses the situation and how it is presented on the profiles, tables, and maps.

2. What is the maximum change in energy gradient between cross-sections? ..... 0.0186 ft/ft

Specify location 0.405

3. What is the distance between the cross-sections in 2 above? ..... 562 ft

Specify location 0.511

4. What is the maximum distance between cross-sections? ..... 623 ft

Specify location 0.326

5. Floodway determination

a. What is the maximum surcharge allowed by the community or State? ..... 1.0 foot

b. What is the maximum surcharge for the revised conditions? ..... 0.1 foot

Specify location 0.030

c. What is the maximum velocity? ..... 26.39 fps

Specify location 0.030

Explain:

d. Are there any negeative surcharge values at any cross-section ☒ Yes ☐ No

If yes, the floodway may need to widen. If it is not widened, please explain and indicate the maximum negative surcharge. Negative surcharges of -0.1 ft occur at 5 stations because limits of effective flow area were set.

Is the discharge value used to determine the floodway anywhere different from that used to determine the natural 100-year flood elevations? ..... ☐ Yes ☐ No

If Yes, explain:

_____

_____

_____

7. Do 100-year water surface elevations increase at any location? ..... ☐ Yes ☐ No

If yes, please attach a list of the locations where the increases occur, state whether or not the increases are located on the requestor's property, and provide an explanation of the reason for the increases.

_____

_____

_____

Please attach a completed comparison table entitled: Water Surface Elevation Check (See page 6)

6. REVISED FIRM/FBFM AND FLOOD PROFILES

A. The revised water surface elevations tie into those computed by the effective FIS Model *(10-, 50-, 100-, and 500-year)*, downstream of the project at cross-section_____ within_____feet and upstream of the project at cross section_____within_____feet.

B. The revised floodway elevations tie into those computed by the effective FIS model, dowstream of the project at cross section_____within_____feet and upstream of the project at cross section_____ within_____feet.

C. Attach profiles, at the same vertical and horizontal scale as the profiles in the effective FIS report, showing stream bed and profiles of all floods studied (without encroachment). Also, label all cross sections, road crossings (including low chord and top-of-road data), culverts, tributaries, corporate limits, and study limits. If channel distance has changed, the stationing should be revised for all profile sheets.

D. Attach a Floodway Data Table showing data for each cross section listed in the published Floodway Data Table in the FIS report.

Proceed to Riverine /Coastal Mapping Form

FEDERAL EMERGENCY MANAGMENT AGENCY

WATER SURFACE ELEVATION CHECK

COMMUNITY NAME	FLOODIND SOURCE	PROJECT NAME /IDENTIFIER
Unincorporated Maricopa County / Town of Wickenburg	Wash T: San Domingo Wash	Wickenburg ADMS-FCD 89-79

	EFFECTIVE			DUPLICATE EFFECTIVE			CORRECTED EFFECTIVE			EXISTING/PRE-PROJECT			REVISED/PROJECT		
SECNO	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]

COMMENTS:

New Model- See following Floodway Data Table

1-100-year (natural) Water Surface Elevation 2-Encroachment (floodway) Water Surface Elevation 3-Surcharge Value

Include all cross sections in the models between tie-in points. Any interpolated values should be indicated in parentheses.

FLOODWAY DATA, WASH T : SAN DOMINGO WAS
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
43.930	201.	1655.	7.7	1849.9	1849.9	.0
.030	52.	786.	16.2	1863.9	1863.8	.1
.067	66.	1201.	10.6	1872.3	1872.4	-.1
.107	379.	5674.	2.2	1876.1	1876.2	-.1
.208	389.	7049.	1.8	1876.2	1876.3	-.1
.326	231.	2651.	4.9	1876.0	1876.1	-.1
.405	563.	5468.	2.4	1876.7	1876.8	-.1
.511	637.	1490.	8.7	1877.1	1877.1	.0
.617	635.	1799.	7.2	1886.1	1886.1	.0
.685	551.	1582.	8.3	1889.9	1889.9	.0
.768	302.	1480.	8.9	1900.1	1900.1	.0
.882	449.	1571.	8.4	1906.8	1906.8	.0
.971	435.	1431.	9.3	1914.9	1914.9	.0
1.061	484.	1514.	8.7	1923.1	1923.1	.0
1.159	648.	1701.	7.8	1931.4	1931.4	.0
1.258	526.	1546.	8.5	1940.3	1940.3	.0
1.345	583.	1956.	6.7	1947.7	1947.7	.0
1.440	458.	1602.	8.2	1955.6	1955.6	.0
1.530	606.	1807.	7.2	1962.0	1962.0	.0
1.624	454.	1644.	7.9	1969.3	1969.3	.0
1.727	760.	1673.	7.8	1978.2	1978.2	.0
1.814	605.	1849.	7.0	1986.4	1986.4	.0
1.912	377.	1546.	8.4	1994.4	1994.4	.0
2.011	341.	1399.	9.2	2002.5	2002.5	.0
2.124	508.	1781.	7.2	2009.7	2009.7	.0
2.195	399.	1635.	7.9	2015.0	2015.0	.0
2.250	389.	1386.	9.3	2022.0	2022.0	.0

Flood Control District of Maricopa County
Contract FCD 89-79

WICKENBURG AREA DRAINAGE MASTER STUDY

TECHNICAL DOCUMENTATION REPORT

Appendix 6.18: HEC-2 Models & Cross Section Plots for East Area Wash OX WASH (Wash v)

Submitted to the
Federal Emergency Management Agency
on Behalf of the
Flood Control District of Maricopa County

N:\1187\02\ADMIN\118702RP.063

May 1994

FEDERAL EMERGENCY MANAGEMENT AGENCY **HYDROLOGIC ANALYSIS FORM**	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.67 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: Wash V: Ox Wash
(One form for each flooding source)

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. HYDROLOGIC ANALYSIS IN FIS

☐ Approximate study stream (Zone A)
☒ Detailed study stream (briefly explain methodology) HEC-1 analysis based on Flood Control District of Maricopa County Methodologies.

2. REASON FOR NEW HYDROLOGIC ANALYSIS

☐ No existing analysis
☐ Improved data *(see data revision on page 3)*
☐ Changed physical conditions of watershed *(explain)* _____

☐ Alternative methodology *(justify why the revised model is better than model used in the effective FIS)*

☐ Evaluation of proposed conditions (CLOMRs only) (explain) _____

☒ Other No existing analysis or analysis being updated to reflect existing conditions.

If a computer program/model was used in revising the hydrologic analysis, please provide a diskette with the input files for the 10-, 50-, 100 - and 500-year recurrence intervals.

Only the 100-year recurrence interval need be included for SFHAs designated as Zone A.

3. APPROVAL OF ANALYSIS

☒ Approval of hydrologic analysis, including the resulting peak discharge value (s) has been provided by the appropriate local, state, or Federal Agency. (i.e., Flood Control District of Maricopa County)
Attach evidence of approval.

☐ Approval of the hydrologic analysis is not required by any local, State, or Federal Agency.

Stream: _____

Comparison of 100-year Discharges

Location:	Drainage area (Sq mi.)	FIS (cfs):	Revised (cfs):
Confluence with Hassayampa River	6.61		4447

Note: When revised discharges are not significantly different than FIS discharges, FEMA may require a confidence limits analysis on attachment D at a later date to complete the review.

As is often the case with revision requests, only a portion of a stream may actually be revised or be affected by a revision. Therefore, transition to the unrevised portion is important to maintain the continuity of the study. NFIP regulations stipulate that such a transition must be assured. What is the transition from the proposed discharges to the effective discharges? Please explain how the transition was made *(attach separate sheet if necessary)*

No existing analysis or updated analysis to reflect existing conditions.

ATTACH A COMPLETED REVIEW OF RESULTS PAGE FOR EACH FLOODING SOURCE.

Is the new hydrologic analysis being developed solely to revise the flow values presented in the FIS *(i.e. no changed hydraulic conditions)*? ☐ Yes ☒ No

If yes, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

FEMA does not normally revise NFIP maps solely due to insignificant flow changes where changes in 100-year water surface elevation are less than 1.0 foot.

5. HISTORICAL FLOODING INFORMATION

Is historical data available for the flooding source? ☐ Yes ☒ No

If yes, provide the following:

Location along flooding source: _____

Maximum peak discharge: _____ cfs

Second highest peak discharge: _____ cfs

Source of information: _____

6. GAGE RECORD INFORMATION

Location of nearest gage to project site *(along flooding source or similar watershed; specify)*

NA

Gaging Station: _____

Drainage area at gage: _____ mi^2

Number of years of data: _____

7. DATA REVISION

Please use the following table to list all the data and/or parameters affected by this request and identify them as new data (*New*) or as revising existing data (*Revised*). *(If necessary, attach a separate sheet.)*

Data Parameter	New	Revised	Data Source
NA	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	

- Data source can be from a Federal, State, or local government agency, or from a private source. Some State and local governments may have less strict data requirements than Federal agencies, in which case the hydrologic data may not be accepted by FEMA unless it is demonstrated that the data give a better estimate of the flood discharge.
- Attach documentation corroborating each data source *(i.e., certified statement, report, bibliographical reference to a published document)*. In the case of a published document or a government report, providing copies of the cover and pertinent pages may be helpful.

8. METHODOLOGY FOR NEW ANALYSIS

☐ Statistical Analysis of Gage Records (*use Attachment A*)

☐ Regional Regression Equations *(use Attachment B)*

☒ Precipitation/Runoff Model *(use Attachment C)*

☐ Other *(specify; attach backup computations and supporting data)* _____

ATTACHMENT A: STATISTICAL ANALYSIS OF GAGE RECORDS

Gaging Station: N/A

Gage Location (latitude and longitude): _____

	FIS:	Revised:
1. Number of years of data		
Systematic		
Historical		
2. Homogeneous data	☐ Yes ☐ No	☐ Yes ☐ No
3. Data adjustments	☐ Yes ☐ No	☐ Yes ☐ No
4. Number of high outliers		
Low outliers		
Zero events		
5. Generalized skew		
6. Station skew		
7. Adopted skew		
8. Probability distribution used (justify if log-Pearson III was not used)		
9. Transfer equations to ungaged sites		☐ Yes ☐ No

If yes, specify method

_____

_____

_____

10. Expected probability*	☐ Yes ☐ No
11. Comparison of results with other analyses	☐ Yes ☐ No

If yes, describe comparison

_____

_____

_____

*FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data is not available, indicate by N/A.

Attach analysis including plot of flood frequency curve.

1. Bibliographical Reference:
   NA

   (Attach a copy of title page, table of contents, and pertinent pages including equations.)

2. Gaged or ungaged stream: _____

3. Hydrologic region(s): _____
   Attach backup map.

4. Provide parameters, values, and source of data used to define parameters.

		FIS:		Revised:	
5.	Urbanized conditions calculations	☐ Yes	☐ No	☐ Yes	☐ No
6	Percent of watershed urbanization	_____		_____	
7.	Is the watershed controlled?	☐ Yes	☐ No	☐ Yes	☐ No
8.	Comparison with other analyses	☐ Yes	☐ No	☐ Yes	☐ No

If the answer to 5, 7, or 8 is yes, explain methodology in Comments.

If data is not available, indicate by N/A.

Comments

Attach computation and supporting maps, delineating the watershed boundary and drainage area divides.

		FIS:	Revised
1.	Method or model used:		HEC-1
	Version:		Ver. 3.0
	Date:		02 AUG. 88
2.	Source of rainfall depth:		NOAA Atlas 2
3.	Source of rainfall distribution:		SCS TYPE II
4.	Rainfall duration:		24 hours
5.	Areal adjustment to precipitation (%):		NWS HYDRO-40
6.	Hydrograph development method:		S-Graph
7.	Loss rate method:		Green-AMPT
	Source of soils information:		SCS
	Source of land use information		Town of Wickenburg
8.	Channel routing method:		Normal Depth
9.	Reservoir routing:	☐ Yes ☐ No	☐ Yes ☒ No
10.	Baseflow considerations:	☐ Yes ☐ No	☐ Yes ☒ No

If yes, explain how baseflow was determined:

11.	Snowmelt considerations:	☐ Yes ☐ No	☐ Yes ☒ No
12.	Model calibration:	☐ Yes ☐ No	☒ Yes ☐ No

If yes, explain how calibration was performed Computed discharges were compared with DISCHARGE vs DRAINAGE AREA curves and envelopes prepared by the Flood Control District of Maricopa County.

13. Future land use condition: ☐ Yes ☒ No

If yes, explain why

NOTE: FEMA policy is to base flooding on existing conditions.
If data is not available, indicate by N/A.

Attach precipitation/runoff model, hydrologic model schematic, curve number calculations, time of concentration calculations, and supporting maps, delineating the watershed boundary and drainage area divides.

Stream: NA - No flow records

Select one location for Confidence Limits Evaluation (*describe location*): _____

_____

Discharges for selected location:

Exceedance Probability		FIS	Revised
10%	(10-year)	_____ cfs	_____ cfs
2%	(50-year)	_____ cfs	_____ cfs
1%	(100-year)	_____ cfs	_____ cfs
0.2%	(500-year)	_____ cfs	_____ cfs

1% (100-year) Flood Confidence Intervals

90% Confidence Interval: 5% limit _____ cfs

95% limit _____ cfs

50% Confidence Interval: 25% limit _____ cfs

75% limit _____ cfs

If the value of the 100-year frequency flood in the FIS is beyond the 50% confidence interval but within the 90% confidence interval, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

An example of confidence limits analysis can be found in Appendix 9 of Bulletin 17B.

Attach Confidence Limits Analysis.

Appendix No 6.18

FEDERAL EMERGENCY MANAGEMENT AGENCY RIVERINE HYDRAULIC ANALYSIS FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: Wash V: Ox Wash
(One form for each flooding source)

Project Name/Identifier: Wickenburg ADMS - FCD 89-79

1. REACH TO BE REVISED

Downstream limit: Station 0.185

Upstream limit: Station 2.172

2. EFFECTIVE FIS

☐ Not studied

☐ Studied by approximate methods

Downstream limit of study _____

Upstream limit of study _____

☒ Studied by detailed methods

Downstream limit of study Confluence with Hassayampa River

Upstream limit of study Station 2.172

☐ Floodway delineated

Downstream limit of Floodway _____

Upstream limit of Floodway _____

3. HYDRAULIC ANALYSIS

Why is the hydraulic analysis different from that used to develop the FIRM. *(Check all that apply)*

☐ Not studied in FIS

☐ Improved hydrologic data/analysis. Explain: _____

☐ Improved hydraulic analysis. Explain: _____

☐ Flood control structure. Explain: _____

☐ Other. Explain: _____

3. RIVERINE HYDRAULIC ANALYSIS FORM
Models Submitted

Full input and output listings along with files on diskette *(if available)* for each of the models listed below and summary of the source of input parameters used in the models must be provided. The summary must include a complete description of any changes made from model to model (*e.g. duplicate effective model to corrected effective model)*. Only the Duplicate Effective and the Revised or Post-Project Conditions models must be submitted. See instructions for directions on when other models may be required. Only the 100-year flood profile is required for SFHAs with a Zone A designation. For areas which do not have detailed flooding, a hydraulic model is not required; however BFE's may not be added to the revised FIRM.

☐ Duplicate Effective Model — Natural ☐ Floodway ☐

Copies of the hydraulic analysis used in the effective FIS, referred to as the effective models *(10-, 50-, 100-, and 500-year multi-profile runs and the floodway run)* must be obtained and then reproduced on the requestor's equipment to produce the duplicate effective model. This is required to assure that the effective model input data has been transferred correctly to the requestor's equipment and to assure that the revised data will be integrated into the effective data to provide a continuous FIS model upstream and downstream of the revised reach.

☐ Corrected Effective Model — Natural ☐ Floodway ☐

The corrected effective model is the model that corrects any errors that occur in the duplicate effective model, adds any additional cross sections to the duplicate effective model, or incorporates more detailed topographic information than that used in the currently effective model. The corrected effective model must not reflect any man-made physical changes since the date of the effective model. An error could be a technical error in the modeling procedures, or any construction in the floodplain that occurred prior to the date of the effective model but was not incorporated into the effective model.

☐ Existing or Pre-Project Conditions Model — Natural ☐ Floodway ☐

The duplicate effective or corrected model is modified to produce the existing or pre-project conditions model to reflect any modifications that have occurred within the floodplain since the date of the effective model but prior to the construction of the project for which the revision is being requested. If no modification has occurred since the date of the effective model, then this model would be identical to the corrected effective or duplicate effective model.

☐ Revised or Post-Project Conditions Model — Natural ☐ Floodway ☐

The existing or pre-project conditions model *(or duplicate effective or corrected effective model, as appropriate)* is revised to reflect revised or post-project conditions. This model must incorporate any physical changes to the floodplain since the effective model was produced as well as the effects of the project. When the request is for proposed project this model should reflect proposed conditions.

☒ Other: Please attach a sheet describing all other models or calculations submitted. — Natural ☒ Floodway ☒

New Model (Proposed Effective Model)

4. MODEL PARAMETERS *(from model used to revise 100-year water surface elevation)*

1. Discharges:

	Upstream Limit	Downstream Limit
10-year	1910 cfs	2232 cfs
50-year	2902 cfs	3773 cfs
100-year	3315 cfs	4447 cfs
500-year	—	—

Attach diagram showing changes in 100-year discharge

2. Explain how the starting water surface elevations were determined Starting water surface elevations determined by the slope-area method.

3. Give range of friction loss coefficients (*Manning's "N"*) Channel .....

Overbanks .....

If friction loss coefficients are different anywhere along the revised reach from those used to develop the FIRM, give location, value used in the effective FIS, and revised values and an explanation as to how the revised values were determined.

Location	FIS	Revised

Explain:

4. Describe how the cross section geometry data were determined (*e.g., field survey, topographic map, taken from previous study*) and list cross sections that were added.

Data points for cross-sections are based on photogrammetric models for the topographic maps.

5. Explain how reach lengths for channel and overbanks were determined:

All reach lengths were measured from floodplain work maps.

5. RESULTS (*from model used to revise 100-year water surface elevations*)

1. Do the results indicate:

a. Water surface elevations higher than end points of cross sections? ☐ Yes ☒ No

b. Supercritical depth? ☐ Yes ☒ No

c. Critical depth? ☒ Yes ☐ No

d. Other unique situations ☐ Yes ☐ No

If yes, special problems report attached.

If yes to any of the above, attach an explanation that discusses the situation and how it is presented on the profiles, tables, and maps.

2. What is the maximum change in energy gradient between cross-sections? 0.0129 ft/ft

Specify location 0.338

3. What is the distance between the cross-sections in 2 above? 31 ft

Specify location 0.344

4. What is the maximum distance between cross-sections? 581 ft

Specify location 1.132

5. Floodway determination

a. What is the maximum surcharge allowed by the community or State? 1.0 foot

b. What is the maximum surcharge for the revised conditions? 0.1 foot

Specify location 0.771

c. What is the maximum velocity? 16.51 fps

Specify location 0.772

Explain:

d. Are there any negeative surcharge values at any cross-section ☐ Yes ☒ No

If yes, the floodway may need to widen. If it is not widened, please explain and indicate the maximum negative surcharge.

6. Is the discharge value used to determine the floodway anywhere different from that used to determine the natural 100-year flood elevations? ..... ☐ Yes ☐ No

If Yes, explain:

_____

_____

_____

7. Do 100-year water surface elevations increase at any location? ..... ☐ Yes ☐ No

If yes, please attach a list of the locations where the increases occur, state whether or not the increases are located on the requestor's property, and provide an explanation of the reason for the increases.

_____

_____

_____

Please attach a completed comparison table entitled: Water Surface Elevation Check (See page 6)

6. REVISED FIRM/FBFM AND FLOOD PROFILES

A. The revised water surface elevations tie into those computed by the effective FIS Model *(10-, 50-, 100-, and 500-year)*, downstream of the project at cross-section_____ within_____feet and upstream of the project at cross section_____within_____feet.

B. The revised floodway elevations tie into those computed by the effective FIS model, dowstream of the project at cross section_____within_____feet and upstream of the project at cross section_____ within_____feet.

C. Attach profiles, at the same vertical and horizontal scale as the profiles in the effective FIS report, showing stream bed and profiles of all floods studied (without encroachment). Also, label all cross sections, road crossings (including low chord and top-of-road data), culverts, tributaries, corporate limits, and study limits. If channel distance has changed, the stationing should be revised for all profile sheets.

D. Attach a Floodway Data Table showing data for each cross section listed in the published Floodway Data Table in the FIS report.

Proceed to Riverine /Coastal Mapping Form

FEDERAL EMERGENCY MANAGMENT AGENCY

WATER SURFACE ELEVATION CHECK

COMMUNITY NAME	FLOODIND SOURCE	PROJECT NAME /IDENTIFIER
Unincorporated Maricopa County / Town of Wickenburg	Wash V: Ox Wash	Wickenburg ADMS-FCD 89-79

	EFFECTIVE			DUPLICATE EFFECTIVE			CORRECTED EFFECTIVE			EXISTING/PRE-PROJECT			REVISED/PROJECT		
SECNO	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]

COMMENTS:

New Model- See following Floodway Data Table

1-100-year (natural) Water Surface Elevation 2-Encroachment (floodway) Water Surface Elevation 3-Surcharge Value

Include all cross sections in the models between tie-in points. Any interpolated values should be indicated in parentheses.

Sheet ___ of ___

FLOODWAY DATA, WASH V: OX WASH
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
43.000	722.	892.	5.0	1823.2	1823.2	.0
.185	244.	518.	8.6	1829.3	1829.3	.0
.286	197.	540.	8.2	1837.9	1837.9	.0
.326	116.	429.	10.4	1840.3	1840.3	.0
.334	95.	389.	11.3	1842.5	1842.5	.0
.338	95.	390.	11.3	1843.1	1843.1	.0
.344	93.	562.	7.8	1844.5	1844.5	.0
.379	150.	587.	7.5	1845.8	1845.8	.0
.465	162.	494.	8.9	1852.3	1852.3	.0
.530	121.	442.	10.0	1857.1	1857.1	.0
.597	172.	561.	7.9	1863.8	1863.8	.0
.672	76.	396.	11.1	1870.5	1870.5	.0
.715	48.	319.	13.8	1877.5	1877.5	.0
.742	150.	1038.	4.2	1881.6	1881.6	.0
.768	201.	1228.	3.6	1881.9	1881.9	.0
.769	170.	872.	5.1	1881.7	1881.7	.0
.770	137.	551.	8.0	1881.2	1881.2	.0
.771	108.	395.	11.2	1881.5	1881.4	.1
.772	32.	267.	16.5	1883.0	1883.0	.0
.825	32.	477.	9.2	1896.3	1896.3	.0
.880	473.	4806.	.9	1898.5	1898.5	.0
.929	720.	4911.	.9	1898.5	1898.5	.0
1.022	722.	945.	4.7	1900.9	1900.9	.0
1.132	561.	938.	4.7	1908.7	1908.7	.0
1.211	395.	619.	5.5	1915.2	1915.2	.0
1.318	740.	828.	4.1	1921.9	1921.9	.0
1.420	584.	682.	5.0	1929.8	1929.8	.0
1.517	232.	455.	7.5	1937.4	1937.4	.0
1.613	174.	461.	7.4	1944.8	1944.8	.0
1.696	440.	763.	4.4	1949.8	1949.8	.0
1.786	258.	491.	6.8	1955.8	1955.8	.0
1.879	175.	462.	7.3	1962.8	1962.8	.0
1.982	167.	442.	7.6	1968.6	1968.6	.0
2.082	132.	404.	8.3	1977.8	1977.8	.0
2.172	391.	698.	4.7	1983.2	1983.2	.0

FEDERAL EMERGENCY MANAGEMENT AGENCY BRIDGE/CULVERT FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: Wash V: Ox Wash

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. IDENTIFIER

1. Name of roadway, railroad, etc.: Atchison - Topeka and Santa Fe Railroad
2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): Station 0.334 to Station 0.338
3. This revision reflects *(check one of the following)*:

   ☒ New bridge/culvert not modeled in the FIS

   ☐ Modified bridge/culvert previously modeled in the FIS

   ☐ New analysis of bridge/culvert previously modeled in the FIS

   (Explain why new analysis was performed)

2. BACKGROUND

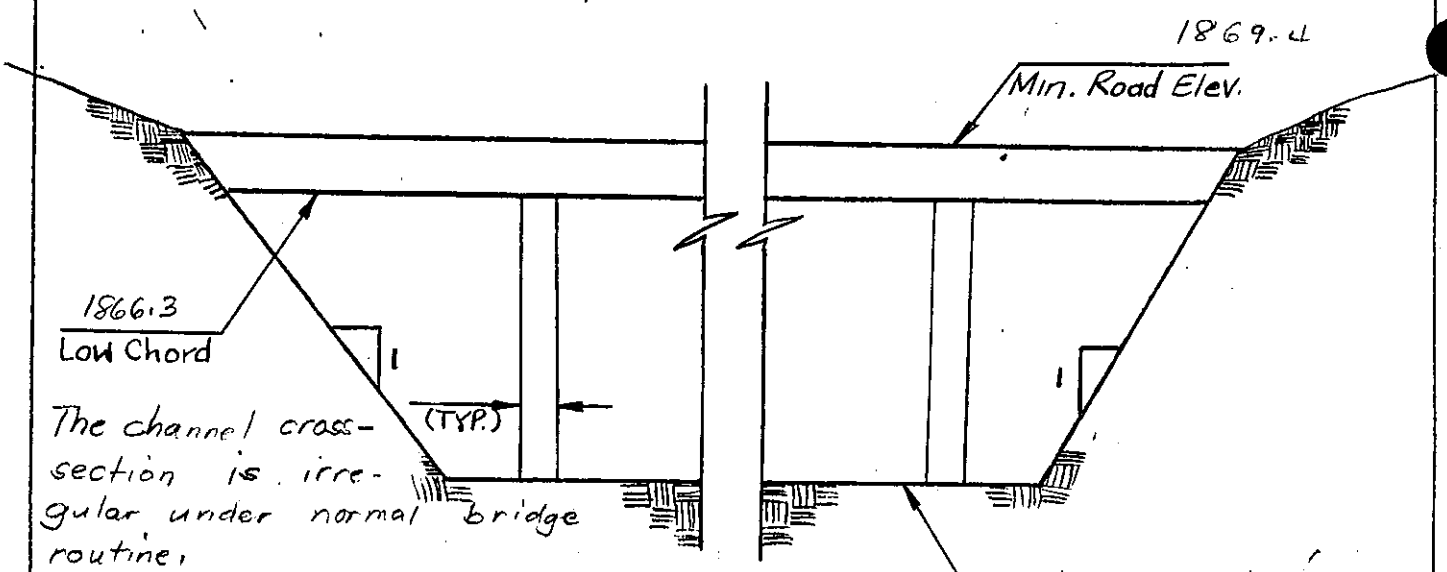
Provide the following information about the structure:

1. Dimension, material, and shape (e.g. two 10 x 5 feet reinforced concrete box culvert; three 30-foot span bridge with 2 rows of two 3- foot diameter circular piers; 40-foot wide ogee shape spillway) Total bridge span of 135-ft with total width of obstruction of 8.5± ft
2. Entrance geometry of culvert/type of bridge opening (e.g. 30° - 75° wing walls with square top edge, sloping embankments and vertical abutments) Semi-trapezoidal opening with sloping embankment.
3. Hydraulic model used to analyze the structure *(e.g., HEC-2 with special bridge routine, WSPRO, HY8)* HEC-2 with Normal Bridge routine

If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structure(s). *(Attach justification)*

Note: If any items do not apply to submitted hydraulic analysis, indicate by N/A
* One form per new/revised bridge/culvert

Sketch the downstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, minimum top of road elevation, and ineffective flow widths.



The channel cross-section is irregular under normal bridge routine.

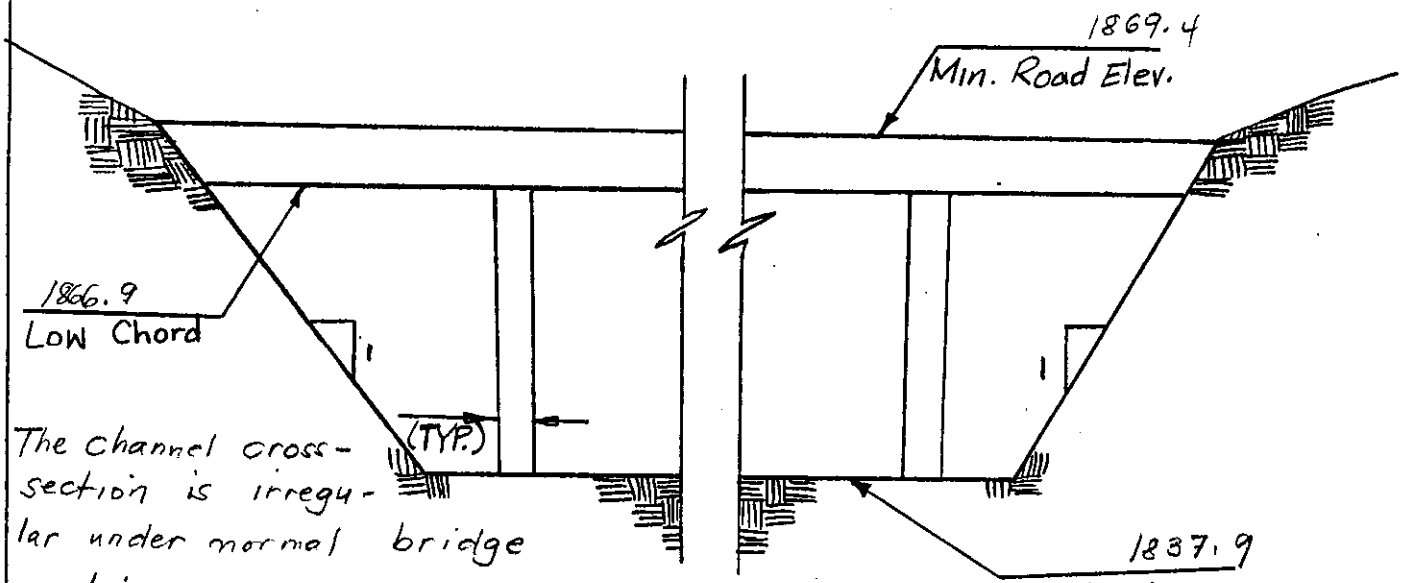
No. of Piers:

Bridge

Total Width of Piers: 8.5'

Note: Under normal bridge analysis the total pier obstruction was coded as a GR-data. See Cross Section # 0.334

Sketch the upstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, and minimum top of road elevation.



The channel cross-section is irregular under normal bridge routine.

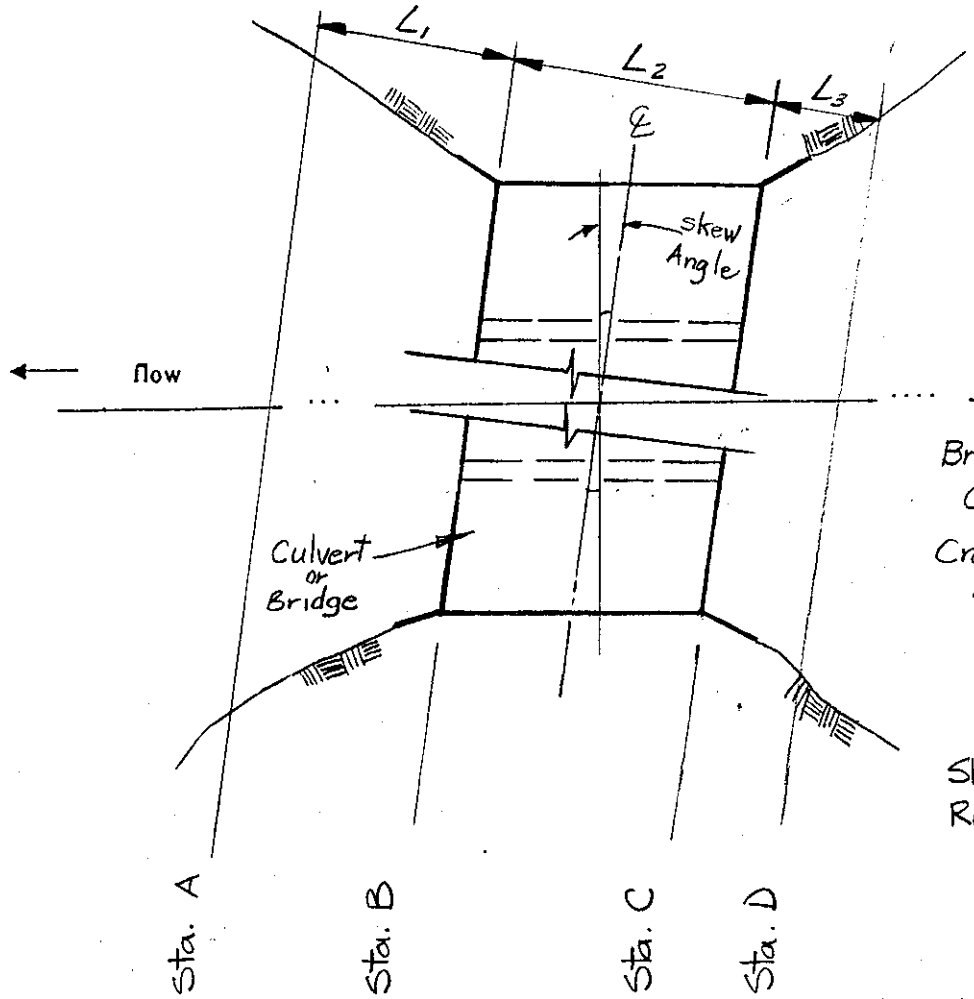
Bridge

No. of Piers:

Total Width of Piers: 8.5'

Note: Under normal bridge analysis the total pier obstruction of 8.5' was coded as a GR-data. See Cross Section # 0.338

Sketch the plan view of the structure(s) Show, at a minimum, the skew angle, cross-section locations, distances between cross sections, and length of structure (s).



Bridge Width / Culvert Length:

Cross Section Stations

Sta. A = 0.326

Sta. B = 0.334

Sta. C = 0.338

Sta. D = 0.34[illegible]

Skew Angle: 0

Reach Lengths:

L1 = 49 ft.

L2 = 20 ft.

L3 = 31 ft.

Attach plans of the structure (s) certified by a registered Professional Engineer.

Culvert length or bridge width (ft)	20'
Calculated culvert/bridge area (ft²) by the hydraulic model, if applicable	—
Total culvert/bridge area (ft²)	2883.6 ft²

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face (STA 0.338)	1869.4	1870.2
Downstream face (STA 0.334)	1869.4	1870.2

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	1869.4	1870.2
Downstream face	1869.4	1870.2

100-Year Elevations	Water Surface Elevations	Energy Gradient Elevations
Upstream face	1843.07	1845.37
Downstream face	1842.46	1844.77

Discharge	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)	4402.	—	—	4402

The maximum depth of flow over the roadway/railroad (ft.) 0

Weir length (ft.) 0

Top Widths

	Floodplain	Floodway
Upstream face	96	96
Downstream face	96	96

Top Widths

	Effective Flow	Effective and Ineffective Flow
Upstream face	96	96
Downstream face	96	96

Loss Coefficients

Entrance loss coefficient	—
Manning's "n" value assigned to the structure(s)	0.035
Friction loss coefficient through structure (s)	—
Other loss coefficients (e.g., bend manhole, etc.) Drag Coefficient	1.33
Total loss coefficient	—
Weir coefficient	—
Pier coefficient	—
Contraction loss coefficient	0.3
Expansion loss coefficient	0.5

4. SEDIMENT TRANSPORT CONSIDERATIONS

1. A. Is there any indication from historical records that sediment transport *(including scour and deposition)* can affect the 100-year water surface elevations? ..... ☐ Yes ☐ No

   B Based on the conditions *(such as geomorphology, vegetative cover and development of the watershed and stream bed, and bank conditions)*, is there a potential for debris and sediment transport *(including scour and deposition)* to affect the 100-year water surface elevations and/or conveyance capacity through the bridge/culvert? ..... ☐ Yes ☐ No

.. If the answer to either 1A or 1B is yes:

A. What is the estimated sediment *(bed material)* load?
_____cfs *(attach gradation curve)*

Explain method used to estimate the sediment transport and the depth of scour and/or deposition NA - Sediment transport not considered in analysis.

B. Will sediment accumulate anywhere through the bridge/culvert? ☐ Yes ☐ No

*If yes, explain the impact on the conveyance capacity through the bridge/culvert?*_____

5. FLOODWAY ANALYSIS

Explain method of bridge encroachment (floodway run) Method I of bridge encroachment is used where the encroachment stations are defined by ET (i.e., STENCL, STENCR) and the effective elevations are defined by X3 (i.e, ELLEF, ELREF) for effective flow calculations.

Comments *(explain any unusual situations)*:

Attach analysis.

FEDERAL EMERGENCY MANAGEMENT AGENCY BRIDGE/CULVERT FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: Wash V: Ox Wash

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. IDENTIFIER

1. Name of roadway, railroad, etc.: U. S. Highway 60-89
2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): Station 0.772 to Station 0.825
3. This revision reflects *(check one of the following)*:

   ☒ New bridge/culvert not modeled in the FIS

   ☐ Modified bridge/culvert previously modeled in the FIS

   ☐ New analysis of bridge/culvert previously modeled in the FIS

   (Explain why new analysis was performed) _____

2. BACKGROUND

Provide the following information about the structure:

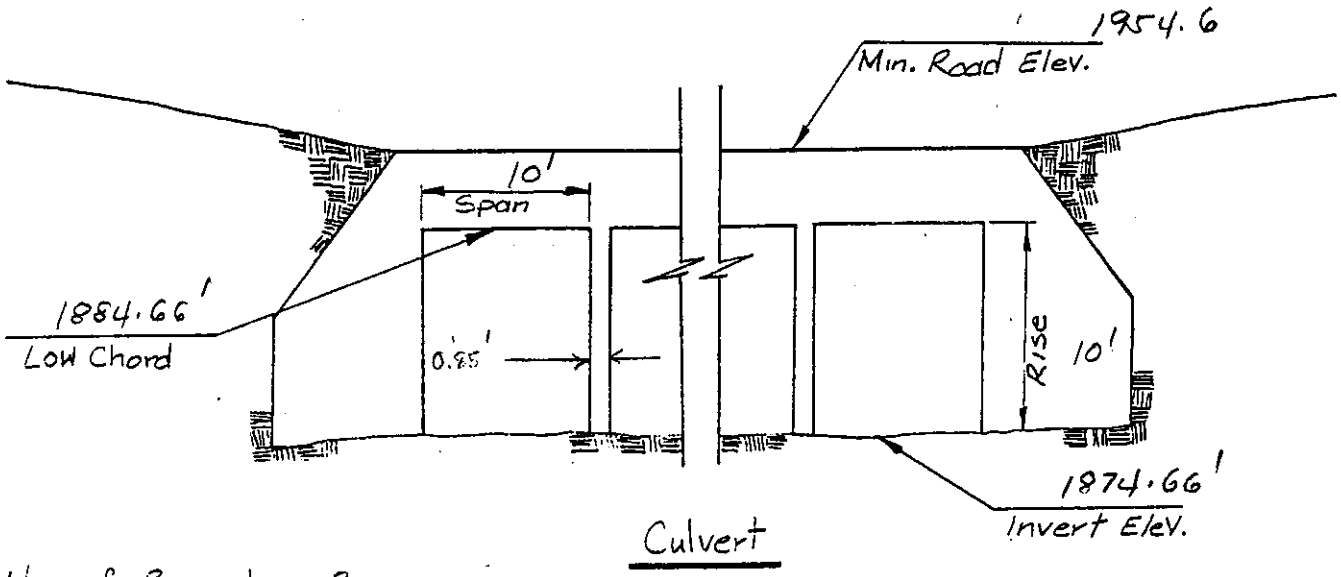
1. Dimension, material, and shape (e.g. two 10 x 5 feet reinforced concrete box culvert; three 30-foot span bridge with 2 rows of two 3- foot diameter circular piers; 40-foot wide ogee shape spillway) three 10'x 10'x 283' concrete box culvert
2. Entrance geometry of culvert/type of bridge opening (e.g. 30° - 75° wing walls with square top edge, sloping embankments and vertical abutments) 30°-75° wing walls; no inlet top edge bevel; square top edge.
3. Hydraulic model used to analyze the structure (*e.g., HEC-2 with special bridge routine, WSPRO, HY8*) HEC-2 with special culvert routine

If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structure(s). *(Attach justification)*

Note: If any items do not apply to submitted hydraulic analysis, indicate by N/A

* One form per new/revised bridge/culvert

Sketch the downstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, minimum top of road elevation, and ineffective flow widths.

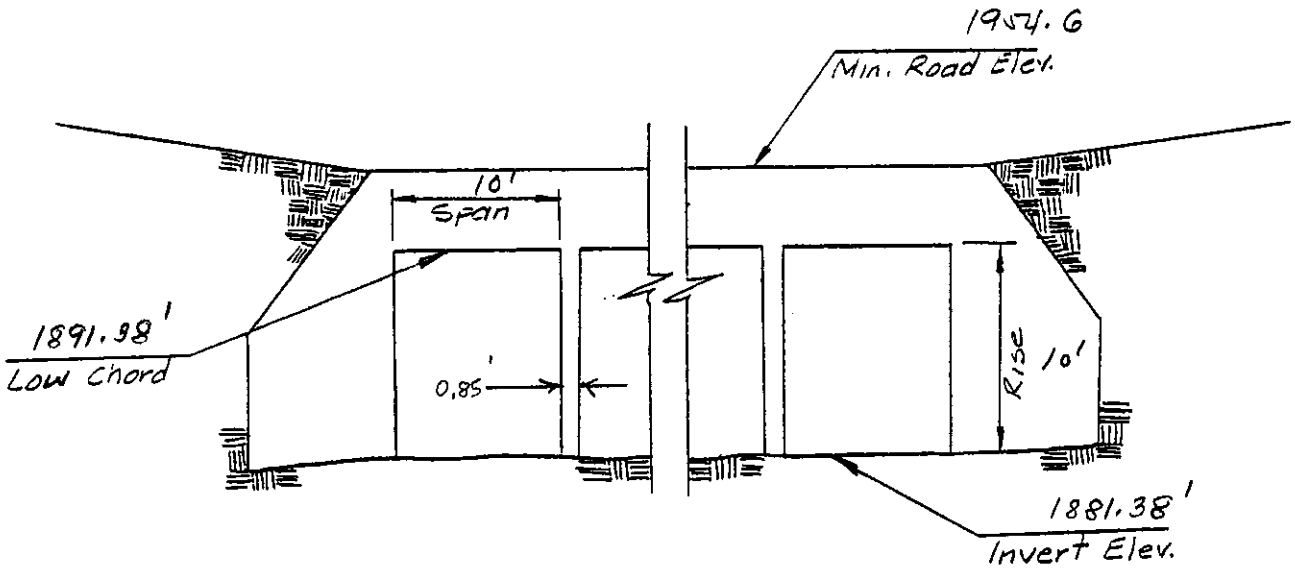


No. of Barrels: 3

Culvert Size: 10'x10'x283

Approx. Depth of Sediment in Culvert: 0 See Cross Section # 0.772

Sketch the upstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, and minimum top of road elevation.

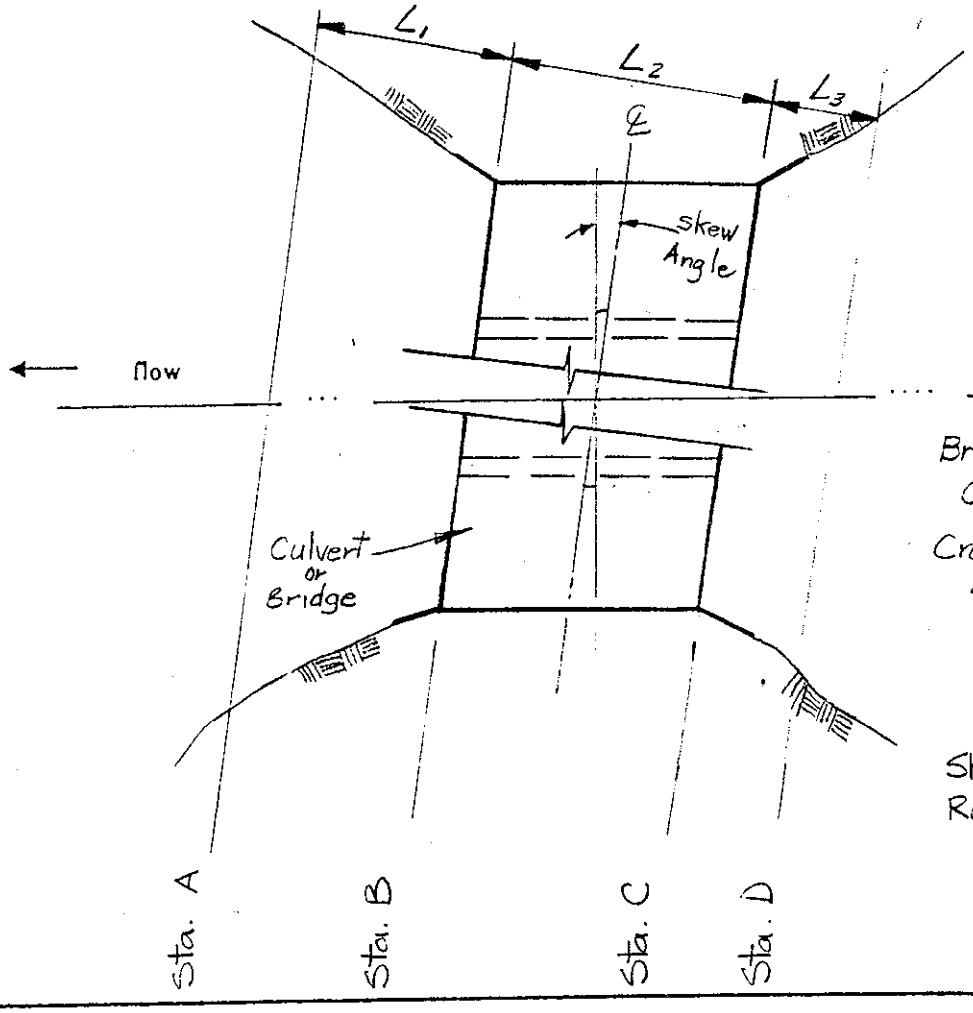


No of Barrels:

Culvert Size: 10'x10'x283

Approx. Depth of Sediment in Culvert: 0' See Cross Section # 0.825

Sketch the plan view of the structure(s) Show, at a minimum, the skew angle, cross-section locations, distances between cross sections, and length of structure (s).



Bridge Width / Culvert Length: 283'

Cross Section Stations

Sta. A = 0.771

Sta. B = 0.772

Sta. C = 0.825

Sta. D = 0.880

Skew Angle: 0

Reach Lengths:

L_1 = 7 ft.

L_2 = 283 ft.

L_3 = 288 ft.

Attach plans of the structure (s) certified by a registered Professional Engineer.

Culvert length or bridge width (ft)	283'
Calculated culvert/bridge area (ft^2) by the hydraulic model, if applicable	300 ft^2
Total culvert/bridge area (ft^2)	300 ft^2

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face (STA 0.825)	1955.2'	1954.6'
Downstream face (STA 0.772)	1884.6'	1884.7'

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	1955.2'	1954.6'
Downstream face	1955.2'	1954.6'

100-Year Elevations	Water Surface Elevations	Energy Gradient Elevations
Upstream face	1896.34'	1897.67'
Downstream face	1883.03'	1887.26'

Discharge	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)	—	4406. cfs	—	4406. cfs

The maximum depth of flow over the roadway/railroad (ft.) 0

Weir length (ft.) 0

Top Widths

	Floodplain	Floodway
Upstream face	410'	32
Downstream face	140'	32

Top Widths

	Effective Flow	Effective and Ineffective Flow
Upstream face	32	410'
Downstream face	32	140'

3. ANALYSIS (Cont'd)

Loss Coefficients

Entrance loss coefficient	0.40
Manning's "n" value assigned to the structure(s)	0.02
Friction loss coefficient through structure (s)	—
Other loss coefficients (e.g., bend manhole, etc.)	—
Total loss coefficient	—
Weir coefficient	2.90
Pier coefficient	—
Contraction loss coefficient	0.60
Expansion loss coefficient	0.80

4. SEDIMENT TRANSPORT CONSIDERATIONS

1. A. Is there any indication from historical records that sediment transport *(including scour and deposition)* can affect the 100-year water surface elevations? ..... ☐ Yes ☐ No

   B. Based on the conditions *(such as geomorphology, vegetative cover and development of the watershed and stream bed, and bank conditions)*, is there a potential for debris and sediment transport *(including scour and deposition)* to affect the 100-year water surface elevations and/or conveyance capacity through the bridge/culvert? ..... ☐ Yes ☐ No

.. If the answer to either 1A or 1B is yes:

A. What is the estimated sediment *(bed material)* load?
_____cfs *(attach gradation curve)*

Explain method used to estimate the sediment transport and the depth of scour and/or deposition NA - Sediment transport not considered in analysis.

B. Will sediment accumulate anywhere through the bridge/culvert? ☐ Yes ☐ No

If yes, explain the impact on the conveyance capacity through the bridge/culvert? _____

5. FLOODWAY ANALYSIS

Explain method of bridge encroachment (floodway run) Method I of bridge encroachment is used where encroachment stations (i.e., STENCL, STENCR) are defined by ET and the effective elevations are defined by X3 (i.e., ELLEA, ELREA) for effective flow calculations.

Comments *(explain any unusual situations)*:

Attach analysis.

```
*******************************************
*  HEC-2 WATER SURFACE PROFILES           *
*                                         *
   Version   4.6.2;  May 1991             *
*                                         *
*  RUN DATE    16APR92    TIME   15:35:05 *
*******************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
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X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
```

THIS RUN EXECUTED 16APR92 15:35:05

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


T1      WICKENBURG ADMS: MARICOPA COUNTY - CONTRACT FCDMC  89-79
T2      BLACK & VEATCH PN 17676: COE & VAN LOO JN 1197-02
T3      WASH V: OX WASH                  (WV5A.0)

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0        2        0        0     0.0075      0        0        0     1828.06     0

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

      1        0       -1        0        0        0       -1        0        0        15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150       200

QT        2      4447      4447
NC     .045       .07      .030        .1        .3
          HASSAYAMPA RIVER FIS CROSS SECTION 43.00  (CBA 1988, NO DATUM CHANGE)
          CONFLUENCE WITH WASH V - OX WASH, AN EAST TRIBUTARY.
          NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA.
X1    43.00        17    2107.1    2536.2         0         0         0
GR   1853.9    1000.0    1831.8    1077.6    1830.5    1244.6    1825.1    1458.2    1826.2    1529.2
GR   1825.9    1610.8    1824.6    1635.7    1822.8    1834.3    1822.1    2082.7    1821.2    2107.1
GR   1821.7    2272.8    1821.7    2338.3    1821.8    2500.5    1829.2    2536.2    1830.4    2581.4
GR   1828.8    2608.8    1839.5    2649.7

NC    0.060     0.065     0.045        .1        .3
ET                7.1       9.1                                   885      1135.       885      1135.
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.185        21       906      1079       120       430       235
GR   1842.0      687.    1826.9      729.    1827.5      777.    1829.4      832.    1829.7      879.
GR   1828.0      906.    1827.0      933.    1825.8      962.    1824.6      969.    1824.4      997.
GR   1824.6     1000.    1827.3     1038.    1828.6     1079.    1829.9     1178.    1830.9     1293.
GR   1830.1     1426.    1829.4     1545.    1829.6     1661.    1830.0     1790.    1832.8     1825.
GR   1840.1     1864.

NC    0.065     0.065     0.035        .1        .3
ET                          9.1                                                       899       1096
X1    0.286        14       961     1042       535       550       535
GR   1839.2      847.    1837.9      901.    1836.9      927.    1833.9      939.    1835.2      961.
GR   1833.6      980.    1832.4      999.    1832.5     1000.    1833.6     1010.    1834.8     1042.
GR   1837.1     1082.    1839.8     1127.    1840.1     1153.    1858.1     1195.
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```
NC    0.065     0.065     0.035       .3        .5
ET                9.1       9.1                                                  924.0     1041.
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.326        10       926      1005       212       212       212
GR   1869.4      882.    1869.3      904.    1837.5      926.    1836.6      960.    1836.4      984.
GR   1835.9     1000.    1835.8     1005.    1836.3     1037.    1865.6     1060.    1872.2     1087.

QT        2      4402      4402
ET                          9.1                                                    945      1041
          DOWNSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.
X1    0.334        13       949      1005        49        49        49
X3                                  924.01    1869.4   1058.01    1869.4
BT       13       906    1869.4    1868.8       924    1869.4    1868.0       949    1869.6    1866.3
BT      955    1869.6    1866.3       981    1869.8    1866.3     981.5    1869.8    1866.3     989.5
BT   1869.8    1866.3       990    1869.8    1866.3      1000    1869.9    1866.3      1005    1869.9
BT   1866.3      1037    1870.1    1866.3      1058    1870.2    1868.0      1087    1870.4    1869.8
GR   1869.4       906    1868.0       924    1838.5       949    1838.2       955    1838.1       981
GR   1866.3     981.5    1866.3     989.5    1837.4       990    1837.3      1000    1837.3      1005
GR   1837.6      1037    1868.0      1058    1870.4      1087

ET                          9.1                                                    945      1041
          UPSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.
X1    0.338        13       949      1005        20        20        20         0        .6         0
X2        0         0         0         0         0         0         1      1.33         0         0
X3                                  924.01    1869.4   1058.01    1869.4
GR   1868.8       906    1868.0       924    1838.5       949    1838.2       955    1838.1       981
GR   1866.3     981.5    1866.3     989.5    1837.4       990    1837.3      1000    1837.3      1005
GR   1837.6      1037    1868.0      1058    1869.8      1087

NC    0.065     0.065     0.035        .1        .3
ET                          9.1                                                    947      1041
X1    0.344        10       952      1007        31        31        31
GR   1869.6      918.    1869.4      925.    1839.0      952.    1837.9      988.    1838.0     1000.
GR   1838.0     1007.    1838.2     1037.    1870.2     1055.    1879.4     1074.    1881.6     1088.

NC    0.065     0.065     0.040        .1        .3
ET                          9.1                                                    860      1011
X1    0.379        11       958      1009       250       170       185
X3       10
GR   1860.0      825.    1844.0      865.    1840.0      875.    1840.0      895.    1845.3      936.
GR   1842.3      958.    1840.5      983.    1839.8     1000.    1840.7     1009.    1868.8     1016.
GR   1870.5     1033.

ET                          9.1                                                    884      1046
X1    0.465        15       948      1030       430       440       454
X3       10
GR   1882.1      746.    1873.3      784.    1864.9      830.    1857.3      864.    1848.6      899.
GR   1848.9      927.    1851.3      948.    1849.3      970.    1847.5      993.    1847.4     1000.
GR   1847.4     1007.    1849.3     1030.    1854.0     1055.    1867.4     1083.    1878.4     1114.
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ET                      9.1                                                942      1064
X1   0.530      10     965.   1057.8     365     320     344.8
GR   1880.0     815    1862.0   840    1860.0    918    1856.0    952    1852.9     965
GR   1852.7     1000   1853.2  1057.8  1856.0   1062.   1860.0   1068    1880.0    1093.

QT     2        4406   4406
ET                      9.1                                                851      1024
X1   0.597      20     975    1015.9   240     388     352
GR   1889.5     758.   1883.2   789.   1880.0   800.   1872.0    808.   1868.0     822.
GR   1864.0     850.   1863.0   858.   1862.0   865.   1861.0    896.   1861.4     942.
GR   1861.0     950.   1860.0   960.   1858.6   975.0  1858.6   1000.   1858.6    1015.9
GR   1860.0     1018.  1864.0  1024.   1868.0  1044.0  1880.0   1078.0  1900.0    1128.0

ET                      9.1                                                973      1051
X1   0.672      13     982    1015     360     460     398
GR   1892.0     940    1880.0   957    1876.0   967    1864.0    982    1862.8    1000
GR   1864.0     1015   1868.0  1042    1872.0  1055    1876.0   1061    1880.0    1068
GR   1884.0     1090   1888.0  1125    1892.0  1162

ET                      9.1                                                974      1023
X1   0.715      11     985    1012     255     160     227
GR   1896.6     896.   1895.3   920.   1892.2   937.   1887.8    959.   1871.0     985.
GR   1866.6     992.   1866.7   997.   1867.2  1000.   1868.1   1005.   1870.8    1012.
GR   1884.2     1033.

ET                      9.1                                                946      1097
X1   0.742      14     967    1023     130     152     143
X3   10
GR   1900.1     907.   1895.7   919.   1882.6   945.   1870.0    967.   1870.0     981.
GR   1872.1     993.   1872.4  1000.   1873.1  1023.   1878.0   1075.   1880.0    1092.
GR   1884.0     1104.  1888.0  1120.   1892.0  1132.   1900.0   1160.

ET                      9.1                                                930      1132
          DOWNSTREAM SECTION OF DROP STRUCTURE.
X1   0.768      25     953    1034     155     138     142
GR   1938.9     635.   1936.0   650.   1925.3   694.   1917.2    744.   1911.9     780.
GR   1905.6     795.   1903.3   819.   1901.8   840.   1899.5    855.   1895.4     883.
GR   1891.3     904.   1883.8   924.   1875.2   953.   1870.3    966.   1870.5     996.
GR   1870.5     1000.  1870.4  1017.   1870.5  1034.   1879.9   1066.   1881.7    1101.
GR   1881.8     1131.  1885.8  1158.   1904.3  1216.   1910.6   1251.   1912.1    1268.

ET                      9.1                                                931      1101
          UPSTREAM SECTION OF DROP STRUCTURE.
X1   0.769      25     953    1037      .1      .1      .1
GR   1938.9     635.   1936.0   650.   1925.3   694.   1917.2    744.   1911.9     780.
GR   1905.6     795.   1903.3   819.   1901.8   840.   1899.5    855.   1895.4     883.
GR   1891.3     904.   1883.8   924.   1875.2   953.   1873.5    966.   1873.5     996.
GR   1873.5     1000.  1873.5  1017.   1875.7  1037.   1879.9   1066.   1881.7    1101.
GR   1881.8     1131.  1885.8  1158.   1904.3  1216.   1910.6   1251.   1912.1    1268.
```

```
NC    0.055     0.055     0.030       .3        .5
ET                        9.1                                                953      1091
          DOWNSTREAM SECTION OF DROP STRUCTURE.
X1    0.770        20    976.45   1023.45         9         9         9        0         0        0
X3       10
GR   1938.9       635    1936.6       650    1925.3       694    1917.2      744    1911.9      780
GR   1905.6       795    1903.3       819    1901.8       840    1899.5      855    1885.4      883
GR   1891.3       904    1876.5    976.45   1873.90    976.65   1873.90     1000   1873.90   1023.35
GR   1876.5   1023.45    1885.8      1158    1904.3      1216    1910.6     1251    1912.1     1268

ET                        9.1                                                964      1072
          UPSTREAM SECTION OF DROP STRUCTURE.
X1    0.771        20    976.45   1023.45        .1        .1        .1        0         0        0
X3       10
GR   1938.9       635    1936.0       650    1925.3       694    1917.2      744    1911.9      780
GR   1905.6       795    1903.3       819    1901.8       840    1899.5      855    1885.4      883
GR   1891.3       904   1879.50    976.45   1874.40    976.65   1874.40     1000   1874.47   1023.35
GR   1879.5   1023.45    1885.8      1185    1904.3      1216    1910.6     1251    1912.1     1268

NC    0.060     0.060     0.020       .6        .8
ET                        9.1                                                984      1016
          DOWNSTREAM SECTION OF S.R. 93 (HWY. 60-89) STRUCTURE
          3 - 10' X 10' X 283' CONCRETE BOX CULVERT W/ HEADWALLS.
          DROP STRUCTURE AT DOWNSTREAM END OF BOX CULVERT.
X1    0.772        22    984.05   1015.95         7         7         7        0         0        0
X3       10                                                             1954.6    1954.6
GR   1956.7       310    1938.9       635    1936.0       650    1925.3      694    1917.2      744
GR   1911.9       780    1905.6       795    1903.3       819    1901.8      840    1899.5      855
GR   1885.4       883    1891.3       904   1884.60    984.05   1874.60   984.15   1874.66     1000
GR   1874.6   1015.85    1884.7   1015.95    1885.8      1185    1904.3     1216    1910.6     1251
GR   1912.1      1268    1954.6    1286.0

SC   3.020      0.40       2.9         0        10        10       283       8.1   1881.38   1874.66
ET                        9.1                                                984      1016
          UPSTREAM SECTION OF CONC. BOX CULVERT.
X1    0.825        18    984.05   1015.95       283       283       283        0         0        0
X2       0         0         2    1891.38    1954.7         0         0                  0        0
X3       10                                                             1954.6    1954.6
BT      -10       310    1956.7                476    1956.6               698    1955.2
BT                 908    1955.0               984.05   1954.7              1000    1954.6
BT                1003    1954.6               1015.6   1954.6              1135    1954.6
BT                1286    1954.6
GR   1956.7       310    1920.0       541    1912.7       559    1907.5      597    1906.7      622
GR   1906.7       657    1905.2       691    1892.8       711   1891.38   984.05   1881.38   984.15
GR   1881.3      1000    1881.4   1015.85   1891.38   1015.95    1891.8     1100    1903.3     1139
GR   1914.0      1193    1915.9      1213    1954.6      1286

NC    0.065     0.065     0.035       .6        .8
ET                 9.1       9.1                                            909      1382
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          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.880      18     944    1042     265     225     288
GR   1920.1     795.  1911.6     805.  1889.3     850.  1888.4     863.  1889.1     910.
GR   1888.8     944.  1886.2    1000.  1888.0    1042.  1888.3    1080.  1889.2    1123.
GR   1888.3    1172.  1888.2    1206.  1886.9    1224.  1886.7    1253.  1887.6    1288.
GR   1888.8    1315.  1888.8    1359.  1920.1    1437.

NC    0.065   0.065   0.035      .1      .3
ET                     9.1                                             801    1523
X1    0.929      25     831     914     270     270     259
GR   1920.1     762.  1911.6     775.  1896.0     807.  1890.9     831.  1890.3     865.
GR   1890.8     914.  1891.1     950.  1891.2    1000.  1891.2    1005.  1892.4    1037.
GR   1893.2    1059.  1892.2    1092.  1891.8    1139.  1891.8    1193.  1890.7    1234.
GR   1891.5    1261.  1891.1    1295.  1891.3    1323.  1891.1    1347.  1892.4    1415.
GR   1892.5    1452.  1891.6    1477.  1890.7    1497.  1891.5    1513.  1920.1    1551.

NC    0.065   0.065   0.035      .3      .5
ET                     9.1                                             890    1613
X1    1.022      27     926    1003     540     540     501
X3       10
GR   1919.8     756.  1907.9     788.  1905.6     816.  1902.6     863.  1900.6     896.
GR   1898.6     926.  1897.7     958.  1897.6     992.  1897.9    1000.  1898.0    1003.
GR   1898.4    1048.  1899.0    1103.  1899.3    1141.  1899.7    1177.  1899.6    1183.
GR   1900.1    1241.  1900.9    1285.  1901.0    1358.  1900.0    1446.  1900.3    1491.
GR   1898.7    1512.  1900.2    1529.  1900.8    1530.  1900.3    1560.  1899.7    1571.
GR   1899.4    1608.  1919.9    1662.

NC    0.065   0.065   0.035      .1      .3
ET                     9.1                                             850    1411
X1    1.132      24     996    1046     600     500     581
X3       10
GR   1919.9     720.  1912.1     734.  1909.1     769.  1908.8     808.  1908.9     839.
GR   1907.9     894.  1907.3     908.  1907.1     934.  1907.1     987.  1905.2     996.
GR   1905.3    1000.  1905.4    1007.  1905.5    1046.  1907.9    1069.  1907.2    1100.
GR   1907.7    1147.  1907.0    1211.  1906.8    1272.  1907.1    1316.  1905.9    1359.
GR   1907.1    1390.  1909.1    1416.  1910.6    1438.  1920.0    1482.

QT       2    3390    3390
ET                     9.1                                             921    1317
X1    1.211      21     928    1008     345     458     417
X3       10
GR   1928.1     910.  1919.9     912.  1911.7     928.  1912.2     957.  1912.7     993.
GR   1912.9    1000.  1913.5    1008.  1914.3    1047.  1915.2    1070.  1913.7    1136.
GR   1913.9    1161.  1913.3    1181.  1912.5    1199.  1912.5    1229.  1913.2    1251.
GR   1914.4    1258.  1914.8    1299.  1916.5    1377.  1917.3    1442.  1919.0    1471.
GR   1928.2    1511.
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ET                      9.1                                                 973      1714
X1   1.318      32     1310     1397      565      400      565
X3      10
GR  1936.0     933.   1926.5     955.  1921.7     974.  1918.9     984.  1919.0     996.
GR  1919.3    1000.   1920.2    1016.  1918.9    1036.  1918.2    1045.  1919.3    1072.
GR  1922.4    1085.   1922.4    1117.  1921.3    1161.  1919.6    1171.  1921.7    1191.
GR  1921.8    1249.   1921.7    1310.  1920.7    1354.  1919.4    1373.  1919.1    1384.
GR  1920.9    1397.   1920.2    1411.  1919.8    1429.  1920.4    1444.  1920.4    1464.
GR  1920.5    1513.   1919.8    1549.  1920.7    1572.  1921.1    1601.  1921.3    1651.
GR  1921.7    1713.   1940.1    1769.

ET                      9.1                                                 762      1347
X1   1.420      31     1190     1264      555      550      539
X3      10
GR  1940.2     705.   1933.2     728.  1929.3     768.  1929.6     811.  1929.5     863.
GR  1928.5     907.   1927.1     922.  1927.8     939.  1929.0     955.  1928.6     970.
GR  1926.8     980.   1926.5     985.  1926.5    1000.  1926.6    1006.  1928.9    1041.
GR  1928.8    1081.   1931.3    1129.  1929.7    1160.  1928.5    1190.  1926.7    1211.
GR  1926.2    1219.   1926.1    1246.  1928.6    1264.  1929.7    1278.  1928.5    1303.
GR  1929.3    1319.   1929.8    1347.  1930.7    1375.  1931.1    1401.  1934.2    1427.
GR  1940.0    1456.

NC   0.065    0.065   0.040      .3       .5
ET                      9.1                                                 783      1017
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1   1.517      27      921     1008      533      455      512
X3                              783    1938.6     1017    1938.2
GR  1948.1     657.   1939.4     677.  1937.9     710.  1938.6     756.  1937.1     790.
GR  1936.6     828.   1937.0     858.  1936.7     882.  1935.5     903.  1933.8     921.
GR  1934.3     945.   1933.5     983.  1933.0     998.  1933.1    1000.  1933.6    1008.
GR  1938.2    1018.   1938.3    1070.  1938.4    1093.  1939.0    1113.  1938.2    1129.
GR  1937.0    1139.   1937.4    1154.  1938.0    1170.  1938.1    1194.  1937.8    1215.
GR  1938.5    1229.   1944.2    1269.

NC   0.055    0.060   0.040      .1       .3
ET              7.1     9.1                                 958.     1132.   958.     1132.
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1   1.613      19      967     1020      375      555      505
GR  1952.0     781.   1951.9     788.  1946.6     804.  1942.0     822.  1941.9     862.
GR  1941.3     887.   1941.8     918.  1943.2     935.  1943.1     958.  1940.1     967.
GR  1939.8     980.   1940.0    1000.  1941.2    1020.  1943.5    1032.  1942.4    1061.
GR  1943.5    1111.   1944.8    1132.  1946.2    1150.  1960.0    1194.

ET                      9.1                                                 978      1419
X1   1.696      28      978     1012      440      325      440
X3      10
GR  1956.2     976.   1950.2     978.  1946.4     989.  1946.1    1000.  1946.1    1002.
GR  1947.7    1012.   1947.7    1034.  1947.8    1055.  1946.6    1064.  1946.9    1073.
GR  1948.0    1087.   1950.0    1092.  1950.0    1100.  1949.3    1116.  1947.0    1176.
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GR   1946.6    1195.    1947.7    1209.    1948.3    1212.    1947.4    1246.    1947.4    1253.
GR   1948.1    1266.    1948.7    1321.    1948.5    1360.    1948.6    1383.    1949.6    1407.
GR   1950.0    1428.    1951.1    1451.    1956.2    1485.

QT       2     3350     3350
NC   0.060     0.060    0.040      .1       .3
ET                      9.1                                                        964      1223
X1   1.786       17      967      1031      515       380      500
X3      10
GR   1972.1     942.    1964.9     953.    1953.4     967.    1952.3     979.    1951.0     992.
GR   1950.8    1000.    1950.7    1003.    1952.0    1022.    1955.2    1031.    1955.7    1048.
GR   1952.1    1061.    1953.1    1082.    1954.4    1122.    1955.3    1158.    1955.4    1207.
GR   1955.4    1221.    1960.2    1237.

ET                      9.1                                                        996      1172
X1   1.879       13      1000      1044      520       505      512
X3      10
GR   1979.9     988.    1966.7     993.    1959.6    1000.    1957.8    1002.    1958.1    1018.
GR   1958.2    1035.    1959.6    1044.    1959.9    1077.    1961.9    1113.    1961.1    1141.
GR   1960.8    1164.    1962.2    1170.    1972.1    1196.

ET              7.1      9.1                                       859    1027.      859      1027
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1   1.982       15      968       1016      585       541      544
GR   1980.0     775.    1970.8     790.    1967.4     806.    1968.0     817.    1969.4     841.
GR   1967.7     880.    1967.3     912.    1966.1     928.    1967.2     937.    1965.3     968.
GR   1963.2     977.    1963.2     997.    1963.2    1000.    1963.2    1016.    1976.1    1042.

ET              7.1      9.1                                       947    1079.      947      1079.
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1   2.082       14      956       1000      500       572      528
GR   1988.0     921.    1984.8     937.    1971.5     956.    1972.3     989.    1974.6    1000.
GR   1976.3    1042.    1977.0    1064.    1977.4    1079.    1977.4    1081.    1976.2    1123.
GR   1973.8    1142.    1973.3    1154.    1975.4    1159.    1988.0    1206.

QT       2     3315     3315
ET                      9.1                                                        610      1002
          UPSTREAM LIMIT OF DETAILED STUDY.
X1   2.172       18      947       998       400       350      474
X3      10
GR   1992.1     594.    1982.4     612.    1982.6     636.    1981.6     684.    1981.1     706.
GR   1982.0     745.    1982.5     778.    1982.3     825.    1981.7     861.    1981.8     880.
GR   1982.0     904.    1979.4     947.    1978.8     966.    1978.2     974.    1978.2     989.
GR   1978.2     998.    1980.9    1000.    1988.0    1006.
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=     .100 CEHV=     .300
*SECNO 43.000
          HASSAYAMPA RIVER FIS CROSS SECTION 43.00  (CBA 1988, NO DATUM CHANGE)
          CONFLUENCE WITH WASH V - OX WASH, AN EAST TRIBUTARY.
          NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA.
   43.000      2.04   1823.24   1823.12   1828.06   1823.72       .48       .00       .00   1821.20
   4447.0     644.8    3802.2        .0     246.5     645.2        .0        .0        .0   1829.20
      .00      2.62      5.89       .00      .045      .030      .000      .000   1821.20   1785.47
  .007496        0.        0.        0.         0        14         7       .00    721.98   2507.46


FLOW DISTRIBUTION FOR SECNO=     43.00          CWSEL=   1823.24

STA=    1785.    1834.    2083.    2107.    2536.
  PER Q=       .3     10.8      3.4     85.5
  AREA=      10.8    196.9     38.9    645.2
   VEL=       1.0      2.4      3.9      5.9
 DEPTH=        .2       .8      1.6      1.6

CCHV=     .100 CEHV=     .300
*SECNO  .185

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      885.0    1135.0  TYPE=      1  TARGET=      250.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
     .185      4.87   1829.27   1829.27       .00   1830.51      1.24      2.55       .23   1828.00
   4447.0      32.1    4389.0      25.9      12.8     487.9      17.2       3.5       2.3   1828.60
     .01      2.50      9.00      1.51      .060      .045      .065      .000   1824.40    885.81
  .018663      120.      235.      430.         0        20         0       .00    244.32   1130.13
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


FLOW DISTRIBUTION FOR SECNO=       .19          CWSEL=   1829.27

STA=     886.     906.    1079.    1130.
  PER Q=       .7     98.7       .6
   AREA=     12.8    487.9     17.2
    VEL=      2.5      9.0      1.5
  DEPTH=       .6      2.8       .3

CCHV=     .100 CEHV=     .300
*SECNO  .286
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
      .286      5.53   1837.93   1837.93       .00   1839.47      1.54      7.08       .09   1835.20
    4447.0     527.1    3628.3     291.6     118.8     334.8      85.2      10.0       5.0   1834.80
       .02      4.44     10.84      3.42      .065      .035      .065      .000   1832.40    899.55
   .009855      535.      535.      550.         0         8         0       .00    196.36   1095.91


FLOW DISTRIBUTION FOR SECNO=       .29          CWSEL=   1837.93

STA=     900.     927.     939.     961.    1042.    1082.    1096.
  PER Q=       .5      2.8      8.6     81.6      6.4       .2
   AREA=     13.9     30.4     74.5    334.8     79.4      5.8
    VEL=      1.5      4.1      5.1     10.8      3.6      1.3
  DEPTH=       .5      2.5      3.4      4.1      2.0       .4

CCHV=     .300 CEHV=     .500
*SECNO  .326

3470 ENCROACHMENT STATIONS=      924.0    1041.0  TYPE=      1  TARGET=      117.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
      .326      4.45   1840.25   1840.25       .00   1842.18      1.93      2.51       .20   1837.50
    4447.0       6.1    3457.8     983.1       2.6     286.5     140.6      12.4       5.8   1835.80
       .03      2.34     12.07      6.99      .065      .035      .065      .000   1835.80    924.10
   .014511      212.      212.      212.         2        15         0       .00    116.00   1040.10


FLOW DISTRIBUTION FOR SECNO=       .33          CWSEL=   1840.25
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA=	924.	926.	1005.	1037.	1040.
PER Q=	.1	77.8	21.7	.4	
AREA=	2.6	286.5	134.4	6.1	
VEL=	2.3	12.1	7.2	3.1	
DEPTH=	1.4	3.6	4.2	2.0	

*SECNO .334

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 13 MIN ELTRD= 1869.40 MAX ELLC= 1866.30

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 924.0 1058.0 TYPE= 1 TARGET= 134.000
ELENCL= 1869.40 ELENCR= 1869.40
DOWNSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.

.334	5.16	1842.46	1842.46	.00	1844.77	2.31	.78	.19	1838.50
4402.0	23.7	2926.5	1451.8	6.7	214.1	168.6	12.8	5.9	1837.30
.03	3.57	13.67	8.61	.065	.035	.065	.000	1837.30	945.64
.017510	49.	49.	49.	0	22	0	.00	85.88	1040.36

FLOW DISTRIBUTION FOR SECNO= .33 CWSEL= 1842.46

STA=	946.	949.	1005.	1037.	1040.
PER Q=	.5	66.5	32.3	.7	
AREA=	6.7	214.1	160.4	8.2	
VEL=	3.6	13.7	8.9	3.8	
DEPTH=	2.0	4.5	5.0	2.4	

*SECNO .338

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 924.0 1058.0 TYPE= 1 TARGET= 134.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

ELENCL= 1869.40 ELENCR= 1869.40
UPSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.

.338	5.17	1843.07	1843.07	.00	1845.37	2.30	.35	.00	1839.10
4402.0	23.8	2926.5	1451.7	6.7	214.5	168.8	13.0	5.9	1837.90
.03	3.56	13.65	8.60	.065	.035	.065	.000	1837.90	945.64
.017424	20.	20.	20.	0	5	0	.00	85.89	1040.36

FLOW DISTRIBUTION FOR SECNO= .34 CWSEL= 1843.07

STA=	946.	949.	1005.	1037.	1040.
PER Q=	.5	66.5	32.3	.7	
AREA=	6.7	214.5	160.6	8.2	
VEL=	3.6	13.6	8.8	3.7	
DEPTH=	2.0	4.5	5.0	2.4	

CCHV= .100 CEHV= .300
*SECNO .344

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.97

.344	6.64	1844.54	1842.82	.00	1845.73	1.19	.25	.11	1839.00
4402.0	31.3	3323.0	1047.7	13.6	343.8	204.3	13.3	6.0	1838.00
.03	2.30	9.67	5.13	.065	.035	.065	.000	1837.90	947.08
.004502	31.	31.	31.	4	8	0	.00	93.48	1040.56

FLOW DISTRIBUTION FOR SECNO= .34 CWSEL= 1844.54

STA=	947.	952.	1007.	1037.	1041.
PER Q=	.7	75.5	23.3	.5	
AREA=	13.6	343.8	193.0	11.3	
VEL=	2.3	9.7	5.3	2.1	
DEPTH=	2.8	6.3	6.4	3.2	

CCHV= .100 CEHV= .300
*SECNO .379

.379	5.97	1845.77	1844.98	.00	1846.95	1.18	1.22	.00	1842.30
4402.0	1756.1	2640.8	5.1	329.1	254.9	3.2	16.0	6.6	1840.70
.04	5.34	10.36	1.58	.065	.040	.065	.000	1839.80	860.55
.009129	250.	185.	170.	3	12	0	.00	149.71	1010.27

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .38 CWSEL= 1845.77

STA=	861.	865.	875.	895.	936.	958.	1009.	1010.
PER Q=	.2	4.3	18.5	13.5	3.4	60.0	.1	
AREA=	4.0	37.8	115.6	128.3	43.5	254.9	3.2	
VEL=	1.9	5.0	7.0	4.6	3.4	10.4	1.6	
DEPTH=	.9	3.8	5.8	3.1	2.0	5.0	2.5	

*SECNO .465
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.465	4.89	1852.29	1852.29	.00	1853.88	1.59	5.40	.12	1851.30
4402.0	1032.8	3277.9	91.3	172.6	292.2	23.8	21.5	8.1	1849.30
.05	5.98	11.22	3.83	.065	.040	.065	.000	1847.40	884.15
.016827	430.	454.	440.	0	15	0	.00	161.77	1045.92

FLOW DISTRIBUTION FOR SECNO= .47 CWSEL= 1852.29

STA=	884.	899.	927.	948.	1030.	1046.
PER Q=	2.7	15.5	5.2	74.5	2.1	
AREA=	27.4	99.2	46.0	292.2	23.8	
VEL=	4.4	6.9	5.0	11.2	3.8	
DEPTH=	1.8	3.5	2.2	3.6	1.5	

*SECNO .530

.530	4.43	1857.13	1856.93	.00	1858.81	1.69	4.90	.03	1852.90
4402.0	174.0	4183.0	45.0	40.2	392.7	11.6	25.2	9.3	1853.20
.06	4.33	10.65	3.90	.065	.040	.065	.000	1852.70	942.44
.012012	365.	345.	320.	3	11	0	.00	121.25	1063.69

FLOW DISTRIBUTION FOR SECNO= .53 CWSEL= 1857.13

STA=	942.	952.	965.	1058.	1062.	1064.
PER Q=	.2	3.7	95.0	1.0	.0	
AREA=	5.4	34.8	392.7	10.6	.9	
VEL=	1.7	4.7	10.7	4.1	1.5	
DEPTH=	.6	2.7	4.2	2.5	.6	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .597

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

.597	5.22	1863.82	1863.82	.00	1865.39	1.57	3.98	.01	1858.60
4406.0	1678.3	2632.3	95.4	326.2	213.5	20.4	28.8	10.3	1858.60
.07	5.14	12.33	4.67	.065	.040	.065	.000	1858.60	851.45
.012170	240.	352.	388.	0	11	0	.00	172.28	1023.73

FLOW DISTRIBUTION FOR SECNO= .60 CWSEL= 1863.82

STA=	851.	858.	865.	896.	942.	950.	960.	975.	1016.	1018.	1024.
PER Q=	.1	.6	7.2	13.1	2.3	4.2	10.6	59.7	1.3	.9	
AREA=	2.7	9.2	71.9	120.5	21.0	33.2	67.8	213.5	9.5	10.9	
VEL=	1.4	3.0	4.4	4.8	4.8	5.6	6.9	12.3	6.1	3.4	
DEPTH=	.4	1.3	2.3	2.6	2.6	3.3	4.5	5.2	4.5	1.9	

*SECNO .672

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

.672	7.74	1870.54	1870.54	.00	1873.26	2.72	4.65	.34	1864.00
4406.0	121.4	3444.8	839.8	26.7	235.6	133.0	33.1	11.4	1864.00
.08	4.54	14.62	6.31	.065	.040	.065	.000	1862.80	973.83
.011312	360.	398.	460.	0	14	0	.00	76.42	1050.25

FLOW DISTRIBUTION FOR SECNO= .67 CWSEL= 1870.54

STA=	974.	982.	1015.	1042.	1050.
PER Q=	2.8	78.2	18.4	.7	
AREA=	26.7	235.6	122.5	10.5	
VEL=	4.5	14.6	6.6	2.8	
DEPTH=	3.3	7.1	4.5	1.3	

*SECNO .715

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.715	10.86	1877.46	1877.46	.00	1881.30	3.83	2.42	.33	1871.00
4406.0	154.2	4088.0	163.8	33.3	251.4	34.8	34.9	11.7	1870.80
.08	4.63	16.26	4.71	.065	.040	.065	.000	1866.60	974.69
.010707	255.	227.	160.	0	11	0	.00	47.75	1022.44

FLOW DISTRIBUTION FOR SECNO= .71 CWSEL= 1877.46

STA=	975.	985.	1012.	1022.
PER Q=	3.5	92.8	3.7	
AREA=	33.3	251.4	34.8	
VEL=	4.6	16.3	4.7	
DEPTH=	3.2	9.3	3.3	

*SECNO .742

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.04

.742	11.60	1881.60	1877.05	.00	1882.02	.42	.38	.34	1870.00
4406.0	268.5	3259.9	877.6	117.5	558.0	362.6	37.1	12.0	1873.10
.09	2.29	5.84	2.42	.065	.040	.065	.000	1870.00	946.75
.001159	130.	143.	152.	3	14	0	.00	150.05	1096.80

FLOW DISTRIBUTION FOR SECNO= .74 CWSEL= 1881.60

STA=	947.	967.	1023.	1075.	1092.	1097.
PER Q=	6.1	74.0	18.4	1.5	.1	
AREA=	117.5	558.0	314.6	44.2	3.8	
VEL=	2.3	5.8	2.6	1.5	.6	
DEPTH=	5.8	10.0	6.0	2.6	.8	

*SECNO .768

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

```
        DOWNSTREAM SECTION OF DROP STRUCTURE.
     .768     11.58   1881.88   1875.19      .00   1882.14      .26      .11      .02   1875.20
   4406.0      88.5    3896.0     421.5     75.2     897.1    255.4     40.8     12.6   1870.50
     .10      1.18      4.34      1.65     .065      .040     .065     .000  1870.30    930.48
  .000562      155.      142.      138.        2        18        0      .00   201.05   1131.53


FLOW DISTRIBUTION FOR SECNO=       .77         CWSEL=   1881.88

STA=     930.     953.    1034.    1066.    1101.    1131.
  PER Q=      2.0     88.4      9.1       .5       .0
   AREA=     75.2    897.1    213.7     37.8      3.9
    VEL=      1.2      4.3      1.9       .6       .1
  DEPTH=      3.3     11.1      6.7      1.1       .1

*SECNO  .769

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .57

        UPSTREAM SECTION OF DROP STRUCTURE.
     .769      8.20   1881.70   1878.30      .00   1882.22      .52      .00      .08   1875.20
   4406.0     144.1    3970.2     291.7     71.2     655.7    144.5     40.8     12.6   1875.70
     .10      2.02      6.06      2.02     .065      .040     .065     .000  1873.50    931.08
  .001722        0.        0.        0.        2        18        0      .00   169.90   1100.98


FLOW DISTRIBUTION FOR SECNO=       .77         CWSEL=   1881.70

STA=     931.     953.    1037.    1066.    1101.
  PER Q=      3.3     90.1      6.0       .6
   AREA=     71.2    655.7    113.1     31.5
    VEL=      2.0      6.1      2.3       .9
  DEPTH=      3.2      7.8      3.9       .9

CCHV=     .300 CEHV=     .500
*SECNO  .770

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .65

        DOWNSTREAM SECTION OF DROP STRUCTURE.
     .770      7.26   1881.16   1880.42      .00   1882.81     1.65      .02      .57   1876.50
   4406.0     158.5    3773.5     474.0     53.1     340.6    156.8     41.0     12.6   1876.50
     .10      2.99     11.08      3.02     .055      .030     .055     .000  1873.90    953.66
  .004071        9.        9.        9.        3        15        0      .00   137.15   1090.81
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .77 CWSEL= 1881.16

STA=	954.	976.	1023.	1091.
PER Q=	3.6	85.6	10.8	
AREA=	53.1	340.6	156.8	
VEL=	3.0	11.1	3.0	
DEPTH=	2.3	7.2	2.3	

*SECNO .771

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
UPSTREAM SECTION OF DROP STRUCTURE.

.771	6.97	1881.37	1881.37	.00	1883.99	2.62	.00	.48	1879.50
4406.0	22.7	4287.8	95.5	10.7	325.8	44.6	41.0	12.6	1879.50
.10	2.12	13.16	2.14	.055	.030	.055	.000	1874.40	964.99
.006879	0.	0.	0.	0	8	0	.00	106.31	1071.30

FLOW DISTRIBUTION FOR SECNO= .77 CWSEL= 1881.37

STA=	965.	976.	1023.	1071.
PER Q=	.5	97.3	2.2	
AREA=	10.7	325.8	44.6	
VEL=	2.1	13.2	2.1	
DEPTH=	.9	6.9	.9	

CCHV= .600 CEHV= .800
*SECNO .772

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1954.60 ELREA= 1954.60

DOWNSTREAM SECTION OF S.R. 93 (HWY. 60-89) STRUCTURE
3 - 10' X 10' X 283' CONCRETE BOX CULVERT W/ HEADWALLS.

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        DROP STRUCTURE AT DOWNSTREAM END OF BOX CULVERT.
     .772      8.43   1883.03   1883.03      .00   1887.26      4.23      .04      1.29   1884.60
   4406.0        .0    4406.0       .0       .0     266.9        .0     41.0      12.6   1884.70
     .10       .00     16.51       .00     .000      .020      .000     .000   1874.60    984.07
  .005090        7.        7.        7.        0        11         0      .00     31.87   1015.93


FLOW DISTRIBUTION FOR SECNO=       .77          CWSEL=   1883.03

STA=     984.    1016.
  PER Q=    100.0
   AREA=    266.9
    VEL=     16.5
  DEPTH=      8.4


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
    3          .020      .40      2.90       .00     10.00     10.00    283.00      8         1      1881.38   1874.66

CHART  8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE  1 - WINGWALLS FLARED 30 TO 75 DEGREES

5130, EGIC= 1897.67..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1896.25 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
*SECNO  .825

SPECIAL CULVERT INLET CONTROL
EGIC =   1897.666  EGOC =   1896.255  PCWSE=   1883.026  ELTRD=   1954.700


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.53

SPECIAL CULVERT

    EGIC      EGOC       H4     QWEIR     QCULV      VCH     ACULV     ELTRD    WEIRLN
  1897.67   1896.25    10.41       0.     4406.    9.228     300.0   1954.70        0.



3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1954.60 ELREA=      1954.60

        UPSTREAM SECTION OF CONC. BOX CULVERT.
     .825     15.04   1896.34       .00       .00   1897.67      1.32     10.41       .00   1891.38
   4406.0        .0    4406.0       .0       .0     477.4        .0     43.4      12.8   1891.38
     .11       .00      9.23       .00     .000      .020      .000     .000   1881.30    984.05
  .000796     283.      283.      283.        3         0         0      .00     31.90   1015.95
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


FLOW DISTRIBUTION FOR SECNO=       .82          CWSEL=   1896.34

STA=     984.    1016.
  PER Q=    100.0
   AREA=    477.4
    VEL=      9.2
  DEPTH=     15.0

CCHV=     .600 CEHV=     .800
*SECNO  .880

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.01


3470 ENCROACHMENT STATIONS=      909.0    1382.0  TYPE=      1  TARGET=      473.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
     .880     12.26   1898.46   1889.74       .00   1898.48       .02       .03       .78   1888.80
   4406.0     235.1    1625.3    2545.6     332.8    1091.2    3381.9      58.4      14.2   1888.00
     .18       .71      1.49       .75      .065      .035      .065      .000   1886.20    909.00
  .000050      265.      288.      225.         2        18         0       .00    473.00   1382.00


FLOW DISTRIBUTION FOR SECNO=       .88          CWSEL=   1898.46

STA=     909.     944.    1042.    1080.    1123.    1172.    1206.    1224.    1253.    1288.    1315.    1359.    1382.
  PER Q=     5.3     36.9      6.8      6.9      7.9      6.0      3.5      6.4      7.3      4.8      7.0      1.2
   AREA=   332.8   1091.2    391.9    417.7    476.0    347.3    196.4    338.2    396.0    277.1    425.2    116.1
    VEL=      .7      1.5       .8       .7       .7       .8       .8       .8       .8       .8       .7       .4
  DEPTH=     9.5     11.1     10.3      9.7      9.7     10.2     10.9     11.7     11.3     10.3      9.7      5.0

CCHV=     .100 CEHV=     .300
*SECNO  .929
     .929      8.18   1898.48   1892.85       .00   1898.50       .02       .02       .00   1890.90
   4406.0      78.3    1063.5    3264.2     127.1     656.7    4127.4      88.3      17.9   1890.80
     .26       .62      1.62       .79      .065      .035      .065      .000   1890.30    801.91
  .000092      270.      259.      270.         2        21         0       .00    720.37   1522.28
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .93 CWSEL= 1898.48

STA=	802.	831.	914.	950.	1000.	1037.	1092.	1139.	1193.	1234.	1261.	1295.	1323.
PER Q=	1.8	24.1	5.2	6.9	4.5	5.0	5.3	6.4	5.5	3.8	4.5	3.8	
AREA=	127.1	656.7	271.2	366.6	250.3	315.9	304.7	360.9	296.5	199.3	244.2	203.9	
VEL=	.6	1.6	.8	.8	.8	.7	.8	.8	.8	.8	.8	.8	
DEPTH=	4.4	7.9	7.5	7.3	6.8	5.7	6.5	6.7	7.2	7.4	7.2	7.3	

STA=	1323.	1347.	1415.	1452.	1497.	1522.
PER Q=	3.3	8.1	3.7	5.5	2.6	
AREA=	174.8	457.8	223.2	307.5	150.5	
VEL=	.8	.8	.7	.8	.7	
DEPTH=	7.3	6.7	6.0	6.8	6.0	

CCHV= .300 CEHV= .500
*SECNO 1.022

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.022	3.35	1900.95	1900.95	.00	1901.66	.71	.16	.35	1898.60
4406.0	115.0	2151.1	2139.8	41.4	236.1	667.9	124.2	26.5	1898.00
.28	2.78	9.11	3.20	.065	.035	.065	.000	1897.60	890.28
.010337	540.	501.	540.	0	15	0	.00	677.94	1612.07

FLOW DISTRIBUTION FOR SECNO= 1.02 CWSEL= 1900.95

STA=	890.	926.	1003.	1048.	1103.	1141.	1177.	1241.	1491.	1529.	1608.	1612.
PER Q=	2.6	48.8	12.8	11.2	5.3	3.5	4.1	3.5	3.8	4.3	.1	
AREA=	41.4	236.1	123.6	123.6	68.3	52.1	71.4	95.7	55.8	74.4	3.1	
VEL=	2.8	9.1	4.6	4.0	3.4	3.0	2.5	1.6	3.0	2.5	1.9	
DEPTH=	1.2	3.1	2.7	2.2	1.8	1.4	1.1	.4	1.5	.9	.8	

CCHV= .100 CEHV= .300
*SECNO 1.132
7185 MINIMUM SPECIFIC ENERGY

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3720 CRITICAL DEPTH ASSUMED

1.132	3.49	1908.69	1908.69	.00	1909.45	.76	6.10	.01	1905.20
4406.0	588.1	1691.6	2126.4	178.2	163.5	589.1	135.5	33.9	1905.50
.30	3.30	10.35	3.61	.065	.035	.065	.000	1905.20	850.59
.012244	600.	581.	500.	0	8	0	.00	560.07	1410.66

FLOW DISTRIBUTION FOR SECNO= 1.13 CWSEL= 1908.69

STA=	851.	934.	987.	996.	1046.	1069.	1147.	1211.	1272.	1316.	1359.	1390.	1411.
PER Q=	4.4	6.6	2.4	38.4	4.1	6.1	6.0	9.2	6.4	9.1	6.6	.8	
AREA=	71.1	84.2	22.9	163.5	45.8	93.6	85.7	109.1	76.5	94.1	67.9	16.4	
VEL=	2.7	3.4	4.6	10.3	4.0	2.9	3.1	3.7	3.7	4.3	4.3	2.2	
DEPTH=	.9	1.6	2.5	3.3	2.0	1.2	1.3	1.8	1.7	2.2	2.2	.8	

*SECNO 1.211

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.211	3.48	1915.18	1915.18	.00	1916.02	.84	5.14	.03	1911.70
3390.0	38.8	2037.8	1313.4	11.8	224.1	382.2	143.3	38.7	1913.50
.32	3.30	9.09	3.44	.065	.035	.065	.000	1911.70	921.22
.011622	345.	417.	458.	0	5	0	.00	393.31	1316.23

FLOW DISTRIBUTION FOR SECNO= 1.21 CWSEL= 1915.18

STA=	921.	928.	1008.	1047.	1136.	1161.	1181.	1199.	1229.	1251.	1316.
PER Q=	1.1	60.1	4.3	3.3	3.1	3.1	5.1	11.2	6.5	2.1	
AREA=	11.8	224.1	49.7	57.7	34.4	31.5	41.0	80.3	51.2	36.5	
VEL=	3.3	9.1	2.9	1.9	3.0	3.3	4.3	4.8	4.3	2.0	
DEPTH=	1.7	2.8	1.3	.6	1.4	1.6	2.3	2.7	2.3	.6	

*SECNO 1.318

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

1.318	2.80	1921.90	1921.81	.00	1922.20	.30	6.13	.05	1921.70
3390.0	1492.0	709.9	1188.1	337.9	119.8	371.1	151.2	44.5	1920.90
.35	4.42	5.92	3.20	.065	.035	.065	.000	1919.10	973.21
.012737	565.	565.	400.	3	21	0	.00	686.32	1713.61

FLOW DISTRIBUTION FOR SECNO= 1.32 CWSEL= 1921.90

STA=	973.	996.	1016.	1036.	1045.	1072.	1191.	1310.	1397.	1429.	1444.	1513.	1549.
PER Q=	7.2	6.0	6.3	5.1	13.9	5.1	.4	20.9	5.8	3.0	9.9	7.0	
AREA=	51.4	45.4	47.0	30.2	85.1	60.9	17.9	119.8	53.1	27.0	101.1	63.0	
VEL=	4.7	4.5	4.6	5.8	5.5	2.8	.7	5.9	3.7	3.8	3.3	3.7	
DEPTH=	2.3	2.3	2.4	3.4	3.2	.5	.2	1.4	1.7	1.8	1.5	1.8	

STA=	1549.	1572.	1651.	1714.
PER Q=	4.0	4.3	1.0	
AREA=	38.0	64.0	24.9	
VEL=	3.6	2.3	1.4	
DEPTH=	1.7	.8	.4	

*SECNO 1.420

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.420	3.70	1929.80	1929.80	.00	1930.55	.75	6.30	.13	1928.50
3390.0	1400.6	1903.5	85.9	418.0	215.6	48.0	160.8	52.2	1928.60
.38	3.35	8.83	1.79	.065	.035	.065	.000	1926.10	762.87
.010433	555.	539.	550.	0	11	0	.00	526.25	1346.99

FLOW DISTRIBUTION FOR SECNO= 1.42 CWSEL= 1929.80

STA=	763.	922.	939.	980.	1000.	1041.	1190.	1264.	1347.
PER Q=	6.3	4.9	5.3	9.9	10.9	4.1	56.2	2.5	
AREA=	94.5	39.9	58.4	65.2	91.2	68.7	215.6	48.0	
VEL=	2.2	4.1	3.1	5.1	4.1	2.0	8.8	1.8	
DEPTH=	.6	2.3	1.4	3.3	2.2	.5	2.9	.6	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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CCHV=     .300 CEHV=     .500
*SECNO 1.517
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      783.0    1017.0  TYPE=      1  TARGET=      234.000
 ELENCL=   1938.60  ELENCR=   1938.20
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
    1.517      4.37   1937.37   1937.37       .00   1938.58      1.21      5.67       .23   1933.80
   3390.0     389.3    2946.5      54.2     125.3     313.8      15.4     167.5      56.7   1933.60
      .40      3.11      9.39      3.51      .065      .040      .065      .000   1933.00    783.96
  .011553      533.      512.      455.         0         8         0       .00    232.22   1016.19


FLOW DISTRIBUTION FOR SECNO=      1.52          CWSEL=   1937.37

STA=     784.     790.     828.     858.     882.     903.     921.    1008.    1016.
 PER Q=      .0       .9       .8       .6      2.3      6.9     86.9      1.6
  AREA=      .8     19.6     17.0     12.4     26.6     48.9    313.8     15.4
   VEL=      .6      1.6      1.7      1.6      2.9      4.8      9.4      3.5
 DEPTH=      .1       .5       .6       .5      1.3      2.7      3.6      1.9

CCHV=     .100 CEHV=     .300
*SECNO 1.613
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      958.0    1132.0  TYPE=      1  TARGET=      174.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
    1.613      4.99   1944.79   1944.79       .00   1946.11      1.32      5.43       .03   1940.10
   3390.0     146.9    2542.1     701.0      28.7     244.3     187.7     172.7      58.9   1941.20
      .41      5.12     10.40      3.73      .055      .040      .060      .000   1939.80    958.00
  .010230      375.      505.      555.         0         8         0       .00    173.78   1131.78


FLOW DISTRIBUTION FOR SECNO=      1.61          CWSEL=   1944.79
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA=	958.	967.	1020.	1032.	1061.	1111.	1132.
PER Q=	4.3	75.0	3.9	5.9	10.2	.7	
AREA=	28.7	244.3	29.2	53.3	91.8	13.4	
VEL=	5.1	10.4	4.5	3.8	3.8	1.9	
DEPTH=	3.2	4.6	2.4	1.8	1.8	.6	

*SECNO 1.696

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1950.20 ELREA= 1947.70

1.696	3.73	1949.83	1949.47	.00	1950.22	.38	4.02	.09	1950.20
3390.0	.0	707.9	2682.1	.0	93.1	669.7	177.8	61.3	1947.70
.43	.00	7.60	4.00	.000	.040	.060	.000	1946.10	979.08
.010772	440.	440.	325.	3	18	0	.00	427.56	1418.99

FLOW DISTRIBUTION FOR SECNO= 1.70 CWSEL= 1949.83

STA=	979.	1012.	1034.	1055.	1064.	1073.	1087.	1176.	1195.	1209.	1246.	1266.	1321.
PER Q=	20.9	5.9	5.4	3.4	4.4	4.5	11.2	9.1	5.5	8.6	5.7	7.6
AREA=	93.1	46.8	43.6	23.7	27.7	33.3	108.1	57.5	37.5	72.7	44.0	78.6
VEL=	7.6	4.3	4.2	4.9	5.4	4.6	3.5	5.4	4.9	4.0	4.4	3.3
DEPTH=	2.8	2.1	2.1	2.6	3.1	2.4	1.2	3.0	2.7	2.0	2.2	1.4

STA=	1321.	1360.	1407.	1419.
PER Q=	4.2	3.7	.0	
AREA=	47.9	46.9	1.4	
VEL=	2.9	2.7	.6	
DEPTH=	1.2	1.0	.1	

CCHV= .100 CEHV= .300
*SECNO 1.786

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.786	5.09	1955.79	1955.79	.00	1956.89	1.10	4.79	.21	1953.40
3350.0	8.7	2384.7	956.6	3.5	247.5	240.4	183.7	64.4	1955.20
.45	2.49	9.63	3.98	.060	.040	.060	.000	1950.70	964.09
.011245	515.	500.	380.	0	11	0	.00	258.22	1222.31

FLOW DISTRIBUTION FOR SECNO= 1.79 CWSEL= 1955.79

STA=	964.	967.	1031.	1048.	1061.	1082.	1122.	1158.	1207.	1221.	1222.
PER Q=	.3	71.2	.2	2.9	11.4	10.3	2.6	1.0	.2	.0	
AREA=	3.5	247.5	5.8	24.6	67.0	81.7	33.9	21.6	5.5	.3	
VEL=	2.5	9.6	1.3	3.9	5.7	4.2	2.5	1.5	1.4	.9	
DEPTH=	1.2	3.9	.3	1.9	3.2	2.0	.9	.4	.4	.2	

*SECNO 1.879
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.879	5.00	1962.80	1962.80	.00	1964.10	1.30	5.83	.06	1959.60
3350.0	14.6	2175.1	1160.3	5.1	200.1	256.6	189.3	66.9	1959.60
.47	2.89	10.87	4.52	.060	.040	.060	.000	1957.80	996.84
.011646	520.	512.	505.	0	5	0	.00	174.74	1171.58

FLOW DISTRIBUTION FOR SECNO= 1.88 CWSEL= 1962.80

STA=	997.	1000.	1044.	1077.	1113.	1141.	1164.	1170.	1172.
PER Q=	.4	64.9	16.9	8.4	3.5	5.1	.7	.0	
AREA=	5.1	200.1	100.7	68.5	36.5	42.6	7.8	.5	
VEL=	2.9	10.9	5.6	4.1	3.2	4.0	3.1	1.1	
DEPTH=	1.6	4.5	3.1	1.9	1.3	1.9	1.3	.3	

*SECNO 1.982
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 859.0 1027.0 TYPE= 1 TARGET= 168.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
1.982	5.39	1968.59	1968.59	.00	1970.02	1.43	5.64	.04	1965.30
3350.0	575.5	2649.7	124.9	163.9	249.2	29.2	195.0	69.1	1963.20
.48	3.51	10.63	4.27	.060	.040	.060	.000	1963.20	859.64
.009178	585.	544.	541.	0	8	0	.00	167.22	1026.86

FLOW DISTRIBUTION FOR SECNO= 1.98 CWSEL= 1968.59

STA=	860.	880.	912.	928.	937.	968.	1016.	1027.
PER Q=	.4	2.6	3.3	1.9	9.0	79.1	3.7	
AREA=	9.0	34.8	30.2	17.4	72.5	249.2	29.2	
VEL=	1.4	2.5	3.6	3.7	4.2	10.6	4.3	
DEPTH=	.4	1.1	1.9	1.9	2.3	5.2	2.7	

*SECNO 2.082
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 947.0 1079.0 TYPE= 1 TARGET= 132.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION; THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

2.082	6.30	1977.80	1977.80	.00	1979.43	1.63	4.92	.06	1971.50
3350.0	128.3	2720.4	501.4	28.4	242.6	133.0	200.1	70.9	1974.60
.50	4.52	11.21	3.77	.060	.040	.060	.000	1971.50	947.00
.009427	500.	528.	572.	0	8	0	.00	132.00	1079.00

FLOW DISTRIBUTION FOR SECNO= 2.08 CWSEL= 1977.80

STA=	947.	956.	1000.	1042.	1064.	1079.
PER Q=	3.8	81.2	12.5	2.0	.5	
AREA=	28.4	242.6	98.7	25.3	9.0	
VEL=	4.5	11.2	4.2	2.6	1.7	
DEPTH=	3.2	5.5	2.4	1.2	.6	

*SECNO 2.172

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3720 CRITICAL DEPTH ASSUMED
UPSTREAM LIMIT OF DETAILED STUDY.

2.172	5.00	1983.20	1983.20	.00	1983.96	.76	3.64	.09	1979.40
3315.0	1250.9	2034.9	29.2	453.1	235.4	9.5	205.5	73.4	1978.20
.52	2.76	8.64	3.07	.060	.040	.060	.000	1978.20	610.52
.007049	400.	474.	350.	0	14	0	.00	391.42	1001.94

FLOW DISTRIBUTION FOR SECNO= 2.17 CWSEL= 1983.20

STA=	611.	684.	706.	745.	825.	861.	904.	947.	998.	1002.
PER Q=	4.4	3.8	5.6	3.9	3.1	4.5	12.4	61.4	.9	
AREA=	70.1	40.7	64.3	68.8	43.1	58.7	107.4	235.4	9.5	
VEL=	2.1	3.1	2.9	1.9	2.3	2.6	3.8	8.6	3.1	
DEPTH=	1.0	1.8	1.6	.9	1.2	1.4	2.5	4.6	2.4	

T1 FLOODWAY DETERMINATION
T2
T3 WASH V: OX WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	3	0	0	0.0075	0	0	0	1828.06	0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2	0	-1	0	0	0	-1	0	0	0

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=     .100 CEHV=     .300
*SECNO 43.000
          HASSAYAMPA RIVER FIS CROSS SECTION 43.00  (CBA 1988, NO DATUM CHANGE)
          CONFLUENCE WITH WASH V - OX WASH, AN EAST TRIBUTARY.
          NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA.
   43.000      2.04   1823.24   1823.12   1828.06   1823.72       .48       .00       .00   1821.20
   4447.0     644.8    3802.2        .0     246.5     645.2        .0        .0        .0   1829.20
      .00      2.62      5.89       .00      .045      .030      .000      .000   1821.20   1785.47
  .007496        0.        0.        0.         0        14         7       .00    721.98   2507.46


CCHV=     .100 CEHV=     .300
*SECNO  .185

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      885.0    1135.0  TYPE=      1  TARGET=      250.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
     .185      4.87   1829.27   1829.27   1829.27   1830.51      1.24      2.55       .23   1828.00
   4447.0      32.1    4389.0      25.9      12.8     487.9      17.2       3.5       2.3   1828.60
      .01      2.50      9.00      1.51      .060      .045      .065      .000   1824.40    885.81
  .018663      120.      235.      430.         0        20         0       .00    244.32   1130.13


CCHV=     .100 CEHV=     .300
*SECNO  .286
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      899.0    1096.0  TYPE=      1  TARGET=      197.000
     .286      5.54   1837.94   1837.94   1837.93   1839.47      1.53      7.06       .09   1835.20
   4447.0     527.5    3627.3     292.2     119.1     335.1      85.4      10.0       5.0   1834.80
      .02      4.43     10.82      3.42      .065      .035      .065      .000   1832.40    899.38
  .009816      535.      535.      550.         0         8         0       .00    196.61   1095.98
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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


CCHV=     .300 CEHV=     .500
*SECNO  .326
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      924.0    1,041.0  TYPE=      1  TARGET=      117.000
        ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
     .326      4.45   1840.25   1840.25   1840.25   1842.18      1.93      2.51       .20   1837.50
   4447.0       6.1    3457.7     983.1       2.6     286.3     140.5      12.4       5.8   1835.80
      .03      2.34     12.08      7.00      .065      .035      .065      .000   1835.80    924.10
  .014533      212.      212.      212.         0        15         0       .00    116.00   1040.10


*SECNO  .334

3265 DIVIDED FLOW


3370 NORMAL BRIDGE, NRD=  13 MIN ELTRD=  1869.40 MAX ELLC=  1866.30

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      924.0    1058.0  TYPE=      1  TARGET=      134.000
 ELENCL=   1869.40  ELENCR=   1869.40
        DOWNSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.
     .334      5.16   1842.46   1842.46   1842.46   1844.77      2.31       .78       .19   1838.50
   4402.0      23.7    2926.5    1451.8       6.7     214.1     168.6      12.8       5.9   1837.30
      .03      3.57     13.67      8.61      .065      .035      .065      .000   1837.30    945.64
  .017510       49.       49.       49.         0        22         0       .00     85.88   1040.36


*SECNO  .338

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      924.0    1058.0  TYPE=      1  TARGET=      134.000
 ELENCL=   1869.40  ELENCR=   1869.40
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UPSTREAM ATCHISON-TOPEKA AND SANTA FE RAILROAD TRESTLE.

.338	5.17	1843.07	1843.07	1843.07	1845.37	2.30	.35	.00	1839.10
4402.0	23.8	2926.5	1451.7	6.7	214.5	168.8	13.0	5.9	1837.90
.03	3.56	13.65	8.60	.065	.035	.065	.000	1837.90	945.64
.017424	20.	20.	20.	0	5	0	.00	85.89	1040.36

CCHV= .100 CEHV= .300
*SECNO .344

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.97

3470 ENCROACHMENT STATIONS= 947.0 1041.0 TYPE= 1 TARGET= 94.000

.344	6.64	1844.54	1842.82	1844.54	1845.73	1.19	.25	.11	1839.00
4402.0	31.3	3323.0	1047.7	13.6	343.8	204.3	13.3	6.0	1838.00
.03	2.30	9.67	5.13	.065	.035	.065	.000	1837.90	947.08
.004502	31.	31.	31.	4	8	0	.00	93.48	1040.56

CCHV= .100 CEHV= .300
*SECNO .379

3470 ENCROACHMENT STATIONS= 860.0 1011.0 TYPE= 1 TARGET= 151.000

.379	5.97	1845.77	1844.97	1845.77	1846.95	1.18	1.22	.00	1842.30
4402.0	1756.1	2640.8	5.1	329.1	254.9	3.2	16.0	6.6	1840.70
.04	5.34	10.36	1.58	.065	.040	.065	.000	1839.80	860.55
.009129	250.	185.	170.	3	12	0	.00	149.71	1010.26

*SECNO .465
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 884.0 1046.0 TYPE= 1 TARGET= 162.000

.465	4.92	1852.32	1852.32	1852.29	1853.88	1.56	5.33	.12	1851.30
4402.0	1034.7	3274.6	92.6	174.6	294.6	24.3	21.5	8.1	1849.30
.05	5.93	11.11	3.81	.065	.040	.065	.000	1847.40	884.02
.016324	430.	454.	440.	0	15	0	.00	161.97	1046.00

*SECNO .530

3470 ENCROACHMENT STATIONS= 942.0 1064.0 TYPE= 1 TARGET= 122.000

.530	4.40	1857.10	1856.93	1857.13	1858.81	1.71	4.88	.04	1852.90
4402.0	172.7	4184.6	44.7	39.6	390.5	11.4	25.2	9.3	1853.20
.06	4.36	10.72	3.92	.065	.040	.065	.000	1852.70	942.64
.012245	365.	345.	320.	3	11	0	.00	121.01	1063.65

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .597
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 851.0 1024.0 TYPE= 1 TARGET= 173.000

.597	5.22	1863.82	1863.82	1863.82	1865.39	1.57	4.01	.01	1858.60
4406.0	1679.1	2631.5	95.5	326.6	213.6	20.4	28.8	10.3	1858.60
.07	5.14	12.32	4.67	.065	.040	.065	.000	1858.60	851.42
.012140	240.	352.	388.	0	11	0	.00	172.31	1023.73

*SECNO .672

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 973.0 1051.0 TYPE= 1 TARGET= 78.000

.672	7.75	1870.55	1870.55	1870.54	1873.26	2.72	4.64	.34	1864.00
4406.0	121.5	3443.9	840.6	26.8	235.8	133.3	33.2	11.4	1864.00
.08	4.54	14.60	6.31	.065	.040	.065	.000	1862.80	973.82
.011264	360.	398.	460.	0	14	0	.00	76.46	1050.27

*SECNO .715

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 974.0 1023.0 TYPE= 1 TARGET= 49.000

.715	10.85	1877.45	1877.45	1877.46	1881.30	3.84	2.42	.34	1871.00
4406.0	153.9	4088.6	163.5	33.2	251.1	34.7	34.9	11.7	1870.80
.08	4.63	16.28	4.71	.065	.040	.065	.000	1866.60	974.71
.010743	255.	227.	160.	0	11	0	.00	47.72	1022.43

*SECNO .742

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.05

3470 ENCROACHMENT STATIONS= 946.0 1097.0 TYPE= 1 TARGET= 151.000

.742	11.60	1881.60	1877.05	1881.60	1882.02	.42	.38	.34	1870.00
4406.0	268.5	3259.8	877.8	117.5	558.0	362.7	37.2	12.0	1873.10
.09	2.29	5.84	2.42	.065	.040	.065	.000	1870.00	946.75
.001158	130.	143.	152.	3	14	0	.00	150.06	1096.80

*SECNO .768

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

3470 ENCROACHMENT STATIONS= 930.0 1132.0 TYPE= 1 TARGET= 202.000
DOWNSTREAM SECTION OF DROP STRUCTURE.

.768	11.58	1881.88	1875.19	1881.88	1882.14	.26	.11	.02	1875.20
4406.0	88.5	3895.9	421.6	75.2	897.2	255.5	40.8	12.6	1870.50
.10	1.18	4.34	1.65	.065	.040	.065	.000	1870.30	930.47
.000561	155.	142.	138.	2	18	0	.00	201.07	1131.54

*SECNO .769

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .57

3470 ENCROACHMENT STATIONS= 931.0 1101.0 TYPE= 1 TARGET= 170.000
UPSTREAM SECTION OF DROP STRUCTURE.

.769	8.20	1881.70	1878.30	1881.70	1882.22	.52	.00	.08	1875.20
4406.0	144.2	3970.0	291.9	71.3	655.8	144.7	40.8	12.6	1875.70
.10	2.02	6.05	2.02	.065	.040	.065	.000	1873.50	931.08
.001720	0.	0.	0.	2	18	0	.00	169.92	1101.00

CCHV= .300 CEHV= .500
*SECNO .770

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .65

3470 ENCROACHMENT STATIONS= 953.0 1091.0 TYPE= 1 TARGET= 138.000

DOWNSTREAM SECTION OF DROP STRUCTURE.

.770	7.26	1881.16	1880.41	1881.16	1882.81	1.65	.02	.57	1876.50
4406.0	158.5	3773.2	474.3	53.1	340.7	156.9	41.0	12.6	1876.50
.10	2.99	11.07	3.02	.055	.030	.055	.000	1873.90	953.65
.004067	9.	9.	9.	3	12	0	.00	137.18	1090.83

*SECNO .771

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 964.0 1072.0 TYPE= 1 TARGET= 108.000

UPSTREAM SECTION OF DROP STRUCTURE.

.771	7.09	1881.49	1881.49	1881.37	1883.98	2.49	.00	.42	1879.50
4406.0	26.1	4266.7	113.2	12.2	331.8	50.8	41.0	12.6	1879.50
.10	2.14	12.86	2.23	.055	.030	.055	.000	1874.40	964.21
.006410	0.	0.	0.	0	5	0	.00	107.79	1072.00

CCHV= .600 CEHV= .800
*SECNO .772

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 984.0 1016.0 TYPE= 1 TARGET= 32.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1954.60 ELREA= 1954.60

DOWNSTREAM SECTION OF S.R. 93 (HWY. 60-89) STRUCTURE
3 - 10' X 10' X 283' CONCRETE BOX CULVERT W/ HEADWALLS.
DROP STRUCTURE AT DOWNSTREAM END OF BOX CULVERT.

.772	8.43	1883.03	1883.03	1883.03	1887.26	4.23	.04	1.39	1884.60
4406.0	.0	4406.0	.0	.0	266.9	.0	41.0	12.6	1884.70
.10	.00	16.51	.00	.000	.020	.000	.000	1874.60	984.07
.005087	7.	7.	7.	0	11	0	.00	31.87	1015.93

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.020	.40	2.90	.00	10.00	10.00	283.00	8	1	1881.38	1874.66

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

5130, EGIC= 1897.67..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1896.25 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
*SECNO .825

SPECIAL CULVERT INLET CONTROL
EGIC = 1897.666 EGOC = 1896.255 PCWSE= 1883.028 ELTRD= 1954.700

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.53

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
1897.67	1896.25	10.41	0.	4406.	9.228	300.0	1954.70	0.

3470 ENCROACHMENT STATIONS= 984.0 1016.0 TYPE= 1 TARGET= 32.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1954.60 ELREA= 1954.60

UPSTREAM SECTION OF CONC. BOX CULVERT.

.825	15.04	1896.34	.00	1896.34	1897.67	1.32	10.41	.00	1891.38
4406.0	.0	4406.0	.0	.0	477.4	.0	43.5	12.8	1891.38
.11	.00	9.23	.00	.000	.020	.000	.000	1881.30	984.05
.000796	283.	283.	283.	3	0	0	.00	31.90	1015.95

CCHV= .600 CEHV= .800
*SECNO .880

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.01

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=      909.0    1382.0  TYPE=      1  TARGET=      473.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
     .880     12.26   1898.46   1889.74   1898.46   1898.48       .02       .03       .78   1888.80
   4406.0     235.1    1625.3    2545.6     332.8    1091.2    3381.9      58.4      14.2   1888.00
     .18       .71      1.49       .75      .065      .035      .065      .000   1886.20    909.00
  .000050      265.      288.      225.         2        18         0       .00    473.00   1382.00


CCHV=     .100 CEHV=     .300
*SECNO  .929

3470 ENCROACHMENT STATIONS=      801.0    1523.0  TYPE=      1  TARGET=      722.000
     .929      8.18   1898.48   1892.85   1898.48   1898.50       .02       .02       .00   1890.90
   4406.0      78.3    1063.5    3264.2     127.1     656.7    4127.4      88.3      17.9   1890.80
     .26       .62      1.62       .79      .065      .035      .065      .000   1890.30    801.91
  .000092      270.      259.      270.         2        21         0       .00    720.37   1522.28


CCHV=     .300 CEHV=     .500
*SECNO 1.022

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      890.0    1613.0  TYPE=      1  TARGET=      723.000
    1.022      3.35   1900.95   1900.95   1900.95   1901.66       .71       .16       .35   1898.60
   4406.0     115.0    2151.6    2139.4      41.4     236.1     667.4     124.2      26.5   1898.00
     .28      2.78      9.11      3.21      .065      .035      .065      .000   1897.60    890.30
  .010351      540.      501.      540.         0        15         0       .00    677.23   1612.07


CCHV=     .100 CEHV=     .300
*SECNO 1.132
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 850.0 1411.0 TYPE= 1 TARGET= 561.000

1.132	3.50	1908.70	1908.70	1908.69	1909.45	.74	6.04	.01	1905.20
4406.0	590.5	1684.4	2131.0	180.2	164.1	594.1	135.6	33.9	1905.50
.31	3.28	10.26	3.59	.065	.035	.065	.000	1905.20	850.00
.011973	600.	581.	500.	0	8	0	.00	560.84	1410.84

*SECNO 1.211

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 921.0 1317.0 TYPE= 1 TARGET= 396.000

1.211	3.48	1915.18	1915.18	1915.18	1916.02	.84	5.07	.03	1911.70
3390.0	38.8	2037.1	1314.1	11.8	224.3	382.8	143.4	38.7	1913.50
.32	3.29	9.08	3.43	.065	.035	.065	.000	1911.70	921.21
.011588	345.	417.	458.	0	5	0	.00	393.54	1316.32

*SECNO 1.318

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 973.0 1714.0 TYPE= 1 TARGET= 741.000

1.318	2.80	1921.90	1921.70	1921.90	1922.20	.30	6.13	.05	1921.70
3390.0	1492.4	709.7	1187.8	337.6	119.7	370.7	151.3	44.5	1920.90
.36	4.42	5.93	3.20	.065	.035	.065	.000	1919.10	973.21
.012769	565.	565.	400.	4	29	0	.00	686.26	1713.61

*SECNO 1.420

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=      762.0    1347.0  TYPE=      1  TARGET=      585.000
    1.420      3.70   1929.80   1929.80   1929.80   1930.55       .75      6.31       .13   1928.50
   3390.0    1400.7    1903.4      85.9     418.1     215.7      48.0     160.9      52.2   1928.60
      .38      3.35      8.83      1.79      .065      .035      .065      .000   1926.10    762.87
  .010429      555.      539.      550.         0        11         0       .00    526.27   1347.00


CCHV=     .300 CEHV=     .500
*SECNO 1.517
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      783.0    1017.0  TYPE=      1  TARGET=      234.000
 ELENCL=   1938.60  ELENCR=   1938.20
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
    1.517      4.37   1937.37   1937.37   1937.37   1938.58      1.21      5.66       .23   1933.80
   3390.0     389.5    2946.3      54.2     125.4     313.9      15.4     167.6      56.7   1933.60
      .40      3.11      9.39      3.51      .065      .040      .065      .000   1933.00    783.95
  .011546      533.      512.      455.         0         8         0       .00    232.24   1016.19


CCHV=     .100 CEHV=     .300
*SECNO 1.613
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      958.0    1132.0  TYPE=      1  TARGET=      174.000
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
    1.613      4.99   1944.79   1944.79   1944.79   1946.11      1.32      5.43       .03   1940.10
   3390.0     146.9    2542.1     701.0      28.7     244.3     187.7     172.8      58.9   1941.20
      .41      5.12     10.40      3.73      .055      .040      .060      .000   1939.80    958.00
  .010230      375.      505.      555.         0         8         0       .00    173.78   1131.78


*SECNO 1.696

3265 DIVIDED FLOW
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 978.0 1419.0 TYPE= 1 TARGET= 441.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1950.20 ELREA= 1947.70

1.696	3.73	1949.83	1949.47	1949.83	1950.22	.38	4.02	.09	1950.20
3390.0	.0	707.9	2682.1	.0	93.1	669.7	177.9	61.3	1947.70
.43	.00	7.60	4.00	.000	.040	.060	.000	1946.10	979.08
.010772	440.	440.	325.	3	18	0	.00	427.56	1418.99

CCHV= .100 CEHV= .300
*SECNO 1.786

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 964.0 1223.0 TYPE= 1 TARGET= 259.000

1.786	5.09	1955.79	1955.79	1955.79	1956.89	1.10	4.79	.21	1953.40
3350.0	8.7	2384.6	956.7	3.5	247.5	240.4	183.8	64.4	1955.20
.45	2.49	9.63	3.98	.060	.040	.060	.000	1950.70	964.09
.011240	515.	500.	380.	0	11	0	.00	258.22	1222.31

*SECNO 1.879
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 996.0 1172.0 TYPE= 1 TARGET= 176.000

1.879	5.00	1962.80	1962.80	1962.80	1964.10	1.30	5.83	.06	1959.60
3350.0	14.6	2175.0	1160.4	5.1	200.1	256.6	189.4	66.9	1959.60
.47	2.89	10.87	4.52	.060	.040	.060	.000	1957.80	996.84
.011643	520.	512.	505.	0	5	0	.00	174.74	1171.58

*SECNO 1.982
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 859.0 1027.0 TYPE= 1 TARGET= 168.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.982	5.39	1968.59	1968.59	1968.59	1970.02	1.43	5.64	.04	1965.30
3350.0	575.4	2649.7	124.9	163.9	249.1	29.2	195.1	69.1	1963.20
.48	3.51	10.64	4.27	.060	.040	.060	.000	1963.20	859.64
.009180	585.	544.	541.	0	8	0	.00	167.21	1026.86

*SECNO 2.082
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 947.0 1079.0 TYPE= 1 TARGET= 132.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

2.082	6.30	1977.80	1977.80	1977.80	1979.43	1.63	4.92	.06	1971.50
3350.0	128.3	2720.5	501.2	28.3	242.5	133.0	200.3	70.9	1974.60
.50	4.53	11.22	3.77	.060	.040	.060	.000	1971.50	947.00
.009430	500.	528.	572.	0	8	0	.00	132.00	1079.00

*SECNO 2.172

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 610.0 1002.0 TYPE= 1 TARGET= 392.000
UPSTREAM LIMIT OF DETAILED STUDY.

2.172	5.00	1983.20	1983.20	1983.20	1983.96	.76	3.64	.09	1979.40
3315.0	1250.8	2035.0	29.2	453.1	235.4	9.5	205.6	73.4	1978.20
.52	2.76	8.64	3.07	.060	.040	.060	.000	1978.20	610.52
.007050	400.	474.	350.	0	14	0	.00	391.42	1001.94

THIS RUN EXECUTED 16APR92 15:35:19

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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

WASH V: OX WASH

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	43.000	.00	.00	.00	1821.20	4447.00	1823.24	1823.12	1823.72	74.96	5.89	891.72	513.65
	43.000	.00	.00	.00	1821.20	4447.00	1823.24	1823.12	1823.72	74.96	5.89	891.72	513.65
*	.185	235.00	.00	.00	1824.40	4447.00	1829.27	1829.27	1830.51	186.63	9.00	517.89	325.52
*	.185	235.00	.00	.00	1824.40	4447.00	1829.27	1829.27	1830.51	186.63	9.00	517.89	325.52
*	.286	535.00	.00	.00	1832.40	4447.00	1837.93	1837.93	1839.47	98.55	10.84	538.78	447.96
*	.286	535.00	.00	.00	1832.40	4447.00	1837.94	1837.94	1839.47	98.16	10.82	539.62	448.85
	.326	212.00	.00	.00	1835.80	4447.00	1840.25	1840.25	1842.18	145.11	12.07	429.65	369.17
*	.326	212.00	.00	.00	1835.80	4447.00	1840.25	1840.25	1842.18	145.33	12.08	429.45	368.88
*	.334	49.00	1869.40	1866.30	1837.30	4402.00	1842.46	1842.46	1844.77	175.10	13.67	389.33	332.66
*	.334	49.00	1869.40	1866.30	1837.30	4402.00	1842.46	1842.46	1844.77	175.10	13.67	389.33	332.66
*	.338	20.00	.00	.00	1837.90	4402.00	1843.07	1843.07	1845.37	174.24	13.65	389.95	333.48
*	.338	20.00	.00	.00	1837.90	4402.00	1843.07	1843.07	1845.37	174.24	13.65	389.95	333.48
*	.344	31.00	.00	.00	1837.90	4402.00	1844.54	1842.82	1845.73	45.02	9.67	561.75	656.09
*	.344	31.00	.00	.00	1837.90	4402.00	1844.54	1842.82	1845.73	45.02	9.67	561.75	656.09
	.379	185.00	.00	.00	1839.80	4402.00	1845.77	1844.98	1846.95	91.29	10.36	587.23	460.73
	.379	185.00	.00	.00	1839.80	4402.00	1845.77	1844.97	1846.95	91.29	10.36	587.23	460.73
*	.465	454.00	.00	.00	1847.40	4402.00	1852.29	1852.29	1853.88	168.27	11.22	488.59	339.35
*	.465	454.00	.00	.00	1847.40	4402.00	1852.32	1852.32	1853.88	163.24	11.11	493.51	344.54
	.530	344.80	.00	.00	1852.70	4402.00	1857.13	1856.93	1858.81	120.12	10.65	444.39	401.64
	.530	344.80	.00	.00	1852.70	4402.00	1857.10	1856.93	1858.81	122.45	10.72	441.56	397.81
*	.597	352.00	.00	.00	1858.60	4406.00	1863.82	1863.82	1865.39	121.70	12.33	560.09	399.39
*	.597	352.00	.00	.00	1858.60	4406.00	1863.82	1863.82	1865.39	121.40	12.32	560.59	399.88

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.672	398.00	.00	.00	1862.80	4406.00	1870.54	1870.54	1873.26	113.12	14.62	395.29	414.26
*	.672	398.00	.00	.00	1862.80	4406.00	1870.55	1870.55	1873.26	112.64	14.60	395.89	415.14
*	.715	227.00	.00	.00	1866.60	4406.00	1877.46	1877.46	1881.30	107.07	16.26	319.47	425.80
*	.715	227.00	.00	.00	1866.60	4406.00	1877.45	1877.45	1881.30	107.43	16.28	319.05	425.08
*	.742	143.00	.00	.00	1870.00	4406.00	1881.60	1877.05	1882.02	11.59	5.84	1037.98	1294.21
*	.742	143.00	.00	.00	1870.00	4406.00	1881.60	1877.05	1882.02	11.58	5.84	1038.18	1294.56
*	.768	142.00	.00	.00	1870.30	4406.00	1881.88	1875.19	1882.14	5.62	4.34	1227.73	1859.32
*	.768	142.00	.00	.00	1870.30	4406.00	1881.88	1875.19	1882.14	5.61	4.34	1228.00	1859.76
*	.769	.10	.00	.00	1873.50	4406.00	1881.70	1878.30	1882.22	17.22	6.06	871.43	1061.83
*	.769	.10	.00	.00	1873.50	4406.00	1881.70	1878.30	1882.22	17.20	6.05	871.72	1062.27
*	.770	9.00	.00	.00	1873.90	4406.00	1881.16	1880.42	1882.81	40.71	11.08	550.47	690.53
*	.770	9.00	.00	.00	1873.90	4406.00	1881.16	1880.41	1882.81	40.67	11.07	550.70	690.86
*	.771	.10	.00	.00	1874.40	4406.00	1881.37	1881.37	1883.99	68.79	13.16	381.16	531.23
*	.771	.10	.00	.00	1874.40	4406.00	1881.49	1881.49	1883.98	64.10	12.86	394.85	550.33
*	.772	7.00	.00	.00	1874.60	4406.00	1883.03	1883.03	1887.26	50.90	16.51	266.87	617.59
*	.772	7.00	.00	.00	1874.60	4406.00	1883.03	1883.03	1887.26	50.87	16.51	266.92	617.76
*	.825	283.00	1954.70	1891.38	1881.30	4406.00	1896.34	.00	1897.67	7.96	9.23	477.44	1561.95
*	.825	283.00	1954.70	1891.38	1881.30	4406.00	1896.34	.00	1897.67	7.96	9.23	477.44	1561.95
*	.880	288.00	.00	.00	1886.20	4406.00	1898.46	1889.74	1898.48	.50	1.49	4805.95	6259.23
*	.880	288.00	.00	.00	1886.20	4406.00	1898.46	1889.74	1898.48	.50	1.49	4805.95	6259.23
	.929	259.00	.00	.00	1890.30	4406.00	1898.48	1892.85	1898.50	.92	1.62	4911.25	4586.73
	.929	259.00	.00	.00	1890.30	4406.00	1898.48	1892.85	1898.50	.92	1.62	4911.25	4586.73
*	1.022	501.00	.00	.00	1897.60	4406.00	1900.95	1900.95	1901.66	103.37	9.11	945.41	433.36
*	1.022	501.00	.00	.00	1897.60	4406.00	1900.95	1900.95	1901.66	103.51	9.11	944.83	433.06
*	1.132	581.00	.00	.00	1905.20	4406.00	1908.69	1908.69	1909.45	122.44	10.35	930.74	398.19
*	1.132	581.00	.00	.00	1905.20	4406.00	1908.70	1908.70	1909.45	119.73	10.26	938.41	402.66
*	1.211	417.00	.00	.00	1911.70	3390.00	1915.18	1915.18	1916.02	116.22	9.09	618.07	314.45
*	1.211	417.00	.00	.00	1911.70	3390.00	1915.18	1915.18	1916.02	115.88	9.08	618.84	314.92
	1.318	565.00	.00	.00	1919.10	3390.00	1921.90	1921.81	1922.20	127.37	5.92	828.83	300.38
	1.318	565.00	.00	.00	1919.10	3390.00	1921.90	1921.70	1922.20	127.69	5.93	827.99	300.00
*	1.420	539.00	.00	.00	1926.10	3390.00	1929.80	1929.80	1930.55	104.33	8.83	681.69	331.89
*	1.420	539.00	.00	.00	1926.10	3390.00	1929.80	1929.80	1930.55	104.29	8.83	681.82	331.95
*	1.517	512.00	.00	.00	1933.00	3390.00	1937.37	1937.37	1938.58	115.53	9.39	454.53	315.40
*	1.517	512.00	.00	.00	1933.00	3390.00	1937.37	1937.37	1938.58	115.46	9.39	454.65	315.49

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	1.613	505.00	.00	.00	1939.80	3390.00	1944.79	1944.79	1946.11	102.30	10.40	460.74	335.17
*	1.613	505.00	.00	.00	1939.80	3390.00	1944.79	1944.79	1946.11	102.30	10.40	460.74	335.17
	1.696	440.00	.00	.00	1946.10	3390.00	1949.83	1949.47	1950.22	107.72	7.60	762.84	326.63
	1.696	440.00	.00	.00	1946.10	3390.00	1949.83	1949.47	1950.22	107.72	7.60	762.84	326.63
*	1.786	500.00	.00	.00	1950.70	3350.00	1955.79	1955.79	1956.89	112.45	9.63	491.36	315.92
*	1.786	500.00	.00	.00	1950.70	3350.00	1955.79	1955.79	1956.89	112.40	9.63	491.45	315.98
*	1.879	512.00	.00	.00	1957.80	3350.00	1962.80	1962.80	1964.10	116.46	10.87	461.71	310.42
*	1.879	512.00	.00	.00	1957.80	3350.00	1962.80	1962.80	1964.10	116.43	10.87	461.75	310.46
*	1.982	544.00	.00	.00	1963.20	3350.00	1968.59	1968.59	1970.02	91.78	10.63	442.34	349.67
*	1.982	544.00	.00	.00	1963.20	3350.00	1968.59	1968.59	1970.02	91.80	10.64	442.30	349.64
*	2.082	528.00	.00	.00	1971.50	3350.00	1977.80	1977.80	1979.43	94.27	11.21	403.95	345.03
*	2.082	528.00	.00	.00	1971.50	3350.00	1977.80	1977.80	1979.43	94.30	11.22	403.89	344.97
*	2.172	474.00	.00	.00	1978.20	3315.00	1983.20	1983.20	1983.96	70.49	8.64	698.04	394.85
*	2.172	474.00	.00	.00	1978.20	3315.00	1983.20	1983.20	1983.96	70.50	8.64	697.99	394.81

WASH V: OX WASH

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	43.000	4447.00	1823.24	.00	.00	-4.82	721.98	.00
	43.000	4447.00	1823.24	.00	.00	-4.82	721.98	.00
*	.185	4447.00	1829.27	.00	6.03	.00	244.32	235.00
*	.185	4447.00	1829.27	.00	6.03	.00	244.32	235.00
*	.286	4447.00	1837.93	.00	8.66	.00	196.36	535.00
*	.286	4447.00	1837.94	.00	8.67	.00	196.61	535.00
	.326	4447.00	1840.25	.00	2.32	.00	116.00	212.00
*	.326	4447.00	1840.25	.00	2.31	.00	116.00	212.00
*	.334	4402.00	1842.46	.00	2.21	.00	85.88	49.00
*	.334	4402.00	1842.46	.00	2.21	.00	85.88	49.00
*	.338	4402.00	1843.07	.00	.61	.00	85.89	20.00
*	.338	4402.00	1843.07	.00	.61	.00	85.89	20.00
	.344	4402.00	1844.54	.00	1.47	.00	93.48	31.00
	.344	4402.00	1844.54	.00	1.47	.00	93.48	31.00
	.379	4402.00	1845.77	.00	1.24	.00	149.71	185.00
	.379	4402.00	1845.77	.00	1.24	.00	149.71	185.00
*	.465	4402.00	1852.29	.00	6.52	.00	161.77	454.00
*	.465	4402.00	1852.32	.03	6.55	.03	161.97	454.00
	.530	4402.00	1857.13	.00	4.83	.00	121.25	344.80
	.530	4402.00	1857.10	-.02	4.78	-.02	121.01	344.80
*	.597	4406.00	1863.82	.00	6.69	.00	172.28	352.00
*	.597	4406.00	1863.82	.00	6.72	.00	172.31	352.00
*	.672	4406.00	1870.54	.00	6.72	.00	76.42	398.00
*	.672	4406.00	1870.55	.01	6.72	.01	76.46	398.00
*	.715	4406.00	1877.46	.00	6.92	.00	47.75	227.00
*	.715	4406.00	1877.45	-.01	6.91	-.01	47.72	227.00
*	.742	4406.00	1881.60	.00	4.14	.00	150.05	143.00
*	.742	4406.00	1881.60	.00	4.15	.00	150.06	143.00
*	.768	4406.00	1881.88	.00	.28	.00	201.05	142.00
*	.768	4406.00	1881.88	.00	.28	.00	201.07	142.00
*	.769	4406.00	1881.70	.00	-.18	.00	169.90	.10
*	.769	4406.00	1881.70	.00	-.18	.00	169.92	.10

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.770	4406.00	1881.16	.00	-.54	.00	137.15	9.00
*	.770	4406.00	1881.16	.00	-.54	.00	137.18	9.00
*	.771	4406.00	1881.37	.00	.21	.00	106.31	.10
*	.771	4406.00	1881.49	.13	.34	.13	107.79	.10
*	.772	4406.00	1883.03	.00	1.66	.00	31.87	7.00
*	.772	4406.00	1883.03	.00	1.53	.00	31.87	7.00
*	.825	4406.00	1896.34	.00	13.32	.00	31.90	283.00
*	.825	4406.00	1896.34	.00	13.32	.00	31.90	283.00
*	.880	4406.00	1898.46	.00	2.12	.00	473.00	288.00
*	.880	4406.00	1898.46	.00	2.12	.00	473.00	288.00
	.929	4406.00	1898.48	.00	.02	.00	720.37	259.00
	.929	4406.00	1898.48	.00	.02	.00	720.37	259.00
*	1.022	4406.00	1900.95	.00	2.46	.00	677.94	501.00
*	1.022	4406.00	1900.95	.00	2.46	.00	677.23	501.00
*	1.132	4406.00	1908.69	.00	7.74	.00	560.07	581.00
*	1.132	4406.00	1908.70	.01	7.76	.01	560.84	581.00
*	1.211	3390.00	1915.18	.00	6.49	.00	393.31	417.00
*	1.211	3390.00	1915.18	.00	6.47	.00	393.54	417.00
	1.318	3390.00	1921.90	.00	6.73	.00	686.32	565.00
	1.318	3390.00	1921.90	.00	6.72	.00	686.26	565.00
*	1.420	3390.00	1929.80	.00	7.90	.00	526.25	539.00
*	1.420	3390.00	1929.80	.00	7.90	.00	526.27	539.00
*	1.517	3390.00	1937.37	.00	7.57	.00	232.22	512.00
*	1.517	3390.00	1937.37	.00	7.57	.00	232.24	512.00
*	1.613	3390.00	1944.79	.00	7.42	.00	173.78	505.00
*	1.613	3390.00	1944.79	.00	7.42	.00	173.78	505.00
	1.696	3390.00	1949.83	.00	5.05	.00	427.56	440.00
	1.696	3390.00	1949.83	.00	5.05	.00	427.56	440.00
*	1.786	3350.00	1955.79	.00	5.96	.00	258.22	500.00
*	1.786	3350.00	1955.79	.00	5.96	.00	258.22	500.00
*	1.879	3350.00	1962.80	.00	7.01	.00	174.74	512.00
*	1.879	3350.00	1962.80	.00	7.01	.00	174.74	512.00
*	1.982	3350.00	1968.59	.00	5.79	.00	167.22	544.00
	1.982	3350.00	1968.59	.00	5.78	.00	167.21	544.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	2.082	3350.00	1977.80	.00	9.21	.00	132.00	528.00
*	2.082	3350.00	1977.80	.00	9.21	.00	132.00	528.00
*	2.172	3315.00	1983.20	.00	5.40	.00	391.42	474.00
*	2.172	3315.00	1983.20	.00	5.40	.00	391.42	474.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=      .185  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .185  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .185  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .185  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .286  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .286  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .286  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .286  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .326  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .326  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .334  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .334  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .334  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .334  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .338  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .338  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .338  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .338  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      .344  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .344  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      .465  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .465  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .465  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .465  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .597  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .597  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .597  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .597  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .672  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .672  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .672  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .672  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .715  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .715  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .715  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .715  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      .742  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .742  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .768  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .768  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=      .769  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .769  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .770  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .770  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      .771  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .771  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .771  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .771  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .772  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .772  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .772  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .772  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      .825  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .825  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .880  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .880  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     1.022  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.022  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.022  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.022  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.132  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.132  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.132  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.132  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.211  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.211  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.211  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.211  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.420  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.420  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.420  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.420  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.517  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.517  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.517  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.517  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.613  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.613  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     1.613  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.613  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.786  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=      1.786  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      1.786  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      1.786  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      1.879  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      1.879  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      1.879  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      1.879  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      1.982  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      1.982  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      1.982  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      1.982  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      2.082  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.082  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      2.082  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.082  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      2.172  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.172  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      2.172  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      2.172  PROFILE=  2  MINIMUM SPECIFIC ENERGY
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FLOODWAY DATA, WASH V: OX WASH
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
43.000	722.	892.	5.0	1823.2	1823.2	.0
.185	244.	518.	8.6	1829.3	1829.3	.0
.286	197.	540.	8.2	1837.9	1837.9	.0
.326	116.	429.	10.4	1840.3	1840.3	.0
.334	95.	389.	11.3	1842.5	1842.5	.0
.338	95.	390.	11.3	1843.1	1843.1	.0
.344	93.	562.	7.8	1844.5	1844.5	.0
.379	150.	587.	7.5	1845.8	1845.8	.0
.465	162.	494.	8.9	1852.3	1852.3	.0
.530	121.	442.	10.0	1857.1	1857.1	.0
.597	172.	561.	7.9	1863.8	1863.8	.0
.672	76.	396.	11.1	1870.5	1870.5	.0
.715	48.	319.	13.8	1877.5	1877.5	.0
.742	150.	1038.	4.2	1881.6	1881.6	.0
.768	201.	1228.	3.6	1881.9	1881.9	.0
.769	170.	872.	5.1	1881.7	1881.7	.0
.770	137.	551.	8.0	1881.2	1881.2	.0
.771	108.	395.	11.2	1881.5	1881.4	.1
.772	32.	267.	16.5	1883.0	1883.0	.0
.825	32.	477.	9.2	1896.3	1896.3	.0
.880	473.	4806.	.9	1898.5	1898.5	.0
.929	720.	4911.	.9	1898.5	1898.5	.0
1.022	722.	945.	4.7	1900.9	1900.9	.0
1.132	561.	938.	4.7	1908.7	1908.7	.0
1.211	395.	619.	5.5	1915.2	1915.2	.0
1.318	740.	828.	4.1	1921.9	1921.9	.0
1.420	584.	682.	5.0	1929.8	1929.8	.0
1.517	232.	455.	7.5	1937.4	1937.4	.0
1.613	174.	461.	7.4	1944.8	1944.8	.0
1.696	440.	763.	4.4	1949.8	1949.8	.0
1.786	258.	491.	6.8	1955.8	1955.8	.0
1.879	175.	462.	7.3	1962.8	1962.8	.0
1.982	167.	442.	7.6	1968.6	1968.6	.0
2.082	132.	404.	8.3	1977.8	1977.8	.0
2.172	391.	698.	4.7	1983.2	1983.2	.0

FEDERAL EMERGENCY MANAGEMENT AGENCY **RIVERINE/COASTAL MAPPING FORM**	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: Wash T: San Domingo Wash

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. MAPPING CHANGES

1. A topographic work map of suitable scale, contour interval, and planimetric definition must be submitted showing *(indicate N/A when not applicable)*:

		Included		
A.	Revised approximate 100-year floodplain boundaries (Zone A)	☐ Yes	☒ No	☐ N/A
B.	Revised detailed 100- and 500-year floodplain boundaries	☒ Yes	☐ No	☐ N/A
C.	Revised 100-year floodway boundaries	☒ Yes	☐ No	☐ N/A
D.	Location and alignment of all cross sections used in the revised hydraulic model with stationing control indicated	☒ Yes	☐ No	☐ N/A
E.	Stream alignments, road and dam alignments	☒ Yes	☐ No	☐ N/A
F.	Current community boundaries	☒ Yes	☐ No	☐ N/A
G.	Effective 100- and 500-year floodplain and 100-year floodway boundaries from the FIRM/FBFM reduced or enlarged to the scale of the topographic work map	☐ Yes	☐ No	☒ N/A
H.	Tie-ins between the effective and revised 100- and 500-year floodplains and 100-year floodway boundaries	☐ Yes	☐ No	☒ N/A
I.	The requestor's property boundaries and community easements	☐ Yes	☐ No	☒ N/A
J.	The signed certification of a registered professional engineer	☒ Yes	☐ No	☐ N/A
K.	Location and description of reference marks	☒ Yes	☐ No	☐ N/A
L.	Vertical datum (example: NGVD, NAVD etc.)	☒ Yes	☐ No	☐ N/A
M.	Coastal zone designations tie into adjacent areas not being revised	☐ Yes	☐ No	☒ N/A
N.	Location and alignment of all coastal transects used to revise the coastal analyses	☐ Yes	☐ No	☒ N/A

If any of the items above are marked no or N/A, please explain: No Zone A, 500-year or coastal zones revised or delineated. Revised 100-year floodplains tie into effective Hassayampa River floodplain.

2. What is the source and date of the updated topographic information *(example: orthophoto maps, July 1985; field survey, May 1979, beach profiles, June 1987, etc.)*? Photo: Jan. 1991 (E), Oct 1990 (W); Maps 1992

3. What is the scale and contour interval of the following workmaps?
   a. Effective FIS unknown scale unknown Contour interval
   b. Revision Request 1" = 200' scale 4' Contour interval

NOTE: Revised topographic information must be of equal or greater detail.

Attach an annotated FIRM and FBFM at the scale of the effective FIRM and FBFM showing the revised 100-year and 500-year floodplains and the 100-year floodway boundaries and how they tie into those shown on the effective FIRM and FBFM downstream and upstream of the revision or adjacent to the area of revision for coastal studies.

Attach additional pages if needed.

2. EARTH FILL PLACEMENT

1. The fill is: ☐ Existing ☐ Proposed ☒ N/A

2. Has fill been/will be placed in the regulatory floodway? ..... ☐ Yes ☒ No
   If yes, please attach completed Riverine Hydraulic Analysis Form.

3. Has fill been/will be placed in floodway fringe *(area between the floodway and 100-year floodplain boundaries)*? ..... ☐ Yes ☒ No

   If yes, then complete A, B, C, and D below.

   A. Are fill slopes for granular materials steeper than one vertical on one-and-one-half horizontal? ..... ☐ Yes ☐ No

   If yes, justify steeper slopes_____

   B. Is adequate erosion protection provided for fill slopes exposed to moving flood waters? *(Slopes exposed to flows with velocities of up to 5 feet per second (fps) during the 100-year flood must, at a minimum, be protected by a cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the 100-year flood must, at a minimum, be protected by stone or rock riprap.)* ..... ☐ Yes ☐ No

   If no, describe erosion protection provided_____

   C. Has all fill placed in revised 100-year floodplain been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test Method or acceptable equivalent method? ☐ Yes ☐ No

   D. Can structures conceivably be constructed on the fill at any time in the future? ☐ Yes ☐ No

   If yes, provide certification of fill compaction (item C. above) by the community's NFIP permit official, a registered professional engineer, or an accredited soils engineer.

4. Has fill been/will be placed in a V-zone? ☐ Yes ☒ No

   If yes, is the fill protected from erosion by a flood control structure such as a revetment or seawall? ☐ Yes ☐ No

   If yes, attach the coastal structures form.

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*********************************************
*  HEC-2 WATER SURFACE PROFILES             *
*                                           *
*  Version   4.6.2;  May 1991               *
*                                           *
*  RUN DATE    15APR92    TIME   14:27:24   *
*********************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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THIS RUN EXECUTED 15APR92 14:27:25

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


T1      WICKENBURG ADMS: MARICOPA COUNTY - CONTRACT 89-79
T2      BLACK & VEATCH PN 17676: COE & VAN LOO JN 1197-02
T3      WASH T : SAN DOMINGO WASH       (WT4A.O)

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         0   0.00196         0         0         0   1862.88         0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1         0         0         0        -1


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150       200

NC     .04       .04      .035        .1        .3
QT       2     12760     12760
          HASSAYAMPA RIVER FIS CROSS SECTION 43.93 (CBA 1988, NO DATUM CHANGE)
          CONFLUENCE WITH WASH T - SAN DOMINGO WASH, AN EAST TRIBUTARY
          NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA
X1    43.93         9    1135.2    1311.9         0         0         0
GR   1942.8    1000.0    1900.0    1090.3    1840.0    1135.2    1841.5    1217.4    1841.6    1311.9
GR   1857.9    1345.7    1858.2    1366.4    1892.0    1384.6    1921.6    1529.8

NC   0.060     0.060     0.035        .1        .3
ET                         9.1                                                          970      1023
          DOWNSTREAM SECTION OF BRIDGE FOR S.R. 93 (U.S. HWY. 60-89)
          NO PIERS, OPEN CHANNEL FLOW - NO BRIDGE DATA FROM FIELD SURVEY
          SINCE THERE ARE NO PIERS OR OBSTRUCTIONS FROM THE BRIDGE THAT
          WOULD IMPEDE FLOW IT WAS DETERMINED THAT A BRIDGE ANALYSIS WAS NOT
          APPROPRIATE.
X1   0.030         8       990      1006       270       880       385
GR   1880.0     958.    1859.3      974.    1840.9      990.    1840.9      994.    1840.9    1000.
GR   1840.9    1006.    1871.4     1028.    1880.0     1040.

NC   0.060     0.060     0.035        .6        .8
ET                         9.1                                                          951      1018
X1   0.067         8       996      1008       195       195       195
GR   1880.0     942.    1872.7      951.    1845.1      987.    1844.3      996.    1844.4    1000.
GR   1844.4    1008.    1881.1     1021.    1888.8     1030.
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NC    0.060     0.060     0.035       .1        .3
ET                        9.1                                                  812       1193
X1    0.107        19      1000      1017       210       265       211
GR   1880.0      805.    1852.0      861.    1850.7      867.    1853.2      880.    1857.0      920.
GR   1862.0      935.    1860.4      951.    1860.9      970.    1861.0      976.    1851.3      990.
GR   1850.0     1000.    1849.4     1005.    1850.1     1017.    1851.4     1032.    1859.2     1050.
GR   1863.5     1086.    1868.1     1119.    1872.7     1167.    1880.1     1221.

QT       2     12881     12881
NC    0.070     0.070     0.035       .1        .3
ET                 7.1       9.1                                   840       1230       840       1230
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.208        22      1135      1199       715       240       532
GR   1880.1      655.    1869.7      681.    1865.9      704.    1863.1      722.    1860.2      739.
GR   1858.4      762.    1858.1      803.    1858.5      850.    1857.7      919.    1858.3      962.
GR   1857.3      994.    1857.3     1000.    1857.4     1036.    1857.7     1086.    1858.6     1114.
GR   1856.9     1135.    1854.3     1156.    1853.8     1173.    1854.4     1194.    1855.8     1199.
GR   1872.6     1219.    1880.0     1240.

NC    0.070     0.060     0.035       .1        .3
ET                 7.1       9.1                                   868       1099       868       1099
X1    0.326        13       934      1000       575       648       623
GR   1888.       840     1880.       858.    1876.1      868.    1868.5      885.    1866.1      908.
GR   1861.8      934.    1861.6      971.    1861.6      992.    1861.8     1000.    1862.6     1038.
GR   1863.7     1058.    1864.8     1077.    1884.4     1115.

QT       2     13001     13001
ET                 7.1       9.1                                   627       1191       627       1191
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.405        35      1028      1051       330       465       418
GR   1900.0      430.    1880.0      454.    1876.0      468.    1876.       478    1872.1      497.
GR   1871.1      537.    1870.4      610.    1870.2      628.    1865.9      642.    1866.6      684.
GR   1866.9      721.    1867.0      784.    1866.2      834.    1866.2      880.    1867.3      904.
GR   1865.8      934.    1867.1      954.    1867.7      988.    1867.5     1000.    1867.4     1003.
GR   1865.1     1028.    1866.3     1051.    1866.9     1069.    1866.9     1085.    1865.5     1110.
GR   1865.8     1133.    1867.8     1144.    1870.6     1150.    1871.3     1168.    1871.5     1175.
GR   1876.3     1189.    1880.0     1200.    1884.0     1211     1888.0     1220.    1892.0     1243.

NC    0.065     0.065     0.035       .1        .3
ET                 7.1       9.1                                   887       1525       887       1525
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.511        49       944      1147       562       720       562
GR   1884.0      826.    1878.3      834.    1877.7      857.    1878.3      875.    1876.7      892.
GR   1874.9      905.    1875.9      926.    1875.0      944.    1874.2      967.    1874.8     1000.
GR   1874.9     1002.    1874.9     1021.    1874.2     1041.    1874.7     1063.    1873.1     1105.
GR   1873.8     1133.    1875.3     1147.    1880.7     1157.    1879.7     1160.    1873.5     1174.
GR   1874.2     1219.    1873.9     1242.    1874.5     1254.    1871.8     1262.    1871.8     1287.
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     1874.0     1337.     1884.8     1349.     1884.8     1364.     1886.8     1373.     1884.0     1379.
GR   1876.1     1396.     1874.8     1412.     1875.5     1444.     1875.0     1465.     1876.7     1482.
GR   1876.5     1498.     1876.5     1515.     1878.1     1539.     1882.9     1558.     1889.4     1577.
GR   1888.8     1581.     1881.2     1595.     1879.9     1627.     1880.3     1640.     1882.6     1697.
GR   1883.9     1729.     1884.8     1749.     1885.1     1770.     1888.0     1781.

NC    0.060     0.060     0.035       .1        .3
ET                7.1       9.1                                    965       1600       965       1600
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.617        45       966       983       556       556       556
GR   1900.0       963.     1878.7     966.     1878.4     983.     1879.3     993.     1879.6     1000.
GR   1881.1      1016.     1880.7     1037.     1881.5     1069.     1883.0     1101.     1883.8     1118.
GR   1883.8      1130.     1885.2     1152.     1885.3     1170.     1878.6     1181.     1881.5     1203.
GR   1884.7      1212.     1884.5     1233.     1885.3     1287.     1883.4     1325.     1881.6     1337.
GR   1884.4      1353.     1883.8     1371.     1885.3     1414.     1885.3     1427.     1886.1     1462.
GR   1879.9      1472.     1880.9     1494.     1885.3     1509.     1887.8     1515.     1886.1     1520.
GR   1884.7      1524.     1884.8     1560.     1883.5     1587.     1883.2     1607.     1883.0     1627.
GR   1881.7      1636.     1883.4     1648.     1883.5     1658.     1883.0     1693.     1883.0     1724.
GR   1883.7      1759.     1884.2     1786.     1883.7     1810.     1883.8     1850.     1888.2     1874.

QT        2      13122     13122
ET                7.1       9.1                                    968       1520       968       1520
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.685        36       971       1000      380       220       359
GR   1900.0       954.     1888.3     971.     1884.3     986.     1885.9     1000.     1886.3     1004.
GR   1886.6      1033.     1886.2     1046.     1886.2     1059.     1885.6     1106.     1886.1     1129.
GR   1888.4      1138.     1889.3     1151.     1888.0     1206.     1887.5     1252.     1887.2     1291.
GR   1887.0      1342.     1887.3     1363.     1887.9     1393.     1888.4     1418.     1887.4     1436.
GR   1886.7      1454.     1884.9     1458.     1885.3     1477.     1886.5     1495.     1887.2     1504.
GR   1886.8      1558.     1886.2     1584.     1886.9     1593.     1886.8     1608.     1885.7     1643.
GR   1886.4      1653.     1886.7     1699.     1886.7     1727.     1887.9     1755.     1889.8     1768.
GR   1892.2      1791.

ET                7.1       9.1                                    967       1270       967       1270
          ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
          SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
          WSEL AND THE TOPOGRAPHY.
X1    0.768        26       974       1002      440       475       440
GR   1920.        926.     1900.0     968.     1893.0     974.     1891.0     984.     1892.0     1000.
GR   1892.1      1002.     1892.8     1032.     1894.0     1048.     1895.4     1057.     1896.1     1073.
GR   1896.3      1105.     1896.8     1134.     1896.0     1170.     1895.3     1182.     1897.2     1192.
GR   1895.6      1204.     1894.9     1220.     1896.1     1237.     1896.4     1253.     1895.5     1282.
GR   1896.2      1321.     1896.4     1334.     1896.8     1364.     1897.6     1388.     1900.0     1412.
GR   1920.0      1461.
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NC    0.050     0.050     0.035       .1        .3
ET              7.1       9.1                                   865       1314      865       1314
        ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
X1    0.882       25       950      1034       560       380       604
GR   1908.0      627.    1903.2      636.    1902.1      655.    1902.0      736.    1901.6      787.
GR   1903.3      827.    1903.3      876.    1903.2      910.    1902.5      934.    1900.7      950.
GR   1900.6      998.    1900.6     1000.    1900.8     1034.    1903.5     1041.    1903.2     1089.
GR   1902.8     1114.    1902.9     1141.    1904.5     1160.    1904.6     1180.    1905.6     1214.
GR   1905.6     1257.    1904.8     1287.    1902.6     1303.    1905.2     1311.    1916.1     1331.

QT       2    13242    13242
ET              7.1       9.1                                   951       1387      951       1387
X1    0.971       16       979      1040       440       525       469
GR   1919.8      932.    1914.0      955.    1911.3      979.    1909.8     1000.    1911.4     1040.
GR   1911.7     1062.    1911.0     1082.    1910.7     1099.    1911.2     1156.    1911.7     1207.
GR   1912.4     1252.    1912.7     1301.    1911.3     1331.    1910.4     1348.    1912.1     1375.
GR   1919.9     1408.

ET              7.1       9.1                                   778       1263      778       1263
X1    1.061       24       932      1000       515       520       474
GR   1928.1      755.    1923.3      777.    1920.3      802.    1918.9      830.    1920.2      851.
GR   1919.9      873.    1920.0      897.    1918.8      932.    1918.8      963.    1919.0      996.
     1919.2     1000.    1920.0     1020.    1920.8     1032.    1918.7     1052.    1921.2     1069.
     1921.0     1074.    1920.6     1121.    1920.0     1192.    1920.0     1244.    1924.0     1267.
GR   1928.0     1275.    1932.0     1288.    1936.0     1298.0   1940.0     1310.0

ET                       9.1                                                           637       1286
X1    1.159       22       981      1062       568       445       520
GR   1940.1      614.    1936.3      617.    1928.7      649.    1928.5      688.    1928.4      740.
GR   1928.2      797.    1928.2      836.    1928.2      868.    1929.1      919.    1928.8      958.
GR   1927.5      981.    1927.1     1000.    1927.0     1006.    1927.3     1062.    1930.1     1101.
GR   1930.9     1132.    1929.4     1208.    1927.4     1223.    1928.7     1246.    1930.5     1264.
GR   1930.8     1284.    1940.1     1307.

QT       2    13132    13132
NC    0.060     0.060     0.035       .1        .3
ET                       9.1                                                           942       1470
X1    1.258       16       995      1089       530       525       520
GR   1943.9      935.    1939.8      944.    1937.6      971.    1937.0      995.    1937.0     1000.
GR   1936.7     1037.    1937.4     1089.    1938.1     1130.    1938.3     1166.    1938.1     1181.
GR   1937.3     1256.    1936.6     1318.    1936.8     1378.    1937.0     1427.    1937.8     1454.
GR   1944.0     1491.

ET                       9.1                                                           944       1528
X1    1.345       20      1016      1079       460       490       458
GR   1952.3      936.    1946.1      948.    1943.8      961.    1943.6      987.    1943.6     1000.
GR   1943.6     1004.    1943.8     1016.    1943.1     1041.    1942.6     1057.    1943.4     1079.
     1944.5     1107.    1945.3     1142.    1946.1     1168.    1945.9     1229.    1944.3     1274.
     1943.5     1368.    1943.6     1441.    1943.8     1481.    1945.0     1518.    1952.5     1545.
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ET                    9.1                                                954      1412
X1   1.440      21    959    1028     505     485     502
GR  1980.0     895.  1977.0   920.  1966.9    943.  1950.6    959.  1950.7     990.
GR  1950.6    1000.  1950.8  1028.  1952.4   1042.  1952.5   1066.  1952.6    1100.
GR  1952.7    1153.  1952.6  1237.  1950.6   1274.  1952.6   1294.  1952.5    1312.
GR  1951.3    1321.  1951.3  1332.  1952.0   1382.  1956.0   1415.  1960.0    1432.
GR  1980.0    1540.

QT      2    13021  13021
NC  0.060    0.060  0.035     .1      .3
ET            7.1    9.1                     696    1303     696     1303
X1   1.530      22    1034    1079     546     370     476
GR  1980.0     669.  1962.2   693.  1958.7    743.  1958.1    770.  1960.3     786.
GR  1961.6     820.  1962.4   851.  1961.2    875.  1957.3    898.  1959.1     923.
GR  1958.6     973.  1957.2   996.  1958.1   1000.  1958.8   1003.  1957.5    1034.
GR  1957.3    1079.  1960.8  1112.  1956.9   1185.  1956.6   1216.  1957.2    1252.
GR  1958.5    1268.  1964.1  1323.

ET            7.1    9.1                     600    1055     600     1055
        ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
X1   1.624      18    947    1026     490     468     598
GR  1976.0     374.  1971.3   418.  1965.6    468.  1964.8    515.  1965.5     595.
    1966.3     653.  1966.6   722.  1966.6    769.  1967.4    824.  1967.6     839.
    1966.4     875.  1964.2   886.  1963.9    947.  1963.0    991.  1963.2    1000.
GR  1963.8    1026.  1968.1  1048.  1980.0   1112.

ET            7.1    9.1                     830    1591     830     1591
        ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
X1   1.727      28    962    1024     400     630     545
GR  1980.1     589.  1974.1   608.  1971.2    647.  1972.2    679.  1972.6     729.
GR  1973.4     802.  1974.7   864.  1974.8    924.  1976.6    948.  1974.9     962.
GR  1973.8     974.  1974.1  1000.  1974.4   1024.  1974.4   1074.  1975.4    1099.
GR  1976.5    1136.  1975.1  1169.  1973.9   1192.  1974.7   1229.  1978.0    1244.
GR  1978.9    1279.  1978.4  1329.  1978.4   1360.  1977.6   1438.  1976.2    1512.
GR  1974.7    1560.  1975.3  1574.  1984.1   1623.

QT      2    12911  12911
ET                    9.1                                                947      1553
X1   1.814      21    968     999     457     562     460
GR  1991.3     941.  1985.6   949.  1979.3    968.  1979.4    989.  1980.3     999.
GR  1980.3    1000.  1980.4  1034.  1981.7   1080.  1981.7   1104.  1983.0    1134.
GR  1984.6    1149.  1983.8  1182.  1983.8   1205.  1984.0   1259.  1984.0    1329.
GR  1983.7    1397.  1985.2  1449.  1985.5   1493.  1984.9   1536.  1986.6    1555.
GR  1992.1    1632.
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ET                      9.1                                                     962      1341
X1   1.912      13     1014     1063      515      545      515
GR  2000.1     956.   1987.4    971.   1987.7     1000.  1987.7    1006.   1987.7    1014.
GR  1986.5    1036.   1988.9   1063.   1990.2     1087.  1990.4    1145.   1991.1    1214.
GR  1992.2    1271.   1993.4   1336.   2000.1     1362.

ET                      9.1                                                     921      1262
        ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
X1   2.011      17      977     1030      535      375      525
GR    2020     894.   2000.1    925.   1998.8     928.  1996.9     977.   1996.0     996.
GR  1995.5    1017.   1996.0   1030.   1996.0     1032.  1996.1    1069.   1998.3    1108.
GR  1999.5    1148.   2000.3   1187.   2000.9     1221.  2001.9    1248.   2003.0    1272.
GR  2003.4    1305.   2004.0   1359.

ET                      9.1                                                     525      1035
X1   2.124      23      960     1026      600      420      607
GR  2016.1     485.   2013.9    499.   2008.9     531.  2005.9     570.   2006.3     601.
GR  2007.0     642.   2006.1    674.   2004.9     694.  2005.2     718.   2006.8     788.
GR  2006.5     827.   2008.7    851.   2007.2     890.  2006.5     914.   2006.5     916.
GR  2006.5     926.   2005.1    960.   2002.6     980.  2003.0     991.   2003.1    1000.
GR  2003.3    1006.   2004.5   1026.   2026.9     1061.

                        9.1                                                     658      1058
    2.195      23      986     1033      270      370      365
GR    2028     580    2024.     628.    2020.     648.  2016.0     654.   2013.8     664.
GR  2009.6     676.   2010.2    706.   2011.7     731.  2011.0     785.   2012.0     827.
GR  2011.6     861.   2012.0    889.   2012.0     925.  2010.9     965.   2009.3     986.
GR  2007.8     996.   2007.9   1012.   2008.0     1020.  2008.0    1024.   2008.4    1033.
GR  2009.9    1049.   2024.3   1073.   2026.6     1092.

ET                      9.1                                                     938      1328
X1   2.250      16      944     1000      430      525      543
GR  2024.1     936.   2017.1    944.   2017.2     968.  2017.9    1000.   2019.0    1027.
GR  2020.5    1037.   2020.4   1077.   2019.5     1103.  2019.1    1128.   2018.1    1187.
GR  2017.1    1218.   2016.5   1254.   2016.3     1274.  2017.8    1300.   2019.1    1309.
GR  2024.0    1341.
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300
*SECNO 43.930
HASSAYAMPA RIVER FIS CROSS SECTION 43.93 (CBA 1988, NO DATUM CHANGE)
CONFLUENCE WITH WASH T - SAN DOMINGO WASH, AN EAST TRIBUTARY
NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA

43.930	9.93	1849.93	1846.57	1862.88	1850.90	.96	.00	.00	1840.00
12760.0	125.6	12348.5	285.9	36.9	1547.2	72.0	.0	.0	1841.60
.00	3.40	7.98	3.97	.040	.035	.040	.000	1840.00	1127.77
.001958	0.	0.	0.	0	14	6	.00	201.42	1329.18

CCHV= .100 CEHV= .300
*SECNO .030

3301 HV CHANGED MORE THAN HVINS

3785 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
DOWNSTREAM SECTION OF BRIDGE FOR S.R. 93 (U.S. HWY. 60-89)
NO PIERS, OPEN CHANNEL FLOW - NO BRIDGE DATA FROM FIELD SURVEY
SINCE THERE ARE NO PIERS OR OBSTRUCTIONS FROM THE BRIDGE THAT
WOULD IMPEDE FLOW IT WAS ASSUMED THAT BRIDGE ANALYSIS WAS NOT
NECESSARY.

.030	22.87	1863.77	1863.77	.00	1872.17	8.40	1.29	2.23	1840.90
12760.0	1822.5	9657.7	1279.7	226.5	365.9	188.7	11.9	1.3	1840.90
.01	8.05	26.39	6.78	.060	.035	.060	.000	1840.90	970.54
.005951	270.	385.	880.	0	14	0	.00	51.95	1022.50

CCHV= .600 CEHV= .800
*SECNO .067

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.55

.067	28.10	1872.40	1865.14	.00	1875.85	3.45	.71	2.97	1844.30
12760.0	5734.3	6547.6	478.1	735.3	336.2	138.8	16.4	1.5	1844.40
.01	7.80	19.48	3.44	.060	.035	.060	.000	1844.30	951.39
.002473	195.	195.	195.	18	11	0	.00	66.52	1017.92

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


CCHV=     .100 CEHV=     .300
*SECNO  .107

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.97

     .107     26.77   1876.17   1861.16       .00   1876.28       .11       .09       .33   1850.00
  12760.0    6997.7    2116.7    3645.6    3301.8     449.4    1953.3      34.4       2.7   1850.10
     .03      2.12      4.71      1.87      .060      .035      .060      .000   1849.40    812.66
  .000157     210.      211.      265.         2        18         0       .00    379.65   1192.31


CCHV=     .100 CEHV=     .300
*SECNO  .208

3470 ENCROACHMENT STATIONS=      840.0    1230.0  TYPE=      1  TARGET=      390.000
        ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
        SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
        WSEL AND THE TOPOGRAPHY.
     .208     22.47   1876.27   1861.81       .00   1876.35       .08       .07       .00   1856.90
  12881.0    8039.3    4606.7     235.0    5435.9    1383.3     260.5     123.4       7.8   1855.80
     .11      1.48      3.33       .90      .070      .035      .070      .000   1853.80    840.00
  .000103     715.      532.      240.         2        17         0       .00    389.42   1229.42


CCHV=     .100 CEHV=     .300
*SECNO  .326

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .35


3470 ENCROACHMENT STATIONS=      868.0    1099.0  TYPE=      1  TARGET=      231.000
     .326     14.49   1876.09   1869.02       .00   1876.63       .53       .14       .14   1861.80
  12881.0    1635.0    6937.4    4308.6     582.4     952.0    1135.4     190.2      12.0   1861.80
     .14      2.81      7.29      3.79      .070      .035      .060      .000   1861.60    868.02
  .000839     575.      623.      648.         2        17         0       .00    230.88   1098.89


*SECNO  .405

3470 ENCROACHMENT STATIONS=      627.0    1191.0  TYPE=      1  TARGET=      564.000
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      ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
      SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
      WSEL AND THE TOPOGRAPHY.
    .405     11.72   1876.82   1869.63      .00   1876.92      .10      .25      .04   1865.10
  13001.0    8862.9   1194.6    2943.5    4045.9     255.7   1205.3    226.0     15.5   1866.30
     .19      2.19      4.67      2.44     .070      .035     .060     .000   1865.10    627.00
  .000489     330.      418.      465.        2        17        0      .00    563.53   1190.53


CCHV=     .100 CEHV=     .300
*SECNO  .511

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      887.0    1525.0  TYPE=      1  TARGET=      638.000
      ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
      SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
      WSEL AND THE TOPOGRAPHY.
    .511      5.33   1877.13   1877.13      .00   1878.61     1.48      .89      .41   1875.00
  13001.0     366.5   6787.5    5847.0     84.8     577.2    828.3    274.8     23.6   1875.30
     .20      4.32     11.76      7.06     .065      .035     .065     .000   1871.80    887.43
  .019061     562.      562.      720.        0        18        0      .00    568.29   1524.44


CCHV=     .100 CEHV=     .300
*SECNO  .617

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      965.0    1600.0  TYPE=      1  TARGET=      635.000
      ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
      SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
      WSEL AND THE TOPOGRAPHY.
    .617      7.71   1886.11   1886.11      .00   1887.50     1.39     8.21      .01   1878.70
  13001.0       6.7   2282.8   10711.5      3.9     128.6   1666.0    295.8     31.2   1878.40
     .22      1.73     17.75      6.43     .060      .035     .060     .000   1878.40    965.00
  .011772     556.      556.      556.        0        14        0      .00    626.00   1600.00
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO  .685

3470 ENCROACHMENT STATIONS=      968.0    1520.0  TYPE=      1  TARGET=      552.000
         ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
         SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
         WSEL AND THE TOPOGRAPHY.
     .685      5.62   1889.92   1889.89       .00   1891.28      1.36      3.77       .00   1888.30
   13122.0       5.3    1945.5   11171.1       1.9     121.9    1458.9     304.7      34.3   1885.90
     .23      2.77     15.96      7.66      .060      .035      .060      .000   1884.30    968.64
  .021422      380.      359.      220.         1        19         0       .00    551.36   1520.00


*SECNO  .768

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      967.0    1270.0  TYPE=      1  TARGET=      303.000
         ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
         SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
         WSEL AND THE TOPOGRAPHY.
     .768      9.06   1900.06   1900.06       .00   1902.16      2.11      6.78       .22   1893.00
   13122.0      94.7    4153.2    8874.1      21.3     233.5    1225.0     321.3      38.9   1892.10
     .24      4.44     17.79      7.24      .060      .035      .060      .000   1891.00    967.88
  .010498      440.      440.      475.         0        14         0       .00    302.12   1270.00


CCHV=     .100 CEHV=     .300
*SECNO  .882
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      865.0    1314.0  TYPE=      1  TARGET=      449.000
         ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
         SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
         WSEL AND THE TOPOGRAPHY.
     .882      6.16   1906.76   1906.76       .00   1908.42      1.66      4.64       .04   1900.70
   13122.0    2281.9    6729.8    4110.3     333.8     511.7     725.2     337.2      42.7   1900.80
     .26      6.84     13.15      5.67      .050      .035      .050      .000   1900.60    865.00
  .008625      560.      604.      380.         0        19         0       .00    448.86   1313.86
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .971
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 951.0 1387.0 TYPE= 1 TARGET= 436.000

.971	5.06	1914.86	1914.86	.00	1916.46	1.60	5.63	.01	1911.30
13242.0	336.6	3652.3	9253.1	54.5	260.9	1115.1	354.5	47.8	1911.40
.27	6.18	14.00	8.30	.050	.035	.050	.000	1909.80	951.59
.015687	440.	469.	525.	0	15	0	.00	435.09	1386.68

*SECNO 1.061
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 778.0 1263.0 TYPE= 1 TARGET= 485.000

1.061	4.44	1923.14	1923.14	.00	1924.63	1.49	7.69	.01	1918.80
13242.0	3878.1	3946.9	5417.0	483.6	290.7	739.3	371.7	53.2	1919.20
.29	8.02	13.58	7.33	.050	.035	.050	.000	1918.70	778.33
.014747	515.	474.	520.	0	15	0	.00	483.73	1262.06

*SECNO 1.159
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.159	4.35	1931.35	1931.35	.00	1932.62	1.27	7.24	.02	1927.50
13242.0	6766.2	4284.6	2191.2	975.7	338.1	387.2	390.7	59.8	1927.30
.30	6.93	12.67	5.66	.050	.035	.050	.000	1927.00	637.84
.013260	568.	520.	445.	0	5	0	.00	647.53	1285.36

CCHV= .100 CEHV= .300
*SECNO 1.258
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.258	3.74	1940.34	1940.34	.00	1941.81	1.46	8.42	.06	1937.00
13132.0	750.9	4269.4	8111.7	117.8	317.4	1110.9	410.3	66.9	1937.40
.32	6.37	13.45	7.30	.060	.035	.060	.000	1936.60	942.80
.019821	530.	520.	525.	0	15	0	.00	526.38	1469.19

*SECNO 1.345

1.345	5.06	1947.66	1947.15	.00	1948.63	.97	6.78	.05	1943.80
13132.0	1591.1	3411.7	8129.2	257.3	284.9	1414.3	429.7	73.0	1943.40
.34	6.18	11.98	5.75	.060	.035	.060	.000	1942.60	944.98
.010645	460.	458.	490.	4	11	0	.00	582.61	1527.59

```
SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1.440

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    1.440      4.97   1955.57   1955.57       .00   1957.22      1.64      5.98       .20   1950.60
  13132.0      51.6    4914.6    8165.8      12.1     338.3    1243.8     449.6      78.9   1950.80
      .35      4.25     14.53      6.56      .060      .035      .060      .000   1950.60    954.12
  .014050      505.      502.      485.         0         5         0       .00    457.37   1411.48


CCHV=     .100 CEHV=     .300
*SECNO 1.530

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      696.0    1303.0  TYPE=      1  TARGET=      607.000
    1.530      5.38   1961.98   1961.55       .00   1963.05      1.07      5.77       .06   1957.50
  13021.0    4843.4    2706.5    5471.0     815.2     206.0     795.1     466.4      84.1   1957.30
      .37      5.94     13.14      6.88      .060      .035      .060      .000   1956.60    696.18
  .012604      546.      476.      370.         2         5         0       .00    581.12   1302.15


*SECNO 1.624

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      600.0    1055.0  TYPE=      1  TARGET=      455.000
         ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
         SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
         WSEL AND THE TOPOGRAPHY.
    1.624      6.30   1969.30   1969.30       .00   1971.01      1.70      5.84       .19   1963.90
  13021.0    6203.3    6407.5     410.2    1103.1     464.1      77.6     486.5      90.0   1963.80
      .38      5.62     13.80      5.28      .060      .035      .060      .000   1963.00    600.00
  .009974      490.      598.      468.         0        11         0       .00    454.46   1054.46
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.727

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 830.0 1591.0 TYPE= 1 TARGET= 761.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.727	6.97	1978.17	1978.17	.00	1979.51	1.33	6.62	.04	1974.90
13021.0	3012.2	3508.7	6500.1	428.6	249.7	994.3	505.8	96.4	1974.40
.40	7.03	14.05	6.54	.060	.035	.060	.000	1971.20	830.00
.017108	400.	545.	630.	0	8	0	.00	628.34	1589.99

*SECNO 1.814
7185 MINIMUM SPECIFIC ENERGY
[illegible]0 CRITICAL DEPTH ASSUMED

1.814	7.11	1986.41	1986.41	.00	1987.82	1.40	6.90	.02	1979.30
12911.0	464.1	3380.5	9066.4	75.8	214.0	1559.8	527.3	104.1	1980.30
.41	6.12	15.80	5.81	.060	.035	.060	.000	1979.30	947.86
.010549	457.	460.	562.	0	8	0	.00	605.07	1552.93

*SECNO 1.912
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.912	7.94	1994.44	1994.44	.00	1996.33	1.89	5.37	.15	1987.70
12911.0	2721.9	5246.5	4942.7	323.3	343.3	878.9	548.2	110.2	1988.90
.43	8.42	15.28	5.62	.060	.035	.060	.000	1986.50	962.69
.009701	515.	515.	545.	0	8	0	.00	377.33	1340.02

*SECNO 2.011
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

2.011	7.02	2002.52	2002.52	.00	2004.59	2.07	4.85	.05	1996.90
12911.0	1741.9	5435.1	5734.1	242.7	345.6	807.1	563.1	113.6	1996.00
.44	7.18	15.73	7.10	.060	.035	.060	.000	1995.50	921.23
.011270	535.	525.	375.	0	15	0	.00	340.34	1261.57

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 2.124

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.124	7.09	2009.69	2009.69	.00	2011.22	1.53	5.77	.05	2005.10
12911.0	7214.7	5611.4	84.9	1355.6	407.0	21.0	583.4	119.0	2004.50
.46	5.32	13.79	4.04	.060	.035	.060	.000	2002.60	525.96
.009365	600.	607.	420.	0	5	0	.00	508.15	1034.11

*SECNO 2.195
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.195	7.21	2015.01	2015.01	.00	2016.75	1.75	3.00	.07	2009.30
12911.0	7114.3	4960.1	836.6	1194.2	324.7	115.4	594.9	121.9	2008.40
.47	5.96	15.27	7.25	.060	.035	.060	.000	2007.80	658.52
.009867	270.	365.	370.	0	5	0	.00	398.99	1057.51

*SECNO 2.250
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.250	5.66	2021.96	2021.96	.00	2023.77	1.81	6.46	.02	2017.10
12911.0	65.8	3951.3	8893.9	13.5	256.8	1113.8	611.9	126.4	2017.90
.48	4.87	15.39	7.99	.060	.035	.060	.000	2016.30	938.44
.017239	430.	543.	525.	0	15	0	.00	389.27	1327.71

T1 FLOODWAY DETERMINATION

T2

T3 WASH T: SAN DOMINGO WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	3	0	0	0.00196	0	0	0	1849.93	0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2	0	-1	0	0	0	-1	0	0	0

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300
*SECNO 43.930
HASSAYAMPA RIVER FIS CROSS SECTION 43.93 (CBA 1988, NO DATUM CHANGE)
CONFLUENCE WITH WASH T - SAN DOMINGO WASH, AN EAST TRIBUTARY
NON COINCIDENT WITH 100-YEAR DISCHARGE IN HASSAYAMPA

43.930	9.93	1849.93	1846.55	1849.93	1850.90	.97	.00	.00	1840.00
12760.0	125.5	12348.7	285.8	36.9	1546.5	71.9	.0	.0	1841.60
.00	3.40	7.98	3.97	.040	.035	.040	.000	1840.00	1127.77
.001961	0.	0.	0.	0	13	0	.00	201.40	1329.17

CCHV= .100 CEHV= .300
*SECNO .030

3301 HV CHANGED MORE THAN HVINS

3485 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 970.0 1023.0 TYPE= 1 TARGET= 53.000
DOWNSTREAM SECTION OF BRIDGE FOR S.R. 93 (U.S. HWY. 60-89)
NO PIERS, OPEN CHANNEL FLOW - NO BRIDGE DATA FROM FIELD SURVEY
SINCE THERE ARE NO PIERS OR OBSTRUCTIONS FROM THE BRIDGE THAT
WOULD IMPEDE FLOW IT WAS ASSUMED THAT BRIDGE ANALYSIS WAS NOT
NECESSARY.

.030	22.97	1863.87	1863.87	1863.77	1872.17	8.30	1.28	2.20	1840.90
12760.0	1830.0	9646.5	1283.6	228.4	367.5	190.3	11.9	1.3	1840.90
.01	8.01	26.25	6.75	.060	.035	.060	.000	1840.90	970.47
.005853	270.	385.	880.	0	14	0	.00	52.10	1022.57

CCHV= .600 CEHV= .800
*SECNO .067

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.52

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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=      951.0    1018.0  TYPE=      1  TARGET=      67.000
     .067     27.97   1872.27   1865.14   1872.40   1875.77      3.50       .72      2.88   1844.30
  12760.0    5726.9    6556.7     476.4     729.3     334.6     137.5      16.4       1.5   1844.40
     .01      7.85     19.60      3.46      .060      .035      .060      .000   1844.30    951.57
  .002520     195.      195.      195.        18        11         0       .00     66.30   1017.87


CCHV=     .100 CEHV=     .300
*SECNO  .107

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.98


3470 ENCROACHMENT STATIONS=      812.0    1193.0  TYPE=      1  TARGET=     381.000
     .107     26.68   1876.08   1861.16   1876.17   1876.20       .11       .09       .34   1850.00
  12760.0    7000.1    2121.5    3638.4    3286.6     448.0    1939.2      34.3       2.7   1850.10
     .03      2.13      4.74      1.88      .060      .035      .060      .000   1849.40    812.82
  .000159     210.      211.      265.         2        18         0       .00    378.90   1191.72


CCHV=     .100 CEHV=     .300
*SECNO  .208

3470 ENCROACHMENT STATIONS=      840.0    1230.0  TYPE=      1  TARGET=     390.000
         ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
         SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
         WSEL AND THE TOPOGRAPHY.
     .208     22.39   1876.19   1861.81   1876.27   1876.28       .08       .08       .00   1856.90
  12881.0    8037.1    4610.2     233.7    5412.5    1378.2     258.1     122.9       7.7   1855.80
     .11      1.48      3.35       .91      .070      .035      .070      .000   1853.80    840.00
  .000104     715.      532.      240.         2        17         0       .00    389.19   1229.19


CCHV=     .100 CEHV=     .300
*SECNO  .326

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .35
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=      868.0    1099.0  TYPE=      1  TARGET=      231.000
      .326     14.41   1876.01   1869.02   1876.09   1876.55       .54       .14       .14   1861.80
   12881.0    1629.9    6944.4    4306.7     577.0     946.6    1127.3     189.3      12.0   1861.80
      .14      2.82      7.34      3.82      .070      .035      .060      .000   1861.60    868.20
   .000857     575.      623.      648.         2        17         0       .00    230.53   1098.73


*SECNO  .405

3470 ENCROACHMENT STATIONS=      627.0    1191.0  TYPE=      1  TARGET=      564.000
         ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
         SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
         WSEL AND THE TOPOGRAPHY.
      .405     11.65   1876.75   1869.63   1876.82   1876.85       .10       .25       .04   1865.10
   13001.0    8863.9    1196.0    2941.0    4017.9     254.1    1195.6     224.9      15.5   1866.30
      .19      2.21      4.71      2.46      .070      .035      .060      .000   1865.10    627.00
   .000501     330.      418.      465.         2        17         0       .00    563.32   1190.32


HV=     .100 CEHV=     .300
*SECNO  .511

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      887.0    1525.0  TYPE=      1  TARGET=      638.000
         ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
         SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
         WSEL AND THE TOPOGRAPHY.
      .511      5.33   1877.13   1877.13   1877.13   1878.61      1.48       .91       .41   1875.00
   13001.0     366.5    6787.5    5847.0      84.8     577.3     828.4     273.5      23.6   1875.30
      .20      4.32     11.76      7.06      .065      .035      .065      .000   1871.80    887.43
   .019055     562.      562.      720.         0        18         0       .00    568.30   1524.45


CCHV=     .100 CEHV=     .300
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .617

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 965.0 1600.0 TYPE= 1 TARGET= 635.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.617	7.72	1886.12	1886.12	1886.11	1887.50	1.39	8.20	.01	1878.70
13001.0	6.7	2282.3	10712.1	3.9	128.6	1666.7	294.4	31.2	1878.40
.22	1.73	17.74	6.43	.060	.035	.060	.000	1878.40	965.00
.011761	556.	556.	556.	0	14	0	.00	626.00	1600.00

*SECNO .685

70 ENCROACHMENT STATIONS= 968.0 1520.0 TYPE= 1 TARGET= 552.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.685	5.61	1889.91	1889.89	1889.92	1891.28	1.36	3.77	.00	1888.30
13122.0	5.3	1945.9	11170.8	1.9	121.9	1458.3	303.4	34.3	1885.90
.23	2.77	15.97	7.66	.060	.035	.060	.000	1884.30	968.64
.021449	380.	359.	220.	1	19	0	.00	551.36	1520.00

*SECNO .768

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 967.0 1270.0 TYPE= 1 TARGET= 303.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.768	9.06	1900.06	1900.06	1900.06	1902.16	2.11	6.79	.22	1893.00
13122.0	94.7	4153.5	8873.8	21.3	233.4	1224.9	319.9	38.9	1892.10
.24	4.44	17.79	7.24	.060	.035	.060	.000	1891.00	967.88
.010501	440.	440.	475.	0	14	0	.00	302.11	1270.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300
*SECNO .882
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 865.0 1314.0 TYPE= 1 TARGET= 449.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

.882	6.16	1906.76	1906.76	1906.76	1908.42	1.66	4.64	.04	1900.70
13122.0	2281.9	6729.5	4110.6	333.9	511.7	725.3	335.9	42.7	1900.80
.26	6.83	13.15	5.67	.050	.035	.050	.000	1900.60	865.00
.008622	560.	604.	380.	0	19	0	.00	448.86	1313.86

*SECNO .971
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

70 ENCROACHMENT STATIONS= 951.0 1387.0 TYPE= 1 TARGET= 436.000

.971	5.06	1914.86	1914.86	1914.86	1916.46	1.60	5.63	.01	1911.30
13242.0	336.6	3652.3	9253.1	54.5	260.9	1115.2	353.1	47.8	1911.40
.27	6.18	14.00	8.30	.050	.035	.050	.000	1909.80	951.59
.015685	440.	469.	525.	0	15	0	.00	435.09	1386.68

*SECNO 1.061
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 778.0 1263.0 TYPE= 1 TARGET= 485.000

1.061	4.44	1923.14	1923.14	1923.14	1924.63	1.49	7.69	.01	1918.80
13242.0	3878.1	3946.8	5417.1	483.7	290.7	739.4	370.4	53.2	1919.20
.28	8.02	13.58	7.33	.050	.035	.050	.000	1918.70	778.33
.014744	515.	474.	520.	0	15	0	.00	483.73	1262.06

*SECNO 1.159
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 637.0 1286.0 TYPE= 1 TARGET= 649.000

1.159	4.35	1931.35	1931.35	1931.35	1932.62	1.27	7.23	.02	1927.50
13242.0	6766.2	4284.4	2191.4	975.8	338.1	387.3	389.4	59.8	1927.30
.30	6.93	12.67	5.66	.050	.035	.050	.000	1927.00	637.84
.013257	568.	520.	445.	0	5	0	.00	647.53	1285.36

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300
*SECNO 1.258
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 942.0 1470.0 TYPE= 1 TARGET= 528.000

1.258	3.74	1940.34	1940.34	1940.34	1941.81	1.46	8.41	.06	1937.00
13132.0	751.0	4269.3	8111.7	117.8	317.4	1111.0	409.0	66.9	1937.40
.32	6.37	13.45	7.30	.060	.035	.060	.000	1936.60	942.80
.019818	530.	520.	525.	0	15	0	.00	526.38	1469.19

*SECNO 1.345

3470 ENCROACHMENT STATIONS= 944.0 1528.0 TYPE= 1 TARGET= 584.000

1.345	5.06	1947.66	1947.15	1947.66	1948.63	.97	6.78	.05	1943.80
13132.0	1591.1	3411.7	8129.2	257.3	284.9	1414.2	428.3	73.0	1943.40
.33	6.18	11.98	5.75	.060	.035	.060	.000	1942.60	944.98
.010646	460.	458.	490.	4	11	0	.00	582.61	1527.58

*SECNO 1.440

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 954.0 1412.0 TYPE= 1 TARGET= 458.000

1.440	4.99	1955.59	1955.59	1955.57	1957.22	1.63	5.94	.20	1950.60
13132.0	51.7	4906.5	8173.8	12.2	339.5	1250.4	448.3	78.8	1950.80
.35	4.23	14.45	6.54	.060	.035	.060	.000	1950.60	954.10
.013842	505.	502.	485.	0	5	0	.00	457.52	1411.62

CCHV= .100 CEHV= .300
*SECNO 1.530

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 696.0 1303.0 TYPE= 1 TARGET= 607.000

1.530	5.36	1961.96	1961.54	1961.98	1963.04	1.08	5.77	.05	1957.50
13021.0	4837.3	2710.4	5473.3	810.2	205.2	791.5	465.1	84.0	1957.30
.36	5.97	13.21	6.92	.060	.035	.060	.000	1956.60	696.41
.012788	546.	476.	370.	2	5	0	.00	579.79	1301.99

*SECNO 1.624

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 600.0 1055.0 TYPE= 1 TARGET= 455.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.624	6.30	1969.30	1969.30	1969.30	1971.01	1.71	5.89	.19	1963.90
13021.0	6202.4	6408.4	410.1	1102.7	464.0	77.6	485.1	89.9	1963.80
.38	5.62	13.81	5.29	.060	.035	.060	.000	1963.00	600.00
.009985	490.	598.	468.	0	11	0	.00	454.46	1054.46

*SECNO 1.727

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 830.0 1591.0 TYPE= 1 TARGET= 761.000
ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
WSEL AND THE TOPOGRAPHY.

1.727	6.97	1978.17	1978.17	1978.17	1979.51	1.33	6.62	.04	1974.90
13021.0	3012.2	3508.5	6500.3	428.7	249.7	994.5	504.4	96.4	1974.40
.40	7.03	14.05	6.54	.060	.035	.060	.000	1971.20	830.00
.017099	400.	545.	630.	0	8	0	.00	628.41	1589.99

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 1.814
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      947.0    1553.0  TYPE=      1  TARGET=      606.000
     1.814      7.11   1986.41   1986.41   1986.41   1987.82      1.40      6.90       .02   1979.30
   12911.0     464.1    3380.7    9066.1      75.8     214.0    1559.6     526.0     104.0   1980.30
       .41      6.12     15.80      5.81      .060      .035      .060      .000   1979.30    947.86
   .010553      457.      460.      562.         0         8         0       .00    605.06   1552.92


*SECNO 1.912
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      962.0    1341.0  TYPE=      1  TARGET=      379.000
     1.912      7.94   1994.44   1994.44   1994.44   1996.33      1.89      5.37       .15   1987.70
   12911.0    2721.7    5246.2    4943.0     323.3     343.3     879.0     546.9     110.1   1988.90
       .43      8.42     15.28      5.62      .060      .035      .060      .000   1986.50    962.69
   .009698      515.      515.      545.         0         8         0       .00    377.33   1340.02


*SECNO 2.011
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      921.0    1262.0  TYPE=      1  TARGET=      341.000
         ET-DATA USED TO SET LIMITS OF EFFECTIVE FLOW AREA AT CURRENT
         SECTION: THEREFORE, FLOODPLAIN LIMITS ARE BASED ON THE COMPUTED
         WSEL AND THE TOPOGRAPHY.
     2.011      7.03   2002.53   2002.53   2002.52   2004.59      2.06      4.83       .05   1996.90
   12911.0    1742.6    5430.5    5737.9     243.3     346.2     809.7     561.8     113.6   1996.00
       .44      7.16     15.69      7.09      .060      .035      .060      .000   1995.50    921.21
   .011186      535.      525.      375.         0        15         0       .00    340.61   1261.82


*SECNO 2.124

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 525.0 1035.0 TYPE= 1 TARGET= 510.000

2.124	7.08	2009.68	2009.68	2009.69	2011.22	1.53	5.76	.05	2005.10
12911.0	7211.5	5614.6	84.8	1353.8	406.7	21.0	582.0	118.9	2004.50
.46	5.33	13.81	4.04	.060	.035	.060	.000	2002.60	525.98
.009397	600.	607.	420.	0	5	0	.00	508.12	1034.10

*SECNO 2.195
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 658.0 1058.0 TYPE= 1 TARGET= 400.000

2.195	7.21	2015.01	2015.01	2015.01	2016.75	1.75	3.01	.06	2009.30
12911.0	7115.4	4959.0	836.6	1194.8	324.8	115.4	593.6	121.9	2008.40
.47	5.96	15.27	7.25	.060	.035	.060	.000	2007.80	658.51
.009854	270.	365.	370.	0	5	0	.00	399.00	1057.51

ECNO 2.250
85 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 938.0 1328.0 TYPE= 1 TARGET= 390.000

2.250	5.67	2021.97	2021.97	2021.96	2023.77	1.80	6.44	.02	2017.10
12911.0	65.8	3950.2	8894.9	13.5	257.1	1115.4	610.6	126.3	2017.90
.48	4.86	15.37	7.97	.060	.035	.060	.000	2016.30	938.43
.017167	430.	543.	525.	0	15	0	.00	389.30	1327.74

THIS RUN EXECUTED 15APR92 14:27:32

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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

WASH T : SAN DOMINGO WAS

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	43.930	.00	.00	.00	1840.00	12760.00	1849.93	1846.57	1850.90	19.58	7.98	1656.17	2883.78
	43.930	.00	.00	.00	1840.00	12760.00	1849.93	1846.55	1850.90	19.61	7.98	1655.36	2881.53
*	.030	385.00	.00	.00	1840.90	12760.00	1863.77	1863.77	1872.17	59.51	26.39	781.06	1654.13
*	.030	385.00	.00	.00	1840.90	12760.00	1863.87	1863.87	1872.17	58.53	26.25	786.13	1667.88
	.067	195.00	.00	.00	1844.30	12760.00	1872.40	1865.14	1875.85	24.73	19.48	1210.31	2565.89
*	.067	195.00	.00	.00	1844.30	12760.00	1872.27	1865.14	1875.77	25.20	19.60	1201.38	2541.90
*	.107	211.00	.00	.00	1849.40	12760.00	1876.17	1861.16	1876.28	1.57	4.71	5704.46	10184.25
*	.107	211.00	.00	.00	1849.40	12760.00	1876.08	1861.16	1876.20	1.59	4.74	5673.85	10109.61
	.208	532.00	.00	.00	1853.80	12881.00	1876.27	1861.81	1876.35	1.03	3.33	7079.75	12694.64
	.208	532.00	.00	.00	1853.80	12881.00	1876.19	1861.81	1876.28	1.04	3.35	7048.87	12607.60
*	.326	623.00	.00	.00	1861.60	12881.00	1876.09	1869.02	1876.63	8.39	7.29	2669.80	4447.31
*	.326	623.00	.00	.00	1861.60	12881.00	1876.01	1869.02	1876.55	8.57	7.34	2650.93	4400.93
	.405	418.00	.00	.00	1865.10	13001.00	1876.82	1869.63	1876.92	4.89	4.67	5506.88	5878.63
	.405	418.00	.00	.00	1865.10	13001.00	1876.75	1869.63	1876.85	5.01	4.71	5467.54	5810.47
*	.511	562.00	.00	.00	1871.80	13001.00	1877.13	1877.13	1878.61	190.61	11.76	1490.33	941.69
*	.511	562.00	.00	.00	1871.80	13001.00	1877.13	1877.13	1878.61	190.55	11.76	1490.46	941.82
*	.617	556.00	.00	.00	1878.40	13001.00	1886.11	1886.11	1887.50	117.72	17.75	1798.48	1198.24
*	.617	556.00	.00	.00	1878.40	13001.00	1886.12	1886.12	1887.50	117.61	17.74	1799.17	1198.80
	.685	359.00	.00	.00	1884.30	13122.00	1889.92	1889.89	1891.28	214.22	15.96	1582.73	896.55
	.685	359.00	.00	.00	1884.30	13122.00	1889.91	1889.89	1891.28	214.49	15.97	1582.05	895.97
	.768	440.00	.00	.00	1891.00	13122.00	1900.06	1900.06	1902.16	104.98	17.79	1479.84	1280.73
	.768	440.00	.00	.00	1891.00	13122.00	1900.06	1900.06	1902.16	105.01	17.79	1479.66	1280.49

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.882	604.00	.00	.00	1900.60	13122.00	1906.76	1906.76	1908.42	86.25	13.15	1570.72	1412.92
*	.882	604.00	.00	.00	1900.60	13122.00	1906.76	1906.76	1908.42	86.22	13.15	1570.94	1413.19
*	.971	469.00	.00	.00	1909.80	13242.00	1914.86	1914.86	1916.46	156.87	14.00	1430.52	1057.27
*	.971	469.00	.00	.00	1909.80	13242.00	1914.86	1914.86	1916.46	156.85	14.00	1430.58	1057.33
*	1.061	474.00	.00	.00	1918.70	13242.00	1923.14	1923.14	1924.63	147.47	13.58	1513.57	1090.43
*	1.061	474.00	.00	.00	1918.70	13242.00	1923.14	1923.14	1924.63	147.44	13.58	1513.69	1090.56
*	1.159	520.00	.00	.00	1927.00	13242.00	1931.35	1931.35	1932.62	132.60	12.67	1701.04	1149.94
*	1.159	520.00	.00	.00	1927.00	13242.00	1931.35	1931.35	1932.62	132.57	12.67	1701.20	1150.10
*	1.258	520.00	.00	.00	1936.60	13132.00	1940.34	1940.34	1941.81	198.21	13.45	1546.12	932.76
*	1.258	520.00	.00	.00	1936.60	13132.00	1940.34	1940.34	1941.81	198.18	13.45	1546.18	932.82
	1.345	458.00	.00	.00	1942.60	13132.00	1947.66	1947.15	1948.63	106.45	11.98	1956.45	1272.81
	1.345	458.00	.00	.00	1942.60	13132.00	1947.66	1947.15	1948.63	106.46	11.98	1956.38	1272.73
*	1.440	502.00	.00	.00	1950.60	13132.00	1955.57	1955.57	1957.22	140.50	14.53	1594.32	1107.89
*	1.440	502.00	.00	.00	1950.60	13132.00	1955.59	1955.59	1957.22	138.42	14.45	1602.13	1116.18
	1.530	476.00	.00	.00	1956.60	13021.00	1961.98	1961.55	1963.05	126.04	13.14	1816.28	1159.81
	1.530	476.00	.00	.00	1956.60	13021.00	1961.96	1961.54	1963.04	127.88	13.21	1807.00	1151.43
	1.624	598.00	.00	.00	1963.00	13021.00	1969.30	1969.30	1971.01	99.74	13.80	1644.90	1303.79
*	1.624	598.00	.00	.00	1963.00	13021.00	1969.30	1969.30	1971.01	99.85	13.81	1644.29	1303.11
*	1.727	545.00	.00	.00	1971.20	13021.00	1978.17	1978.17	1979.51	171.08	14.05	1672.65	995.50
*	1.727	545.00	.00	.00	1971.20	13021.00	1978.17	1978.17	1979.51	170.99	14.05	1672.96	995.76
*	1.814	460.00	.00	.00	1979.30	12911.00	1986.41	1986.41	1987.82	105.49	15.80	1849.55	1257.04
*	1.814	460.00	.00	.00	1979.30	12911.00	1986.41	1986.41	1987.82	105.53	15.80	1849.33	1256.84
*	1.912	515.00	.00	.00	1986.50	12911.00	1994.44	1994.44	1996.33	97.01	15.28	1545.41	1310.85
*	1.912	515.00	.00	.00	1986.50	12911.00	1994.44	1994.44	1996.33	96.98	15.28	1545.59	1311.07
*	2.011	525.00	.00	.00	1995.50	12911.00	2002.52	2002.52	2004.59	112.70	15.73	1395.38	1216.19
*	2.011	525.00	.00	.00	1995.50	12911.00	2002.53	2002.53	2004.59	111.86	15.69	1399.25	1220.75
*	2.124	607.00	.00	.00	2002.60	12911.00	2009.69	2009.69	2011.22	93.65	13.79	1783.63	1334.17
*	2.124	607.00	.00	.00	2002.60	12911.00	2009.68	2009.68	2011.22	93.97	13.81	1781.46	1331.86
*	2.195	365.00	.00	.00	2007.80	12911.00	2015.01	2015.01	2016.75	98.67	15.27	1634.34	1299.76
*	2.195	365.00	.00	.00	2007.80	12911.00	2015.01	2015.01	2016.75	98.54	15.27	1635.07	1300.61
*	2.250	543.00	.00	.00	2016.30	12911.00	2021.96	2021.96	2023.77	172.39	15.39	1384.10	983.34
*	2.250	543.00	.00	.00	2016.30	12911.00	2021.97	2021.97	2023.77	171.67	15.37	1386.05	985.39

H T : SAN DOMINGO WAS

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	43.930	12760.00	1849.93	.00	.00	-12.95	201.42	.00
	43.930	12760.00	1849.93	.00	.00	.00	201.40	.00
*	.030	12760.00	1863.77	.00	13.84	.00	51.95	385.00
*	.030	12760.00	1863.87	.10	13.94	.10	52.10	385.00
*	.067	12760.00	1872.40	.00	8.63	.00	66.52	195.00
*	.067	12760.00	1872.27	-.13	8.40	-.13	66.30	195.00
*	.107	12760.00	1876.17	.00	3.77	.00	379.65	211.00
*	.107	12760.00	1876.08	-.08	3.82	-.08	378.90	211.00
	.208	12881.00	1876.27	.00	.11	.00	389.42	532.00
	.208	12881.00	1876.19	-.08	.11	-.08	389.19	532.00
*	.326	12881.00	1876.09	.00	-.18	.00	230.88	623.00
*	.326	12881.00	1876.01	-.08	-.18	-.08	230.53	623.00
	.405	13001.00	1876.82	.00	.72	.00	563.53	418.00
	.405	13001.00	1876.75	-.07	.74	-.07	563.32	418.00
*	.511	13001.00	1877.13	.00	.31	.00	568.29	562.00
*	.511	13001.00	1877.13	.00	.38	.00	568.30	562.00
*	.617	13001.00	1886.11	.00	8.98	.00	626.00	556.00
*	.617	13001.00	1886.12	.00	8.99	.00	626.00	556.00
	.685	13122.00	1889.92	.00	3.80	.00	551.36	359.00
	.685	13122.00	1889.91	.00	3.80	.00	551.36	359.00
*	.768	13122.00	1900.06	.00	10.14	.00	302.12	440.00
*	.768	13122.00	1900.06	.00	10.14	.00	302.11	440.00
*	.882	13122.00	1906.76	.00	6.70	.00	448.86	604.00
*	.882	13122.00	1906.76	.00	6.71	.00	448.86	604.00
*	.971	13242.00	1914.86	.00	8.10	.00	435.09	469.00
*	.971	13242.00	1914.86	.00	8.10	.00	435.09	469.00
*	1.061	13242.00	1923.14	.00	8.28	.00	483.73	474.00
*	1.061	13242.00	1923.14	.00	8.28	.00	483.73	474.00
*	1.159	13242.00	1931.35	.00	8.21	.00	647.53	520.00
*	1.159	13242.00	1931.35	.00	8.21	.00	647.53	520.00
*	1.258	13132.00	1940.34	.00	8.99	.00	526.38	520.00
*	1.258	13132.00	1940.34	.00	8.99	.00	526.38	520.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.345	13132.00	1947.66	.00	7.32	.00	582.61	458.00
	1.345	13132.00	1947.66	.00	7.32	.00	582.61	458.00
*	1.440	13132.00	1955.57	.00	7.91	.00	457.37	502.00
*	1.440	13132.00	1955.59	.02	7.93	.02	457.52	502.00
	1.530	13021.00	1961.98	.00	6.40	.00	581.12	476.00
	1.530	13021.00	1961.96	-.02	6.37	-.02	579.79	476.00
*	1.624	13021.00	1969.30	.00	7.33	.00	454.46	598.00
*	1.624	13021.00	1969.30	.00	7.34	.00	454.46	598.00
*	1.727	13021.00	1978.17	.00	8.87	.00	628.34	545.00
*	1.727	13021.00	1978.17	.00	8.87	.00	628.41	545.00
*	1.814	12911.00	1986.41	.00	8.24	.00	605.07	460.00
*	1.814	12911.00	1986.41	.00	8.24	.00	605.06	460.00
*	1.912	12911.00	1994.44	.00	8.02	.00	377.33	515.00
*	1.912	12911.00	1994.44	.00	8.02	.00	377.33	515.00
*	2.011	12911.00	2002.52	.00	8.09	.00	340.34	525.00
*	2.011	12911.00	2002.53	.01	8.10	.01	340.61	525.00
	2.124	12911.00	2009.69	.00	7.17	.00	508.15	607.00
*	2.124	12911.00	2009.68	.00	7.15	.00	508.12	607.00
*	2.195	12911.00	2015.01	.00	5.32	.00	398.99	365.00
*	2.195	12911.00	2015.01	.00	5.32	.00	399.00	365.00
*	2.250	12911.00	2021.96	.00	6.96	.00	389.27	543.00
*	2.250	12911.00	2021.97	.01	6.96	.01	389.30	543.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=      .030  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .030  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .030  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .030  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      .067  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .067  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .107  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .107  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .326  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .326  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      .511  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .511  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=      .617  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .617  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .617  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .617  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .768  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .768  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .768  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=      .882  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .882  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     1.258  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     2.250  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     2.250  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.250  PROFILE=  2  MINIMUM SPECIFIC ENERGY
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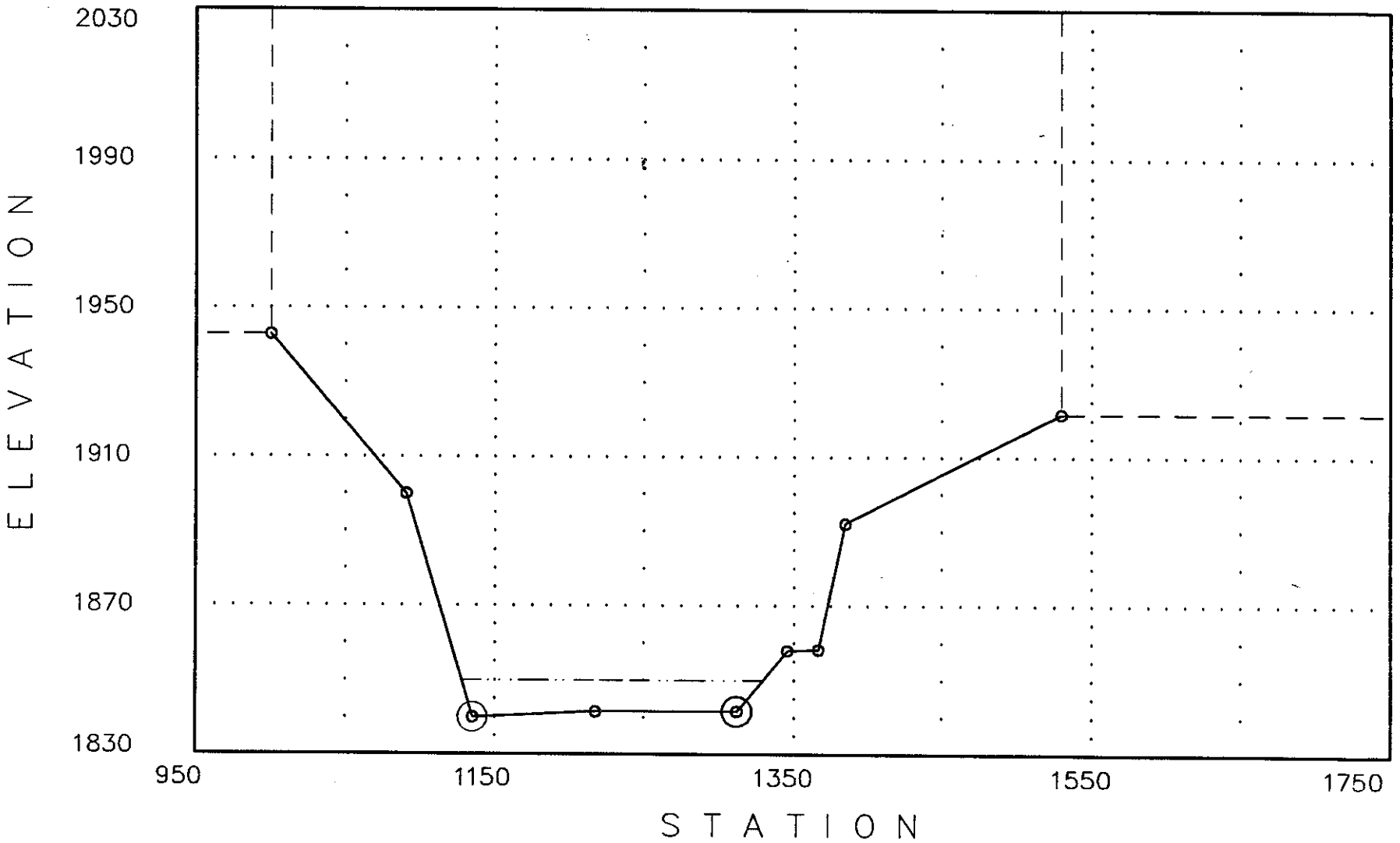
FLOODWAY DATA, WASH T : SAN DOMINGO WAS
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
43.930	201.	1655.	7.7	1849.9	1849.9	.0
.030	52.	786.	16.2	1863.9	1863.8	.1
.067	66.	1201.	10.6	1872.3	1872.4	-.1
.107	379.	5674.	2.2	1876.1	1876.2	-.1
.208	389.	7049.	1.8	1876.2	1876.3	-.1
.326	231.	2651.	4.9	1876.0	1876.1	-.1
.405	563.	5468.	2.4	1876.7	1876.8	-.1
.511	637.	1490.	8.7	1877.1	1877.1	.0
.617	635.	1799.	7.2	1886.1	1886.1	.0
.685	551.	1582.	8.3	1889.9	1889.9	.0
.768	302.	1480.	8.9	1900.1	1900.1	.0
.882	449.	1571.	8.4	1906.8	1906.8	.0
.971	435.	1431.	9.3	1914.9	1914.9	.0
1.061	484.	1514.	8.7	1923.1	1923.1	.0
1.159	648.	1701.	7.8	1931.4	1931.4	.0
1.258	526.	1546.	8.5	1940.3	1940.3	.0
1.345	583.	1956.	6.7	1947.7	1947.7	.0
1.440	458.	1602.	8.2	1955.6	1955.6	.0
1.530	606.	1807.	7.2	1962.0	1962.0	.0
1.624	454.	1644.	7.9	1969.3	1969.3	.0
1.727	760.	1673.	7.8	1978.2	1978.2	.0
1.814	605.	1849.	7.0	1986.4	1986.4	.0
1.912	377.	1546.	8.4	1994.4	1994.4	.0
2.011	341.	1399.	9.2	2002.5	2002.5	.0
2.124	508.	1781.	7.2	2009.7	2009.7	.0
2.195	399.	1635.	7.9	2015.0	2015.0	.0
2.250	389.	1386.	9.3	2022.0	2022.0	.0

<<<<<< Cross Section: 43.93: (FN = WASHT.O) >>>>>>

Q1= 12760 WS1= 1849.93
Q2= 12760 WS2= 1849.93

Manning-n's: n-lob = .04 n-ch = .035 n-rob = .04

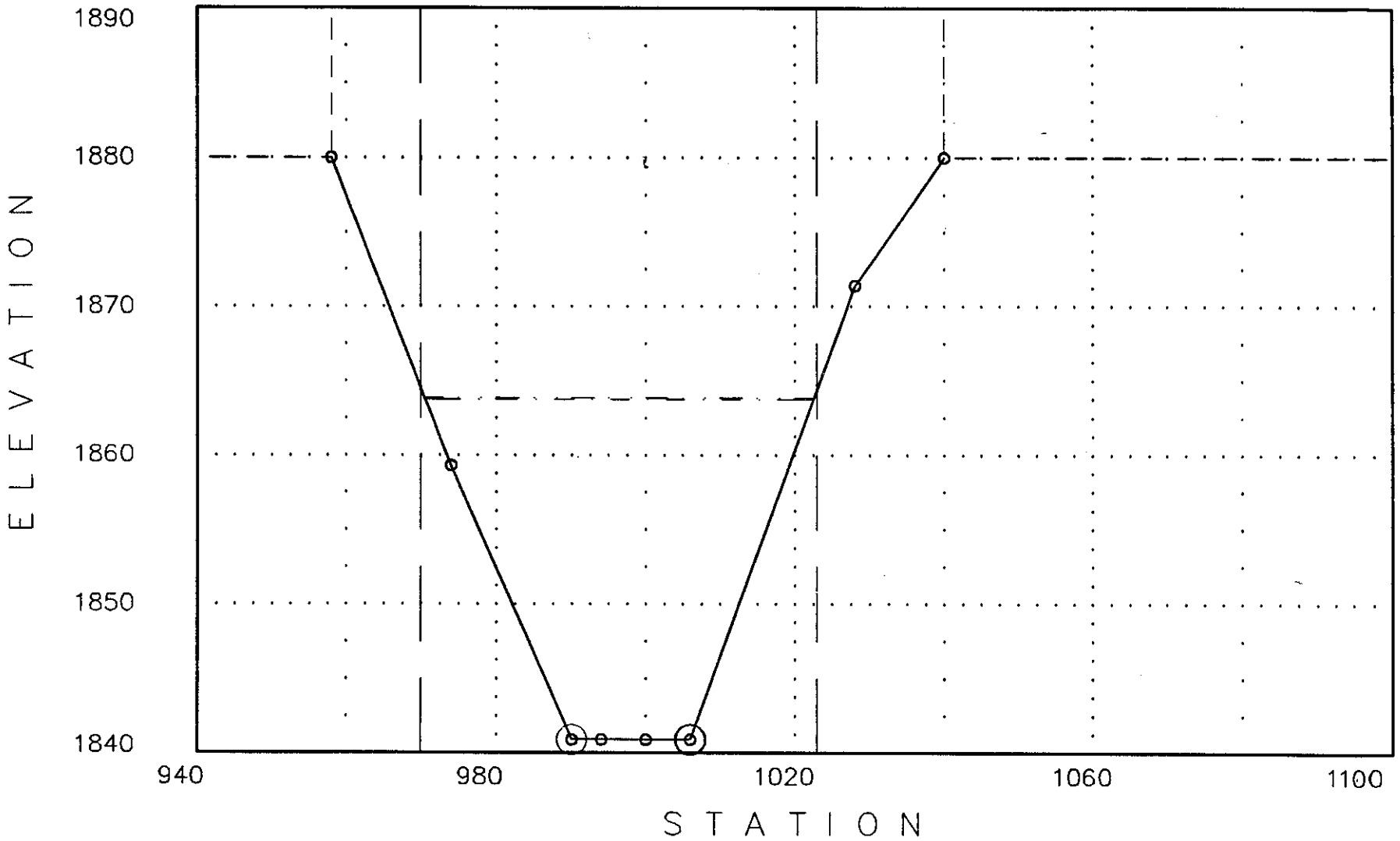


08-20-1992

<<<<<< Cross Section: .03: (FN = WASHT.0) >>>>>>

Q1= 12760 WS1= 1863.77
Q2= 12760 WS2= 1863.87

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

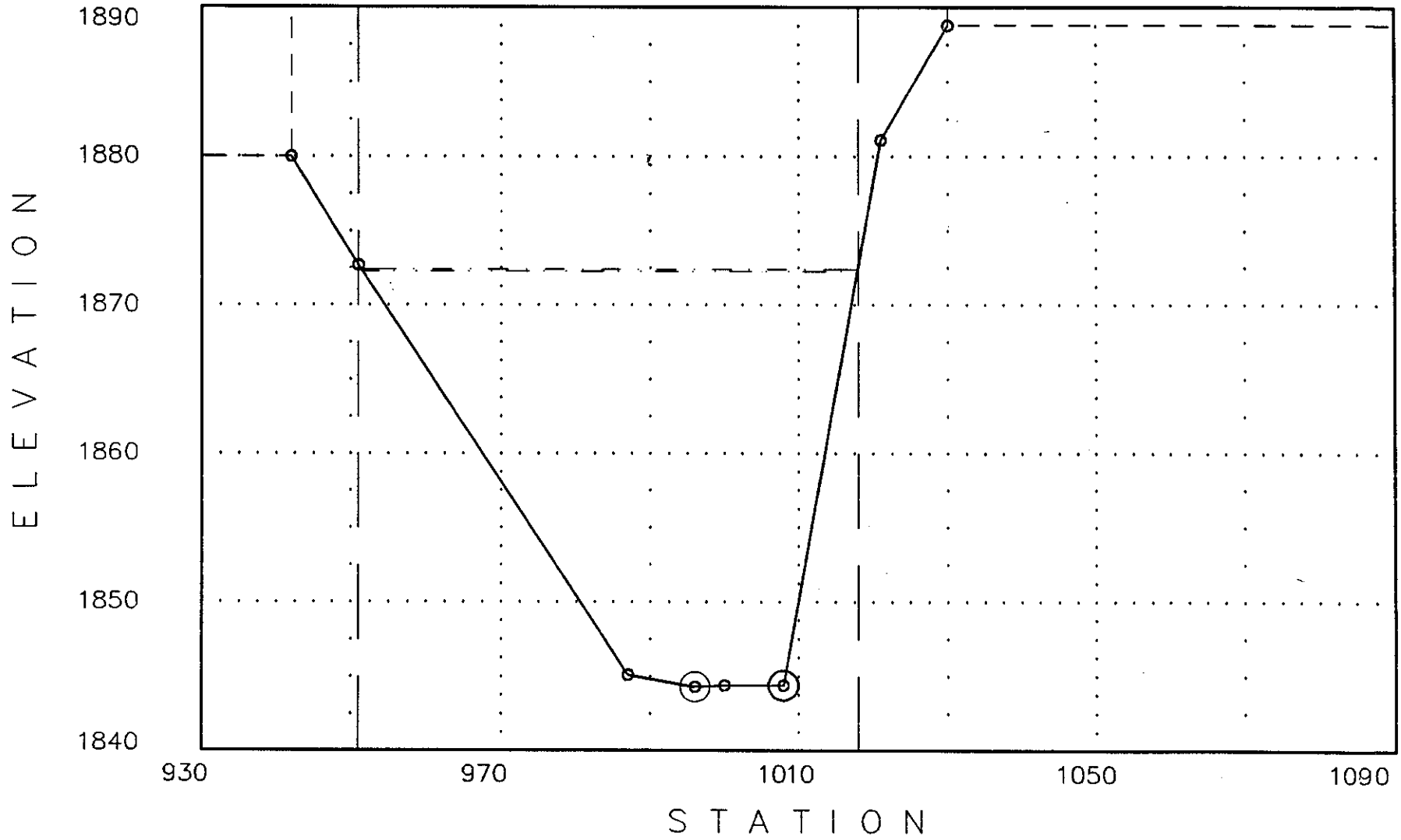


08-20-1992

<<<<<< Cross Section: .067: (FN = WASHT.O) >>>>>>

Q1= 12760 WS1= 1872.4
Q2= 12760 WS2= 1872.27

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06



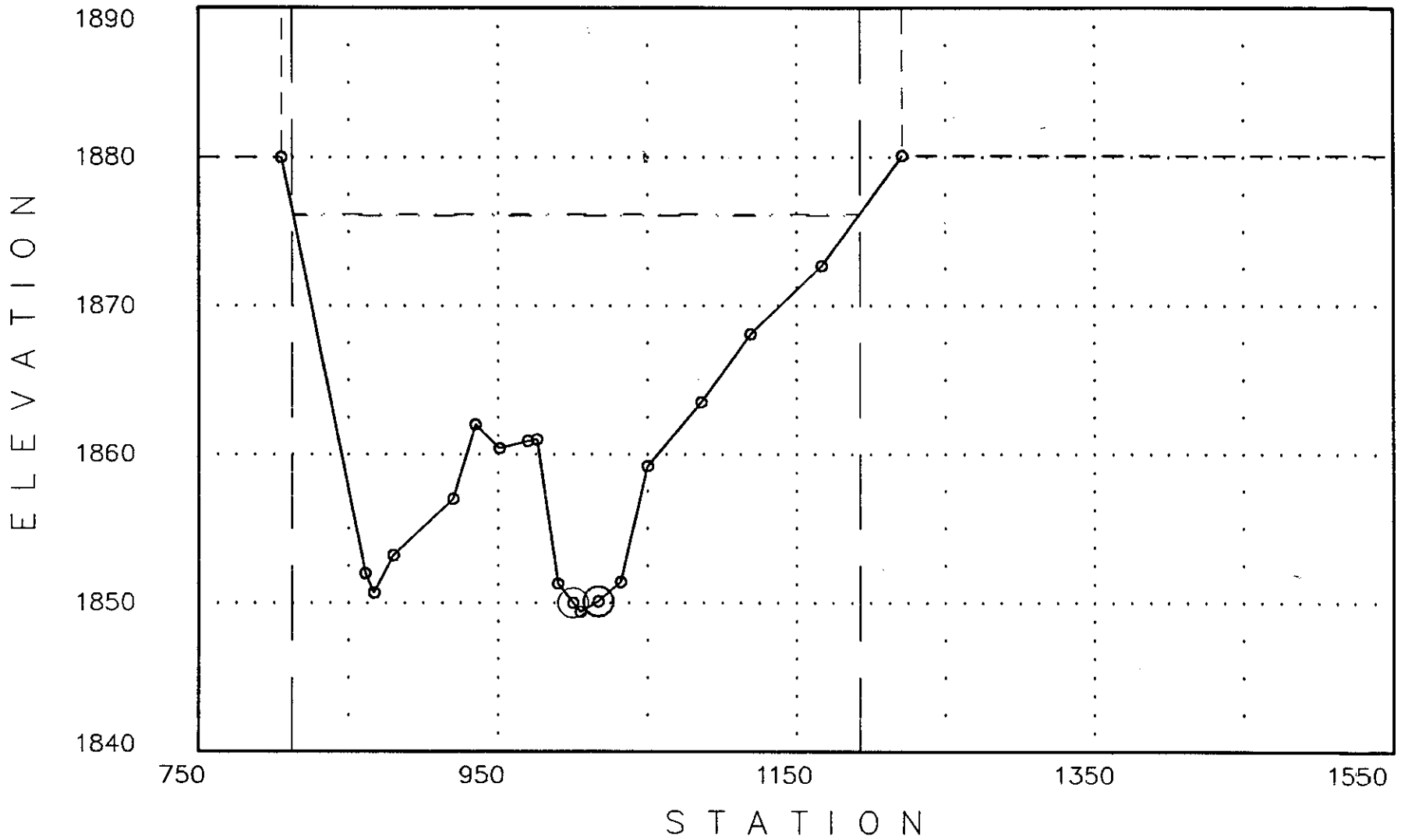
08-20-1992

<<<<<< Cross Section: .107: (FN = WASHT.O) >>>>>>

Q1= 12760 WS1= 1876.17

Q2= 12760 WS2= 1876.08

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

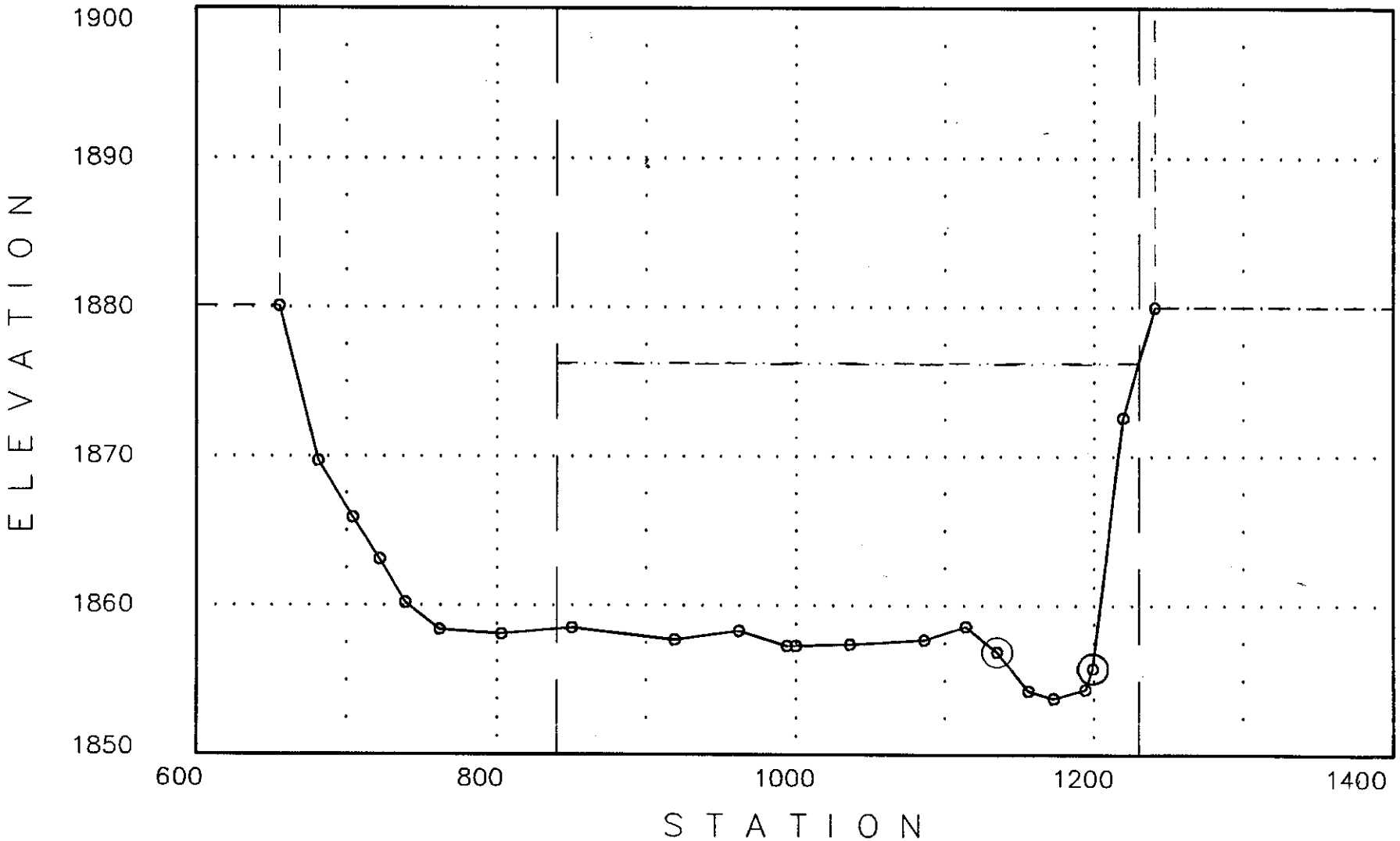


08-20-1992

<<<<<< Cross Section: .208: (FN = WASHT.0) >>>>>>

Q1= 12881 WS1= 1876.27
Q2= 12881 WS2= 1876.19

Manning-n's: n-lob = .07 n-ch = .035 n-rob = .07

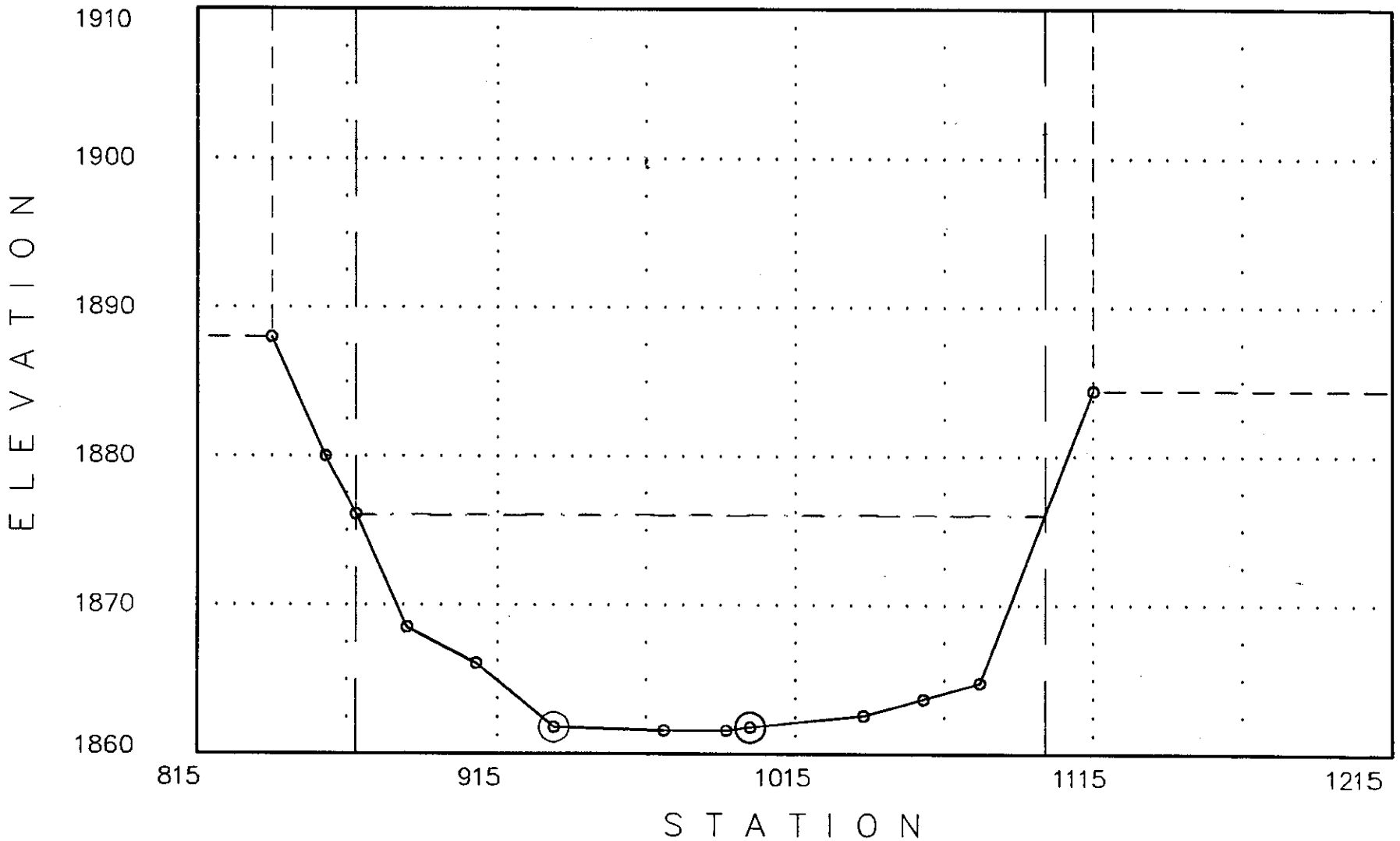


08-20-1992

<<<<<< Cross Section: .326: (FN = WASHT.O) >>>>>>

Q1= 12881 WS1= 1876.09
Q2= 12881 WS2= 1876.01

Manning-n's: n-lob = .07 n-ch = .035 n-rob = .06

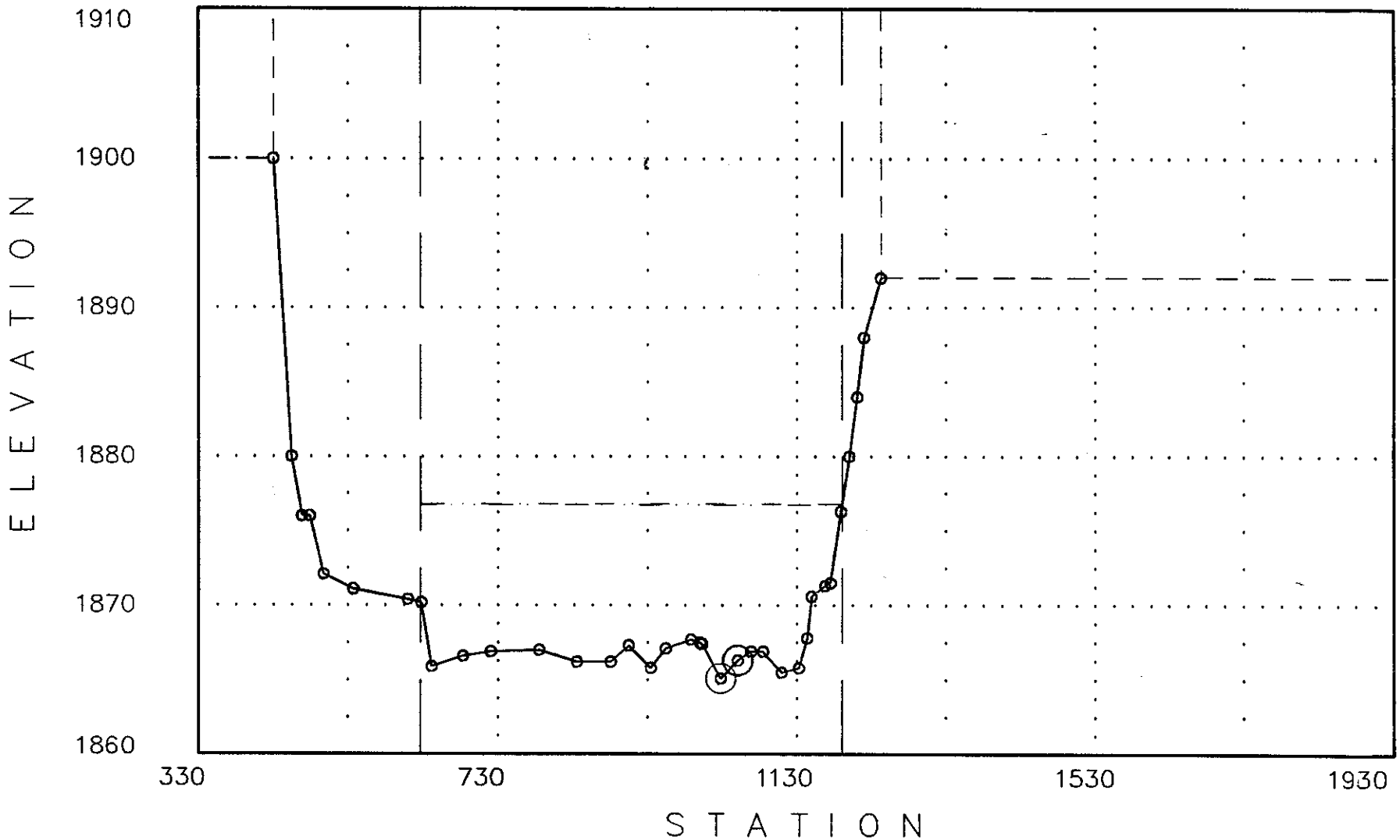


08-20-1992

<<<<<< Cross Section: .405: (FN = WASHT.O) >>>>>>

Q1= 13001 WS1= 1876.82
Q2= 13001 WS2= 1876.75

Manning-n's: n-lob = .07 n-ch = .035 n-rob = .06

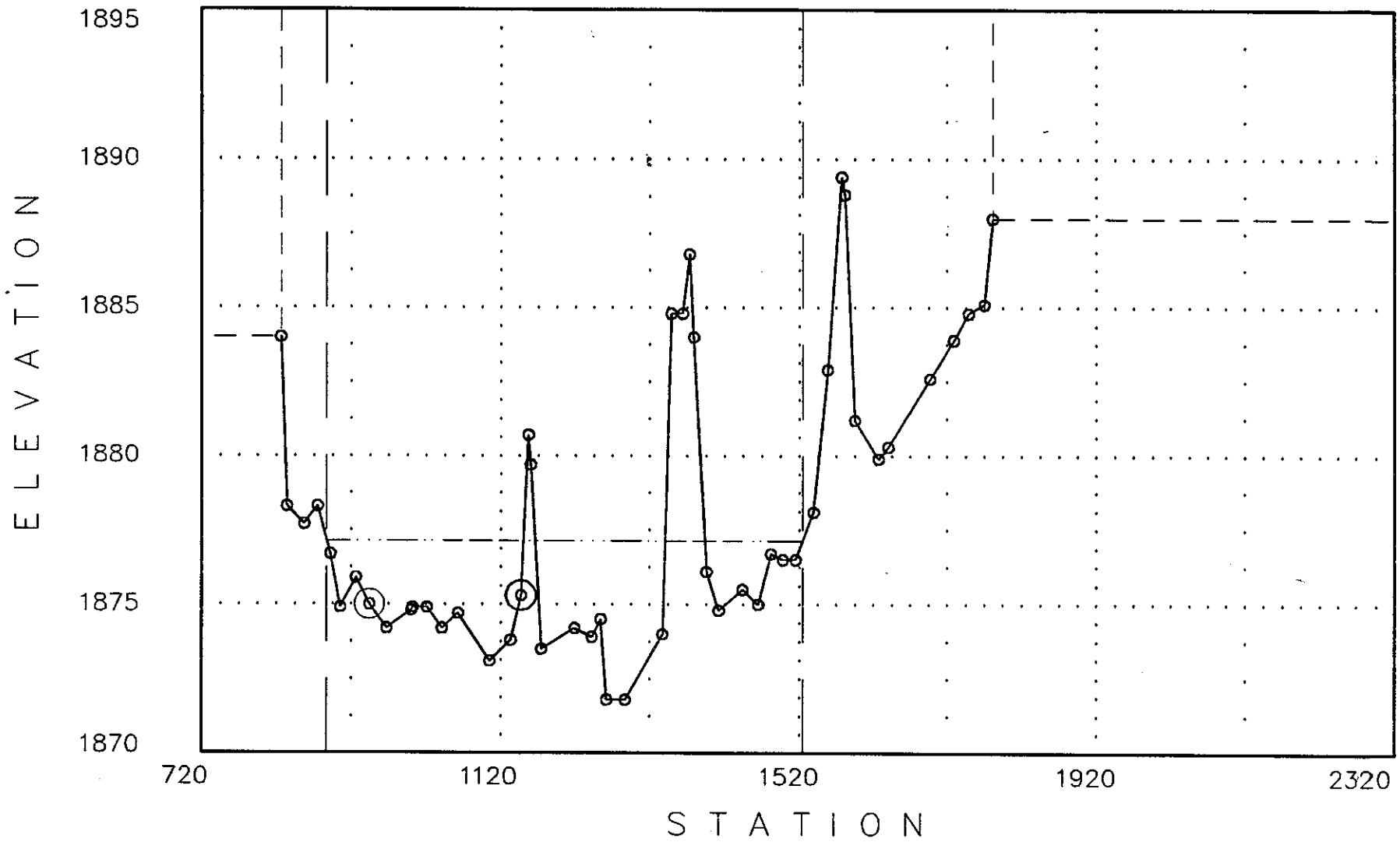


08-20-1992

<<<<<< Cross Section: .511: (FN = WASHT.O) >>>>>>

Q1= 13001 WS1= 1877.13
Q2= 13001 WS2= 1877.13

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065



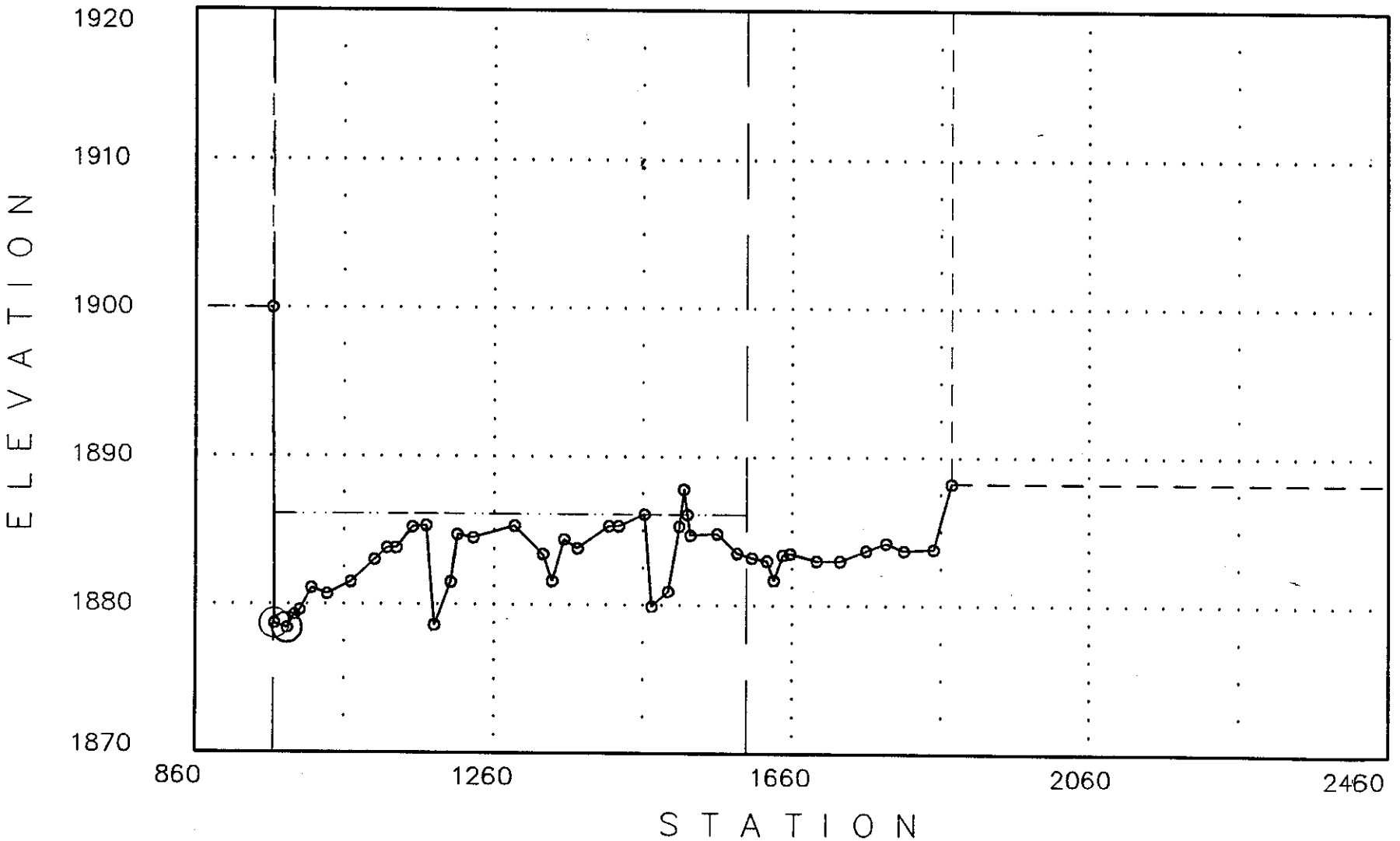
08-20-1992

<<<<<< Cross Section: .617: (FN = WASHT.0) >>>>>>

Q1= 13001 WS1= 1886.11

Q2= 13001 WS2= 1886.12

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

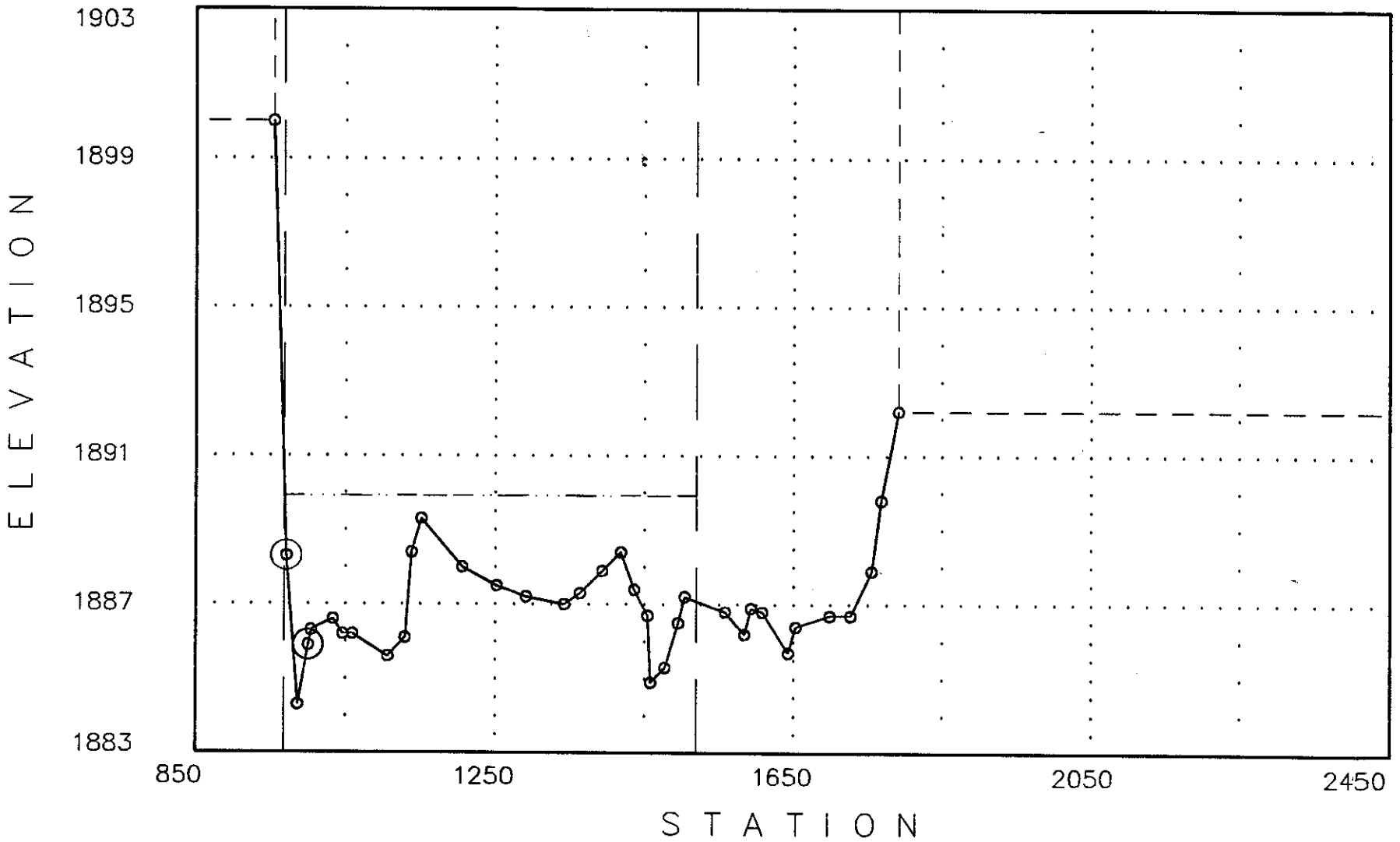


08-20-1992

<<<<<< Cross Section: .685: (FN = WASHT.O) >>>>>>

Q1= 13122 WS1= 1889.92
Q2= 13122 WS2= 1889.91

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

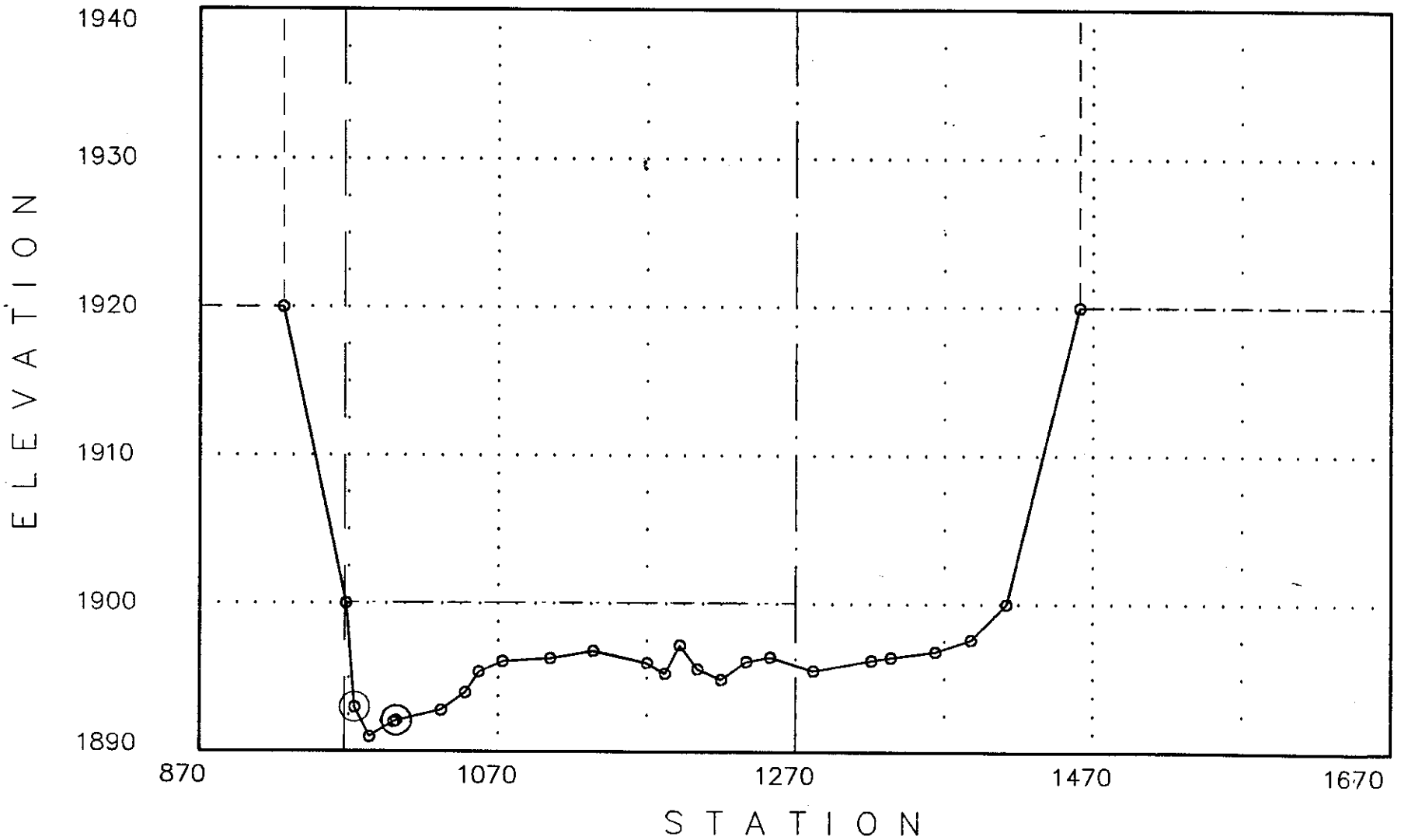


08-20-1992

<<<<<< Cross Section: .768: (FN = WASHT.O) >>>>>>

Q1= 13122 WS1= 1900.06
Q2= 13122 WS2= 1900.06

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

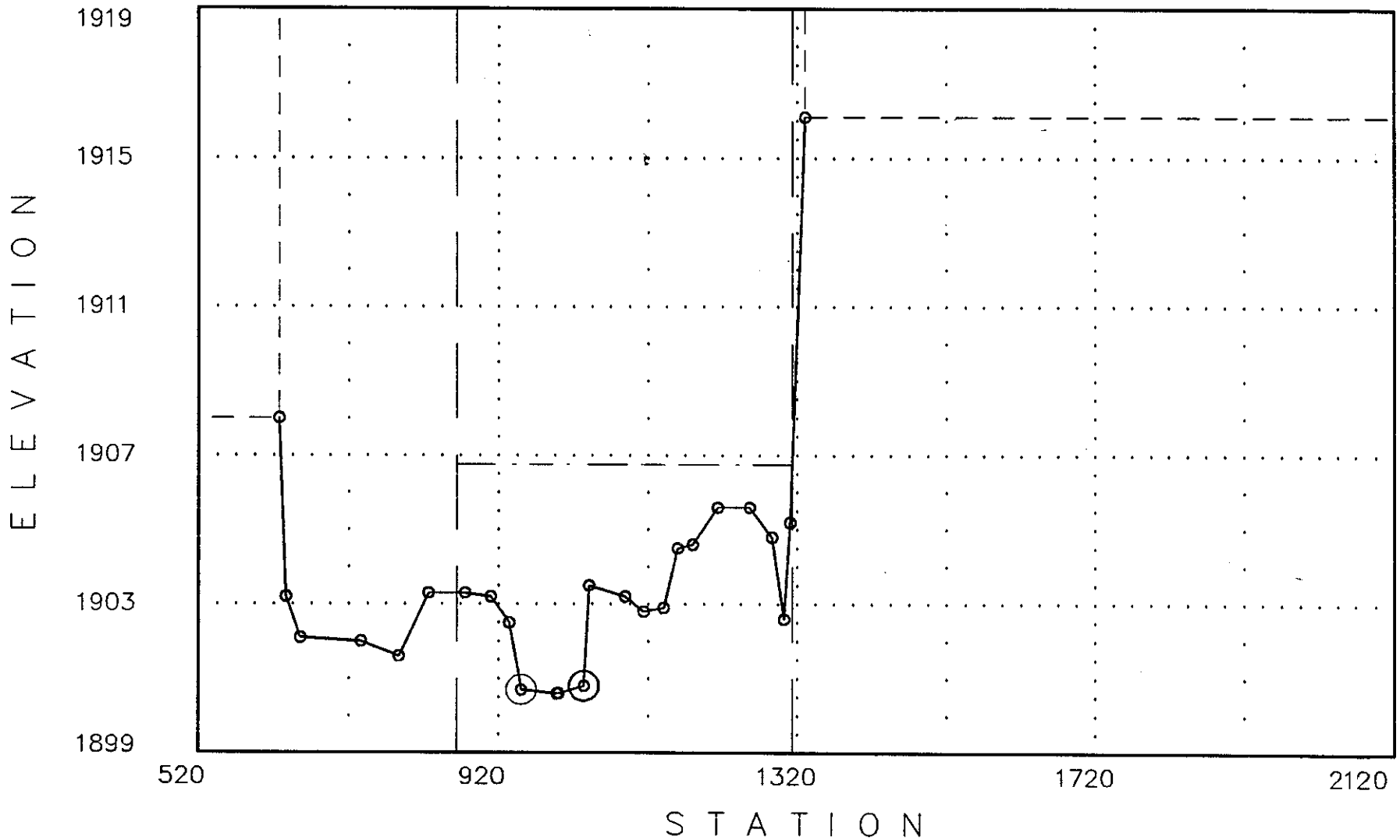


08-20-1992

<<<<<< Cross Section: .882: (FN = WASHT.O) >>>>>>

Q1= 13122 WS1= 1906.76
Q2= 13122 WS2= 1906.76

Manning-n's: n-lob = .05 n-ch = .035 n-rob = .05

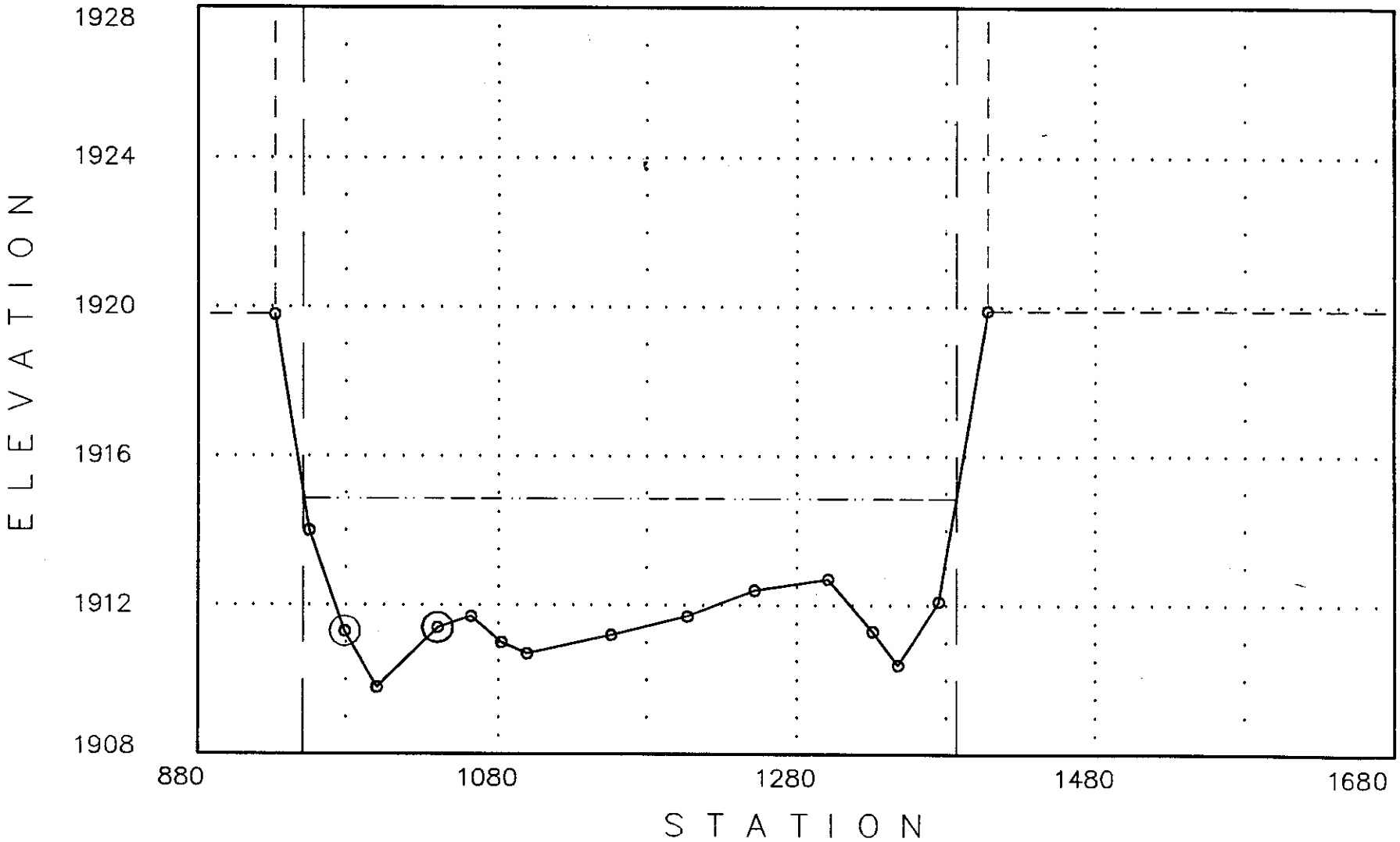


08-20-1992

<<<<<< Cross Section: .971: (FN = WASHT.O) >>>>>>

Q1= 13242 WS1= 1914.86
Q2= 13242 WS2= 1914.86

Manning-n's: n-lob = .05 n-ch = .035 n-rob = .05

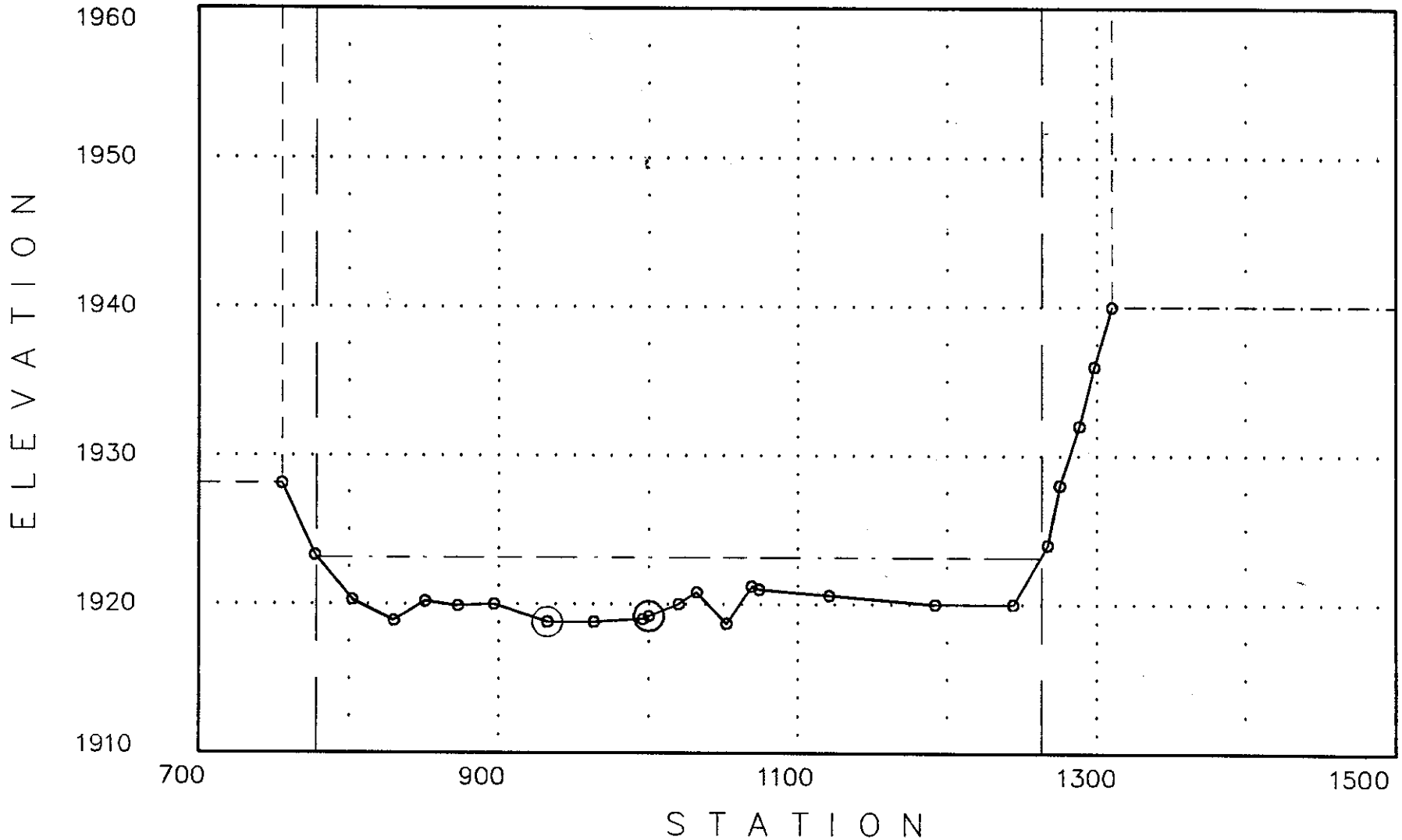


08-20-1992

<<<<<< Cross Section: 1.061: (FN = WASHT.O) >>>>>>

Q1= 13242 WS1= 1923.14
Q2= 13242 WS2= 1923.14

Manning-n's: n-lob = .05 n-ch = .035 n-rob = .05

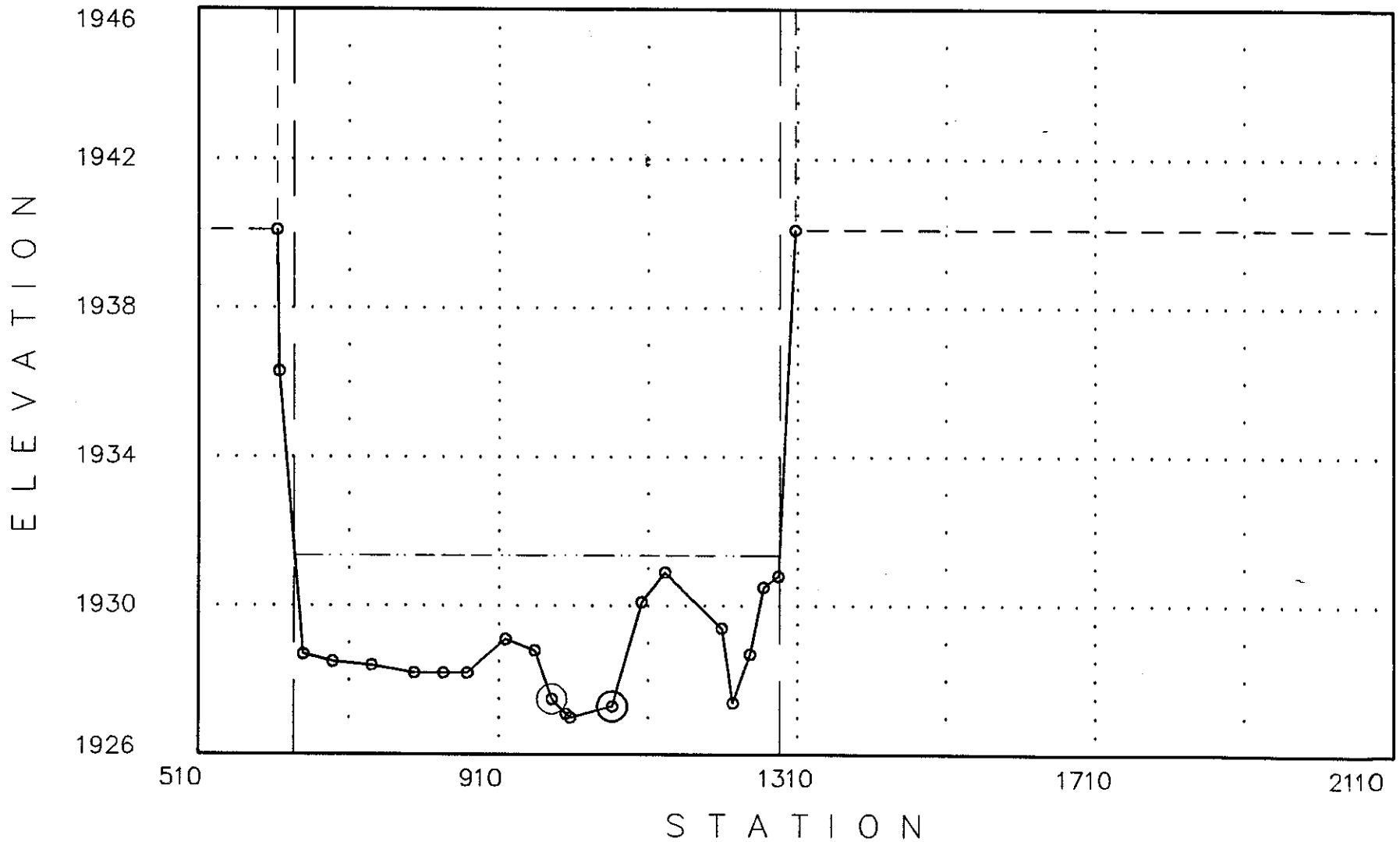


08-20-1992

<<<<<< Cross Section: 1.159: (FN = WASHT.O) >>>>>>

Q1= 13242 WS1= 1931.35
Q2= 13242 WS2= 1931.35

Manning-n's: n-lob = .05 n-ch = .035 n-rob = .05

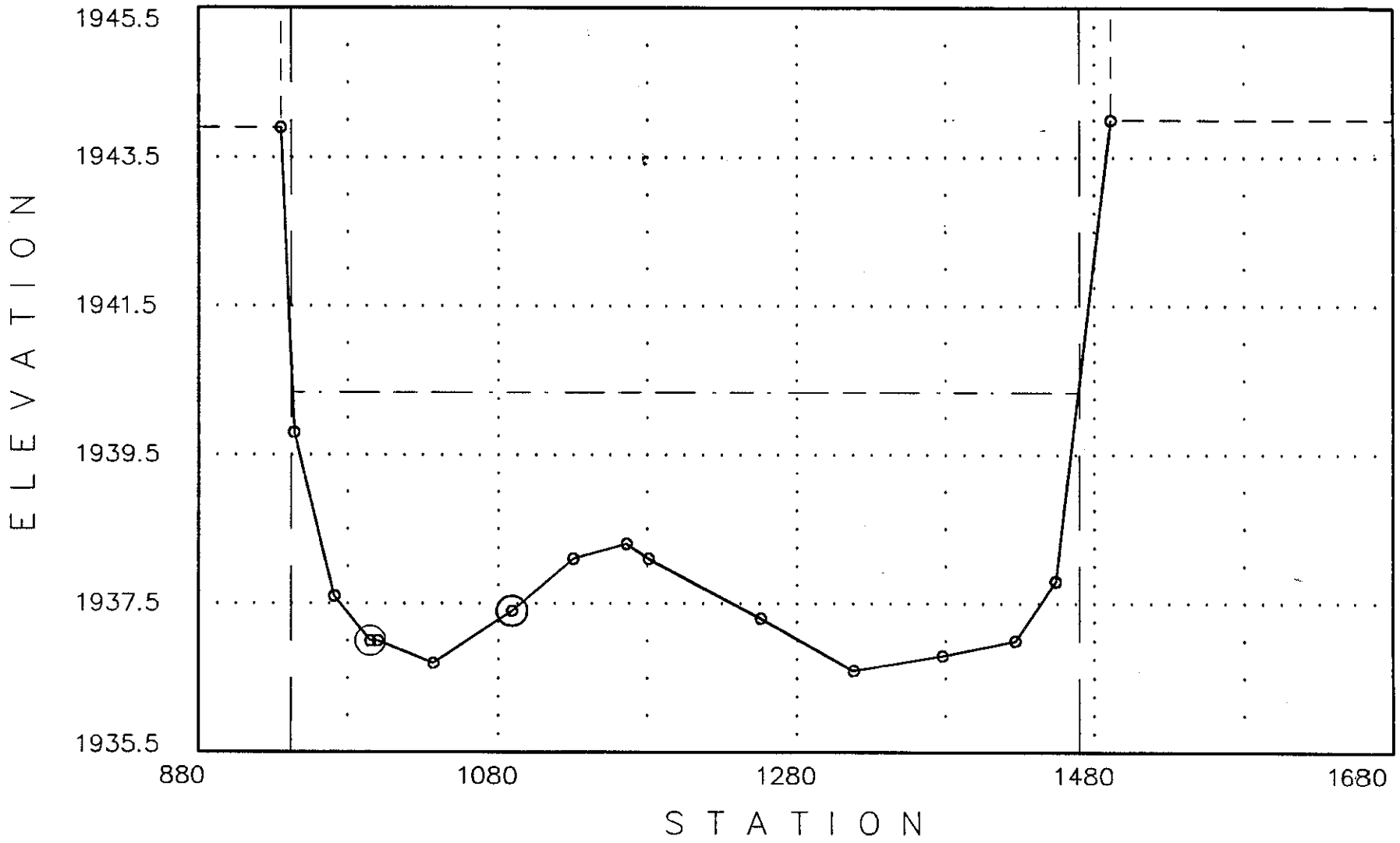


08-20-1992

<<<<<< Cross Section: 1.258: (FN = WASHT.O) >>>>>>

Q1= 13132 WS1= 1940.34
Q2= 13132 WS2= 1940.34

Manning-n's: n-lob = .06 n-ch = .035 n-rob = .06

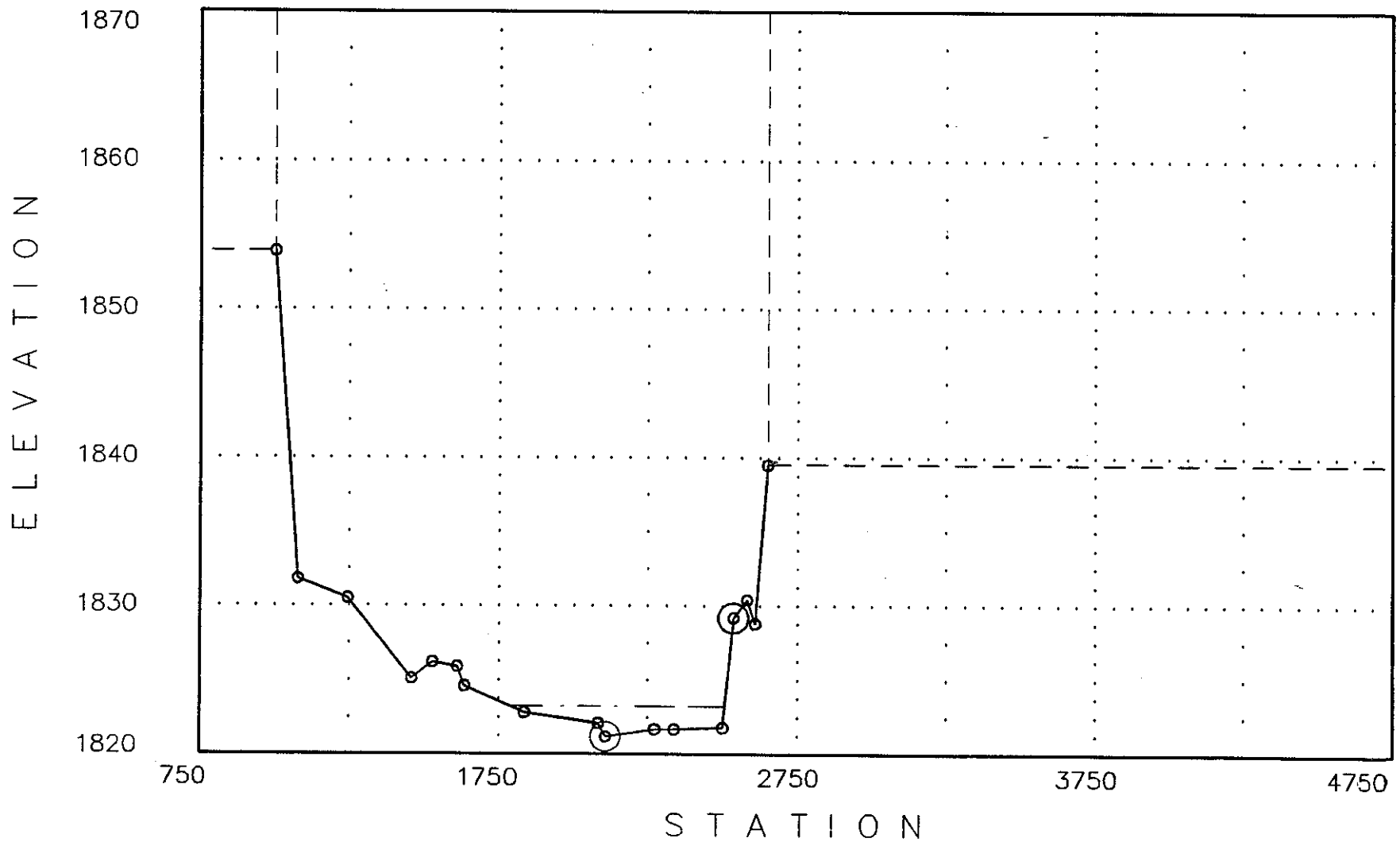


08-20-1992

<<<<<< Cross Section: 43: (FN = WASHV.O) >>>>>>

Q1= 4447 WS1= 1823.24
Q2= 4447 WS2= 1823.24

Manning-n's: n-lob = .045 n-ch = .03 n-rob = .07

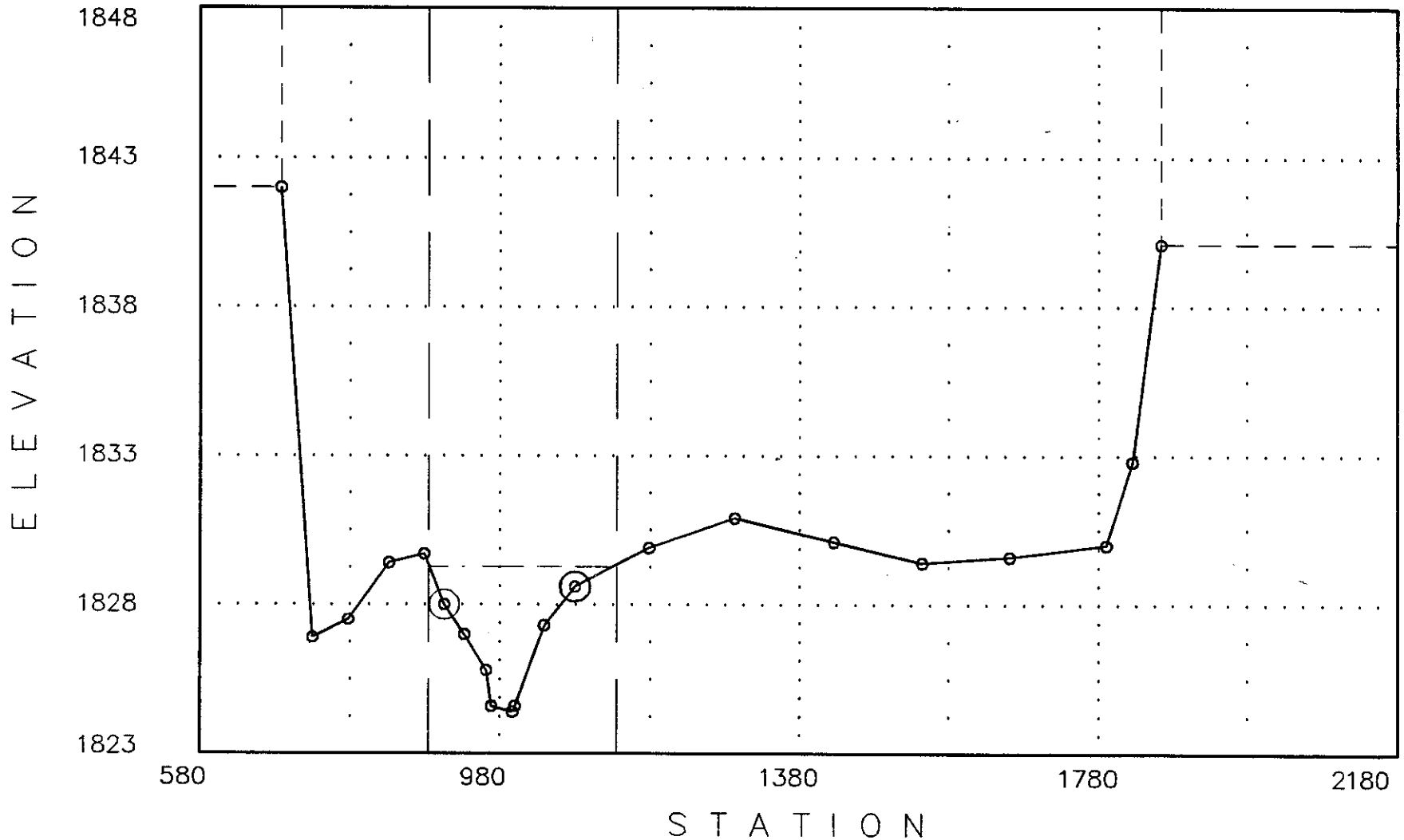


08-20-1992

<<<<<< Cross Section: .185: (FN = WASHV.0) >>>>>>

Q1= 4447 WS1= 1829.27
Q2= 4447 WS2= 1829.27

Manning-n's: n-lob = .06 n-ch = .045 n-rob = .065

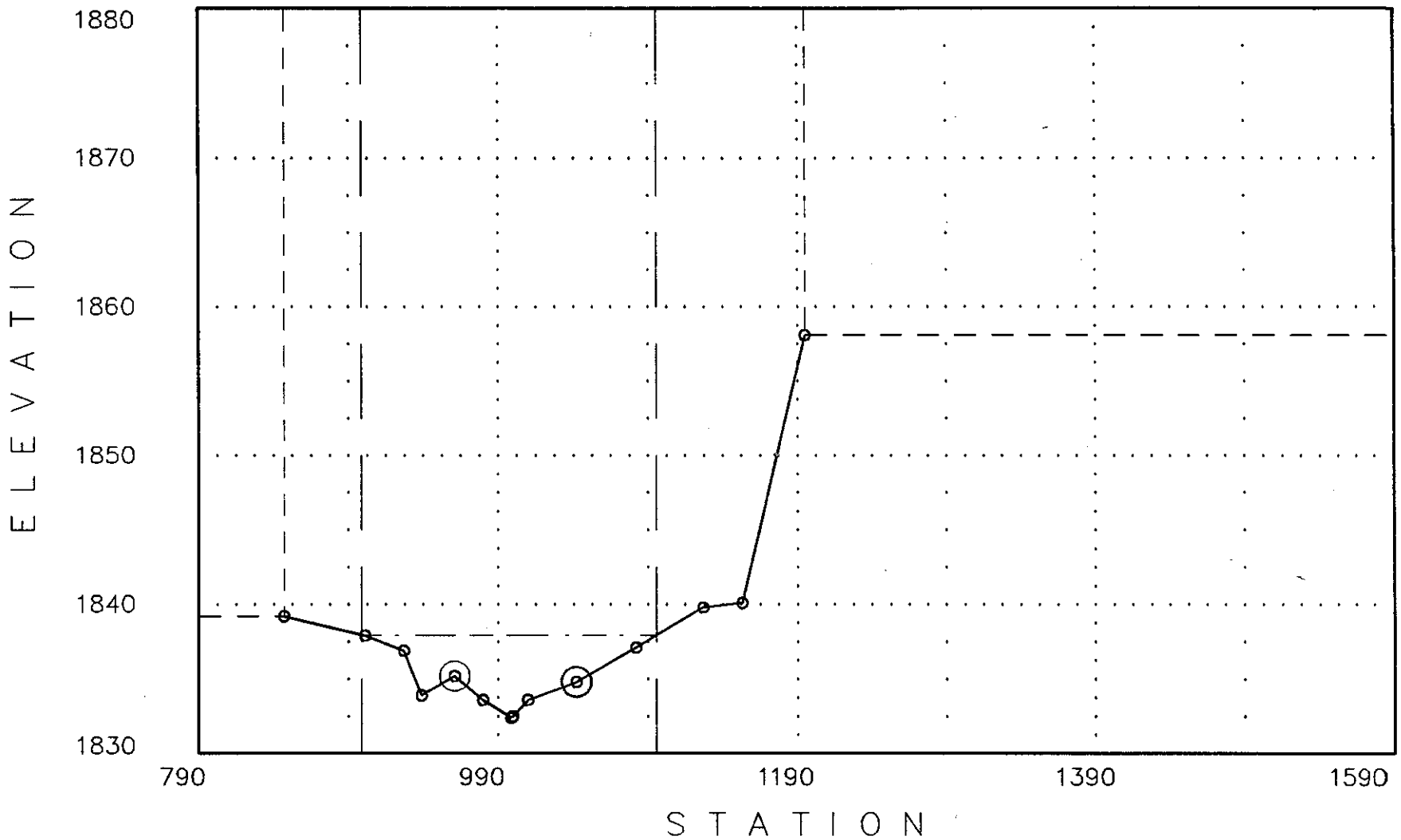


08-20-1992

<<<<<< Cross Section: .286: (FN = WASHV.O) >>>>>>

Q1= 4447 WS1= 1837.93
Q2= 4447 WS2= 1837.94

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

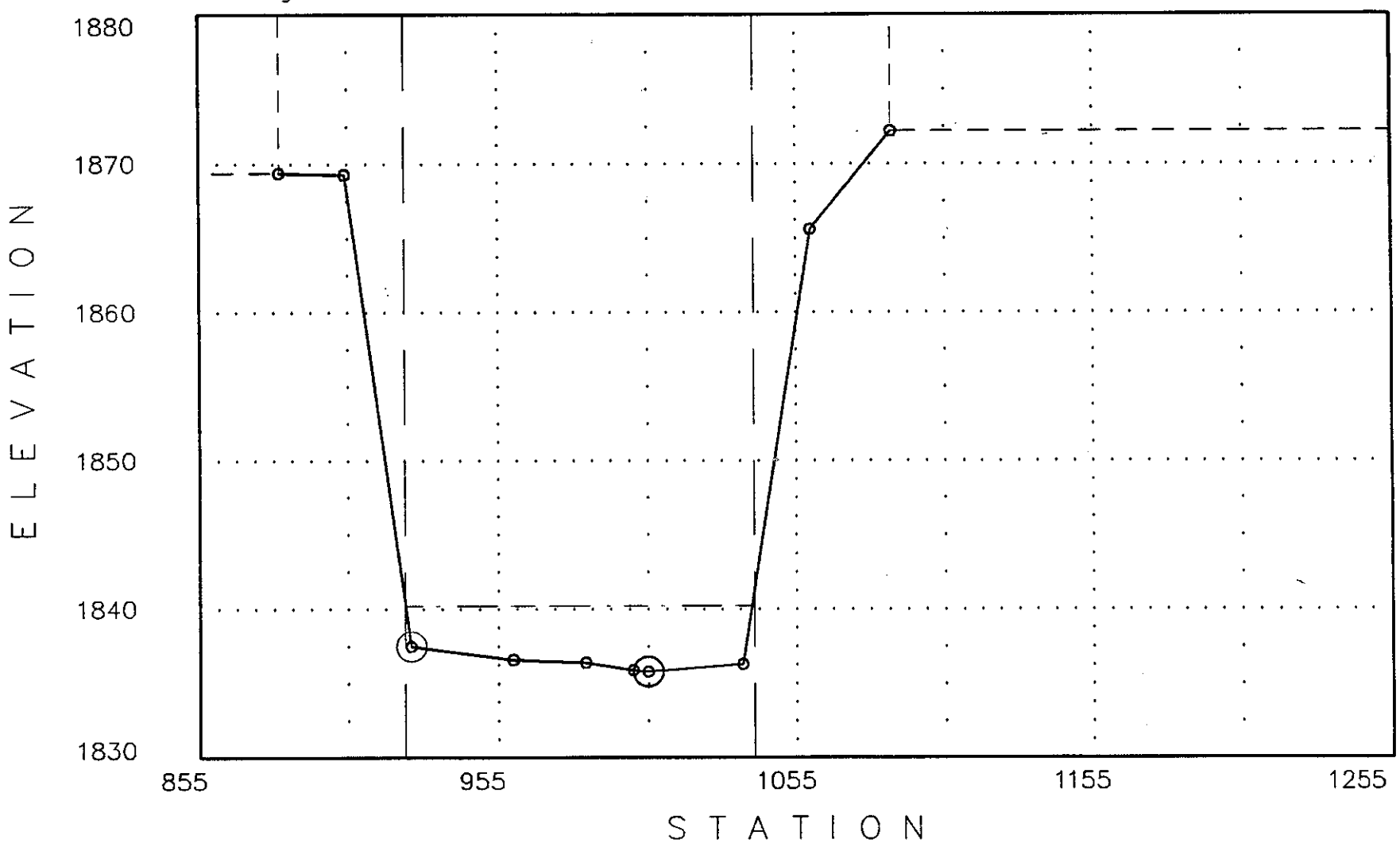


08-20-1992

<<<<<< Cross Section: .326: (FN = WASHV.0) >>>>>>

Q1= 4447 WS1= 1840.25
Q2= 4447 WS2= 1840.25

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

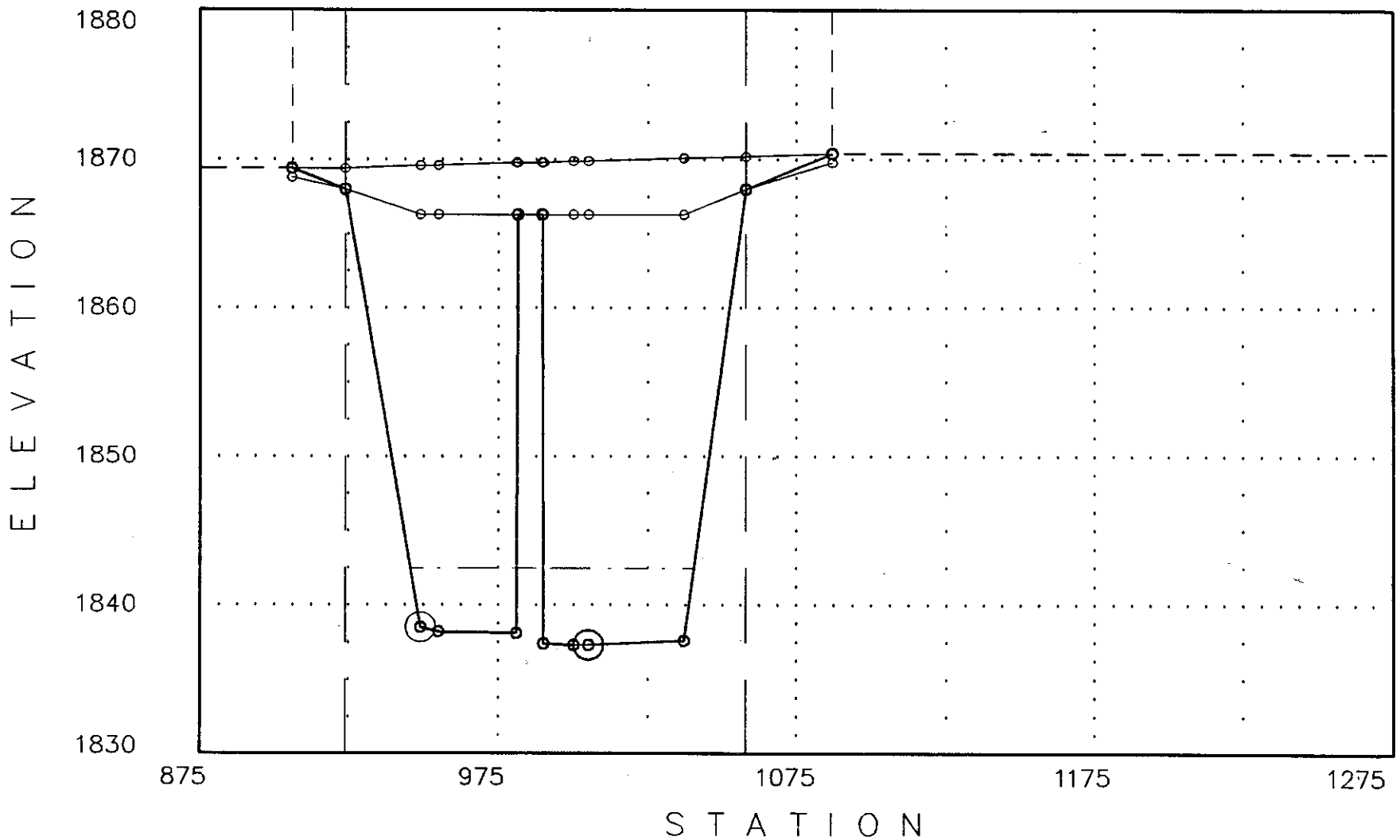


08-20-1992

<<<<<< Cross Section: .334: (FN = WASHV.O) >>>>>>

Q1= 4402 WS1= 1842.46
Q2= 4402 WS2= 1842.46

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065 NORMAL BRIDGE

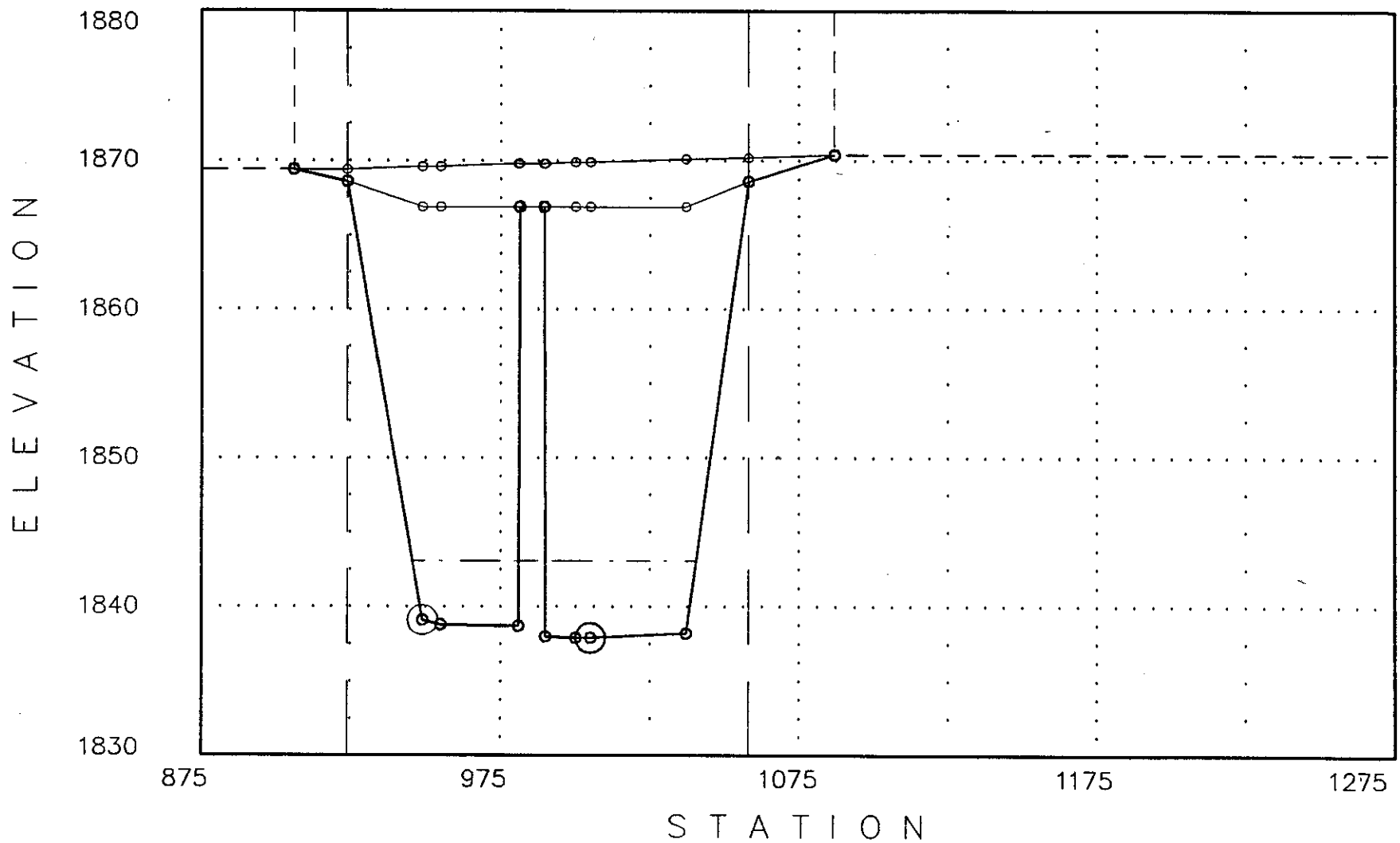


08-20-1992

<<<<<< Cross Section: .338: (FN = WASHV.O) >>>>>>

Q1= 4402 WS1= 1843.07
Q2= 4402 WS2= 1843.07

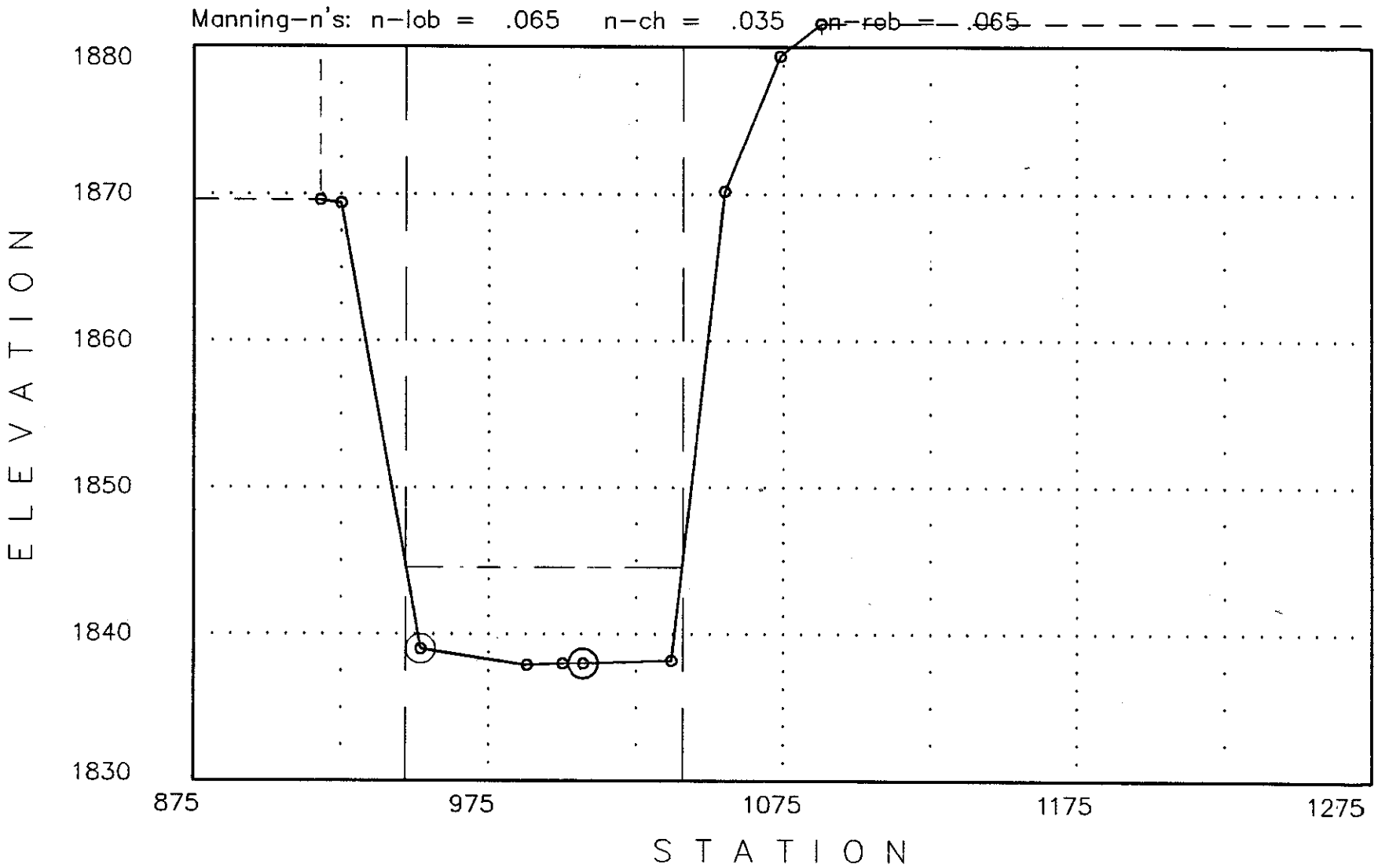
Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065



08-20-1992

<<<<<< Cross Section: .344: (FN = WASHV.O) >>>>>>

Q1= 4402 WS1= 1844.54
Q2= 4402 WS2= 1844.54



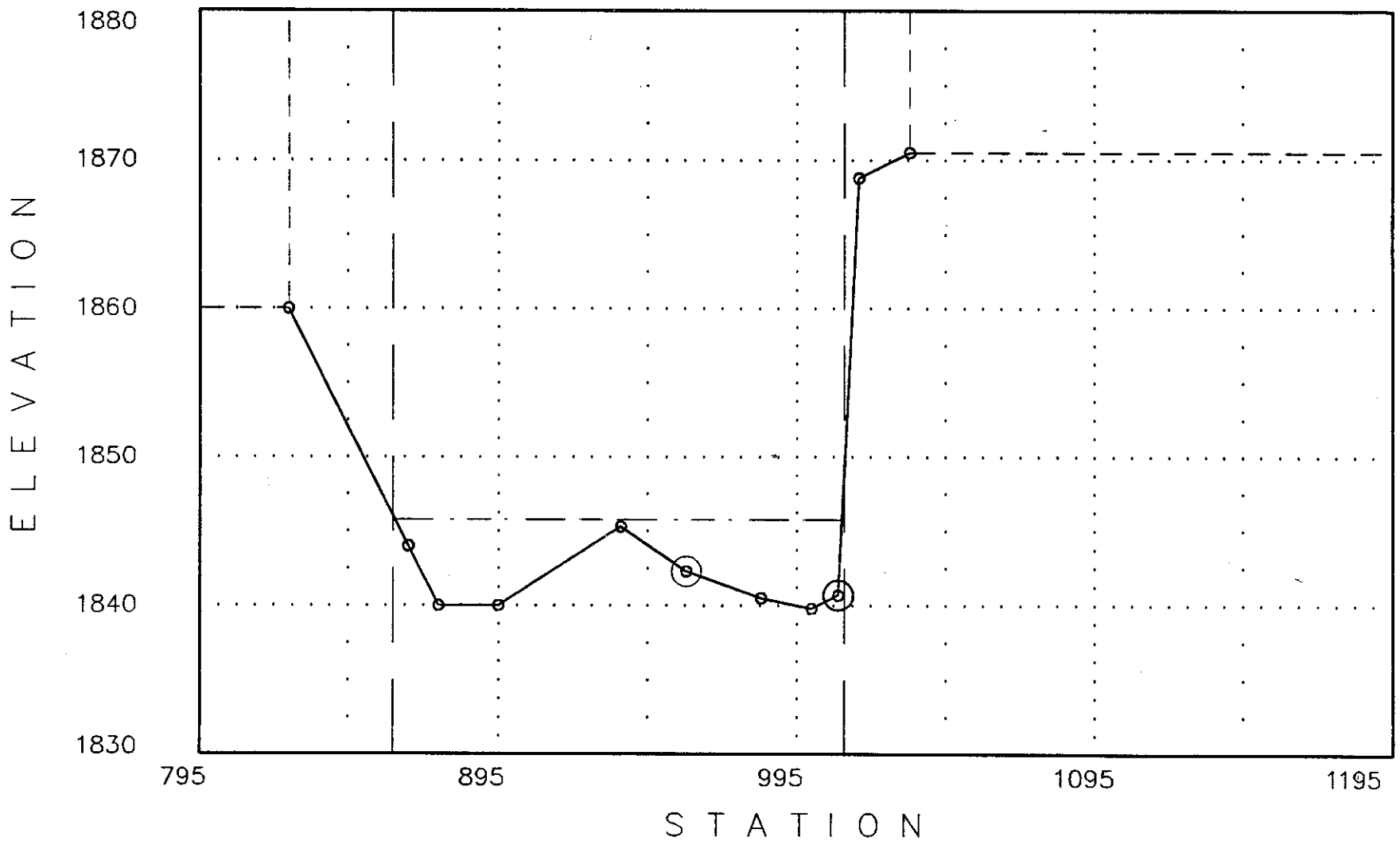
08-20-1992

<<<<<< Cross Section: .379: (FN = WASHV.O) >>>>>>

Q1= 4402 WS1= 1845.77

Q2= 4402 WS2= 1845.77

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

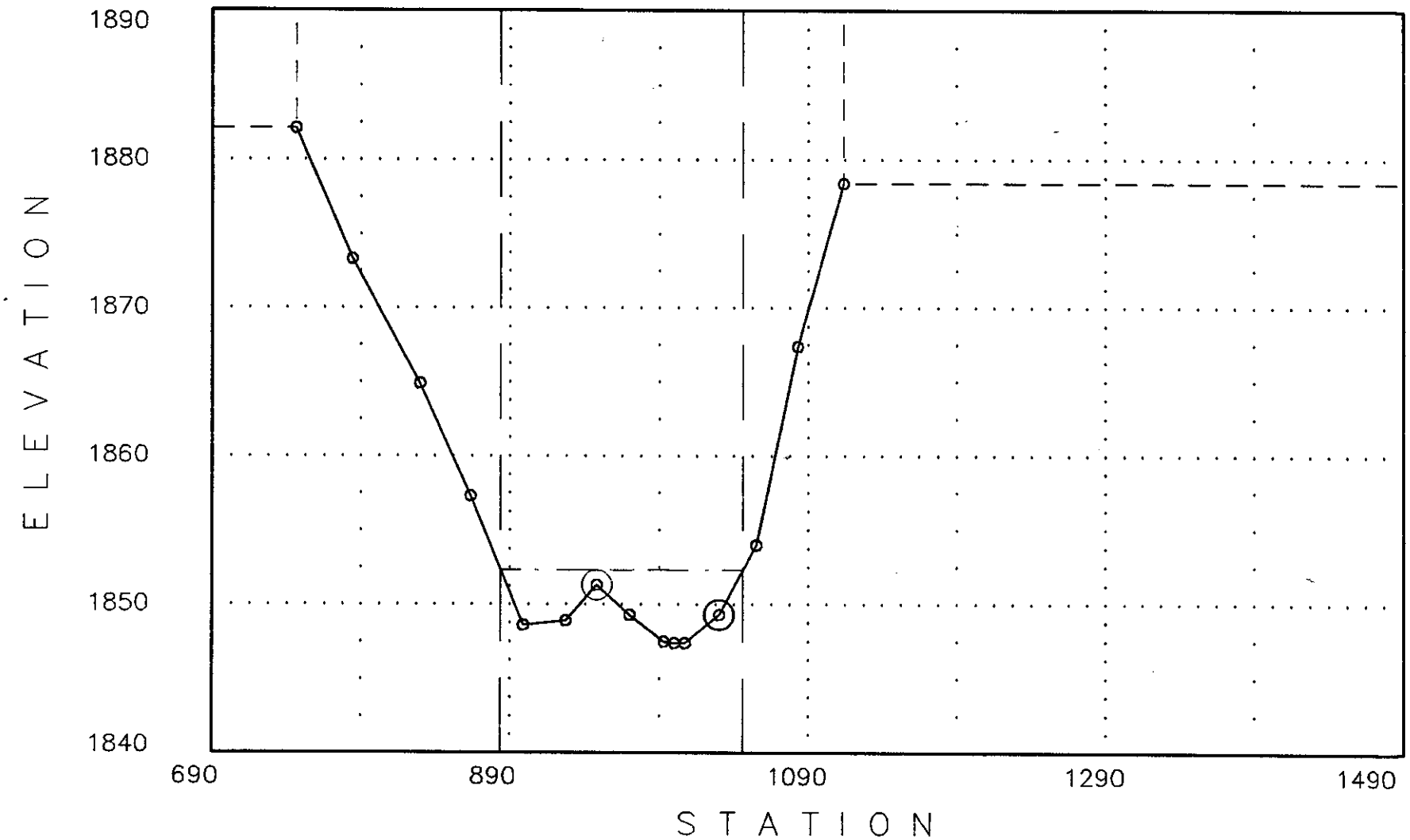


08-20-1992

<<<<<< Cross Section: .465: (FN = WASHV.0) >>>>>>

Q1= 4402 WS1= 1852.29
Q2= 4402 WS2= 1852.32

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

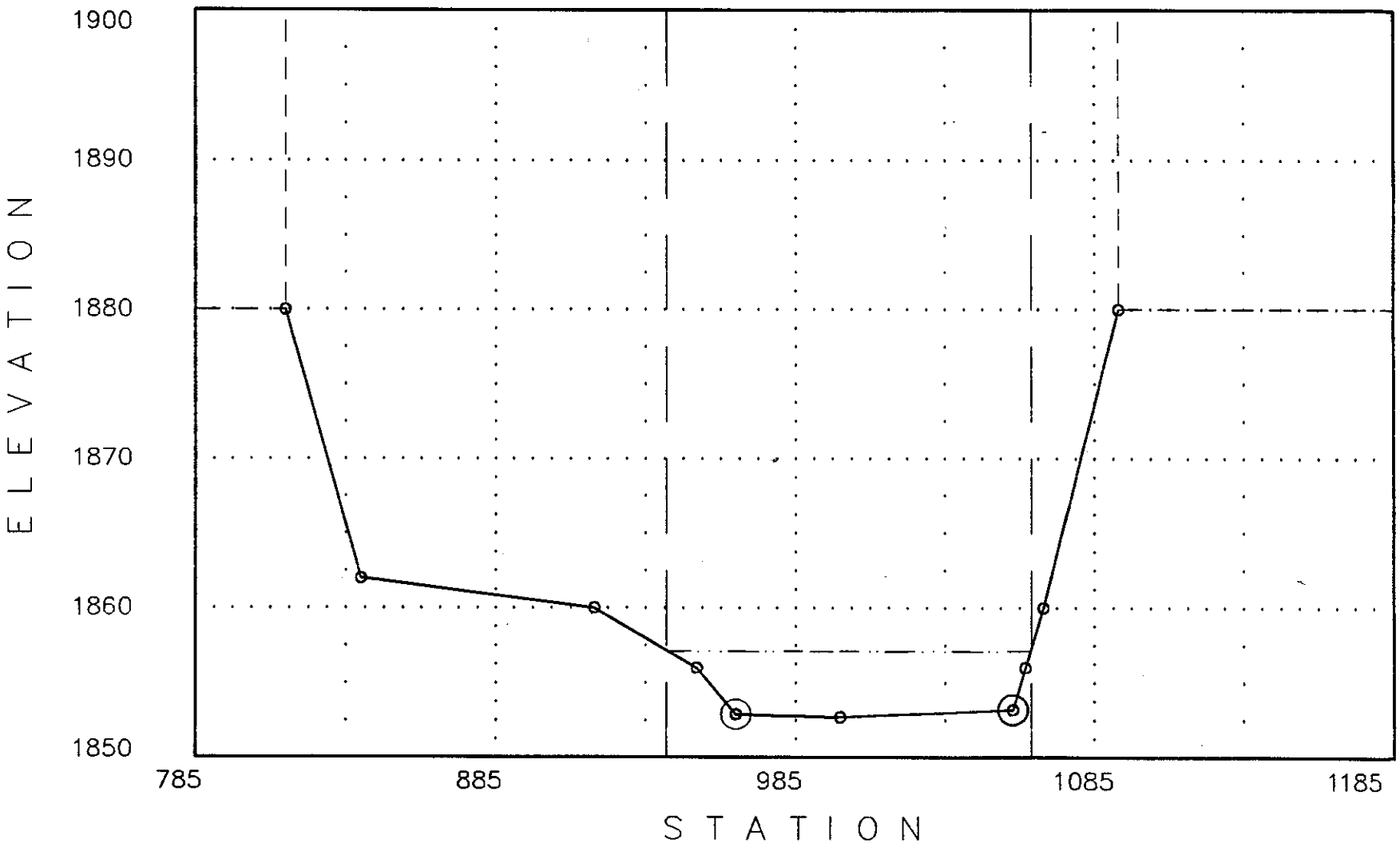


08-20-1992

<<<<<< Cross Section: .53: (FN = WASHV.0) >>>>>>

Q1= 4402 WS1= 1857.13
Q2= 4402 WS2= 1857.1

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

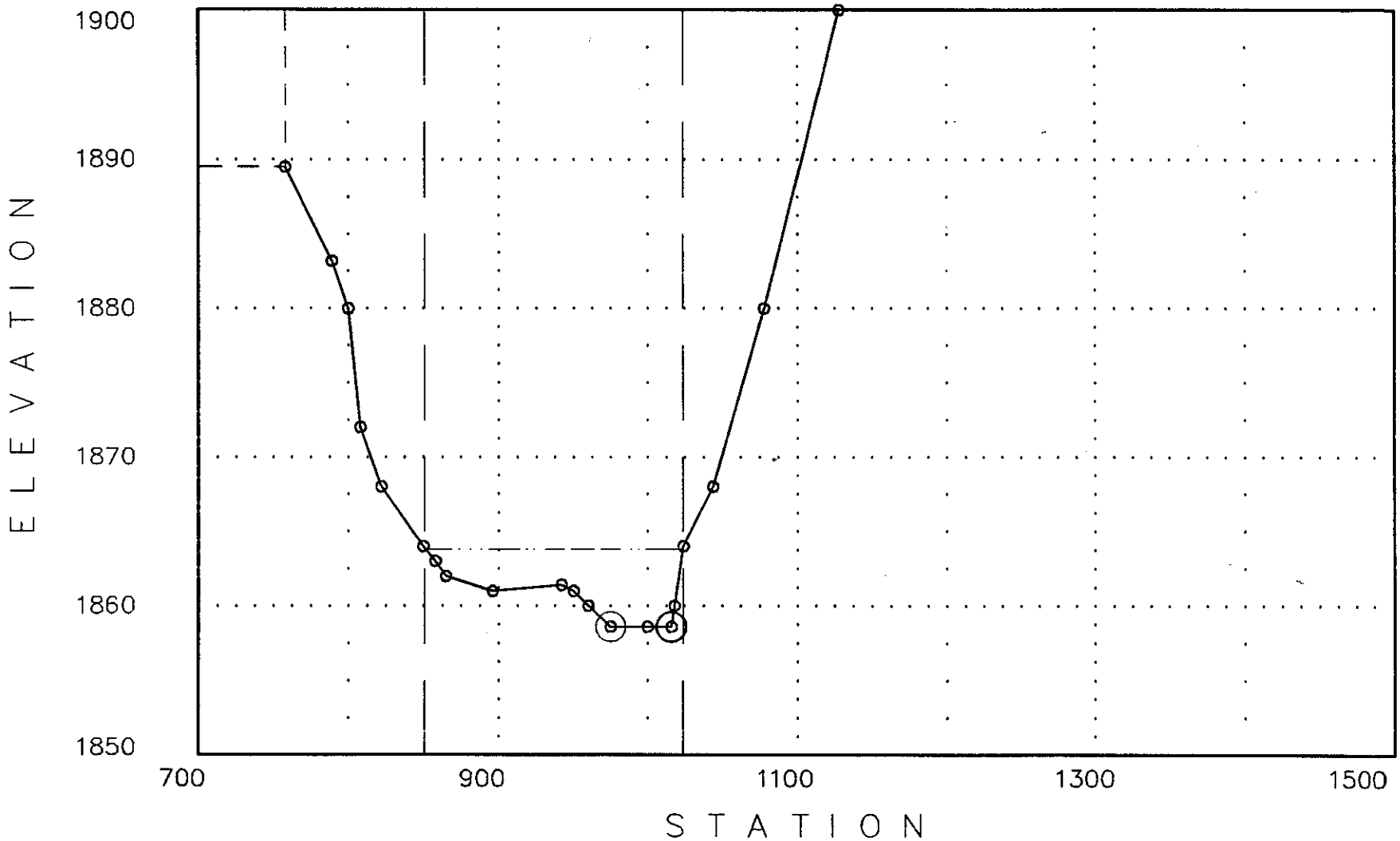


08-20-1992

<<<<<< Cross Section: .597: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1863.82
Q2= 4406 WS2= 1863.82

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

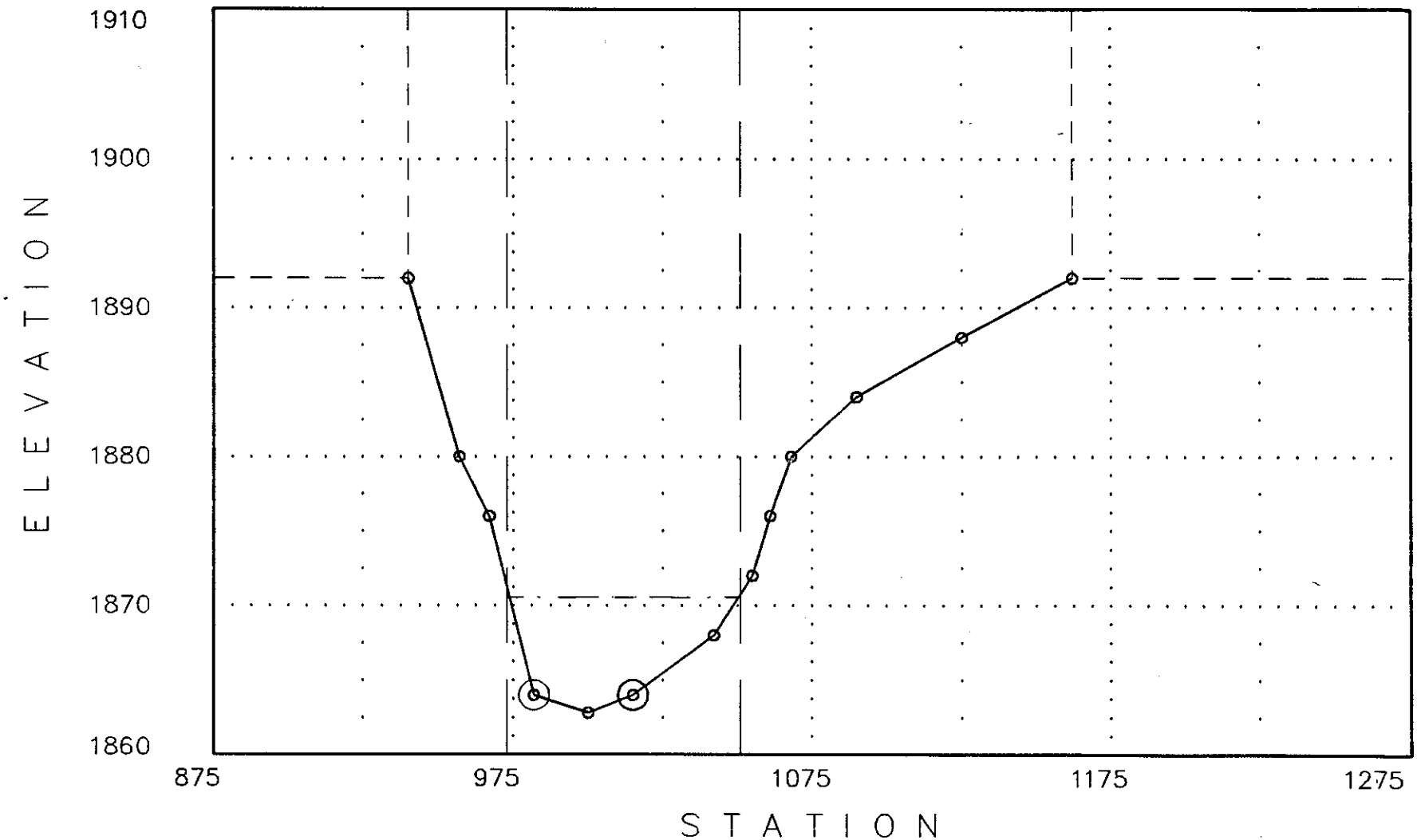


08-20-1992

<<<<<< Cross Section: .672: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1870.54
Q2= 4406 WS2= 1870.55

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065



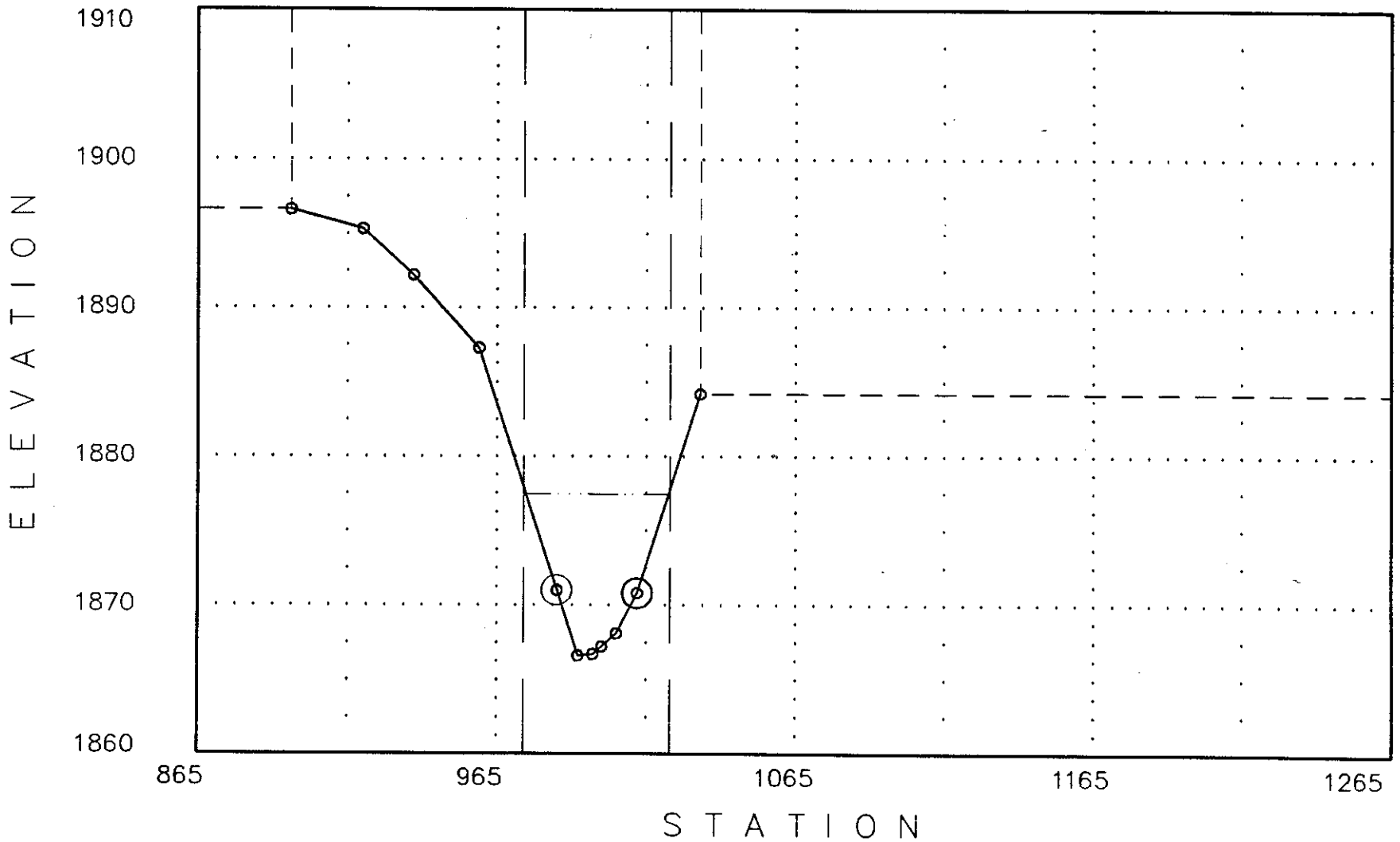
08-20-1992

<<<<<< Cross Section: .715: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1877.46

Q2= 4406 WS2= 1877.45

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

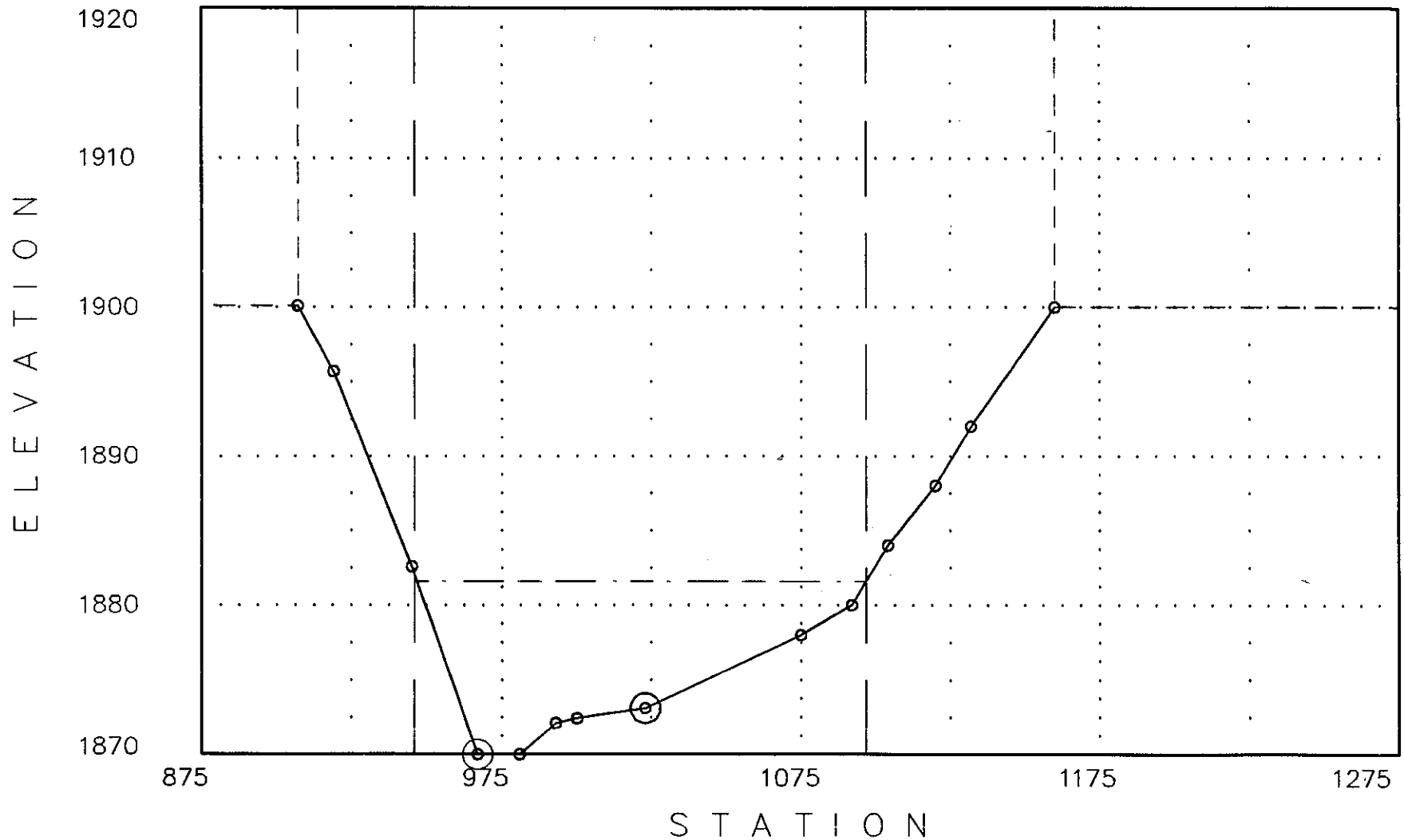


08-20-1992

<<<<<< Cross Section: .742: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1881.6
Q2= 4406 WS2= 1881.6

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

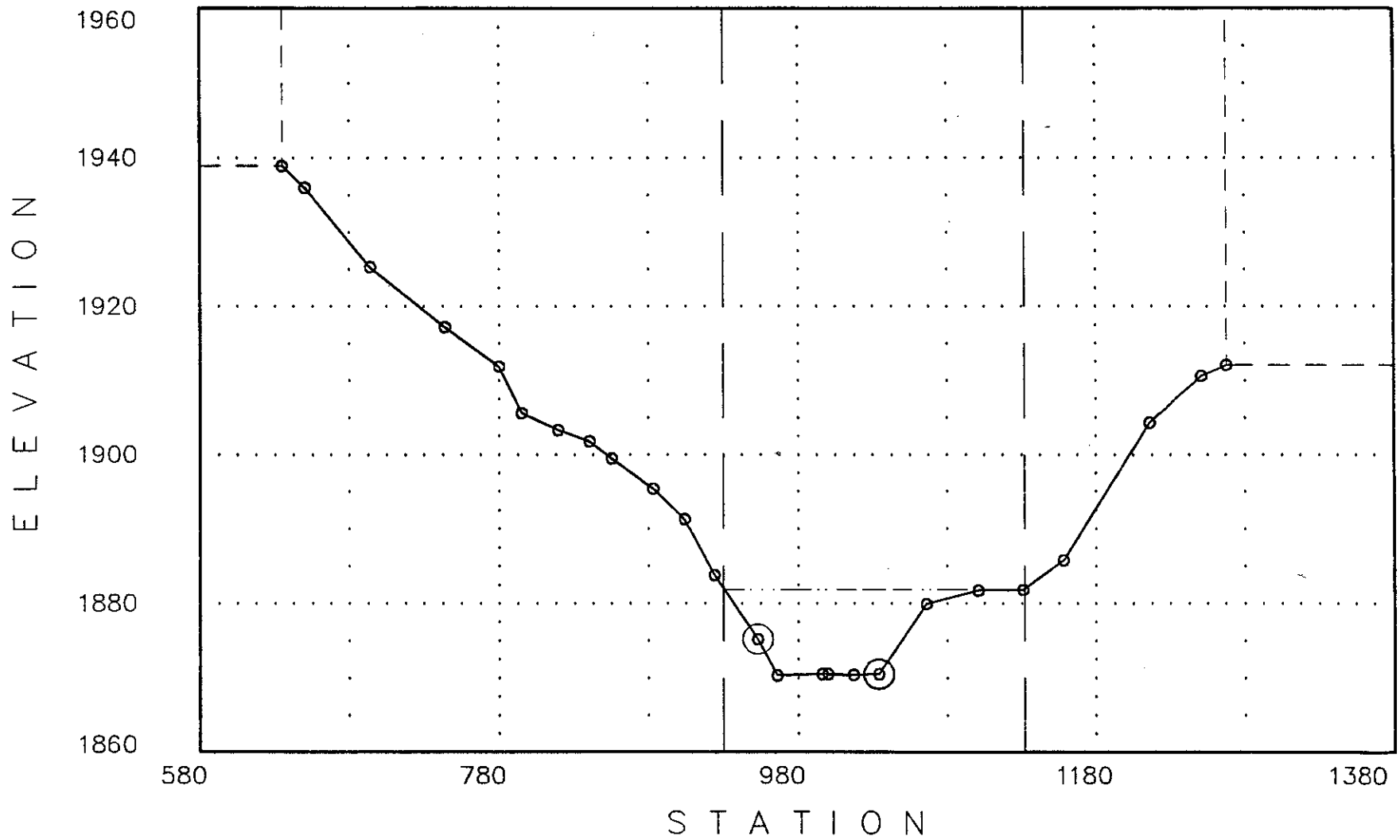


08-20-1992

<<<<<< Cross Section: .768: (FN = WASHV.0) >>>>>>

Q1= 4406 WS1= 1881.88
Q2= 4406 WS2= 1881.88

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

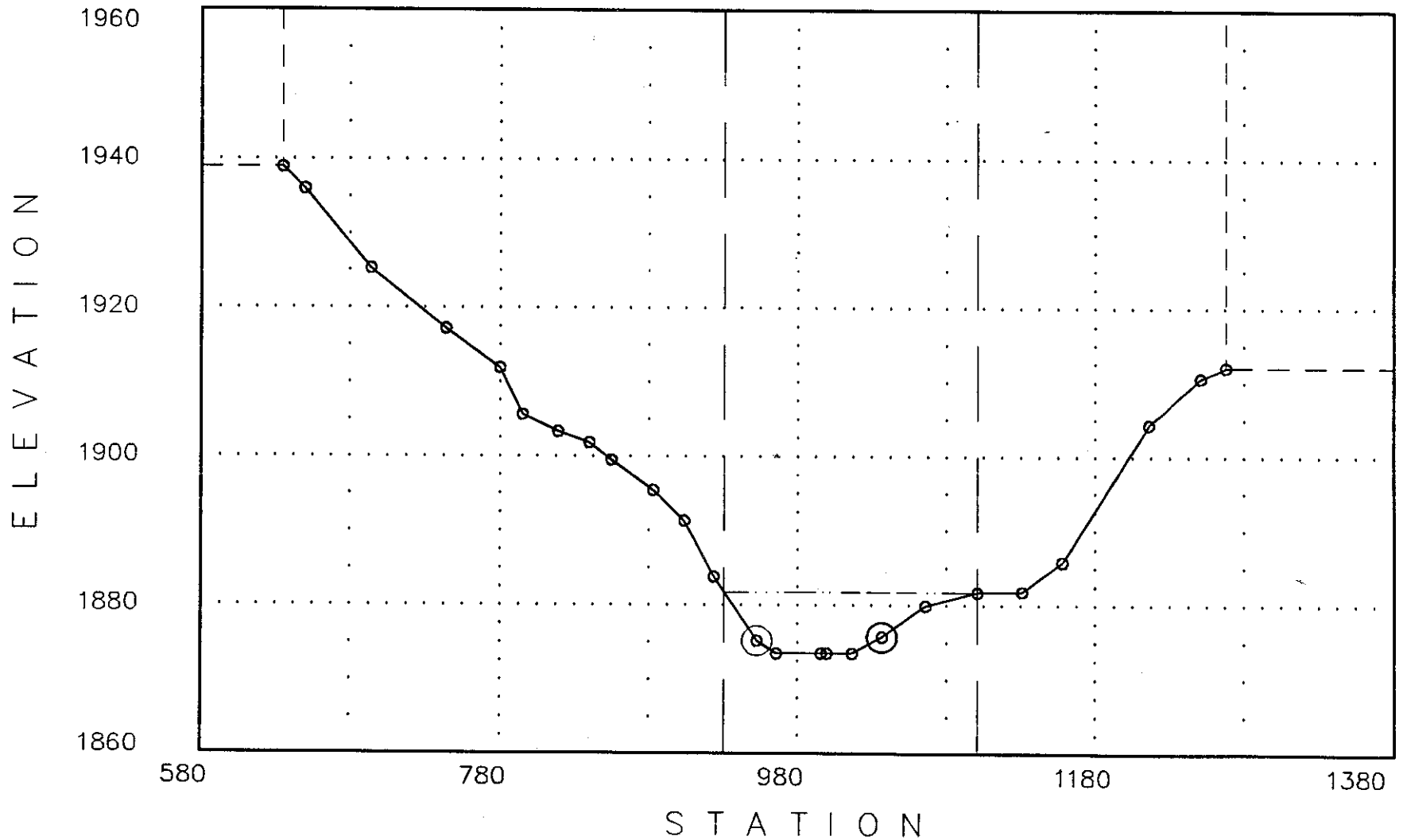


08-20-1992

<<<<<< Cross Section: .769: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1881.7
Q2= 4406 WS2= 1881.7

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

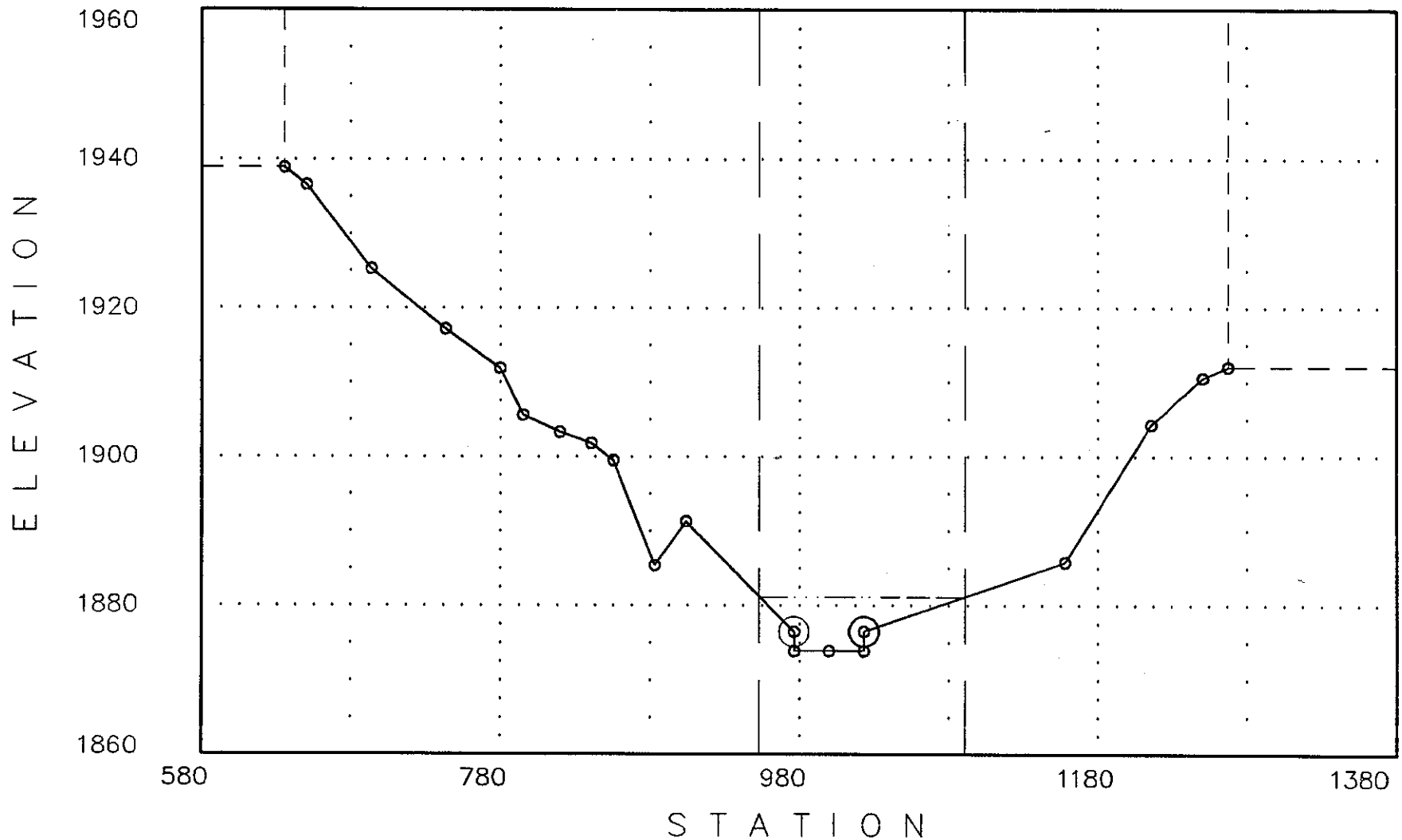


08-20-1992

<<<<<< Cross Section: .77: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1881.16
Q2= 4406 WS2= 1881.16

Manning-n's: n-lob = .055 n-ch = .03 n-rob = .055



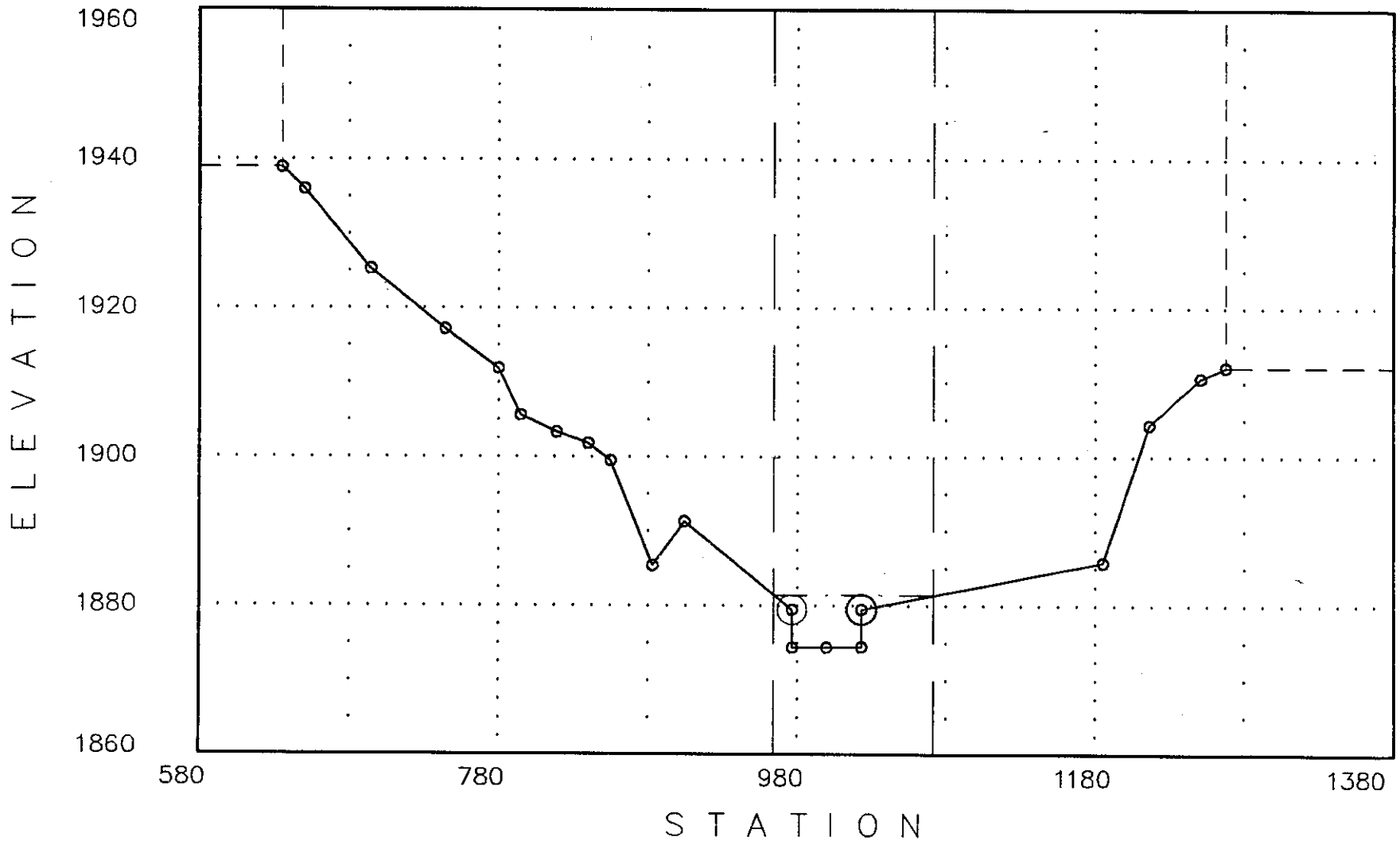
08-20-1992

<<<<<< Cross Section: .771: (FN = WASHV.0) >>>>>>

Q1= 4406 WS1= 1881.37

Q2= 4406 WS2= 1881.49

Manning-n's: n-lob = .055 n-ch = .03 n-rob = .055



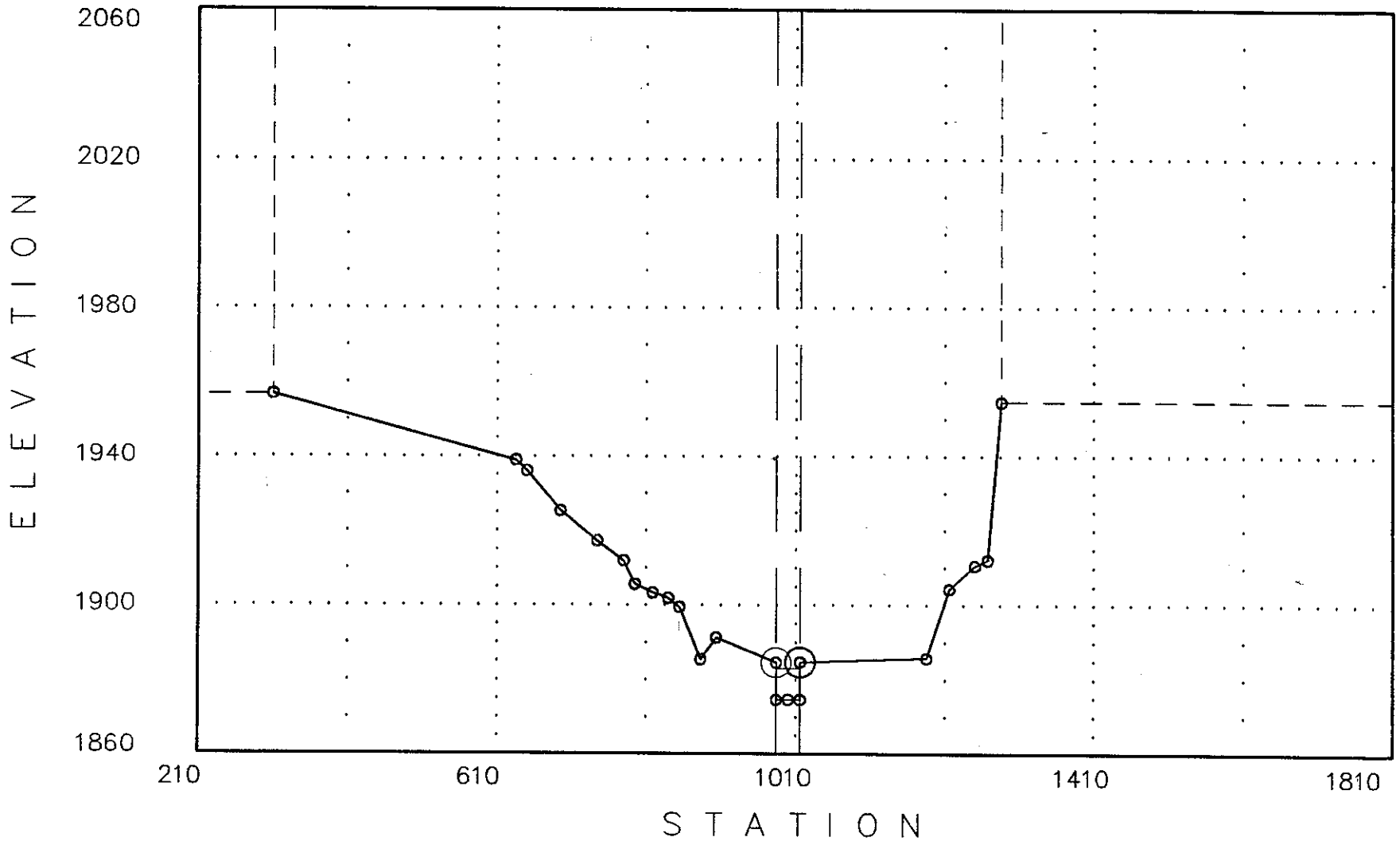
08-20-1992

<<<<<< Cross Section: .772: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1883.03

Q2= 4406 WS2= 1883.03

Manning-n's: n-lob = .06 n-ch = .02 n-rob = .06



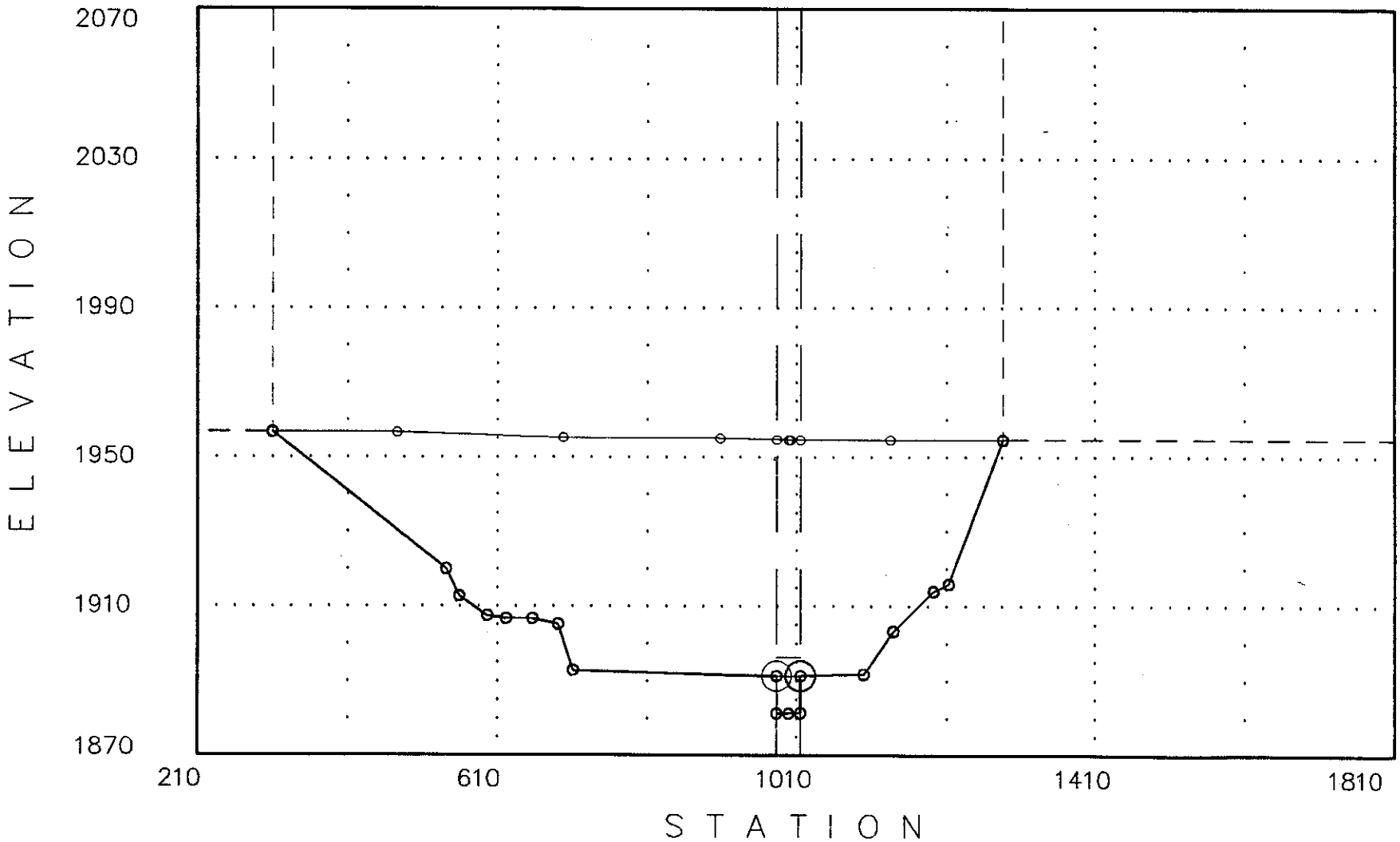
08-20-1992

<<<<<< Cross Section: .825: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1896.34
Q2= 4406 WS2= 1896.34

Manning-n's: n-lob = .06 n-ch = .02 n-rob = .06

SPECIAL CULVERT

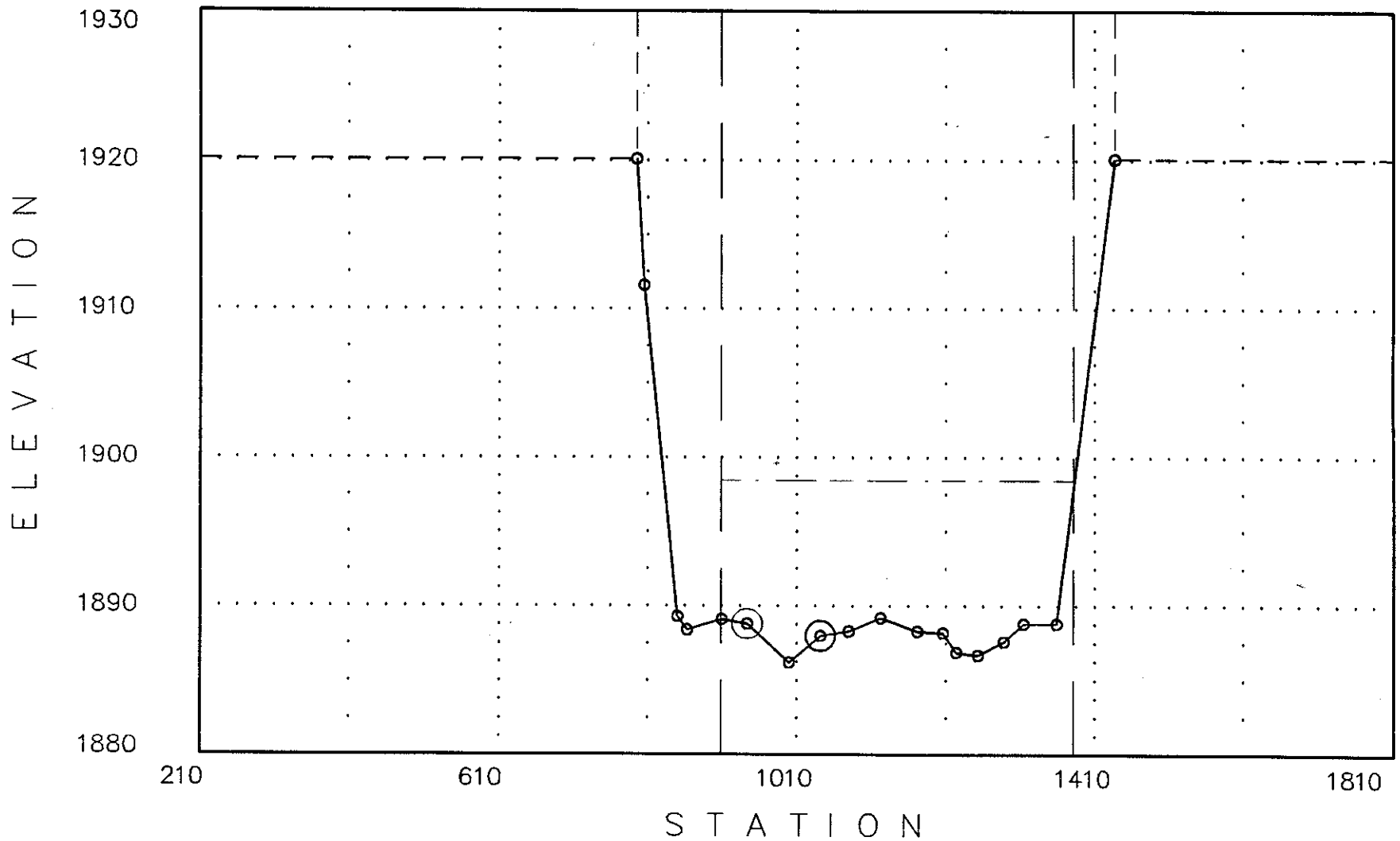


08-20-1992

<<<<<< Cross Section: .88: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1898.46
Q2= 4406 WS2= 1898.46

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

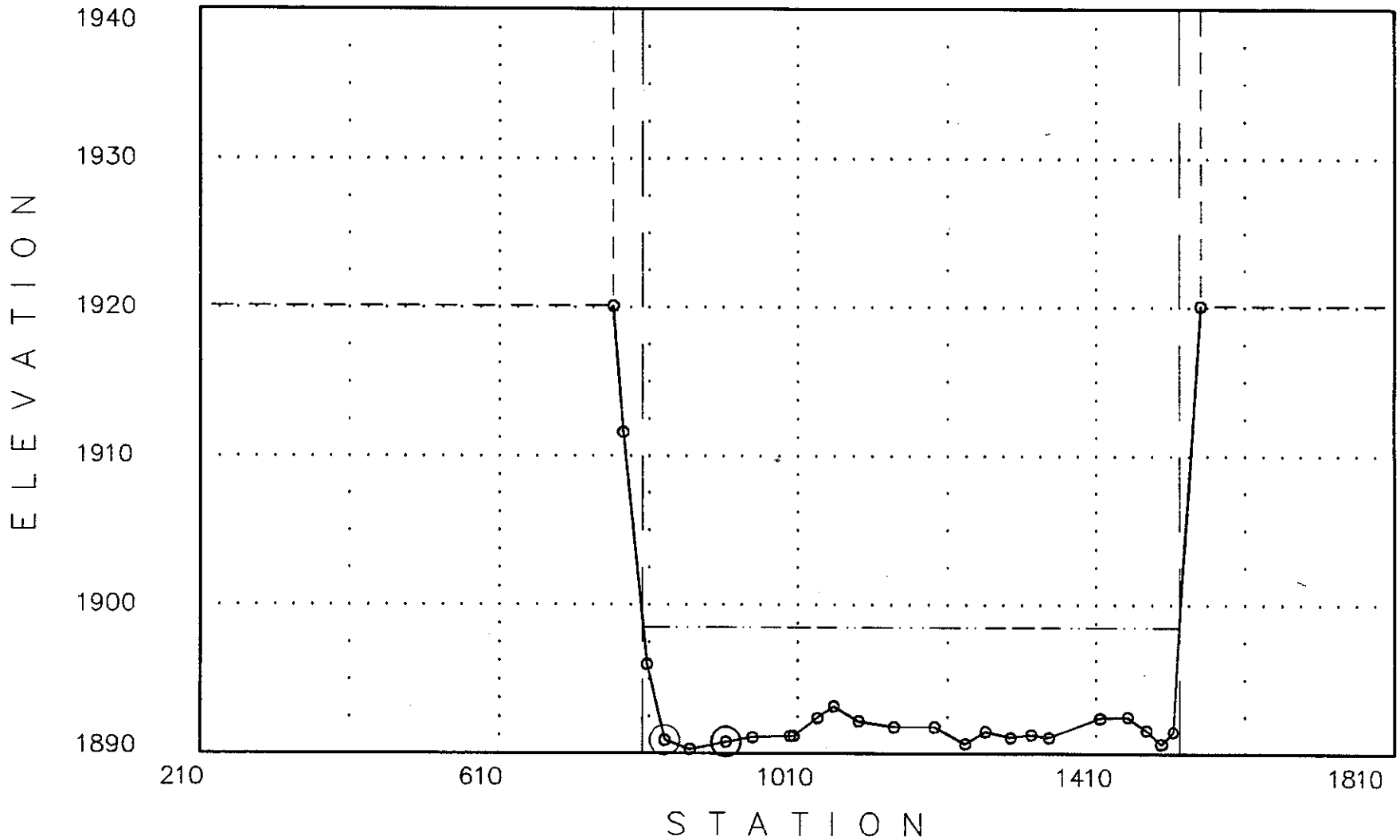


08-20-1992

<<<<<< Cross Section: .929: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1898.48
Q2= 4406 WS2= 1898.48

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

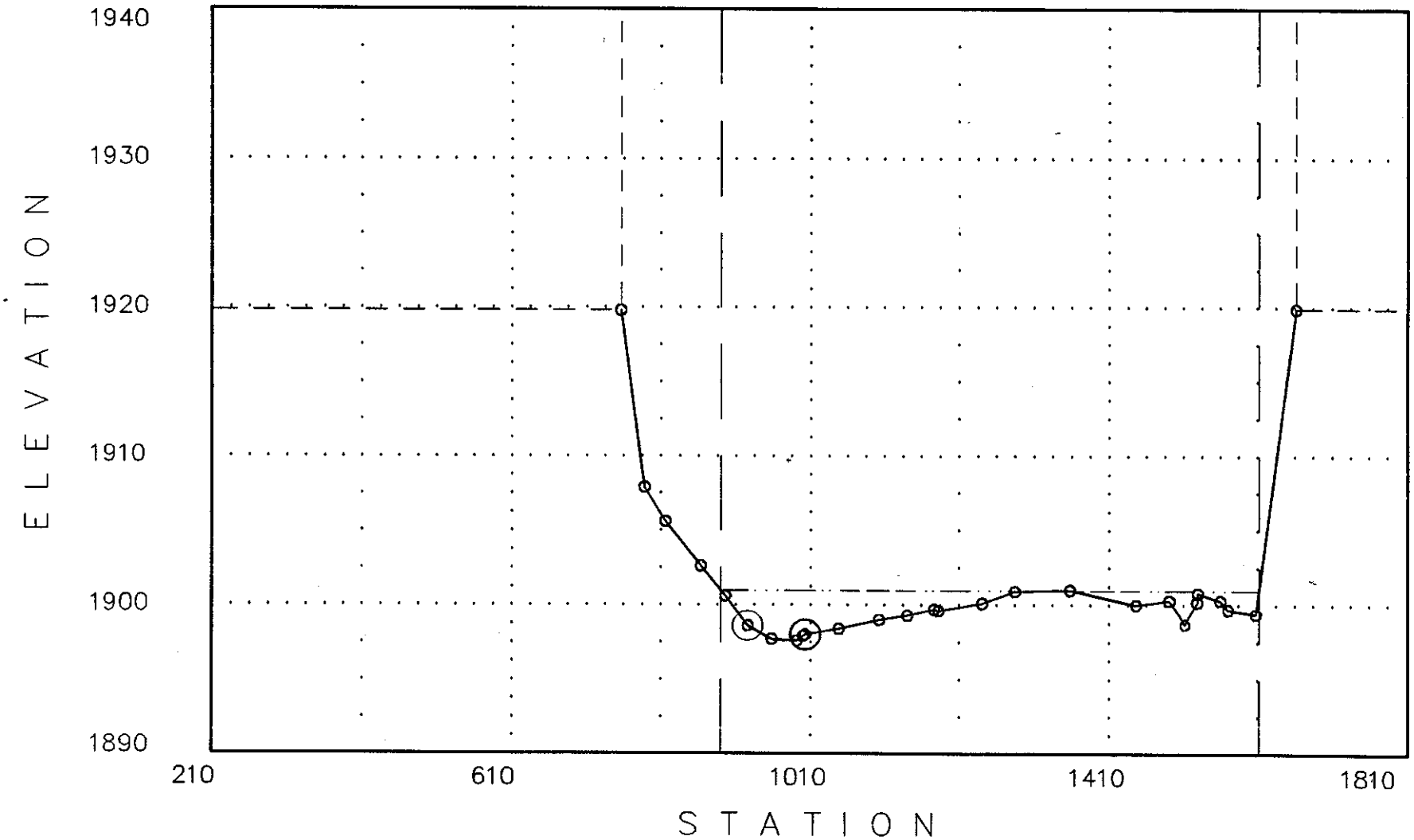


08-20-1992

<<<<<< Cross Section: 1.022: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1900.95
Q2= 4406 WS2= 1900.95

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

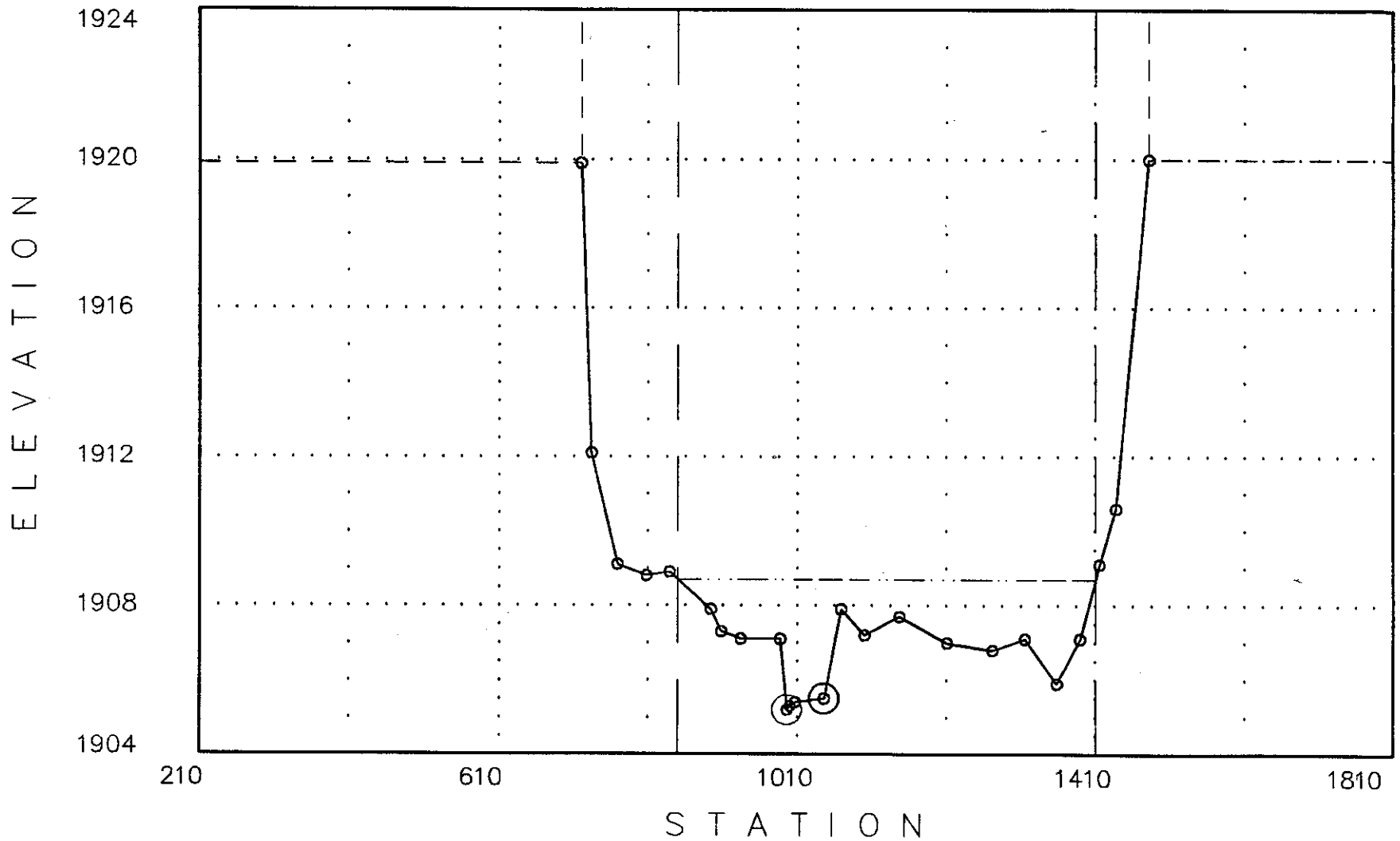


08-20-1992

<<<<<< Cross Section: 1.132: (FN = WASHV.O) >>>>>>

Q1= 4406 WS1= 1908.69
Q2= 4406 WS2= 1908.7

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

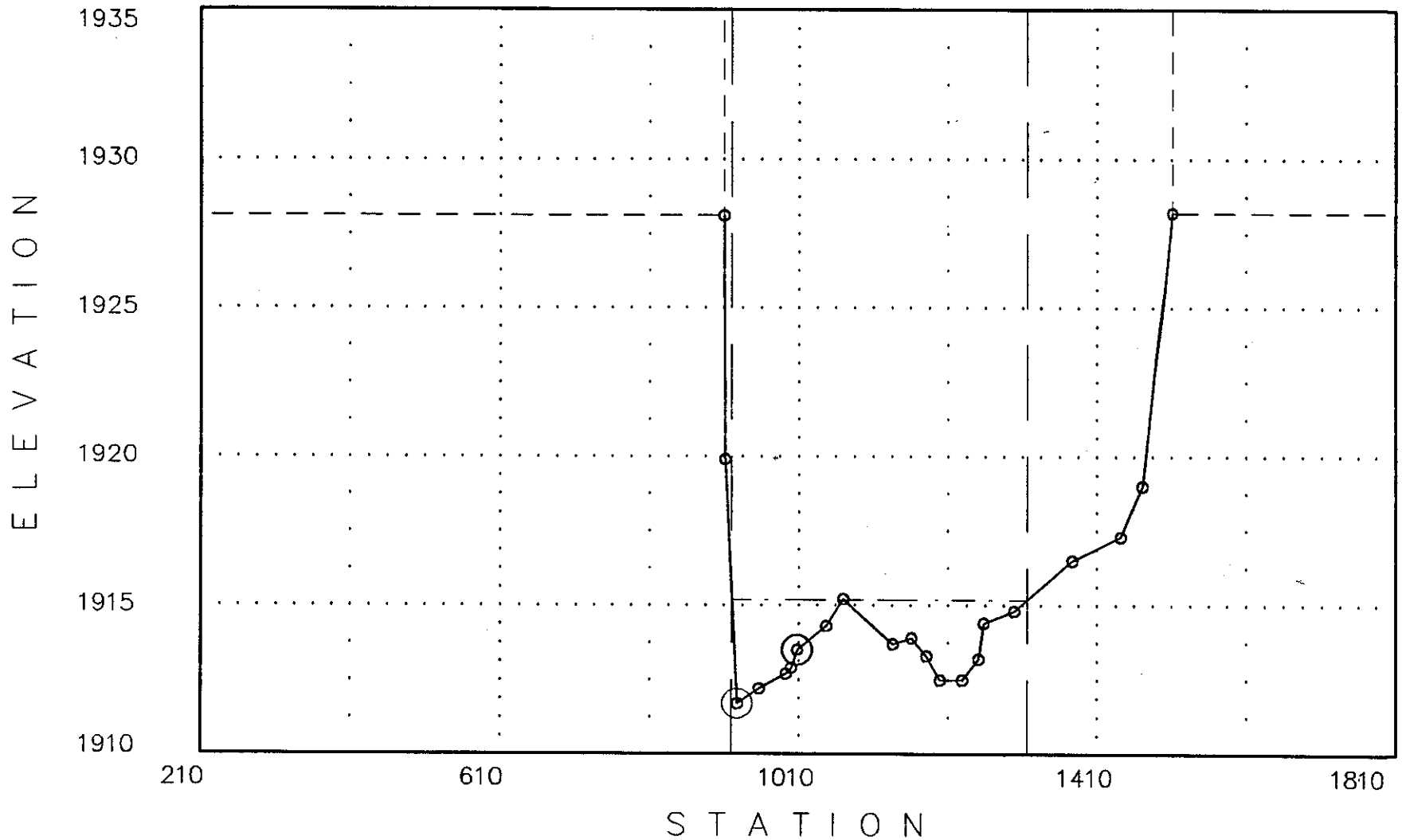


08-20-1992

<<<<<< Cross Section: 1.211: (FN = WASHV.O) >>>>>>

Q1= 3390 WS1= 1915.18
Q2= 3390 WS2= 1915.18

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

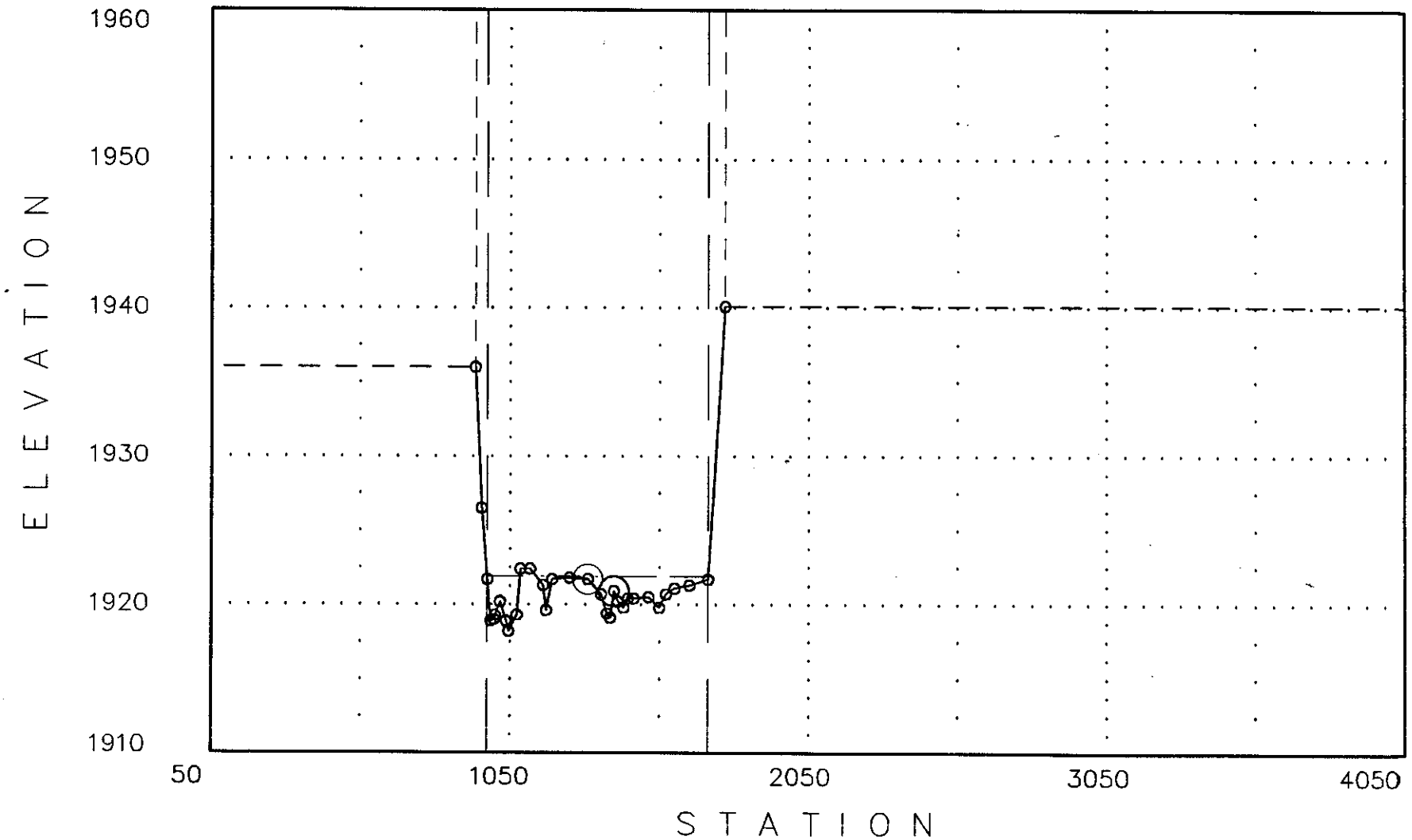


08-20-1992

<<<<<< Cross Section: 1.318: (FN = WASHV.O) >>>>>>

Q1= 3390 WS1= 1921.9
Q2= 3390 WS2= 1921.9

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

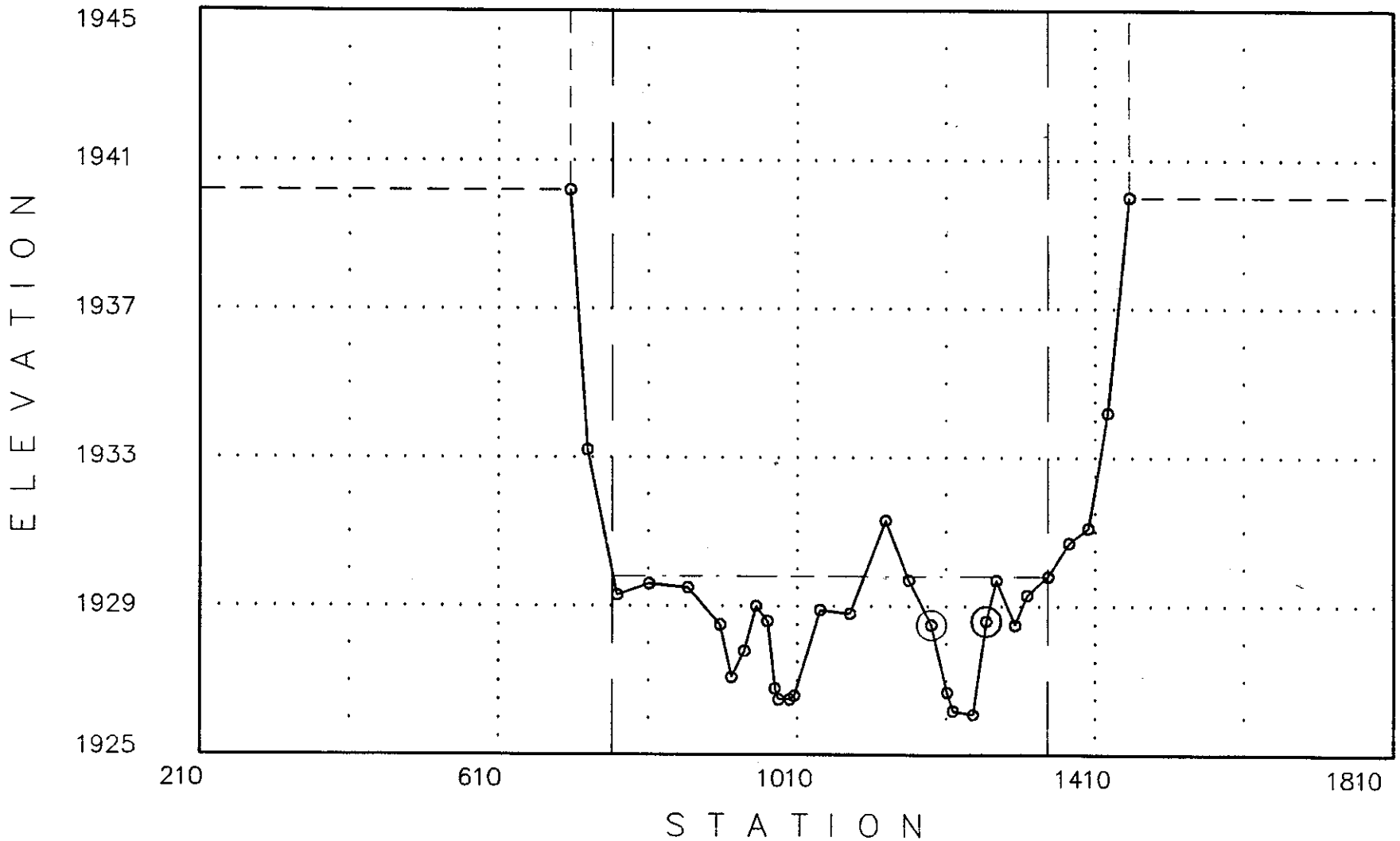


08-20-1992

<<<<<< Cross Section: 1.42: (FN = WASHV.O) >>>>>>

Q1= 3390 WS1= 1929.8
Q2= 3390 WS2= 1929.8

Manning-n's: n-lob = .065 n-ch = .035 n-rob = .065

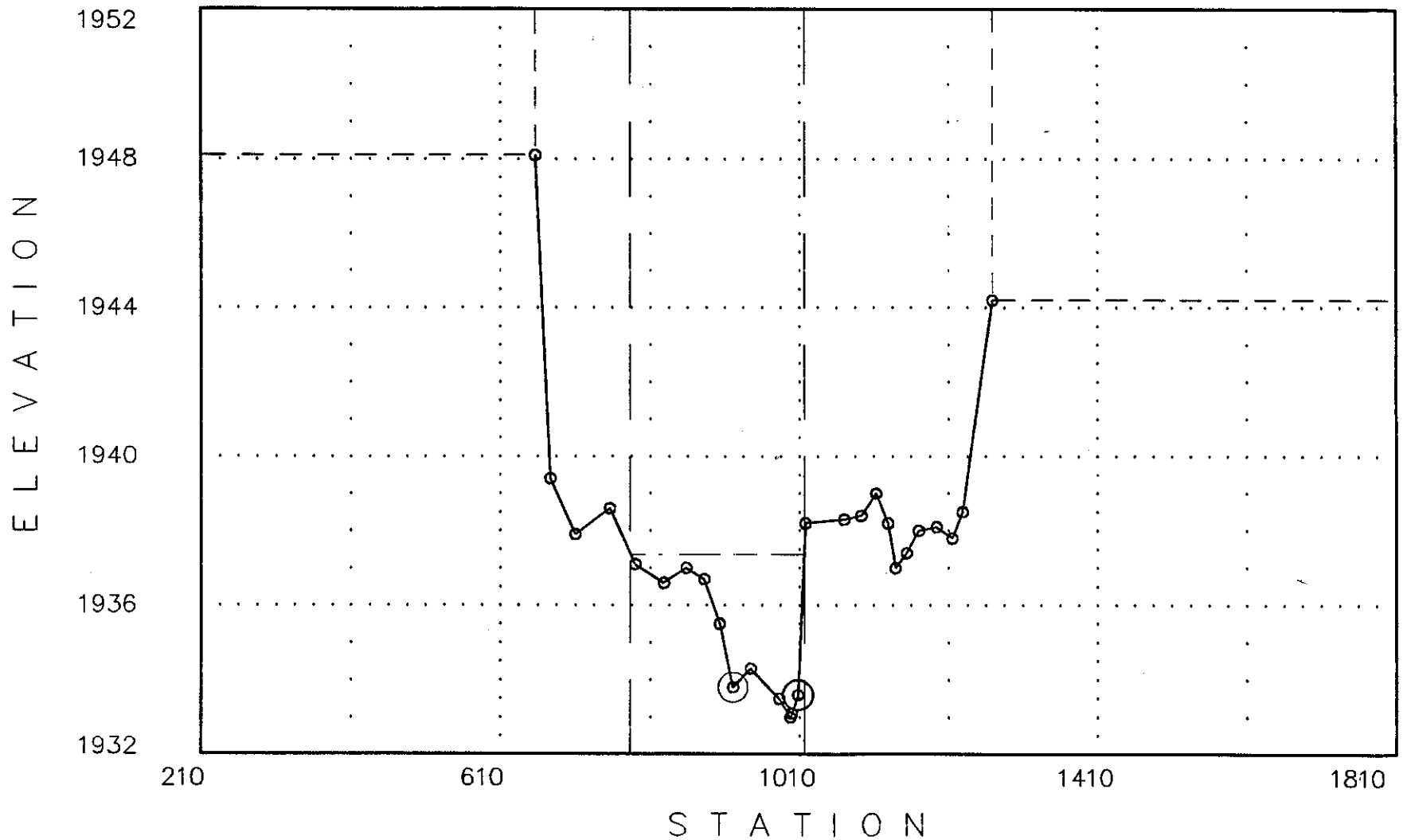


08-20-1992

<<<<<< Cross Section: 1.517: (FN = WASHV.O) >>>>>>

Q1= 3390 WS1= 1937.37
Q2= 3390 WS2= 1937.37

Manning-n's: n-lob = .065 n-ch = .04 n-rob = .065

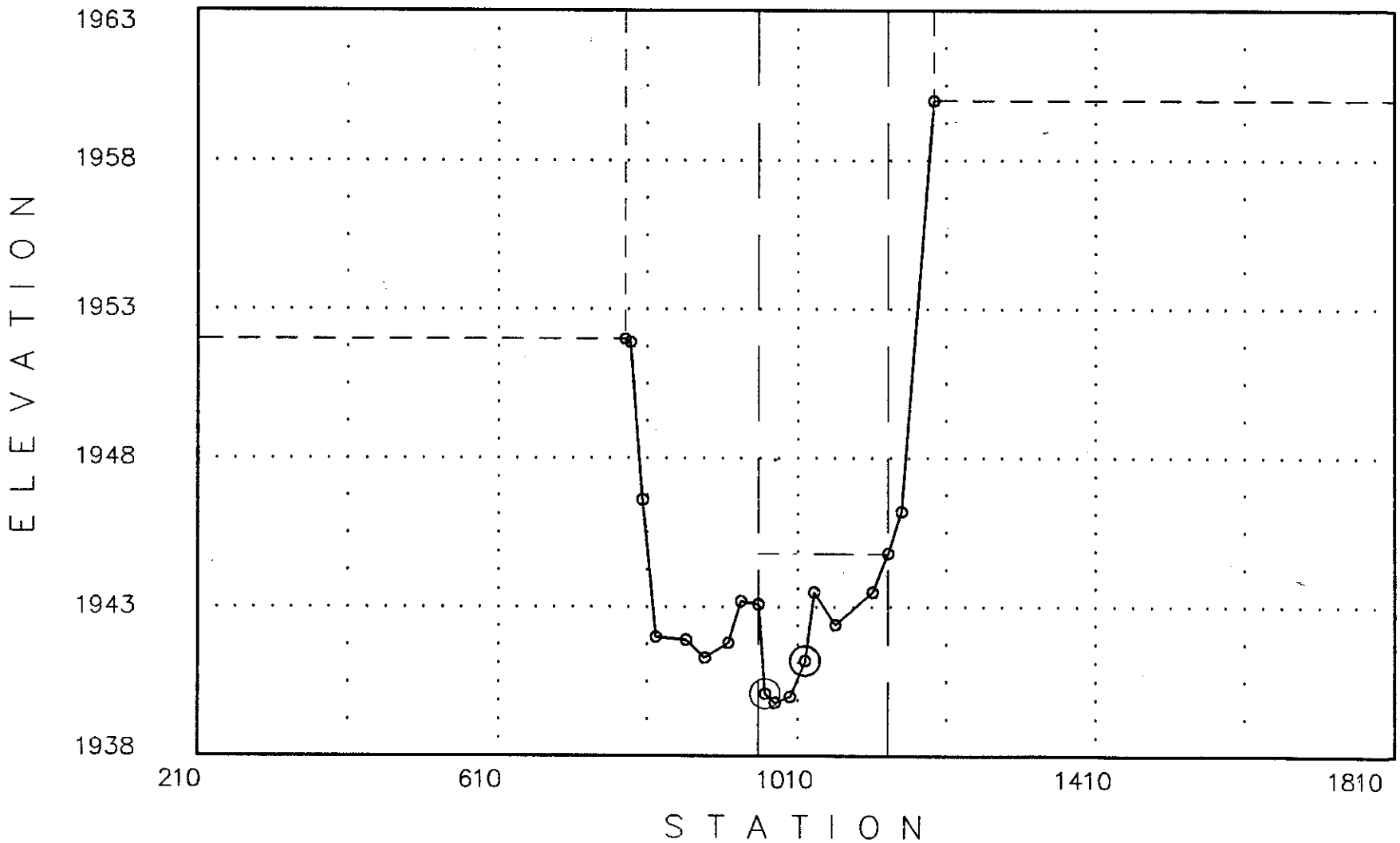


08-20-1992

<<<<<< Cross Section: 1.613: (FN = WASHV.O) >>>>>>

Q1= 3390 WS1= 1944.79
Q2= 3390 WS2= 1944.79

Manning-n's: n-lob = .055 n-ch = .04 n-rob = .06

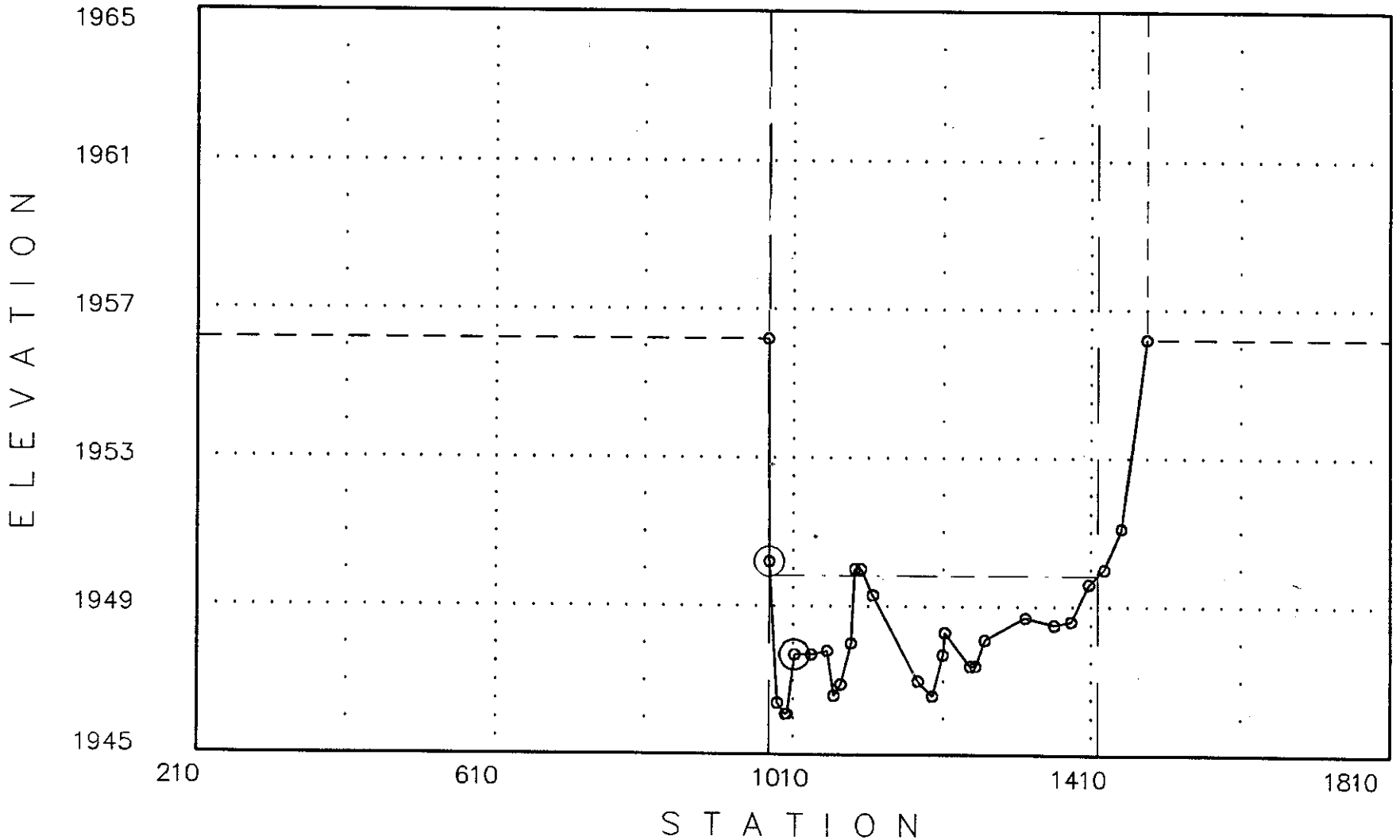


08-20-1992

<<<<<< Cross Section: 1.696: (FN = WASHV.O) >>>>>>

Q1= 3390 WS1= 1949.83
Q2= 3390 WS2= 1949.83

Manning-n's: n-lob = .055 n-ch = .04 n-rob = .06

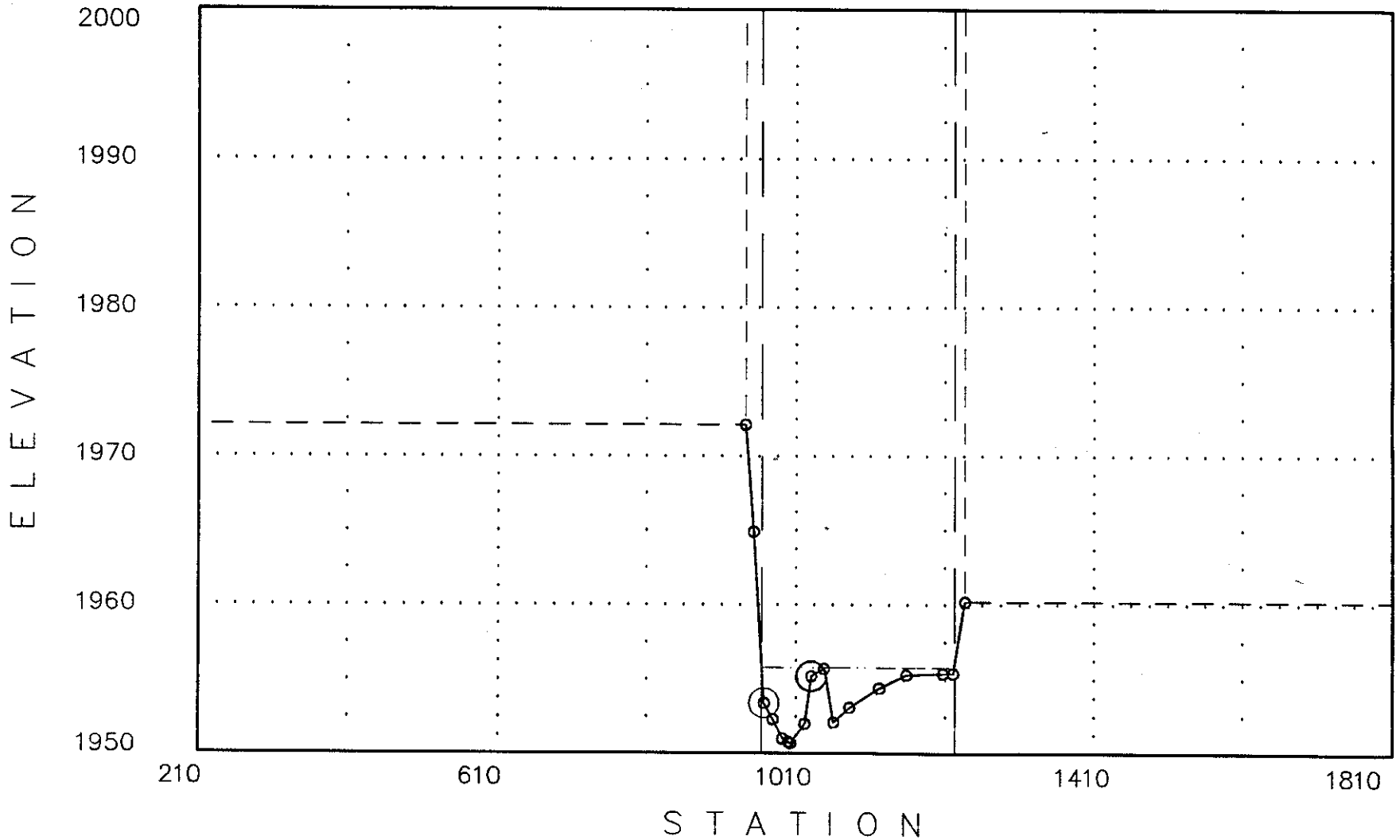


08-20-1992

<<<<<< Cross Section: 1.786: (FN = WASHV.O) >>>>>>

Q1= 3350 WS1= 1955.79
Q2= 3350 WS2= 1955.79

Manning-n's: n-lob = .06 n-ch = .04 n-rob = .06

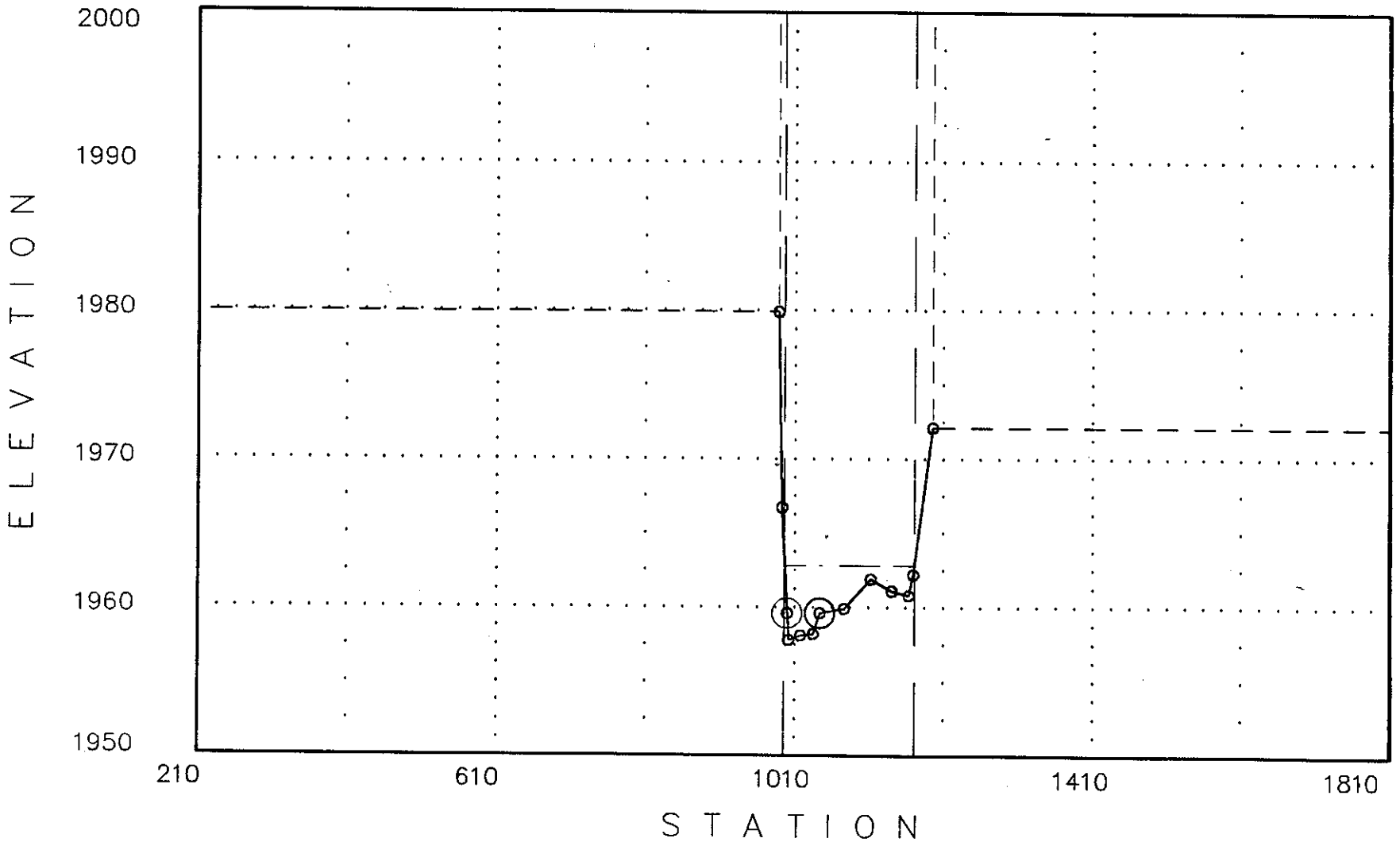


08-20-1992

<<<<<< Cross Section: 1.879: (FN = WASHV.O) >>>>>>

Q1= 3350 WS1= 1962.8
Q2= 3350 WS2= 1962.8

Manning-n's: n-lob = .06 n-ch = .04 n-rob = .06

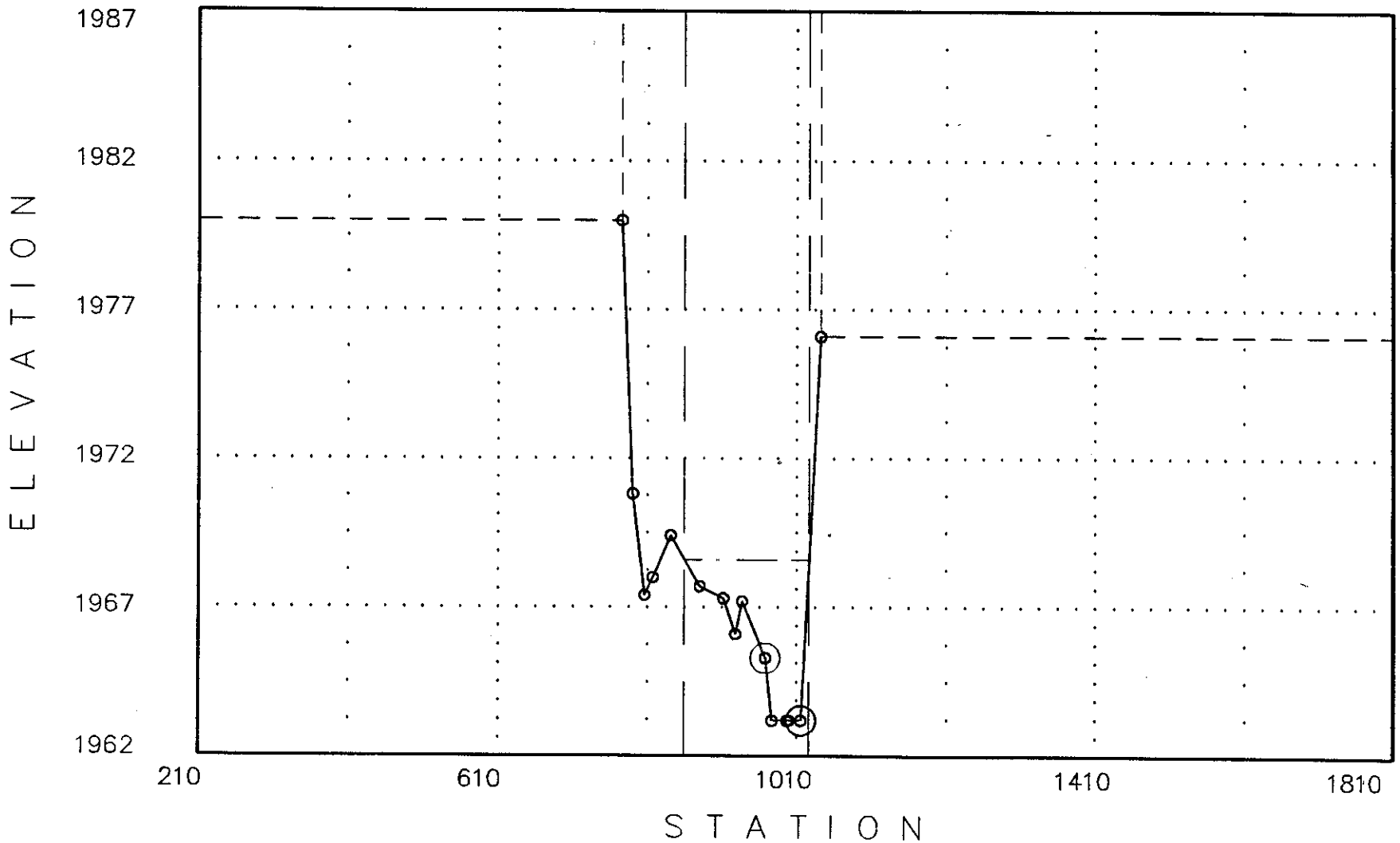


06-20-1992

<<<<<< Cross Section: 1.982: (FN = WASHV.O) >>>>>>

Q1= 3350 WS1= 1968.59
Q2= 3350 WS2= 1968.59

Manning-n's: n-lob = .06 n-ch = .04 n-rob = .06

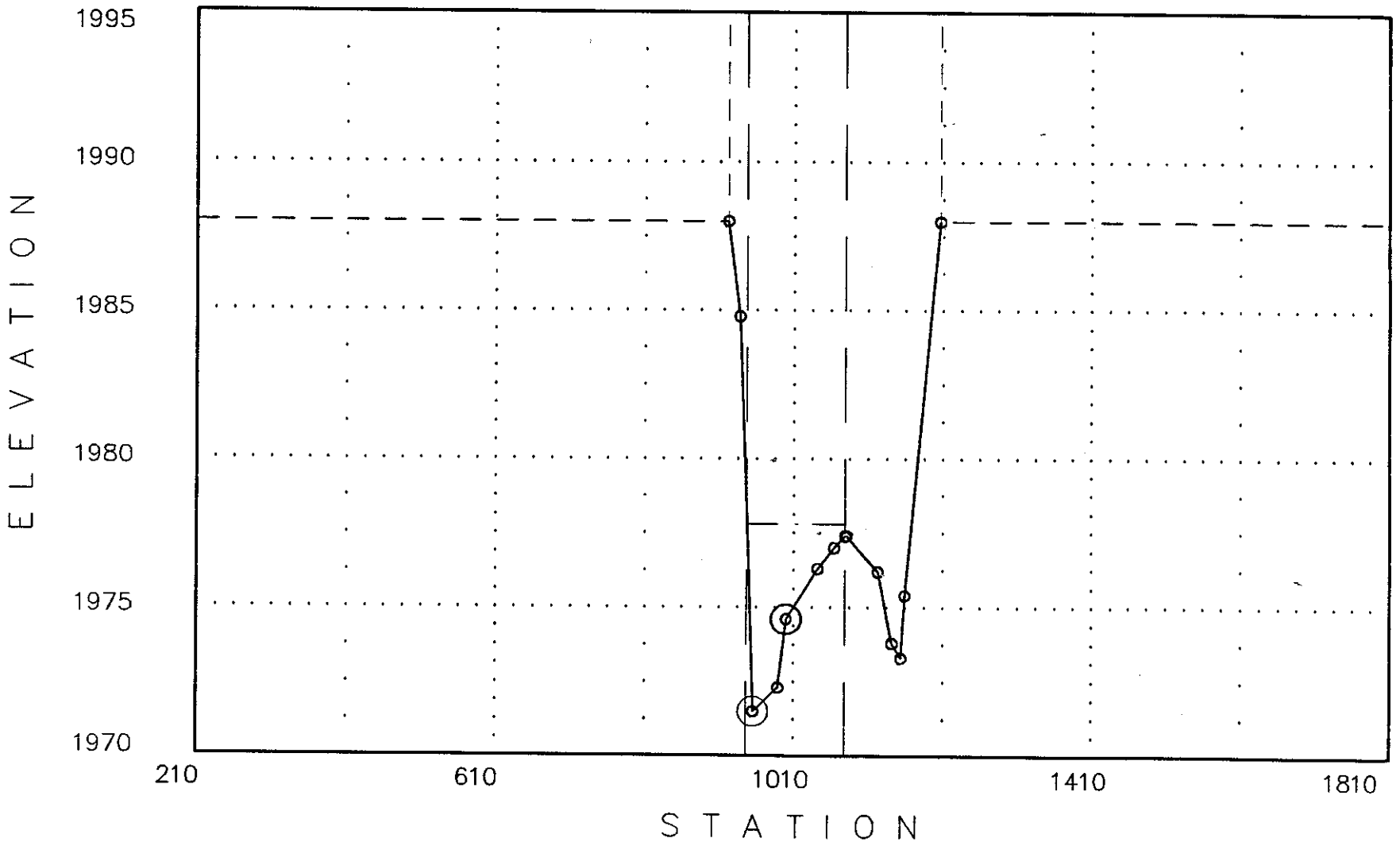


08-20-1992

<<<<<< Cross Section: 2.082: (FN = WASHV.O) >>>>>>

Q1= 3350 WS1= 1977.8
Q2= 3350 WS2= 1977.8

Manning-n's: n-lob = .06 n-ch = .04 n-rob = .06

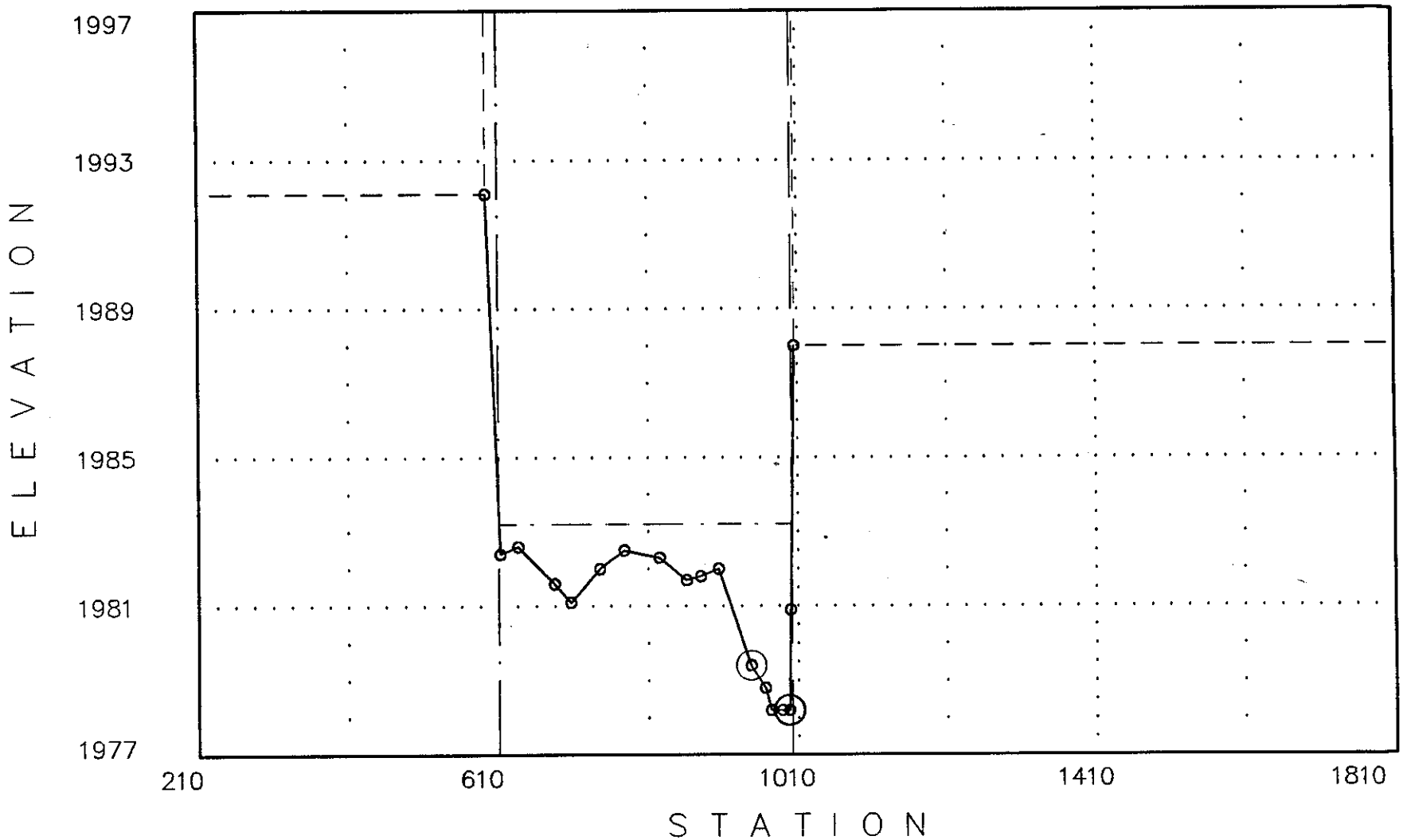


08-20-1992

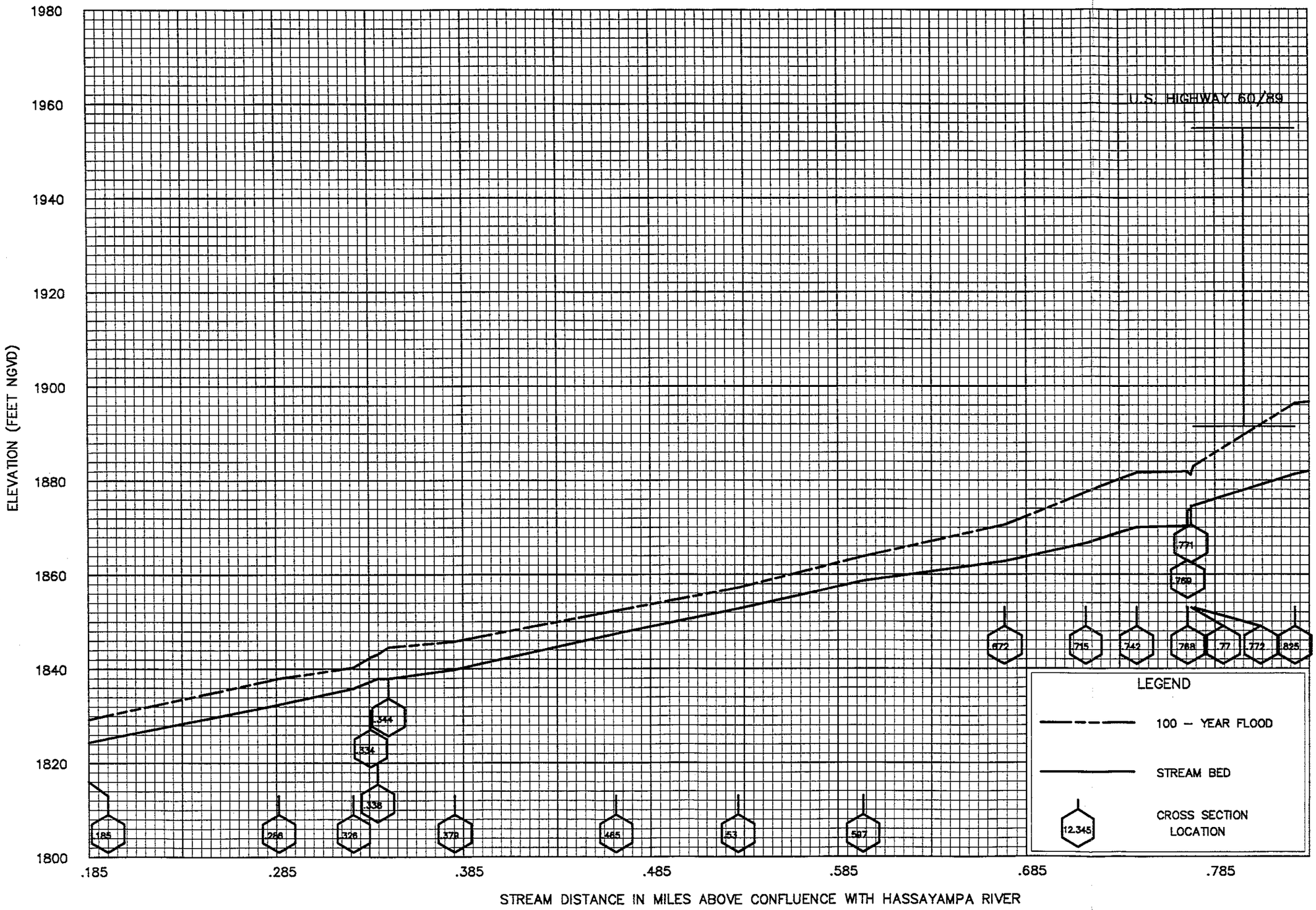
<<<<<< Cross Section: 2.172: (FN = WASHV.O) >>>>>>

Q1= 3315 WS1= 1983.2
Q2= 3315 WS2= 1983.2

Manning-n's: n-lob = .06 n-ch = .04 n-rob = .06



08-20-1992

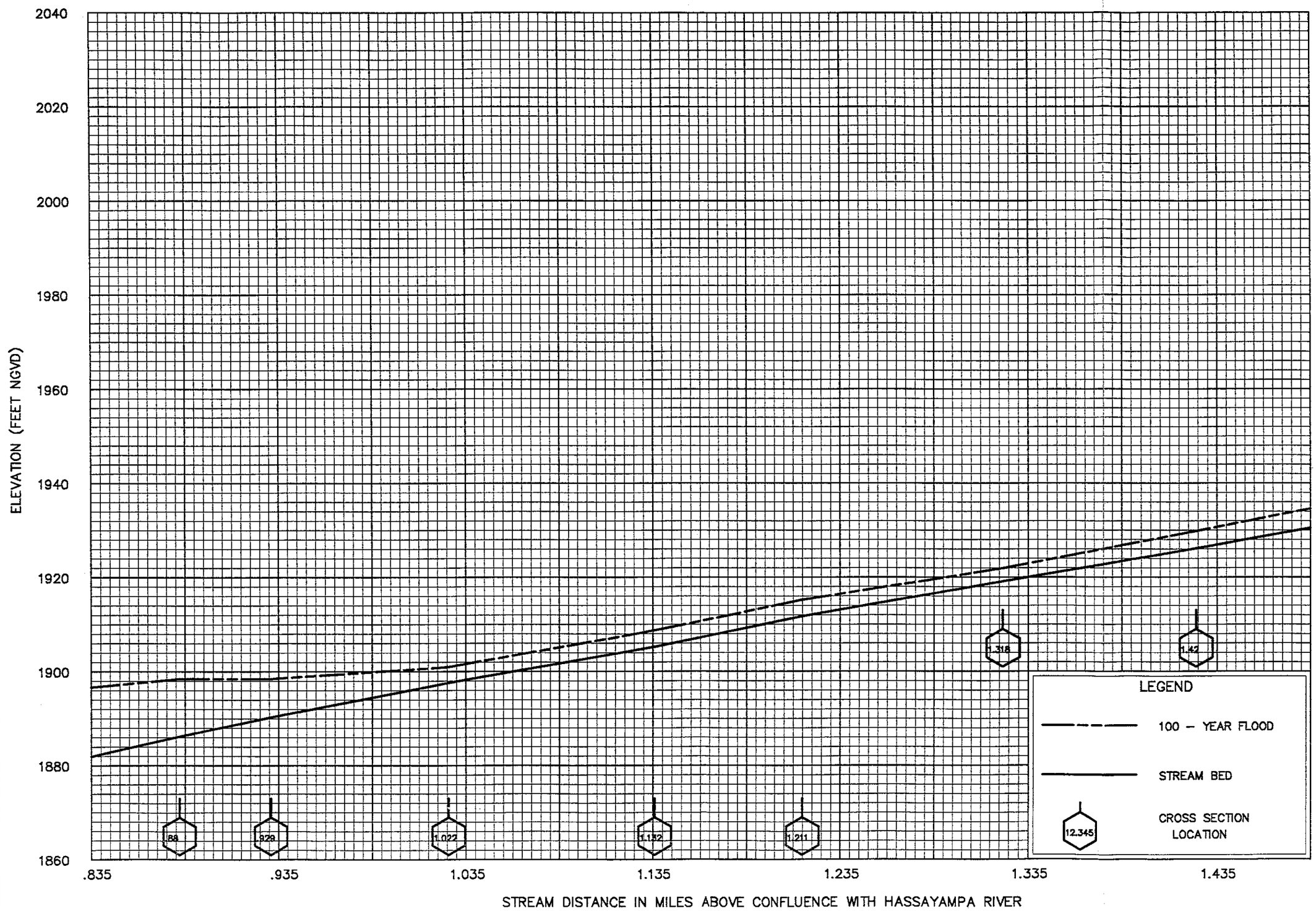


FLOOD PROFILES

OX WASH (WASH V)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

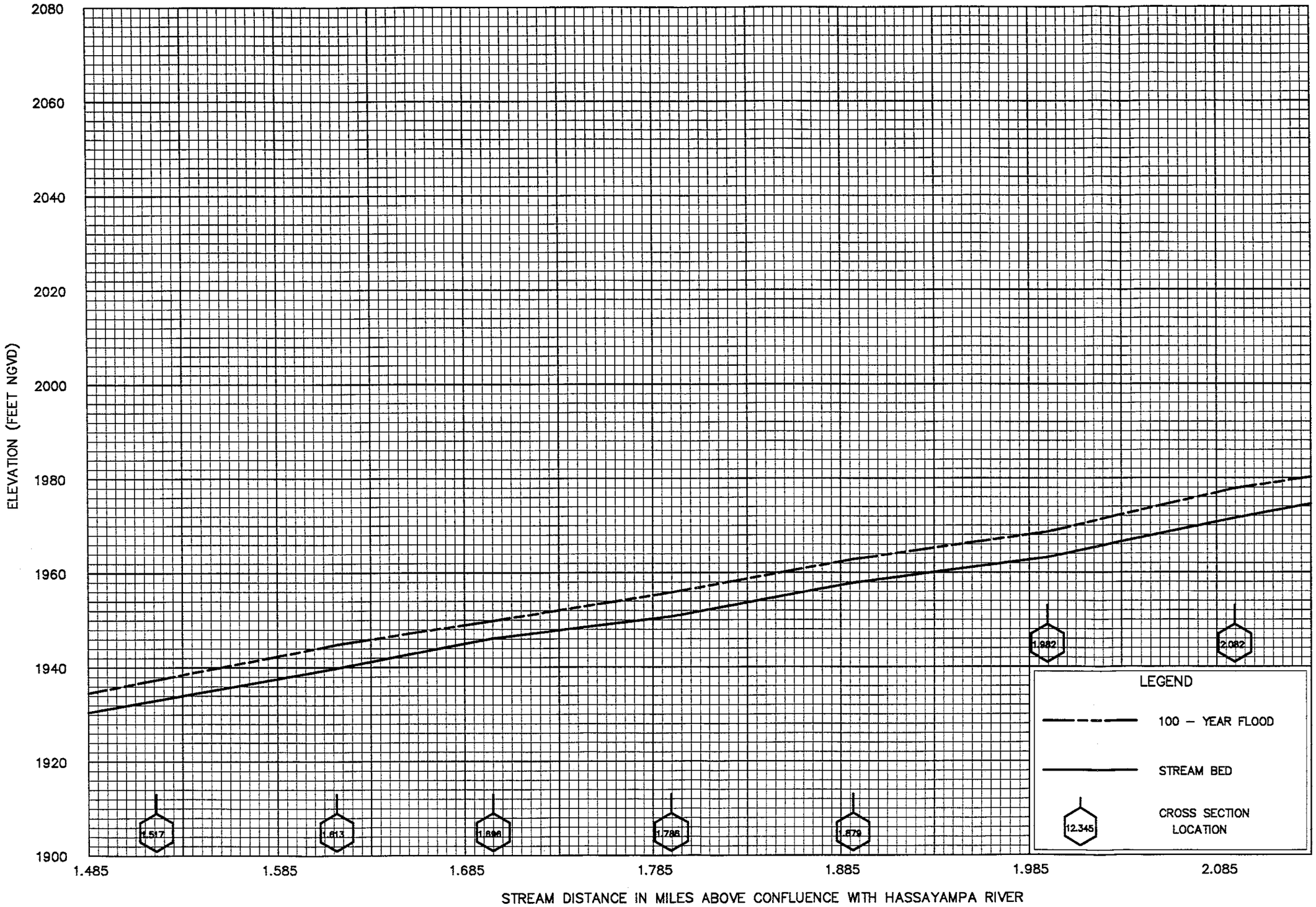


FLOOD PROFILES

OX WASH (WASH V)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

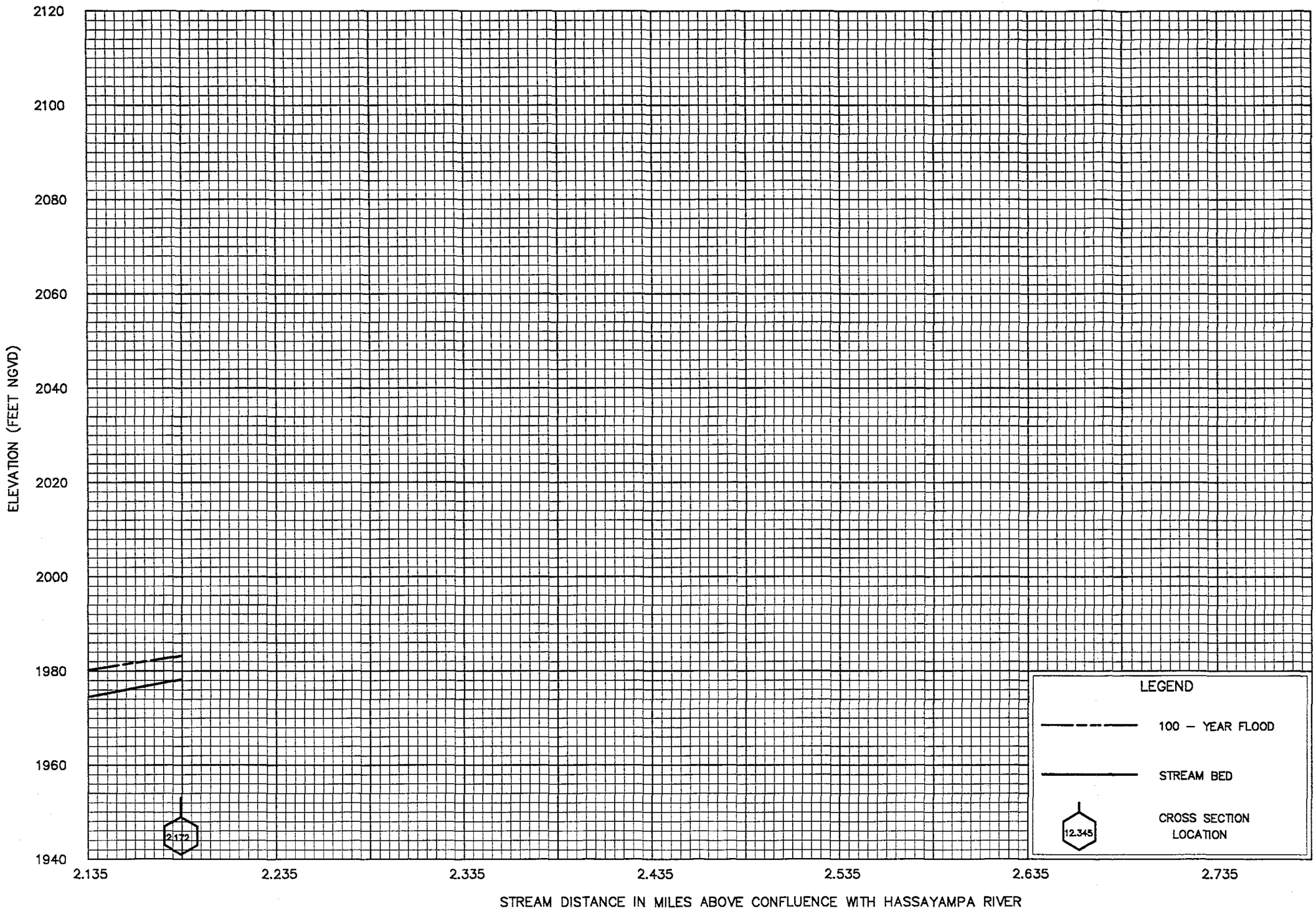


FLOOD PROFILES

OX WASH (WASH V)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS



FLOOD PROFILES

OX WASH (WASH V)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

Flood Control District of Maricopa County
Contract FCD 89-79

WICKENBURG AREA DRAINAGE MASTER STUDY

TECHNICAL DOCUMENTATION REPORT

Appendix 6.19: HEC-2 Models & Cross Section Plots for East Area Wash
POWDER HOUSE WASH & TRIBUTARIES (Wash aa)

Submitted to the
Federal Emergency Management Agency
on Behalf of the
Flood Control District of Maricopa County

N:\1197\02\ADMIN\119702RP.063

May 1994

6.19

FEDERAL EMERGENCY MANAGEMENT AGENCY **HYDROLOGIC ANALYSIS FORM**	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.67 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: UNINCORPORATED MARICOPA COUNTY/TOWN OF WICKENBURG

Flooding Source: WASH AA: POWDER HOUSE WASH
(One form for each flooding source)

Project Name/Identifier: WICKENBURG ADMS FCD 89-79

1. HYDROLOGIC ANALYSIS IN FIS

- ☐ Approximate study stream (Zone A)
- ☒ Detailed study stream (briefly explain methodology) UNKNOWN

2. REASON FOR NEW HYDROLOGIC ANALYSIS

- ☐ No existing analysis
- ☐ Improved data *(see data revision on page 3)*
- ☐ Changed physical conditions of watershed *(explain)*
- ☐ Alternative methodology *(justify why the revised model is better than model used in the effective FIS)*
- ☐ Evaluation of proposed conditions (CLOMRs only) (explain)
- ☒ Other No existing analysis or analysis being updated to reflect existing conditions

If a computer program/model was used in revising the hydrologic analysis, please provide a diskette with the input files for the 10-, 50-, 100 - and 500-year recurrence intervals.

Only the 100-year recurrence interval need be included for SFHAs designated as Zone A.

3. APPROVAL OF ANALYSIS

- ☒ Approval of hydrologic analysis, including the resulting peak discharge value (s) has been provided by the appropriate local, state, or Federal Agency. (i.e., Flood Control District of Maricopa County)
  Attach evidence of approval.
- ☐ Approval of the hydrologic analysis is not required by any local, State, or Federal Agency.

Stream: WASH AA: POWDER HOUSE WASH

Comparison of 100-year Discharges

Location:	Drainage area (Sq mi.)	FIS (cfs):	Revised (cfs):
HASSAYAMPA R. CONFLUENCE	1.95	UNKNOWN	2114
STATION 0.943	1.33		1476
STATION 1.390			1354
STATION 1.680			1132
STATION 1.769			744

Note: When revised discharges are not significantly different than FIS discharges, FEMA may require a confidence limits analysis on attachment D at a later date to complete the review.

As is often the case with revision requests, only a portion of a stream may actually be revised or be affected by a revision. Therefore, transition to the unrevised portion is important to maintain the continuity of the study. NFIP regulations stipulate that such a transition must be assured. What is the transition from the proposed discharges to the effective discharges? Please explain how the transition was made *(attach separate sheet if necessary)*

ATTACH A COMPLETED REVIEW OF RESULTS PAGE FOR EACH FLOODING SOURCE.

Is the new hydrologic analysis being developed solely to revise the flow values presented in the FIS *(i.e. no changed hydraulic conditions)*? ☐ Yes ☒ No

If yes, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

FEMA does not normally revise NFIP maps solely due to insignificant flow changes where changes in 100-year water surface elevation are less than 1.0 foot.

5. HISTORICAL FLOODING INFORMATION

Is historical data available for the flooding source? ☐ Yes ☒ No

If yes, provide the following:

Location along flooding source: _____

Maximum peak discharge: _____ cfs

Second highest peak discharge: _____ cfs

Source of information: _____

6. GAGE RECORD INFORMATION

Location of nearest gage to project site *(along flooding source or similar watershed; specify)*

NA

Gaging Station: _____

Drainage area at gage: _____ mi^2

Number of years of data: _____

7. DATA REVISION

Please use the following table to list all the data and/or parameters affected by this request and identify them as new data (*New*) or as revising existing data (*Revised*). *(If necessary, attach a separate sheet.)*

Data Parameter	New	Revised	Data Source
NA	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	

- Data source can be from a Federal, State, or local government agency, or from a private source. Some State and local governments may have less strict data requirements than Federal agencies, in which case the hydrologic data may not be accepted by FEMA unless it is demonstrated that the data give a better estimate of the flood discharge.
- Attach documentation corroborating each data source *(i.e., certified statement, report, bibliographical reference to a published document)*. In the case of a published document or a government report, providing copies of the cover and pertinent pages may be helpful.

8. METHODOLOGY FOR NEW ANALYSIS

☐ Statistical Analysis of Gage Records *(use Attachment A)*

☐ Regional Regression Equations *(use Attachment B)*

☒ Precipitation/Runoff Model *(use Attachment C)*

☐ Other *(specify; attach backup computations and supporting data)* _____

Gaging Station: NA

Gage Location (latitude and longitude): _____

	FIS:	Revised:
1. Number of years of data	_____	_____
Systematic	_____	_____
Historical	_____	_____
2. Homogeneous data	☐ Yes ☐ No	☐ Yes ☐ No
3. Data adjustments	☐ Yes ☐ No	☐ Yes ☐ No
4. Number of high outliers	_____	_____
Low outliers	_____	_____
Zero events	_____	_____
5. Generalized skew	_____	_____
6. Station skew	_____	_____
7. Adopted skew	_____	_____
8. Probability distribution used (justify if log-Pearson III was not used)	_____	_____
9. Transfer equations to ungaged sites		☐ Yes ☐ No

If yes, specify method

_____

_____

_____

10. Expected probability* ☐ Yes ☐ No

11. Comparison of results with other analyses ☐ Yes ☐ No

If yes, describe comparison

_____

_____

_____

*FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data is not available, indicate by N/A.

Attach analysis including plot of flood frequency curve.

1. Bibliographical Reference:

NA

(Attach a copy of title page, table of contents, and pertinent pages including equations.)

2. Gaged or ungaged stream: _____

3. Hydrologic region(s): _____
Attach backup map.

4. Provide parameters, values, and source of data used to define parameters.

	FIS:		Revised:	
5. Urbanized conditions calculations	☐ Yes	☐ No	☐ Yes	☐ No
6 Percent of watershed urbanization	_____		_____	
7. Is the watershed controlled?	☐ Yes	☐ No	☐ Yes	☐ No
8. Comparison with other analyses	☐ Yes	☐ No	☐ Yes	☐ No

If the answer to 5, 7, or 8 is yes, explain methodology in Comments.

If data is not available, indicate by N/A.

Comments

Attach computation and supporting maps, delineating the watershed boundary and drainage area divides.

		FIS:	Revised *
1.	Method or model used:		HEC-1
	Version:		VER 3.0
	Date:		02 AUG 83
2.	Source of rainfall depth:		NOAA ATLAS 2
3.	Source of rainfall distribution:		SCS TYPE II
4.	Rainfall duration:		24 HOURS
5.	Areal adjustment to precipitation (%):		NWS HYDRO-40
6.	Hydrograph development method:		S-GRAPH
7.	Loss rate method:		GREEN-AMPT
	Source of soils information:		SCS
	Source of land use information		TOWN of WICKENBURG
8.	Channel routing method:		NORMAL DEPTH
9.	Reservoir routing:	☐ Yes ☐ No	☐ Yes ☐ No
10.	Baseflow considerations:	☐ Yes ☐ No	☐ Yes ☒ No

If yes, explain how baseflow was determined:

11.	Snowmelt considerations:	☐ Yes ☐ No	☐ Yes ☒ No
12.	Model calibration:	☐ Yes ☐ No	☒ Yes ☐ No

If yes, explain how calibration was performed Computed discharges were compared with DISCHARGE VS DRAINAGE AREA curves and envelopes prepared by the Flood Control District of Maricopa County

13. Future land use condition: ☐ Yes ☒ No

If yes, explain why

* Small tributaries upstream of Station 0.943 use flowrates based on proportion of watershed area.

NOTE: FEMA policy is to base flooding on existing conditions.
If data is not available, indicate by N/A.

Attach precipitation/runoff model, hydrologic model schematic, curve number calculations, time of concentration calculations, and supporting maps, delineating the watershed boundary and drainage area divides.

Stream: NA – NO FLOW RECORDS

Select one location for Confidence Limits Evaluation (*describe location*): _____

_____

Discharges for selected location:

Exceedance Probability		FIS	Revised
10%	(10-year)	_____ cfs	_____ cfs
2%	(50-year)	_____ cfs	_____ cfs
1%	(100-year)	_____ cfs	_____ cfs
0.2%	(500-year)	_____ cfs	_____ cfs

1% (100-year) Flood Confidence Intervals

90% Confidence Interval: 5% limit _____ cfs

95% limit _____ cfs

50% Confidence Interval: 25% limit _____ cfs

75% limit _____ cfs

If the value of the 100-year frequency flood in the FIS is beyond the 50% confidence interval but within the 90% confidence interval, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

An example of confidence limits analysis can be found in Appendix 9 of Bulletin 17B.

Attach Confidence Limits Analysis.

BLACK & VEATCH
CONSULTING ENGINEERS
KANSAS CITY DALLAS DENVER ORLANDO

SUBJECT: WICKENBURG ADMS
WORK: Sub Delineation of SAA5 : Powder House Wash TO DETERMINE Q's for QT CARDS
PROJECT NO. 17676
FILE NO.

DATE 1/29/ 1992
SET UP BY: JAH
COMPUTED BY: JAH
CHECKED BY:
PAGE NO. OF

DO NOT WRITE IN THIS SPACE

SAA5 : AREA = 1.33 sq. mi

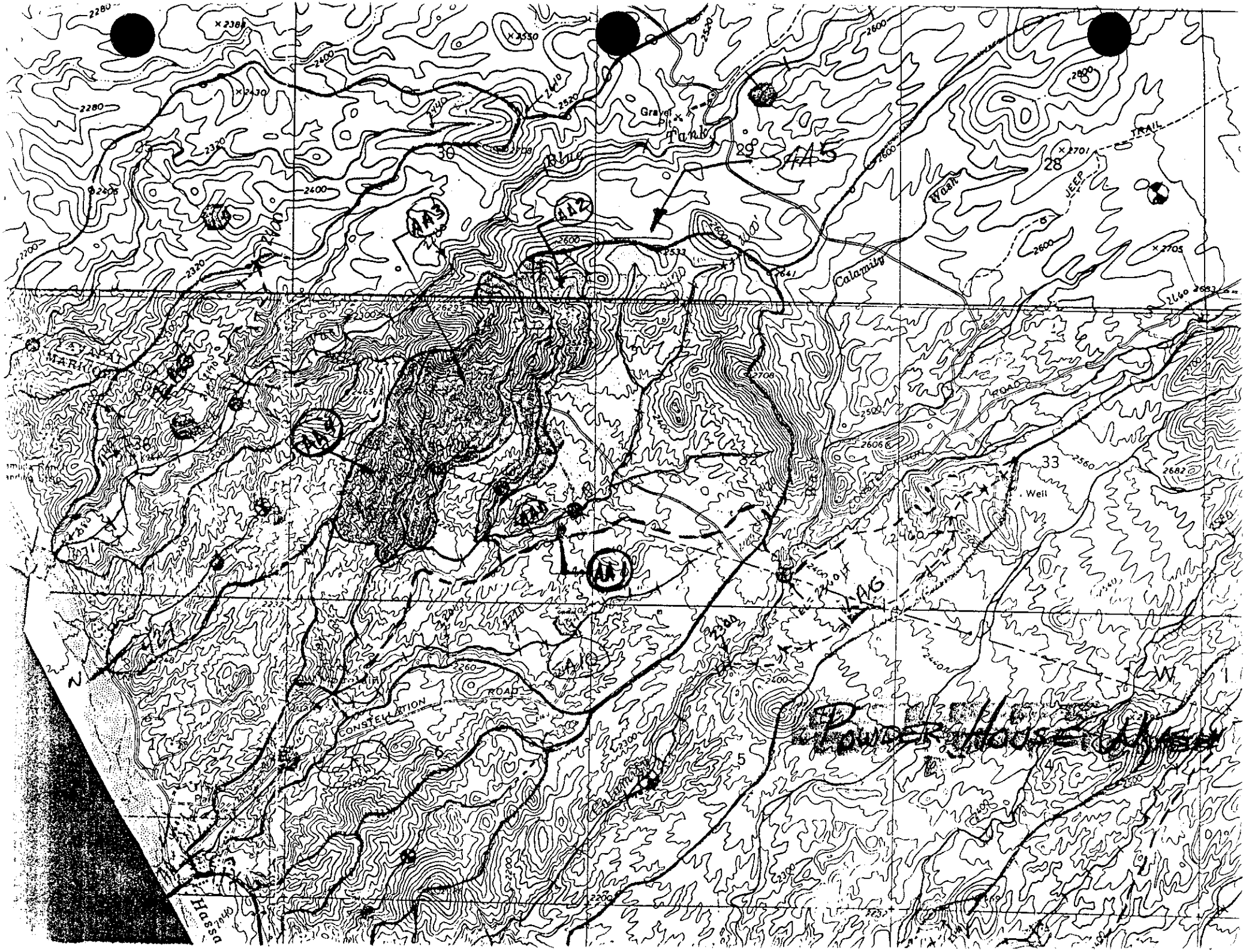
PLA: $\frac{1 \text{ sq in}}{1.18 \text{ unit}} \times \frac{4{,}000{,}000 \text{ sq ft}}{1 \text{ sq in}} \times \frac{1 \text{ sq mi}}{(5280 \text{ ft})^2} = 0.1216 \text{ sq mi/unit}$

AREA	UNIT	SQ MI
RED	0.88, 0.88 } 0.88	0.11
GREEN	1.66, 1.66 } 1.66	0.20
BLUE	0.96, 0.94, 0.95 } 0.95	0.12
	5.54, 5.54 } 5.54	0.67
WHITE	1.85, 1.86, 1.86 } 1.86	0.23
		1.33 OK

RETURN PERIOD

		2YR	10YR	25YR	50YR	100YR	
	SAA5 Q	372	831	1101	1286	1476	← HEC-1
AA4	RED Q	31	69	91	106	122	Q's Determined by Ratio of Areas
AA3	GREEN Q	56	125	166	193	222	
AA2	BLUE Q	34	75	99	116	133	
AA1		187	419	555	648	744	

P-GN-024-A


Gravel
Tank
Blue
Calamity
Wash
JEEP
TRAIL
MARIPOSA
CONSTELLATION
ROAD
Well
Hassa
AA1
AA2
AA3
AA4
AA5
AA6
AA7
AA8
Powder House Wash

BLACK & VEATCH
CONSULTING ENGINEERS
KANSAS CITY DALLAS DENVER ORLANDO

SUBJECT: WICKENBURG ADMS- CONTRACT FCD 89-74
WASH AA & POWDER HOUSE WASH

DATE: FEB 6, 1992
SET UP BY: JAH
COMPUTED BY:
CHECKED BY:
PAGE NO. 9 OF 9

PROJECT NO. 12676
FILE NO.

ITEM	COMMENTS/REMARKS
SPECIAL PROBLEMS	
WASHAA.DAT	
E-Ø.278	SHIFTED CWSEL SSTA & ENDST 10 ft to RIGHT TO LEVEL WSEL
J-Ø.651	SHIFTED CWSEL SSTA & ENDST 10 ft to RIGHT TO LEVEL WSEL
L-Ø.848	SHIFTED CWSEL SSTA & ENDST 10 ft TO LEFT TO LEVEL WSEL
M-Ø.943	SHIFTED CWSEL SSTA & ENDST 10 ft to left TO LEVEL WSEL
T-1.489	SHIFTED CWSEL SSTA & ENDST 5 ft TO RIGHT TO LEVEL WSEL
U-1.579	SHIFTED CWSEL SSTA & ENDST 80 ft to RIGHT TO LEVEL WSEL
V-1.680	SHIFTED CWSEL SSTA & ENDST 50 ft TO RIGHT TO LEVEL WSEL
W-1.769	SHIFTED CWSEL SSTA & ENDST 15 ft to RIGHT TO LEVEL WSEL
Y-1.886	SHIFTED CWSEL SSTA & ENDST 10 FT TO RIGHT TO LEVEL WSEL
Z-1.958	SHIFTED CWSEL SSTA & ENDST 10 FT TO RIGHT TO LEVEL WSEL
AATRIBS-AA2	
A-Ø.104	SHIFTED CWSEL SSTA & ENDST 10 FT TO RIGHT TO LEVEL WSEL
C-Ø.294	SHIFTED CWSEL SSTA & ENDST 10 FT TO RIGHT TO LEVEL WSEL
AATRIBS-AA3	
A-Ø.085	SHIFTED CWSEL SSTA & ENDST 10 FT TO RIGHT TO LEVEL WSEL

..023A

FEDERAL EMERGENCY MANAGEMENT AGENCY RIVERINE HYDRAULIC ANALYSIS FORM	O.M.B. Burden No 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: WASH AA: Powder House Wash
(One form for each flooding source)

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. REACH TO BE REVISED

Downstream limit: Station 0.038 (Hassayampa R. Confluence)

Upstream limit: Station 2.053

2. EFFECTIVE FIS

☐ Not studied

☐ Studied by approximate methods

Downstream limit of study _____

Upstream limit of study _____

☒ Studied by detailed methods

Downstream limit of study Same

Upstream limit of study Approximately Station 1.227

☐ Floodway delineated

Downstream limit of Floodway _____

Upstream limit of Floodway _____

3. HYDRAULIC ANALYSIS

Why is the hydraulic analysis different from that used to develop the FIRM. *(Check all that apply)*

☐ Not studied in FIS

☒ Improved hydrologic data/analysis. Explain: Hydrologic Analysis procedures standardized by the Flood Control District of Maricopa County

☐ Improved hydraulic analysis. Explain: _____

☐ Flood control structure. Explain: _____

☐ Other. Explain: _____

4. MODEL PARAMETERS *(from model used to revise 100-year water surface elevation)*

Discharges:	Upstream Limit	Downstream Limit
10-year		
50-year		
100-year	744	2114
500-year		

Attach diagram showing changes in 100-year discharge

2. Explain how the starting water surface elevations were determined Starting water surface elevation determined by the Slope-Area Method

3. Give range of friction loss coefficients (*Manning's "N"*) Channel ..... .016 - .030

Overbanks ..... .030 - .050

If friction loss coefficients are different anywhere along the revised reach from those used to develop the FIRM, give location, value used in the effective FIS, and revised values and an explanation as to how the revised values were determined.

Location	FIS	Revised
NA		

Explain:

4. Describe how the cross section geometry data were determined (*e.g., field survey, topographic map, taken from previous study*) and list cross sections that were added.

Data points for cross sections are based on the photogrammetric models for the topographic maps

6. Is the discharge value used to determine the floodway anywhere different from that used to determine the natural 100-year flood elevations? ..... ☐ Yes ☒ No

If Yes, explain:

7. Do 100-year water surface elevations increase at any location? ..... ☐ Yes ☒ No

If yes, please attach a list of the locations where the increases occur, state whether or not the increases are located on the requestor's property, and provide an explanation of the reason for the increases.

NA- New Model

Please attach a completed comparison table entitled: Water Surface Elevation Check (See page 6)

6. REVISED FIRM/FBFM AND FLOOD PROFILES

A. The revised water surface elevations tie into those computed by the effective FIS Model (10-, 50-, 100-, and 500-year), downstream of the project at cross-section NA within _____ feet and upstream of the project at cross section _____ within _____ feet.

B. The revised floodway elevations tie into those computed by the effective FIS model, dowstream of the project at cross section NA within _____ feet and upstream of the project at cross section _____ within NA feet.

C. Attach profiles, at the same vertical and horizontal scale as the profiles in the effective FIS report, showing stream bed and profiles of all floods studied (without encroachment). Also, label all cross sections, road crossings (including low chord and top-of-road data), culverts, tributaries, corporate limits, and study limits. If channel distance has changed, the stationing should be revised for all profile sheets.

D. Attach a Floodway Data Table showing data for each cross section listed in the published Floodway Data Table in the FIS report.

Proceed to Riverine /Coastal Mapping Form

FLOODWAY DATA, WASH AA: POWDER HOUSE WA
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
.038	128.	327.	6.5	2043.6	2043.6	.0
.123	116.	288.	7.3	2052.0	2052.0	.0
.165	76.	103.	5.9	2054.7	2054.7	.0
.221	40.	77.	7.9	2059.2	2059.2	.0
.278	42.	78.	7.8	2065.6	2065.6	.0
.335	111.	121.	5.0	2072.7	2072.7	.0
.392	78.	236.	9.0	2080.4	2080.4	.0
.454	103.	251.	8.4	2087.5	2087.5	.0
.545	115.	273.	7.7	2099.5	2099.5	.0
.651	146.	339.	6.2	2111.0	2111.0	.0
.754	116.	300.	7.0	2123.2	2123.2	.0
.848	163.	299.	7.1	2132.7	2132.7	.0
.943	152.	241.	6.1	2144.9	2144.9	.0
1.038	120.	227.	6.5	2157.4	2157.4	.0
1.159	84.	178.	8.3	2170.4	2170.4	.0
1.227	81.	196.	7.5	2179.3	2179.3	.0
1.324	109.	233.	6.3	2188.5	2188.5	.0
1.390	92.	203.	6.7	2196.6	2196.6	.0
1.443	37.	146.	9.2	2204.7	2204.7	.0
1.489	76.	215.	6.3	2207.6	2207.6	.0
1.579	393.	333.	4.1	2220.7	2220.7	.0
1.680	249.	229.	4.9	2233.5	2233.5	.0
1.769	47.	105.	7.1	2248.3	2248.3	.0
1.826	122.	146.	5.1	2254.1	2254.1	.0
1.886	89.	133.	5.6	2262.9	2262.9	.0
1.958	111.	134.	5.5	2269.7	2269.7	.0
2.053	26.	82.	9.1	2283.2	2283.2	.0

FLOODWAY DATA, WASH AA: CONSTELLATION R
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
.038	128.	327.	6.5	2043.6	2043.6	.0
.123	116.	288.	7.3	2052.0	2052.0	.0
.161	63.	174.	8.6	2054.8	2054.8	.0
.191	95.	210.	7.2	2058.3	2058.3	.0
.252	68.	187.	8.0	2066.9	2066.4	.5
.305	72.	195.	7.7	2074.1	2074.1	.0

FLOODWAY DATA, WASH AA: TRIBUTARIES
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
1.489	76.	216.	6.3	2207.6	2207.6	.0
1.579	393.	330.	4.1	2220.7	2220.7	.0
1.680	249.	229.	4.9	2233.5	2233.5	.0
1.769	47.	105.	7.1	2248.3	2248.3	.0
-1.489	76.	216.	6.3	2207.6	2207.6	.0
.085	62.	49.	4.5	2222.1	2222.1	.0
.189	38.	43.	5.1	2236.8	2236.8	.0
.297	26.	39.	5.7	2257.5	2257.5	.0
.382	14.	32.	6.8	2267.6	2267.6	.0
.490	24.	38.	5.9	2296.7	2296.7	.0
-1.680	249.	229.	4.9	2233.5	2233.5	.0
.104	53.	32.	4.2	2252.4	2252.4	.0
.199	51.	36.	3.7	2270.0	2270.0	.0
.294	115.	42.	3.1	2285.9	2285.9	.0

Wickenburg ADMS FCD 89-79

EXPLANATORY NOTES FOR
FORM 4 SECTION 5 PARAGRAPH 1.C

This watercourse islocated in a mountainous area. It is common for this watercourse to flow in subcritical, supercritical, and transitional flow regimes. The subcritical profile has been used to delineate the 100 year floodplain and prepare maps, tables, etc.

Town of Wickenburg (CID 040056) and Unincorporated Maricopa County (CID 040035) Arizona. .

November 1992.

Black & Veatch (PN 17676) / Coe & Van Loo (JN 1197) for the Flood Control District of Maricopa County (Contract FCD 89-79).

Various Washes in and near the Town of Wickenburg.

Documentation Index Number 4.5. Special Problem Report (Appendix 1.1).

PREPARER: Black & Veatch.

LOCATION/SPECIAL PROBLEM DESCRIPTION:

POWDER HOUSE WASH/CONSTELLATION RD

MAP SHEETS 9, 76

This special problem report covers a split flow condition on Powder House Wash (Wash AA). HEC-2 files CONSTRD.* and WASHAA.* are on the ETRIBS diskette.

Wash AA (Powder House Wash) enters the Hassayampa River upstream of the Highway 93 bridge, and has no designed hydraulic structures. Between Jack Burden Road and the intersection of Constellation Road and El Recreo Drive, flow is split into two channels. One is Constellation Road; the other is a small sand-bottomed channel just southwest of Constellation Road. Flow in Constellation Road rejoins the "natural" channel just upstream of Jack Burden Road.

The flow is divided by a low berm across El Recreo Dr. This berm is an apparent continuation of a natural high spot in the wash that has been modified somewhat during urbanization (no berm design data is available). The division of flow between the two channels was calculated by modeling the low berm as a weir and basing discharge on the energy grade line. See file WASHAA.OUT for the weir definition and split flow modeling results. Most flow is diverted by the weir into Constellation Road.

File CONSTRD.OUT shows water surface profiles for the Constellation Road reach based on this flow division. AATRIBS.OUT models upstream tributaries to Powder House Wash and is unrelated to this special problem report.

FEDERAL EMERGENCY MANAGEMENT AGENCY **RIVERINE/COASTAL MAPPING FORM**	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: WASH AA: Powder House Wash

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. MAPPING CHANGES

1. A topographic work map of suitable scale, contour interval, and planimetric definition must be submitted showing *(Indicate N/A when not applicable)*:

		Included		
A.	Revised approximate 100-year floodplain boundaries (Zone A)	☐ Yes	☒ No	☐ N/A
B.	Revised detailed 100- and 500-year floodplain boundaries	☒ Yes	☐ No	☐ N/A
C.	Revised 100-year floodway boundaries	☒ Yes	☐ No	☐ N/A
D.	Location and alignment of all cross sections used in the revised hydraulic model with stationing control indicated	☒ Yes	☐ No	☐ N/A
E.	Stream alignments, road and dam alignments	☒ Yes	☐ No	☐ N/A
F.	Current community boundaries	☒ Yes	☐ No	☐ N/A
G.	Effective 100- and 500-year floodplain and 100-year floodway boundaries from the FIRM/FBFM reduced or enlarged to the scale of the topographic work map	☐ Yes	☐ No	☒ N/A
H.	Tie-ins between the effective and revised 100- and 500-year floodplains and 100-year floodway boundaries	☐ Yes	☐ No	☒ N/A
I.	The requestor's property boundaries and community easements	☐ Yes	☐ No	☒ N/A
J.	The signed certification of a registered professional engineer	☒ Yes	☐ No	☐ N/A
K.	Location and description of reference marks	☒ Yes	☐ No	☐ N/A
L.	Vertical datum (example: NGVD, NAVD etc.)	☒ Yes	☐ No	☐ N/A
M.	Coastal zone designations tie into adjacent areas not being revised	☐ Yes	☐ No	☒ N/A
N.	Location and alignment of all coastal transects used to revise the coastal analyses	☐ Yes	☐ No	☒ N/A

If any of the items above are marked no or N/A, please explain: No Zone A, 500-year, or coastal zones revised or delineated. Revised 100-year floodplains tie into effective Hassayampa River floodplain.

2. What is the source and date of the updated topographic information *(example: orthophoto maps, July 1985; field survey, May 1979, beach profiles, June 1987, etc.)*? Photo: Jan. 1991 (E), Oct 1990 (W); Maps 1992

3. What is the scale and contour interval of the following workmaps?
   a. Effective FIS unknown scale unknown Contour interval
   b. Revision Request 1" = 200' scale 2 ft and 4 FT Contour interval

   NOTE: Revised topographic information must be of equal or greater detail.

4. Attach an annotated FIRM and FBFM at the scale of the effective FIRM and FBFM showing the revised 100-year and 500-year floodplains and the 100-year floodway boundaries and how they tie into those shown on the effective FIRM and FBFM downstream and upstream of the revision or adjacent to the area of revision for coastal studies.

   Attach additional pages if needed.

2. EARTH FILL PLACEMENT

1. The fill is: ☐ Existing ☐ Proposed ☒ N/A

2. Has fill been/will be placed in the regulatory floodway? ..... ☐ Yes ☒ No
   If yes, please attach completed Riverine Hydraulic Analysis Form.

3. Has fill been/will be placed in floodway fringe *(area between the floodway and 100-year floodplain boundaries)*? ..... ☐ Yes ☒ No

   If yes, then complete A, B, C, and D below.

   A. Are fill slopes for granular materials steeper than one vertical on one-and-one-half horizontal? ..... ☐ Yes ☐ No

      If yes, justify steeper slopes_____

      B. Is adequate erosion protection provided for fill slopes exposed to moving flood waters? *(Slopes exposed to flows with velocities of up to 5 feet per second (fps) during the 100-year flood must, at a minimum, be protected by a cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the 100-year flood must, at a minimum, be protected by stone or rock riprap.)* ..... ☐ Yes ☐ No

      If no, describe erosion protection provided_____

      C. Has all fill placed in revised 100-year floodplain been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test Method or acceptable equivalent method? ☐ Yes ☐ No

      D. Can structures conceivably be constructed on the fill at any time in the future? ☐ Yes ☐ No

   If yes, provide certification of fill compaction (item C. above) by the community's NFIP permit official, a registered professional engineer, or an accredited soils engineer.

4. Has fill been/will be placed in a V-zone? ☐ Yes ☒ No

   If yes, is the fill protected from erosion by a flood control structure such as a revetment or seawall? ☐ Yes ☐ No

   If yes, attach the coastal structures form.

```
*****************************************
*  HEC-2 WATER SURFACE PROFILES          *
*                                        *
*  Version   4.6.2;  May 1991            *
*                                        *
*  RUN DATE    17AUG92    TIME   14:22:19 *
*****************************************
```

```
***************************************
*  U.S. ARMY CORPS OF ENGINEERS       *
*  HYDROLOGIC ENGINEERING CENTER      *
*  609 SECOND STREET, SUITE D         *
*  DAVIS, CALIFORNIA 95616-4687       *
*          (916) 756-1104             *
***************************************
```

```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
```

THIS RUN EXECUTED 17AUG92 14:22:19

```
************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************
```

SPLIT FLOW BEING PERFORMED

```
SF      SPLIT FLOW PROBLEM

JC      ENERGY GRADE LINE BEING USED TO DETERMINE OVERFLOW
JP                              1

TW      RIGHT BANK OVER-FLOW WEIR BETWEEN SECTIONS 0.335 & 0.392
WS     3   0.335   0.392   0.123     2.8
WC     0  2076.2     225    2076     330  2081.5
```

```
      WICKENBURG ADMS - CONTRACT FCD 89-79
      BLACK & VEATCH PN 17676   COE & VAN LOO JN 1197-02
T3    WASH AA: POWDER HOUSE WASH       (FILE WASHAA.DAT)

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

              2                                                          2043.57

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     1                -1                                   -1                         15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150       200

NC   0.050     0.050     0.030       0.1       0.3
QT       2      2114      2114
ET               9.1       9.1                                                          950.      1100.
            CONFLUENCE OF WASH AA: POWDER HOUSE WASH
            AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                 UY (HASSAYAMPA RIVER MILE 51.34)
                 VA (HASSAYAMPA RIVER MILE 51.45)
            CROSS-SECTION DESIGNATION FROM:
                 HASSAYAMPA RIVER FLOODWAY FLOOD INSURANCE
                 STUDY, MARICOPA COUNTY, ARIZONA AND
                 UNINCORPORATED AREAS.  FEDERAL EMERGENCY
                 MANAGEMENT AGENCY, EFFECTIVE DATE
                 SEPTEMBER 4, 1991, PERFORMED BY CELLA BARR
                 ASSOCIATES UNDER CONTRACT NO. EMW-88-C-2603.

            SPLIT FLOW OPTION USED FROM XSECT 0.335 TO XSECT 0.392
            TO MODEL WEIR FLOW DOWN CONSTELLATION ROAD.  THE PROGRAM
            WILL USE THE ENERGY GRADE LINE TO DETERMINE OVERFLOW.

            SWSE DETERMINED BY SLOPE AREA METHOD

            ET RECORD: STA 1100. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL

X1    0.038       95     991.0    1010.0       0        0        0
GR   2050.4    950.0    2048.7     960.0  2044.5    969.5   2040.3     979.0   2039.4     984.0
GR   2039.0    991.0    2039.0    1000.0  2039.2   1010.0   2040.0    1012.0   2041.2    1014.0
GR   2041.3   1021.0    2041.7    1032.7  2042.0   1044.3   2042.4    1056.0   2041.9    1064.5
GR   2041.5   1073.0    2040.5    1076.0  2040.4   1079.0   2040.6    1085.0   2042.3    1093.0
GR   2042.4   1103.8    2042.5    1114.6  2042.7   1125.4   2042.8    1136.2   2042.9    1147.0
GR   2043.0   1156.0    2043.1    1165.0  2043.1   1174.0   2043.2    1183.0   2043.3    1194.3
GR   2043.3   1205.5    2043.4    1216.8  2043.5   1228.0   2043.5    1237.6   2043.6    1247.2
GR   2043.6   1256.8    2043.7    1266.4  2043.7   1304.7   2043.8    1314.3   2043.8    1343.0
GR   2043.8   1354.3    2043.8    1365.7  2043.8   1377.0   2043.7    1387.9   2043.7    1398.7
GR   2043.6   1409.6    2043.6    1420.4  2043.5   1431.3   2043.5    1442.1   2043.4    1453.0
GR   2043.5   1463.3    2043.6    1473.5  2043.7   1483.8   2043.8    1494.0   2044.0    1503.0
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    2043.8    1515.0    2043.7    1527.0    2043.7    1536.4    2043.6    1545.8    2043.6    1555.2
    2043.5    1564.6    2043.5    1574.0    2043.6    1583.0    2043.6    1592.0    2043.7    1604.0
GR  2043.8    1613.0    2044.0    1631.0    2044.2    1651.9    2044.3    1672.7    2044.4    1683.1
GR  2044.5    1693.6    2044.6    1704.0    2044.6    1713.9    2044.7    1723.8    2044.7    1733.6
GR  2044.8    1743.5    2044.8    1753.4    2044.8    1805.0    2044.7    1816.0    2044.5    1821.0
GR  2044.6    1831.0    2044.7    1841.0    2044.7    1851.0    2044.8    1861.0    2044.8    1870.5
GR  2044.9    1880.0    2044.9    1889.5    2045.0    1899.0    2045.2    1910.0    2045.3    1921.0
GR  2045.4    1932.0    2045.6    1943.0    2045.7    1952.7    2045.9    1962.3    2046.0    1972.0

NC  0.030     0.030     0.016     0.6       0.8
ET            9.1       9.1                                                         812.      1039.
            ET RECORD: STA 1039. ELIMINATE INEFFECTIVE
                       FLOW AREA BEHIND RETAINING WALL

            X4 RECORD: MODEL RETAINING WALL
                       IN RIGHT OVERBANK
X1  0.123     93        991.0     1030.0    470       450       450
X4  3         2048.5    1038.9    2053.0    1039.0    2053.0    1040.0
GR  2069.4    812.0     2066.6    818.4     2063.8    824.8     2060.9    831.2     2058.1    837.6
GR  2055.3    844.0     2053.0    850.0     2052.9    856.5     2052.7    863.0     2052.6    869.3
GR  2052.6    875.5     2052.5    881.8     2052.4    888.0     2052.4    915.0     2052.1    920.8
GR  2051.7    926.7     2051.4    932.5     2051.0    938.3     2050.6    944.2     2050.3    950.0
GR  2050.1    956.0     2049.8    962.0     2049.6    968.0     2049.3    974.0     2049.0    981.0
GR  2048.7    988.0     2048.7    991.0     2048.6    1000.0    2048.6    1027.0    2048.7    1030.0
GR  2048.5    1037.0    2048.6    1044.0    2048.3    1050.0    2048.0    1056.0    2047.9    1062.7
GR  2047.8    1069.4    2047.7    1076.1    2047.6    1082.9    2047.5    1089.6    2047.4    1096.3
    2047.3    1103.0    2047.4    1109.3    2047.4    1115.6    2047.5    1121.9    2047.5    1128.1
GR  2047.6    1134.4    2047.6    1140.7    2047.7    1147.0    2047.8    1153.5    2047.8    1166.5
GR  2047.9    1173.0    2047.9    1179.0    2048.0    1185.0    2048.2    1191.7    2048.3    1198.3
GR  2048.5    1205.0    2048.7    1211.7    2048.8    1218.3    2049.0    1225.0    2049.1    1230.8
GR  2049.3    1236.5    2049.4    1242.3    2049.6    1248.0    2049.7    1253.3    2049.9    1258.7
GR  2050.0    1264.0    2050.1    1269.7    2050.1    1275.3    2050.2    1281.0    2050.3    1287.5
GR  2050.3    1294.0    2050.3    1300.0    2050.2    1306.0    2050.1    1312.0    2050.1    1318.0
GR  2049.9    1325.3    2049.7    1332.7    2049.5    1340.0    2049.4    1347.5    2049.4    1355.0
GR  2049.7    1363.0    2049.9    1370.0    2050.1    1377.5    2050.4    1385.0    2051.9    1398.2
GR  2052.6    1404.8    2053.4    1411.4    2054.1    1418.0    2055.1    1423.8    2056.1    1429.6
GR  2057.2    1435.4    2058.2    1441.2    2059.2    1447.0

NC  0.030     0.030     0.025     0.1       0.3
ET            9.1       9.1                                                         940.2     1040.
            ET RECORD: STA 1040. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL

            X4 RECORD: MODEL RETAINING WALL
                       IN RIGHT OVERBANK
X1  0.165     90        975.4     1012.9    200       240       220
X4  3         2053.6    1448.9    2058.0    1449.0    2058.0    1450.0
GR  2070.0    940.2     2060.0    954.8     2058.1    959.1     2054.2    964.3     2053.9    967.8
GR  2052.9    975.4     2052.8    981.8     2053.0    1000.0    2053.0    1012.9    2054.3    1031.8
    2054.4    1046.6    2054.5    1056.4    2054.5    1068.8    2054.6    1084.3    2054.8    1095.9
    2054.7    1110.7    2055.5    1121.8    2055.5    1134.2    2055.5    1170.2    2055.1    1174.2
GR  2054.7    1178.2    2054.3    1182.2    2053.9    1186.2    2053.3    1189.7    2052.7    1193.2
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    2051.0    1199.2    2051.0    1201.2    2051.1    1205.2    2051.1    1213.2    2051.2    1217.2
    2051.3    1221.2    2051.4    1225.2    2051.6    1229.2    2051.7    1233.2    2052.2    1239.2
GR  2052.3    1243.2    2052.4    1247.2    2052.4    1251.5    2052.5    1255.7    2052.5    1260.0
GR  2052.6    1264.2    2052.6    1272.7    2052.7    1277.0    2052.7    1285.2    2052.6    1289.2
GR  2052.6    1293.2    2052.5    1297.2    2052.5    1301.2    2052.4    1305.2    2052.4    1309.2
GR  2052.5    1312.9    2052.6    1316.5    2052.7    1320.2    2052.8    1324.5    2052.8    1328.8
GR  2052.9    1333.1    2052.9    1341.7    2053.0    1346.0    2053.1    1350.3    2053.1    1358.9
GR  2053.2    1363.2    2053.2    1367.2    2053.3    1371.2    2053.3    1375.2    2053.4    1379.2
GR  2053.4    1387.2    2053.5    1391.2    2053.5    1395.2    2053.6    1399.2    2053.6    1419.2
GR  2053.7    1423.2    2053.7    1443.5    2053.6    1447.7    2053.6    1456.2    2053.5    1460.5
GR  2053.4    1469.0    2053.3    1481.4    2053.2    1497.8    2053.1    1510.1    2053.0    1522.2
GR  2052.9    1529.9    2052.8    1537.2    2052.9    1546.2    2053.6    1552.2    2055.8    1556.1
GR  2058.0    1559.9    2060.2    1563.8    2062.4    1567.6    2064.6    1571.5    2069.0    1579.2

ET              9.1       9.1                                                         707.      1020.
            ET RECORD: SAT 1020. ELIMINATE INEFFECTIVE
                       FLOW AREA BEHIND RETAINING WALL

            X4 RECORD: MODEL RETAINING WALL
                       IN RIGHT OVERBANK
X1  0.221       39       969    1017.0       325       280       300
X3  10
X4  4       2057.2    1019.9    2061.0    1020.0    2061.0    1021.0    2057.0      1024
GR  2072.0     707.    2068.6      725.    2063.4      749.    2062.6      750.    2062.4      763.
GR  2062.2     766.    2062.2      782.    2062.1      797.    2061.9      856.    2059.9      910.
    2059.1     933.    2059.3      954.    2061.0      964.    2062.8      969.    2062.5      974.
    2061.6     979.    2058.0      981.    2057.2      988.    2057.1      995.    2057.1     1000.
    2057.1    1008.    2057.2     1017.    2056.8     1032.    2056.0     1058.    2055.6     1061.
GR  2055.8    1090.    2055.6     1108.    2056.0     1118.    2057.6     1124.    2057.8     1136.
GR  2058.3    1155.    2059.6     1186.    2060.5     1215.    2059.6     1260.    2061.4     1306.
GR  2061.9    1336.    2062.7     1366.    2062.7     1389.    2068.3     1420.

ET                       9.1                                                         965.      1035.
X1  0.278       33       965       1035       290       305       300
X3  10
GR  2076.0     626.    2065.1      650.    2063.7      695.    2063.9      714.    2063.2      759.
GR  2064.1     808.    2065.0      837.    2064.3      864.    2063.9      870.    2064.3      891.
GR  2065.3     895.    2064.4      909.    2064.6      922.    2065.3      937.    2067.9      946.
GR  2069.5     954.    2069.5      965.    2067.8      967.    2063.2      978.    2063.2     1000.
GR  2064.6    1011.    2067.9     1023.    2069.5     1035.    2067.9     1043.    2063.8     1062.
GR  2063.8    1092.    2063.9     1098.    2064.5     1115.    2064.7     1135.    2064.9     1173.
GR  2068.1    1198.    2073.9     1231.    2083.9     1280.

ET              9.1       9.1                                                         902.      1059.
            ET RECORD: STA 1059. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK
X1  0.335       36      987.       1013       310       285       300
GR  2084.0     902.    2079.3      912.    2074.2      926.    2072.8      934.    2072.6      947.
GR  2071.5     960.    2072.8      967.    2072.5      976.    2070.5      987.    2069.6      994.
GR  2070.0     997.    2070.2     1000.    2071.2     1013.    2071.7     1017.    2071.8     1024.
GR  2071.9    1029.    2072.0     1049.    2076.2     1059.    2075.2     1065.    2070.6     1078.
    2070.0    1082.    2070.3     1090.    2070.9     1100.    2071.9     1113.    2071.9     1133.
    2073.3    1159.    2075.0     1182.    2075.5     1223.    2075.6     1269.    2075.7     1295.
GR  2076.5    1311.    2078.2     1318.    2081.1     1339.    2089.1     1349.    2096.8     1361.
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    2116.1      1382.

ET              9.1       9.1                                                960.      1060.
            ET RECORD: STA 1060. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK
X1   0.392       18       985      1019       280       310       300
GR  2088.1      960.    2083.9     967.    2076.2      985.    2076.0      990.    2076.0     1000.
GR  2076.5     1019.    2077.2    1021.    2077.9     1031.    2079.0     1046.    2080.0     1051.
GR  2081.5     1060.    2080.8    1071.    2079.8     1088.    2079.5     1116.    2079.9     1167.
GR  2081.0     1174.    2081.5    1181.    2088.1     1200.

ET                       9.1                                                965.45    1068.50
X1   0.454       22       988      1009       330       330       330
GR  2108.0      927.    2104.1     938.    2085.3      969.    2084.1      978.    2083.3      988.
GR  2083.2      992.    2083.2    1000.    2083.5     1009.    2083.5     1011.    2083.9     1023.
GR  2084.6     1026.    2086.0    1029.    2086.5     1035.    2086.6     1046.    2087.2     1065.
GR  2088.0     1076.    2089.1    1088.    2089.7     1103.    2090.9     1114.    2091.6     1119.
GR  2104.0     1140.    2108.0    1149.

ET                       9.1                                                976.20    1090.71
X1   0.545       17       988      1004       475       485       480
GR  2108.0      950.    2106.1     960.    2100.0      975.    2094.7      988.    2094.7     1000.
GR  2094.7     1004.    2095.1    1007.    2095.7     1019.    2096.4     1026.    2097.6     1035.
GR  2098.2     1046.    2098.7    1076.    2099.8     1096.    2099.9     1113.    2100.0     1125.
GR  2101.9     1134.    2108.0    1145.

    0.050      0.050    0.030      0.1       0.3
ET                       9.1                                                872.41    1017.97
X1   0.651       20       985      1000       560       540       560
GR  2120.2      851.    2114.9     860.    2113.0      869.    2109.5      875.    2109.2      883.
GR  2110.0      895.    2110.0     914.    2109.3      926.    2108.9      936.    2108.7      942.
GR  2108.7      944.    2108.3     954.    2108.2      968.    2107.2      977.    2106.6      985.
GR  2106.6     1000.    2109.1    1007.    2108.7     1014.    2112.2     1020.    2120.3     1035.

ET                       9.1                                                976.90    1093.46
X1   0.754       17       990      1003       490       540       540
GR  2140.0      953.    2129.8     965.    2127.3      971.    2121.8      979.    2118.9      990.
GR  2118.9     1000.    2118.9    1003.    2119.8     1009.    2120.0     1034.    2121.4     1055.
GR  2121.7     1078.    2123.3    1094.    2124.9     1111.    2126.5     1124.    2127.5     1129.
GR  2130.0     1134.    2132.8    1140.

ET                       9.1                                                892.76    1055.60
X1   0.848       20      1000      1023       495       500       500
GR  2144.1      864.    2139.2     869.    2136.1      880.    2135.8      883.    2133.5      890.
GR  2132.0      895.    2130.8     904.    2130.3      917.    2131.2      929.    2131.5      940.
GR  2131.3      948.    2131.0     958.    2129.4      970.    2130.6     1000.    2130.4     1023.
GR  2131.4     1037.    2132.7    1056.    2135.4     1068.    2138.2     1076.    2144.1     1090.

QT       2     1476      1476
ET                       9.1                                                891.62    1043.13
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                Q = 1476 cfs   FROM HEC-1 MODEL (SAA5)
      0.943        14       981      1000       540       480       500
GR   2156.1      874.    2148.0      885.    2144.7      892.    2144.4      903.    2143.1      913.
GR   2143.0      933.    2143.0      956.    2142.8      981.    2142.8      998.    2142.9     1000.
GR   2143.8     1022.    2143.5     1038.    2148.6     1057.    2156.1     1076.

ET                          9.1                                                        977.29    1097.01
X1    1.038       15      982.9     1000       490       510       500
GR   2164.4      964.    2159.7      972.    2155.0     982.9    2154.5      984.    2155.0     1000.
GR   2155.0     1017.    2155.0     1033.    2155.3     1051.    2156.0     1069.    2156.4     1077.
GR   2156.8     1084.    2156.9     1092.    2157.0     1096.    2160.3     1104.    2164.2     1110.

ET                          9.1                                                        926.78    1010.45
X1    1.159       14       994     1009       640       620       640
GR   2180.1      917.    2170.8      925.    2167.3      941.    2167.1      956.    2168.6      970.
GR   2168.6      987.    2168.6      994.    2168.6     1000.    2168.6     1009.    2176.1     1015.
GR   2180.3     1034.    2187.3     1040.    2192.3     1048.    2200.1     1059.

ET                          9.1                                                        934.67    1015.43
X1    1.227       15       980     1000       310       310       360
GR   2196.1      913.    2191.5      924.    2182.8      930.    2179.0      935.    2178.2      941.
GR   2177.4      942.    2176.8      948.    2176.8      949.    2176.2      980.    2176.2     1000.
GR   2177.1     1007.    2179.4     1016.    2181.7     1021.    2184.2     1031.    2196.5     1039.

ET                          9.1                                                        985.17    1094.21
X1    1.324       24     995.3     1017       480       500       510
GR   2200.9      964.    2194.3      975.    2189.0      985.    2186.1      986.    2185.5     995.3
GR   2185.2     1000.    2185.5     1017.    2186.2     1026.    2186.7     1035.    2186.7     1054.
GR   2186.7     1059.    2186.7     1062.    2186.7     1069.    2186.7     1072.    2186.6     1075.
GR   2186.9     1079.    2187.2     1083.    2187.8     1086.    2187.7     1092.    2187.7     1094.
GR   2191.5     1095.    2194.1     1105.    2197.1     1113.    2200.8     1118.

QT        2      1354      1354
ET                          9.1                                                        976.54    1068.78
                ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
                CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
X1    1.390       23      1000     1022       350       330       350
GR   2220.6      914.    2214.6      929.    2205.5      944.    2200.0      960.    2197.6      970.
GR   2195.9      981.    2194.9      987.    2193.8      991.    2193.1     1000.    2193.1     1022.
GR   2194.7     1035.    2195.2     1048.    2195.1     1050.    2195.7     1067.    2198.7     1073.
GR   2202.5     1077.    2203.7     1079.    2203.3     1086.    2204.3     1096.    2206.1     1104.
GR   2212.4     1113.    2215.1     1121.    2220.6     1144.

ET                          9.1                                                        981.75    1019.24
X1    1.443       16       994     1008       280       260       280
GR   2224.2      940.    2221.7      953.    2217.0      960.    2213.8      968.    2210.4      973.
GR   2206.4      981.    2204.1      982.    2199.5      994.    2199.1     1000.    2199.5     1008.
GR   2199.5     1009.    2199.5     1010.    2200.0     1011.    2200.8     1013.    2212.0     1031.
GR   2224.5     1050.
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                          9.1                                                942.34    1018.63
X1    1.489       11      984      1000       230       240       240
GR   2220.1      917.    2213.2     933.    2208.7      939.    2205.2      950.    2204.5      965.
GR   2204.0      984.    2204.0    1000.    2205.4     1010.    2206.2     1016.    2212.2     1027.
GR   2220.0     1046.

ET                        9.1                                                739.34    1135.04
X1    1.579       33      991      1005       500       450       480
GR   2232.1      228.    2228.4     243.    2225.3      258.    2224.0      275.    2221.4      304.
GR   2221.0      340.    2222.9     396.    2221.9      488.    2221.2      560.    2221.2      638.
GR   2220.8      731.    2220.0     793.    2220.0      877.    2220.0      899.    2220.0      914.
GR   2220.0      928.    2219.1     991.    2219.0     1000.    2219.1     1005.    2219.7     1091.
GR   2221.3     1162.    2222.0    1222.    2221.7     1223.    2222.9     1269.    2222.8     1309.
GR   2221.6     1346.    2220.9    1371.    2220.9     1392.    2225.3     1400.    2229.3     1415.
GR   2229.3     1427.    2228.2    1458.    2228.2     1461.

QT       2      1132      1132
ET                        9.1                                                866.93    1115.83
             ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
             CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
X1    1.680       27      993      1007       395       590       530
GR   2244.3      534.    2236.8     561.    2234.5      593.    2234.7      659.    2233.8      735.
GR   2234.1      810.    2233.7     860.    2232.4      906.    2232.1      982.    2232.1      993.
GR   2232.1     1000.    2232.1    1007.    2232.1     1044.    2233.1     1049.    2233.2     1055.
GR   2233.0     1061.    2233.1    1065.    2233.5     1076.    2232.9     1107.    2234.2     1126.
GR   2235.2     1134.    2235.3    1140.    2234.8     1149.    2235.3     1173.    2236.9     1193.
GR   2239.4     1208.    2244.1    1231.

QT       2       744       744
ET                        9.1                                                958.77    1006.08
             ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
             CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
X1    1.769       11      994    1001.6       500       440       470
GR   2256.2      956.    2247.6     959.    2245.7      972.    2245.7      988.    2245.7      994.
GR   2245.0     1000.    2245.7    1001.6    2245.9     1002.    2248.2     1006.    2253.7     1013.
GR   2256.3     1030.

ET                        9.1                                                916.83    1038.81
X1    1.826       23      985    1007.9       260       310       300
GR   2276.0      839.    2274.3     846.    2273.2      858.    2271.6      867.    2269.8      880.
GR   2266.4      891.    2261.5     900.    2254.0      917.    2252.7      944.    2252.5      968.
GR   2252.6      985.    2252.3    1000.    2252.3     1001.    2252.6    1007.9    2253.0     1017.
GR   2253.5     1034.    2254.1    1039.    2254.3     1061.    2258.2     1094.    2263.5     1111.
GR   2273.5     1159.    2278.2    1182.    2278.2     1183.

ET                        9.1                                                923.15    1011.91
X1    1.886       17      984    1003.6       370       300       320
GR   2284.2      817.    2280.2     824.    2271.7      844.    2271.5      852.    2269.2      860.
GR   2267.8      866.    2266.3     869.    2265.0      871.    2263.9      877.    2263.5      899.
GR   2262.8      928.    2261.4     945.    2261.2      958.    2261.1      984.    2260.3     1000.
GR   2261.1    1003.6    2266.0    1026.
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			9.1						906.62	1018.03
X1	1.958	18	987	1010	360	380	380			
GR	2280.3	866.	2277.8	874.	2274.8	887.	2272.7	895.	2271.2	900.
GR	2270.4	904.	2269.1	909.	2268.5	922.	2268.4	952.	2268.4	976.
GR	2268.4	987.	2268.4	1000.	2268.4	1010.	2268.4	1012.	2271.9	1028.
GR	2274.3	1036.	2276.9	1047.	2280.3	1054.				
ET			9.1						984.13	1009.86
X1	2.053	13	991	1005	500	500	500			
GR	2292.1	959.	2287.2	979.	2280.2	988.	2279.5	991.	2279.4	995.
GR	2279.4	1000.	2279.7	1005.	2280.4	1008.	2280.8	1009.	2283.6	1010.
GR	2287.0	1018.	2290.7	1020.	2292.6	1025.				

```
    ECNO     DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
             QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
   TIME      VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE     XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV=     .100 CEHV=     .300
*SECNO  .038
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      950.0    1100.0  TYPE=      1  TARGET=      150.000
            CONFLUENCE OF WASH AA: POWDER HOUSE WASH
            AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                 UY (HASSAYAMPA RIVER MILE 51.34)
                 VA (HASSAYAMPA RIVER MILE 51.45)
            CROSS-SECTION DESIGNATION FROM:
                 HASSAYAMPA RIVER FLOODWAY FLOOD INSURANCE
                 STUDY, MARICOPA COUNTY, ARIZONA AND
                 UNINCORPORATED AREAS.  FEDERAL EMERGENCY
                 MANAGEMENT AGENCY, EFFECTIVE DATE
                 SEPTEMBER 4, 1991, PERFORMED BY CELLA BARR
                 ASSOCIATES UNDER CONTRACT NO. EMW-88-C-2603.

            SPLIT FLOW OPTION USED FROM XSECT 0.335 TO XSECT 0.392
            TO MODEL WEIR FLOW DOWN CONSTELLATION ROAD.  THE PROGRAM
            WILL USE THE ENERGY GRADE LINE TO DETERMINE OVERFLOW.

            SWSE DETERMINED BY SLOPE AREA METHOD

            ET RECORD: STA 1100. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL

      .038      4.57   2043.57   2043.57   2043.57   2044.75      1.18       .00       .00   2039.00
    2114.0     361.8     998.0     754.2      61.4      85.9     179.7        .0        .0   2039.20
       .00      5.90     11.62      4.20      .050      .030      .050      .000   2039.00    971.59
   .007358        0.        0.        0.         0         4         0       .00    128.40   1100.00


FLOW DISTRIBUTION FOR SECNO=       .04          CWSEL=   2043.57

STA=     972.     984.     991.    1010.    1014.    1021.    1033.    1044.    1065.    1076.    1085.    1093.    1100.
  PER Q=     7.3      9.9     47.2      3.6      3.4      4.8      3.5      4.2      4.6      7.1      3.3      1.1
   AREA=    30.7     30.6     85.9     13.9     16.3     24.3     20.0     28.2     23.6     27.8     17.0      8.7
    VEL=     5.0      6.8     11.6      5.5      4.5      4.1      3.7      3.2      4.1      5.4      4.2      2.6
      H=     2.5      4.4      4.5      3.5      2.3      2.1      1.7      1.4      2.1      3.1      2.1      1.2
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .600 CEHV= .800
*SECNO .123
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 812.0 1039.0 TYPE= 1 TARGET= 227.000
ET RECORD: STA 1039. ELIMINATE INEFFECTIVE
FLOW AREA BEHIND RETAINING WALL

X4 RECORD: MODEL RETAINING WALL
IN RIGHT OVERBANK

.123	4.68	2051.98	2051.98	2051.98	2053.26	1.29	1.87	.09	2048.70
2114.0	558.0	1401.5	154.5	126.5	131.1	30.4	3.2	1.3	2048.70
.01	4.41	10.69	5.09	.030	.016	.030	.000	2047.30	922.63
.002633	470.	450.	450.	0	5	0	.00	116.35	1038.98

FLOW DISTRIBUTION FOR SECNO= .12 CWSEL= 2051.98

	923.	956.	968.	974.	981.	988.	991.	1030.	1037.	1039.
Q=	4.9	5.2	3.4	4.8	5.6	2.6	66.3	6.4	.9
AREA=	34.0	25.8	15.2	19.8	21.9	9.8	131.1	23.6	6.7
VEL=	3.0	4.2	4.7	5.1	5.4	5.6	10.7	5.7	2.9
DEPTH=	1.0	2.2	2.5	2.8	3.1	3.3	3.4	3.4	3.4

CCHV= .100 CEHV= .300
*SECNO .165

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 940.2 1040.0 TYPE= 1 TARGET= 99.800
ET RECORD: STA 1040. ELIMINATE INEFFECTIVE
FLOW AREA IN RIGHT OVERBANK

MAPPED FLOODPLAIN TO CWSEL

X4 RECORD: MODEL RETAINING WALL
IN RIGHT OVERBANK

.165	3.72	2054.72	2054.72	2054.72	2055.34	.62	.68	.07	2052.90
607.6	54.1	464.6	89.0	12.6	67.4	23.5	4.2	1.8	2053.00
.02	4.30	6.90	3.79	.030	.025	.030	.000	2051.00	963.60
.006169	200.	220.	240.	0	14	0	.00	76.39	1040.00

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .17 CWSEL= 2054.72

STA=	964.	964.	968.	975.	1013.	1032.	1040.
PER Q=	.0	1.2	7.7	76.5	13.6	1.1	
AREA=	.2	2.4	10.0	67.4	20.3	3.2	
VEL=	1.4	3.0	4.7	6.9	4.1	2.0	
DEPTH=	.3	.7	1.3	1.8	1.1	.4	

*SECNO .221
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 707.0 1020.0 TYPE= 1 TARGET= 313.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2062.80 ELREA= 2057.20

ET RECORD: SAT 1020. ELIMINATE INEFFECTIVE
FLOW AREA BEHIND RETAINING WALL

X4 RECORD: MODEL RETAINING WALL
IN RIGHT OVERBANK

.221	2.09	2059.19	2059.19	2059.19	2060.18	.99	2.08	.11	2062.80
607.6	.0	579.3	28.4	.0	71.4	5.8	4.8	2.2	2057.20
.03	.00	8.12	4.87	.000	.025	.030	.000	2057.10	980.34
.007878	325.	300.	280.	0	11	0	.00	39.61	1019.95

FLOW DISTRIBUTION FOR SECNO= .22 CWSEL= 2059.19

STA=	980.	1017.	1020.	1020.
PER Q=	95.3	4.7	.0	
AREA=	71.4	5.8	.1	
VEL=	8.1	4.9	.0	
DEPTH=	1.9	2.0	1.0	

*SECNO .278
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2069.50 ELREA= 2069.50

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
.278	2.35	2065.55	2065.55	2065.55	2066.49	.94	2.33	.01	2069.50
607.6	.0	607.6	.0	.0	78.2	.0	5.3	2.4	2069.50
.05	.00	7.77	.00	.000	.025	.000	.000	2063.20	972.37
.007633	290.	300.	305.	0	8	0	.00	42.09	1014.47

FLOW DISTRIBUTION FOR SECNO= .28 CWSEL= 2065.55

STA= 972. 1035.
PER Q= 100.0
AREA= 78.2
VEL= 7.8
DEPTH= 1.9

*SECNO .335

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
7[illegible] CRITICAL DEPTH ASSUMED

3[illegible] ENCROACHMENT STATIONS= 902.0 1059.0 TYPE= 1 TARGET= 157.000
ET RECORD: STA 1059. ELIMINATE INEFFECTIVE
FLOW AREA IN RIGHT OVERBANK

.335	3.12	2072.72	2072.72	2072.71	2073.29	.58	1.70	.04	2070.50
607.6	81.3	429.1	97.2	27.2	61.5	32.1	6.0	3.0	2071.20
.06	2.99	6.98	3.03	.030	.025	.030	.000	2069.60	939.44
.004407	310.	300.	285.	0	11	0	.00	108.30	1050.71

FLOW DISTRIBUTION FOR SECNO= .34 CWSEL= 2072.72

STA=	939.	947.	960.	967.	976.	987.	1013.	1017.	1024.	1029.	1049.	1051.
PER Q=	.0	3.6	1.5	.1	8.2	70.6	3.2	3.6	2.1	6.9	.2	
AREA=	.4	8.7	4.0	.7	13.4	61.5	5.1	6.8	4.3	15.3	.6	
VEL=	.5	2.5	2.3	.7	3.7	7.0	3.8	3.2	3.0	2.8	1.6	
DEPTH=	.1	.7	.6	.1	1.2	2.4	1.3	1.0	.9	.8	.4	

*SECNO .392

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 960.0 1060.0 TYPE= 1 TARGET= 100.000
ET RECORD: STA 1060. ELIMINATE INEFFECTIVE
FLOW AREA IN RIGHT OVERBANK

.392	4.41	2080.41	2080.41	2080.41	2081.92	1.51	1.42	.28	2076.20
2114.0	111.2	1574.5	428.3	20.8	144.8	70.3	7.3	3.6	2076.50
.07	5.36	10.87	6.09	.030	.025	.030	.000	2076.00	975.15
.004847	280.	300.	310.	0	11	0	.00	78.33	1053.48

FLOW DISTRIBUTION FOR SECNO= .39 CWSEL= 2080.41

STA=	975.	985.	1019.	1021.	1031.	1046.	1051.	1053.
PER Q=	5.3	74.5	2.6	9.4	7.5	.7	.0	
AREA=	20.8	144.8	7.1	28.6	29.5	4.6	.5	
EL=	5.4	10.9	7.7	6.9	5.4	3.2	1.2	
PTH=	2.1	4.3	3.6	2.9	2.0	.9	.2	

*SECNO .454
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.454	4.25	2087.45	2087.45	2087.45	2088.73	1.28	1.63	.02	2083.30
2114.0	502.4	963.5	648.1	66.2	87.8	97.2	9.1	4.3	2083.50
.08	7.59	10.97	6.67	.030	.025	.030	.000	2083.20	965.45
.005062	330.	330.	330.	0	8	0	.00	103.05	1068.50

FLOW DISTRIBUTION FOR SECNO= .45 CWSEL= 2087.45

STA=	965.	969.	978.	988.	1009.	1011.	1023.	1026.	1029.	1035.	1046.	1065.	1069.
PER Q=	.6	8.1	15.1	45.6	3.3	18.1	3.4	1.7	1.4	1.6	1.2	.0	
AREA=	3.8	24.8	37.5	87.8	7.9	45.1	9.6	6.5	7.2	9.9	10.5	.4	
VEL=	3.3	6.9	8.5	11.0	8.8	8.5	7.5	5.5	4.0	3.3	2.4	.9	
DEPTH=	1.1	2.8	3.8	4.2	4.0	3.8	3.2	2.2	1.2	.9	.6	.1	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .545
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.545	4.81	2099.51	2099.51	2099.51	2100.72	1.21	2.31	.01	2094.70
2114.0	161.5	878.4	1074.1	28.4	76.9	165.4	12.0	5.5	2094.70
.09	5.69	11.42	6.49	.030	.025	.030	.000	2094.70	976.20
.004543	475.	480.	485.	0	8	0	.00	114.51	1090.71

FLOW DISTRIBUTION FOR SECNO= .55 CWSEL= 2099.51

STA=	976.	988.	1004.	1007.	1019.	1026.	1035.	1046.	1076.	1091.
PER Q=	7.6	41.6	6.0	20.0	8.7	6.5	3.8	5.2	.5	
AREA=	28.4	76.9	13.8	49.3	24.2	22.6	17.7	31.8	6.0	
VEL=	5.7	11.4	9.2	8.6	7.6	6.1	4.6	3.5	1.8	
DEPTH=	2.4	4.8	4.6	4.1	3.5	2.5	1.6	1.1	.4	

CCHV= .100 CEHV= .300
*SECNO .651
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.651	4.41	2111.01	2111.01	2111.01	2112.09	1.08	3.31	.01	2106.60
2114.0	1114.0	798.8	201.2	231.4	66.2	41.5	15.9	7.1	2106.60
.12	4.81	12.07	4.85	.050	.030	.050	.000	2106.60	872.41
.008200	560.	560.	540.	0	15	0	.00	145.56	1017.97

FLOW DISTRIBUTION FOR SECNO= .65 CWSEL= 2111.01

STA=	872.	895.	926.	936.	944.	954.	968.	977.	985.	1000.	1007.	1014.	1018.
PER Q=	5.3	5.0	3.8	3.9	5.9	9.7	8.4	10.7	37.8	5.8	3.1	.6	
AREA=	32.2	35.6	19.1	17.9	25.1	38.7	29.8	32.9	66.2	22.1	14.8	4.6	
VEL=	3.5	3.0	4.1	4.6	5.0	5.3	6.0	6.9	12.1	5.6	4.4	2.7	
DEPTH=	1.4	1.1	1.9	2.2	2.5	2.8	3.3	4.1	4.4	3.2	2.1	1.2	

*SECNO .754
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.754	4.35	2123.25	2123.25	2123.24	2124.47	1.22	4.65	.04	2118.90
2114.0	187.7	731.5	1194.8	33.4	56.5	211.4	19.7	8.7	2118.90
.13	5.63	12.95	5.65	.050	.030	.050	.000	2118.90	976.90
.009632	490.	540.	540.	0	5	0	.00	116.56	1093.46

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .75 CWSEL= 2123.25

STA=	977.	979.	990.	1003.	1009.	1034.	1055.	1078.	1093.
PER Q=	.1	8.7	34.6	7.9	25.8	13.7	7.7	1.4	
AREA=	1.5	31.9	56.5	23.4	83.6	53.5	39.0	11.9	
VEL=	2.1	5.8	12.9	7.2	6.5	5.4	4.1	2.4	
DEPTH=	.7	2.9	4.3	3.9	3.3	2.5	1.7	.8	

*SECNO .848
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.848	3.27	2132.67	2132.67	2132.67	2133.62	.95	6.33	.03	2130.60
2114.0	1387.5	549.4	177.1	212.7	50.0	36.6	23.1	10.3	2130.40
.15	6.52	11.00	4.83	.050	.030	.050	.000	2129.40	892.76
.017518	495.	500.	500.	0	19	0	.00	162.84	1055.60

FLOW DISTRIBUTION FOR SECNO= .85 CWSEL= 2132.67

STA=	893.	895.	904.	917.	929.	940.	948.	958.	970.	1000.	1023.	1037.	1056.
Q=	.1	2.5	8.5	6.6	3.3	2.2	3.7	10.0	28.7	26.0	6.8	1.6	
AREA=	.8	11.5	27.6	23.1	14.5	10.2	15.2	29.7	80.2	50.0	24.8	11.8	
VEL=	1.8	4.6	6.5	6.1	4.7	4.6	5.2	7.2	7.6	11.0	5.8	2.9	
DEPTH=	.3	1.3	2.1	1.9	1.3	1.3	1.5	2.5	2.7	2.2	1.8	.6	

*SECNO .943
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
Q = 1476 cfs FROM HEC-1 MODEL (SAA5)

.943	2.08	2144.88	2144.88	2144.88	2145.65	.78	8.87	.02	2142.80
1476.0	805.8	405.2	265.0	144.1	39.4	56.8	26.3	12.2	2142.90
.17	5.59	10.29	4.67	.050	.030	.050	.000	2142.80	891.62
.016343	540.	500.	480.	0	14	0	.00	151.51	1043.13

FLOW DISTRIBUTION FOR SECNO= .94 CWSEL= 2144.88

STA=	892.	903.	913.	933.	956.	981.	1000.	1022.	1038.	1043.
PER Q=	.4	3.1	14.1	16.9	20.0	27.5	11.5	5.8	.7	
AREA=	3.6	11.3	36.5	43.2	49.4	39.4	33.6	19.6	3.5	
VEL=	1.8	4.1	5.7	5.8	6.0	10.3	5.0	4.4	2.9	
DEPTH=	.3	1.1	1.8	1.9	2.0	2.1	1.5	1.2	.7	

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.038
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.038	2.92	2157.42	2157.42	2157.42	2158.34	.92	7.31	.04	2155.00
1476.0	24.7	495.2	956.1	6.8	45.6	174.6	29.0	13.7	2155.00
.19	3.65	10.85	5.48	.050	.030	.050	.000	2154.50	977.29
.013088	490.	500.	510.	0	11	0	.00	119.72	1097.01

FLOW DISTRIBUTION FOR SECNO= 1.04 CWSEL= 2157.42

STA=	977.	983.	1000.	1017.	1033.	1051.	1069.	1077.	1084.	1092.	1096.	1097.
PER Q=	1.7	33.5	17.1	16.1	16.2	10.7	2.6	1.2	.7	.3	.0	
AREA=	6.8	45.6	41.1	38.7	40.8	31.8	9.7	5.7	4.5	1.9	.2	
VEL=	3.6	10.9	6.1	6.1	5.9	5.0	3.9	3.0	2.3	2.0	1.1	
DEPTH=	1.2	2.7	2.4	2.4	2.3	1.8	1.2	.8	.6	.5	.2	

*SECNO 1.159
7185 MINIMUM SPECIFIC ENERGY
CRITICAL DEPTH ASSUMED

.159	3.31	2170.41	2170.41	2170.41	2171.55	1.14	10.60	.07	2168.60
1476.0	1174.5	297.5	4.0	149.6	27.2	1.3	32.0	15.2	2168.60
.21	7.85	10.95	3.03	.050	.030	.050	.000	2167.10	926.78
.022159	640.	640.	620.	0	8	0	.00	83.67	1010.45

FLOW DISTRIBUTION FOR SECNO= 1.16 CWSEL= 2170.41

STA=	927.	941.	956.	970.	987.	994.	1009.	1010.
PER Q=	8.8	31.4	20.0	13.7	5.6	20.2	.3	
AREA=	22.1	48.2	35.9	30.8	12.7	27.2	1.3	
VEL=	5.8	9.6	8.2	6.6	6.6	11.0	3.0	
DEPTH=	1.6	3.2	2.6	1.8	1.8	1.8	.9	

*SECNO 1.227
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.227	3.05	2179.25	2179.25	2179.25	2180.48	1.23	5.17	.03	2176.20
1476.0	641.3	693.4	141.3	106.2	61.1	27.3	33.3	15.8	2176.20
.22	6.04	11.35	5.17	.050	.030	.050	.000	2176.20	934.67
.011852	310.	360.	310.	0	11	0	.00	80.76	1015.43

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 1.23 CWSEL= 2179.25

STA=	935.	941.	942.	948.	949.	980.	1000.	1007.	1015.
PER Q=	.6	.3	4.7	1.0	36.8	47.0	7.5	2.0	
AREA=	3.9	1.5	12.9	2.5	85.4	61.1	18.2	9.1	
VEL=	2.4	3.5	5.4	5.9	6.4	11.4	6.1	3.3	
DEPTH=	.6	1.5	2.2	2.5	2.8	3.1	2.6	1.1	

*SECNO 1.324
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.324	3.32	2188.52	2188.52	2188.52	2189.52	1.00	5.31	.02	2185.50
1476.0	144.4	718.0	613.5	26.3	68.7	137.7	35.8	16.9	2185.50
.24	5.50	10.45	4.46	.050	.030	.050	.000	2185.20	985.17
.009576	480.	510.	500.	0	8	0	.00	109.05	1094.21

FLOW DISTRIBUTION FOR SECNO= 1.32 CWSEL= 2188.52

STA=	985.	995.	1017.	1026.	1035.	1054.	1062.	1069.	1075.	1083.	1094.
Q=	9.8	48.6	9.1	5.9	10.1	4.3	3.7	3.3	3.5	1.6	
AREA=	26.3	68.7	24.0	18.6	34.5	14.5	12.7	11.0	12.9	9.4	
VEL=	5.5	10.4	5.6	4.7	4.3	4.3	4.3	4.4	4.0	2.6	
DEPTH=	2.6	3.2	2.7	2.1	1.8	1.8	1.8	1.8	1.6	.8	

*SECNO 1.390
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

1.390	3.49	2196.59	2196.59	2196.59	2197.69	1.10	3.05	.03	2193.10
1354.0	226.8	793.7	333.5	45.9	76.8	80.2	37.5	17.7	2193.10
.25	4.94	10.34	4.16	.050	.030	.050	.000	2193.10	976.54
.008232	350.	350.	330.	0	8	0	.00	92.24	1068.78

FLOW DISTRIBUTION FOR SECNO= 1.39 CWSEL= 2196.59

STA=	977.	981.	987.	991.	1000.	1022.	1035.	1048.	1050.	1067.	1069.
PER Q=	.1	1.6	3.0	12.0	58.6	13.4	5.9	.7	4.5	.1	
AREA=	1.5	7.1	9.0	28.3	76.8	35.0	21.3	2.9	20.2	.8	
VEL=	1.3	3.0	4.5	5.8	10.3	5.2	3.7	3.4	3.0	1.5	
DEPTH=	.3	1.2	2.2	3.1	3.5	2.7	1.6	1.4	1.2	.4	

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.443

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.443	5.58	2204.68	2204.68	2204.68	2206.68	2.00	2.13	.27	2199.50
1354.0	169.4	975.3	209.3	34.7	75.3	36.0	38.6	18.1	2199.50
.26	4.89	12.94	5.82	.050	.030	.050	.000	2199.10	981.75
.007256	280.	280.	260.	0	14	0	.00	37.49	1019.24

FLOW DISTRIBUTION FOR SECNO= 1.44 CWSEL= 2204.68

STA=	982.	994.	1008.	1009.	1010.	1011.	1013.	1019.
PER Q=	12.5	72.0	2.9	2.9	2.5	4.0	3.2	
AREA=	34.7	75.3	5.2	5.2	4.9	8.6	12.1	
VEL=	4.9	12.9	7.6	7.6	6.8	6.4	3.5	
DEPTH=	2.8	5.4	5.2	5.2	4.9	4.3	1.9	

*SECNO 1.489

3301 HV CHANGED MORE THAN HVINS

1.489	3.64	2207.64	2207.19	2207.64	2208.49	.85	1.69	.12	2204.00
1354.0	591.4	569.7	192.9	115.5	58.2	42.3	39.6	18.4	2204.00
.27	5.12	9.79	4.56	.050	.030	.050	.000	2204.00	942.34
.006986	230.	240.	240.	3	11	0	.00	76.29	1018.63

FLOW DISTRIBUTION FOR SECNO= 1.49 CWSEL= 2207.64

STA=	942.	950.	965.	984.	1000.	1010.	1016.	1019.
PER Q=	1.9	15.2	26.6	42.1	11.0	3.0	.3	
AREA=	9.3	41.8	64.3	58.2	29.4	11.0	1.9	
VEL=	2.7	4.9	5.6	9.8	5.1	3.7	1.8	
DEPTH=	1.2	2.8	3.4	3.6	2.9	1.8	.7	

*SECNO 1.579
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
1.579	1.69	2220.69	2220.69	2220.69	2221.05	.36	4.87	.05	2219.10
1354.0	605.6	200.7	547.7	184.0	23.0	133.0	42.6	21.0	2219.10
.30	3.29	8.73	4.12	.050	.030	.050	.000	2219.00	739.34
.016029	500.	480.	450.	0	13	0	.00	395.69	1135.04

FLOW DISTRIBUTION FOR SECNO= 1.58 CWSEL= 2220.69

STA=	739.	793.	877.	899.	914.	928.	991.	1005.	1091.	1135.
PER Q=	2.5	12.6	3.3	2.3	2.1	21.9	14.8	36.6	3.8	
AREA=	18.6	58.2	15.2	10.4	9.7	72.0	23.0	111.1	21.9	
VEL=	1.9	2.9	2.9	2.9	2.9	4.1	8.7	4.5	2.4	
DEPTH=	.3	.7	.7	.7	.7	1.1	1.6	1.3	.5	

*SECNO 1.680
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

1.680	1.40	2233.50	2233.50	2233.50	2233.97	.47	8.68	.03	2232.10
132.0	618.7	175.6	337.8	132.3	19.7	77.2	45.7	24.5	2232.10
.33	4.67	8.93	4.38	.050	.030	.050	.000	2232.10	866.93
.020686	395.	530.	590.	0	12	0	.00	248.90	1115.83

FLOW DISTRIBUTION FOR SECNO= 1.68 CWSEL= 2233.50

STA=	867.	906.	982.	993.	1007.	1044.	1049.	1055.	1061.	1065.	1076.	1107.	1116.
PER Q=	5.5	41.9	7.3	15.5	24.6	1.6	.4	.5	.4	.3	1.6	.5	
AREA=	21.6	95.3	15.4	19.7	51.9	4.5	2.1	2.4	1.8	2.2	9.4	2.7	
VEL=	2.9	5.0	5.4	8.9	5.4	3.9	2.1	2.3	2.5	1.5	1.9	1.9	
DEPTH=	.6	1.3	1.4	1.4	1.4	.9	.4	.4	.5	.2	.3	.3	

*SECNO 1.769

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
1.769	3.27	2248.27	2248.27	2248.27	2249.34	1.07	8.34	.18	2245.70
744.0	464.6	256.2	23.2	77.5	22.2	5.8	47.6	26.1	2245.70
.34	5.99	11.56	3.96	.050	.030	.050	.000	2245.00	958.77
.013519	500.	470.	440.	0	20	0	.00	47.31	1006.08

FLOW DISTRIBUTION FOR SECNO= 1.77 CWSEL= 2248.27

STA=	959.	972.	988.	994.	1002.	1002.	1006.
PER Q=	13.3	35.7	13.4	34.4	.8	2.3	
AREA=	21.1	41.0	15.4	22.2	1.0	4.9	
VEL=	4.7	6.5	6.5	11.6	5.9	3.6	
DEPTH=	1.6	2.6	2.6	2.9	2.5	1.2	

*SECNO 1.826
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.826	1.78	2254.08	2254.08	2254.08	2254.66	.58	3.88	.05	2252.60
744.0	342.1	307.2	94.7	81.0	37.4	27.1	48.4	26.6	2252.60
.36	4.22	8.21	3.50	.050	.030	.050	.000	2252.30	916.83
.014301	260.	300.	310.	0	11	0	.00	121.98	1038.81

FLOW DISTRIBUTION FOR SECNO= 1.83 CWSEL= 2254.08

STA=	917.	944.	968.	985.	1008.	1017.	1034.	1039.
PER Q=	7.6	22.0	16.4	41.3	6.5	5.9	.3	
AREA=	19.6	35.4	26.0	37.4	11.6	14.1	1.4	
VEL=	2.9	4.6	4.7	8.2	4.2	3.1	1.5	
DEPTH=	.7	1.5	1.5	1.6	1.3	.8	.3	

*SECNO 1.886
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.886	2.62	2262.92	2262.92	2262.92	2263.67	.75	4.28	.05	2261.10
744.0	338.6	383.7	21.8	81.1	43.5	7.5	49.5	27.5	2261.10
.37	4.17	8.83	2.89	.050	.030	.050	.000	2260.30	923.15
.011072	370.	320.	300.	0	14	0	.00	88.75	1011.91

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 1.89 CWSEL= 2262.92

STA=	923.	928.	945.	958.	984.	1004.	1012.
PER Q=	.0	5.1	12.2	28.2	51.6	2.9	
AREA=	.3	13.9	21.0	45.9	43.5	7.5	
VEL=	.5	2.7	4.3	4.6	8.8	2.9	
DEPTH=	.1	.8	1.6	1.8	2.2	.9	

*SECNO 1.958
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.958	1.32	2269.72	2269.72	2269.72	2270.32	.60	5.34	.02	2268.40
744.0	465.3	253.2	25.6	96.9	30.3	6.6	50.6	28.3	2268.40
.39	4.80	8.35	3.87	.050	.030	.050	.000	2268.40	906.62
.019656	360.	380.	380.	0	8	0	.00	111.40	1018.03

FLOW DISTRIBUTION FOR SECNO= 1.96 CWSEL= 2269.72

STA=	907.	909.	922.	952.	976.	987.	1010.	1012.	1018.
PER Q=	.2	6.3	25.0	21.3	9.8	34.0	1.8	1.7	
AREA=	.7	11.9	38.0	31.6	14.5	30.3	2.6	4.0	
VEL=	1.9	3.9	4.9	5.0	5.0	8.3	5.0	3.1	
DEPTH=	.3	.9	1.3	1.3	1.3	1.3	1.3	.7	

*SECNO 2.053

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.053	3.81	2283.21	2283.21	2283.21	2284.87	1.67	6.39	.32	2279.50
744.0	80.9	591.9	71.3	15.9	52.4	13.1	51.8	29.1	2279.70
.40	5.09	11.30	5.43	.050	.030	.050	.000	2279.40	984.13
.008981	500.	500.	500.	0	20	0	.00	25.73	1009.86

FLOW DISTRIBUTION FOR SECNO= 2.05 CWSEL= 2283.21

STA=	984.	988.	991.	1005.	1008.	1009.	1010.
PER Q=	2.5	8.4	79.6	7.6	1.8	.2	
AREA=	5.8	10.1	52.4	9.5	2.6	1.0	
VEL=	3.2	6.2	11.3	6.0	5.1	1.5	
DEPTH=	1.5	3.4	3.7	3.2	2.6	1.2	

RIGHT BANK OVER-FLOW WEIR BETWEEN SECTIONS 0.335 & 0.392

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1506.37	1506.33	.00	1506.37	1506.33	.00	5	2073.292	2081.921	.335	.392

FLOODWAY DETERMINATION
1.0 FT TARGET INCREASE
T3 WASH AA: POWDER HOUSE WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2043.57	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15		-1				-1			

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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV=     .100 CEHV=     .300
*SECNO  .038
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      950.0    1100.0  TYPE=      1  TARGET=      150.000
            CONFLUENCE OF WASH AA: POWDER HOUSE WASH
            AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                 UY (HASSAYAMPA RIVER MILE 51.34)
                 VA (HASSAYAMPA RIVER MILE 51.45)
            CROSS-SECTION DESIGNATION FROM:
                 HASSAYAMPA RIVER FLOODWAY FLOOD INSURANCE
                 STUDY, MARICOPA COUNTY, ARIZONA AND
                 UNINCORPORATED AREAS.  FEDERAL EMERGENCY
                 MANAGEMENT AGENCY, EFFECTIVE DATE
                 SEPTEMBER 4, 1991, PERFORMED BY CELLA BARR
                 ASSOCIATES UNDER CONTRACT NO. EMW-88-C-2603.

            SPLIT FLOW OPTION USED FROM XSECT 0.335 TO XSECT 0.392
            TO MODEL WEIR FLOW DOWN CONSTELLATION ROAD.  THE PROGRAM
            WILL USE THE ENERGY GRADE LINE TO DETERMINE OVERFLOW.

            SWSE DETERMINED BY SLOPE AREA METHOD

            ET RECORD: STA 1100. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL

     .038      4.57   2043.57   2043.57   2043.57   2044.75      1.18       .00       .00   2039.00
   2114.0     361.8     998.0     754.2      61.4      85.9     179.7        .0        .0   2039.20
      .00      5.90     11.62      4.20      .050      .030      .050      .000   2039.00    971.59
  .007358        0.        0.        0.         0         4         0       .00    128.40   1100.00


CCHV=     .600 CEHV=     .800
*SECNO  .123
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
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 ECNO     DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
          QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


3470 ENCROACHMENT STATIONS=      812.0    1039.0  TYPE=      1  TARGET=      227.000
            ET RECORD: STA 1039. ELIMINATE INEFFECTIVE
                       FLOW AREA BEHIND RETAINING WALL

            X4 RECORD: MODEL RETAINING WALL
                       IN RIGHT OVERBANK
     .123      4.68   2051.98   2051.98   2051.98   2053.26      1.29      1.87       .09   2048.70
   2114.0     558.0    1401.5     154.5     126.5     131.1      30.4       3.2       1.3   2048.70
     .01      4.41     10.69      5.09      .030      .016      .030      .000   2047.30    922.63
  .002633     470.      450.      450.         0         5         0       .00    116.35   1038.98


CCHV=     .100 CEHV=     .300
*SECNO  .165

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      940.2    1040.0  TYPE=      1  TARGET=       99.800
            ET RECORD: STA 1040. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL

            X4 RECORD: MODEL RETAINING WALL
                       IN RIGHT OVERBANK
     .165      3.72   2054.72   2054.72   2054.72   2055.34       .62       .68       .07   2052.90
    607.6      54.1     464.6      89.0      12.6      67.4      23.5       4.2       1.8   2053.00
     .02      4.30      6.90      3.79      .030      .025      .030      .000   2051.00    963.60
  .006169     200.      220.      240.         0        14         0       .00     76.39   1040.00


*SECNO  .221
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      707.0    1020.0  TYPE=      1  TARGET=      313.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      2062.80 ELREA=      2057.20
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ET RECORD: SAT 1020. ELIMINATE INEFFECTIVE
           FLOW AREA BEHIND RETAINING WALL

X4 RECORD: MODEL RETAINING WALL
           IN RIGHT OVERBANK
     .221      2.09   2059.19   2059.19   2059.19   2060.18       .99      2.08       .11   2062.80
    607.6        .0     579.3      28.4        .0      71.4       5.8       4.8       2.2   2057.20
      .03       .00      8.12      4.87      .000      .025      .030      .000   2057.10    980.34
  .007878      325.      300.      280.         0        11         0       .00     39.61   1019.95


*SECNO  .278
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      965.0    1035.0  TYPE=      1  TARGET=       70.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      2069.50 ELREA=    100000.00

     .278      2.35   2065.55   2065.55   2065.55   2066.49       .94      2.33       .01   2069.50
    607.6        .0     607.6        .0        .0      78.2        .0       5.3       2.4 100000.00
      .05       .00      7.77       .00      .000      .025      .000      .000   2063.20    972.37
  .007633      290.      300.      305.         0         8         0       .00     42.09   1014.47


*SECNO  .335

3[illegible] DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      902.0    1059.0  TYPE=      1  TARGET=      157.000
           ET RECORD: STA 1059. ELIMINATE INEFFECTIVE
                      FLOW AREA IN RIGHT OVERBANK
     .335      3.12   2072.72   2072.72   2072.71   2073.29       .58      1.70       .04   2070.50
    607.6      81.3     429.1      97.2      27.2      61.5      32.1       6.0       3.0   2071.20
      .06      2.99      6.98      3.03      .030      .025      .030      .000   2069.60    939.44
  .004407      310.      300.      285.         0        11         0       .00    108.30   1050.71


*SECNO  .392

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      960.0    1060.0  TYPE=      1  TARGET=      100.000
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ET RECORD: STA 1060. ELIMINATE INEFFECTIVE
           FLOW AREA IN RIGHT OVERBANK
    .392      4.41   2080.41   2080.41   2080.41   2081.92      1.51      1.42       .28   2076.20
  2114.0     111.2    1574.5     428.3      20.8     144.8      70.3       7.3       3.6   2076.50
     .07      5.36     10.87      6.09      .030      .025      .030      .000   2076.00    975.15
 .004847      280.      300.      310.         0        11         0       .00     78.33   1053.48


*SECNO  .454
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      965.5    1068.5  TYPE=      1  TARGET=      103.050
    .454      4.25   2087.45   2087.45   2087.45   2088.73      1.28      1.64       .02   2083.30
  2114.0     502.4     963.6     648.0      66.1      87.8      97.1       9.1       4.3   2083.50
     .08      7.60     10.98      6.67      .030      .025      .030      .000   2083.20    965.45
 .005067      330.      330.      330.         0         8         0       .00    103.04   1068.49


*SECNO  .545
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      976.2    1090.7  TYPE=      1  TARGET=      114.510
    .545      4.83   2099.53   2099.53   2099.53   2100.72      1.19      2.28       .01   2094.70
  2114.0     161.8     875.4    1076.8      28.6      77.3     167.1      12.0       5.5   2094.70
     .09      5.66     11.33      6.44      .030      .025      .030      .000   2094.70    976.20
 .004450      475.      480.      485.         0         8         0       .00    114.51   1090.71


CCHV=     .100 CEHV=     .300
*SECNO  .651
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      872.4    1018.0  TYPE=      1  TARGET=      145.560
    .651      4.41   2111.01   2111.01   2111.02   2112.09      1.08      3.27       .01   2106.60
  2114.0    1114.3     798.5     201.2     231.6      66.2      41.5      15.9       7.1   2106.60
     .12      4.81     12.06      4.84      .050      .030      .050      .000   2106.60    872.41
 .008184      560.      560.      540.         0        15         0       .00    145.56   1017.97


*SECNO  .754
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      976.9    1093.5  TYPE=      1  TARGET=      116.560
    .754      4.34   2123.24   2123.24   2123.23   2124.47      1.23      4.67       .05   2118.90
  2114.0     187.7     732.3    1194.1      33.3      56.4     210.8      19.7       8.7   2118.90
     .13      5.64     12.98      5.66      .050      .030      .050      .000   2118.90    976.91
 .009706      490.      540.      540.         0         5         0       .00    116.48   1093.39
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ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO  .848
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      892.8    1055.6  TYPE=      1  TARGET=      162.840
      .848      3.27   2132.67   2132.67   2132.67   2133.62       .95      6.36       .03   2130.60
    2114.0    1387.5     549.5     177.0     212.5      49.9      36.6      23.1      10.3   2130.40
       .15      6.53     11.00      4.84      .050      .030      .050      .000   2129.40    892.76
   .017546      495.      500.      500.         0        19         0       .00    162.82   1055.58


*SECNO  .943
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      891.6    1043.1  TYPE=      1  TARGET=      151.510
            Q = 1476 cfs   FROM HEC-1 MODEL (SAA5)
      .943      2.08   2144.88   2144.88   2144.88   2145.65       .77      8.86       .02   2142.80
    1476.0     805.8     405.0     265.3     144.4      39.4      56.9      26.4      12.2   2142.90
       .17      5.58     10.27      4.66      .050      .030      .050      .000   2142.80    891.62
     6237       540.      500.      480.         0        14         0       .00    151.51   1043.13


*SECNO 1.038
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      977.3    1097.0  TYPE=      1  TARGET=      119.720
     1.038      2.92   2157.42   2157.42   2157.42   2158.34       .92      7.29       .04   2155.00
    1476.0      24.7     495.2     956.1       6.8      45.6     174.6      29.1      13.7   2155.00
       .19      3.65     10.85      5.48      .050      .030      .050      .000   2154.50    977.29
   .013083      490.      500.      510.         0        11         0       .00    119.72   1097.01


*SECNO 1.159
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      926.8    1010.5  TYPE=      1  TARGET=       83.670
     1.159      3.31   2170.41   2170.41   2170.41   2171.55      1.13     10.58       .06   2168.60
    1476.0    1174.3     297.7       4.0     149.8      27.2       1.3      32.0      15.2   2168.60
       .21      7.84     10.94      3.02      .050      .030      .050      .000   2167.10    926.78
   .022070      640.      640.      620.         0         8         0       .00     83.67   1010.45
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1.227
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      934.7    1015.4  TYPE=      1  TARGET=      80.760
     1.227      3.07   2179.27   2179.27   2179.27   2180.48      1.21      5.11       .02   2176.20
    1476.0     641.6     692.7     141.6     106.8      61.3      27.5      33.4      15.8   2176.20
       .22      6.01     11.29      5.15      .050      .030      .050      .000   2176.20    934.67
   .011660      310.      360.      310.         0        11         0       .00     80.76   1015.43


*SECNO 1.324
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      985.2    1094.2  TYPE=      1  TARGET=     109.040
     1.324      3.32   2188.52   2188.52   2188.52   2189.52      1.00      5.26       .02   2185.50
    1476.0     144.4     717.8     613.8      26.3      68.8     137.9      35.8      16.9   2185.50
       .24      5.49     10.44      4.45      .050      .030      .050      .000   2185.20    985.17
   .009554      480.      510.      500.         0         8         0       .00    109.04   1094.21


*SECNO 1.390
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      976.5    1068.8  TYPE=      1  TARGET=      92.240
            ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
            CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
     1.390      3.49   2196.59   2196.59   2196.59   2197.69      1.10      3.05       .03   2193.10
    1354.0     226.8     793.6     333.6      45.9      76.8      80.2      37.5      17.7   2193.10
       .25      4.94     10.34      4.16      .050      .030      .050      .000   2193.10    976.54
   .008225      350.      350.      330.         0         8         0       .00     92.24   1068.78


*SECNO 1.443

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      981.8    1019.2  TYPE=      1  TARGET=      37.490
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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
           QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

   1.443      5.59   2204.70   2204.70   2204.70   2206.68      1.99      2.12       .27   2199.50
  1354.0     169.9     974.6     209.5      34.8      75.5      36.1      38.6      18.1   2199.50
     .26      4.88     12.90      5.80      .050      .030      .050      .000   2199.10    981.75
 .007187      280.      280.      260.         0        14         0       .00     37.49   1019.24


*SECNO 1.489

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      942.3    1018.6  TYPE=      1  TARGET=      76.290
   1.489      3.63   2207.63   2207.19   2207.63   2208.48       .86      1.69       .11   2204.00
  1354.0     591.3     570.0     192.7     115.1      58.1      42.1      39.6      18.4   2204.00
     .27      5.14      9.82      4.57      .050      .030      .050      .000   2204.00    942.37
 .007048      230.      240.      240.         3        11         0       .00     76.25   1018.62


*SECNO 1.579
7185 MINIMUM SPECIFIC ENERGY
     CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      739.3    1135.0  TYPE=      1  TARGET=     395.700
   1.579      1.67   2220.67   2220.67   2220.67   2221.05       .37      5.02       .05   2219.10
  1354.0     601.2     203.0     549.8     179.4      22.7     130.6      42.6      21.0   2219.10
     .30      3.35      8.93      4.21      .050      .030      .050      .000   2219.00    740.76
 .017023      500.      480.      450.         0        15         0       .00    393.47   1134.23


*SECNO 1.680
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      866.9    1115.8  TYPE=      1  TARGET=     248.900
            ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
            CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
   1.680      1.40   2233.50   2233.50   2233.50   2233.97       .47      9.00       .03   2232.10
  1132.0     618.7     175.7     337.6     132.1      19.6      77.0      45.7      24.5   2232.10
     .33      4.68      8.95      4.38      .050      .030      .050      .000   2232.10    866.98
 .020776      395.      530.      590.         0        15         0       .00    248.83   1115.81
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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
           QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1.769

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      958.8    1006.1  TYPE=      1  TARGET=      47.310
            ALL DISCHARGES WERE DETERMINED BY USING RATIO OF
            CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
    1.769      3.26   2248.26   2248.26   2248.26   2249.34      1.07      8.38       .18   2245.70
    744.0     464.6     256.3      23.1      77.4      22.1       5.8      47.5      26.1   2245.70
      .34      6.00     11.58      3.96      .050      .030      .050      .000   2245.00    958.77
  .013578      500.      470.      440.         0        20         0       .00     47.31   1006.08


*SECNO 1.826
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      916.8    1038.8  TYPE=      1  TARGET=     121.980
    1.826      1.78   2254.08   2254.08   2254.08   2254.66       .58      3.89       .05   2252.60
    744.0     342.1     307.2      94.7      81.1      37.4      27.1      48.3      26.6   2252.60
      .36      4.22      8.21      3.50      .050      .030      .050      .000   2252.30    916.83
  .014284      260.      300.      310.         0        11         0       .00    121.98   1038.81


*SECNO 1.886
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      923.2    1011.9  TYPE=      1  TARGET=      88.760
    1.886      2.62   2262.92   2262.92   2262.92   2263.67       .74      4.24       .05   2261.10
    744.0     339.0     383.1      21.9      81.6      43.6       7.6      49.5      27.5   2261.10
      .37      4.15      8.79      2.88      .050      .030      .050      .000   2260.30    923.15
  .010911      370.      320.      300.         0        14         0       .00     88.76   1011.91


*SECNO 1.958
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      906.6    1018.0  TYPE=      1  TARGET=     111.410
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
1.958	1.32	2269.72	2269.72	2269.72	2270.32	.60	5.28	.01	2268.40
744.0	465.3	253.1	25.6	97.1	30.4	6.6	50.6	28.3	2268.40
.39	4.79	8.33	3.86	.050	.030	.050	.000	2268.40	906.62
.019516	360.	380.	380.	0	8	0	.00	111.41	1018.03

*SECNO 2.053

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 984.1 1009.9 TYPE= 1 TARGET= 25.730

2.053	3.81	2283.21	2283.21	2283.22	2284.87	1.66	6.35	.32	2279.50
744.0	80.9	591.8	71.3	15.9	52.5	13.1	51.8	29.1	2279.70
.40	5.08	11.28	5.42	.050	.030	.050	.000	2279.40	984.13
.008919	500.	500.	500.	0	20	0	.00	25.73	1009.86

RIGHT BANK OVER-FLOW WEIR BETWEEN SECTIONS 0.335 & 0.392

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1506.37	1506.33	.00	1506.37	1506.33	.00	5	2073.292	2081.921	.335	.392

THIS RUN EXECUTED 17AUG92 14:23:25

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

WASH AA: POWDER HOUSE WA

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.038	.00	.00	.00	2039.00	2114.00	2043.57	2043.57	2044.75	73.58	11.62	327.00	246.45
*	.038	.00	.00	.00	2039.00	2114.00	2043.57	2043.57	2044.75	73.58	11.62	327.00	246.45
*	.123	450.00	.00	.00	2047.30	2114.00	2051.98	2051.98	2053.26	26.33	10.69	287.90	412.00
*	.123	450.00	.00	.00	2047.30	2114.00	2051.98	2051.98	2053.26	26.33	10.69	287.90	412.00
	.165	220.00	.00	.00	2051.00	607.63	2054.72	2054.72	2055.34	61.69	6.90	103.42	77.37
	.165	220.00	.00	.00	2051.00	607.63	2054.72	2054.72	2055.34	61.69	6.90	103.42	77.37
*	.221	300.00	.00	.00	2057.10	607.63	2059.19	2059.19	2060.18	78.78	8.12	77.20	68.46
*	.221	300.00	.00	.00	2057.10	607.63	2059.19	2059.19	2060.18	78.78	8.12	77.20	68.46
*	.278	300.00	.00	.00	2063.20	607.63	2065.55	2065.55	2066.49	76.33	7.77	78.24	69.55
*	.278	300.00	.00	.00	2063.20	607.63	2065.55	2065.55	2066.49	76.33	7.77	78.24	69.55
*	.335	300.00	.00	.00	2069.60	607.63	2072.72	2072.72	2073.29	44.07	6.98	120.74	91.53
*	.335	300.00	.00	.00	2069.60	607.63	2072.72	2072.72	2073.29	44.07	6.98	120.74	91.53
*	.392	300.00	.00	.00	2076.00	2114.00	2080.41	2080.41	2081.92	48.47	10.87	235.88	303.65
*	.392	300.00	.00	.00	2076.00	2114.00	2080.41	2080.41	2081.92	48.47	10.87	235.88	303.65
*	.454	330.00	.00	.00	2083.20	2114.00	2087.45	2087.45	2088.73	50.62	10.97	251.16	297.13
*	.454	330.00	.00	.00	2083.20	2114.00	2087.45	2087.45	2088.73	50.67	10.98	251.06	296.98
*	.545	480.00	.00	.00	2094.70	2114.00	2099.51	2099.51	2100.72	45.43	11.42	270.69	313.64
*	.545	480.00	.00	.00	2094.70	2114.00	2099.53	2099.53	2100.72	44.50	11.33	272.95	316.90
*	.651	560.00	.00	.00	2106.60	2114.00	2111.01	2111.01	2112.09	82.00	12.07	339.10	233.45
*	.651	560.00	.00	.00	2106.60	2114.00	2111.01	2111.01	2112.09	81.84	12.06	339.34	233.69
*	.754	540.00	.00	.00	2118.90	2114.00	2123.25	2123.25	2124.47	96.32	12.95	301.31	215.40
	.754	540.00	.00	.00	2118.90	2114.00	2123.24	2123.24	2124.47	97.06	12.98	300.49	214.58

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.848	500.00	.00	.00	2129.40	2114.00	2132.67	2132.67	2133.62	175.18	11.00	299.26	159.72
*	.848	500.00	.00	.00	2129.40	2114.00	2132.67	2132.67	2133.62	175.46	11.00	299.10	159.59
*	.943	500.00	.00	.00	2142.80	1476.00	2144.88	2144.88	2145.65	163.43	10.29	240.22	115.46
*	.943	500.00	.00	.00	2142.80	1476.00	2144.88	2144.88	2145.65	162.37	10.27	240.74	115.83
*	1.038	500.00	.00	.00	2154.50	1476.00	2157.42	2157.42	2158.34	130.88	10.85	226.97	129.02
*	1.038	500.00	.00	.00	2154.50	1476.00	2157.42	2157.42	2158.34	130.83	10.85	227.00	129.04
*	1.159	640.00	.00	.00	2167.10	1476.00	2170.41	2170.41	2171.55	221.59	10.95	178.07	99.15
*	1.159	640.00	.00	.00	2167.10	1476.00	2170.41	2170.41	2171.55	220.70	10.94	178.29	99.35
*	1.227	360.00	.00	.00	2176.20	1476.00	2179.25	2179.25	2180.48	118.52	11.35	194.57	135.58
*	1.227	360.00	.00	.00	2176.20	1476.00	2179.27	2179.27	2180.48	116.60	11.29	195.64	136.69
*	1.324	510.00	.00	.00	2185.20	1476.00	2188.52	2188.52	2189.52	95.76	10.45	232.71	150.83
*	1.324	510.00	.00	.00	2185.20	1476.00	2188.52	2188.52	2189.52	95.54	10.44	232.89	151.01
*	1.390	350.00	.00	.00	2193.10	1354.00	2196.59	2196.59	2197.69	82.32	10.34	202.81	149.23
*	1.390	350.00	.00	.00	2193.10	1354.00	2196.59	2196.59	2197.69	82.25	10.34	202.88	149.30
*	1.443	280.00	.00	.00	2199.10	1354.00	2204.68	2204.68	2206.68	72.56	12.94	145.97	158.95
*	1.443	280.00	.00	.00	2199.10	1354.00	2204.70	2204.70	2206.68	71.87	12.90	146.46	159.71
	1.489	240.00	.00	.00	2204.00	1354.00	2207.64	2207.19	2208.49	69.86	9.79	215.93	161.99
	1.489	240.00	.00	.00	2204.00	1354.00	2207.63	2207.19	2208.48	70.48	9.82	215.30	161.28
*	1.579	480.00	.00	.00	2219.00	1354.00	2220.69	2220.69	2221.05	160.29	8.73	340.00	106.95
*	1.579	480.00	.00	.00	2219.00	1354.00	2220.67	2220.67	2221.05	170.23	8.93	332.78	103.78
*	1.680	530.00	.00	.00	2232.10	1132.00	2233.50	2233.50	2233.97	206.86	8.93	229.17	78.71
*	1.680	530.00	.00	.00	2232.10	1132.00	2233.50	2233.50	2233.97	207.76	8.95	228.80	78.54
*	1.769	470.00	.00	.00	2245.00	744.00	2248.27	2248.27	2249.34	135.19	11.56	105.51	63.99
*	1.769	470.00	.00	.00	2245.00	744.00	2248.26	2248.26	2249.34	135.78	11.58	105.36	63.85
*	1.826	300.00	.00	.00	2252.30	744.00	2254.08	2254.08	2254.66	143.01	8.21	145.50	62.21
*	1.826	300.00	.00	.00	2252.30	744.00	2254.08	2254.08	2254.66	142.84	8.21	145.56	62.25
*	1.886	320.00	.00	.00	2260.30	744.00	2262.92	2262.92	2263.67	110.72	8.83	132.13	70.71
*	1.886	320.00	.00	.00	2260.30	744.00	2262.92	2262.92	2263.67	109.11	8.79	132.83	71.23
*	1.958	380.00	.00	.00	2268.40	744.00	2269.72	2269.72	2270.32	196.56	8.35	133.80	53.07
*	1.958	380.00	.00	.00	2268.40	744.00	2269.72	2269.72	2270.32	195.16	8.33	134.09	53.26
*	2.053	500.00	.00	.00	2279.40	744.00	2283.21	2283.21	2284.87	89.81	11.30	81.36	78.51
*	2.053	500.00	.00	.00	2279.40	744.00	2283.21	2283.21	2284.87	89.19	11.28	81.55	78.78

AA: POWDER HOUSE WA

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.038	2114.00	2043.57	.00	.00	.00	128.40	.00
*	.038	2114.00	2043.57	.00	.00	.00	128.40	.00
*	.123	2114.00	2051.98	.00	8.40	.00	116.35	450.00
*	.123	2114.00	2051.98	.00	8.40	.00	116.35	450.00
*	.165	607.63	2054.72	.00	2.75	.00	76.39	220.00
*	.165	607.63	2054.72	.00	2.75	.00	76.39	220.00
*	.221	607.63	2059.19	.00	4.47	.00	39.61	300.00
*	.221	607.63	2059.19	.00	4.47	.00	39.61	300.00
*	.278	607.63	2065.55	.00	6.36	.00	42.09	300.00
*	.278	607.63	2065.55	.00	6.36	.00	42.09	300.00
*	.335	607.63	2072.72	.00	7.16	.00	108.30	300.00
*	.335	607.63	2072.72	.00	7.16	.00	108.30	300.00
*	.392	2114.00	2080.41	.00	7.70	.00	78.33	300.00
	.392	2114.00	2080.41	.00	7.70	.00	78.33	300.00
*	.454	2114.00	2087.45	.00	7.04	.00	103.05	330.00
*	.454	2114.00	2087.45	.00	7.04	.00	103.04	330.00
*	.545	2114.00	2099.51	.00	12.05	.00	114.51	480.00
*	.545	2114.00	2099.53	.02	12.08	.00	114.51	480.00
*	.651	2114.00	2111.01	.00	11.50	.00	145.56	560.00
*	.651	2114.00	2111.01	.00	11.49	.00	145.56	560.00
*	.754	2114.00	2123.25	.00	12.23	.00	116.56	540.00
*	.754	2114.00	2123.24	-.01	12.22	.00	116.48	540.00
*	.848	2114.00	2132.67	.00	9.43	.00	162.84	500.00
*	.848	2114.00	2132.67	.00	9.43	.00	162.82	500.00
*	.943	1476.00	2144.88	.00	12.21	.00	151.51	500.00
*	.943	1476.00	2144.88	.00	12.21	.00	151.51	500.00
*	1.038	1476.00	2157.42	.00	12.54	.00	119.72	500.00
*	1.038	1476.00	2157.42	.00	12.54	.00	119.72	500.00
*	1.159	1476.00	2170.41	.00	12.99	.00	83.67	640.00
*	1.159	1476.00	2170.41	.00	13.00	.00	83.67	640.00
	1.227	1476.00	2179.25	.00	8.84	.00	80.76	360.00
*	1.227	1476.00	2179.27	.01	8.85	.00	80.76	360.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	1.324	1476.00	2188.52	.00	9.26	.00	109.05	510.00
*	1.324	1476.00	2188.52	.00	9.25	.00	109.04	510.00
*	1.390	1354.00	2196.59	.00	8.07	.00	92.24	350.00
*	1.390	1354.00	2196.59	.00	8.07	.00	92.24	350.00
*	1.443	1354.00	2204.68	.00	8.09	.00	37.49	280.00
*	1.443	1354.00	2204.70	.01	8.10	.00	37.49	280.00
	1.489	1354.00	2207.64	.00	2.96	.00	76.29	240.00
	1.489	1354.00	2207.63	-.01	2.93	.00	76.25	240.00
*	1.579	1354.00	2220.69	.00	13.06	.00	395.69	480.00
*	1.579	1354.00	2220.67	-.02	13.04	.00	393.47	480.00
*	1.680	1132.00	2233.50	.00	12.81	.00	248.90	530.00
*	1.680	1132.00	2233.50	.00	12.83	.00	248.83	530.00
*	1.769	744.00	2248.27	.00	14.76	.00	47.31	470.00
*	1.769	744.00	2248.26	.00	14.76	.00	47.31	470.00
*	1.826	744.00	2254.08	.00	5.81	.00	121.98	300.00
*	1.826	744.00	2254.08	.00	5.82	.00	121.98	300.00
	1.886	744.00	2262.92	.00	8.84	.00	88.75	320.00
	1.886	744.00	2262.92	.01	8.85	.00	88.76	320.00
*	1.958	744.00	2269.72	.00	6.80	.00	111.40	380.00
*	1.958	744.00	2269.72	.00	6.80	.00	111.41	380.00
*	2.053	744.00	2283.21	.00	13.49	.00	25.73	500.00
*	2.053	744.00	2283.21	.01	13.49	.00	25.73	500.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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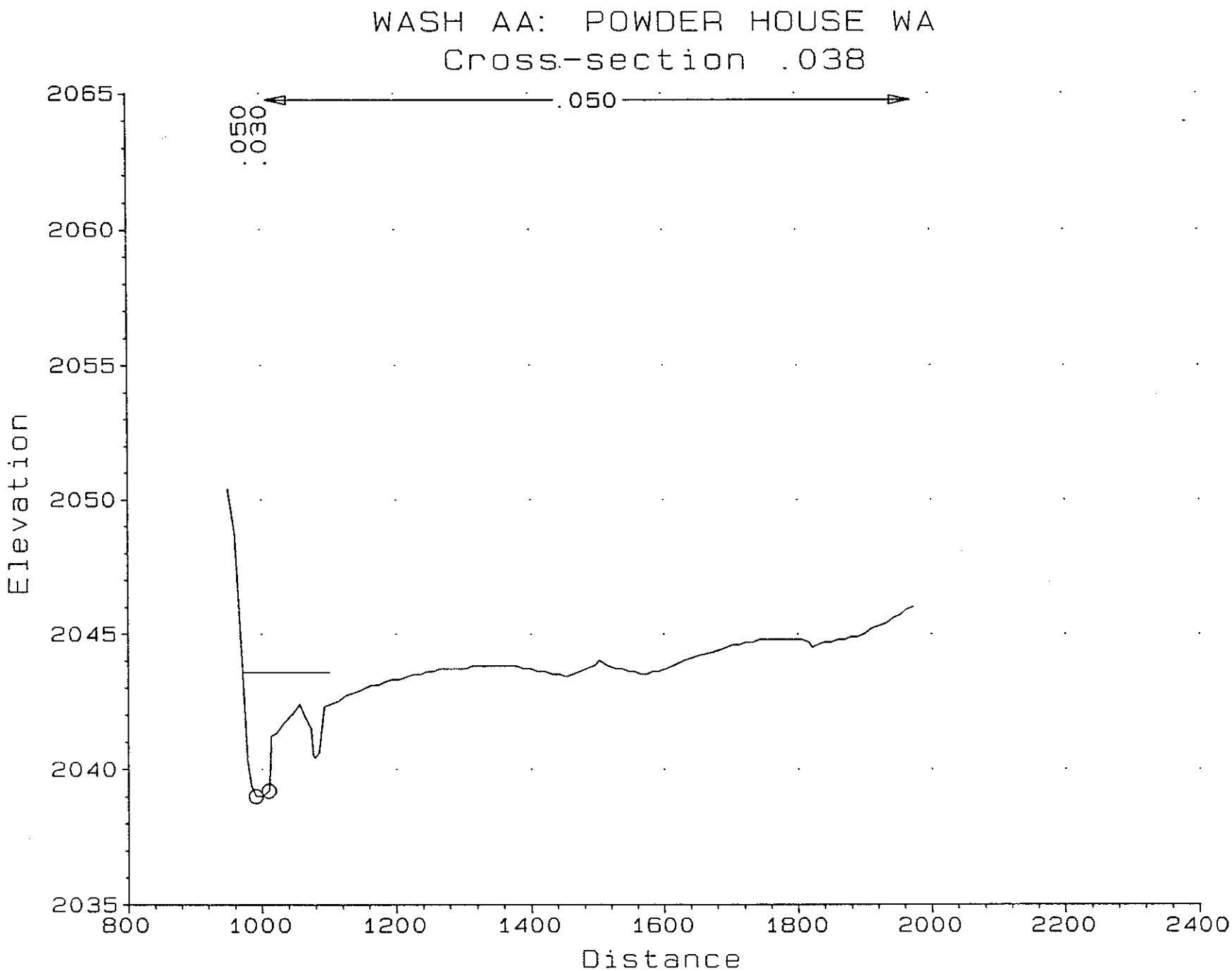
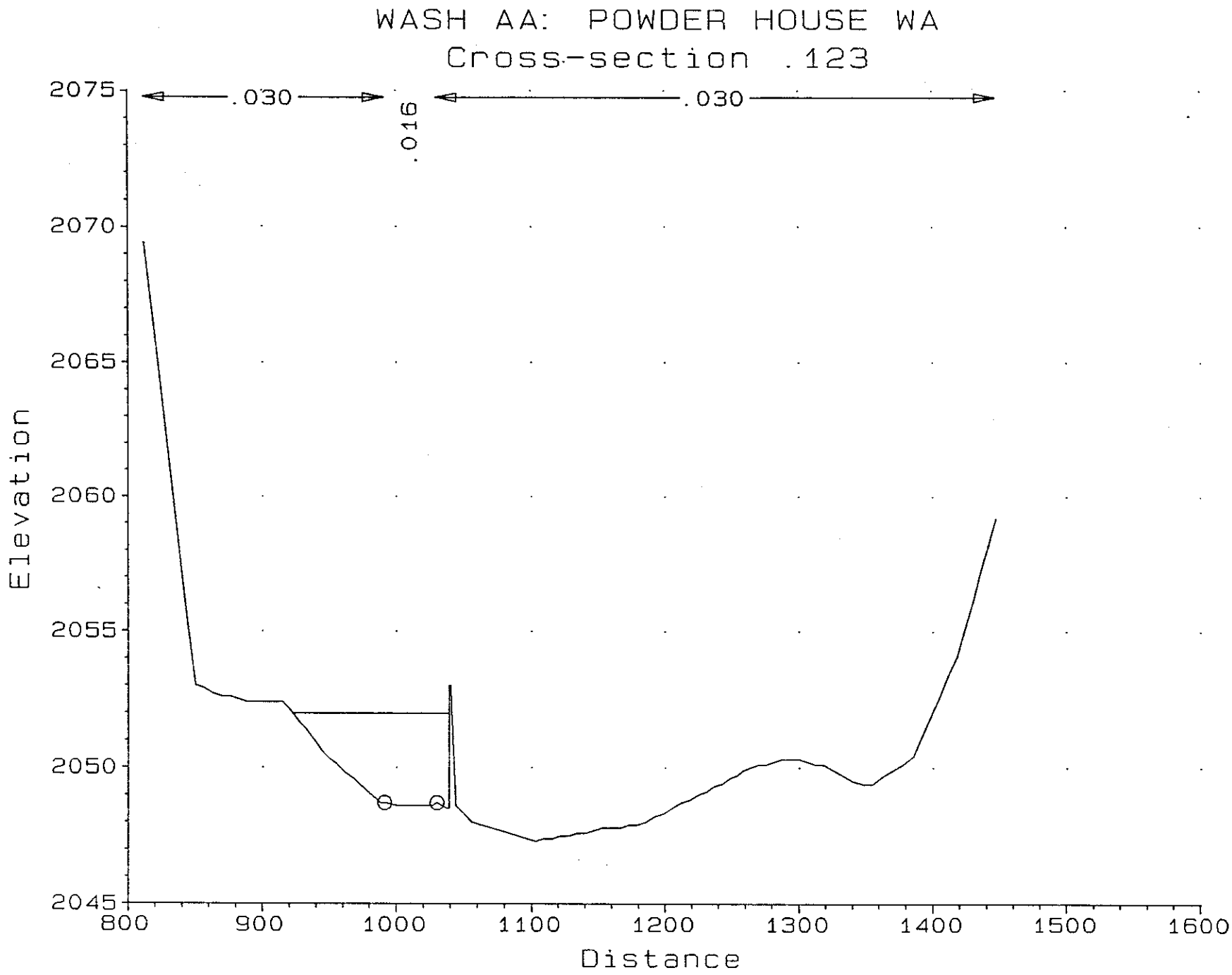
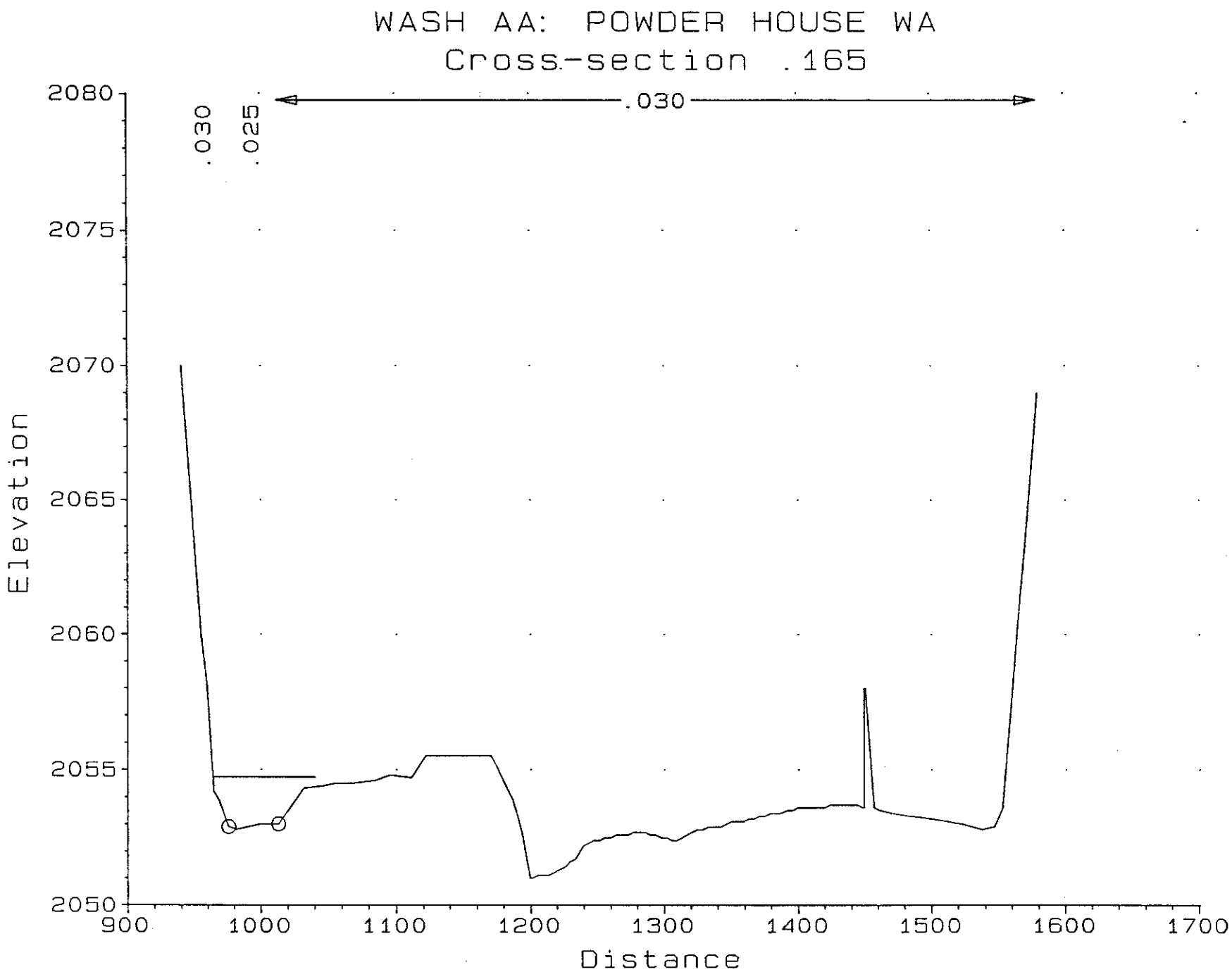
FLOODWAY DATA, WASH AA: POWDER HOUSE WA
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
.038	128.	327.	6.5	2043.6	2043.6	.0
.123	116.	288.	7.3	2052.0	2052.0	.0
.165	76.	103.	5.9	2054.7	2054.7	.0
.221	40.	77.	7.9	2059.2	2059.2	.0
.278	42.	78.	7.8	2065.6	2065.6	.0
.335	111.	121.	5.0	2072.7	2072.7	.0
.392	78.	236.	9.0	2080.4	2080.4	.0
.454	103.	251.	8.4	2087.5	2087.5	.0
.545	115.	273.	7.7	2099.5	2099.5	.0
.651	146.	339.	6.2	2111.0	2111.0	.0
.754	116.	300.	7.0	2123.2	2123.2	.0
.848	163.	299.	7.1	2132.7	2132.7	.0
.943	152.	241.	6.1	2144.9	2144.9	.0
1.038	120.	227.	6.5	2157.4	2157.4	.0
1.159	84.	178.	8.3	2170.4	2170.4	.0
1.227	81.	196.	7.5	2179.3	2179.3	.0
1.324	109.	233.	6.3	2188.5	2188.5	.0
1.390	92.	203.	6.7	2196.6	2196.6	.0
1.443	37.	146.	9.2	2204.7	2204.7	.0
1.489	76.	215.	6.3	2207.6	2207.6	.0
1.579	393.	333.	4.1	2220.7	2220.7	.0
1.680	249.	229.	4.9	2233.5	2233.5	.0
1.769	47.	105.	7.1	2248.3	2248.3	.0
1.826	122.	146.	5.1	2254.1	2254.1	.0
1.886	89.	133.	5.6	2262.9	2262.9	.0
1.958	111.	134.	5.5	2269.7	2269.7	.0
2.053	26.	82.	9.1	2283.2	2283.2	.0


WASH AA: POWDER HOUSE WA
Cross-section .038
.050
.050
.030
Elevation
2065
2060
2055
2050
2045
2040
2035
800
1000
1200
1400
1600
1800
2000
2200
2400
Distance


WASH AA: POWDER HOUSE WA
Cross-section .123
.030
.016
.030
2075
2070
2065
2060
2055
2050
2045
Elevation
800
900
1000
1100
1200
1300
1400
1500
1600
Distance


WASH AA: POWDER HOUSE WA
Cross-section .165
.030
.030
.025
2080
2075
2070
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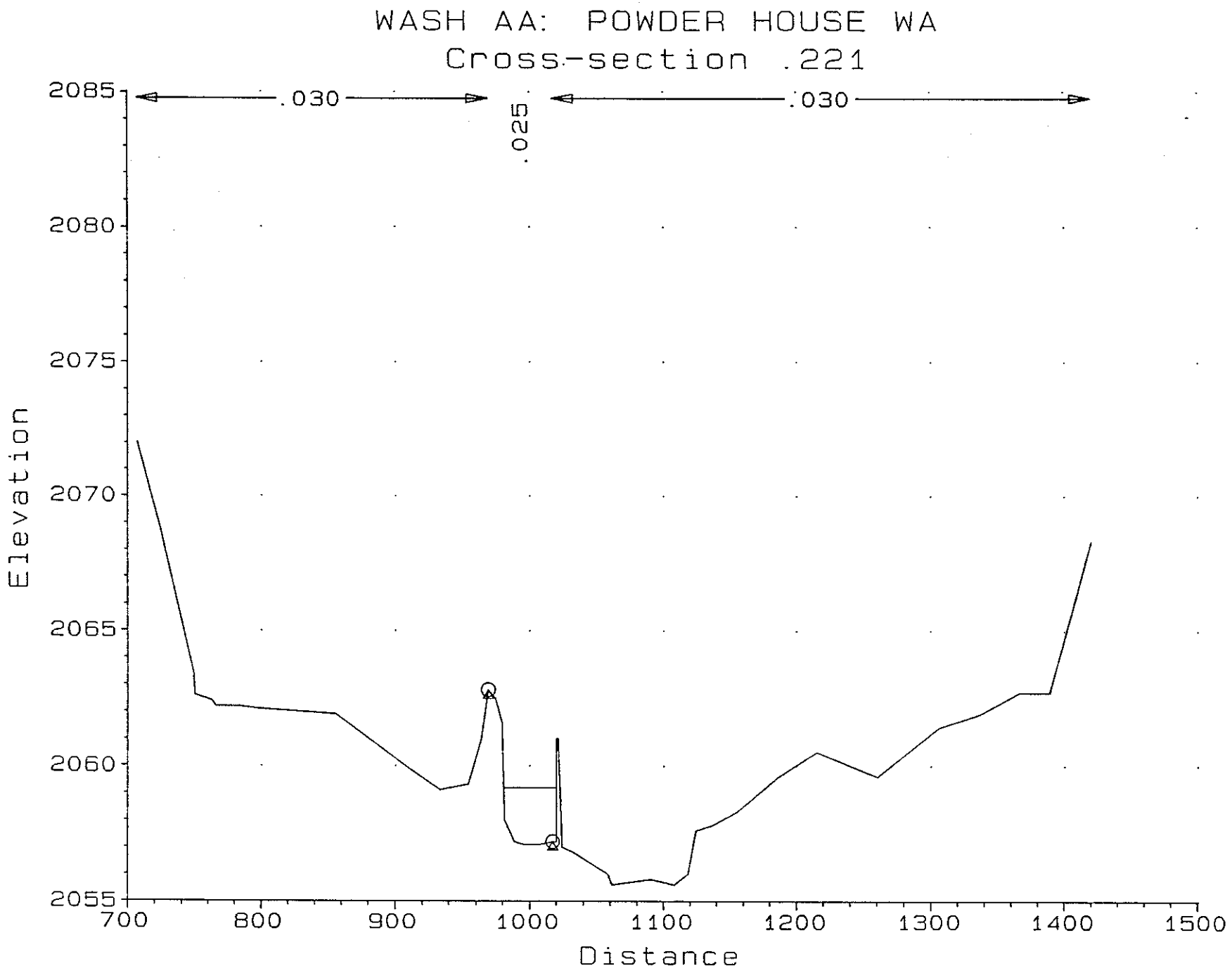
2060
2055
2050
Elevation
900
1000
1100
1200
1300
1400
1500
1600
1700
Distance


WASH AA: POWDER HOUSE WA
Cross-section .221
.030
.025
.030
2085
2080
2075
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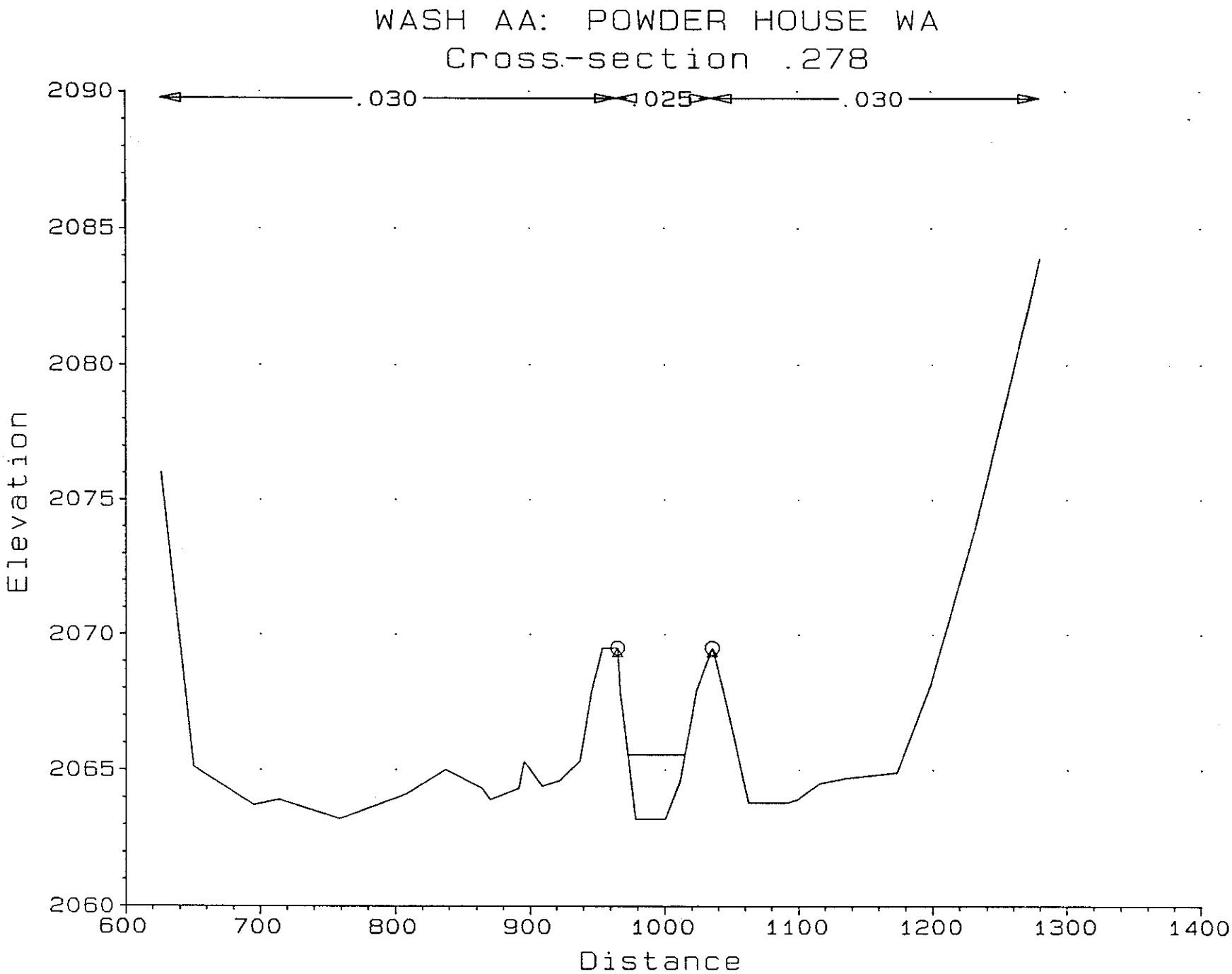
2065
2060
2055
Elevation
700
800
900
1000
1100
1200
1300
1400
1500
Distance


WASH AA: POWDER HOUSE WA
Cross-section .278
.030
.025
.030
2090
2085
2080
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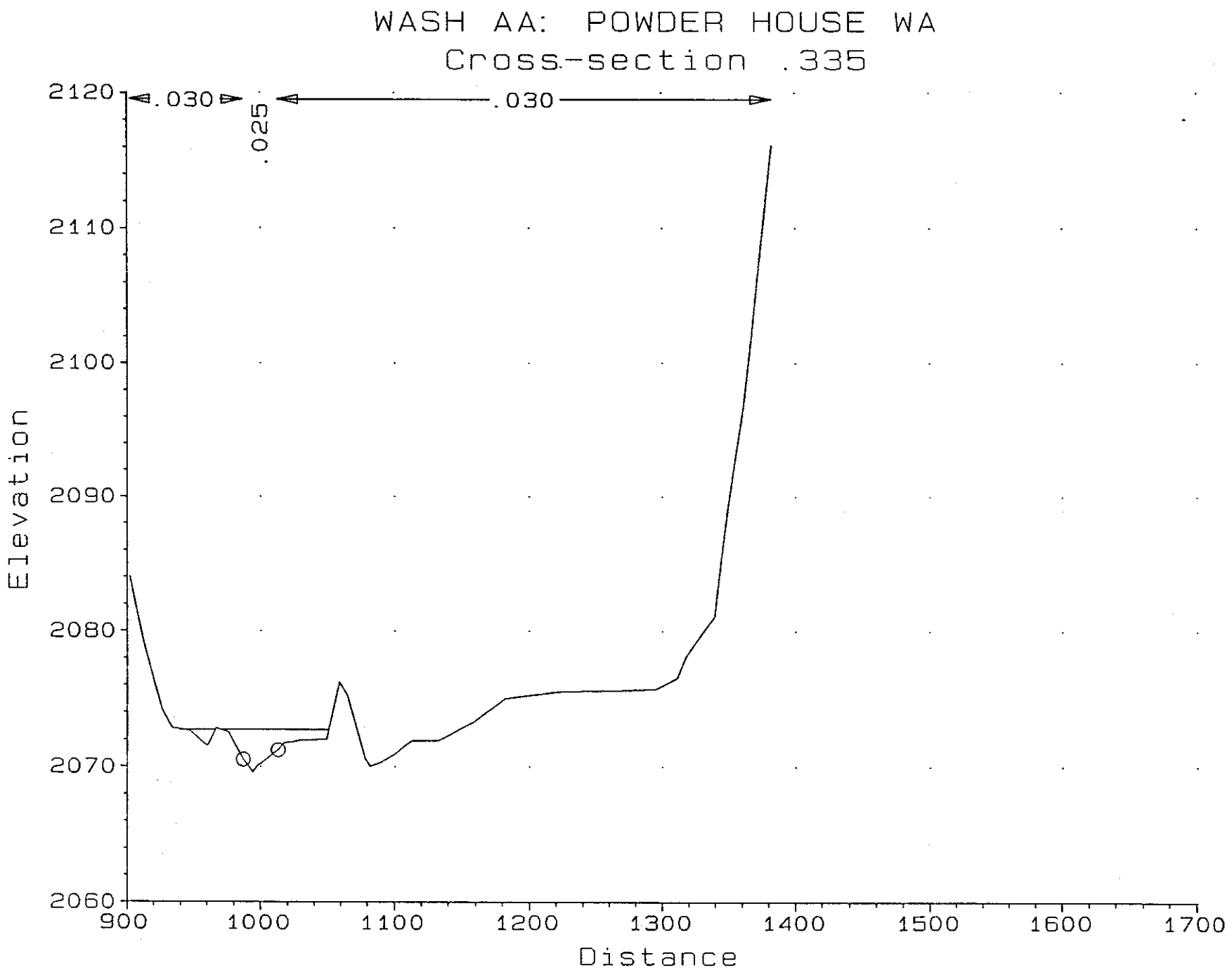
2070
2065
2060
Elevation
600
700
800
900
1000
1100
1200
1300
1400
Distance


WASH AA: POWDER HOUSE WA
Cross-section .335
.030
.025
.030
2120
2110
2100
2090
2080
2070
2060
Elevation
900
1000
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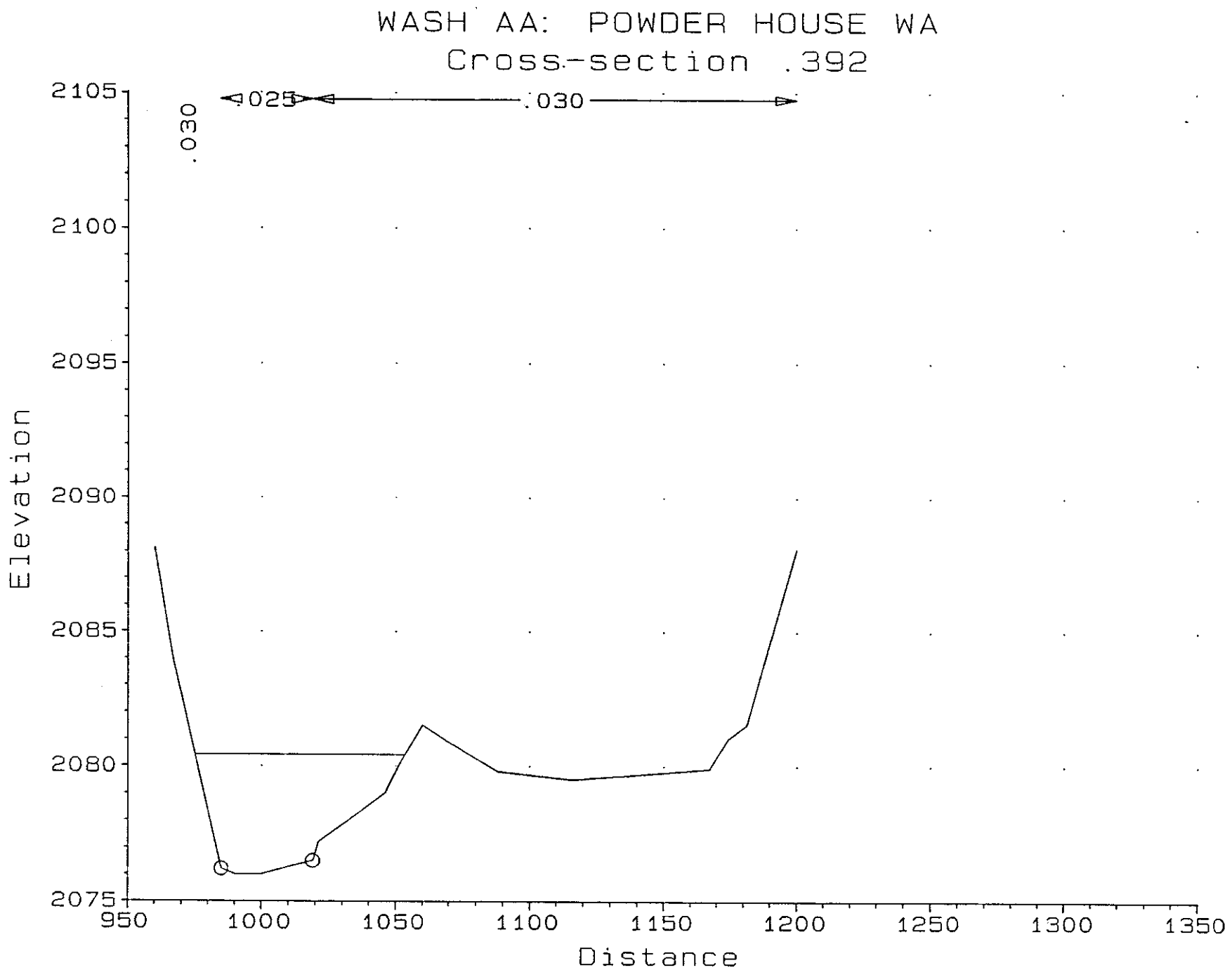
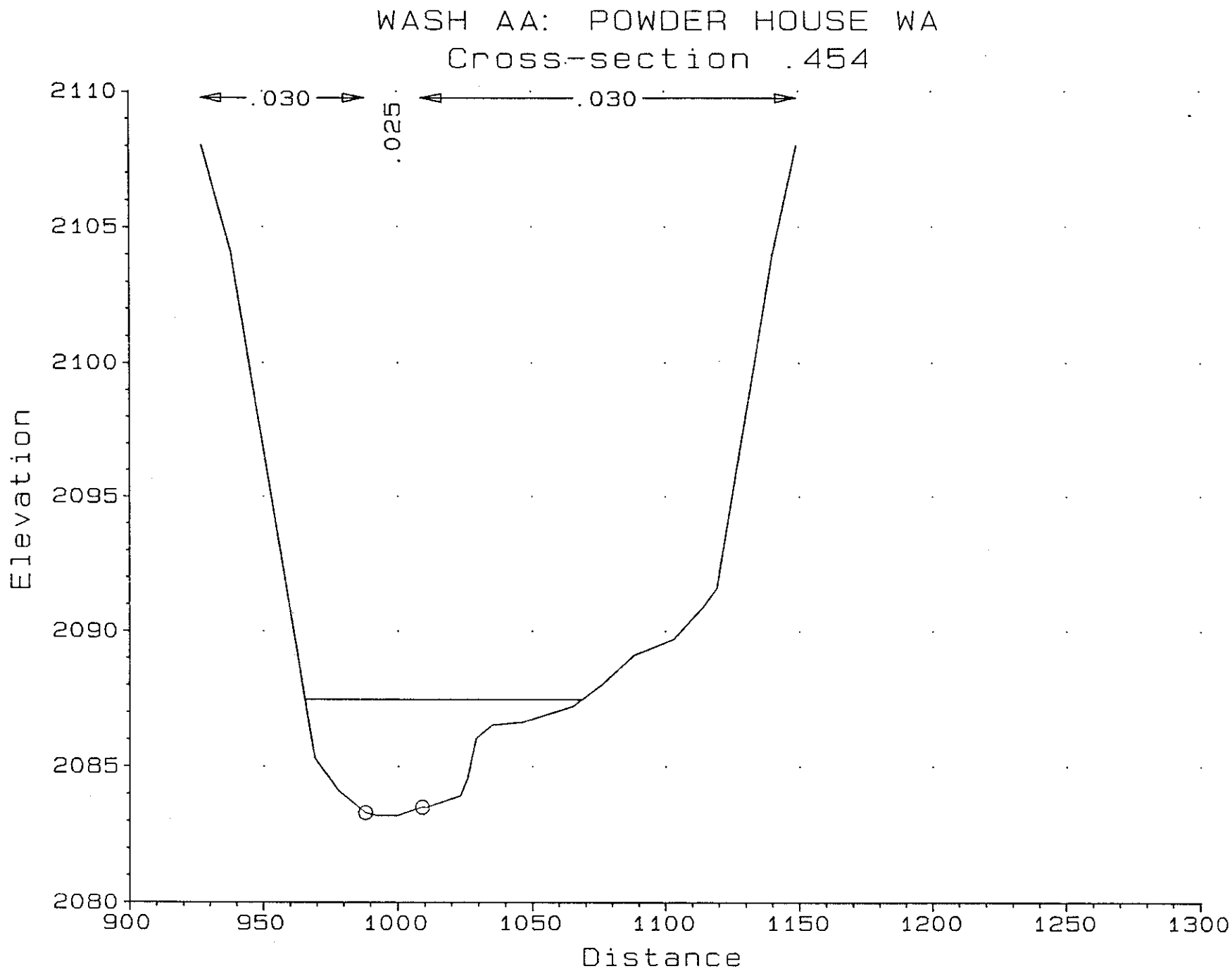
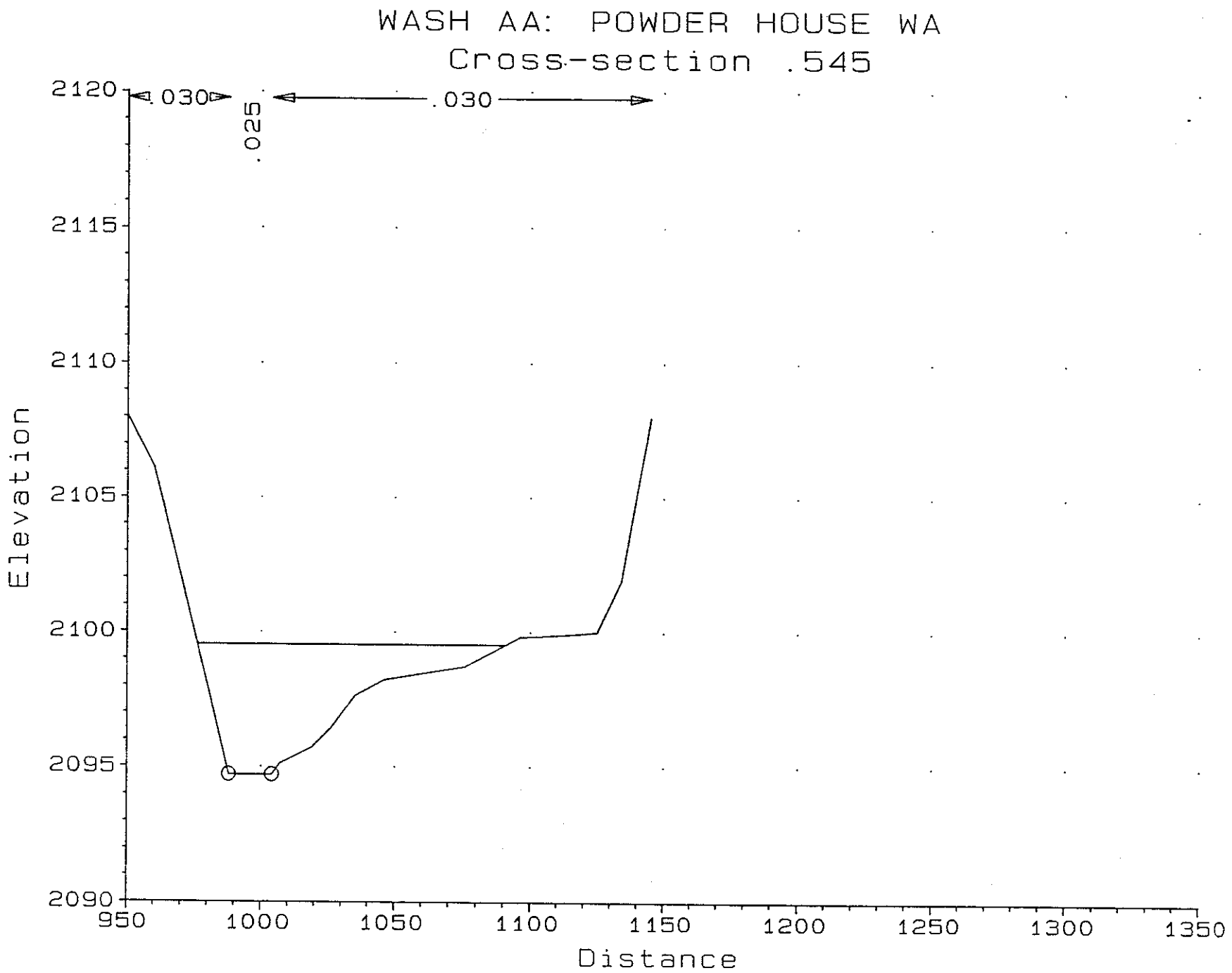
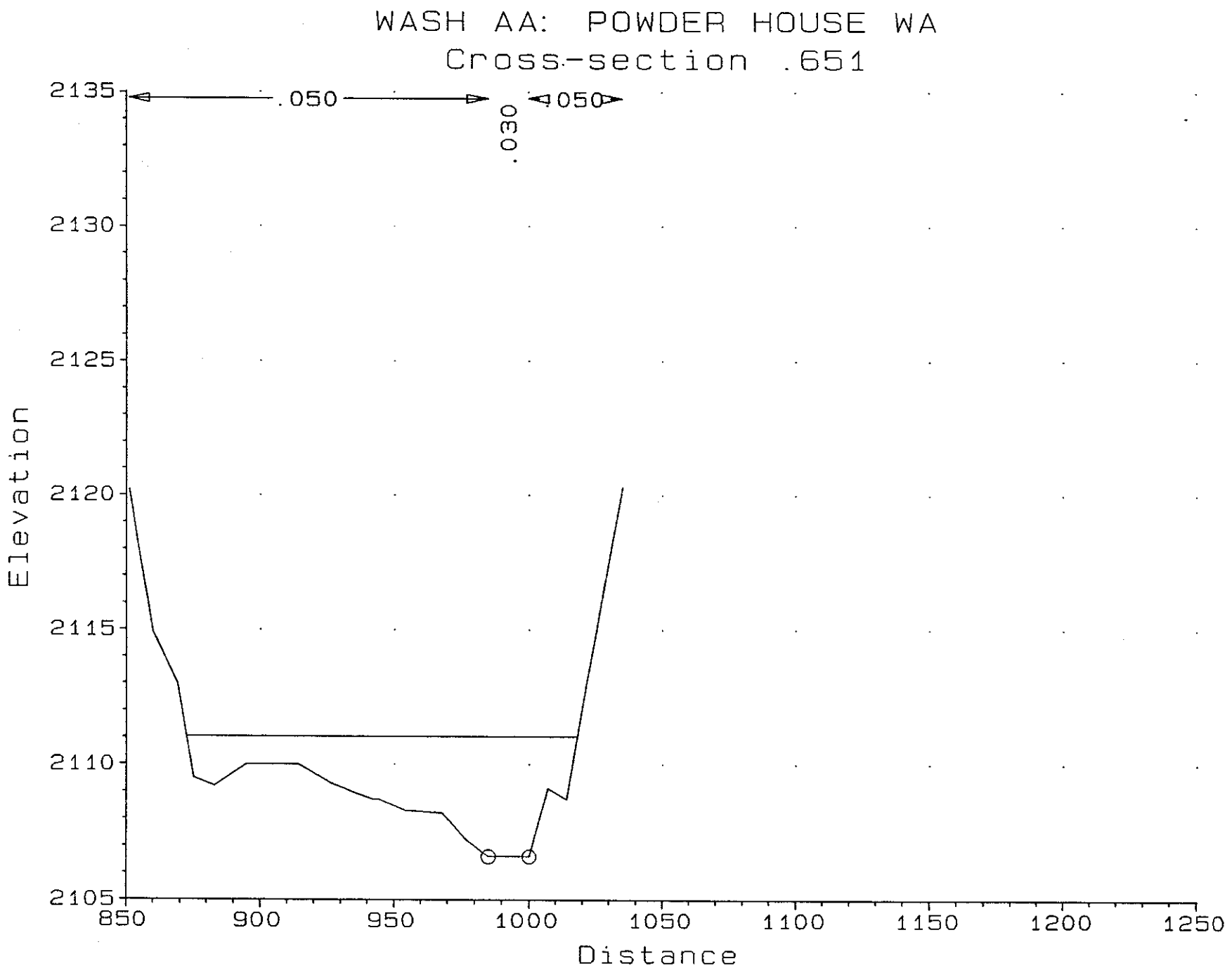
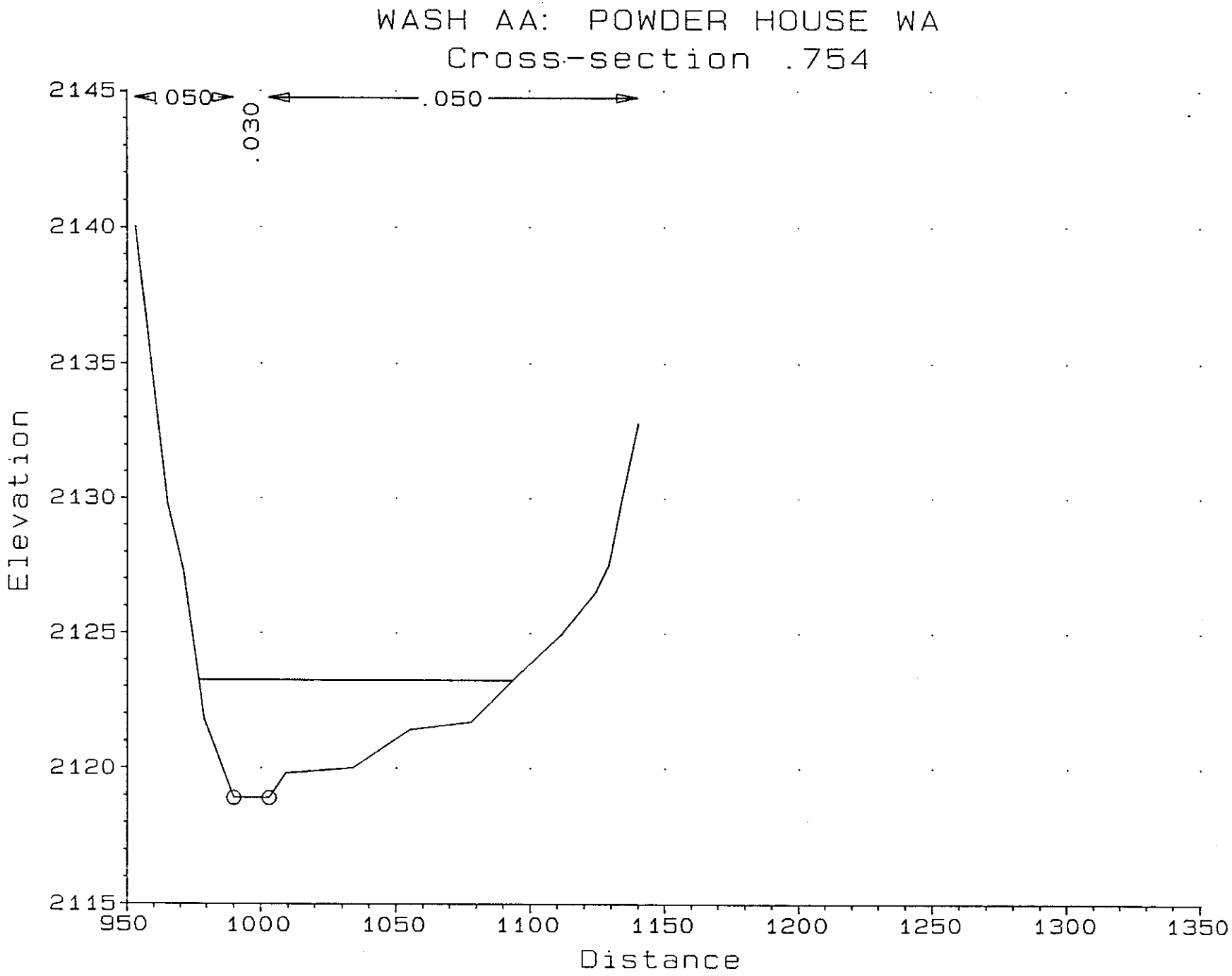
1200
1300
1400
1500
1600
1700
Distance


WASH AA: POWDER HOUSE WA
Cross-section .392
.025
.030
.030
2105
2100
2095
2090
2085
2080
2075
Elevation
950
1000
1050
1100
1150
1200
1250
1300
1350
Distance


WASH AA: POWDER HOUSE WA
Cross-section .454
.030
.025
.030
Elevation
2110
2105
2100
2095
2090
2085
2080
900
950
1000
1050
1100
1150
1200
1250
1300
Distance


WASH AA: POWDER HOUSE WA
Cross-section .545
.030
.025
.030
2120
2115
2110
2105
2100
2095
2090
Elevation
950
1000
1050
1100
1150
1200
1250
1300
1350
Distance


WASH AA: POWDER HOUSE WA
Cross-section .651
.050
.050
.030
2135
2130
2125
2120
2115
2110
2105
Elevation
850
900
950
1000
1050
1100
1150
1200
1250
Distance


WASH AA: POWDER HOUSE WA
Cross-section .754
.050
.050
.030
2145
2140
2135
2130
2125
2120
2115
Elevation
950
1000
1050
1100
1150
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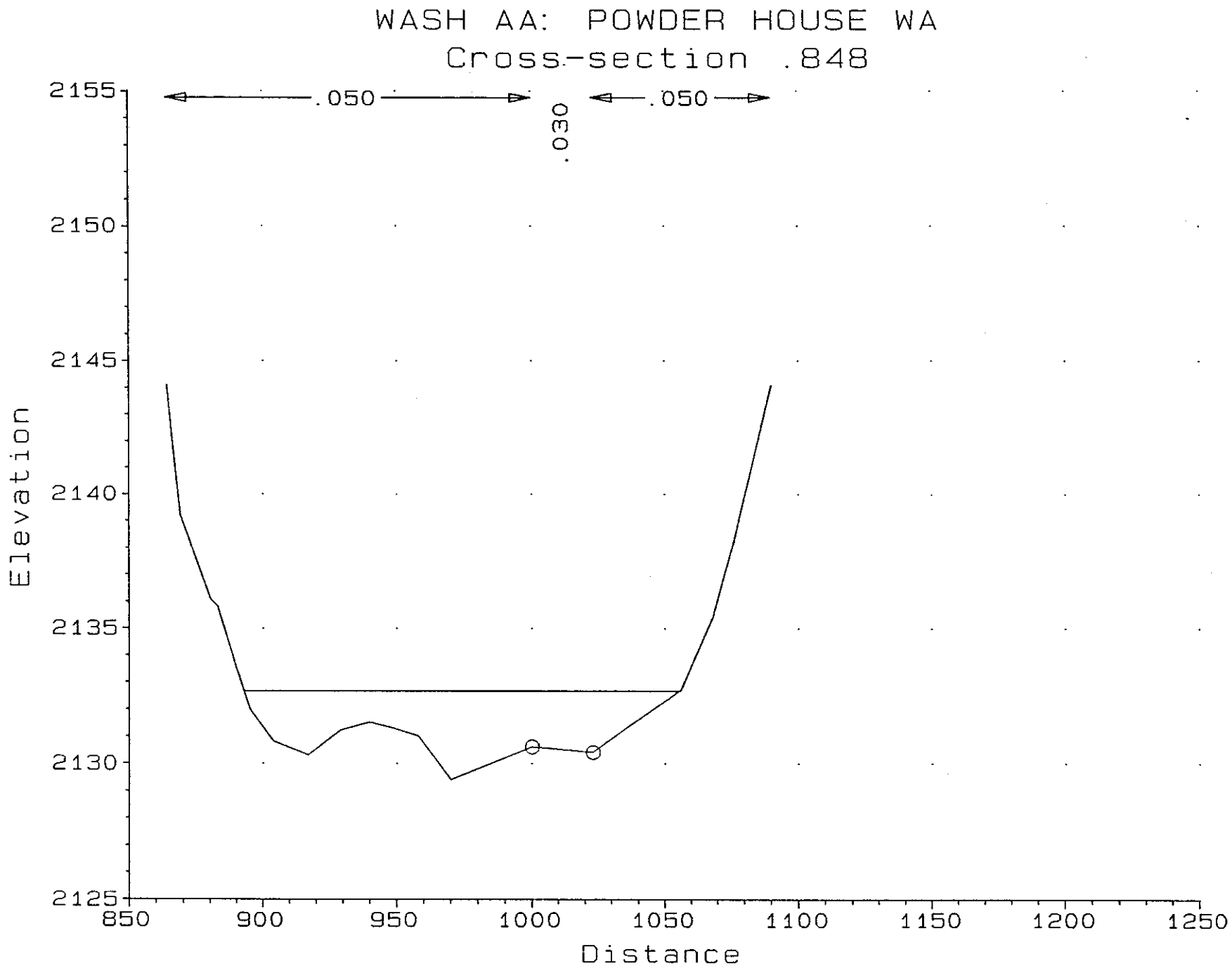
1250
1300
1350
Distance


WASH AA: POWDER HOUSE WA
Cross-section .848
.050
.030
.050
2155
2150
2145
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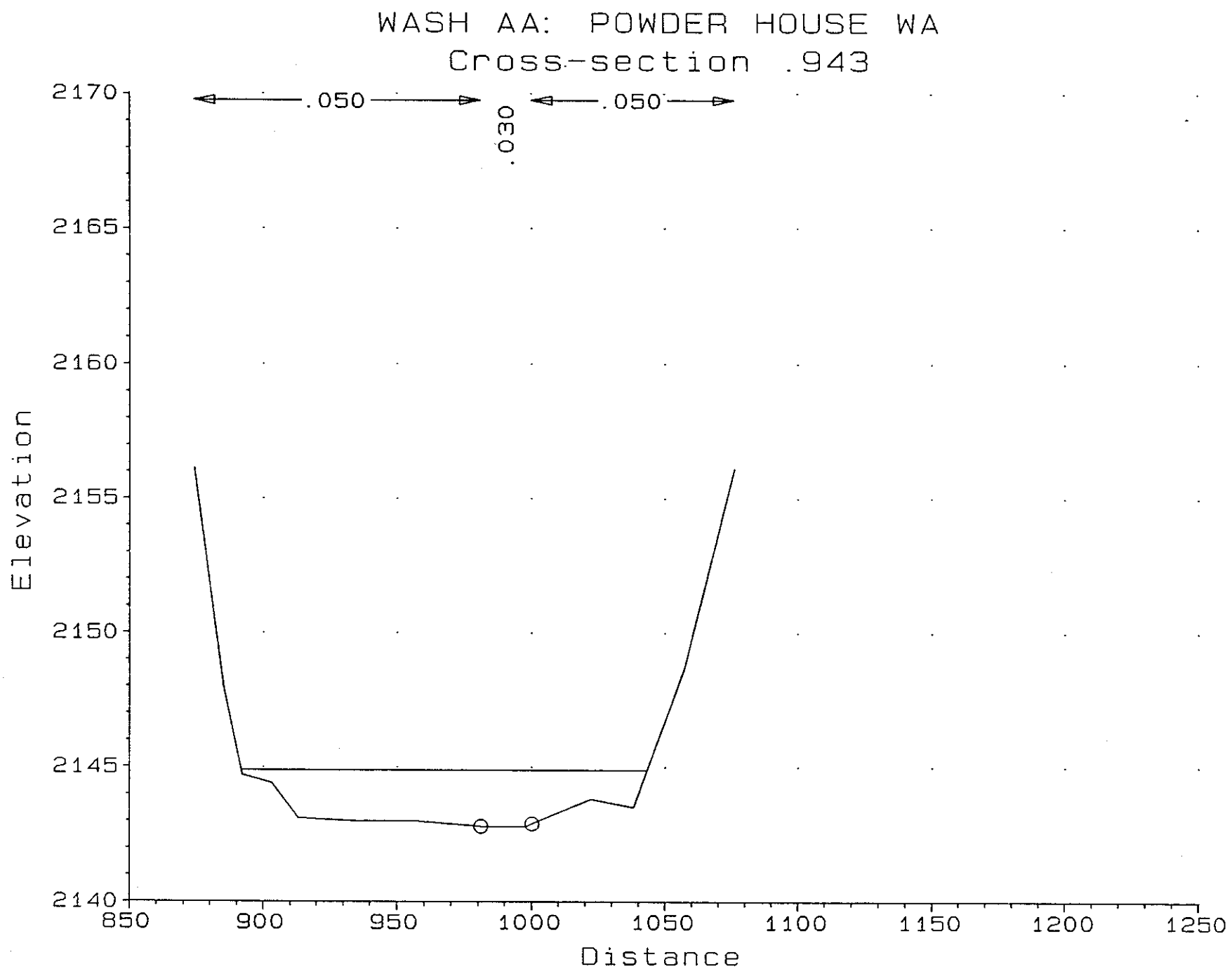
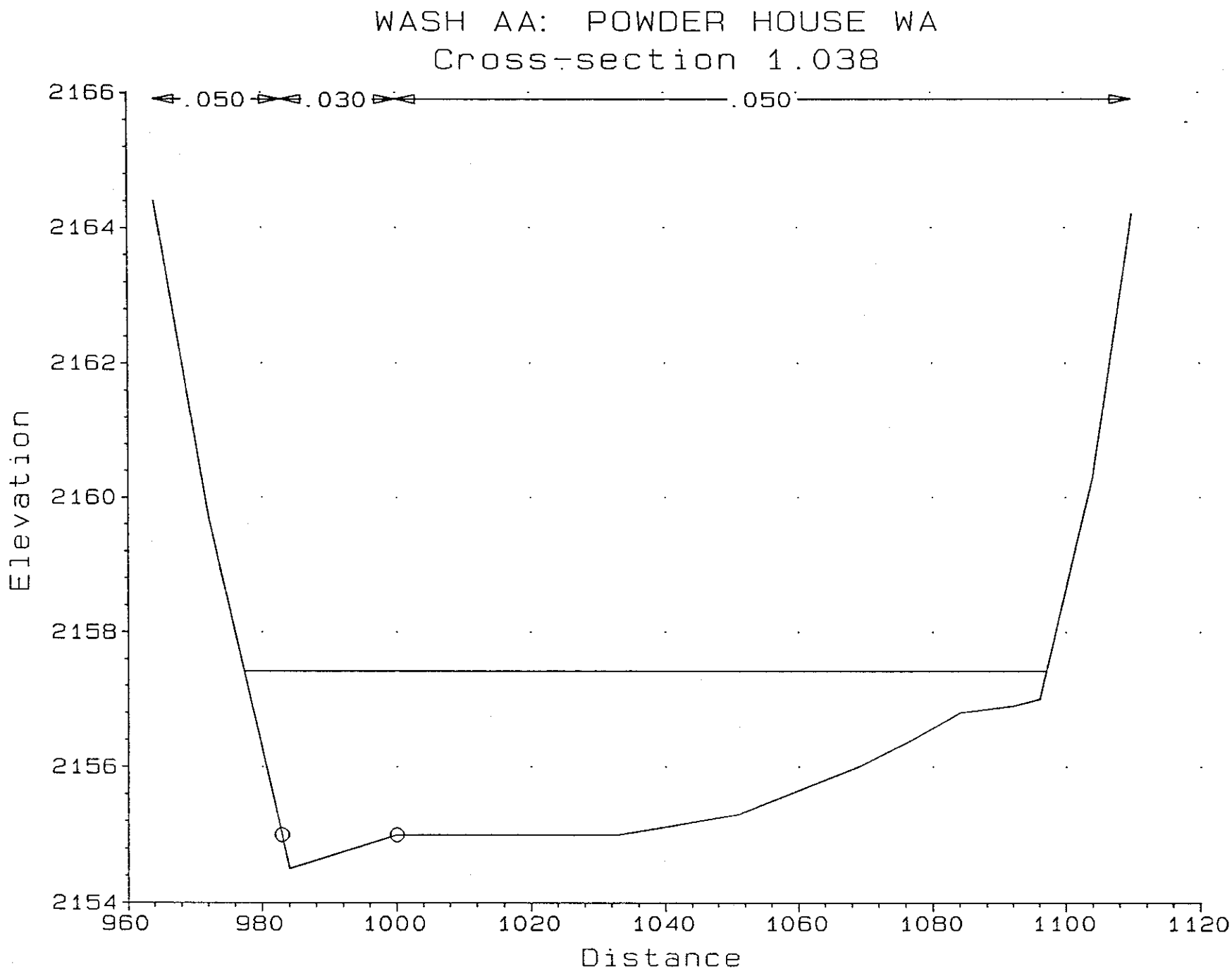
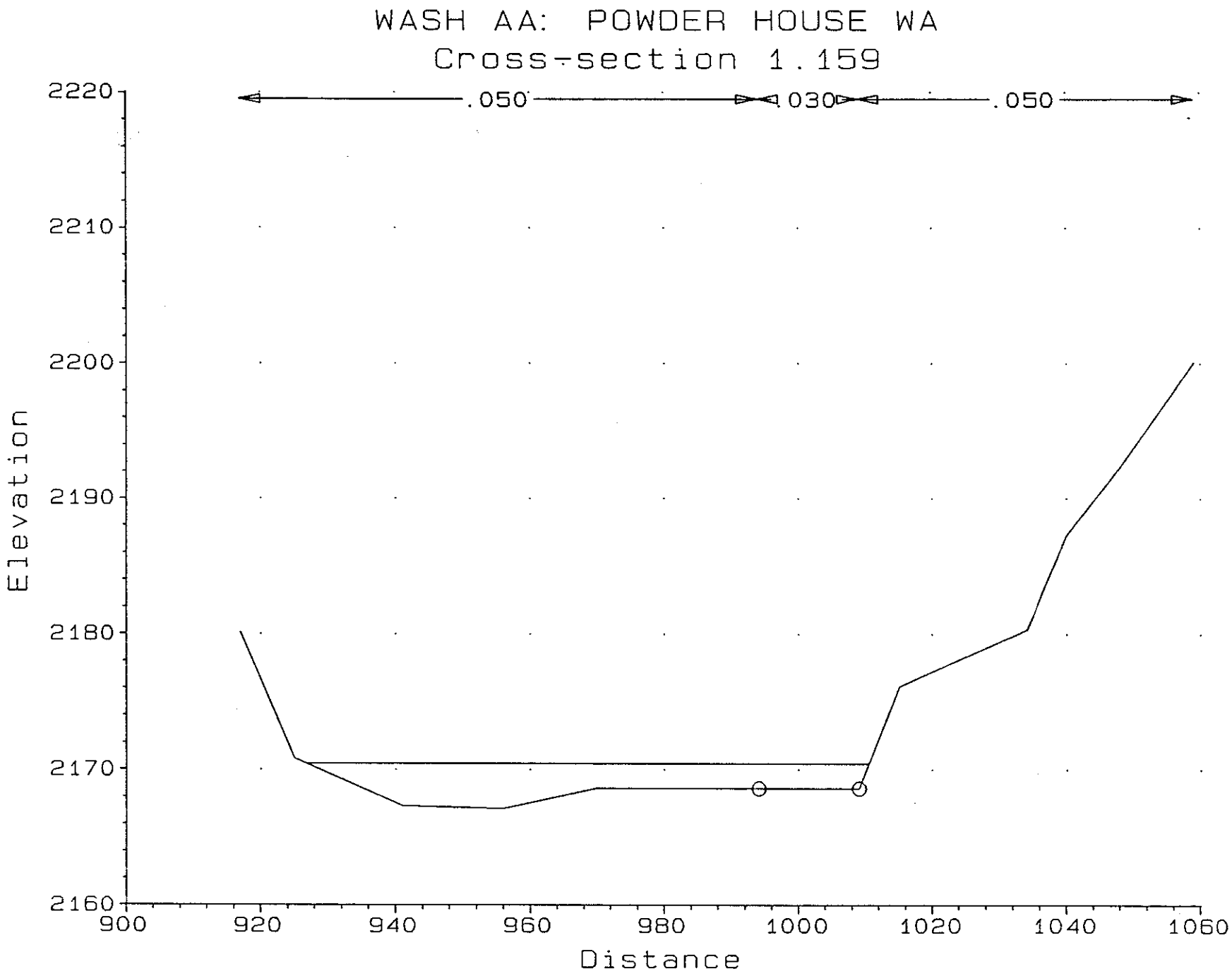
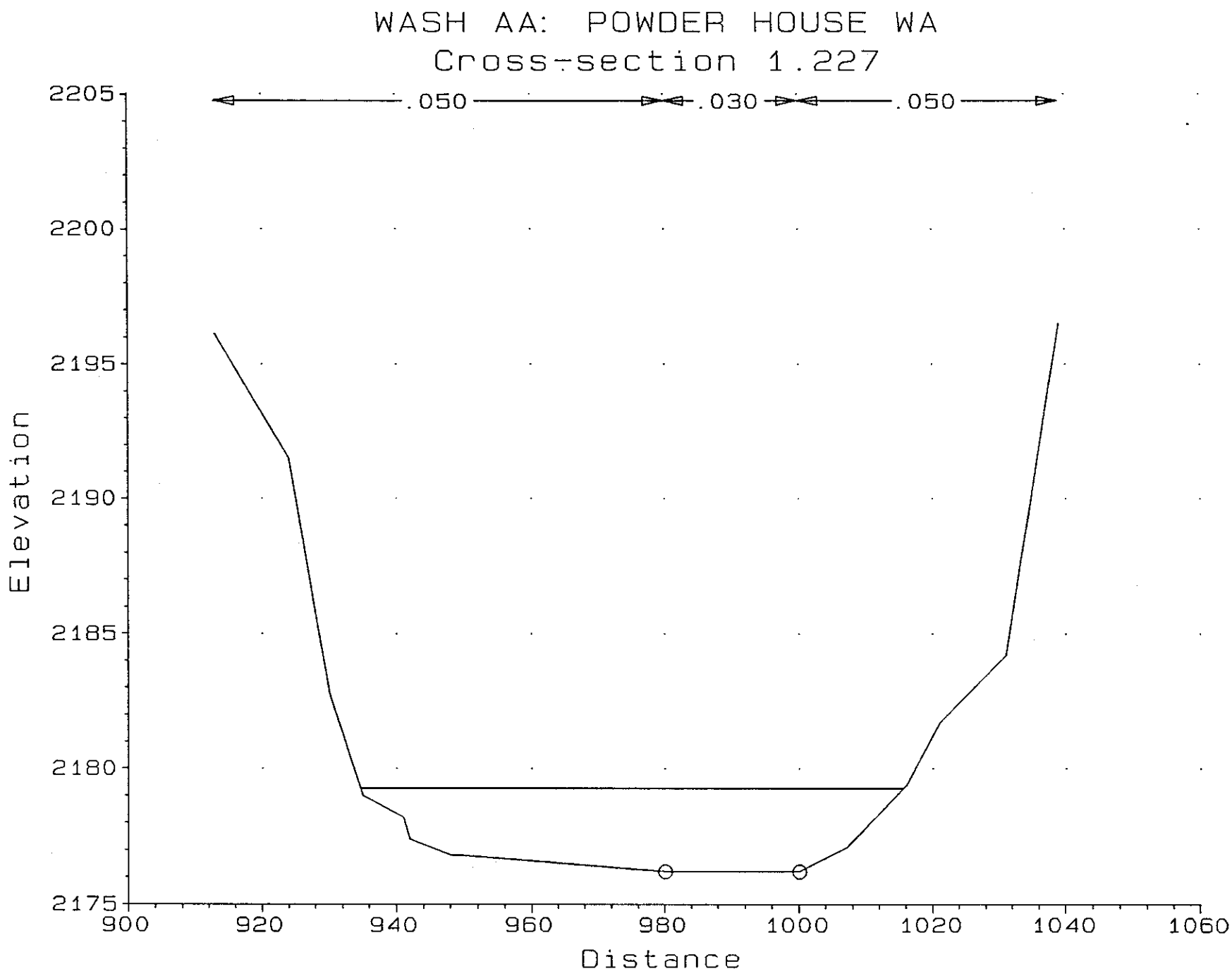
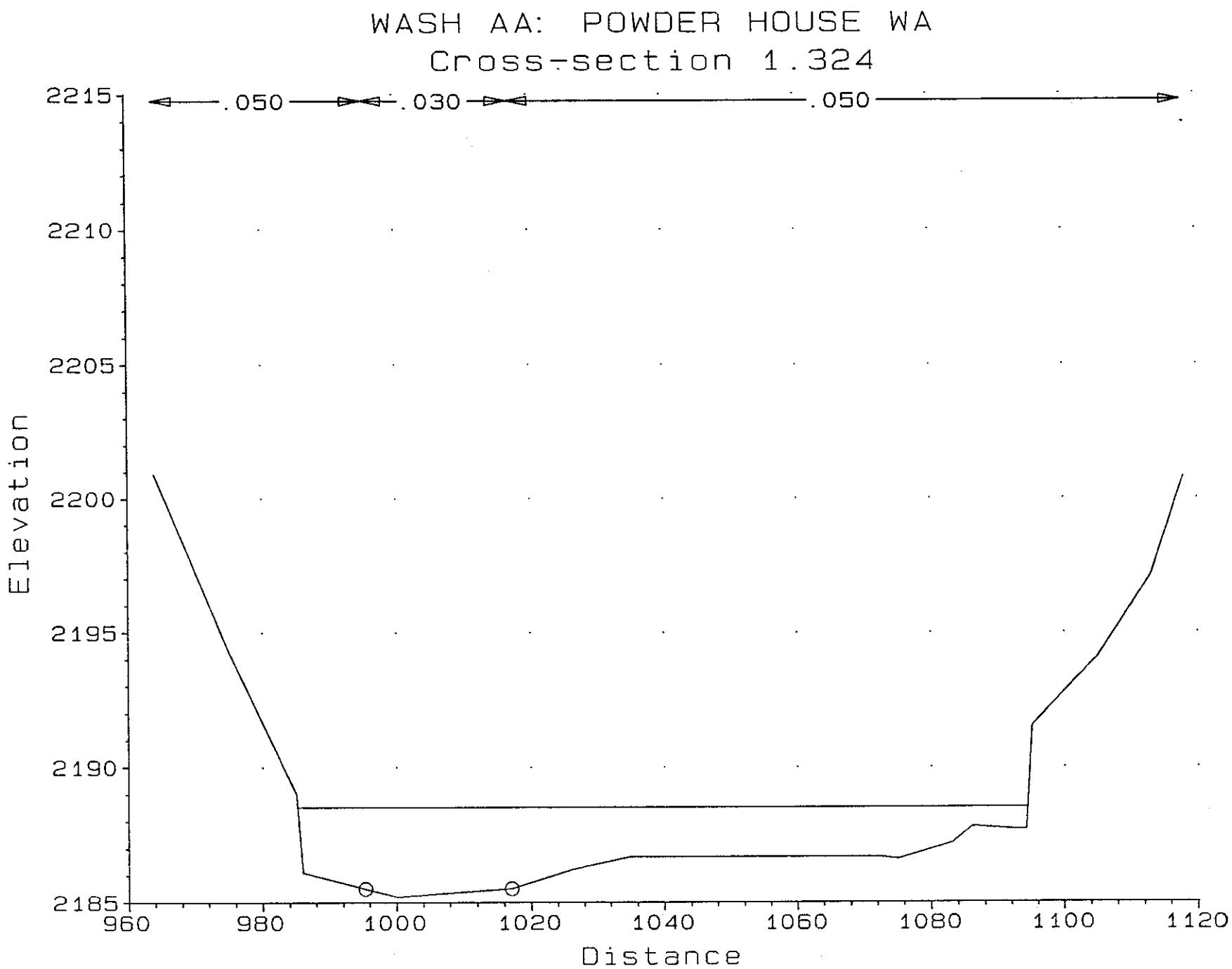
2135
2130
2125
Elevation
850
900
950
1000
1050
1100
1150
1200
1250
Distance

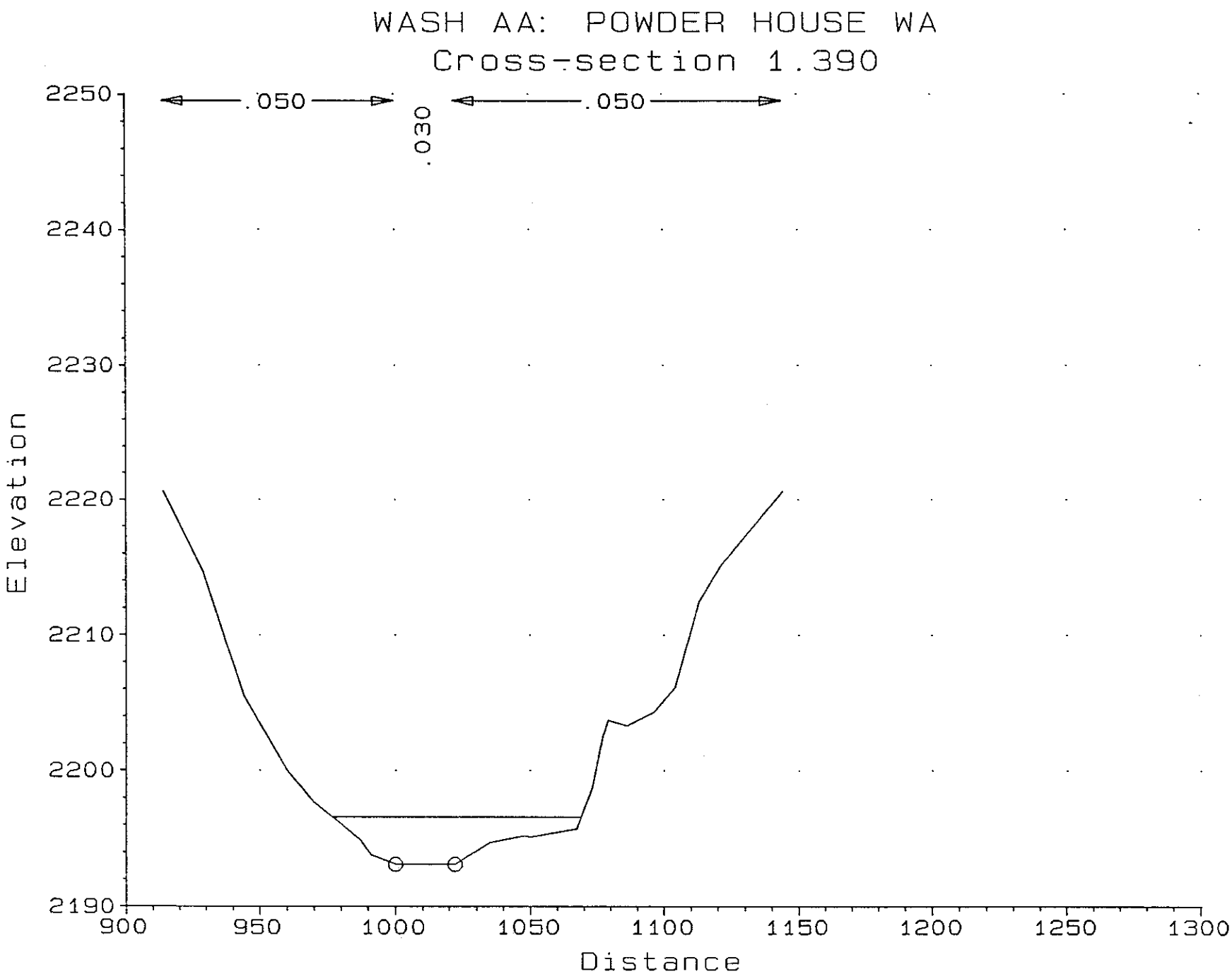

WASH AA: POWDER HOUSE WA
Cross-section .943
.050
.030
.050
2170
2165
2160
2155
2150
2145
2140
Elevation
850
900
950
1000
1050
1100
1150
1200
1250
Distance

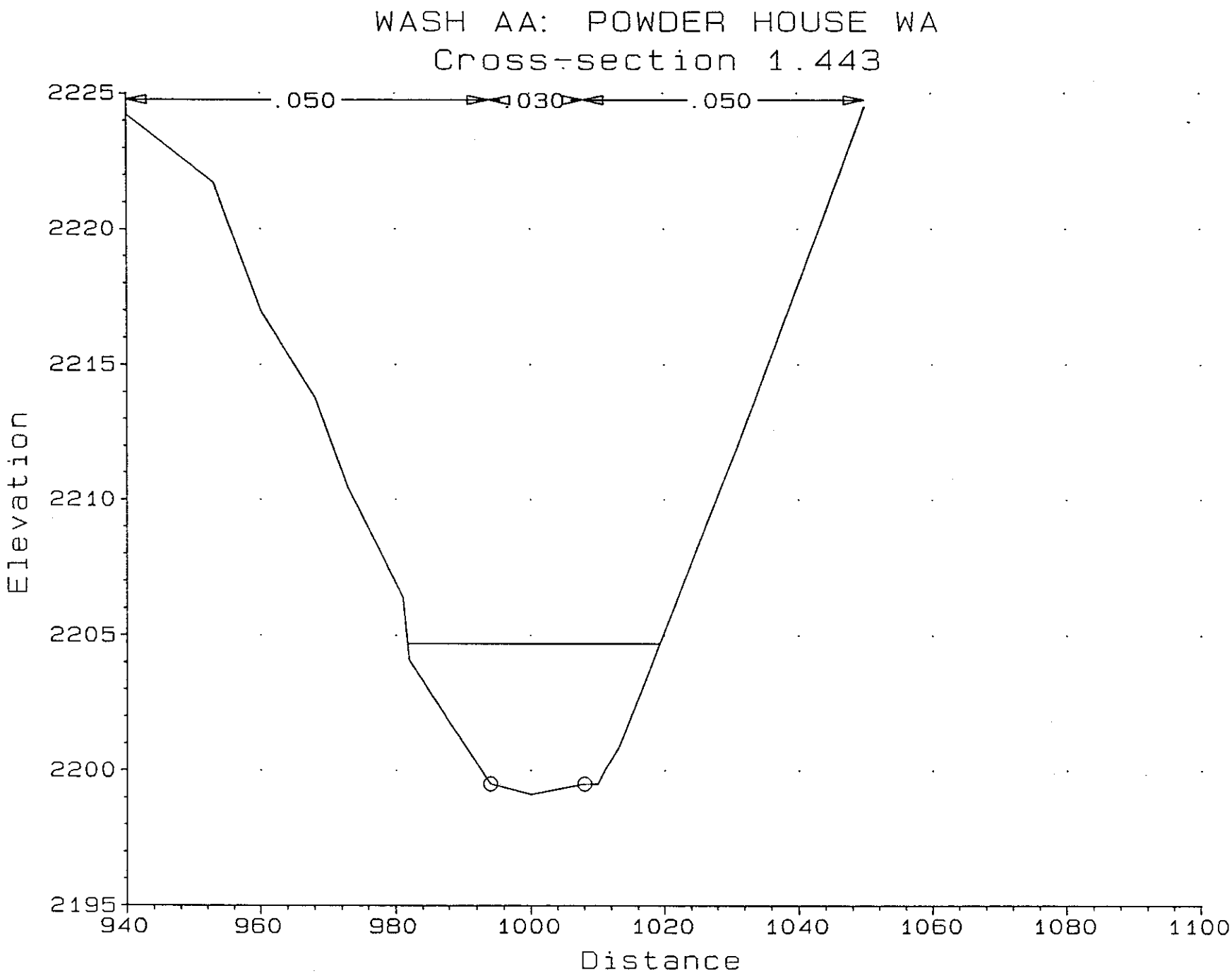

WASH AA: POWDER HOUSE WA
Cross-section 1.038
.050
.030
.050
2166
2164
2162
2160
2158
2156
2154
Elevation
960
980
1000
1020
1040
1060
1080
1100
1120
Distance

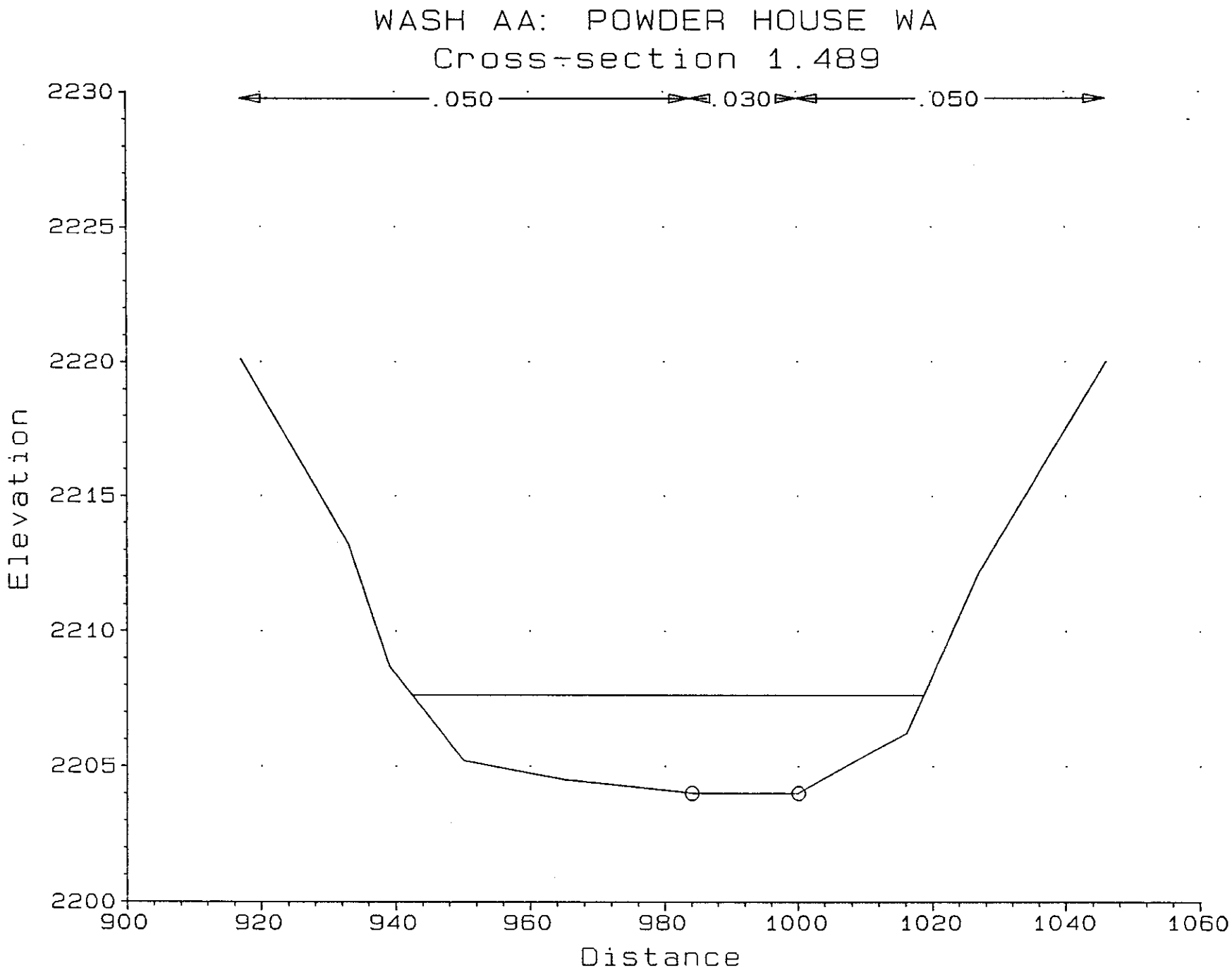

WASH AA: POWDER HOUSE WA
Cross-section 1.159
.050
.030
.050
2220
2210
2200
2190
2180
2170
2160
Elevation
900
920
940
960
980
1000
1020
1040
1060
Distance

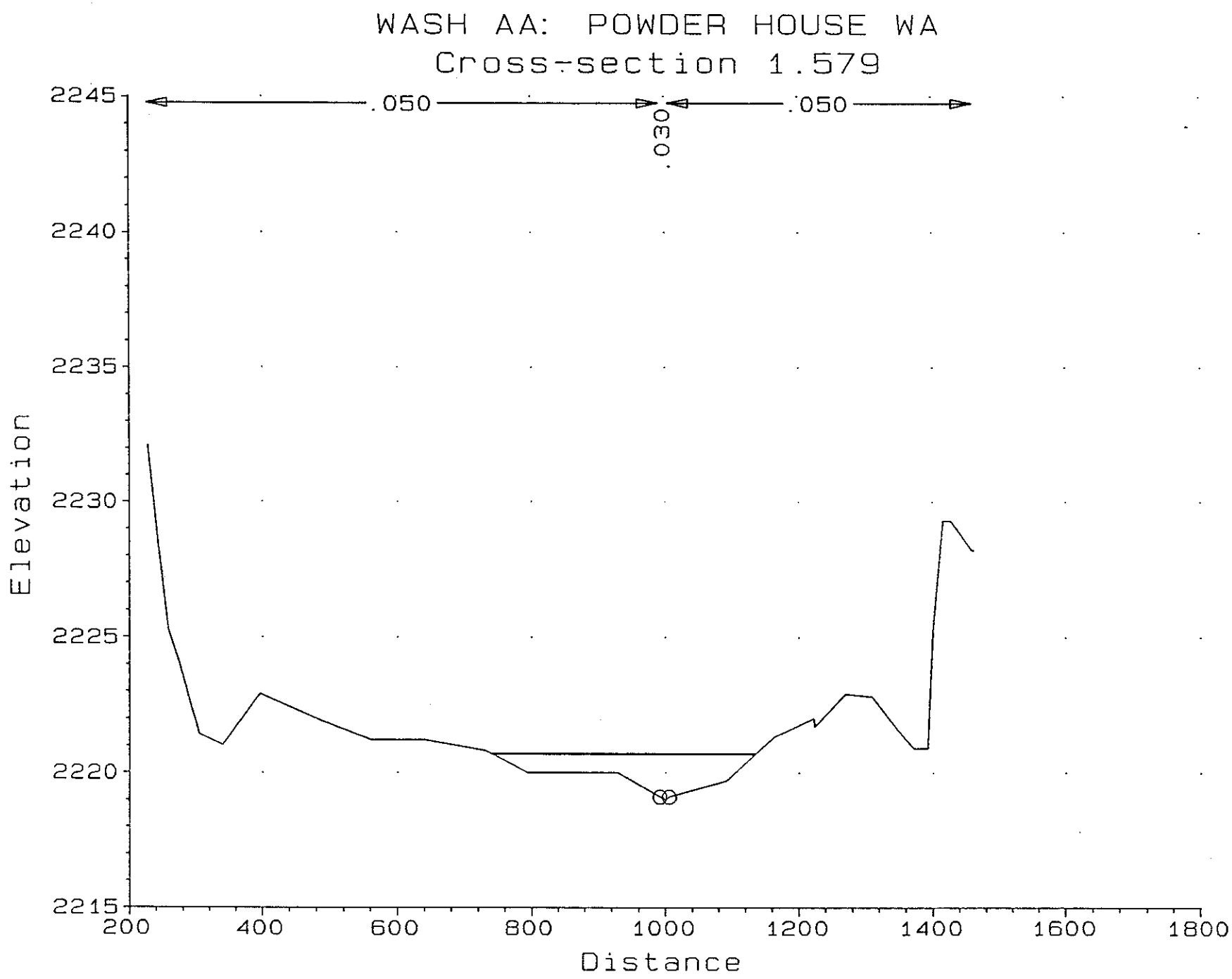

WASH AA: POWDER HOUSE WA
Cross-section 1.227
.050
.030
.050
2205
2200
2195
2190
2185
2180
2175
Elevation
900
920
940
960
980
1000
1020
1040
1060
Distance

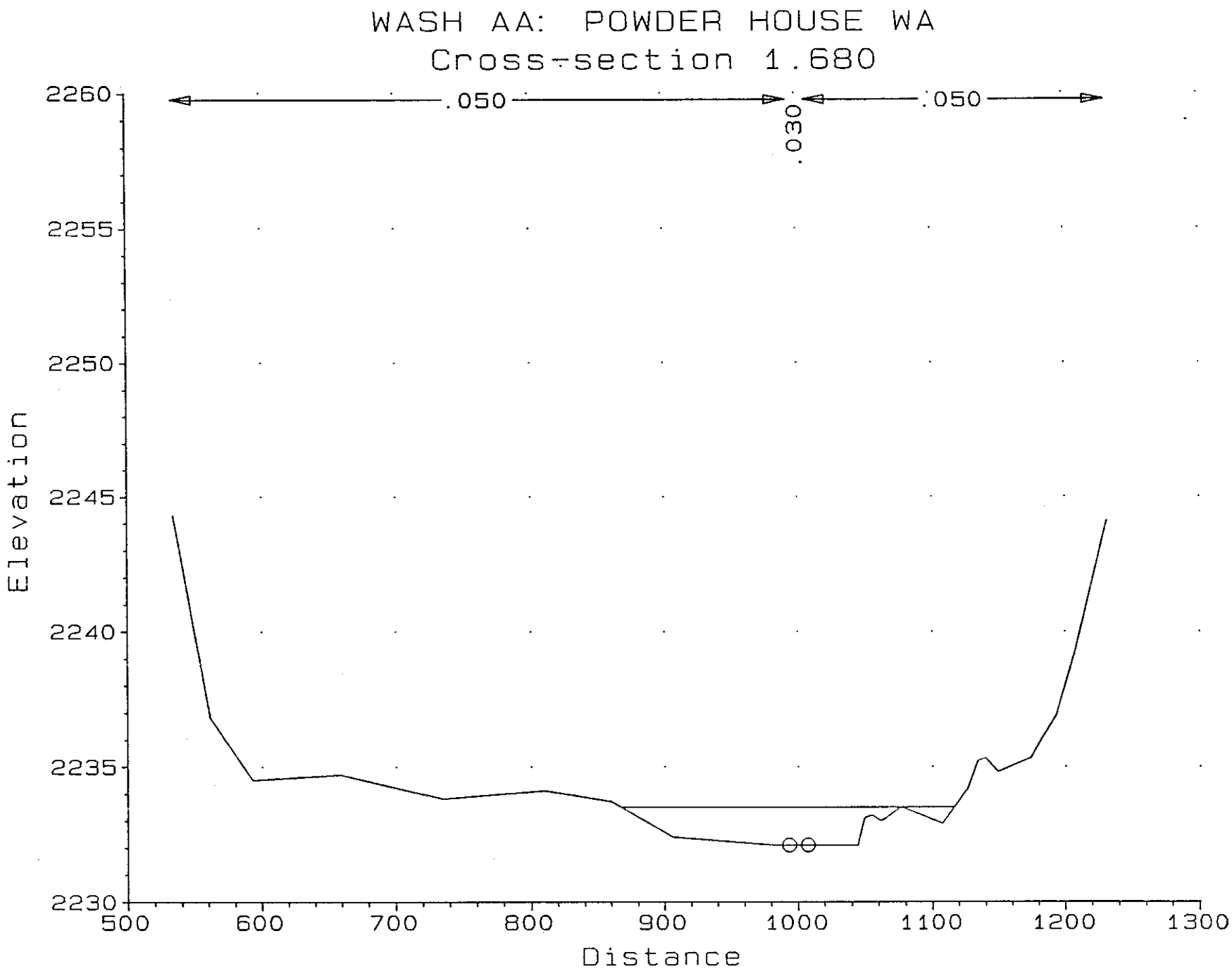

WASH AA: POWDER HOUSE WA
Cross-section 1.324
.050
.030
.050
2215
2210
2205
2200
2195
2190
2185
Elevation
960
980
1000
1020
1040
1060
1080
1100
1120
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.390
.050
.030
.050
Elevation
2250
2240
2230
2220
2210
2200
2190
900
950
1000
1050
1100
1150
1200
1250
1300
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.443
.050
.030
.050
2225
2220
2215
2210
2205
2200
2195
Elevation
940
960
980
1000
1020
1040
1060
1080
1100
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.489
.050
.030
.050
2230
2225
2220
2215
2210
2205
2200
Elevation
900
920
940
960
980
1000
1020
1040
1060
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.579
.050
.030
.050
2245
2240
2235
2230
2225
2220
2215
Elevation
200
400
600
800
1000
1200
1400
1600
1800
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.680
.050
.030
.050
2260
2255
2250
2245
2240
2235
2230
Elevation
500
600
700
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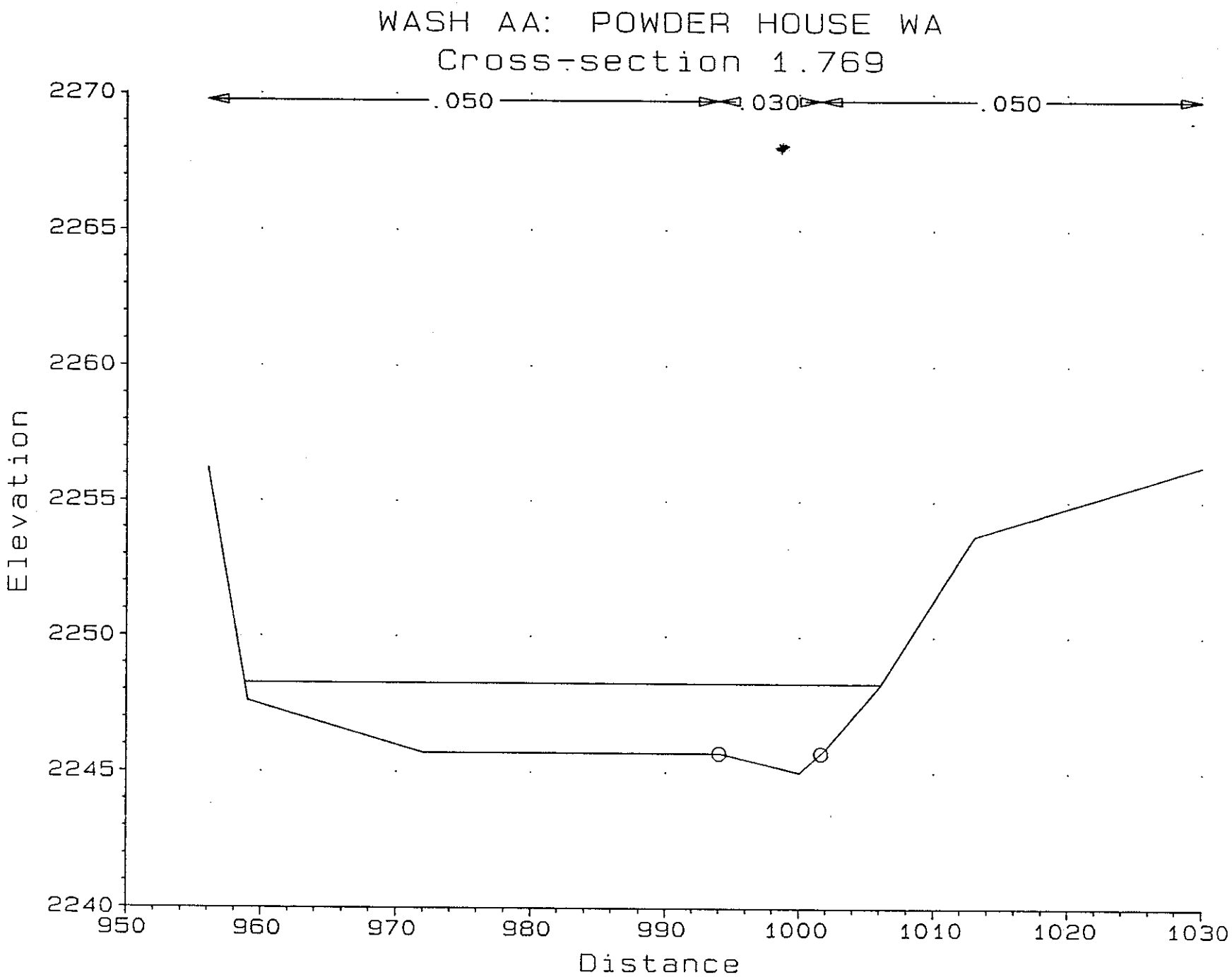
1000
1100
1200
1300
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.769
.050
.030
.050
2270
2265
2260
2255
2250
2245
2240
Elevation
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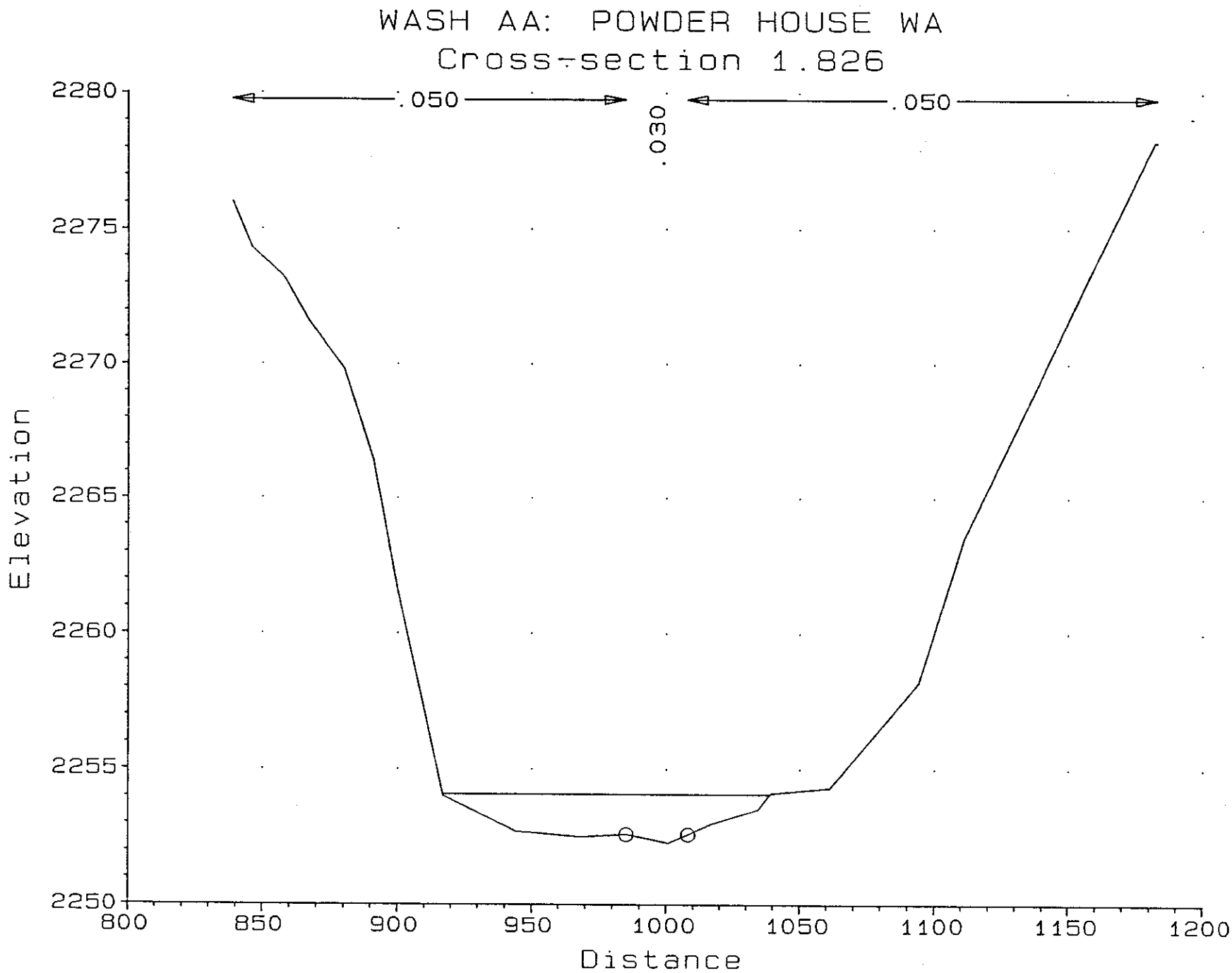
960
970
980
990
1000
1010
1020
1030
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.826
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.030
.050
Elevation
2280
2275
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2265
2260
2255
2250
800
850
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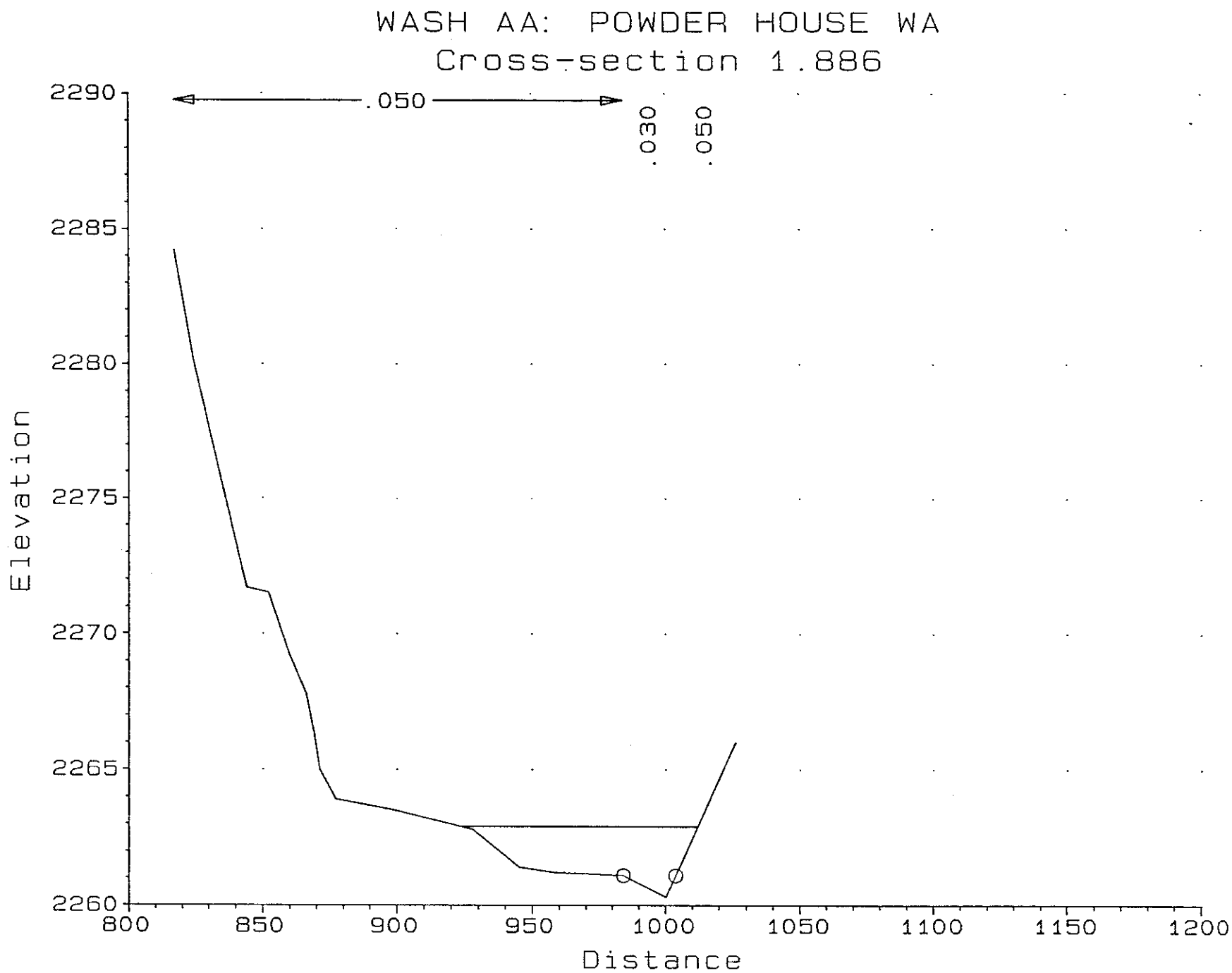
950
1000
1050
1100
1150
1200
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.886
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.030
.050
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2280
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2270
2265
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Elevation
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850
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950
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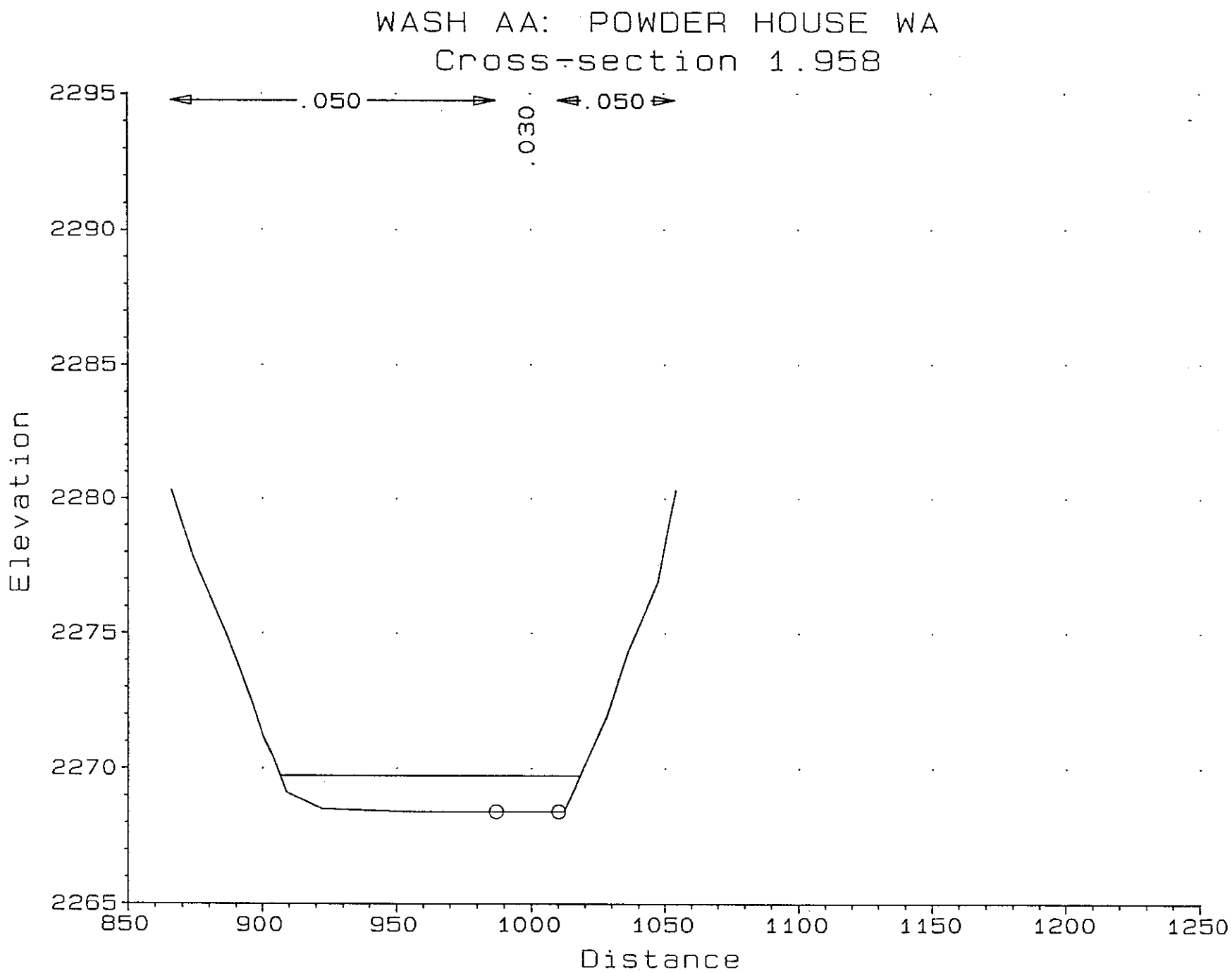
1050
1100
1150
1200
Distance


WASH AA: POWDER HOUSE WA
Cross-section 1.958
.050
.050
.030
2295
2290
2285
2280
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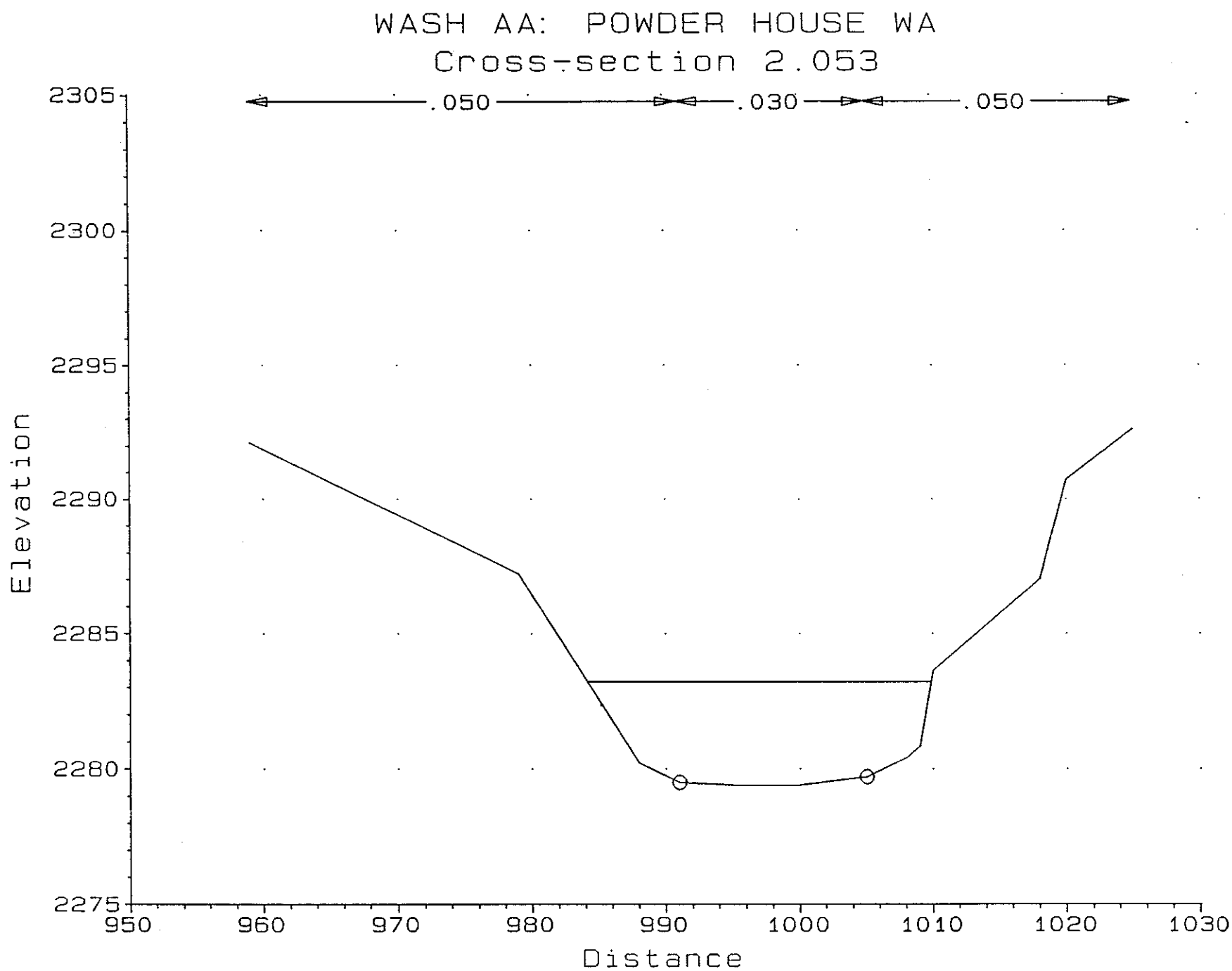
2270
2265
Elevation
850
900
950
1000
1050
1100
1150
1200
1250
Distance


WASH AA: POWDER HOUSE WA
Cross-section 2.053
.050
.030
.050
2305
2300
2295
2290
2285
2280
2275
Elevation
950
960
970
980
990
1000
1010
1020
1030
Distance

```
*****************************************
*  HEC-2 WATER SURFACE PROFILES         *
*                                       *
*  Version   4.6.2;  May 1991           *
*                                       *
*  RUN DATE    17AUG92    TIME    16:28:32  *
*****************************************
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*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616-4687     *
*          (916) 756-1104           *
*************************************
```

```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
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THIS RUN EXECUTED 17AUG92 16:28:32

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


T1      WICKENBURG ADMS - CONTRACT FCD 89-79
T2      BLACK & VEATCH PN 17676   COE & VAN LOO JN 1197-02
T3      WASH AA: CONSTELLATION RD.      (FILE CONSTRD.DAT)

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

               2                                                                   2043.57

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1                   -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150       200

NC    0.050     0.050     0.030       0.1       0.3
QT        2      2114      2114
ET                 9.1       9.1                                                                950.0      1100.
            CONFLUENCE OF WASH AA: POWDER HOUSE WASH
            AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                 UY (HASSAYAMPA RIVER MILE 51.34)
                 VA (HASSAYAMPA RIVER MILE 51.45)
            CROSS-SECTION DESIGNATION FROM:
                 HASSAYAMPA RIVER FLOODWAY FLOOD INSURANCE
                 STUDY, MARICOPA COUNTY, ARIZONA AND
                 UNINCORPORATED AREAS.  FEDERAL EMERGENCY
                 MANAGEMENT AGENCY, EFFECTIVE DATE
                 SEPTEMBER 4, 1991, PERFORMED BY CELLA BARR
                 ASSOCIATES UNDER CONTRACT NO. EMW-88-C-2603.

            SWSE TAKEN FROM FILE WASHAA.DAT (POWDER HOUSE WASH)

            Q = 2114 cfs  DISCHARGE FROM HEC-1 MODEL  (CAA17)

            ET RECORD: STA 1100. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL
X1    0.038        95     991.0    1010.0         0         0         0
GR   2050.4     950.0    2048.7     960.0    2044.5     969.5    2040.3     979.0    2039.4     984.0
GR   2039.0     991.0    2039.0    1000.0    2039.2    1010.0    2040.0    1012.0    2041.2    1014.0
GR   2041.3    1021.0    2041.7    1032.7    2042.0    1044.3    2042.4    1056.0    2041.9    1064.5
GR   2041.5    1073.0    2040.5    1076.0    2040.4    1079.0    2040.6    1085.0    2042.3    1093.0
GR   2042.4    1103.8    2042.5    1114.6    2042.7    1125.4    2042.8    1136.2    2042.9    1147.0
```

GR	2043.0	1156.0	2043.1	1165.0	2043.1	1174.0	2043.2	1183.0	2043.3	1194.3

```
    2043.3    1205.5    2043.4    1216.8    2043.5    1228.0    2043.5    1237.6    2043.6    1247.2
    2043.6    1256.8    2043.7    1266.4    2043.7    1304.7    2043.8    1314.3    2043.8    1343.0
GR  2043.8    1354.3    2043.8    1365.7    2043.8    1377.0    2043.7    1387.9    2043.7    1398.7
GR  2043.6    1409.6    2043.6    1420.4    2043.5    1431.3    2043.5    1442.1    2043.4    1453.0
GR  2043.5    1463.3    2043.6    1473.5    2043.7    1483.8    2043.8    1494.0    2044.0    1503.0
GR  2043.8    1515.0    2043.7    1527.0    2043.7    1536.4    2043.6    1545.8    2043.6    1555.2
GR  2043.5    1564.6    2043.5    1574.0    2043.6    1583.0    2043.6    1592.0    2043.7    1604.0
GR  2043.8    1613.0    2044.0    1631.0    2044.2    1651.9    2044.3    1672.7    2044.4    1683.1
GR  2044.5    1693.6    2044.6    1704.0    2044.6    1713.9    2044.7    1723.8    2044.7    1733.6
GR  2044.8    1743.5    2044.8    1753.4    2044.8    1805.0    2044.7    1816.0    2044.5    1821.0
GR  2044.6    1831.0    2044.7    1841.0    2044.7    1851.0    2044.8    1861.0    2044.8    1870.5
GR  2044.9    1880.0    2044.9    1889.5    2045.0    1899.0    2045.2    1910.0    2045.3    1921.0
GR  2045.4    1932.0    2045.6    1943.0    2045.7    1952.7    2045.9    1962.3    2046.0    1972.0

NC    0.030     0.030     0.016       0.6       0.8
ET                5.1       9.1                812.     1039.                       922.63     1039.

          ET RECORD: STA 1039. ELIMINATE INEFFECTIVE
                     FLOW AREA BEHIND RETAINING WALL

          X4 RECORD: MODEL RETAINING WALL IN RIGHT OVERBANK

X1    0.123        93     991.0    1030.0       470       450       450
X4        3    2048.5    1038.9    2053.0    1039.0    2053.0    1040.0
GR   2069.4     812.0    2066.6     818.4    2063.8     824.8    2060.9     831.2    2058.1     837.6
GR   2055.3     844.0    2053.0     850.0    2052.9     856.5    2052.7     863.0    2052.6     869.3
GR   2052.6     875.5    2052.5     881.8    2052.4     888.0    2052.4     915.0    2052.1     920.8
GR   2051.7     926.7    2051.4     932.5    2051.0     938.3    2050.6     944.2    2050.3     950.0
GR   2050.1     956.0    2049.8     962.0    2049.6     968.0    2049.3     974.0    2049.0     981.0
GR   2048.7     988.0    2048.7     991.0    2048.6    1000.0    2048.6    1027.0    2048.7    1030.0
GR   2048.5    1037.0    2048.6    1044.0    2048.3    1050.0    2048.0    1056.0    2047.9    1062.7
GR   2047.8    1069.4    2047.7    1076.1    2047.6    1082.9    2047.5    1089.6    2047.4    1096.3
GR   2047.3    1103.0    2047.4    1109.3    2047.4    1115.6    2047.5    1121.9    2047.5    1128.1
GR   2047.6    1134.4    2047.6    1140.7    2047.7    1147.0    2047.8    1153.5    2047.8    1166.5
GR   2047.9    1173.0    2047.9    1179.0    2048.0    1185.0    2048.2    1191.7    2048.3    1198.3
GR   2048.5    1205.0    2048.7    1211.7    2048.8    1218.3    2049.0    1225.0    2049.1    1230.8
GR   2049.3    1236.5    2049.4    1242.3    2049.6    1248.0    2049.7    1253.3    2049.9    1258.7
GR   2050.0    1264.0    2050.1    1269.7    2050.1    1275.3    2050.2    1281.0    2050.3    1287.5
GR   2050.3    1294.0    2050.3    1300.0    2050.2    1306.0    2050.1    1312.0    2050.1    1318.0
GR   2049.9    1325.3    2049.7    1332.7    2049.5    1340.0    2049.4    1347.5    2049.4    1355.0
GR   2049.7    1363.0    2049.9    1370.0    2050.1    1377.5    2050.4    1385.0    2051.9    1398.2
GR   2052.6    1404.8    2053.4    1411.4    2054.1    1418.0    2055.1    1423.8    2056.1    1429.6
GR   2057.2    1435.4    2058.2    1441.2    2059.2    1447.0

NC    0.030     0.030     0.016       0.1       0.3
QT        2   1506.37   1506.37
ET                9.1       9.1                                                      1170.2       1240.
          DISCHARGE DETERMINED FROM SPLIT FLOW CALCULATIONS
          FILE WASHAA.DAT  (POWDER HOUSE WASH MAIN CHANNEL)
```

ET RECORD: STA 1240. ELIMINATE INEFFECTIVE
FLOW AREA IN RIGHT OVERBANK

X4 RECORD: MODEL RETAINING WALL IN RIGHT OVERBANK

MAPPED FLOODPLAIN TO CWSEL

HYDRAULIC CONTROL LINE @ STA 1201.2

X1	0.161	72	1199.2	1233.2	195	200	200			
X3	10									
X4	3	2053.6	1448.9	2058.0	1449.0	2058.0	1450.0			
GR	2055.5	1170.2	2055.1	1174.2	2054.7	1178.2	2054.3	1182.2	2053.9	1186.2
GR	2053.3	1189.7	2052.7	1193.2	2051.0	1199.2	2051.0	1201.2	2051.1	1205.2
GR	2051.1	1213.2	2051.2	1217.2	2051.3	1221.2	2051.4	1225.2	2051.6	1229.2
GR	2051.7	1233.2	2052.2	1239.2	2052.3	1243.2	2052.4	1247.2	2052.4	1251.5
GR	2052.5	1255.7	2052.5	1260.0	2052.6	1264.2	2052.6	1272.7	2052.7	1277.0
GR	2052.7	1285.2	2052.6	1289.2	2052.6	1293.2	2052.5	1297.2	2052.5	1301.2
GR	2052.4	1305.2	2052.4	1309.2	2052.5	1312.9	2052.6	1316.5	2052.7	1320.2
GR	2052.8	1324.5	2052.8	1328.8	2052.9	1333.1	2052.9	1341.7	2053.0	1346.0
GR	2053.1	1350.3	2053.1	1358.9	2053.2	1363.2	2053.2	1367.2	2053.3	1371.2
GR	2053.3	1375.2	2053.4	1379.2	2053.4	1387.2	2053.5	1391.2	2053.5	1395.2
GR	2053.6	1399.2	2053.6	1419.2	2053.7	1423.2	2053.7	1443.5	2053.6	1447.7
GR	2053.6	1456.2	2053.5	1460.5	2053.4	1469.0	2053.3	1481.4	2053.2	1497.8
GR	2053.1	1510.1	2053.0	1522.2	2052.9	1529.9	2052.8	1537.2	2052.9	1546.2
[illegible]	2053.6	1552.2	2055.8	1556.1	2058.0	1559.9	2060.2	1563.8	2062.4	1567.6
GR	2064.6	1571.5	2069.0	1579.2						
ET		5.1	9.1		1021.	1420.			1021.	1118.

ET RECORD: STA 1021. ELIMINATE INEFFECTIVE
FLOW AREA BEHIND RETAINING WALL

X4 RECORD: MODEL RETAINING WALL IN LEFT OVERBANK

HYDRAULIC CONTROL LINE @ STA 1090.0

X1	0.191	18	1061	1108	170	170	160			
X3	10									
X4	4	2057.2	1019.9	2061.0	1020.0	2061.0	1021.0	2057.0	1024	
GR	2057.2	1017.	2056.8	1032.	2056.0	1058.	2055.6	1061.	2055.8	1090.
GR	2055.6	1108.	2056.0	1118.	2057.6	1124.	2057.8	1136.	2058.3	1155.
GR	2059.6	1186.	2060.5	1215.	2059.6	1260.	2061.4	1306.	2061.9	1336.
GR	2062.7	1366.	2062.7	1389.	2068.3	1420.				
ET			9.1						1049.92	1118.

ADDED STA 1080.0 TO DEFINE HYDRAULIC CONTROL LINE

X1	0.252	12	1062	1098	315	310	320			
X3	10									
[illegible]	069.5	1035.	2067.9	1043.	2063.8	1062.	2063.8	1080.	2063.8	1092.
[illegible]	063.9	1098.	2064.5	1115.	2064.7	1135.	2064.9	1173.	2068.1	1198.
GR	2073.9	1231.	2083.9	1280.0						

9.1 1068.08 1140.

HYDRAULIC CONTROL LINE @ STA 1100.0

X1	0.305	19	1078	1113	275	280	280			
X3	10									
GR	2076.2	1059.	2075.2	1065.	2070.6	1078.	2070.0	1082.	2070.3	1090.
GR	2070.9	1100.	2071.9	1113.	2071.9	1133.	2073.3	1159.	2075.0	1182.
GR	2075.5	1223.	2075.6	1269.	2075.7	1295.	2076.5	1311.	2078.2	1318.
GR	2081.1	1339.	2089.1	1349.	2096.8	1361.	2116.1	1382.		

```
 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
          QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
  TIME    VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
  SLOPE   XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV=     .100 CEHV=     .300
*SECNO  .038
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      950.0    1100.0  TYPE=      1  TARGET=      150.000
            CONFLUENCE OF WASH AA: POWDER HOUSE WASH
            AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                UY (HASSAYAMPA RIVER MILE 51.34)
                VA (HASSAYAMPA RIVER MILE 51.45)
            CROSS-SECTION DESIGNATION FROM:
                HASSAYAMPA RIVER FLOODWAY FLOOD INSURANCE
                STUDY, MARICOPA COUNTY, ARIZONA AND
                UNINCORPORATED AREAS.  FEDERAL EMERGENCY
                MANAGEMENT AGENCY, EFFECTIVE DATE
                SEPTEMBER 4, 1991, PERFORMED BY CELLA BARR
                ASSOCIATES UNDER CONTRACT NO. EMW-88-C-2603.

            SWSE TAKEN FROM FILE WASHAA.DAT (POWDER HOUSE WASH)

            Q = 2114 cfs  DISCHARGE FROM HEC-1 MODEL  (CAA17)

            ET RECORD: STA 1100. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL
      .038      4.57   2043.57   2043.57       .00   2044.75      1.18       .00       .00   2039.00
    2114.0     361.8     998.0     754.2      61.4      85.9     179.7        .0        .0   2039.20
       .00      5.90     11.62      4.20      .050      .030      .050      .000   2039.00    971.59
   .007358        0.        0.        0.         0         4         0       .00    128.40   1100.00


FLOW DISTRIBUTION FOR SECNO=       .04          CWSEL=   2043.57

STA=     972.     984.     991.    1010.    1014.    1021.    1033.    1044.    1065.    1076.    1085.    1093.    1100.
  PER Q=     7.3      9.9     47.2      3.6      3.4      4.8      3.5      4.2      4.6      7.1      3.3      1.1
   AREA=    30.7     30.6     85.9     13.9     16.3     24.3     20.0     28.2     23.6     27.8     17.0      8.7
    VEL=     5.0      6.8     11.6      5.5      4.5      4.1      3.7      3.2      4.1      5.4      4.2      2.6
  DEPTH=     2.5      4.4      4.5      3.5      2.3      2.1      1.7      1.4      2.1      3.1      2.1      1.2
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 SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
          QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


CCHV=     .600 CEHV=     .800
*SECNO  .123
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      812.0    1039.0  TYPE=      1  TARGET=      227.000

            ET RECORD: STA 1039. ELIMINATE INEFFECTIVE
                       FLOW AREA BEHIND RETAINING WALL

            X4 RECORD: MODEL RETAINING WALL IN RIGHT OVERBANK

      .123      4.68   2051.98   2051.98       .00   2053.26      1.29      1.87       .09   2048.70
    2114.0     558.0    1401.5     154.5     126.5     131.1      30.4       3.2       1.3   2048.70
       .01      4.41     10.69      5.09      .030      .016      .030      .000   2047.30    922.63
   .002633      470.      450.      450.         0         5         0       .00    116.35   1038.98


FLOW DISTRIBUTION FOR SECNO=       .12          CWSEL=   2051.98

       923.     956.     968.     974.     981.     988.     991.    1030.    1037.    1039.
     Q=     4.9      5.2      3.4      4.8      5.6      2.6     66.3      6.4       .9
  AREA=    34.0     25.8     15.2     19.8     21.9      9.8    131.1     23.6      6.7
   VEL=     3.0      4.2      4.7      5.1      5.4      5.6     10.7      5.7      2.9
 DEPTH=     1.0      2.2      2.5      2.8      3.1      3.3      3.4      3.4      3.4

CCHV=     .100 CEHV=     .300
*SECNO  .161
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1170.2    1240.0  TYPE=      1  TARGET=       69.800
            DISCHARGE DETERMINED FROM SPLIT FLOW CALCULATIONS
            FILE WASHAA.DAT  (POWDER HOUSE WASH MAIN CHANNEL)

            ET RECORD: STA 1240. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            X4 RECORD: MODEL RETAINING WALL IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL
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HYDRAULIC CONTROL LINE @ STA 1201.2

.161	3.84	2054.84	2054.84	.00	2056.36	1.53	.50	.07	2051.00
1506.4	129.5	1288.8	88.1	33.1	121.8	19.4	4.3	1.7	2051.70
.02	3.92	10.58	4.54	.030	.016	.030	.000	2051.00	1176.84
.002366	195.	200.	200.	0	15	0	.00	63.16	1240.00

FLOW DISTRIBUTION FOR SECNO= .16 CWSEL= 2054.84

STA=	1177.	1182.	1186.	1190.	1193.	1199.	1233.	1239.	1240.
PER Q=	.1	.4	.8	1.5	5.8	85.6	5.6	.2	
AREA=	1.4	2.9	4.3	6.4	17.9	121.8	17.3	2.1	
VEL=	1.1	2.0	2.7	3.6	4.9	10.6	4.9	1.7	
DEPTH=	.3	.7	1.2	1.8	3.0	3.6	2.9	2.6	

*SECNO .191

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1021.0 1420.0 TYPE= 1 TARGET= 399.000
ET RECORD: STA 1021. ELIMINATE INEFFECTIVE
FLOW AREA BEHIND RETAINING WALL

X4 RECORD: MODEL RETAINING WALL IN LEFT OVERBANK

HYDRAULIC CONTROL LINE @ STA 1090.0

.191	2.66	2058.26	2058.26	.00	2059.24	.98	.41	.05	2055.60
1506.4	258.2	1088.7	159.5	67.2	120.2	44.0	5.0	2.1	2055.60
.03	3.84	9.05	3.62	.030	.016	.030	.000	2055.60	1023.06
.002716	170.	160.	170.	0	19	0	.00	130.37	1153.42

FLOW DISTRIBUTION FOR SECNO= .19 CWSEL= 2058.26

STA=	1023.	1024.	1032.	1058.	1061.	1108.	1118.	1124.	1136.	1153.
PER Q=	.1	2.3	12.5	2.3	72.3	7.7	1.9	.8	.3	
AREA=	.6	10.9	48.3	7.4	120.2	24.6	8.8	6.7	4.0	
VEL=	1.3	3.2	3.9	4.7	9.1	4.7	3.2	1.8	1.0	
DEPTH=	.6	1.4	1.9	2.5	2.6	2.5	1.5	.6	.2	

*SECNO .252
7185 MINIMUM SPECIFIC ENERGY

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3720 CRITICAL DEPTH ASSUMED

ADDED STA 1080.0 TO DEFINE HYDRAULIC CONTROL LINE

.252	2.61	2066.41	2066.41	.00	2067.34	.94	.90	.00	2063.80
1506.4	49.9	894.5	561.9	15.7	93.5	143.6	6.8	3.0	2063.90
.04	3.17	9.56	3.91	.030	.016	.030	.000	2063.80	1049.92
.002968	315.	320.	310.	0	5	0	.00	134.85	1184.77

FLOW DISTRIBUTION FOR SECNO= .25 CWSEL= 2066.41

STA=	1050.	1062.	1098.	1115.	1135.	1173.	1185.
PER Q=	3.3	59.4	11.4	9.6	15.0	1.3	
AREA=	15.7	93.5	37.5	36.1	61.1	8.9	
VEL=	3.2	9.6	4.6	4.0	3.7	2.2	
DEPTH=	1.3	2.6	2.2	1.8	1.6	.8	

*SECNO .305
7105 MINIMUM SPECIFIC ENERGY
CRITICAL DEPTH ASSUMED

HYDRAULIC CONTROL LINE @ STA 1100.0

.305	4.11	2074.11	2074.11	.00	2075.29	1.18	.72	.07	2070.60
1506.4	56.9	1147.8	301.6	17.4	117.3	87.9	8.3	3.8	2071.90
.05	3.27	9.79	3.43	.030	.016	.030	.000	2070.00	1068.08
.002224	275.	280.	280.	0	14	0	.00	101.89	1169.97

FLOW DISTRIBUTION FOR SECNO= .31 CWSEL= 2074.11

STA=	1068.	1078.	1113.	1133.	1159.	1170.
PER Q=	3.8	76.2	11.6	8.0	.4	
AREA=	17.4	117.3	44.2	39.3	4.4	
VEL=	3.3	9.8	4.0	3.1	1.3	
DEPTH=	1.8	3.4	2.2	1.5	.4	

FLOODWAY DETERMINATION
1.0 FT TARGET INCREASE
T3 WASH AA: CONSTELLATION RD.

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2043.57	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15		-1				-1			

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 ECNO     DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    L-BANK ELEV
          QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      R-BANK ELEV
 TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
 SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST


*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV=     .100 CEHV=     .300
*SECNO  .038
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      950.0    1100.0  TYPE=      1  TARGET=      150.000
            CONFLUENCE OF WASH AA: POWDER HOUSE WASH
            AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                UY (HASSAYAMPA RIVER MILE 51.34)
                VA (HASSAYAMPA RIVER MILE 51.45)
            CROSS-SECTION DESIGNATION FROM:
                HASSAYAMPA RIVER FLOODWAY FLOOD INSURANCE
                STUDY, MARICOPA COUNTY, ARIZONA AND
                UNINCORPORATED AREAS.  FEDERAL EMERGENCY
                MANAGEMENT AGENCY, EFFECTIVE DATE
                SEPTEMBER 4, 1991, PERFORMED BY CELLA BARR
                ASSOCIATES UNDER CONTRACT NO. EMW-88-C-2603.

            SWSE TAKEN FROM FILE WASHAA.DAT (POWDER HOUSE WASH)

            Q = 2114 cfs  DISCHARGE FROM HEC-1 MODEL  (CAA17)

            ET RECORD: STA 1100. ELIMINATE INEFFECTIVE
                       FLOW AREA IN RIGHT OVERBANK

            MAPPED FLOODPLAIN TO CWSEL
     .038      4.57   2043.57   2043.57   2043.57   2044.75      1.18       .00       .00   2039.00
   2114.0     361.8     998.0     754.2      61.4      85.9     179.7        .0        .0   2039.20
     .00      5.90     11.62      4.20      .050      .030      .050      .000   2039.00    971.59
  .007358       0.        0.        0.         0         4         0       .00    128.40   1100.00


CCHV=     .600 CEHV=     .800
*SECNO  .123
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      922.6    1039.0  TYPE=      1  TARGET=      116.370
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          ET RECORD: STA 1039. ELIMINATE INEFFECTIVE
                     FLOW AREA BEHIND RETAINING WALL

          X4 RECORD: MODEL RETAINING WALL IN RIGHT OVERBANK

     .123      4.68   2051.98   2051.98   2051.98   2053.26      1.29      1.87       .09   2048.70
   2114.0     558.0    1401.6     154.5     126.4     131.0      30.4       3.2       1.3   2048.70
     .01      4.41     10.70      5.09      .030      .016      .030      .000   2047.30    922.64
  .002635     470.      450.      450.         0         5         0       .00    116.34   1038.98


CCHV=     .100 CEHV=     .300
*SECNO  .161
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1170.2    1240.0  TYPE=      1  TARGET=       69.800
          DISCHARGE DETERMINED FROM SPLIT FLOW CALCULATIONS
          FILE WASHAA.DAT  (POWDER HOUSE WASH MAIN CHANNEL)

          ET RECORD: STA 1240. ELIMINATE INEFFECTIVE
                     FLOW AREA IN RIGHT OVERBANK

          X4 RECORD: MODEL RETAINING WALL IN RIGHT OVERBANK

          MAPPED FLOODPLAIN TO CWSEL

          HYDRAULIC CONTROL LINE @ STA 1201.2

     .161      3.84   2054.84   2054.84   2054.84   2056.36      1.53       .50       .07   2051.00
   1506.4     129.5    1288.8      88.1      33.1     121.8      19.4       4.3       1.7   2051.70
     .02      3.92     10.58      4.54      .030      .016      .030      .000   2051.00   1176.84
  .002366     195.      200.      200.         0        15         0       .00     63.16   1240.00


*SECNO  .191
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1021.0    1118.0  TYPE=      1  TARGET=       97.000
          ET RECORD: STA 1021. ELIMINATE INEFFECTIVE
                     FLOW AREA BEHIND RETAINING WALL

          X4 RECORD: MODEL RETAINING WALL IN LEFT OVERBANK

          HYDRAULIC CONTROL LINE @ STA 1090.0

     .191      2.64   2058.24   2058.24   2058.26   2059.36      1.12       .43       .04   2055.60
   1506.4     267.7    1133.6     105.1      66.6     119.5      24.4       5.0       2.0   2055.60
     .03      4.02      9.49      4.30      .030      .016      .030      .000   2055.60   1023.07
  .003006     170.      160.      170.         0        19         0       .00     94.93   1118.00
```

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .252
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1049.9 1118.0 TYPE= 1 TARGET= 68.080

ADDED STA 1080.0 TO DEFINE HYDRAULIC CONTROL LINE

.252	3.12	2066.92	2066.92	2066.41	2068.30	1.38	.92	.08	2063.80
1506.4	81.7	1167.1	257.7	21.9	112.0	53.5	6.4	2.6	2063.90
.04	3.72	10.42	4.82	.030	.016	.030	.000	2063.80	1049.92
.002769	315.	320.	310.	0	8	0	.00	68.08	1118.00

*SECNO .305
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 1068.1 1140.0 TYPE= 1 TARGET= 71.920

HYDRAULIC CONTROL LINE @ STA 1100.0

.305	4.13	2074.13	2074.13	2074.11	2075.49	1.36	.72	.00	2070.60
1506.4	60.6	1211.8	234.0	17.6	118.0	58.9	7.7	3.0	2071.90
.04	3.44	10.27	3.97	.030	.016	.030	.000	2070.00	1068.08
.002429	275.	280.	280.	0	11	0	.00	71.92	1140.00

THIS RUN EXECUTED 17AUG92 16:28:38

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

WASH AA: CONSTELLATION R

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.038	.00	.00	.00	2039.00	2114.00	2043.57	2043.57	2044.75	73.58	11.62	327.00	246.45
*	.038	.00	.00	.00	2039.00	2114.00	2043.57	2043.57	2044.75	73.58	11.62	327.00	246.45
*	.123	450.00	.00	.00	2047.30	2114.00	2051.98	2051.98	2053.26	26.33	10.69	287.90	412.00
*	.123	450.00	.00	.00	2047.30	2114.00	2051.98	2051.98	2053.26	26.35	10.70	287.82	411.83
	.161	200.00	.00	.00	2051.00	1506.37	2054.84	2054.84	2056.36	23.66	10.58	174.31	309.66
	.161	200.00	.00	.00	2051.00	1506.37	2054.84	2054.84	2056.36	23.66	10.58	174.31	309.66
*	.191	160.00	.00	.00	2055.60	1506.37	2058.26	2058.26	2059.24	27.16	9.05	231.44	289.07
*	.191	160.00	.00	.00	2055.60	1506.37	2058.24	2058.24	2059.36	30.06	9.49	210.48	274.75
*	.252	320.00	.00	.00	2063.80	1506.37	2066.41	2066.41	2067.34	29.68	9.56	252.86	276.51
*	.252	320.00	.00	.00	2063.80	1506.37	2066.92	2066.92	2068.30	27.69	10.42	187.44	286.28
*	.305	280.00	.00	.00	2070.00	1506.37	2074.11	2074.11	2075.29	22.24	9.79	222.62	319.42
*	.305	280.00	.00	.00	2070.00	1506.37	2074.13	2074.13	2075.49	24.29	10.27	194.51	305.61

A: CONSTELLATION R

SUMMARY PRINTOUT TABLE 150

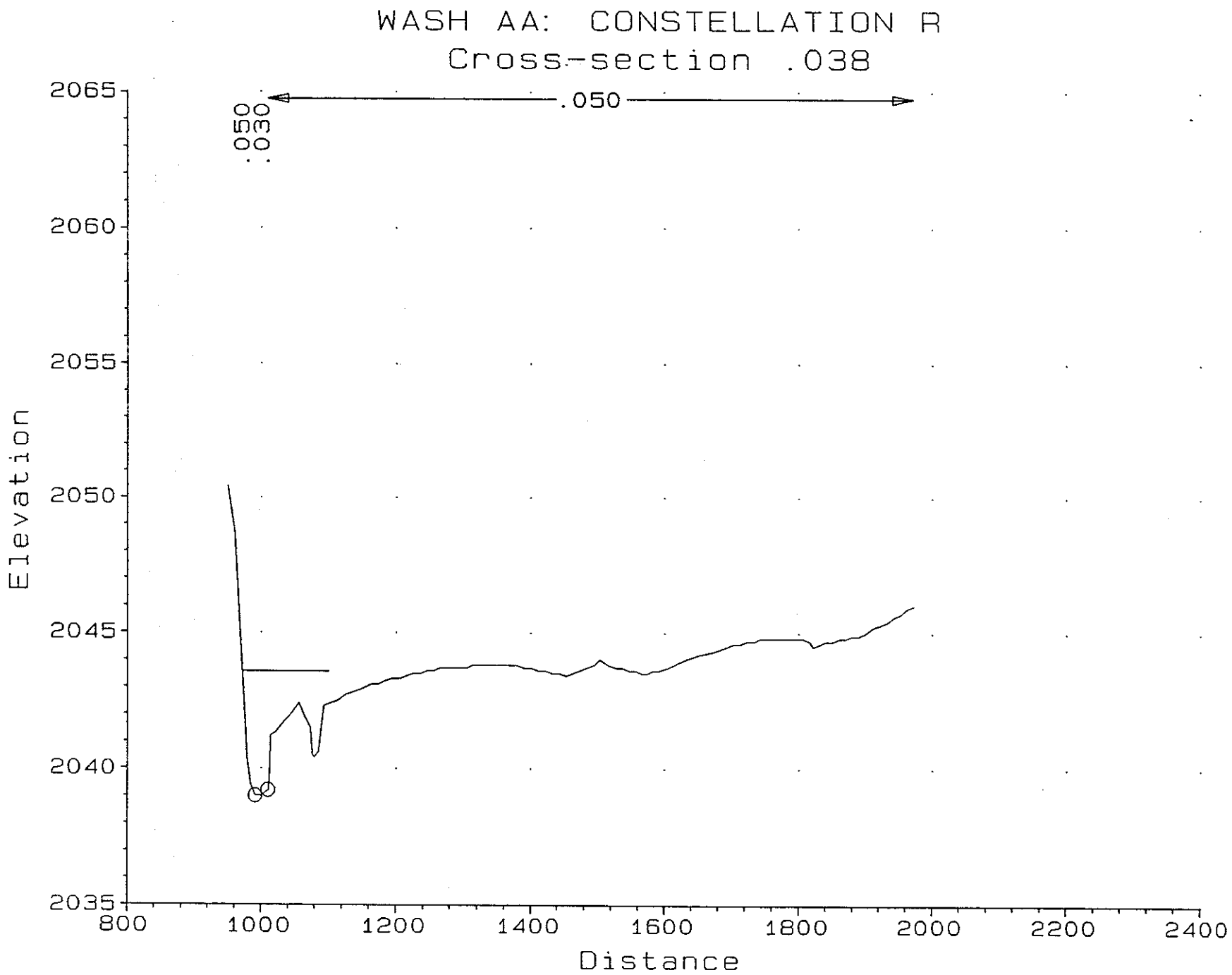
	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.038	2114.00	2043.57	.00	.00	.00	128.40	.00
*	.038	2114.00	2043.57	.00	.00	.00	128.40	.00
*	.123	2114.00	2051.98	.00	8.40	.00	116.35	450.00
*	.123	2114.00	2051.98	.00	8.40	.00	116.34	450.00
*	.161	1506.37	2054.84	.00	2.86	.00	63.16	200.00
*	.161	1506.37	2054.84	.00	2.86	.00	63.16	200.00
*	.191	1506.37	2058.26	.00	3.42	.00	130.37	160.00
*	.191	1506.37	2058.24	-.02	3.41	-.02	94.93	160.00
*	.252	1506.37	2066.41	.00	8.15	.00	134.85	320.00
*	.252	1506.37	2066.92	.51	8.68	.51	68.08	320.00
*	.305	1506.37	2074.11	.00	7.70	.00	101.89	280.00
*	.305	1506.37	2074.13	.02	7.21	.02	71.92	280.00

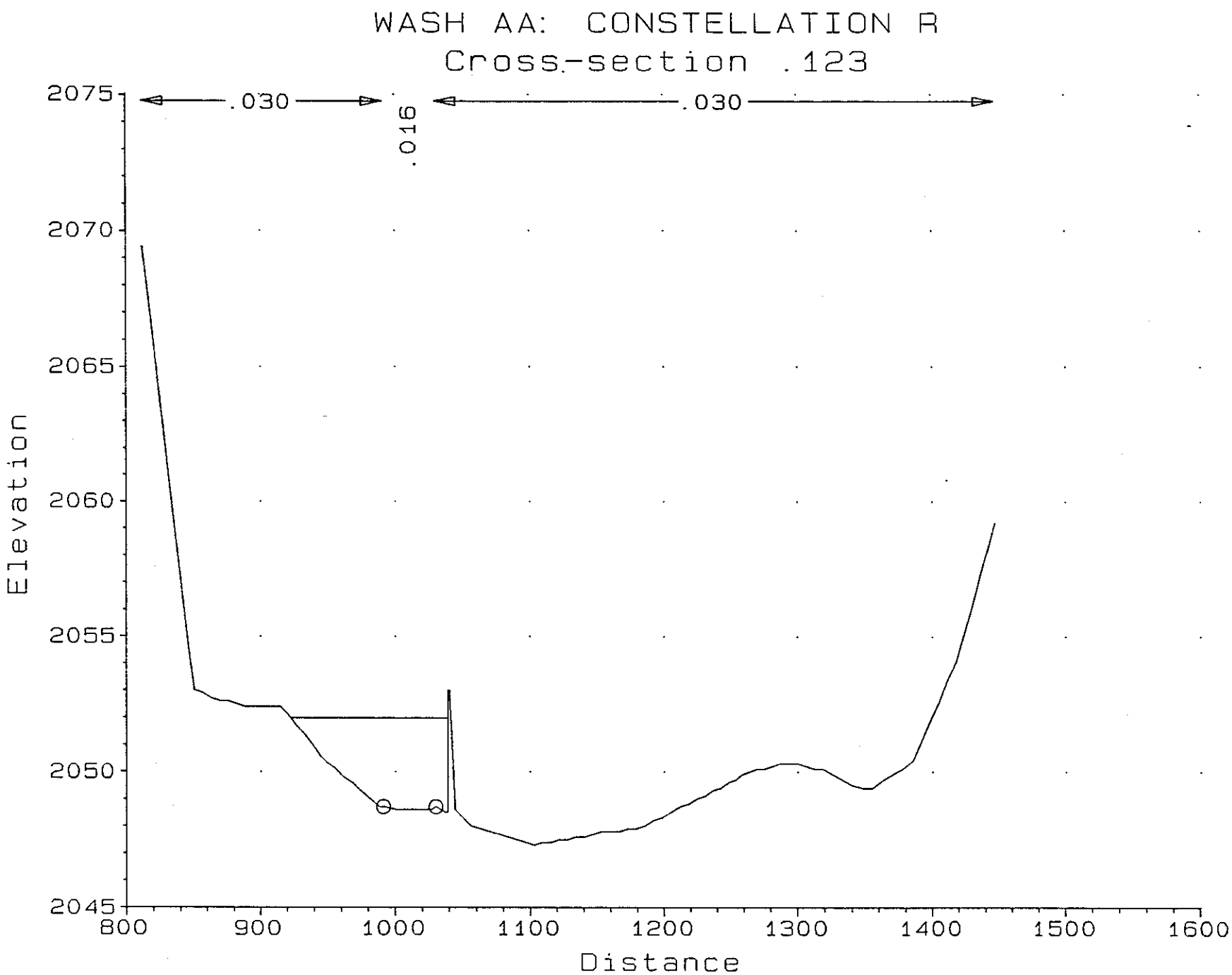
SUMMARY OF ERRORS AND SPECIAL NOTES

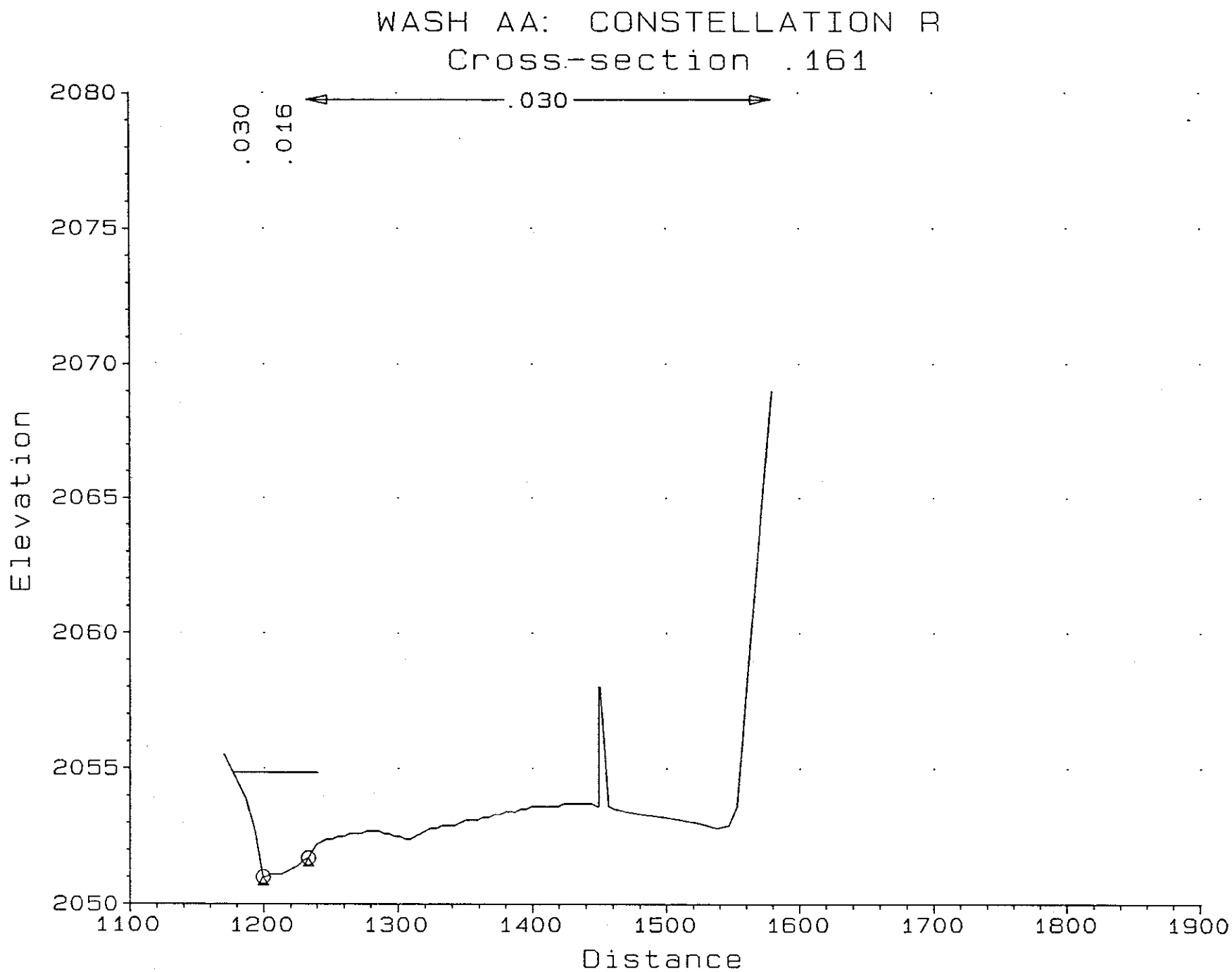
```
CAUTION SECNO=      .038  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .038  PROFILE=  2  CRITICAL DEPTH ASSUMED

CAUTION SECNO=      .123  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .123  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .123  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .123  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .161  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .161  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .161  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .161  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .191  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .191  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .191  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .191  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .252  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .252  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .252  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .252  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .305  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .305  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      .305  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .305  PROFILE=  2  MINIMUM SPECIFIC ENERGY
```

FLOODWAY DATA, WASH AA: CONSTELLATION R
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
.038	128.	327.	6.5	2043.6	2043.6	.0
.123	116.	288.	7.3	2052.0	2052.0	.0
.161	63.	174.	8.6	2054.8	2054.8	.0
.191	95.	210.	7.2	2058.3	2058.3	.0
.252	68.	187.	8.0	2066.9	2066.4	.5
.305	72.	195.	7.7	2074.1	2074.1	.0


WASH AA: CONSTELLATION R
Cross-section .038
.050
.050
.030
Elevation
2065
2060
2055
2050
2045
2040
2035
800
1000
1200
1400
1600
1800
2000
2200
2400
Distance


WASH AA: CONSTELLATION R
Cross-section .123
.030
.016
.030
2075
2070
2065
2060
2055
2050
2045
Elevation
800
900
1000
1100
1200
1300
1400
1500
1600
Distance


WASH AA: CONSTELLATION R
Cross-section .161
.030
.030
.016
2080
2075
2070
2065
2060
2055
2050
Elevation
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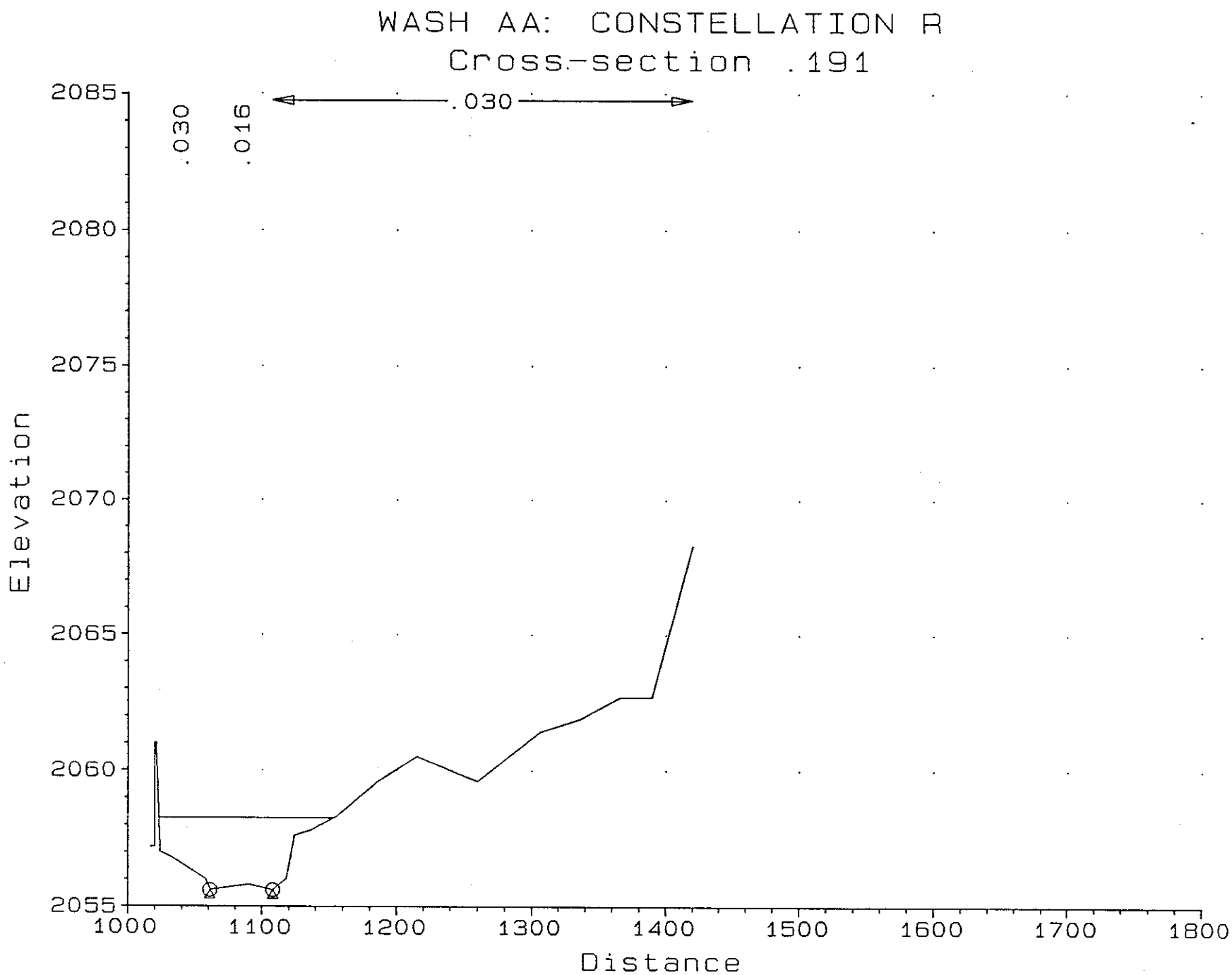
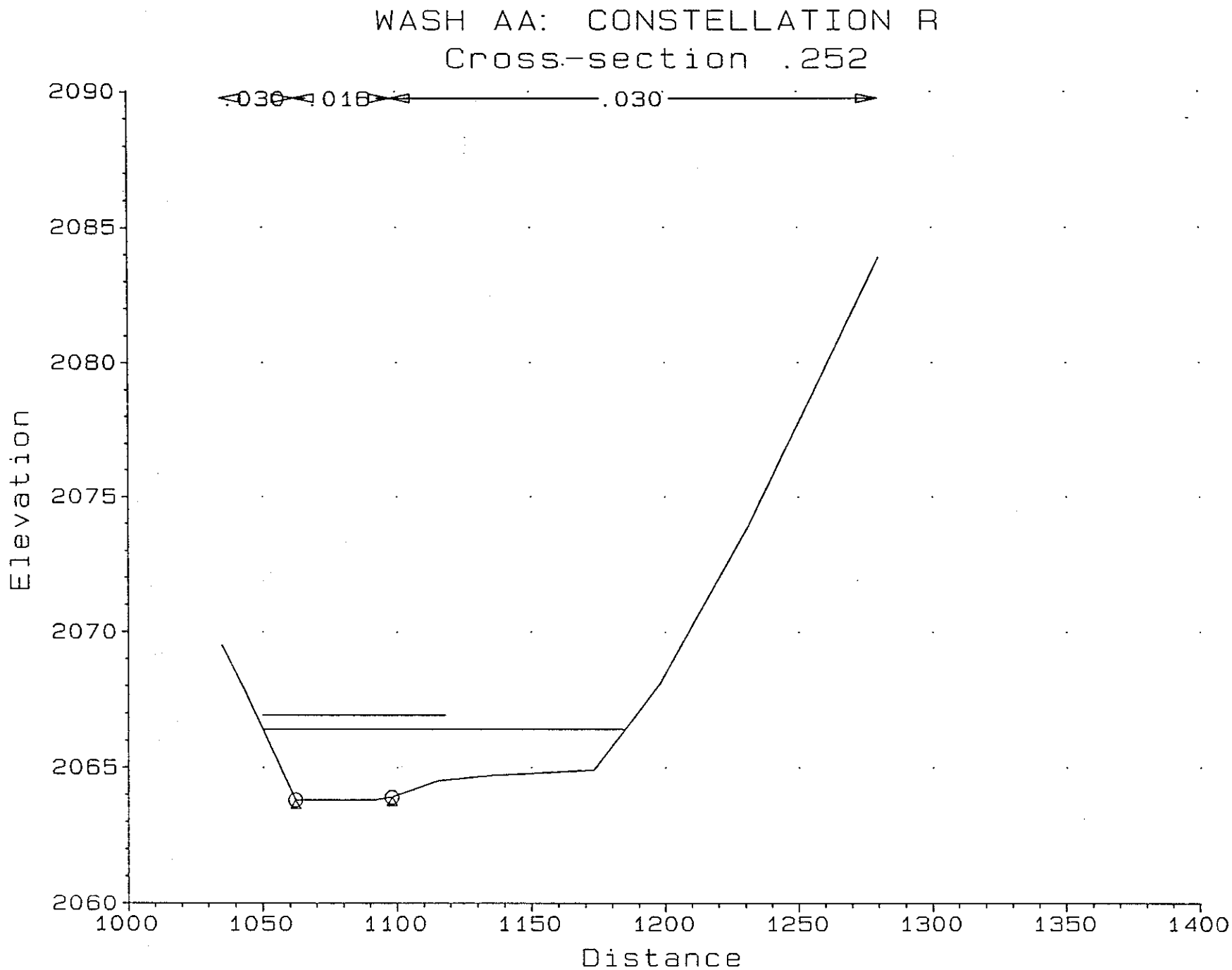
1500
1600
1700
1800
1900
Distance


WASH AA: CONSTELLATION R
Cross-section .191
.030
.030
.016
2085
2080
2075
2070
2065
2060
2055
Elevation
1000
1100
1200
1300
1400
1500
1600
1700
1800
Distance


WASH AA: CONSTELLATION R
Cross-section .252
.030
.018
.030
2090
2085
2080
2075
2070
2065
2060
Elevation
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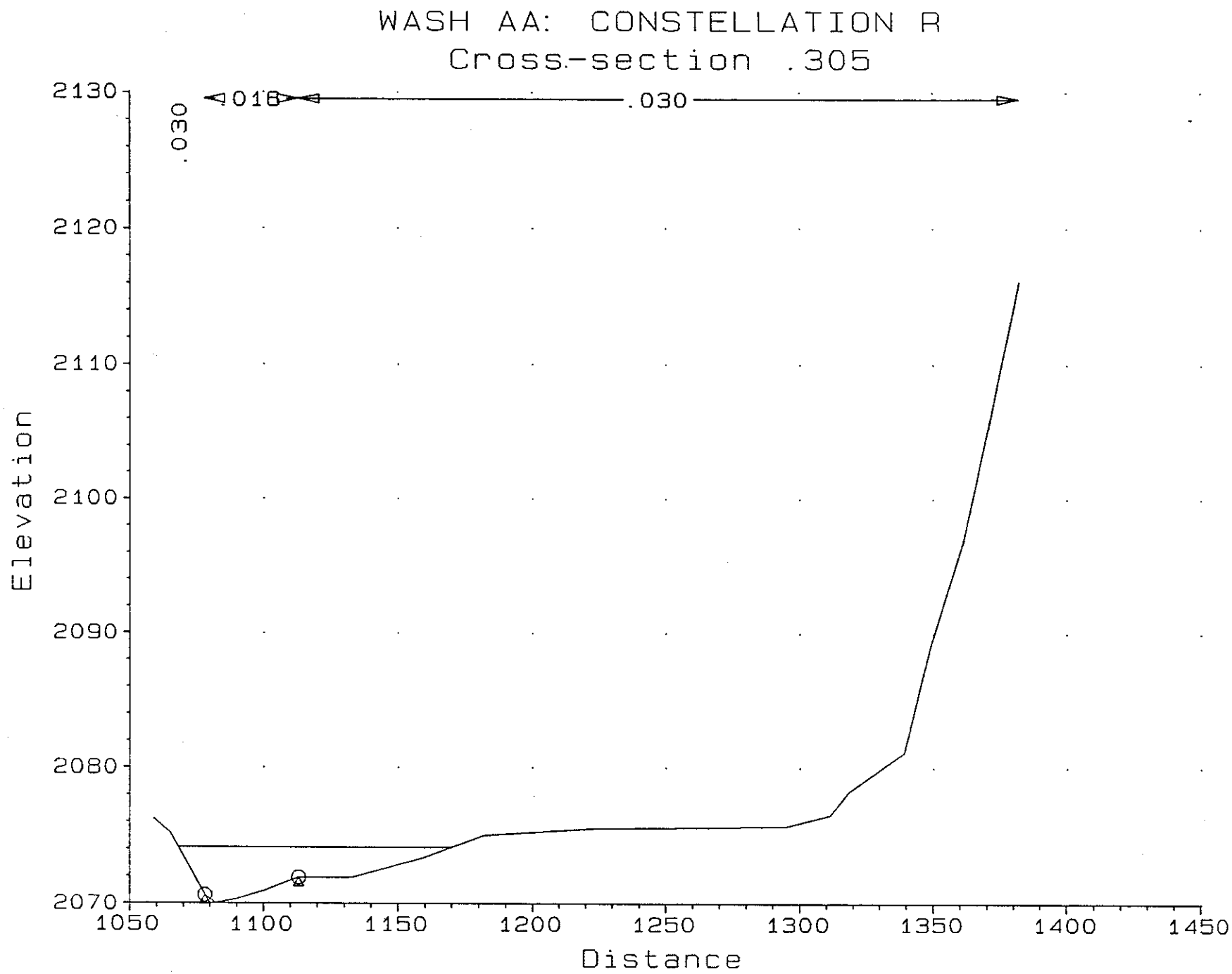
1250
1300
1350
1400
Distance


WASH AA: CONSTELLATION R
Cross-section .305
.018
.030
.030
Elevation
2130
2120
2110
2100
2090
2080
2070
1050
1100
1150
1200
1250
1300
1350
1400
1450
Distance

```
*****************************************
*  HEC-2 WATER SURFACE PROFILES         *
*                                       *
*  Version   4.6.2;  May 1991           *
*                                       *
*  RUN DATE    29JUN92   TIME   09:24:22 *
*****************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

THIS RUN EXECUTED 29JUN92 09:24:22

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


T1      WICKENBURG ADMS - CONTRACT FCD 89-79
T2      BLACK & VEATCH PN 17676   COE & VAN LOO JN 1197-02
T3      WASH AA: TRIBUTARIES            (FILE AATRIBS.DAT)

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

              2                                                                   2207.64

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1                  -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150       200

NC    0.050     0.050     0.030       0.1       0.3
QT       2      1354      1354
ET                         9.1                                                                942.33    1018.64
            STARTING WATER SURFACE ELEVATION TAKEN FROM
            FILE WASHAA.DAT (POWDER HOUSE WASH MAIN CHANNEL)

            ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
            RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
X1    1.489        11       984      1000         0         0         0
GR   2220.1      917.    2213.2      933.    2208.7      939.    2205.2      950.    2204.5      965.
GR   2204.0      984.    2204.0     1000.    2205.4     1010.    2206.2     1016.    2212.2     1027.
GR   2220.0     1046.

ET                         9.1                                                                739.38    1135.01
X1    1.579        33       991      1005       500       450       480
GR   2232.1      228.    2228.4      243.    2225.3      258.    2224.0      275.    2221.4      304.
GR   2221.0      340.    2222.9      396.    2221.9      488.    2221.2      560.    2221.2      638.
GR   2220.8      731.    2220.0      793.    2220.0      877.    2220.0      899.    2220.0      914.
GR   2220.0      928.    2219.1      991.    2219.0     1000.    2219.1     1005.    2219.7     1091.
GR   2221.3     1162.    2222.0     1222.    2221.7     1223.    2222.9     1269.    2222.8     1309.
GR   2221.6     1346.    2220.9     1371.    2220.9     1392.    2225.3     1400.    2229.3     1415.
GR   2229.3     1427.    2228.2     1458.    2228.2     1461.

QT       2      1132      1132
                           9.1                                                                866.97    1115.81
```

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                ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
                RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
X1    1.680        27       993      1007       395       590       530
GR   2244.3       534.    2236.8      561.    2234.5      593.    2234.7      659.    2233.8      735.
GR   2234.1       810.    2233.7      860.    2232.4      906.    2232.1      982.    2232.1      993.
GR   2232.1      1000.    2232.1     1007.    2232.1     1044.    2233.1     1049.    2233.2     1055.
GR   2233.0      1061.    2233.1     1065.    2233.5     1076.    2232.9     1107.    2234.2     1126.
GR   2235.2      1134.    2235.3     1140.    2234.8     1149.    2235.3     1173.    2236.9     1193.
GR   2239.4      1208.    2244.1     1231.

QT       2        744       744
ET                          9.1                                                      958.77    1006.08
                ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
                RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
X1    1.769         11       994    1001.6       500       440       470
GR   2256.2       956.    2247.6      959.    2245.7      972.    2245.7      988.    2245.7      994.
GR   2245.0      1000.    2245.7    1001.6    2245.9     1002.    2248.2     1006.    2253.7     1013.
GR   2256.3      1030.

QT       2       1354      1354
ET                          9.1                                                      942.33    1018.64
X1   -1.489         11       984     1000         0         0         0
GR   2220.1       917.    2213.2      933.    2208.7      939.    2205.2      950.    2204.5      965.
GR   2204.0       984.    2204.0     1000.    2205.4     1010.    2206.2     1016.    2212.2     1027.
GR   2220.0      1046.

     2            222       222
                  5.1       9.1                1269.      1461.                        1331.79    1394.11
                SAME SECTION AS 1.579 BUT WITH CHANNEL BANK STATIONS SET AT
                LB = 1371.0 & RB = 1392.0  (HYDRAULIC CONTROL LINE @ STA 1392)

                ET RECORD: STA 1269. ELIMINATE INEFFECTIVE
                           FLOW AREA IN LEFT OVERBANK

                ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
                RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
X1    0.085         35      1371.     1392.       500       440       450
GR   2232.1       228.    2228.4      243.    2225.3      258.    2224.0      275.    2221.4      304.
GR   2221.2      322.0    2221.0      340.    2221.2     345.9    2222.9      396.    2221.9      488.
GR   2221.2       560.    2221.2      638.    2220.8      731.    2220.0      793.    2220.0      877.
GR   2220.0       899.    2220.0      914.    2220.0      928.    2219.1      991.    2219.0     1000.
GR   2219.1      1005.    2219.7     1091.    2221.3     1162.    2222.0     1222.    2221.7     1223.
GR   2222.9      1269.    2222.8     1309.    2221.6     1346.    2220.9     1371.    2220.9     1392.
GR   2225.3      1400.    2229.3     1415.    2229.3     1427.    2228.2     1458.    2228.2     1461.

ET                          9.1                                                      971.06    1008.63
X1    0.189         17       995     1005       530       520       550
GR   2248.1       942.    2243.5      951.    2239.9      954.    2237.7      958.    2237.5      968.
GR   2236.6       972.    2236.0      974.    2235.5      985.    2235.5      995.    2235.3     1000.
GR   2235.3      1005.    2237.8     1011.    2237.8     1013.    2239.6     1016.    2241.0     1020.
GR   2243.7      1029.    2248.3     1041.
```

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                        9.1                                                988.03    1014.04
X1    0.297      13     992     1000     570     560     570
GR   2268.0     967.   2266.8   969.   2264.9   973.   2262.9   979.   2260.3     984.
GR   2257.9     987.   2256.8   990.   2255.3   992.   2255.5  1000.   2256.4    1010.
GR   2258.9    1019.   2266.0  1028.   2268.1  1029.

ET                      9.1                                                995.27    1009.63
X1    0.382      19     999     1001     445     445     445
GR   2280.6     973.   2277.8   981.   2274.7   987.   2271.5   988.   2268.7     991.
GR   2267.8     995.   2266.1   997.   2264.2   999.   2264.2  1000.   2264.2    1001.
GR   2264.5    1003.   2264.8  1005.   2265.3  1006.   2267.8  1010.   2270.2    1015.
GR   2273.1    1021.   2274.1  1025.   2277.9  1033.   2280.2  1039.

ET                      9.1                                                989.84    1013.83
X1    0.490      19     995     1003     570     570     570
GR   2308.3     951.   2307.0   955.   2306.1   966.   2303.4   973.   2301.1     976.
GR   2299.9     979.   2297.8   983.   2297.1   988.   2296.3   992.   2294.9     995.
GR   2293.8    1000.   2294.4  1003.   2295.3  1006.   2295.6  1011.   2298.0    1017.
GR   2301.9    1034.   2302.5  1036.   2305.6  1048.   2308.2  1054.

QT       2     1132    1132
ET                      9.1                                                866.97    1115.81
X1   -1.680      27     993     1007     395     590     530
GR   2244.3     534.   2236.8   561.   2234.5   593.   2234.7   659.   2233.8     735.
GR   2234.1     810.   2233.7   860.   2232.4   906.   2232.1   982.   2232.1     993.
GR   2232.1    1000.   2232.1  1007.   2232.1  1044.   2233.1  1049.   2233.2    1055.
GR   2233.0    1061.   2233.1  1065.   2233.5  1076.   2232.9  1107.   2234.2    1126.
GR   2235.2    1134.   2235.3  1140.   2234.8  1149.   2235.3  1173.   2236.9    1193.
GR   2239.4    1208.   2244.1  1231.

QT       2      133     133
ET                      9.1                                                966.59    1019.36
             ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
             RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
X1    0.104      28     998     1008     600     520     550
GR   2264.2     946.   2260.0   954.   2257.6   958.   2253.0   961.   2252.0     970.
GR   2251.3     973.   2250.9   976.   2250.7   978.   2251.1   980.   2251.3     981.
GR   2251.4     985.   2251.6   990.   2251.9   993.   2252.1   996.   2252.2     998.
GR   2252.0    1000.   2252.0  1004.   2252.1  1008.   2252.1  1010.   2252.1    1014.
GR   2252.3    1017.   2252.5  1023.   2252.6  1028.   2253.0  1029.   2253.4    1030.
GR   2257.5    1045.   2260.6  1049.   2264.2  1053.

ET                      9.1                                                960.84    1011.42
X1    0.199      15     992.7   1002.7   500     500     500
GR   2280.3     922.   2275.3   943.   2273.4   953.   2271.2   960.   2269.8     961.
GR   2269.6     971.   2269.4   978.   2269.0   992.7  2268.8  1000.   2269.0    1002.7
GR   2269.4    1008.   2269.4  1009.   2269.4  1010.   2276.8  1027.   2280.1    1033.
```

			9.1						895.90	1011.08
X1	0.294	28	995	1004	465	500	500			
GR	2296.1	813.	2292.5	824.	2288.4	851.	2287.6	861.	2286.2	871.
GR	2286.1	883.	2285.8	904.	2285.5	915.	2285.6	928.	2285.6	942.
GR	2285.4	956.	2285.4	962.	2285.5	971.	2285.5	977.	2285.5	990.
GR	2285.5	995.	2285.4	1000.	2285.5	1004.	2285.5	1007.	2285.5	1009.
GR	2286.1	1012.	2286.4	1014.	2286.5	1018.	2287.2	1022.	2288.1	1025.
GR	2288.1	1027.	2292.3	1032.	2296.8	1042.				

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV= .100 CEHV= .300
*SECNO 1.489
STARTING WATER SURFACE ELEVATION TAKEN FROM
FILE WASHAA.DAT (POWDER HOUSE WASH MAIN CHANNEL)

ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

1.489	3.64	2207.64	2207.19	2207.64	2208.49	.85	.00	.00	2204.00
1354.0	591.5	569.5	193.0	115.6	58.2	42.3	.0	.0	2204.00
.00	5.12	9.78	4.56	.050	.030	.050	.000	2204.00	942.33
.006961	0.	0.	0.	0	10	0	.00	76.31	1018.64

FLOW DISTRIBUTION FOR SECNO= 1.49 CWSEL= 2207.64

	942.	950.	965.	984.	1000.	1010.	1016.	1019.
PER Q=	1.9	15.2	26.6	42.1	11.0	3.0	.3	
AREA=	9.4	41.8	64.4	58.2	29.4	11.0	1.9	
VEL=	2.7	4.9	5.6	9.8	5.1	3.7	1.8	
DEPTH=	1.2	2.8	3.4	3.6	2.9	1.8	.7	

*SECNO 1.579
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.579	1.69	2220.69	2220.69	.00	2221.05	.36	4.87	.05	2219.10
1354.0	605.5	200.8	547.8	183.9	23.0	132.9	3.1	2.6	2219.10
.03	3.29	8.73	4.12	.050	.030	.050	.000	2219.00	739.38
.016054	500.	480.	450.	0	13	0	.00	395.63	1135.01

FLOW DISTRIBUTION FOR SECNO= 1.58 CWSEL= 2220.69

STA=	739.	793.	877.	899.	914.	928.	991.	1005.	1091.	1135.
PER Q=	2.5	12.6	3.3	2.3	2.1	21.9	14.8	36.7	3.8	
AREA=	18.5	58.1	15.2	10.4	9.7	71.9	23.0	111.1	21.8	
VEL=	1.9	2.9	2.9	2.9	2.9	4.1	8.7	4.5	2.4	
DEPTH=	.3	.7	.7	.7	.7	1.1	1.6	1.3	.5	

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1.680
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

1.680	1.40	2233.50	2233.50	.00	2233.97	.47	8.70	.03	2232.10
1132.0	618.7	175.7	337.7	132.2	19.6	77.0	6.2	6.1	2232.10
.06	4.68	8.94	4.38	.050	.030	.050	.000	2232.10	866.97
.020761	395.	530.	590.	0	12	0	.00	248.84	1115.81

FLOW DISTRIBUTION FOR SECNO= 1.68 CWSEL= 2233.50

STA=	867.	906.	982.	993.	1007.	1044.	1049.	1055.	1061.	1065.	1076.	1107.	1116.
PER Q=	5.5	41.9	7.3	15.5	24.6	1.6	.4	.5	.4	.3	1.6	.5	
AREA=	21.5	95.2	15.4	19.6	51.9	4.5	2.1	2.4	1.8	2.2	9.4	2.7	
VEL=	2.9	5.0	5.4	8.9	5.4	3.9	2.1	2.3	2.5	1.5	1.9	1.9	
DEPTH=	.6	1.3	1.4	1.4	1.4	.9	.4	.4	.5	.2	.3	.3	

*SECNO 1.769

HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

1.769	3.26	2248.26	2248.26	.00	2249.34	1.07	8.37	.18	2245.70
744.0	464.6	256.3	23.1	77.4	22.1	5.8	8.0	7.7	2245.70
.07	6.00	11.57	3.96	.050	.030	.050	.000	2245.00	958.77
.013551	500.	470.	440.	0	20	0	.00	47.31	1006.08

FLOW DISTRIBUTION FOR SECNO= 1.77 CWSEL= 2248.26

STA=	959.	972.	988.	994.	1002.	1002.	1006.
PER Q=	13.3	35.7	13.4	34.4	.8	2.3	
AREA=	21.1	41.0	15.4	22.1	1.0	4.9	
VEL=	4.7	6.5	6.5	11.6	5.9	3.6	
DEPTH=	1.6	2.6	2.6	2.9	2.5	1.2	

```
 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
           QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME     VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE    XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO -1.489
START TRIB COMP
    -1.489     1.489  2207.640
   -1.489      3.64   2207.64      .00       .00   2208.49      .85       .00      8.55   2204.00
   1354.0     591.5     569.5    193.0     115.6      58.2     42.3       8.0       7.7   2204.00
      .07      5.12      9.78     4.56      .050      .030     .050      .000   2204.00    942.33
  .006961       0.        0.       0.         0         0        0       .00     76.31   1018.64


FLOW DISTRIBUTION FOR SECNO=     -1.49          CWSEL=   2207.64

STA=     942.     950.     965.     984.    1000.    1010.    1016.    1019.
  PER Q=      1.9      15.2     26.6     42.1     11.0      3.0       .3
   AREA=      9.4      41.8     64.4     58.2     29.4     11.0      1.9
    VEL=      2.7       4.9      5.6      9.8      5.1      3.7      1.8
  DEPTH=      1.2       2.8      3.4      3.6      2.9      1.8       .7

*SECNO  .085
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

 ENCROACHMENT STATIONS=     1269.0    1461.0  TYPE=      1  TARGET=      192.000
           SAME SECTION AS 1.579 BUT WITH CHANNEL BANK STATIONS SET AT
           LB = 1371.0 & RB = 1392.0  (HYDRAULIC CONTROL LINE @ STA 1392)

           ET RECORD: STA 1269. ELIMINATE INEFFECTIVE
                      FLOW AREA IN LEFT OVERBANK

           ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
           RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
     .085      3.06   2222.06   2222.06       .00   2222.53       .47      3.53       .04   2220.90
    222.0      64.9     154.4      2.7      23.5      24.4       1.2       9.5       8.5   2220.90
      .10      2.76      6.34     2.19      .050      .030      .050      .000   2219.00   1331.79
  .013408      500.      450.     440.         0        11         0       .00     62.32   1394.11


FLOW DISTRIBUTION FOR SECNO=      .09          CWSEL=   2222.06

STA=    1332.    1346.    1371.    1392.    1394.
  PER Q=      1.9      27.3     69.6      1.2
   AREA=      3.3      20.3     24.4      1.2
    VEL=      1.3       3.0      6.3      2.2
  DEPTH=       .2        .8      1.2       .6
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .189
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.189	1.51	2236.81	2236.81	.00	2237.39	.58	7.54	.03	2235.50
222.0	102.1	112.2	7.7	25.9	14.6	2.7	10.0	9.1	2235.30
.12	3.94	7.67	2.81	.050	.030	.050	.000	2235.30	971.06
.014472	530.	550.	520.	0	8	0	.00	37.57	1008.63

FLOW DISTRIBUTION FOR SECNO= .19 CWSEL= 2236.81

STA=	971.	972.	974.	985.	995.	1005.	1009.
PER Q=	.0	1.0	19.6	25.3	50.6	3.5	
AREA=	.1	1.0	11.7	13.1	14.6	2.7	
VEL=	.8	2.2	3.7	4.3	7.7	2.8	
DEPTH=	.1	.5	1.1	1.3	1.5	.8	

*SECNO .297
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.297	2.22	2257.52	2257.52	.00	2258.29	.77	6.94	.06	2255.30
222.0	11.0	142.0	69.0	3.7	17.0	18.0	10.6	9.5	2255.50
.15	3.02	8.36	3.83	.050	.030	.050	.000	2255.30	988.03
.010445	570.	570.	560.	0	14	0	.00	26.01	1014.04

FLOW DISTRIBUTION FOR SECNO= .30 CWSEL= 2257.52

STA=	988.	990.	992.	1000.	1010.	1014.
PER Q=	.5	4.5	63.9	29.0	2.1	
AREA=	.7	2.9	17.0	15.7	2.3	
VEL=	1.5	3.4	8.4	4.1	2.0	
DEPTH=	.4	1.5	2.1	1.6	.6	

*SECNO .382
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.382	3.37	2267.57	2267.57	.00	2268.77	1.20	5.04	.13	2264.20
222.0	26.1	83.3	112.6	6.1	6.7	18.9	10.9	9.7	2264.20
.16	4.27	12.36	5.95	.050	.030	.050	.000	2264.20	995.27
.012308	445.	445.	445.	0	14	0	.00	14.36	1009.63

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .38 CWSEL= 2267.57

STA=	995.	997.	999.	1001.	1003.	1005.	1006.	1010.
PER Q=	1.3	10.5	37.5	20.7	17.6	6.4	6.0	
AREA=	1.3	4.8	6.7	6.4	5.8	2.5	4.1	
VEL=	2.2	4.8	12.4	7.1	6.7	5.7	3.2	
DEPTH=	.7	2.4	3.4	3.2	2.9	2.5	1.1	

*SECNO .490
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.490	2.93	2296.73	2296.73	.00	2297.58	.84	5.85	.04	2294.90
222.0	10.0	165.0	47.0	3.9	19.8	13.7	11.4	10.0	2294.40
.18	2.60	8.33	3.44	.050	.030	.050	.000	2293.80	989.84
.008692	570.	570.	570.	0	15	0	.00	23.99	1013.83

FLOW DISTRIBUTION FOR SECNO= .49 CWSEL= 2296.73

STA=	990.	992.	995.	1003.	1006.	1011.	1014.
Q=	.2	4.3	74.3	10.4	9.4	1.3	
EA=	.5	3.4	19.8	5.6	6.4	1.6	
VEL=	1.0	2.8	8.3	4.1	3.3	1.8	
DEPTH=	.2	1.1	2.5	1.9	1.3	.6	

*SECNO -1.680
START TRIB COMP

-1.680	1.680	2233.503							
-1.680	1.40	2233.50	.00	.00	2233.97	.47	8.84	-2.95	2232.10
1132.0	618.7	175.7	337.7	132.2	19.6	77.0	12.9	11.5	2232.10
.21	4.68	8.94	4.38	.050	.030	.050	.000	2232.10	866.97
.020761	395.	530.	590.	0	0	0	.00	248.84	1115.81

FLOW DISTRIBUTION FOR SECNO= -1.68 CWSEL= 2233.50

STA=	867.	906.	982.	993.	1007.	1044.	1049.	1055.	1061.	1065.	1076.	1107.	1116.
PER Q=	5.5	41.9	7.3	15.5	24.6	1.6	.4	.5	.4	.3	1.6	.5	
AREA=	21.5	95.2	15.4	19.6	51.9	4.5	2.1	2.4	1.8	2.2	9.4	2.7	
VEL=	2.9	5.0	5.4	8.9	5.4	3.9	2.1	2.3	2.5	1.5	1.9	1.9	
DEPTH=	.6	1.3	1.4	1.4	1.4	.9	.4	.4	.5	.2	.3	.3	

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .104
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

.104	1.68	2252.38	2252.38	.00	2252.68	.30	12.16	.02	2252.20
133.0	116.8	12.2	3.9	25.9	3.4	2.3	14.6	13.5	2252.10
.25	4.50	3.61	1.72	.050	.030	.050	.000	2250.70	966.59
.022574	600.	550.	520.	0	8	0	.00	52.77	1019.36

FLOW DISTRIBUTION FOR SECNO= .10 CWSEL= 2252.38

STA=	967.	973.	976.	978.	980.	981.	985.	990.	993.	998.	1008.	1019.
PER Q=	6.5	15.1	14.3	12.7	4.4	14.1	13.5	4.6	2.6	9.2	3.0	
AREA=	2.8	3.8	3.2	3.0	1.2	4.1	4.4	1.9	1.6	3.4	2.3	
VEL=	3.1	5.2	6.0	5.7	4.9	4.5	4.1	3.3	2.1	3.6	1.7	
DEPTH=	.4	1.3	1.6	1.5	1.2	1.0	.9	.6	.3	.3	.2	

*SECNO .199
MINIMUM SPECIFIC ENERGY
CRITICAL DEPTH ASSUMED

.199	1.22	2270.02	2270.02	.00	2270.36	.34	8.36	.01	2269.00
133.0	48.6	67.9	16.5	18.9	11.2	6.0	15.0	14.1	2269.00
.28	2.57	6.06	2.74	.050	.030	.050	.000	2268.80	960.84
.012887	500.	500.	500.	0	19	0	.00	50.58	1011.42

FLOW DISTRIBUTION FOR SECNO= .20 CWSEL= 2270.02

STA=	961.	971.	978.	993.	1003.	1008.	1009.	1010.	1011.
PER Q=	3.8	6.0	26.8	51.0	9.6	1.1	1.1	.5	
AREA=	3.2	3.6	12.1	11.2	4.3	.6	.6	.4	
VEL=	1.6	2.2	3.0	6.1	3.0	2.5	2.5	1.5	
DEPTH=	.3	.5	.8	1.1	.8	.6	.6	.3	

*SECNO .294
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.294	.52	2285.92	2285.92	.00	2286.10	.19	9.39	.02	2285.50
133.0	103.2	22.7	7.1	35.7	4.2	2.5	15.4	15.0	2285.50
.32	2.89	5.42	2.82	.050	.030	.050	.000	2285.40	895.90
.033161	465.	500.	500.	0	18	0	.00	115.18	1011.08

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .29 CWSEL= 2285.92

STA=	896.	915.	928.	942.	956.	962.	971.	977.	990.	995.	1004.	1009.	1011.
PER Q=	5.2	9.9	8.3	13.2	8.1	10.3	5.7	12.3	4.7	17.1	4.7	.6	
AREA=	3.4	4.8	4.4	5.8	3.1	4.2	2.5	5.4	2.1	4.2	2.1	.4	
VEL=	2.0	2.8	2.5	3.0	3.5	3.3	3.0	3.0	3.0	5.4	3.0	1.9	
DEPTH=	.2	.4	.3	.4	.5	.5	.4	.4	.4	.5	.4	.2	

FLOODWAY DETERMINATION
1.0 FT TARGET INCREASE
T3 WASH AA: TRIBUTARIES

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2207.64	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15		-1				-1			

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV= .100 CEHV= .300
*SECNO 1.489

3470 ENCROACHMENT STATIONS= 942.3 1018.6 TYPE= 1 TARGET= 76.310
STARTING WATER SURFACE ELEVATION TAKEN FROM
FILE WASHAA.DAT (POWDER HOUSE WASH MAIN CHANNEL)

ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

1.489	3.64	2207.64	2207.19	2207.64	2208.49	.85	.00	.00	2204.00
1354.0	591.5	569.5	193.0	115.6	58.2	42.3	.0	.0	2204.00
.00	5.12	9.78	4.56	.050	.030	.050	.000	2204.00	942.33
.006961	0.	0.	0.	0	10	0	.00	76.31	1018.64

1.579
MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 739.4 1135.0 TYPE= 1 TARGET= 395.630

1.579	1.67	2220.67	2220.67	2220.69	2221.05	.38	5.03	.05	2219.10
1354.0	599.3	204.0	550.7	177.5	22.6	129.6	3.0	2.6	2219.10
.03	3.38	9.01	4.25	.050	.030	.050	.000	2219.00	741.35
.017456	500.	480.	450.	0	18	0	.00	392.53	1133.88

*SECNO 1.680
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 867.0 1115.8 TYPE= 1 TARGET= 248.840
ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)

1.680	1.40	2233.50	2233.50	2233.50	2233.97	.47	9.12	.03	2232.10
1132.0	618.7	175.6	337.7	132.3	19.7	77.2	6.1	6.1	2232.10
.05	4.68	8.93	4.38	.050	.030	.050	.000	2232.10	866.97
.020700	395.	530.	590.	0	15	0	.00	248.84	1115.81

```
 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
           QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 1.769

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      958.8    1006.1  TYPE=      1  TARGET=       47.310
            ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
            RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
    1.769      3.26   2248.26   2248.26   2248.26   2249.34      1.07      8.35       .18   2245.70
    744.0     464.6     256.3      23.1      77.5      22.1       5.8       7.9       7.7   2245.70
      .07      6.00     11.57      3.96      .050      .030      .050      .000   2245.00    958.77
  .013546      500.      470.      440.         0        20         0       .00     47.31   1006.08


*SECNO -1.489
START TRIB COMP
   -1.489     1.489  2207.640

 ENCROACHMENT STATIONS=      942.3    1018.6  TYPE=      1  TARGET=       76.310
   -1.489      3.64   2207.64       .00   2207.64   2208.49       .85       .00      8.53   2204.00
   1354.0     591.5     569.5     193.0     115.6      58.2      42.3       7.9       7.7   2204.00
      .07      5.12      9.78      4.56      .050      .030      .050      .000   2204.00    942.33
  .006961        0.        0.        0.         0         0         0       .00     76.31   1018.64


*SECNO  .085
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1331.8    1394.1  TYPE=      1  TARGET=       62.320
            SAME SECTION AS 1.579 BUT WITH CHANNEL BANK STATIONS SET AT
            LB = 1371.0 & RB = 1392.0  (HYDRAULIC CONTROL LINE @ STA 1392)

            ET RECORD: STA 1269. ELIMINATE INEFFECTIVE
                       FLOW AREA IN LEFT OVERBANK

            ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
            RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
     .085      3.06   2222.06   2222.06   2222.06   2222.53       .46      3.52       .04   2220.90
    222.0      65.0     154.3       2.7      23.7      24.5       1.2       9.4       8.5   2220.90
      .10      2.74      6.31      2.18      .050      .030      .050      .000   2219.00   1331.79
  .013217      500.      450.      440.         0        11         0       .00     62.32   1394.11
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO .189
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 971.1 1008.6 TYPE= 1 TARGET= 37.570

.189	1.52	2236.82	2236.82	2236.81	2237.39	.57	7.45	.03	2235.50
222.0	102.1	112.1	7.7	26.0	14.7	2.8	9.9	9.1	2235.30
.12	3.92	7.65	2.81	.050	.030	.050	.000	2235.30	971.06
.014307	530.	550.	520.	0	8	0	.00	37.57	1008.63

*SECNO .297
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 988.0 1014.0 TYPE= 1 TARGET= 26.010

.297	2.23	2257.53	2257.53	2257.52	2258.29	.76	6.83	.06	2255.30
222.0	11.1	141.7	69.2	3.7	17.1	18.1	10.5	9.5	2255.50
.15	3.00	8.30	3.81	.050	.030	.050	.000	2255.30	988.03
.010237	570.	570.	560.	0	14	0	.00	26.01	1014.04

*SECNO .382
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 995.3 1009.6 TYPE= 1 TARGET= 14.360

.382	3.42	2267.62	2267.62	2267.57	2268.77	1.15	4.86	.12	2264.20
222.0	26.3	82.9	112.8	6.3	6.8	19.3	10.8	9.7	2264.20
.16	4.19	12.13	5.84	.050	.030	.050	.000	2264.20	995.27
.011658	445.	445.	445.	0	14	0	.00	14.36	1009.63

*SECNO .490
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 989.8 1013.8 TYPE= 1 TARGET= 23.990

.490	2.94	2296.74	2296.74	2296.73	2297.58	.83	5.65	.03	2294.90
222.0	10.1	164.7	47.2	3.9	19.9	13.8	11.3	9.9	2294.40
.18	2.59	8.28	3.42	.050	.030	.050	.000	2293.80	989.84
.008535	570.	570.	570.	0	15	0	.00	23.99	1013.83

```
 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
           QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME     VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE    XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO -1.680
START TRIB COMP
    -1.680     1.680  2233.504

3470 ENCROACHMENT STATIONS=      867.0    1115.8  TYPE=      1  TARGET=      248.840
   -1.680      1.40   2233.50       .00   2233.50   2233.97       .47      8.78     -3.10   2232.10
   1132.0     618.7     175.6     337.7     132.3      19.7      77.2      12.8      11.5   2232.10
      .21      4.68      8.93      4.38      .050      .030      .050      .000   2232.10    866.97
  .020700      395.      530.      590.         0         0         0       .00    248.84   1115.81


*SECNO  .104
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      966.6    1019.4  TYPE=      1  TARGET=       52.770
            ALL DISCHARGES FOR TRIBUTARIES WERE DETERMINED BY USING
            RATIO OF CONTRIBUTING AREAS TO ENTIRE SUBBASIN (SAA5)
     .104      1.68   2252.38   2252.38   2252.38   2252.68       .30     12.14       .02   2252.20
    133.0     116.9      12.2       3.9      25.9       3.4       2.3      14.5      13.4   2252.10
      .25      4.51      3.61      1.72      .050      .030      .050      .000   2250.70    966.61
   22715      600.      550.      520.         0         8         0       .00     52.71   1019.32


*SECNO  .199
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      960.8    1011.4  TYPE=      1  TARGET=       50.580
     .199      1.22   2270.02   2270.02   2270.02   2270.36       .35      8.44       .01   2269.00
    133.0      48.5      68.0      16.5      18.8      11.2       6.0      14.9      14.0   2269.00
      .28      2.58      6.08      2.75      .050      .030      .050      .000   2268.80    960.84
  .013025      500.      500.      500.         0        19         0       .00     50.57   1011.42


*SECNO  .294
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      895.9    1011.1  TYPE=      1  TARGET=      115.180
     .294       .52   2285.92   2285.92   2285.92   2286.10       .18      9.43       .02   2285.50
    133.0     103.2      22.7       7.1      35.7       4.2       2.5      15.3      14.9   2285.50
      .32      2.89      5.41      2.81      .050      .030      .050      .000   2285.40    895.90
  .032958      465.      500.      500.         0        18         0       .00    115.18   1011.08
```

THIS RUN EXECUTED 29JUN92 09:24:32

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

WASH AA: TRIBUTARIES

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1.489	.00	.00	.00	2204.00	1354.00	2207.64	2207.19	2208.49	69.61	9.78	216.19	162.29
	1.489	.00	.00	.00	2204.00	1354.00	2207.64	2207.19	2208.49	69.61	9.78	216.19	162.29
*	1.579	480.00	.00	.00	2219.00	1354.00	2220.69	2220.69	2221.05	160.54	8.73	339.81	106.86
*	1.579	480.00	.00	.00	2219.00	1354.00	2220.67	2220.67	2221.05	174.56	9.01	329.80	102.48
	1.680	530.00	.00	.00	2232.10	1132.00	2233.50	2233.50	2233.97	207.61	8.94	228.87	78.56
	1.680	530.00	.00	.00	2232.10	1132.00	2233.50	2233.50	2233.97	207.00	8.93	229.11	78.68
*	1.769	470.00	.00	.00	2245.00	744.00	2248.26	2248.26	2249.34	135.51	11.57	105.43	63.91
*	1.769	470.00	.00	.00	2245.00	744.00	2248.26	2248.26	2249.34	135.46	11.57	105.44	63.92
	-1.489	.00	.00	.00	2204.00	1354.00	2207.64	.00	2208.49	69.61	9.78	216.19	162.29
	-1.489	.00	.00	.00	2204.00	1354.00	2207.64	.00	2208.49	69.61	9.78	216.19	162.29
*	.085	450.00	.00	.00	2219.00	222.00	2222.06	2222.06	2222.53	134.08	6.34	49.15	19.17
*	.085	450.00	.00	.00	2219.00	222.00	2222.06	2222.06	2222.53	132.17	6.31	49.40	19.31
*	.189	550.00	.00	.00	2235.30	222.00	2236.81	2236.81	2237.39	144.72	7.67	43.30	18.45
*	.189	550.00	.00	.00	2235.30	222.00	2236.82	2236.82	2237.39	143.07	7.65	43.46	18.56
*	.297	570.00	.00	.00	2255.30	222.00	2257.52	2257.52	2258.29	104.45	8.36	38.64	21.72
*	.297	570.00	.00	.00	2255.30	222.00	2257.53	2257.53	2258.29	102.37	8.30	38.91	21.94
*	.382	445.00	.00	.00	2264.20	222.00	2267.57	2267.57	2268.77	123.08	12.36	31.79	20.01
*	.382	445.00	.00	.00	2264.20	222.00	2267.62	2267.62	2268.77	116.58	12.13	32.43	20.56
*	.490	570.00	.00	.00	2293.80	222.00	2296.73	2296.73	2297.58	86.92	8.33	37.33	23.81
*	.490	570.00	.00	.00	2293.80	222.00	2296.74	2296.74	2297.58	85.35	8.28	37.59	24.03
	-1.680	530.00	.00	.00	2232.10	1132.00	2233.50	.00	2233.97	207.61	8.94	228.87	78.56
	-1.680	530.00	.00	.00	2232.10	1132.00	2233.50	.00	2233.97	207.00	8.93	229.11	78.68

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.104	550.00	.00	.00	2250.70	133.00	2252.38	2252.38	2252.68	225.74	3.61	31.63	8.85
*	.104	550.00	.00	.00	2250.70	133.00	2252.38	2252.38	2252.68	227.15	3.61	31.56	8.82
*	.199	500.00	.00	.00	2268.80	133.00	2270.02	2270.02	2270.36	128.87	6.06	36.14	11.72
*	.199	500.00	.00	.00	2268.80	133.00	2270.02	2270.02	2270.36	130.25	6.08	36.00	11.65
*	.294	500.00	.00	.00	2285.40	133.00	2285.92	2285.92	2286.10	331.61	5.42	42.36	7.30
*	.294	500.00	.00	.00	2285.40	133.00	2285.92	2285.92	2286.10	329.58	5.41	42.44	7.33

AA: TRIBUTARIES

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.489	1354.00	2207.64	.00	.00	.00	76.31	.00
	1.489	1354.00	2207.64	.00	.00	.00	76.31	.00
*	1.579	1354.00	2220.69	.00	13.05	.00	395.63	480.00
*	1.579	1354.00	2220.67	-.03	13.03	-.03	392.53	480.00
*	1.680	1132.00	2233.50	.00	12.81	.00	248.84	530.00
*	1.680	1132.00	2233.50	.00	12.84	.00	248.84	530.00
*	1.769	744.00	2248.26	.00	14.76	.00	47.31	470.00
*	1.769	744.00	2248.26	.00	14.76	.00	47.31	470.00
	-1.489	1354.00	2207.64	.00	-40.62	.00	76.31	.00
	-1.489	1354.00	2207.64	.00	-40.62	.00	76.31	.00
*	.085	222.00	2222.06	.00	14.42	.00	62.32	450.00
*	.085	222.00	2222.06	.00	14.43	.00	62.32	450.00
*	.189	222.00	2236.81	.00	14.75	.00	37.57	550.00
	.189	222.00	2236.82	.00	14.75	.00	37.57	550.00
*	.297	222.00	2257.52	.00	20.71	.00	26.01	570.00
*	.297	222.00	2257.53	.01	20.72	.01	26.01	570.00
*	.382	222.00	2267.57	.00	10.05	.00	14.36	445.00
*	.382	222.00	2267.62	.04	10.08	.04	14.36	445.00
*	.490	222.00	2296.73	.00	29.16	.00	23.99	570.00
*	.490	222.00	2296.74	.01	29.13	.01	23.99	570.00
	-1.680	1132.00	2233.50	.00	-63.23	.00	248.84	530.00
	-1.680	1132.00	2233.50	.00	-63.24	.00	248.84	530.00
*	.104	133.00	2252.38	.00	18.88	.00	52.77	550.00
*	.104	133.00	2252.38	.00	18.87	.00	52.71	550.00
*	.199	133.00	2270.02	.00	17.64	.00	50.58	500.00
*	.199	133.00	2270.02	.00	17.64	.00	50.57	500.00
*	.294	133.00	2285.92	.00	15.90	.00	115.18	500.00
*	.294	133.00	2285.92	.00	15.90	.00	115.18	500.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=      1.579  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      1.579  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      1.579  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      1.579  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      1.680  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      1.680  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=       .199  PROFILE=  2  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=       .294  PROFILE=  1  CRITICAL DEPTH ASSUMED
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ON SECNO=      .294  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .294  PROFILE=  2  MINIMUM SPECIFIC ENERGY
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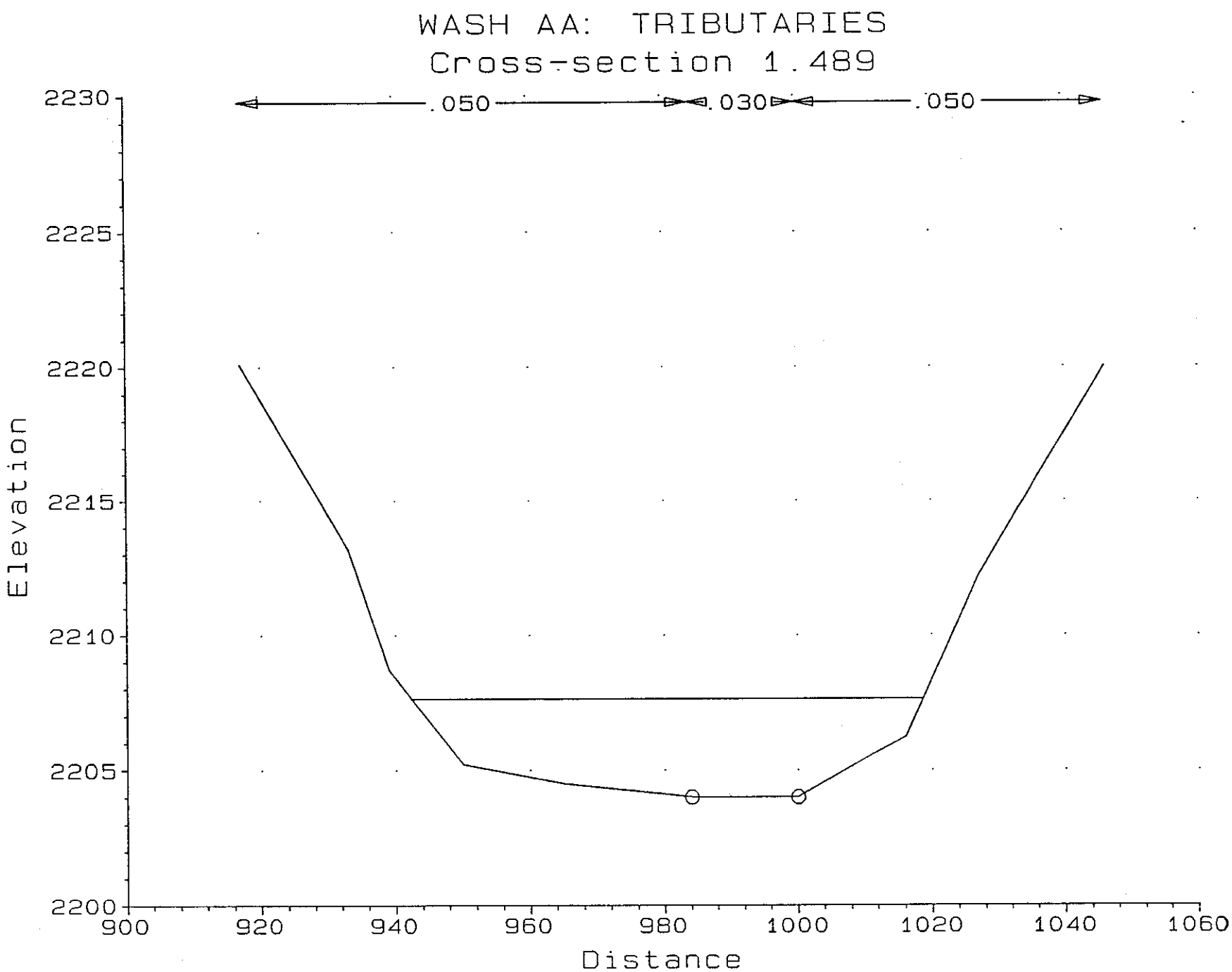
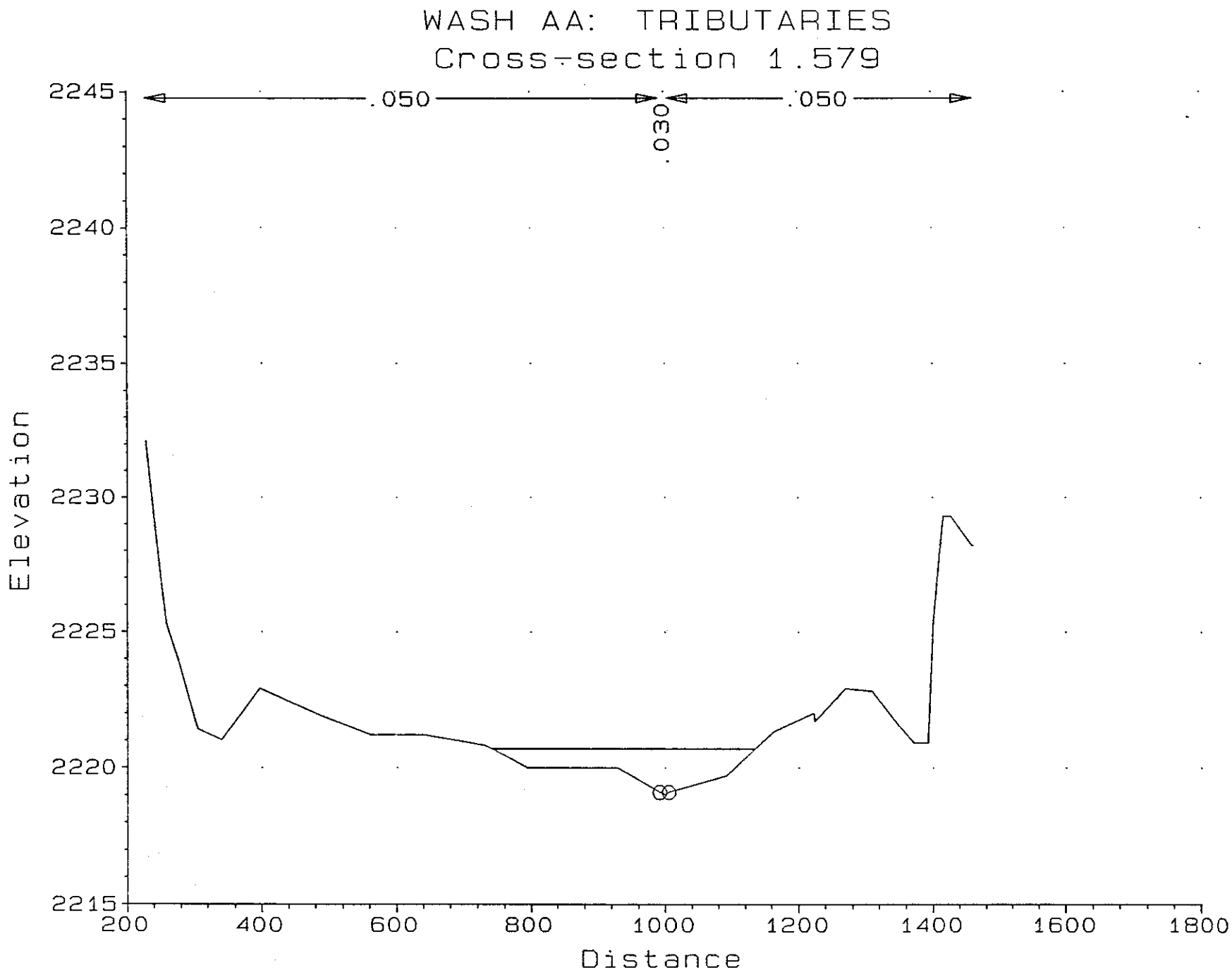
FLOODWAY DATA, WASH AA: TRIBUTARIES
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
1.489	76.	216.	6.3	2207.6	2207.6	.0
1.579	393.	330.	4.1	2220.7	2220.7	.0
1.680	249.	229.	4.9	2233.5	2233.5	.0
1.769	47.	105.	7.1	2248.3	2248.3	.0
-1.489	76.	216.	6.3	2207.6	2207.6	.0
.085	62.	49.	4.5	2222.1	2222.1	.0
.189	38.	43.	5.1	2236.8	2236.8	.0
.297	26.	39.	5.7	2257.5	2257.5	.0
.382	14.	32.	6.8	2267.6	2267.6	.0
.490	24.	38.	5.9	2296.7	2296.7	.0
-1.680	249.	229.	4.9	2233.5	2233.5	.0
.104	53.	32.	4.2	2252.4	2252.4	.0
.199	51.	36.	3.7	2270.0	2270.0	.0
.294	115.	42.	3.1	2285.9	2285.9	.0


WASH AA: TRIBUTARIES
Cross-section 1.489
.050
.030
.050
2230
2225
2220
2215
2210
2205
2200
Elevation
900
920
940
960
980
1000
1020
1040
1060
Distance


WASH AA: TRIBUTARIES
Cross-section 1.579
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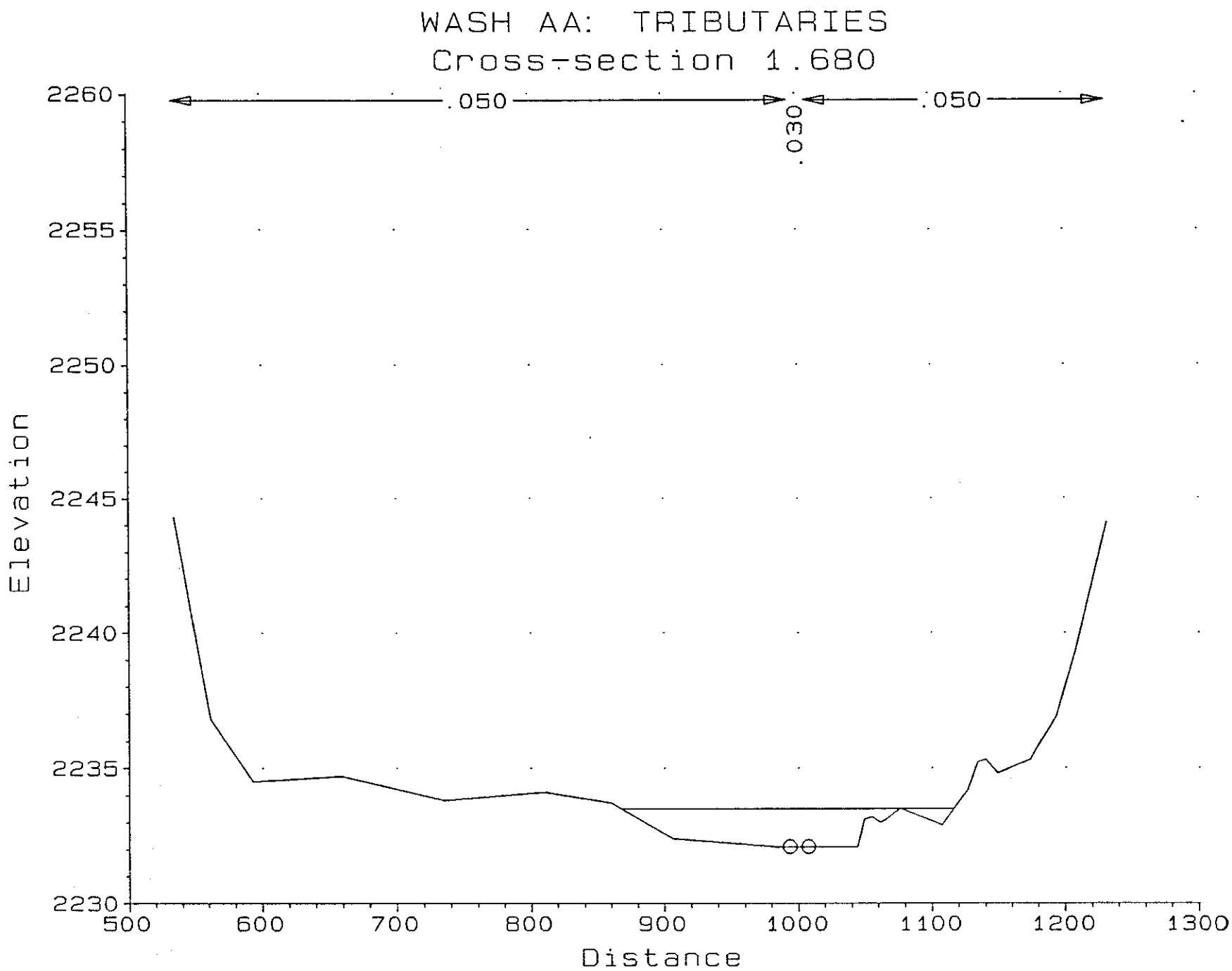
.030
.050
2245
2240
2235
2230
2225
2220
2215
Elevation
200
400
600
800
1000
1200
1400
1600
1800
Distance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Elevation
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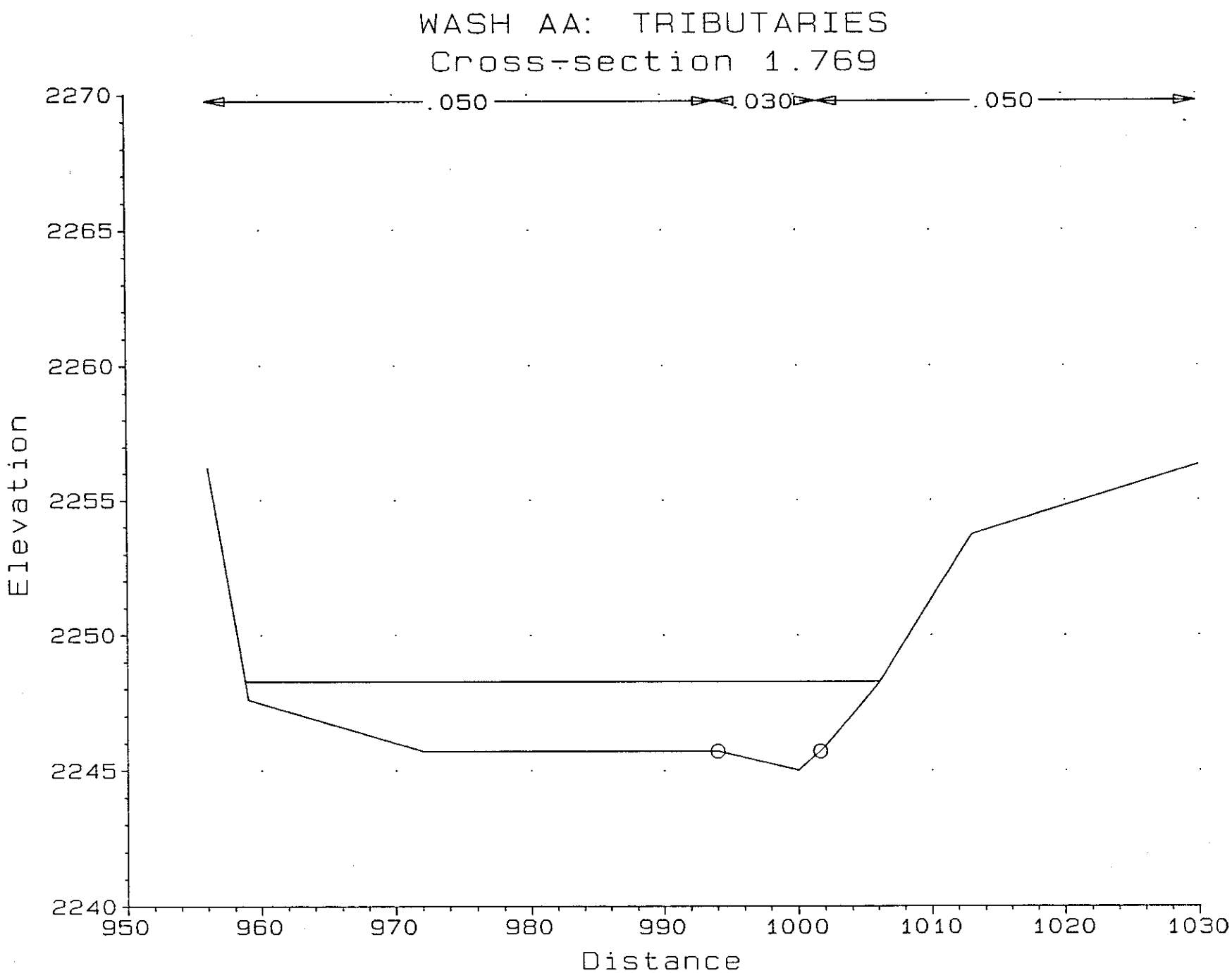
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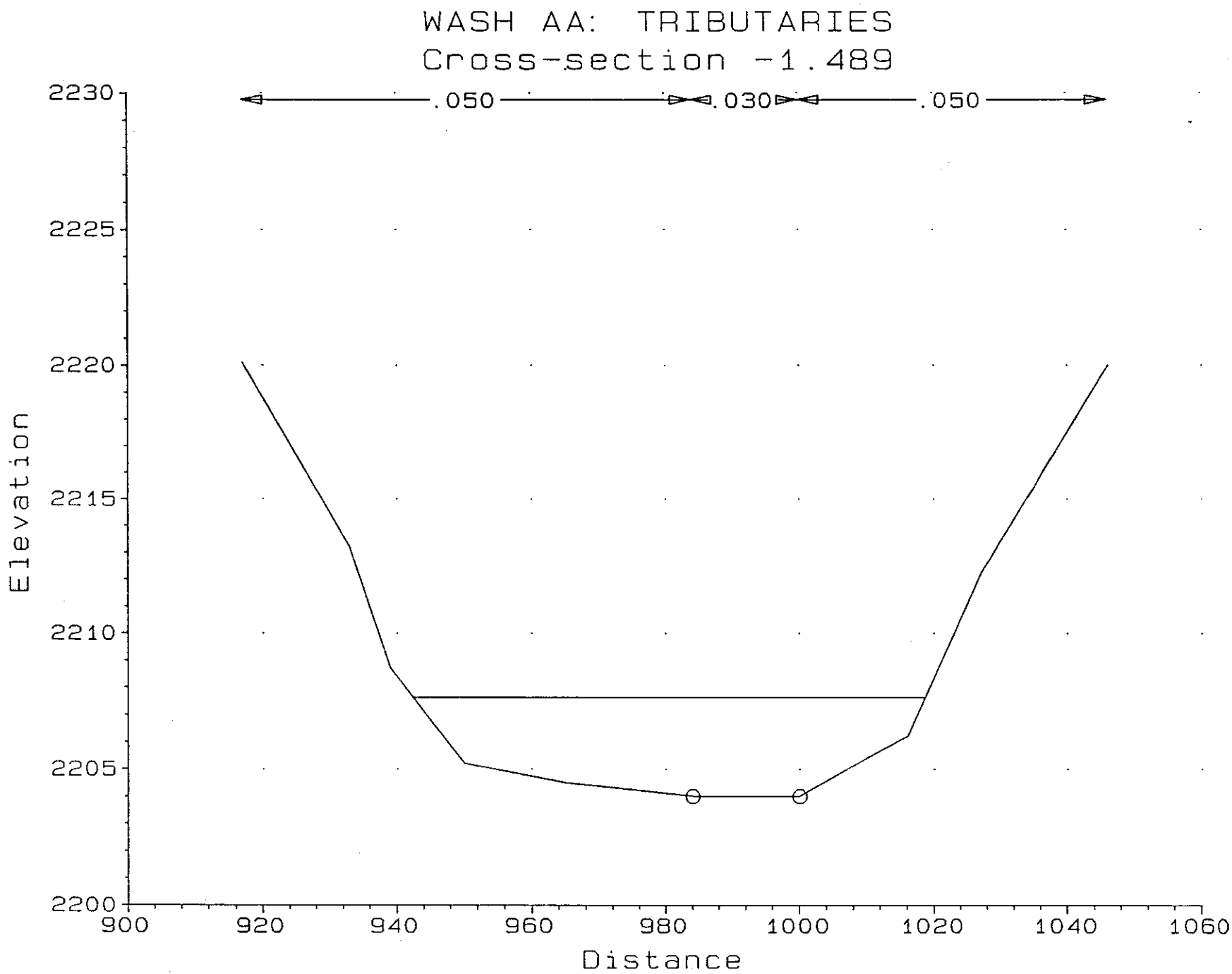
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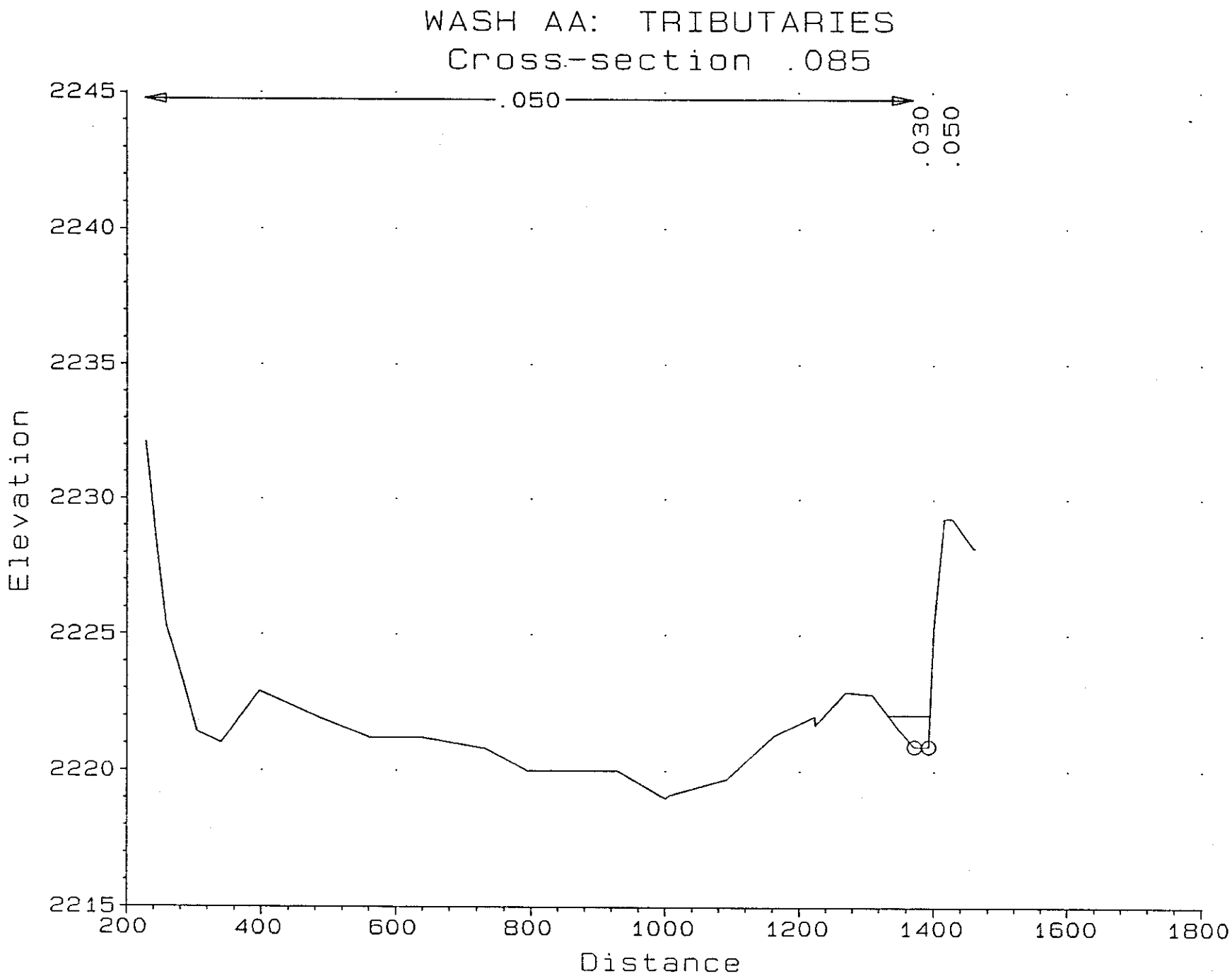
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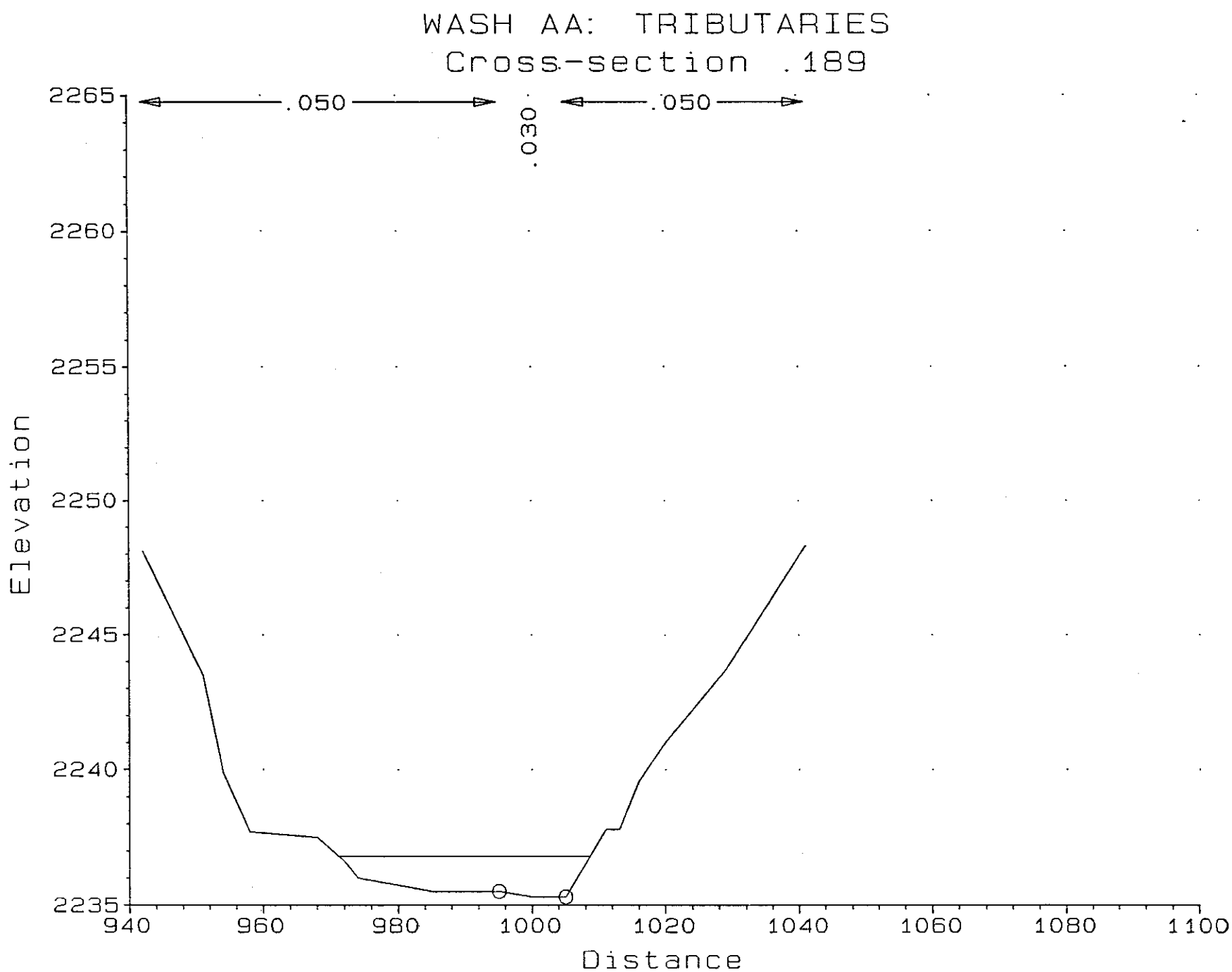
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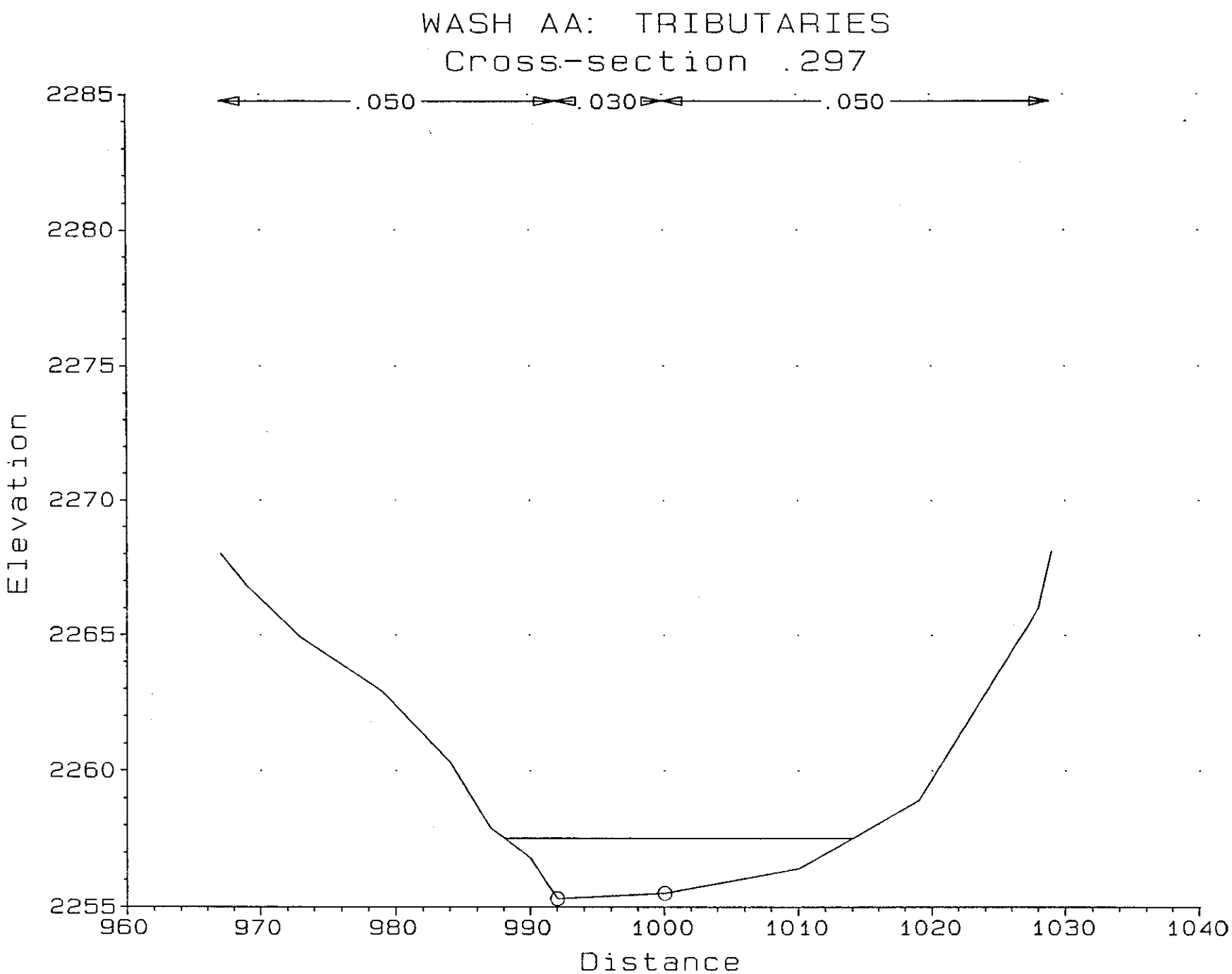
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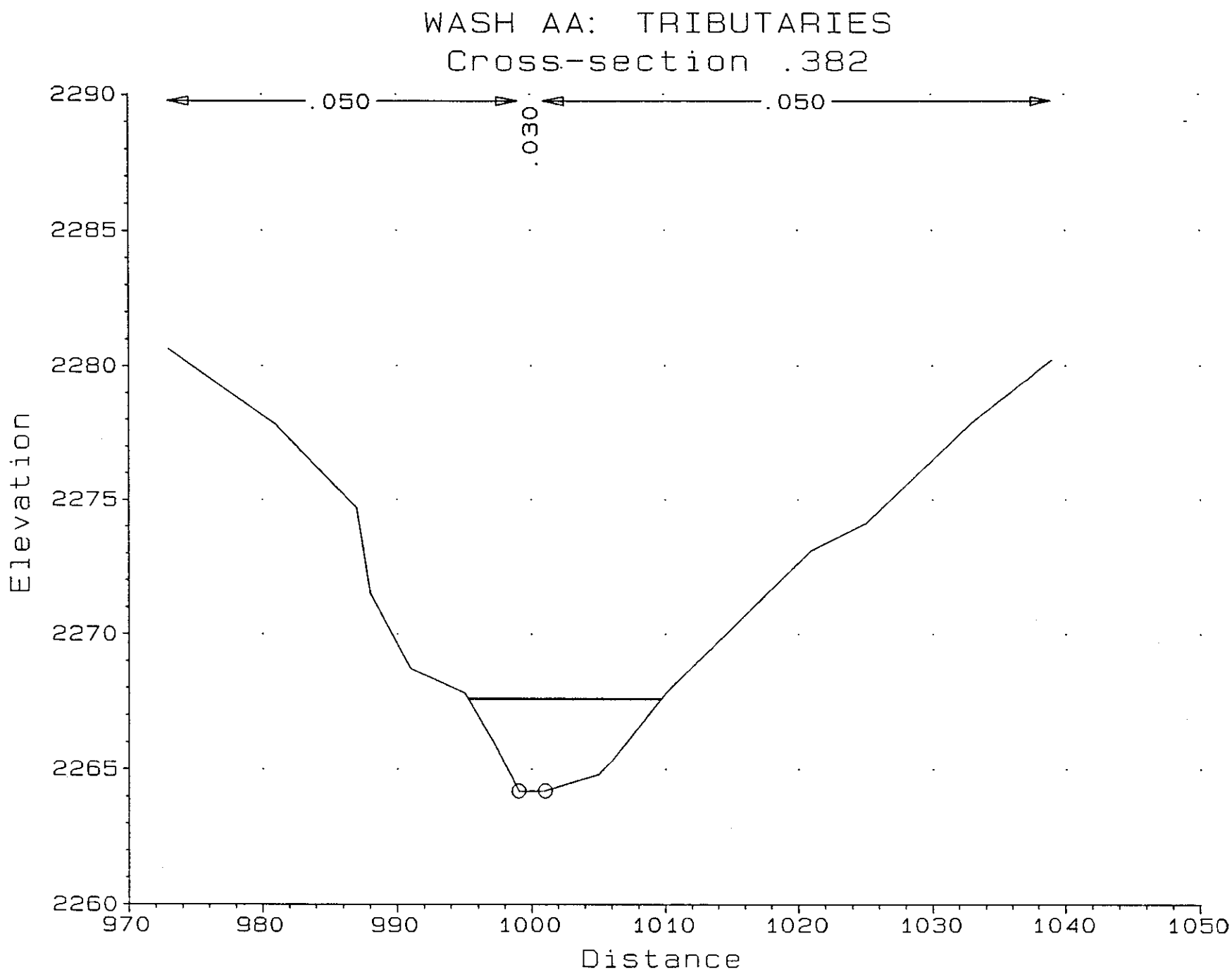
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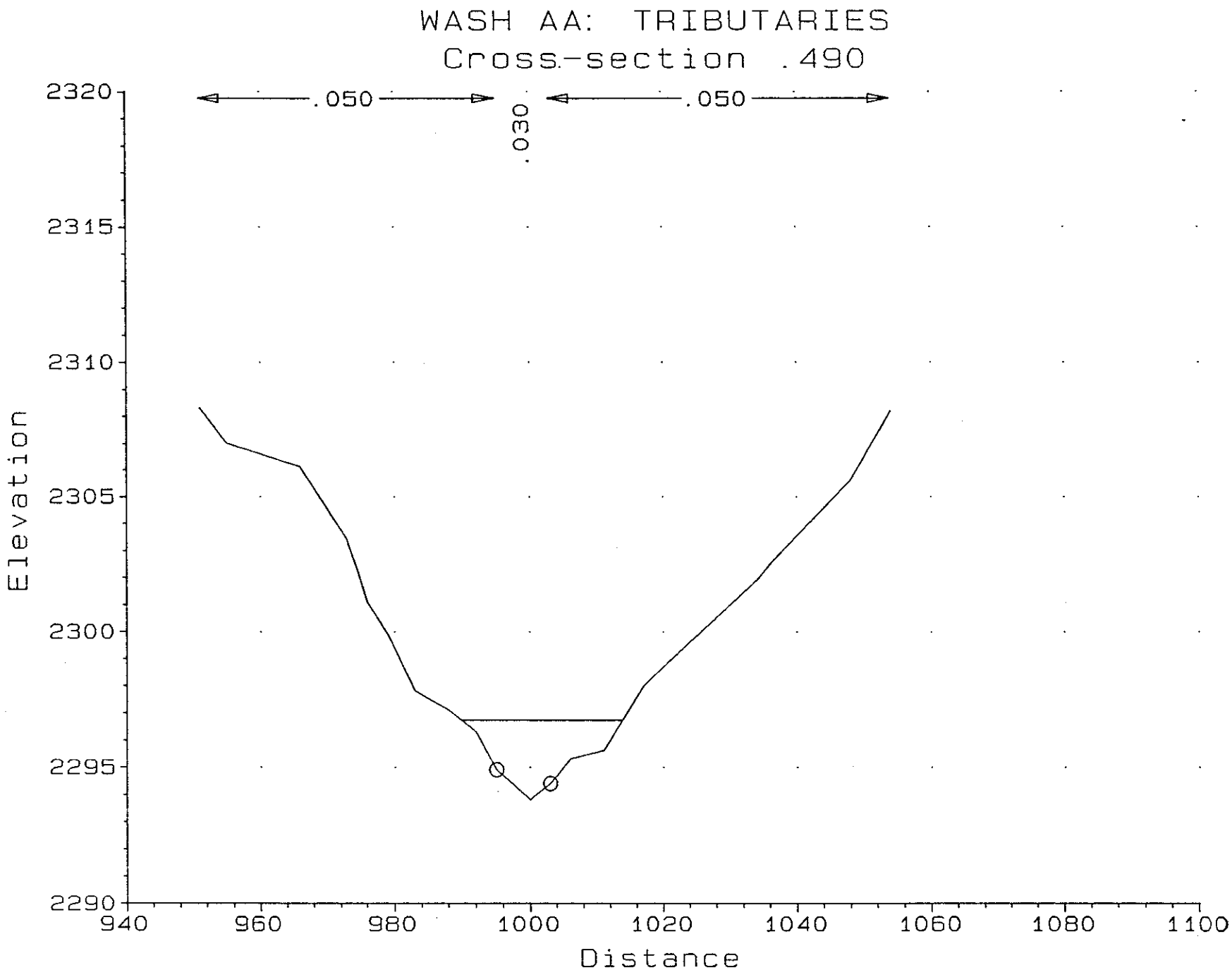
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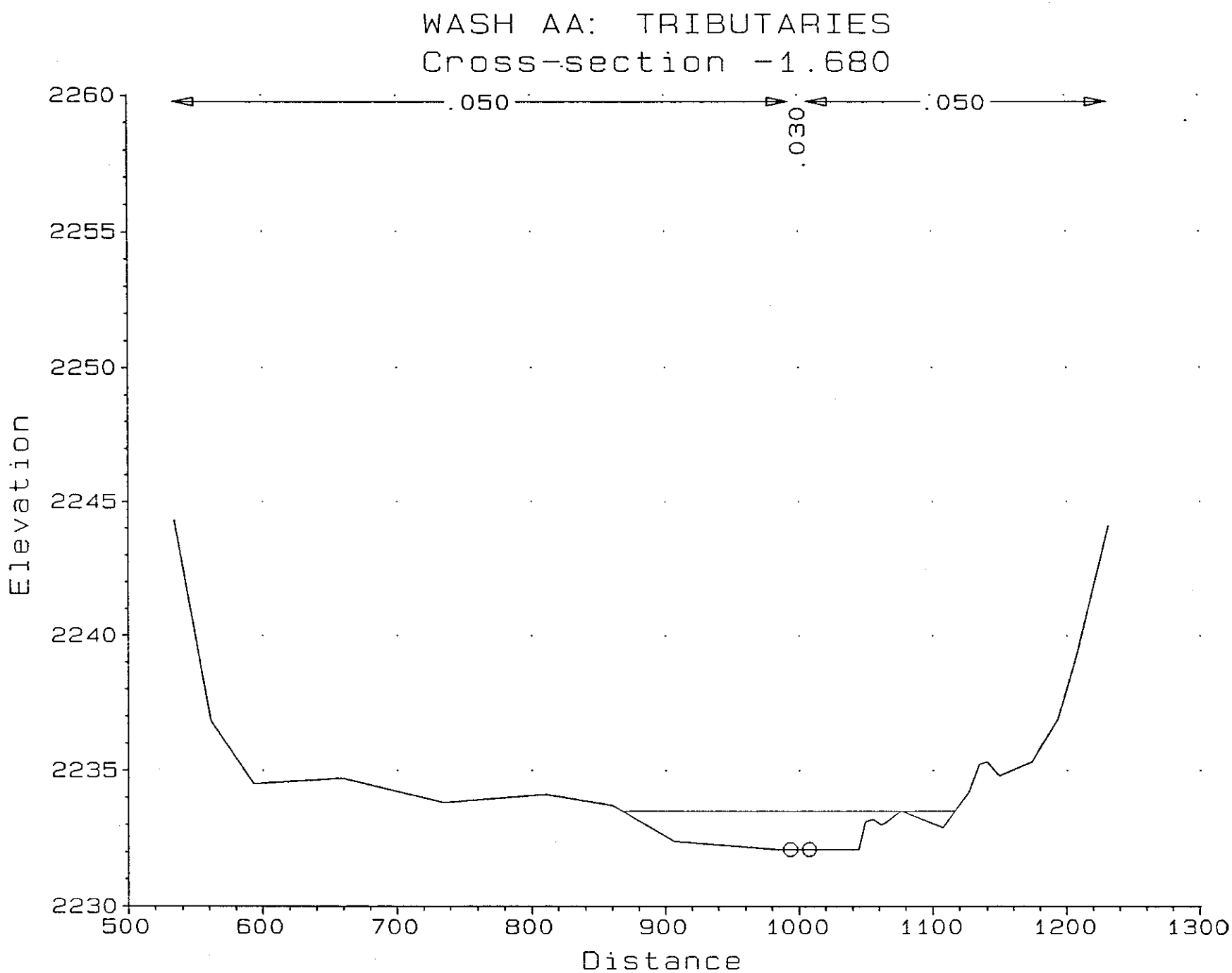
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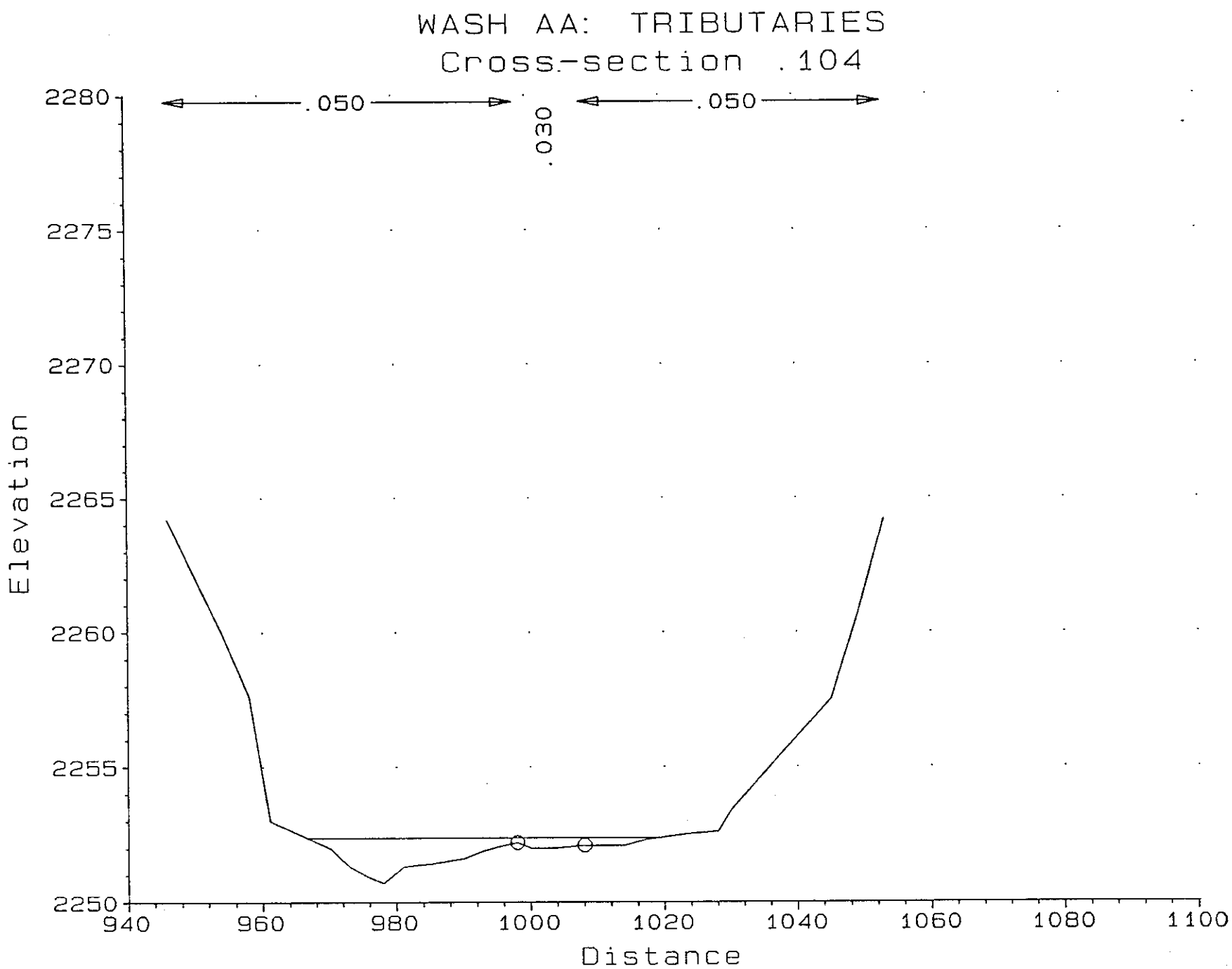
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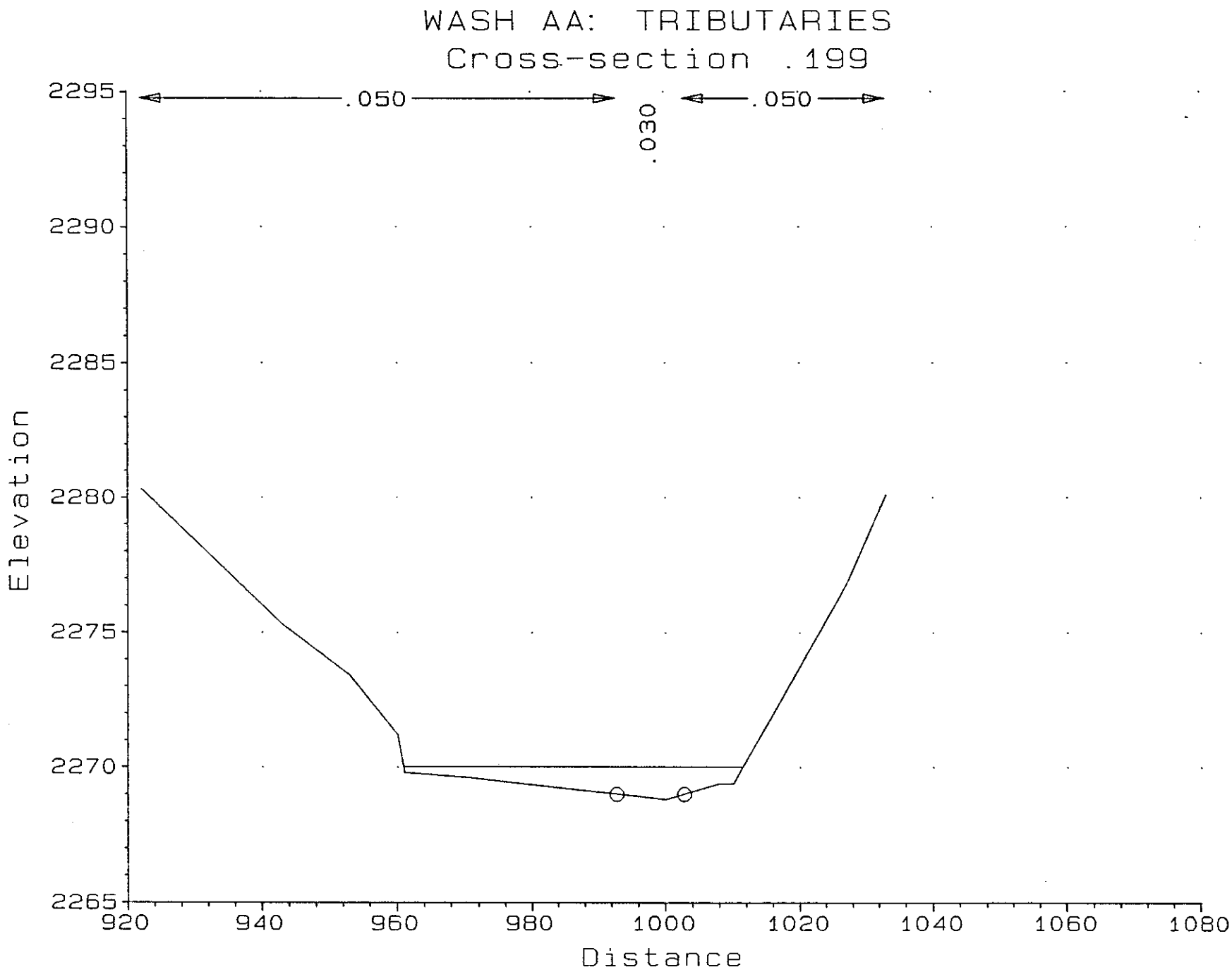
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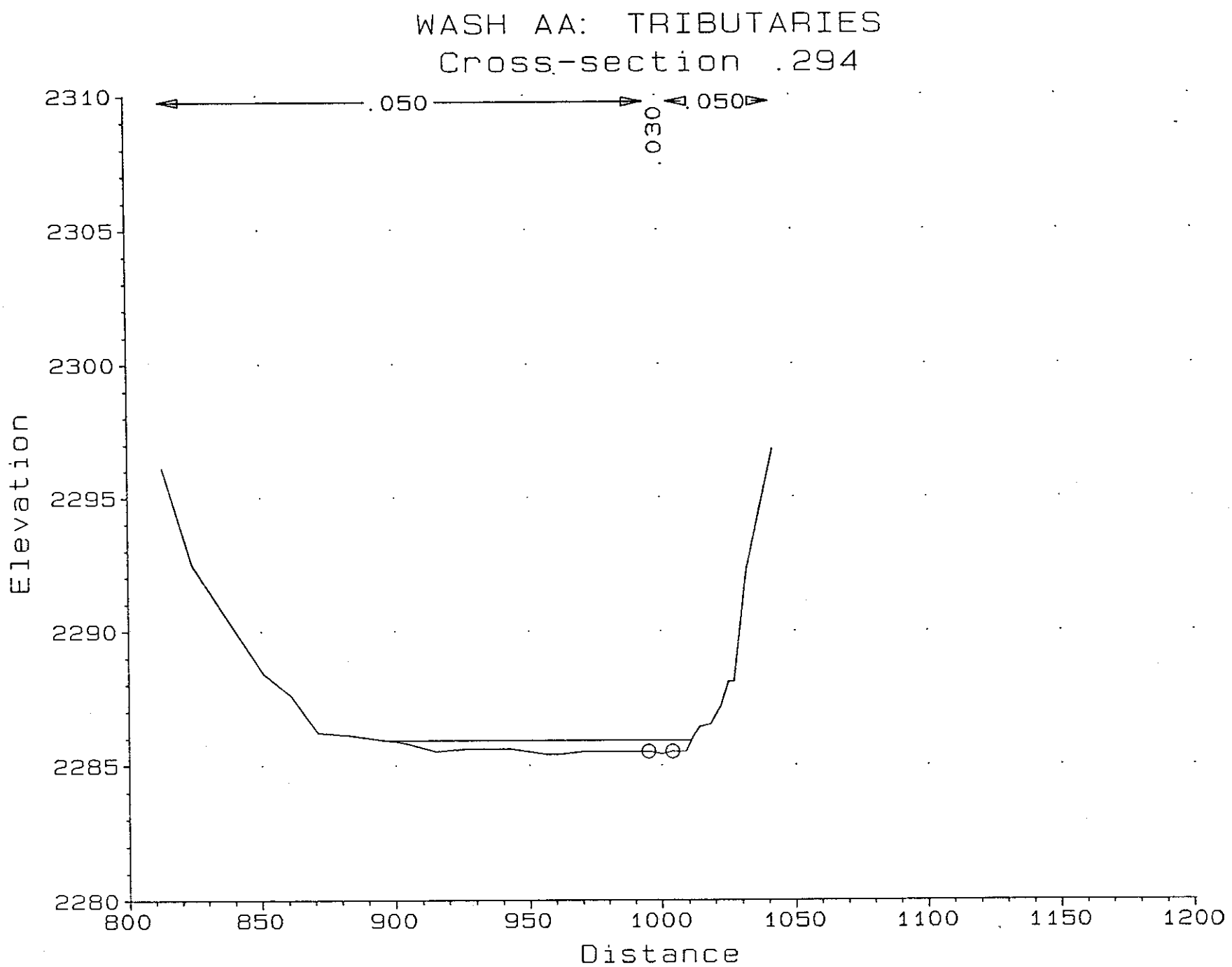
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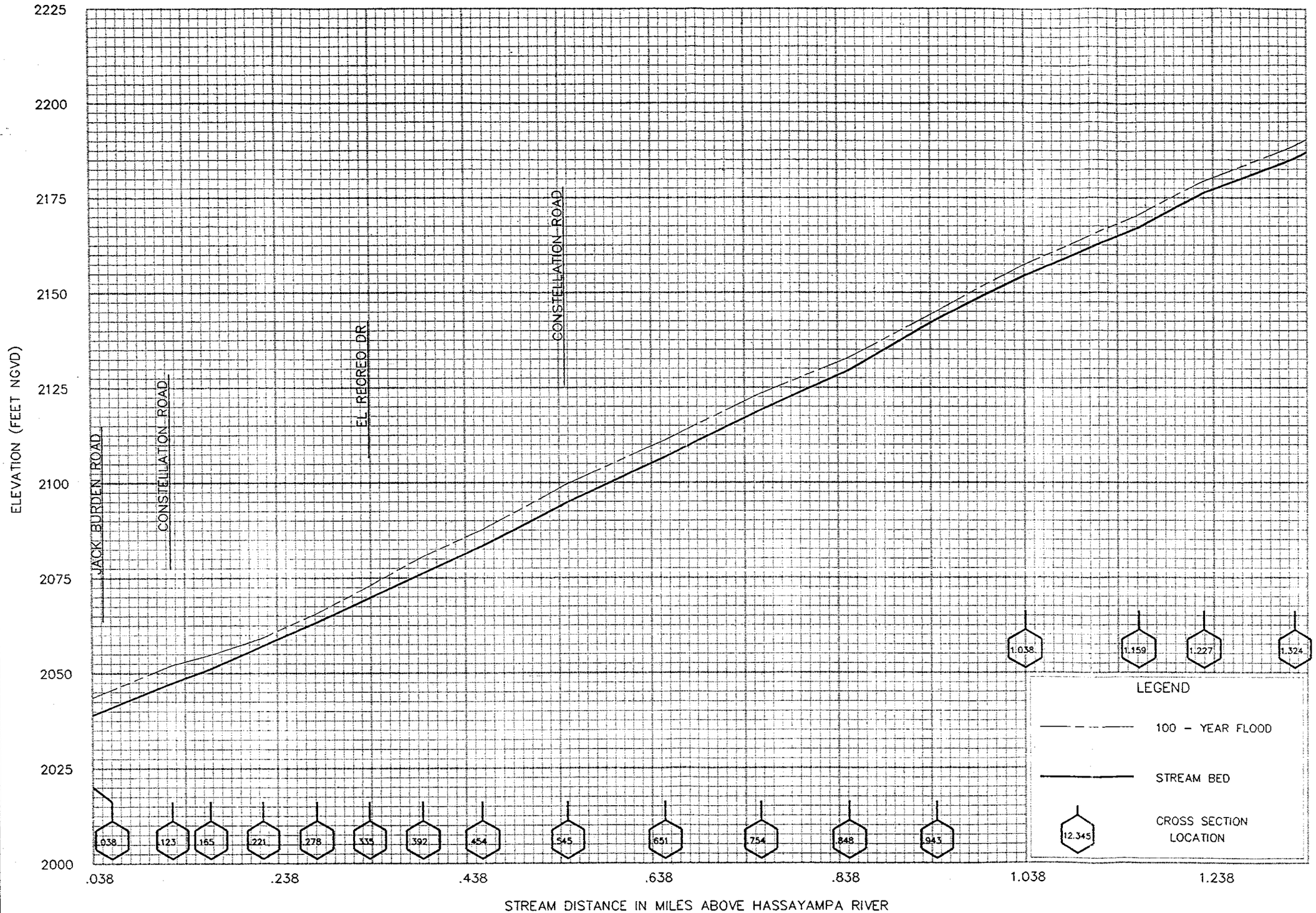

FILE:WASHAA.DWG

FLOOD PROFILES

POWDER HOUSE WASH (AA)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOOD PROFILES

POWDER HOUSE WASH (AA)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

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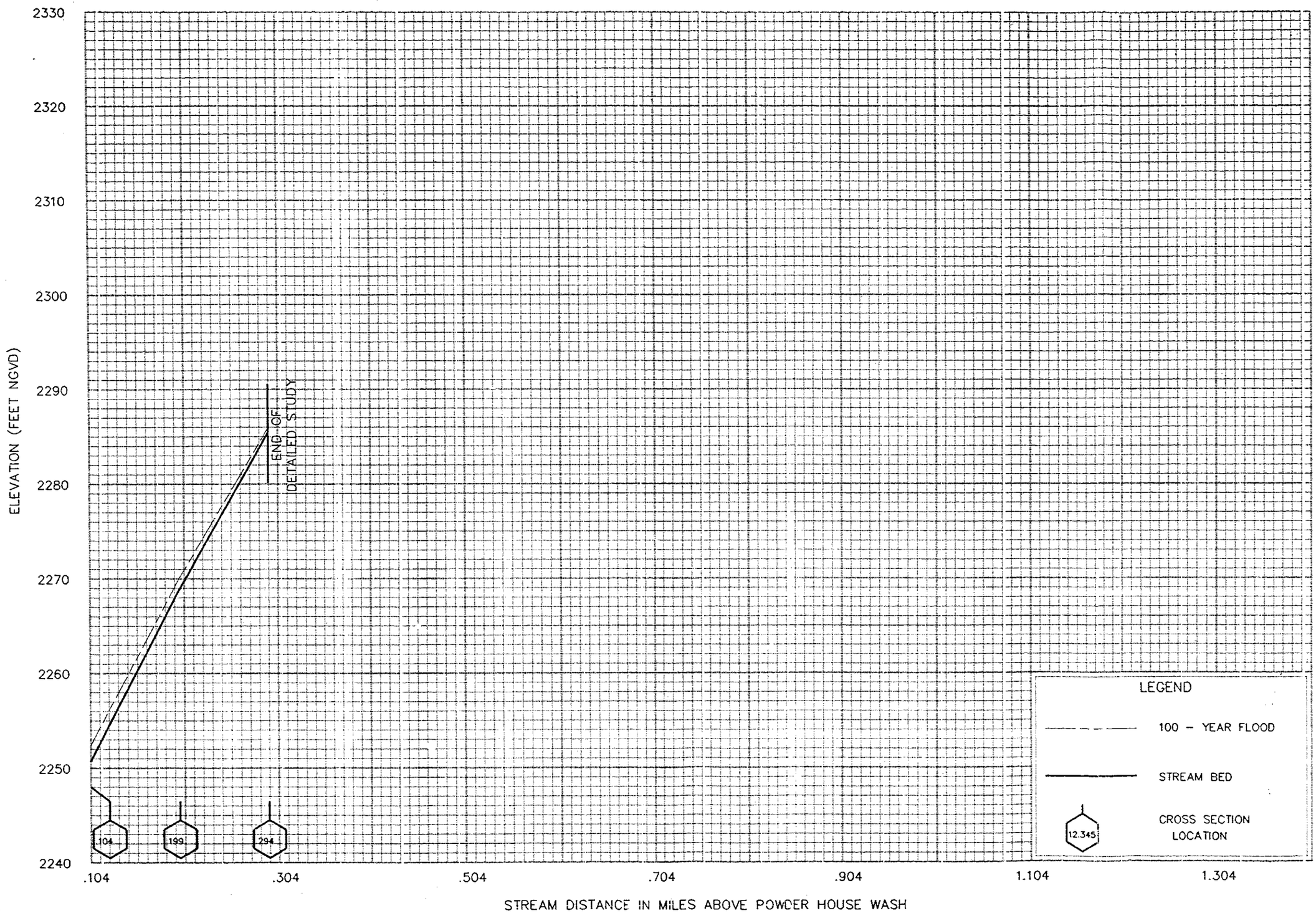

FLOOD PROFILES

POWDER HOUSE WASH TRIBUTARY AA2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

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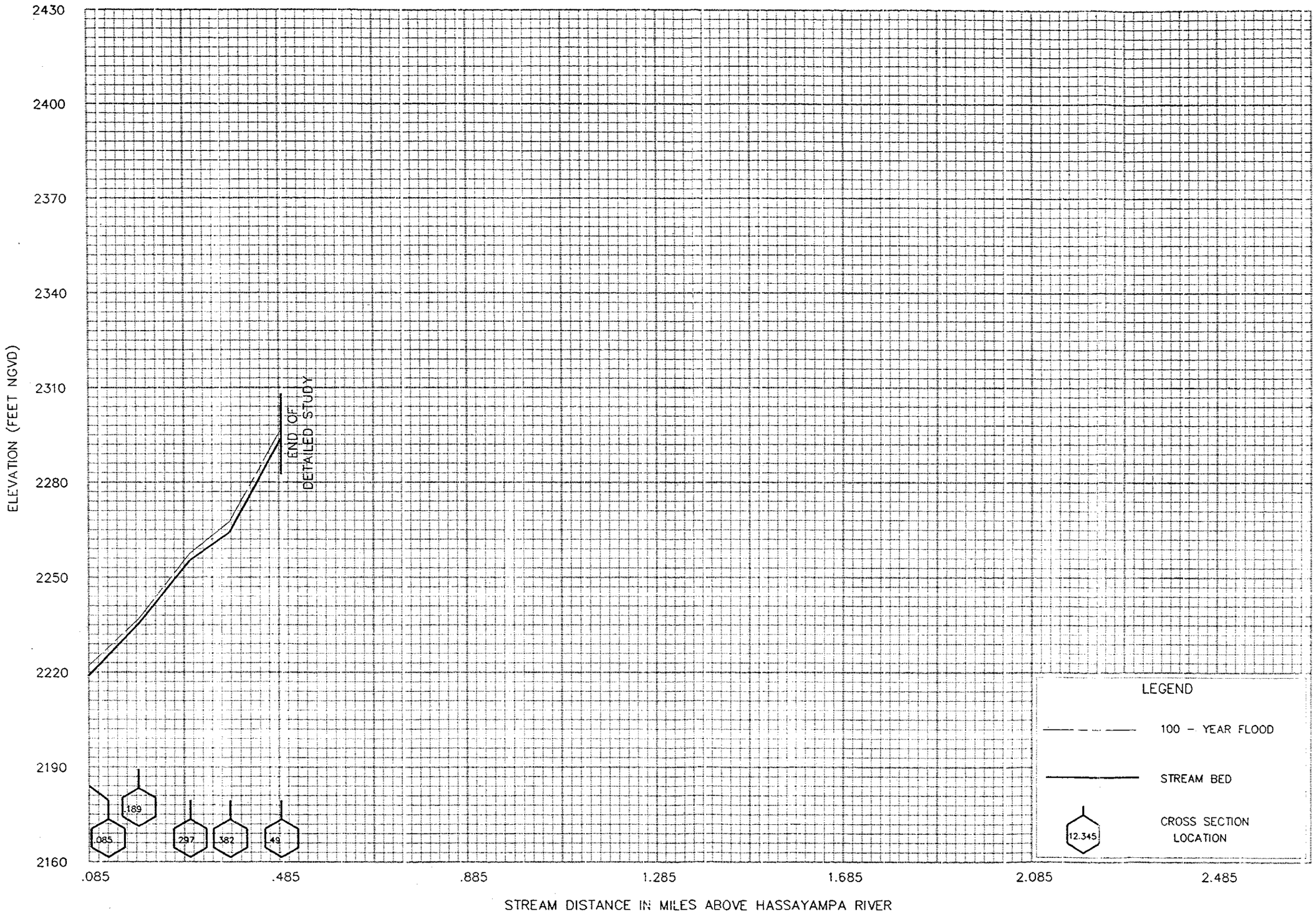

FLOOD PROFILES

POWDER HOUSE WASH TRIBUTARY AA3

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

02/18/94 14:02:57 ACD-12_

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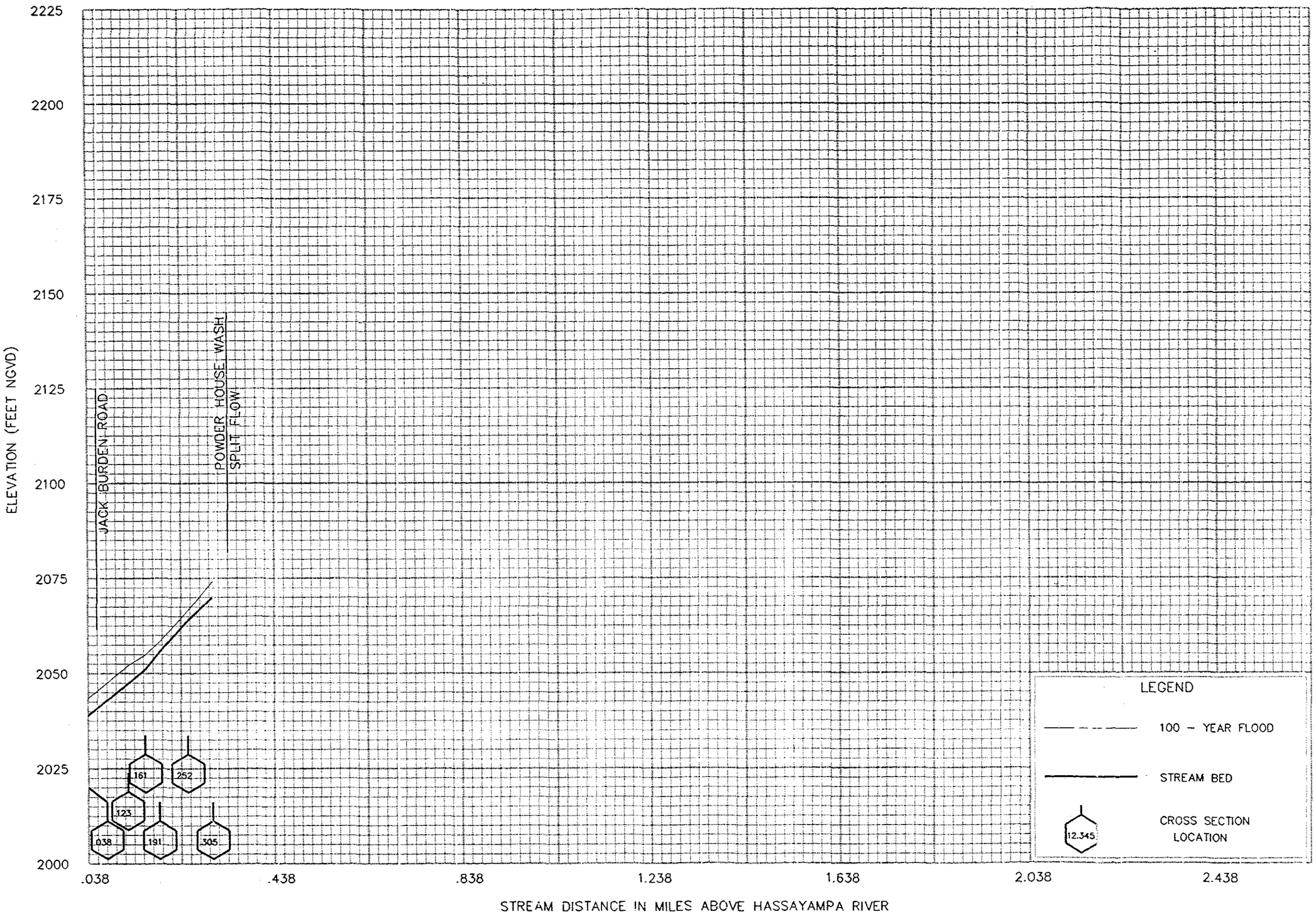


PC FILE:CONSTRD.DWG

FLOOD PROFILES

POWDER HOUSE WASH (CONST)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

Flood Control District of Maricopa County
Contract FCD 89-79

WICKENBURG AREA DRAINAGE MASTER STUDY

TECHNICAL DOCUMENTATION REPORT

Appendix 6.20: HEC-2 Models & Cross Section Plots for East Area Wash
UNNAMED WASH #9 (Wash #af)

Submitted to the
Federal Emergency Management Agency
on Behalf of the
Flood Control District of Maricopa County

N:\1197\02\ADMIN\119702RP.063

May 1994

6.20

FEDERAL EMERGENCY MANAGEMENT AGENCY **HYDROLOGIC ANALYSIS FORM**	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.67 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: UNINCORPORATED MARICOPA COUNTY / TOWN OF WICKENBURG

Flooding Source: WASH AF3 UNNAMED HASSAYAMPA RIVER TRIBUTARY (#9)
(One form for each flooding source)

Project Name/Identifier: WICKENBURG ADMS FCD 89-79

1. HYDROLOGIC ANALYSIS IN FIS

- ☐ Approximate study stream (Zone A)
- ☐ Detailed study stream (briefly explain methodology) NA

2. REASON FOR NEW HYDROLOGIC ANALYSIS

- ☒ No existing analysis
- ☐ Improved data *(see data revision on page 3)*
- ☐ Changed physical conditions of watershed *(explain)*
- ☐ Alternative methodology *(justify why the revised model is better than model used in the effective FIS)*
- ☐ Evaluation of proposed conditions (CLOMRs only) (explain)
- ☒ Other No existing analysis or analysis being updated to reflect existing conditions

If a computer program/model was used in revising the hydrologic analysis, please provide a diskette with the input files for the 10-, 50-, 100- and 500-year recurrence intervals.

Only the 100-year recurrence interval need be included for SFHAs designated as Zone A.

3. APPROVAL OF ANALYSIS

- ☒ Approval of hydrologic analysis, including the resulting peak discharge value (s) has been provided by the appropriate local, state, or Federal Agency. (i.e., Flood Control District of Maricopa County)
  Attach evidence of approval.
- ☐ Approval of the hydrologic analysis is not required by any local, State, or Federal Agency.

Stream: WASH AF: UNNAMED HASSAYAMPA RIVER TRIBUTARY (#9)

Comparison of 100-year Discharges

Location:	Drainage area (Sq mi.)	FIS (cfs):	Revised (cfs):
HASSAYAMPA R. CONFLUENCE	0.30	—	420

Note: When revised discharges are not significantly different than FIS discharges, FEMA may require a confidence limits analysis on attachment D at a later date to complete the review.

As is often the case with revision requests, only a portion of a stream may actually be revised or be affected by a revision. Therefore, transition to the unrevised portion is important to maintain the continuity of the study. NFIP regulations stipulate that such a transition must be assured. What is the transition from the proposed discharges to the effective discharges? Please explain how the transition was made *(attach separate sheet if necessary)*

ATTACH A COMPLETED REVIEW OF RESULTS PAGE FOR EACH FLOODING SOURCE.

Is the new hydrologic analysis being developed solely to revise the flow values presented in the FIS *(i.e. no changed hydraulic conditions)*? ☐ Yes ☒ No

If yes, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

FEMA does not normally revise NFIP maps solely due to insignificant flow changes where changes in 100-year water surface elevation are less than 1.0 foot.

5. HISTORICAL FLOODING INFORMATION

Is historical data available for the flooding source? ☐ Yes ☒ No

If yes, provide the following:

Location along flooding source: _____

Maximum peak discharge: _____ cfs

Second highest peak discharge: _____ cfs

Source of information: _____

6. GAGE RECORD INFORMATION

Location of nearest gage to project site *(along flooding source or similar watershed; specify)*

NA

Gaging Station: _____

Drainage area at gage: _____ mi^2

Number of years of data: _____

7. DATA REVISION

Please use the following table to list all the data and/or parameters affected by this request and identify them as new data (*New*) or as revising existing data (*Revised*). *(If necessary, attach a separate sheet.)*

Data Parameter	New	Revised	Data Source
NA	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	
	☐	☐	

- Data source can be from a Federal, State, or local government agency, or from a private source. Some State and local governments may have less strict data requirements than Federal agencies, in which case the hydrologic data may not be accepted by FEMA unless it is demonstrated that the data give a better estimate of the flood discharge.
- Attach documentation corroborating each data source *(i.e., certified statement, report, bibliographical reference to a published document)*. In the case of a published document or a government report, providing copies of the cover and pertinent pages may be helpful.

8. METHODOLOGY FOR NEW ANALYSIS

☐ Statistical Analysis of Gage Records (*use Attachment A*)

☐ Regional Regression Equations *(use Attachment B)*

☒ Precipitation/Runoff Model *(use Attachment C)*

☐ Other *(specify; attach backup computations and supporting data)* _____

Gaging Station: NA

Gage Location (latitude and longitude): _____

	FIS:	Revised:
1. Number of years of data	_____	_____
Systematic	_____	_____
Historical	_____	_____
2. Homogeneous data	☐ Yes ☐ No	☐ Yes ☐ No
3. Data adjustments	☐ Yes ☐ No	☐ Yes ☐ No
4. Number of high outliers	_____	_____
Low outliers	_____	_____
Zero events	_____	_____
5. Generalized skew	_____	_____
6. Station skew	_____	_____
7. Adopted skew	_____	_____
8. Probability distribution used (justify if log-Pearson III was not used)	_____	_____
9. Transfer equations to ungaged sites		☐ Yes ☐ No

If yes, specify method

_____

_____

_____

10. Expected probability* ☐ Yes ☐ No

11. Comparison of results with other analyses ☐ Yes ☐ No

If yes, describe comparison

_____

_____

_____

*FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data is not available, indicate by N/A.

Attach analysis including plot of flood frequency curve.

1. Bibliographical Reference:

NA

(Attach a copy of title page, table of contents, and pertinent pages including equations.)

2. Gaged or ungaged stream: _____

3. Hydrologic region(s): _____
Attach backup map.

4. Provide parameters, values, and source of data used to define parameters.

	FIS:		Revised:	
5. Urbanized conditions calculations	☐ Yes	☐ No	☐ Yes	☐ No
6 Percent of watershed urbanization	_____		_____	
7. Is the watershed controlled?	☐ Yes	☐ No	☐ Yes	☐ No
8. Comparison with other analyses	☐ Yes	☐ No	☐ Yes	☐ No

If the answer to 5, 7, or 8 is yes, explain methodology in Comments.

If data is not available, indicate by N/A.

Comments

Attach computation and supporting maps, delineating the watershed boundary and drainage area divides.

		FIS:	Revised
1.	Method or model used:		HEC-1
	Version:		VER 3.0
	Date:		02 AUG 88
2.	Source of rainfall depth:		NOAA ATLAS 2
3.	Source of rainfall distribution:		SCS TYPE II
4.	Rainfall duration:		24 HOURS
5.	Areal adjustment to precipitation (%):		NWS HYDRO-40
6.	Hydrograph development method:		S-GRAPH
7.	Loss rate method:		GREEN-AMPT
	Source of soils information:		SCS
	Source of land use information		TOWN of WICKENBURG
8.	Channel routing method:		NORMAL DEPTH
9.	Reservoir routing:	☐ Yes ☐ No	☐ Yes ☐ No
10.	Baseflow considerations:	☐ Yes ☐ No	☐ Yes ☒ No

If yes, explain how baseflow was determined:

11.	Snowmelt considerations:	☐ Yes ☐ No	☐ Yes ☒ No
12.	Model calibration:	☐ Yes ☐ No	☒ Yes ☐ No

If yes, explain how calibration was performed Computed discharges were compared with DISCHARGE VS DRAINAGE AREA curves and envelopes prepared by the Flood Control District of Maricopa County

13. Future land use condition: ☐ Yes ☒ No

If yes, explain why

NOTE: FEMA policy is to base flooding on existing conditions.
If data is not available, indicate by N/A.

Attach precipitation/runoff model, hydrologic model schematic, curve number calculations, time of concentration calculations, and supporting maps, delineating the watershed boundary and drainage area divides.

Stream: NA – NO FLOW RECORDS

Select one location for Confidence Limits Evaluation (*describe location*): _____

_____

Discharges for selected location:

Exceedance Probability		FIS	Revised
10%	(10-year)	_____ cfs	_____ cfs
2%	(50-year)	_____ cfs	_____ cfs
1%	(100-year)	_____ cfs	_____ cfs
0.2%	(500-year)	_____ cfs	_____ cfs

1% (100-year) Flood Confidence Intervals

90% Confidence Interval: 5% limit _____ cfs

95% limit _____ cfs

50% Confidence Interval: 25% limit _____ cfs

75% limit _____ cfs

If the value of the 100-year frequency flood in the FIS is beyond the 50% confidence interval but within the 90% confidence interval, does the 100-year water surface elevation change by 1.0 foot or more? ☐ Yes ☐ No

An example of confidence limits analysis can be found in Appendix 9 of Bulletin 17B.

Attach Confidence Limits Analysis.

FEDERAL EMERGENCY MANAGEMENT AGENCY RIVERINE HYDRAULIC ANALYSIS FORM	O.M.B. Burden No 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

lic reporting burden for this form is estimated to average 2.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: WASH AF: UNNAMED HASSAYAMPA RIVER TRIBUTARY (#9)
(One form for each flooding source)

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. REACH TO BE REVISED

Downstream limit: Station 0.000 (HASSAYAMPA RIVER CONFLUENCE)

Upstream limit: Station 0.909

2. EFFECTIVE FIS

☒ Not studied

☐ Studied by approximate methods

Downstream limit of study _____

Upstream limit of study _____

☐ Studied by detailed methods

Downstream limit of study _____

Upstream limit of study _____

☐ Floodway delineated

Downstream limit of Floodway _____

Upstream limit of Floodway _____

3. HYDRAULIC ANALYSIS

Why is the hydraulic analysis different from that used to develop the FIRM. *(Check all that apply)*

☒ Not studied in FIS

☒ Improved hydrologic data/analysis. Explain: Hydrologic Analysis procedures standardized by the Flood Control District of Maricopa County

☐ Improved hydraulic analysis. Explain: _____

☐ Flood control structure. Explain: _____

☐ Other. Explain: _____

Full input and output listings along with files on diskette *(if available)* for each of the models listed below and summary of the source of input parameters used in the models must be provided. The summary must include a complete description of any changes made from model to model *(e.g. duplicate effective model to corrected effective model)*. Only the Duplicate Effective and the Revised or Post-Project Conditions models must be submitted. See instructions for directions on when other models may be required. Only the 100-year flood profile is required for SFHAs with a Zone A designation. For areas which do not have detailed flooding, a hydraulic model is not required; however BFE's may not be added to the revised FIRM.

☐ Duplicate Effective Model — Natural ☐ Floodway ☐

Copies of the hydraulic analysis used in the effective FIS, referred to as the effective models *(10-, 50-, 100-, and 500-year multi-profile runs and the floodway run)* must be obtained and then reproduced on the requestor's equipment to produce the duplicate effective model. This is required to assure that the effective model input data has been transferred correctly to the requestor's equipment and to assure that the revised data will be integrated into the effective data to provide a continuous FIS model upstream and downstream of the revised reach.

☐ Corrected Effective Model — Natural ☐ Floodway ☐

The corrected effective model is the model that corrects any errors that occur in the duplicate effective model, adds any additional cross sections to the duplicate effective model, or incorporates more detailed topographic information than that used in the currently effective model. The corrected effective model must not reflect any man-made physical changes since the date of the effective model. An error could be a technical error in the modeling procedures, or any construction in the floodplain that occurred prior to the date of the effective model but was not incorporated into the effective model.

☐ Existing or Pre-Project Conditions Model — Natural ☐ Floodway ☐

The duplicate effective or corrected model is modified to produce the existing or pre-project conditions model to reflect any modifications that have occurred within the floodplain since the date of the effective model but prior to the construction of the project for which the revision is being requested. If no modification has occurred since the date of the effective model, then this model would be identical to the corrected effective or duplicate effective model.

☐ Revised or Post-Project Conditions Model — Natural ☐ Floodway ☐

The existing or pre-project conditions model *(or duplicate effective or corrected effective model, as appropriate)* is revised to reflect revised or post-project conditions. This model must incorporate any physical changes to the floodplain since the effective model was produced as well as the effects of the project. When the request is for proposed project this model should reflect proposed conditions.

☒ Other: Please attach a sheet describing all other models or calculations submitted. — Natural ☒ Floodway ☒

New Model
(Proposed Effective Model)

4. MODEL PARAMETERS *(from model used to revise 100-year water surface elevation)*

Discharges:	Upstream Limit	Downstream Limit
10-year		
50-year		
100-year	420	420
500-year		

Attach diagram showing changes in 100-year discharge

2. Explain how the starting water surface elevations were determined Starting water surface elevation determined by the Slope-Area Method

3. Give range of friction loss coefficients (*Manning's "N"*) Channel 0.040

Overbanks ..... 0.050 - 0.070

If friction loss coefficients are different anywhere along the revised reach from those used to develop the FIRM, give location, value used in the effective FIS, and revised values and an explanation as to how the revised values were determined.

Location	FIS	Revised
NA		

Explain:

4. Describe how the cross section geometry data were determined (*e.g., field survey, topographic map, taken from previous study*) and list cross sections that were added.

Data points for cross sections are based on the photogrammetric models for the topographic maps

5. Explain how reach lengths for channel and overbanks were determined:

All reach lengths were measured from floodplain work maps.

5. RESULTS (*from model used to revise 100-year water surface elevations*)

1. Do the results indicate:

a. Water surface elevations higher than end points of cross sections? ..... ☐ Yes ☒ No

b. Supercritical depth? ..... ☐ Yes ☒ No

c. Critical depth? ..... ☒ Yes ☐ No

d. Other unique situations ..... ☐ Yes ☒ No

(If yes, Special Problem Report attached)

If yes to any of the above, attach an explanation that discusses the situation and how it is presented on the profiles, tables, and maps.

2. What is the maximum change in energy gradient between cross-sections? 20.63

Specify location 0.606

3. What is the distance between the cross-sections in 2 above? 510

Specify location 0.606

4. What is the maximum distance between cross-sections? 640

Specify location ..... ~~0.237~~, 0.510

5. Floodway determination

a. What is the maximum surcharge allowed by the community or State? ..... / foot

b. What is the maximum surcharge for the revised conditions? ..... NA foot

Specify location ..... ZONE A

c. What is the maximum velocity? ..... fps

Specify location .....

Explain:

d. Are there any negeative surcharge values at any cross-section NA ☐ Yes ☐ No

If yes, the floodway may need to widen. If it is not widened, please explain and indicate the maximum negative surcharge.

6. Is the discharge value used to determine the floodway anywhere different from that used to determine the natural 100-year flood elevations? ..... ☐ Yes ☒ No

If Yes, explain:

7. Do 100-year water surface elevations increase at any location? ..... ☐ Yes ☒ No

If yes, please attach a list of the locations where the increases occur, state whether or not the increases are located on the requestor's property, and provide an explanation of the reason for the increases.

NA- New Model

Please attach a completed comparison table entitled: Water Surface Elevation Check (See page 6)

6. REVISED FIRM/FBFM AND FLOOD PROFILES

A. The revised water surface elevations tie into those computed by the effective FIS Model *(10-, 50-, 100-, and 500-year)*, downstream of the project at cross-section NA within _____ feet and upstream of the project at cross section _____ within _____ feet.

B. The revised floodway elevations tie into those computed by the effective FIS model, dowstream of the project at cross section NA within _____ feet and upstream of the project at cross section _____ within NA feet.

C. Attach profiles, at the same vertical and horizontal scale as the profiles in the effective FIS report, showing stream bed and profiles of all floods studied (without encroachment). Also, label all cross sections, road crossings (including low chord and top-of-road data), culverts, tributaries, corporate limits, and study limits. If channel distance has changed, the stationing should be revised for all profile sheets.

D. Attach a Floodway Data Table showing data for each cross section listed in the published Floodway Data Table in the FIS report.

Proceed to Riverine /Coastal Mapping Form

FEDERAL EMERGENCY MANAGMENT AGENCY
WATER SURFACE ELEVATION CHECK

COMMUNITY NAME: Unincorporated Maricopa County/ Town of Wickenburg

FLOODIND SOURCE:

PROJECT NAME /IDENTIFIER: Wickenburg ADMS FCD 89-79

	Proposed ~~EFFECTIVE~~			DUPLICATE EFFECTIVE			CORRECTED EFFECTIVE			EXISTING/PRE-PROJECT			REVISED/PROJECT		
SECNO	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]	NCWSEL[1]	FCWSEL[2]	SURC.[3]
.105	2024.57														
.122	2031.83														
.139	2036.86														
.163	2037.95														
.277	2044.55														
.389	2059.74														
.510	2077.09														
.606	2097.10														
.699	2110.65														
.796	2130.44														
.909	2151.39														

COMMENTS: New Model - ~~See following Floodway Data Table~~
ZONE A PROPOSED ~~EFFECTIVE~~ MODEL

1-100-year (natural) Water Surface Elevation 2-Encroachment (floodway) Water Surface Elevation 3-Surcharge Value

Include all cross sections in the models between tie-in points. Any interpolated values should be indicated in parentheses.

Sheet 1 of 1

EXPLANATORY NOTES FOR
FORM 4 SECTION 5 PARAGRAPH 1.C

This watercourse islocated in a mountainous area. It is common for this watercourse to flow in subcritical, supercritical, and transitional flow regimes. The subcritical profile has been used to delineate the 100 year floodplain and prepare maps, tables, etc.

FEDERAL EMERGENCY MANAGEMENT AGENCY RIVERINE/COASTAL MAPPING FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: WASH AF: UNNAMED HASSAYAMPA RIVER TRIBUTARY (#9)

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. MAPPING CHANGES

1. A topographic work map of suitable scale, contour interval, and planimetric definition must be submitted showing *(Indicate N/A when not applicable)*:

		Included		
A.	Revised approximate 100-year floodplain boundaries (Zone A)	☒ Yes	☐ No	☐ N/A
B.	Revised detailed 100- and 500-year floodplain boundaries	☐ Yes	☒ No	☐ N/A
C.	Revised 100-year floodway boundaries	☐ Yes	☒ No	☐ N/A
D.	Location and alignment of all cross sections used in the revised hydraulic model with stationing control indicated	☒ Yes	☐ No	☐ N/A
E.	Stream alignments, road and dam alignments	☒ Yes	☐ No	☐ N/A
F.	Current community boundaries	☒ Yes	☐ No	☐ N/A
G.	Effective 100- and 500-year floodplain and 100-year floodway boundaries from the FIRM/FBFM reduced or enlarged to the scale of the topographic work map	☐ Yes	☐ No	☒ N/A
H.	Tie-ins between the effective and revised 100- and 500-year floodplains and 100-year floodway boundaries	☐ Yes	☐ No	☒ N/A
I.	The requestor's property boundaries and community easements	☐ Yes	☐ No	☒ N/A
J.	The signed certification of a registered professional engineer	☒ Yes	☐ No	☐ N/A
K.	Location and description of reference marks	☒ Yes	☐ No	☐ N/A
L.	Vertical datum (example: NGVD, NAVD etc.)	☒ Yes	☐ No	☐ N/A
M.	Coastal zone designations tie into adjacent areas not being revised	☐ Yes	☐ No	☒ N/A
N.	Location and alignment of all coastal transects used to revise the coastal analyses	☐ Yes	☐ No	☒ N/A

If any of the items above are marked no or N/A, please explain: No ~~[illegible]~~, 500-year, or coastal zones revised or delineated. Revised 100-year floodplains tie into effective Hassayampa River floodplain. Zone A only.

2. What is the source and date of the updated topographic information *(example: orthophoto maps, July 1985; field survey, May 1979, beach profiles, June 1987, etc.)*? Photo: Jan. 1991 (E), Oct 1990 (W); Maps 1992

3. What is the scale and contour interval of the following workmaps?
   a. Effective FIS unknown scale unknown Contour interval
   b. Revision Request 1" = 200' scale 4 FT Contour interval

NOTE: Revised topographic information must be of equal or greater detail.

4. Attach an annotated FIRM and FBFM at the scale of the effective FIRM and FBFM showing the revised 100-year and 500-year floodplains and the 100-year floodway boundaries and how they tie into those shown on the effective FIRM and FBFM downstream and upstream of the revision or adjacent to the area of revision for coastal studies.

Attach additional pages if needed.

5. Flood Boundaries and 100-year water surface elevations:

Has the 100-year floodplain been shifted or increased or the 100-year water surface elevation increased at any location on property other than the requestor's or community's? ☐ Yes ☒ No

If yes, please give the location of shift or increase and an explanation for the increase.

~~Revised detailed 100-year floodplain replaces effective~~ New zone A floodplain.

a. Have the affected property owners been notified of this shift or increase and the effect it will have on their property? ..... ☐ Yes ☒ No

If yes, please attach letters from these property owners stating they have no objections to the revised flood boundaries if a LOMR is being requested.

b. What is the number of insurable structures that will be impacted by this shift or increase? _____

6. Have the floodway boundaries shifted or increased at any location compared to those shown on the effective FBFM or FIRM? ..... ☐ Yes ☒ No

If yes, explain:

7. If a V-zone has been designated, has it been delineated to extend landward to the heel of the primary frontal dune? ☐ Yes ☒ No

If no, explain:

NA

8. Manual or digital map submission:

☒ Manual

☐ Digital

Digital map submissions may be used to update digital FIRMs (DFIRMs). For updating DFIRMs, these submissions must be coordinated with FEMA Headquarters as far in advance of submission as possible.

2. EARTH FILL PLACEMENT

1. The fill is: ☐ Existing ☐ Proposed ☒ N/A

2. Has fill been/will be placed in the regulatory floodway? ..... ☐ Yes ☒ No
   If yes, please attach completed Riverine Hydraulic Analysis Form.

3. Has fill been/will be placed in floodway fringe *(area between the floodway and 100-year floodplain boundaries)*? ..... ☐ Yes ☒ No

   If yes, then complete A, B, C, and D below.

   A. Are fill slopes for granular materials steeper than one vertical on one-and-one-half horizontal? ..... ☐ Yes ☐ No

      If yes, justify steeper slopes_____

   B. Is adequate erosion protection provided for fill slopes exposed to moving flood waters? *(Slopes exposed to flows with velocities of up to 5 feet per second (fps) during the 100-year flood must, at a minimum, be protected by a cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the 100-year flood must, at a minimum, be protected by stone or rock riprap.)* ..... ☐ Yes ☐ No

      If no, describe erosion protection provided_____

   C. Has all fill placed in revised 100-year floodplain been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test Method or acceptable equivalent method? ☐ Yes ☐ No

   D. Can structures conceivably be constructed on the fill at any time in the future? ☐ Yes ☐ No

   If yes, provide certification of fill compaction (item C. above) by the community's NFIP permit official, a registered professional engineer, or an accredited soils engineer.

4. Has fill been/will be placed in a V-zone? ☐ Yes ☒ No

   If yes, is the fill protected from erosion by a flood control structure such as a revetment or seawall? ☐ Yes ☐ No

   If yes, attach the coastal structures form.

Culvert

FEDERAL EMERGENCY MANAGEMENT AGENCY BRIDGE/CULVERT FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: WASH AF: UNNAMED HASSAYAMPA RIVER TRIBUTARY (#9)

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. IDENTIFIER

1. Name of roadway, railroad, etc.: _____
2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): Station .122 to Station .139
3. This revision reflects *(check one of the following)*:
   - ☒ New bridge/culvert not modeled in the FIS
   - ☐ Modified bridge/culvert previously modeled in the FIS
   - ☐ New analysis of bridge/culvert previously modeled in the FIS

   (Explain why new analysis was performed) _____

2. BACKGROUND

Provide the following information about the structure:

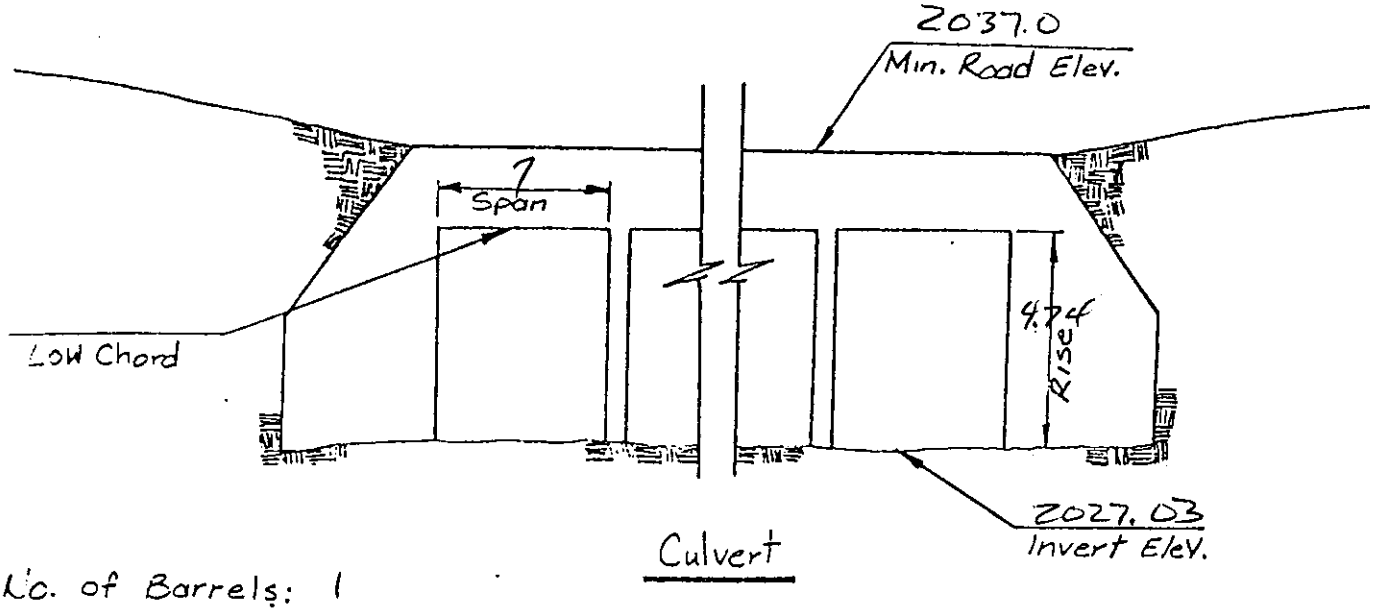
1. Dimension, material, and shape (e.g. two 10 x 5 feet reinforced concrete box culvert; three 30-foot span bridge with 2 rows of two 3- foot diameter circular piers; 40-foot wide ogee shape spillway) Single 7x5.75 ft reinforced concrete box culvert w/sediment
2. Entrance geometry of culvert/type of bridge opening (e.g. 30° - 75° wing walls with square top edge, sloping embankments and vertical abutments) 30°-75° wing walls with no bevel on top edge
3. Hydraulic model used to analyze the structure (*e.g., HEC-2 with special bridge routine, WSPRO, HY8*) HEC-2 with special culvert routine

   If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structure(s). *(Attach justification)*

Note: If any items do not apply to submitted hydraulic analysis, indicate by N/A

* One form per new/revised bridge/culvert

Sketch the downstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, minimum top of road elevation, and ineffective flow widths.

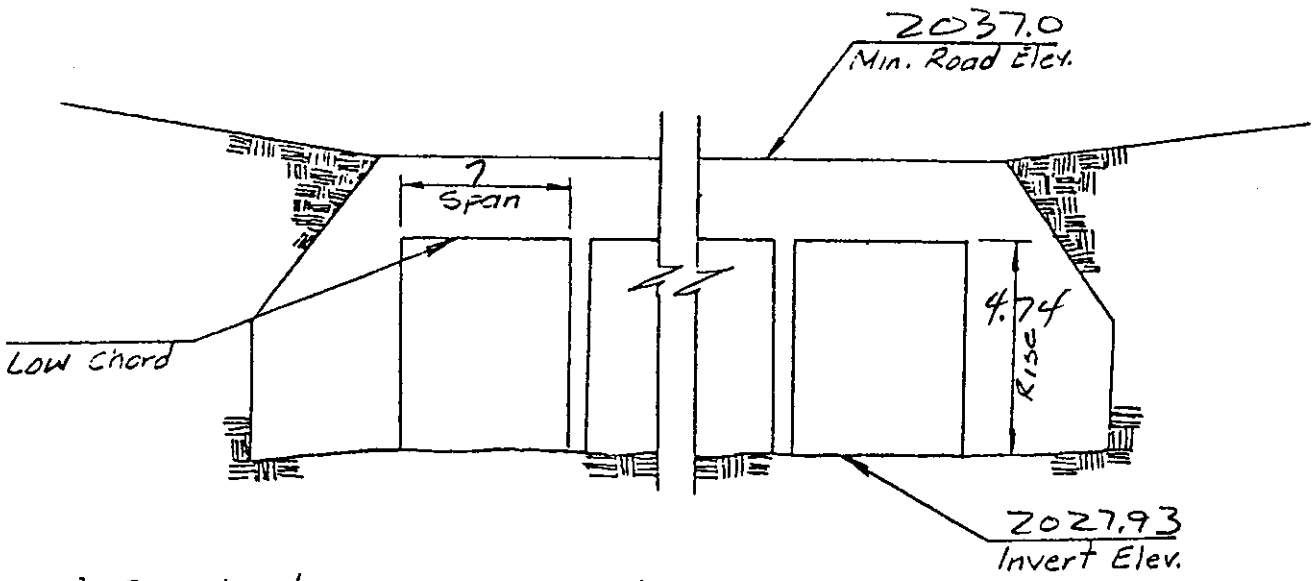


No. of Barrels: 1

Culvert Size: 7x5.75

Approx. Depth of Sediment in Culvert: 1ft See Cross Section # 0.122

Sketch the upstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, and minimum top of road elevation.

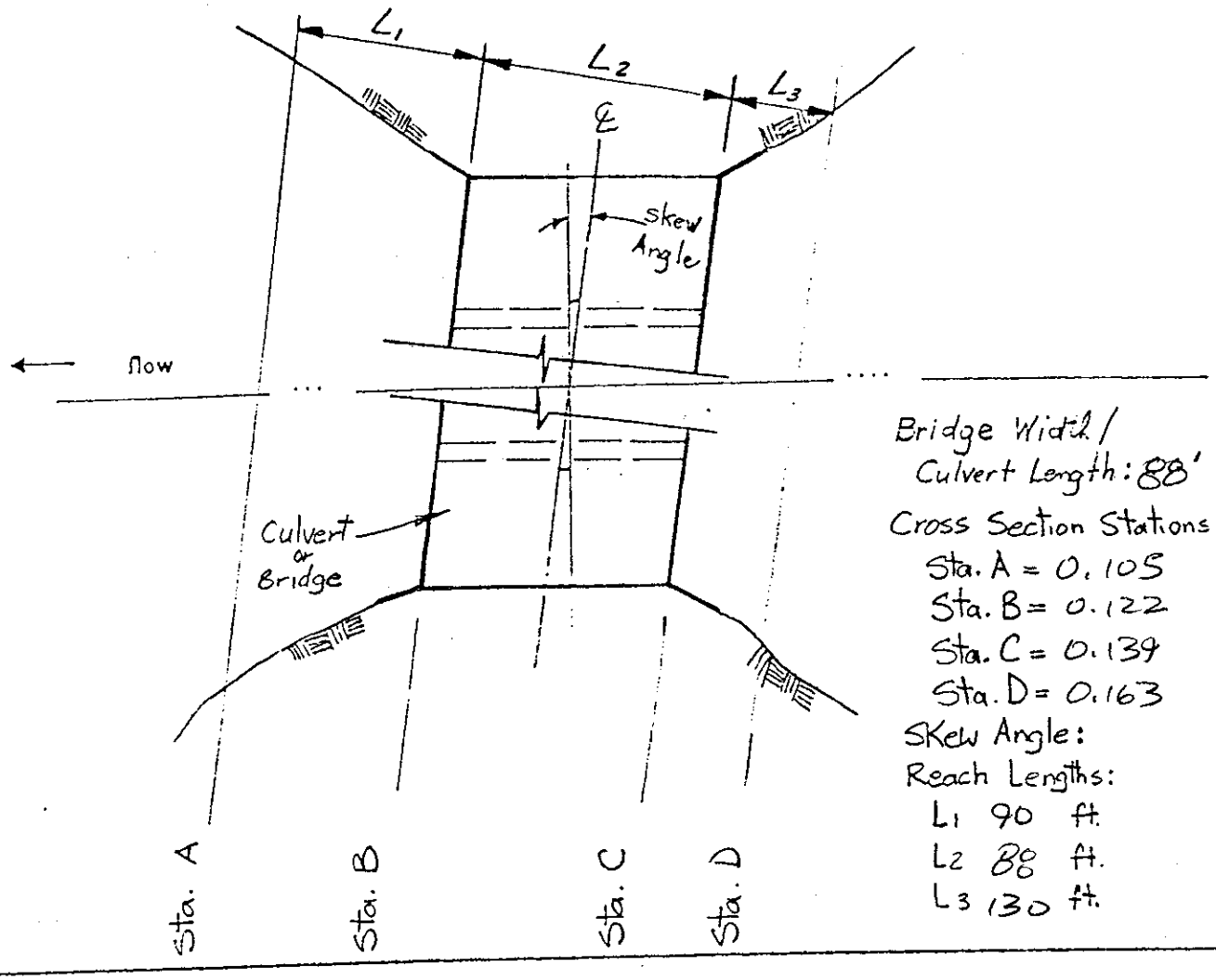


No. of Barrels: 1

Culvert Size: 7x5.75

Approx. Depth of Sediment in Culvert: 1ft See Cross Section # 0.139

Sketch the plan view of the structure(s) Show, at a minimum, the skew angle, cross-section locations, distances between cross sections, and length of structure (s).



Bridge Width / Culvert Length: 88'

Cross Section Stations

Sta. A = 0.105

Sta. B = 0.122

Sta. C = 0.139

Sta. D = 0.163

Skew Angle:

Reach Lengths:

L1 90 ft.

L2 88 ft.

L3 130 ft.

Attach plans of the structure (s) certified by a registered Professional Engineer.

Culvert length or bridge width (ft)	88
Calculated culvert/bridge area (ft²) by the hydraulic model, if applicable	33.2
Total culvert/bridge area (ft²)	33.8

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face	2037.0	2038.60
Downstream face	2037.00	2038.60

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	2037.0	2038.6
Downstream face	2037.0	2038.6

100-Year Elevations	Water Surface Elevations	Energy Gradient Elevations
Upstream face	2036.86	2037.56
Downstream face	2031.83	2034.26

Discharge	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)		408	12	420

The maximum depth of flow over the roadway/railroad (ft.) 0.56

Weir length (ft.) 29

Top Widths

	Floodplain	Floodway
Upstream face	29	29
Downstream face	7	7

Top Widths

	Effective Flow	Effective and Ineffective Flow
Upstream face	29	29
Downstream face	7	7

Loss Coefficients

Entrance loss coefficient	0.40
Manning's "n" value assigned to the structure(s)	0.016
Friction loss coefficient through structure (s)	—
Other loss coefficients (e.g., bend manhole, etc.)	—
Total loss coefficient	—
Weir coefficient	2.8
Pier coefficient	—
Contraction loss coefficient	0.6
Expansion loss coefficient	0.8

4. SEDIMENT TRANSPORT CONSIDERATIONS

1. A. Is there any indication from historical records that sediment transport (*including scour and deposition*) can affect the 100-year-water surface elevations? ..... ☐ Yes ☐ No

B Based on the conditions (*such as geomorphology, vegetative cover and development of the watershed and stream bed, and bank conditions*), is there a potential for debris and sediment transport (*including scour and deposition*) to affect the 100-year water surface elevations and/or conveyance capacity through the bridge/culvert? ..... ☐ Yes ☐ No

.. If the answer to either 1A or 1B is yes:

A. What is the estimated sediment (*bed material*) load?
_____cfs (*attach gradation curve*)

Explain method used to estimate the sediment transport and the depth of scour and/or deposition NA - Sediment transport not considered in analysis.

B. Will sediment accumulate anywhere through the bridge/culvert? ☐ Yes ☐ No

If yes, explain the impact on the conveyance capacity through the bridge/culvert? _____

5. FLOODWAY ANALYSIS

Explain method of bridge encroachment (floodway run) NA

Comments *(explain any unusual situations)*:

Attach analysis.

```
*****************************************
*  HEC-2 WATER SURFACE PROFILES         *
*                                       *
*  Version   4.6.2;  May 1991           *
*                                       *
*  RUN DATE    24JUN92   TIME   15:28:07 *
*****************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

THIS RUN EXECUTED 24JUN92 15:28:07

```
************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


T1      WICKENBURG ADMS - CONTRACT FCD 89-79
T2      B&V PN 17676   CVL JN 1197-02
T3      WASH AF: UNNAMED WASH #9      (FILE WASHAF.DAT)

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         0         0         0         0         0   2024.57         0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1                   -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150

    0.070     0.070     0.040       0.1       0.3
QT      1       420
ET              9.1                                                                   974.0     1026.0
            CONFLUENCE OF WASH AF:  UNNAMED WASH #9
            AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                 UQ (HASSAYAMPA RIVER MILE 50.75)
                 US (HASSAYAMPA RIVER MILE 50.94)
            CROSS-SECTION DESIGNATION FROM:
                 HASSAYAMPA RIVER FLOODWAY FLOOD INSURANCE
                 STUDY, MARICOPA COUNTY, ARIZONA AND
                 UNINCORPORATED AREAS.  FEDERAL EMERGENCY
                 MANAGEMENT AGENCY, EFFECTIVE DATE
                 SEPTEMBER 4, 1991, PERFORMED BY CELLA BARR
                 ASSOCIATES UNDER CONTRACT NO. EMW-88-C-2603.

            SWSE DETERMINED BY SLOPE AREA METHOD

            NOTE:  ENCROACHMENTS SET AT STATIONS 974 AND 1026
                   BASED ON A 4 TO 1 EXPANSION OF FLOW FROM
                   DOWNSTREAM FACE OF RCB CULVERT

            NOTE:  ADDED STATION 995 AND 1005
                   TO DEFINE 10' WIDE CHANNEL

    0.105        14       995      1005         0         0         0
   2035.8       837    2027.8       869    2025.4       891    2023.0       930    2022.9       940
GR 2022.9       975    2022.6       995    2022.5      1000    2022.9      1005    2023.5      1012
GR 2024.9      1033    2034.8      1061    2036.2      1068    2041.0      1083
```

```
     0.050     0.050     0.016       0.6       0.8
               DOWNSTREAM FACE OF 1 - 7' X 5.75' RCB  (~0.60' OF SEDIMENT)
               NOTE:  ROAD CENTERLINE SECTION WAS USED
                      TO CREATE THE DS FACE SECTION
X1   0.122        12     996.5    1003.5        85        90        90
X3      10                                                          2037.0    2038.6
GR  2037.0     914.0    2038.6    996.49   2027.03     996.5   2027.03    1000.0   2027.03    1003.5
GR  2038.6   1003.51    2039.7    1057.0    2041.7    1117.0    2043.2    1180.0    2045.0    1295.0
GR  2048.7    1353.0    2049.6    1414.0

SC   1.016      0.40       2.8         0      4.74         7        88       8.1   2027.93   2027.03
               UPSTREAM FACE OF 1 - 7' x 5.75' RCB  (~1.01' OF SEDIMENT)
               NOTE:  ROAD CENTERLINE SECTION WAS USED
                      TO CREATE THE US FACE SECTION
X1   0.139        12     996.5    1003.5        88        88        88
X2                          2   2032.67    2037.0
X3      10                                                          2037.0    2038.6
BT     -12     914.0    2037.0              996.49    2038.6             996.5    2038.6
BT            1000.0    2038.6              1003.5    2038.6           1003.51    2038.6
BT            1057.0    2039.7              1117.0    2041.7            1180.0    2043.2
BT            1295.0    2045.0              1353.0    2048.7            1414.0    2049.6
GR  2037.0     914.0    2038.6    996.49   2027.93     996.5   2027.93    1000.0   2027.93    1003.5
GR  2038.6   1003.51    2039.7    1057.0    2041.7    1117.0    2043.2    1180.0    2045.0    1295.0
GR  2048.7    1353.0    2049.6    1414.0

     0.070     0.070     0.040       0.6       0.8
               NOTE:  ADDED STATION 995 AND 1005
                      TO DEFINE 10' WIDE CHANNEL
X1   0.163        15       995      1005       130       130       130
GR  2044.8      959.   2036.8      964.    2036.2      979.    2030.7      987.    2030.3       995
GR  2030.1      1000.  2030.2      1005    2030.3     1017.    2033.7     1023.    2041.0     1039.
GR  2042.8      1056.  2042.8      1072.   2042.8     1075.    2043.0     1110.    2044.6     1142.

NC   0.070     0.070     0.040       0.1       0.3
               STATION 912 IS TOP OF EARTHEN BERM

               NOTE:  ADDED STATION 995 AND 1005
                      TO DEFINE 10' WIDE CHANNEL
X1   0.277        20       995      1005       510       600       600
X3      10
GR  2056.1       766   2050.8       772    2041.8       814    2041.5       829    2041.2       859
GR  2042.3       884   2042.6       912    2042.6       924    2042.1       944    2041.3       974
GR  2040.7       988   2040.5       995    2040.4      1000    2040.4      1005    2040.6      1033
GR  2040.6      1072   2043.7      1114    2044.3      1145    2045.6      1195    2056.3      1225

               NOTE:  ADDED STATION 995 AND 1005
                      TO DEFINE 10' WIDE CHANNEL
X1   0.389        13       995      1005       540       550       590
GR  2072.2       908   2065.0       919    2059.0       995    2058.6      1000    2058.6      1005
GR  2059.2      1078   2059.0      1107    2059.0      1121    2059.0      1130    2059.8      1178
GR  2059.2      1207   2060.6      1224    2072.4      1254
```

```
                NOTE:  ADDED SATAION 996 & 1001
                       TO DEFINE 5' WIDE CHANNEL
X1    0.510        8       996      1001       640       640       640
GR   2088.4     946.    2082.1       963.    2075.5      983.    2073.6       996    2073.0      1000
GR   2073.6     1001    2077.2      1007    2088.3     1025.

                APPROXIMATELY 4' WIDE CHANNEL
X1    0.606        6       998      1002       510       510       510
GR   2104.6      984    2091.9       998    2091.9      1000    2091.9      1002    2102.1      1019
GR   2104.6     1025

                NOTE:  ADDED STATION 997.5 & 1002.5
                       TO DEFINE 5' WIDE CHANNEL
X1    0.699       10     997.5    1002.5       490       490       490
GR   2125.2     951.    2120.7      966.    2109.3      986.    2107.7     997.5    2107.3     1000.
GR   2107.5   1002.5    2107.7     1006.    2112.4     1020.    2122.0     1033.    2124.4     1048.

                NOTE:  ADDED STATION 999.8 & 1004.8
                       TO DEFINE 5' WIDE CHANNEL
X1    0.796        6     999.8    1004.8       510       510       510
GR   2140.6     990.    2126.6     999.8    2126.3      1000    2126.5    1004.8    2126.6      1008
GR   2143.0     1047

                NOTE:  ADDED STATION 999.3 & 1004.3
                       TO DEFINE 5' WIDE CHANNEL
      0.909        7     999.3    1004.3       600       600       600
     2164.3      976    2148.2     999.3    2147.7      1000    2148.0    1004.3    2148.5      1011
GR   2151.3     1026    2164.7      1068
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV= .100 CEHV= .300
*SECNO .105

3470 ENCROACHMENT STATIONS= 974.0 1026.0 TYPE= 1 TARGET= 52.000
CONFLUENCE OF WASH AF: UNNAMED WASH #9
AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
UQ (HASSAYAMPA RIVER MILE 50.75)
US (HASSAYAMPA RIVER MILE 50.94)
CROSS-SECTION DESIGNATION FROM:
HASSAYAMPA RIVER FLOODWAY FLOOD INSURANCE
STUDY, MARICOPA COUNTY, ARIZONA AND
UNINCORPORATED AREAS. FEDERAL EMERGENCY
MANAGEMENT AGENCY, EFFECTIVE DATE
SEPTEMBER 4, 1991, PERFORMED BY CELLA BARR
ASSOCIATES UNDER CONTRACT NO. EMW-88-C-2603.

SWSE DETERMINED BY SLOPE AREA METHOD

NOTE: ENCROACHMENTS SET AT STATIONS 974 AND 1026
BASED ON A 4 TO 1 EXPANSION OF FLOW FROM
DOWNSTREAM FACE OF RCB CULVERT

NOTE: ADDED STATION 995 AND 1005
TO DEFINE 10' WIDE CHANNEL

.105	2.07	2024.57	2024.57	.00	2025.29	.72	.00	.00	2022.60
420.0	184.6	176.3	59.2	38.1	19.4	18.0	.0	.0	2022.90
.00	4.85	9.06	3.28	.070	.040	.070	.000	2022.50	974.00
.024565	0.	0.	0.	0	4	0	.00	52.00	1026.00

FLOW DISTRIBUTION FOR SECNO= .10 CWSEL= 2024.57

STA=	974.	975.	995.	1005.	1012.	1026.
PER Q=	1.0	43.0	42.0	9.3	4.7	
AREA=	1.7	36.4	19.4	9.6	8.4	
VEL=	2.4	5.0	9.1	4.1	2.4	
DEPTH=	1.7	1.8	1.9	1.4	.6	

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .600 CEHV= .800
*SECNO .122

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2037.00 ELREA= 2038.60

DOWNSTREAM FACE OF 1 - 7' X 5.75' RCB (~0.60' OF SEDIMENT)
NOTE: ROAD CENTERLINE SECTION WAS USED
TO CREATE THE DS FACE SECTION

.122	4.80	2031.83	2031.83	.00	2034.26	2.43	.47	1.37	2027.03
420.0	.0	420.0	.0	.0	33.6	.0	.1	.1	2027.03
.00	.00	12.50	.00	.000	.016	.000	.000	2027.03	996.50
.002236	85.	90.	90.	0	17	0	.00	7.00	1003.50

FLOW DISTRIBUTION FOR SECNO= .12 CWSEL= 2031.83

997. 1004.
PER Q= 100.0
AREA= 33.6
VEL= 12.5
DEPTH= 4.8

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	1	.016	.40	2.80	.00	4.74	7.00	88.00	8	1	2027.93	2027.03

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO .139

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG = 2037.56

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.81

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2037.91	2036.34	3.30	12.	408.	6.721	33.2	2037.00	29.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2037.00 ELREA= 2038.60

UPSTREAM FACE OF 1 - 7' x 5.75' RCB (~1.01' OF SEDIMENT)
NOTE: ROAD CENTERLINE SECTION WAS USED
TO CREATE THE US FACE SECTION

.139	8.93	2036.86	.00	.00	2037.56	.70	3.30	.00	2027.93
420.0	.0	420.0	.0	.0	62.5	.0	.2	.1	2027.93
.01	.00	6.72	.00	.000	.016	.000	.000	2027.93	996.50
.000283	88.	88.	88.	2	0	0	.00	7.00	1003.50

FLOW DISTRIBUTION FOR SECNO= .14 CWSEL= 2036.86

997. 1004.
ER Q= 100.0
AREA= 62.5
VEL= 6.7
DEPTH= 8.9

CCHV= .600 CEHV= .800
*SECNO .163

3301 HV CHANGED MORE THAN HVINS

NOTE: ADDED STATION 995 AND 1005
TO DEFINE 10' WIDE CHANNEL

.163	7.85	2037.95	2032.27	.00	2037.99	.04	.03	.40	2030.30
420.0	104.5	163.2	152.3	118.0	77.8	148.1	.8	.2	2030.20
.03	.89	2.10	1.03	.070	.040	.070	.000	2030.10	963.28
.000207	130.	130.	130.	2	14	0	.00	69.05	1032.33

FLOW DISTRIBUTION FOR SECNO= .16 CWSEL= 2037.95

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

STA=	963.	964.	979.	987.	995.	1005.	1017.	1023.	1032.
PER Q=	.0	2.0	6.3	16.5	38.9	26.2	7.8	2.2	
AREA=	.4	21.8	36.1	59.7	77.8	92.5	35.7	19.9	
VEL=	.1	.4	.7	1.2	2.1	1.2	.9	.5	
DEPTH=	.6	1.5	4.5	7.5	7.8	7.7	6.0	2.1	

CCHV= .100 CEHV= .300
*SECNO .277

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
STATION 912 IS TOP OF EARTHEN BERM

NOTE: ADDED STATION 995 AND 1005
TO DEFINE 10' WIDE CHANNEL

.277	1.15	2041.55	2041.55	.00	2041.89	.34	.42	.09	2040.50
420.0	57.0	84.8	278.2	22.8	11.2	72.4	3.8	1.7	2040.40
.07	2.50	7.55	3.84	.070	.040	.070	.000	2040.40	826.60
5405	510.	600.	600.	0	17	0	.00	160.45	1084.84

FLOW DISTRIBUTION FOR SECNO= .28 CWSEL= 2041.55

STA=	827.	859.	867.	974.	988.	995.	1005.	1033.	1072.	1085.
PER Q=	1.9	.4	.3	4.9	6.1	20.2	28.8	33.9	3.5	
AREA=	6.0	1.4	1.2	7.7	6.6	11.2	29.3	37.0	6.1	
VEL=	1.3	1.2	1.0	2.7	3.9	7.6	4.1	3.9	2.4	
DEPTH=	.2	.2	.0	.5	.9	1.1	1.0	.9	.5	

*SECNO .389

3265 DIVIDED FLOW

NOTE: ADDED STATION 995 AND 1005
TO DEFINE 10' WIDE CHANNEL

.389	1.14	2059.74	2059.67	.00	2059.96	.21	18.05	.01	2059.00
420.0	6.5	68.3	345.2	3.5	10.4	121.9	5.3	4.1	2058.60
.11	1.88	6.57	2.83	.070	.040	.070	.000	2058.60	985.64
.029823	540.	590.	550.	5	11	0	.00	221.26	1213.54

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .39 CWSEL= 2059.74

STA=	986.	995.	1005.	1078.	1107.	1121.	1130.	1174.	1207.	1214.
PER Q=	1.6	16.3	47.5	12.0	7.4	4.7	7.4	2.6	.6	
AREA=	3.5	10.4	61.2	18.5	10.3	6.6	16.4	7.0	1.8	
VEL=	1.9	6.6	3.3	2.7	3.0	3.0	1.9	1.5	1.5	
DEPTH=	.4	1.0	.8	.6	.7	.7	.4	.2	.3	

*SECNO .510

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
NOTE: ADDED SATAION 996 & 1001
TO DEFINE 5' WIDE CHANNEL

.510	4.09	2077.09	2077.09	.00	2078.22	1.13	13.70	.27	2073.60
420.0	173.0	211.3	35.8	36.9	19.0	10.2	6.8	5.9	2073.60
.14	4.69	11.15	3.52	.070	.040	.070	.000	2073.00	978.18
.016100	640.	640.	640.	0	23	0	.00	28.64	1006.82

FLOW DISTRIBUTION FOR SECNO= .51 CWSEL= 2077.09

STA=	978.	983.	996.	1001.	1007.
PER Q=	2.0	39.1	50.3	8.5	
AREA=	3.8	33.0	19.0	10.2	
VEL=	2.2	5.0	11.1	3.5	
DEPTH=	.8	2.5	3.8	1.7	

*SECNO .606

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
APPROXIMATELY 4' WIDE CHANNEL

.606	5.20	2097.10	2097.10	.00	2098.85	1.75	7.48	.19	2091.90
420.0	56.7	268.7	94.6	14.9	20.8	22.5	7.5	6.2	2091.90
.15	3.81	12.91	4.20	.070	.040	.070	.000	2091.90	992.27
.013408	510.	510.	510.	0	11	0	.00	18.40	1010.67

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .61 CWSEL= 2097.10

STA=	992.	998.	1002.	1011.
PER Q=	13.5	64.0	22.5	
AREA=	14.9	20.8	22.5	
VEL=	3.8	12.9	4.2	
DEPTH=	2.6	5.2	2.6	

*SECNO .699

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
NOTE: ADDED STATION 997.5 & 1002.5
TO DEFINE 5' WIDE CHANNEL

.699	3.35	2110.65	2110.65	.00	2111.70	1.05	7.89	.07	2107.70
420.0	125.1	180.0	114.9	26.3	16.0	23.6	8.2	6.5	2107.50
.17	4.75	11.26	4.87	.070	.040	.070	.000	2107.30	983.63
.019682	490.	490.	490.	0	14	0	.00	31.15	1014.78

FLOW DISTRIBUTION FOR SECNO= .70 CWSEL= 2110.65

STA=	984.	986.	998.	1003.	1006.	1015.
PER Q=	.8	29.0	42.9	15.9	11.5	
AREA=	1.6	24.7	16.0	10.7	12.9	
VEL=	2.1	4.9	11.3	6.3	3.7	
DEPTH=	.7	2.1	3.2	3.0	1.5	

*SECNO .796
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
NOTE: ADDED STATION 999.8 & 1004.8
TO DEFINE 5' WIDE CHANNEL

.796	4.14	2130.44	2130.44	.00	2131.96	1.52	9.43	.14	2126.60
420.0	15.5	246.1	158.5	5.2	20.2	30.0	8.9	6.8	2126.50
.18	2.99	12.18	5.28	.070	.040	.070	.000	2126.30	997.11
.017418	510.	510.	510.	0	11	0	.00	20.03	1017.14

ECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= .80 CWSEL= 2130.44

STA=	997.	1000.	1005.	1008.	1017.
PER Q=	3.7	58.6	20.6	17.2	
AREA=	5.2	20.2	12.5	17.6	
VEL=	3.0	12.2	6.9	4.1	
DEPTH=	1.9	4.0	3.9	1.9	

*SECNO .909
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
NOTE: ADDED STATION 999.3 & 1004.3
TO DEFINE 5' WIDE CHANNEL

.909	3.69	2151.39	2151.39	.00	2152.41	1.02	10.27	.05	2148.20
420.0	24.3	192.4	203.3	7.4	17.6	43.4	9.8	7.1	2148.00
.21	3.30	10.91	4.68	.070	.040	.070	.000	2147.70	994.68
.016822	600.	600.	600.	0	11	0	.00	31.60	1026.28

FLOW DISTRIBUTION FOR SECNO= .91 CWSEL= 2151.39

STA=	995.	999.	1004.	1011.	1026.
PER Q=	5.8	45.8	29.5	18.9	
AREA=	7.4	17.6	21.0	22.3	
VEL=	3.3	10.9	5.9	3.6	
DEPTH=	1.6	3.5	3.1	1.5	

THIS RUN EXECUTED 24JUN92 15:28:15

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

WASH AF: UNNAMED WASH #9

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	.105	.00	.00	.00	2022.50	420.00	2024.57	2024.57	2025.29	245.65	9.06	75.55	26.80
*	.122	90.00	.00	.00	2027.03	420.00	2031.83	2031.83	2034.26	22.36	12.50	33.60	88.82
*	.139	88.00	2037.00	2032.67	2027.93	420.00	2036.86	.00	2037.56	2.83	6.72	62.49	249.79
	.163	130.00	.00	.00	2030.10	420.00	2037.95	2032.27	2037.99	2.07	2.10	343.86	292.00
*	.277	600.00	.00	.00	2040.40	420.00	2041.55	2041.55	2041.89	354.05	7.55	106.47	22.32
	.389	590.00	.00	.00	2058.60	420.00	2059.74	2059.67	2059.96	298.23	6.57	135.74	24.32
*	.510	640.00	.00	.00	2073.00	420.00	2077.09	2077.09	2078.22	161.00	11.15	65.95	33.10
*	.606	510.00	.00	.00	2091.90	420.00	2097.10	2097.10	2098.85	134.08	12.91	58.26	36.27
*	.699	490.00	.00	.00	2107.30	420.00	2110.65	2110.65	2111.70	196.82	11.26	65.91	29.94
*	.796	510.00	.00	.00	2126.30	420.00	2130.44	2130.44	2131.96	174.18	12.18	55.41	31.82
*	.909	600.00	.00	.00	2147.70	420.00	2151.39	2151.39	2152.41	168.22	10.91	68.38	32.38

AF: UNNAMED WASH #9

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	.105	420.00	2024.57	.00	.00	.00	52.00	.00
*	.122	420.00	2031.83	.00	7.26	.00	7.00	90.00
*	.139	420.00	2036.86	.00	5.03	.00	7.00	88.00
	.163	420.00	2037.95	.00	1.10	.00	69.05	130.00
*	.277	420.00	2041.55	.00	3.59	.00	160.45	600.00
	.389	420.00	2059.74	.00	18.20	.00	221.26	590.00
*	.510	420.00	2077.09	.00	17.35	.00	28.64	640.00
*	.606	420.00	2097.10	.00	20.01	.00	18.40	510.00
*	.699	420.00	2110.65	.00	13.55	.00	31.15	490.00
*	.796	420.00	2130.44	.00	19.80	.00	20.03	510.00
	.909	420.00	2151.39	.00	20.95	.00	31.60	600.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=      .122  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .122  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      .139  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      .277  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .277  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .510  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .510  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .606  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .606  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .699  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .699  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .796  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .796  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      .909  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .909  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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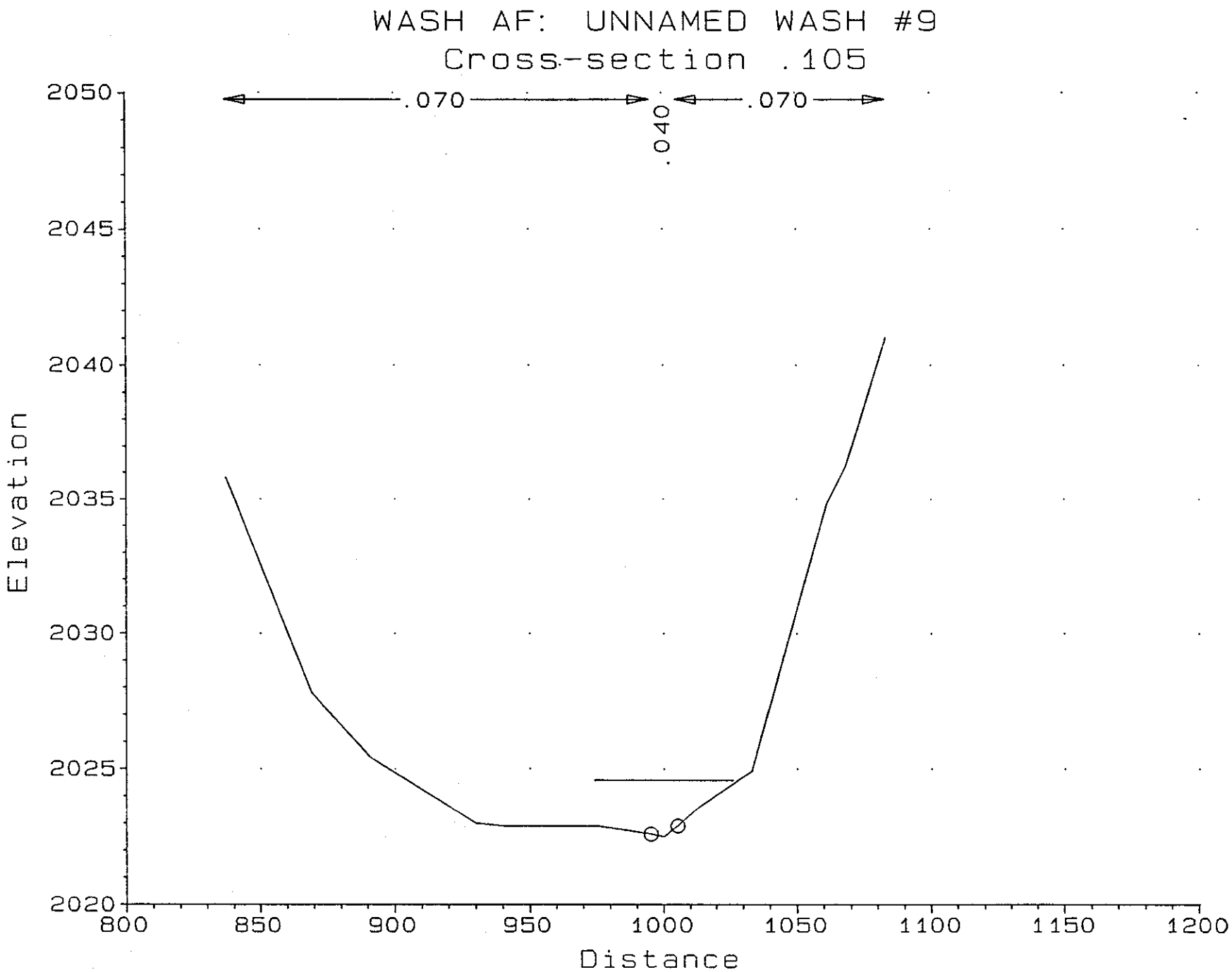
WASH AF: UNNAMED WASH #9
Cross-section .105
.070
.040
.070
2050
2045
2040
2035
2030
2025
2020
Elevation
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850
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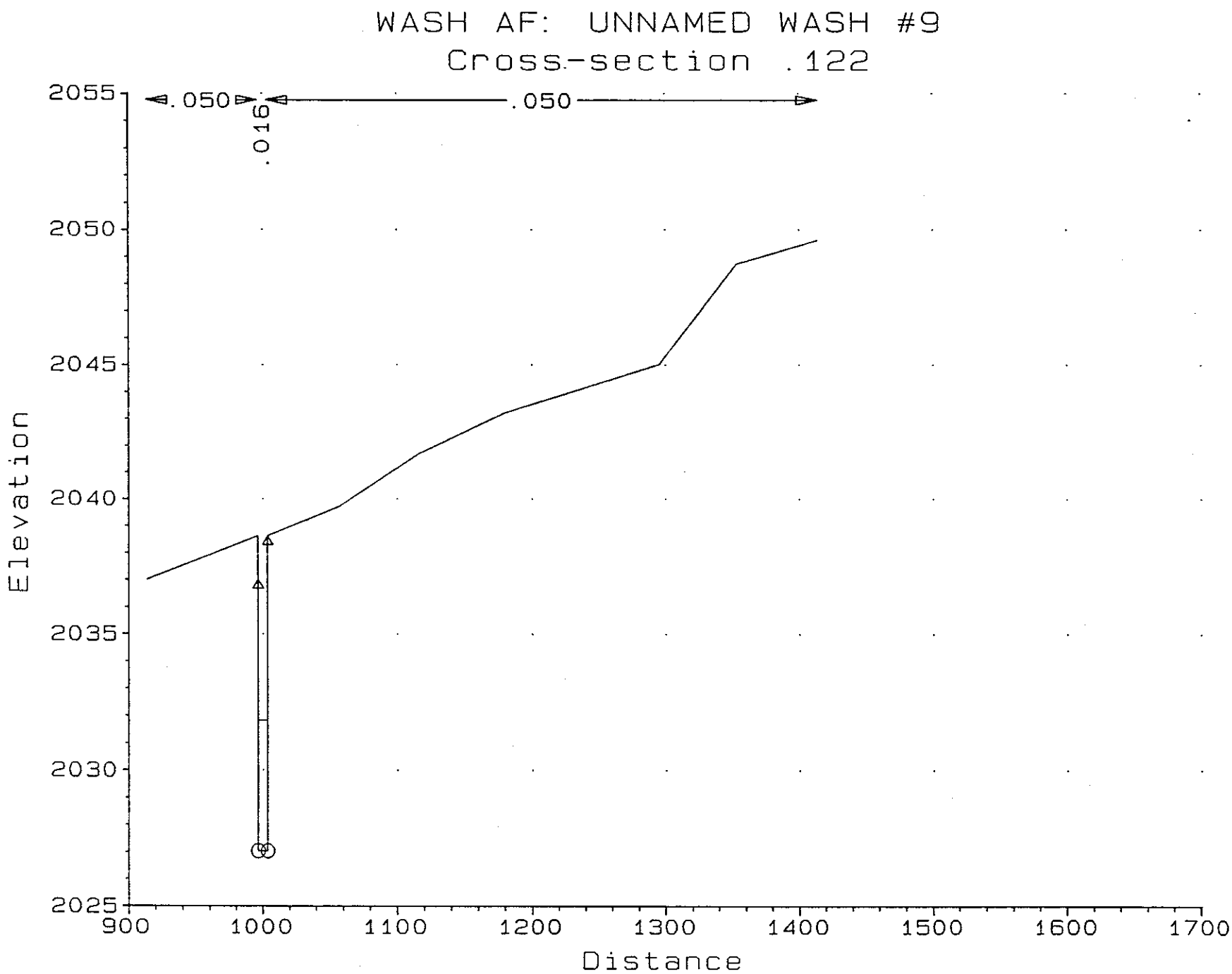
950
1000
1050
1100
1150
1200
Distance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Cross-section .122
.050
.016
.050
2055
2050
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2035
2030
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Elevation
900
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1100
1200
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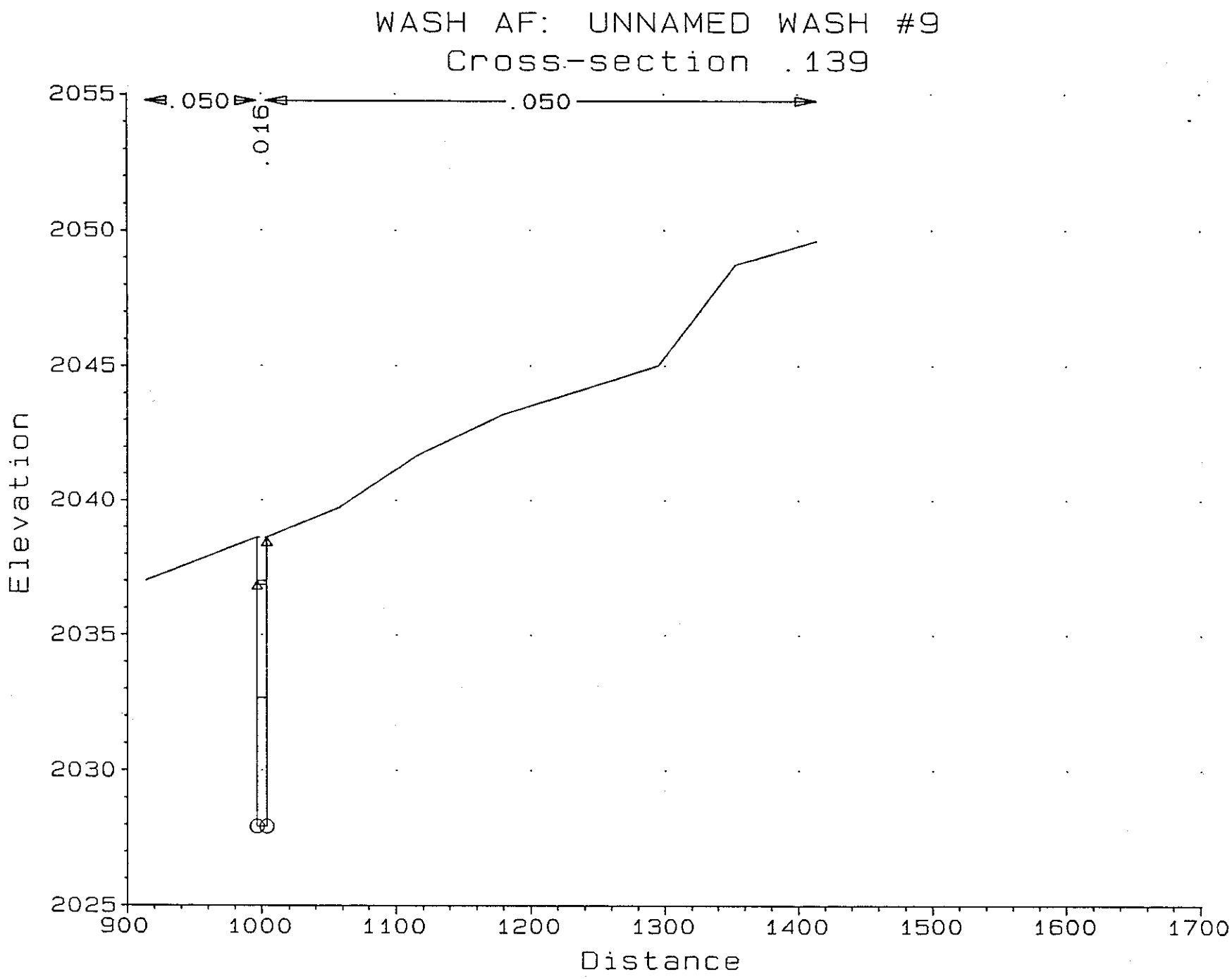
1400
1500
1600
1700
Distance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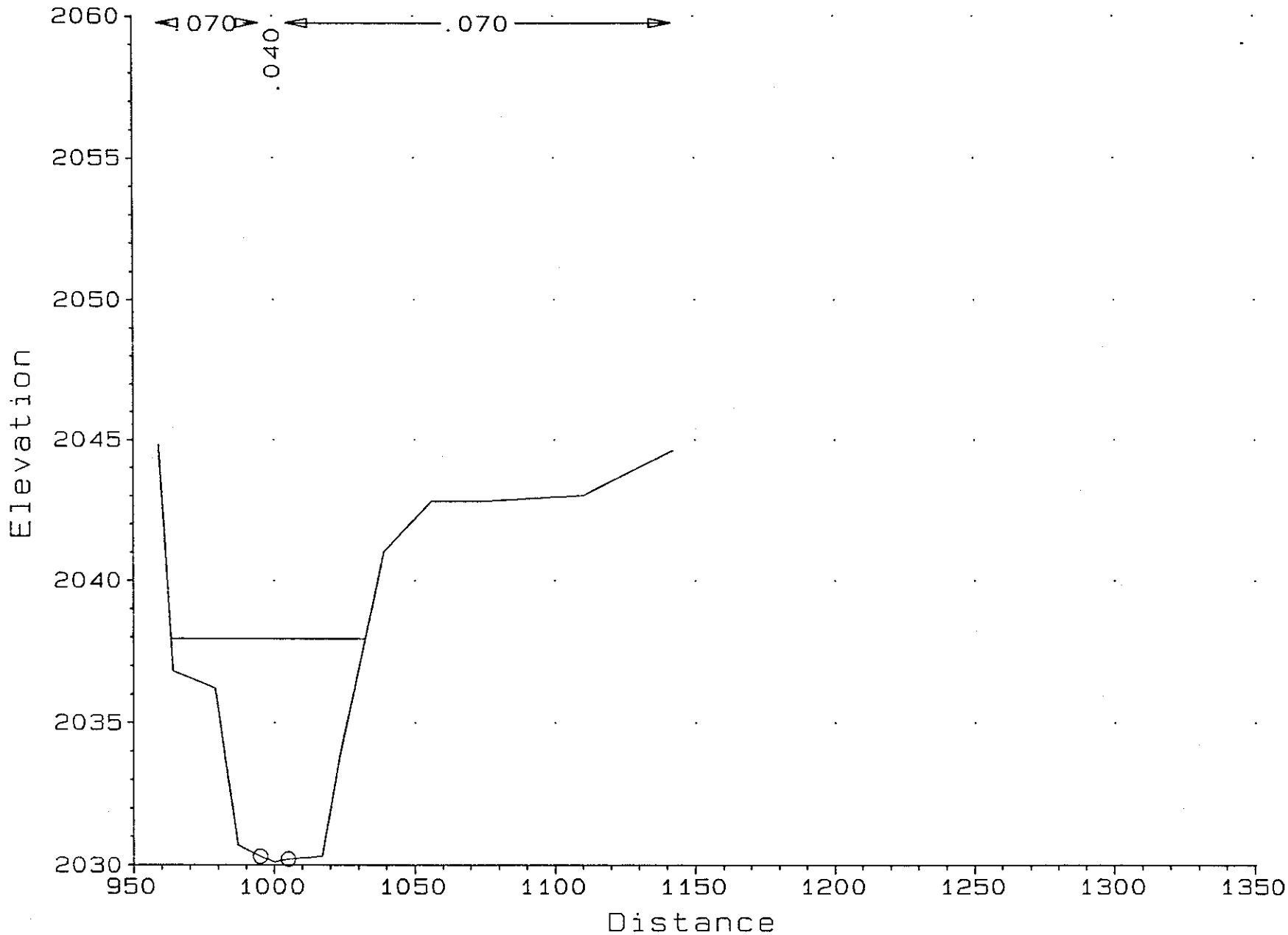
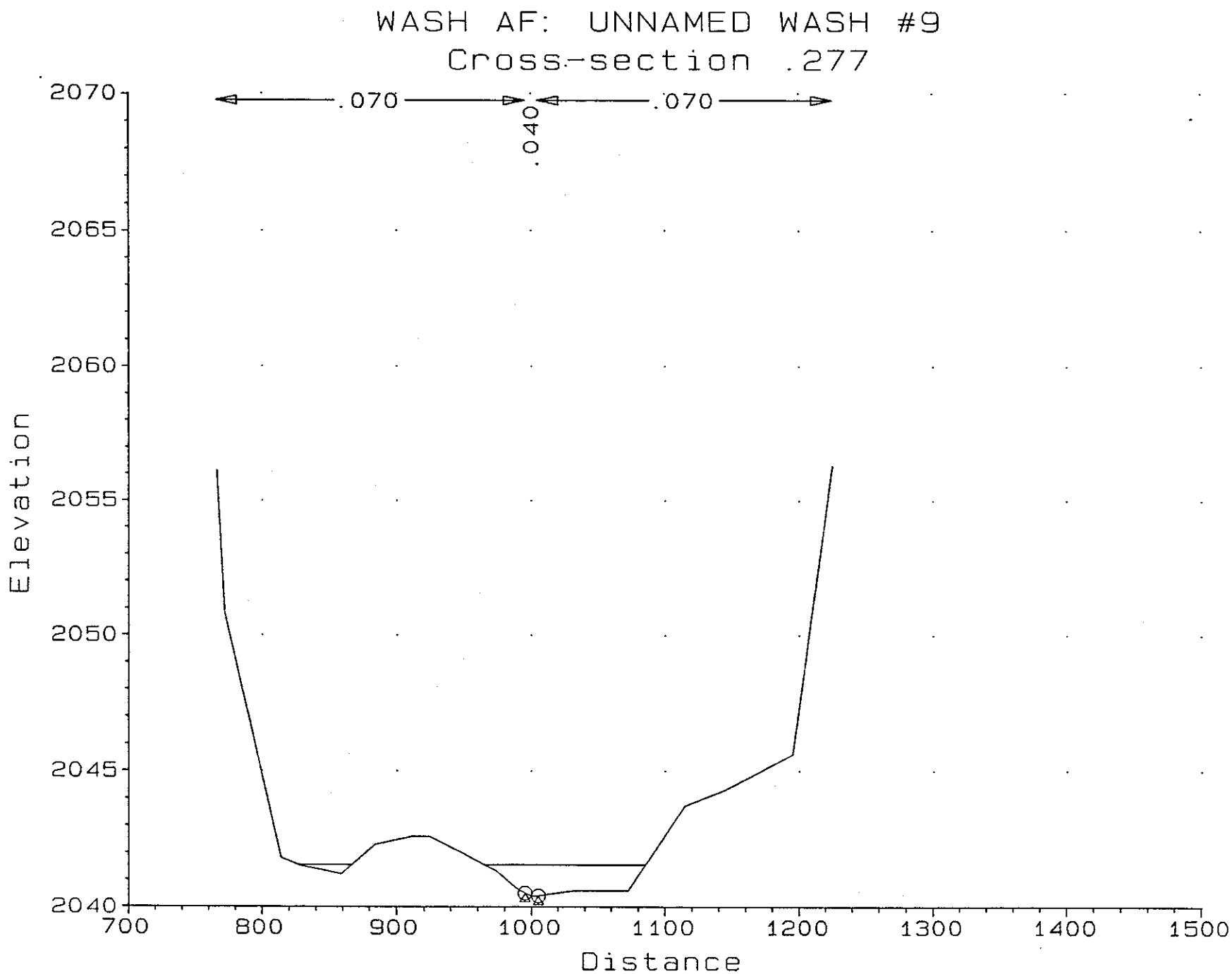
Cross-section .139
.050
.016
.050
2055
2050
2045
2040
2035
2030
2025
Elevation
900
1000
1100
1200
1300
1400
1500
1600
1700
Distance

WASH AF: UNNAMED WASH #9
Cross-section .163

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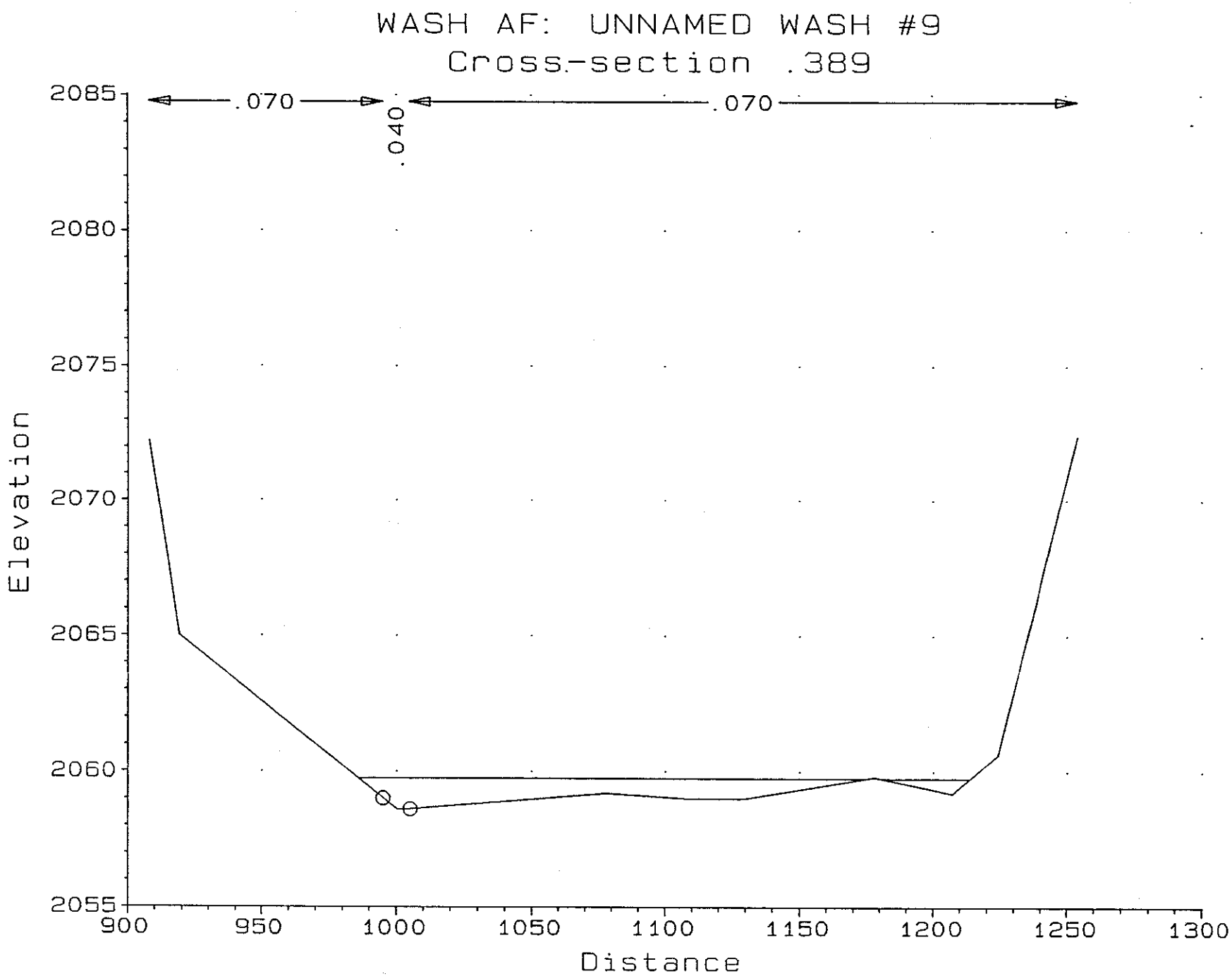
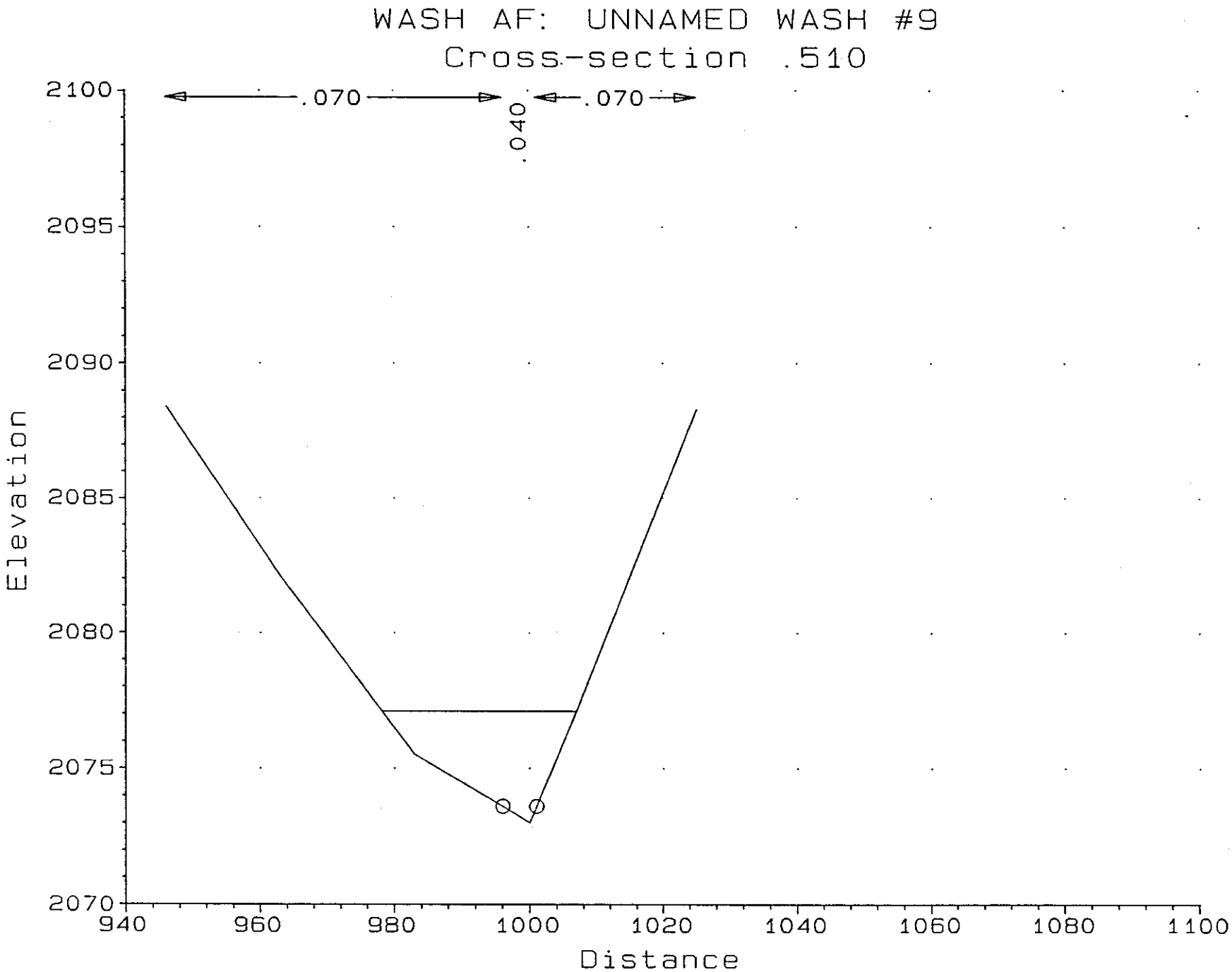
Cross-section .277
.070
.040
.070
2070
2065
2060
2055
2050
2045
2040
Elevation
700
800
900
1000
1100
1200
1300
1400
1500
Distance


WASH AF: UNNAMED WASH #9
Cross-section .389
.070
.040
.070
2085
2080
2075
2070
2065
2060
2055
Elevation
900
950
1000
1050
1100
1150
1200
1250
1300
Distance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.040
.070
2100
2095
2090
2085
2080
2075
2070
Elevation
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1000
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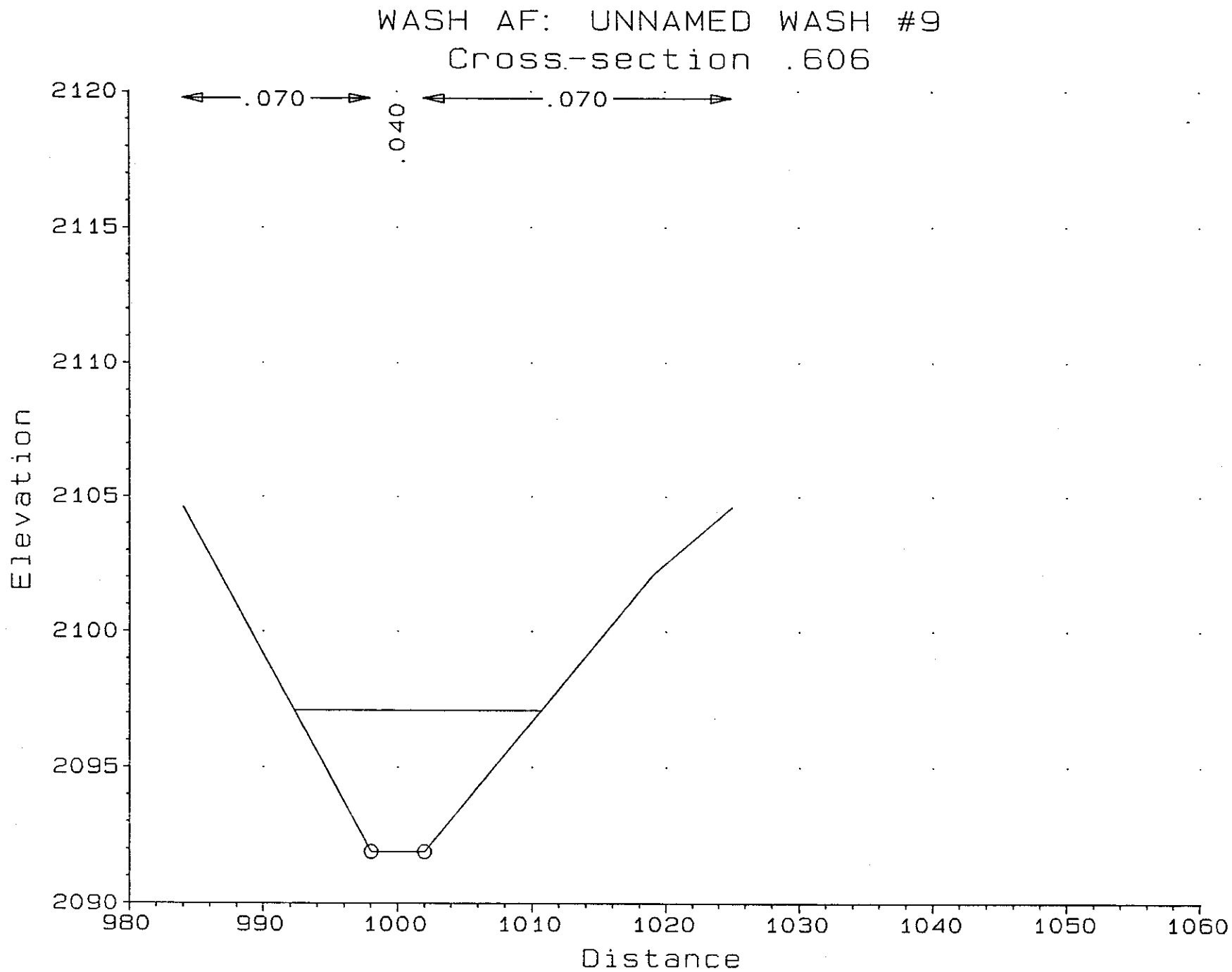
1040
1060
1080
1100
Distance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.040
.070
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2115
2110
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2100
2095
2090
Elevation
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1000
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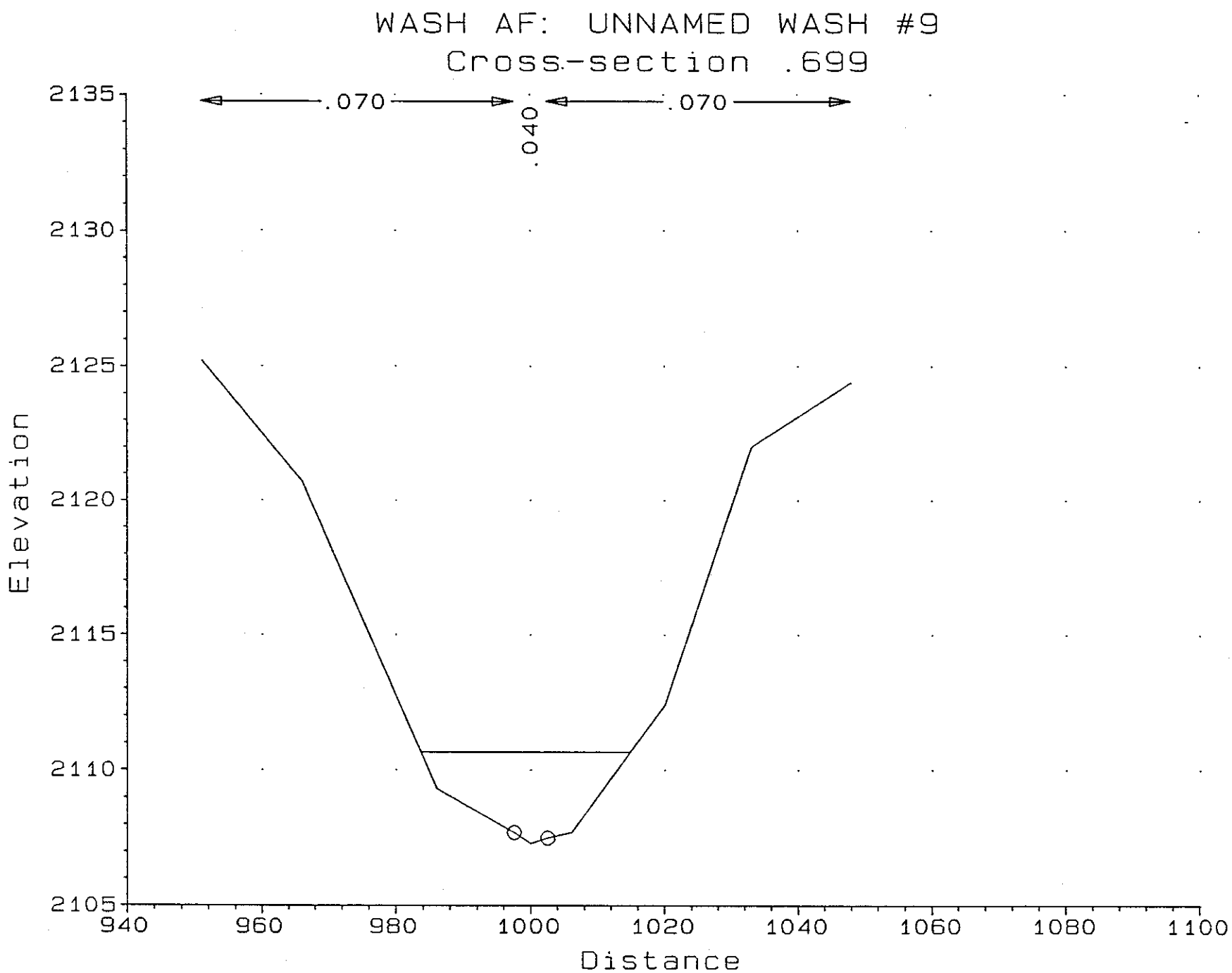
1040
1050
1060
Distance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.040
.070
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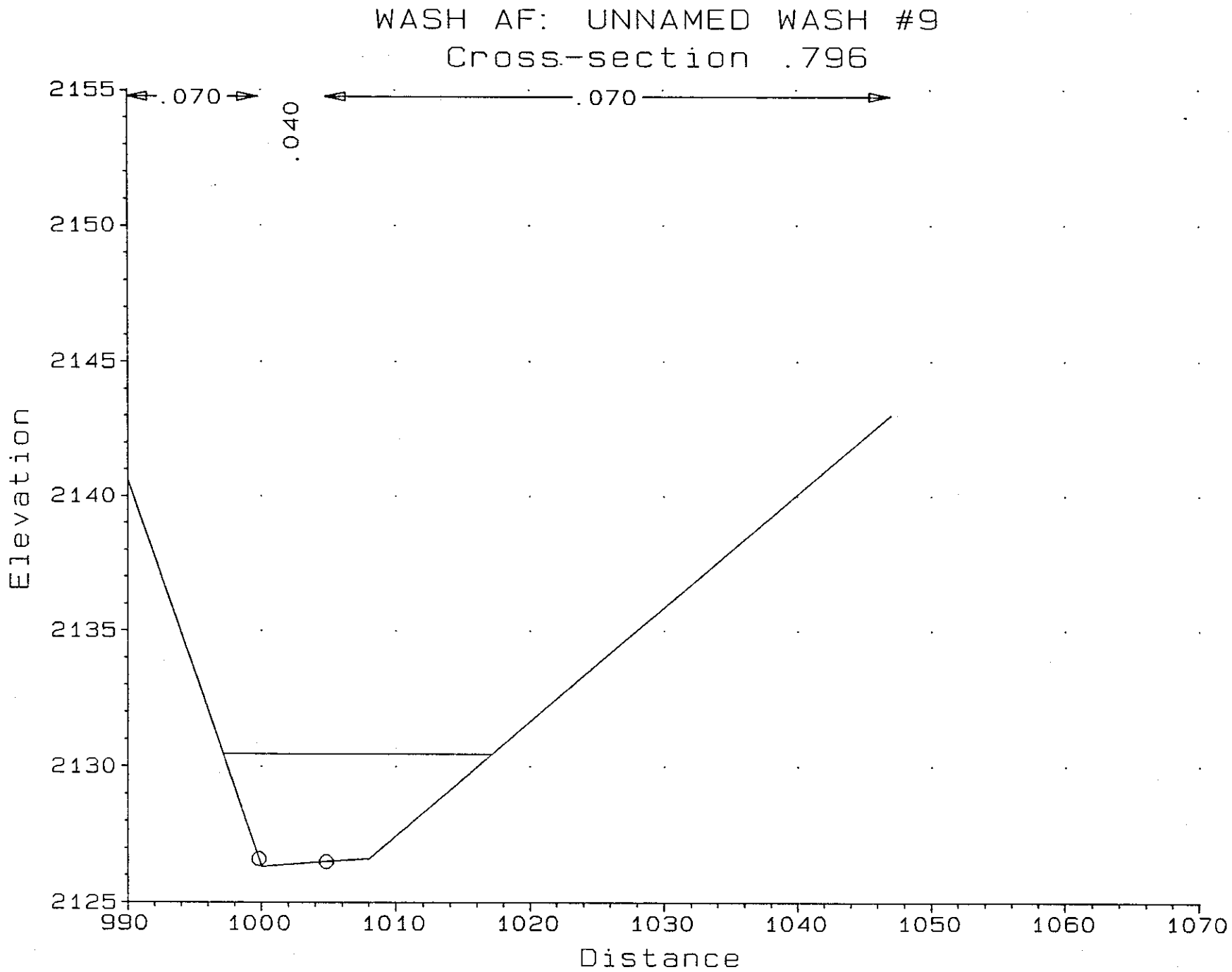
1060
1080
1100
Distance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.040
.070
2155
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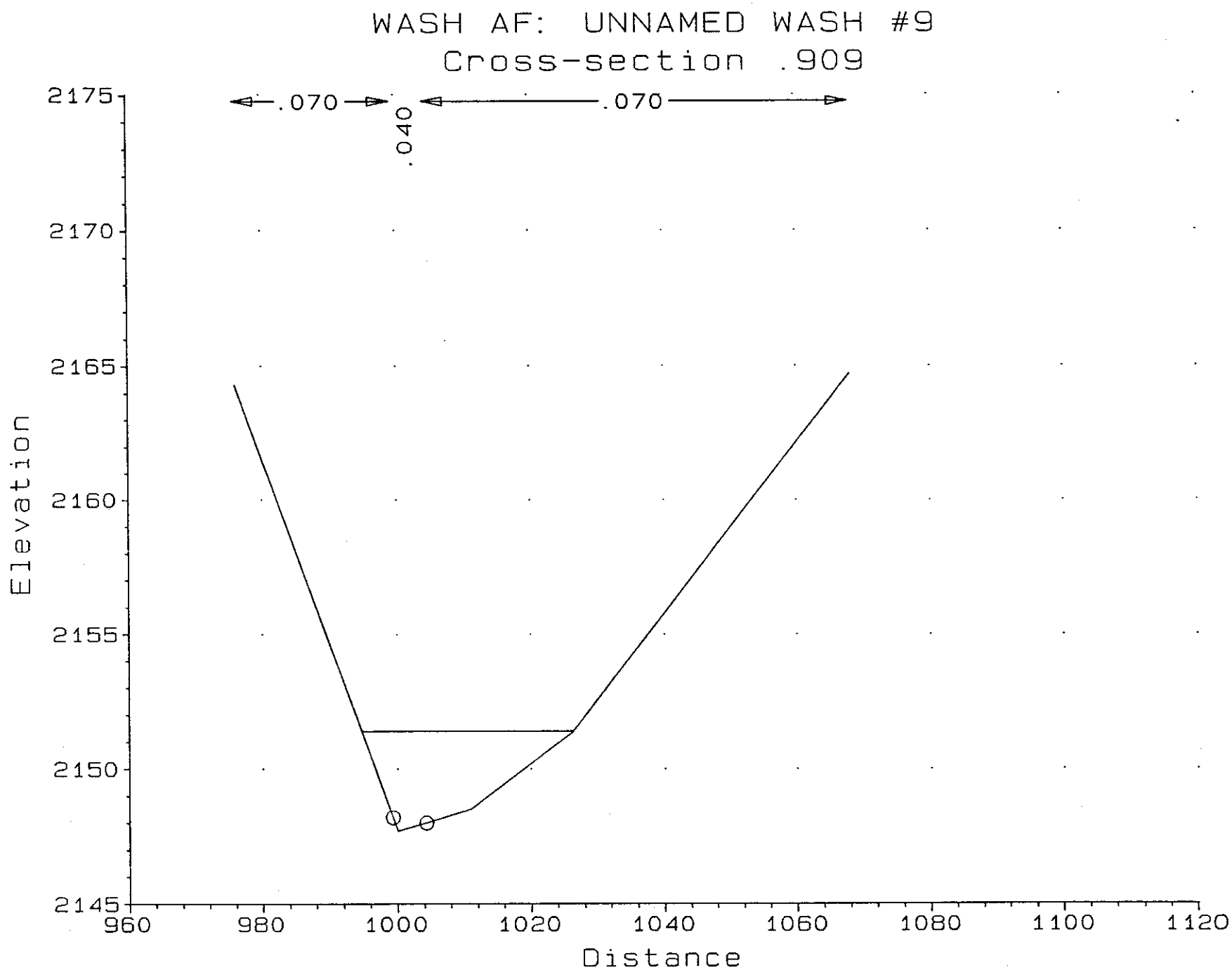
1040
1050
1060
1070
Distance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Cross-section .909
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.040
.070
2175
2170
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2160
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2150
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Elevation
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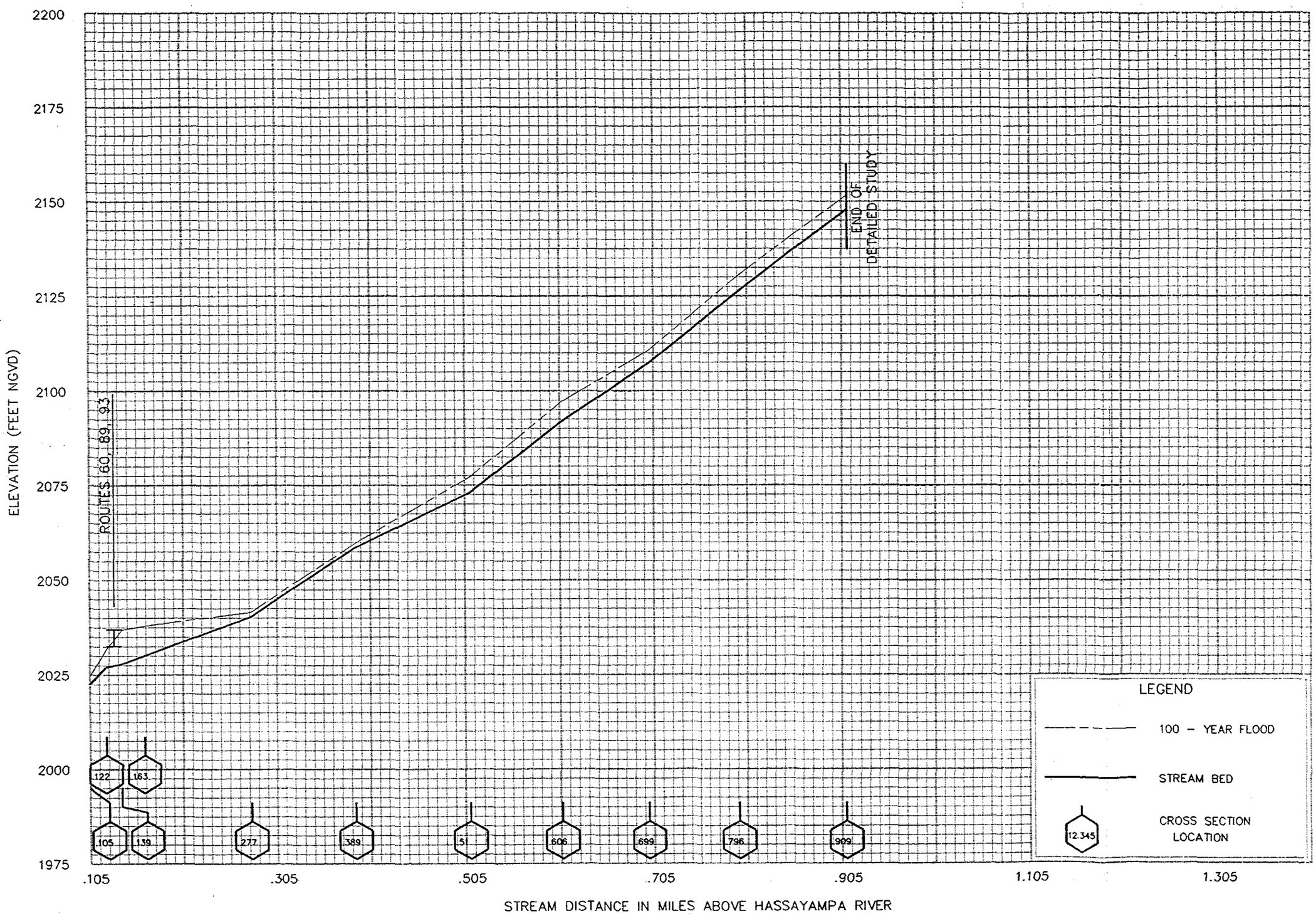
980
1000
1020
1040
1060
1080
1100
1120
Distance



FLOOD PROFILES

UNNAMED WASH #9 (AF)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

02/21/94 11:46:17 ACD-12_

PC FILE:WASHAF.DWG

1. Bibliographical Reference:
NA

(Attach a copy of title page, table of contents, and pertinent pages including equations.)

2. Gaged or ungaged stream: _____

3. Hydrologic region(s): _____
Attach backup map.

4. Provide parameters, values, and source of data used to define parameters.

		FIS:		Revised:	
5.	Urbanized conditions calculations	☐ Yes	☐ No	☐ Yes	☐ No
6	Percent of watershed urbanization	_____		_____	
7.	Is the watershed controlled?	☐ Yes	☐ No	☐ Yes	☐ No
8.	Comparison with other analyses	☐ Yes	☐ No	☐ Yes	☐ No

If the answer to 5, 7, or 8 is yes, explain methodology in Comments.

If data is not available, indicate by N/A.

Comments

Attach computation and supporting maps, delineating the watershed boundary and drainage area divides.

		FIS:	Revised
1.	Method or model used:		HEC-1
	Version:		Ver. 3.0
	Date:		02 AUG. 88
2.	Source of rainfall depth:		NOAA Atlas 2
3.	Source of rainfall distribution:		SCS TYPE II
4.	Rainfall duration:		24 hours
5.	Areal adjustment to precipitation (%):		NWS HYDRO-40
6.	Hydrograph development method:		S-Graph
7.	Loss rate method:		Green-AMPT
	Source of soils information:		SCS
	Source of land use information		Town of Wickenburg
8.	Channel routing method:		Normal Depth
9.	Reservoir routing:	☐ Yes ☐ No	☐ Yes ☐ No
10.	Baseflow considerations:	☐ Yes ☐ No	☐ Yes ☒ No

If yes, explain how baseflow was determined:

11. Snowmelt considerations: ☐ Yes ☐ No ☐ Yes ☒ No

12. Model calibration: ☐ Yes ☐ No ☒ Yes ☐ No

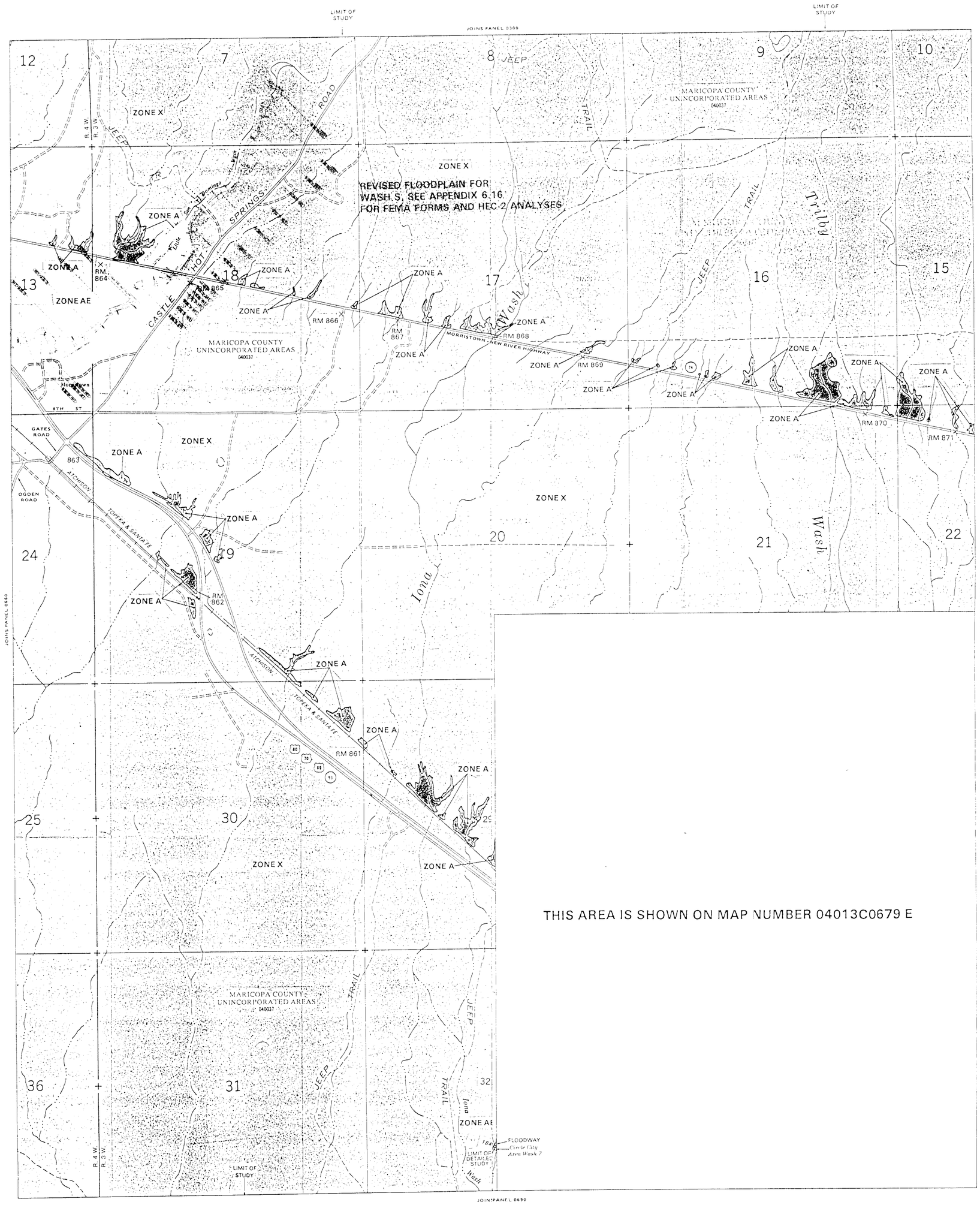
If yes, explain how calibration was performed Computed discharges were compared with DISCHARGE vs DRAINAGE AREA curves and envelopes prepared by the Flood Control District of Maricopa County.

13. Future land use condition: ☐ Yes ☒ No

If yes, explain why

NOTE: FEMA policy is to base flooding on existing conditions.
If data is not available, indicate by N/A.

Attach precipitation/runoff model, hydrologic model schematic, curve number calculations, time of concentration calculations, and supporting maps, delineating the watershed boundary and drainage area divides.



THIS AREA IS SHOWN ON MAP NUMBER 04013C0679 E

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 6 NORTH, RANGE 3 WEST AND TOWNSHIP 6 NORTH, RANGE 4 WEST

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
BM#1	970.687	U.S. Coast and Geodetic Survey brass cap in 3.5" iron pipe 250 feet northwest of the Atchison, Topeka and Santa Fe Railroad station, 50 feet northeast of the centerline of the track and 5 feet northeast of the centerline of Gates Road at Morristown, marked 1971 Phoenix
BM#1	1,042.41	1.7 miles southwest along the Atchison, Topeka and Santa Fe Railroad from Vulture Highway junction, northwest of milepost 1.53 at culvert #1153, and on the top of the northwest corner headwall. A standard Muser medallion
BM#2	1,061.95	0.8 mile southwest along the Atchison, Topeka and Santa Fe Railroad from Vulture Junction, at a concrete highway overpass, on the top of the wing of the north abutment and 3 feet higher than the track. A standard Muser medallion
BM#4	2,294.51	R.M. 5.87 in a concrete culvert right station 45+14
BM#5	2,327.35	Brass cap in concrete on west wing at Turley grand station 85+73
BM#6	2,341.14	Brass cap in the river right station 76+70
BM#7	2,346.78	Brass cap top of headwall right station 157+60
BM#8	2,347.65	Brass cap top of headwall right station 179+74
BM#9	2,348.76	Brass cap top of maximum rock bolted 184+50
BM#10	2,375.13	Brass cap top of headwall right station 267+30
BM#11	2,379.67	Brass cap top of headwall right station 279+50

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

(D)——(D) — Cross Section Line

(EL 987) — Base Flood Elevation In Feet Where Uniform Within Zone*

RM7 X — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100-year flood) include Zones A, A1-30, AE, AH, AO, A99, V, V1-30 AND VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only landward of the shoreline.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of the map.

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY

Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

APRIL 15, 1988

EFFECTIVE DATE (S) OF REVISION (S) TO THIS PANEL

Map revised September 4, 1991 to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to update map format, to add roads and road names and to incorporate previously issued letter of map revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 680 OF 4350

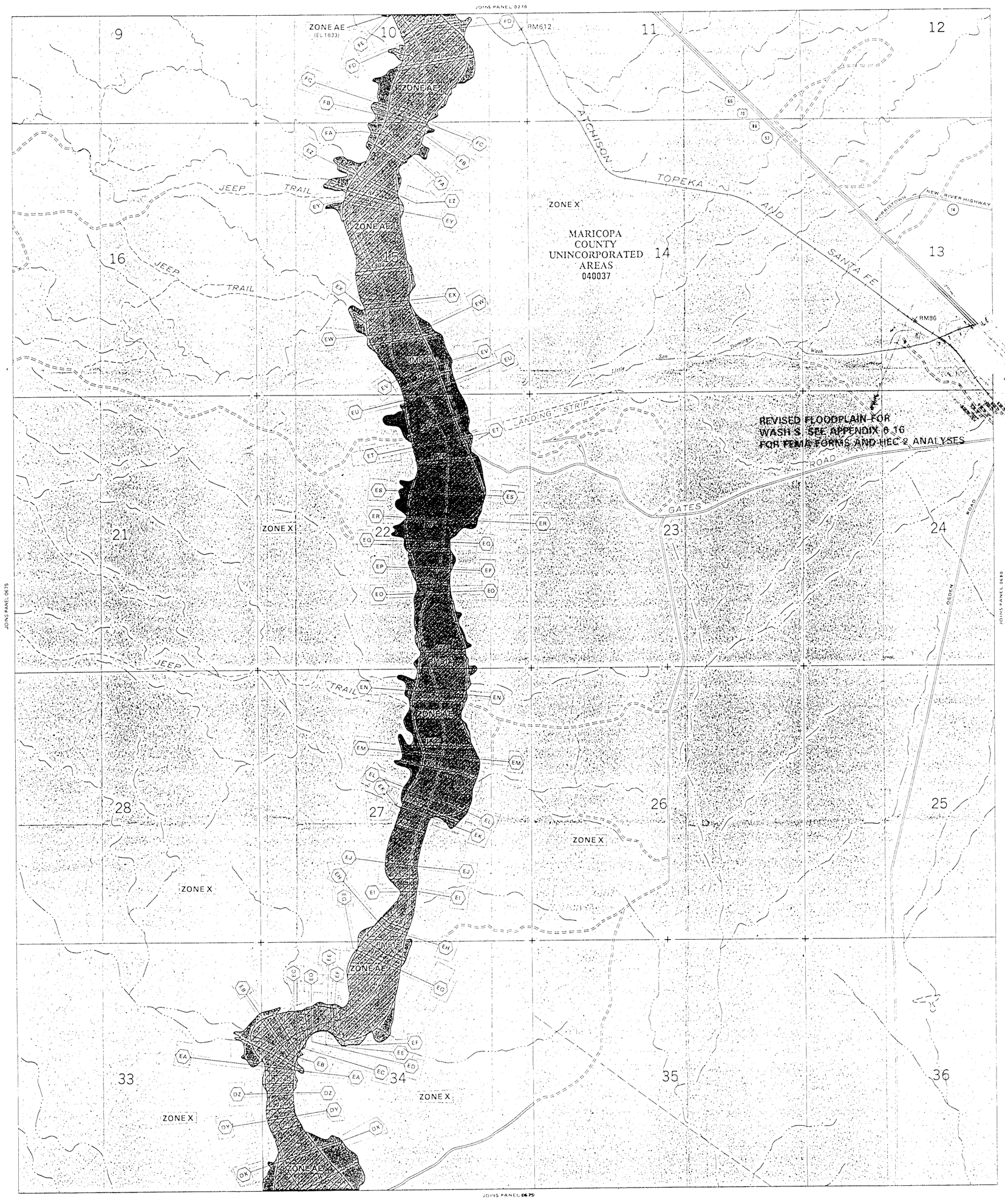
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY UNINCORPORATED AREAS	040037	0680	E

MAP NUMBER
04013C0680 E

MAP REVISED:
SEPTEMBER 4, 1991

Federal Emergency Management Agency



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 6 NORTH, RANGE 4 WEST

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM86	1,955.902	U.S. Geological Survey brass cap in concrete post 35 feet northwest of the centerline of the Atchison, Topeka and Santa Fe Railroad, 742 feet northwest of milepost 190 and a switch, and 0.6 mile northwest along railroad from the station at Morristown. (Revised 11-24-1993)
RM612	1,874.78	Brass cap stamped U.S. Coast and Geodetic Survey Bench Mark 224 1935. 2.4 miles northwest along the Atchison, Topeka and Santa Fe Railroad from Hot Springs Junction, Maricopa County, 175 feet northwest of milepost 148, 450 feet southwest of bridge D-148, on a rock point sticking out from the west slope of a canal and 20 feet northeast of the centerline of the track.
RM613	1,788.40	Chiseled 2" x 2" "+" on southwest corner of concrete pad for a fuel storage building on Daisies A Ranch, north or north and of Gates Road and approximately 50 feet east of Hassayampa River Dam.
RM614	1,762.79	3/2" rebar and aluminum cap set in base of rock. Stamped E R M. on west side. Hassayampa River. 2.35 above streambed, approximately 250 feet north of the south section line of Section 32, T6N, R4W.
RM615	1,741.41	3/2" rebar and aluminum cap stamped E R M. approximately 80 feet west of a 4" high base on west side of Hassayampa River, set 0.25' above ground. Rocks piled around it very close to section line between Sections 27 and 34, T6N, R4W, approximately 0.50 mile west of section corner 26, 27, 34 and 35, and 100 feet south of section line.

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal Flood Protection System under construction; no base elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones

513 — Base Flood Elevation Line; Elevation in Feet*

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

RM7 × — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100-year flood) include Zones A, A1-30, AE, AH, AO, A99, V, V1-30 AND VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only landward of the shoreline.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of the map.

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY

Refer to Repository Listing on Index Map

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP:
APRIL 15, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

Map revised September 4, 1991 to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to update map format, to add roads and road names and to incorporate previously issued letter of map revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA AND
INCORPORATED AREAS

PANEL 660 OF 4350

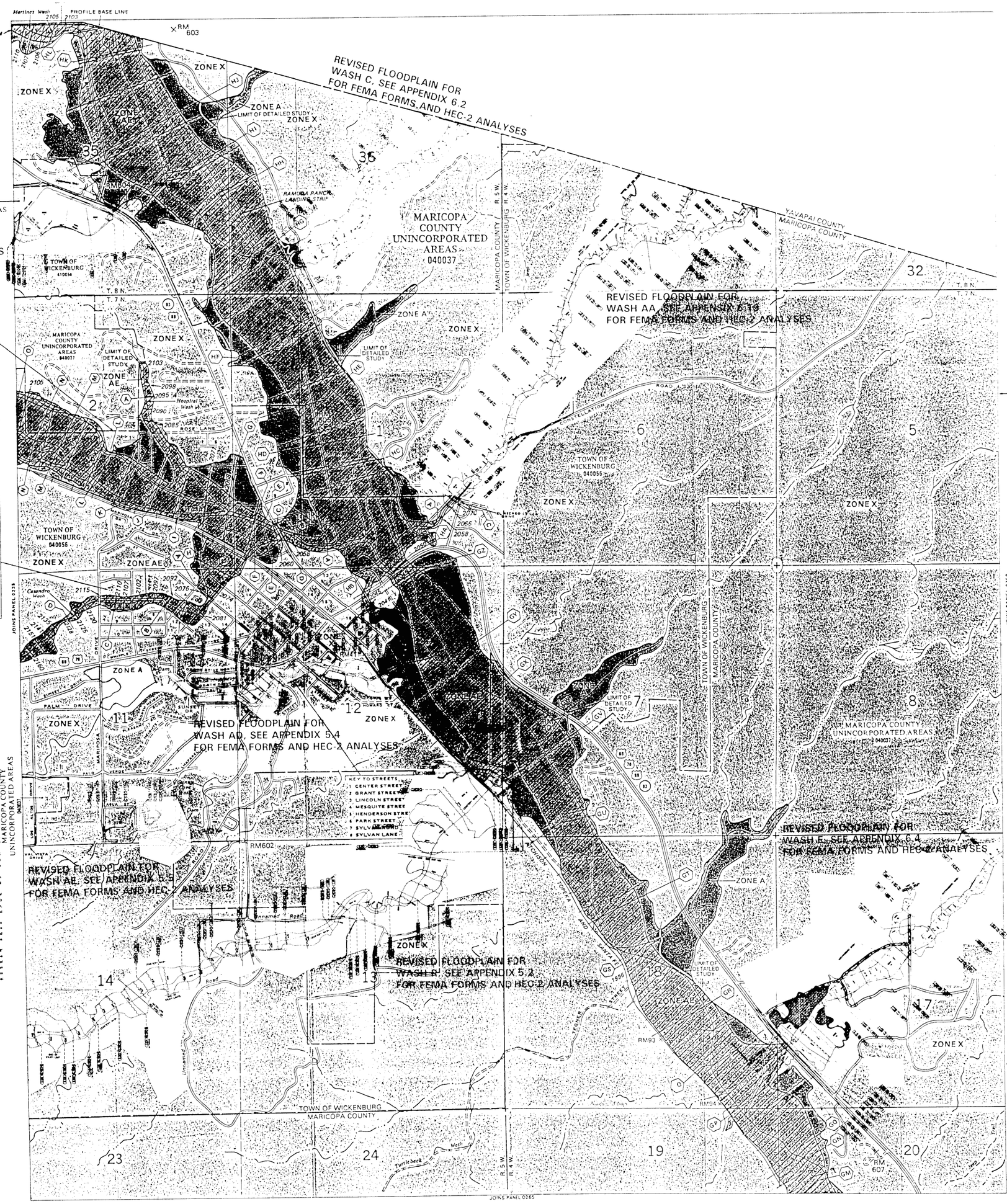
CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	660	E

MAP NUMBER
04013C0660 E

MAP REVISED:
SEPTEMBER 4, 1991

Federal Emergency Management Agency



ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM901	1,993.78	U.S. Geological Survey standard disk 2.6 miles southeast of Wickenburg, approximately 100 feet west of the Atchison, Topeka and Santa Fe Railroad, stamped M 2 1 B3.
RM904	1,986.29	Monel metal disk in cement at halfway on south side of Atchison, Topeka and Santa Fe Railroad, 2.5 miles southeast of Wickenburg. U.S. Geological Survey designation RV 119.
RM911	2,056.80	At Wickenburg, 0.7 mile south of the Atchison, Topeka and Santa Fe Railroad station, 800 feet south of milepost 180, 50 feet west of the centerline of the track and in the corner of a residence yard. A standard disk stamped N 24 1 B32 and set in the top of a concrete post.
RM800	2,038.18	Chiseled 7" x 7" "+" on southwest corner of railroad bridge at Cottonwood Wash.
RM801	2,034.84	Chiseled 8" x 8" "+" on top of 8" x 8" concrete headwall on the northwest corner of Calamity Wash bridge on State Route 93, approximately 0.4 mile north of mile post 112.
RM802	2,180.87	Chiseled 6" on top of north and of south at the northeast corner of cattle guard on Kaiser Road across from south entrance to Cemetery, approximately 0.6 mile south of the intersection of Kaiser Road and Whipple Street in Wickenburg.
*RM803	2,142.71	Brass cap set in a rock, stamped U.S. Coast and Geodetic Survey HA55 1924, approximately 2 miles north of Wickenburg, 800 feet east of the east bank of the Hassayampa River, shown as triangulation station 2141 on the U.S. Department of Interior Geological Survey, Wickenburg Quadrangle.
RM804	2,084.75	Brass cap stamped A D O T ELEV 2095.34 STA 910 + 48.56 1963 set in top of 1' x 33' x 12" headwall on the west side of highway 89 approximately 300 feet south of Ponderosa Road, Wickenburg.
RM805	2,053.02	Chiseled 7" x 7" "+" on southeast corner of concrete drain at top of a stretch of a ramp to a farm account location that is the fantastic north of 3 and cream of a north-south direction at Double Thoroughbred Farms, Inc. located at the intersection of the east end of Canyonness Street and Wickenburg Street in Wickenburg.
RM806	2,011.16	Brass cap stamped A D O T, Bs Elev 66, Elev 2011.47 1961 set top of a 1' x 1' x 5.5' high post located on the south side of Route 93, where Turtleback Wash crosses under the highway, 0.25 mile north of north end of a median and 4.50 miles north of mile post 113. Brass cap is approximately 1.5 below highway elevation.
RM807	2,012.02	Brass cap stamped Arizona Highway Department STA. 8 ELEV. set on 8" x 10.5 x 2' high headwall in north end of a catwalk crossing at the entrance to Rock House Ranch, located approximately 150 feet north of entrance to Flagstaff Trailer Park on a driveway that is parallel to and on the west side of Highway 93. Flagstaff Trailer Park entrance is west from the median crossing on Highway 93 that is 0.40 mile north of mile post 114.

*OUTSIDE CORPORATE LIMITS

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

D — D — Cross Section Line

(EL 987) — Base Flood Elevation In Feet Where Uniform Within Zone*

RM7 × — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100 year flood) include Zones A, A1-30, AE, AH, AO, A99, V, V1-30 + VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only landward of the shoreline.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of the map.

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY

Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

APRIL 15, 1988

EFFECTIVE DATE (S) OF REVISION (S) TO THIS PANEL

Map revised September 29, 1989 to change base flood elevations and special flood hazard areas, to add base flood elevations and special flood hazard areas, to change zone designations, to reflect updated topographic information, to incorporate previously issued letters of map revision and map amendment, and to update map format.

Map revised September 4, 1991 to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to update map format, to add roads and road names and to incorporate previously issued letter of map revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

N

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 255 OF 4350

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	0255	F
WICKENBURG, TOWN OF	040056	0255	F

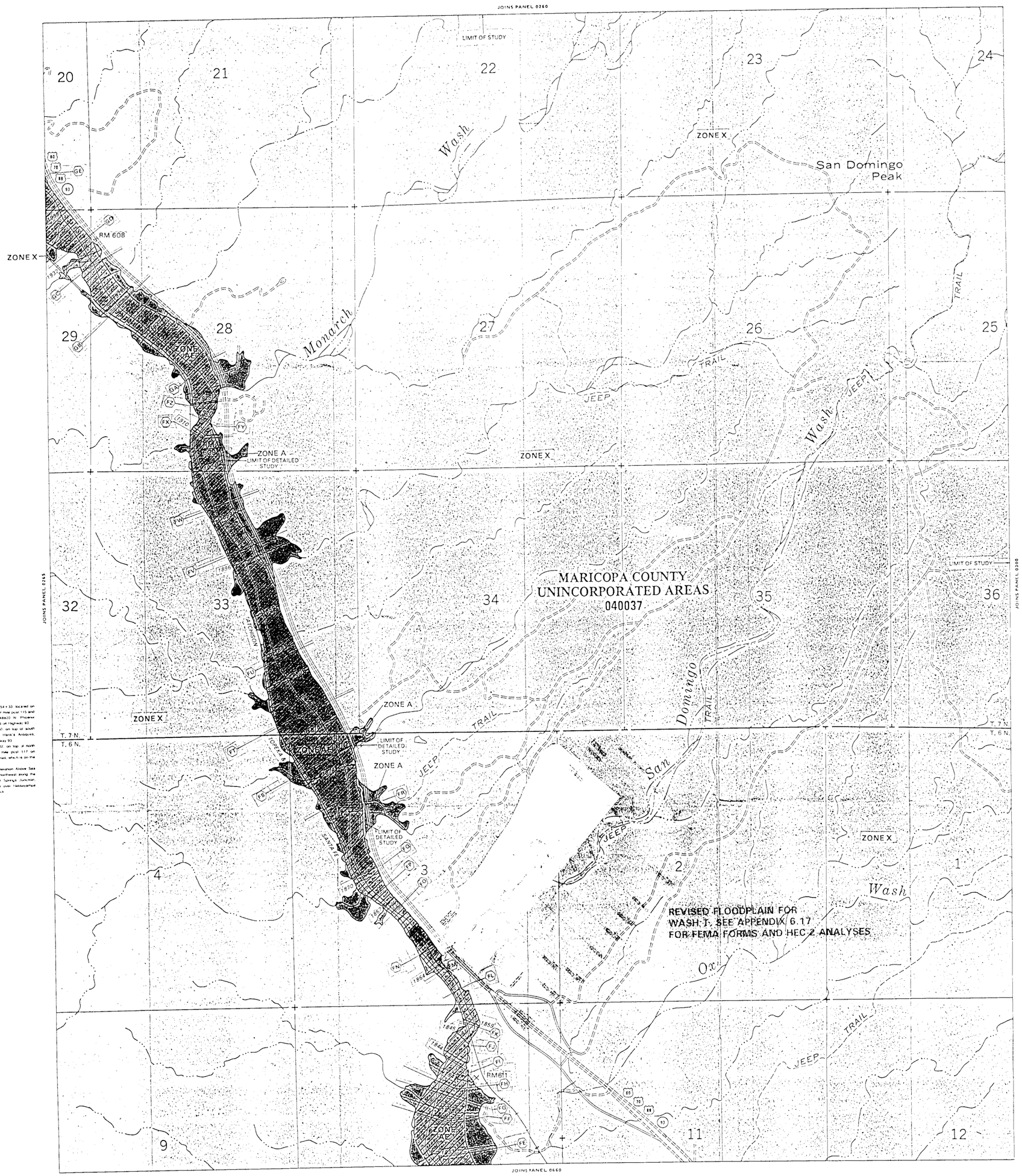
RECEIVED

OCT 9 1991

MAP NUMBER
04013C0255 F

MAP REVISED:
SEPTEMBER 4, 1991

Federal Emergency Management Agency



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 6 NORTH, AND TOWNSHIP 7 NORTH, RANGE 4 WEST.

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM608	1,942.92	Brass cap stamped A.R.D.T., ELEV. 1943.24 STA. 1054+33 located on top of curb on north median bullnose, 0.25 mile north of mile post 115 and opposite a house where sign reads "Hashknife Hideout" on Highway 93 approximately 0.25 mile north of mile post 115 on Highway 93.
RM609	1,911.23	Brass cap stamped A.R.D.T., 1911.60 STA. 1106+50 on top of south median bullnose, approximately 225 feet north of Hank's Antiques, approximately 0.25 mile north of mile post 116 on Highway 93.
RM610	1,881.44	Brass cap stamped A.R.D.T., 1881.70 STA. 1158+02, on top of north median bullnose, approximately 0.10 mile north of mile post 117 on Highway 93 and opposite the entrance to Owens Cabinet, which is on the west side of Highway 93.
RM611	1,864.72	Brass cap stamped U.S. Geological Survey, B.M. Elevation Above Sea Level 1865 feet Datum PN 1,21 Sign 2,90 mass northwest along the Atchison, Topeka and Santa Fe Railroad from Hot Springs Junction, Maricopa County, 0.50 mile southeast of the bridge over Hassayampa River and 75 feet southwest of the centerline of the track.

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year flood plain.
- ZONE D — Areas in which flood hazards are undetermined.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet*

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*

RM7x — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100-year flood) include Zones A, A1-30, AE, AH, AO, A99, V, V1-30 AND VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross-sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only landward of the shoreline.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of the map.

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY

Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

APRIL 15, 1988

EFFECTIVE DATE (S) OF REVISION (S) TO THIS PANEL:

Map revised September 4, 1991 to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to update map format, to add roads and road names and to incorporate previously issued letter of map revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 270 OF 4350

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	0270	E

MAP NUMBER
04013C0270 E

MAP REVISED:
SEPTEMBER 4, 1991

Federal Emergency Management Agency