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

Flood Control District of Maricopa County
Contract FCD 89-79

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WICKENBURG AREA DRAINAGE MASTER STUDY

TECHNICAL DOCUMENTATION REPORT

Appendix 4.0 FEMA Forms and 3.5" Diskettes

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 **REVISION REQUESTOR AND COMMUNITY OFFICIAL 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 2.13 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.

1. OVERVIEW

1. The basis for this revision request is (are): *(check all that apply)*
   - ☒ Physical change
     - ☒ Existing
     - ☐ Proposed
   - ☐ Improved methodology
   - ☒ Improved data
   - ☐ Floodway revision
   - ☐ Other New and revised FIS.

   Explain _____

2. Flooding Source: Hassayampa River and Sols Wash Watersheds.
3. Project Name/Identifier: Wickenburg ADMS
4. FEMA zone designations affected: Zones A, AE, X.
   (example: A, AH, AO, A1-A30, A99, AE, V, V1-30, VE, B, C, D, X)
5. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	County	State	Map No.	Panel No.	Effective Date
EX: 480301	Katy,City	Harris, Fort Bend	TX	480301	0005D	02/08/83
480287	Harris County	Harris	TX	48201C	0220G	09/28/90
040056	Town of Wickenburg	Maricopa	AZ	4013C	0660	9/04/91
040037	Maricopa	Maricopa	AZ	4013C	**	9/04/91

**Panel Numbers: *300, *260, *245, *240, *225, 270, 265, 255, 235, & 230
*Not printed

6. The area of revision encompasses the following types of flooding, structures, and associated disciplines: *(check all that apply)*

Types of Flooding	Structures	Disciplines*
☒ Riverine	☐ Channelization	☒ Water Resources
☐ Coastal	☐ Levee/Floodwall	☒ Hydrology
☐ Alluvial Fan	☐ Bridge/Culvert	☒ Hydraulics
☐ Shallow Flooding *(e.g. Zones AO and AH)*	☐ Dam	☐ Sediment Transport
☐ Lakes	☐ Coastal	☐ Interior Drainage
	☐ Fill	☐ Structural
Affected by wind/wave action	☐ Pump Station	☐ Geotechnical
☐ Yes	☐ None	☐ Land Surveying
☐ No	☐ Channel Relocation	☐ Other *(describe)*
	☐ Excavation	
	☐ Other *(describe)*	

☐ Other(describe) _____ _____ _____

*** Attach completed "Certification by Registered Professional Engineer and/or Land Surveyor" Form for each discipline checked. (Form 2)**

2. FLOODWAY INFORMATION

7. Does the affected flooding source have a floodway designated on the effective FIRM or FBFM? ☒ Yes ☐ No
8. Does the revised floodway delineation differ from that shown on the effective FIRM or FBFM ☒ Yes ☐ No
   If yes, give reason: Restudy, improved mapping and technical data.

Attach copy of either a public notice distributed by the community stating the community's intent to revise the floodway or a statement by the community that it has notified all affected property owners and affected adjacent jurisdictions.

9. Does the State have jurisdiction over the floodway or its adoption by communities participating in the NFIP? ☒ Yes ☐ No

If yes, attach a copy of a letter notifying the appropriate State agency of the floodway revision and documentation of the approval of the revised floodway by the appropriate State agency.

3. PROPOSED ENCROACHMENTS

10. With floodways:

1A. Does the revision request involve fill, new construction, substantial improvement, or other development in the floodway? ☐ Yes ☒ No

1B. If yes, does the development cause the 100-year water surface elevation to increase at any location by more than 0.000 feet? ☐ Yes ☐ No

11. Without floodways:

2A. Does the revision request involve fill, new construction, substantial improvement, or other development in the 100-year floodplain? ☐ Yes ☒ No

2B. If yes, does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the 100-year water surface elevation to increase at any location by more than one foot (*or other surcharge limit if community or state has adopted more stringent criteria*)? ☐ Yes ☐ No

If the answer to either Items 1B or 2B is yes, please provide documentation that all requirements of Section 65.12 of the NFIP regulations have been met, regarding evaluation of alternatives, notice to individual legal property owners, concurrence of CEO, and certification that no insurable structures are impacted.

4. REVISION REQUESTOR ACKNOWLEDGMENT

12. Having read NFIP Regulations, 44 CFR Ch. I, parts 59, 60, 61, and 72, I believe that the proposed revision ☒ is ☐ is not in compliance with the requirements of the aforementioned NFIP Regulations.

5. COMMUNITY OFFICIAL ACKNOWLEDGMENT

13. Was this revision request reviewed by the community for compliance with the community's adopted floodplain management ordinances? ☒ Yes ☐ No

14. Does this revision request have the endorsement of the community? ☒ Yes ☐ No

If no to either of the above questions, please explain: _____

Please note that community acknowledgment and /or notification is required for all requests as outlined in Section 65.4 (b) of the NFIP Regulations.

6. OPERATION AND MAINTENANCE

15. Does the physical change involve a flood control structure (e.g., levees, floodwalls, channelization, basins, dams)? ☐ Yes ☒ No

If yes, please provide the following information for each of the new flood control structures:

A. Inspection of the flood control project will be conducted periodically by _____ (entity)

_____ with a maximum interval of _____ months between inspections.

B. Based on the results of scheduled periodic inspections, appropriate maintenance of the flood control facilities will be conducted by _____ (entity)

to ensure the integrity and degree of flood protection of the structure.

C. A formal plan of operation, including documentation of the flood warning system, specific actions and assignments of responsibility by individual name or title, and provisions for testing the plan at intervals not less than one year, ☐ has ☐ has not been prepared for the flood control structure.

D. The community is willing to assume responsibility for ☐ performing ☐ overseeing compliance with the maintenance and operation plans of the _____
(Name)

flood control structure. If not performed promptly by an owner other than the community, the community will provide the necessary services without cost to the Federal government.

Attach operation and maintenance plans

7. REQUESTED RESPONSE FROM FEMA

16. After examining the pertinent NFIP regulations and reviewing the document entitled "Appeals, Revisions, and Amendments to Flood Insurance Maps: A guide for Community Officials," dated January 1990, this request is for a:

_____a. CLOMR — A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision *(LOMR or PMR)*, or proposed hydrology changes *(see 44 CFR Ch. I, Parts 60, 65, and 72)*.

_____b. LOMR — A letter from FEMA officially revising the current NFIP map to show changes to floodplains, floodways, or flood elevations. LOMRs typically depict decreased flood hazards. *(See 44 CFR Ch. I Parts 60 and 65.)*

__X__c. PMR — A reprinted NFIP map incorporating changes to floodplains, floodways, or flood elevations. Because of the time and cost involved to change, reprint, and redistribute an NFIP map, a PMR is usually processed when a revision reflects increased flood hazards or large-scope changes. *(See 44 CFR Ch. I, Parts 60 and 65.)*

_____d. Other: Describe_____

8. FORMS INCLUDED

17. Form 2 entitled, "Certification By Registered Professional Engineer and/or Land Surveyor" must be submitted.

The following forms should be included with this request if (check the included forms):

• Hydrologic analysis for flooding source differs from that used to develop FIRM	☒ Hydrologic Analysis Form (Form 3)
• Hydraulic analysis for riverine flooding differs from that used to develop FIRM	☒ Riverine Hydraulic Analysis Form (Form 4)
• The request is based on updated topographic information or a revised floodplain or floodway delineation is requested	☐ Riverine /Coastal Mapping Form (Form 5)
• The request involves any type of channel modification	☐ Channelization Form (Form 6)
• The request involves new bridge or culvert or revised analysis of an existing bridge or culvert	☒ Bridge/Culvert Form (Form 7)
• The request involves a new revised levee/floodwall system	☐ Levee/Floodwall System Analysis Form (Form 8)
• The request involves analysis of coastal flooding	☐ Coastal Analysis Form (Form 9)
• The request involves coastal structures credited as providing protection from the 100-year flood	☐ Coastal Structures (Form 10)
• The request involves an existing, proposed, or modified dam	☒ Dam Form (Form 11)
• The request involves structures credited as providing protection from the 100-year flood on an alluvial fan	☐ Alluvial Fan Flooding Form (Form 12)

9. INITIAL REVIEW FEE

18. The minimum initial review fee for the appropriate request category has been included. ☐ Yes ☐ No

Initial fee amount: $ _____

METHOD OF PAYMENT (Check one box)

☐ PAYMENT ENCLOSED ☐ VISA ☐ MASTERCARD

Check or money order only.
Make payable to
National Flood Insurance Program

CARD NUMBER

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

EXP. Date

_____
Signature

or

19. This request is for a project that is for public benefit and is intended to reduce the flood hazard to existing development in identified flood hazard areas as opposed to planned floodplain development. ☒ Yes ☐ No

or

20. This request is to correct an error or to include the effects of natural changes within the areas of special flood hazards. ☐ Yes ☐ No

Note: I understand that my signature indicates that all information submitted in support of this request is correct.

_____
Signature of Revision Requester

_____
Printed Name and Title of Revision Requester

_____
Company Name

_____
Date

Note: Signature indicates that the community understands, from the revision requester, the impacts of the revision on flooding conditions in the community.

_____
Signature of Community Official

_____
Printed Name and Title of Community Official

_____
Community Name

_____
Date

Does this request impact any other communities? ☐ Yes ☐ No

If yes, attach letters from all affected jurisdictions acknowledging revision request and approving changes to floodway, if applicable.

Note: Although a photograph of physical changes is not required, it may be helpful for FEMA's review.

FEDERAL EMERGENCY MANAGEMENT AGENCY **CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR 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 . 23 hour 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.

1. This certification is in accordance with 44 CFR Ch. I, Section 65.2
2. I am licensed with an expertise in Water Resources; Hydrology, Hydraulics
   [example: water resources (*hydrology, hydraulics, sediment transport, interior drainage*)* structural, geotechnical, land surveying.]
3. I have 10 years experience in the expertise listed above.
4. I have ☐ prepared ☒ reviewed the attached supporting data and analyses related to my expertise.
5. I ☒ have ☐ have not visited and physically viewed the project.
6. In my opinion, the following analyses and /or designs, is/are being certified:
   HEC-1 Hydrologic Analysis, HEC-2 Hydraulic Analysis
7. Base upon the following review, the modifications in place have been constructed in general accordance with plans and specifications.

   Basis for above statement: (check all that apply)

   a. ☐ Viewed all phases of actual construction.
   b. ☐ Compared plans and specifications with as-built survey information.
   c. ☐ Examined plans and specifications and compared with completed projects.
   d. ☒ Other NA
8. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: David W. Dust
(please print or type)

Title: Project Engineer
(please print or type)

Registration No. 21680 Expiration Date: 9-30-96

State Arizona

Type of License Civil Engineering

David W. Dust
Signature

4-1-94
Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 21680 DAVID W. DUST Date Signed 4-1-94 ARIZONA, U.S.A.

Seal
(*Optional*)

*Specify Subdiscipline

Note: Insert not applicable (N/A) when statement does not apply.

FEDERAL EMERGENCY MANAGEMENT AGENCY CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

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1. This certification is in accordance with 44 CFR Ch. I, Section 65.2
2. I am licensed with an expertise in Land Surveying
   [example: water resources *(hydrology, hydraulics, sediment transport, interior drainage)** structural, geotechnical, land surveying.]
3. I have 7 years experience in the expertise listed above.
4. I have ☐ prepared ☒ reviewed the attached supporting data and analyses related to my expertise.
5. I ☒ have ☐ have not visited and physically viewed the project.
6. In my opinion, the following analyses and /or designs, is/are being certified:
   Wickenburg, AZ ADMS - West Area control surveys & photogrammetric mapping
7. Base upon the following review, the modifications in place have been constructed in general accordance with plans and specifications.

   Basis for above statement: (check all that apply)

   a. ☐ Viewed all phases of actual construction.
   b. ☐ Compared plans and specifications with as-built survey information.
   c. ☐ Examined plans and specifications and compared with completed projects.
   d. ☒ Other completed field surveys, photogrammetry & field checks
8. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Lee Harbers
(please print or type)

Title: Vice President - McLain Harbers Co., Inc.
(please print or type)

Registration No. 26401 Expiration Date: July 1995

State Arizona

Type of License Land Surveying

Signature

May 10, 1994
Date

Seal
(Optional)

*Specify Subdiscipline

Note: Insert not applicable (N/A) when statement does not apply.

FEDERAL EMERGENCY MANAGEMENT AGENCY CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR FORM	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

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1. This certification is in accordance with 44 CFR Ch. I, Section 65.2
2. I am licensed with an expertise in Land Surveying
   [example: water resources *(hydrology, hydraulics, sediment transport, interior drainage)** structural, geotechnical, land surveying.]
3. I have 15 years experience in the expertise listed above.
4. I have ☐ prepared ☒ reviewed the attached supporting data and analyses related to my expertise.
5. I ☒ have ☐ have not visited and physically viewed the project.
6. In my opinion, the following analyses and /or designs, is/are being certified:
   Aerial & ground control establishment & structur verification elevations.
7. Base upon the following review, the modifications in place have been constructed in general accordance with plans and specifications.

   Basis for above statement: (check all that apply)

   a. ☐ Viewed all phases of actual construction.
   b. ☐ Compared plans and specifications with as-built survey information.
   c. ☐ Examined plans and specifications and compared with completed projects.
   d. ☒ Other N/A
8. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: James G. Spring
(please print or type)

Title: MM/CSS A, Inc. - Survey Dept. Manager
(please print or type)

Registration No. PLS #22282 Expiration Date: 6/30/95

State Arizona

Type of License Profession Land Survey

Signature

Date 5/9/94.

REGISTERED LAND SURVEYOR CERTIFICATE NO. 22282 JAMES G. SPRING Date Signed 5/9/94 ARIZONA, U. S. A.

Seal
(Optional)

Specify Subdiscipline

Note: Insert not applicable (N/A) when statement does not apply.

FEDERAL EMERGENCY MANAGEMENT AGENCY **CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR FORM**	O.M.B. Burden No. 3067-0148 Expires July 31, 1994	FEMA USE ONLY

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1. This certification is in accordance with 44 CFR Ch. I, Section 65.2
2. I am licensed with an expertise in Water Resources - Hydrology, Hydraulics
   [example: water resources *(hydrology, hydraulics, sediment transport, interior drainage)** structural, geotechnical, land surveying.]
3. I have 10 years experience in the expertise listed above.
4. I have ☒ prepared ☒ reviewed the attached supporting data and analyses related to my expertise.
5. I ☒ have ☐ have not visited and physically viewed the project.
6. In my opinion, the following analyses and /or designs, is/are being certified:
   Hydrology, Hydraulics, Floodplain/Floodway Determinations
7. Base upon the following review, the modifications in place have been constructed in general accordance with plans and specifications.

   Basis for above statement: (check all that apply)

   a. ☐ Viewed all phases of actual construction.
   b. ☐ Compared plans and specifications with as-built survey information.
   c. ☐ Examined plans and specifications and compared with completed projects.
   d. ☒ Other N/A
8. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Timothy K. Meyer
(please print or type)

Title: Staff Water Resources Engineer/Project Engineer
(please print or type)

Registration No. 25818 Expiration Date: 3/31/95

State Arizona

Type of License Civil Engineer

Timothy K. Meyer
Signature

May 8, 1994
Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 25818 TIMOTHY K. MEYER Date Signed 5/9/94 ARIZONA, U.S.A.

Seal
(Optional)

*Specify Subdiscipline

Note: Insert not applicable (N/A) when statement does not apply.

Flood Control District of Maricopa County
Contract FCD 89-79

WICKENBURG AREA DRAINAGE MASTER STUDY

TECHNICAL DOCUMENTATION REPORT

Appendix 4.1: HEC-2 Models & Cross Section Plots for Sols Wash Area Wash AMIR WASH (Wash a)

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

4.1

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 A: AMIR 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; HEC-2

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: Amir Wash, Wash A

Comparison of 100-year Discharges

Location:	Drainage area (Sq mi.)	FIS (cfs):	Revised (cfs):
Nassawadox R. Confl	2.19	—	1500
Section 0.992	1.83	—	1318
Section 1.574	1.54	—	1209
Confl. w/ Right Bank Trib	0.68	—	649

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.

ream: 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

The 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: Amir Wash: Wash A
(One form for each flooding source)

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. REACH TO BE REVISED

Downstream limit: Station 0.243

Upstream limit: Station 2.757

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		
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 .....

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
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? 11.0

Specify location 0.583

3. What is the distance between the cross-sections in 2 above? 500

Specify location 0.583

4. What is the maximum distance between cross-sections? 580

Specify location ..... Section 1.899

5. Floodway determination

a. What is the maximum surcharge allowed by the community or State? ..... 1 foot

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

Specify location .....

c. What is the maximum velocity? ..... 12.2 fps

Specify location 0.583

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.

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 FCD89-79

	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 1 of 1

FLOODWAY DATA, WASH A: AMIR WASH
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
.243	49.	150.	10.0	2087.0	2087.0	.0
.269	32.	150.	10.0	2087.4	2087.4	.0
.280	32.	200.	7.5	2089.1	2089.1	.0
.286	83.	180.	8.3	2089.7	2089.7	.0
.309	65.	209.	7.2	2090.7	2090.7	.0
.394	56.	220.	6.8	2092.0	2092.0	.0
.488	32.	130.	11.5	2101.2	2101.2	.0
.583	27.	123.	12.2	2111.9	2111.9	.0
.668	144.	448.	3.3	2115.7	2115.0	.7
.685	122.	430.	3.5	2115.8	2115.0	.8
.689	122.	427.	3.5	2115.8	2115.0	.8
.693	170.	484.	3.1	2115.9	2115.0	.9
.730	162.	289.	5.2	2119.6	2119.3	.3
.795	312.	393.	3.8	2126.6	2125.9	.7
.848	288.	346.	4.3	2132.6	2131.9	.7
.886	234.	364.	4.1	2135.4	2135.4	.0
.992	200.	274.	5.5	2144.6	2144.5	.1
1.055	300.	343.	3.8	2148.5	2148.2	.3
1.113	346.	340.	3.9	2152.5	2152.5	.0
1.184	425.	258.	5.1	2157.3	2157.3	.0
1.250	691.	391.	3.4	2162.6	2162.6	.0
1.358	317.	296.	4.5	2171.6	2171.6	.0
1.420	353.	334.	3.9	2177.0	2177.0	.0
1.466	81.	185.	7.1	2182.5	2182.5	.0
1.574	110.	206.	5.9	2190.0	2190.0	.0
1.676	114.	207.	5.8	2197.0	2197.0	.0
1.733	198.	280.	4.3	2202.5	2202.5	.0
1.790	185.	249.	4.9	2205.1	2204.8	.3
1.899	130.	216.	5.6	2213.2	2213.2	.0
1.977	155.	226.	5.3	2216.6	2216.6	.0
2.072	110.	206.	5.9	2225.7	2225.6	.1
2.170	218.	249.	4.9	2231.9	2231.9	.0
2.257	110.	210.	5.8	2237.0	2236.7	.3
2.338	110.	262.	4.6	2240.0	2239.6	.4
2.428	122.	242.	2.7	2242.1	2242.0	.1
2.497	100.	124.	5.2	2249.3	2249.3	.0
2.543	94.	139.	4.7	2253.3	2252.8	.5
2.639	95.	129.	5.0	2258.5	2257.8	.7
2.718	95.	125.	5.2	2263.0	2263.0	.0
2.757	95.	122.	5.3	2266.3	2266.2	.1
2.338	177.	363.	3.3	2240.0	2239.6	.4
.063	95.	113.	1.4	2241.2	2241.4	-.2

A

A2

FLOODWAY DATA, WASH A: AMIR WASH
PROFILE NO. 2

STATION	------- FLOODWAY ------- WIDTH	SECTION AREA	MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
.102	39.	37.	4.5	2245.7	2245.7	.0
.205	49.	39.	4.2	2251.6	2251.6	.0
.323	66.	43.	3.8	2263.5	2263.5	.0
.421	63.	43.	3.8	2271.5	2271.5	.0
.540	55.	40.	4.1	2281.4	2281.4	.0
.608	59.	41.	4.0	2287.4	2287.4	.0
.681	50.	40.	4.1	2293.6	2293.6	.0
.759	58.	40.	4.1	2304.3	2304.3	.0

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

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Community Name: Unincorporated Maricopa County/Town of Wickenburg

Flooding Source: Wash A: Amir 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 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 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? NA

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

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Community Name: Unincorporated Maricopa County / Town of Wickenburg

Flooding Source: Amir Wash: Wash A

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. IDENTIFIER

1. Name of roadway, railroad, etc.: U.S. Hwy 89 (Work Map Sheet No. 59)
2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): Station 0.269 to Station 0.286
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

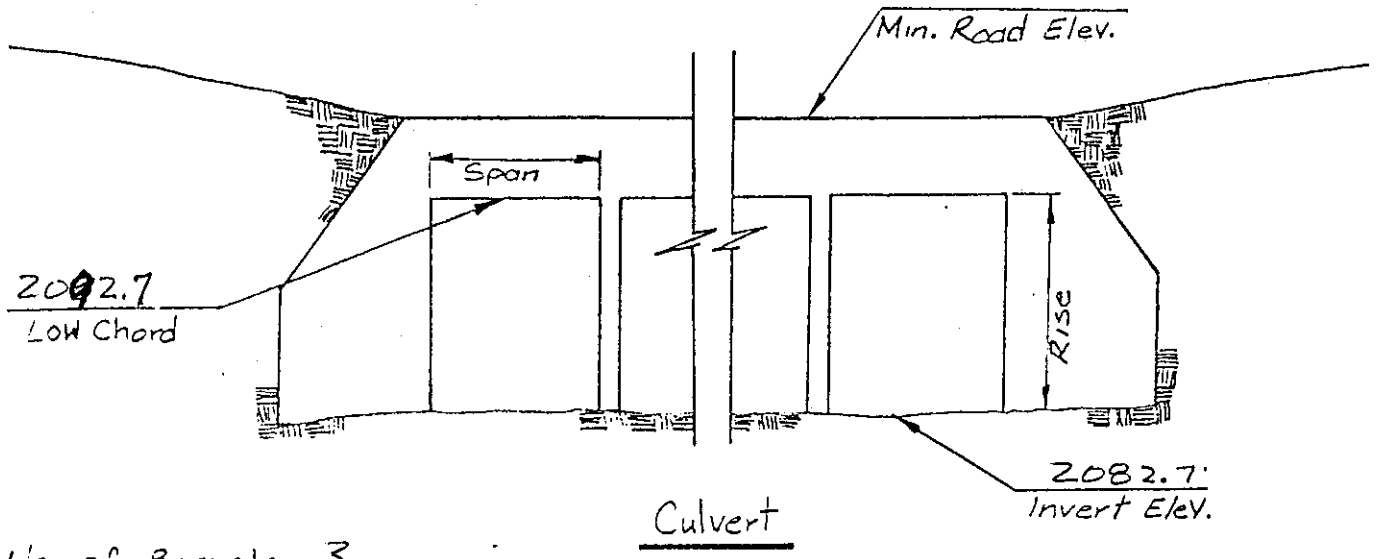
Provide the following information about the structure:

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 barrel 10x10 Reinforced 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° Wingwalls, no inlet bevel
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.

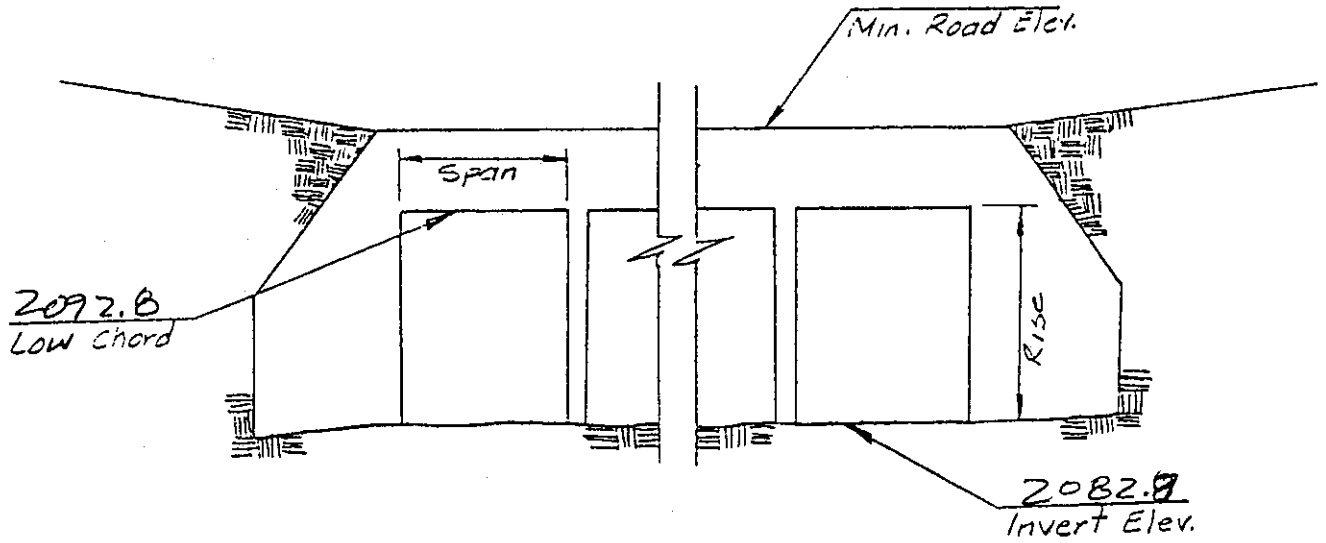


No. of Barrels: 3

Culvert Size: 10x10x58'

Approx. Depth of Sediment in Culvert: 0 See Cross Section # 0.2 9

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.



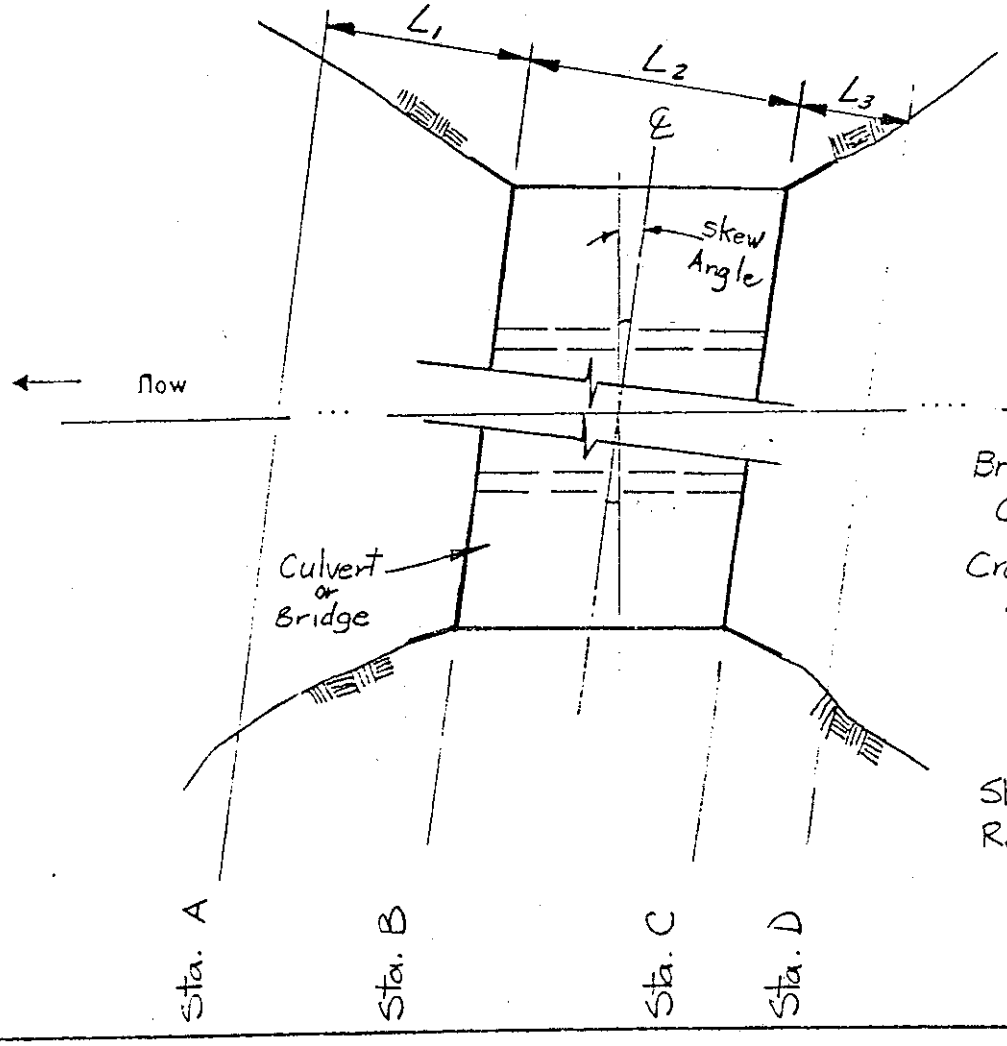
No of Barrels: 3

Culvert

Culvert Size: 10x10x58'

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

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: 58

Cross Section Stations
Sta. A = 0.243
Sta. B = 0.269
Sta. C = 0.280
Sta. D = 0.286

Skew Angle: 0

Reach Lengths:
L1 140 ft.
L2 58 ft.
L3 30 ft.

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

Culvert length or bridge width (ft)	58
Calculated culvert/bridge area (ft²) by the hydraulic model, if applicable	300
Total culvert/bridge area (ft²)	300

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face	—	—
Downstream face	—	—

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	2095.21	2095.21
Downstream face	2095.21	2095.21

100-Year Elevations	Water Surface Elevations	Energy Gradient Elevations
Upstream face	2089.1	2089.98
Downstream face	2087.4	2088.98

Discharge	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)	1500	0	0	1500

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

Weir length (ft.) ..... —

Top Widths

	Floodplain	Floodway
Upstream face	31.70	31.70
Downstream face	31.70	31.70

Top Widths

	Effective Flow	Effective and Ineffective Flow
Upstream face	31.70	31.70
Downstream face	31.70	31.70

Loss Coefficients

Entrance loss coefficient	0.4
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) None

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: Amir Wash: Wash A

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. IDENTIFIER

1. Name of roadway, railroad, etc.: Private Road (Work Map Sheet No. 59)
2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): Station 0.685 to Station 0.693
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:

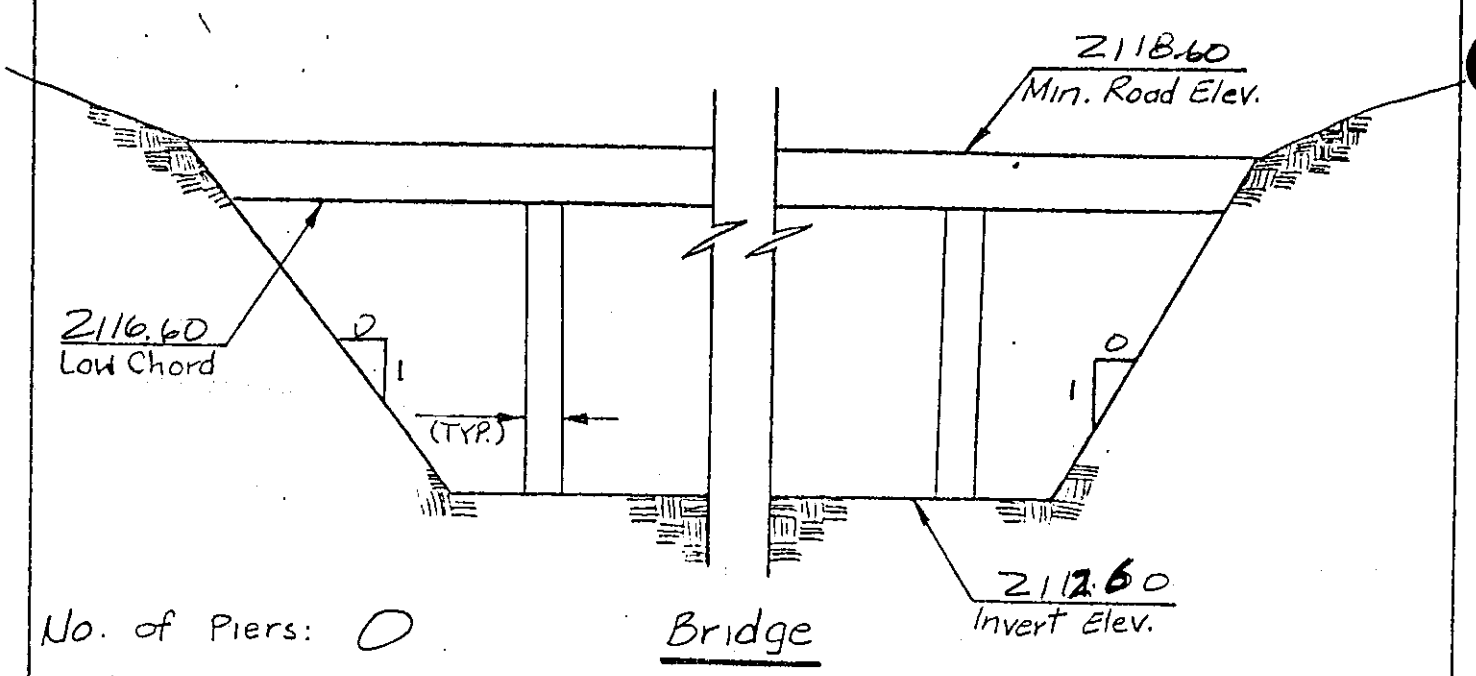
1. Dimension, material, and shape (e.g. two 10 x 5 feet reinforced concrete box culvert; three 30-foot span bridge with 2 rows of two 3- foot diameter circular piers; 40-foot wide ogee shape spillway) Single 20.5 ft span wooden bridge
2. Entrance geometry of culvert/type of bridge opening (e.g. 30°-75° wing walls with square top edge, sloping embankments and vertical abutments) Steep Sloping embankments; Vertical abutments
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.

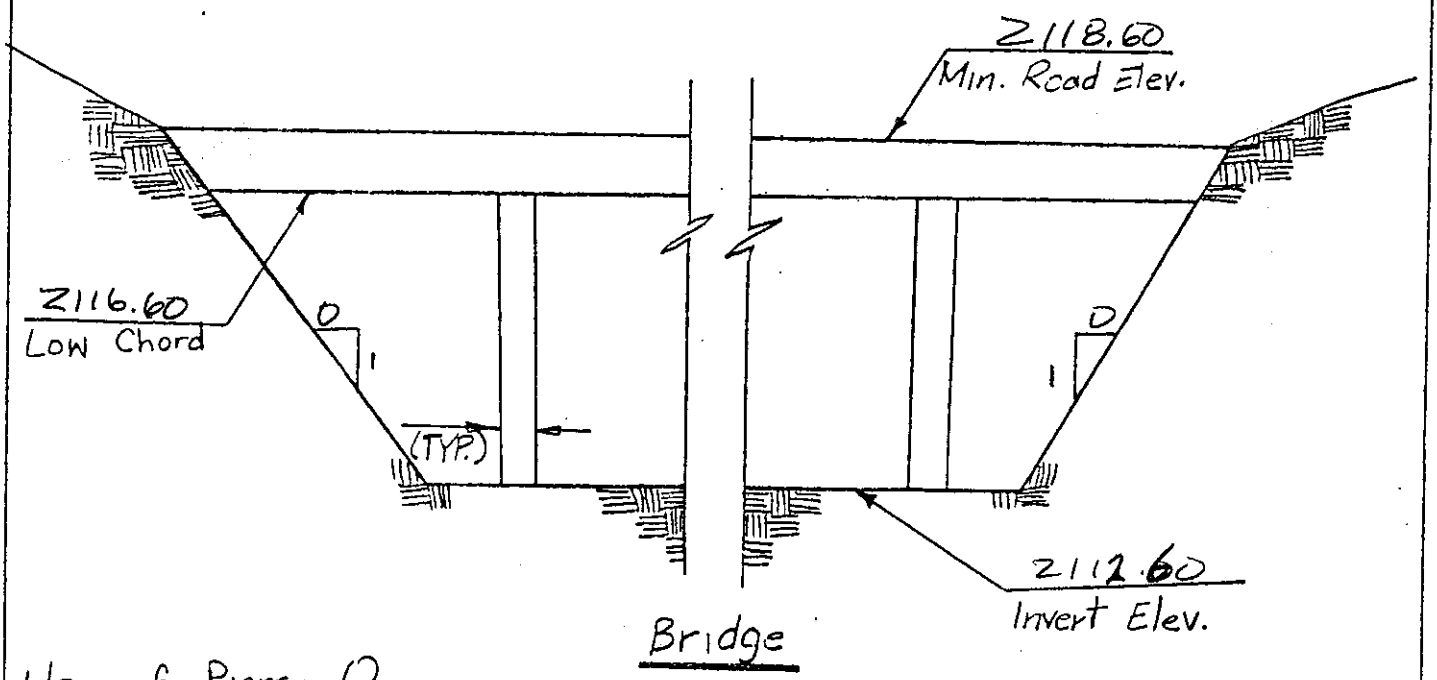


No. of Piers: 0

Total Width of Piers: —0—

See Cross Section # 0.685

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.

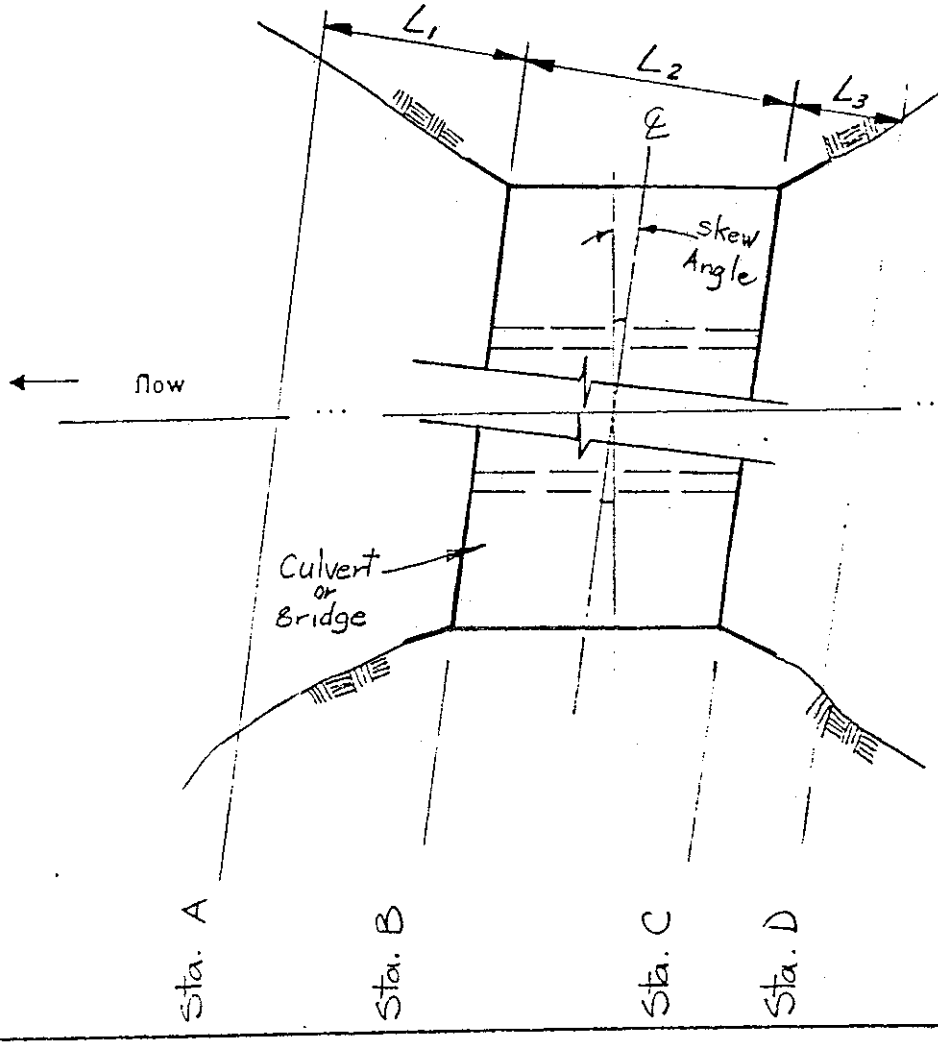


No. of Piers: 0

Total Width of Piers: —0—

See Cross Section # 0.693

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: 20 ft

Cross Section Stations

Sta. A = 0.668

Sta. B = 0.685

Sta. C = 0.689

Sta. D = 0.693

Skew Angle: 25°

Reach Lengths:

L1 90 ft.

L2 20 ft.

L3 20 ft.

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

Culvert length or bridge width (ft)	20 ft
Calculated culvert/bridge area (ft²) by the hydraulic model, if applicable	
Total culvert/bridge area (ft²)	~~TBD~~ 80 ft²

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face	See Comments	—
Downstream face	"	—

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	See Comments	2118.6
Downstream face	"	2118.6

100-Year Elevations	Water Surface Elevations	Energy Gradient Elevations
Upstream face	2115.04	2115.07
Downstream face	2115.04	2115.06

Discharge	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)	1500	—	—	1500

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

Weir length (ft.) ..... —

Top Widths

	Floodplain	Floodway
Upstream face	365.12	139.42
Downstream face	392.63	106.28

Top Widths

	Effective Flow	Effective and Ineffective Flow
Upstream face		
Downstream face		

Loss Coefficients

Entrance loss coefficient	—
Manning's "n" value assigned to the structure(s)	.025
Friction loss coefficient through structure (s)	.025
Other loss coefficients (e.g., bend manhole, etc.)	—
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) NONE —

Comments (*explain any unusual situations*):

Flood-irrigated pasture lies in left overbank, and carries large percentage of the flow. Bridge design data unavailable - (private road) - Encroachment in left overbank only

Attach analysis.

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: AMIR WASH TRIBUTARY: Wash A
(One form for each flooding source)

Project Name /Identifier: WICKENBURG ADMS FCD 89-79

1. HYDROLOGIC ANALYSIS IN FIS

- [x] Approximate study stream (Zone A)
- [ ] Detailed study stream (briefly explain methodology) NA

2. REASON FOR NEW HYDROLOGIC ANALYSIS

- [x] 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)
- [x] 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

- [x] 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: Amir Wash Tributary

Comparison of 100-year Discharges

Location:	Drainage area (Sq mi.)	FIS (cfs):	Revised (cfs):
Confluence w/Amir Wash	0.17	—	164

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

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: Amir Wash Tributary: Wash A
(One form for each flooding source)

Project Name/Identifier: Wickenburg ADMS FCD 89-79

1. REACH TO BE REVISED

Downstream limit: Station 0.063

Upstream limit: Station 0.759

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	164 cfs	164 cfs
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 0.03

Overbanks 0.05

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? ~~This watercourse is in a meandering area. Superficial, subcritical and transitional regimes are common. Alternating areas subcritical profile~~ ☒ 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? 11.75

Specify location 0.323

3. What is the distance between the cross-sections in 2 above? ..... 620 ft

Specify location .....

4. What is the maximum distance between cross-sections? ..... 625 ft

Specify location 0.540

5. Floodway determination

a. What is the maximum surcharge allowed by the community or State? ..... 1 foot

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

Specify location ..... —

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	FLOODIND SOURCE	PROJECT NAME /IDENTIFIER
Unincorporated Maricopa County/ Town of Wickenburg	Amir Wash Tributary: Wash A2	Wickenburg ADMS FCD89-79

	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 1 of 1

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.

FLOODWAY DATA, WASH A: AMIR WASH
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
.243	49.	150.	10.0	2087.0	2087.0	.0
.269	32.	150.	10.0	2087.4	2087.4	.0
.280	32.	200.	7.5	2089.1	2089.1	.0
.286	83.	180.	8.3	2089.7	2089.7	.0
.309	65.	209.	7.2	2090.7	2090.7	.0
.394	56.	220.	6.8	2092.0	2092.0	.0
.488	32.	130.	11.5	2101.2	2101.2	.0
.583	27.	123.	12.2	2111.9	2111.9	.0
.668	144.	448.	3.3	2115.7	2115.0	.7
.685	122.	430.	3.5	2115.8	2115.0	.8
.689	122.	427.	3.5	2115.8	2115.0	.8
.693	170.	484.	3.1	2115.9	2115.0	.9
.730	162.	289.	5.2	2119.6	2119.3	.3
.795	312.	393.	3.8	2126.6	2125.9	.7
.848	288.	346.	4.3	2132.6	2131.9	.7
.886	234.	364.	4.1	2135.4	2135.4	.0
.992	200.	274.	5.5	2144.6	2144.5	.1
1.055	300.	343.	3.8	2148.5	2148.2	.3
1.113	346.	340.	3.9	2152.5	2152.5	.0
1.184	425.	258.	5.1	2157.3	2157.3	.0
1.250	691.	391.	3.4	2162.6	2162.6	.0
1.358	317.	296.	4.5	2171.6	2171.6	.0
1.420	353.	334.	3.9	2177.0	2177.0	.0
1.466	81.	185.	7.1	2182.5	2182.5	.0
1.574	110.	206.	5.9	2190.0	2190.0	.0
1.676	114.	207.	5.8	2197.0	2197.0	.0
1.733	198.	280.	4.3	2202.5	2202.5	.0
1.790	185.	249.	4.9	2205.1	2204.8	.3
1.899	130.	216.	5.6	2213.2	2213.2	.0
1.977	155.	226.	5.3	2216.6	2216.6	.0
2.072	110.	206.	5.9	2225.7	2225.6	.1
2.170	218.	249.	4.9	2231.9	2231.9	.0
2.257	110.	210.	5.8	2237.0	2236.7	.3
2.338	110.	262.	4.6	2240.0	2239.6	.4
2.428	122.	242.	2.7	2242.1	2242.0	.1
2.497	100.	124.	5.2	2249.3	2249.3	.0
2.543	94.	139.	4.7	2253.3	2252.8	.5
2.639	95.	129.	5.0	2258.5	2257.8	.7
2.718	95.	125.	5.2	2263.0	2263.0	.0
2.757	95.	122.	5.3	2266.3	2266.2	.1
-2.338	177.	363.	3.3	2240.0	2239.6	.4
.063	95.	113.	1.4	2241.2	2241.4	-.2

A

A2

FLOODWAY DATA, WASH A: AMIR WASH
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
.102	39.	37.	4.5	2245.7	2245.7	.0
.205	49.	39.	4.2	2251.6	2251.6	.0
.323	66.	43.	3.8	2263.5	2263.5	.0
.421	63.	43.	3.8	2271.5	2271.5	.0
.540	55.	40.	4.1	2281.4	2281.4	.0
.608	59.	41.	4.0	2287.4	2287.4	.0
.681	50.	40.	4.1	2293.6	2293.6	.0
.759	58.	40.	4.1	2304.3	2304.3	.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: Amir Wash Tributary: Wash A

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 work maps?
   a. Effective FIS unknown scale unknown Contour interval
   b. Revision Request 1" = 200' scale _____ 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    23JUN92    TIME    14:32:36  *
*********************************************
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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 23JUN92 14:32:36

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************************************
 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 A: AMIR WASH        (FILE WASHA.DAT)

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0        2        0        0     0.0141      0        0        0    2087.04     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

NC    0.045     0.050     0.025       0.1       0.3
QT        2      1500      1500

             CONFLUENCE OF WASH A:  AMIR WASH
             AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                  VR (HASSAYAMPA RIVER MILE 53.06)
                  VS (HASSAYAMPA RIVER MILE 53.16)
             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

X1    0.243       87      980     1035        0        0        0
X3       10
GR   2100.0    200.0   2098.7    211.7   2097.3    223.3   2096.0    235.0   2095.3    246.7
GR   2094.7    258.3   2094.0    270.0   2093.8    282.5   2093.5    295.0   2093.3    307.5
GR   2093.0    320.0   2092.8    332.5   2092.5    345.0   2092.3    357.5   2092.0    370.0
GR   2091.8    381.7   2091.7    393.3   2091.5    405.0   2091.3    416.7   2091.2    428.3
GR   2091.0    440.0   2091.2    451.7   2091.3    463.3   2091.5    475.0   2091.7    486.7
GR   2091.8    498.3   2092.0    510.0   2092.0    522.5   2092.0    535.0   2091.0    545.0
GR   2090.0    555.0   2089.5    568.8   2089.0    582.5   2088.5    596.3   2088.0    610.0
GR   2087.9    623.0   2087.8    636.0   2087.7    649.0   2087.6    662.0   2087.5    675.0
GR   2087.4    687.0   2087.4    699.0   2087.4    711.0   2087.3    723.0   2087.3    735.0
GR   2087.2    747.0   2087.1    759.0   2087.1    771.0   2087.1    783.0   2087.0    795.0
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GR	2087.1	808.1	2087.1	821.3	2087.2	834.4	2087.3	847.5	2087.3	860.6

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GR   2087.4    873.8   2087.4    886.9   2087.5    900.0   2087.6    911.3   2087.8    922.5
GR   2087.9    933.8   2088.0    945.0   2088.0    956.7   2088.0    968.3   2088.0    980.0
GR   2084.0    990.0   2082.0   1000.0   2083.0   1010.0   2084.0   1020.0   2088.0   1035.0
GR   2092.0   1050.0   2094.0   1060.0   2096.0   1070.0   2096.3   1081.7   2096.7   1093.3
GR   2097.0   1105.0   2097.3   1116.7   2097.7   1128.3   2098.0   1140.0   2098.1   1153.1
GR   2098.3   1166.3   2098.4   1179.4   2098.5   1192.5   2098.6   1205.6   2098.8   1218.8
GR   2098.9   1231.9   2099.0   1245.0

NC    0.045     0.045    0.016      0.6      0.8
          DOWNSTREAM FACE: 3 - 10' X 10' RCB
          NOTE:  US HWY 89 CENTERLINE SECTION WAS
                 USED TO CREATE THE DS FACE SECTION
X1    0.269        94   984.15  1015.85      140      140      140
X3       10                                                   2095.1   2095.3
GR   2102.2    170.9   2101.8    184.1   2101.4    197.3   2101.1    210.4   2100.7    223.6
GR   2100.4    236.8   2100.0    250.0   2099.9    263.1   2099.8    276.3   2099.6    289.4
GR   2099.5    302.5   2099.4    315.6   2099.3    328.8   2099.1    341.9   2099.0    355.0
GR   2098.9    368.1   2098.8    381.3   2098.6    394.4   2098.5    407.5   2098.4    420.6
GR   2098.3    433.8   2098.1    446.9   2098.0    460.0   2097.9    473.3   2097.9    486.7
GR   2097.8    500.0   2097.7    513.3   2097.7    526.7   2097.6    540.0   2097.5    553.3
GR   2097.5    566.7   2097.4    580.0   2097.3    593.3   2097.3    606.7   2097.2    620.0
GR   2097.1    633.3   2097.1    646.7   2097.0    660.0   2096.9    672.9   2096.9    685.7
GR   2096.8    698.6   2096.7    711.4   2096.6    724.3   2096.6    737.1   2096.5    750.0
GR   2096.4    762.9   2096.4    775.7   2096.3    788.6   2096.2    801.4   2096.1    814.3
GR   2096.1    827.1   2096.0    840.0   2095.9    853.3   2095.8    866.7   2095.8    880.0
GR   2095.7    893.3   2095.6    906.7   2095.5    920.0   2095.4    933.3   2095.3    946.7
GR   2095.3    960.0   2095.2    973.3   2082.7   984.15   2082.7    986.7   2082.7   1000.0
GR   2082.7   1013.8   2082.7  1015.85   2095.5   1027.5   2095.8   1041.3   2096.0   1055.0
GR   2096.7   1068.3   2097.3   1081.7   2098.0   1095.0   2098.7   1108.3   2099.3   1121.7
GR   2100.0   1135.0   2100.1   1147.5   2100.2   1160.0   2100.3   1172.5   2100.4   1185.0
GR   2100.5   1197.5   2100.6   1210.0   2100.7   1222.5   2100.8   1235.0   2100.9   1247.5
GR   2101.0   1260.0   2101.1   1273.1   2101.3   1286.3   2101.4   1299.4   2101.5   1312.5
GR   2101.6   1325.6   2101.8   1338.8   2101.9   1351.9   2102.0   1365.0

SC   3.016     0.40      2.8        0       10       10       58      8.1   2082.8   2082.7
          UPSTREAM FACE: 3 - 10' X 10' RCB
          NOTE:  US HWY 89 CENTERLINE SECTION WAS
                 USED TO CREATE THE US FACE SECTION
X1    0.280        94   984.15  1015.85       58       58       58
X2                          2   2092.8   2095.0
X3       10                                                   2095.1   2095.3
BT      -94    170.9   2102.2            184.1   2101.8            197.3   2101.4
BT           210.4   2101.1            223.6   2100.7            236.8   2100.4
BT           250.0   2100.0            263.1   2099.9            276.3   2099.8
BT           289.4   2099.6            302.5   2099.5            315.6   2099.4
BT           328.8   2099.3            341.9   2099.1            355.0   2099.0
BT           368.1   2098.9            381.3   2098.8            394.4   2098.6
BT           407.5   2098.5            420.6   2098.4            433.8   2098.3
BT           446.9   2098.1            460.0   2098.0            473.3   2097.9
BT           486.7   2097.9            500.0   2097.8            513.3   2097.7
BT           526.7   2097.7            540.0   2097.6            553.3   2097.5
BT           566.7   2097.5            580.0   2097.4            593.3   2097.3
BT           606.7   2097.3            620.0   2097.2            633.3   2097.1
BT           646.7   2097.1            660.0   2097.0            672.9   2096.9
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BT          685.7    2096.9          698.6    2096.8          711.4    2096.7
BT          724.3    2096.6          737.1    2096.6          750.0    2096.5
BT          762.9    2096.4          775.7    2096.4          788.6    2096.3
BT          801.4    2096.2          814.3    2096.1          827.1    2096.1
BT          840.0    2096.0          853.3    2095.9          866.7    2095.8
BT          880.0    2095.8          893.3    2095.7          906.7    2095.6
BT          920.0    2095.5          933.3    2095.4          946.7    2095.3
BT          960.0    2095.3          973.3    2095.2          984.15   2095.1
BT          986.7    2095.1          1000.0   2095.0          1013.8   2095.3
BT          1015.85  2095.3          1027.5   2095.5          1041.3   2095.8
BT          1055.0   2096.0          1068.3   2096.7          1081.7   2097.3
BT          1095.0   2098.0          1108.3   2098.7          1121.7   2099.3
BT          1135.0   2100.0          1147.5   2100.1          1160.0   2100.2
BT          1172.5   2100.3          1185.0   2100.4          1197.5   2100.5
BT          1210.0   2100.6          1222.5   2100.7          1235.0   2100.8
BT          1247.5   2100.9          1260.0   2101.0          1273.1   2101.1
BT          1286.3   2101.3          1299.4   2101.4          1312.5   2101.5
BT          1325.6   2101.6          1338.8   2101.8          1351.9   2101.9
BT          1365.0   2102.0
GR  2102.2  170.9    2101.8  184.1   2101.4  197.3   2101.1  210.4   2100.7  223.6
GR  2100.4  236.8    2100.0  250.0   2099.9  263.1   2099.8  276.3   2099.6  289.4
GR  2099.5  302.5    2099.4  315.6   2099.3  328.8   2099.1  341.9   2099.0  355.0
GR  2098.9  368.1    2098.8  381.3   2098.6  394.4   2098.5  407.5   2098.4  420.6
GR  2098.3  433.8    2098.1  446.9   2098.0  460.0   2097.9  473.3   2097.9  486.7
GR  2097.8  500.0    2097.7  513.3   2097.7  526.7   2097.6  540.0   2097.5  553.3
GR  2097.5  566.7    2097.4  580.0   2097.3  593.3   2097.3  606.7   2097.2  620.0
GR  2097.1  633.3    2097.1  646.7   2097.0  660.0   2096.9  672.9   2096.9  685.7
GR  2096.8  698.6    2096.7  711.4   2096.6  724.3   2096.6  737.1   2096.5  750.0
GR  2096.4  762.9    2096.4  775.7   2096.3  788.6   2096.2  801.4   2096.1  814.3
GR  2096.1  827.1    2096.0  840.0   2095.9  853.3   2095.8  866.7   2095.8  880.0
GR  2095.7  893.3    2095.6  906.7   2095.5  920.0   2095.4  933.3   2095.3  946.7
GR  2095.3  960.0    2095.2  973.3   2082.8  984.15  2082.8  986.7   2082.8  1000.0
GR  2082.8  1013.8   2082.8  1015.85 2095.5  1027.5  2095.8  1041.3  2096.0  1055.0
GR  2096.7  1068.3   2097.3  1081.7  2098.0  1095.0  2098.7  1108.3  2099.3  1121.7
GR  2100.0  1135.0   2100.1  1147.5  2100.2  1160.0  2100.3  1172.5  2100.4  1185.0
GR  2100.5  1197.5   2100.6  1210.0  2100.7  1222.5  2100.8  1235.0  2100.9  1247.5
GR  2101.0  1260.0   2101.1  1273.1  2101.3  1286.3  2101.4  1299.4  2101.5  1312.5
GR  2101.6  1325.6   2101.8  1338.8  2101.9  1351.9  2102.0  1365.0

NC  0.045   0.045    0.025   0.6     0.8
ET          9.1      9.1                                             9954.2  10045.9
            CONTROL LINE IS STATION 10000

            ET RECORD: STATIONS 9954.2 & 10045.9 USED TO
                       MODEL 1 TO 1 FLOW CONTRACTION
                       UPSTREAM FROM 3 - 10' X 10' RCB
X1  0.286   79       9976    10035.7 30      30      30
X3  10
GR  2100.0  8850.0   2099.8  8879.5  2099.5  8909.0  2099.3  8938.5  2099.0  8968.0
GR  2098.8  8998.5   2098.5  9027.0  2098.3  9056.5  2098.0  9086.0  2097.8  9115.5
GR  2097.5  9145.0   2097.3  9174.5  2097.0  9204.0  2096.8  9233.5  2096.5  9263.0
GR  2096.3  9292.5   2096.0  9322.0  2095.7  9352.3  2095.3  9382.5  2095.0  9412.8
GR  2094.7  9443.0   2094.3  9473.3  2094.0  9503.5  2093.7  9533.8  2093.3  9564.0
GR  2093.0  9594.3   2092.7  9624.5  2092.3  9654.8  2092.0  9685.0  2091.8  9715.0
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GR	2091.5	9745.0	2091.3	9775.0	2091.0	9805.0	2090.8	9835.0	2090.5	9865.0
GR	2090.3	9895.0	2090.0	9925.0	2089.8	9929.8	2089.7	9934.7	2089.5	9939.5
GR	2089.3	9944.3	2089.2	9949.2	2089.0	9954.0	2089.0	9959.5	2089.0	9965.0
GR	2089.0	9970.5	2089.0	9976.0	2088.7	9980.7	2088.3	9985.3	2088.0	9990.0
GR	2087.0	9995.0	2086.0	10000.0	2086.2	10005.3	2086.1	10010.5	2086.1	10015.8
GR	2086.2	10021.0	2086.1	10025.5	2086.2	10030.0	2089.3	10035.7	2090.7	10041.3
GR	2092.0	10047.0	2092.3	10051.9	2092.6	10056.7	2092.9	10061.6	2093.1	10066.4
GR	2093.4	10071.3	2093.7	10076.1	2094.0	10081.0	2094.3	10085.9	2094.6	10090.7
GR	2094.9	10095.6	2095.1	10100.4	2095.4	10105.3	2095.7	10110.1	2096.0	10115.0
GR	2100.0	10140.0	2110.0	10175.0	2120.0	10210.0	2120.0	10242.0		
NC	0.045	0.050	0.025	0.1	0.3					
X1	0.309	21	976.3	1050	120	120	120			
X3	10									
GR	2099.0	923.0	2100.0	925.0	2102.0	930.0	2102.0	950.0	2100.0	955.0
GR	2096.0	965.0	2093.0	976.3	2092.0	980.0	2090.7	982.0	2089.3	985.0
GR	2088.1	988.0	2087.1	991.0	2087.0	1000.0	2087.2	1041.0	2092.0	1049.0
GR	2093.0	1050.0	2094.0	1113.0	2096.0	1130.0	2098.0	1140.0	2100.0	1150.0
GR	2105.0	1161.3								
X1	0.394	39	950	1042.5	450	450	450			
X3	10									
GR	2100.0	495.0	2099.0	515.0	2099.0	540.2	2099.0	565.4	2099.0	590.6
GR	2099.0	615.8	2099.0	640.9	2099.0	666.1	2099.0	691.3	2099.0	716.5
GR	2099.0	741.7	2099.0	766.9	2099.0	792.1	2099.0	817.3	2099.0	842.4
GR	2099.0	867.6	2099.0	892.8	2099.0	922.0	2100.0	925.0	2102.0	930.0
GR	2102.0	950.0	2100.0	955.0	2096.0	960.0	2091.9	965.0	2088.0	970.0
GR	2087.3	972.0	2087.0	1000.0	2087.5	1007.0	2088.0	1010.0	2092.0	1020.5
GR	2096.0	1030.0	2096.8	1031.0	2097.6	1032.0	2100.0	1035.0	2102.0	1042.5
GR	2104.0	1050.0	2106.7	1070.7	2113.3	1096.3	2120.0	1122.0		
X1	0.488	26	977.5	1021.3	500	500	500			
X3	10									
GR	2105.0	678.0	2104.5	694.0	2104.0	710.0	2102.0	735.0	2100.0	760.0
GR	2099.0	781.0	2099.0	801.6	2099.0	822.1	2099.0	842.7	2099.0	863.3
GR	2099.0	883.9	2099.0	904.4	2099.0	925.0	2100.0	940.0	2104.0	950.0
GR	2106.0	955.0	2106.0	977.5	2104.0	980.0	2100.0	985.0	2096.2	990.0
GR	2096.0	1000.0	2096.3	1010.0	2100.0	1014.3	2106.0	1021.3	2116.0	1033.0
GR	2120.0	1056.0								
ET			9.1						984.6	1018.1
X1	0.583	36	984.6	1018.1	500	500	500			
GR	2140.0	397.0	2120.0	416.0	2119.8	442.0	2116.0	450.0	2116.0	475.0
GR	2115.8	488.0	2115.6	496.0	2115.3	506.0	2115.0	532.0	2115.0	558.0
GR	2114.8	584.0	2114.7	610.0	2114.6	635.0	2114.5	660.0	2114.6	685.0
GR	2114.5	710.0	2114.6	735.0	2114.5	760.0	2114.7	785.0	2114.5	810.0
GR	2114.6	835.8	2114.5	861.7	2114.5	887.5	2114.6	913.3	2114.5	920.0
GR	2114.5	984.6	2112.0	987.5	2105.5	995.0	2105.5	1000.0	2105.5	1005.0
GR	2108.0	1010.0	2112.0	1015.0	2114.5	1018.1	2120.0	1025.0	2140.0	1055.0
GR	2150.0	1085.0								

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NC    0.045     0.050     0.025     0.3       0.5
ET                        9.1                                                   887.      1039.5
X1    0.668        36       983    1039.5       360       450       450
GR   2144.0     430.0    2140.0     455.0    2120.0     470.0    2120.0     500.0    2116.0     515.5
GR   2116.0     540.0    2112.0     560.0    2111.0     588.0    2111.0     612.7    2111.0     637.5
GR   2111.0     662.2    2111.0     686.9    2111.0     711.6    2111.0     736.4    2111.0     761.1
GR   2111.0     785.8    2111.0     810.5    2111.0     835.3    2111.0     860.0    2111.0     886.7
GR   2111.0     913.3    2111.0     940.0    2112.0     957.0    2117.5     967.0    2117.5     983.0
GR   2112.0     995.0    2112.0    1000.0    2112.2    1013.0    2114.0    1022.0    2116.0    1032.0
GR   2117.5    1039.5    2118.0    1042.0    2120.0    1052.0    2126.7    1080.3    2133.3    1108.7
GR   2140.0    1137.0

ET                        9.1                                                   887.      1009.3
                DOWNSTREAM FACE SMALL WOODEN BRIDGE
                20.5' SPAN; +-3.5' RISE; 25 DEGREE SKEW ANGLE
X1    0.685        43     990.7    1009.3        80        90        90
BT      -10    988.65    2118.6    2118.6     990.0    2118.6    2118.6    990.69    2118.6    2118.6
BT             990.7    2118.6    2116.6     995.0    2118.6    2116.6    1000.0    2118.6    2116.6
BT            1004.8    2118.6    2116.6    1009.3    2118.6    2116.6   1009.31    2118.6    2118.6
BT           1011.35    2118.6    2118.6
GR   2144.0     470.0    2132.0     477.5    2120.0     500.0    2120.0     550.0    2116.0     570.5
GR   2116.0     595.0    2112.0     610.0    2111.0     629.0    2111.0     942.0    2111.3     946.3
GR   2111.7     950.7    2112.0     955.0    2112.7     960.0    2113.3     965.0    2114.0     970.0
GR   2116.0     975.0    2118.0     980.0    2118.6    988.65    2118.6     990.0    2118.6    990.69
GR   2112.6     990.7    2112.6     995.0    2112.6    1000.0    2112.6    1004.8    2112.6    1009.3
GR   2118.6   1009.31    2118.6   1011.35    2118.9    1014.3    2120.0    1030.0    2120.1    1035.1
GR   2120.2    1040.2    2120.3    1045.3    2120.3    1050.3    2120.4    1055.4    2120.5    1060.5
GR   2120.6    1065.6    2120.7    1070.7    2120.8    1075.8    2120.8    1080.8    2120.9    1085.9
GR   2121.0    1091.0    2131.0    1110.0    2141.0    1140.0

ET                        9.1                                                   887.      1009.3
                UPSTREAM FACE SMALL WOODEN BRIDGE
                20.5' SPAN; +-3.5' RISE; 25 DEGREE SKEW ANGLE
X1    0.689        43     990.7    1009.3        20        20        20
BT      -10    988.65    2118.6    2118.6     990.0    2118.6    2118.6    990.69    2118.6    2118.6
BT             990.7    2118.6    2116.6     995.0    2118.6    2116.6    1000.0    2118.6    2116.6
BT            1004.8    2118.6    2116.6    1009.3    2118.6    2116.6   1009.31    2118.6    2118.6
BT           1011.35    2118.6    2118.6
GR   2144.0     470.0    2132.0     477.5    2120.0     500.0    2120.0     550.0    2116.0     570.5
GR   2116.0     595.0    2112.0     610.0    2111.0     629.0    2111.0     942.0    2111.3     946.3
GR   2111.7     950.7    2112.0     955.0    2112.7     960.0    2113.3     965.0    2114.0     970.0
GR   2116.0     975.0    2118.0     980.0    2118.6    988.65    2118.6     990.0    2118.6    990.69
GR   2112.9     990.7    2112.9     995.0    2112.9    1000.0    2112.9    1004.8    2112.9    1009.3
GR   2118.6   1009.31    2118.6   1011.35    2118.9    1014.3    2120.0    1030.0    2120.1    1035.1
GR   2120.2    1040.2    2120.3    1045.3    2120.3    1050.3    2120.4    1055.4    2120.5    1060.5
GR   2120.6    1065.6    2120.7    1070.7    2120.8    1075.8    2120.8    1080.8    2120.9    1085.9
GR   2121.0    1091.0    2131.0    1110.0    2141.0    1140.0
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ET                      9.1                                                     865.     1047.5
X1   0.693      34     971.9    1047.5      20       30       20
GR  2140.0   480.0    2130.0     500.0  2120.0    520.0   2120.0     540.0  2120.0     560.0
GR  2120.0   572.0    2116.0     595.0  2116.0    620.0   2112.0     640.0  2111.0     670.0
GR  2111.0   694.4    2111.0     718.8  2111.0    743.1   2111.0     767.5  2111.0     791.9
GR  2111.0   816.3    2111.0     840.6  2111.0    865.0   2111.0     893.5  2111.0     922.0
GR  2112.0   940.0    2116.0     950.0  2118.0    953.9   2118.0     971.9  2116.0     980.0
GR  2113.3   991.0    2113.0    1000.0  2113.2   1009.0   2116.0    1035.0  2118.0    1047.5
GR  2120.0  1060.0    2126.7    1085.0  2133.3   1110.0   2140.0    1135.0

NC   0.045   0.050     0.025       0.1     0.3
ET        5.1       9.1                605.     1109.                          865.     1026.64
          ET RECORD: STATION 605. ELIMINATE INEFECTIVE
                     FLOW AREA IN LEFT OVERBANK
X1   0.730      38     980     1022.5     180      200      195
GR  2140.0   490.0    2120.0     520.0  2119.0    535.0   2120.0     555.0  2121.0     580.0
GR  2122.0   605.0    2121.3     629.7  2120.7    654.3   2120.0     699.0  2119.5     704.1
GR  2119.2   729.3    2118.8     754.4  2118.2    779.6   2118.3     804.7  2118.2     829.9
GR  2118.1   855.0    2118.3     905.0  2118.4    955.0   2118.3     960.0  2118.5     964.0
GR  2118.5   980.0    2116.5     987.5  2115.5    990.0   2115.2     995.0  2115.0    1000.0
GR  2115.2  1005.0    2115.5    1010.0  2117.0   1015.0   2118.0    1020.0  2118.5    1022.5
GR  2119.0  1025.0    2120.0    1030.0  2121.0   1035.0   2122.0    1040.0  2123.0    1045.0
GR  2124.0  1050.0    2132.0    1080.0  2140.0   1110.0

ET                      9.1                                                     706.     1018.4
X1   0.795      58     982.5     1018.4     440      345      345
GR  2140.0   215.0    2136.0     220.0  2132.0    225.0   2131.9     240.0  2128.0     255.0
GR  2127.8   315.0    2126.0     385.0  2125.5    456.9   2124.5     520.8  2124.5     580.6
GR  2124.7   622.5    2124.9     664.4  2125.1    706.3   2125.4     748.1  2125.6     790.0
GR  2125.5   825.0    2125.7     860.0  2125.5    895.0   2126.0     920.0  2126.0     939.8
GR  2126.0   949.6    2126.5     954.5  2126.4    959.4   2127.0     964.0  2127.0     982.5
GR  2124.0   990.0    2122.0     995.0  2122.0   1000.0   2122.0    1005.0  2122.0    1010.0
GR  2122.0  1015.0    2127.0    1018.4  2129.3   1020.0   2134.7    1025.0  2140.0    1030.0
GR  2139.9  1035.0    2139.7    1040.0  2139.6   1045.0   2139.4    1050.0  2139.3    1055.0
GR  2139.1  1060.0    2139.0    1065.0  2139.3   1070.0   2139.7    1075.0  2140.0    1080.0
GR  2141.4  1085.0    2142.8    1090.0  2144.1   1095.0   2145.5    1100.0  2146.9    1105.0
GR  2148.3  1110.0    2149.7    1115.0  2151.1   1120.0   2152.5    1125.0  2153.9    1130.0
GR  2155.2  1135.0    2156.6    1140.0  2158.0   1145.0

ET                      9.1                                                     724.     1011.81
X1   0.848      41     990     1011.81     325      280      280
GR  2140.0   393.0    2136.0     405.0  2135.8    420.0   2134.3     433.0  2132.4     445.0
GR  2131.9   460.2    2131.7     493.4  2131.5    517.6   2131.4     541.8  2131.3     566.0
GR  2131.3   592.3    2130.9     618.6  2130.5    644.9   2130.1     671.1  2130.2     697.4
GR  2130.3   723.7    2130.4     750.0  2130.6    775.7   2131.1     801.4  2131.7     827.1
GR  2131.3   852.9    2131.4     878.6  2131.9    904.3   2132.0     935.0  2132.8     960.0
GR  2133.0   970.0    2133.0     985.0  2133.0    990.0   2132.5     995.0  2128.0    1000.0
GR  2128.0  1004.5    2128.0    1009.0  2133.0   1011.81  2136.0    1013.5  2140.0    1018.8
GR  2144.0  1022.8    2148.0    1027.6  2152.0   1032.4   2156.0    1037.2  2160.0    1042.0
GR  2180.0  1068.0
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ET                      9.1                                                785.    1018.62
X1   0.886      46      982     1015     220     200     200
GR  2160.0   480.0   2150.0    505.0  2140.0   530.0  2137.0    540.0  2137.0     565.0
GR  2136.0   586.0   2135.9    611.0  2135.7   636.0  2135.5    661.0  2135.4     686.0
GR  2135.2   711.0   2135.1    736.0  2134.9   761.0  2134.8    786.0  2134.6     811.0
GR  2134.5   836.0   2134.3    861.0  2134.1   886.0  2134.0    911.0  2134.0     916.1
GR  2134.0   921.1   2134.0    926.2  2134.0   931.3  2134.0    936.4  2134.0     941.4
GR  2134.0   946.5   2134.0    951.6  2134.0   956.6  2134.0    961.7  2134.0     966.8
GR  2134.0   971.9   2134.0    976.9  2134.0   982.0  2133.0    987.5  2131.5     990.0
GR  2131.0  1000.0   2131.2   1005.0  2131.5  1010.0  2134.0   1015.0  2136.0    1020.0
GR  2137.3  1025.0   2138.7   1030.0  2140.0  1035.0  2168.0   1062.5  2176.0    1090.0
GR  2180.0  1110.0

NC   0.045   0.045   0.035      0.1     0.3
ET                      9.1                                                980.     1180.
X1   0.992      32     985.5     1010     395     630     560
GR  2169.0   804.0   2164.5    832.0  2160.0   860.0  2148.0    879.0  2144.0     910.0
GR  2144.0   940.0   2143.0    971.0  2142.5   985.5  2142.0   1000.0  2142.5    1010.0
GR  2143.0  1020.0   2143.1   1043.8  2143.3  1067.5  2143.4   1091.3  2143.5    1115.0
GR  2143.6  1138.8   2143.8   1162.5  2143.9  1186.3  2144.0   1210.0  2144.6    1234.3
GR  2145.1  1258.6   2145.7   1282.9  2146.3  1307.1  2146.9   1331.4  2147.4    1355.7
GR  2148.0  1380.0   2154.7   1391.7  2155.1  1415.4  2155.6   1439.2  2156.0    1463.0
GR  2158.0  1491.5   2160.0   1520.0

QT        2    1318     1318
NC   0.050   0.050   0.030      0.1     0.3
ET                      9.1                                                980.     1280.
            CSM GRAPH USED TO DETERMINE DISCHARGE
X1   1.055      43      984    1010.5     360     260     330
GR  2167.0   747.0   2160.0    772.0  2156.0   800.0  2152.0    820.0  2148.0     840.0
GR  2147.8   865.6   2147.6    891.2  2147.4   916.8  2147.2    942.4  2147.0     968.0
GR  2146.5   984.0   2146.0   1000.0  2146.5  1010.5  2147.0   1021.0  2147.1    1046.8
GR  2147.2  1072.5   2147.3   1098.3  2147.3  1124.0  2147.4   1149.8  2147.5    1175.5
GR  2147.6  1201.3   2147.7   1227.0  2147.8  1252.8  2147.8   1278.5  2147.9    1304.3
GR  2148.0  1330.0   2147.5   1354.0  2147.0  1378.0  2147.5   1405.0  2148.0    1432.0
GR  2149.0  1459.5   2150.0   1487.0  2151.0  1514.5  2152.0   1542.0  2153.0    1565.3
GR  2154.0  1588.5   2155.0   1611.8  2156.0  1635.0  2156.8   1658.0  2157.6    1681.0
GR  2158.4  1704.0   2159.2   1727.0  2160.0  1750.0

ET                      9.1                                               976.86    1323.64
X1   1.113      29     991.5     1022     350     315     310
GR  2164.0   850.0   2162.0    870.0  2160.0   890.0  2158.0    909.5  2156.0     929.0
GR  2154.0   956.0   2152.0    983.0  2151.0   991.5  2150.0   1000.0  2151.0    1022.0
GR  2151.1  1046.1   2151.2   1070.2  2151.3  1094.3  2151.3   1118.3  2151.4    1142.4
GR  2151.5  1166.5   2151.6   1190.6  2151.7  1214.7  2151.8   1238.8  2151.8    1262.8
GR  2151.9  1286.9   2152.0   1311.0  2153.0  1338.8  2154.0   1366.5  2155.0    1394.3
GR  2156.0  1422.0   2160.0   1440.0  2162.0  1464.0  2164.0   1488.0
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ET			9.1						789.51	1214.64
X1	1.184	32	990	1022	340	330	370			
GR	2170.0	530.0	2164.0	551.0	2160.0	585.0	2159.3	635.0	2158.7	685.0
GR	2158.0	735.0	2157.3	786.7	2156.7	838.3	2156.0	890.0	2155.0	919.0
GR	2156.0	970.0	2157.0	990.0	2156.0	1000.0	2157.0	1022.0	2158.0	1032.0
GR	2157.7	1088.0	2157.3	1144.0	2157.0	1200.0	2157.8	1243.8	2158.5	1287.5
GR	2159.3	1331.3	2160.0	1375.0	2164.0	1415.0	2164.0	1460.0	2164.0	1505.0
GR	2163.0	1525.0	2164.0	1550.0	2164.8	1597.8	2165.6	1645.6	2166.4	1693.4
GR	2167.2	1741.2	2168.0	1789.0						
ET			9.1						888.26	1581.08
X1	1.250	33	987.5	1010	350	320	350			
GR	2176.0	608.0	2172.0	631.0	2168.0	680.0	2166.0	720.5	2164.0	761.0
GR	2163.5	797.0	2163.0	833.0	2162.8	868.5	2162.5	904.0	2162.3	939.5
GR	2162.0	975.0	2161.5	987.5	2161.0	1000.0	2161.5	1010.0	2162.0	1020.0
GR	2163.0	1045.0	2162.9	1087.1	2162.7	1129.3	2162.6	1171.4	2162.4	1213.6
GR	2162.3	1255.7	2162.1	1297.9	2162.0	1340.0	2161.8	1377.0	2161.6	1414.0
GR	2161.4	1451.0	2161.2	1488.0	2161.0	1525.0	2162.0	1559.3	2163.0	1593.7
GR	2164.0	1628.0	2172.0	1664.0	2180.0	1700.0				
ET			9.1						709.55	1026.18
X1	1.358	27	985	1015	550	590	570			
GR	2193.0	622.0	2192.0	645.0	2180.0	678.0	2172.0	700.0	2170.0	750.0
GR	2170.3	777.3	2170.7	804.7	2171.0	832.0	2171.0	860.7	2171.0	889.3
GR	2171.0	918.0	2170.7	945.3	2170.3	972.7	2170.2	985.0	2170.0	1000.0
GR	2170.8	1015.0	2171.0	1020.0	2172.0	1030.0	2173.0	1067.5	2174.0	1095.0
GR	2173.7	1116.7	2173.3	1138.3	2173.0	1160.0	2176.0	1180.0	2182.0	1199.5
GR	2188.0	1219.0	2189.0	1240.0						
ET			9.1						751.06	1104.58
X1	1.420	28	980	1010	325	330	330			
GR	2192.0	575.0	2188.0	591.0	2184.0	615.0	2180.0	639.0	2179.3	664.2
GR	2178.7	689.3	2178.0	714.5	2177.3	739.7	2176.7	764.8	2176.0	790.0
GR	2176.0	813.6	2176.0	837.1	2176.0	860.7	2176.0	884.3	2176.0	907.9
GR	2176.0	931.4	2176.0	955.0	2175.0	980.0	2174.0	1000.0	2175.0	1010.0
GR	2176.0	1025.0	2178.0	1056.0	2177.5	1080.0	2177.0	1104.0	2178.5	1134.5
GR	2180.0	1165.0	2184.0	1198.0	2188.0	1230.0				
ET			9.1						973.72	1055.
X1	1.466	23	980	1011	240	225	240			
GR	2194.0	909.0	2192.0	934.0	2188.0	960.0	2180.0	980.0	2178.0	1000.0
GR	2180.0	1011.0	2181.0	1033.0	2182.0	1055.0	2181.5	1079.0	2181.0	1103.0
GR	2181.5	1123.0	2182.0	1143.0	2182.5	1163.0	2183.0	1183.0	2183.3	1200.0
GR	2183.7	1217.0	2184.0	1234.0	2185.0	1252.5	2186.0	1271.0	2187.0	1289.5
GR	2188.0	1308.0	2190.0	1330.0	2192.0	1352.0				
QT	2	1209	1209							
ET			9.1						929.68	1040.

CSM GRAPH USED TO DETERMINE DISCHARGE

X1	1.574	19	980	1000	590	510	570			
GR	2204.	829.	2200.	838.	2196.	860.	2192.	885.	2188.	975.0
GR	2187.0	980.0	2187.0	1000.0	2188.0	1025.0	2189.0	1040.0	2192.	1139.
GR	2196.	1170.	2200.	1180.	2204.	1200.	2205.	1280.	2204.	1408.
GR	2200.	1465.	2196.	1480.	2196.	1590.	2200.	1655.		
ET			9.1						916.51	1031.
X1	1.676	26	980	1000	430	540	540			
GR	2208.0	799.0	2206.0	812.0	2204.0	825.0	2202.7	840.0	2201.3	855.0
GR	2200.0	870.0	2199.0	885.5	2198.0	901.0	2197.0	916.5	2196.0	932.0
GR	2195.5	948.5	2195.0	965.0	2194.0	980.0	2194.0	1000.0	2195.0	1010.0
GR	2196.0	1031.0	2196.3	1046.6	2196.6	1062.1	2196.9	1077.7	2197.1	1093.3
GR	2197.4	1108.9	2197.7	1124.4	2198.0	1140.0	2200.0	1159.0	2204.0	1177.0
GR	2208.0	1195.0								
ET			9.1						847.57	1047.
X1	1.733	25	990	1010	290	300	300			
GR	2216.0	771.0	2204.0	812.0	2203.0	835.5	2202.0	859.0	2201.8	888.0
GR	2201.5	917.0	2201.3	946.0	2201.0	975.0	2199.0	990.0	2198.0	1000.0
GR	2199.0	1010.0	2201.0	1019.0	2201.5	1047.0	2202.0	1075.0	2202.0	1112.5
GR	2202.0	1150.0	2202.4	1181.8	2202.8	1213.6	2203.2	1245.4	2203.6	1277.2
GR	2204.0	1309.0	2206.0	1337.0	2208.0	1365.0	2212.0	1399.0	2216.0	1410.0
ET			9.1						856.45	1041.
X1	1.790	26	990	1019	310	290	300			
GR	2213.0	691.0	2210.5	706.5	2208.0	722.0	2207.5	742.9	2207.0	763.8
GR	2206.5	784.6	2206.0	805.5	2205.5	826.4	2205.0	847.3	2204.5	868.1
GR	2204.0	889.0	2203.0	904.0	2204.0	919.0	2205.0	940.0	2204.0	961.0
GR	2203.0	990.0	2202.0	1000.0	2203.0	1019.0	2203.3	1040.5	2203.5	1062.0
GR	2203.8	1083.5	2204.0	1105.0	2205.0	1127.5	2206.0	1150.0	2207.0	1172.5
GR	2208.0	1195.0								
ET			9.1						960.10	1089.67
X1	1.899	40	988	1010	555	580	580			
GR	2228.0	880.0	2226.0	887.5	2224.0	895.0	2222.0	905.0	2220.0	915.0
GR	2218.0	923.5	2216.0	932.0	2215.0	942.0	2214.0	952.0	2213.0	962.0
GR	2212.0	972.0	2211.0	980.0	2210.0	988.0	2209.0	1000.0	2210.0	1010.0
GR	2211.0	1020.0	2211.5	1030.0	2212.0	1040.0	2212.2	1050.0	2212.5	1060.0
GR	2212.7	1070.0	2212.9	1080.0	2213.2	1090.0	2213.4	1100.0	2213.6	1110.0
GR	2213.9	1120.0	2214.1	1130.0	2214.4	1140.0	2214.6	1150.0	2214.8	1160.0
GR	2215.1	1170.0	2215.3	1180.0	2215.5	1190.0	2215.8	1200.0	2216.0	1210.0
GR	2218.0	1220.0	2220.0	1230.0	2221.3	1240.0	2222.7	1250.0	2224.0	1260.0
ET			9.1						912.93	1068.28
X1	1.977	27	976	1012.5	395	430	410			
GR	2232.0	729.0	2230.0	744.5	2228.0	760.0	2224.0	788.0	2220.0	809.0
GR	2219.3	829.0	2218.7	849.0	2218.0	869.0	2217.3	889.0	2216.7	909.0
GR	2216.0	929.0	2215.0	952.0	2214.5	976.0	2214.0	1000.0	2214.5	1012.5
GR	2215.0	1025.0	2216.0	1068.0	2220.0	1070.0	2222.0	1090.0	2223.0	1110.0
GR	2224.0	1130.0	2228.0	1152.5	2232.0	1175.0	2233.0	1197.5	2234.0	1220.0
GR	2235.0	1242.5	2236.0	1265.0						

ET			9.1						960.08	1070.
X1	2.072	31	994	1018	470	510	500			
GR	2236.0	795.0	2234.0	807.5	2232.0	820.0	2231.4	834.1	2230.9	848.3
GR	2230.3	862.4	2229.7	876.6	2229.1	890.7	2228.6	904.9	2228.0	919.0
GR	2227.2	932.8	2226.4	946.6	2225.6	960.4	2224.8	974.2	2224.0	988.0
GR	2223.0	994.0	2222.0	1000.0	2223.0	1018.0	2224.0	1039.0	2224.5	1054.5
GR	2225.0	1070.0	2224.7	1083.3	2224.3	1096.7	2224.0	1110.0	2225.0	1125.0
GR	2226.0	1140.0	2227.0	1155.0	2228.0	1170.0	2230.7	1183.0	2233.3	1196.0
GR	2236.0	1209.0								

ET			9.1						925.	1143.07
		CENTERLINE OF VULTURE MINE ROAD								
X1	2.170	58	985	1015	550	460	520			
GR	2245.0	455.0	2244.7	483.3	2244.3	511.7	2244.0	540.0	2242.7	563.0
GR	2241.3	586.0	2240.0	609.0	2239.0	634.3	2238.0	659.5	2237.0	684.8
GR	2236.0	710.0	2235.3	733.3	2234.7	756.7	2234.0	780.0	2233.3	803.3
GR	2232.7	826.7	2232.0	850.0	2231.7	875.0	2231.3	900.0	2231.0	925.0
GR	2230.7	950.0	2230.3	975.0	2230.2	985.0	2230.0	1000.0	2230.2	1015.0
GR	2230.3	1024.8	2230.7	1049.7	2231.0	1074.5	2231.3	1099.3	2231.7	1124.2
GR	2232.0	1149.0	2232.6	1173.4	2233.1	1197.9	2233.7	1222.3	2234.3	1246.7
GR	2234.9	1271.1	2235.4	1295.6	2236.0	1320.0	2236.3	1344.1	2236.6	1368.3
GR	2236.9	1392.4	2237.1	1416.6	2237.4	1440.7	2237.7	1464.9	2238.0	1489.0
GR	2238.3	1513.3	2238.6	1537.6	2238.9	1561.9	2239.1	1586.1	2239.4	1610.4
GR	2239.7	1634.7	2240.0	1659.0	2240.2	1682.5	2240.3	1706.0	2240.5	1729.5
GR	2240.7	1753.0	2240.8	1776.5	2241.0	1800.0				

ET			9.1						924.	1034.22
X1	2.257	33	980	1005	460	470	460			
GR	2245.0	780.0	2244.7	790.0	2244.3	800.0	2244.0	810.0	2240.0	822.0
GR	2238.7	833.0	2237.3	844.0	2236.0	865.0	2235.7	866.3	2235.3	877.7
GR	2235.0	889.0	2235.0	899.1	2235.0	909.2	2235.0	919.3	2235.0	929.4
GR	2235.0	939.6	2235.0	949.7	2235.0	959.8	2235.0	969.9	2235.0	980.0
GR	2234.5	990.0	2234.0	1000.0	2235.0	1005.0	2236.0	1025.0	2236.5	1032.0
GR	2237.0	1039.0	2238.5	1046.0	2240.0	1053.0	2242.0	1061.0	2244.0	1072.0
GR	2244.7	1081.3	2245.3	1090.7	2246.0	1100.0				

ET			9.1						922.	1032.25
X1	2.338	45	980	1005	370	425	425			
GR	2252.0	550.0	2251.2	565.0	2250.4	580.0	2249.6	595.0	2248.8	610.0
GR	2248.0	625.0	2247.2	639.0	2246.4	653.0	2245.6	667.0	2244.8	681.0
GR	2244.0	695.0	2243.5	711.0	2243.0	727.0	2242.5	743.0	2242.0	759.0
GR	2241.7	773.3	2241.3	787.7	2241.0	802.0	2240.7	816.3	2240.3	830.7
GR	2240.0	845.0	2239.5	858.8	2239.0	872.5	2238.5	886.3	2238.0	900.0
GR	2237.9	914.3	2237.7	928.6	2237.6	942.9	2237.4	957.1	2237.3	971.4
GR	2237.2	980.0	2237.1	985.7	2237.0	1000.0	2237.4	1005.0	2238.5	1018.5
GR	2240.0	1037.0	2242.0	1053.0	2244.0	1069.0	2246.7	1082.7	2249.3	1096.3
GR	2252.0	1110.0	2253.0	1125.0	2254.0	1140.0	2255.0	1155.0	2256.0	1170.0

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QT        2       649       649
ET                          9.1                                                   949.54    1071.39
                CSM GRAPH USED TO DETERMINE DISCHARGE
X1    2.428        33     994.4    1014.5       500       450       475
GR   2251.2     812.1    2250.4     820.3    2249.7     830.8    2249.0     838.8    2248.0     847.7
GR   2247.6     858.3    2247.1     870.6    2246.4     882.0    2246.0     890.5    2245.4     904.2
GR   2245.0     914.4    2244.2     931.6    2244.0     935.9    2243.0     941.8    2242.0     949.3
GR   2241.0     957.3    2240.0     963.7    2239.8     970.2    2239.8     978.6    2239.8     981.6
GR   2239.8     987.5    2239.6     994.4    2239.6     997.7    2239.6    1000.0    2239.6    1006.2
GR   2239.6    1011.1    2239.6    1014.5    2239.8    1028.6    2239.8    1037.9    2240.0    1050.1
GR   2241.0    1061.5    2242.0    1071.7    2243.0    1079.4

ET                          9.1                                                   975.      1075.
X1    2.497        54     995.3    1009.2       355       400       365
GR   2253.1     770.2    2252.5     793.5    2252.2     804.8    2252.0     821.3    2251.5     837.5
GR   2251.1     851.0    2250.9     859.3    2250.6     870.4    2250.3     888.1    2250.0     898.3
GR   2249.7     914.5    2249.5     927.6    2249.3     937.9    2249.1     945.5    2248.8     954.6
GR   2248.6     962.4    2248.0     975.3    2247.8     981.0    2247.8     984.5    2247.7     990.7
GR   2247.7     995.3    2247.6    1000.0    2247.6    1004.0    2248.0    1009.2    2248.4    1014.2
GR   2248.5    1021.0    2248.3    1031.8    2248.0    1037.4    2247.8    1041.6    2247.8    1044.4
GR   2247.9    1049.8    2248.0    1053.5    2248.5    1063.5    2248.8    1071.6    2249.0    1081.7
GR   2249.3    1093.3    2249.6    1104.7    2249.7    1119.0    2249.9    1131.6    2250.1    1146.8
GR   2250.4    1158.7    2250.6    1164.0    2250.8    1171.3    2251.0    1181.4    2251.7    1195.8
GR   2252.1    1208.1    2253.0    1211.5    2254.0    1215.3    2255.0    1221.4    2256.0    1225.9
GR   2257.0    1229.7    2258.0    1234.1    2259.0    1238.5    2260.0    1241.4

ET                          9.1                                                   985.70    1080.
X1    2.543        43     990.1    1011.1       225       320       245
GR   2254.7     878.2    2255.7     890.3    2257.0     901.8    2257.8     909.9    2258.3     914.7
GR   2259.6     920.4    2260.3     928.5    2260.4     934.6    2260.4     941.5    2260.3     951.7
GR   2260.3     959.8    2260.1     960.1    2260.0     966.3    2256.0     975.4    2253.0     984.7
GR   2252.0     990.1    2251.7     994.6    2251.7    1000.0    2251.7    1006.0    2251.8    1011.1
GR   2251.8    1024.8    2251.8    1043.7    2251.8    1056.6    2251.8    1069.8    2251.7    1084.4
GR   2251.7    1099.1    2251.8    1131.5    2251.8    1147.7    2251.8    1157.9    2251.9    1171.4
GR   2251.9    1184.1    2252.0    1197.6    2252.7    1211.5    2253.0    1220.7    2253.9    1231.0
GR   2254.8    1242.5    2256.0    1258.8    2257.1    1264.3    2258.3    1271.4    2259.1    1279.9
GR   2260.4    1285.4    2262.8    1291.1    2264.0    1298.6

ET                          9.1                                                   919.      1014.04
X1    2.639        56     988.4    1011.8       450       415       505
GR   2269.3     628.4    2266.0     635.6    2265.1     645.3    2264.0     653.7    2262.9     661.0
GR   2261.4     671.5    2260.0     682.4    2259.1     690.2    2258.4     701.5    2257.5     712.4
GR   2257.0     725.9    2257.8     731.8    2257.8     740.4    2257.8     751.3    2257.7     763.8
GR   2256.7     778.4    2256.8     785.9    2256.8     796.1    2256.9     808.8    2256.9     820.4
GR   2257.0     831.1    2257.0     843.2    2257.0     853.9    2257.1     864.4    2257.2     871.6
GR   2257.2     894.2    2257.2     907.7    2257.2     919.6    2257.3     931.4    2257.3     936.1
GR   2257.3     944.4    2257.2     957.9    2257.2     966.0    2257.2     978.0    2257.2     984.5
GR   2257.0     988.4    2256.5     996.3    2256.5    1000.0    2256.5    1004.1    2257.2    1011.8
GR   2258.7    1017.5    2260.0    1021.7    2260.8    1030.0    2261.2    1040.8    2261.6    1056.8
GR   2261.7    1068.7    2261.8    1076.9    2262.0    1087.9    2262.3    1098.4    2262.6    1114.5
GR   2262.9    1129.8    2263.3    1139.4    2263.6    1151.0    2264.1    1163.7    2264.5    1174.1
GR   2264.8    1180.0
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ET                      9.1                                                     986.96    1082.31
X1    2.718      51    993.2   1010.5     445     415     415
GR   2269.0   934.3   2268.8    941.0  2268.5   952.8  2268.2   962.7  2267.1     971.4
GR   2265.4   979.3   2264.0    985.4  2262.4   988.0  2261.0   993.2  2260.7    1000.0
GR   2260.7  1004.2   2260.8   1010.5  2260.8  1014.8  2261.0  1018.5  2261.3    1023.7
GR   2261.6  1030.2   2261.8   1041.8  2262.1  1053.6  2262.4  1061.8  2262.8    1073.0
GR   2263.2  1088.4   2263.4   1092.7  2263.6  1101.8  2263.8  1110.6  2264.1    1122.5
GR   2264.4  1130.0   2264.7   1140.3  2265.1  1152.1  2265.5  1160.4  2265.9    1168.3
GR   2266.4  1179.1   2266.8   1191.5  2267.3  1208.2  2267.8  1215.3  2267.4    1228.2
GR   2269.0  1238.4   2269.4   1249.0  2269.8  1265.5  2270.2  1273.6  2270.3    1283.1
GR   2270.1  1298.9   2270.0   1305.6  2269.5  1313.7  2269.2  1323.5  2269.2    1327.5
GR   2269.6  1334.7   2269.8   1339.3  2270.3  1344.0  2271.4  1356.2  2271.8    1364.5
GR   2272.7  1374.7

ET                      9.1                                                     952.5     1047.5
X1    2.757      53    994.8   1010.3     210     210     210
GR   2278.8   795.3   2277.1    804.1  2275.4   811.6  2272.1   816.7  2271.5     822.6
GR   2271.0   828.9   2270.3    838.4  2269.6   846.1  2269.1   851.4  2268.8     862.6
GR   2268.3   874.2   2267.1    879.8  2266.8   889.7  2266.4   901.9  2265.8     911.3
GR   2265.7   923.7   2265.4    936.5  2265.3   944.2  2265.2   952.3  2265.1     958.4
GR   2265.1   967.1   2265.0    974.0  2265.0   981.7  2264.8   988.3  2264.7     994.8
GR   2264.6  1000.0   2264.7   1010.3  2264.9  1014.8  2265.1  1026.5  2265.2    1038.5
GR   2265.4  1047.9   2265.5   1057.1  2265.6  1070.4  2265.9  1081.0  2266.0    1091.6
GR   2266.3  1104.8   2266.6   1112.5  2266.8  1118.2  2267.1  1128.7  2267.4    1139.4
GR   2267.8  1151.6   2268.5   1161.9  2269.1  1172.0  2270.2  1181.3  2271.0    1193.1
GR   2271.8  1204.2   2272.9   1218.8  2273.5  1229.5  2274.1  1240.6  2274.7    1252.4
GR   2275.2  1261.7   2275.9   1269.9  2276.2  1275.2

QT       2    1209     1209
ET                      9.1                                                     855.64    1032.25
            CSM GRAPH USED TO DETERMINE DISCHARGE
X1   -2.338      45     980     1005       0       0       0
GR   2252.0   550.0   2251.2    565.0  2250.4   580.0  2249.6   595.0  2248.8     610.0
GR   2248.0   625.0   2247.2    639.0  2246.4   653.0  2245.6   667.0  2244.8     681.0
GR   2244.0   695.0   2243.5    711.0  2243.0   727.0  2242.5   743.0  2242.0     759.0
GR   2241.7   773.3   2241.3    787.7  2241.0   802.0  2240.7   816.3  2240.3     830.7
GR   2240.0   845.0   2239.5    858.8  2239.0   872.5  2238.5   886.3  2238.0     900.0
GR   2237.9   914.3   2237.7    928.6  2237.6   942.9  2237.4   957.1  2237.3     971.4
GR   2237.2   980.0   2237.1    985.7  2237.0  1000.0  2237.4  1005.0  2238.5    1018.5
GR   2240.0  1037.0   2242.0   1053.0  2244.0  1069.0  2246.7  1082.7  2249.3    1096.3
GR   2252.0  1110.0   2253.0   1125.0  2254.0  1140.0  2255.0  1155.0  2256.0    1170.0

QT       2     164      164
            TRIBUTARY TO AMIR WASH
X1   0.063      29    987.6    1011.4     350     330     330
GR   2243.0   933.7   2242.0    942.6  2241.0   954.1  2240.0   963.6  2239.9     969.5
GR   2239.8   976.1   2239.7    987.6  2239.5  1000.0  2239.7  1011.4  2239.8    1018.5
GR   2239.9  1030.8   2240.0   1034.7  2241.0  1045.9  2242.1  1055.9  2243.1    1066.5
GR   2244.0  1078.1   2245.0   1094.3  2245.3  1104.4  2245.2  1114.8  2245.0    1120.1
GR   2244.7  1129.7   2244.5   1137.6  2244.7  1145.3  2245.0  1155.0  2246.0    1169.6
GR   2247.1  1175.3   2248.2   1187.2  2252.3  1196.8  2255.3  1204.3
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X1	0.102	46	995	1005.5	210	210	210			
GR	2253.0	806.0	2252.0	828.0	2248.0	850.0	2247.5	867.5	2247.0	905.0
GR	2246.9	910.0	2246.9	915.0	2246.8	920.0	2246.7	925.0	2246.6	930.0
GR	2246.5	935.0	2246.5	940.0	2246.4	945.0	2246.3	950.0	2246.2	955.0
GR	2246.1	960.0	2246.1	965.0	2246.0	970.0	2245.7	975.0	2245.3	980.0
GR	2245.0	985.0	2244.7	990.0	2244.3	995.0	2244.0	1000.0	2244.5	1005.5
GR	2245.0	1011.0	2246.5	1015.5	2248.0	1020.0	2248.3	1025.0	2248.5	1030.0
GR	2248.8	1035.0	2249.0	1040.0	2249.3	1045.0	2249.5	1050.0	2249.8	1055.0
GR	2250.0	1060.0	2250.3	1086.3	2250.7	1112.7	2251.0	1139.0	2251.3	1165.5
GR	2251.5	1192.0	2251.8	1218.5	2252.0	1245.0	2256.0	1265.0	2258.0	1294.0
GR	2260.0	1323.0								
X1	0.205	30	990.2	1004.5	540	540	540			
GR	2264.0	659.0	2262.7	672.7	2261.3	686.3	2260.0	700.0	2259.4	715.7
GR	2258.9	731.4	2258.3	747.1	2257.7	762.9	2257.1	778.6	2256.6	794.3
GR	2256.0	810.0	2255.6	824.9	2255.2	839.8	2254.8	854.7	2254.4	869.6
GR	2254.0	884.5	2253.6	899.4	2253.2	914.3	2252.8	929.2	2252.4	944.1
GR	2252.0	959.0	2251.3	972.7	2250.7	986.3	2250.5	990.2	2250.0	1000.0
GR	2250.5	1004.5	2252.0	1018.0	2260.0	1040.0	2262.0	1057.5	2264.0	1075.0
X1	0.323	28	990	1009	620	620	620			
GR	2276.0	740.0	2275.0	755.5	2274.0	770.0	2273.0	785.5	2272.0	800.0
GR	2271.0	830.5	2270.0	860.0	2269.0	890.5	2268.0	920.0	2266.0	935.5
GR	2264.0	960.0	2263.0	980.0	2262.5	990.0	2262.0	1000.0	2262.5	1009.0
GR	2263.0	1018.0	2263.5	1039.0	2264.0	1100.0	2268,0	1125.0	2269.0	1130.5
GR	2270.0	1135.0	2271.0	1140.5	2272.0	1145.0	2272.9	1158.0	2273.7	1171.0
GR	2274.6	1184.0	2275.4	1197.0	2276.3	1212.0				
X1	0.421	34	987.5	1005	520	520	520			
GR	2284.0	795.0	2282.7	803.7	2281.3	812.3	2280.0	821.0	2279.0	830.8
GR	2278.0	840.5	2277.0	850.3	2276.0	860.0	2275.6	870.0	2275.1	880.0
GR	2274.7	890.0	2274.2	900.0	2273.8	910.0	2273.3	920.0	2272.9	930.0
GR	2272.4	940.0	2272.0	950.0	2271.5	962.5	2271.0	975.0	2270.5	987.5
GR	2270.0	1000.0	2270.5	1005.0	2271.0	1010.0	2271.3	1020.0	2271.7	1030.0
GR	2272.0	1040.0	2274.0	1049.5	2276.0	1059.0	2277.3	1069.0	2278.7	1079.0
GR	2280.0	1089.0	2280.0	1107.0	2280.0	1116.0	2280.0	1125.0		
X1	0.540	33	990.5	1011	625	625	625			
GR	2290.0	850.0	2289.0	859.5	2288.0	869.0	2286.7	879.3	2285.3	889.7
GR	2284.0	900.0	2283.6	910.1	2283.3	920.3	2282.9	930.4	2282.5	940.5
GR	2282.1	950.6	2281.8	960.8	2281.4	970.9	2281.0	981.0	2280.5	990.5
GR	2280.0	1000.0	2280.5	1011.0	2281.0	1022.0	2282.0	1031.3	2283.0	1040.7
GR	2284.0	1050.0	2285.3	1060.3	2286.7	1070.7	2288.0	1081.0	2288.6	1090.9
GR	2289.1	1100.7	2289.7	1110.6	2290.3	1120.4	2290.9	1130.3	2291.4	1140.1
GR	2292.0	1150.0	2292.5	1160.5	2293.0	1171.0				
X1	0.608	32	985.3	1006.8	355	360	360			
GR	2300.0	811.0	2298.7	827.0	2297.3	843.0	2296.0	859.0	2294.7	876.3
GR	2293.3	893.7	2292.0	911.0	2290.0	926.0	2288.0	941.0	2287.5	955.8
GR	2287.0	970.5	2286.5	985.3	2286.0	1000.0	2286.5	1006.8	2287.0	1013.5
GR	2288.0	1027.0	2289.0	1040.3	2290.0	1053.5	2291.0	1066.8	2292.0	1080.0
GR	2292.8	1095.0	2293.6	1110.0	2294.4	1125.0	2295.2	1140.0	2296.0	1155.0
GR	2298.0	1172.5	2300.0	1190.0	2301.0	1204.0	2302.0	1218.0	2303.0	1232.0

GR	2304.0	1246.0	2305.0	1260.0						
X1	0.681	25	994.4	1009.5	380	380	380			
GR	2300.0	910.0	2299.3	917.5	2298.7	925.3	2298.0	933.0	2297.3	940.7
GR	2296.7	948.2	2296.0	955.0	2292.5	994.4	2292.0	1000.0	2292.5	1009.5
GR	2292.7	1013.3	2293.3	1026.7	2294.0	1040.0	2294.3	1054.7	2294.7	1069.3
GR	2295.0	1084.0	2295.3	1098.7	2295.7	1119.3	2296.0	1140.0	2297.3	1145.3
GR	2298.7	1162.7	2300.0	1175.0	2302.0	1187.5	2304.0	1200.0	2306.0	1215.0
X1	0.759	25	990	1012.5	410	410	410			
GR	2316.0	515.0	2318.0	555.0	2316.0	595.0	2312.0	810.0	2311.2	819.6
GR	2310.4	829.2	2309.6	838.8	2308.8	848.4	2308.0	858.0	2306.0	919.0
GR	2304.0	980.0	2303.5	990.0	2303.0	1000.0	2303.5	1012.5	2304.0	1025.0
GR	2306.0	1040.0	2305.0	1055.0	2308.0	1070.0	2310.0	1099.5	2312.0	1129.0
GR	2315.0	1170.0	2314.5	1207.5	2314.0	1245.0	2313.0	1280.0	2317.0	1320.0

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

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*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=     .100 CEHV=     .300
*SECNO  .243
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      2088.00 ELREA=      2088.00


            CONFLUENCE OF WASH A:  AMIR WASH
            AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
                 VR (HASSAYAMPA RIVER MILE 53.06)
                 VS (HASSAYAMPA RIVER MILE 53.16)
            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

      .243      5.04   2087.04   2087.04   2087.04   2088.59      1.56       .00       .00   2088.00
    1500.0        .0    1500.0        .0        .0     149.9        .0        .0        .0   2088.00
       .00       .00     10.01       .00      .000      .025      .000      .000   2082.00    982.41
   .006605        0.        0.        0.         0         5         5       .00     48.97   1031.38


FLOW DISTRIBUTION FOR SECNO=       .24          CWSEL=   2087.04

STA=     982.    1035.
  PER Q=    100.0
   AREA=    149.9
    VEL=     10.0
  DEPTH=      3.1

CCHV=     .600 CEHV=     .800
*SECNO  .269
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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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.12

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2095.10 ELREA= 2095.30

DOWNSTREAM FACE: 3 - 10' X 10' RCB
NOTE: US HWY 89 CENTERLINE SECTION WAS
USED TO CREATE THE DS FACE SECTION

.269	4.71	2087.41	2086.80	.00	2088.97	1.56	.38	.00	2082.70
1500.0	.0	1500.0	.0	.0	149.8	.0	.5	.1	2082.70
.00	.00	10.02	.00	.000	.016	.000	.000	2082.70	984.15
.001467	140.	140.	140.	3	15	0	.00	31.70	1015.85

FLOW DISTRIBUTION FOR SECNO= .27 CWSEL= 2087.41

STA= 984. 1016.
PER Q= 100.0
AREA= 149.8
VEL= 10.0
DEPTH= 4.7

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.016	.40	2.80	.00	10.00	10.00	58.00	8	1	2082.80	2082.70

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO .280

SPECIAL CULVERT OUTLET CONTROL
EGIC = 2089.602 EGOC = 2089.980 PCWSE= 2087.415 ELTRD= 2095.000

3301 HV CHANGED MORE THAN HVINS

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

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
2089.60	2089.98	1.01	0.	1500.	7.502	300.0	2095.00	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2095.10 ELREA= 2095.30

UPSTREAM FACE: 3 - 10' X 10' RCB
NOTE: US HWY 89 CENTERLINE SECTION WAS
USED TO CREATE THE US FACE SECTION

.280	6.31	2089.11	.00	.00	2089.98	.87	1.01	.00	2082.80
1500.0	.0	1500.0	.0	.0	199.9	.0	.7	.2	2082.80
.01	.00	7.50	.00	.000	.016	.000	.000	2082.80	984.15
.000560	58.	58.	58.	3	0	0	.00	31.70	1015.85

FLOW DISTRIBUTION FOR SECNO= .28 CWSEL= 2089.11

STA= 984. 1016.
PER Q= 100.0
AREA= 199.9
VEL= 7.5
DEPTH= 6.3

CCHV= .600 CEHV= .800
*SECNO .286
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9954.2 10045.9 TYPE= 1 TARGET= 91.700
CONTROL LINE IS STATION 10000

ET RECORD: STATIONS 9954.2 & 10045.9 USED TO
MODEL 1 TO 1 FLOW CONTRACTION
UPSTREAM FROM 3 - 10' X 10' RCB

.286	3.73	2089.73	2089.73	.00	2090.95	1.22	.04	.28	2089.00
1500.0	32.5	1467.1	.3	15.9	163.8	.4	.8	.2	2089.30
.01	2.04	8.96	.90	.045	.025	.045	.000	2086.00	9954.20
.006048	30.	30.	30.	0	14	0	.00	83.22	10037.42

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= .29 CWSEL= 2089.73

STA=	9954.	9960.	9965.	9971.	9976.	10036.	10037.
PER Q=	.5	.6	.6	.6	97.8	.0	
AREA=	3.9	4.0	4.0	4.0	163.8	.4	
VEL=	1.9	2.1	2.1	2.1	9.0	.9	
DEPTH=	.7	.7	.7	.7	2.7	.2	

CCHV= .100 CEHV= .300
*SECNO .309

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2093.00 ELREA= 2093.00

.309	3.70	2090.70	2089.98	.00	2091.51	.80	.51	.04	2093.00
1500.0	.0	1500.0	.0	.0	208.9	.0	1.4	.4	2093.00
.01	.00	7.18	.00	.000	.025	.000	.000	2087.00	981.98
.003175	120.	120.	120.	2	15	0	.00	64.88	1046.86

FLOW DISTRIBUTION FOR SECNO= .31 CWSEL= 2090.70

STA=	982.	1050.
PER Q=	100.0	
AREA=	208.9	
VEL=	7.2	
DEPTH=	3.2	

*SECNO .394

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2102.00 ELREA= 2102.00

.394	4.97	2091.97	2090.67	.00	2092.69	.72	1.18	.01	2102.00
1500.0	.0	1500.0	.0	.0	220.5	.0	3.6	1.0	2102.00
.03	.00	6.80	.00	.000	.025	.000	.000	2087.00	964.91
.002199	450.	450.	450.	2	5	0	.00	55.53	1020.44

FLOW DISTRIBUTION FOR SECNO= .39 CWSEL= 2091.97

STA=	965.	1043.
PER Q=	100.0	
AREA=	220.5	
VEL=	6.8	
DEPTH=	4.0	

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

*SECNO .488

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2106.00 ELREA= 2106.00

.488	5.15	2101.15	2101.15	.00	2103.21	2.06	1.77	.40	2106.00
1500.0	.0	1500.0	.0	.0	130.3	.0	5.6	1.5	2106.00
.04	.00	11.51	.00	.000	.025	.000	.000	2096.00	983.56
.006646	500.	500.	500.	0	8	0	.00	32.08	1015.64

FLOW DISTRIBUTION FOR SECNO= .49 CWSEL= 2101.15

STA= 984. 1021.
PER Q= 100.0
AREA= 130.3
VEL= 11.5
DEPTH= 4.1

*SECNO .583
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.583	6.42	2111.92	2111.92	.00	2114.21	2.30	3.37	.07	2114.50
1500.0	.0	1500.0	.0	.0	123.4	.0	7.1	1.9	2114.50
.05	.00	12.16	.00	.000	.025	.000	.000	2105.50	987.60
.006824	500.	500.	500.	0	11	0	.00	27.30	1014.90

FLOW DISTRIBUTION FOR SECNO= .58 CWSEL= 2111.92

STA= 988. 1018.
PER Q= 100.0
AREA= 123.4
VEL= 12.2
DEPTH= 4.5

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

CCHV= .300 CEHV= .500
*SECNO .668

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 7.72

.668	4.03	2115.03	2111.81	.00	2115.04	.01	.15	.69	2117.50
1500.0	1413.2	86.8	.0	1609.0	83.3	.0	14.8	3.9	2117.50
.18	.88	1.04	.00	.045	.025	.000	.000	2111.00	544.85
.000114	360.	450.	450.	2	14	0	.00	456.43	1027.15

FLOW DISTRIBUTION FOR SECNO= .67 CWSEL= 2115.03

STA=	545.	588.	613.	638.	662.	687.	712.	736.	761.	786.	811.	835.	860.
PER Q=	6.1	5.9	6.0	5.9	5.9	5.9	6.0	5.9	5.9	5.9	6.0	5.9	
AREA=	121.8	99.6	100.0	99.6	99.6	99.6	100.0	99.6	99.6	99.6	100.0	99.6	
VEL=	.8	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	
DEPTH=	2.8	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	

STA=	860.	887.	913.	940.	957.	963.	1040.
PER Q=	6.4	6.4	6.4	3.3	.2	5.8	
AREA=	107.6	107.2	107.6	60.0	8.4	83.3	
VEL=	.9	.9	.9	.8	.4	1.0	
DEPTH=	4.0	4.0	4.0	3.5	1.5	2.1	

*SECNO .685

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 10 MIN ELTRD= 2118.60 MAX ELLC= 2116.60

DOWNSTREAM FACE SMALL WOODEN BRIDGE
20.5' SPAN; +-3.5' RISE; 25 DEGREE SKEW ANGLE

.685	4.04	2115.04	2111.88	.00	2115.06	.02	.01	.00	2112.60
1500.0	1439.9	60.1	.0	1427.2	45.4	.0	17.7	4.7	2112.60
.20	1.01	1.33	.00	.045	.025	.000	.000	2111.00	598.60
.000151	80.	90.	90.	2	26	0	.00	392.61	1009.30

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= .69 CWSEL= 2115.04

STA=	599.	629.	942.	960.	991.	1009.
PER Q=	4.8	86.9	3.6	.7	4.0	
AREA=	84.6	1264.6	59.5	18.5	45.4	
VEL=	.9	1.0	.9	.6	1.3	
DEPTH=	2.8	4.0	3.3	.6	2.4	

*SECNO .689

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 10 MIN ELTRD= 2118.60 MAX ELLC= 2116.60

UPSTREAM FACE SMALL WOODEN BRIDGE
20.5' SPAN; +-3.5' RISE; 25 DEGREE SKEW ANGLE

.689	4.04	2115.04	2111.88	.00	2115.06	.02	.00	.00	2112.90
1500.0	1451.2	48.8	.0	1428.3	39.9	.0	18.4	4.9	2112.90
.21	1.02	1.22	.00	.045	.025	.000	.000	2111.00	598.59
.000153	20.	20.	20.	0	26	0	.00	392.63	1009.30

FLOW DISTRIBUTION FOR SECNO= .69 CWSEL= 2115.04

STA=	599.	629.	942.	960.	991.	1009.
PER Q=	4.9	87.5	3.6	.7	3.3	
AREA=	84.7	1265.5	59.5	18.5	39.9	
VEL=	.9	1.0	.9	.6	1.2	
DEPTH=	2.8	4.0	3.3	.6	2.1	

*SECNO .693

3265 DIVIDED FLOW

.693	4.04	2115.04	2111.99	.00	2115.07	.02	.00	.00	2118.00
1500.0	1441.3	58.7	.0	1225.0	56.7	.0	19.0	5.1	2118.00
.21	1.18	1.04	.00	.045	.025	.000	.000	2111.00	624.76
.000207	20.	20.	30.	0	11	0	.00	365.12	1026.15

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= .69 CWSEL= 2115.04

STA=	625.	670.	694.	719.	743.	768.	792.	816.	841.	865.	894.	922.	940.
PER Q=	8.8	8.0	8.0	7.9	8.0	8.0	8.0	7.9	8.0	9.3	9.3	4.7	
AREA=	129.6	98.7	98.7	98.3	98.7	98.7	98.7	98.3	98.7	115.3	115.3	63.8	
VEL=	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	
DEPTH=	2.9	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	

STA=	940.	948.	1048.
PER Q=	.5	3.9	
AREA=	11.6	56.7	
VEL=	.6	1.0	
DEPTH=	1.5	1.3	

CCHV= .100 CEHV= .300
*SECNO .730

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 605.0 1109.0 TYPE= 1 TARGET= 504.000
ET RECORD: STATION 605. ELIMINATE INEFECTIVE
FLOW AREA IN LEFT OVERBANK

.730	4.33	2119.33	2119.33	.00	2119.96	.63	.10	.18	2118.50
1500.0	491.3	1006.8	2.0	240.5	131.3	1.7	22.5	6.5	2118.50
.22	2.04	7.67	1.14	.045	.025	.050	.000	2115.00	718.62
.003799	180.	195.	200.	0	8	0	.00	308.02	1026.64

FLOW DISTRIBUTION FOR SECNO= .73 CWSEL= 2119.33

STA=	719.	780.	805.	830.	855.	905.	955.	980.	1023.	1027.
PER Q=	3.0	3.9	3.9	4.5	8.3	6.5	2.7	67.1	.1	
AREA=	29.7	27.0	27.1	29.5	56.4	48.9	21.8	131.3	1.7	
VEL=	1.5	2.1	2.1	2.3	2.2	2.0	1.9	7.7	1.1	
DEPTH=	.5	1.1	1.1	1.2	1.1	1.0	.9	3.1	.4	

*SECNO .795

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

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.795	3.93	2125.93	2125.93	.00	2126.37	.44	1.42	.02	2127.00
1500.0	748.3	751.7	.0	387.6	103.1	.0	26.6	10.8	2127.00
.25	1.93	7.29	.00	.045	.025	.000	.000	2122.00	395.11
.003603	440.	345.	345.	0	9	0	.00	553.87	1017.67

FLOW DISTRIBUTION FOR SECNO= .80 CWSEL= 2125.93

STA=	395.	457.	521.	581.	623.	664.	706.	748.	790.	825.	860.	895.	916.
PER Q=	.6	7.5	14.3	8.9	6.8	4.9	2.9	1.4	.9	.7	.7	.2	
AREA=	13.3	59.4	85.5	55.7	47.3	39.0	28.4	18.0	13.3	11.5	11.5	4.6	
VEL=	.7	1.9	2.5	2.4	2.2	1.9	1.5	1.1	1.0	.9	.9	.7	
DEPTH=	.2	.9	1.4	1.3	1.1	.9	.7	.4	.4	.3	.3	.2	

STA=	916.	1018.
PER Q=	50.1	
AREA=	103.1	
VEL=	7.3	
DEPTH=	3.2	

*SECNO .848

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.848	3.86	2131.86	2131.86	.00	2132.30	.45	1.49	.00	2133.00
1500.0	1078.3	421.7	.0	362.6	47.1	.0	29.9	14.5	2133.00
.26	2.97	8.95	.00	.045	.025	.000	.000	2128.00	467.50
.006831	325.	280.	280.	0	5	0	.00	450.00	1011.17

FLOW DISTRIBUTION FOR SECNO= .85 CWSEL= 2131.86

STA=	467.	592.	619.	645.	671.	697.	724.	750.	776.	801.	879.	902.	1012.
PER Q=	4.7	3.0	6.1	10.0	11.7	10.5	9.5	7.8	4.7	3.6	.4	28.1	
AREA=	44.9	19.9	30.4	40.8	44.9	42.2	39.6	34.8	25.9	33.9	5.3	47.1	
VEL=	1.6	2.3	3.0	3.7	3.9	3.7	3.6	3.3	2.7	1.6	1.0	8.9	
DEPTH=	.4	.8	1.2	1.6	1.7	1.6	1.5	1.4	1.0	.4	.2	3.1	

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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


*SECNO  .886
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
      .886      4.45   2135.45   2135.45       .00   2136.07       .62      1.00       .05   2134.00
    1500.0     574.8     921.7       3.5     273.7     116.4       2.6      31.8      16.5   2134.00
       .27      2.10      7.92      1.34      .045      .025      .050      .000   2131.00    674.11
   .003456      220.      200.      200.         0        11         0       .00    344.51   1018.62


FLOW DISTRIBUTION FOR SECNO=       .89         CWSEL=   2135.45

STA=     674.     811.     861.     886.     911.     926,     941.     957.     972.     982.    1015.    1019.
  PER Q=      4.8      6.2      4.7      5.7      3.6      3.6      3.6      3.7      2.4     61.4       .2
   AREA=     56.2     48.6     31.2     34.9     22.0     22.0     22.0     22.1     14.6    116.4      2.6
    VEL=      1.3      1.9      2.2      2.4      2.5      2.5      2.5      2.5      2.5      7.9      1.3
  DEPTH=       .4      1.0      1.2      1.4      1.4      1.4      1.4      1.4      1.4      3.5       .7

CCHV=     .100 CEHV=     .300
*SECNO  .992
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
      .992      2.47   2144.47   2144.47       .00   2144.93       .46      3.15       .02   2142.50
    1500.0     274.5     438.8     786.7      70.4      54.5     204.7      36.0      20.2   2142.50
       .30      3.90      8.05      3.84      .045      .035      .045      .000   2142.00    906.32
   .012393      395.      560.      630.         0        11         0       .00    322.91   1229.23


FLOW DISTRIBUTION FOR SECNO=       .99         CWSEL=   2144.47

STA=     906.     971.     986.    1010.    1020.    1044.    1068.    1091.    1115.    1139.    1163.    1210.    1229.
  PER Q=      9.5      8.8     29.3      6.1     10.5      8.7      7.1      6.1      5.1      3.8      4.6       .4
   AREA=     45.3     25.0     54.5     17.2     33.9     30.2     26.8     24.3     22.0     18.4     27.3      4.6
    VEL=      3.1      5.3      8.1      5.3      4.7      4.3      4.0      3.7      3.5      3.1      2.6      1.4
  DEPTH=       .7      1.7      2.2      1.7      1.4      1.3      1.1      1.0       .9       .8       .6       .2

CCHV=     .100 CEHV=     .300
*SECNO 1.055
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
            CSM GRAPH USED TO DETERMINE DISCHARGE
     1.055      2.15   2148.15   2148.15       .00   2148.45       .30      3.21       .02   2146.50
    1318.0     277.4     366.7     674.0     106.0      50.4     280.5      38.6      23.3   2146.50
       .32      2.62      7.27      2.40      .050      .030      .050      .000   2146.00    839.24
   .009160      360.      330.      260.         0         9         0       .00    596.94   1436.18
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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= 1.05 CWSEL= 2148.15

STA=	839.	917.	942.	968.	984.	1011.	1021.	1047.	1073.	1098.	1124.	1150.	1176.
PER Q=	4.7	4.2	6.0	6.1	27.8	4.0	6.5	5.6	4.7	4.2	3.9	3.1	
AREA=	34.8	21.8	26.9	22.4	50.4	14.7	28.4	25.8	23.3	21.9	20.7	18.0	
VEL=	1.8	2.6	2.9	3.6	7.3	3.6	3.0	2.8	2.7	2.6	2.5	2.2	
DEPTH=	.4	.9	1.1	1.4	1.9	1.4	1.1	1.0	.9	.9	.8	.7	

STA=	1176.	1227.	1330.	1378.	1405.	1436.
PER Q=	4.1	3.3	5.5	4.9	1.3	
AREA=	28.4	32.4	31.3	24.4	11.2	
VEL=	1.9	1.4	2.3	2.7	1.5	
DEPTH=	.6	.3	.7	.9	.4	

*SECNO 1.113
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.113	2.45	2152.45	2152.45	.00	2152.87	.42	3.05	.04	2151.00
1318.0	24.9	463.3	829.8	9.5	59.6	276.3	41.4	26.7	2151.00
.34	2.62	7.77	3.00	.050	.030	.050	.000	2150.00	976.86
.010106	350.	310.	315.	0	8	0	.00	346.77	1323.64

FLOW DISTRIBUTION FOR SECNO= 1.11 CWSEL= 2152.45

STA=	977.	992.	1022.	1046.	1070.	1094.	1118.	1142.	1167.	1191.	1215.	1239.	1287.
PER Q=	1.9	35.1	9.6	8.5	7.5	6.9	6.4	5.5	4.6	3.8	3.0	5.0	
AREA=	9.5	59.6	33.8	31.4	29.0	27.7	26.6	24.2	21.8	19.4	17.0	30.3	
VEL=	2.6	7.8	3.7	3.6	3.4	3.3	3.2	3.0	2.8	2.6	2.4	2.2	
DEPTH=	.6	2.0	1.4	1.3	1.2	1.2	1.1	1.0	.9	.8	.7	.6	

STA=	1287.	1324.
PER Q=	2.0	
AREA=	15.0	
VEL=	1.7	
DEPTH=	.4	

*SECNO 1.184

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .70

1.184	2.27	2157.27	2157.23	.00	2157.72	.45	4.83	.01	2157.00
1318.0	1160.8	147.1	10.1	218.0	24.6	9.0	43.8	29.2	2157.00
.36	5.32	5.99	1.12	.050	.030	.050	.000	2155.00	789.51
.020890	340.	370.	330.	2	11	0	.00	299.69	1214.64

FLOW DISTRIBUTION FOR SECNO= 1.18 CWSEL= 2157.27

STA=	790.	838.	890.	919.	970.	990.	1022.	1025.	1200.	1215.
PER Q=	1.9	14.6	24.4	42.9	4.2	11.2	.0	.6	.2	
AREA=	13.8	47.4	51.3	90.1	15.3	24.6	.4	6.7	2.0	
VEL=	1.9	4.1	6.3	6.3	3.6	6.0	1.1	1.1	1.1	
DEPTH=	.3	.9	1.8	1.8	.8	.8	.1	.0	.1	

*SECNO 1.250

3265 DIVIDED FLOW

1.250	1.63	2162.63	2162.51	.00	2162.86	.23	5.12	.02	2161.50
1318.0	76.4	204.7	1036.8	37.5	31.1	329.8	46.3	32.6	2161.50
.39	2.04	6.58	3.14	.050	.030	.050	.000	2161.00	888.26
.011465	350.	350.	320.	4	19	0	.00	571.14	1581.08

FLOW DISTRIBUTION FOR SECNO= 1.25 CWSEL= 2162.63

STA=	888.	975.	988.	1010.	1256.	1340.	1377.	1414.	1451.	1488.	1525.	1559.	1581.
PER Q=	3.3	2.5	15.5	4.1	6.7	5.3	8.0	11.0	14.4	18.2	10.2	.8	
AREA=	26.5	11.0	31.1	31.6	42.8	27.1	34.5	41.9	49.3	56.7	38.9	6.9	
VEL=	1.7	2.9	6.6	1.7	2.1	2.6	3.0	3.5	3.9	4.2	3.5	1.5	
DEPTH=	.3	.9	1.4	.1	.5	.7	.9	1.1	1.3	1.5	1.1	.3	

*SECNO 1.358
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.358	1.62	2171.62	2171.62	.00	2172.06	.45	8.13	.07	2170.20
1318.0	965.1	337.9	15.0	246.0	41.0	5.5	50.8	38.4	2170.80
.42	3.92	8.23	2.73	.050	.030	.050	.000	2170.00	709.55
.018217	550.	570.	590.	0	5	0	.00	316.63	1026.18

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= 1.36 CWSEL= 2171.62

STA=	710.	750.	777.	805.	832.	861.	889.	918.	945.	973.	985.	1015.	1026.
PER Q=	8.6	15.8	10.0	5.4	3.9	3.9	3.9	5.4	10.0	6.3	25.6	1.1	
AREA=	32.7	40.1	30.6	21.0	17.7	17.7	17.7	21.0	30.6	16.8	41.0	5.5	
VEL=	3.5	5.2	4.3	3.4	2.9	2.9	2.9	3.4	4.3	4.9	8.2	2.7	
DEPTH=	.8	1.5	1.1	.8	.6	.6	.6	.8	1.1	1.4	1.4	.5	

*SECNO 1.420

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.420	3.03	2177.03	2177.03	.00	2177.55	.52	3.68	.02	2175.00
1318.0	616.9	608.5	92.6	227.3	75.9	31.2	53.1	40.7	2175.00
.44	2.71	8.02	2.97	.050	.030	.050	.000	2174.00	751.06
.007639	325.	330.	330.	0	17	0	.00	291.84	1104.58

FLOW DISTRIBUTION FOR SECNO= 1.42 CWSEL= 2177.03

STA=	751.	814.	837.	861.	884.	908.	931.	955.	980.	1010.	1025.	1105.
PER Q=	7.6	4.9	4.9	4.9	4.9	4.9	4.9	10.0	46.2	6.0	1.0	
AREA=	43.6	24.2	24.3	24.3	24.3	24.2	24.3	38.2	75.9	22.9	8.2	
VEL=	2.3	2.6	2.6	2.6	2.6	2.6	2.6	3.4	8.0	3.4	1.7	
DEPTH=	.7	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.5	1.5	.1	

*SECNO 1.466
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.466	4.51	2182.51	2182.51	.00	2183.26	.74	1.48	.07	2180.00
1318.0	18.8	895.2	404.0	7.9	108.9	161.0	54.8	42.0	2180.00
.45	2.38	8.22	2.51	.050	.030	.050	.000	2178.00	973.72
.005218	240.	240.	225.	0	11	0	.00	189.81	1163.53

FLOW DISTRIBUTION FOR SECNO= 1.47 CWSEL= 2182.51

STA=	974.	980.	1011.	1033.	1055.	1079.	1103.	1123.	1143.	1163.
PER Q=	1.4	67.9	11.5	3.7	2.5	5.8	4.8	2.1	.4	
AREA=	7.9	108.9	44.3	22.3	18.3	30.3	25.3	15.3	5.3	
VEL=	2.4	8.2	3.4	2.2	1.8	2.5	2.5	1.8	.9	
DEPTH=	1.3	3.5	2.0	1.0	.8	1.3	1.3	.8	.3	

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 1.574
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
CSM GRAPH USED TO DETERMINE DISCHARGE

1.574	3.01	2190.01	2190.01	.00	2190.84	.83	3.62	.02	2187.00
1209.0	191.0	582.3	435.7	58.2	60.3	102.5	57.9	44.0	2187.00
.47	3.28	9.66	4.25	.050	.030	.050	.000	2187.00	929.68
.008734	590.	570.	510.	0	14	0	.00	143.79	1073.47

FLOW DISTRIBUTION FOR SECNO= 1.57 CWSEL= 2190.01

STA=	930.	975.	980.	1000.	1025.	1040.	1073.
PER Q=	10.5	5.3	48.2	26.7	6.9	2.5	
AREA=	45.6	12.6	60.3	62.9	22.7	17.0	
VEL=	2.8	5.1	9.7	5.1	3.7	1.8	
DEPTH=	1.0	2.5	3.0	2.5	1.5	.5	

*SECNO 1.676
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.676	3.00	2197.00	2197.00	.00	2197.72	.72	4.31	.01	2194.00
1209.0	371.9	554.0	283.1	94.7	60.0	82.5	60.5	45.8	2194.00
.49	3.93	9.23	3.43	.050	.030	.050	.000	2194.00	916.51
.008036	430.	540.	540.	0	5	0	.00	168.93	1085.44

FLOW DISTRIBUTION FOR SECNO= 1.68 CWSEL= 2197.00

STA=	917.	932.	949.	965.	980.	1000.	1010.	1031.	1047.	1062.	1078.	1085.
PER Q=	1.1	5.3	9.2	15.2	45.8	10.1	9.1	2.6	1.3	.3	.0	
AREA=	7.7	20.6	28.9	37.5	60.0	25.0	31.5	13.2	8.5	3.9	.4	
VEL=	1.7	3.1	3.9	4.9	9.2	4.9	3.5	2.4	1.8	1.1	.4	
DEPTH=	.5	1.2	1.7	2.5	3.0	2.5	1.5	.8	.5	.2	.0	

*SECNO 1.733
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.733	4.49	2202.49	2202.49	.00	2203.02	.54	1.64	.02	2199.00
1209.0	345.8	629.4	233.8	151.6	79.7	123.5	62.5	47.5	2199.00
.51	2.28	7.89	1.89	.050	.030	.050	.000	2198.00	847.57
.004045	290.	300.	300.	0	11	0	.00	341.12	1188.69

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= 1.73 CWSEL= 2202.49

STA=	848.	917.	946.	975.	990.	1010.	1019.	1047.	1113.	1189.
PER Q=	5.4	5.2	7.4	10.6	52.1	6.3	6.2	4.4	2.4	
AREA=	44.1	31.5	38.8	37.3	79.7	22.4	34.6	38.9	27.7	
VEL=	1.5	2.0	2.3	3.4	7.9	3.4	2.2	1.4	1.0	
DEPTH=	.6	1.1	1.3	2.5	4.0	2.5	1.2	.6	.4	

*SECNO 1.790

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.790	2.78	2204.78	2204.78	.00	2205.33	.55	1.75	.00	2203.00
1209.0	293.1	539.9	375.9	101.0	66.1	114.8	64.7	49.6	2203.00
.52	2.90	8.17	3.28	.050	.030	.050	.000	2202.00	856.45
.009088	310.	300.	290.	0	14	0	.00	256.86	1122.55

FLOW DISTRIBUTION FOR SECNO= 1.79 CWSEL= 2204.78

STA=	856.	904.	919.	990.	1019.	1041.	1062.	1084.	1105.	1123.
PER Q=	7.1	5.3	11.8	44.7	11.4	8.6	6.2	4.1	.9	
AREA=	31.9	19.2	49.9	66.1	35.0	29.7	24.3	18.9	6.8	
VEL=	2.7	3.3	2.9	8.2	3.9	3.5	3.1	2.6	1.5	
DEPTH=	.7	1.3	.7	2.3	1.6	1.4	1.1	.9	.4	

*SECNO 1.899
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.899	4.19	2213.19	2213.19	.00	2214.10	.92	4.30	.11	2210.00
1209.0	155.0	757.7	296.3	42.1	81.2	91.2	68.0	52.1	2210.00
.55	3.68	9.33	3.25	.050	.030	.050	.000	2209.00	960.10
.006262	555.	580.	580.	0	14	0	.00	129.57	1089.67

FLOW DISTRIBUTION FOR SECNO= 1.90 CWSEL= 2213.19

STA=	960.	980.	988.	1010.	1020.	1030.	1040.	1060.	1090.
PER Q=	4.8	8.1	62.7	10.1	5.9	3.6	3.7	1.3	
AREA=	20.6	21.5	81.2	26.9	19.4	14.4	19.3	11.2	
VEL=	2.8	4.5	9.3	4.5	3.7	3.0	2.3	1.4	
DEPTH=	1.0	2.7	3.7	2.7	1.9	1.4	1.0	.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 1.977
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.977	2.56	2216.56	2216.56	.00	2217.29	.72	3.13	.02	2214.50
1209.0	265.4	709.3	234.3	72.5	84.4	68.4	70.1	53.5	2214.50
.56	3.66	8.40	3.42	.050	.030	.050	.000	2214.00	912.93
.009417	395.	410.	430.	0	14	0	.00	155.35	1068.28

FLOW DISTRIBUTION FOR SECNO= 1.98 CWSEL= 2216.56

STA=	913.	929.	952.	976.	1013.	1025.	1068.	1068.
PER Q=	.5	6.1	15.4	58.7	8.0	11.3	.0	
AREA=	4.5	24.4	43.5	84.4	22.7	45.7	.1	
VEL=	1.2	3.0	4.3	8.4	4.3	3.0	.0	
DEPTH=	.3	1.1	1.8	2.3	1.8	1.1	.3	

*SECNO 2.072
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.072	3.62	2225.62	2225.62	.00	2226.33	.71	3.99	.00	2223.00
1209.0	106.6	655.4	447.0	35.3	74.8	143.6	72.8	55.3	2223.00
.59	3.02	8.76	3.11	.050	.030	.050	.000	2222.00	960.08
.006900	470.	500.	510.	0	14	0	.00	174.20	1134.28

FLOW DISTRIBUTION FOR SECNO= 2.07 CWSEL= 2225.62

STA=	960.	988.	994.	1018.	1039.	1055.	1083.	1097.	1110.	1125.	1134.
PER Q=	4.6	4.2	54.2	15.0	5.3	4.3	3.3	5.2	3.7	.3	
AREA=	22.6	12.7	74.8	44.5	21.2	23.7	15.0	19.5	16.8	2.9	
VEL=	2.4	4.0	8.8	4.1	3.0	2.2	2.7	3.2	2.7	1.1	
DEPTH=	.8	2.1	3.1	2.1	1.4	.8	1.1	1.5	1.1	.3	

*SECNO 2.170
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
CENTERLINE OF VULTURE MINE ROAD

2.170	1.93	2231.93	2231.93	.00	2232.41	.48	4.46	.02	2230.20
1209.0	386.7	439.0	383.3	111.8	54.8	110.9	75.9	58.0	2230.20
.61	3.46	8.00	3.46	.050	.030	.050	.000	2230.00	855.98
.011682	550.	520.	460.	0	11	0	.00	287.09	1143.07

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= 2.17 CWSEL= 2231.93

STA=	856.	925.	950.	975.	985.	1015.	1025.	1050.	1075.	1099.	1143.
PER Q=	6.1	7.5	12.0	6.3	36.3	6.2	12.0	7.5	4.3	1.7	
AREA=	32.3	27.0	35.7	16.8	54.8	16.4	35.6	26.7	19.3	12.8	
VEL=	2.3	3.4	4.1	4.5	8.0	4.5	4.1	3.4	2.7	1.6	
DEPTH=	.5	1.1	1.4	1.7	1.8	1.7	1.4	1.1	.8	.3	

*SECNO 2.257

2.257	2.66	2236.66	2236.47	.00	2237.13	.48	4.73	.00	2235.00
1209.0	709.3	423.0	76.7	185.8	54.0	26.2	78.8	60.5	2235.00
.64	3.82	7.84	2.93	.050	.030	.050	.000	2234.00	854.36
.009036	460.	460.	470.	4	11	0	.00	179.86	1034.22

FLOW DISTRIBUTION FOR SECNO= 2.26 CWSEL= 2236.66

STA=	854.	878.	889.	899.	909.	919.	929.	940.	950.	960.	970.	980.	1005.
PER Q=	4.0	5.2	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	35.0	
AREA=	17.8	17.0	16.8	16.8	16.8	16.8	16.9	16.8	16.8	16.8	16.8	54.0	
VEL=	2.7	3.7	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	7.8	
DEPTH=	.8	1.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.2	

STA=	1005.	1025.	1034.
PER Q=	6.0	.4	
AREA=	23.2	3.0	
VEL=	3.1	1.5	
DEPTH=	1.2	.3	

*SECNO 2.338

2.338	2.61	2239.61	2239.23	.00	2240.02	.40	2.87	.01	2237.20
1209.0	678.3	446.1	84.6	196.4	62.8	30.1	81.2	62.0	2237.40
.66	3.45	7.10	2.81	.050	.030	.050	.000	2237.00	855.64
.006031	370.	425.	425.	4	15	0	.00	176.61	1032.25

FLOW DISTRIBUTION FOR SECNO= 2.34 CWSEL= 2239.61

STA=	856.	900.	914.	929.	943.	957.	971.	980.	1005.	1019.	1032.
PER Q=	6.9	6.4	7.4	8.4	9.4	10.7	6.9	36.9	6.0	1.0	
AREA=	35.8	23.8	25.9	28.1	30.0	32.4	20.3	62.8	22.5	7.7	
VEL=	2.3	3.2	3.4	3.6	3.8	4.0	4.1	7.1	3.2	1.6	
DEPTH=	.8	1.7	1.8	2.0	2.1	2.3	2.4	2.5	1.7	.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 2.428

CSM GRAPH USED TO DETERMINE DISCHARGE

2.428	2.37	2241.97	2241.07	.00	2242.14	.17	2.10	.02	2239.60
649.0	194.1	217.0	237.9	79.8	47.6	99.0	84.1	63.7	2239.60
.70	2.43	4.56	2.40	.050	.030	.050	.000	2239.60	949.54
.002678	500.	475.	450.	3	11	0	.00	121.85	1071.39

FLOW DISTRIBUTION FOR SECNO= 2.43 CWSEL= 2241.97

STA=	950.	964.	970.	979.	988.	994.	1015.	1029.	1038.	1050.	1062.	1071.
PER Q=	3.4	5.2	7.2	7.7	6.4	33.4	13.1	8.0	9.7	5.1	.7	
AREA=	13.2	13.5	18.2	19.3	15.7	47.6	32.0	20.2	25.3	16.8	4.8	
VEL=	1.7	2.5	2.6	2.6	2.7	4.6	2.7	2.6	2.5	2.0	.9	
DEPTH=	.9	2.1	2.2	2.2	2.3	2.4	2.3	2.2	2.1	1.5	.5	

*SECNO 2.497

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2.497	1.69	2249.29	2249.29	.00	2249.75	.46	1.98	.09	2247.70
649.0	205.3	182.6	261.1	51.1	22.2	70.9	85.7	64.9	2248.00
.73	4.02	8.23	3.68	.050	.030	.050	.000	2247.60	938.35
.014803	355.	365.	400.	0	19	0	.00	154.50	1092.85

FLOW DISTRIBUTION FOR SECNO= 2.50 CWSEL= 2249.29

STA=	938.	975.	981.	985.	991.	995.	1009.	1014.	1032.	1037.	1042.	1044.	1050.
PER Q=	9.7	5.5	3.8	7.1	5.5	28.1	3.2	7.8	3.9	4.0	3.0	5.5	
AREA=	21.1	7.9	5.2	9.5	7.3	22.2	5.4	15.3	6.4	5.8	4.2	7.8	
VEL=	3.0	4.5	4.7	4.8	4.9	8.2	3.8	3.3	3.9	4.5	4.7	4.6	
DEPTH=	.6	1.4	1.5	1.5	1.6	1.6	1.1	.9	1.1	1.4	1.5	1.4	

STA=	1050.	1054.	1064.	1082.	1093.
PER Q=	3.3	5.9	3.3	.2	
AREA=	5.0	10.4	9.1	1.6	
VEL=	4.4	3.7	2.4	1.0	
DEPTH=	1.3	1.0	.5	.1	

*SECNO 2.543

2.543	1.11	2252.81	2252.50	.00	2252.97	.16	3.19	.03	2252.00
649.0	2.7	108.1	538.2	1.8	22.5	195.8	86.9	66.2	2251.80
.75	1.50	4.81	2.75	.050	.030	.050	.000	2251.70	985.70
.008612	225.	245.	320.	5	11	0	.00	229.32	1215.02

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= 2.54 CWSEL= 2252.81

STA=	986.	990.	1011.	1025.	1044.	1057.	1070.	1084.	1099.	1132.	1148.	1158.	1171.
PER Q=	.4	16.7	6.0	8.2	5.6	5.7	6.9	7.5	15.3	7.1	4.4	5.4	
AREA=	1.8	22.5	13.9	19.2	13.1	13.4	15.5	16.4	34.5	16.4	10.3	13.0	
VEL=	1.5	4.8	2.8	2.8	2.8	2.8	2.9	3.0	2.9	2.8	2.8	2.7	
DEPTH=	.4	1.1	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.0	1.0	1.0	

STA=	1171.	1184.	1198.	1215.
PER Q=	4.7	4.5	1.7	
AREA=	11.6	11.7	6.7	
VEL=	2.6	2.5	1.6	
DEPTH=	.9	.9	.4	

*SECNO 2.639

3265 DIVIDED FLOW

2.639	1.29	2257.79	2257.76	.00	2258.06	.27	5.05	.03	2257.00
649.0	481.8	166.1	1.1	165.3	25.5	.7	89.0	68.8	2257.20
.78	2.92	6.52	1.60	.050	.030	.050	.000	2256.50	708.90
.015475	450.	505.	415.	3	8	0	.00	284.19	1014.04

FLOW DISTRIBUTION FOR SECNO= 2.64 CWSEL= 2257.79

STA=	709.	732.	778.	786.	796.	809.	820.	831.	843.	854.	864.	894.	908.
PER Q=	3.5	3.5	4.6	5.7	6.5	5.4	4.6	4.6	4.1	3.6	7.3	3.2	
AREA=	10.1	9.1	7.8	10.1	11.9	10.3	9.0	9.5	8.4	7.8	17.9	8.0	
VEL=	2.3	2.5	3.8	3.7	3.5	3.4	3.3	3.2	3.2	3.0	2.6	2.6	
DEPTH=	.4	.2	1.0	1.0	.9	.9	.8	.8	.8	.7	.6	.6	

STA=	908.	931.	958.	978.	988.	1012.	1014.
PER Q=	5.2	5.0	4.7	2.7	25.6	.2	
AREA=	13.4	13.6	11.8	6.5	25.5	.7	
VEL=	2.5	2.4	2.6	2.7	6.5	1.6	
DEPTH=	.6	.5	.6	.6	1.1	.3	

*SECNO 2.718
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
2.718	2.34	2263.04	2263.04	.00	2263.71	.67	5.17	.12	2261.00
649.0	24.8	330.5	293.8	7.3	39.2	78.8	90.6	70.7	2260.80
.80	3.39	8.44	3.73	.050	.030	.050	.000	2260.70	986.96
.009757	445.	415.	415.	0	14	0	.00	95.35	1082.31

FLOW DISTRIBUTION FOR SECNO= 2.72 CWSEL= 2263.04

STA=	987.	988.	993.	1011.	1015.	1019.	1024.	1030.	1042.	1054.	1062.	1073.	1082.
PER Q=	.1	3.8	50.9	7.5	5.9	6.8	6.4	8.6	6.2	2.5	1.3	.1	
AREA=	.3	7.0	39.2	9.6	7.9	9.8	10.3	15.6	12.9	6.5	4.9	1.1	
VEL=	1.2	3.5	8.4	5.0	4.9	4.5	4.0	3.6	3.1	2.5	1.7	.7	
DEPTH=	.3	1.3	2.3	2.2	2.1	1.9	1.6	1.3	1.1	.8	.4	.1	

*SECNO 2.757
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.757	1.55	2266.15	2266.15	.00	2266.55	.40	2.47	.03	2264.70
649.0	268.7	182.1	198.3	76.2	23.3	60.9	91.3	71.4	2264.70
.82	3.53	7.82	3.25	.050	.030	.050	.000	2264.60	905.79
.014514	210.	210.	210.	0	19	0	.00	192.46	1098.26

FLOW DISTRIBUTION FOR SECNO= 2.76 CWSEL= 2266.15

STA=	906.	937.	952.	958.	967.	974.	982.	988.	995.	1010.	1015.	1027.	1039.
PER Q=	4.7	6.7	3.4	5.2	4.5	5.4	5.3	6.3	28.1	4.1	8.2	6.6	
AREA=	13.6	13.5	6.1	9.1	7.6	8.9	8.3	9.1	23.3	6.1	13.5	12.0	
VEL=	2.2	3.2	3.6	3.7	3.8	3.9	4.2	4.5	7.8	4.4	3.9	3.6	
DEPTH=	.4	.9	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.4	1.2	1.0	

STA=	1039.	1048.	1070.	1098.
PER Q=	4.0	6.0	1.7	
AREA=	8.0	14.5	6.9	
VEL=	3.2	2.7	1.6	
DEPTH=	.9	.6	.2	

*SECNO -2.338
START TRIB COMP

-2.338	2.338	2239.615

CSM GRAPH USED TO DETERMINE DISCHARGE

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
-2.338	2.61	2239.61	.00	.00	2240.02	.40	.00	2.50	2237.20
1209.0	678.3	446.1	84.6	196.4	62.8	30.1	91.3	71.4	2237.40
.82	3.45	7.10	2.81	.050	.030	.050	.000	2237.00	855.63
.006028	0.	0.	0.	0	0	0	.00	176.62	1032.25

FLOW DISTRIBUTION FOR SECNO= -2.34 CWSEL= 2239.61

STA=	856.	900.	914.	929.	943.	957.	971.	980.	1005.	1019.	1032.
PER Q=	6.9	6.4	7.4	8.4	9.4	10.7	6.9	36.9	6.0	1.0	
AREA=	35.8	23.8	26.0	28.1	30.0	32.4	20.3	62.8	22.5	7.7	
VEL=	2.3	3.2	3.4	3.6	3.8	4.0	4.1	7.1	3.2	1.6	
DEPTH=	.8	1.7	1.8	2.0	2.1	2.3	2.4	2.5	1.7	.6	

*SECNO .063

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .40

TRIBUTARY TO AMIR WASH

.063	1.85	2241.35	2240.38	.00	2241.39	.03	1.33	.04	2239.70
164.0	43.3	78.0	42.7	45.4	41.7	45.4	92.9	72.5	2239.70
.88	.95	1.87	.94	.050	.030	.050	.000	2239.50	950.07
.000677	350.	330.	330.	2	22	0	.00	99.02	1049.09

FLOW DISTRIBUTION FOR SECNO= .06 CWSEL= 2241.35

STA=	950.	954.	964.	970.	976.	988.	1011.	1019.	1031.	1035.	1046.	1049.
PER Q=	.1	3.4	4.9	6.1	11.9	47.6	7.3	11.4	3.2	4.0	.1	
AREA=	.7	8.1	8.3	9.9	18.4	41.7	11.4	18.5	5.5	9.5	.6	
VEL=	.2	.7	1.0	1.0	1.1	1.9	1.1	1.0	1.0	.7	.2	
DEPTH=	.2	.9	1.4	1.5	1.6	1.8	1.6	1.5	1.4	.9	.2	

*SECNO .102
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.102	1.72	2245.72	2245.72	.00	2246.21	.49	.36	.14	2244.30
164.0	40.5	106.5	17.1	14.5	16.0	6.1	93.3	72.8	2244.50
.89	2.80	6.67	2.78	.050	.030	.050	.000	2244.00	974.61
.010391	210.	210.	210.	0	11	0	.00	38.57	1013.17

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= .10 CWSEL= 2245.72

STA=	975.	980.	985.	990.	995.	1006.	1011.	1013.
PER Q=	.8	3.7	7.4	12.9	64.9	9.7	.7	
AREA=	1.1	2.9	4.4	6.1	16.0	5.4	.8	
VEL=	1.1	2.1	2.8	3.5	6.7	3.0	1.5	
DEPTH=	.2	.6	.9	1.2	1.5	1.0	.4	

*SECNO .205
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.205	1.64	2251.64	2251.64	.00	2252.08	.44	5.44	.00	2250.50
164.0	31.9	120.4	11.7	13.8	19.8	5.8	93.8	73.4	2250.50
.92	2.31	6.07	2.01	.050	.030	.050	.000	2250.00	966.12
.009767	540.	540.	540.	0	11	0	.00	48.61	1014.73

FLOW DISTRIBUTION FOR SECNO= .20 CWSEL= 2251.64

STA=	966.	973.	986.	990.	1005.	1015.
PER Q=	.6	11.5	7.4	73.4	7.1	
AREA=	1.1	8.7	4.0	19.8	5.8	
VEL=	.9	2.2	3.0	6.1	2.0	
DEPTH=	.2	.6	1.0	1.4	.6	

*SECNO .323
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.323	1.46	2263.46	2263.46	.00	2263.83	.37	5.98	.01	2262.50
164.0	18.6	125.9	19.5	9.2	23.0	10.8	94.4	74.2	2262.50
.96	2.03	5.48	1.81	.050	.030	.050	.000	2262.00	970.83
.009528	620.	620.	620.	0	11	0	.00	66.44	1037.27

FLOW DISTRIBUTION FOR SECNO= .32 CWSEL= 2263.46

STA=	971.	980.	990.	1009.	1018.	1037.
PER Q=	1.4	10.0	76.8	9.0	2.9	
AREA=	2.1	7.1	23.0	6.4	4.4	
VEL=	1.1	2.3	5.5	2.3	1.1	
DEPTH=	.2	.7	1.2	.7	.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 .421
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.421	1.51	2271.51	2271.51	.00	2271.89	.37	4.88	.00	2270.50
164.0	26.5	122.8	14.7	12.8	22.1	8.0	94.9	74.9	2270.50
.99	2.07	5.56	1.84	.050	.030	.050	.000	2270.00	962.20
.009262	520.	520.	520.	0	8	0	.00	63.10	1025.30

FLOW DISTRIBUTION FOR SECNO= .42 CWSEL= 2271.51

STA=	962.	975.	988.	1005.	1010.	1020.	1025.
PER Q=	2.3	13.8	74.9	5.5	3.2	.2	
AREA=	3.3	9.5	22.1	3.8	3.6	.6	
VEL=	1.2	2.4	5.6	2.4	1.5	.6	
DEPTH=	.3	.8	1.3	.8	.4	.1	

*SECNO .540
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.540	1.40	2281.40	2281.40	.00	2281.79	.39	6.11	.01	2280.50
164.0	16.2	130.7	17.1	8.2	23.6	7.9	95.5	75.8	2280.50
1.03	1.97	5.53	2.15	.050	.030	.050	.000	2280.00	970.83
.010336	625.	625.	625.	0	11	0	.00	54.91	1025.74

FLOW DISTRIBUTION FOR SECNO= .54 CWSEL= 2281.40

STA=	971.	981.	991.	1011.	1022.	1026.
PER Q=	1.3	8.6	79.7	9.9	.5	
AREA=	2.0	6.2	23.6	7.2	.8	
VEL=	1.0	2.3	5.5	2.3	1.0	
DEPTH=	.2	.7	1.2	.7	.2	

*SECNO .608
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.608	1.38	2287.38	2287.38	.00	2287.75	.38	3.70	.00	2286.50
164.0	22.5	131.3	10.2	11.4	24.2	5.2	95.8	76.3	2286.50
1.05	1.98	5.42	1.97	.050	.030	.050	.000	2286.00	959.42
.010228	355.	360.	360.	0	8	0	.00	59.17	1018.59

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

FLOW DISTRIBUTION FOR SECNO= .61 CWSEL= 2287.38

STA=	959.	971.	985.	1007.	1014.	1019.
PER Q=	1.3	12.5	80.1	5.6	.6	
AREA=	2.1	9.3	24.2	4.2	1.0	
VEL=	1.0	2.2	5.4	2.2	1.0	
DEPTH=	.2	.6	1.1	.6	.2	

*SECNO .681
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.681	1.60	2293.60	2293.60	.00	2294.03	.43	3.80	.02	2292.50
164.0	13.4	121.9	28.7	6.8	20.4	12.7	96.2	76.7	2292.50
1.07	1.97	5.98	2.26	.050	.030	.050	.000	2292.00	982.01
.009787	380.	380.	380.	0	11	0	.00	50.39	1032.41

FLOW DISTRIBUTION FOR SECNO= .68 CWSEL= 2293.60

STA=	982.	994.	1010.	1013.	1027.	1032.
PER Q=	8.2	74.3	6.8	10.3	.4	
AREA=	6.8	20.4	3.8	8.0	.9	
VEL=	2.0	6.0	2.9	2.1	.8	
DEPTH=	.6	1.4	1.0	.6	.2	

*SECNO .759
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.759	1.34	2304.34	2304.34	.00	2304.72	.38	4.17	.01	2303.50
164.0	14.5	133.1	16.4	7.7	24.6	7.9	96.5	77.3	2303.50
1.09	1.88	5.41	2.09	.050	.030	.050	.000	2303.00	969.52
.010594	410.	410.	410.	0	15	0	.00	58.05	1027.58

FLOW DISTRIBUTION FOR SECNO= .76 CWSEL= 2304.34

STA=	970.	980.	990.	1013.	1025.	1028.
PER Q=	1.0	7.8	81.1	9.8	.3	
AREA=	1.8	5.9	24.6	7.4	.4	
VEL=	.9	2.2	5.4	2.2	.9	
DEPTH=	.2	.6	1.1	.6	.2	

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T1      FLOODWAY DETERMINATION
T2      1 FT TARGET INCREASE
T3      WASH A: AMIR WASH

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

              3                                                          2087.04

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 .243

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2088.00 ELREA= 2088.00

CONFLUENCE OF WASH A: AMIR WASH
AND HASSAYAMPA RIVER BETWEEN CROSS-SECTIONS:
VR (HASSAYAMPA RIVER MILE 53.06)
VS (HASSAYAMPA RIVER MILE 53.16)
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

.243	5.04	2087.04	2087.04	2087.04	2088.59	1.55	.00	.00	2088.00
1500.0	.0	1500.0	.0	.0	150.1	.0	.0	.0	2088.00
.00	.00	9.99	.00	.000	.025	.000	.000	2082.00	982.40
.006578	0.	0.	0.	0	4	0	.00	49.00	1031.40

CCHV= .600 CEHV= .800
*SECNO .269

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.11

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2095.10 ELREA= 2095.30

DOWNSTREAM FACE: 3 - 10' X 10' RCB
NOTE: US HWY 89 CENTERLINE SECTION WAS
USED TO CREATE THE DS FACE SECTION

.269	4.72	2087.42	2086.80	.00	2088.98	1.56	.38	.01	2082.70
1500.0	.0	1500.0	.0	.0	149.6	.0	.5	.1	2082.70
.00	.00	10.03	.00	.000	.016	.000	.000	2082.70	984.15
.001473	140.	140.	140.	5	15	0	.00	31.70	1015.85

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	.016	.40	2.80	.00	10.00	10.00	58.00	8	1	2082.80	2082.70

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO .280

SPECIAL CULVERT OUTLET CONTROL
EGIC = 2089.602 EGOC = 2089.981 PCWSE= 2087.418 ELTRD= 2095.000

3301 HV CHANGED MORE THAN HVINS

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2089.60	2089.98	1.00	0.	1500.	7.502	300.0	2095.00	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2095.10 ELREA= 2095.30

UPSTREAM FACE: 3 - 10' X 10' RCB
NOTE: US HWY 89 CENTERLINE SECTION WAS
USED TO CREATE THE US FACE SECTION

.280	6.31	2089.11	.00	.00	2089.98	.87	1.00	.00	2082.80
1500.0	.0	1500.0	.0	.0	200.0	.0	.7	.2	2082.80
.01	.00	7.50	.00	.000	.016	.000	.000	2082.80	984.15
.000560	58.	58.	58.	3	0	0	.00	31.70	1015.85

CCHV= .600 CEHV= .800
*SECNO .286
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 9954.2 10045.9 TYPE= 1 TARGET= 91.700
CONTROL LINE IS STATION 10000

ET RECORD: STATIONS 9954.2 & 10045.9 USED TO
MODEL 1 TO 1 FLOW CONTRACTION

UPSTREAM FROM 3 - 10' X 10' RCB

.286	3.73	2089.73	2089.73	2089.73	2090.95	1.22	.04	.28	2089.00
1500.0	32.5	1467.1	.3	15.9	163.8	.4	.8	.2	2089.30
.01	2.04	8.96	.90	.045	.025	.045	.000	2086.00	9954.20
.006048	30.	30.	30.	0	14	0	.00	83.22	10037.42

CCHV= .100 CEHV= .300
*SECNO .309

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2093.00 ELREA= 2093.00

.309	3.70	2090.70	2089.98	2090.70	2091.51	.80	.51	.04	2093.00
1500.0	.0	1500.0	.0	.0	208.9	.0	1.4	.4	2093.00
.01	.00	7.18	.00	.000	.025	.000	.000	2087.00	981.98
.003175	120.	120.	120.	2	15	0	.00	64.88	1046.86

*SECNO .394

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2102.00 ELREA= 2102.00

.394	4.97	2091.97	2090.67	2091.97	2092.69	.72	1.18	.01	2102.00
1500.0	.0	1500.0	.0	.0	220.5	.0	3.6	1.0	2102.00
.03	.00	6.80	.00	.000	.025	.000	.000	2087.00	964.91
.002199	450.	450.	450.	2	5	0	.00	55.53	1020.44

*SECNO .488

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2106.00 ELREA= 2106.00

.488	5.15	2101.15	2101.15	2101.15	2103.21	2.06	1.77	.40	2106.00
1500.0	.0	1500.0	.0	.0	130.3	.0	5.6	1.5	2106.00
.04	.00	11.51	.00	.000	.025	.000	.000	2096.00	983.56
.006646	500.	500.	500.	0	8	0	.00	32.08	1015.64

*SECNO .583
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 984.6 1018.1 TYPE= 1 TARGET= 33.500

.583	6.42	2111.92	2111.92	2111.92	2114.21	2.30	3.37	.07	2114.50
1500.0	.0	1500.0	.0	.0	123.4	.0	7.1	1.9	100000.00
.05	.00	12.16	.00	.000	.025	.000	.000	2105.50	987.60
.006824	500.	500.	500.	0	11	0	.00	27.30	1014.90

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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  .668

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.27


3470 ENCROACHMENT STATIONS=      887.0    1039.5  TYPE=      1  TARGET=      152.500
      .668      4.73   2115.73   2113.39   2115.03   2115.92       .18      1.07       .63   2117.50
    1500.0    1052.9     447.1        .0     335.5     112.3        .0       9.7       2.6 100000.00
      .09      3.14      3.98       .00      .045      .025      .000      .000   2111.00    887.00
   .001323      360.      450.      450.         3        18         0       .00    120.60   1030.67


*SECNO  .685

3265 DIVIDED FLOW


3370 NORMAL BRIDGE, NRD=  10 MIN ELTRD=  2118.60 MAX ELLC=  2116.60


3470 ENCROACHMENT STATIONS=      887.0    1009.3  TYPE=      1  TARGET=      122.300
            DOWNSTREAM FACE SMALL WOODEN BRIDGE
            20.5' SPAN; +-3.5' RISE; 25 DEGREE SKEW ANGLE
      .685      4.84   2115.84   2113.51   2115.04   2116.04       .20       .12       .01   2112.60
    1500.0    1227.4     272.6        .0     369.3      60.2        .0      10.5       2.8 100000.00
      .09      3.32      4.53       .00      .045      .025      .000      .000   2111.00    887.00
   .001499       80.       90.       90.         2         9         0       .00    106.20   1009.30


*SECNO  .689

3265 DIVIDED FLOW


3370 NORMAL BRIDGE, NRD=  10 MIN ELTRD=  2118.60 MAX ELLC=  2116.60
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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=      887.0    1009.3  TYPE=      1  TARGET=      122.300
            UPSTREAM FACE SMALL WOODEN BRIDGE
            20.5' SPAN; +-3.5' RISE; 25 DEGREE SKEW ANGLE
     .689      4.87   2115.87   2113.59   2115.04   2116.07       .20       .03       .00   2112.90
   1500.0    1258.8     241.2        .0     372.1      55.2        .0      10.7       2.8 100000.00
     .10      3.38      4.37       .00      .045      .025      .000      .000   2111.00    887.00
  .001540      20.       20.       20.         0        12         0       .00    106.28   1009.30


*SECNO  .693

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      865.0    1047.5  TYPE=      1  TARGET=      182.500
     .693      4.96   2115.96   2113.54   2115.04   2116.11       .15       .03       .01   2118.00
   1500.0    1185.7     314.3        .0     382.9     101.0        .0      10.9       2.9 100000.00
     .10      3.10      3.11       .00      .045      .025      .000      .000   2111.00    865.00
  .001218      20.       20.       30.         2        11         0       .00    139.42   1034.66


CCHV=     .100 CEHV=     .300
*SECNO  .730

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      865.0    1026.6  TYPE=      1  TARGET=      161.640
            ET RECORD: STATION 605. ELIMINATE INEFECTIVE
                       FLOW AREA IN LEFT OVERBANK
     .730      4.58   2119.58   2119.58   2119.33   2120.39       .81       .37       .20   2118.50
   1500.0     341.2    1154.8       4.0     144.3     142.1       2.8      12.5       3.5   2118.50
     .11      2.36      8.13      1.44      .045      .025      .050      .000   2115.00    865.00
  .003836      180.      195.      200.         0        10         0       .00    161.64   1026.64


*SECNO  .795

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


7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      706.0    1018.4  TYPE=      1  TARGET=      312.400
      .795      4.65   2126.65   2126.65   2125.93   2127.25       .60      1.32       .02   2127.00
    1500.0     531.9     968.1        .0     265.1     127.5        .0      15.7       5.7 100000.00
      .12      2.01      7.59       .00      .045      .025      .000      .000   2122.00    706.00
   .003265      440.      345.      345.         0         5         0       .00    290.15   1018.16


*SECNO  .848

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      724.0    1011.8  TYPE=      1  TARGET=      287.810
      .848      4.55   2132.55   2132.55   2131.86   2133.12       .57      1.33       .00   2133.00
    1500.0     967.1     532.9        .0     287.3      58.3        .0      18.3       7.7 100000.00
      .14      3.37      9.14       .00      .045      .025      .000      .000   2128.00    724.00
   .006242      325.      280.      280.         0         5         0       .00    245.24   1011.56


*SECNO  .886
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      785.0    1018.6  TYPE=      1  TARGET=      233.620
      .886      4.48   2135.48   2135.48   2135.45   2136.13       .65       .96       .02   2134.00
    1500.0     558.9     937.4       3.8     243.6     117.5       2.7      20.1       8.9   2134.00
      .15      2.29      7.98      1.38      .045      .025      .050      .000   2131.00    785.00
   .003461      220.      200.      200.         0         6         0       .00    233.62   1018.62


CCHV=     .100 CEHV=     .300
*SECNO  .992
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=      980.0    1180.0  TYPE=      1  TARGET=      200.000
      .992      2.60   2144.60   2144.60   2144.47   2145.23       .63      3.38       .00   2142.50
    1500.0      56.0     509.7     934.3      11.0      57.6     205.2      23.9      11.4   2142.50
      .17      5.08      8.85      4.55      .045      .035      .045      .000   2142.00    980.00
   .013938      395.      560.      630.         0        14         0       .00    200.00   1180.00
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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

CCHV= .100 CEHV= .300
*SECNO 1.055
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 980.0 1280.0 TYPE= 1 TARGET= 300.000
CSM GRAPH USED TO DETERMINE DISCHARGE

1.055	2.44	2148.44	2148.44	2148.15	2148.87	.43	3.24	.02	2146.50
1318.0	25.1	460.3	832.6	7.5	57.9	277.7	25.8	13.0	2146.50
.19	3.35	7.95	3.00	.050	.030	.050	.000	2146.00	980.00
.009081	360.	330.	260.	0	10	0	.00	300.00	1280.00

*SECNO 1.113
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 976.9 1323.6 TYPE= 1 TARGET= 346.780

1.113	2.44	2152.44	2152.44	2152.45	2152.87	.43	3.07	.00	2151.00
1318.0	24.7	467.0	826.3	9.3	59.2	271.9	28.3	15.3	2151.00
.21	2.66	7.89	3.04	.050	.030	.050	.000	2150.00	977.06
.010530	350.	310.	315.	0	5	0	.00	346.17	1323.23

*SECNO 1.184

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 789.5 1214.6 TYPE= 1 TARGET= 425.130

1.184	2.28	2157.28	2157.24	2157.27	2157.71	.43	4.84	.00	2157.00
1318.0	1156.8	149.2	12.0	222.0	25.2	10.4	30.6	17.8	2157.00
.23	5.21	5.92	1.16	.050	.030	.050	.000	2155.00	789.51
.019747	340.	370.	330.	2	12	0	.00	303.59	1214.64

*SECNO 1.250

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 888.3 1581.1 TYPE= 1 TARGET= 692.820

1.250	1.62	2162.62	2162.51	2162.63	2162.85	.24	5.12	.02	2161.50
1318.0	74.8	206.2	1036.9	36.3	30.8	324.1	33.1	21.1	2161.50
.25	2.06	6.69	3.20	.050	.030	.050	.000	2161.00	889.76
.011993	350.	350.	320.	4	14	0	.00	563.53	1580.64

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

*SECNO 1.358
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 709.5 1026.2 TYPE= 1 TARGET= 316.630

1.358	1.63	2171.63	2171.63	2171.62	2172.06	.43	8.20	.06	2170.20
1318.0	966.4	336.4	15.3	249.0	41.4	5.6	37.6	26.9	2170.80
.29	3.88	8.13	2.71	.050	.030	.050	.000	2170.00	709.55
.017567	550.	570.	590.	0	5	0	.00	316.63	1026.18

*SECNO 1.420

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 751.1 1104.6 TYPE= 1 TARGET= 353.520

1.420	3.03	2177.03	2177.03	2177.03	2177.55	.53	3.63	.03	2175.00
1318.0	616.6	608.9	92.5	227.0	75.8	31.1	40.0	29.2	2175.00
.30	2.72	8.03	2.97	.050	.030	.050	.000	2174.00	751.11
.007660	325.	330.	330.	0	17	0	.00	291.68	1104.55

*SECNO 1.466

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 973.7 1055.0 TYPE= 1 TARGET= 81.280

1.466	4.54	2182.54	2182.54	2182.51	2183.73	1.20	1.76	.20	2180.00
1318.0	22.6	1057.6	237.9	8.0	109.6	67.5	41.4	30.2	2180.00
.31	2.81	9.65	3.52	.050	.030	.050	.000	2178.00	973.72
.007132	240.	240.	225.	0	14	0	.00	81.28	1055.00

*SECNO 1.574
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= 929.7 1040.0 TYPE= 1 TARGET= 110.320
CSM GRAPH USED TO DETERMINE DISCHARGE

1.574	3.03	2190.03	2190.03	2190.01	2190.93	.90	4.43	.03	2187.00
1209.0	198.1	597.2	413.6	59.0	60.6	86.2	43.9	31.4	2187.00
.33	3.36	9.86	4.80	.050	.030	.050	.000	2187.00	929.68
.009035	590.	570.	510.	0	14	0	.00	110.32	1040.00

*SECNO 1.676
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 916.5 1031.0 TYPE= 1 TARGET= 114.490

1.676	2.96	2196.96	2196.96	2197.00	2197.84	.87	4.70	.00	2194.00
1209.0	386.7	583.9	238.4	92.5	59.3	55.4	46.2	32.7	2194.00
.35	4.18	9.85	4.31	.050	.030	.050	.000	2194.00	917.06
.009291	430.	540.	540.	0	8	0	.00	113.94	1031.00

*SECNO 1.733
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 847.6 1047.0 TYPE= 1 TARGET= 199.430

1.733	4.44	2202.44	2202.44	2202.49	2203.16	.72	1.97	.02	2199.00
1209.0	362.6	686.8	159.6	145.4	78.9	55.4	47.9	33.7	2199.00
.37	2.49	8.71	2.88	.050	.030	.050	.000	2198.00	848.60
.004996	290.	300.	300.	0	11	0	.00	198.40	1047.00

*SECNO 1.790
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 856.5 1041.0 TYPE= 1 TARGET= 184.550

1.790	3.03	2205.03	2205.03	2204.78	2205.70	.67	1.94	.01	2203.00
1209.0	415.0	623.3	170.7	133.8	73.5	41.4	49.7	35.1	2203.00
.38	3.10	8.49	4.13	.050	.030	.050	.000	2202.00	856.45
.008527	310.	300.	290.	0	19	0	.00	184.55	1041.00

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

*SECNO 1.899
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 960.1 1089.7 TYPE= 1 TARGET= 129.570

1.899	4.20	2213.20	2213.20	2213.19	2214.10	.90	4.13	.07	2210.00
1209.0	155.5	755.5	298.1	42.5	81.5	92.3	52.8	37.1	2210.00
.40	3.66	9.27	3.23	.050	.030	.050	.000	2209.00	960.10
.006145	555.	580.	580.	0	11	0	.00	129.57	1089.67

*SECNO 1.977
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 912.9 1068.3 TYPE= 1 TARGET= 155.350

1.977	2.57	2216.57	2216.57	2216.56	2217.29	.72	3.08	.02	2214.50
1209.0	265.9	708.3	234.8	72.9	84.6	68.8	54.9	38.5	2214.50
.42	3.65	8.37	3.41	.050	.030	.050	.000	2214.00	912.93
.009301	395.	410.	430.	0	14	0	.00	155.35	1068.28

*SECNO 2.072
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 960.1 1070.0 TYPE= 1 TARGET= 109.920

2.072	3.77	2225.77	2225.77	2225.62	2226.70	.93	4.16	.07	2223.00
1209.0	134.2	742.1	332.7	40.4	78.4	86.9	57.3	40.0	2223.00
.44	3.32	9.46	3.83	.050	.030	.050	.000	2222.00	960.08
.007569	470.	500.	510.	0	14	0	.00	109.92	1070.00

*SECNO 2.170
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 925.0 1143.1 TYPE= 1 TARGET= 218.070
CENTERLINE OF VULTURE MINE ROAD

2.170	1.95	2231.95	2231.95	2231.93	2232.51	.57	4.90	.04	2230.20
1209.0	331.4	466.0	411.7	80.6	55.4	113.2	60.0	41.8	2230.20
.47	4.11	8.41	3.64	.050	.030	.050	.000	2230.00	925.00
.012724	550.	520.	460.	0	11	0	.00	218.07	1143.07

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 2.257

3470 ENCROACHMENT STATIONS= 924.0 1034.2 TYPE= 1 TARGET= 110.220

2.257	2.99	2236.99	2236.87	2236.66	2237.75	.76	5.18	.06	2235.00
1209.0	514.8	564.5	129.7	111.7	62.4	36.0	62.4	43.6	2235.00
.48	4.61	9.05	3.60	.050	.030	.050	.000	2234.00	924.00
.009935	460.	460.	470.	3	14	0	.00	110.22	1034.22

*SECNO 2.338

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

3470 ENCROACHMENT STATIONS= 922.0 1032.3 TYPE= 1 TARGET= 110.250

2.338	3.03	2240.03	2239.38	2239.61	2240.49	.46	2.72	.03	2237.20
1209.0	564.9	521.6	122.5	147.5	73.3	41.6	64.5	44.6	2237.40
.51	3.83	7.12	2.95	.050	.030	.050	.000	2237.00	922.00
.004925	370.	425.	425.	3	15	0	.00	110.25	1032.25

*SECNO 2.428

3470 ENCROACHMENT STATIONS= 949.5 1071.4 TYPE= 1 TARGET= 121.850
CSM GRAPH USED TO DETERMINE DISCHARGE

2.428	2.49	2242.09	2241.07	2241.97	2242.24	.15	1.71	.03	2239.60
649.0	195.1	214.4	239.6	85.4	50.1	106.1	67.3	45.8	2239.60
.55	2.28	4.28	2.26	.050	.030	.050	.000	2239.60	949.54
.002202	500.	475.	450.	3	11	0	.00	121.85	1071.39

*SECNO 2.497
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 975.0 1075.0 TYPE= 1 TARGET= 100.000

2.497	1.73	2249.33	2249.33	2249.29	2249.93	.59	1.78	.13	2247.70
649.0	158.3	202.1	288.6	31.3	22.8	69.9	68.9	46.8	2248.00
.57	5.06	8.85	4.13	.050	.030	.050	.000	2247.60	975.00
.016516	355.	365.	400.	0	19	0	.00	100.00	1075.00

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

*SECNO 2.543

3470 ENCROACHMENT STATIONS= 985.7 1080.0 TYPE= 1 TARGET= 94.300

2.543	1.59	2253.29	2253.03	2252.81	2253.71	.42	3.77	.02	2252.00
649.0	10.3	225.1	413.6	3.9	32.5	103.1	69.8	47.5	2251.80
.59	2.65	6.93	4.01	.050	.030	.050	.000	2251.70	985.70
.010957	225.	245.	320.	4	15	0	.00	94.30	1080.00

*SECNO 2.639

3470 ENCROACHMENT STATIONS= 919.0 1014.0 TYPE= 1 TARGET= 95.040

2.639	1.96	2258.46	2258.43	2257.79	2259.05	.59	5.29	.05	2257.00
649.0	317.6	325.7	5.7	85.4	41.2	2.2	71.2	48.5	2257.20
.61	3.72	7.90	2.62	.050	.030	.050	.000	2256.50	919.00
.011979	450.	505.	415.	3	11	0	.00	95.04	1014.04

*SECNO 2.718
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 987.0 1082.3 TYPE= 1 TARGET= 95.350

2.718	2.34	2263.04	2263.04	2263.04	2263.71	.67	4.59	.02	2261.00
649.0	24.7	330.9	293.4	7.3	39.1	78.4	72.4	49.4	2260.80
.63	3.40	8.47	3.74	.050	.030	.050	.000	2260.70	986.97
.009863	445.	415.	415.	0	11	0	.00	95.13	1082.09

*SECNO 2.757
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 952.5 1047.5 TYPE= 1 TARGET= 95.000

2.757	1.67	2266.27	2266.27	2266.15	2266.88	.61	2.66	.01	2264.70
649.0	241.4	221.5	186.1	53.7	25.0	43.5	73.0	49.8	2264.70
.64	4.49	8.85	4.28	.050	.030	.050	.000	2264.60	952.50
.016845	210.	210.	210.	0	19	0	.00	95.00	1047.50

*SECNO -2.338
START TRIB COMP

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

-2.338 2.338 2240.033

3470 ENCROACHMENT STATIONS= 855.6 1032.3 TYPE= 1 TARGET= 176.610

CSM GRAPH USED TO DETERMINE DISCHARGE

-2.338	3.03	2240.03	.00	2239.61	2240.28	.25	.00	2.66	2237.20
1209.0	696.2	415.2	97.5	248.5	73.3	41.5	73.0	49.8	2237.40
.64	2.80	5.67	2.35	.050	.030	.050	.000	2237.00	855.64
.003124	0.	0.	0.	0	0	0	.00	176.61	1032.25

*SECNO .063

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .23

TRIBUTARY TO AMIR WASH

.063	1.66	2241.16	2240.38	2241.35	2241.20	.05	.90	.02	2239.70
164.0	42.1	80.5	41.4	38.3	37.0	38.2	74.9	50.9	2239.70
.69	1.10	2.17	1.08	.050	.030	.050	.000	2239.50	952.31
.001069	350.	330.	330.	2	17	0	.00	95.00	1047.31

*SECNO .102
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.102	1.72	2245.72	2245.72	2245.72	2246.21	.49	.52	.13	2244.30
164.0	40.4	106.5	17.0	14.4	16.0	6.1	75.2	51.2	2244.50
.71	2.80	6.68	2.78	.050	.030	.050	.000	2244.00	974.63
.010440	210.	210.	210.	0	8	0	.00	38.53	1013.17

*SECNO .205
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.205	1.64	2251.64	2251.64	2251.64	2252.08	.44	5.45	.01	2250.50
164.0	31.9	120.4	11.7	13.8	19.8	5.8	75.7	51.8	2250.50
.74	2.31	6.07	2.01	.050	.030	.050	.000	2250.00	966.12
.009760	540.	540.	540.	0	11	0	.00	48.61	1014.73

*SECNO .323
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.323	1.46	2263.46	2263.46	2263.46	2263.83	.37	5.98	.01	2262.50
164.0	18.6	125.9	19.5	9.2	23.0	10.8	76.3	52.6	2262.50
.77	2.03	5.48	1.81	.050	.030	.050	.000	2262.00	970.83
.009544	620.	620.	620.	0	11	0	.00	66.41	1037.25

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 .421
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.421	1.51	2271.51	2271.51	2271.51	2271.89	.37	4.87	.00	2270.50
164.0	26.6	122.7	14.7	12.9	22.1	8.0	76.8	53.4	2270.50
.80	2.07	5.54	1.83	.050	.030	.050	.000	2270.00	962.15
.009191	520.	520.	520.	0	8	0	.00	63.21	1025.35

*SECNO .540
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.540	1.40	2281.40	2281.40	2281.40	2281.79	.39	6.08	.01	2280.50
164.0	16.2	130.7	17.1	8.3	23.6	7.9	77.4	54.2	2280.50
.84	1.97	5.53	2.15	.050	.030	.050	.000	2280.00	970.83
.010327	625.	625.	625.	0	11	0	.00	54.92	1025.75

*SECNO .608
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.608	1.38	2287.38	2287.38	2287.38	2287.75	.38	3.70	.00	2286.50
164.0	22.5	131.4	10.2	11.4	24.2	5.2	77.7	54.7	2286.50
.86	1.98	5.42	1.97	.050	.030	.050	.000	2286.00	959.43
.010246	355.	360.	360.	0	8	0	.00	59.15	1018.58

*SECNO .681
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.681	1.60	2293.60	2293.60	2293.60	2294.03	.43	3.81	.02	2292.50
164.0	13.4	121.9	28.7	6.8	20.4	12.7	78.1	55.2	2292.50
.88	1.97	5.98	2.26	.050	.030	.050	.000	2292.00	982.02
.009809	380.	380.	380.	0	11	0	.00	50.37	1032.39

*SECNO .759
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

.759	1.34	2304.34	2304.34	2304.34	2304.72	.38	4.20	.00	2303.50
164.0	14.4	133.2	16.4	7.7	24.5	7.8	78.5	55.7	2303.50
.91	1.88	5.43	2.10	.050	.030	.050	.000	2303.00	969.61
.010708	410.	410.	410.	0	15	0	.00	57.94	1027.55

THIS RUN EXECUTED 23JUN92 14:33:21

****
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 A: AMIR WASH

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.243	.00	.00	.00	2082.00	1500.00	2087.04	2087.04	2088.59	66.05	10.01	149.87	184.57
	.243	.00	.00	.00	2082.00	1500.00	2087.04	2087.04	2088.59	65.78	9.99	150.08	184.94
*	.269	140.00	.00	.00	2082.70	1500.00	2087.41	2086.80	2088.97	14.67	10.02	149.77	391.67
*	.269	140.00	.00	.00	2082.70	1500.00	2087.42	2086.80	2088.98	14.73	10.03	149.58	390.86
*	.280	58.00	2095.00	2092.80	2082.80	1500.00	2089.11	.00	2089.98	5.60	7.50	199.94	633.96
*	.280	58.00	2095.00	2092.80	2082.80	1500.00	2089.11	.00	2089.98	5.60	7.50	199.95	634.01
*	.286	30.00	.00	.00	2086.00	1500.00	2089.73	2089.73	2090.95	60.48	8.96	180.10	192.87
*	.286	30.00	.00	.00	2086.00	1500.00	2089.73	2089.73	2090.95	60.48	8.96	180.10	192.87
	.309	120.00	.00	.00	2087.00	1500.00	2090.70	2089.98	2091.51	31.75	7.18	208.91	266.21
	.309	120.00	.00	.00	2087.00	1500.00	2090.70	2089.98	2091.51	31.75	7.18	208.91	266.21
	.394	450.00	.00	.00	2087.00	1500.00	2091.97	2090.67	2092.69	21.99	6.80	220.48	319.91
	.394	450.00	.00	.00	2087.00	1500.00	2091.97	2090.67	2092.69	21.99	6.80	220.48	319.91
*	.488	500.00	.00	.00	2096.00	1500.00	2101.15	2101.15	2103.21	66.46	11.51	130.28	184.00
*	.488	500.00	.00	.00	2096.00	1500.00	2101.15	2101.15	2103.21	66.46	11.51	130.28	184.00
*	.583	500.00	.00	.00	2105.50	1500.00	2111.92	2111.92	2114.21	68.24	12.16	123.36	181.58
*	.583	500.00	.00	.00	2105.50	1500.00	2111.92	2111.92	2114.21	68.24	12.16	123.36	181.58
*	.668	450.00	.00	.00	2111.00	1500.00	2115.03	2111.81	2115.04	1.14	1.04	1692.33	1402.65
*	.668	450.00	.00	.00	2111.00	1500.00	2115.73	2113.39	2115.92	13.23	3.98	447.89	412.35
	.685	90.00	2118.60	2116.60	2111.00	1500.00	2115.04	2111.88	2115.06	1.51	1.33	1472.58	1219.65
	.685	90.00	2118.60	2116.60	2111.00	1500.00	2115.84	2113.51	2116.04	14.99	4.53	429.57	387.48
	.689	20.00	2118.60	2116.60	2111.00	1500.00	2115.04	2111.88	2115.06	1.53	1.22	1468.16	1211.60
	.689	20.00	2118.60	2116.60	2111.00	1500.00	2115.87	2113.59	2116.07	15.40	4.37	427.34	382.21

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	.693	20.00	.00	.00	2111.00	1500.00	2115.04	2111.99	2115.07	2.07	1.04	1281.61	1041.62
	.693	20.00	.00	.00	2111.00	1500.00	2115.96	2113.54	2116.11	12.18	3.11	483.92	429.72
*	.730	195.00	.00	.00	2115.00	1500.00	2119.33	2119.33	2119.96	37.99	7.67	373.49	243.37
*	.730	195.00	.00	.00	2115.00	1500.00	2119.58	2119.58	2120.39	38.36	8.13	289.20	242.18
*	.795	345.00	.00	.00	2122.00	1500.00	2125.93	2125.93	2126.37	36.03	7.29	490.73	249.90
*	.795	345.00	.00	.00	2122.00	1500.00	2126.65	2126.65	2127.25	32.65	7.59	392.64	262.51
*	.848	280.00	.00	.00	2128.00	1500.00	2131.86	2131.86	2132.30	68.31	8.95	409.76	181.49
*	.848	280.00	.00	.00	2128.00	1500.00	2132.55	2132.55	2133.12	62.42	9.14	345.61	189.86
*	.886	200.00	.00	.00	2131.00	1500.00	2135.45	2135.45	2136.07	34.56	7.92	392.75	255.16
*	.886	200.00	.00	.00	2131.00	1500.00	2135.48	2135.48	2136.13	34.61	7.98	363.85	254.95
*	.992	560.00	.00	.00	2142.00	1500.00	2144.47	2144.47	2144.93	123.93	8.05	329.54	134.74
*	.992	560.00	.00	.00	2142.00	1500.00	2144.60	2144.60	2145.23	139.38	8.85	273.77	127.05
*	1.055	330.00	.00	.00	2146.00	1318.00	2148.15	2148.15	2148.45	91.60	7.27	436.87	137.71
*	1.055	330.00	.00	.00	2146.00	1318.00	2148.44	2148.44	2148.87	90.81	7.95	343.07	138.31
*	1.113	310.00	.00	.00	2150.00	1318.00	2152.45	2152.45	2152.87	101.06	7.77	345.47	131.10
*	1.113	310.00	.00	.00	2150.00	1318.00	2152.44	2152.44	2152.87	105.30	7.89	340.40	128.44
*	1.184	370.00	.00	.00	2155.00	1318.00	2157.27	2157.23	2157.72	208.90	5.99	251.54	91.19
	1.184	370.00	.00	.00	2155.00	1318.00	2157.28	2157.24	2157.71	197.47	5.92	257.51	93.79
	1.250	350.00	.00	.00	2161.00	1318.00	2162.63	2162.51	2162.86	114.65	6.58	398.42	123.09
	1.250	350.00	.00	.00	2161.00	1318.00	2162.62	2162.51	2162.85	119.93	6.69	391.21	120.35
*	1.358	570.00	.00	.00	2170.00	1318.00	2171.62	2171.62	2172.06	182.17	8.23	292.49	97.65
*	1.358	570.00	.00	.00	2170.00	1318.00	2171.63	2171.63	2172.06	175.67	8.13	296.05	99.44
*	1.420	330.00	.00	.00	2174.00	1318.00	2177.03	2177.03	2177.55	76.39	8.02	334.30	150.80
*	1.420	330.00	.00	.00	2174.00	1318.00	2177.03	2177.03	2177.55	76.60	8.03	333.94	150.59
*	1.466	240.00	.00	.00	2178.00	1318.00	2182.51	2182.51	2183.26	52.18	8.22	277.81	182.46
*	1.466	240.00	.00	.00	2178.00	1318.00	2182.54	2182.54	2183.73	71.32	9.65	185.17	156.06
*	1.574	570.00	.00	.00	2187.00	1209.00	2190.01	2190.01	2190.84	87.34	9.66	221.03	129.36
*	1.574	570.00	.00	.00	2187.00	1209.00	2190.03	2190.03	2190.93	90.35	9.86	205.73	127.19
*	1.676	540.00	.00	.00	2194.00	1209.00	2197.00	2197.00	2197.72	80.36	9.23	237.20	134.87
*	1.676	540.00	.00	.00	2194.00	1209.00	2196.96	2196.96	2197.84	92.91	9.85	207.09	125.43
*	1.733	300.00	.00	.00	2198.00	1209.00	2202.49	2202.49	2203.02	40.45	7.89	354.88	190.10
*	1.733	300.00	.00	.00	2198.00	1209.00	2202.44	2202.44	2203.16	49.96	8.71	279.61	171.04
*	1.790	300.00	.00	.00	2202.00	1209.00	2204.78	2204.78	2205.33	90.88	8.17	281.90	126.82
*	1.790	300.00	.00	.00	2202.00	1209.00	2205.03	2205.03	2205.70	85.27	8.49	248.62	130.93

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	1.899	580.00	.00	.00	2209.00	1209.00	2213.19	2213.19	2214.10	62.62	9.33	214.50	152.79
*	1.899	580.00	.00	.00	2209.00	1209.00	2213.20	2213.20	2214.10	61.45	9.27	216.33	154.22
*	1.977	410.00	.00	.00	2214.00	1209.00	2216.56	2216.56	2217.29	94.17	8.40	225.29	124.59
*	1.977	410.00	.00	.00	2214.00	1209.00	2216.57	2216.57	2217.29	93.01	8.37	226.31	125.36
*	2.072	500.00	.00	.00	2222.00	1209.00	2225.62	2225.62	2226.33	69.00	8.76	253.72	145.54
*	2.072	500.00	.00	.00	2222.00	1209.00	2225.77	2225.77	2226.70	75.69	9.46	205.75	138.97
*	2.170	520.00	.00	.00	2230.00	1209.00	2231.93	2231.93	2232.41	116.82	8.00	277.49	111.86
*	2.170	520.00	.00	.00	2230.00	1209.00	2231.95	2231.95	2232.51	127.24	8.41	249.20	107.18
	2.257	460.00	.00	.00	2234.00	1209.00	2236.66	2236.47	2237.13	90.36	7.84	265.93	127.19
	2.257	460.00	.00	.00	2234.00	1209.00	2236.99	2236.87	2237.75	99.35	9.05	210.09	121.29
	2.338	425.00	.00	.00	2237.00	1209.00	2239.61	2239.23	2240.02	60.31	7.10	289.31	155.68
*	2.338	425.00	.00	.00	2237.00	1209.00	2240.03	2239.38	2240.49	49.25	7.12	262.36	172.27
	2.428	475.00	.00	.00	2239.60	649.00	2241.97	2241.07	2242.14	26.78	4.56	226.46	125.42
	2.428	475.00	.00	.00	2239.60	649.00	2242.09	2241.07	2242.24	22.02	4.28	241.63	138.30
*	2.497	365.00	.00	.00	2247.60	649.00	2249.29	2249.29	2249.75	148.03	8.23	144.16	53.34
*	2.497	365.00	.00	.00	2247.60	649.00	2249.33	2249.33	2249.93	165.16	8.85	124.01	50.50
	2.543	245.00	.00	.00	2251.70	649.00	2252.81	2252.50	2252.97	86.12	4.81	220.02	69.93
	2.543	245.00	.00	.00	2251.70	649.00	2253.29	2253.03	2253.71	109.57	6.93	139.43	62.00
	2.639	505.00	.00	.00	2256.50	649.00	2257.79	2257.76	2258.06	154.75	6.52	191.41	52.17
	2.639	505.00	.00	.00	2256.50	649.00	2258.46	2258.43	2259.05	119.79	7.90	128.78	59.30
*	2.718	415.00	.00	.00	2260.70	649.00	2263.04	2263.04	2263.71	97.57	8.44	125.25	65.70
*	2.718	415.00	.00	.00	2260.70	649.00	2263.04	2263.04	2263.71	98.63	8.47	124.71	65.35
*	2.757	210.00	.00	.00	2264.60	649.00	2266.15	2266.15	2266.55	145.14	7.82	160.39	53.87
*	2.757	210.00	.00	.00	2264.60	649.00	2266.27	2266.27	2266.88	168.45	8.85	122.24	50.01
	-2.338	.00	.00	.00	2237.00	1209.00	2239.61	.00	2240.02	60.28	7.10	289.35	155.72
	-2.338	.00	.00	.00	2237.00	1209.00	2240.03	.00	2240.28	31.24	5.67	363.30	216.29
*	.063	330.00	.00	.00	2239.50	164.00	2241.35	2240.38	2241.39	6.77	1.87	132.42	63.05
*	.063	330.00	.00	.00	2239.50	164.00	2241.16	2240.38	2241.20	10.69	2.17	113.47	50.15
*	.102	210.00	.00	.00	2244.00	164.00	2245.72	2245.72	2246.21	103.91	6.67	36.59	16.09
*	.102	210.00	.00	.00	2244.00	164.00	2245.72	2245.72	2246.21	104.40	6.68	36.52	16.05
*	.205	540.00	.00	.00	2250.00	164.00	2251.64	2251.64	2252.08	97.67	6.07	39.43	16.59
*	.205	540.00	.00	.00	2250.00	164.00	2251.64	2251.64	2252.08	97.60	6.07	39.44	16.60
*	.323	620.00	.00	.00	2262.00	164.00	2263.46	2263.46	2263.83	95.28	5.48	42.96	16.80
*	.323	620.00	.00	.00	2262.00	164.00	2263.46	2263.46	2263.83	95.44	5.48	42.92	16.79

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.421	520.00	.00	.00	2270.00	164.00	2271.51	2271.51	2271.89	92.62	5.56	42.88	17.04
*	.421	520.00	.00	.00	2270.00	164.00	2271.51	2271.51	2271.89	91.91	5.54	43.01	17.11
*	.540	625.00	.00	.00	2280.00	164.00	2281.40	2281.40	2281.79	103.36	5.53	39.81	16.13
*	.540	625.00	.00	.00	2280.00	164.00	2281.40	2281.40	2281.79	103.27	5.53	39.82	16.14
*	.608	360.00	.00	.00	2286.00	164.00	2287.38	2287.38	2287.75	102.28	5.42	40.76	16.22
*	.608	360.00	.00	.00	2286.00	164.00	2287.38	2287.38	2287.75	102.46	5.42	40.73	16.20
*	.681	380.00	.00	.00	2292.00	164.00	2293.60	2293.60	2294.03	97.87	5.98	39.91	16.58
*	.681	380.00	.00	.00	2292.00	164.00	2293.60	2293.60	2294.03	98.09	5.98	39.87	16.56
*	.759	410.00	.00	.00	2303.00	164.00	2304.34	2304.34	2304.72	105.94	5.41	40.20	15.93
*	.759	410.00	.00	.00	2303.00	164.00	2304.34	2304.34	2304.72	107.08	5.43	40.03	15.85

WASH A: AMIR WASH

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.243	1500.00	2087.04	.00	.00	.00	48.97	.00
	.243	1500.00	2087.04	.00	.00	.00	49.00	.00
*	.269	1500.00	2087.41	.00	.38	.00	31.70	140.00
*	.269	1500.00	2087.42	.00	.38	.00	31.70	140.00
*	.280	1500.00	2089.11	.00	1.69	.00	31.70	58.00
*	.280	1500.00	2089.11	.00	1.69	.00	31.70	58.00
*	.286	1500.00	2089.73	.00	.62	.00	83.22	30.00
*	.286	1500.00	2089.73	.00	.62	.00	83.22	30.00
	.309	1500.00	2090.70	.00	.97	.00	64.88	120.00
	.309	1500.00	2090.70	.00	.97	.00	64.88	120.00
	.394	1500.00	2091.97	.00	1.27	.00	55.53	450.00
	.394	1500.00	2091.97	.00	1.27	.00	55.53	450.00
*	.488	1500.00	2101.15	.00	9.18	.00	32.08	500.00
*	.488	1500.00	2101.15	.00	9.18	.00	32.08	500.00
*	.583	1500.00	2111.92	.00	10.77	.00	27.30	500.00
*	.583	1500.00	2111.92	.00	10.77	.00	27.30	500.00
*	.668	1500.00	2115.03	.00	3.11	.00	456.43	450.00
*	.668	1500.00	2115.73	.70	3.82	.70	120.60	450.00
	.685	1500.00	2115.04	.00	.01	.00	392.61	90.00
	.685	1500.00	2115.84	.80	.11	.80	106.20	90.00
	.689	1500.00	2115.04	.00	.00	.00	392.63	20.00
	.689	1500.00	2115.87	.83	.03	.83	106.28	20.00
	.693	1500.00	2115.04	.00	.00	.00	365.12	20.00
	.693	1500.00	2115.96	.92	.09	.92	139.42	20.00
*	.730	1500.00	2119.33	.00	4.28	.00	308.02	195.00
*	.730	1500.00	2119.58	.26	3.62	.26	161.64	195.00
*	.795	1500.00	2125.93	.00	6.60	.00	553.87	345.00
*	.795	1500.00	2126.65	.72	7.07	.72	290.15	345.00
*	.848	1500.00	2131.86	.00	5.93	.00	450.00	280.00
*	.848	1500.00	2132.55	.69	5.90	.69	245.24	280.00
*	.886	1500.00	2135.45	.00	3.59	.00	344.51	200.00
*	.886	1500.00	2135.48	.03	2.93	.03	233.62	200.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.992	1500.00	2144.47	.00	9.03	.00	322.91	560.00
*	.992	1500.00	2144.60	.12	9.12	.12	200.00	560.00
*	1.055	1318.00	2148.15	.00	3.68	.00	596.94	330.00
*	1.055	1318.00	2148.44	.28	3.84	.28	300.00	330.00
*	1.113	1318.00	2152.45	.00	4.30	.00	346.77	310.00
*	1.113	1318.00	2152.44	-.01	4.00	-.01	346.17	310.00
*	1.184	1318.00	2157.27	.00	4.81	.00	299.69	370.00
	1.184	1318.00	2157.28	.01	4.84	.01	303.59	370.00
	1.250	1318.00	2162.63	.00	5.36	.00	571.14	350.00
	1.250	1318.00	2162.62	-.01	5.34	-.01	563.53	350.00
*	1.358	1318.00	2171.62	.00	8.99	.00	316.63	570.00
*	1.358	1318.00	2171.63	.01	9.01	.01	316.63	570.00
*	1.420	1318.00	2177.03	.00	5.41	.00	291.84	330.00
*	1.420	1318.00	2177.03	.00	5.40	.00	291.68	330.00
*	1.466	1318.00	2182.51	.00	5.48	.00	189.81	240.00
*	1.466	1318.00	2182.54	.02	5.51	.02	81.28	240.00
*	1.574	1209.00	2190.01	.00	7.50	.00	143.79	570.00
*	1.574	1209.00	2190.03	.02	7.49	.02	110.32	570.00
*	1.676	1209.00	2197.00	.00	6.99	.00	168.93	540.00
*	1.676	1209.00	2196.96	-.04	6.93	-.04	113.94	540.00
*	1.733	1209.00	2202.49	.00	5.49	.00	341.12	300.00
*	1.733	1209.00	2202.44	-.04	5.48	-.04	198.40	300.00
*	1.790	1209.00	2204.78	.00	2.29	.00	256.86	300.00
*	1.790	1209.00	2205.03	.25	2.59	.25	184.55	300.00
*	1.899	1209.00	2213.19	.00	8.41	.00	129.57	580.00
*	1.899	1209.00	2213.20	.01	8.17	.01	129.57	580.00
*	1.977	1209.00	2216.56	.00	3.37	.00	155.35	410.00
*	1.977	1209.00	2216.57	.01	3.36	.01	155.35	410.00
*	2.072	1209.00	2225.62	.00	9.06	.00	174.20	500.00
*	2.072	1209.00	2225.77	.15	9.20	.15	109.92	500.00
*	2.170	1209.00	2231.93	.00	6.31	.00	287.09	520.00
*	2.170	1209.00	2231.95	.02	6.18	.02	218.07	520.00
	2.257	1209.00	2236.66	.00	4.73	.00	179.86	460.00
	2.257	1209.00	2236.99	.33	5.04	.33	110.22	460.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	2.338	1209.00	2239.61	.00	2.96	.00	176.61	425.00
*	2.338	1209.00	2240.03	.42	3.04	.42	110.25	425.00
	2.428	649.00	2241.97	.00	2.35	.00	121.85	475.00
	2.428	649.00	2242.09	.12	2.06	.12	121.85	475.00
*	2.497	649.00	2249.29	.00	7.32	.00	154.50	365.00
*	2.497	649.00	2249.33	.05	7.24	.05	100.00	365.00
	2.543	649.00	2252.81	.00	3.53	.00	229.32	245.00
	2.543	649.00	2253.29	.48	3.96	.48	94.30	245.00
	2.639	649.00	2257.79	.00	4.98	.00	284.19	505.00
	2.639	649.00	2258.46	.67	5.17	.67	95.04	505.00
*	2.718	649.00	2263.04	.00	5.25	.00	95.35	415.00
*	2.718	649.00	2263.04	-.01	4.57	-.01	95.13	415.00
*	2.757	649.00	2266.15	.00	3.11	.00	192.46	210.00
*	2.757	649.00	2266.27	.11	3.23	.11	95.00	210.00
	-2.338	1209.00	2239.61	.00	-26.54	.00	176.62	.00
	-2.338	1209.00	2240.03	.42	-26.23	.42	176.61	.00
*	.063	164.00	2241.35	.00	1.74	.00	99.02	330.00
*	.063	164.00	2241.16	-.20	1.12	-.20	95.00	330.00
*	.102	164.00	2245.72	.00	4.37	.00	38.57	210.00
*	.102	164.00	2245.72	.00	4.57	.00	38.53	210.00
*	.205	164.00	2251.64	.00	5.91	.00	48.61	540.00
*	.205	164.00	2251.64	.00	5.91	.00	48.61	540.00
*	.323	164.00	2263.46	.00	11.82	.00	66.44	620.00
*	.323	164.00	2263.46	.00	11.82	.00	66.41	620.00
*	.421	164.00	2271.51	.00	8.05	.00	63.10	520.00
*	.421	164.00	2271.51	.00	8.06	.00	63.21	520.00
*	.540	164.00	2281.40	.00	9.89	.00	54.91	625.00
*	.540	164.00	2281.40	.00	9.89	.00	54.92	625.00
*	.608	164.00	2287.38	.00	5.97	.00	59.17	360.00
*	.608	164.00	2287.38	.00	5.97	.00	59.15	360.00
*	.681	164.00	2293.60	.00	6.22	.00	50.39	380.00
*	.681	164.00	2293.60	.00	6.22	.00	50.37	380.00
*	.759	164.00	2304.34	.00	10.74	.00	58.05	410.00
*	.759	164.00	2304.34	.00	10.74	.00	57.94	410.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=      .243  PROFILE=  1  CRITICAL DEPTH ASSUMED

WARNING SECNO=      .269  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .269  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .280  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      .280  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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CAUTION SECNO=      .286  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=      .583  PROFILE=  2  MINIMUM SPECIFIC ENERGY

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CAUTION SECNO=      .886  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=      .992  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=      .540  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=      .759  PROFILE=  2  MINIMUM SPECIFIC ENERGY
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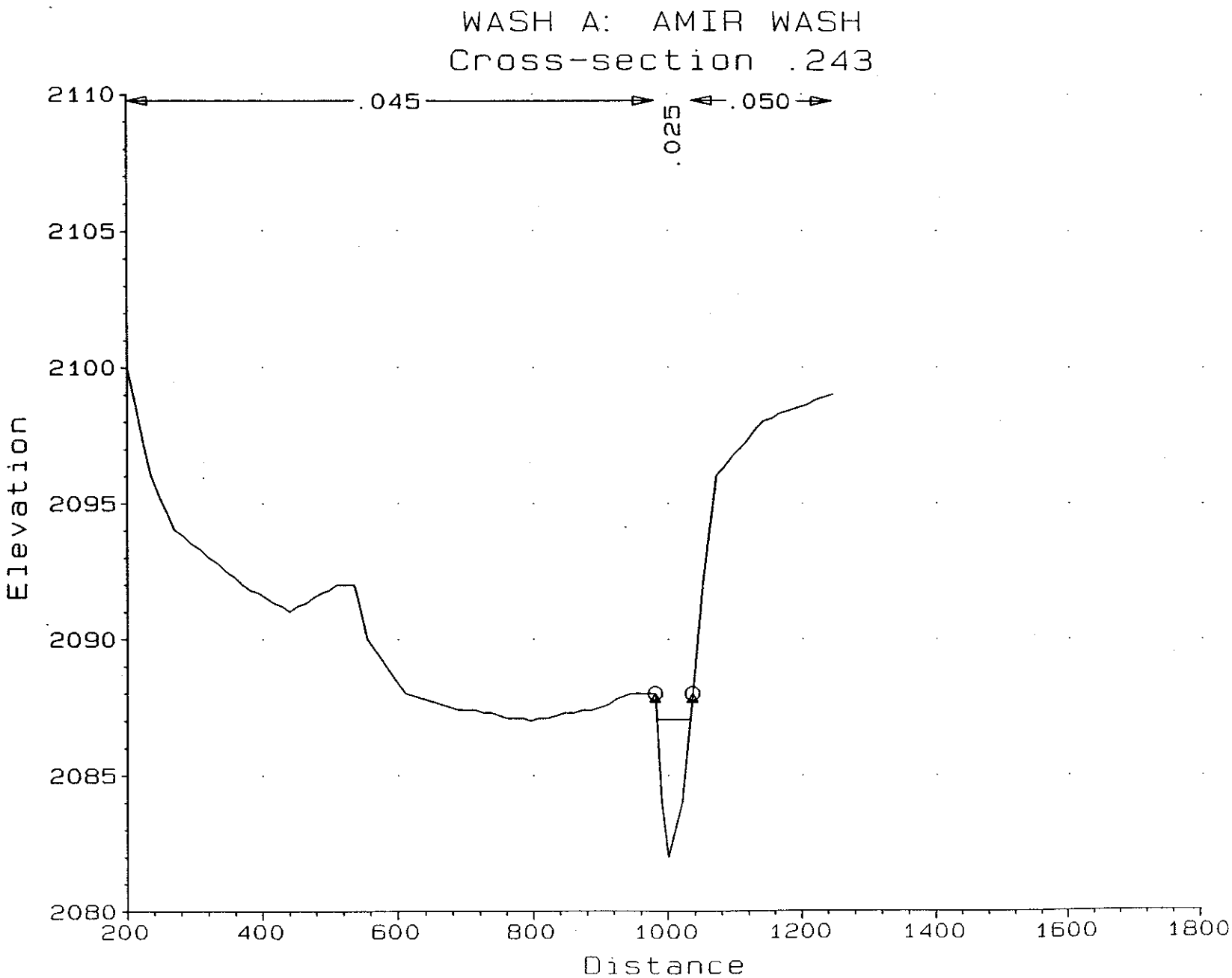
FLOODWAY DATA, WASH A: AMIR WASH
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
.243	49.	150.	10.0	2087.0	2087.0	.0
.269	32.	150.	10.0	2087.4	2087.4	.0
.280	32.	200.	7.5	2089.1	2089.1	.0
.286	83.	180.	8.3	2089.7	2089.7	.0
.309	65.	209.	7.2	2090.7	2090.7	.0
.394	56.	220.	6.8	2092.0	2092.0	.0
.488	32.	130.	11.5	2101.2	2101.2	.0
.583	27.	123.	12.2	2111.9	2111.9	.0
.668	144.	448.	3.3	2115.7	2115.0	.7
.685	122.	430.	3.5	2115.8	2115.0	.8
.689	122.	427.	3.5	2115.8	2115.0	.8
.693	170.	484.	3.1	2115.9	2115.0	.9
.730	162.	289.	5.2	2119.6	2119.3	.3
.795	312.	393.	3.8	2126.6	2125.9	.7
.848	288.	346.	4.3	2132.6	2131.9	.7
.886	234.	364.	4.1	2135.4	2135.4	.0
.992	200.	274.	5.5	2144.6	2144.5	.1
1.055	300.	343.	3.8	2148.5	2148.2	.3
1.113	346.	340.	3.9	2152.5	2152.5	.0
1.184	425.	258.	5.1	2157.3	2157.3	.0
1.250	691.	391.	3.4	2162.6	2162.6	.0
1.358	317.	296.	4.5	2171.6	2171.6	.0
1.420	353.	334.	3.9	2177.0	2177.0	.0
1.466	81.	185.	7.1	2182.5	2182.5	.0
1.574	110.	206.	5.9	2190.0	2190.0	.0
1.676	114.	207.	5.8	2197.0	2197.0	.0
1.733	198.	280.	4.3	2202.5	2202.5	.0
1.790	185.	249.	4.9	2205.1	2204.8	.3
1.899	130.	216.	5.6	2213.2	2213.2	.0
1.977	155.	226.	5.3	2216.6	2216.6	.0
2.072	110.	206.	5.9	2225.7	2225.6	.1
2.170	218.	249.	4.9	2231.9	2231.9	.0
2.257	110.	210.	5.8	2237.0	2236.7	.3
2.338	110.	262.	4.6	2240.0	2239.6	.4
2.428	122.	242.	2.7	2242.1	2242.0	.1
2.497	100.	124.	5.2	2249.3	2249.3	.0
2.543	94.	139.	4.7	2253.3	2252.8	.5
2.639	95.	129.	5.0	2258.5	2257.8	.7
2.718	95.	125.	5.2	2263.0	2263.0	.0
2.757	95.	122.	5.3	2266.3	2266.2	.1
-2.338	177.	363.	3.3	2240.0	2239.6	.4
.063	95.	113.	1.4	2241.2	2241.4	-.2

FLOODWAY DATA, WASH A: 'AMIR WASH
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
.102	39.	37.	4.5	2245.7	2245.7	.0
.205	49.	39.	4.2	2251.6	2251.6	.0
.323	66.	43.	3.8	2263.5	2263.5	.0
.421	63.	43.	3.8	2271.5	2271.5	.0
.540	55.	40.	4.1	2281.4	2281.4	.0
.608	59.	41.	4.0	2287.4	2287.4	.0
.681	50.	40.	4.1	2293.6	2293.6	.0
.759	58.	40.	4.1	2304.3	2304.3	.0


WASH A: AMIR WASH
Cross-section .243
.045
.025
.050
2110
2105
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Elevation
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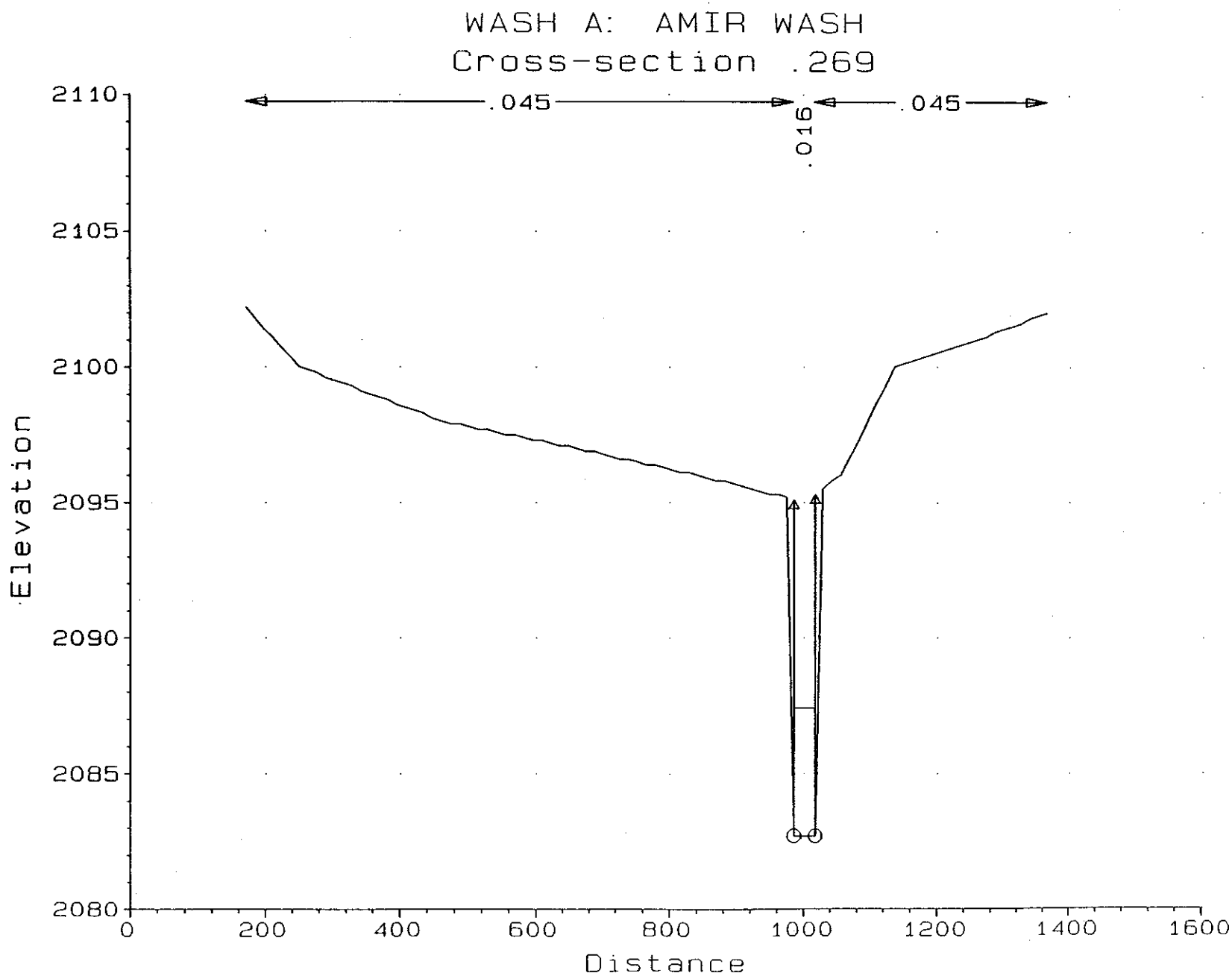
Distance


WASH A: AMIR WASH
Cross-section .269
.045
.016
.045
2110
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Elevation
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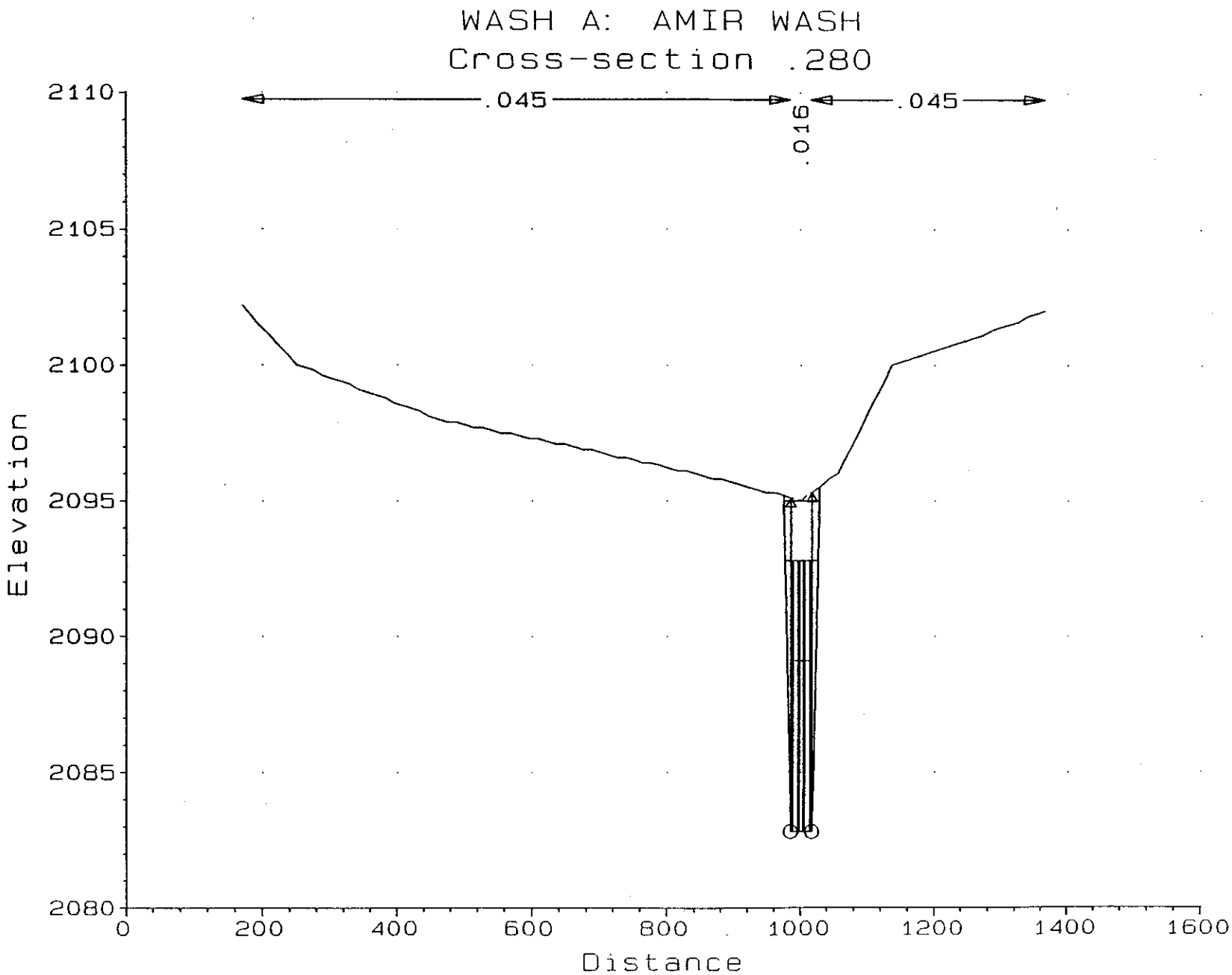
WASH A: AMIR WASH
Cross-section .280
.045
.016
.045
Elevation
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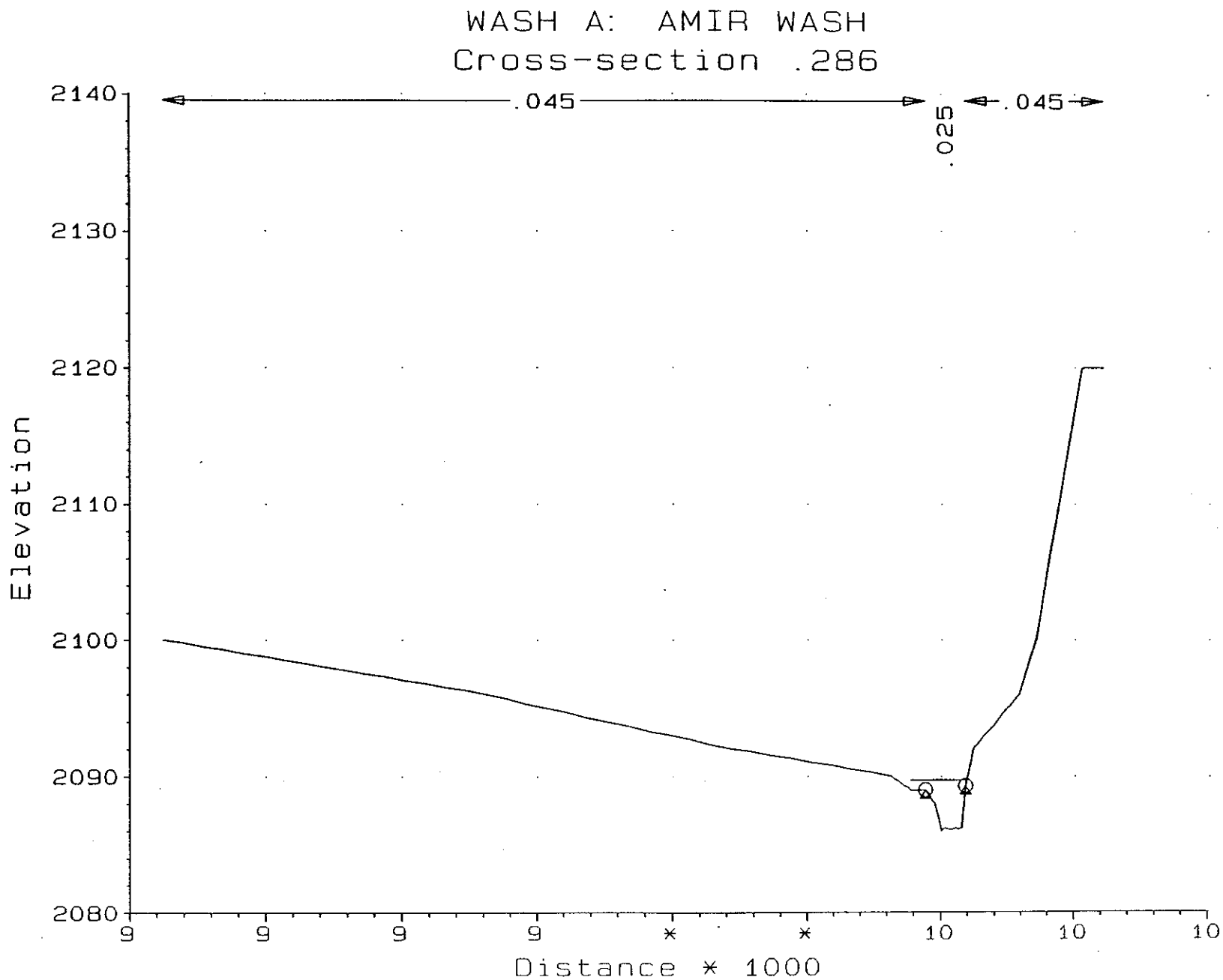
Distance


WASH A: AMIR WASH
Cross-section .286
.045
.025
.045
2140
2130
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2110
2100
2090
2080
Elevation
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9
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*
*
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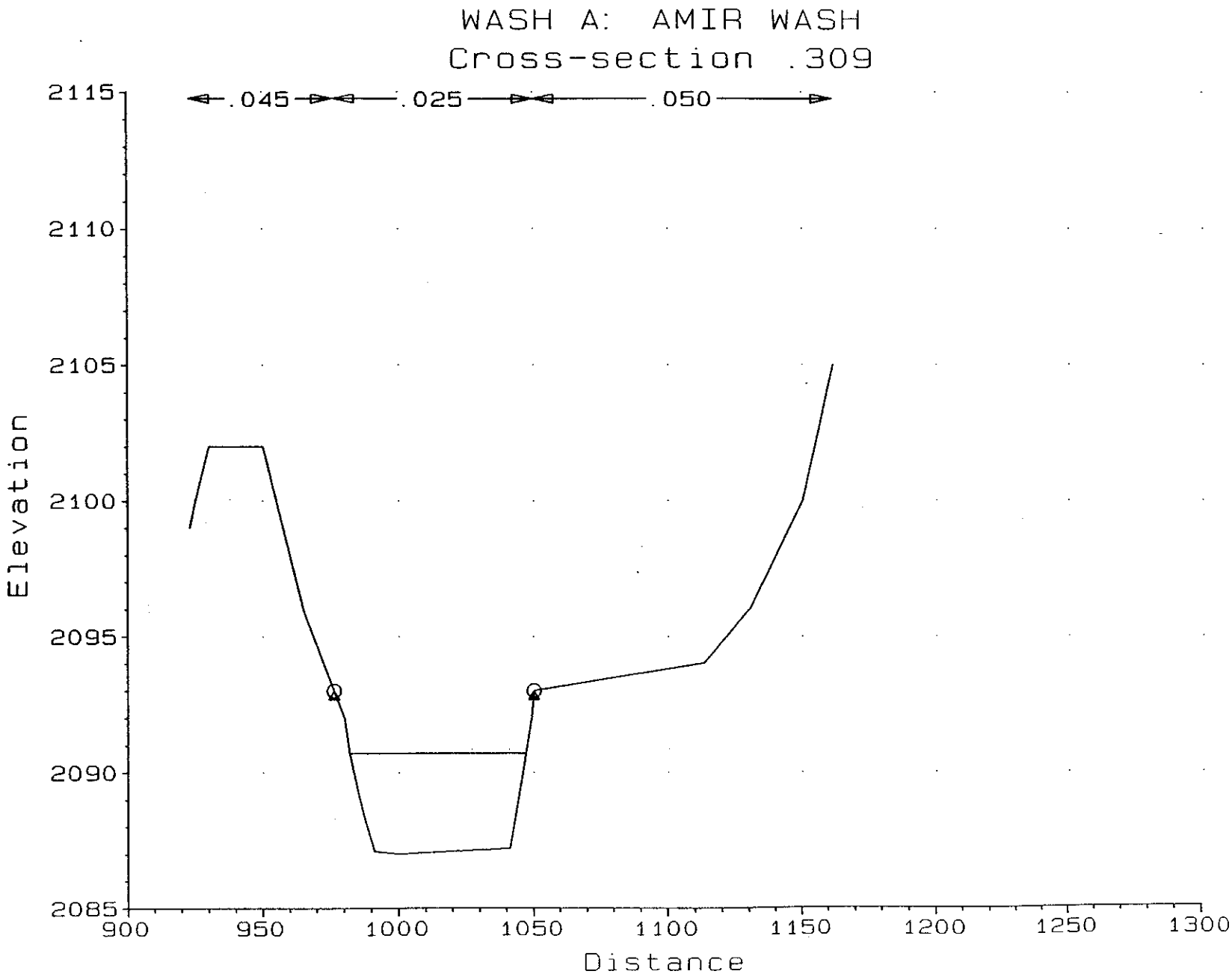
Distance * 1000


WASH A: AMIR WASH
Cross-section .309
.045
.025
.050
2115
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Elevation
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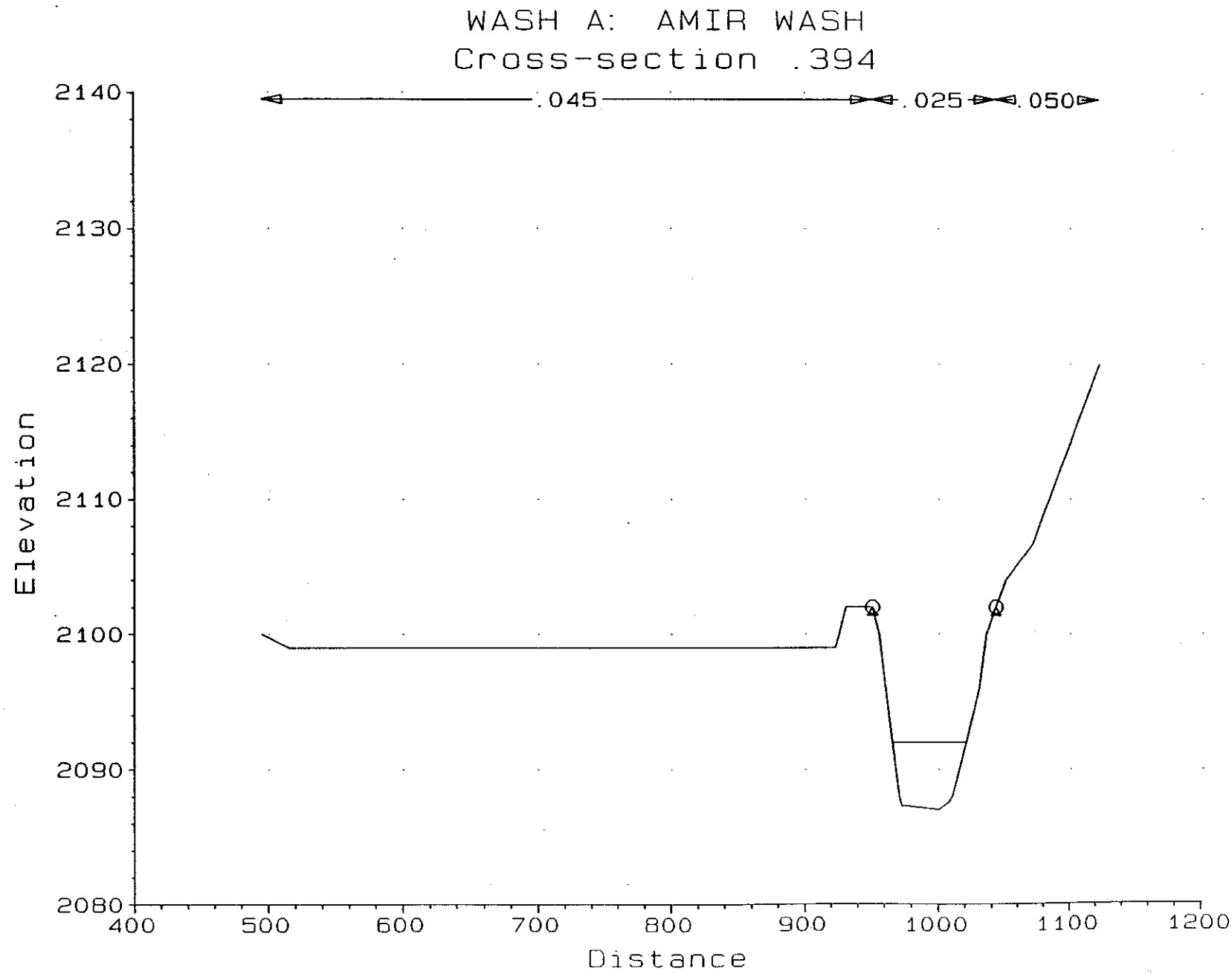
Distance


WASH A: AMIR WASH
Cross-section .394
.045
.025
.050
Elevation
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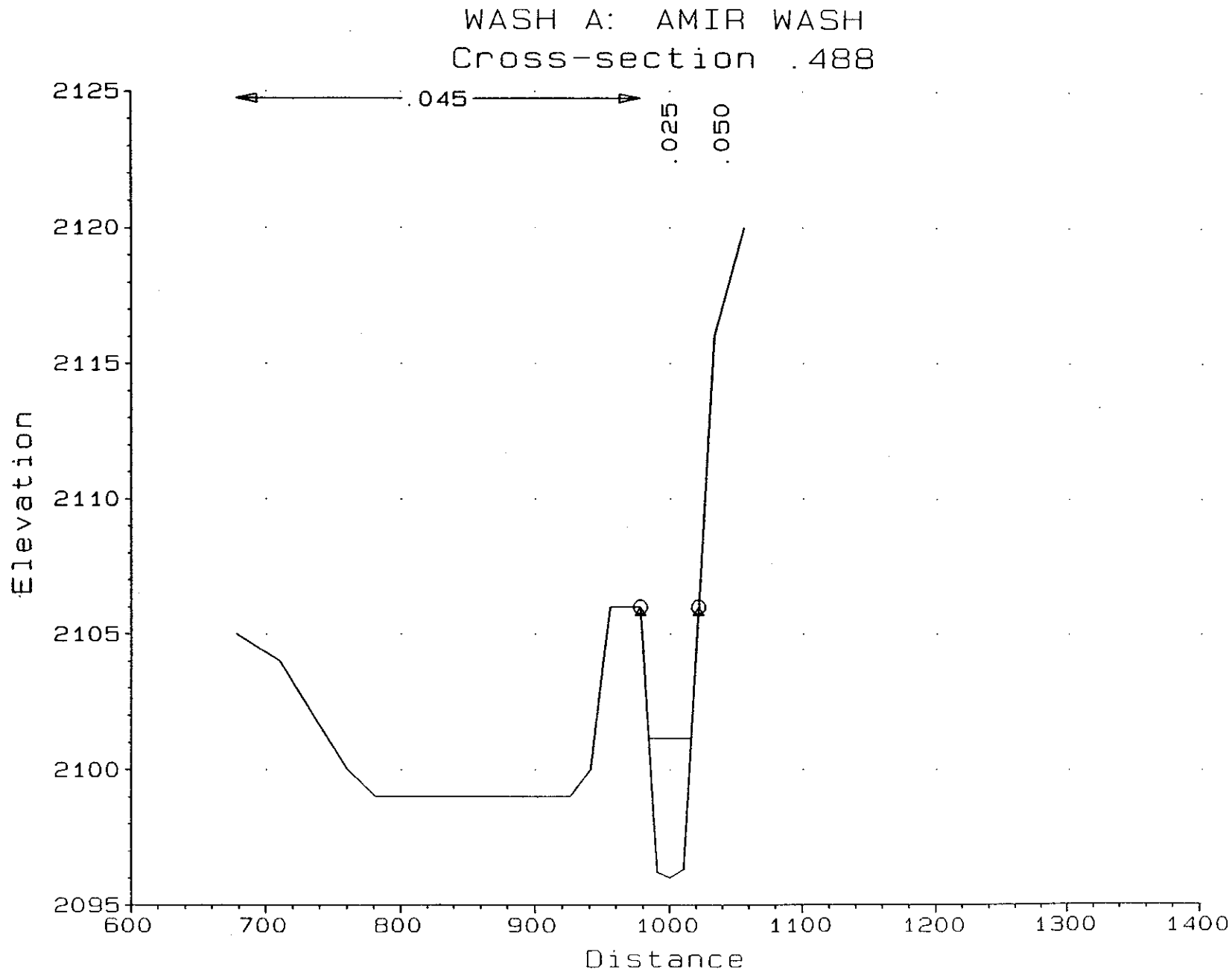
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Cross-section .488
.045
.025
.050
2125
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Elevation
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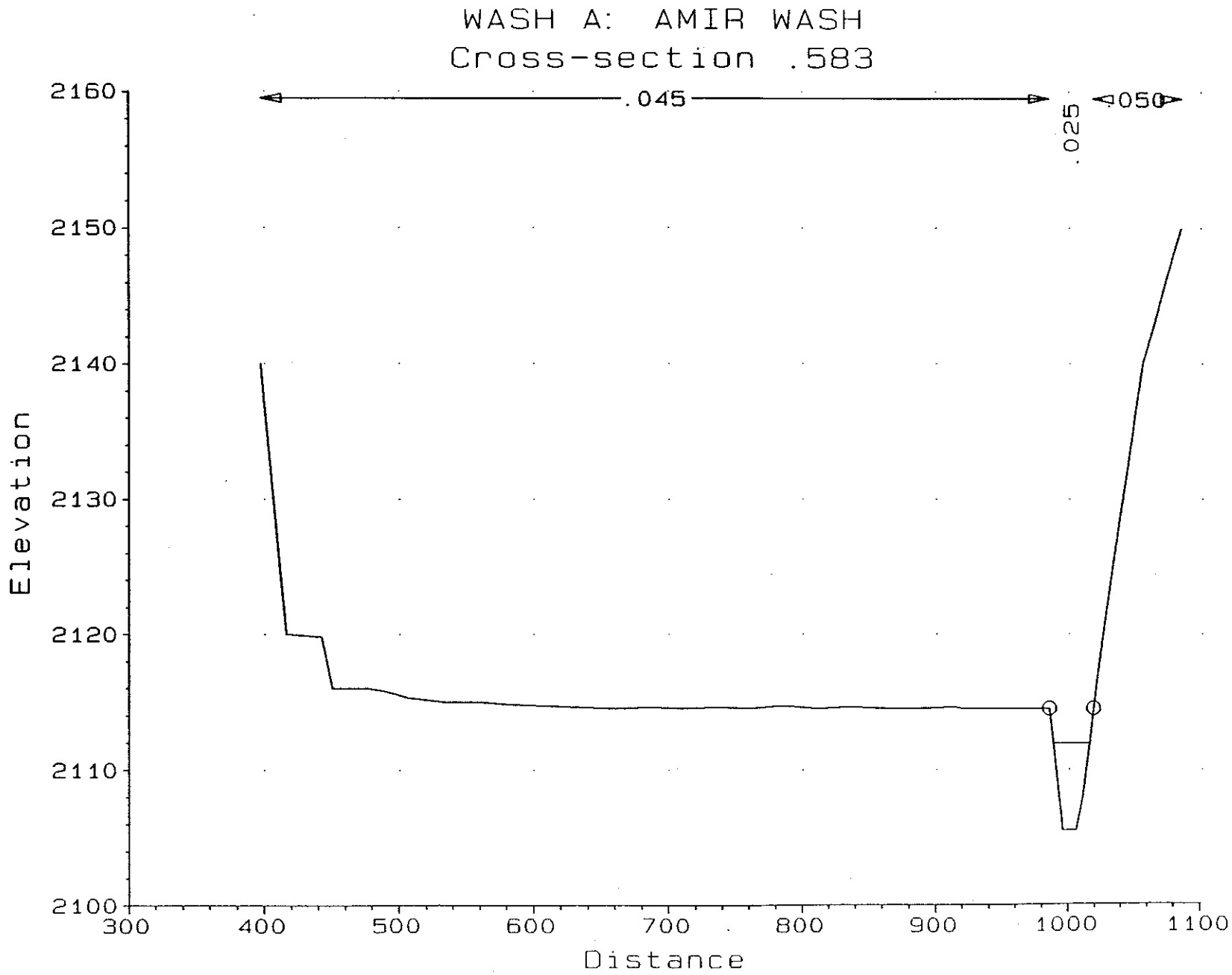
Distance


WASH A: AMIR WASH
Cross-section .583
.045
.025
.050
Elevation
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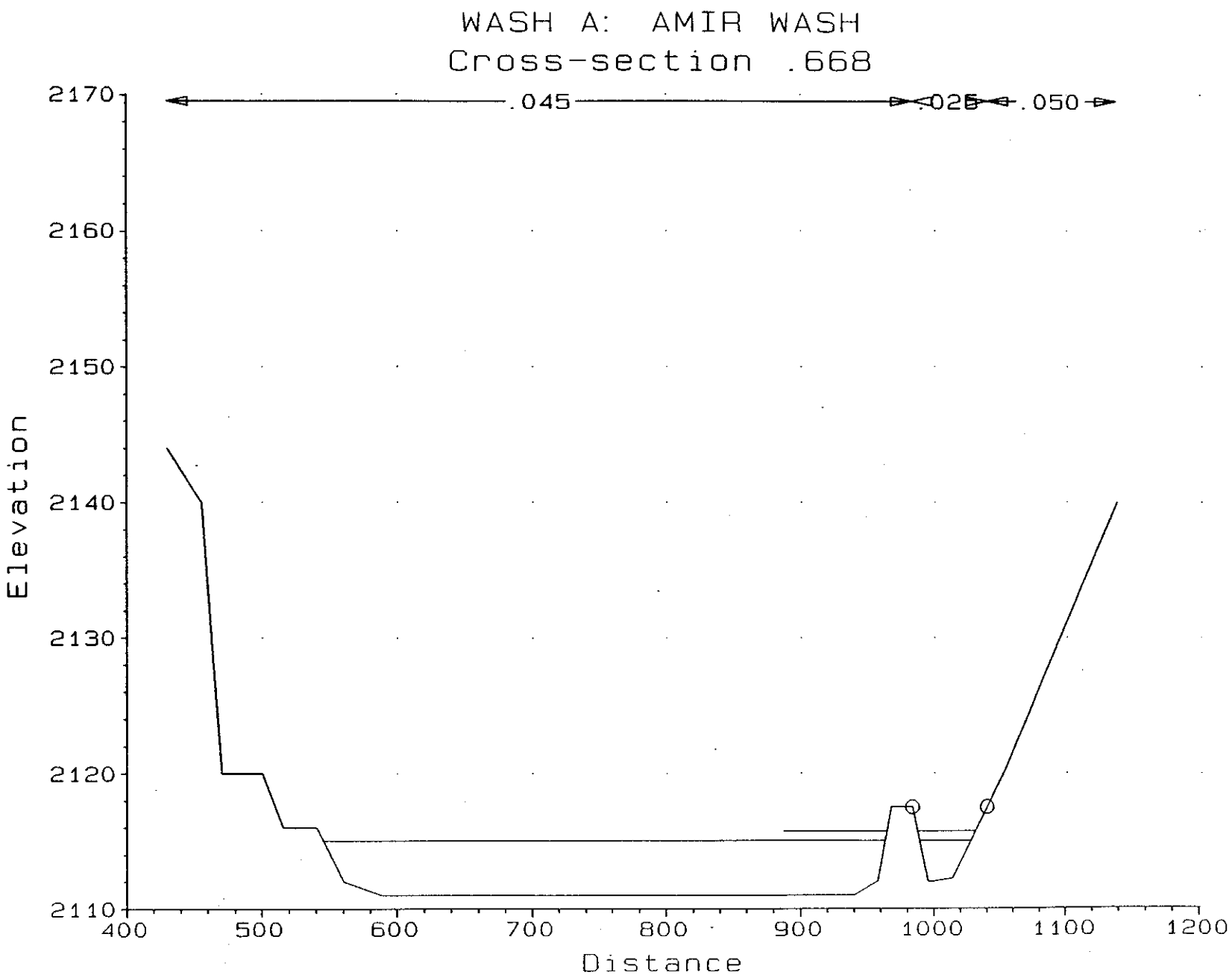
WASH A: AMIR WASH
Cross-section .668
.045
.025
.050
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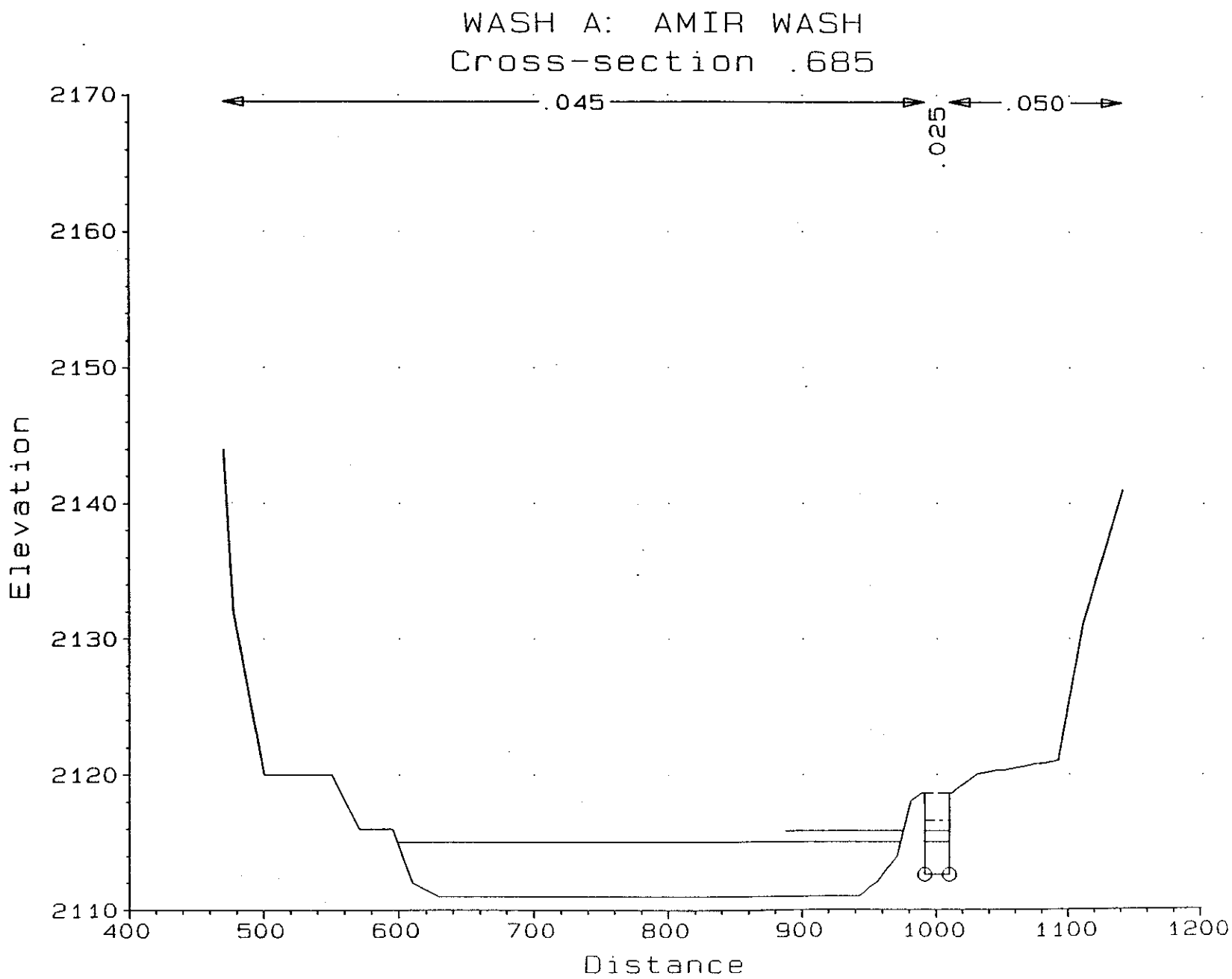
Distance


WASH A: AMIR WASH
Cross-section .685
.045
.050
.025
Elevation
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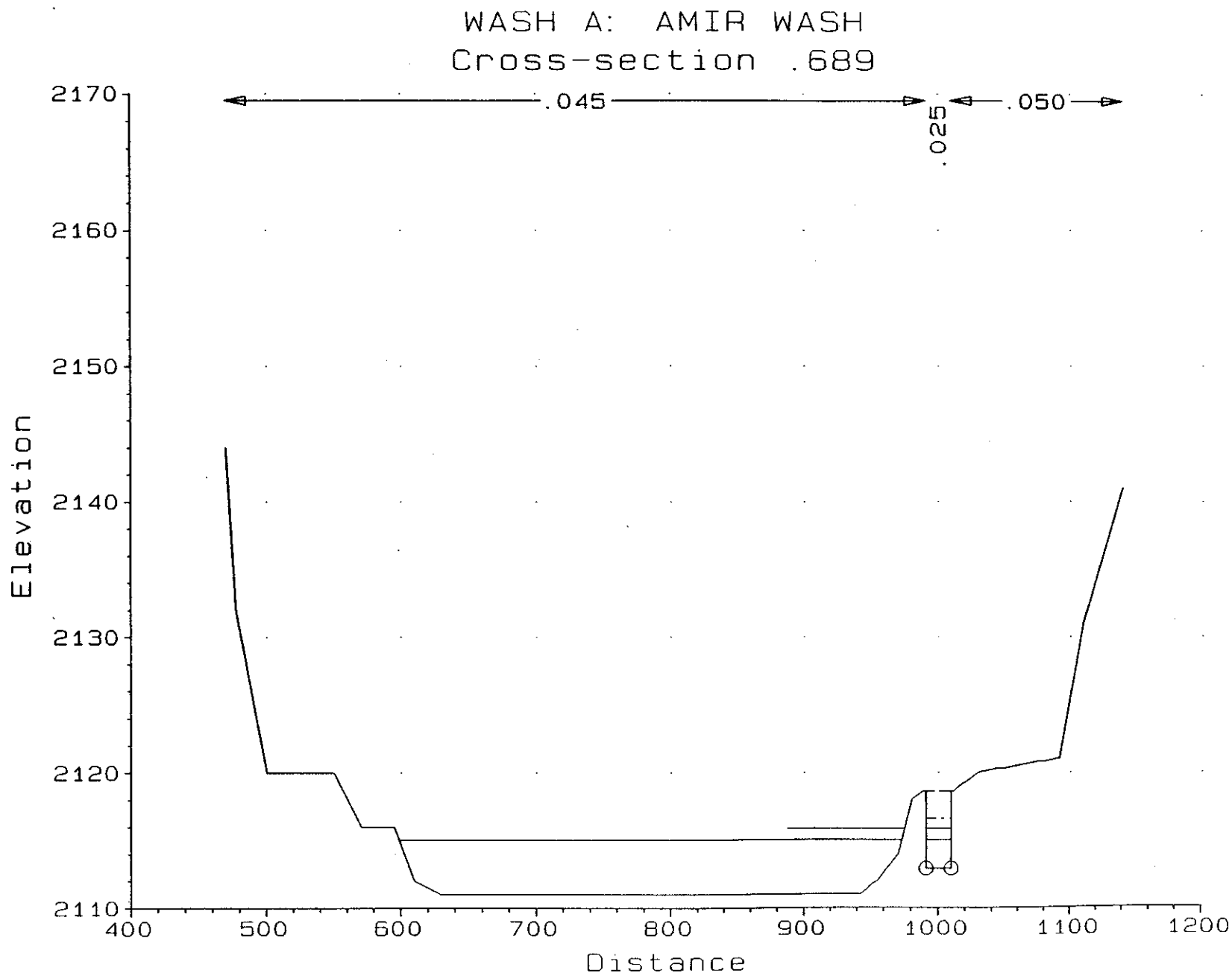
WASH A: AMIR WASH
Cross-section .689
.045
.050
.025
Elevation
2170
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2120
2110
400
500
600
700
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1000
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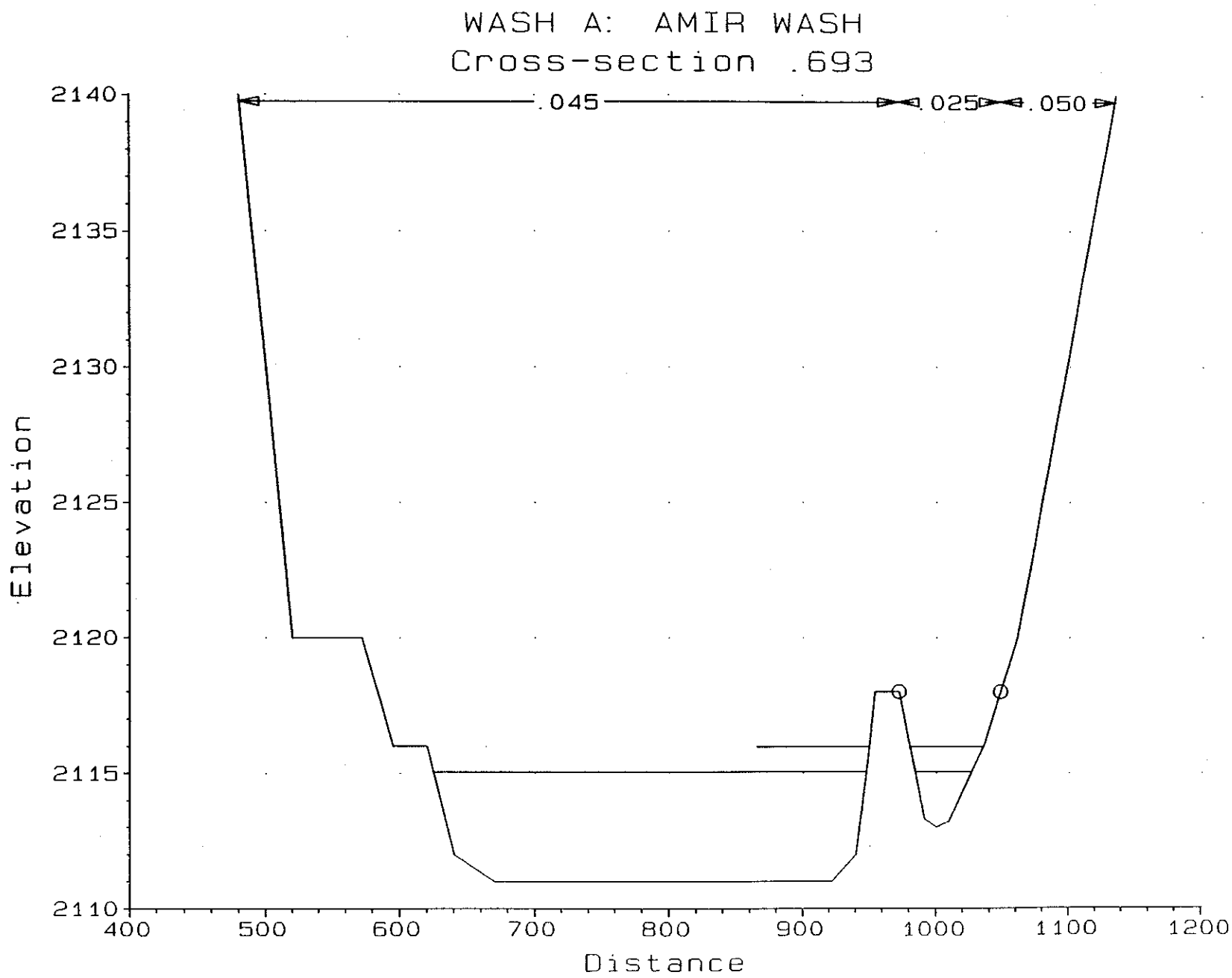
1200
Distance


WASH A: AMIR WASH
Cross-section .693
.045
.025
.050
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Elevation
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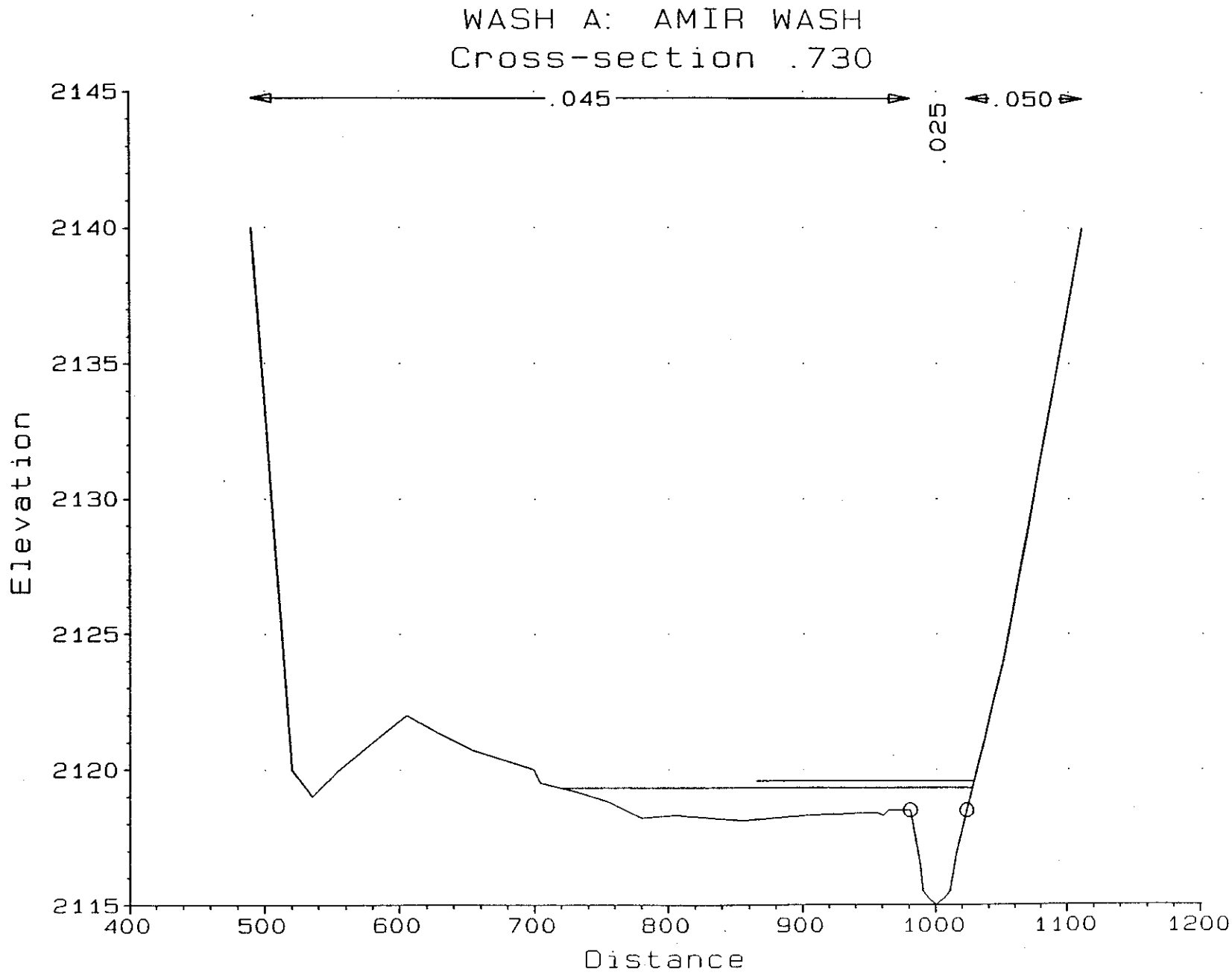
Distance


WASH A: AMIR WASH
Cross-section .730
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.025
.050
Elevation
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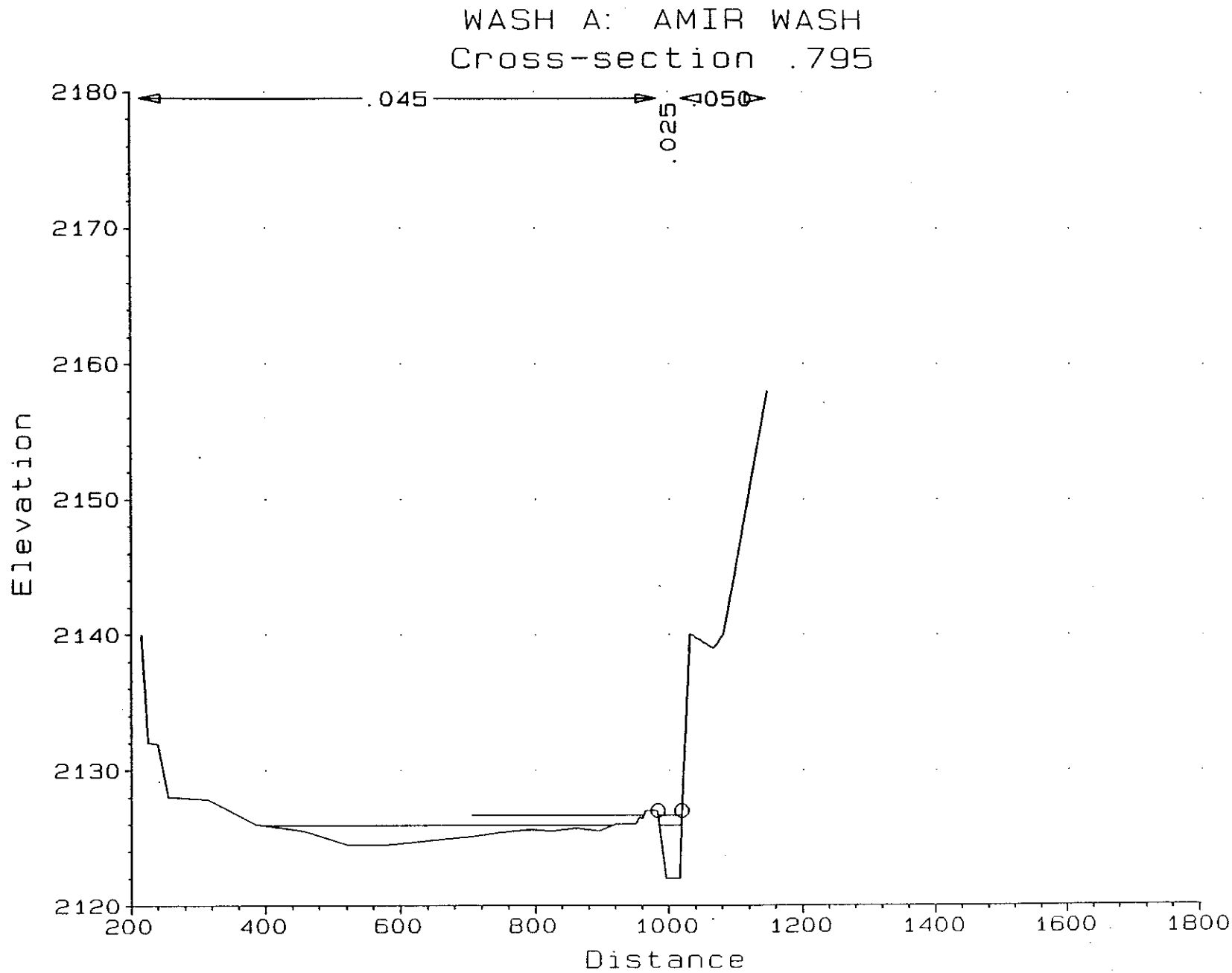
WASH A: AMIR WASH
Cross-section .795
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.050
.025
Elevation
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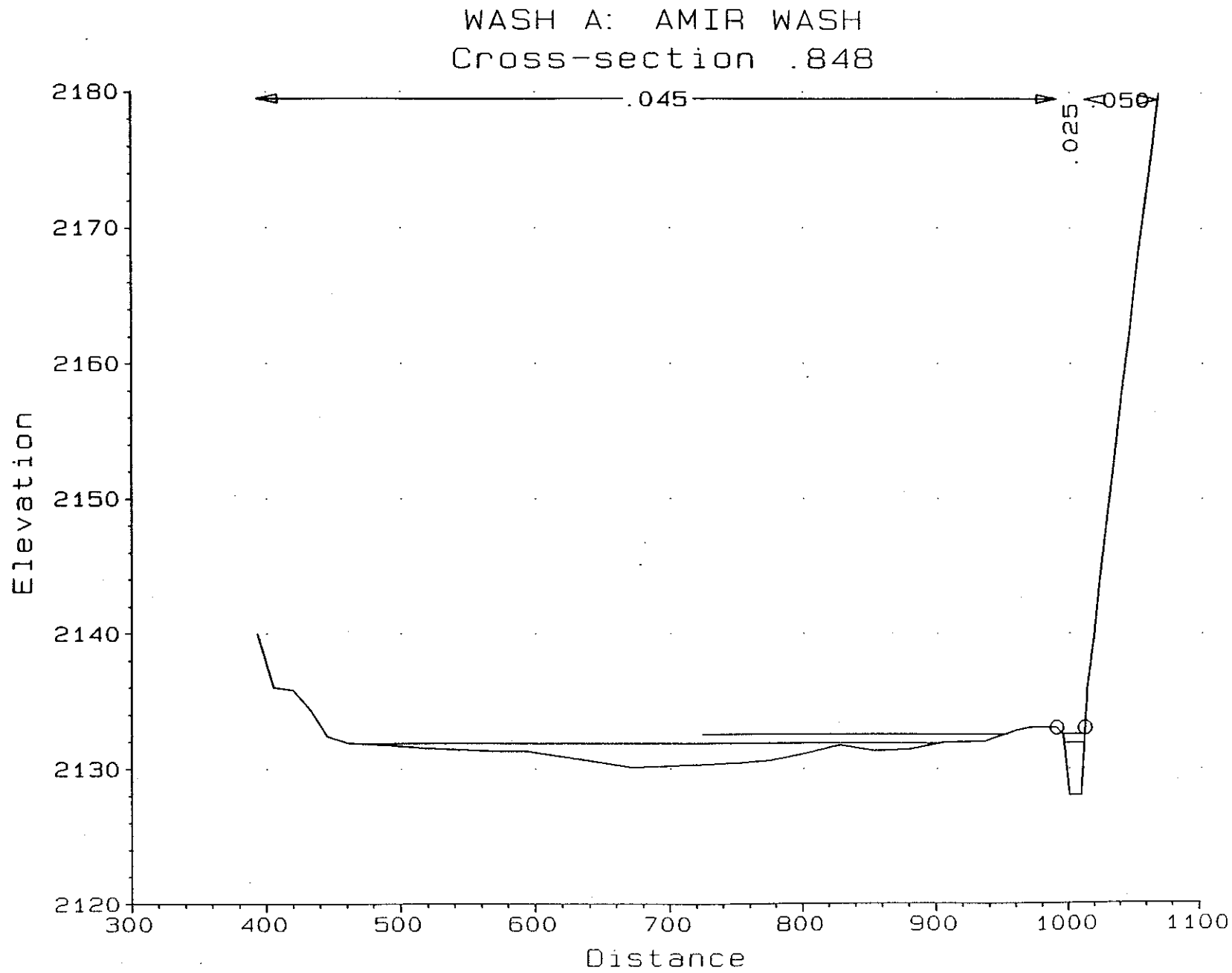
1600
1800
Distance


WASH A: AMIR WASH
Cross-section .848
.045
.025
.050
Elevation
2180
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2150
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2130
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300
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500
600
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1000
1100
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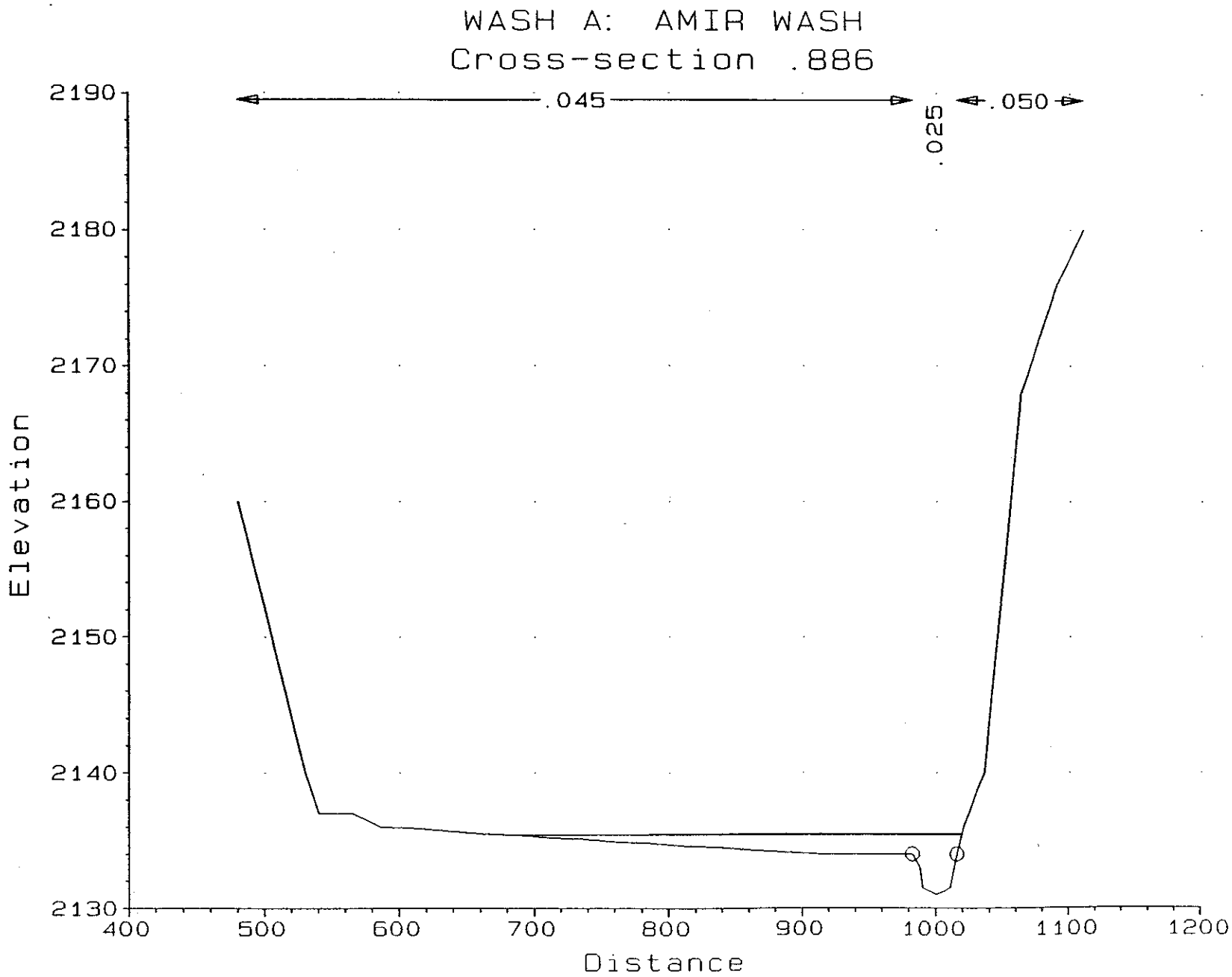
WASH A: AMIR WASH
Cross-section .886
.045
.025
.050
Elevation
2190
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2170
2160
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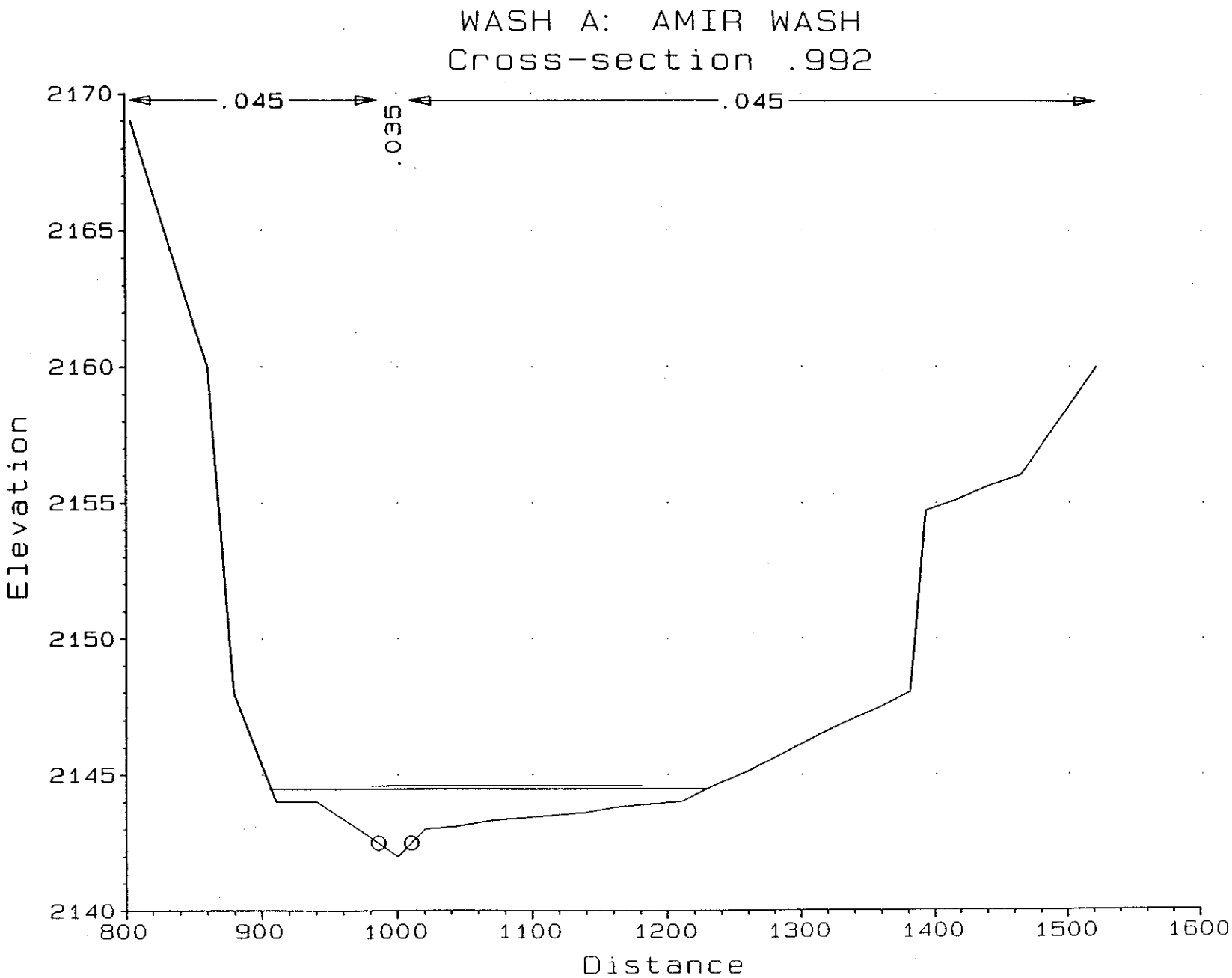
1200
Distance


WASH A: AMIR WASH
Cross-section .992
.045
.035
.045
2170
2165
2160
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2150
2145
2140
Elevation
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1600
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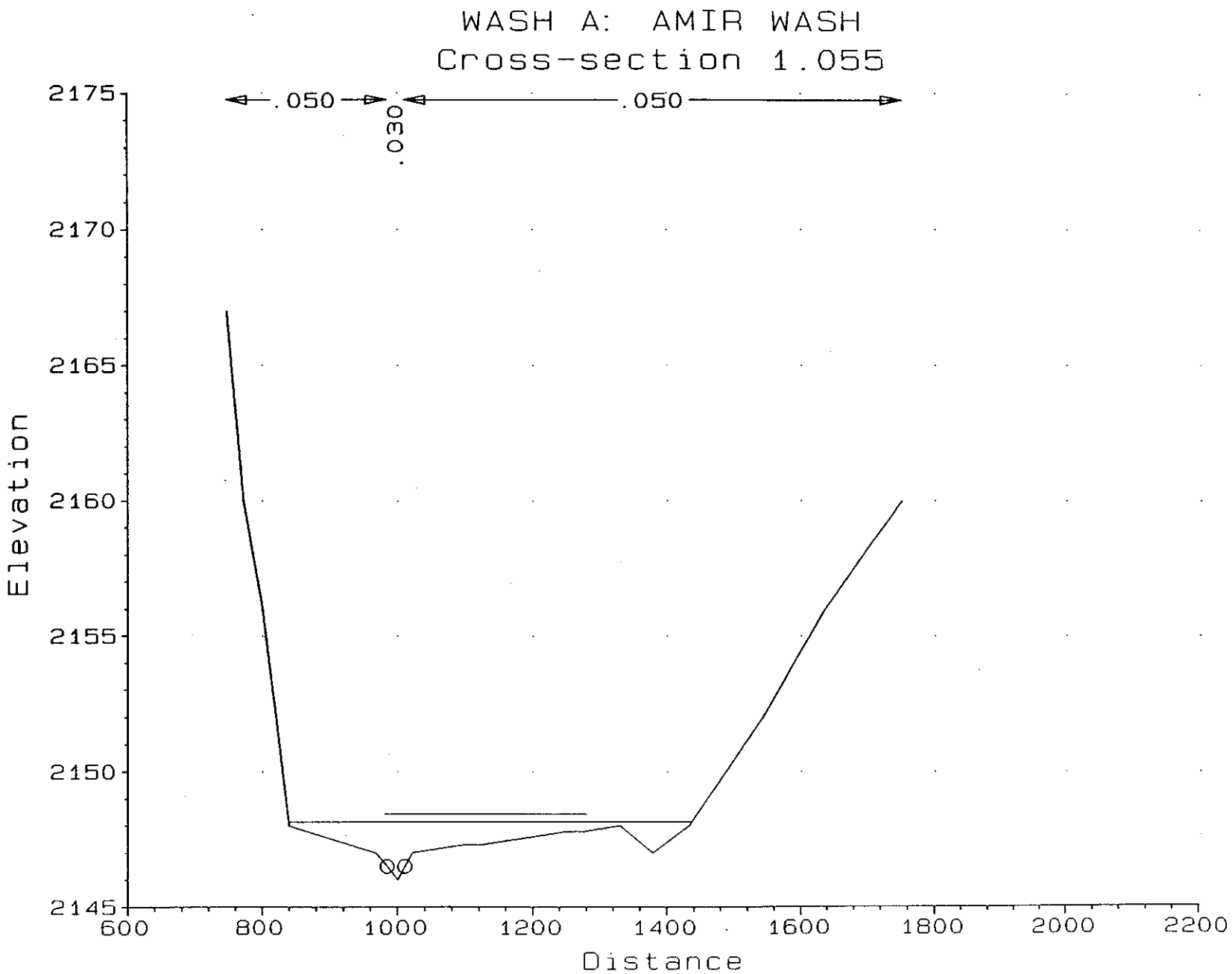
WASH A: AMIR WASH
Cross-section 1.055
.050
.030
.050
Elevation
2175
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2160
2155
2150
2145
600
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1000
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1400
1600
1800
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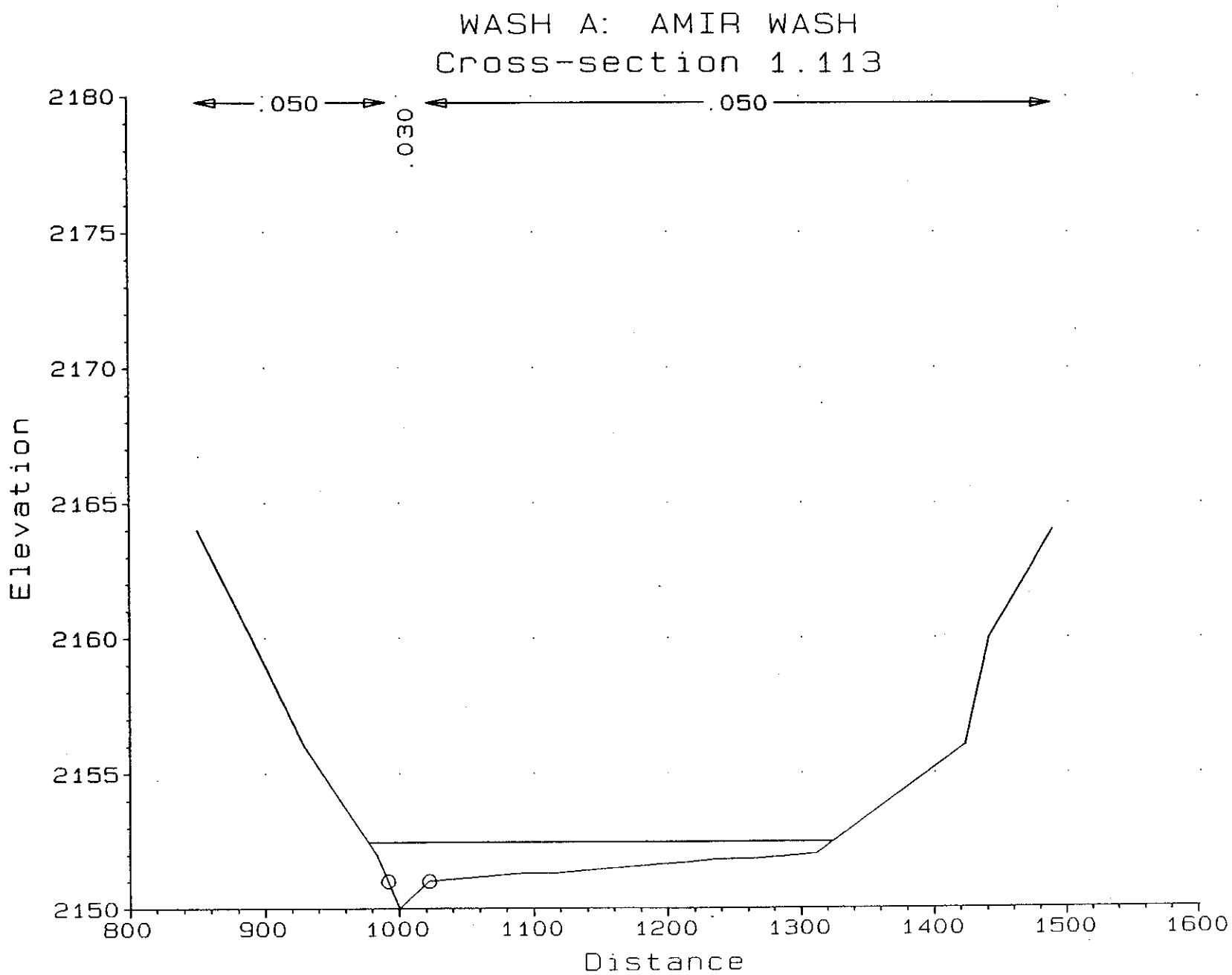
2200
Distance


WASH A: AMIR WASH
Cross-section 1.113
.050
.030
.050
2180
2175
2170
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2160
2155
2150
Elevation
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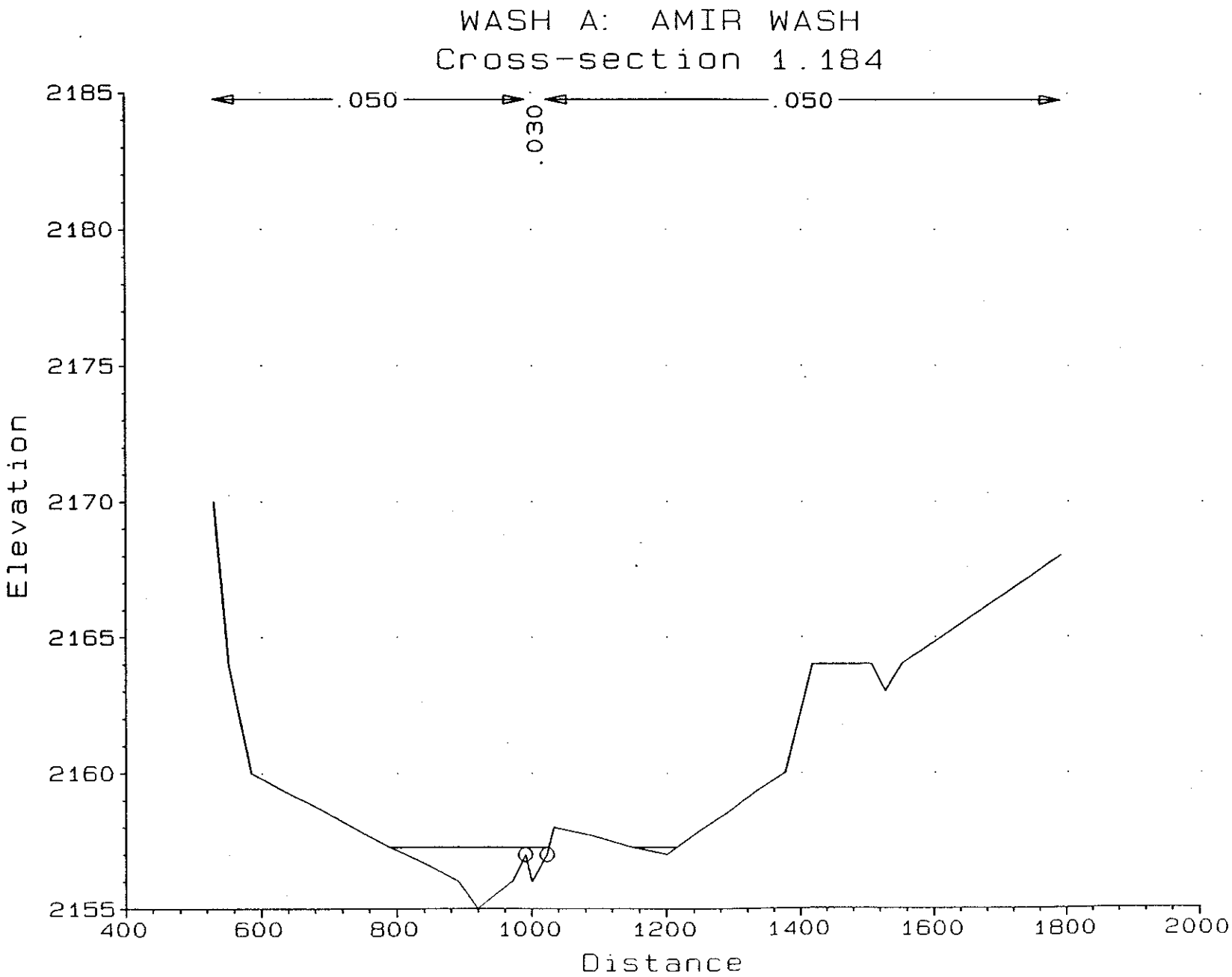
1500
1600
Distance


WASH A: AMIR WASH
Cross-section 1.184
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.030
.050
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2170
2165
2160
2155
Elevation
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800
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1600
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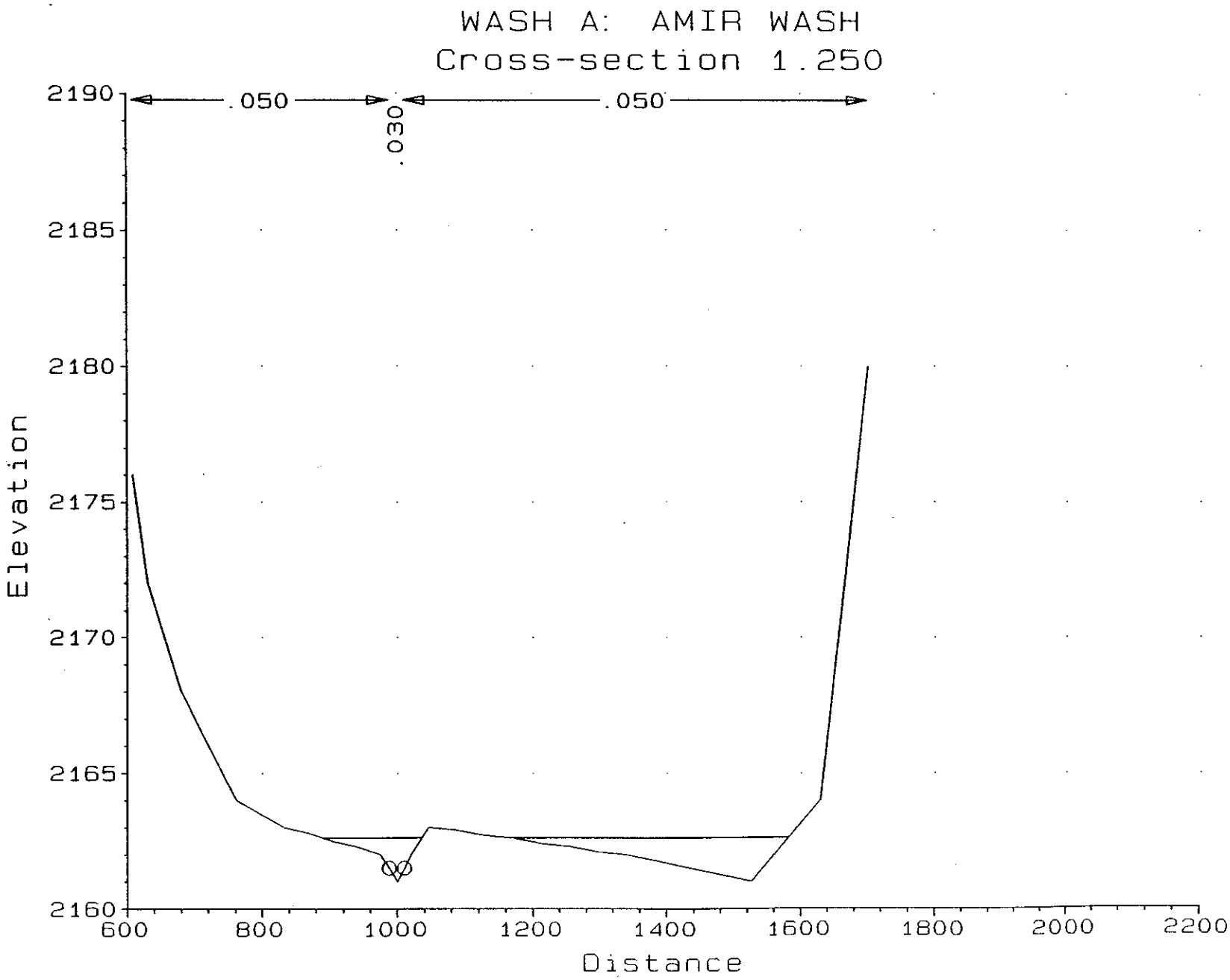
2000
Distance


WASH A: AMIR WASH
Cross-section 1.250
.050
.030
.050
2190
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2170
2165
2160
Elevation
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1000
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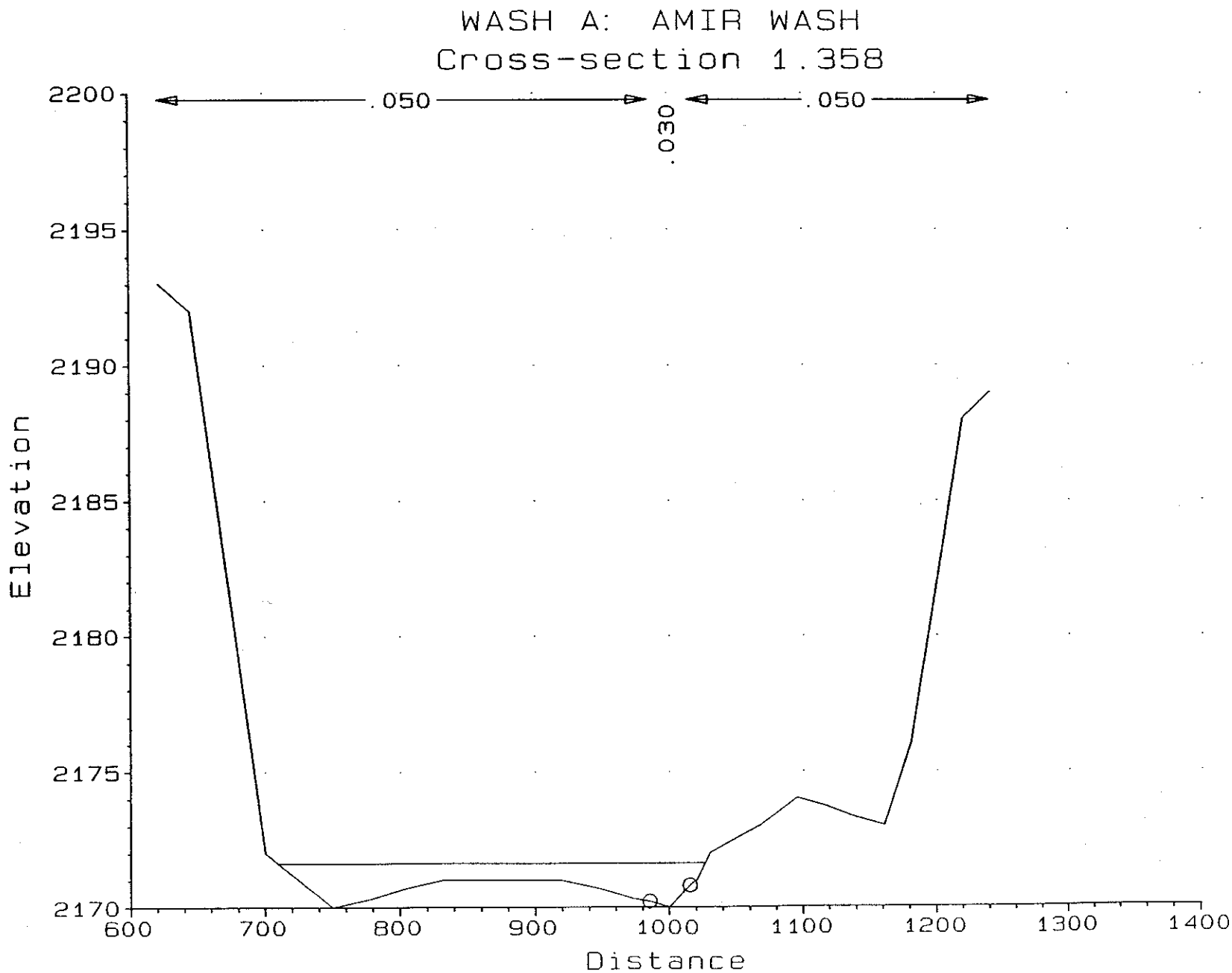
2200
Distance


WASH A: AMIR WASH
Cross-section 1.358
.050
.030
.050
2200
2195
2190
2185
2180
2175
2170
Elevation
600
700
800
900
1000
1100
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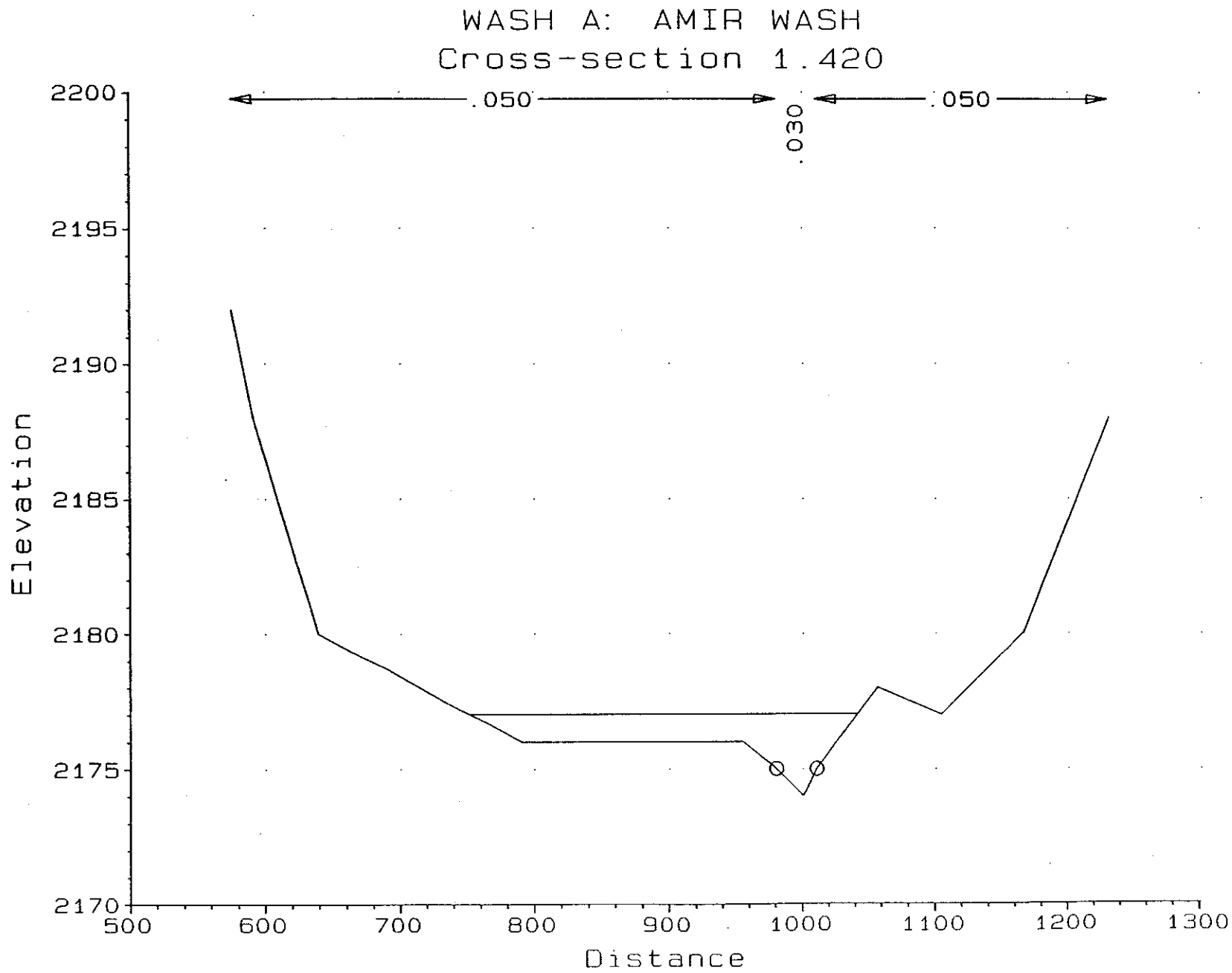
1300
1400
Distance


WASH A: AMIR WASH
Cross-section 1.420
.050
.030
.050
2200
2195
2190
2185
2180
2175
2170
Elevation
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700
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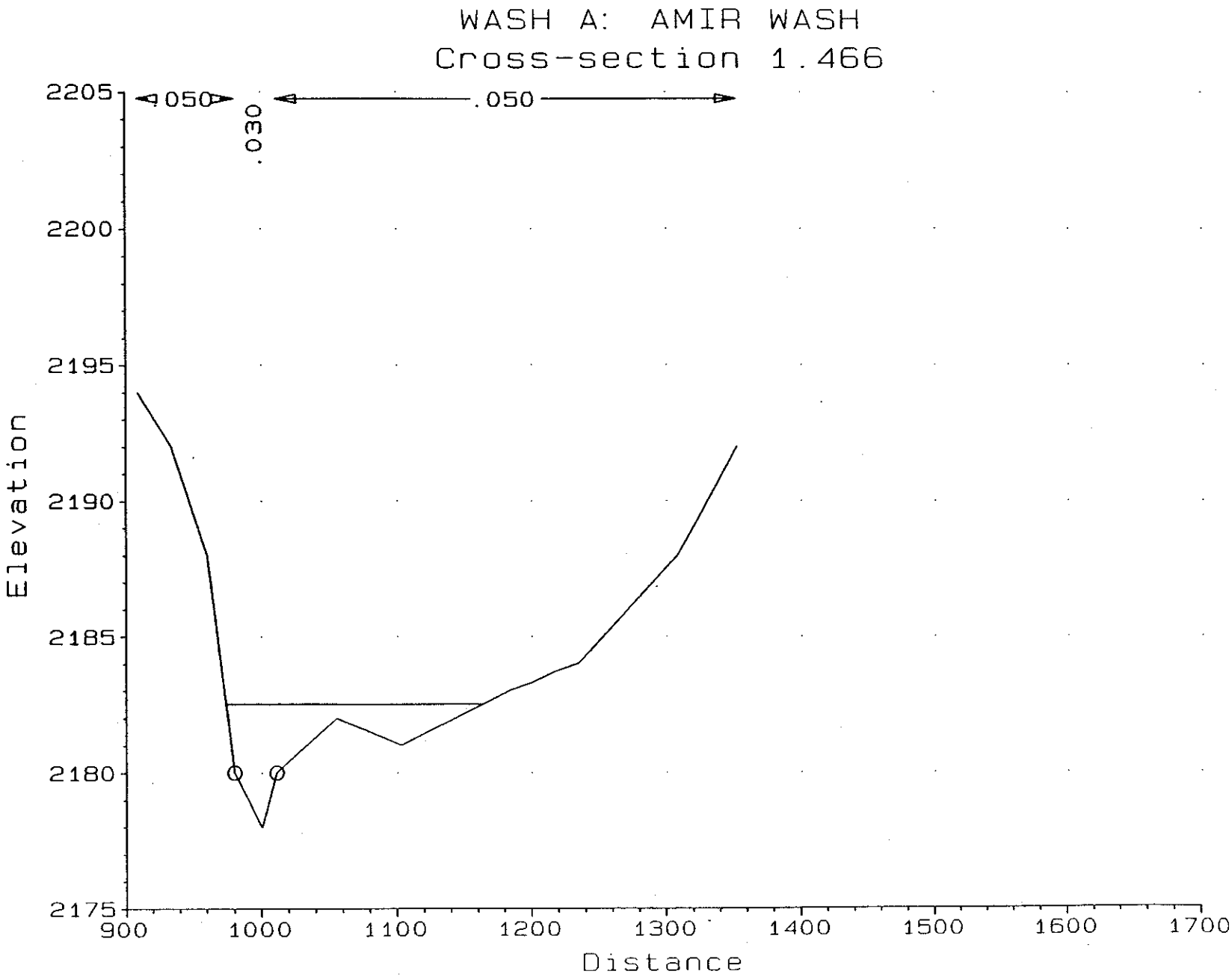
1300
Distance


WASH A: AMIR WASH
Cross-section 1.466
.050
.030
.050
2205
2200
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2185
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Elevation
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1200
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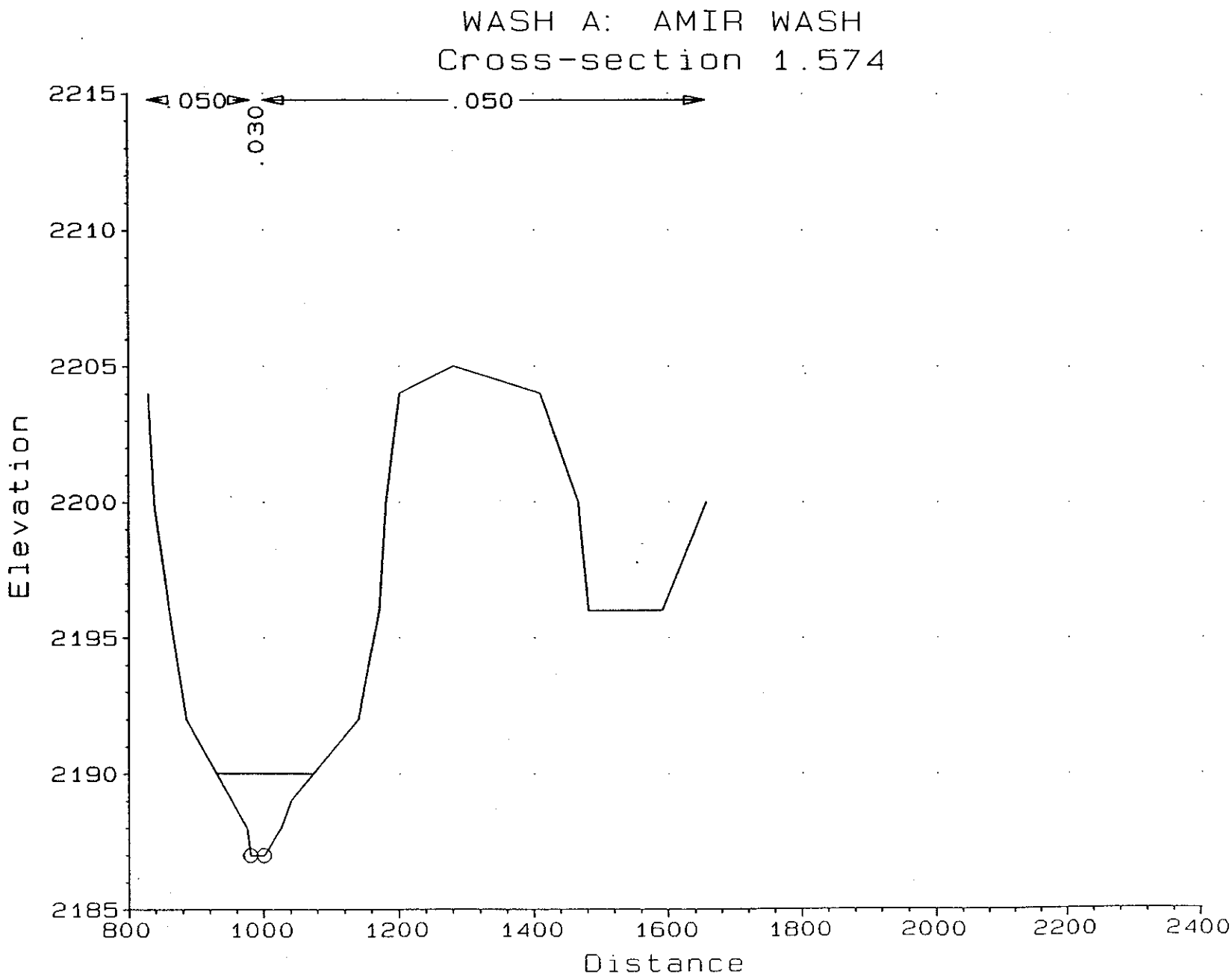
1600
1700
Distance


WASH A: AMIR WASH
Cross-section 1.574
.050
.030
.050
2215
2210
2205
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2190
2185
Elevation
800
1000
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1400
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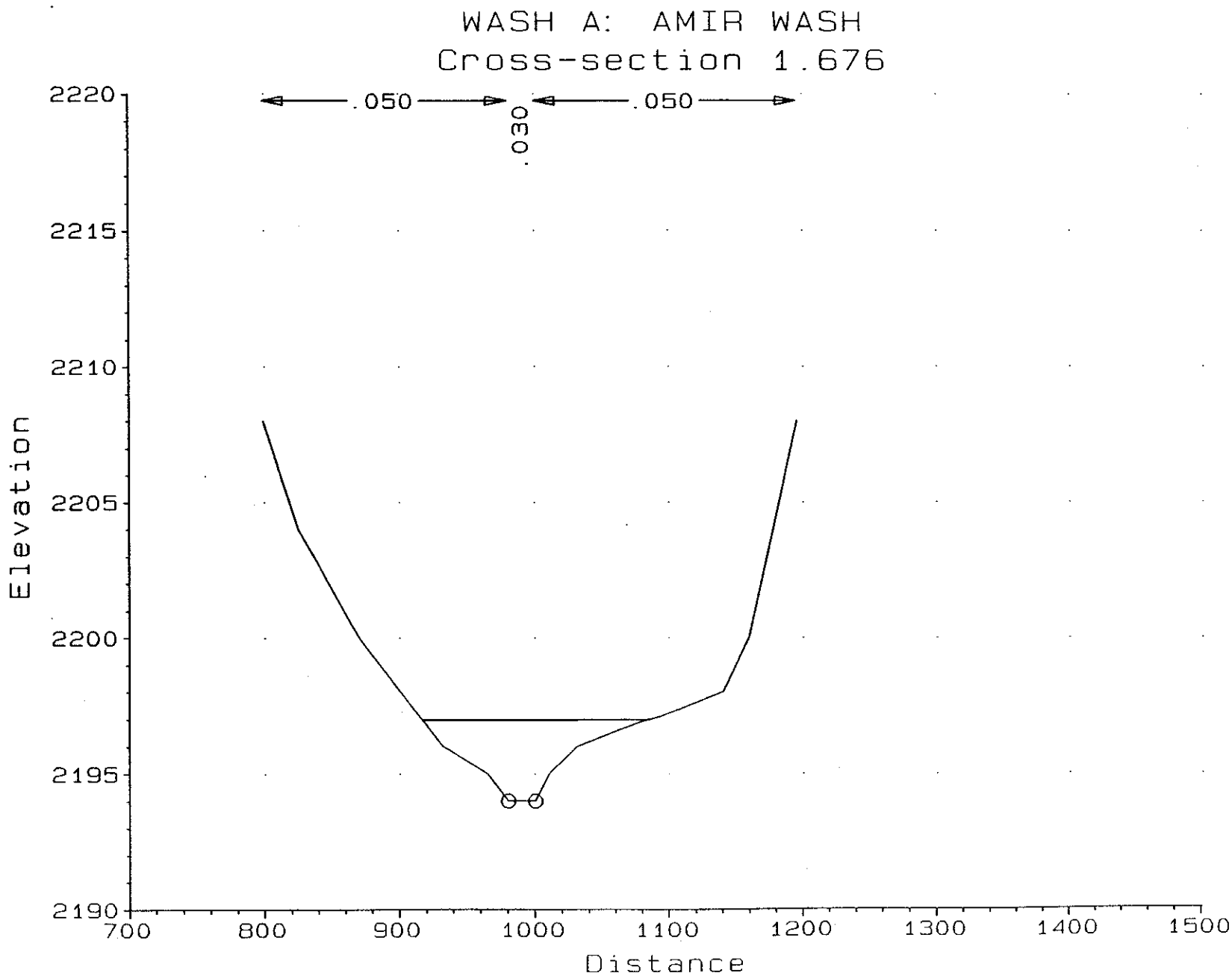
2000
2200
2400
Distance


WASH A: AMIR WASH
Cross-section 1.676
.050
.050
.030
Elevation
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2205
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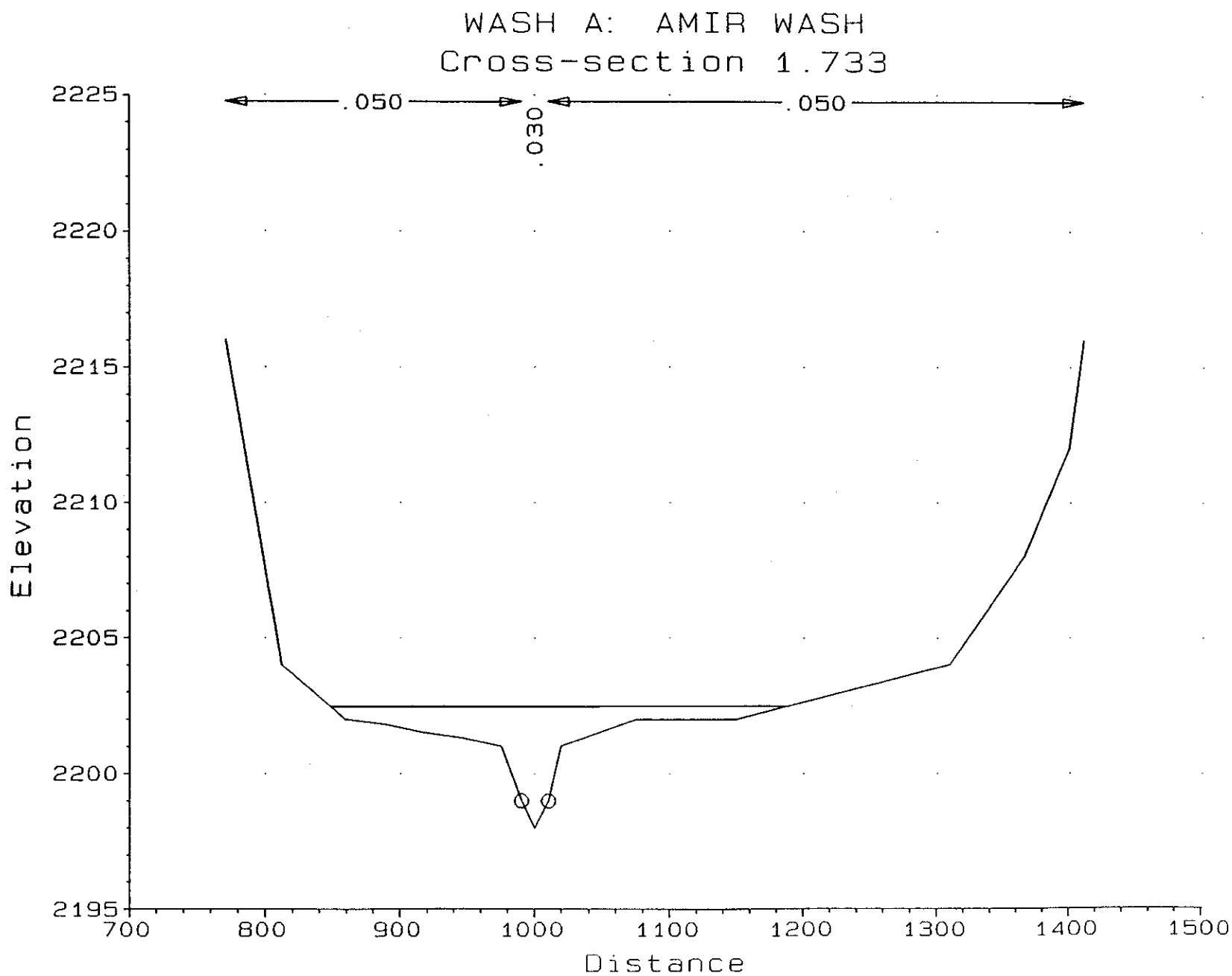
1400
1500
Distance


WASH A: AMIR WASH
Cross-section 1.733
.050
.030
.050
2225
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2215
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2205
2200
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Elevation
700
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900
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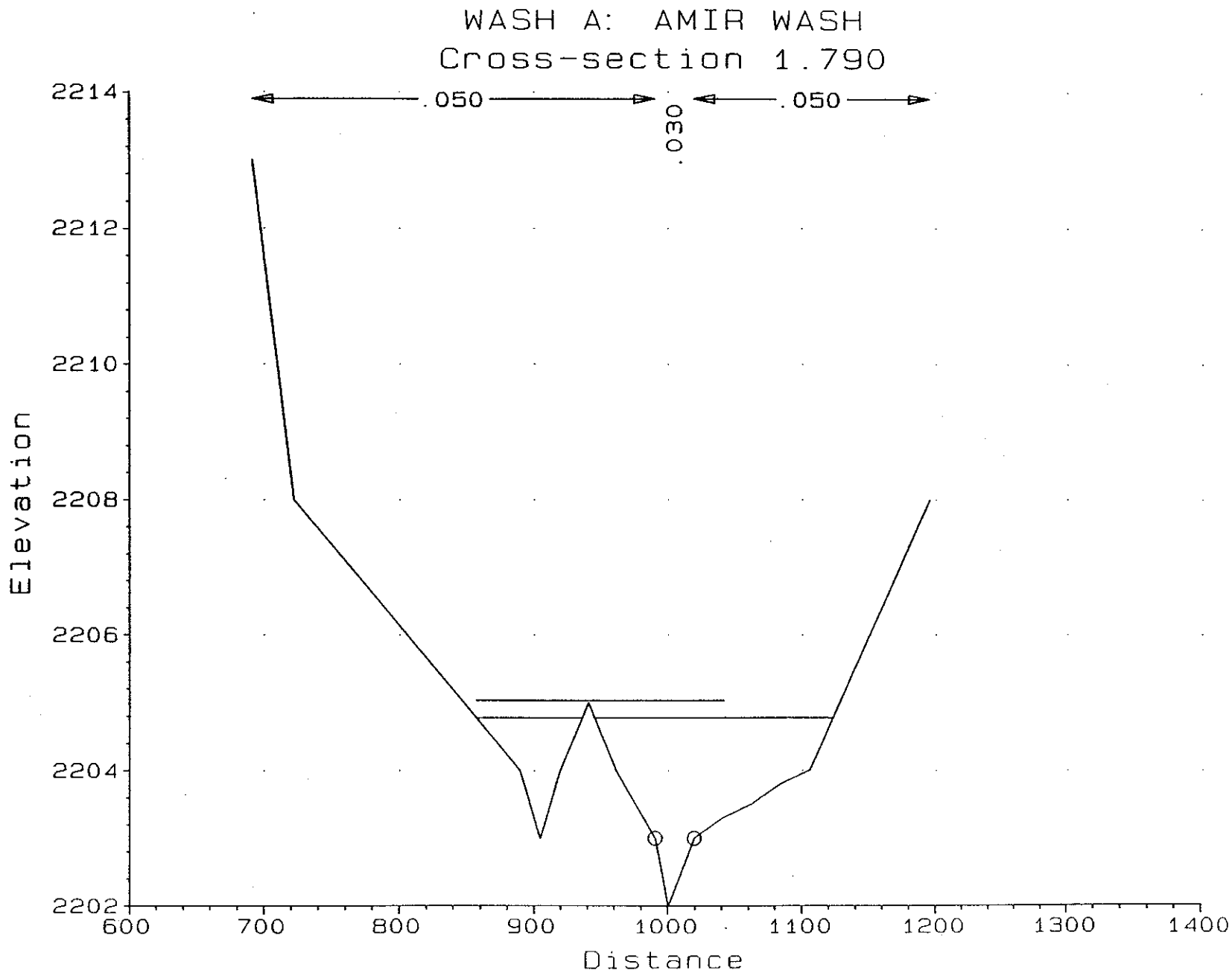
Distance


WASH A: AMIR WASH
Cross-section 1.790
.050
.030
.050
Elevation
2214
2212
2210
2208
2206
2204
2202
600
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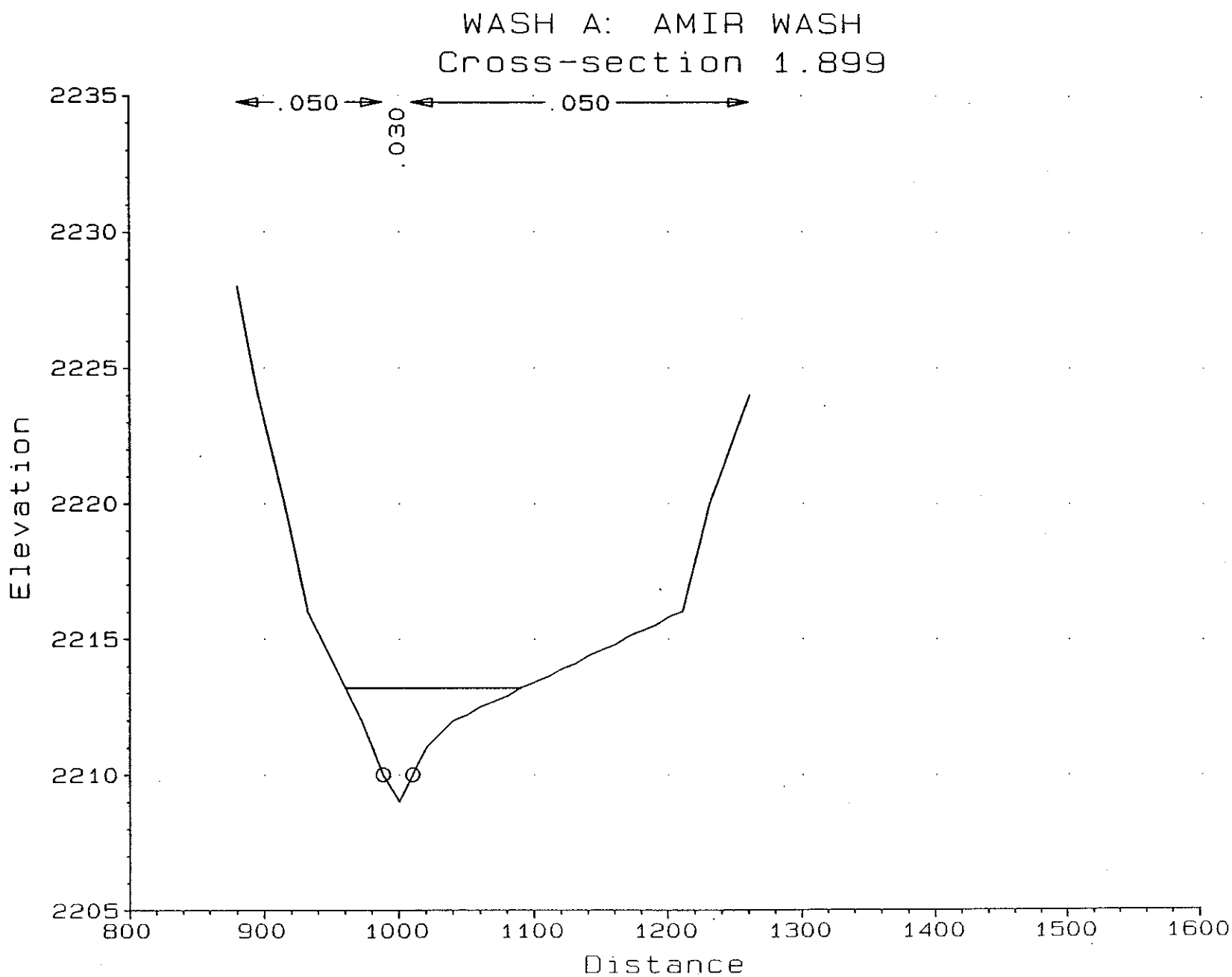
Distance


WASH A: AMIR WASH
Cross-section 1.899
.050
.050
.030
2235
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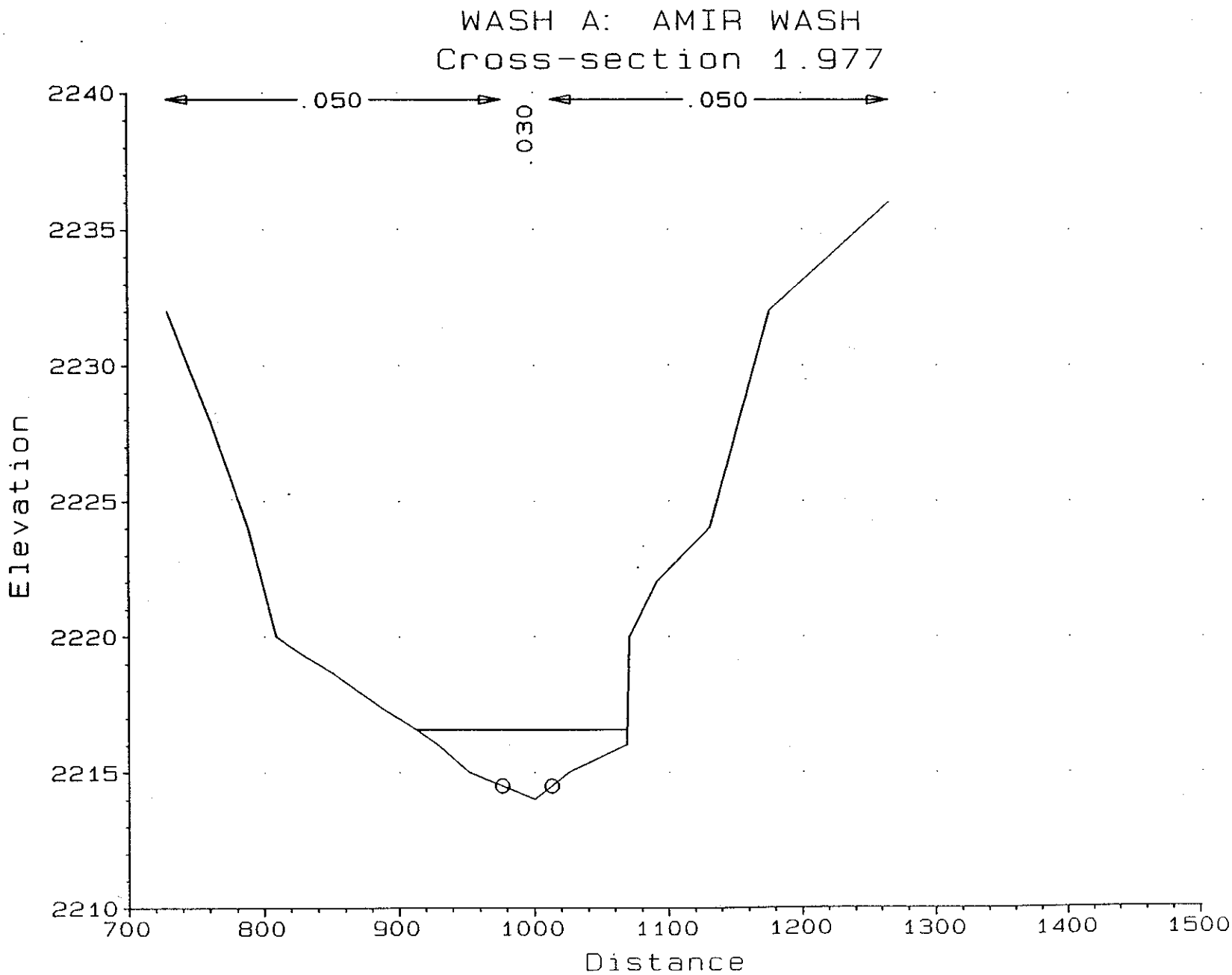
WASH A: AMIR WASH
Cross-section 1.977
.050
.030
.050
2240
2235
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2220
2215
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Elevation
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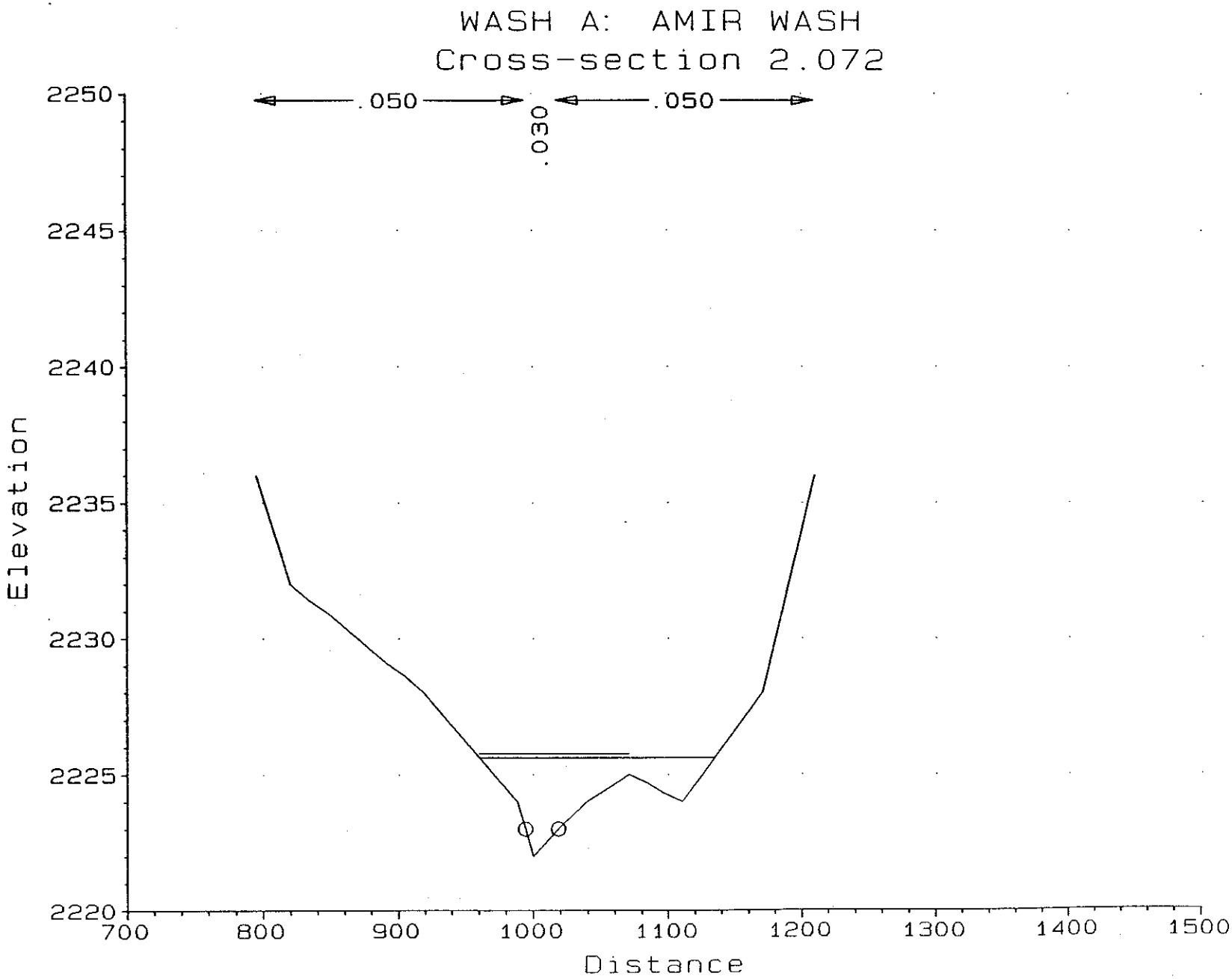
1500
Distance


WASH A: AMIR WASH
Cross-section 2.072
.050
.050
.030
2250
2245
2240
2235
2230
2225
2220
Elevation
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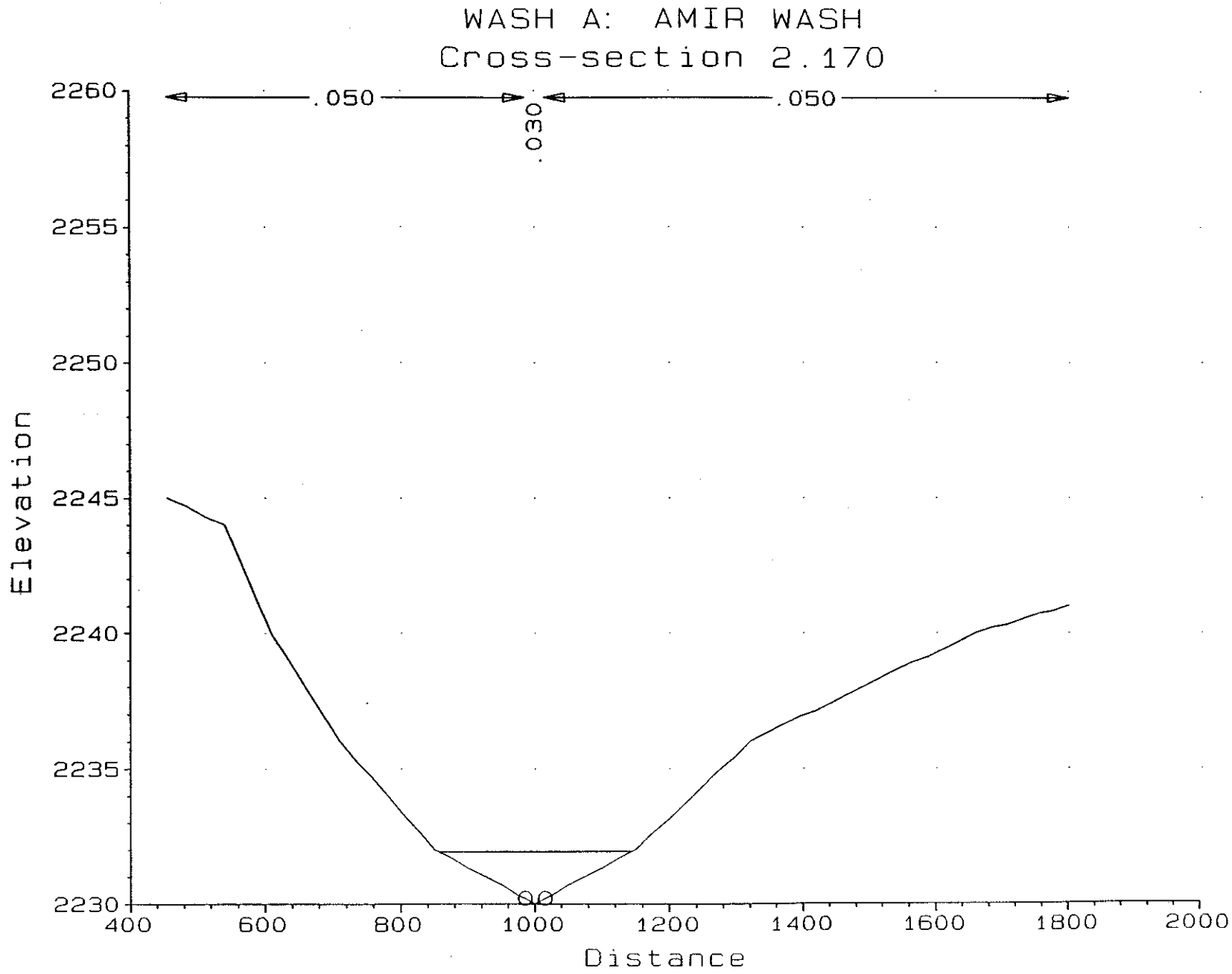
Distance


WASH A: AMIR WASH
Cross-section 2.170
.050
.030
.050
2260
2255
2250
2245
2240
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2230
Elevation
400
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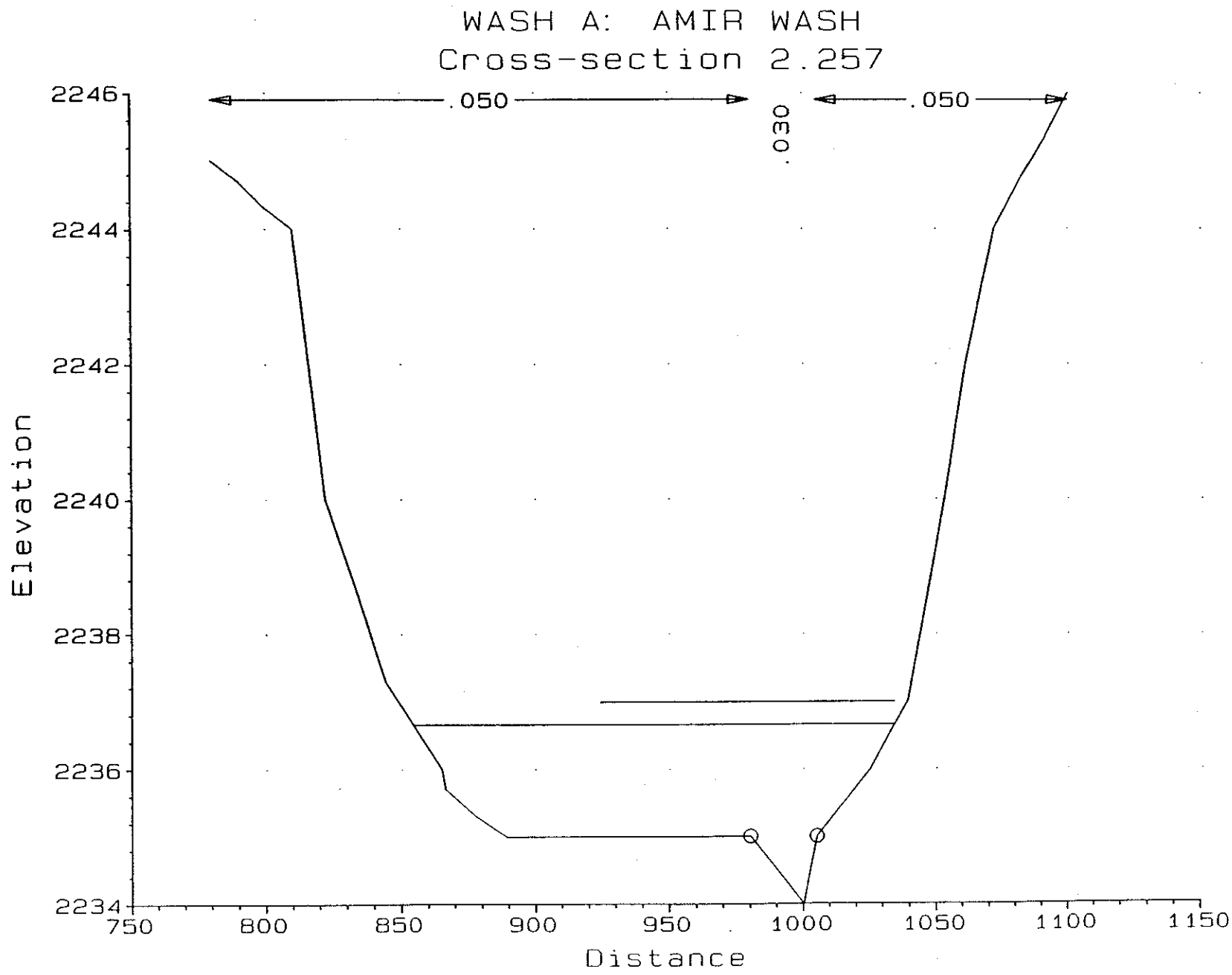
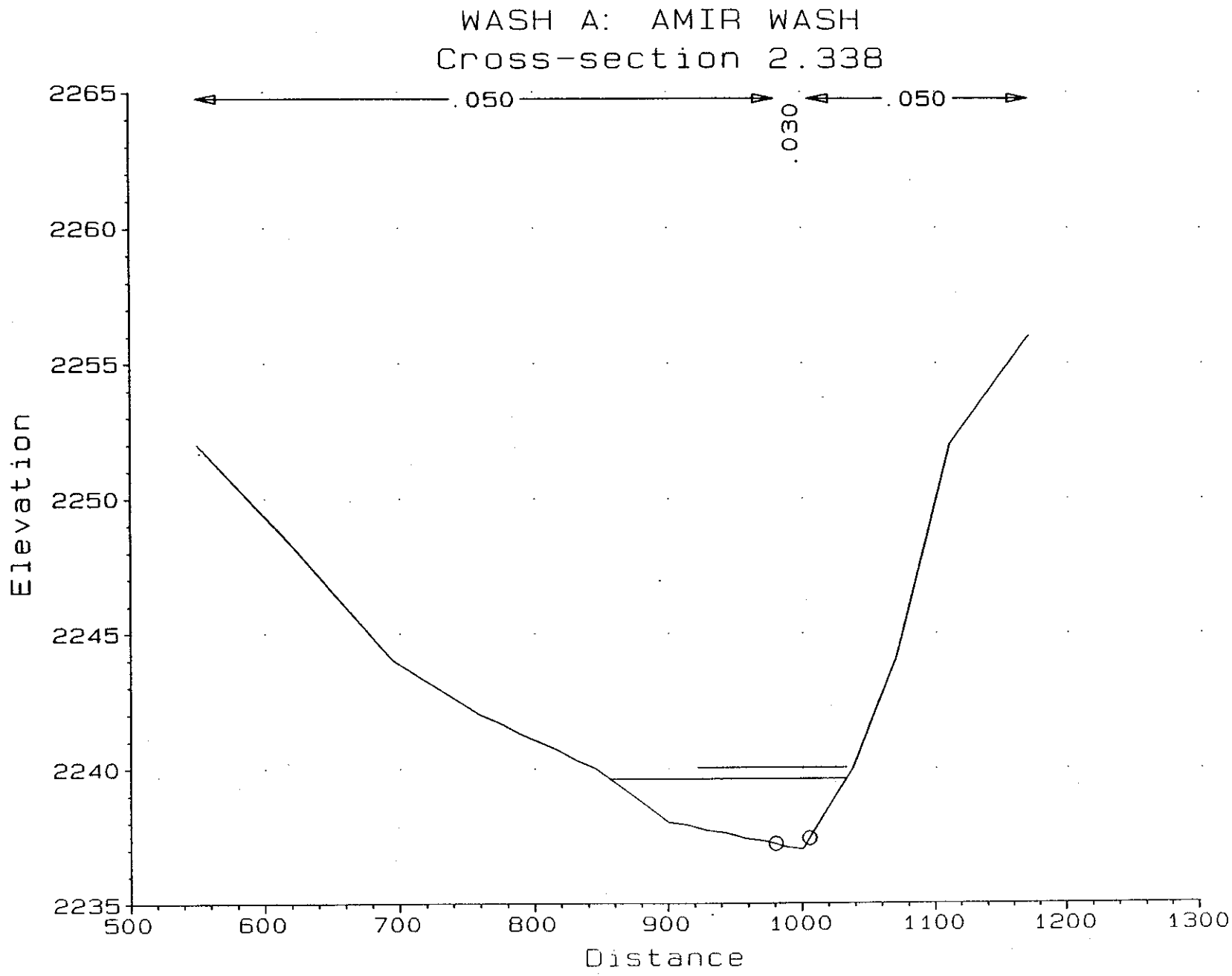
2000
Distance


WASH A: AMIR WASH
Cross-section 2.257
.050
.030
.050
Elevation
2246
2244
2242
2240
2238
2236
2234
750
800
850
900
950
1000
1050
1100
1150
Distance


WASH A: AMIR WASH
Cross-section 2.338
.050
.030
.050
2265
2260
2255
2250
2245
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2235
Elevation
500
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700
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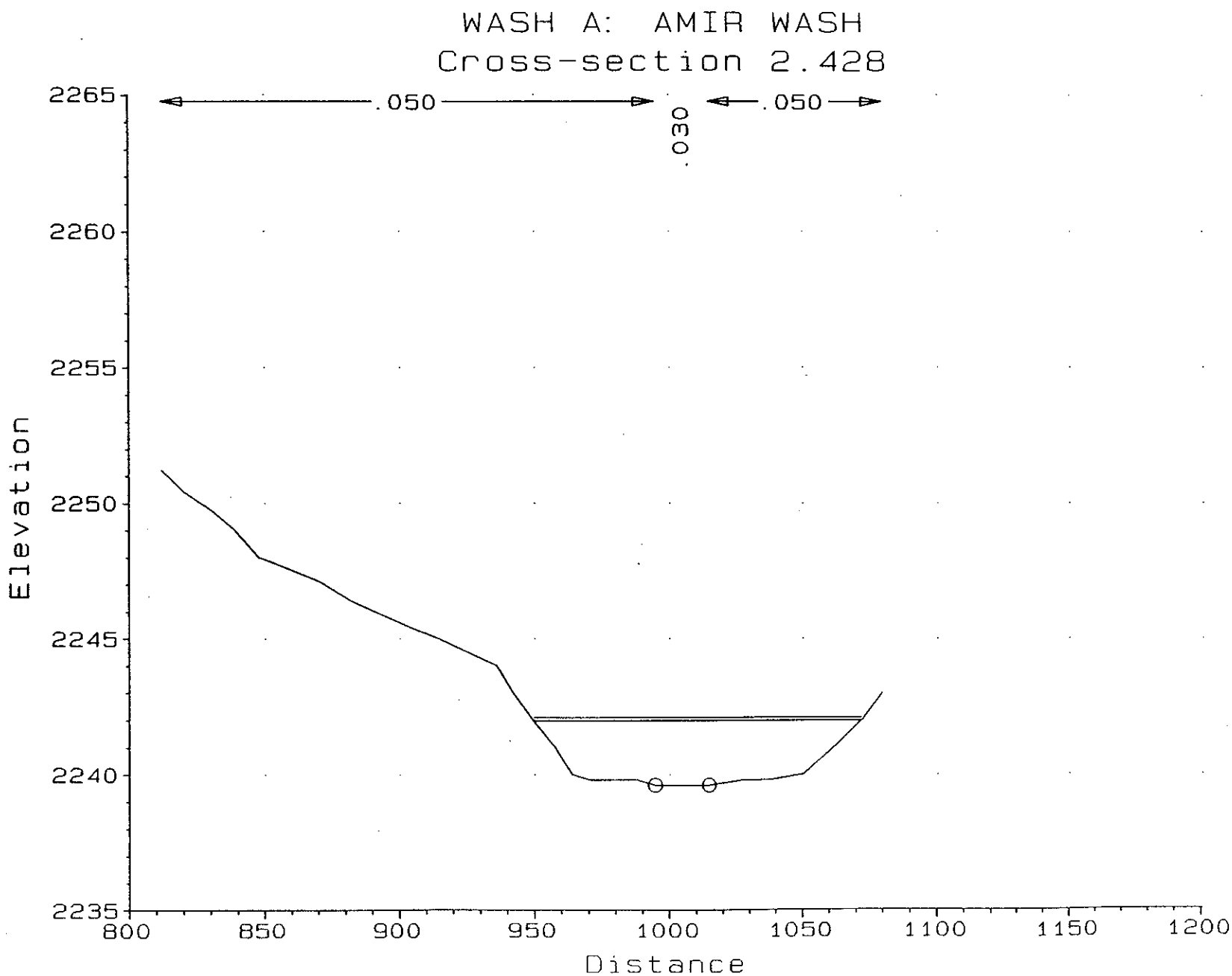
1200
1300
Distance


WASH A: AMIR WASH
Cross-section 2.428
.050
.030
.050
Elevation
2265
2260
2255
2250
2245
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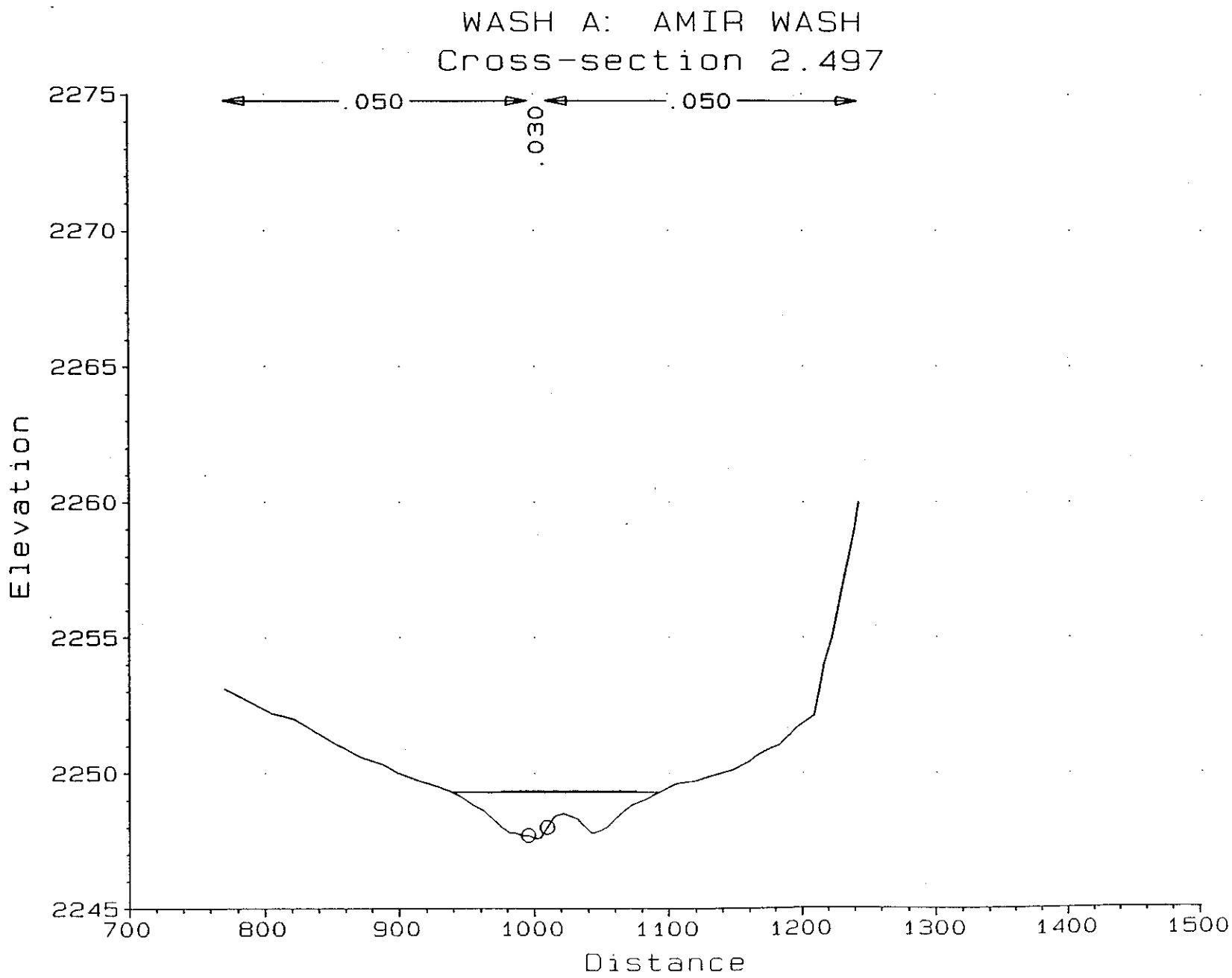
2235
800
850
900
950
1000
1050
1100
1150
1200
Distance


WASH A: AMIR WASH
Cross-section 2.497
.050
.050
.030
Elevation
2275
2270
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2260
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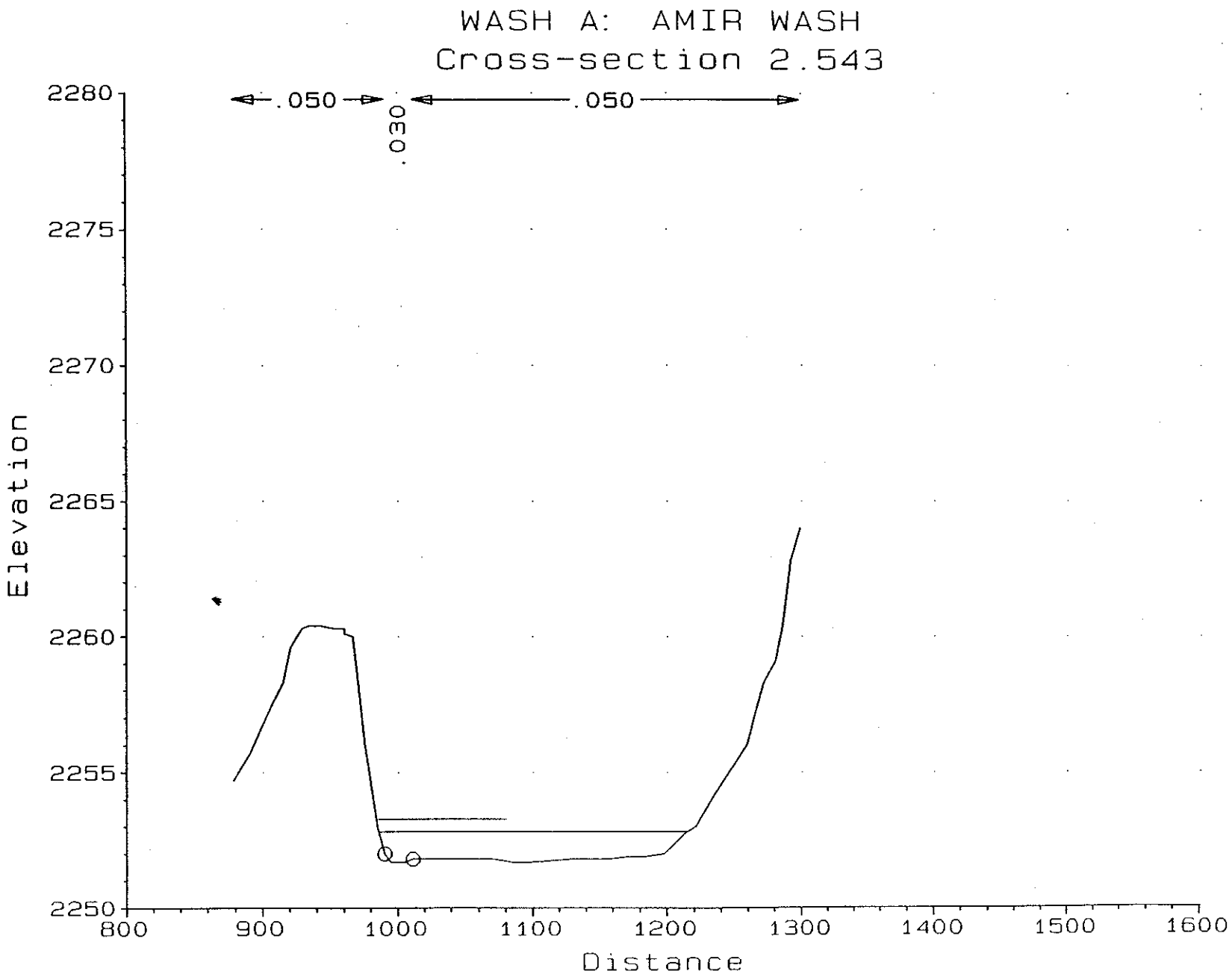
Distance


WASH A: AMIR WASH
Cross-section 2.543
.050
.030
.050
Elevation
2280
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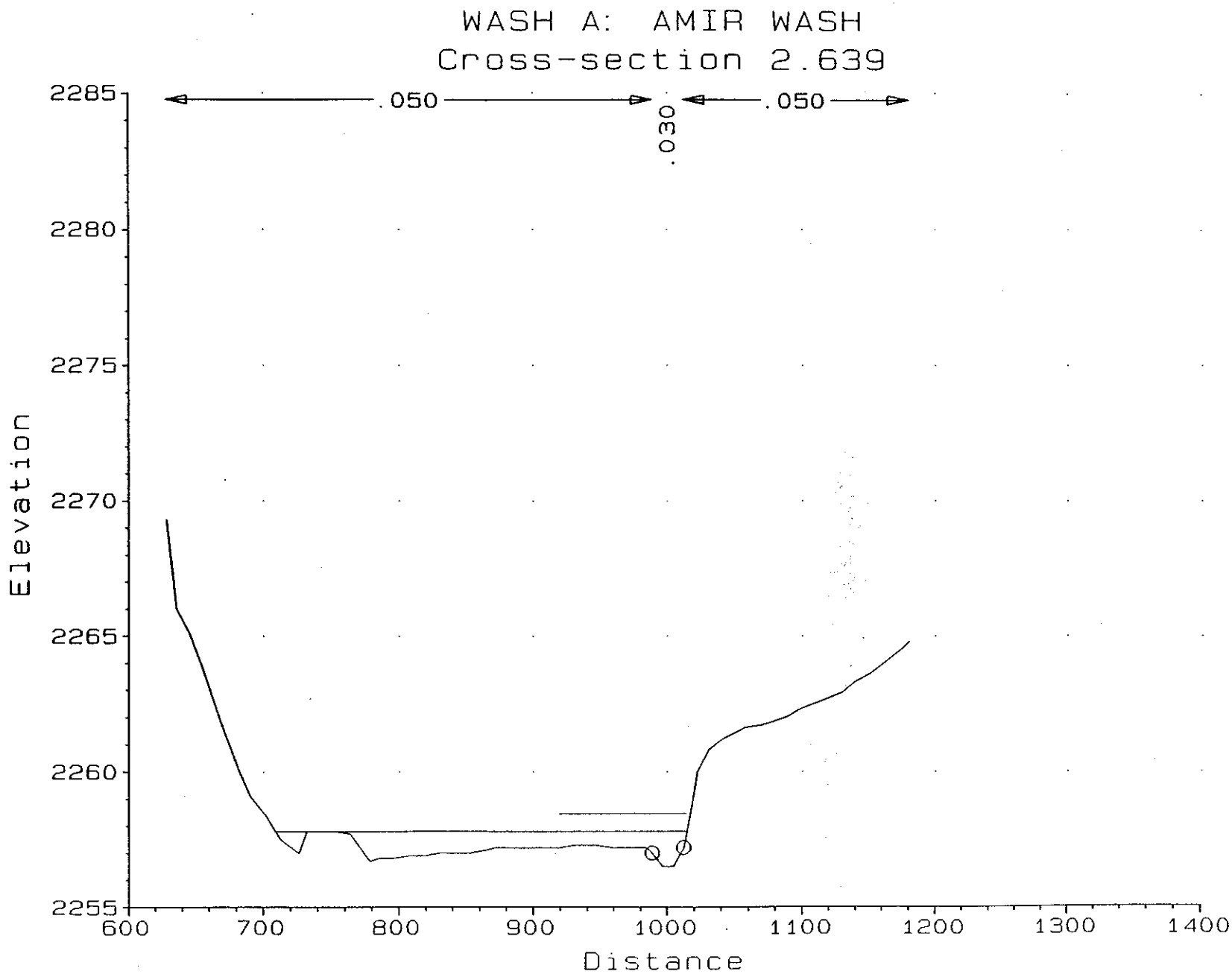
Distance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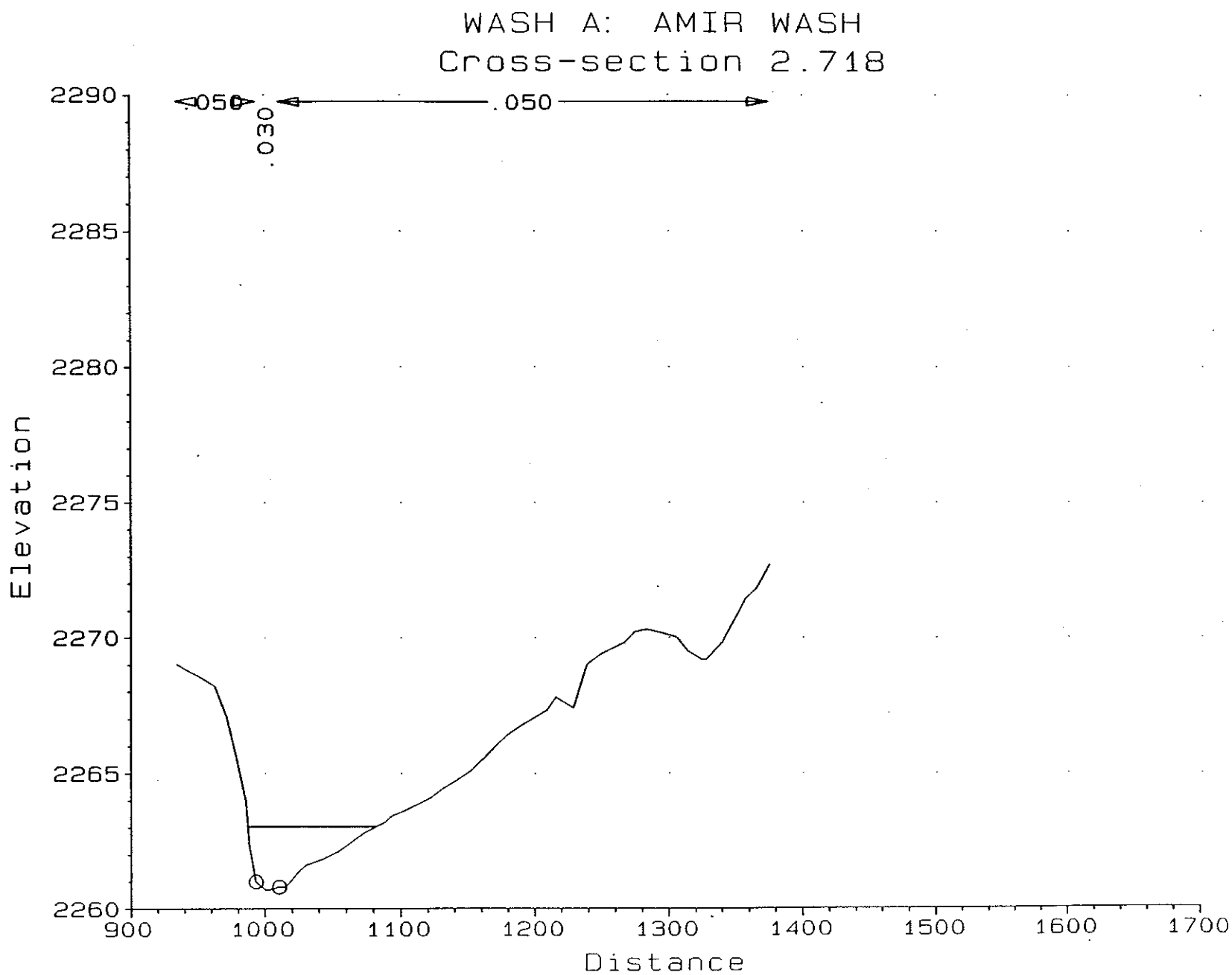
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Elevation
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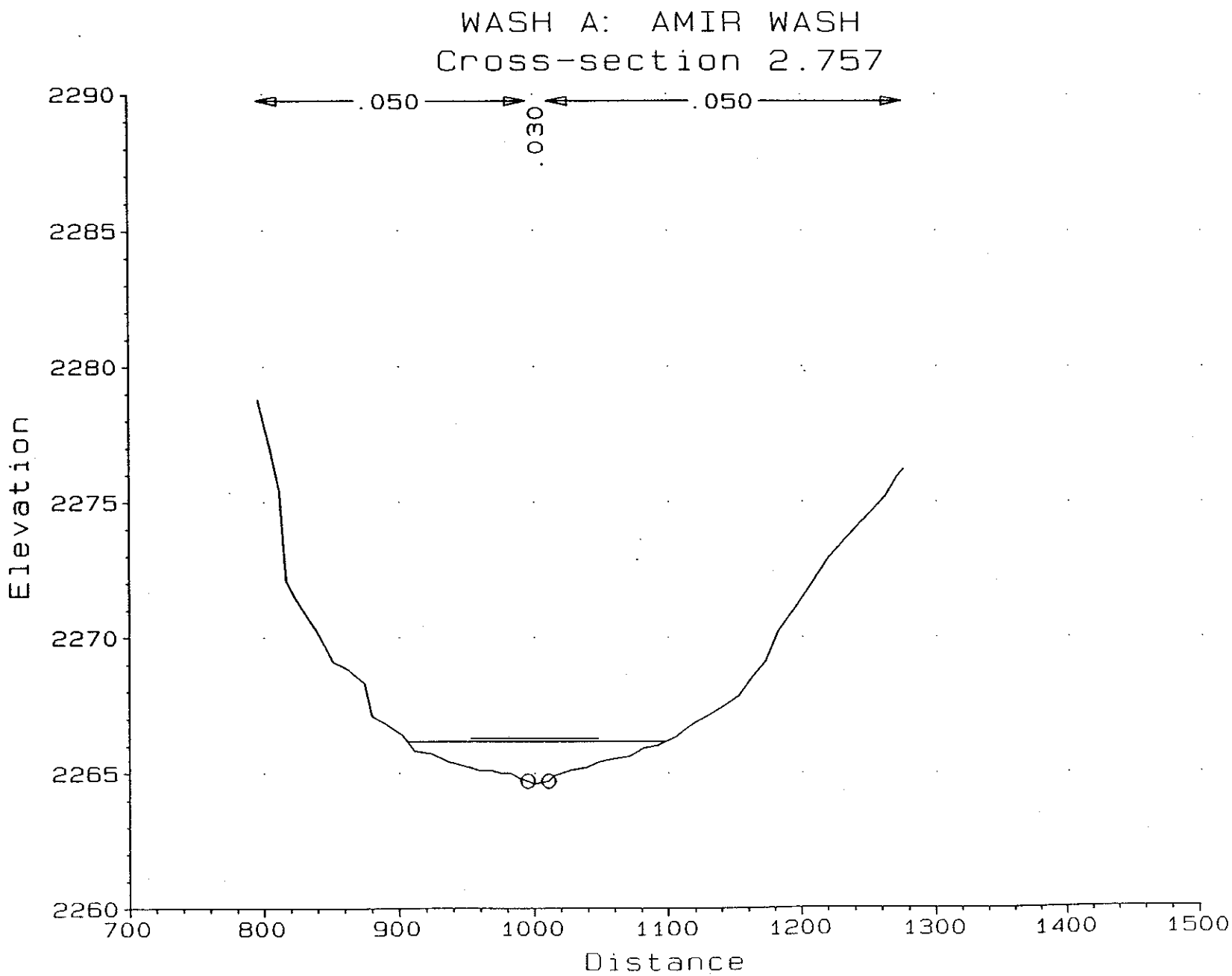
1700
Distance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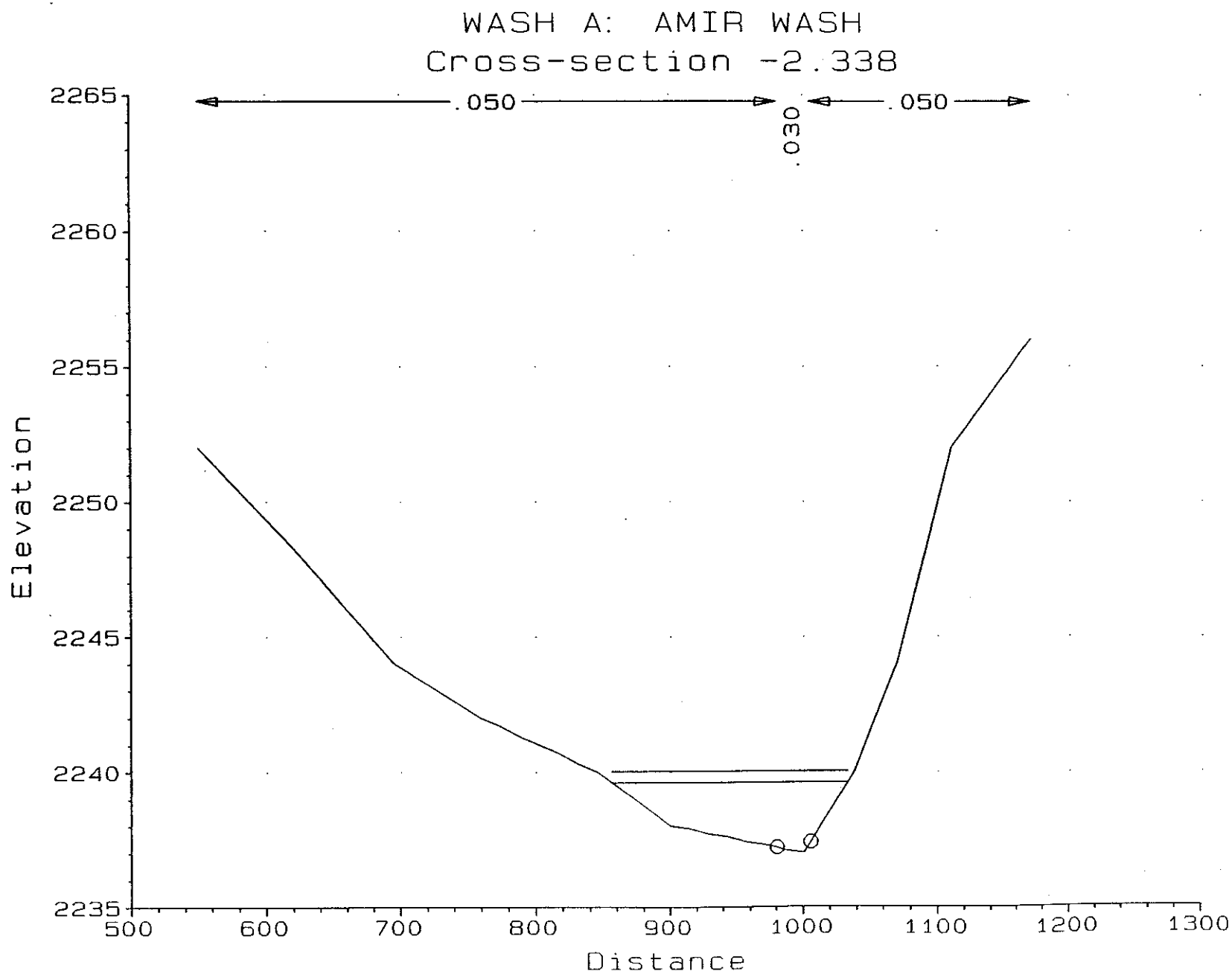
Distance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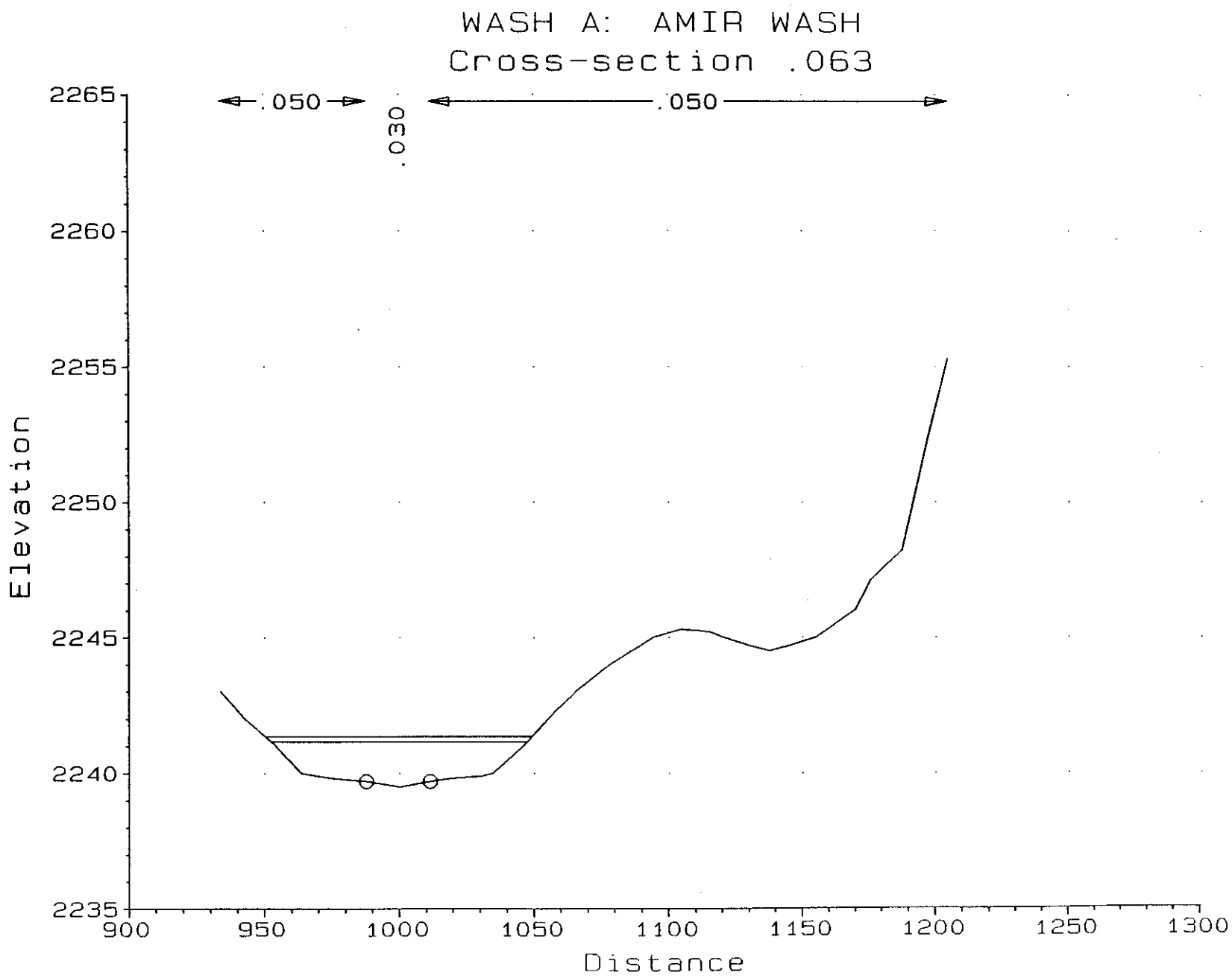
Distance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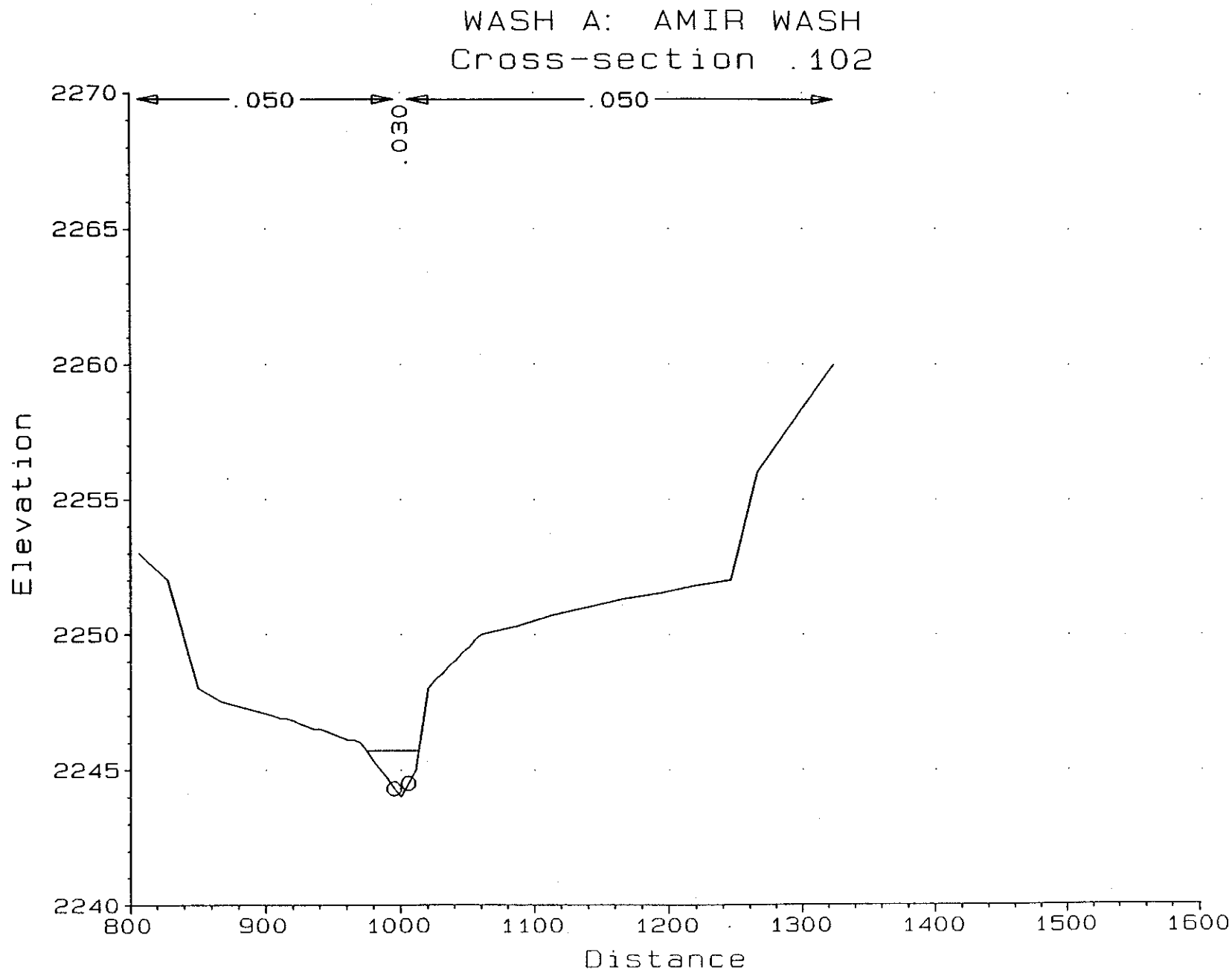
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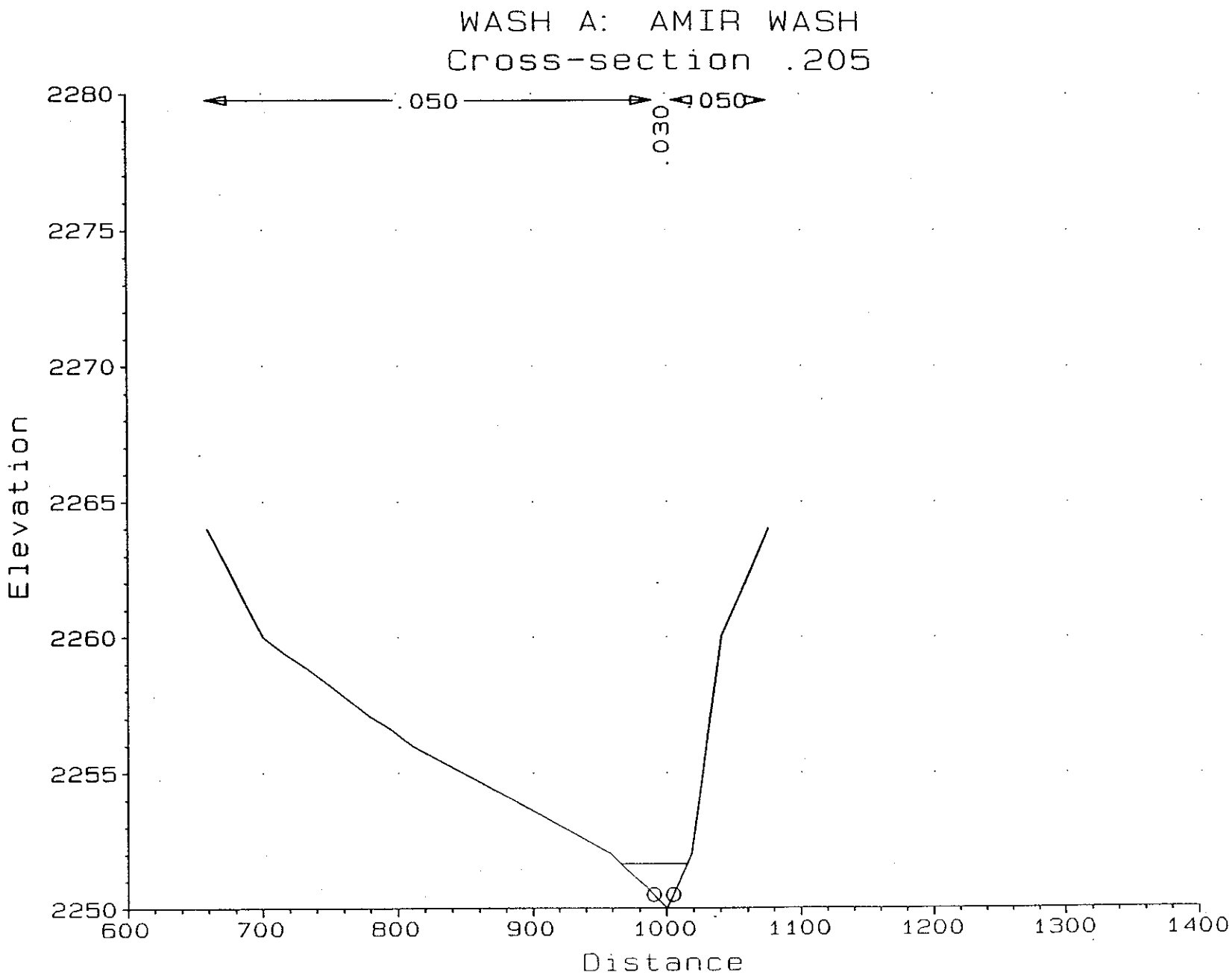
Distance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.050
.030
2280
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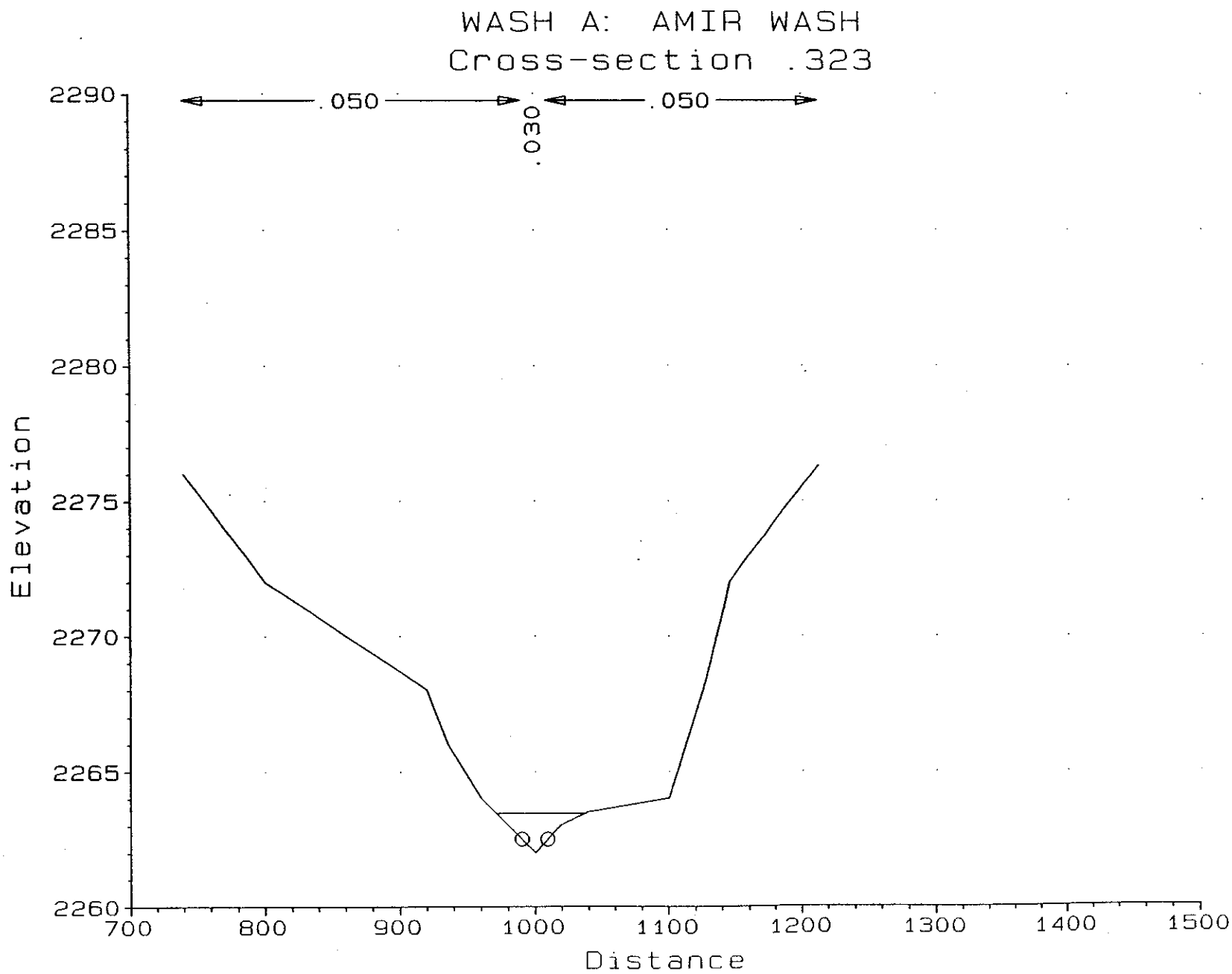
1200
1300
1400
Distance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.050
.030
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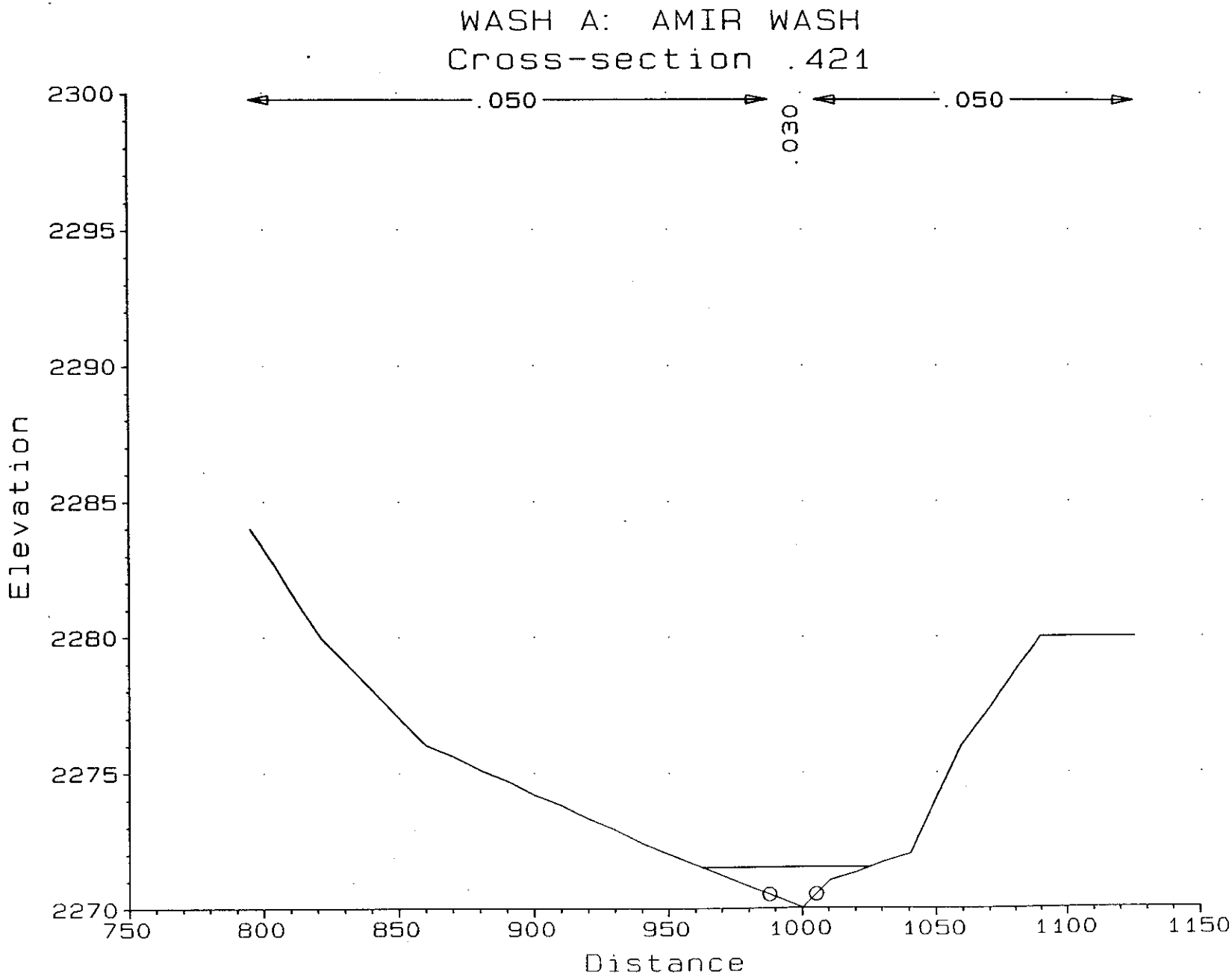
Distance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Cross-section .421
.050
.050
.030
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1100
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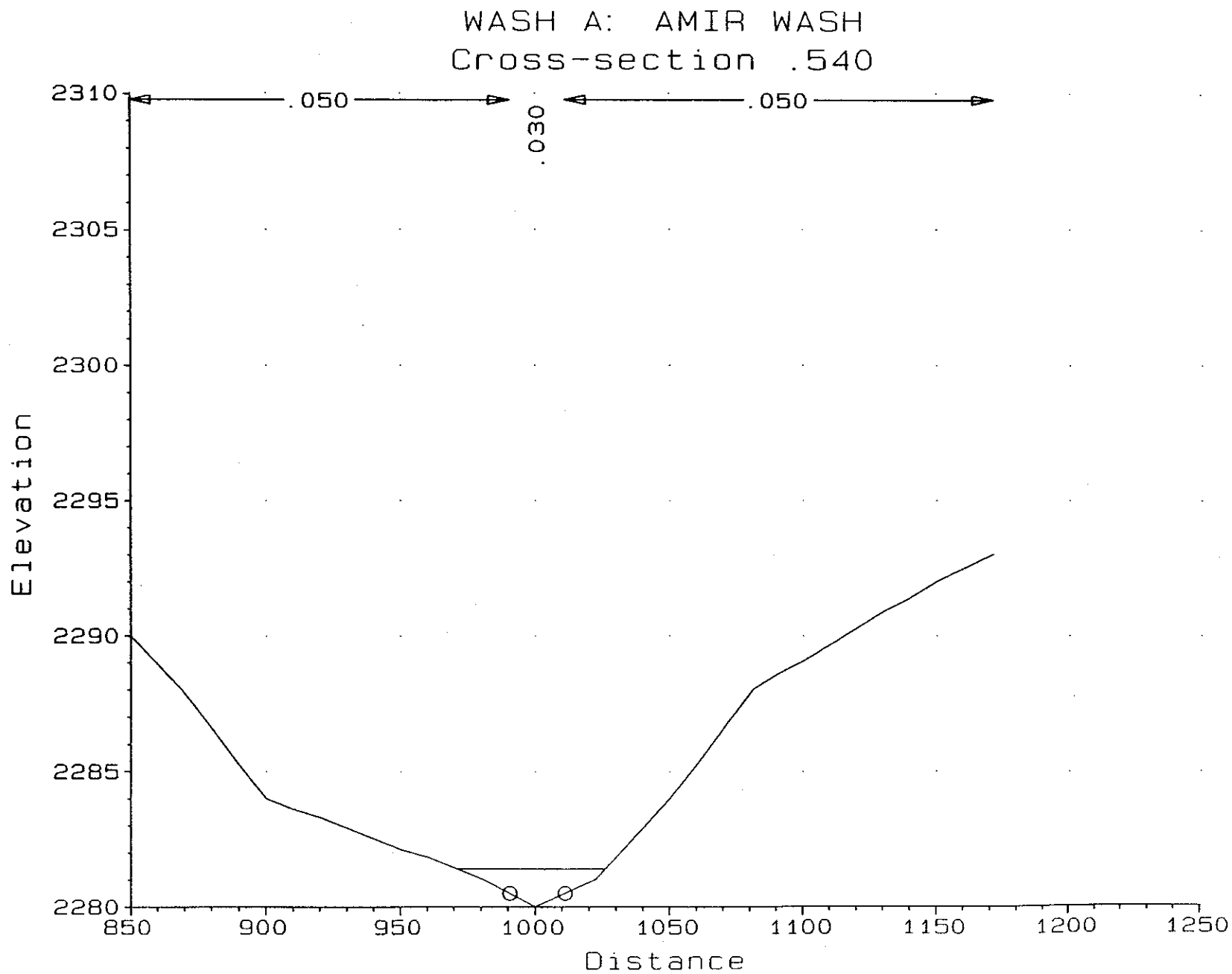
Distance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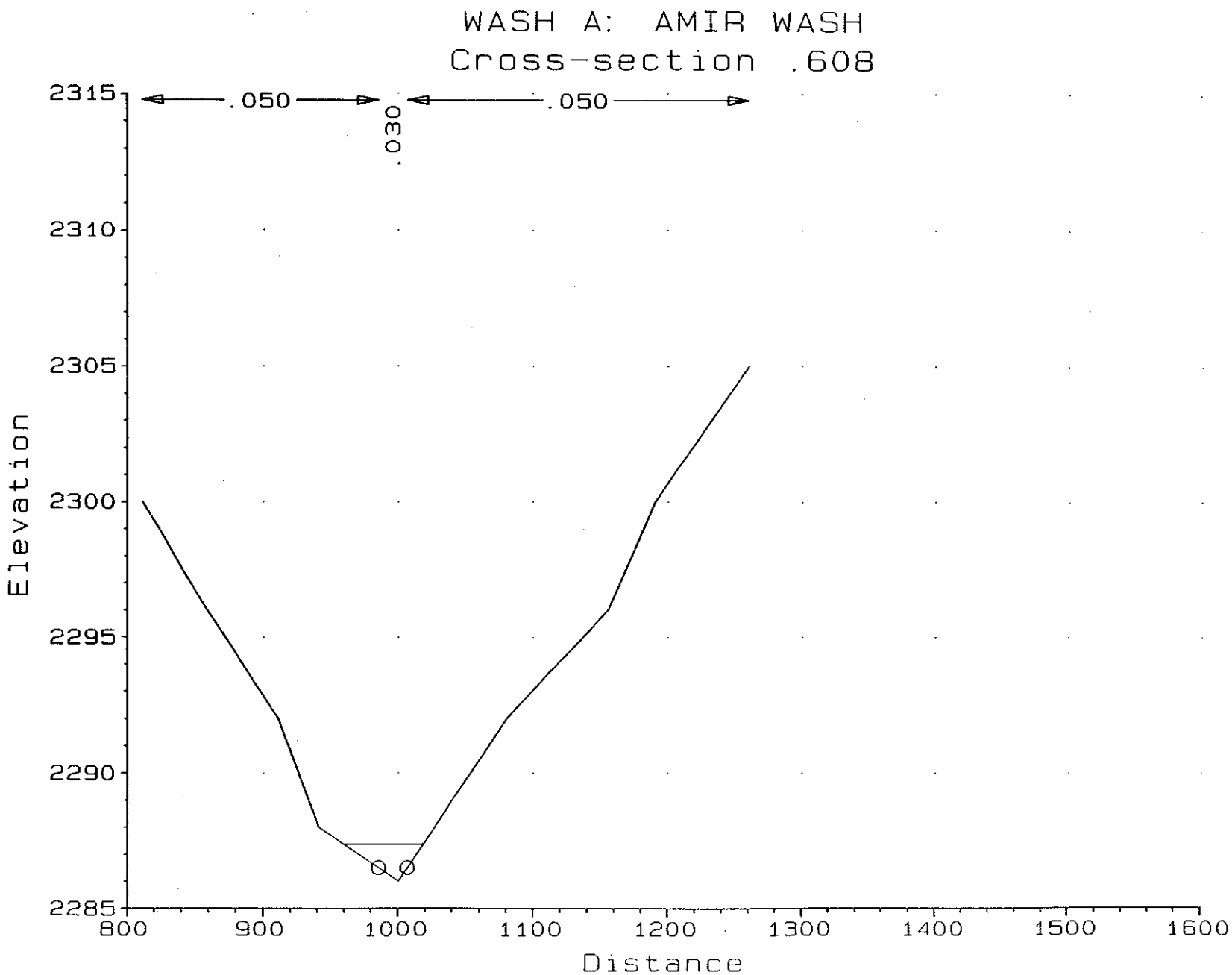
Distance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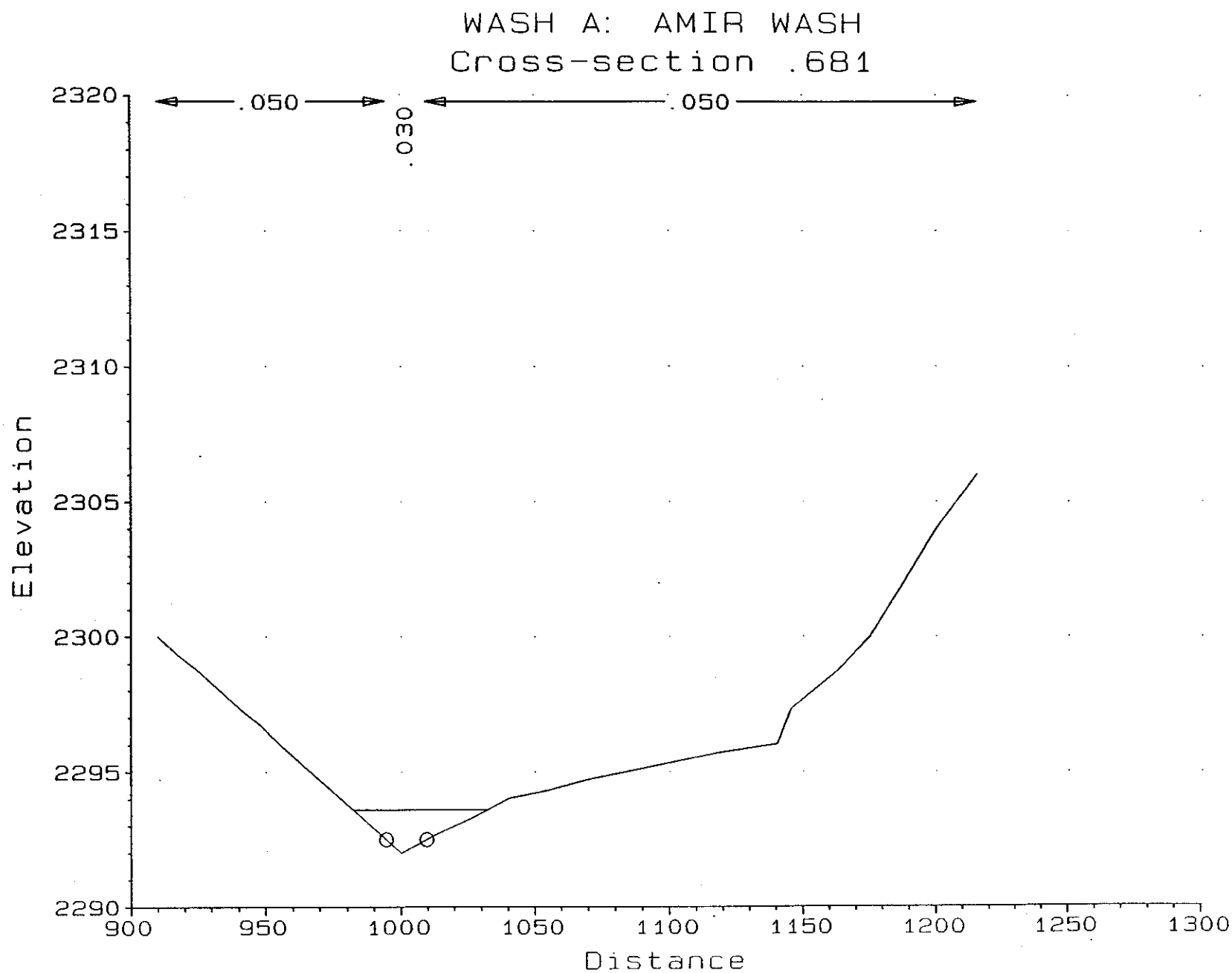
Distance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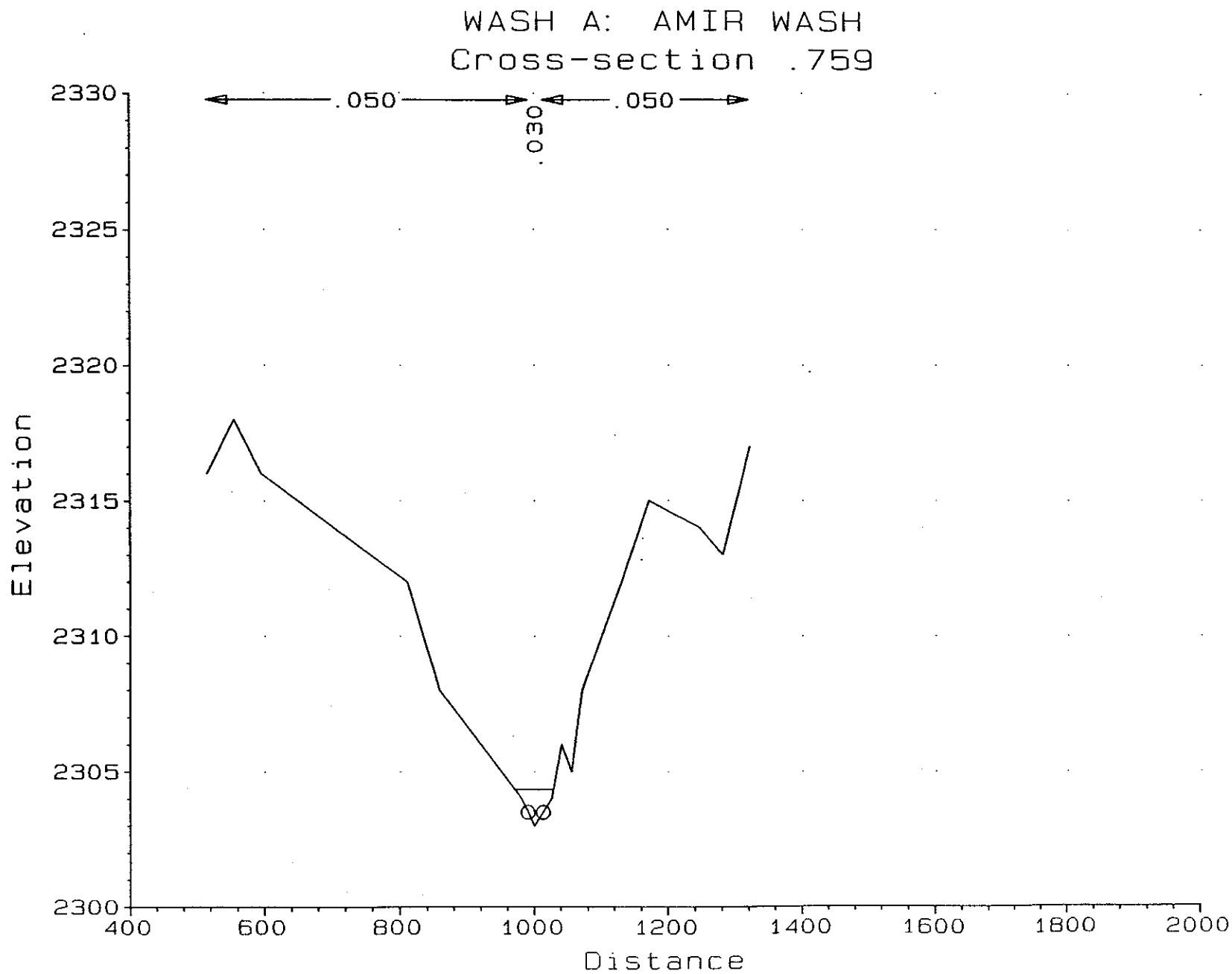
Distance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Cross-section .759
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.030
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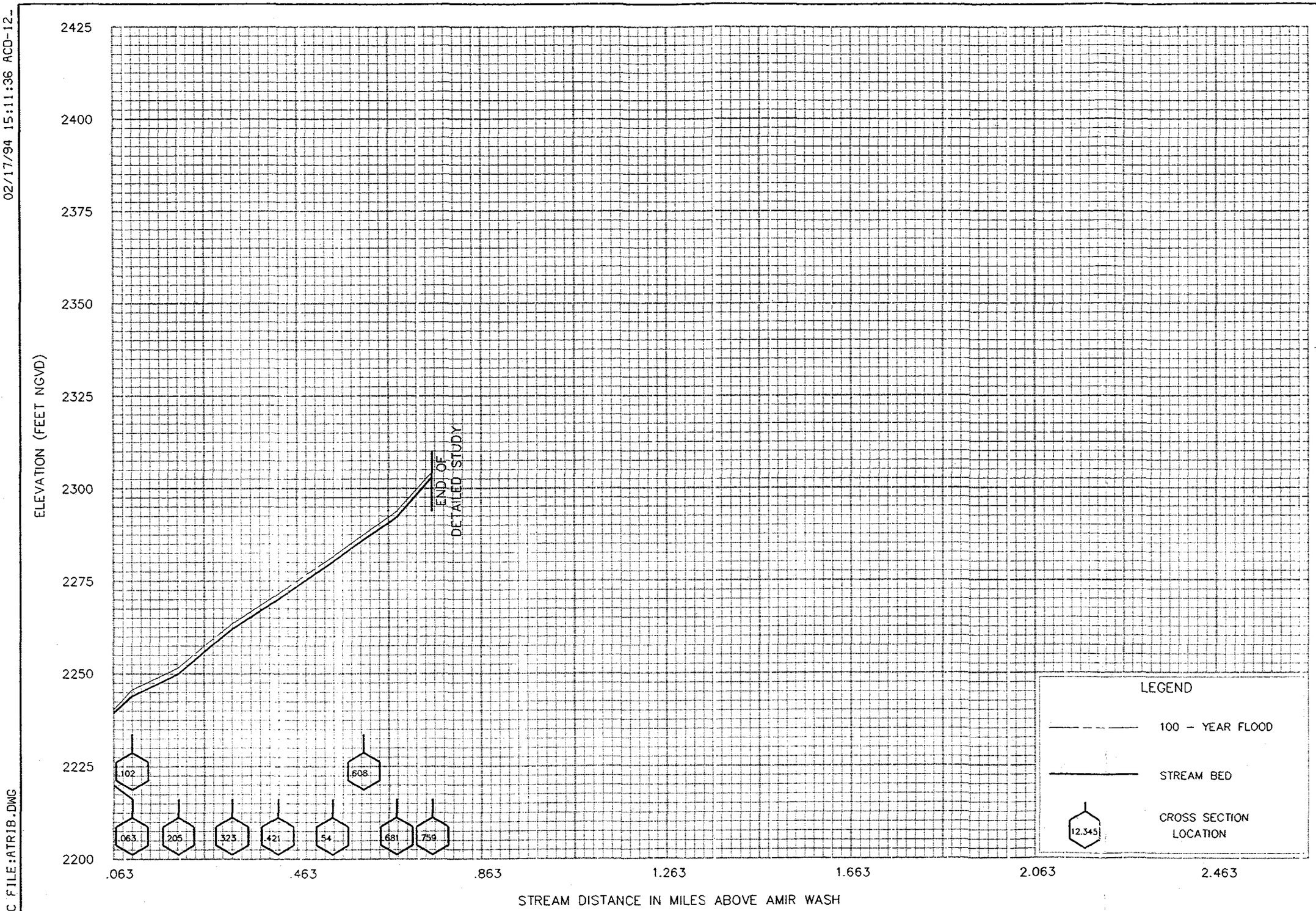
2000
Distance



FLOOD PROFILES

AMIR WASH TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

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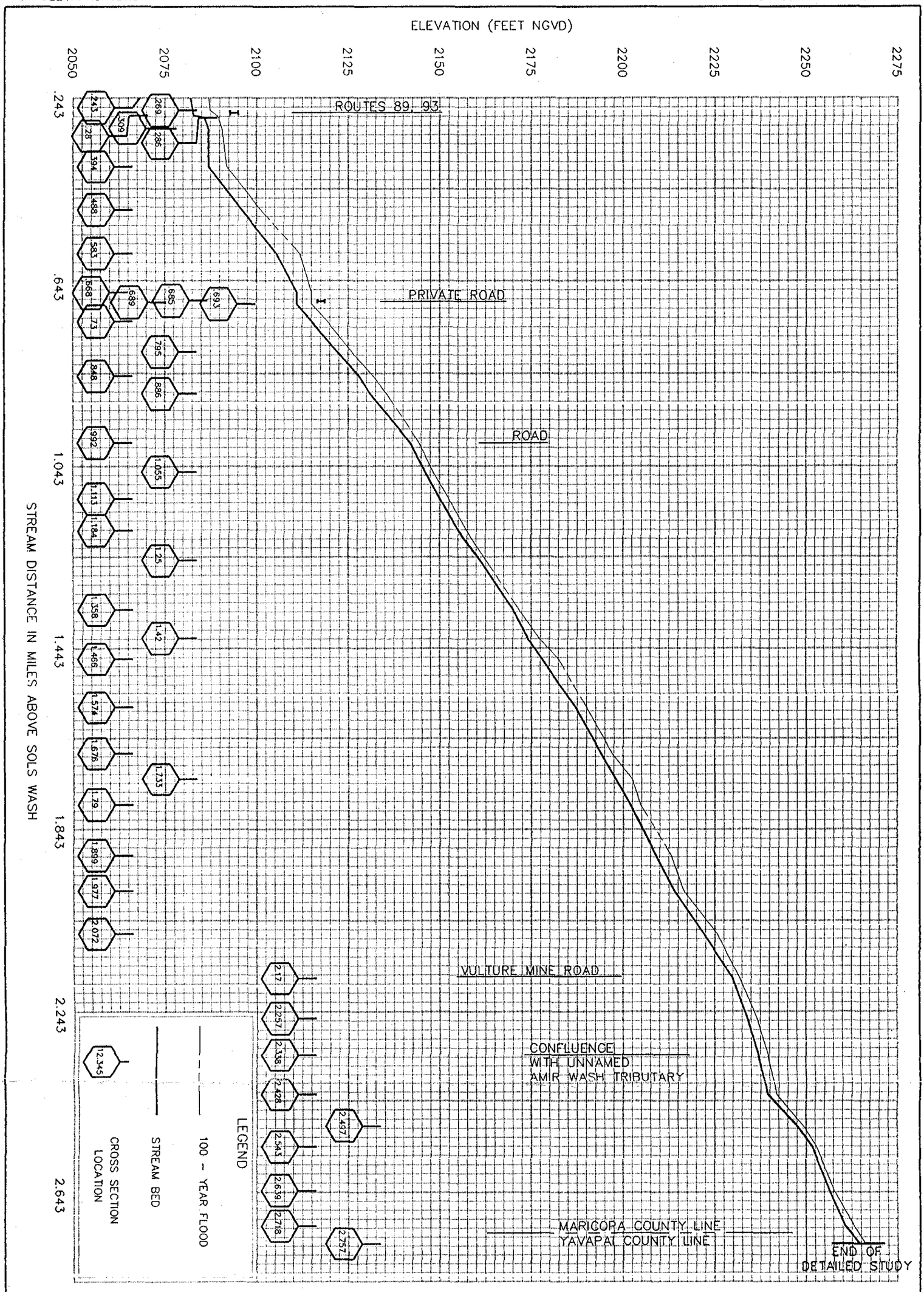
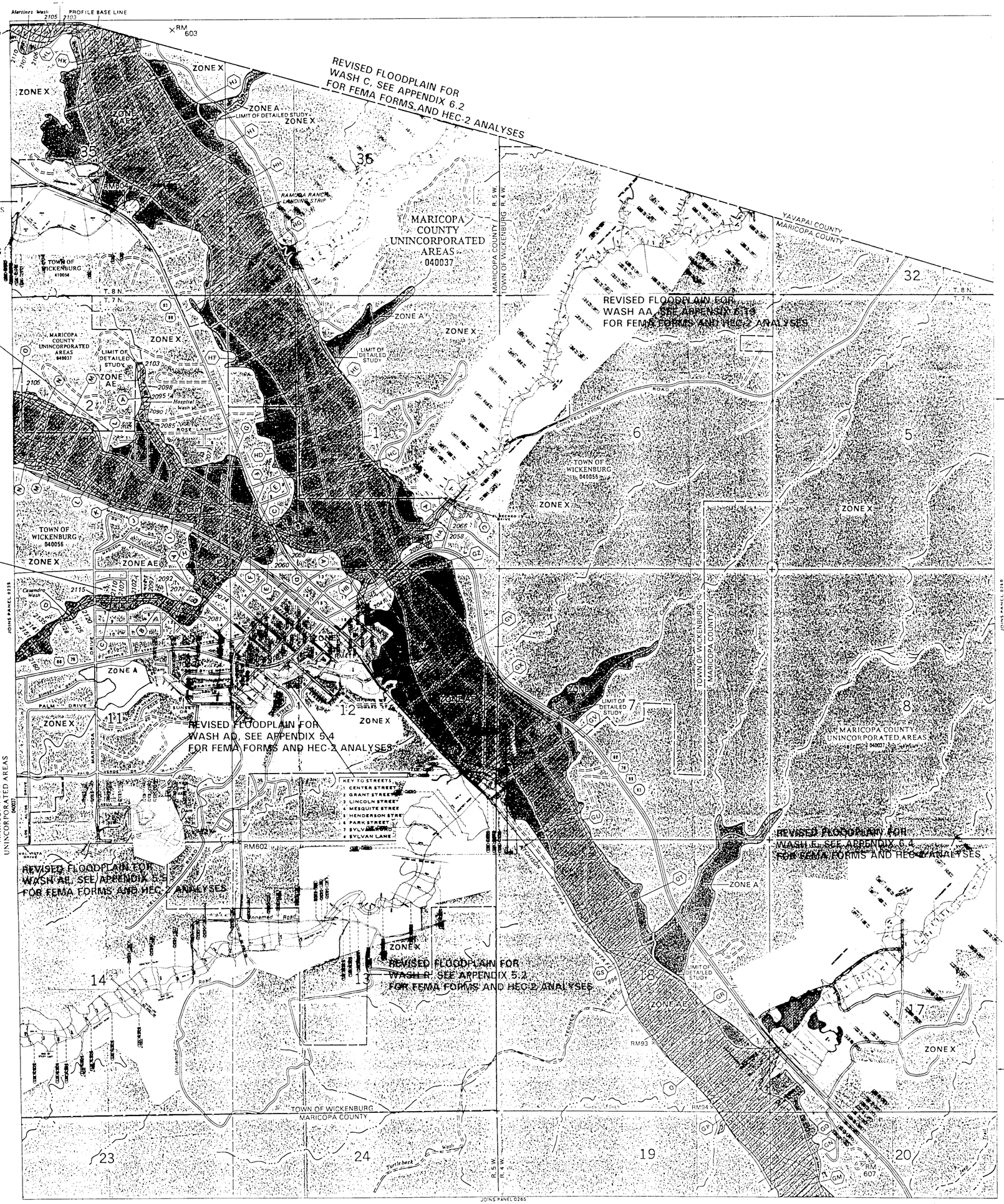


FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS

FLOOD PROFILES

AMIR WASH



KEY TO STREETS (NORTH OF RAILROAD)

1 SUNFLOWER LANE
2 POPPY STREET
3 HONEYSUCKLE AVENUE
4 OLEANDER STREET
5 VILLA SERENO DRIVE
6 PALM LANE
7 GENUNG AVENUE
8 WEAVER STREET
9 CAVANESS AVENUE
10 SWILLING AVENUE
11 CHESTNUT STREET
12 RIVER STREET
13 YAVAPAI STREET
14 FRONTIER STREET
15 APACHE STREET
16 VALENTINE ROAD
17 CENTER STREET
18 COCONINO STREET
19 COCHISE STREET
20 KERKES STREET

KEY TO STREETS (SOUTH OF RAILROAD)

1 HERMOSA DRIVE
2 CUCARACHA STREET
3 EL TECALOTE DRIVE
4 NAVAJO STREET
5 MADISON STREET
6 MOHAVE STREET
7 LA PALOMA DRIVE
8 VIA CORTA DRIVE
9 LA GOLANDRINA DRIVE
10 EL PAJARITO DRIVE
11 AVISPA STREET
12 LINCOLN DRIVE
13 JACKSON STREET
14 SANTA CRUZ STREET

KEY TO STREETS

1 CENTER STREET
2 GRANT STREET*
3 LINCOLN STREET*
4 MESQUITE STREET
5 HENDERSON STREET
6 PARK STREET
7 SYLVAN ROAD
8 SYLVAN LANE

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM93	1 963.78	U.S. Geological Survey standard disk 7.4 miles southeast of Wickenburg, approximately 100 feet west of the Atchison, Topeka and Santa Fe Railroad, marked M 74 1 933
RM94	1 949.28	Monumental marker in cemeteries of Hillcrest on south side of Atchison, Topeka and Santa Fe Railroad 2.3 miles southeast of Wickenburg U.S. Geological Survey designation PK 118
RM411	2 058.90	At Wickenburg 0.4 mile south of the Atchison, Topeka and Santa Fe Railroad station, 800 feet south of milepost 140, 53 feet west of the centerline of the track, and in the corner of a residence yard A standard disk stamped N 24 1 933 and set in the top of a concrete post
RM600	2 036.18	Chiselled 2" x 2" " on southwest corner of railroad bridge at Centennial Wash
RM601	2 034.84	Chiselled 2" x 2" " on top of 2" x 1" concrete headwall on the northwest corner of Calamity Wash bridge on State Route 93, approximately 0.1 mile north of mile post 112
RM602	2 180.87	Chiselled "X" on top of north and of north in the northeast corner of concrete guard rail Kaiser Road across from south entrance to cemetery approximately 0.6 mile south of the intersection of Kaiser Road and Whipple Street in Wickenburg
*RM603	2 142.71	Brass cap set in a rock stamped U.S. Coast and Geodetic Survey HABS 1921, approximately 2 mile north of Wickenburg 800 feet west of the west bank of the Hassayampa River shown as triangulation station 2141 on the U.S. Department of Interior Geological Survey, Wickenburg Quadrangle
RM604	2 084.75	Brass cap stamped A D O T ELEV 2085 34 STA 810 + 46 84 1963 set in top of 1" x 33" x 13" hubcover on the west hub of highway 93 approximately 300 feet south of Rancho Road Wickenburg
RM605	2 053.02	Chiselled 3" x 3" " on southeast corner of concrete slab in top of transition of a ramp to a hay storage shelter that is the farthest north of 3 and sheds (7 in) a north south direction at Double Thoroughbred Farm, Inc. located at the intersection of the east end of Cavaness Street and Weaver Street in Wickenburg
RM606	2 011.16	Brass cap stamped A D O T Bm 936 + 86 Elev 2011 47 1967 on top of a 1' x 2' x 5 5 high box culvert on the east side of Route 93 where Turtleback Wash (culvert under the highway) 0 25 miles north of north end of a median and 4 90 miles north of mile post 113 Brass cap is approximately 15' below highway elevation
RM607	2 012 02	Brass cap stamped Arizona Highways Department STA 4 ELEV set on 8' x 16 5' x 2' high headwall at north end of a safeguard crossing in the entrance to Rock House Ranch located approximately 165 feet north of entrance to Foothills Trailer Park on a driveway that is parallel to and on the west side of Highway 93 Foothills 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 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 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.

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

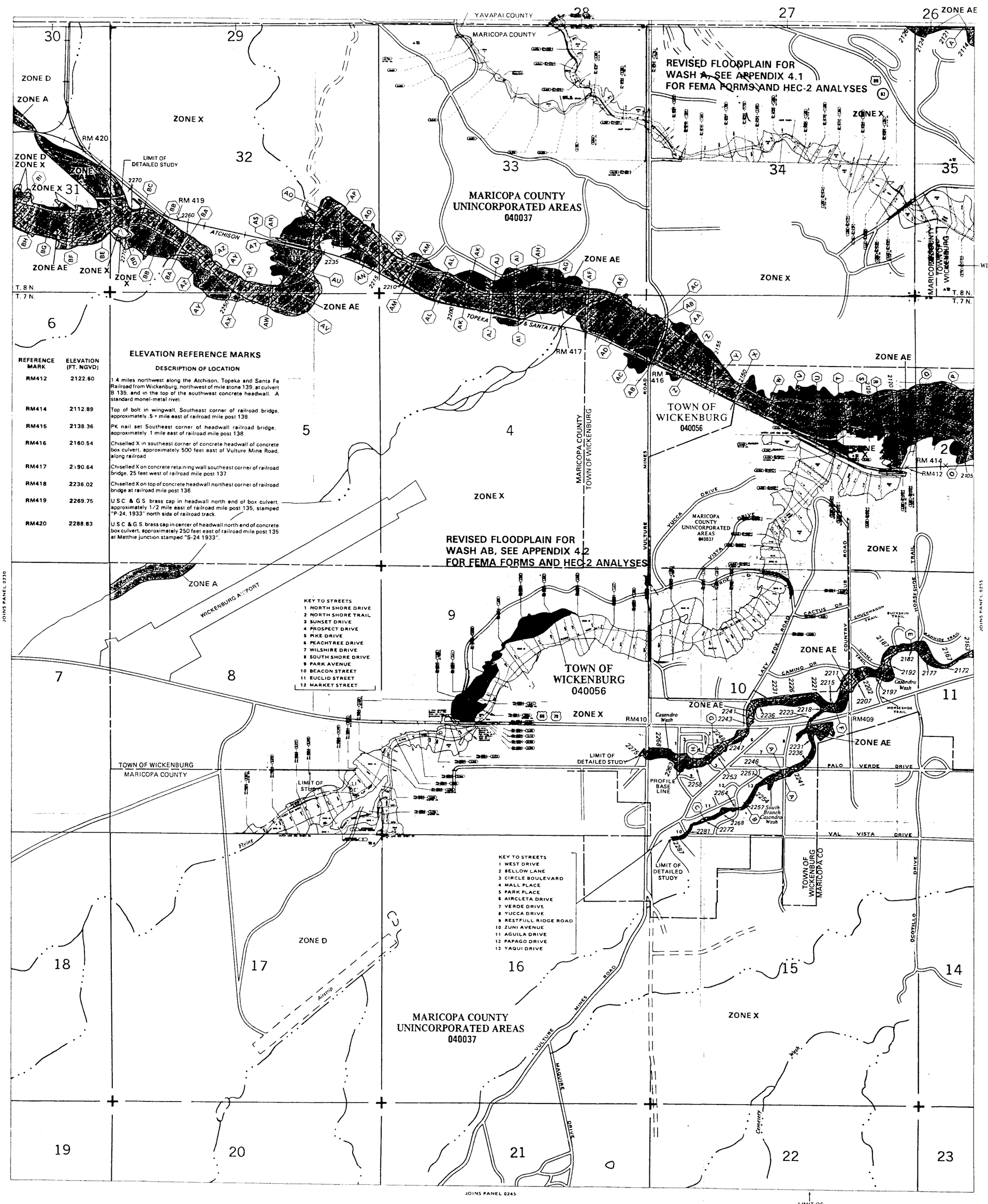
CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	0255	F
WICKENBURG, TOWN OF	040056	0255	F

MAP NUMBER 04013C0255 F

MAP REVISED: SEPTEMBER 4, 1991

Federal Emergency Management Agency



ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM412	2122.60	1.4 miles northwest along the Atchison, Topeka and Santa Fe Railroad from Wickenburg, northwest of mile stone 139, at culvert B 139, and in the top of the southwest concrete headwall. A standard monel-metal rivet.
RM414	2112.89	Top of bolt in wingwall, Southeast corner of railroad bridge, approximately .5 + mile east of railroad mile post 138.
RM415	2138.36	PK nail set Southeast corner of headwall railroad bridge, approximately 1 mile east of railroad mile post 138.
RM416	2160.54	Chiselled X in southeast corner of concrete headwall of concrete box culvert, approximately 500 feet east of Vulture Mine Road, along railroad.
RM417	2190.64	Chiselled X on concrete retaining wall southeast corner of railroad bridge, 25 feet west of railroad mile post 137.
RM418	2236.02	Chiselled X on top of concrete headwall northest corner of railroad bridge at railroad mile post 136.
RM419	2269.75	U.S.C. & G.S. brass cap in headwall north end of box culvert, approximately 1/2 mile east of railroad mile post 135, stamped "P-24, 1933" north side of railroad track.
RM420	2288.83	U.S.C. & G.S. brass cap in center of headwall north end of concrete box culvert, approximately 250 feet east of railroad mile post 135 at Matthie junction stamped "S-24 1933".

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

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- 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.
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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.

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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, 1986

EFFECTIVE DATE (S) OF REVISION (S) TO THIS PANEL

Major 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.

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 235 OF 4350

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	0235	E
WICKENBURG, TOWN OF	040056	0235	E

MAP NUMBER
04013C0235 E

MAP REVISED:
SEPTEMBER 29, 1989

Federal Emergency Management Agency

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 7 NORTH, RANGE 5 WEST AND TOWNSHIP 8 NORTH, RANGE 5 WEST