A Detailed Hydraulic Analysis for a Portion of the Cave Creek Wash (19th Avenue and Monroe Street) within the City of Phoenix, Maricopa County, Arizona

For:

Flood Plain Manager
City of Phoenix
200 West Washington, 5th Floor
Phoenix, Arizona 85003-1611

By:

WILLDAN
Serving Public Agencies
1717 West Northern Avenue, Suite 112
Phoenix, Arizona 85021 * (602) 870-7600
602/870-7600 Fax (602) 870-7601
www.willdan.com

City of Phoenix
FLOODPLAIN MANAGEMENT
STREET TRANSPORTATION DEPARTMENT
200 West Washington, 5th Floor
Phoenix, Arizona 85003-1611

ADDRESS SERVICE REQUESTED

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

Mr. Tim Murphy, P.E.
Flood Control District of Maricopa County
2801 West Durango
Phoenix, Arizona 85009

City of Phoenix
STREET TRANSPORTATION DEPARTMENT

October 26, 2001

Mr. Matthew Miller, P. E., Chief
Hazards Study Branch
Mitigation Directorate
Federal Emergency Management Agency
500 C. Street, S. W.
Washington, D. C. 20472

Dear Mr. Miller:

RE: CLOMA FOR AN OFFICE BUILDING AND PARKING STRUCTURE DEVELOPMENT AT 18TH AVENUE AND M0NROE STREET

Enclosed are the following materials for this CLOMA application:

1- Copy of Credit Card Information Form
2- Vicinity Map
3- Site Map
4- Current FIS and FIRM panel 04013C2130F
5- Proposed Improvements
6- Alta Survey
7- HEC 2 effective Model
8- HEC-RAS Effective Model
9- Photographs
10- Computer Disks

If you have any technical questions concerning this report please contact Mr. David P. Gue, P. E., Willdan Serving Public Agencies, 1717 West Northern Avenue, Suite 112, Phoenix, Arizona 85021, phone number 602-870-7600, fax 602-870-7601. Any other questions please contact this office at 602-262-4960.

Sincerely,

Hasan Mushtaq, Ph. D., P.E.
Floodplain Manager

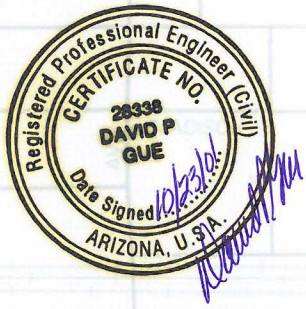
HM/aff/cloma.doc

Attachments

c: Mr. Gue, Willdan
Mr. Murphy, FCDMC

MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 009

A Detailed Hydraulic Analysis for a Portion of the Cave Creek Wash within the City of Phoenix, Maricopa County, Arizona



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PURPOSE

This report has been prepared to verify any impact to the regulatory floodplain limits and elevations for a proposed office building and parking structure development to be located at the intersection of Monroe Street and 18th Avenue in the City of Phoenix. This project is being developed for the Arizona Department of Health Services. Authorization for this hydraulic study by Willdan was given by Leo A. Daly, project architect.

PROJECT LOCATION

In particular, the site for the office building is located on the south side of Monroe Street between 18th and 19th Avenues and the parking structure will be located east of 18th Avenue between the alley north of Monroe Street to the alley south of Monroe Street. As part of this project, Monroe Street will be abandoned between 17th and 18th Avenues. A vicinity map is shown in Appendix A. A detailed site map with proposed improvements and existing conditions is shown on Appendix B. Aerial photograph and topography was obtained thru the Flood Control District of Maricopa County from a 1999 flight.

REGULATORY ENVIRONMENT

The site is located within a regulated Federal Emergency Management Agency (FEMA) flood zone. As such, it must comply with all requirements of the Federal Flood Insurance requirements including construction of the finished floor elevations a minimum of one foot above the established Base Flood Elevation (BFE) and any construction cannot raise the BFE more than the values shown in the Flood Insurance Study (FIS). Additionally, the City of regulates and approves all construction within Flood Zones through the office of the Flood Plain Administrator. The City of Phoenix criteria is that new construction will cause no increase of the established BFE or expansion of the Flood Plain limits.

EXISTING CONDITIONS

The original hydrologic and hydraulic study for the communities and unincorporated areas of Maricopa County was performed in 1973 by the U.S. Army Corps of Engineers. Final study results and Flood Insurance Rate Maps (FIRM's) were prepared in 1977. Various updates to the FIRM's have been completed as areas developed. An additional restudy and update of this Flood Insurance Study (FIS) was performed in response to the flooding experienced during 1978 and 1980 major storm events. This update, performed by Cella Barr Associates, utilized aerial photographs to delineate limits of flooding, including those within the proposed project limits. Additionally, and most critically for this report, Mannings "n" values were adjusted to maintain flood boundaries. The Manning's 'n' values utilized in this report were based upon Table 6.11 in *the Drainage Design Manual for Maricopa County, Arizona Volume II* Hydraulic and corresponding sections and stations of the updated FIS. See Manning's "n" value graphical summary at the end of this report for Station 6.05 Effective Model, Corrective Effective Model, and Post-Development Models.

The proposed site is located at Station 6.05 of Cave Creek Wash, north of the confluence with the Salt River. It is within a Zone AE of the FIRM for Maricopa County and Incorporated Areas, Panel 2130 of 4350, Map Number 04013C2130, revised July 2001. This station has a designation of Section NR with an established BFE of 1071.7 in the FIS. Cave Creek Wash no

longer exists as a defined open channel or enclosed system through this area. This area was extensively developed in Phoenix many decades ago. The waters from the wash flow through the streets in this area making their way downstream to the Salt River. Conveyance requirements beyond street and storm drain capacity are provided by shallow flows through open landscape and parking lot areas between buildings. Detailed applicable information from the current FIS study and FIRM is provided in Appendix C.

The project site consists of two existing paved parking lots. The western parking lot, which will be the site for the office building, has a three foot high screen wall located around its perimeter just behind the sidewalk on the north, east and west sides. Just south of the parking lot, separated by a paved alley and utility corridor, are two buildings with the same style screen wall around the parking lots. Openings are provided adjacent to the buildings for sidewalks, which will also permit discharge of flows to the south. The screen wall is solid cast-in-place concrete approximately one foot in thickness. Driveways located off of Monroe Street, 19th Avenue and 17th Avenue create openings in the wall of approximately 24 feet in width. . Across 18th avenue to the east of the site is a building with a finish floor of 1074.85. North of the site are commercial buildings. The existing condition for Section 6.05 has not changed since the restudy report was prepared. Detailed site photographs are provided in Appendix J.

The existing walls create an impediment to, and diversion of, the storm water flows in the existing floodplain. The storm water flows are forced south on 18th Avenue or west on Monroe Street to go around this site. The current FIS modeled the conditions utilizing very high "n" values of 0.50 to 0.65 to simulate the impeded flow in densely developed areas and 0.13 for residential areas with paved roads in the vicinity of this site.

PROPOSED CONDITIONS

Based on site plans provided by the architect, the asphalt parking lot and retaining wall is to be removed and a new building set on this site. The building footprint of 34,800 square feet will be significantly smaller than the existing parking lot and perimeter wall of 56,300 square feet. The building will be placed a minimum of one foot above the 100-year base flood elevation with a finished floor elevation of 1073.5. There will be a partial screen wall around a new paved parking lot on the western side of the site with openings to allow storm water flows to pass through the parking lot. A multi story parking structure will also be constructed east of 17th Avenue and north of Monroe Street. Ground level wall cut-outs will provide passage of storm flows.

STUDY METHODOLOGY

The U.S. Army Corps of Engineers HEC 2 computer program, version 4.6.2, was utilized to confirm that digital data obtained from the Flood Control District of Maricopa County was the effective hydraulic model for the final FIS. This computer run verified that the data at Section or Station 6.05 was correct (Exhibit E) and produced a Water Surface Elevation (WSE) of 1071.71.

This data was imported into HEC-RAS, version 3.0.1, and hydraulic simulations run to produce a HEC-RAS effective model (Exhibit F). Manual input of data contained in the HEC-2 X3 and lateral weir cards was required to produce equivalent output. This produced a WSE of 1071.77 at Station 6.05, which is within acceptable limits of the original.

Additional information for the existing conditions of the site was obtained from field survey data gathered by DEI Professional Services, L.L.C. and converted to Autocad grading and drainage drawings by KPFF Consulting Engineers. Detailed survey information for the project area was added by Willdan to the existing data for Section 6.05. Elevations and Mannings "n" data are considerably more accurate than the original data and have produced correspondingly more accurate hydraulic profiles. The accuracy of the corrected model is a response to the increased detail used. Instead of one "n" value to describe a block of buildings, right of ways, open areas etc, this area was given more than one "n" value to describe the section. For example: an "n" value for the pavement, with a different "n" value for landscaping areas. The use of more detailed survey data, field data, and "n" values have given a more accurate model of the site.

The HEC-RAS program was run again to create a new, corrected effective model (Exhibit G). The WSE for Section 6.05 is shown to be 1071.59.

The HEC-RAS data file was further modified to simulate the proposed, post development conditions to determine any impact to the base flood elevation and limits (Exhibit H). The proposed office building was placed in the model as a solid obstruction The WSE for Section 6.05 is shown to be 1071.53. This reduction from the effective model is attributed to an increase in unobstructed available conveyance capacity along the east and west sides of the proposed building.

WATER SURFACE ELEVATION			
	STATION 5.95	**STATION 6.05**	**STATION 6.14**
HEC 2	1071.43	1071.71	1072.94
HEC RAS	1071.21	1071.77	1072.94
CORRECTED EFFECTIVE	1071.21	1071.59	1072.81
POST DEVELOPMENT MODEL	1071.21	1071.53	1072.80

Finally, the HEC-RAS data file was again modified to simulate the proposed, post development conditions to include the parking structure and determine any impact to the base flood elevation and limits (Exhibit I). The structure was modeled with solid walls, which was considered the 'worst case' scenario. The WSE for Station 6.05 is shown to remain at 1071.53. An additional section through the parking structure was inserted at Station 6.09312. The post development WSE at this station was 1072.16.

The pre-development upstream WSE at Station 6.14 was 1072.81 (from the corrected effective model) and post-development the 1072.86. The post-development model created a parking structure with solid walls, a design which will divert water around the structure. The final design for the structure will include open walls to allow storm water flows to pass through the structure with a ground level finish floor elevation at or below the existing topography. The slight rise in Water Surface Elevation seen in this HEC RAS model is due to the solid wall design. With or openings in the perimeter walls to allow storm water flows to go through the structure the WSE will remain at the pre development elevation.

PARKING STRUCTURE IMPACT
WATER SURFACE ELEVATION

	STATION 5.95	**STATION 6.05**	**STATION 6.09**	**STATION 6.14**
WATER SURFACE ELEVATION	1071.21	1072.53	1072.16	1072.86
*based upon having a solid parking structure blocking flows----				

CONCLUSION

From our study of the existing and proposed conditions, the degree of accuracy of the original existing conditions was improved with the addition of the detailed survey data. With the design of the proposed site improvements the flood plain model indicates a minor reduction of the base flood elevation in this section. The models include sections upstream and downstream to show the water surface elevations in these areas have not changed. Construction of the proposed improvements will not create additional adverse flood plain impacts within the subject area.

FEDERAL EMERGENCY MANAGEMENT AGENCY **PROPERTY INFORMATION**	O.M.B. Burden No. 3067-0147 Expires May 31, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.63 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.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

This form may be completed by the property owner, registered land surveyor, or registered professional engineer

1. Community Name of NFIP map panel on which the property is located:
   City of PHOENIX County: MARICOPA State: AZ
   Panel or Map Number: 04 013C 2130 F
   Effective Date: July 19, 2001
2. Street Address of Property: _____
3. Description of Property Lot and Block (if a street address cannot be provided):
   _____
   _____
   _____
4. Are you requesting that the SFHA designation be removed from (a) all of the land within the bounds of the property, (b) a portion of land within the bounds of the property (*a certified metes and bounds description of the area to be removed is required*), or (c) the structure(s) on the property? *(Answer "a," "b," or "c")* c
5. Is this request for (a) a single structure, (b) a single lot, (c) multiple structures, (d) multiple lots? *(Answer "a," "b," "c" or "d")* c
6. What is the type of construction? (a) crawl space; (b) slab on grade; (c) basement; (d) other (explain). *(Answer "a," b," "c," or "d")* b
7. Is this request prior to the transfer of ownership of the property in question from a developer to an individual property owner?
   ☐ Yes ☒ No
8. Is this request for (a) existing conditions, or (b) proposed project? *(Answer "a" or "b")* b
9. Has fill been placed on the property to elevate the ground elevation of the property, to elevate a structure(s), or to elevate the ground elevations around a structure? _____ If yes, when? _____
10. For proposed projects, will fill be placed to elevate this land or structure? YES
11. If known, list the case number and/or the street address of previous requests that have been submitted to FEMA for this property or adjacent properties? _____
    _____
12. One of the following documents is required of all cases:

    I have enclosed the following documents in support of this request:

    ☐ a. Copy of the Subdivision Plat Map *(with recordation data and stamp of the Recorder's Office)*

    OR

    ☒ b. Copy of the property Deed *(with recordation data and stamp of the Recorder's Office)*, accompanied by a tax assessor's map or other suitable map showing the surveyed location of the property with respect to local streets and watercourses.

    (For these maps a map scale must be provided and they should not be reduced or enlarged.)

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

The following documents should be enclosed as applicable:

☑ c. Copy of the effective FIRM panel on which the property location has been accurately plotted *(if the request is for more than one lot/structure, this location must be certified by a licensed land surveyor or registered professional engineer)*

☑ d. A map showing the location of any structures existing on or proposed for the property *(certified by a licensed land surveyor or registered professional engineer)*

☐ e. Metes and bounds description and accompanying map of the portion of the property to be removed from the SFHA (certified by a licensed land surveyor or registered professional engineer) (only if the request is for a portion of land within the bounds of the property, not the entire lot or the structure(s) only)

☑ f. Form 2 Elevation Information form or A FEMA NFIP Elevation Certificate may be submitted in lieu of the Elevation Information form (for structures/property located in Zone AO see instructions for further guidance.)

☑ g. Form 4 Community Acknowledgment form *(only if fill has been or will be placed)*

☐ h. Form 3 Certification of Fill Compaction form *(only if fill has been or will be placed and the request is not for an existing single residential structure)*

☐ i. Additional information: _____
please specify

13. **PAYMENT ENCLOSED**

☑ Processing fee (see instructions for processing fees and exemptions)

CLOMA (Type of request) $ 700.00 (amount enclosed)

Check or money order only. Make check or money order payable to: **National Flood Insurance Program.** If paying by Visa or Mastercard, please complete and submit the Credit Card Information Form (Form 1A), which follows this form.

14. All documents submitted in support of this request are 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.

Applicant's Name: David P. Gue *(please print or type)* Company: Killdan

Mailing Address: 1717 W. Northern Ave Suite 112
(please print or type) Phoenix, AZ 85021

Daytime Telephone Number: 602 870 7600 Fax Number: 602 870 7601

10/23/01
Date

David P Gue
Signature of Applicant (required)

FEDERAL EMERGENCY MANAGEMENT AGENCY **ELEVATION INFORMATION**	O.M.B. Burden No. 3067-0147 Expires May 31, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 0.63 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.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

This form must be completed by a registered professional engineer or licensed land surveyor. These forms should not be used for requests involving Channelization, Bridges/Culverts, or Fill in the FEMA-Designated (regulatory) Floodway; instead, forms entitled Revisions to National Flood Insurance Program Maps (MT-2) should be used. The Elevation Information Form must be included for all requests, unless the request is for a determination in which the FIRM already shows the property to be CLEARLY outside the SFHA. Cases in which the determination for the property or structure is uncertain will require the submittal of elevation data to provide a definitive determination. If an Elevation Certificate has been completed for the subject property, it may be submitted in lieu of this form.

(See instructions for details)

1. Community Name: City of Phoenix

2. Legal Description of Property: _____

3. Flooding Source: Cave Creek Wash

4. Based on the FIRM, this property is located in Zone(s): AE

5. Is any portion of this property located in the regulatory floodway? ☐ Yes ☑ No

   Are any structures (*existing or proposed*) located in the regulatory floodway? ☐ Yes ☒ No

6. Is this area subject to land subsidence or uplift? ☐ Yes ☒ No
   If yes, what is the date of the current releveling? _____

For items 7-11 multiple lots/structures, complete the appropriate column(s) of the Summary of Elevations - Individual Lot Breakdown form, identifying the elevation for each lot/structure. To support items 9, 10, and 11, please note a map (certified by a licensed surveyor or registered professional engineer) may be required to relate the ground elevations and locations of structures or lots. The map should indicate whether it reflects "as-built" or "proposed" conditions.

7. What is the BFE for this property? (*Provide elevation to nearest tenth of a foot and datum)*

   1071.7 Elevation NGVD Datum (NGVD, NAVD or other)

8. How was the BFE determined? (*attach a copy of the Flood Profile or table from the FIS report, if appropriate, a copy of a letter from a state agency establishing a BFE, or other necessary supporting information including Forms 3 and 4 from forms entitled, "Revisions to National Flood Insurance Program Maps" (MT-2)).*

   FIS REPORT

9. If this request is to remove the SFHA designation from a parcel of land or lot(s), what is the existing or proposed elevation of the lowest grade; that is, the lowest ground on the property or within the metes and bounds description of the portion being removed? (Provide elevation to nearest tenth of a foot and datum)
   _____ Elevation _____ Datum

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

10. If this request is to remove the SFHA designation from a structure(s), what is the elevation of the existing or proposed lowest adjacent grade; that is, the lowest ground touching the structure, including any attached decks or garage? (Provide elevation to nearest tenth of a foot and datum) 1073.5 Elevation NGVD Datum

11. If fill has been/will be placed to elevate the structure(s) on this property, what is the existing or proposed elevation of the lowest floor, including basement, and/or attached garage? (Provide elevation to nearest tenth of a foot and datum)
1073.5 Elevation NGVD Datum

12. Are the measurements in items 9 - 11 based on (a) proposed or (b) existing conditions? a

13. If any of the above elevations were computed based on a datum different than the effective FIS, what is the conversion factor?
FIS Datum = Local Datum +/- _____ feet

14. 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 (please print or type): DAVID P. GUE

Title (please print or type): Supervising Engineer

Registration No.: 28338 Expiration Date: _____

State: AZ

Telephone Number: 602 870 7600

David P Gue
Signature

10/23/01
Date

Seal (Optional)

FEDERAL EMERGENCY MANAGEMENT AGENCY **CREDIT CARD INFORMATION**	O.M.B. Burden No. 3067-0147 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 6 minutes 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

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

If paying by credit card, this form must be completed. **THIS FORM SHOULD NOT BE INCLUDED WITH THE REST OF THE FORMS PACKAGE. IT MUST BE MAILED OR FAXED TO:**

Federal Emergency Management Agency
Revisions Fee-Collection System Administrator
P.O. Box 3173
Merrifield, Virginia 22116
Fax: (703) 849-0282

Case # _____ (if known)

Amount: $ 700.00

☐ FEE ☐ ADDITIONAL FEE ☐ INVOICE

☒ VISA ☐ MASTERCARD

CARD NUMBER: 4046 4460 3484 9318

EXPIRATION DATE: 5/03

_____
Signature

NAME (AS IT APPEARS ON CARD): MICHAEL E. BENNAN
(please print)

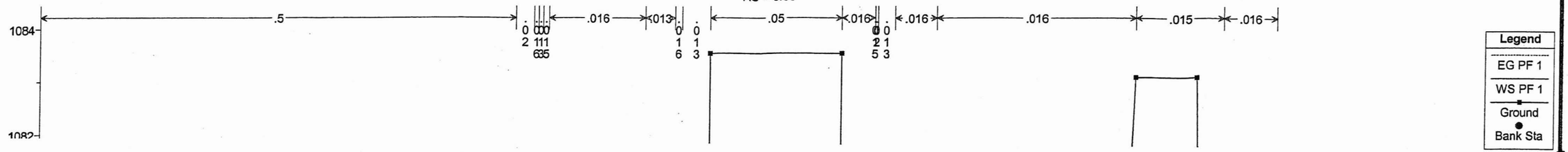
ADDRESS: 6738 E. KEIM DRIVE
(for your credit card receipt- please print)
PARADISE VALLEY, AZ. 85253

DAYTIME PHONE: 602.285.3106

NOTICE: A COPY OF FORM 1, BEING SUBMITTED FOR THIS REQUEST MUST BE ATTACHED TO THIS FORM.

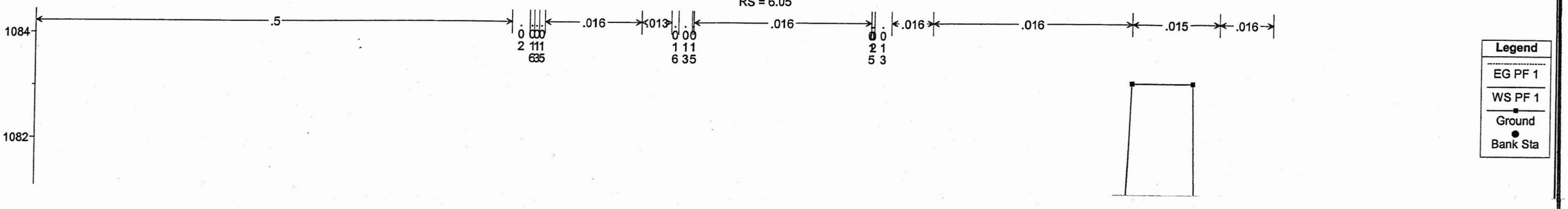
DHS-Post Development Plan: Imported Plan 03

RS = 6.05



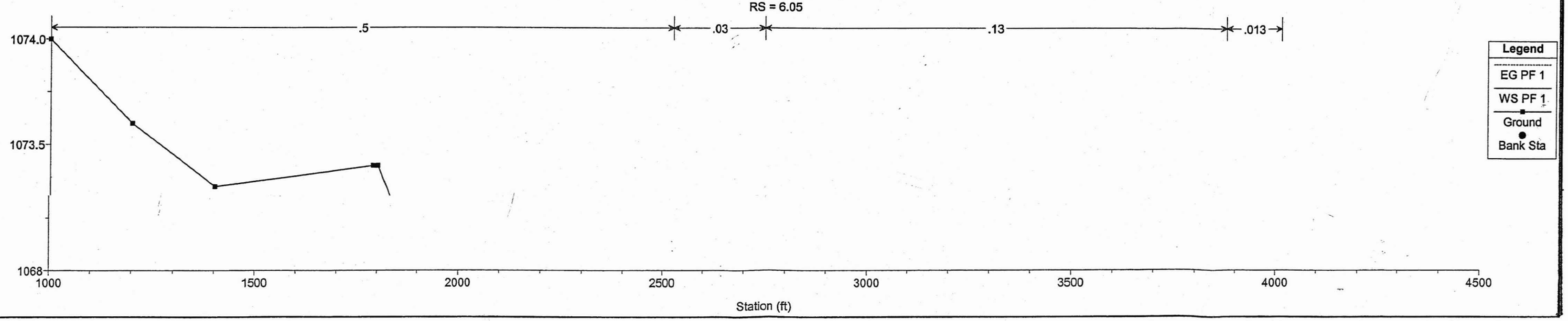
DHS-Corrected Effective Plan: Imported Plan 03

RS = 6.05



DHS-Duplicate Effective Plan: Imported Plan 03

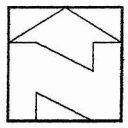
RS = 6.05



MANNING'S "n" SUMMARY

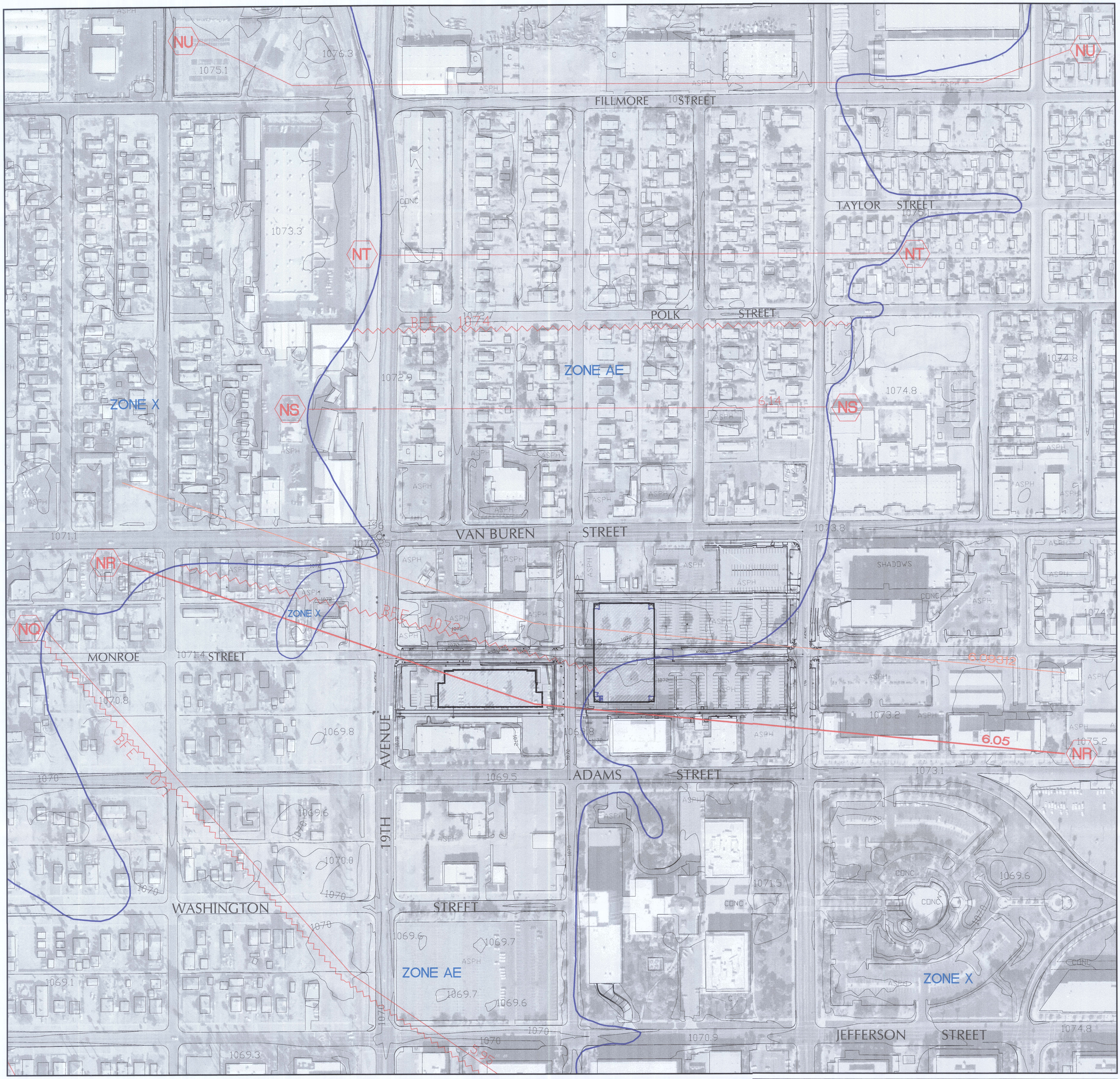
Appendix A Vicinity Map

PROJECT VICINITY MAP



SCALE: 1"=4000'

Appendix B Site Map



SCALE: 1"=200'

6.05 DISTANCE ABOVE SALT RIVER CONFLUENCE

BASE FLOOD ELEVATION (BFE)

DHS PROJECT SITE

100 YEAR FLOOD PLAIN

FIRM CROSS SECTION

ADDED CROSS SECTION

DEPARTMENT OF HEALTH SERVICES
BUILDING / PARKING GARAGE PROJECT
19TH AVENUE AND MONROE STREET

CAVE CREEK WASH DRAINAGE STUDY MAP

WILLDAN
Serving Public Agencies

Date: 08-22-2001 File: Projects\State\Base1.dwg

ALTA/ACSM SURVEY
ARIZONA DEPARTMENT OF HEALTH SERVICES
THAT PORTION OF THE NORTHWEST QUARTER OF SECTION 7, TOWNSHIP 1 NORTH, RANGE 3 EAST, OF THE GILA & SALT RIVER BASE AND MERIDIAN MARICOPA COUNTY, ARIZONA

NOTES

1. THE SURVEYOR'S REVIEW OF DOCUMENTS REFERENCED IN THE TITLE REPORT AS SCHEDULE "B" ITEMS IS LIMITED TO THE SURVEYOR'S SCOPE– OF–SERVICES AS IDENTIFIED IN THE CERTIFICATION HEREON. ADDITIONALLY THE SURVEYOR'S SCOPE–OF–SERVICES IS LIMITED TO PROVIDING SERVICES IN A MANNER CONSISTENT WITH THE DEGREE OF CARE AND SKILL ORDINARILY EXERCISED BY MEMBERS OF THE SAME PROFESSIONAL CURRENTLY PRACTICING UNDER SIMILAR CONDITIONS. SCHEDULE "B" ITEM DOCUMENTS MAY CONTAIN ENCUMBRANCES WHICH AFFECT THE SUBJECT PROPERTY WHICH THE SURVEYOR IS NOT QUALIFIED TO INTERPRET AND/OR ARE NOT WITHIN THE SURVEYOR'S SCOPE–OF–SERVICES. IT IS RECOMMENDED THAT INTERESTED AND AFFECTED PARTIES OBTAIN CONSULTATION WITH QUALIFIED LEGAL COUNSEL RELATIVE TO THE INTERPRETATION OF ALL SCHEDULE "B" DOCUMENTS REFERENCED IN THE TITLE REPORT.

2. SCHEDULE B ITEMS 1–4 AND 19–21 ARE BEYOND THE REVIEW AND SCOPE OF THIS SURVEY.

3. THE LOCATION OF UNDERGROUND UTILITIES AS DEPICTED HEREON IS BASED ON RECORD INFORMATION PROVIDED TO THE SURVEYOR BY LOCAL AGENCIES OF JURISDICTION AND ON RECOVERABLE FIELD LOCATED SURFACE FEATURES OF THOSE UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE AND POSSIBLY INCOMPLETE. NO EXCAVATIONS WERE MADE TO LOCATE BURIED UTILITIES DURING THE PROGRESS OF OR FOR THE PURPOSE OF THIS SURVEY.

4. PURSUANT TO TABLE "A", ITEM 15, THE SURVEYOR HAS NOT BEEN INFORMED OF ANY CHANGES IN THE PROPOSED RIGHTS OF WAY BY TITLE INFORMATION OR CLIENT KNOWLEDGE ON WHICH THIS SURVEY IS BASED. ADDITIONALLY, ANY CHANGES IN RIGHTS OF WAY, WHICH HAVE ALREADY OCCURRED, SHOULD BE VERIFIED BY ADDITIONAL TITLE SEARCH. TO THE BEST OF MY KNOWLEDGE, THE SURVEYOR HAS NOT OBSERVED ANY RECENT STREET OR SIDEWALK CONSTRUCTION. THE SURVEYOR AND FIELD PERSONNEL UNDER THE SURVEYOR'S DIRECTION ARE NOT TRAINED OR QUALIFIED CONTRACTORS AND CANNOT ACCURATELY IDENTIFY RECENT CONSTRUCTION. INTERESTED AND AFFECTED PARTIES SHOULD SEEK CONSULTATION FROM A REGISTERED CONTRACTOR OR OTHER QUALIFIED PARTY.

5. THIS SURVEY IS BASED ON COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY NO. 210–800–1341571 DATED APRIL 27, 2001 AT 7:30 A.M.

6. THIS SURVEY CONTAINS OPTIONAL TABLE A ITEMS 1, 2, 3, 4, 7a, 8, 9, 10, 11, 13, AND 15 HEREON.

7. (5) PROPERTY IS SUBJECT TO COVENANTS, CONDITIONS, AND RESTRICTIONS RECORDED IN BOOK 99 OF DEEDS, PAGE 563 M.C.R.

8. (6) PROPERTY IS SUBJECT TO A COVENANTS, CONDITIONS, AND RESTRICTIONS RECORDED IN BOOK 103 OF DEEDS, PAGE 381 M.C.R.

9. (7) PROPERTY IS SUBJECT TO COVENANTS, CONDITIONS, AND RESTRICTIONS RECORDED IN BOOK 106 OF DEEDS, PAGE 252 M.C.R.

10. (8) PROPERTY IS SUBJECT TO COVENANTS, CONDITIONS, AND RESTRICTIONS RECORDED IN BOOK 108 OF DEEDS, PAGE 11 M.C.R.

11. (9) PROPERTY IS SUBJECT TO COVENANTS, CONDITIONS, AND RESTRICTIONS RECORDED IN BOOK 108 OF DEEDS, PAGE 98 M.C.R.

12. (10) PROPERTY IS SUBJECT TO COVENANTS, CONDITIONS AND RESTRICTIONS RECORDED IN BOOK 123 OF DEEDS, PAGE 587 M.C.R.

13. (11) PROPERTY IS SUBJECT TO COVENANTS, CONDITIONS AND RESTRICTIONS RECORED IN BOOK 134 OF DEEDS, PAGE 33 M.C.R.

14. (12) PROPERTY IS SUBJECT TO COVENANTS, CONDITIONS, AND RESTRICTIONS RECORED IN BOOK 277 OF DEEDS, PAGE 478 M.C.R.

15. (13) PROPERTY IS SUBJECT TO AN EASEMENT FOR FOR ELECTRIC LINES PER DKT. 1495, PAGE 288 M.C.R. THE WIDTH OF THIS EASEMENT IS INDETERMINABLE.

16. (14) PROPERTY IS SUBJECT TO AN EASEMENT FOR UNDERGROUND ELECTRIC LINES RECORDED PER DKT. 10178, PAGE 1196 M.C.R.

17. (15) PROPERTY IS SUBJECT TO AN EASEMENT OFR UNDERGROUND ELECTRIC LINES PER DKT. 11347, PAGE 1456 M.C.R. DOCUMENT DOES NOT DETERMINE WHICH BLOCK THE EASEMENTS FALL IN.

18. (16) PROPERTY IS SUBJECT TO TERMS CONDITIONS AND PROVISIONS RECORDED PER DKT. 14696, PAGE 747 M.C.R.

19. (17) PROPERTY IS SUBJECT TO AN EASEMENT FOR UNDERGROUND ELECTRIC LINES RECORDED PER DKT. 93–0566699 M.C.R. OF OFFICIAL RECORDS. A.P.S. Document unclear??

20. (18) PROPERTY IS SUBJECT TO EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES RECORDED PER DKT. 00–0130054 M.C.R OF OFFICIAL RECORDS. ONLY AFFECTS LOTS 6B & 7B. Abandoned ALLEY

LEGAL DESCRIPTIONS

PARCEL NO. 1:

LOTS 1 THROUGH 6; LOTS 18 THROUGH 29; AND THE WEST 2.00 FEET OF LOT 30, BLOCK 3, OF CAPITOL ADDITION ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62.

PARCEL NO. 2:

LOTS 31, 32, 33, 34, AND THE EAST 38.00 FEET OF LOT 30, BLOCK 3, OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62.

PARCEL NO. 3A:

LOTS 1, 2, 3, 4, 5 AND THE EAST HALF OF LOT 6, BLOCK 6, OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62.

PARCEL NO. 3B:

THE NORTH HALF OF THE ALLEY SHOWN ON A PLAT OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, LYING BETWEEN THE SOUTH PROLONGATION OF THE EAST LINE OF LOT 1, BLOCK 6 OF SAID CAPITOL ADDITION, AND THE SOUTH PROLONGATION OF THE WEST LINE OF THE EAST HALF OF LOT 6, BLOCK 6 OF SAID CAPITOL ADDITION, ABANDONED BY RESOLUTION OF THE COUNCIL OF THE CITY OF PHOENIX, A CERTIFIED COPY OF WHICH WAS RECORDED AS 00–0130054, OF OFFICIAL RECORDS.

PARCEL NO. 4A:

LOTS 22 AND 23, BLOCK 6, OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62.

PARCEL NO. 4B:

THE NORTH HALF OF THE ALLEY SHOWN ON A PLAT OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, LYING BETWEEN THE SOUTH PROLONGATION OF THE EAST LINE OF LOT 22, BLOCK 6 OF SAID CAPITOL ADDITION, AND THE SOUTH PROLONGATION OF THE WEST LINE OF LOT 23, BLOCK 6 OF SAID CAPITOL ADDITION, ABANDONED BY RESOLUTION OF THE COUNCIL OF THE CITY OF PHOENIX, A CERTIFIED COPY OF WHICH WAS RECORDED AS 00–0130054, OF OFFICIAL RECORDS.

PARCEL NO. 5A:

LOTS 13, 14 AND 15, BLOCK 5, OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62.

PARCEL NO. 5B:

THE NORTH HALF OF THE ALLEY SHOWN ON THE PLAT OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, LYING BETWEEN THE SOUTH PROLONGATION OF THE EAST LINE OF LOT 13, BLOCK 5 OF SAID CAPITOL ADDITION, AND THE SOUTH PROLONGATION OF THE WEST LINE OF LOT 15, BLOCK 6 OF SAID CAPITOL ADDITION, ABANDONED BY RESOLUTION OF THE COUNCIL OF THE CITY OF PHOENIX, A CERTIFIED COPY OF WHICH WAS RECORDED AS 00–0130054, OF OFFICIAL RECORDS.

PARCEL NO. 6A:

LOTS 1 THROUGH 12, BLOCK 5, OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62.

PARCEL NO. 6B:

THE NORTH HALF OF THE ALLEY SHOWN ON A PLAT OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, LYING BETWEEN THE SOUTH PROLONGATION OF THE EAST LINE OF LOT 1, BLOCK 5 OF SAID CAPITOL ADDITION, AND THE SOUTH PROLONGATION OF THE WEST LINE OF LOT 12, BLOCK 5 OF SAID CAPITOL ADDITION, ABANDONED BY RESOLUTION OF CITY OF PHOENIX, A CERTIFIED COPY OF WHICH WAS RECORDED AS 00–0130054, OF OFFICIAL RECORDS.

PARCEL NO. 7A:

LOTS 16, 17, 18, 19 AND THAT PORTION OF LOT 20, BLOCK 5, OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LOT 20;

THENCE WEST 13.00 FEET ALONG THE SOUTH LINE OF SAID LOT 20;

THENCE NORTHEAST TO A POINT ON THE NORTH LINE OF SAID LOT 20 WHICH IS 10.00 FEET WEST OF THE NORTHEAST CORNER OF SAID LOT 20.

THENCE EAST TO THE NORTHEAST CORNER OF SAID LOT 20;

THENCE SOUTH ALONG THE EAST LINE OF SAID LOT 20 TO THE POINT OF BEGINNING.

BENCHMARK

S.R.P. ALUMINUM CAP SET IN TOP OF CURB 9' NORTH OF NORTH END OF RETURN @ NW CORNER OF INTERSECTION OF 19TH AVENUE AND VANBUREN

ELEVATION=1072.32 (CITY OF PHOENIX DATUM)

LEGAL DESCRIPTIONS

PARCEL NO. 7B:

THE NORTH HALF OF THE ALLEY SHOWN ON A PLAT OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, LYING BETWEEN THE SOUTH PROLONGATION OF THE EAST LINE OF LOT 16, BLOCK 5 OF SAID CAPITOL ADDITION, AND THE SOUTH PROLONGATION OF THE WEST LINE OF THAT PORTION OF LOT 20, BLOCK 5 OF SAID CAPITOL ADDITION DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LOT 20;

THENCE WEST 13.00 FEET ALONG THE SOUTH LINE OF SAID LOT 20;

THENCE NORTHEAST TO A POINT ON THE NORTH LINE OF SAID LOT 20 WHICH IS 10.00 FEET WEST OF THE NORTHEAST CORNER OF SAID LOT 20;

THENCE EAST TO THE NORTHEAST CORNER OF SAID LOT 20;

THENCE SOUTH ALONG THE EAST LINE OF SAID LOT 20 TO THE POINT OF BEGINNING.

PARCEL NO. 8A:

THE WEST HALF OF LOT 6 AND ALL OF LOTS 7 THROUGH 21, BLOCK 6, OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62.

PARCEL NO. 8B:

THE NORTH HALF OF THE ALLEY SHOWN ON A PLAT OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, LYING BETWEEN THE SOUTH PROLONGATION OF THE EAST LINE OF THE WEST HALF OF LOT 6, BLOCK 6 OF SAID CAPITOL ADDITION, AND THE SOUTH PROLONGATION OF THE WEST LINE OF LOT 21, BLOCK 6 OF SAID CAPITOL ADDITION, ABANDONED BY RESOLUTION OF THE COUNCIL OF THE CITY OF PHOENIX, A CERTIFIED COPY OF WHICH WAS RECORDED AS 00–0130054, OF OFFICIAL RECORDS.

PARCEL NO. 9A:

LOTS 24 AND 25, BLOCK 6, OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62.

PARCEL NO. 9B:

THE NORTH HALF OF THE ALLEY SHOWN ON A PLAT OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, LYING BETWEEN THE SOUTH PROLONGATION OF THE EAST LINE OF LOT 24, BLOCK 6 OF SAID CAPITOL ADDITION, AND THE SOUTH PROLONGATION OF LOT 25, BLOCK 6 OF SAID CAPITOL ADDITION, ABANDONED BY RESOLUTION OF THE COUNCIL OF THE CITY OF PHOENIX, RECORDED AS 00–0130054, OF OFFICIAL RECORDS.

PARCEL NO. 10:

THAT PORTION OF BINGHAM AVENUE (NOW MONROE STREET) SHOWN ON A PLAT OF CAPITOL ADDITION, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, RECORDED AS BOOK 1 OF MAPS, PAGE 62, LYING BETWEEN THE SOUTH PROLONGATION OF THE EAST LINE OF LOT 34, BLOCK 3 OF SAID CAPITOL ADDITION AND THE SOUTH PROLONGATION OF THE WEST LINE OF LOT 18, BLOCK 3 OF SAID CAPITOL ADDITION, ABANDONED BY RESOLUTION OF THE COUNCIL OF THE CITY OF PHOENIX, A CERTIFIED COPY OF WHICH WAS RECORDED AS _____, OF OFFICIAL RECORDS.

AREA TABLE

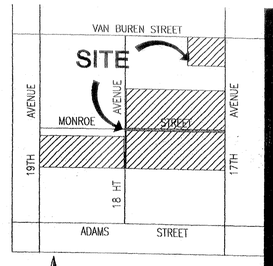
PARCEL 1 NORTH – 29,437.2 SQ.FT. OR 0.68 ACRES NET
PARCEL 1 SOUTH – 64,057.5 SQ.FT. OR 1.47 ACRES NET
PARCEL 2 – 23,545.7 SQ.FT OR 0.54 ACRES NET
PARCEL 3A – 19,274.6 SQ.FT. OR 0.44 ACRES NET
PARCEL 3B – 1,377.5 SQ.FT. OR 0.03 ACRES NET
PARCEL 4A – 7,012.4 SQ.FT. OR 0.16 ACRES NET
PARCEL 4B – 500.4 SQ.FT. OR 0.01 ACRES NET
PARCEL 5A – 10,524.6 SQ.FT. OR 0.24 ACRES NET
PARCEL 5B – 750.4 SQ.FT. OR 0.02 ACRES NET
PARCEL 6A – 42,072.6 SQ.FT OR 0.97 ACRES NET
PARCEL 6B – 3,001.6 SQ.FT. OR 0.07 ACRES NET
PARCEL 8A – 54,333.7 SQ.FT. OR 0.44 ACRES NET
PARCEL 8B – 3,880.0 SQ.FT. OR 0.09 ACRES NET
PARCEL 9A – 7,013.1 SQ.FT. OR 0.16 ACRES NET
PARCEL 9B – 500.4 SQ.FT. OR 0.01 ACRES NET
PARCEL 10 – 37,553.6 SQ.FT. OR 0.86 ACRES NET

FLOOD ZONING

ACCORDING TO THE FLOOD INSURANCE RATE MAP #04013C2130 E, DATED SEPTEMBER 4, 1991, THIS PROPERTY IS LOCATED IN FLOOD 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. AND ZONE AE SPECIAL FLOOD HAZARD AREA INUNDATED BY 100 YEAR FLOOD ZONE, BASE FLOOD ELEVATIONS DETERMINED PER SAID MAP.

PARCEL 1 NORTH, 5A, 5B, 6A, 6B, 7A, & 7B ARE IN FLOOD ZONE AE.

PARCEL 1 SOUTH, 2, 3A, 3B, 4A, 4B, 8A, 9A, & 9B ARE IN FLOOD ZONE X.



N VICINITY MAP
N.T.S.

ZONING

PARCELS ARE ZONED C–2, C–3 AND R–5 AS SHOWN ON SHEET 2

LEGEND

◙	FD. BRASS CAP IN HAND HOLE	E	ELECTRICAL BOX
◉	FD. BRASS CAP FLUSH		UTILITY POLE
○	SET 1/2" REBAR	T	TELEPHONE JUNCTION BOX
(SS)	SEWER MANHOLE	←	GUY WIRE
(SD)	STORM DRAIN MANHOLE	⬡	GAS VALVE
⊛	WATER VALVE		TREE
	FIRE HYDRANT		PALM TREE
⊠	WATER METER	SWR	SEWER LINE
●	IRRIGATION CONTROL BAX	STRM DRN	STORM DRAIN LINE
●C.O.	SEWER CLEAN OUT	WTR	WATER LINE
☼	LIGHT	R–O–W	RIGHT–OF–WAY
	STREET LIGHT	B/C	BACK OF CURB
(13)	SCHEDULE "B" ITEM PER TITLE REPORT	B/W	BACK OF WALK
		(R)	RECORD PER CAPITOL ADDITION PLAT BOOK 1 OF MAPS, PAGE 62 M.C.R.

SURVEYORS CERTIFICATE

I, the undersigned registered land surveyor, hereby certify to Trammel Crow Company and First American Title Insurance Company its affiliates, successors and assigns, that, as of the date hereon, this map of survey accurately and truly represents the results of a field survey made under my direction and made in accordance with the "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys" jointly established and adopted by ALTA, ACSM and NSPS in 1999, and includes Items 1, 2, 3, 4, 7a, 8, 9, 10, 11 13, and 15 of Table A thereof. Pursuant to the Accuracy Standards as adopted by ALTA, NSPS and ACSM and in effect on the date of this certification, undersigned further certifies that the Positional Uncertainties resulting from the survey measurements made on the survey do not exceed the allowable Positional Tolerance, and that the said map of survey correctly and accurately shows and depicts (a) the boundary and location of the perimeter of the property by courses and distances, (b) all easements affecting the property, whether benefiting or burdening same, rights–of–way and existing utility lines as presented in "Schedule B" of the title report provided by First American Title Insurance Company, dated April 27, 2001, Commitment No. 201–800–1341571, or disclosed by a physical inspection of the property, (c) the boundaries of all public and private streets abutting the property and the widths thereof, (d) encroachments onto the property and any and all easements appertaining thereto as presented in the above referenced title report or disclosed by a physical inspection of the property, and the extent thereof in feet and inches and all encroachments by any buildings, structures or improvements located on the property onto any easements and onto property adjacent thereto, (e) all buildings, structures or improvements, and the relationship of such buildings, structures, improvements and other physical matters by distances to the perimeter of the property, (f) that there exists means of ingress and egress to and from the property and (g) the location of the boundaries of any 100–year flood hazard boundary level as defined by the current Federal Emergency Management Agency map of the area.

JASON R. KACK, R.L.S. NO. 33315 — 8/28/01 DATE

Two working days before you dig CALL FOR THE BLUE STAKES 263-1100 Blue Stake Center

DEI PROFESSIONAL SERVICES, L.L.C.
6225 N. 24th Street, Suite 200
Phoenix, Arizona 85016
Phone: (602) 954–6038
Fax: (602) 944–8609

1982–2001
19 YEARS OF EXCELLENCE
DEI Professional Services, L.L.C.

REGISTERED LAND SURVEYOR CERTIFICATE NO. 33315 JASON R. KACK Date Signed 8/28/01 ARIZONA U.S.A.

ALTA/ACSM SURVEY
ARIZONA DEPT. OF HEALTH SEVRICES
PHOENIX, ARIZONA

REVISIONS
A REVISED PER CLIENT COMMENTS 08/28/01

DATE:	06/22/01
PROJ. NO:	1087
DESIGN:	
DRAWN:	RMH
CHECK:	DAM
SCALE:	N.T.S.
CAD FILE:	1087AS01

ALTA/ACSM SURVEY

LEGEND

◙	FD. BRASS CAP IN HAND HOLE	[E]	ELECTRICAL BOX
◉	FD. BRASS CAP FLUSH		UTILITY POLE
•	FOUND MONUEMENT AS NOTED	[T]	TELEPHONE JUNCTION BOX
(SS)	SEWER MANHOLE	←	GUY WIRE
(SD)	STORM DRAIN MANHOLE	⬡	GAS VALVE
⊗	WATER VALVE		TREE
⊕	FIRE HYDRANT		PALM TREE
⊠	WATER METER	SWR	SEWER LINE
•	IRRIGATION CONTROL BAX	STRM DRN	STORM DRAIN LINE
•C.O.	SEWER CLEAN OUT	WTR	WATER LINE
☼	LIGHT	R-O-W	RIGHT-OF-WAY
•☼	STREET LIGHT	B/C	BACK OF CURB
⟨13⟩	SCHEDULE "B" ITEM PER TITLE REPORT	B/W	BACK OF WALK
		(R)	RECORD PER CAPITOL ADDITION PLAT BOOK 1 OF MAPS, PAGE 62 M.C.R.

N

SCALE: 1"= 50'

0 25' 50' 100' 150'

FOUND STONE IN HANDHOLE INT. 18TH AVE. & VAN BUREN ST.

S89°56'06"E 726.08 (M)

VAN BUREN STREET

50.00' R-O-W

FOUND STONE IN HANDHOLE INT. 17TH AVE. & VAN BUREN ST.

S89°56'02"E 210.35 (M)
210.00(M) (R)

PARCEL 1 NORTH
CONTAINS 29,437.2 SQ.FT.
OR 0.68 ACRES NET
ZONED C-3

N00°00'23"W 139.95 (M) 140.00 (R)

S00°00'15"W 139.94 (M) 140.00(R)

210.00(M) (R)
N89°56'21"W 210.32 (M)

50.00' R-O-W

17TH AVENUE

S00°00'15"W 379.89 (M)

S89°56'22"E 625.95 (M) 625.00 (R)

457.70 (M)
457.00 (R)

168.25 (M)
168.00 (R)

PARCEL 2
CONTAINS 23,545.7 SQ.FT.
OR 0.54 ACRES NET
ZONED C-2/R-5

50.00' R-O-W

18TH AVENUE

N00°01'42"W 380.00 (M)

N00°01'42"W 139.95 (M) 140.00 (R)

PARCEL 1 SOUTH
CONTAINS 64,057.5 SQ.FT.
OR 1.47 ACRES NET
ZONED R-5

N00°00'07"W 139.95 (M) 140.00 (R)

LIMITS OF R-5 ZONING
LIMITS OF C-2 ZONING

S00°00'08"W 139.94 (M) 140.00 (R)

FOUND STONE IN HANDHOLE INT. 18TH AVE. & MONROE ST.

30.00' R-O-W

30.00' R-O-W

457.00 (R)
457.64 (M)

168.00 (R)
168.24 (M)

N89°56'35"W 625.88 (M) 625.00 (R)

N00°01'22"W 60.00 (R&M)

S89°56'35"E 725.86 (M)

MONROE STREET

PARCEL 10
CONTAINS 37,543.6 SQ.FT.
OR 0.86 ACRES NET
ZONED C-2/R-5

S00°00'35"E 60.00 (R&M)

FOUND BRASS CAP FLUSH INT. 19TH AVE. & MONROE ST.

PARCEL 7A
CONTAINS 14,036.9 SQ.FT.
OR 0.32 ACRES NET
ZONED C-2

PARCEL 5A
CONTAINS 10,524.6 SQ.FT.
OR 0.24 ACRES NET
ZONED R-5/C-2

S89°55'23"E 590.34 (M)

MONROE STREET

S89°55'23"E 475.30 (M) 475.00 (R)

S89°56'35"E 625.85 (M) 625.00 (R)

388.03 (M)
387.50 (R)

137.69 (M)
137.50 (R)

FOUND STONE IN HANDHOLE INT. 17TH AVE. & MONROE ST.

55.00' R-O-W

100.06 (M)
100.00 (R)

75.05 (M)
75.00 (R)

300.19 (M)
300.00 (R)

30.00' R-O-W

PARCEL 8A
CONTAINS 42,072.6 SQ.FT.
OR 0.97 ACRES NET
ZONED R-5

50.00' R-O-W

PARCEL 8A
CONTAINS 54,333.7 SQ.FT.
OR 0.44 ACRES NET
ZONED R-5

PARCEL 3A
CONTAINS 19,274.6 SQ.FT.
OR 0.44 ACRES NET
ZONED C-2/R-5

19TH AVENUE

385.68 (M)

N00°02'42"W

N00°02'24"W 140.31 (M) 140.00 (R)

N00°02'16"W 140.26 (M) 140.00 (R)

LIMITS OF C-2 ZONING
LIMITS OF R-5 ZONING

N00°02'03"W 140.23 (M) 140.00 (R)

S00°01'11"E 140.09 (M) 140.00 (R)

10' ELECTRIC ⟨14⟩ EASEMENT PER DKT 10178, PAGE 1196 M.C.R.

⟨18⟩ 20' PUBLIC UTILITY EASEMENT PER DKT 00-0130054 M.C.R.

ELECTRIC EASEMENT PER ⟨13⟩ DKT 1495, PAGE 288 M.C.R. (WITH OF EASEMENT IS INDETERMINABLE)

10' ELECTRIC ⟨14⟩ EASEMENT PER DKT 10178, PAGE 1196 M.C.R.

50.00' R-O-W

50.00' R-O-W

18TH AVENUE

N00°01'03"W 385.12 (M)

N00°00'58"W 140.07 (M) 140.00 (R)

N00°00'52"W 140.06 (M) 140.00 (R)

N00°00'55"W 140.05 (M) 140.00 (R)

N00°01'18"W 139.99 (M) 140.00 (R)

LIMITS OF R-5 ZONING
LIMITS OF C-2 ZONING

S00°01'13"E 139.97 (M) 140.00 (R)

50.00' R-O-W

52.00' R-O-W

100.00 (R)
100.05 (M)
100.05 (M)

75.00 (R)
75.04 (M)
75.04 (M)

300.00 (R)
300.16 (M)
300.15 (M)

387.50 (R)
388.04 (M)
388.04 (M)

137.50 (R)
137.70 (M)
137.70 (M)

N89°56'58"W 475.24 (M) 475.00 (R)

N89°57'01"W 625.88 (M) 625.00 (R)

17TH AVENUE

S00°01'25"E 384.93 (M)

10.00(M)

10.00(M)

10.00(M)

10.00(M)

9.99(M)

9.99(M)

10.00(M)

10.00(M)

10.01(M)

PUBLIC UTILITY ⟨18⟩ EASEMENT PER DKT 00-0130054 M.C.R.

PARCEL 7B
CONTAINS 1,000.5 SQ.FT.
OR 0.02 ACRES NET
ZONED C-2

PARCEL 6B
CONTAINS 3,001.6 SQ.FT.
OR 0.07 ACRES NET
ZONED R-5

PARCEL 5B
CONTAINS 750.4 SQ.FT.
OR 0.02 ACRES NET
ZONED R-5/C-2

PARCEL 9B
CONTAINS 500.4 SQ.FT.
OR 0.01 ACRES NET
ZONED R-5

PARCEL 4A
CONTAINS 7,012.4 SQ.FT.
OR 0.16 ACRES NET
ZONED R-5

PARCEL 4B
CONTAINS 500.4 SQ.FT.
OR 0.01 ACRES NET
ZONED R-5

PARCEL 9A
CONTAINS 7,013.1 SQ.FT.
OR 0.16 ACRES NET
ZONED R-5

PARCEL 8B
CONTAINS 3,880.0 SQ.FT.
OR 0.09 ACRES NET
ZONED R-5

PARCEL 3B
CONTAINS 1,377.5 SQ.FT.
OR 0.03 ACRES NET
ZONED R-5

S89°58'32"E 590.15 (M)

ADAMS STREET

S89°57'32"E 725.90 (M)

ADAMS STREET

FOUND BRASS CAP IN HANDHOLE INT. 19TH AVE. & ADAMS ST.

FOUND STONE IN HANDHOLE INT. 17TH AVE. & ADAMS ST.

Two working days before you dig CALL FOR THE BLUE STAKES 263-1100 Blue Stake Center CALL COLLECT

DEI PROFESSIONAL SERVICES, L.L.C.
6255 N. 24th Street, Suite 200
Phoenix, Arizona 85016
Phone: (602) 954-0038
Fax: (602) 944-0566

1982 - 2001
19 YEARS OF EXCELLENCE
DEI Professional Services, L.L.C.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33315
JASON R. KACK
Date Signed 8/28/01
ARIZONA U.S.A.

ALTA/ACSM SURVEY
ARIZONA DEPT. OF HEALTH SEVRICES
PHOENIX, ARIZONA

REVISIONS
1 REVISED PER CLIENT COMMENTS 08/28/01

DATE:	08/22/01
PROJ. NO:	1087
DESIGN:	
DRAWN:	RMH
CHECK:	DAM
SCALE:	1"=50'
CAD FILE:	1087A502

ALTA/ACSM SURVEY

2 of 3

LEGEND

◙	FD. BRASS CAP IN HAND HOLE	TS	TRAFFIC SIGNAL PULL BOX
◉	FD. BRASS CAP FLUSH	E	ELECTRICAL BOX
•	FOUND MONUEMENT AS NOTED		UTILITY POLE
SS	SEWER MANHOLE	T	TELEPHONE JUNCTION BOX
SD	STORM DRAIN MANHOLE	←	GUY WIRE
	WATER VALVE		GAS VALVE
	FIRE HYDRANT		TREE
	WATER METER		PALM TREE
	IRRIGATION CONTROL BAX	SWR	SEWER LINE
C.O.	SEWER CLEAN OUT	STRM DRN	STORM DRAIN LINE
	LIGHT	WTR	WATER LINE
	STREET LIGHT	R-O-W	RIGHT-OF-WAY
13	SCHEDULE "B" ITEM PER TITLE REPORT	B/C	BACK OF CURB
		B/W	BACK OF WALK
		(R)	RECORD PER CAPITOL ADDITION PLAT BOOK 1 OF MAPS, PAGE 62 M.C.R.

N

SCALE: 1"= 50'

0 25' 50' 100' 150'

FOUND STONE IN HANDHOLE INT. 18TH AVE. & VAN BUREN ST.

S89°56'06"E 726.08 (M)

VAN BUREN STREET

24.2'± 20" WTR

BOLLANDS WITH CHAINS.

FOUND STONE IN HANDHOLE INT. 17TH AVE. & VAN BUREN ST.

18.2'± STRM DRN

18.2'± 54" SWR

WROUGHT IRON FENCE

US WEST COMPOUNDS

TRASH ENCLOSURE

F.F.=73.81

F.F.=73.85

10.0'± 27" SWR

22.4'± OH

19.1'± CONCRETE DRIVE

17TH AVENUE

S00°00'15"W 379.89 (M)

18.0'± B/C

6.8'± 8" WTR

47.4'± B/W

FOUND STONE IN HANDHOLE INT. 18TH AVE. & MONROE ST.

18TH AVENUE N00°02'42"W 1380.00 (M)

F.F.=72.60

FOUND BRASS CAP FLUSH INT. 19TH AVE. & MONROE ST.

27.2'± B/W

15.5'± B/C

15.6'± B/C

27.4'± B/W

5.7'± 6" WTR

21.0'± CABLE

15.7'± B/C

27.7'± B/W

15.5'± B/C

27.5'± B/W

S89°55'23"E 590.15 (M)

S89°56'55"E 725.86 (M)

MONROE STREET

FOUND STONE IN HANDHOLE INT. 17TH AVE. & MONROE ST.

13.0'± 12" WTR

DISTANCE TO B/C VARIES

3'X1' WALL

43.0'± CABLE

47.3'± B/W

17.9'± B/C

18.1'± B/C

47.7'± B/W

47.4'± B/W

20.5'± B/C

20.6'± B/C

47.4'± B/W

COVERED PARKING

F.F.=71.61

F.F.=71.69

F.F.=72.15

10.8'± 8" SWR

F.F.=74.85

10.2'± 8" SWR

F.F.=72.60

19TH AVENUE N00°02'42"W 1380.00 (M)

N00°01'53"W 385.00 (M)

S00°01'25"E 384.93 (M)

S89°58'32"E 590.15 (M)

ADAMS STREET

S89°57'32"E 725.90 (M)

ADAMS STREET

FOUND BRASS CAP IN HANDHOLE INT. 19TH AVE. & ADAMS ST.

FOUND STONE IN HANDHOLE INT. 17TH AVE. & ADAMS ST.

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REGISTERED LAND SURVEYOR CERTIFICATE NO. 33315 JASON R. KACK 6-30-02 ARIZONA U.S.A.

ALTA/ACSM SURVEY

ARIZONA DEPT. OF HEALTH SEVRICES

PHOENIX, ARIZONA

REVISIONS

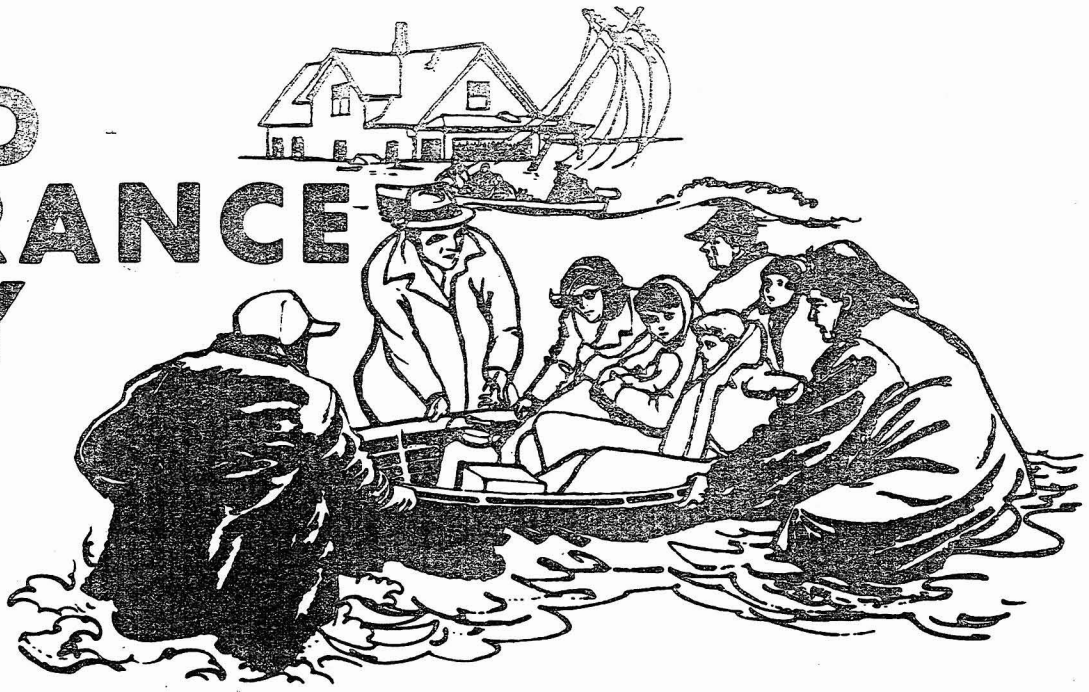
A REVISED PER CLIENT COMMENTS 08/28/01

DATE	06/22/01
PROJ. NO.	1087
DESIGN	
DRAWN	RMH
CHECK	DAM
SCALE	1"=50'
CAD FILE	1087A803

ALTA/ACSM SURVEY

Appendix C Current FIS & FIRM

FLOOD INSURANCE STUDY



MARICOPA COUNTY, ARIZONA
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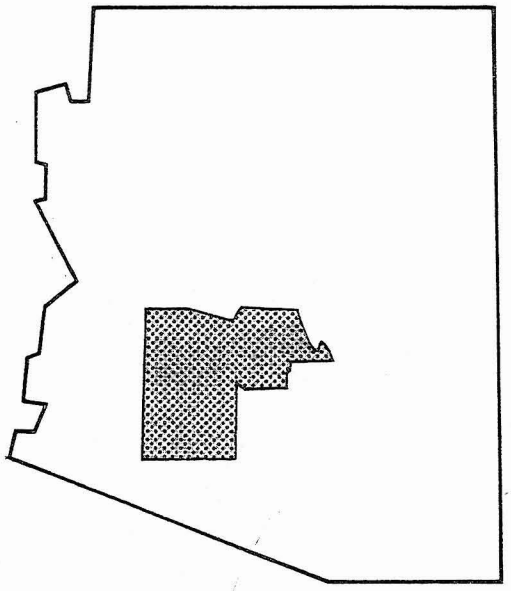


COMMUNITY NAME	COMMUNITY NUMBER
AVONDALE, CITY OF	040038
BUCKEYE, TOWN OF	040039
CAREFREE, TOWN OF	040126
CAVE CREEK, TOWN OF	040129
CHANDLER, CITY OF	040040
EL MIRAGE, TOWN OF	040041
GILA BEND, TOWN OF	040043
GILBERT, TOWN OF	040044
GLENDALE, CITY OF	040045
GOODYEAR, TOWN OF	040046
GUADALUPE, TOWN OF	040111
LITCHFIELD PARK, CITY OF	040128
MARICOPA COUNTY UNINCORPORATED AREAS	040037
MESA, CITY OF	040048
PARADISE VALLEY, TOWN OF	040049
PEORIA, CITY OF	040050
PHOENIX, CITY OF	040051
QUEEN CREEK, TOWN OF	040132
SCOTTSDALE, CITY OF	045012
SURPRISE, TOWN OF	045053
TEMPE, CITY OF	040054
TOLLESON, CITY OF	040055
WICKENBURG, TOWN OF	040056
YOUNGSTOWN, TOWN OF	040057

REVISED: SEPTEMBER 30, 1995

Federal Emergency Management Agency

The discharge estimates obtained from the TR-20 analysis for this study correspond with the results from both the SCS and PRC analyses. The discharge-frequency curve developed by the COE for the 1977 Flood Insurance Study has a steeper slope and results in a much larger 100-year peak discharge than the other studies. The SCS, PRC, and CBA studies each employed the TR-20 model which might explain, in part, the consistency of the results, although the TR-20 is quite sensitive to changes in time of concentration, and each model employed different input parameters.

The calibration of the TR-20 model, by PRC, using streamflow data from the Hassayampa River, lends further credence to each of the study results. Therefore, results from the TR-20 model utilized in this restudy of Sols Wash have been employed in the hydraulic analysis.

Peak discharge-frequency relationships for Casandro, South Branch Casandro, Flying E, Hospital, and Powder House Washes were taken from the Flood Insurance Study for Wickenburg (Reference 19).

Peak discharge-drainage area relationships for flooding sources studied by detailed methods are shown in Table 3.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

For areas of riverine flooding studied by detailed methods, water-surface elevations for floods of the selected recurrence intervals were computed using the COE HEC-2 computer program (Reference 45).

The cross section data for the Agua Fria River were taken from several sources of mapping. A 1981 COE topographic map for the New River (Reference 46) was used for the river section from the confluence with the Gila River to the confluence with the New River. From the New River to Northern Avenue, 1982 City of Glendale mapping was used (Reference 47). From Northern Avenue to Grand Avenue and from Beardsley Road to Jomax Road, 1983 Maricopa County maps were used (Reference 48). The topographic maps for the reach between Grand Avenue and Bell Road (Reference 49) were furnished by American Engineering Company. For the reach between Bell and Beardsley Roads, maps were provided by Cella, Barr, Evans and Associates (Reference 50).

Cross sections for the Gila River were digitized from 1983 topographic maps or taken from as-built data for the Bullard Avenue Bridge.

Cross sections for the Salt River between Central Avenue and 115th Avenue were based on digitized data from topographic mapping. From Central Avenue to Country Club Road in Mesa, cross sections were also taken from topographic mapping (References 51 and 52).

For study purposes, Skunk Creek was divided into two sections. Lower Skunk Creek lies between Adobe Dam outlet channel and the Bell Road Bridge. Upper Skunk Creek is from the Central Arizona Project channel to Adobe Dam. Cross sections for both reaches were generated using 1974 Maricopa County topographic maps at a scale of 1:2,400, with a contour interval of 2 feet. These maps were supplemented by additional mapping from the City of Phoenix and the COE at scales of 1:1,200 and 1:2,400, respectively, both with a contour interval of 2 feet.

Cross sections for the Hassayampa River (below Carefree Highway) were field surveyed.

Cross section data for the following were developed from topographic maps (Reference 53): Skunk Creek above Carefree Highway; Cave Creek above Cave Creek Dam; Andora Hills, Galloway, Rowe, Grapevine, Ocotillo, Willow Springs, Powder House, Mockingbird, and Little San Domingo Washes; Wittmann Drainage; Aguila Farm Channel; Grass, Sand Tank, and Bender Washes; Rodeo Wash and its tributary; Airport, and Scott Avenue Washes; Lower El Mirage Wash and its tributary; Atchison, Topeka & Santa Fe Railway Channel at El Mirage; the Atchison, Topeka & Santa Fe Railway at Peoria; and the Southern Pacific Railroad and its spurs.

Cross section data for East Branch Scatter Wash and Echo Canyon Washes were developed from topographic maps provided by the City of Phoenix (Reference 54).

Cross section data for Cave Creek below Arizona Canal and for East Fork Cave Creek were developed from aerial photographs flown in March 1980 (Reference 55). Cross section data for Cave Creek between Arizona Canal and Cave Creek Dam were developed from aerial photographs flown in March 1978 (Reference 56).

Cross section data for the Sols Wash backwater analyses were obtained from topographic maps, at a scale of 1:200, with a contour interval of 2 feet, prepared specifically for this project by Cooper Aerial Survey in March 1986 (Reference 57). Culvert and bridge data were obtained from the topographic maps and were field checked to verify structural geometry.

Cross section data for Casandro, South Branch Casandro, Flying E, and Hospital Washes were taken from a COE Flood Plain Information report for Wickenburg (Reference 58) and from topographic maps (Reference 59).

Cross section data for Martinez Wash were digitized from topographic maps (Reference 26).

Cross sections were located at close intervals above and below bridges in order to compute the significant backwater effects of these structures. All bridges and culverts were investigated to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Hydraulic roughness coefficients (Manning's "n") were selected on the basis of field inspection and engineering judgment. Table 4 gives the range of Manning's "n" values for each flooding source studied by detailed methods.

Starting water-surface elevations for all riverine flooding sources, except as noted below, were developed using the slope-area method.

The Agua Fria River starting water-surface elevations were determined assuming normal depth. The Manning's "n" values used ranged from 0.03 to 0.035 for the channel and from 0.04 to 0.045 for the overbanks.

The starting water-surface elevations for the Gila River were computed by normal-depth methods. The "n" value used for the Gila River was 0.045 for both the channel and overbanks.

The starting water-surface elevations for the New River were developed through the use of 1985 topographic mapping in the area of its confluence with Skunk Creek. Manning's "n" values were based on field observations and engineering judgment. These "n" values ranged in the channel from 0.03 to 0.035.

In the overbank areas, "n" values ranged from 0.03 to 0.06. A significant feature of the New River floodplain is the channelization in the vicinity of its confluence with Skunk Creek. This channelization has occurred from approximately 1,500 feet downstream of the Thunderbird Road Bridge upstream to the Greenway Road. In addition, in the left overbank area above Union Hill Drive, a new wastewater treatment plant with improved channel banks is reflected in the hydraulic model.

For the upper reaches of Skunk Creek, the starting water-surface elevations were computed from the reservoir spillway elevation of 1,377 feet. For the lower reach, normal-depth and New River backwater computations were used. Mannings "n" values were 0.035 for the channel and 0.045 for the overbanks on the lower reach. For the upper reach, the "n" values ranged from 0.035 to 0.04 in the channel and from 0.035 to 0.05 in the overbank.

Table 4. Range of Hydraulic Roughness Coefficients (Manning's 'n') - (Cont'd)

Flooding Source	Channel	Overbanks
Rowe Wash	0.020 - 0.045	0.020 - 0.052
Sols Wash	0.035 - 0.065	0.025 - 0.100
Scott Avenue Wash	0.025	0.035
Trilby Wash	0.040 - 0.100	0.050 - 0.100
Willow Springs Wash	0.020 - 0.045	0.020 - 0.080
Wittman Area Washes	0.015 - 0.060	0.015 - 0.090
Centennial Wash	0.030 - 0.070	0.030 - 0.200
Cemetery Wash	0.035 - 0.100	0.040 - 0.100
Waterman Wash	0.025 - 0.065	0.028 - 0.070
Caterpillar Tank Wash	0.024 - 0.055	0.036 - 0.060
Twin Buttes Wash	0.024 - 0.055	0.036 - 0.060
White Peak Wash	0.024 - 0.055	0.036 - 0.060
West Fork White Peak Wash	0.024 - 0.055	0.036 - 0.060
East Garambullo Wash	0.024 - 0.055	0.036 - 0.060
West Garambullo Wash	0.024 - 0.055	0.036 - 0.060
Cave Creek Wash	0.015 - 0.065	0.035 - 0.065
East Fork Cave Creek Wash	0.015 - 0.035	0.035 - 0.045
Jackrabbit Wash	0.030 - 0.035	0.035 - 0.040
Star Wash	0.030 - 0.035	0.035 - 0.040
Unnamed Tributary of Jackrabbit Wash	0.030 - 0.035	0.035 - 0.040
Southern Pacific Railroad & Southern Pacific Spur, Ponding	0.025 - 0.075	0.025 - 0.075
Consolidated Canal, Ponding	0.025 - 0.075	0.025 - 0.075
Eastern Canal, Ponding	0.032 - 0.075	0.032 - 0.075
Cline Creek and Tributaries	0.045 - 0.075	0.045 - 0.080
Morgan City Wash	0.035 - 0.100	0.055 - 0.100
Rodger Creek	0.045 - 0.080	0.055 - 0.080
Centennial Wash	0.040	0.040
North Branch Centennial Wash	0.040	0.040
Cottonwood Creek	0.030 - 0.060	0.050 - 0.080
Cottonwood Creek Tributary 1	0.045 - 0.050	0.060 - 0.070
Cottonwood Creek Tributary 2	0.050	0.060 - 0.070
Galloway Wash-North Tributary	0.025 - 0.041	0.045
Ocotillo Wash Tributary 1	0.035 - 0.040	0.045

Salt River photos for the 1978 and 1980 flooding events were extensively used in establishing channel parameters for bank station identification, "n" values, and floodflow conveyance patterns. Information from the current airport channelization project was also transferred to the maps. The Salt River model also includes the proposed south dike on the Salt River, which represents an extension of the airport channelization project. This dike is located between Hohokam Expressway (48th Street) and Priest Road on the southern bank of the Salt River.

Water-surface elevations computed in the HEC-2 hydraulic model were calibrated with the known floodplains of the 1978 and 1980 flooding events. This technique involved the adjustment at conveyance boundaries and "n" values. The calibrated "n" values ranged from 0.03 to 0.035 for the channel and from 0.04 to 0.05 for the overbanks.

The starting water-surface elevation for Scatter Wash was taken from Skunk Creek. Manning's "n" values were determined through field investigations and engineering judgment. Scatter Wash is a relatively flat floodplain for the majority of its reach, with a substantial amount of development in some overbank areas. Manning's "n" values for the channel ranged between 0.02 at Deer Valley underpass to 0.05 for heavy brush areas.

In the upper Scatter Wash drainage basin, it was determined that floodflows would proceed along the many braided streamlines, until they reach Interstate Highway 17 (I-17). At I-17, the flows will begin to concentrate in the area north of Williams Road. The 100-year flows at this point will separate into a north and south branch of Scatter Wash. The Scatter Wash, North Branch, passes under I-17 through two culverts, and over I-17 via sheetflow action. Scatter Wash, South Branch, continues to flow southerly along the eastern side of I-17, until it eventually ponds and passes under I-17 at Deer Valley Road. Both branches of Scatter Wash join in the vicinity of Rose Garden Lane and 33rd Avenue. At this location, the flows proceed downstream to their confluence with Skunk Creek.

During periods of heavy runoff, flows from Sand Tank and Bender Washes near Gila Bend are intermixed. Highway and railroad bridges traverse both washes. These structures cannot pass a 100-year flood, resulting in extensive ponding at each obstruction during floods of low frequency.

Apache Creek is located on an alluvial fan near Apache Junction at the base of the Superstition Mountains. A vast network of intermingling channels exists on the fan. Flooding on alluvial fans is often erratic and unpredictable, and flow may occur on separate parts of an alluvial fan during sequent flood events. Flooding in this area was analyzed using alluvial fan methodology developed by FEMA.

Much of the flooding in the county is caused by sheetflow that originates from alluvial fans. Flows are intercepted by canal levees, railroad embankments, and elevated roads, causing water to pond behind the embankments. Depths of ponding depend on the elevation of the embankments. When the intercepted runoff exceeds ponding storage capacity, the flow will overtop the embankment, thus eroding the levee. Areas immediately downslope of the breakout will be affected by high water. However, flows will fan out to again become shallow sheetflow that is less than 1 foot in depth. Therefore, many areas in the county have been designated Zone B. (See Section 5.)

Approximate hydraulic analyses for Bulldog, Apache, and Goldfield Washes and the downstream reach of Weekes Wash were carried out using approximate flow velocities and normal-depth calculations. These analyses revealed that the channels have very little capacity relative to the 100-year flood, and in some cases, the channels are nonexistent. Furthermore, the overbank flow is not confined to a well-defined floodplain, causing shallow flooding. The average depth of flooding for the overbank areas was determined to be less than 1 foot.

Areas of ponding on the upstream side of U.S. Highway 60/89 were also studied. Water-surface elevations for these areas were based on the elevation of the highway grade with shallow flows over the highway of less than 1 foot. This results in average shallow flooding depths behind the highway between 1 and 3 feet.

Cross sections were taken perpendicular to the canals and railroad embankments using topographic maps (Reference 60). The top of the embankments were assumed to be the maximum ponding elevation upslope of the embankment. Flood hazard areas were then determined by projecting this elevation upslope to intersect the natural ground.

The canal levees and railroad embankments do not permanently retain stormflows, but divert them along the embankments. Most of the canal levees consist of unconsolidated material. These levees are subject to failure when runoff volumes exceed storage capacity. Potential flood hazard areas on the downslope side of the canals were analyzed for levees exceeding 2 feet in height. This analysis determined the distance required for flow through a break in a levee to spread and be reduced to an average depth of 1 foot, using Manning's equation. This analysis assumed the following:

1. A canal breach could occur at any point.

2. A broad, cresting horizontal weir equation with a head of 3 feet could be used to determine the length of a breach, resulting in a weir from 50 to 100 feet long.

3. Floodwaters would spread at a 45 degree angle from the breach in the levee.

4. The peak discharge at a potential levee break was the maximum canal capacity or the concentration of peak flows from runoff in the watershed, whichever was greater.

Due to the nature of flooding along the New River, Skunk Creek below Carefree Highway, Lower El Mirage Wash, Scatter Wash below Black Canyon Highway, and East Branch Scatter Wash, no 500-year flood profiles were developed. The floodplains of these streams are wide; therefore, flow could increase substantially without significantly raising the water-surface elevation or increasing the velocity of flow. Moreover, most of the area contiguous to the floodplains is subject to sheetflow during a 100-year flood.

In addition, 50-year flood profiles for the Agua Fria and New Rivers, Skunk Creek below Carefree Highway, Cave Creek below Cave Creek Dam, East Fork Cave Creek, and Echo Canyon, Scatter, and East Branch Scatter Washes were not computed.

Flood profiles are not applicable for areas of shallow flooding and ponding; therefore, flood profiles are not presented for any of the canals or other areas of shallow flooding, including Sand Tank and Bender Washes, Rodeo Wash and its tributary, Lower El Mirage Wash Tributary, and Airport and Scott Avenue Washes.

For flooding sources studied by approximate methods, 100-year flood elevations were computed using Manning's equation, COE Flood Plain Information reports (References 27, 29, 58, and 61), USGS Flood-Prone Area Maps (Reference 62), USGS slope maps (Reference 63), high-resolution Skylab photographs (References 64 and 65), and USGS topographic maps (Reference 66).

The study was limited to the uses of fixed-bed modeling for the hydraulic analyses. However, with the occurrence of a large flood, substantial changes in the riverbed are expected to occur, particularly where the bottom slope is very non-uniform and/or where other structures, such as bridges, cause local increases in the velocity. Resultant changes in the water-surface elevations can be expected.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks and descriptions used in this study are shown on the maps.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study produces maps designed to assist communities in developing floodplain management measures.

4.1 Flood Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at scales of 1:1,200, 1:2,400, 1:4,800, and 1:6,000, with contour intervals of 2 and 4 feet (References 53, 54, 59, and 60).

The 100- and 500-year floodplain boundaries are shown on the Flood Boundary and Floodway Map (Exhibit 2). In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

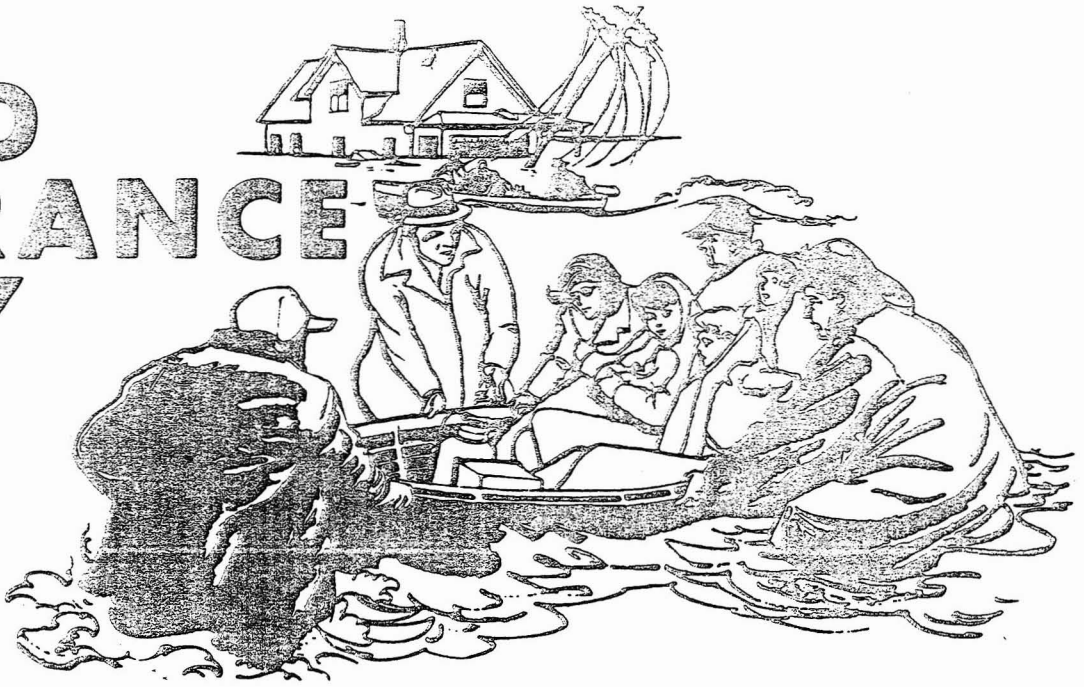
Approximate flood boundaries were delineated using USGS topographic maps and Flood-Prone Areas Maps (References 62 and 66), and high-resolution Skylab photographs (References 64 and 65).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed on the basis of equal-conveyance reduction from each side of the floodplain. The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 5).

FLOOD INSURANCE STUDY



MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS
VOLUME 2 OF 12

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AVONDALE, CITY OF	040038
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CHANDLER, CITY OF	040040
EL MIRAGE, TOWN OF	040041
GILA BEND, TOWN OF	040043
GILBERT, TOWN OF	040044
GLENDALE, CITY OF	040045
GOODYEAR, TOWN OF	040046
GUADALUPE, TOWN OF	040111
LITCHFIELD PARK, CITY OF	040128
MARICOPA COUNTY UNINCORPORATED AREAS	040037
MESA, CITY OF	040048
PARADISE VALLEY, TOWN OF	040049
PEORIA, CITY OF	040050
PHOENIX, CITY OF	040051
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SCOTTSDALE, CITY OF	045012
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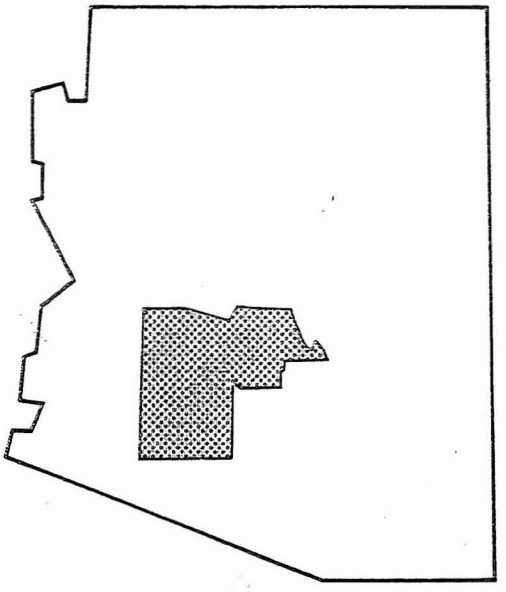
YOUNGSTOWN, TOWN OF	040057



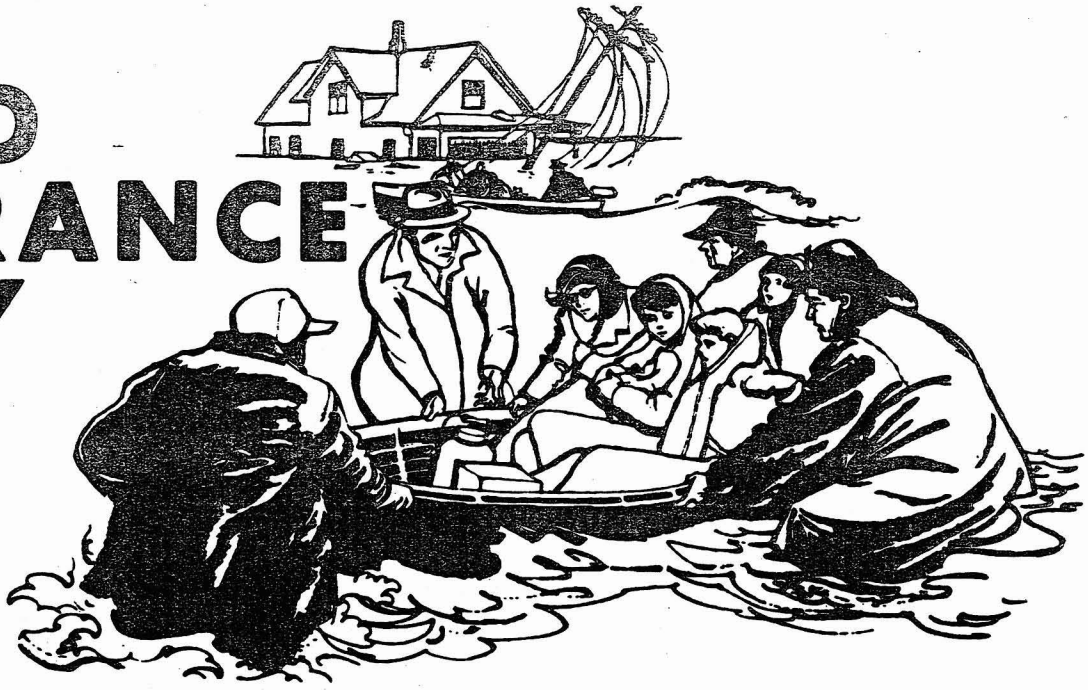
REVISED: SEPTEMBER 30, 1995

Federal Emergency Management Agency

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Cave Creek Wash (Cont'd)								
NA	3.420	700	1,457	1.5	1,045.0	1,045.0	1,045.5	0.5
NB	3.610	675	1,079	2.1	1,045.4	1,045.4	1,046.0	0.6
NC	3.380	730	1,124	2.0	1,047.4	1,047.4	1,048.0	0.6
ND	3.990	730	1,039	2.1	1,048.0	1,048.0	1,048.8	0.8
NE	4.080	858	1,014	2.2	1,049.0	1,049.0	1,049.7	0.7
NF	4.270	1,365	2,424	0.9	1,049.4	1,049.4	1,050.3	0.9
NG	4.350	1,490	2,142	1.0	1,049.9	1,049.9	1,050.6	0.7
NH	4.440	1,550	2,202	1.0	1,051.8	1,051.8	1,051.9	0.1
NI	4.620	1,053	1,251	1.8	1,053.5	1,053.5	1,053.5	0.0
NJ	4.699	993	462	4.8	1,058.6	1,058.6	1,058.6	0.0
NK	4.790	1,450	5,305	0.5	1,059.2	1,059.2	1,059.3	0.1
NL	4.980	2,308	3,032	0.8	1,059.3	1,059.3	1,059.9	0.6
NM	5.070	1,720	2,940	0.9	1,060.8	1,060.8	1,061.5	0.7
NN	5.380	1,112	1,379	1.8	1,066.1	1,066.1	1,066.6	0.5
NO	5.570	965	2,309	0.8	1,068.4	1,068.4	1,069.1	0.7
NP	5.670	745	1,650	1.1	1,069.2	1,069.2	1,069.8	0.6
NQ	5.860	660	1,165	1.6	1,071.1	1,071.1	1,071.7	0.6
NR	6.050	818	1,361	1.4	1,071.7	1,071.7	1,072.6	0.9
NS	6.230	1,405	1,405	1.3	1,073.7	1,073.7	1,074.0	0.3
NT	6.330	1,385	1,544	1.2	1,074.4	1,074.4	1,074.8	0.4
NU	6.420	1,407	1,286	1.4	1,074.9	1,074.9	1,075.3	0.4
NV	6.700	1,445	2,176	0.9	1,077.9	1,077.9	1,078.8	0.9
NW	6.880	1,203	1,663	1.1	1,079.2	1,079.2	1,080.1	0.9
NX	7.010	1,380	1,548	1.2	1,080.0	1,080.0	1,080.7	0.7
NY	7.290	975	1,498	1.1	1,082.7	1,082.7	1,083.4	0.7
NZ	7.380	940	1,706	1.0	1,083.2	1,083.2	1,084.1	0.9

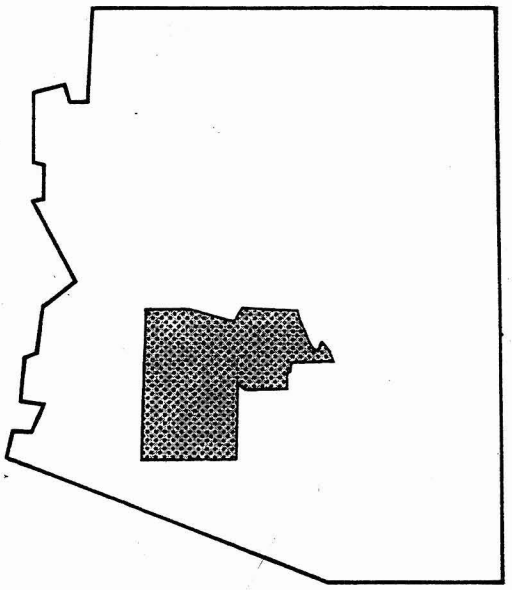
[1]Miles Upstream From Salt River

FLOOD INSURANCE STUDY



MARICOPA COUNTY, ARIZONA
AND INCORPORATED AREAS
VOLUME 4 OF 12

COMMUNITY NAME	COMMUNITY NUMBER
AVONDALE, CITY OF	040038
BUCKEYE, TOWN OF	040039
CAREFREE, TOWN OF	040126
CAVE CREEK, TOWN OF	040129
CHANDLER, CITY OF	040040
EL MIRAGE, TOWN OF	040041
GILA BEND, TOWN OF	040043
GILBERT, TOWN OF	040044
GLENDALE, CITY OF	040045
GOODYEAR, TOWN OF	040046
GUADALUPE, TOWN OF	040111
LITCHFIELD PARK, CITY OF	040128
MARICOPA COUNTY UNINCORPORATED AREAS	040037
MESA, CITY OF	040048
PARADISE VALLEY, TOWN OF	040049
PEORIA, CITY OF	040050
PHOENIX, CITY OF	040051
QUEEN CREEK, TOWN OF	040132
SCOTTSDALE, CITY OF	045012
SURPRISE, TOWN OF	045053
TEMPE, CITY OF	040054
TOLLESON, CITY OF	040055
WICKENBURG, TOWN OF	040056
YOUNGSTOWN, TOWN OF	040057



REVISED: SEPTEMBER 30,1995

Federal Emergency Management Agency

SOUTHERN PACIFIC RAILROAD

VANBUREN STREET

ELEVATION (FEET NGVD)

1075
1070
1065
1060

NN NO NP NQ NR NS NT

LEGEND

500 - YEAR FLOOD
100 - YEAR FLOOD
50 - YEAR FLOOD
10 - YEAR FLOOD
STREAM BED
CROSS SECTION LOCATION

5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6.0 6.1 6.2 6.3 6.4

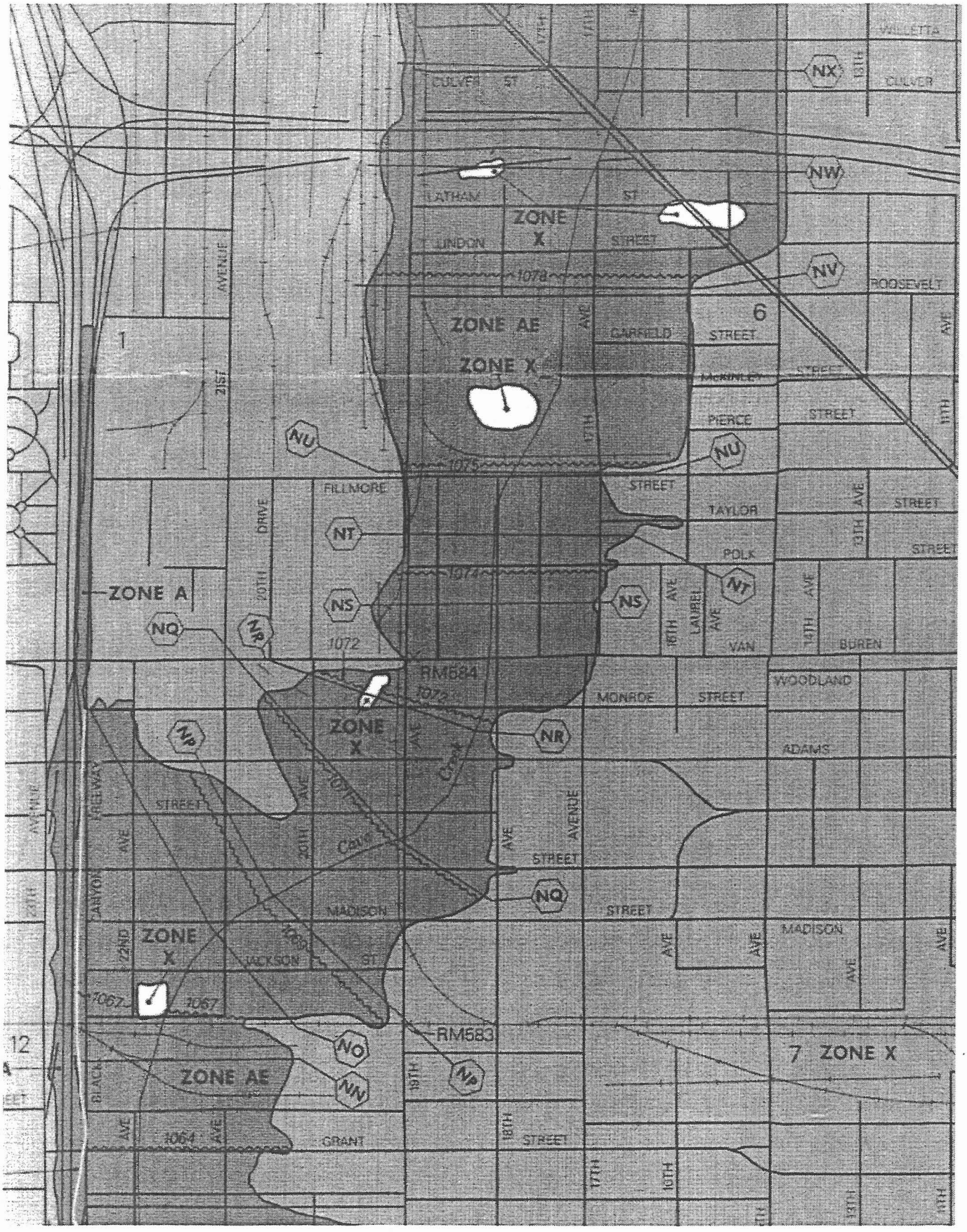
STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH SALT RIVER

FLOOD PROFILES

CAVE CREEK WASH

FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ
AND INCORPORATED AREAS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AVENUE 998
AVENUE 999
AVENUE 1000

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM583	1072.36	Chiseled 2" by 2-inch "+" in top, northwest corner of 8-inch thick concrete retaining wall at west edge of 5-foot concrete sidewalk, 0.7 foot above sidewalk, approximately 29 feet south of south RR track, approximately 150 feet north of the centerline of Buchanon Street and approximately 31 feet west of the centerline of 19th Avenue.
RM584	1071.96	Chiseled 3" by 3-inch "+" in top of curb at the northeast corner of 19th Avenue and Van Buren Road, approximately 62 feet north of the centerline of Van Buren Road and approximately 34 feet east of the centerline of 19th Avenue.
RM585	1082.40	Top of east bolt, 2-inch diameter on 1.5- by 1.5-foot metal base plate for a traffic signal light pole, 0.8 foot above concrete sidewalk at the northwest corner of Grand and 19th Avenues, approximately 42 feet west of the centerline of 19th Avenue and approximately 54 feet southeast of the centerline of Grand Avenue.
RM586	1089.37	Brass cap stamped S.R.V.W.U.A., bench mark location, Engineering Dept., set on the top, center of the 0.5-foot-thick south wall of a 5- by 7.5-foot irrigation box, 2.8 feet above concrete sidewalk, at the northeast corner of 19th Avenue and Encanto Boulevard, approximately 67 feet north of the centerline of Encanto Boulevard and approximately 495 feet east of the centerline of 19th Avenue.
RM587	1107.33	Brass cap stamped S.R.V.W.U.A., bench mark location, Engineering Dept., set on the top, center of the 0.5-foot-thick south wall of a 6- by 9-foot irrigation box, 2.8 feet above pavement, at the southeast corner of 19th Avenue and Osborn Road, approximately 47 feet south of the centerline of Osborn Road and approximately 45 feet east of the centerline of 19th Avenue.
RM588	1113.47	Top, northwest corner of metal base plate on a 1- by 1-foot concrete pad set on a 2-foot-diameter concrete base for a traffic signal light pole, 0.4 foot above pavement, at southeast corner of 15th Avenue and Indian School Road, approximately 50 feet east of 15th Avenue and approximately 46 feet south of the centerline of Indian School Road.

LEGEND

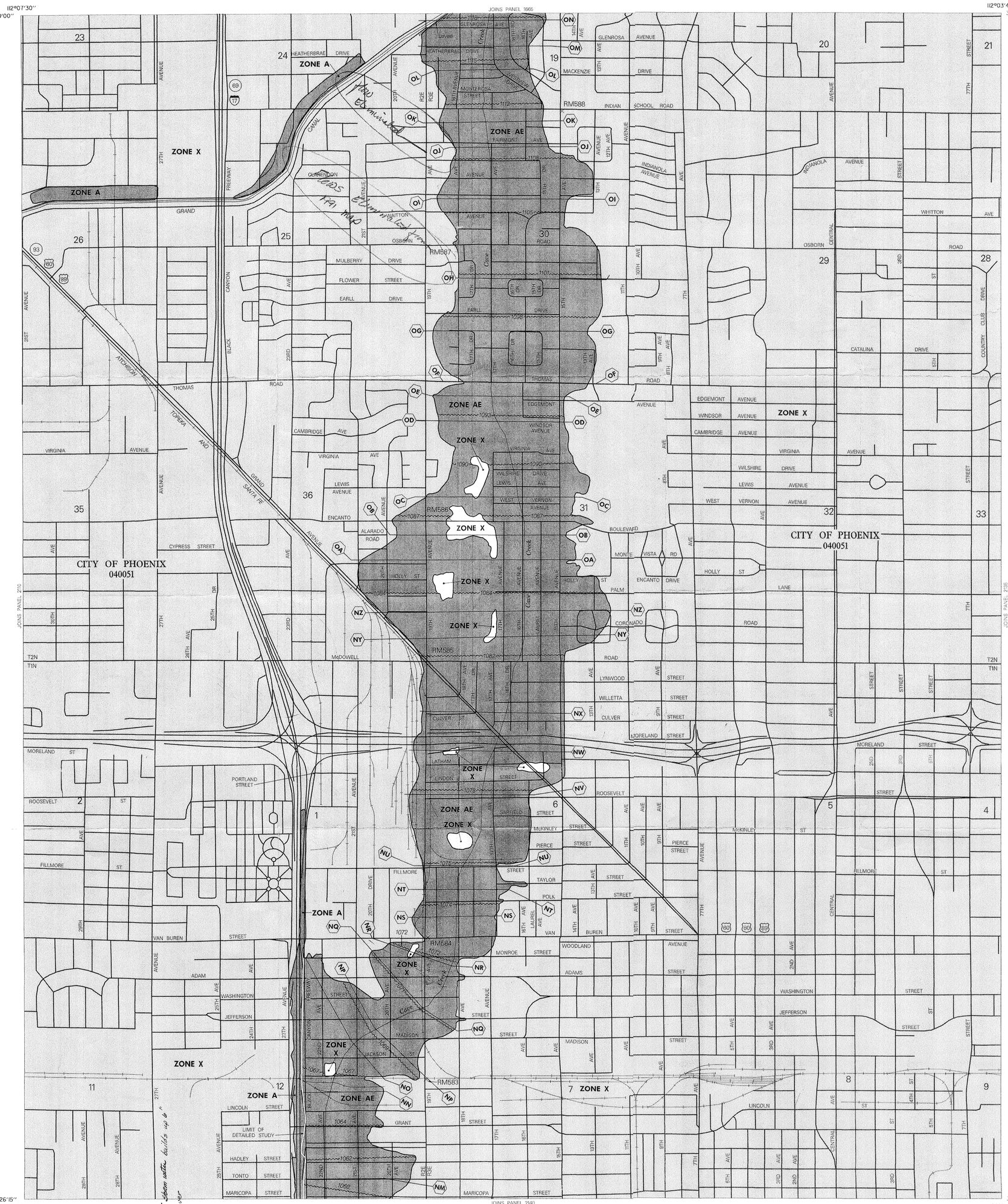
To obtain more detailed information in areas where Base Flood Elevations (BFEs)and /or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations and therefore may not exactly reflect the flood elevation data presented in the FIS. BFEs shown on the FIRM are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and /or floodplain management.

ERM elevations listed on this map were obtained and/or developed to establish vertical control for determination of flood elevations and floodplain boundaries portrayed on this map. Users should be aware that these ERM elevations may have changed since the publication of this map. To obtain up-to-date elevation information on National Geodetic Survey (NGS) ERMs shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov. Map users should seek verification of non-NGS ERM monument elevations when using these elevations for construction or floodplain management purposes.

Coastal BFE's shown on this map may apply only landward of 0.0' NGVD. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and / or floodplain management purposes when they are higher than the elevations shown on this FIRM.

price Study —

9/4/1991
This map would please a homebuilding with kind of a bill was there in 1991



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood 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 floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain 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. See Map Index for Elevation Datum.

(D)—(D) Cross Section Line

(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 Elevation Reference Mark

M2 River Mile

97°07'30", 32°22'30" Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

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. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

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. Refer to Floodway Data Table where floodway width is shown at 120 inch.

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 this map.

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (Pl. 101-591).

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP:
APRIL 15, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 4, 1991

Map revised July 19, 2001 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 Letters 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 2130 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
PHOENIX, CITY OF	040051	2130	F

MAP NUMBER 04013C2130 F

MAP REVISED: JULY 19, 2001

Federal Emergency Management Agency

For ADOT — shown with details up a" — sub splits over

Appendix D Proposed Improvements

LEGEND

◉	FD. BRASS CAP IN HAND HOLE	TS	TRAFFIC SIGNAL PULL BOX
●	FD. BRASS CAP FLUSH	E	ELECTRICAL BOX
●	FOUND MONUEMENT AS NOTED		UTILITY POLE
S	SEWER MANHOLE	T	TELEPHONE JUNCTION BOX
SD	STORM DRAIN MANHOLE		GUY WIRE
	WATER VALVE		GAS VALVE
	FIRE HYDRANT		TREE
WM	WATER METER		PALM TREE
●	IRRIGATION CONTROL BAX	SWR	SEWER LINE
● CO	SEWER CLEAN OUT	STRM DRN	STORM DRAIN LINE
	LIGHT	WTR	WATER LINE
●	STREET LIGHT	R-O-W	RIGHT-OF-WAY
13	SCHEDULE "B" ITEM PER TITLE REPORT	B/C	BACK OF CURB
		B/W	BACK OF WALK
		(R)	RECORD PER CAPITOL ADDITION PLAT BOOK 1 OF MAPS, PAGE 62 M.C.R.

SCALE: 1"= 50'

0 25' 50' 100' 150'

FOUND STONE IN HANDHOLE INT. 18TH AVE. & VAN BUREN ST.

S89°56'06"E 726.08 (M)

VAN BUREN STREET

24.2'± 20" WTR

BOLLARDS WITH CHAINS.

FOUND STONE IN HANDHOLE INT. 17TH AVE. & VAN BUREN ST.

18.2'± STRM DRN

18.2'± 54" SWR

WROUGHT IRON FENCE

US WEST COMPOUNDS

TRASH ENCLOSURE

F.F.=72.70

F.F.=73.85

10.0'± 27" SWR

22.4'± OH

19.1'± CONCRETE DRIVE

BLOCK 5

BLOCK 6

17TH AVENUE

S00°00'15"W 379.89 (M)

18TH AVENUE

N00°01'42"W 380.00 (M)

18.0'± B/C

6.8'± 8" WTR

47.4'± B/W

FOUND STONE IN HANDHOLE INT. 18TH AVE. & MONROE ST.

F.F.=72.60

FOUND BRASS CAP FLUSH INT. 19TH AVE. & MONROE ST.

S89°55'23"E 590.34 (M)

S89°56'35"E 725.86 (M)

MONROE STREET

FOUND STONE IN HANDHOLE INT. 17TH AVE. & MONROE ST.

27.0'± B/W

15.5'± B/C

15.6'± B/C

27.4'± B/W

5.7'± 6" WTR

21.0'± CABLE

15.7'± B/C

27.7'± B/W

15.5'± B/C

27.5'± B/W

47.4'± B/W

20.5'± B/C

20.6'± B/C

47.4'± B/W

13.0'± 12" WTR

DISTANCE TO B/C VARIES

DEPRESSED CURB

3'X1' WALL

43.0'± CABLE

47.3'± B/W

17.9'± B/C

18.1'± B/C

47.7'± B/W

19TH AVENUE

N00°02'42"W 380.00 (M)

N00°01'03"W 380.00 (M)

S00°01'25"E 384.93 (M)

COVERED PARKING

F.F.=71.61

F.F.=71.69

F.F.=72.15

10.8'± 8" SWR

F.F.=74.85

10.2'± 8" SWR

F.F.=72.60

S89°58'32"E 590.15 (M)

ADAMS STREET

S89°57'32"E 725.90 (M)

ADAMS STREET

FOUND BRASS CAP IN HANDHOLE INT. 19TH AVE. & ADAMS ST.

FOUND STONE IN HANDHOLE INT. 17TH AVE. & ADAMS ST.

Two working days before you dig CALL FOR THE BLUE STAKES 263-1100 Blue Stake Center CALL COLLECT

DEI PROFESSIONAL SERVICES, L.L.C.
6225 N. 24th Street, Suite 200
Phoenix, Arizona 85016-6018
Phone: (602) 954-6038
Fax: (602) 381-6005

1985-2004 19 YEARS OF EXCELLENCE DEI Professional Services, L.L.C.

ALTA/ACSM SURVEY

ARIZONA DEPT. OF HEALTH SEVRICES

PHOENIX, ARIZONA

REVISIONS

1 REVISED PER CLIENT COMMENTS 08/28/01

2 REVISED PER CLIENT COMMENTS 10/09/01

DATE:	06/22/01
PROJ. NO:	1087
DESIGN:	
DRAWN:	RMH
CHECK:	DAM
SCALE:	1"=50'
CAD FILE:	1087AS03

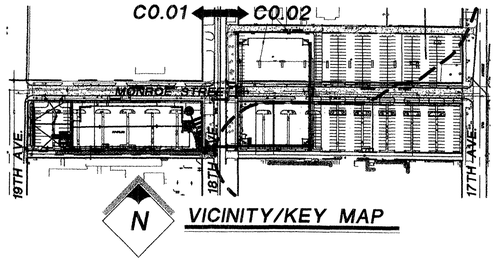
ALTA/ACSM SURVEY

3 of 3

DRAWING NAME:
001G0108.DWG

XREF LIST:
BRDR0108
PATT0108
SITE0108
SURV0108
ARCH0108

PRELIMINARY GRADING & DRAINAGE PLAN
FOR
DHS OFFICE BUILDING & PARKING STRUCTURE
18th AVENUE & MONROE STREET
PHOENIX, AZ



VICINITY/KEY MAP

BENCHMARK

DIRECTION OF RUNOFF
G=71.25 PROPOSED GUTTER ELEV.
P=71.25 PROPOSED PAVEMENT ELEV.
SW=71.25 PROPOSED SIDEWALK ELEV.
TC=72.93 FG=72.53 EXISTING ELEV.
PROPOSED CURB
PROPOSED CURB & GUTTER
CENTER LINE
PROPERTY LINE
PROPOSED CONC. PVMT./SIDEWALK
PROPOSED ASPHALT PVMT.
EX. PAVEMENT
EX. CONC. PVMT.
FLOWLINE
70.83 PROPOSED CONTOUR
RIDGE
MAXWELL PLUS DRYWELL
PROPOSED STORM DRAIN
HIGH WATER LIMITS
BASE FLOOD ELEVATION (B.F.E.)

8"SS EX. UTLITY (AS NOTED)
EX. STORM PIPE
EX. CURB & GUTTER
EX. MANHOLE
EX. STORM DRAIN MANHOLE
EX. SEWER MANHOLE
EX. ELECTRIC JUNCTION BOX
EX. TREE
EX. GAS VALVE
EX. ELEC. MANHOLE
EX. TELE. MANHOLE
EX. FIRE HYDRANT
EX. WATER VALVE
EX. IRR. CONTROL VAVLE
EX. SEWER CLEAN OUT
EX. SIGN
EX. IRR. JUNCTION BOX
EX. METER BOX
EX. LIGHT

SHEET INDEX

C0.01 PRELIMINARY GRADING & DRAINAGE PLAN (OFFICE BUILDING)
C0.02 PRELIMINARY GRADING & DRAINAGE PLAN (PARKING STRUCTURE)

ENGINEER

KPFF CONSULTING ENGINEERS
2800 N. CENTRAL AVE.
PHOENIX, ARIZONA 85004
PHONE: (602) 264-1010
FAX: (602) 285-1010

ARCHITECT

LEO A. DALY ARCHITECTS
3344 CAMELBACK ROAD, SUITE 201
PHOENIX, AZ 85018
PHONE: (602) 954-0818

BENCHMARK

S.R.P. ALUMINUM CAP SET IN TOP OF CURB 9' NORTH OF NORTH END OF RETURN @ NW CORNER OF INTERSECTION OF 19TH AVENUE AND VAN BUREN.
ELEVATION=1072.32 (CITY OF PHOENIX DATUM).

PHASE I - DRAINAGE STATEMENT

GENERAL:

THE DEPARTMENT OF HEALTH SERVICES IS PROPOSING THE CONSTRUCTION OF A NEW 170,000 sf OFFICE BUILDING, A 936 SPACE PARKING STRUCTURE AND ON-GRADE PARKING LOT IMPROVEMENTS LOCATED AT 18th AVENUE AND MONROE STREET IN PHOENIX, ARIZONA. THE PROJECT SITE AREA IS APPROXIMATELY 4.68 ACRES. THE PROJECT SITE IS CURRENTLY DEVELOPED CONTAINING ROADWAY AND PAVED PARKING LOTS.

EXISTING DRAINAGE PATTERNS:

THE LOCATION OF THE NEW PARKING STRUCTURE WILL REQUIRE ABANDONING MONROE STREET BETWEEN 18th AND 17th AVENUES AND DEMOLISHING PORTIONS OF EXISTING PAVED PARKING LOTS IN THIS AREA. MONROE STREET BETWEEN 18th AND 17th AVENUES CURRENTLY DRAINS IN A WESTERLY DIRECTION CONTRIBUTING TO 18th AVENUE.

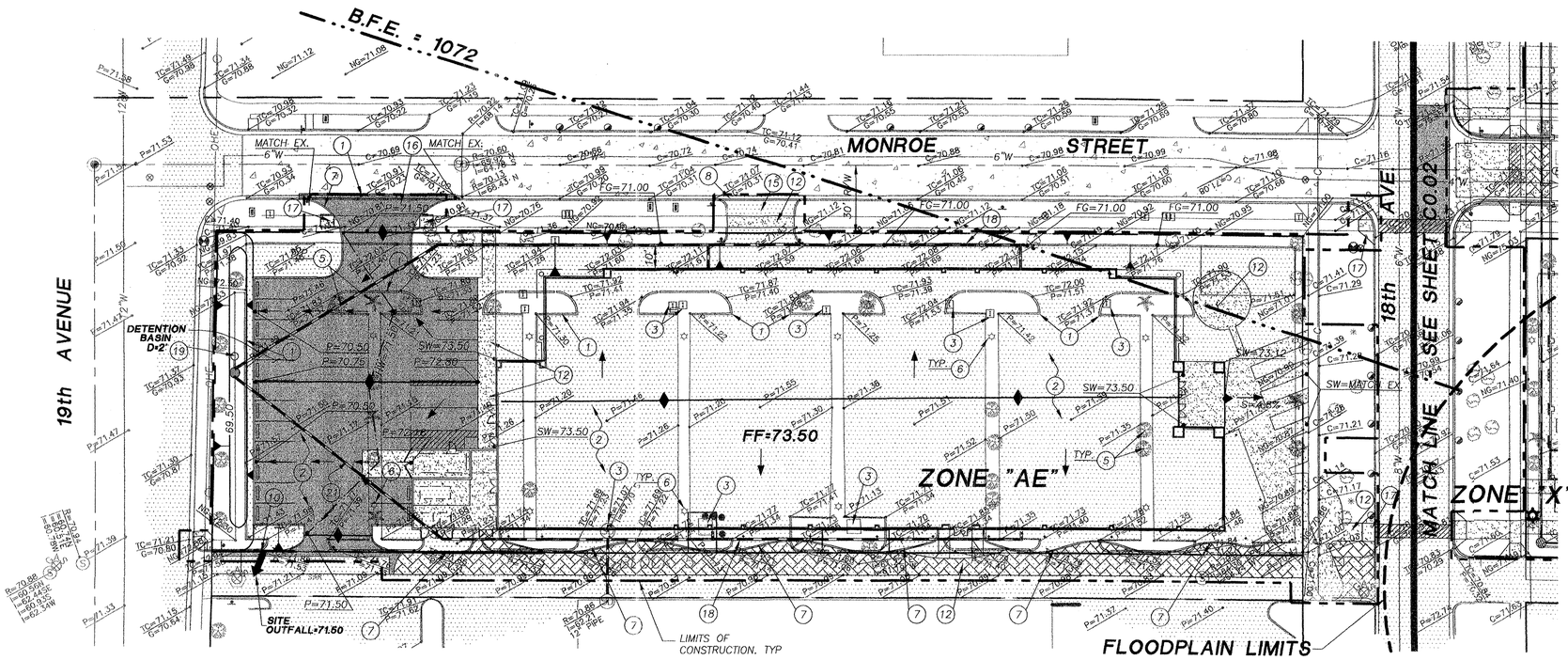
THE EXISTING NORTH PARKING LOT DRAINS INTO A DRYWELL. THE EXISTING SOUTH PARKING LOT GENERALLY DRAINS IN A SOUTHWESTERLY DIRECTION CONTRIBUTING TO AN ALLEY TO THE SOUTH. SIMILAR TO MONROE STREET, THE ALLEY DRAINS IN A WESTERLY DIRECTION ULTIMATELY CONTRIBUTING TO 18th AVENUE.

THE LOCATION OF THE NEW OFFICE BUILDING WILL REQUIRE DEMOLITION OF AN EXISTING PAVED PARKING LOT. THE EXISTING PARKING LOT CURRENTLY DRAINS IN A SOUTHWESTERLY DIRECTION INTO AN ALLEY TO THE SOUTH. THE ALLEY DRAINS IN A WESTERLY DIRECTION CONTRIBUTING TO 19th AVENUE.

ACCORDING TO FLOOD INSURANCE RATE MAP #0413C2130 E, DATED SEPTEMBER 4, 1991, THE PROJECT SITE IS LOCATED PARTIALLY FLOOD ZONE "X" AND PARTIALLY IN FLOOD ZONE "AE". FLOOD ZONE "X" IS DEFINED AS AREAS OF 500-YEAR FLOOD; AREAS OF 100-YEAR FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREA OF LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 100-YEAR OLD FLOOD ZONE "AE" IS DEFINED AS SPECIAL FLOOD HAZARD AREA INUNDATED BY 100-YEAR FLOOD ZONE. THE BASE FLOOD ELEVATION FOR THIS PROJECT SITE BEING 72.00.

PROPOSED DRAINAGE PATTERNS:

THE PRE- AND POST-DEVELOPMENT RUNOFF COEFFICIENTS FOR THIS PROJECT ARE THE SAME, 0.95. THEREFORE THE POST-DEVELOPMENT RUNOFF WILL NOT BE SIGNIFICANTLY INCREASED DUE TO THE PROPOSED DEVELOPMENT AND RETENTION IS NOT PROVIDED. A SHALLOW DETENTION BASIN IS PROPOSED AS PART OF THE OFFICE BUILDING IMPROVEMENTS TO ATTENUATE THE RUNOFF PRIOR TO OUTLETTING ONTO 19TH AVENUE ALIKE EXISTING DRAINAGE PATTERNS.
THE FINISHED FLOOR FOR THE PROPOSED OFFICE BUILDING AND PARKING STRUCTURE ARE SET A MINIMUM OF 1-FOOT ABOVE THE BASE FLOOD ELEVATION AS DETERMINED BY THE FIRM MAPS AND A MINIMUM 1-FOOT ABOVE THE SITE OUTFALL ELEVATIONS. THE SITE OUTFALL ELEVATIONS AND LOCATIONS MATCH THE EXISTING DRAINAGE PATTERNS.



CONSTRUCTION NOTES

1. REMOVE CURB & GUTTER.
2. REMOVE PAVEMENT.
3. REMOVE/RELOCATE UTILITY LINE AND RELATED FEATURES.
4. REMOVE SIDEWALK.
5. REMOVE LANDSCAPE/TREE.
6. REMOVE STREET LIGHT/POLE.
7. NEW CURB.
8. NEW CURB & GUTTER.
9. NEW VALLEY GUTTER.
10. NEW CURB OPENING.
11. NEW SCUPPER.
12. NEW SIDEWALK.
13. NEW CONCRTE PAVEMENT.
14. NEW RIP-RAP SPILLWAY.
15. REMOVE DRIVEWAY
16. NEW DRIVEWAY
17. NEW SIDEWALK RAMP
18. NEW STORM/ROOF DRAIN
19. MAXWELL PLUS DRYWELL
20. TYPE IV MAXWELL DRYWELL
21. NEW ASPHALT PAVEMENT

N

PRELIMINARY PLAN
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALE
30 0 15 30
1 INCH = 30 FT

Two working days before you dig CALL FOR THE BLUE STAKES 602-263-1100 Blue Stake Center

kpff Consulting Engineers
2800 NORTH CENTRAL AVENUE, SUITE 1010
PHOENIX, ARIZONA 85004
PHONE (602) 264-1010
FAX (602) 285-1010

REVISIONS	DATE

Registered Professional Engineer
CERTIFICATE NO.
32837
KIMBERLY JA FOTI
STATE OF ARIZONA
10/18/01

DHS OFFICE BUILDING & PARKING STRUCTURE
AZ DEPT. OF ADMINISTRATION
18th AVENUE & MONROE STREET, PHOENIX, AZ

SHEET TITLE:
PRELIMINARY GRADING AND DRAINAGE PLAN (OFFICE BUILDING)

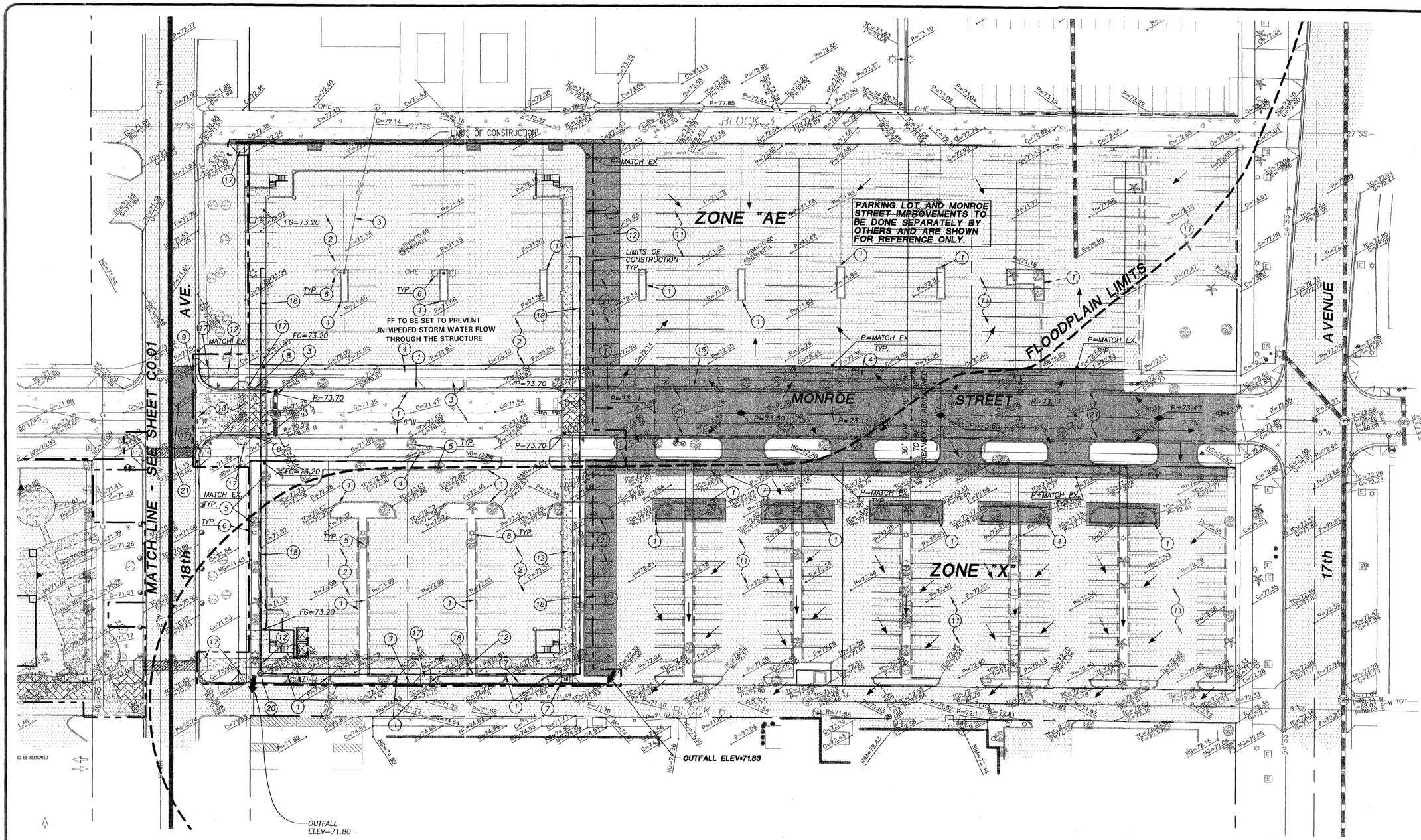
STATUS: PRELIMINARY

DRAFTED:	RMR
DESIGNED:	KJF
CHECKED:	KJF
DATE:	10/18/01
JOB NO:	115008

SHEET NO: C0.01
1 OF 2

DRAWING NAME:
002C0108.DWG

XREF LIST:
BRDR0108
SURV0108
PATT0108
SITE0108
ARCH0108



CONSTRUCTION NOTES

1. REMOVE CURB & GUTTER.
2. REMOVE PAVEMENT.
3. REMOVE/RELOCATE UTILITY LINE & RELATED FEATURES.
4. REMOVE SIDEWALK.
5. REMOVE LANDSCAPE/TREE.
6. REMOVE STREET LIGHT/POLE.
7. NEW CURB.
8. NEW CURB & GUTTER.
9. NEW VALLEY GUTTER.
10. NEW CURB OPENING.
11. EXISTING PARKING LOT TO BE RE-STRIPED AS SHOWN SEPARATELY BY OTHERS. DRAINAGE PATTERNS TO MATCH EXISTING CONDITIONS.
12. NEW SIDEWALK.
13. NEW CONCRETE PAVEMENT.
14. NEW RIP-RAP SPILLWAY.
15. REMOVE DRIVEWAY.
16. NEW DRIVEWAY.
17. NEW SIDEWALK RAMP.
18. NEW STORM/ROOF DRAIN.
19. MAXWELL PLUS DRYWELL.
20. TYPE IV MAXWELL DRYWELL.
21. NEW ASPHALT PAVEMENT.

N

PRELIMINARY PLAN
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALE
30 0 15 30
1 INCH = 30 FT

Two working days before you dig
CALL FOR THE BLUE STAKES
602-263-1100
Blue Stake Center

kpti Consulting Engineers
2800 NORTH CENTRAL AVENUE, SUITE 1010
PHOENIX, ARIZONA 85004
PHONE (602) 264-1010
FAX (602) 265-1010

REVISIONS	DATE

Registered Professional Engineer
CERTIFICATE NO.
32837
KIMBERLY FOTI
STATE OF ARIZONA
10/15/01

DHS OFFICE BUILDING & PARKING STRUCTURE
AZ DEPT. OF ADMINISTRATION
18th AVENUE & MONROE STREET, PHOENIX, AZ

SHEET TITLE:
PRELIMINARY GRADING AND DRAINAGE (PARKING STRUCTURE)

STATUS:
PRELIMINARY

DRAFTED:	MEK
DESIGNED:	KJF
CHECKED:	KJF
DATE:	10/15/01
JOB NO:	115008

SHEET NO:
C0.02
2 OF 2

Appendix E
HEC 2 Effective Model

```
1*****************************************
**************************************
 *  HEC-2 WATER SURFACE PROFILES            *
*  U.S. ARMY CORPS OF ENGINEERS        *
 *                                          *
*  HYDROLOGIC ENGINEERING CENTER       *
 *  Version   4.6.2;  May 1991              *
*  609 SECOND STREET, SUITE D          *
 *                                          *
*  DAVIS, CALIFORNIA 95616-4687        *
 *  RUN DATE    17OCT01    TIME   16:45:43  *
*          (916) 756-1104              *
 ******************************************
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                                        X     X  X        X                       X
                                        XXXXXXX  XXXX     X          XXXXX    XXXXX
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                                        X     X  X        X     X            X
                                        X     X  XXXXXXX   XXXXX             XXXXXXX
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    17OCT01      16:45:43
PAGE    1
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THIS

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RUN EXECUTED 17OCT01    16:45:43
 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************
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 SPLIT FLOW BEING PERFORMED

 SF   SPLIT FLOW CAVE CREEK WASH REACH 2

 TW   RIGHT OVERBANK BETWEEN STATIONS 7.01 AND 7.11
 WS     6    7.01    7.11    5.86    2.25
 WC     0  1080.0      10  1079.5     190  1079.5     200  1080.0   400.0  1081.0
 WC   500  1081.5

 TW   RIGHT OVERBANK BETWEEN STATIONS 6.94 AND 7.01
 WS     4    6.94    7.01    5.86    2.25
 WC     0  1080.0      10  1079.2     340  1079.2     360  1080.0

 TW   RIGHT OVERBANK BETWEEN STATIONS 6.88 AND 6.94
 WS     4    6.88    6.94    5.86    2.25
 WC     0    1079.0    10  1078.8     340  1078.8     360  1082.0

 TW   RIGHT OVERBANK BETWEEN STATIONS 5.48 AND 5.57
 WS     5    5.48    5.57    4.98    2.25
 WC     0  1068.0     100  1066.7     800  1066.7     930  1068.0  1660.0  1070.0

 TW   RIGHT OVERBANK BETWEEN STATIONS 5.20 AND 5.25
 WS     4    5.20    5.25    4.98    2.25
 WC     0  1062.9     100  1063.0     200  1064.0     280  1064.4

 TW   RIGHT OVERBANK BETWEEN STATIONS 5.10 AND 5.20
 WS     4    5.10    5.20   4.98     2.25
 WC     0  1061.9     200 1062.0      300  1062.5     500  1062.9
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 TW   RIGHT OVERBANK BETWEEN STATIONS 5.07 AND 5.10
 WS     4    5.07    5.10    4.98    2.25
 WC     0  1060.2      50  1060.6     100  1061.5     200  1061.9
1
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 T1   FEMA FLOOD INSURANCE RE-STUDY                CELLA BARR ASSPCIATES
 T2   OF MARICOPA COUNTY, ARIZONA                  5062  N.  19TH  AVE.
 T3   CAVE CREEK WASH JOB #04856-05-75             PHOENIX, ARIZONA 85015

 J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q          WSEL
FQ

        0         2         0         0         0         0         0         0   1059.21
0

 J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW        CHNIM
ITRACE

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


 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     150        200         0         0         0         0         0         0
0          0

 QT         1     2523.0
 NC       .13       .13      .025       0.1       0.3
          THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
          FLOODWAY MODEL, CAVE.FLDWY.2.  THIS MODEL UTILIZES THE SPLIT FLOW
          AND X3 CARDS.  THE X3 CARDS ARE USED TO SET CROSS-SECTION "BOUNDARIES"
          AT TOPOGRAPICALLY HIGH GROUND THAT CONTAINS THE Q100-YR  WITHIN THE
          CROSS-SECTION.
          CROSS-SECTION EXTENDED MESSAGES OCCUR AT LOCATIONS OF WEIR FLOW.
 X1     4.79         26     2760.0     2850.0          0         0         0
 GR   1077.7     1000.0     1085.6     1042.8     1083.6     1120.1     1055.7
1200.0     1054.4     1260.7
 GR   1054.9     1305.3     1052.0     1400.0     1051.4     1421.0     1054.1
1447.4     1054.7     1501.2
 GR   1054.3     1600.0     1053.7     1800.0     1053.6     2000.0     1054.0
2200.0     1054.7     2400.0
 GR   1054.5     2600.0     1054.4     2760.0     1055.4     2789.3     1055.4
2800.0     1055.4     2850.0
 GR   1055.8     2999.9     1056.1     3199.9     1056.5     3307.6     1057.8
3399.9     1057.9     3599.9
 GR   1059.2     3633.4

 X1     4.89         30     3799.9     3900.0      570.0      500.0      500.0
 GR   1065.5     1000.0     1069.9     1040.8     1066.7     1109.1     1060.3
1172.3     1056.5     1178.6
 GR   1056.5     1200.0     1055.6     1400.0     1055.6     1460.9     1054.9
1476.9     1055.5     1600.0
 GR   1055.2     1771.0     1054.1     1787.3     1054.2     1800.0     1054.2
2000.0     1053.7     2200.0
 GR   1053.8     2400.0     1053.8     2461.4     1054.7     2470.5     1054.5
2600.0     1054.2     2684.7
 GR   1055.1     2800.0     1055.2     2999.9     1055.7     3199.9     1057.2
3399.9     1057.3     3599.9
 GR   1056.8     3799.9     1057.0     3900.0     1057.2     3999.9     1057.5
4199.9     1059.6     4290.2

 X1     4.95         40     3580.0     3650.0      315.0      250.0      315.0
 GR   1078.3     1000.0     1066.9     1006.6     1065.2     1031.4     1059.6
1081.3     1059.1     1088.5
 GR   1058.8     1129.0     1057.8     1200.0     1057.7     1400.0     1056.5
1600.0     1056.8     1677.6
 GR   1057.3     1701.1     1056.9     1800.0     1056.8     1848.2     1056.3
1869.9     1056.3     2000.0
 GR   1056.2     2142.3     1057.2     2156.6     1056.2     2177.1     1056.3
2200.0     1055.6     2400.0
 GR   1055.4     2600.0     1055.7     2800.0     1055.8     2875.5     1055.9
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2914.1      1052.4      2926.7
 GR   1054.9      2933.1      1055.3      2999.9      1055.5      3199.9      1056.1
3399.9      1056.8      3580.0
 GR   1056.8      3599.9      1056.8      3650.0      1057.3      3799.9      1058.7
3999.9      1058.5      4199.9
 GR   1058.5      4399.9      1057.7      4599.9      1058.2      4799.9      1058.3
4999.9      1059.9      5018.8
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 X1     4.98          30      4760.0      4850.0       200.0       170 .0       175.0
 GR   1060.0       100.0      1058.7      1200.0      1058.3      1400.0      1060.2
1497.3      1059.3      1600.0
 GR   1059.3      1800.0      1059.3      1841.2      1058.0      1867.3      1057.3
2000.0      1057.5      2200.0
 GR   1056.7      2400.0      1056.5      2450.8      1057.1      2600.0      1057.2
2800.0      1057.3      2999.9
 GR   1057.6      3199.9      1057.8      3399.9      1058.5      3599.9      1059.1
3799.9      1059.7      3999.9
 GR   1058.9      4199.9      1058.3      4237.8      1059.1      4249.7      1059.2
4399.9      1059.3      4599.9
 GR   1058.5      4760.0      1058.5      4799.9      1058.5      4850.0      1058.6
4999.9      1060.0      5213.

 X1     5.03          31      3140.0      3240.0       270.0       280.0       270.0
 GR   1061.7      1000.0      1061.4      1008.8      1062.2      1200.0      1061.3
1519.2      1061.3      1552.3
 GR   1061.8      1568.9      1061.9      1600.0      1062.1      1704.4      1064.3
1722.7      1062.8      1800.0
 GR   1062.5      2000.0      1062.4      2112.9      1062.1      2119.7      1061.5
2186.3      1061.6      2200.0
 GR   1061.3      2400.0      1060.6      2600.0      1060.2      2799.9      1059.8
2994.5      1060.3      2999.9
 GR   1060.4      3004.6      1060.0      3140.0      1059.8      3240.0      1059.4
3399.9      1059.2      3509.8
 GR   1059.3      3599.9      1059.2      3799.9      1058.9      3999.9      1059.2
4199.9      1060.1      4399.9
 GR   1060.8      4548.3

          WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SECTION
          4.98.  FLOW PATH FOR OVER SPILL(WEIR FLOW) IS THE I-10 FREEWAY
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1     5.07          25      4199.9      4225.0       210.0       190.0       190.0
 X3        0           0           0      2332.5      1063.1
 GR   1062.7      1000.0      1062.0      1073.2      1062.3      1200.0      1061.7
1600.0      1061.5      1800.0
 GR   1061.5      2000.0      1061.6      2200.0      1063.1      2332.5      1062.0
2400.0      1061.0      2600.0
 GR   1060.6      2799.9      1060.5      2999.9      1060.3      3199.9      1060.2
3399.9      1059.9      3599.9
 GR   1059.6      3681.8      1059.8      3799.9      1059.6      3999.9      1059.6
4199.9      1059.6      4225.0
 GR   1059.6      4290.0      1059.4      4599.9      1059.3      4694.3      1059.5
4716.3      1060.2      4736.7

          WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
          FOR OVER SPILL IS THE I-10 FREEWAY
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1     5.10          41      4730.0      4830.0       200.0       200.0       200.0
 X3        0           0           0      2859.4      1063.2      5039.9      1061.9
 GR   1063.5      1000.0      1063.1      1200.0      1062.3      1400.0      1061.5
1511.0      1062.2      1564.4
 GR   1062.2      1600.0      1062.0      1800.0      1062.0      2000.0      1061.8
2169.2      1061.9      2200.0
 GR   1061.9      2213.6      1061.5      2400.0      1061.4      2600.0      1062.2
2771.8      1062.2      2799.9
 GR   1062.0      2827.2      1063.2      2859.4      1062.8      2980.9      1061.4
2992.0      1061.4      2999.9
 GR   1061.2      3199.9      1060.9      3399.9      1061.1      3599.9      1061.0
3799.9      1061.2      3999.9
 GR   1060.7      4137.2      1061.0      4148.9      1061.0      4199.9      1060.9
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4399.9      1060.5      4599.9
 GR   1060.9     4730.0     1060.3     4765.0      1060.3      4770.0      1060.3
4830.0      1060.4      4999.9
 GR   1060.5     5012.8     1061.9     5039.9      1061.7      5081.0      1060.4
5118.8      1060.5      5139.5
 GR   1061.4     5150.0

          WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
          FOR OVER SPILL IS THE I-10 FREEWAY
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
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          PATH OF CAVE CREEK WASH
 X1      5.20          42      5399.9     5500.0       500.0       500.0       500.0
 X3         0           0           0     4170.9      1065.8
 GR   1065.7     1000.0     1064.7     1200.0      1064.4      1376.5      1065.5
1400.0      1065.4      1430.6
 GR   1064.3     1439.3     1064.3     1600.0      1063.7      1800.0      1063.7
2000.0      1063.5      2074.4
 GR   1062.7     2086.6     1062.4     2157.5      1062.9      2200.0      1063.0
2400.0      1063.1      2599.9
 GR   1062.6     2799.9     1062.5     2816.3      1062.3      2852.2      1062.8
2999.9      1063.3      3199.9
 GR   1063.6     3399.9     1063.6     3407.4      1063.3      3415.5      1063.4
3478.8      1063.2      3599.9
 GR   1063.8     3799.9     1065.1     3999.9      1065.8      4170.9      1064.6
4180.6      1064.6      4199.9
 GR   1064.0     4399.9     1063.2     4599.9      1062.8      4739.6      1062.7
4799.9      1062.3      4999.9
 GR   1062.1     5199.9     1062.0     5399.9      1062.0      5500.0      1061.9
5599.8      1061.8      5799.8
 GR   1062.0     5806.4     1062.9     5839.8

          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1      5.25          27      5350.0     5430.0       290.0       285.0       280.0
 X3         0           0           0     3999.9      1065.0
 GR   1065.0     1000.0     1064.5     1200.0      1064.2      1400.0      1063.6
1800.0      1063.2      2000.0
 GR   1062.8     2200.0     1062.8     2400.0      1062.4      2599.9      1062.2
2799.9      1063.0      2999.9
 GR   1063.4     3199.9     1063.9     3399.9      1064.2      3599.9      1064.5
3799.9      1065.0      3999.9
 GR   1064.6     4199.9     1064.0     4399.9      1063.3      4599.9      1063.4
4799.9      1062.8      4999.9
 GR   1062.4     5199.9     1062.6     5350.0      1062.6      5399.9      1062.6
5430.0      1063.0      5550.8
 GR   1064.4     5799.8     1064.4     5894.3

 NC       .06         .06         .06
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1      5.31          28      4670.0     4770.0       290.0       280.0       280.0
 X3         0           0           0     2999.9      1066.6
 GR   1066.2     1000.0     1065.1     1200.0      1064.2      1400.0      1064.5
1800.0      1064.5      2000.0
 GR   1064.1     2117.1     1063.7     2122.4      1063.8      2160.0      1064.2
2200.0      1065.0      2400.0
 GR   1065.6     2599.9     1065.3     2725.0      1065.6      2781.3      1066.2
2799.9      1066.6      2999.9
 GR   1066.3     3199.9     1066.2     3399.9      1065.3      3599.9      1064.5
3799.9      1064.2      3999.9
 GR   1064.2     4199.9     1064.4     4399.9      1063.9      4599.9      1064.0
4670.0      1063.5      4770.0
 GR   1063.1     4799.9     1063.8     4999.9      1065.5      5106.3

 NC       .13        .045        .045
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1      5.38          38      5130.0     5240.0       400.0       400.0       400.0
 X3         0           0           0     3599.9      1067.7
 GR   1068.5     1000.0     1068.5     1037.9      1070.2      1065.0      1068.7
1161.3      1068.8      1200.0
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 GR   1067.7     1371.6     1067.6     1400.0     1067.6     1423.0     1067.2
1600.0     1066.0     1800.0
 GR   1064.4     1991.9     1064.5     2000.0     1064.6     2051.5     1065.6
2200.0     1066.0     2400.0
 GR   1065.8     2599.9     1066.2     2742.2     1066.5     2799.9     1066.7
2999.9     1066.5     3199.9
 GR   1066.8     3302.6     1067.1     3353.6     1067.6     3399.9     1067.7
3599.9     1066.7     3799.9
 GR   1066.2     3999.9     1066.0     4199.9     1065.8     4399.9     1065.7
4599.9     1065.6     4799.9
 GR   1065.4     4999.9     1065.1     5130.0     1065.1     5199.9     1065.0
5240.0     1065.0     5399.9
 GR   1065.4     5599.8     1066.1     5656.3     1066.7     5698.7
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 QT        1     1890.0
 NC      .13        .06        .045
         WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
         FOR OVER SPILL IS THE I-10 FREEWAY. IN THIS MODEL IT IS ASSUMED THAT
         THE SOUTHER PACIFIC RAILROAD DOES NOT FUNCTION AS A LEVEE AND HAS
         FAILED ALLOWING FLOW TO FOLLOW ITS NATURAL COURSE.
 X1     5.48         22     4710.0     4850.0      500.0      520.0      500.0
 GR   1068.6     3203.5     1069.3     3399.9     1068.5     3599.9     1067.6
3799.9     1067.3     3999.9
 GR   1067.1     4199.9     1066.6     4399.9     1066.1     4599.9     1066.4
4710.0     1066.5     4799.9
 GR   1066.4     4850.0     1070.1     4899.6     1070.1     4999.9     1069.7
5070.2     1065.6     5088.8
 GR   1065.5     5117.0     1064.5     5123.1     1066.2     5134.6     1066.4
5199.9     1066.7     5399.9
 GR   1066.7     5454.2     1066.5     5505.7

 NC      .13        .13        .08
 X1     5.57         22     1700.0     1830.0      450.0      580.0      500.0
 GR   1068.7     1000.0     1066.9     1200.0     1066.1     1356.8     1066.2
1406.1     1066.5     1600.0
 GR   1066.6     1700.0     1066.8     1830.0     1067.0     2000.0     1067.6
2200.0     1066.9     2271.1
 GR   1066.8     2322.9     1068.1     2400.0     1068.4     2599.9     1068.2
2710.1     1067.4     2735.5
 GR   1067.6     2772.9     1068.0     2799.9     1068.1     2852.5     1068.1
2916.1     1068.5     2999.9
 GR   1068.7     3102.4     1068.5     3600.0

 NC      .08        .08        .08
 X1     5.67         17     2050.0     2280.0      530.0      520.0      500.0
 GR   1069.9     1000.0     1067.7     1200.0     1067.2     1400.0     1067.4
1800.0     1067.3     2050.0
 GR   1068.1     2280.0     1067.6     2400.0     1068.6     2599.9     1068.0
2799.9     1068.3     2999.9
 GR   1069.1     3199.9     1070.0     3440.0     1070.5     3710.0     1070.0
3960.0     1069.5     4040.0
 GR   1070.0     4140.0     1070.0     4500.0

 X1     5.76         15     2400.0     2599.9      490.0      470.0      500.0
 GR   1070.5     1000.0     1070.0     1200.0     1070.0     1400.0     1070.0
1800.0     1068.4     1847.1
 GR   1068.3     2000.0     1068.5     2200.0     1068.5     2400.0     1068.9
2599.9     1069.5     2740.0
 GR   1070.0     3040.0     1070.5     3300.0     1070.0     3820.0     1070.5
4600.0     1071.0     4920.0

 NC     .035        .13       .035
 X1     5.86         19     2000.0     2260.0      540.0      490.0      500.0
 GR   1072.4     1000.0     1072.5     1200.0     1072.1     1295.5     1070.2
1397.4     1070.4     1400.0
 GR   1070.6     1600.0     1069.4     1800.0     1069.8     2000.0     1069.9
2083.5     1069.3     2117.1
 GR   1069.5     2168.3     1070.6     2187.8     1070.6     2260.0     1069.3
2368.8     1070.0     2390.0
 GR   1070.0     2450.0     1070.5     2940.0     1070.5     3540.0     1072.0
3680.0
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 NH        4      0.130     1400.0       0.50      1939.2       0.035      2999.9
0.060      3765.7
           X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
           PATH OF CAVE CREEK WASH
 X1      5.95          23     2225.0     2400.0       510.0       470.0       500.0
 X3         0           0          0          0           0      3765.7      1072.0
 GR   1073.1     1000.0     1072.8     1200.0      1072.0      1400.0      1072.3
1800.0      1072.0      1939.2
 GR   1069.7     1992.7     1069.8     2000.0      1070.0      2179.3      1070.7
2200.0      1070.8      2225.0
 GR   1070.2     2385.2     1070.2     2400.0      1070.6      2599.9      1070.4
2799.9      1070.3      2999.9
 GR   1070.6     3199.9     1070.8     3323.1      1070.5      3337.6      1070.5
3375.9      1070.7      3399.9
 GR   1070.8     3445.8     1071.2     3599.9      1072.0      3765.7
1
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 NH        4       0.50     2525.0       0.030     2750.0       0.130      3874.0
0.013      4009.6
 X1      6.05          23     2525.0     2750.0       560.0       480.0       500.0
 GR   1074.0     1000.0     1073.6     1200.0      1073.3      1400.0      1073.4
1789.0      1073.4      1800.0
 GR   1073.2     1842.1     1072.7     2000.0      1073.0      2200.0      1072.7
2400.0      1072.3      2525.0
 GR   1070.5     2530.2     1070.4     2561.0      1070.7      2599.9      1071.1
2750.0      1071.1      2999.9
 GR   1070.6     3094.1     1070.8     3199.9      1071.6      3399.9      1072.5
3599.9      1071.1      3799.9
 GR   1071.0     3874.0     1072.6     3999.9      1072.4      4009.6

 QT        1     1865.0
 NH        7      0.130     1657.9       0.030     1876.0       0.50       2200.0
0.030      2999.9       0.020
 NH   3130.0       0.030     3799.9       0.130     4740.0
           X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
           PATH OF CAVE CREEK WASH
 X1      6.14          33     2999.9     3130.0       490.0       450.0       480.0
 X3         0           0          0          0           0      3724.6      1073.5
 GR   1074.8     1000.0     1074.6     1200.0      1074.7      1400.0      1074.6
1649.0      1073.8      1657.9
 GR   1073.6     1695.2     1073.7     1800.0      1073.5      1856.2      1073.9
1876.0      1073.6      1903.1
 GR   1073.6     2000.0     1073.7     2200.0      1072.8      2317.7      1073.1
2400.0      1073.0      2599.9
 GR   1072.5     2799.9     1072.5     2851.8      1071.9      2860.7      1072.4
2866.2      1072.5      2999.9
 GR   1072.0     3072.5     1071.8     3110.2      1072.0      3130.0      1072.2
3199.9      1072.5      3399.9
 GR   1072.1     3599.9     1072.5     3627.7      1073.5      3724.6      1072.9
3799.9      1073.0      3900.0
 GR   1072.0     3999.9     1071.5     4115.0      1072.0      4740.0

 NC       .06         .06         .02
 X1      6.23          29     3059.0     3175.0       500.0       500.0       500.0
 X3         0           0          0          0           0      3999.9      1074.0
 GR   1074.8     1000.0     1075.1     1200.0      1075.0      1400.0      1074.2
1512.1      1074.3      1537.5
 GR   1074.6     1600.0     1074.6     1800.0      1074.3      1860.5      1074.7
2000.0      1074.7      2001.1
 GR   1074.4     2018.0     1075.0     2200.0      1073.5      2343.1      1073.6
2376.4      1073.7      2400.0
 GR   1073.3     2599.9     1072.9     2751.0      1073.4      2799.9      1073.5
2999.9      1073.0      3059.0
 GR   1072.6     3092.2     1072.6     3129.2      1073.0      3175.0      1072.8
3399.9      1072.2      3469.2
 GR   1072.2     3499.4     1072.7     3599.9      1072.9      3799.9      1074.0
3999.9

 NH        4      0.130     2341.6       0.060     3050.0       0.020      3175.0
0.060      4070.0
           X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
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          PATH OF CAVE CREEK WASH
 X1     6.33         25     3050.0     3175.0      500.0      500.0      500.0
 X3        0          0          0          0          0     3778.0     1075.8
 GR   1075.7     1000.0     1075.8     1200.0     1075.6     1400.0     1074.9
1665.0     1075.0     1800.0
 GR   1075.2     2000.0     1074.0     2130.0     1073.8     2341.6     1073.8
2375.4     1074.2     2400.0
 GR   1073.9     2599.9     1073.8     2799.9     1073.9     2999.9     1073.6
3050.0     1073.4     3175.0
 GR   1073.3     3399.0     1073.3     3599.9     1073.5     3665.9     1073.8
3719.1     1075.3     3736.3
 GR   1075.0     3753.5     1075.8     3758.3     1075.8     3778.0     1074.6
3786.7     1075.5     4070.0

 NH        6      0.13     1800.0       0.50     2200.0       0.020     2487.3
0.060     2999.9       0.020
 NH   3130.0      0.030     3999.9
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1     6.42         33     2999.9     3130.0      500.0      500.0      500.0
 X3        0          0          0          0          0     3999.9     1076.0
 GR   1076.2     1000.0     1075.5     1063.1     1075.6     1103.6     1075.8
1400.0     1075.7     1600.0
 GR   1075.1     1741.6     1075.1     1775.3     1075.9     1800.0     1076.0
1803.5     1076.1     2000.0
 GR   1075.6     2200.0     1074.9     2400.0     1074.8     2409.9     1074.8
2452.1     1074.6     2487.3
1
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 GR   1075.3     2599.9     1074.4     2799.9     1074.7     2999.9     1074.2
3079.2     1074.6     3105.6
 GR   1074.4     3130.0     1074.2     3199.9     1074.1     3399.9     1074.0
3599.9     1073.9     3755.6
 GR   1074.0     3799.9     1074.2     3818.4     1076.4     3846.7     1076.8
3872.9     1076.1     3883.9
 GR   1076.1     3898.8     1075.6     3949.7     1076.0     3999.9

 NH        4      0.130     1843.1       0.50     2400.0       0.035     2940.0
0.030     4378.5
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1     6.52         36     2750.0     2999.9      500.0      500.0      500.0
 X3        0          0          0          0          0     4035.5     1076.4
 GR   1077.7     1000.0     1076.4     1132.4     1076.9     1178.7     1076.8
1400.0     1076.7     1600.0
 GR   1075.8     1800.0     1075.7     1804.7     1075.9     1843.1     1077.9
1878.3     1078.3     2000.0
 GR   1077.3     2200.0     1076.0     2400.0     1075.9     2463.8     1075.4
2474.0     1075.2     2513.0
 GR   1075.8     2541.2     1075.9     2599.9     1076.0     2750.0     1076.1
2799.9     1075.4     2940.0
 GR   1075.5     2999.9     1075.4     3199.9     1075.8     3399.9     1076.0
3599.9     1076.3     3698.2
 GR   1075.7     3781.6     1074.4     3799.9     1074.3     3801.8     1074.0
3819.4     1074.4     3871.2
 GR   1075.0     3893.8     1075.2     3999.9     1075.5     4013.7     1076.4
4035.2     1076.6     4199.9
 GR   1077.0     4378.5

 NH        4      0.130     2929.5       0.020     3020.0       0.50     3999.9
0.040     4700.0
 X1     6.61         38     3020.0     3300.0      490.0      470.0      490.0
 GR   1078.2     1000.0     1078.5     1137.9     1077.3     1185.1     1077.3
1272.6     1077.9     1400.0
 GR   1077.9     1571.4     1077.2     1583.2     1077.2     1600.0     1077.3
1626.0     1077.1     1800.0
 GR   1077.2     2000.0     1077.0     2200.0     1076.6     2279.2     1076.9
2400.0     1076.7     2599.9
 GR   1076.6     2799.9     1075.8     2929.5     1076.0     2975.7     1076.1
2999.9     1076.1     3020.0
 GR   1076.2     3199.9     1076.0     3300.0     1075.3     3399.9     1075.2
3445.4     1076.0     3576.3
 GR   1076.7     3599.9     1077.1     3611.4     1077.5     3799.9     1077.0
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3999.9      1076.9      4199.9
 GR   1076.6     4232.0     1075.0     4266.3     1075.1     4324.6     1075.6
4399.9      1075.8      4424.6
 GR   1076.0     4520.0     1078.0     4650.0     1079.0     4700.0

 NH        4      0.130     2978.8      0.020     3039.6      0.130     4655.0
0.060      4800.0
 X1     6.70         39     3170.0     3370.0      500.0      500.0      500.0
 GR   1079.1     1000.0     1078.8     1042.4     1079.0     1200.0     1078.7
1600.0      1078.5      1648.2
 GR   1078.6     1787.1     1078.7     1800.0     1079.2     2000.0     1079.1
2200.0      1077.9      2329.8
 GR   1077.7     2365.6     1078.6     2400.0     1079.0     2423.6     1079.5
2599.9      1078.5      2799.9
 GR   1077.7     2978.8     1077.2     2994.2     1077.2     2999.9     1077.1
3026.3      1077.7      3039.6
 GR   1077.7     3170.0     1077.7     3199.9     1077.5     3370.0     1077.4
3399.9      1078.3      3534.4
 GR   1077.3     3538.5     1077.8     3599.9     1077.8     3600.5     1076.3
3672.7      1076.3      3702.2
 GR   1077.0     3719.0     1077.2     3799.9     1077.4     3999.9     1076.4
4199.9      1076.0      4336.5
 GR   1076.5     4399.9     1076.8     4599.9     1077.8     4655.0     1078.5
4800.0

 NC       .1        .13        .02
 X1     6.80         44     2940.0     3050.0      500.0      500.0      500.0
 GR   1079.7     1000.0     1079.9     1200.0     1079.8     1400.0     1079.5
1603.6      1078.6      1611.3
 GR   1078.9     1659.5     1079.1     1800.0     1078.4     1953.5     1078.5
1986.0      1079.1      2000.0
 GR   1079.1     2007.4     1079.1     2142.5     1078.6     2187.2     1078.8
2200.0      1079.0      2225.7
 GR   1078.7     2266.4     1079.4     2335.3     1079.4     2400.0     1078.8
2599.9      1078.4      2799.9
 GR   1078.2     2940.0     1078.0     2999.9     1078.1     3050.0     1078.1
3199.9      1078.9      3260.7
 GR   1078.6     3302.6     1077.9     3313.2     1077.9     3399.9     1077.9
3403.7      1078.5      3415.2
 GR   1078.5     3455.4     1077.7     3468.5     1077.7     3599.9     1077.2
3627.4      1077.1      3661.6
 GR   1077.7     3724.7     1077.7     3799.9     1077.7     3999.9     1077.5
4199.9      1077.0      4267.1
 GR   1077.5     4332.8     1078.0     4399.9     1079.0     4442.4     1079.6
4469.1
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 NH        4      0.130     1600.0      0.060     2320.0      0.020     2599.9
0.060      3966.7
          WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION
          5.86. FLOW PATH FOR OVER SPILL IS 21ST.AVE.
 X1     6.88         30     2320.0     2599.9      420.0      420.0      420.0
 GR   1093.4     1000.0     1079.0     1040.0     1079.0     1093.5     1079.0
1383.4      1078.9      1389.3
 GR   1078.9     1400.0     1078.9     1424.1     1079.6     1600.0     1078.7
1759.9      1080.0      1796.2
 GR   1080.0     1800.0     1079.1     1987.2     1078.2     2000.0     1078.2
2002.8      1078.4      2200.0
 GR   1079.1     2320.0     1079.0     2599.9     1078.6     2799.9     1078.4
2999.9      1078.4      3110.0
 GR   1083.1     3144.5     1081.4     3199.9     1078.2     3292.0     1077.7
3399.9      1077.3      3599.9
 GR   1077.0     3696.0     1077.3     3767.6     1077.8     3799.9     1079.0
3966.2      1079.2      3966.7

 NC       .06        .06        .02
          WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION
          5.86. FLOW PATH FOR OVER SPILL IS 21ST.AVE.
 X1     6.94         36     2400.0     2660.0      360.0      360.0      360.0
 GR   1101.2     1000.0     1101.2     1014.6     1103.6     1031.8     1080.8
1137.7      1079.3      1220.0
 GR   1079.3     1225.0     1079.5     1400.0     1079.7     1572.6     1079.4
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1600.0      1079.5      1800.0
 GR   1079.1     1882.6     1079.1     1962.3     1079.2     2000.0     1079.4
2186.7      1078.7      2200.0
 GR   1078.6     2204.6     1078.6     2230.0     1079.4     2245.5     1080.2
2400.0      1079.7      2465.1
 GR   1078.7     2501.1     1078.9     2599.9     1079.0     2660.0     1079.5
2799.9      1079.4      2999.9
 GR   1078.9     3199.9     1078.3     3399.9     1077.7     3599.9     1077.3
3799.9      1077.3      3801.5
 GR   1077.9     3824.3     1076.9     3841.3     1077.8     3858.7     1077.9
3923.4      1080.0      3999.9
 GR   1082.0     4051.0

 NC      .13        .06        .02
          WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION
          5.86. FLOW PATH FOR OVER SPILL IS 21ST.AVE.
 X1     7.01         36     2865.0     3100.0      360.0      360.0      400.0
 GR   1082.1     1000.0     1081.4     1182.3     1081.4     1200.0     1082.0
1400.0      1081.9      1600.0
 GR   1081.4     1794.4     1080.1     1800.0     1079.9     1806.0     1079.8
1853.2      1079.9      2000.0
 GR   1079.5     2200.0     1079.6     2400.0     1079.0     2480.0     1079.5
2505.7      1079.7      2599.9
 GR   1079.5     2799.9     1079.5     2806.5     1079.5     2865.0     1079.5
2999.9      1079.5      3100.0
 GR   1079.5     3168.5     1079.5     3199.9     1079.4     3399.9     1079.5
3454.6      1079.5      3487.2
 GR   1079.4     3575.9     1079.9     3599.9     1080.0     3621.4     1080.0
3799.9      1079.9      3999.9
 GR   1079.4     4199.9     1078.7     4399.9     1078.5     4453.1     1078.6
4524.8      1081.0      4599.9
 GR   1081.0     4642.0

 X1     7.11         50     2846.6     2950.0      500.0      500.0      530.0
 X3        0          0          0          0          0     4723.7     1081.5
 GR   1082.0     1000.0     1081.7     1200.0     1081.5     1233.4     1081.1
1265.1      1081.5      1286.4
 GR   1081.5     1400.0     1081.5     1600.0     1081.3     1800.0     1081.1
1857.6      1080.9      1867.2
 GR   1080.9     1911.5     1080.9     1920.5     1080.9     2000.0     1080.8
2200.0      1080.6      2399.9
 GR   1080.0     2537.2     1080.0     2563.0     1080.4     2575.4     1080.4
2599.9      1080.3      2799.9
 GR   1080.3     2846.6     1079.8     2863.9     1079.8     2887.0     1080.2
2905.0      1080.3      2950.0
 GR   1080.0     3184.1     1080.0     3199.9     1080.4     3399.9     1080.0
3515.0      1080.0      3553.5
 GR   1080.2     3566.5     1080.2     3599.9     1080.1     3799.9     1080.0
3841.7      1079.9      3848.8
 GR   1079.9     3884.5     1080.1     3896.9     1080.1     3999.9     1080.3
4037.1      1079.9      4056.7
 GR   1080.3     4120.1     1080.0     4181.8     1080.1     4199.9     1079.9
4399.9      1079.9      4408.2
 GR   1080.1     4506.3     1080.4     4567.3     1080.4     4599.9     1081.5
4723.7      1081.3      4741.4
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 QT        1     1691.0
 X1     7.20         21     2999.9     3140.0      450.0      470.0      470.0
 GR   1082.7     1000.0     1082.6     1200.0     1082.5     1400.0     1082.3
1800.0      1081.9      2080.0
 GR   1081.6     2180.0     1081.7     2399.9     1081.6     2599.9     1081.6
2799.9      1081.5      2999.9
 GR   1081.4     3140.0     1081.0     3399.9     1080.9     3599.9     1080.8
3799.9      1080.8      3999.9
 GR   1080.6     4199.9     1080.5     4399.9     1080.5     4599.9     1081.4
4799.9      1082.2      4999.9
 GR   1082.2     5016.6

 NH        6      0.130     3325.0      0.020     3450.0      0.130     3999.9
0.50      4981.7       0.035
 NH   5100.0      0.130     5697.1
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 X1     7.29          58      3325.0      3450.0       490.0       500.0       500.0
 GR   1083.0      1000.0      1083.7      1200.0      1083.6      1297.5      1083.3
1400.0       1083.7       1600.0
 GR   1083.7      1609.0      1083.8      1647.0      1082.8      1667.9      1083.4
1691.2       1083.3       1800.0
 GR   1082.6      1952.8      1082.6      1978.9      1083.2      1991.8      1083.2
2000.0       1082.9       2200.0
 GR   1082.3      2292.1      1082.3      2313.6      1082.7      2330.4      1082.7
2399.9       1082.3       2599.9
 GR   1082.1      2615.6      1082.1      2661.2      1082.4      2799.9      1081.7
2996.5       1081.7       2999.9
 GR   1081.7      3026.6      1082.0      3045.2      1082.3      3176.7      1082.1
3199.9       1081.5       3325.0
 GR   1081.6      3382.7      1082.1      3396.2      1082.1      3450.0      1081.8
3599.9       1081.4       3716.1
 GR   1081.4      3741.1      1081.8      3753.0      1081.7      3799.9      1082.0
3916.2       1082.9       3923.0
 GR   1083.2      3972.9      1083.1      3999.9      1082.5      4199.9      1081.9
4399.9       1081.9       4599.9
 GR   1082.1      4799.9      1080.6      4981.7      1080.6      4999.9      1080.6
5035.7       1080.9       5048.4
 GR   1080.9      5100.0      1080.8      5213.0      1080.9      5276.2      1082.5
5399.8       1082.6       5599.8
 GR   1081.6      5610.9      1081.2      5624.8      1082.7      5697.1

 NH         5       0.130      3170.0       0.020      3280.0       0.130      3799.9
0.020       5070.8        0.130
 NH    6032.6
 X1     7.38          59      3170.0      3280.0       490.0       490.0       490.0
 GR   1084.6      1000.0      1083.5      1158.3      1083.5      1188.6      1084.4
1387.2       1084.4       1400.0
 GR   1083.7      1512.7      1083.1      1556.9      1083.1      1600.0      1083.1
1800.0       1083.2       2000.0
 GR   1082.9      2143.6      1083.1      2160.2      1083.1      2200.0      1082.9
2399.9       1082.8       2462.1
 GR   1082.3      2476.9      1082.3      2520.1      1082.8      2535.1      1082.7
2599.9       1082.5       2799.9
 GR   1082.3      2846.2      1082.0      2858.5      1082.0      2887.2      1082.5
2999.9       1082.5       3030.6
 GR   1082.2      3170.0      1082.2      3204.1      1082.0      3216.2      1082.0
3244.5       1082.2       3280.0
 GR   1082.2      3399.9      1082.3      3556.4      1082.0      3576.6      1082.0
3599.9       1082.0       3600.6
 GR   1082.4      3618.8      1082.7      3757.2      1084.1      3786.3      1083.9
3799.9       1083.7       3999.9
 GR   1083.1      4199.9      1083.0      4399.9      1083.4      4599.9      1082.3
4799.9       1082.4       4846.0
 GR   1081.9      4899.7      1082.3      4955.2      1082.3      4999.9      1082.0
5070.8       1081.6       5079.6
 GR   1082.0      5199.8      1082.1      5399.8      1082.2      5599.8      1082.1
5799.8       1081.7       5891.0
 GR   1082.0      5964.2      1082.3      5999.8      1083.5      6032.2      1083.5
6032.6

 NH         8       0.130      3080.0       0.020      3199.9       0.130      3693.0
0.035       3799.9         0.50
 NH    4199.9       0.020      4349.4       0.100      4817.8       0.130      6469.9
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1     7.48          60      3080.0      3199.9       500.0       500.0       500.0
 X3        0           0           0      5700.0      1084.0
 GR   1085.3      1000.0      1084.5      1074.4      1084.7      1200.0      1084.7
1600.0       1083.8       1735.6
 GR   1084.0      1768.1      1084.4      1800.0      1084.4      2000.0      1084.2
2200.0       1083.7       2381.5
 GR   1083.0      2394.6      1083.0      2399.9      1083.0      2437.9      1083.4
2599.9       1082.7       2771.6
 GR   1082.6      2796.9      1082.7      2799.9      1083.1      2999.9      1083.1
3080.0       1082.3       3132.1
 GR   1082.3      3158.5      1083.0      3180.5      1083.0      3199.9      1083.2
3399.9       1083.3       3476.6
 GR   1082.7      3496.3      1082.7      3518.3      1083.3      3533.7      1083.3
3599.9       1083.1       3663.6
 GR   1083.7      3693.0      1083.8      3736.5      1079.4      3741.5      1079.2
3799.9       1081.1       3999.9
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 GR   1085.6      4199.9      1082.8      4349.4      1080.7      4356.5      1080.6
4399.9       1080.7       4406.6
 GR   1083.0      4414.2      1085.0      4541.6      1085.0      4599.9      1085.2
4788.5       1084.9       4799.9
 GR   1083.8      4817.8      1083.4      4985.2      1082.5      4992.2      1082.5
4999.9       1082.4       5058.8
 GR   1083.0      5199.8      1083.4      5399.8      1083.4      5599.8      1084.0
5700.0       1083.2       5999.8
 GR   1083.5      6199.8      1084.1      6332.8      1084.5      6399.8      1084.6
6406.3       1085.8       6469.9

 NH         5      0.130      2160.0       0.020      2280.0       0.130      2778.0
0.020       4137.8         0.130
 NH    5602.3
 X1      7.57           52      2160.0      2280.0       500.0       500.0       500.0
 GR   1086.5      1000.0      1085.9      1038.5      1087.7      1069.7      1085.1
1200.0       1084.1       1400.0
 GR   1083.6      1460.6      1083.9      1512.2      1084.8      1574.0      1084.9
1600.0       1084.5       1795.9
 GR   1084.4      1800.0      1083.7      1851.1      1083.7      1873.1      1084.5
1896.9       1084.5       2000.0
 GR   1084.6      2050.0      1084.2      2160.0      1084.1      2200.0      1083.4
2208.2       1083.4       2233.3
 GR   1084.2      2280.0      1084.5      2399.9      1084.6      2407.9      1084.1
2554.8       1083.8       2567.4
 GR   1083.8      2593.6      1084.1      2599.9      1084.3      2606.6      1084.5
2753.0       1085.3       2778.0
 GR   1085.4      2799.9      1084.7      2887.9      1084.7      2999.9      1084.4
3199.9       1084.4       3399.9
 GR   1085.0      3599.9      1084.4      3799.9      1084.7      3999.9      1084.8
4055.0       1083.6       4072.9
 GR   1083.8      4137.8      1084.2      4199.9      1084.5      4399.9      1084.7
4599.9       1085.0       4799.9
 GR   1084.9      4999.9      1084.9      5199.8      1085.1      5399.8      1085.1
5410.4       1085.4       5442.9
 GR   1086.3      5599.8      1086.4      5602.3

 NH         5       0.130      2421.0       0.020      2540.0       0.130      3040.0
0.020       4399.9         0.130
 NH    5510.5
 X1      7.66           48      2421.0      2540.0       480.0       480.0       480.0
 GR   1087.7      1000.0      1087.3      1020.1      1088.5      1064.8      1086.8
1111.2       1086.8       1200.0
 GR   1086.3      1400.0      1086.4      1600.0      1086.3      1643.2      1085.2
1675.6       1085.4       1721.4
 GR   1085.5      1800.0      1085.2      2000.0      1085.1      2045.4      1084.8
2053.8       1084.8       2077.2
 GR   1085.3      2097.5      1085.3      2200.0      1085.2      2397.4      1085.1
2399.9       1084.5       2421.0
 GR   1084.5      2438.3      1085.1      2453.3      1085.3      2540.0      1085.1
2768.4       1084.8       2777.5
 GR   1084.8      2797.2      1084.8      2799.9      1085.3      2813.7      1085.2
2958.8       1086.2       2999.9
 GR   1086.3      3040.0      1086.0      3199.9      1085.7      3399.9      1086.3
3599.9       1086.4       3799.9
 GR   1084.9      3999.9      1085.4      4199.9      1085.7      4271.0      1084.8
4285.1       1084.8       4342.9
 GR   1085.1      4355.5      1085.2      4399.9      1085.1      4599.9      1085.4
4799.9       1085.8       4999.9
 GR   1086.1      5199.8      1086.4      5399.8      1086.7      5510.5

 QT         1     1375.0
 NH         4       0.130      2480.0       0.020      2525.0       0.130      2999.9
0.035       5610.8
 X1      7.71           27      2480.0      2525.0       220.0       220.0       220.0
 GR   1087.8      1000.0      1085.9      1188.6      1086.7      1200.0      1086.5
1366.9       1086.5       1400.0
 GR   1086.4      1600.0      1085.9      1800.0      1085.7      2000.0      1085.5
2200.0       1085.5       2480.0
 GR   1085.5      2525.0      1085.6      2799.9      1085.9      2999.9      1086.3
3199.9       1086.9       3399.9
 GR   1087.0      3599.9      1086.7      3799.9      1086.5      3999.9      1086.2
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4199.9      1085.7      4399.9
 GR   1085.9     4599.9      1086.2      4799.9      1086.5      4999.9      1087.1
5199.8      1087.7      5399.8
 GR   1088.0     5599.8      1088.1      5610.8

 NH        4      0.130      2369.1       0.020      2430.0       0.130      2973.0
0.035      4878.2
 X1     7.80          52      2369.1      2430.0       490.0       490.0       490.0
 GR   1090.6     1000.0      1090.9      1084.3      1088.6      1111.0      1088.6
1235.4      1090.1      1244.2
 GR   1090.8     1312.8      1088.1      1400.0      1087.5      1414.6      1088.1
1600.0      1088.1      1620.5
 GR   1087.3     1630.5      1087.3      1673.6      1087.9      1800.0      1087.9
2000.0      1087.7      2200.0
 GR   1087.8     2357.9      1087.2      2369.1      1087.2      2398.7      1087.3
2399.9      1087.9      2430.0
 GR   1087.8     2599.9      1087.7      2799.9      1087.6      2929.6      1087.3
2936.7      1087.6      2973.0
 GR   1087.8     2999.9      1088.1      3179.5      1087.7      3199.9      1087.4
3221.4      1088.3      3331.1
 GR   1087.6     3373.3      1087.7      3399.9      1087.4      3527.8      1088.4
3599.9      1088.9      3614.6
1
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 GR   1087.7     3642.9      1087.5      3693.7      1085.9      3739.4      1087.1
3799.9      1088.4      3883.7
 GR   1088.5     3999.9      1088.1      4057.2      1088.8      4199.9      1088.8
4215.4      1088.0      4243.7
 GR   1088.3     4309.8      1088.4      4399.9      1088.5      4599.9      1088.7
4743.6      1090.7      4796.8
 GR   1090.8     4799.9      1091.5      4878.2

 NH        5      0.130      2425.0       0.020      2460.0       0.130      2999.9
0.035      3999.9       0.130
 NH   5184.3
 X1     7.89          49      2425.0      2460.0       500.0       500.0       500.0
 GR   1090.5     1000.0      1090.2      1200.0      1089.2      1400.0      1089.4
1671.5      1089.0      1685.6
 GR   1088.8     1800.0      1089.0      2000.0      1089.2      2200.0      1089.5
2425.0      1089.5      2430.0
 GR   1089.3     2435.0      1089.4      2460.0      1089.3      2799.9      1088.5
2983.2      1088.7      2999.9
 GR   1088.9     3010.7      1089.2      3026.7      1088.3      3099.3      1089.0
3199.9      1088.9      3265.2
 GR   1090.9     3293.1      1088.3      3343.8      1087.9      3399.9      1087.3
3445.4      1088.7      3599.9
 GR   1089.2     3675.4      1088.5      3724.3      1088.7      3799.9      1088.8
3813.3      1090.0      3928.3
 GR   1091.3     3990.9      1091.3      3999.9      1091.3      4041.2      1090.8
4063.0      1091.1      4096.5
 GR   1092.1     4138.9      1092.5      4199.9      1092.4      4275.9      1091.7
4293.0      1091.4      4363.4
 GR   1091.7     4399.9      1091.3      4599.9      1090.9      4766.8      1090.9
4797.5      1090.9      4799.9
 GR   1091.3     4999.9      1090.8      5032.4      1090.7      5060.8      1091.0
5184.3

 NH        4       0.035      2160.0        .033      2422.2        .034      2472.3
0.130      4538.8
 X1     7.99          45      2160.0      2422.2       470.0       570.0       500.0
 GR   1091.9     1000.0      1091.6      1200.0      1091.0      1371.1      1090.2
1400.0      1090.2      1428.7
 GR   1091.0     1459.0      1091.3      1600.0      1091.3      1800.0      1091.5
2000.0      1091.7      2088.2
 GR   1092.1     2118.5      1091.1      2160.0      1090.9      2200.0      1090.7
2399.9      1090.8      2422.2
 GR   1093.5     2472.3      1093.6      2522.6      1090.6      2599.9      1090.3
2607.7      1090.6      2799.9
 GR   1090.8     2999.9      1091.0      3199.9      1091.0      3399.9      1090.9
3479.4      1092.4      3517.6
 GR   1091.4     3566.3      1091.5      3599.9      1091.6      3648.7      1094.2
3687.4      1094.4      3743.9
 GR   1092.0     3754.5      1092.3      3784.0      1093.8      3799.9      1095.7
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3844.3       1095.6       3918.3
 GR   1094.3      3928.0      1094.4      3949.3      1093.7      3975.7      1094.9
3998.7       1095.0       3999.9
 GR   1095.5      4063.6      1096.1      4078.1      1096.2      4199.9      1095.5
4399.9       1094.9       4538.8

 NH         6        .036      1165.4        .034      2216.7        .036      2690.0
.035       3896.7         0.131
 NH    4399.9         0.13      4429.9
 X1      8.08           33      2216.7      2690.0       550.0       610.0       500.0
 GR   1092.9      1000.0      1092.9      1165.4      1092.0      1200.0      1091.5
1260.8       1092.1       1285.5
 GR   1095.4      1303.8      1095.0      1346.6      1092.5      1394.7      1092.4
1400.0       1092.2       1600.0
 GR   1092.1      1800.0      1092.2      2000.0      1092.0      2086.3      1092.9
2097.5       1092.4       2111.1
 GR   1094.3      2129.3      1094.2      2200.0      1094.1      2216.7      1091.8
2269.1       1091.8       2399.9
 GR   1091.9      2599.9      1092.1      2690.0      1092.2      2999.9      1092.4
3199.9       1092.3       3399.9
 GR   1092.6      3599.9      1093.8      3799.9      1094.3      3826.1      1094.5
3896.7       1094.9       3999.9
 GR   1095.0      4199.9      1096.3      4399.9      1096.6      4429.9

 NH         4       0.130      1864.9       0.035      3799.9       0.130      4102.9
0.135       4132.9
 X1      8.18           30      2290.0      2599.9       520.0       490.0       500.0
 GR   1094.3      1000.0      1093.2      1087.8      1092.7      1105.2      1093.5
1200.0       1093.8       1400.0
 GR   1094.0      1600.0      1093.6      1800.0      1093.2      1834.1      1093.2
1864.9       1093.4       1875.2
 GR   1093.2      2000.0      1093.3      2200.0      1092.8      2290.0      1093.3
2599.9       1093.1       2799.9
 GR   1093.3      2999.9      1093.4      3199.9      1093.5      3399.9      1093.6
3599.9       1094.0       3674.3
 GR   1094.7      3714.6      1095.0      3778.5      1095.3      3799.9      1096.2
3903.5       1095.5       3950.5
 GR   1096.0      3999.9      1096.1      4040.5      1095.5      4073.1      1095.7
4102.9       1096.3       4132.9
1
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 QT         1      1210.0
 NH         4        .013      1200.0         .13      2399.9         .034      5399.8
.035       5580.8
 X1      8.23           23      2950.0      3150.0       280.0       270.0       270.0
 GR   1095.7      1000.0      1094.8      1200.0      1094.5      1400.0      1094.3
1800.0       1094.1       2000.0
 GR   1094.2      2200.0      1094.3      2399.9      1094.3      2599.9      1094.3
2799.9       1094.4       2950.0
 GR   1094.5      3150.0      1094.7      3399.9      1094.9      3599.9      1095.1
3799.9       1095.2       3999.9
 GR   1095.1      4199.9      1095.1      4399.9      1095.6      4599.9      1095.9
4799.9       1096.7       4999.9
 GR   1097.3      5199.8      1097.8      5399.8      1097.4      5580.8

 NH         4       0.020      1719.7       0.130      2970.0       0.020      3090.0
0.130       5260.0
 X1      8.32           31      2970.0      3090.0       500.0       500.0       500.0
 GR   1096.6      1000.0      1094.5      1013.9      1095.8      1081.6      1095.8
1400.0       1095.2       1600.0
 GR   1094.8      1676.6      1095.1      1719.7      1095.1      1800.0      1095.2
2000.0       1095.6       2200.0
 GR   1095.8      2333.3      1095.4      2356.5      1095.4      2383.1      1095.7
2399.9       1095.6       2599.9
 GR   1095.3      2683.8      1095.3      2719.5      1095.5      2799.9      1095.2
2970.0       1095.1       3015.6
 GR   1095.1      3051.9      1095.3      3066.3      1095.5      3090.0      1095.5
3338.5       1094.9       3369.4
 GR   1095.3      3400.4      1095.3      3800.3      1096.0      4150.0      1097.0
4540.0       1098.0       5000.0
 GR   1098.2      5260.0
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 NH        4       0.035      1850.6       0.130      3110.0       0.020      3230.0
0.130       5601.4
 X1      8.42           39      3110.0      3230.0       490.0       490.0       490.0
 GR    1097.1      1000.0      1097.6      1200.0      1096.5      1400.0      1096.5
1800.0       1096.4       1850.6
 GR    1096.9      2000.0      1096.6      2200.0      1096.5      2399.9      1096.7
2599.9       1097.0       2799.9
 GR    1096.7      2999.9      1096.7      3110.0      1096.3      3148.8      1096.4
3181.8       1096.8       3199.9
 GR    1096.8      3230.0      1096.6      3399.9      1096.8      3494.7      1096.3
3535.3       1096.4       3599.9
 GR    1096.2      3799.9      1096.3      3999.9      1096.9      4199.9      1097.2
4399.9       1097.2       4422.8
 GR    1097.4      4478.9      1099.1      4515.7      1098.4      4538.1      1098.6
4599.9       1099.4       4799.9
 GR    1099.1      4999.9      1099.4      5123.5      1101.3      5142.0      1101.3
5199.8       1101.3       5213.5
 GR    1100.5      5242.4      1101.0      5399.8      1100.7      5599.8      1100.7
5601.4

 NH        5       0.020      1524.2       0.030      2325.2       0.130      3599.9
0.020       3690.0        0.130
 NH    5648.2
 X1      8.51           43      3599.9      3690.0       500.0       500.0       500.0
 X3         0            0           0           0           0      4399.9      1100.2
 GR    1099.1      1000.0      1099.3      1200.0      1099.3      1349.4      1098.8
1524.2       1098.7       1600.0
 GR    1098.6      1800.0      1098.2      2000.0      1098.2      2176.6      1098.7
2200.0       1098.8       2212.4
 GR    1097.9      2276.3      1098.1      2325.2      1098.4      2399.9      1098.6
2599.9       1098.9       2799.9
 GR    1098.2      2954.1      1098.2      2987.4      1098.6      2999.9      1098.4
3199.9       1098.2       3399.9
 GR    1098.5      3599.9      1098.5      3614.8      1098.5      3649.2      1098.8
3690.0       1098.9       3799.9
 GR    1098.9      3809.6      1098.7      3999.9      1098.5      4199.9      1098.3
4263.3       1098.3       4295.5
 GR    1098.7      4313.7      1098.8      4351.4      1099.5      4370.2      1100.2
4399.9       1100.0       4525.6
 GR    1098.8      4533.3      1098.7      4599.9      1098.8      4799.9      1099.1
4999.9       1099.4       5199.8
 GR    1099.8      5399.8      1100.3      5599.8      1100.3      5648.2

 NC       .13          .13          .02
 X1      8.61           36      3190.0      3290.0       490.0       490.0       490.0
 GR    1101.2      1000.0      1100.2      1200.0      1100.0      1400.0      1099.4
1800.0       1099.4       1939.1
 GR    1099.6      2000.0      1099.7      2200.0      1099.9      2399.9      1099.8
2599.9       1099.8       2799.9
 GR    1100.1      2999.9      1100.2      3041.8      1100.0      3190.0      1099.9
3226.8       1100.1       3290.0
 GR    1099.9      3542.7      1099.9      3575.5      1100.3      3599.9      1100.3
3608.9       1100.5       3799.9
 GR    1100.6      3856.8      1100.5      3866.7      1100.5      3900.7      1101.7
3928.4       1102.0       3999.9
 GR    1101.7      4199.9      1101.4      4399.9      1101.1      4500.0      1100.8
4569.2       1101.3       4599.9
 GR    1101.3      4724.2      1101.4      4799.9      1102.1      4999.9      1102.7
5199.8       1103.2       5399.8
1
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 GR    1103.2      5569.2

 X1      8.70           43      3170.0      3270.0       500.0       500.0       500.0
 GR    1103.4      1000.0      1102.1      1146.8      1102.1      1175.3      1102.3
1400.0       1102.3       1600.0
 GR    1101.9      1800.0      1101.2      1859.5      1101.4      1915.5      1102.2
2000.0       1101.8       2200.0
 GR    1101.9      2399.9      1101.3      2527.6      1101.3      2560.8      1101.9
2593.3       1101.9       2599.9
 GR    1101.7      2799.9      1101.6      2999.9      1101.4      3170.0      1101.4
3199.9       1101.5       3270.0
 GR    1101.6      3399.9      1101.9      3599.9      1102.0      3735.5      1102.1
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3778.5      1102.2      3799.9
 GR   1102.6     3925.0     1103.9     3948.3      1104.2      3999.9      1104.5
4199.9      1103.9      4399.9
 GR   1103.6     4469.4     1103.8     4532.4      1105.5      4599.9      1105.8
4618.6      1104.4      4755.0
 GR   1104.5     4799.9     1104.2     4999.9      1105.0      5199.8      1104.9
5399.8      1105.0      5595.1
 GR   1105.1     5599.8     1105.7     5627.6      1105.5      5717.9

 X1      8.79          42     2975.0     3080.0       500.0       500.0       500.0
 GR   1104.6     1000.0     1104.6     1016.4      1104.5      1062.7      1104.2
1400.0      1104.2      1600.0
 GR   1104.0     1681.2     1103.3     1692.0      1103.3      1738.1      1103.5
1800.0      1103.4      2000.0
 GR   1103.0     2200.0     1103.0     2400.0      1103.1      2600.0      1102.9
2692.6      1103.0      2729.2
 GR   1103.2     2800.0     1103.3     2881.4      1103.4      2975.0      1103.4
3023.3      1103.0      3030.4
 GR   1103.1     3062.1     1103.5     3080.0      1103.5      3200.0      1103.6
3400.0      1104.0      3600.0
 GR   1104.0     3663.7     1103.8     3670.7      1103.8      3701.5      1104.1
3714.1      1104.2      3800.0
 GR   1104.6     4000.0     1105.8     4200.0      1105.4      4286.2      1106.5
4302.8      1106.4      4366.4
 GR   1107.3     4387.7     1107.3     4400.0      1107.3      4568.6      1106.8
4575.8      1107.0      4600.0
 GR   1107.1     4800.0     1107.3     4968.3

 X1      8.89          34     3110.0     3187.3       500.0       500.0       500.0
 GR   1107.6     1000.0     1107.6     1063.2      1106.6      1088.6      1106.4
1200.0      1106.4      1400.0
 GR   1106.2     1600.0     1105.3     1795.2      1105.3      1800.0      1105.3
1848.6      1105.3      2000.0
 GR   1104.8     2092.8     1104.7     2178.9      1104.7      2200.0      1104.7
2210.9      1105.0      2400.0
 GR   1105.1     2600.0     1105.1     2800.0      1105.3      3000.0      1105.2
3110.0      1104.9      3134.8
 GR   1105.1     3166.1     1105.5     3187.3      1105.5      3200.0      1105.6
3400.0      1105.7      3600.0
 GR   1105.3     3779.9     1105.5     3800.0      1105.5      3805.5      1105.7
4000.0      1105.9      4200.0
 GR   1107.4     4400.0     1108.0     4408.1      1108.6      4469.9      1109.0
4498.9

 X1      8.98          63     3900.0     4000.0       500.0       500.0       500.0
 GR   1108.2     1000.0     1108.1     1010.0      1108.0      1020.0      1107.9
1040.0      1107.9      1050.0
 GR   1107.9     1060.0     1107.9     1070.0      1107.8      1080.0      1107.8
1090.0      1107.7      1100.0
 GR   1107.8     1690.0     1107.8     1700.0      1107.8      1710.0      1107.8
1720.0      1107.8      1730.0
 GR   1107.8     1740.0     1107.9     1750.0      1107.9      1760.0      1107.9
1770.0      1107.9      1780.0
 GR   1107.9     1790.0     1107.9     1800.0      1108.0      1810.0      1108.0
1820.0      1108.0      1830.0
 GR   1108.0     1840.0     1108.0     1850.0      1108.1      1860.0      1108.1
1870.0      1108.1      1880.0
 GR   1108.1     1890.0     1108.1     1900.0      1108.1      1910.0      1108.1
1920.0      1107.7      1930.0
 GR   1107.5     1940.0     1107.5     1944.3      1107.3      1944.4      1107.2
2144.3      1107.1      2344.3
 GR   1107.0     2544.3     1106.6     2744.3      1106.3      2944.3      1106.2
3144.3      1106.3      3344.3
 GR   1106.5     3544.3     1106.6     3744.3      1106.0      3900.0      1106.0
3944.3      1106.0      3965.8
 GR   1106.5     4000.0     1106.7     4344.3      1107.1      4544.3      1107.1
4572.1      1106.9      4578.8
 GR   1106.8     4604.1     1107.3     4744.3      1107.8      4944.3      1108.9
5144.3      1109.6      5208.7
 GR   1109.5     5269.8     1110.0     5344.3      1110.3      5366.4

          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
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          PATH OF CAVE CREEK WASH
 X1      9.08          66      3900.0      4000.0       500.0       500.0       500.0
 X3         0           0           0      2600.0      1109.0
 GR    1109.0      1000.0      1109.0      1010.0      1109.0      1020.0      1109.0
1040.0       1109.0       1050.0
 GR    1109.3      1700.0      1109.3      1710.0      1109.4      1720.0      1109.4
1730.0       1109.4       1740.0
 GR    1109.4      1750.0      1109.5      1760.0      1109.5      1770.0      1109.5
1780.0       1109.5       1790.0
 GR    1109.4      1800.0      1109.4      1810.0      1109.4      1820.0      1109.4
1830.0       1109.4       1840.0
 GR    1109.4      1850.0      1109.5      1860.0      1109.5      1870.0      1109.5
1880.0       1109.5       1890.0
 GR    1109.6      1900.0      1109.6      1904.3      1109.5      1910.0      1109.2
1920.0       1108.9       1926.9
 GR    1108.9      1930.0      1108.9      1935.4      1108.8      1935.5      1108.7
2135.4       1108.0       2263.7
 GR    1108.2      2286.8      1108.7      2335.4      1108.5      2535.4      1108.5
2589.3       1109.0       2600.0
 GR    1108.6      2735.4      1108.4      2935.4      1107.9      3135.4      1107.4
3272.2       1107.4       3303.2
 GR    1107.7      3335.4      1107.4      3535.4      1107.5      3735.4      1107.3
3900.0       1107.3       3935.4
 GR    1107.3      3959.2      1107.7      4000.0      1107.8      4135.4      1108.0
4335.4       1108.4       4535.4
 GR    1108.2      4574.3      1108.3      4599.7      1109.3      4735.4      1109.7
4935.4       1110.9       5135.4
 GR    1110.9      5202.7      1110.8      5262.7      1111.5      5275.3      1112.1
5335.4       1112.1       5535.4
 GR    1112.8      5681.6

 QT         1      1237.0
 NC       .13         .13         .035
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1      9.17          45      3663.7      3880.0       500.0       500.0       520.0
 X3         0           0           0      2400.0      1112.0
 GR    1110.9      1000.0      1110.9      1010.0      1110.9      1020.0      1111.0
1040.0       1111.1       1050.0
 GR    1111.1      1650.0      1111.0      1651.5      1111.0      1660.0      1111.0
1663.7       1110.7       1663.8
 GR    1110.7      1863.7      1110.5      2063.7      1110.7      2263.7      1110.7
2305.7       1111.0       2360.9
 GR    1112.4      2400.0      1111.5      2463.7      1110.8      2663.7      1110.5
2863.7       1110.5       2971.0
 GR    1110.1      2984.4      1110.1      3014.4      1110.9      3028.6      1110.9
3063.7       1110.3       3263.7
 GR    1110.0      3463.7      1110.2      3663.7      1109.6      3880.0      1110.2
4063.7       1110.8       4263.7
 GR    1110.9      4291.0      1110.6      4294.1      1110.6      4325.2      1110.8
4337.6       1110.7       4463.7
 GR    1110.9      4582.8      1110.8      4647.6      1111.1      4662.3      1111.1
4663.7       1111.7       4863.7
 GR    1111.9      4924.5      1112.3      4986.1      1112.5      5063.7      1113.3
5263.7       1113.8       5394.1

 NC       .13         .13         .02
 X1      9.27          43      2700.0      2776.7       500.0       500.0       500.0
 GR    1114.6      1000.0      1114.6      1026.0      1113.2      1067.7      1112.7
1092.6       1112.7       1105.4
 GR    1114.7      1113.5      1114.7      1200.0      1114.7      1375.6      1113.6
1396.8       1113.6       1400.0
 GR    1113.5      1450.0      1113.0      1600.0      1112.5      1800.0      1112.0
1896.2       1111.9       1940.3
 GR    1111.9      2000.0      1111.4      2200.0      1111.5      2400.0      1111.3
2700.0       1111.1       2730.8
 GR    1110.9      2741.7      1110.8      2767.4      1111.3      2776.7      1111.3
2880.0       1111.5       3000.0
 GR    1111.7      3200.0      1111.7      3400.0      1111.7      3429.3      1111.5
3434.9       1111.5       3461.0
 GR    1111.8      3472.6      1112.1      3600.0      1112.1      3608.2      1112.8
3614.8       1112.6       3793.1
 GR    1112.6      3800.0      1112.6      3827.7      1113.6      4000.0      1113.6
4014.2       1113.7       4077.2
 GR    1114.3      4200.0      1115.5      4400.0      1115.8      4525.1
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 NC      .16         .16         .16
 X1     9.36          31      2450.0      2700.0       500.0       500.0       500.0
 GR   1114.8      1000.0      1114.5      1200.0      1114.7      1226.6      1115.1
1400.0       1114.3       1568.8
 GR   1114.3      1589.5      1114.6      1600.0      1114.2      1800.0      1113.7
1907.2       1113.6       2000.0
 GR   1113.4      2200.0      1113.2      2450.0      1113.1      2600.0      1112.8
2700.0       1112.9       3000.0
 GR   1112.6      3200.0      1112.5      3233.3      1113.4      3254.8      1113.0
3273.2       1112.8       3400.0
 GR   1113.6      3600.0      1113.7      3625.7      1113.8      3657.7      1114.8
3698.0       1115.0       3800.0
 GR   1114.4      3845.7      1114.5      3908.4      1114.9      3939.0      1114.8
4000.0       1115.9       4200.0
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 GR   1116.4      4255.3

 NH         4       0.160      2332.1       0.090      3600.0       0.160      5605.0
0.165       5611.8
 X1     9.45          45      3600.0      3940.0       470.0       500.0       470.0
 X3        0           0           0      2483.2      1116.5
 GR   1116.5      1000.0      1116.5      1010.0      1116.5      1020.0      1116.5
1040.0       1116.6       1050.0
 GR   1116.5      1660.0      1116.3      1667.7      1116.2      1670.0      1116.0
1673.6       1116.0       1680.0
 GR   1115.9      1683.2      1115.8      1683.3      1116.1      1883.2      1116.2
2083.2       1116.0       2283.2
 GR   1115.9      2332.1      1116.3      2375.2      1116.5      2483.2      1116.5
2681.9       1116.5       2683.2
 GR   1116.4      2689.8      1116.4      2712.7      1116.5      2883.2      1115.9
3000.4       1115.9       3029.8
 GR   1115.8      3083.2      1115.5      3283.2      1115.4      3600.0      1115.3
3683.0       1115.0       3883.2
 GR   1114.9      3940.0      1115.1      4283.2      1115.1      4306.2      1115.4
4483.2       1115.5       4683.2
 GR   1115.7      4883.2      1116.0      4947.0      1116.2      5012.0      1116.9
5054.9       1116.9       5083.2
 GR   1117.6      5283.2      1118.1      5483.2      1117.9      5597.3      1120.6
5605.0       1120.7       5611.8

 NC     0.090       0.160       0.160
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
 X1     9.55          32      2800.0      3140.0       500.0       500.0       500.0
 X3        0           0           0      1535.0      1118.2
 GR   1117.1      1000.0      1117.2      1177.4      1117.2      1200.0      1117.9
1491.9       1118.2       1535.0
 GR   1118.1      1600.0      1117.9      1800.0      1117.8      1829.8      1117.8
1857.9       1118.2       1869.5
 GR   1118.4      2000.0      1117.6      2200.0      1117.1      2400.0      1116.8
2511.7       1116.8       2540.9
 GR   1117.0      2600.0      1116.7      2800.0      1116.7      2803.8      1116.7
2832.0       1116.5       3000.0
 GR   1116.4      3140.0      1116.5      3400.0      1116.5      3467.9      1116.6
3495.5       1117.1       3508.0
 GR   1116.9      3600.0      1117.0      3800.0      1117.4      3951.6      1118.2
4000.0       1118.4       4022.2
 GR   1121.0      4031.8      1121.1      4046.5

 NC      .16         .16         .16
 X1     9.61          20      3880.0      4644.6       360.0       360.0       360.0
 GR   1121.6      3000.0      1121.8      3024.7      1121.6      3041.6      1121.5
3085.6       1121.7       3101.4
 GR   1121.9      3116.6      1121.9      3301.4      1121.8      3501.4      1121.4
3701.4       1120.0       3880.0
 GR   1119.1      4101.4      1119.2      4301.4      1118.5      4501.4      1118.6
4644.6       1118.8       4701.4
 GR   1119.1      4901.4      1119.0      5101.4      1119.9      5301.4      1120.0
5501.4       1120.2       5587.5
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     SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS
L-BANK ELEV
     Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA
R-BANK ELEV
     TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN
SSTA
     SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR
TOPWID     ENDST


 *PROF 1
0

 CCHV=      .100 CEHV=      .300
 *SECNO 4.790
 3280 CROSS SECTION       4.79 EXTENDED        .01 FEET

          THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
          FLOODWAY MODEL, CAVE.FLDWY.2.  THIS MODEL UTILIZES THE SPLIT FLOW
          AND X3 CARDS.  THE X3 CARDS ARE USED TO SET CROSS-SECTION "BOUNDARIES"
          AT TOPOGRAPICALLY HIGH GROUND THAT CONTAINS THE Q100-YR  WITHIN THE
          CROSS-SECTION.
          CROSS-SECTION EXTENDED MESSAGES OCCUR AT LOCATIONS OF WEIR FLOW.
      4.790       7.81    1059.21        .00    1059.21    1059.21        .00        .00
.00    1054.40
     2523.0     1847.0      363.7      312.3     7962.9      357.5     1990.7         .0
.0    1055.40
        .00        .23       1.02        .16       .130       .025       .130       .000
1051.40    1189.95
     .000047         0.         0.         0.          0          0          0        .00
2443.45    3633.40


 FLOW DISTRIBUTION FOR SECNO=       4.79          CWSEL=    1059.21

 STA=     1190.     1305.     1400.     1447.     1600.     1800.     2000.     2200.     2400.
2600.     2760.     2850.     3000.
   PER Q=       3.8       5.4       3.7       6.3       9.7      10.8      10.3       8.6       7.9
6.7      14.4       3.9
    AREA=     473.5     545.5     328.3     724.1    1042.0    1112.0    1082.0     972.0     922.0
761.6     357.5     541.1
     VEL=        .2        .3        .3        .2        .2        .2        .2        .2        .2
.2       1.0        .2
   DEPTH=       4.1       5.8       6.9       4.7       5.2       5.6       5.4       4.9       4.6
4.8       4.0       3.6

 STA=     3000.     3200.     3600.     3633.
   PER Q=       4.4       4.0        .1
    AREA=     652.0     775.5      22.1
     VEL=        .2        .1        .1
   DEPTH=       3.3       1.9        .7

 *SECNO 4.890
      4.890       5.54    1059.24        .00        .00    1059.24        .00        .03
.00    1056.80
     2523.0     2260.5      179.6       82.9    10335.8      233.8      655.2      138.3
35.2    1057.00
        .61        .22        .77        .13       .130       .025       .130       .000
1053.70    1174.06
     .000054       570.       500.       500.          2          0          0        .00
3100.46    4274.53


 FLOW DISTRIBUTION FOR SECNO=       4.89          CWSEL=    1059.24
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     SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS
L-BANK ELEV
     Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA
R-BANK ELEV
     TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN
SSTA
     SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR
TOPWID     ENDST


 STA=     1174.     1400.     1600.     1771.     2000.     2200.     2400.     2461.     2600.
2685.     2800.     3000.     3200.
   PER Q=       5.0       6.5       5.5      11.2      10.7      11.4       3.4       6.0       4.0
4.9       6.9       6.1
    AREA=     701.8     781.9     664.4    1146.4    1057.1    1097.1     333.7     645.7     413.8
528.7     816.7     757.1
     VEL=        .2        .2        .2        .2        .3        .3        .3        .2        .2
.2        .2        .2
   DEPTH=       3.1       3.9       3.9       5.0       5.3       5.5       5.4       4.7       4.9
4.6       4.1       3.8

 STA=     3200.     3400.     3800.     3900.     4200.     4275.
   PER Q=       3.7       4.5       7.1       3.1        .2
    AREA=     557.1     834.2     233.8     590.4      64.8
     VEL=        .2        .1        .8        .1        .1
   DEPTH=       2.8       2.1       2.3       2.0        .9

 *SECNO 4.950

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .64

      4.950      6.86   1059.26       .00       .00   1059.27       .00       .02
.00   1056.80
     2523.0    2066.4     213.2     243.4    7338.2     172.4    1573.1     210.1
59.3   1056.80
       .85       .28      1.24       .15      .130      .025      .130      .000
1052.40   1086.15
    .000130      315.      315.      250.         2         0         0       .00
3925.13   5011.28


 FLOW DISTRIBUTION FOR SECNO=      4.95          CWSEL=   1059.26

 STA=     1086.     1600.     1800.     2000.     2142.     2400.     2600.     2800.     2876.
2933.     3000.     3200.     3400.
   PER Q=       6.2       4.3       5.8       4.6       9.2       9.4       9.2       3.2       3.1
3.7       9.8       8.2
    AREA=     816.5     468.7     560.7     428.8     820.8     752.6     742.6     265.2     232.1
278.1     772.6     692.6
     VEL=        .2        .2        .3        .3        .3        .3        .3        .3        .3
.3        .3        .3
   DEPTH=       1.6       2.3       2.8       3.0       3.2       3.8       3.7       3.5       4.0
4.2       3.9       3.5

 STA=     3400.     3580.     3650.     4000.     4800.     5011.
   PER Q=       5.2       8.5       4.4       4.1       1.1
    AREA=     506.7     172.4     584.4     780.6     208.1
     VEL=        .3       1.2        .2        .1        .1
   DEPTH=       2.8       2.5       1.7       1.0       1.0

 *SECNO 4.980

 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
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TOPWID    ENDST


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .32

      4.980      2.82   1059.32       .00       .00   1059.33       .01       .06
.00   1058.50
     2523.0    2337.5     137.7      47.9    3990.4      73.7     154.6     239.9
77.0   1058.50
       .94       .59      1.87       .31      .130      .025      .130      .000
1056.50    676.34
    .001289      200.      175.      170.         3         0         0       .00
4064.98   5109.32


 FLOW DISTRIBUTION FOR SECNO=      4.98          CWSEL=   1059.32

 STA=     676.    1400.    2000.    2200.    2400.    2451.    2600.    2800.    3000.
3200.    3400.    3600.    4760.
   PER Q=      3.5      5.6      9.6     12.3      4.4     11.3     11.8     10.9      9.2
7.3      4.2      2.5
    AREA=    325.8    270.0    383.8    443.8    138.1    375.8    433.8    413.6    373.8
323.8    233.8    274.5
     VEL=       .3       .5       .6       .7       .8       .8       .7       .7       .6
.6       .5       .2
   DEPTH=       .5       .5      1.9      2.2      2.7      2.5      2.2      2.1      1.9
1.6      1.2       .2

 STA=    4760.    4850.    5109.
   PER Q=      5.5      1.9
    AREA=     73.7    154.6
     VEL=      1.9       .3
   DEPTH=       .8       .6

 *SECNO 5.030

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .08

      5.030       .97   1059.87       .00       .00   1059.91       .03       .57
.01   1060.00
      941.5        .2       1.2     940.0       1.2       1.2     662.6     255.2
93.4    1059.80
        .99       .19      1.03      1.42      .130      .025      .130      .000
1058.90   2960.88
    .026813      270.      270.      280.         3         0         0       .00
1177.53   4348.60


 FLOW DISTRIBUTION FOR SECNO=      5.03          CWSEL=   1059.87

 STA=    2961.    2995.    3240.    3400.    3510.    3600.    3800.    4000.    4200.
4349.
   PER Q=       .0       .1      3.6      8.5      8.1     17.9     28.5     28.5      4.8
    AREA=      1.2      1.2     43.0     62.5     55.8    123.8    163.8    163.8     49.8
     VEL=       .2      1.0       .8      1.3      1.4      1.4      1.6      1.6       .9
   DEPTH=       .0       .0       .3       .6       .6       .6       .8       .8       .3

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     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS
L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA
R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN
SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR
TOPWID    ENDST
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 *SECNO 5.070
 3280 CROSS SECTION       5.07 EXTENDED        .59 FEET


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.83


 3470 ENCROACHMENT STATIONS=     2332.5    4736.7  TYPE=      1  TARGET=    -2332.500
  ELENCL=   1063.10  ELENCR= 100000.00
          WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SECTION
          4.98.  FLOW PATH FOR OVER SPILL(WEIR FLOW) IS THE I-10 FREEWAY
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      5.070      1.49   1060.79       .00        .00   1060.80       .02        .90
.00   1059.60
      941.5     473.0      84.7     383.7    1054.6      29.8     660.6     260.7
100.8   1059.60
       1.07       .45      2.84       .58      .130      .025      .130      .000
1059.30   2707.06
     .001825      210.      190.      190.         3         0         0       .00
2029.64   4736.70


 FLOW DISTRIBUTION FOR SECNO=    5.07          CWSEL=   1060.79

 STA=     2707.    3200.    3400.    3600.    3682.    3800.    4000.    4200.    4225.
4290.    4600.    4694.    4737.
   PER Q=      3.1      3.7      6.2      4.5      7.0     11.9     13.8      9.0      4.5
24.4      8.9      2.9
    AREA=    132.9    107.2    147.2     84.8    128.2    217.2    237.2     29.8     77.1
398.5    135.5     49.6
     VEL=       .2       .3       .4       .5       .5       .5       .5      2.8       .5
.6       .6       .5
   DEPTH=       .3       .5       .7      1.0      1.1      1.1      1.2      1.2      1.2
1.3      1.4      1.2

 *SECNO 5.100

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .51


 3470 ENCROACHMENT STATIONS=     2859.4    5039.9  TYPE=      1  TARGET=     2180.500
  ELENCL=   1063.20  ELENCR=   1061.90
          WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
          FOR OVER SPILL IS THE I-10 FREEWAY
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
     5.100      1.04   1061.34       .00        .00   1061.52       .19        .67
.05   1060.90
      980.0     337.2     462.3     180.6     598.5      92.9     185.4     266.7
110.0   1060.30
       1.09       .56      4.97       .97      .130      .025      .130      .000
1060.30   3065.43
     .007720      200.      200.      200.         2         0         0       .00
1963.52   5028.95


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


 FLOW DISTRIBUTION FOR SECNO=      5.10          CWSEL=   1061.34

 STA=     3065.    3600.    4000.    4149.    4400.    4600.    4730.    4830.    5000.
5029.
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   PER Q=       6.0       4.3       3.2       5.0       9.6       6.2      47.2      17.0       1.5
    AREA=     132.8     103.8      58.5      94.0     126.9      82.5      92.9     167.3      18.1
     VEL=        .4        .4        .5        .5        .7        .7       5.0       1.0        .8
   DEPTH=        .2        .3        .4        .4        .6        .6        .9       1.0        .6

 *SECNO 5.200
 3280 CROSS SECTION      5.20 EXTENDED       .36 FEET


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.00


 3470 ENCROACHMENT STATIONS=     4170.9    5839.8  TYPE=      1  TARGET=    -4170.900
  ELENCL=   1065.80  ELENCR= 100000.00
          WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
          FOR OVER SPILL IS THE I-10 FREEWAY
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
     5.200      1.46   1063.26       .00       .00   1063.32       .06      1.78
.01   1062.00
    1020.6     340.1     397.2     283.3     670.3     125.7     447.4     278.9
128.4   1062.00
      1.18       .51      3.16       .63      .130      .025      .130      .000
1061.80   4585.89
    .002085      500.      500.      500.         4         0         0       .00
1253.91   5839.80


 FLOW DISTRIBUTION FOR SECNO=      5.20          CWSEL=   1063.26

 STA=    4586.    4740.    4800.    5000.    5200.    5400.    5500.    5600.    5800.
5806.    5840.
   PER Q=       .7      1.0      6.4     11.2     14.0     38.9      8.0     18.0       .6
1.2
    AREA=     36.2     30.5    151.2    211.2    241.2    125.7    130.3    281.2      8.9
26.9
     VEL=       .2       .3       .4       .5       .6      3.2       .6       .7       .6
.4
   DEPTH=       .2       .5       .8      1.1      1.2      1.3      1.3      1.4      1.4
.8

 *SECNO 5.250

 3470 ENCROACHMENT STATIONS=     3999.9    5894.3  TYPE=      1  TARGET=    -3999.900
  ELENCL=   1065.00  ELENCR= 100000.00
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
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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


     5.250      1.75   1063.95       .00       .00   1064.05       .10       .72
.01   1062.60
    1105.4     548.6     430.7     126.1     834.3     107.7     218.0     286.8
136.9   1062.60
      1.22       .66      4.00       .58      .130      .025      .130      .000
1062.20   4415.32
    .003046      290.      280.      285.         2         0         0       .00
1303.74   5719.06


 FLOW DISTRIBUTION FOR SECNO=      5.25          CWSEL=   1063.95

 STA=    4415.    4600.    4800.    5000.    5200.    5350.    5430.    5551.    5719.
   PER Q=       1.6      4.8      8.6     18.7     15.8     39.0      8.7      2.8
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    AREA=      59.6    119.2    169.2    269.2    217.1    107.7    138.4     79.6
     VEL=        .3       .4       .6       .8       .8      4.0       .7       .4
   DEPTH=        .3       .6       .8      1.3      1.4      1.3      1.1       .5

 *SECNO 5.310

 3470 ENCROACHMENT STATIONS=     2999.9    5106.3  TYPE=      1  TARGET=    -2999.900
  ELENCL=   1066.60  ELENCR= 100000.00
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      5.310      1.71   1064.81       .00       .00   1064.84       .02       .78
.01   1064.00
     1105.4     455.8     136.8     512.8     523.4     106.3     350.0     293.8
145.6   1063.50
       1.28       .87      1.29      1.47      .060      .060      .060      .000
1063.10   3721.60
    .002486       290.      280.      280.         2         0         0       .00
1341.72   5063.31


 FLOW DISTRIBUTION FOR SECNO=      5.31          CWSEL=   1064.81

 STA=    3722.    3800.    4000.    4200.    4400.    4600.    4670.    4770.    4800.
5000.    5063.
   PER Q=       .4       6.2       9.9       7.4      11.3       6.1      12.4       6.7      37.4
2.3
    AREA=      12.3      92.7     122.7     102.6     132.6      60.5     106.3      45.2     272.6
32.1
     VEL=       .4       .7        .9        .8        .9       1.1       1.3       1.6       1.5
.8
   DEPTH=       .2       .5        .6        .5        .7        .9       1.1       1.5       1.4
.5

 *SECNO 5.380

 3470 ENCROACHMENT STATIONS=     3599.9    5698.7  TYPE=      1  TARGET=    -3599.900
  ELENCL=   1067.70  ELENCR= 100000.00
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      5.380      1.65   1066.05       .00       .00   1066.10       .05      1.26
.01   1065.10
     1105.4     178.0     220.6     706.9     386.6     106.6     355.4     302.2
158.7   1065.00
       1.35       .46      2.07      1.99      .130      .045      .045      .000
1064.40   4148.62
    .004089       400.      400.      400.         2         0         0       .00
1503.75   5652.37


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


 FLOW DISTRIBUTION FOR SECNO=      5.38          CWSEL=   1066.05

 STA=    4149.    4400.    4600.    4800.    5000.    5130.    5240.    5400.    5600.
5652.
   PER Q=       .6       1.8       2.9       4.9       5.9      20.0      33.2      29.2       1.5
    AREA=      31.6      60.3      80.3     110.3     104.2     106.6     168.1     170.2      17.1
     VEL=       .2        .3        .4        .5        .6       2.1       2.2       1.9       1.0
   DEPTH=       .1        .3        .4        .6        .8       1.0       1.1        .9        .3

 *SECNO 5.480

 3265 DIVIDED FLOW
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 3280 CROSS SECTION      5.48 EXTENDED       .76 FEET

          WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
          FOR OVER SPILL IS THE I-10 FREEWAY. IN THIS MODEL IT IS ASSUMED THAT
          THE SOUTHER PACIFIC RAILROAD DOES NOT FUNCTION AS A LEVEE AND HAS
          FAILED ALLOWING FLOW TO FOLLOW ITS NATURAL COURSE.
      5.480      2.76   1067.26       .00       .00   1067.27       .01      1.16
.00   1066.40
      472.4     112.9      97.2     262.3     388.7     113.5     364.7     312.2
174.6   1066.40
       1.57       .29       .86       .72      .130      .045      .060      .000
1064.50   4038.95
    .000889      500.      500.      520.         6         0         0       .00
1247.03   5505.70


 FLOW DISTRIBUTION FOR SECNO=      5.48          CWSEL=   1067.26

 STA=    4039.    4400.    4600.    4710.    4850.    5117.    5123.    5135.    5200.
5400.    5454.    5506.
   PER Q=      3.5     12.4      8.1     20.6     12.1      3.7      5.3      9.6     17.7
3.2      4.0
    AREA=     95.2    182.2    111.3    113.5     59.5     13.8     22.0     62.8    142.2
30.5     34.0
     VEL=       .2       .3       .3       .9      1.0      1.3      1.1       .7       .6
.5       .6
   DEPTH=       .3       .9      1.0       .8       .2      2.3      1.9      1.0       .7
.6       .7

 *SECNO 5.570

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.19

      5.570      2.28   1068.38       .00       .00   1068.39       .01      1.12
.00   1066.60
     1890.0    1021.8     312.3     556.0    1102.9     218.4     840.4     329.9
193.4   1066.80
       1.72       .93      1.43       .66      .130      .080      .130      .000
1066.10   1035.58
    .002968      450.      500.      580.         3         0         0       .00
1914.47   2974.71


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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=      5.57          CWSEL=   1068.38

 STA=    1036.    1200.    1357.    1406.    1600.    1700.    1830.    2000.    2200.
2323.    2773.    2975.
   PER Q=      3.3     14.8      6.2     20.8      9.0     16.5     10.8      7.5      6.3
3.9      1.0
    AREA=    121.7    294.7    109.9    393.6    183.0    218.4    251.6    216.0    159.6
154.3     59.0
     VEL=       .5       .9      1.1      1.0       .9      1.4       .8       .7       .8
.5       .3
   DEPTH=       .7      1.9      2.2      2.0      1.8      1.7      1.5      1.1      1.3
.3       .3

 *SECNO 5.670
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 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.87

      5.670      1.94   1069.14       .00       .00   1069.15       .01       .75
.00   1067.30
     1890.0    1242.3     225.7     422.0    1606.7     329.1     808.3     359.3
217.7   1068.10
       1.93       .77       .69       .52       .080      .080      .080      .000
1067.20   1069.93
     .000846      530.      500.      520.         2         0         0       .00
2138.17   3208.11


 FLOW DISTRIBUTION FOR SECNO=      5.67          CWSEL=   1069.14

 STA=    1070.    1200.    1400.    1800.    2050.    2280.    2400.    2600.    2800.
3000.    3200.    3208.
   PER Q=      2.1     13.6     31.3     18.7     11.9      5.2      6.0      4.2      5.5
1.4       .0
    AREA=     93.0    336.2    732.3    445.2    329.1    153.7    206.0    166.1    196.1
86.1       .1
     VEL=       .4       .8       .8       .8       .7       .6       .6       .5       .5
.3        .0
   DEPTH=       .7      1.7      1.8      1.8      1.4      1.3      1.0       .8      1.0
.4        .0

 *SECNO 5.760

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .43

      5.760      1.63   1069.93       .00       .00   1069.96       .04       .81
.01   1068.50
     1890.0    1408.9     353.0     128.1     866.6     245.4     156.8     381.7
236.2   1068.90
       2.01       1.63      1.44       .82       .080      .080      .080      .000
1068.30   1802.13
     .004563      490.      500.      470.         2         0         0       .00
1194.44   2996.57


 FLOW DISTRIBUTION FOR SECNO=      5.76          CWSEL=   1069.93

 STA=    1802.    1847.    2000.    2200.    2400.    2600.    2740.    2997.
   PER Q=      1.9     21.7     26.9     24.0     18.7      5.5      1.3
    AREA=     34.3    241.2    305.5    285.5    245.4    101.9     54.9
     VEL=      1.0      1.7      1.7      1.6      1.4      1.0       .4
   DEPTH=       .8      1.6      1.5      1.4      1.2       .7       .2

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


 *SECNO 5.860

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.88

      5.860      1.78   1071.08       .00       .00   1071.12       .03      1.15
.00   1069.80
     1890.0    1066.6     479.7     343.7     647.1     291.7     980.9     400.6
256.3   1070.60
       2.12       1.65      1.64       .35       .035      .035      .130      .000
1069.30   1350.51
     .001287      540.      500.      490.         3         0         0       .00
2243.10   3593.61
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 FLOW DISTRIBUTION FOR SECNO=      5.86          CWSEL=   1071.08

 STA=     1351.     1397.     1400.     1600.     1800.     2000.     2260.     2369.     2390.
2450.     2940.     3540.     3594.
   PER Q=       1.0        .1       6.4      18.2      30.8      25.4       2.9        .8       1.5
7.7        5.2        .1
    AREA=      20.5       2.0     114.9     214.9     294.9     291.7     122.3      30.2      64.5
403.9     344.6      15.4
     VEL=         .9       1.3       1.1       1.6       2.0       1.6        .4        .5        .4
.4         .3         .2
   DEPTH=         .4        .8        .6       1.1       1.5       1.1       1.1       1.4       1.1
.8         .6         .3

 1490 NH CARD USED
 *SECNO 5.950

 3470 ENCROACHMENT STATIONS=          .0    3765.7  TYPE=       1  TARGET=     3765.699
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      5.950      1.73   1071.43       .00       .00   1071.44       .01       .32
.00   1070.80
     1005.9     311.3     112.1     582.4     360.3     166.9    1061.6     420.2
278.2   1070.20
       2.32       .86       .67       .55       .035      .035      .042      .000
1069.70   1952.50
    .000267      510.      500.      470.         2         0         0       .00
1694.73   3647.23


 FLOW DISTRIBUTION FOR SECNO=      5.95          CWSEL=   1071.43

 STA=     1952.     2000.     2179.     2225.     2400.     2600.     2800.     3000.     3200.
3338.     3446.     3647.
   PER Q=       3.4      25.1       2.5      11.1      14.4      12.2      15.6       7.8       3.3
3.0        1.6
    AREA=      47.0     274.0      39.3     166.9     205.6     185.7     215.7     195.7     101.0
86.6      71.4
     VEL=         .7        .9        .6        .7        .7        .7        .7        .4        .3
.4         .2
   DEPTH=       1.0       1.5        .9       1.0       1.0        .9       1.1       1.0        .7
.8         .4

 1490 NH CARD USED
 *SECNO 6.050
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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


 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .26

      6.050      1.31   1071.71       .00       .00   1071.80       .09       .34
.03   1072.30
     1005.9        .0     632.1     373.8        .0     208.7     543.4     433.5
294.0   1071.10
       2.39       .00      3.03       .69       .000      .030      .107      .000
1070.40   2526.69
    .004094      560.      500.      480.         2         0         0       .00
1116.98   3930.26
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 FLOW DISTRIBUTION FOR SECNO=       6.05          CWSEL=   1071.71

 STA=    2527.    2750.    3000.    3094.    3200.    3400.    3425.    3800.    3874.
3930.
   PER Q=     62.8      8.1      5.4      7.9      4.8       .0       .9      2.7      7.4
    AREA=    208.7    153.7     81.5    107.4    103.0      1.5     27.0     49.3     20.1
     VEL=      3.0       .5       .7       .7       .5       .1       .3       .6      3.7
   DEPTH=       .9       .6       .9      1.0       .5       .1       .1       .7       .4

 1490 NH CARD USED
 *SECNO 6.140

 3265 DIVIDED FLOW

 3280 CROSS SECTION      6.14 EXTENDED       .94 FEET


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.50


 3470 ENCROACHMENT STATIONS=         .0    3724.6  TYPE=      1  TARGET=     3724.599
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      6.140      1.44   1072.94       .00       .00   1073.00       .06      1.20
.00   1072.50
      980.9     162.2     305.6     513.1     143.1     110.2     333.3     440.6
305.8   1072.00
       2.46      1.13      2.77      1.54      .030      .020      .030      .000
1071.50   2299.07
    .001737       490.      480.      450.         4         0         0       .00
1105.40   3670.58


 FLOW DISTRIBUTION FOR SECNO=       6.14          CWSEL=   1072.94

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


 STA=    2299.    2800.    2861.    3000.    3130.    3200.    3400.    3600.    3671.
   PER Q=      3.2      3.9      9.4     31.2     11.1     17.6     20.1      3.5
    AREA=     43.3     29.6     70.2    110.2     58.9    118.5    128.5     27.3
     VEL=       .7      1.3      1.3      2.8      1.8      1.5      1.5      1.3
   DEPTH=       .1       .5       .5       .8       .8       .6       .6       .4

 *SECNO 6.230

 3470 ENCROACHMENT STATIONS=         .0    3999.9  TYPE=      1  TARGET=     3999.899
      6.230      1.50   1073.70       .00       .00   1073.74       .04       .73
.00   1073.00
      980.9     117.8     288.0     575.0     242.8     111.9     672.8     449.8
321.4   1073.00
       2.56       .49      2.57       .85      .060      .020      .060      .000
1072.20   2323.94
    .001259       500.      500.      500.         2         0         0       .00
1621.56   3945.50


 FLOW DISTRIBUTION FOR SECNO=       6.23          CWSEL=   1073.70

 STA=    2324.    2751.    3000.    3059.    3175.    3400.    3469.    3499.    3600.
3800.    3945.
   PER Q=      7.2      3.4      1.4     29.4     13.9      8.4      5.3     13.1     15.1
2.8
    AREA=    139.1     77.1     26.6    111.9    180.1     83.2     45.3    125.7    180.2
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58.3
     VEL=       .5       .4       .5      2.6       .8      1.0      1.2      1.0       .8
.5
   DEPTH=       .3       .3       .5      1.0       .8      1.2      1.5      1.3       .9
.4

 1490 NH CARD USED
 *SECNO 6.330

 3470 ENCROACHMENT STATIONS=         .0    3778.0  TYPE=      1  TARGET=     3777.999
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      6.330      1.06   1074.36       .00       .00   1074.40       .03       .66
.00   1073.60
      980.9     209.9     270.0     501.0     431.2     107.8     543.6     461.9
340.1   1073.40
       2.67       .49      2.50       .92      .069      .020      .060      .000
1073.30   2090.71
     .001383      500.      500.      500.         3         0         0       .00
1634.84   3725.55


 FLOW DISTRIBUTION FOR SECNO=      6.33          CWSEL=   1074.36

 STA=    2091.    2375.    2600.    2800.    3000.    3050.    3175.    3399.    3600.
3666.    3726.
   PER Q=      3.9      3.1      6.2      6.2      2.1     27.5     21.5     20.9      5.8
2.9
    AREA=    124.0     71.4    102.5    102.5     30.7    107.8    226.8    213.5     63.5
39.7
     VEL=       .3       .4       .6       .6       .7      2.5       .9      1.0       .9
.7
   DEPTH=       .4       .3       .5       .5       .6       .9      1.0      1.1      1.0
.7

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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


 1490 NH CARD USED
 *SECNO 6.420

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=         .0    3999.9  TYPE=      1  TARGET=     3999.899
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      6.420      1.04   1074.94       .00       .00   1074.97       .03       .58
.00   1074.70
      980.9      55.2      90.7     835.0     133.1      63.3     594.8     472.7
357.0   1074.40
       2.78       .41      1.43      1.40      .052      .020      .030      .000
1073.90   2389.82
     .000972      500.      500.      500.         1         0         0       .00
1298.47   3827.86


 FLOW DISTRIBUTION FOR SECNO=      6.42          CWSEL=   1074.94

 STA=    2390.    3000.    3130.    3200.    3400.    3600.    3756.    3800.    3828.
   PER Q=      5.6      9.2      5.2     21.1     25.7     23.9      6.8      2.4
    AREA=    133.1     63.3     44.4    157.1    177.1    153.5     43.7     18.9
     VEL=       .4      1.4      1.1      1.3      1.4      1.5      1.5      1.3
   DEPTH=       .2       .5       .6       .8       .9      1.0      1.0       .7
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 1490 NH CARD USED
 *SECNO 6.520

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .49


 3470 ENCROACHMENT STATIONS=          .0    4035.5  TYPE=       1  TARGET=     4035.499
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      6.520       1.76    1075.76    1075.64        .00    1075.88        .11        .88
.03    1076.00
      980.9       39.7       36.5      904.7       27.5       32.2      323.3      479.4
369.3    1075.50
       2.83       1.44       1.13       2.80       .035       .033       .030       .000
1074.00    1801.63
     .004118       500.       500.       500.          6         11          0        .00
851.88    4020.04


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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=       6.52          CWSEL=    1075.76

 STA=     1802.     2513.     2540.     3000.     3200.     3383.     3800.     3819.     3871.
3894.     4000.     4020.
   PER Q=       3.2        .9       3.7       9.5       3.5       3.4      13.8      35.4       8.1
17.4       1.1
    AREA=      20.0       7.5      32.2      63.1      33.4      13.4      31.1      81.1      24.1
70.6       6.6
     VEL=       1.5       1.2       1.1       1.5       1.0       2.5       4.3       4.3       3.3
2.4       1.6
   DEPTH=        .0        .3        .2        .3        .2        .0       1.6       1.6       1.1
.7        .3

 1490 NH CARD USED
 *SECNO 6.610

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.78

      6.610       1.89    1076.89        .00        .00    1076.90        .01       1.01
.01    1076.10
      980.9      246.5       18.8      715.6      260.6      211.5      793.5      488.4
383.6    1076.00
       2.98        .95        .09        .90       .038       .500       .071       .000
1075.00    2222.31
     .001306       490.       490.       470.          3          0          0        .00
1741.60    4577.68


 FLOW DISTRIBUTION FOR SECNO=       6.61          CWSEL=    1076.89

 STA=     2222.     2930.     2976.     3000.     3020.     3300.     3576.     4266.     4325.
4400.     4425.     4520.     4578.
   PER Q=       4.1      12.4       4.9       3.7       1.9       4.9       5.7      22.0      21.1
4.5       12.8       2.0
    AREA=     178.9      45.6      20.3      15.8     211.5     366.6      54.9     107.1     115.8
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29.3      94.2      25.6
     VEL=        .2       2.7       2.4       2.3        .1        .1       1.0       2.0       1.8
1.5       1.3        .8
   DEPTH=        .3       1.0        .8        .8        .8       1.3        .1       1.8       1.5
1.2       1.0        .4

 1490 NH CARD USED
 *SECNO 6.700

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .62

      6.700       1.88   1077.88        .00        .00   1077.90        .01       1.00
.00   1077.70
      980.9      120.7       14.8      845.4       67.3       53.4    1167.1      503.1
403.4   1077.50
       3.14       1.79        .28        .72       .026       .130       .130       .000
1076.00   2333.05
     .003407       500.       500.       500.          1          0          0        .00
1709.10   4671.94


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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=       6.70          CWSEL=    1077.88

 STA=     2333.     3000.     3026.     3170.     3370.     3673.     3702.     3800.     4000.
4200.     4337.     4400.     4600.
   PER Q=       3.1       6.9       2.3       1.5       5.3       4.3       5.3       5.5      13.2
22.1       9.8      19.3
    AREA=      17.8      19.3      30.1      53.4     111.4      46.7      83.9     116.4     196.4
229.7     103.5     246.4
     VEL=       1.7       3.5        .7        .3        .5        .9        .6        .5        .7
.9         .9         .8
   DEPTH=         .0        .7        .2        .3        .4       1.6        .9        .6       1.0
1.7       1.6       1.2

 STA=     4600.     4672.
   PER Q=       1.5
    AREA=      32.7
     VEL=        .5
   DEPTH=        .5

 *SECNO 6.800

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.60

      6.800       1.88   1078.88        .00        .00   1078.90        .02       1.00
.00   1078.20
      980.9       56.7      207.8      716.4      198.4       88.7    1516.2      520.8
425.5   1078.10
       3.30        .29       2.34        .47       .100       .020       .130       .000
1077.00   1608.87
     .001323       500.       500.       500.          0          0          0        .00
2149.67   4437.47


 FLOW DISTRIBUTION FOR SECNO=       6.80          CWSEL=    1078.88
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 STA=    1609.    2940.    3050.    3200.    3400.    3600.    3662.    3725.    3800.
4000.    4200.    4267.    4333.
   PER Q=      5.8     21.2      4.2      4.4      8.5      5.8      5.2      4.2     11.2
12.9      6.5      6.3
    AREA=    198.4     88.7    117.5    121.0    192.9     98.7     93.6     89.0    236.8
256.8    109.8    107.3
     VEL=       .3      2.3       .4       .4       .4       .6       .5       .5       .5
.5       .6       .6
   DEPTH=       .1       .8       .8       .6      1.0      1.6      1.5      1.2      1.2
1.3      1.6      1.6

 STA=    4333.    4400.    4437.
   PER Q=      3.5       .4
    AREA=     76.1     16.6
     VEL=       .5       .2
   DEPTH=      1.1       .4

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


 1490 NH CARD USED
 *SECNO 6.880

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.72

          WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION
          5.86. FLOW PATH FOR OVER SPILL IS 21ST.AVE.
      6.880      2.20   1079.20       .00       .00   1079.21       .01       .30
.00   1079.10
      980.9     118.6      17.6     844.7     355.5      40.6    1323.8     537.8
447.5   1079.00
       3.50       .33       .43       .64      .064      .020      .060      .000
1077.00   1039.46
     .000446      420.      420.      420.         2         0         0       .00
2412.32   3966.69


 FLOW DISTRIBUTION FOR SECNO=      6.88          CWSEL=   1079.20

 STA=    1039.    2200.    2320.    2600.    3000.    3110.    3400.    3600.    3696.
3768.    3800.    3966.
   PER Q=     10.4      1.7      1.8      8.1      4.0      8.8     25.7     16.9     12.6
3.9      6.1
    AREA=    302.1     53.4     40.6    218.0     87.5    150.9    339.0    196.5    146.4
53.1    132.2
     VEL=       .3       .3       .4       .4       .4       .6       .7       .8       .8
.7       .4
   DEPTH=       .3       .4       .1       .5       .8       .5      1.7      2.0      2.0
1.6       .8

 *SECNO 6.940

 3265 DIVIDED FLOW

          WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION
          5.86. FLOW PATH FOR OVER SPILL IS 21ST.AVE.
      6.940      2.52   1079.42       .00       .00   1079.44       .02       .23
.00   1080.20
     1257.5      38.4     141.5    1077.5     110.6      98.3    1166.8     550.6
465.3   1079.00
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      3.60       .35      1.44       .92      .060      .020      .060      .000
1076.90   1213.57
    .000870      360.      360.      360.         2         0         0       .00
1896.40   3978.67


 FLOW DISTRIBUTION FOR SECNO=      6.94          CWSEL=   1079.42

 STA=    1214.    2246.    2660.    3400.    3600.    3800.    3824.    3841.    3859.
3923.    3979.
   PER Q=      3.1     11.3     10.1     20.8     34.4      3.9      3.2      3.4      7.9
2.0
    AREA=    110.6     98.3    241.5    283.4    383.4     44.8     34.3     36.0    101.4
41.9
     VEL=       .3      1.4       .5       .9      1.1      1.1      1.2      1.2      1.0
.6
   DEPTH=       .1       .5       .3      1.4      1.9      1.8      2.0      2.1      1.6
.8

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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 7.010

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .60

          WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION
          5.86. FLOW PATH FOR OVER SPILL IS 21ST.AVE.
     7.010      1.52   1080.02       .00       .00   1080.07       .05       .62
.01   1079.50
    1553.0     176.0     359.7    1017.3     427.8     122.6     775.6     561.9
484.8   1079.50
      3.66       .41      2.93      1.31      .130      .020      .060      .000
1078.50   1802.35
    .003713      360.      400.      360.         4         0         0       .00
2766.94   4569.29


 FLOW DISTRIBUTION FOR SECNO=      7.01          CWSEL=   1080.02

 STA=    1802.    2400.    2600.    2865.    3100.    3200.    3400.    3487.    3576.
4200.    4400.    4453.    4525.
   PER Q=      4.4      3.8      3.1     23.2      3.3      7.7      3.2      3.4      4.5
18.5      9.3     13.3
    AREA=    192.2    117.3    118.3    122.6     52.1    114.3     48.3     50.7    103.0
194.3     75.6    105.5
     VEL=       .4       .5       .4      2.9      1.0      1.0      1.0      1.0       .7
1.5      1.9      2.0
   DEPTH=       .3       .6       .4       .5       .5       .6       .6       .6       .2
1.0      1.4      1.5

 STA=    4525.    4569.
   PER Q=      2.4
    AREA=     31.6
     VEL=      1.2
   DEPTH=       .7

 *SECNO 7.110

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.98


 3470 ENCROACHMENT STATIONS=         .0    4723.7  TYPE=      1  TARGET=     4723.699
     7.110      1.27   1081.07       .00       .00   1081.10       .03      1.03
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.00   1080.30
     1865.0      150.3      287.1     1427.7      489.6      104.0     1606.5      582.2
517.0   1080.30
       3.79        .31       2.76        .89       .130       .020       .060       .000
1079.80   1858.65
     .001371       500.       530.       500.          3          0          0        .00
2817.55   4676.20


 FLOW DISTRIBUTION FOR SECNO=       7.11          CWSEL=    1081.07

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


 STA=     1859.     2537.     2800.     2847.     2950.     3184.     3400.     3515.     3600.
3800.     3885.     4000.     4120.
   PER Q=       3.5       3.9        .7      15.4      10.2       8.8       4.6       4.1       8.7
4.9       5.6       5.4
    AREA=     252.4     200.9      36.3     104.0     217.2     192.6     101.1      83.5     185.6
93.0     114.1     113.8
     VEL=        .3        .4        .4       2.8        .9        .9        .8        .9        .9
1.0        .9        .9
   DEPTH=        .4        .8        .8       1.0        .9        .9        .9       1.0        .9
1.1       1.0        .9

 STA=     4120.     4200.     4400.     4506.     4600.     4676.
   PER Q=       3.6      11.1       6.0       3.0        .6
    AREA=      75.9     215.6     115.5      72.6      25.9
     VEL=        .9       1.0       1.0        .8        .4
   DEPTH=       1.0       1.1       1.1        .8        .3

 *SECNO 7.200
      7.200       1.28    1081.78        .00        .00    1081.80        .02        .70
.00   1081.50
     1691.0       21.2       68.0     1601.8      146.3       46.9     1609.4      603.6
546.7   1081.40
       3.92        .15       1.45       1.00       .130       .020       .060       .000
1080.50   2118.36
     .001635       450.       470.       470.          1          0          0        .00
2777.77   4896.13


 FLOW DISTRIBUTION FOR SECNO=       7.20          CWSEL=    1081.78

 STA=     2118.     3000.     3140.     3400.     3600.     3800.     4000.     4200.     4400.
4600.     4800.     4896.
   PER Q=       1.3       4.0       6.3       8.8      10.6      11.5      13.6      16.8      18.0
8.8        .4
    AREA=     146.3      46.9     152.0     167.0     187.0     197.0     217.0     247.0     257.0
167.0      18.5
     VEL=        .1       1.4        .7        .9       1.0       1.0       1.1       1.2       1.2
.9        .3
   DEPTH=        .2        .3        .6        .8        .9       1.0       1.1       1.2       1.3
.8        .2

 1490 NH CARD USED
 *SECNO 7.290

 3265 DIVIDED FLOW

      7.290       2.05    1082.65        .00        .00    1082.68        .03        .88
.00   1081.50
     1691.0      167.3      297.2     1226.4      484.0      103.9     1772.8      627.5
580.6   1082.10
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       4.05        .35       2.86        .69       .130       .020       .102       .000
1080.60   1941.74
    .001895       490.       500.       500.          3          0          0        .00
3169.88   5694.72


 FLOW DISTRIBUTION FOR SECNO=       7.29          CWSEL=   1082.65

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

 STA=     1942.     2997.     3325.     3450.     3716.     3916.     4982.     5000.     5036.
5048.     5100.     5213.     5276.
   PER Q=       4.5       5.4      17.6       6.1       5.0       4.3       6.6      13.0       4.0
14.3       8.9       5.0
    AREA=     257.8     226.2     103.9     227.1     179.1     612.2      37.3      73.4      24.1
90.3     203.5     113.8
     VEL=        .3        .4       2.9        .5        .5        .1       3.0       3.0       2.8
2.7        .7        .7
   DEPTH=        .2        .7        .8        .9        .9        .6       2.1       2.1       1.9
1.8       1.8       1.8

 STA=     5276.     5400.     5695.
   PER Q=       3.3       2.0
    AREA=     117.5      94.3
     VEL=        .5        .4
   DEPTH=       1.0        .3

 1490 NH CARD USED
 *SECNO 7.380

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.57

      7.380       1.63    1083.23        .00        .00    1083.24        .02        .56
.00   1082.20
     1691.0      170.9      273.7     1246.3      706.0      123.3     1969.7      656.5
620.8   1082.20
       4.21        .24       2.22        .63       .130       .020       .067       .000
1081.60   1547.63
    .000768       490.       490.       490.          3          0          0        .00
3968.59   6024.80


 FLOW DISTRIBUTION FOR SECNO=       7.38          CWSEL=   1083.23

 STA=     1548.     2800.     3000.     3170.     3280.     3556.     4400.     4800.     4846.
4900.     4955.     5000.     5071.
   PER Q=       4.0       3.7       2.4      16.2       5.2       4.2       6.0       4.5       7.4
8.2       4.8       9.7
    AREA=     365.0     196.6     144.4     123.3     275.7     204.0      90.7      40.4      57.8
62.5      41.4      76.3
     VEL=        .2        .3        .3       2.2        .3        .3       1.1       1.9       2.2
2.2       2.0       2.2
   DEPTH=        .3       1.0        .8       1.1       1.0        .2        .2        .9       1.1
1.1        .9       1.1

 STA=     5071.     5200.     5400.     5600.     5800.     5964.     6025.
   PER Q=       4.4       4.9       4.2       4.2       5.1        .9
    AREA=     183.9     235.2     215.2     215.2     221.6      49.9
     VEL=        .4        .4        .3        .3        .4        .3
   DEPTH=       1.4       1.2       1.1       1.1       1.3        .8
```

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


 1490 NH CARD USED
 *SECNO 7.480

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .17


 3470 ENCROACHMENT STATIONS=     5700.0    6469.9  TYPE=      1  TARGET=    -5700.000
  ELENCL=   1084.00  ELENCR= 100000.00
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      7.480       5.10   1084.30        .00        .00   1084.38        .08       1.12
.02   1084.00
     1691.0      225.3      204.5     1261.2      284.3       37.2     1036.3      680.3
665.1   1084.00
       4.29        .79       5.50       1.22       .130       .020       .124       .000
1079.20   1675.49
     .026046       500.       500.       500.          1          0          0        .00
3756.08   6368.03


 FLOW DISTRIBUTION FOR SECNO=       7.48          CWSEL=   1084.30

 STA=     1675.     2438.     2772.     3000.     3080.     3200.     3400.     3600.     3737.
3800.     4414.     5000.     5200.
   PER Q=       3.4       5.2       3.5       1.2      12.1       3.1       3.1       4.0       3.7
3.1       3.1       3.1
    AREA=      85.0     103.5      70.8      24.9      37.2      62.1      62.1      42.4      19.7
92.7      63.6      62.0
     VEL=        .7        .8        .8        .8       5.5        .8        .8       1.6       3.1
.6        .8        .8
   DEPTH=        .1        .3        .3        .3        .3        .3        .3        .3        .3
.2        .1        .3

 STA=     5200.     5400.     5600.     6000.     6200.     6333.     6368.
   PER Q=       3.1       3.1      20.0      20.4       4.7        .1
    AREA=      62.1      62.1     244.0     192.1      67.9       3.7
     VEL=        .8        .8       1.4       1.8       1.2        .4
   DEPTH=        .3        .3        .6       1.0        .5        .1

 1490 NH CARD USED
 *SECNO 7.570

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  7.10

      7.570       1.76   1085.16        .00        .00   1085.18        .02        .79
.01   1084.20
     1691.0      165.4      326.0     1199.6      710.8      159.6     1715.7      703.0
710.6   1084.20
       4.45        .23       2.04        .70       .130       .020       .037       .000
1083.40   1197.03
     .000517       500.       500.       500.          8          0          0        .00
4163.20   5416.81
```

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

 FLOW DISTRIBUTION FOR SECNO=       7.57          CWSEL=   1085.16

 STA=     1197.     1512.     1873.     2160.     2280.     2567.     3000.     3200.     3400.
3600.     3800.     4000.     4138.
   PER Q=       4.0       3.2       2.6      19.3       3.2       5.9       8.7      12.6       5.5
5.5       8.7      15.1
    AREA=     263.9     239.7     207.1     159.6     236.0     232.3     121.8     151.8      91.8
91.8     121.8     134.4
     VEL=         .3        .2        .2       2.0        .2        .4       1.2       1.4       1.0
1.0       1.2       1.9
   DEPTH=         .8        .7        .7       1.3        .8        .5        .6        .8        .5
.5        .6       1.0

 STA=     4138.     4400.     5417.
   PER Q=       3.4       2.3
    AREA=     233.8     300.0
     VEL=         .2        .1
   DEPTH=         .9        .3

 1490 NH CARD USED
 *SECNO 7.660

 3265 DIVIDED FLOW

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .30

      7.660      1.20   1085.70       .00       .00   1085.79       .09       .59
.02   1084.50
     1691.0     166.7     321.6    1202.7     320.7      76.6     685.6     723.2
746.5   1085.30
       4.51       .52      4.20      1.75       .130      .020      .041      .000
1084.50   1661.13
    .005753       480.      480.      480.         2         0         0       .00
2366.80   4945.52

 FLOW DISTRIBUTION FOR SECNO=       7.66          CWSEL=   1085.70

 STA=     1661.     2045.     2397.     2421.     2540.     2768.     2959.     4000.     4200.
4343.     4400.     4600.     4946.
   PER Q=       3.5       5.4        .9      19.0       3.6       3.5       7.6      24.0      18.0
7.9       3.7       2.9
    AREA=     133.3     167.3      20.2      76.6     112.2      99.6      46.7     108.3      67.8
33.4     108.3     109.5
     VEL=         .4        .5        .8       4.2        .5        .6       2.8       3.7       4.5
4.0        .6        .5
   DEPTH=         .3        .5        .9        .6        .5        .5        .0        .5        .5
.6        .5        .3

 1490 NH CARD USED
 *SECNO 7.710

 3265 DIVIDED FLOW
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     SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS
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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

      7.710       1.03    1086.53        .00        .00    1086.56        .03        .77
.01    1085.50
     1375.0      342.4      163.5      869.0      737.2       46.4      952.2      730.3
760.2    1085.50
       4.57        .46       3.53        .91       .130       .020       .058       .000
1085.50    1125.99
     .002163       220.       220.       220.          3          0          0        .00
3048.20    5010.15


 FLOW DISTRIBUTION FOR SECNO=       7.71          CWSEL=    1086.53

 STA=     1126.     2000.     2200.     2480.     2525.     2800.     3000.     3200.     4400.
4600.     4800.     5010.
   PER Q=       6.7       6.9      11.4      11.9      10.3       5.1       7.1      13.6      17.0
8.5       1.7
    AREA=     262.4     186.2     288.6      46.4     269.6     156.2      86.1     161.7     146.2
96.2      36.3
     VEL=        .3        .5        .5       3.5        .5        .5       1.1       1.2       1.6
1.2        .6
   DEPTH=        .3        .9       1.0       1.0       1.0        .8        .4        .1        .7
.5        .2

 1490 NH CARD USED
 *SECNO 7.800

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .64

      7.800       2.17    1088.07    1087.90        .00    1088.14        .08       1.57
.01    1087.20
     1375.0      122.3      167.0     1085.8      292.2       40.7      566.7      745.1
790.4    1087.90
       4.63        .42       4.10       1.92       .130       .020       .042       .000
1085.90    1400.81
     .005227       490.       490.       490.         13         18          0        .00
2324.66    4258.38


 FLOW DISTRIBUTION FOR SECNO=       7.80          CWSEL=    1088.07

 STA=     1401.     1674.     2200.     2369.     2430.     2930.     3160.     3303.     3528.
3694.     3739.     3800.     3862.
   PER Q=       3.2       4.1       1.7      12.1       4.4       3.5       4.7      11.4       5.0
17.2      28.5       4.1
    AREA=      90.2     145.6      56.3      40.7     154.2      57.9      41.6      83.7      41.3
62.5      94.8      30.1
     VEL=        .5        .4        .4       4.1        .4        .8       1.6       1.9       1.7
3.8       4.1       1.9
   DEPTH=        .3        .3        .3        .7        .3        .3        .3        .4        .2
1.4       1.6        .5

 STA=     3862.     4258.
   PER Q=        .0
    AREA=        .6
     VEL=        .3
   DEPTH=        .0

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     SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS
L-BANK ELEV
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     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


 1490 NH CARD USED
 *SECNO 7.890

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.82

      7.890       2.13    1089.43        .00        .00    1089.46        .03       1.31
.00    1089.50
     1375.0       71.5        1.2     1302.2      297.6        2.2      860.7      757.0
817.6    1089.40
       4.73        .24        .54       1.51       .130       .020       .038       .000
1087.30    1353.74
     .001573       500.       500.       500.          2          0          0        .00
2412.68    3873.79


 FLOW DISTRIBUTION FOR SECNO=       7.89          CWSEL=    1089.43

 STA=     1354.     2000.     2373.     2460.     3011.     3099.     3200.     3344.     3400.
3445.     3600.     3724.     3800.
   PER Q=       4.0       1.2        .1       3.3       5.1       8.2       3.5      11.1      15.3
34.4        5.2        6.8
    AREA=     211.3      86.3       2.2     145.7      55.6      78.6      45.9      74.7      83.3
221.1      64.8      62.8
     VEL=        .3        .2        .5        .3       1.3       1.4       1.1       2.0       2.5
2.1        1.1        1.5
   DEPTH=        .3        .2        .1        .3        .6        .8        .3       1.3       1.8
1.4         .5         .8

 STA=     3800.     3874.
   PER Q=       1.9
    AREA=      28.2
     VEL=         .9
   DEPTH=         .4

 1490 NH CARD USED
 *SECNO 7.990

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .32

      7.990       1.12    1091.32        .00        .00    1091.45        .13       1.96
.03    1091.10
     1375.0      427.4      451.9      495.7      117.1      128.8      484.4      768.7
842.7    1090.80
       4.78       3.65       3.51       1.02       .035       .033       .129       .000
1090.20    1280.59
     .015674       470.       500.       570.          3          0          0        .00
1726.18    3490.03


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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
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 FLOW DISTRIBUTION FOR SECNO=      7.99          CWSEL=   1091.32

 STA=    1281.    1400.    1429.    1459.    2160.    2422.    2800.    3000.    3200.
3400.    3490.
   PER Q=      8.0     13.4      6.7      2.9     32.9     17.2      9.3      4.9      3.1
1.6
    AREA=     35.1     32.1     21.7     28.2    128.8    182.6    123.5     83.5     63.5
31.4
     VEL=      3.2      5.7      4.3      1.4      3.5      1.3      1.0       .8       .7
.7
   DEPTH=       .3      1.1       .7       .0       .5       .5       .6       .4       .3
.3

 1490 NH CARD USED
 *SECNO 8.080

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.08

     8.080      1.29   1092.79       .00       .00   1092.80       .02      1.34
.01   1094.10
    1375.0     528.7     469.3     377.0     520.9     398.3     452.1     782.4
868.5   1092.10
      4.93      1.01      1.18       .83      .034      .036      .035      .000
1091.50   1169.76
    .000940      550.      500.      610.         6         0         0       .00
2225.02   3630.99


 FLOW DISTRIBUTION FOR SECNO=      8.08          CWSEL=   1092.79

 STA=    1170.    1261.    1600.    1800.    2000.    2086.    2115.    2690.    3000.
3200.    3400.    3600.    3631.
   PER Q=      6.9      8.4      9.2      9.2      4.5       .3     34.1     13.8      5.7
4.8      3.1       .1
    AREA=     74.9    125.5    127.3    127.3     59.2      6.6    398.3    197.3     97.3
87.3     67.3      2.9
     VEL=      1.3       .9      1.0      1.0      1.0       .6      1.2      1.0       .8
.7       .6       .3
   DEPTH=       .8       .4       .6       .6       .7       .2       .9       .6       .5
.4       .3       .1

 1490 NH CARD USED
 *SECNO 8.180

 3265 DIVIDED FLOW


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .44

     8.180       .98   1093.68       .00       .00   1093.73       .05       .92
.01   1092.80
    1375.0     412.5     433.7     528.7     311.8     196.8     335.8     795.2
893.7   1093.30
      5.02      1.32      2.20      1.57      .048      .035      .035      .000
1092.70   1049.07
    .004935      520.      500.      490.         3         0         0       .00
2132.71   3615.75


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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
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TOPWID    ENDST

 FLOW DISTRIBUTION FOR SECNO=      8.18          CWSEL=   1093.68

 STA=    1049.    1200.    2000.    2200.    2290.    2600.    2800.    3000.    3200.
3400.    3616.
   PER Q=      3.1      6.9     10.8      9.2     31.5     13.0     13.0      7.0      3.9
1.6
    AREA=     77.7     90.0     87.0     57.2    196.8     97.0     97.0     67.0     47.0
27.7
     VEL=       .5      1.1      1.7      2.2      2.2      1.8      1.8      1.4      1.1
.8
   DEPTH=       .5       .1       .4       .6       .6       .5       .5       .3       .2
.1

 1490 NH CARD USED
 *SECNO 8.230
      8.230       .81   1094.91       .00       .00   1094.93       .02      1.19
.00   1094.40
     1210.0     959.0     145.0     106.1    1004.9      91.3      97.9     801.6
908.1   1094.50
       5.09       .95      1.59      1.08      .068      .034      .034      .000
1094.10   1176.37
    .003760      280.      270.      270.         4         0         0       .00
2429.88   3606.25


 FLOW DISTRIBUTION FOR SECNO=      8.23          CWSEL=   1094.91

 STA=    1176.    1800.    2000.    2200.    2400.    2600.    2800.    2950.    3150.
3400.    3606.
   PER Q=      8.8      6.5      7.3      5.7     19.2     19.2     12.5     12.0      7.7
1.1
    AREA=    255.1    141.3    151.3    131.2    121.3    121.3     83.5     91.3     76.6
21.3
     VEL=       .4       .6       .6       .5      1.9      1.9      1.8      1.6      1.2
.6
   DEPTH=       .4       .7       .8       .7       .6       .6       .6       .5       .3
.1

 1490 NH CARD USED
 *SECNO 8.320

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.67

      8.320      1.46   1095.96       .00       .00   1095.98       .02      1.06
.00   1095.20
     1210.0     848.6     210.1     151.2    1000.1      92.0     533.6     817.8
940.0   1095.50
       5.23       .85      2.29       .28      .046      .020      .130      .000
1094.50   1004.26
    .001349      500.      500.      500.         4         0         0       .00
3124.03   4128.29


 FLOW DISTRIBUTION FOR SECNO=      8.32          CWSEL=   1095.96

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

 STA=    1004.    1082.    1400.    1600.    1677.    1720.    2000.    2333.    2720.
2970.    3090.    3369.    3800.
   PER Q=     11.9      3.3     12.2     16.0      9.8      7.0      3.1      3.1      3.6
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17.4       3.0       7.7
    AREA=      61.6      49.8      91.3      73.3      43.4     230.1     145.5     157.2     147.9
92.0     136.8     289.1
     VEL=       2.3        .8       1.6       2.6       2.7        .4        .3        .2        .3
2.3        .3        .3
   DEPTH=         .8        .2        .5       1.0       1.0        .8        .4        .4        .6
.8        .5        .7

 STA=     3800.     4128.
   PER Q=       1.8
    AREA=     107.7
     VEL=        .2
   DEPTH=        .3

 1490 NH CARD USED
 *SECNO 8.420

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .55

      8.420        .85   1097.05        .00        .00   1097.08        .03       1.10
.00   1096.70
     1210.0      698.6      192.4      319.0      720.6       61.1      574.2      834.6
974.5   1096.80
       5.34        .97       3.15        .56        .059       .020       .130       .000
1096.20   1298.55
    .004427       490.       490.       490.          3          0          0        .00
3006.69   4305.23


 FLOW DISTRIBUTION FOR SECNO=       8.42           CWSEL=   1097.05

 STA=     1299.     1800.     1851.     2200.     2400.     2600.     3110.     3230.     3495.
3600.     3800.     4000.     4200.
   PER Q=      38.1       5.2       3.9       4.1       3.4       3.1      15.9       3.0       3.1
7.9       8.8       3.4
    AREA=     251.5      30.8     122.5     101.5      91.6     122.6      61.1      94.8      66.4
151.6     161.6      91.6
     VEL=       1.8       2.0        .4        .5        .5        .3       3.2        .4        .6
.6        .7        .5
   DEPTH=         .5        .6        .4        .5        .5        .2        .5        .4        .6
.8        .8        .5

 STA=     4200.     4305.
   PER Q=        .1
    AREA=       8.3
     VEL=        .1
   DEPTH=        .1

 1490 NH CARD USED
 *SECNO 8.510

 3470 ENCROACHMENT STATIONS=          .0    4399.9  TYPE=       1  TARGET=     4399.899
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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


      8.510       1.04   1098.94        .00        .00   1098.96        .02       1.88
.00   1098.50
     1210.0     1077.4       74.6       58.0     1024.1       33.9      178.0      849.5
1008.2   1098.80
       5.47       1.05       2.20        .33        .054       .020       .130       .000
1097.90   1473.80
    .003228       500.       500.       500.          5          0          0        .00
2881.47   4355.27
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 FLOW DISTRIBUTION FOR SECNO=      8.51          CWSEL=   1098.94

 STA=    1474.    1800.    2000.    2177.    2276.    2325.    2600.    2987.    3200.
3400.    3600.    3690.    4263.
   PER Q=      7.4     16.9     25.1      8.1     10.3      5.0      3.5      3.0      5.2
4.5      6.2      3.6
    AREA=     77.2    108.9    131.4     51.9     46.2    140.7    124.4     95.6    128.8
118.8     33.9    141.6
     VEL=      1.2      1.9      2.3      1.9      2.7       .4       .3       .4       .5
.5       2.2       .3
   DEPTH=       .2       .5       .7       .5       .9       .5       .3       .5       .6
.6       .4       .2

 STA=    4263.    4355.
   PER Q=      1.2
    AREA=     36.4
     VEL=       .4
   DEPTH=       .4

 *SECNO 8.610

 3265 DIVIDED FLOW

      8.610      1.19   1100.59       .00       .00   1100.61       .03      1.65
.00   1100.00
     1210.0     923.3     190.4      96.4    1565.0      60.5     226.3     866.8
1040.0   1100.10
       5.60       .59      3.15       .43      .130      .020      .130      .000
1099.40   1122.68
    .003506      490.      490.      490.         4         0         0       .00
2771.05   3902.70


 FLOW DISTRIBUTION FOR SECNO=      8.61          CWSEL=   1100.59

 STA=    1123.    1400.    1800.    1939.    2000.    2200.    2400.    2600.    2800.
3000.    3190.    3290.    3543.
   PER Q=      3.6     18.3     10.3      3.9     10.0      7.5      6.7      7.5      5.3
3.1      15.7       5.8
    AREA=    112.3    354.6    165.0     66.2    187.3    157.2    147.3    157.3    127.3
90.4     60.5    148.2
     VEL=       .4       .6       .8       .7       .6       .6       .6       .6       .5
.4       3.1       .5
   DEPTH=       .4       .9      1.2      1.1       .9       .8       .7       .8       .6
.5       .6       .6

 STA=    3543.    3903.
   PER Q=      2.2
    AREA=     78.1
     VEL=       .3
   DEPTH=       .2

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


 *SECNO 8.700
      8.700      1.20   1102.40       .00       .00   1102.52       .12      1.88
.03   1101.40
     1210.0     591.4     442.9     175.7    1078.0      96.3     326.8     886.1
1071.7   1101.50
       5.67       .55      4.60       .54      .130      .020      .130      .000
1101.20   1113.17
    .004032      500.      500.      500.         2         0         0       .00
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2748.61   3861.78

 FLOW DISTRIBUTION FOR SECNO=      8.70          CWSEL=   1102.40

 STA=     1113.     1800.     1916.     2200.     2400.     2528.     2593.     2800.     3000.
3170.     3270.     3400.     3600.
   PER Q=       3.1       6.6       4.7       4.4       5.3       3.7       5.2       7.4       8.5
36.6       5.9       5.8
    AREA=     137.1     111.9     130.1     109.5     101.9      62.4     122.9     149.6     152.7
96.3     110.1     129.6
     VEL=        .3        .7        .4        .5        .6        .7        .5        .6        .7
4.6        .7        .5
   DEPTH=        .2       1.0        .5        .5        .8        .9        .6        .7        .9
1.0        .8        .6

 STA=     3600.     3862.
   PER Q=       2.8
    AREA=      87.1
     VEL=        .4
   DEPTH=        .3

 *SECNO 8.790
      8.790       1.25   1104.15        .00        .00   1104.21        .06       1.69
.01   1103.40
     1210.0      754.2      340.8      115.0     1247.7       93.0      293.3      904.1
1099.8   1103.50
        5.77        .60       3.67        .39        .130       .020       .130       .000
1102.90   1620.52
     .002862       500.       500.       500.          3          0          0        .00
2136.06   3756.58


 FLOW DISTRIBUTION FOR SECNO=      8.79          CWSEL=   1104.15

 STA=     1621.     1800.     2000.     2200.     2400.     2600.     2693.     2800.     2881.
2975.     3080.     3400.     3757.
   PER Q=       3.9       5.6       9.3      12.7      11.8       5.9       6.4       3.4       3.3
28.2       7.3       2.2
    AREA=      95.5     139.9     189.9     229.9     219.9     106.4     118.2      73.2      74.8
93.0     197.8      95.5
     VEL=        .5        .5        .6        .7        .7        .7        .7        .6        .5
3.7        .4        .3
   DEPTH=        .5        .7        .9       1.1       1.1       1.1       1.1        .9        .8
.9         .6        .3

 *SECNO 8.890
      8.890       1.23   1105.93        .00        .00   1106.00        .08       1.79
.00   1105.20
     1210.0      806.2      284.3      119.5     1157.5       64.1      315.2      922.3
1126.6   1105.50
        5.86        .70       4.44        .38        .130       .020       .130       .000
1104.70   1659.18
     .004582       500.       500.       500.          2          0          0        .00
2544.43   4203.61


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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=      8.89          CWSEL=   1105.93

 STA=     1659.     2000.     2093.     2179.     2400.     2600.     2800.     3000.     3110.
3187.     3600.     3800.     4204.
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   PER Q=       7.3       4.8       7.2      16.6      10.3       9.3       7.5       3.7      23.5
4.2       3.2       2.4
    AREA=     171.1      81.4     101.4     243.0     175.4     165.4     145.4      74.5      64.1
136.3      87.4      91.5
     VEL=        .5        .7        .9        .8        .7        .7        .6        .6       4.4
.4        .4        .3
   DEPTH=        .5        .9       1.2       1.1        .9        .8        .7        .7        .8
.3        .4        .2

 *SECNO 8.980

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.54

      8.980      1.34   1107.34       .00       .00   1107.42       .09      1.42
.00   1106.00
     1210.0     600.2     469.2     140.6    1324.0     124.4     397.4     941.7
1157.4   1106.50
       5.94       .45      3.77       .35      .130      .020      .130      .000
1106.00   1944.39
    .001925      500.      500.      500.         3         0         0       .00
2811.83   4756.21


 FLOW DISTRIBUTION FOR SECNO=     8.98          CWSEL=   1107.34

 STA=     1944.     2744.     2944.     3144.     3344.     3544.     3744.     3900.     4000.
4344.     4744.     4756.
   PER Q=       4.5       6.7       9.4       9.4       7.3       5.5       6.8      38.8       8.4
3.2        .0
    AREA=     213.9     176.0     216.0     216.0     186.0     156.0     160.3     124.4     251.3
145.9        .2
     VEL=        .3        .5        .5        .5        .5        .4        .5       3.8        .4
.3        .0
   DEPTH=        .3        .9       1.1       1.1        .9        .8       1.0       1.2        .7
.4        .0

 *SECNO 9.080

 3470 ENCROACHMENT STATIONS=     2600.0    5681.6  TYPE=      1  TARGET=    -2600.000
  ELENCL=   1109.00  ELENCR= 100000.00
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      9.080      1.22   1108.52       .00       .00   1108.67       .15      1.23
.02   1107.30
     1210.0     542.0     527.2     140.8     862.1     114.2     313.0     959.7
1183.9   1107.70
       6.00       .63      4.62       .45      .130      .020      .130      .000
1107.30   2812.08
    .003237      500.      500.      500.         2         0         0       .00
1817.92   4630.00


 FLOW DISTRIBUTION FOR SECNO=     9.08          CWSEL=   1108.52

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


 STA=    2812.     3272.     3335.     3535.     3735.     3900.     4000.     4135.     4335.
4630.
   PER Q=       8.0       3.7      10.3      12.1      10.7      43.6       4.7       4.9       2.0
    AREA=     201.7      66.2     194.7     214.7     184.9     114.2     104.7     124.7      83.7
     VEL=        .5        .7        .6        .7        .7       4.6        .5        .5        .3
   DEPTH=        .4       1.0       1.0       1.1       1.1       1.1        .8        .6        .3
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 *SECNO 9.170

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=     2400.0    5394.1  TYPE=      1  TARGET=    -2400.000
  ELENCL=   1112.00  ELENCR= 100000.00
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      9.170      1.27   1110.87       .00       .00   1110.97       .11      2.30
.00   1110.20
     1237.0     312.5     715.4     209.1     475.3     210.4     291.2     972.8
1205.5   1109.60
       6.06       .66      3.40       .72      .130      .035      .130      .000
1109.60   2642.91
     .006653      500.      520.      500.         2         0         0       .00
1922.03   4651.17


 FLOW DISTRIBUTION FOR SECNO=      9.17          CWSEL=   1110.87

 STA=    2643.    2984.    3264.    3464.    3664.    3880.    4064.    4325.    4651.
   PER Q=      3.2      3.5      8.8      9.8     57.8     13.2      3.2       .5
    AREA=     93.0     83.2    144.6    154.6    210.4    178.7     84.2     28.4
     VEL=       .4       .5       .8       .8      3.4       .9       .5       .2
   DEPTH=       .3       .3       .7       .8      1.0      1.0       .3       .1

 *SECNO 9.270

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.84

      9.270      1.71   1112.51       .00       .00   1112.62       .11      1.64
.00   1111.30
     1237.0     397.6     481.2     358.1     803.5     113.1     743.2     987.9
1226.9   1111.30
       6.13       .49      4.26       .48      .130      .020      .130      .000
1110.80   1795.85
     .001956      500.      500.      500.         4         0         0       .00
1816.22   3612.07


 FLOW DISTRIBUTION FOR SECNO=      9.27          CWSEL=   1112.51

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


 STA=    1796.    2200.    2400.    2700.    2777.    2880.    3000.    3200.    3400.
3600.    3612.
   PER Q=      8.5      9.0     14.6     38.9      5.8      5.8      7.0      5.8      4.5
.1
    AREA=    258.3    212.1    333.1    113.1    125.0    133.2    182.1    162.1    136.6
4.2
     VEL=       .4       .5       .5      4.3       .6       .5       .5       .4       .4
.3
   DEPTH=       .6      1.1      1.1      1.5      1.2      1.1       .9       .8       .7
.3

 *SECNO 9.360

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .61

      9.360      1.62   1114.12       .00       .00   1114.13       .01      1.50
.01   1113.20
     1237.0     204.6     182.5     849.9     394.3     263.6    1118.3    1007.6
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1248.0   1112.80
      6.33       .52       .69       .76      .160      .160      .160      .000
1112.50   1816.20
    .005178      500.      500.      500.         2         0         0       .00
1854.57   3670.77


 FLOW DISTRIBUTION FOR SECNO=      9.36          CWSEL=   1114.12

 STA=    1816.    2200.    2450.    2700.    3000.    3200.    3233.    3400.    3600.
3671.
   PER Q=      6.7      9.8     14.8     24.3     18.4      3.8     12.0      9.5       .8
    AREA=    188.2    206.1    263.6    382.3    274.9     52.4    197.5    184.9     26.3
     VEL=       .4       .6       .7       .8       .8       .9       .8       .6       .4
   DEPTH=       .5       .8      1.1      1.3      1.4      1.6      1.2       .9       .4

 1490 NH CARD USED
 *SECNO 9.450

 3470 ENCROACHMENT STATIONS=     2483.2    5611.8  TYPE=      1  TARGET=    -2483.200
  ELENCL=   1116.50  ELENCR= 100000.00
      9.450      1.41   1116.31       .00       .00   1116.31       .01      2.18
.00   1115.40
     1237.0     381.9     245.8     609.2     454.5     387.7    1017.7    1028.0
1270.0   1114.90
      6.53       .84       .63       .60      .090      .160      .160      .000
1114.90   2921.16
    .003914      470.      470.      500.         4         0         0       .00
2097.32   5018.48


 FLOW DISTRIBUTION FOR SECNO=      9.45          CWSEL=   1116.31

 STA=    2921.    3283.    3600.    3940.    4283.    4483.    4683.    4883.    5018.
   PER Q=     10.5     20.4     19.9     25.1     10.6      7.2      5.3      1.0
    AREA=    183.5    271.1    387.7    448.1    214.6    171.1    141.1     42.8
     VEL=       .7       .9       .6       .7       .6       .5       .5       .3
   DEPTH=       .5       .9      1.1      1.3      1.1       .9       .7       .3

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


 *SECNO 9.550

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=     1535.0    4046.5  TYPE=      1  TARGET=    -1535.000
  ELENCL=   1118.20  ELENCR= 100000.00
          X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
          PATH OF CAVE CREEK WASH
      9.550      1.53   1117.93       .00       .00   1117.94       .01      1.62
.00   1116.70
     1237.0     446.0     282.2     508.9     553.7     469.1     932.0    1049.9
1293.3   1116.40
      6.74       .81       .60       .55      .090      .160      .160      .000
1116.40   1772.65
    .002730      500.      500.      500.         3         0         0       .00
1954.29   3983.51


 FLOW DISTRIBUTION FOR SECNO=      9.55          CWSEL=   1117.93

 STA=    1773.    2400.    2512.    2600.    2800.    3140.    3400.    3468.    3600.
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3800.    3952.    3984.
   PER Q=       6.0       7.5       6.8      15.8      22.8      19.5       4.8       5.6       7.6
3.5        .1
    AREA=     135.4     109.2      93.6     215.5     469.1     384.1      96.9     136.8     195.5
110.3       8.4
     VEL=        .5        .8        .9        .9        .6        .6        .6        .5        .5
.4         .2
   DEPTH=        .2       1.0       1.1       1.1       1.4       1.5       1.4       1.0       1.0
.7         .3

 *SECNO 9.610

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .41

      9.610      1.40   1119.90       .00       .00   1119.92       .02      1.98
.00   1120.00
     1237.0        .0     679.8     557.2        .0     635.1     520.8    1062.7
1307.2   1118.60
       6.83       .00      1.07      1.07      .000      .160      .160      .000
1118.50   3903.60
    .016316      360.      360.      360.         2         0         0       .00
1405.86   5309.46


 FLOW DISTRIBUTION FOR SECNO=       9.61          CWSEL=   1119.90

 STA=    3904.    4645.    4701.    4901.    5101.    5301.
   PER Q=     55.0      7.4     17.7     14.7      5.1
    AREA=    635.1     68.4    190.8    170.8     90.8
     VEL=      1.1      1.3      1.1      1.1       .7
   DEPTH=       .9      1.2      1.0       .9       .5

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  TW   RIGHT OVERBANK BETWEEN STATIONS 7.01 AND 7.11

     ASQ       QCOMP      ERRAC      TASQ        TCQ       TABER      NITER      DSWS       USWS
DSSNO      USSNO
     312.02     312.04        .01     312.02     312.04        .01          9  1080.021
1081.071      7.010      7.110


  TW   RIGHT OVERBANK BETWEEN STATIONS 6.94 AND 7.01

     ASQ       QCOMP      ERRAC      TASQ        TCQ       TABER      NITER      DSWS       USWS
DSSNO      USSNO
     295.51     295.59        .03     607.53     607.63        .02          9  1079.420
1080.021      6.940      7.010


  TW   RIGHT OVERBANK BETWEEN STATIONS 6.88 AND 6.94

     ASQ       QCOMP      ERRAC      TASQ        TCQ       TABER      NITER      DSWS       USWS
DSSNO      USSNO
     276.60     276.49        .04     884.12     884.12        .00          9  1079.199
1079.420      6.880      6.940


  TW   RIGHT OVERBANK BETWEEN STATIONS 5.48 AND 5.57

     ASQ       QCOMP      ERRAC      TASQ        TCQ       TABER      NITER      DSWS       USWS
DSSNO      USSNO
    1417.56    1418.20        .05    2301.68    2302.32        .03          9  1067.260
1068.379      5.480      5.570


  TW   RIGHT OVERBANK BETWEEN STATIONS 5.20 AND 5.25

     ASQ       QCOMP      ERRAC      TASQ        TCQ       TABER      NITER      DSWS       USWS
DSSNO      USSNO
      84.85      84.79        .07    2386.53    2387.11        .02          9  1063.255
1063.947      5.200      5.250
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TW RIGHT OVERBANK BETWEEN STATIONS 5.10 AND 5.20

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
40.57	40.68	.25	2427.11	2427.79	.03	9	1061.338	1063.255	5.100	5.200

TW RIGHT OVERBANK BETWEEN STATIONS 5.07 AND 5.10

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
38.56	38.58	.07	2465.67	2466.37	.03	9	1060.787	1061.338	5.070	5.100

THIS

RUN EXECUTED 17OCT01 16:45:45

****
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

E CREEK WASH JOB #04856-

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	4.790	.00	.00	.00	1051.40	2523.00	1059.21	.00	1059.21	.47	1.02	10311.23	3697.91
	4.890	500.00	.00	.00	1053.70	2523.00	1059.24	.00	1059.24	.54	.77	11224.79	3436.81
*	4.950	315.00	.00	.00	1052.40	2523.00	1059.26	.00	1059.27	1.30	1.24	9083.69	2211.98
*	4.980	175.00	.00	.00	1056.50	2523.00	1059.32	.00	1059.33	12.89	1.87	4218.73	702.60
*	5.030	270.00	.00	.00	1058.90	941.46	1059.87	.00	1059.91	268.13	1.03	664.99	57.49
*	5.070	190.00	.00	.00	1059.30	941.46	1060.79	.00	1060.80	18.25	2.84	1745.01	220.37
*	5.100	200.00	.00	.00	1060.30	980.02	1061.34	.00	1061.52	77.20	4.97	876.83	111.54
*	5.200	500.00	.00	.00	1061.80	1020.59	1063.26	.00	1063.32	20.85	3.16	1243.37	223.51
	5.250	280.00	.00	.00	1062.20	1105.44	1063.95	.00	1064.05	30.46	4.00	1160.00	200.29
	5.310	280.00	.00	.00	1063.10	1105.44	1064.81	.00	1064.84	24.86	1.29	979.71	221.69
	5.380	400.00	.00	.00	1064.40	1105.44	1066.05	.00					

1066.10 40.89 2.07 848.61 172.87

5.480 500.00 .00 .00 1064.50 472.44 1067.26 .00
1067.27 8.89 .86 866.91 158.42

* 5.570 500.00 .00 .00 1066.10 1890.00 1068.38 .00
1068.39 29.68 1.43 2161.61 346.93

* 5.670 500.00 .00 .00 1067.20 1890.00 1069.14 .00
1069.15 8.46 .69 2744.05 649.85

* 5.760 500.00 .00 .00 1068.30 1890.00 1069.93 .00
1069.96 45.63 1.44 1268.79 279.79

* 5.860 500.00 .00 .00 1069.30 1890.00 1071.08 .00
1071.12 12.87 1.64 1919.74 526.80

5.950 500.00 .00 .00 1069.70 1005.88 1071.43 .00
1071.44 2.67 .67 1588.78 615.89

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG
10*KS	VCH	AREA	.01K					
* 6.050	500.00	.00	.00	1070.40	1005.88	1071.71		.00
1071.80	40.94	3.03	752.15	157.21				
* 6.140	480.00	.00	.00	1071.50	980.88	1072.94		.00
1073.00	17.37	2.77	586.52	235.37				
6.230	500.00	.00	.00	1072.20	980.88	1073.70		.00
1073.74	12.59	2.57	1027.50	276.44				
6.330	500.00	.00	.00	1073.30	980.88	1074.36		.00
1074.40	13.83	2.50	1082.62	263.77				
6.420	500.00	.00	.00	1073.90	980.88	1074.94		.00
1074.97	9.72	1.43	791.20	314.63				
* 6.520	500.00	.00	.00	1074.00	980.88	1075.76		1075.64
1075.88	41.18	1.13	383.07	152.86				
* 6.610	490.00	.00	.00	1075.00	980.88	1076.89		.00
1076.90	13.06	.09	1265.56	271.42				
* 6.700	500.00	.00	.00	1076.00	980.88	1077.88		.00
1077.90	34.07	.28	1287.74	168.05				
* 6.800	500.00	.00	.00	1077.00	980.88	1078.88		.00
1078.90	13.23	2.34	1803.39	269.70				
* 6.880	420.00	.00	.00	1077.00	980.88	1079.20		.00
1079.21	4.46	.43	1719.97	464.33				
6.940	360.00	.00	.00	1076.90	1257.47	1079.42		.00
1079.44	8.70	1.44	1375.76	426.30				
* 7.010	400.00	.00	.00	1078.50	1552.98	1080.02		.00
1080.07	37.13	2.93	1326.06	254.88				
* 7.110	530.00	.00	.00	1079.80	1865.00	1081.07		.00
1081.10	13.71	2.76	2200.09	503.69				
7.200	470.00	.00	.00	1080.50	1691.00	1081.78		.00
1081.80	16.35	1.45	1802.65	418.20				
7.290	500.00	.00	.00	1080.60	1691.00	1082.65		.00
1082.68	18.95	2.86	2360.66	388.50				
* 7.380	490.00	.00	.00	1081.60	1691.00	1083.23		.00
1083.24	7.68	2.22	2798.94	610.34				

```
        9.550    500.00        .00        .00   1116.40   1237.00   1117.93        .00
1117.94     27.30        .60   1954.74    236.74

 *      9.610    360.00        .00        .00   1118.50   1237.00   1119.90        .00
1119.92    163.16       1.07   1155.89     96.84

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 E CREEK WASH JOB #04856-

 SUMMARY PRINTOUT TABLE  150

       SECNO         Q         CWSEL     DIFWSP     DIFWSX     DIFKWS     TOPWID      XLCH

        4.790   2523.00   1059.21        .00        .00        .00   2443.45        .00
        4.890   2523.00   1059.24        .00        .03        .00   3100.46     500.00
 *      4.950   2523.00   1059.26        .00        .02        .00   3925.13     315.00
 *      4.980   2523.00   1059.32        .00        .06        .00   4064.98     175.00
 *      5.030    941.46   1059.87        .00        .56        .00   1177.53     270.00
 *      5.070    941.46   1060.79        .00        .91        .00   2029.64     190.00
 *      5.100    980.02   1061.34        .00        .55        .00   1963.52     200.00
 *      5.200   1020.59   1063.26        .00       1.92        .00   1253.91     500.00
        5.250   1105.44   1063.95        .00        .69        .00   1303.74     280.00
        5.310   1105.44   1064.81        .00        .87        .00   1341.72     280.00
        5.380   1105.44   1066.05        .00       1.24        .00   1503.75     400.00
        5.480    472.44   1067.26        .00       1.21        .00   1247.03     500.00
 *      5.570   1890.00   1068.38        .00       1.12        .00   1914.47     500.00
 *      5.670   1890.00   1069.14        .00        .76        .00   2138.17     500.00
 *      5.760   1890.00   1069.93        .00        .79        .00   1194.44     500.00
 *      5.860   1890.00   1071.08        .00       1.16        .00   2243.10     500.00
        5.950   1005.88   1071.43        .00        .35        .00   1694.73     500.00
 *      6.050   1005.88   1071.71        .00        .28        .00   1116.98     500.00
 *      6.140    980.88   1072.94        .00       1.23        .00   1105.40     480.00
        6.230    980.88   1073.70        .00        .76        .00   1621.56     500.00
        6.330    980.88   1074.36        .00        .66        .00   1634.84     500.00
        6.420    980.88   1074.94        .00        .58        .00   1298.47     500.00
 *      6.520    980.88   1075.76        .00        .82        .00    851.88     500.00
 *      6.610    980.88   1076.89        .00       1.12        .00   1741.60     490.00

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       SECNO         Q         CWSEL     DIFWSP     DIFWSX     DIFKWS     TOPWID      XLCH

 *      6.700    980.88   1077.88        .00       1.00        .00   1709.10     500.00
```

*	6.800	980.88	1078.88	.00	1.00	.00	2149.67	500.00
*	6.880	980.88	1079.20	.00	.32	.00	2412.32	420.00
	6.940	1257.47	1079.42	.00	.22	.00	1896.40	360.00
*	7.010	1552.98	1080.02	.00	.60	.00	2766.94	400.00
*	7.110	1865.00	1081.07	.00	1.05	.00	2817.55	530.00
	7.200	1691.00	1081.78	.00	.71	.00	2777.77	470.00
	7.290	1691.00	1082.65	.00	.87	.00	3169.88	500.00
*	7.380	1691.00	1083.23	.00	.57	.00	3968.59	490.00
*	7.480	1691.00	1084.30	.00	1.08	.00	3756.08	500.00
*	7.570	1691.00	1085.16	.00	.86	.00	4163.20	500.00
*	7.660	1691.00	1085.70	.00	.54	.00	2366.80	480.00
	7.710	1375.00	1086.53	.00	.83	.00	3048.20	220.00
*	7.800	1375.00	1088.07	.00	1.54	.00	2324.66	490.00
*	7.890	1375.00	1089.43	.00	1.36	.00	2412.68	500.00
*	7.990	1375.00	1091.32	.00	1.89	.00	1726.18	500.00
*	8.080	1375.00	1092.79	.00	1.47	.00	2225.02	500.00
*	8.180	1375.00	1093.68	.00	.90	.00	2132.71	500.00
	8.230	1210.00	1094.91	.00	1.22	.00	2429.88	270.00
*	8.320	1210.00	1095.96	.00	1.05	.00	3124.03	500.00
*	8.420	1210.00	1097.05	.00	1.09	.00	3006.69	490.00
	8.510	1210.00	1098.94	.00	1.89	.00	2881.47	500.00
	8.610	1210.00	1100.59	.00	1.64	.00	2771.05	490.00
	8.700	1210.00	1102.40	.00	1.81	.00	2748.61	500.00
	8.790	1210.00	1104.15	.00	1.75	.00	2136.06	500.00
	8.890	1210.00	1105.93	.00	1.78	.00	2544.43	500.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	8.980	1210.00	1107.34	.00	1.41	.00	2811.83	500.00
	9.080	1210.00	1108.52	.00	1.19	.00	1817.92	500.00
	9.170	1237.00	1110.87	.00	2.35	.00	1922.03	520.00
*	9.270	1237.00	1112.51	.00	1.64	.00	1816.22	500.00
*	9.360	1237.00	1114.12	.00	1.61	.00	1854.57	500.00
	9.450	1237.00	1116.31	.00	2.19	.00	2097.32	470.00
	9.550	1237.00	1117.93	.00	1.62	.00	1954.29	500.00
*	9.610	1237.00	1119.90	.00	1.97	.00	1405.86	360.00

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 4.950 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 4.980 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.030 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.070 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.100 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.200 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.570 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.670 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.760 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 5.860 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 6.050 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 6.140 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 6.520 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 6.610 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 6.700 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 6.800 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 6.880 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.010 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.110 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.380 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.480 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.570 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.660 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.800 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.890 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7.990 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8.080 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8.180 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8.320 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8.420 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8.980 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 9.270 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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WARNING SECNO=      9.360  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      9.610  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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 *      7.480    500.00       .00       .00   1079.20   1691.00   1084.30       .00
1084.38    260.46      5.50   1357.77   104.78

 *      7.570    500.00       .00       .00   1083.40   1691.00   1085.16       .00
1085.18      5.17      2.04   2586.03   743.50

 *      7.660    480.00       .00       .00   1084.50   1691.00   1085.70       .00
1085.79     57.53      4.20   1082.96   222.95

        7.710    220.00       .00       .00   1085.50   1375.00   1086.53       .00
1086.56     21.63      3.53   1735.80   295.67

 *      7.800    490.00       .00       .00   1085.90   1375.00   1088.07   1087.90
1088.14     52.27      4.10    899.56   190.18

 *      7.890    500.00       .00       .00   1087.30   1375.00   1089.43       .00
1089.46     15.73       .54   1160.54   346.63

 *      7.990    500.00       .00       .00   1090.20   1375.00   1091.32       .00
1091.45    156.74      3.51    730.31   109.83

 *      8.080    500.00       .00       .00   1091.50   1375.00   1092.79       .00
1092.80      9.40      1.18   1371.24   448.37

 *      8.180    500.00       .00       .00   1092.70   1375.00   1093.68       .00
1093.73     49.35      2.20    844.49   195.74

        8.230    270.00       .00       .00   1094.10   1210.00   1094.91       .00
1094.93     37.60      1.59   1194.00   197.33

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      SECNO      XLCH      ELTRD      ELLC       ELMIN       Q        CWSEL      CRIWS       EG
10*KS       VCH       AREA       .01K

 *      8.320    500.00       .00       .00   1094.50   1210.00   1095.96       .00
1095.98     13.49      2.29   1625.63   329.43

 *      8.420    490.00       .00       .00   1096.20   1210.00   1097.05       .00
1097.08     44.27      3.15   1355.86   181.85

        8.510    500.00       .00       .00   1097.90   1210.00   1098.94       .00
1098.96     32.28      2.20   1235.97   212.96

        8.610    490.00       .00       .00   1099.40   1210.00   1100.59       .00
1100.61     35.06      3.15   1851.79   204.35

        8.700    500.00       .00       .00   1101.20   1210.00   1102.40       .00
1102.52     40.32      4.60   1501.05   190.55

        8.790    500.00       .00       .00   1102.90   1210.00   1104.15       .00
1104.21     28.62      3.67   1633.95   226.19

        8.890    500.00       .00       .00   1104.70   1210.00   1105.93       .00
1106.00     45.82      4.44   1536.78   178.76

 *      8.980    500.00       .00       .00   1106.00   1210.00   1107.34       .00
1107.42     19.25      3.77   1845.89   275.80

        9.080    500.00       .00       .00   1107.30   1210.00   1108.52       .00
1108.67     32.37      4.62   1289.32   212.68

        9.170    520.00       .00       .00   1109.60   1237.00   1110.87       .00
1110.97     66.53      3.40    976.93   151.66

 *      9.270    500.00       .00       .00   1110.80   1237.00   1112.51       .00
1112.62     19.56      4.26   1659.72   279.71

 *      9.360    500.00       .00       .00   1112.50   1237.00   1114.12       .00
1114.13     51.78       .69   1776.21   171.90

        9.450    470.00       .00       .00   1114.90   1237.00   1116.31       .00
1116.31     39.14       .63   1859.94   197.73
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Appendix F
HEC-RAS Effective Model

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	9.61	1237.00	1118.50	1119.94	1119.28	1119.95	0.016005	1.08	1203.81	1480.45	0.20
Reach-1	9.55	1237.00	1116.40	1117.96	1117.00	1117.97	0.002757	0.61	2015.98	1995.83	0.09
Reach-1	9.45	1237.00	1114.90	1116.33	1115.54	1116.34	0.003926	0.65	1918.42	2104.46	0.11
Reach-1	9.36	1237.00	1112.80	1114.14		1114.15	0.005213	0.70	1811.80	1859.45	0.12
Reach-1	9.27	1237.00	1110.80	1112.54		1112.65	0.001910	4.26	1707.97	1827.07	0.61
Reach-1	9.17	1237.00	1109.60	1110.92	1110.64	1111.03	0.006627	3.49	1059.41	2022.23	0.61
Reach-1	9.08	1210.00	1107.30	1108.56	1108.30	1108.72	0.003245	4.73	1359.38	1861.18	0.77
Reach-1	8.98	1210.00	1106.00	1107.37		1107.47	0.001939	3.87	1962.24	2828.35	0.60
Reach-1	8.89	1210.00	1104.90	1105.94		1106.02	0.004759	4.55	1556.36	2547.13	0.88
Reach-1	8.79	1210.00	1103.00	1104.19		1104.25	0.002715	3.66	1710.89	2181.16	0.67
Reach-1	8.7	1210.00	1101.40	1102.42		1102.56	0.004251	4.80	1566.60	2758.75	0.85
Reach-1	8.61	1210.00	1099.90	1100.62		1100.65	0.003357	3.18	1938.72	2786.99	0.70
Reach-1	8.51	1210.00	1098.50	1098.96	1098.63	1098.98	0.003415	2.33	1283.50	2887.68	0.65
Reach-1	8.42	1210.00	1096.30	1097.09	1096.80	1097.12	0.004064	3.13	1441.35	3030.72	0.75
Reach-1	8.32	1210.00	1095.10	1095.99	1095.56	1096.02	0.001419	2.42	1740.76	3142.63	0.48
Reach-1	8.23	1210.00	1094.40	1094.92		1094.93	0.003702	1.60	1218.09	2441.97	0.41
Reach-1	8.18	1375.00	1092.80	1093.70	1093.53	1093.74	0.004973	2.24	872.73	2151.59	0.49
Reach-1	8.08	1375.00	1091.80	1092.79		1092.81	0.000952	1.19	1385.10	2226.90	0.22
Reach-1	7.99	1375.00	1090.70	1091.40	1091.23	1091.49	0.013231	3.55	867.86	1834.11	0.83
Reach-1	7.89	1375.00	1089.30	1089.48		1089.51	0.001660	0.74	1274.24	2464.16	0.38
Reach-1	7.8	1375.00	1087.20	1088.13	1087.90	1088.19	0.004738	4.13	1039.12	2423.09	0.85
Reach-1	7.71	1375.00	1085.50	1086.56		1086.60	0.002351	3.75	1826.99	3125.45	0.64
Reach-1	7.66	1691.00	1084.50	1085.73		1085.81	0.005330	4.18	1162.59	2417.10	0.90
Reach-1	7.57	1691.00	1083.40	1085.18	1084.73	1085.20	0.000534	2.10	2682.16	4170.48	0.32
Reach-1	7.48	1691.00	1084.00	1084.31	1084.10	1084.38	0.025525	5.44	1447.54	3974.46	1.72
Reach-1	7.38	1691.00	1082.00	1083.26		1083.28	0.000752	2.24	2942.59	4009.52	0.37
Reach-1	7.29	1691.00	1081.50	1082.69		1082.72	0.001923	2.97	2483.14	3220.65	0.56
Reach-1	7.2	1691.00	1081.40	1081.81		1081.82	0.001657	1.52	1864.50	2790.73	0.45
Reach-1	7.11	1865.00	1079.80	1081.09	1080.54	1081.12	0.001356	2.77	2245.17	2820.12	0.48
Reach-1	7.06	Lat. Weir									
Reach-1	7.01	1550.95	1079.50	1080.12		1080.16	0.003066	2.98	1585.73	2772.29	0.67
Reach-1	6.96	Lat. Weir									
Reach-1	6.94	1269.36	1078.70	1079.48		1079.49	0.001083	1.71	1497.60	2236.85	0.39
Reach-1	6.91	Lat. Weir									
Reach-1	6.88	979.54	1079.00	1079.23		1079.24	0.000449	0.50	1804.32	2436.82	0.21
Reach-1	6.8	979.54	1078.00	1078.91		1078.93	0.001362	2.42	1851.52	2183.99	0.47

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	6.7	979.54	1077.50	1077.98		1077.99	0.002766	0.31	1456.93	1781.21	0.09
Reach-1	6.61	979.54	1076.00	1077.01		1077.02	0.001439	0.10	1490.31	2004.57	0.02
Reach-1	6.52	979.54	1075.40	1075.79	1075.64	1075.89	0.004545	1.34	404.97	881.43	0.47
Reach-1	6.42	979.54	1074.20	1074.95	1074.47	1074.97	0.000950	1.43	803.75	1305.04	0.36
Reach-1	6.33	979.54	1073.40	1074.38	1073.87	1074.41	0.001323	2.48	1106.58	1636.60	0.47
Reach-1	6.23	979.54	1072.60	1073.73	1073.21	1073.77	0.001258	2.62	1068.56	1628.56	0.46
Reach-1	6.14	979.54	1071.80	1072.94	1072.71	1073.00	0.001851	2.86	584.77	1103.97	0.55
Reach-1	6.05	1004.54	1070.40	1071.77		1071.85	0.003389	2.86	813.63	1141.29	0.51
Reach-1	5.95	1004.54	1070.20	1071.21	1070.67	1071.23	0.000600	0.85	1228.99	1645.07	
Reach-1	5.86	1004.54	1069.30	1070.77		1070.79	0.001403	1.39	1235.33	2197.80	
Reach-1	5.76	1004.54	1068.50	1069.46		1069.49	0.005350	1.13	780.75	915.33	
Reach-1	5.67	1004.54	1067.30	1068.76		1068.76	0.000677	0.50	1966.64	2009.85	0.09
Reach-1	5.57	1004.54	1066.60	1068.29		1068.30	0.001174	0.87	2002.11	1781.77	0.12
Reach-1	5.53	Lat. Weir									
Reach-1	5.48	1004.54	1066.40	1067.64	1066.74	1067.65	0.001323	1.35	1391.06	1501.45	0.22
Reach-1	5.38	1637.54	1065.00	1066.26	1065.82	1066.33	0.004495	2.47	1188.14	1692.65	0.40
Reach-1	5.31	1637.54	1063.50	1065.13	1064.46	1065.15	0.002061	1.39	1414.96	1439.55	0.21
Reach-1	5.25	1637.54	1062.60	1064.28	1063.79	1064.42	0.003140	4.71	1626.56	1473.09	0.64
Reach-1	5.23	Lat. Weir									
Reach-1	5.2	1500.11	1062.00	1063.48	1062.86	1063.58	0.002648	3.97	1530.84	1309.96	0.58
Reach-1	5.15	Lat. Weir									
Reach-1	5.1	1385.10	1060.30	1061.56	1061.46	1061.73	0.005722	4.96	1341.75	2042.69	0.81
Reach-1	5.08	Lat. Weir									
Reach-1	5.07	1328.93	1059.60	1061.05	1060.09	1061.07	0.001886	3.30	2292.72	2146.17	0.48
Reach-1	5.03	1328.93	1059.80	1059.63	1059.59	1059.79	0.267842		405.78	985.06	0.00
Reach-1	4.98	1328.93	1058.50	1059.24		1059.24	0.000496	1.08	3926.67	3564.81	0.22
Reach-1	4.95	1328.93	1056.80	1059.23		1059.23	0.000042	0.69	8937.10	3924.15	0.08
Reach-1	4.89	1328.93	1056.80	1059.22		1059.22	0.000017	0.42	11170.30	3099.68	0.05
Reach-1	4.79	1328.93	1054.40	1059.21	1054.09	1059.21	0.000013	0.54	10311.23	2443.45	0.05

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

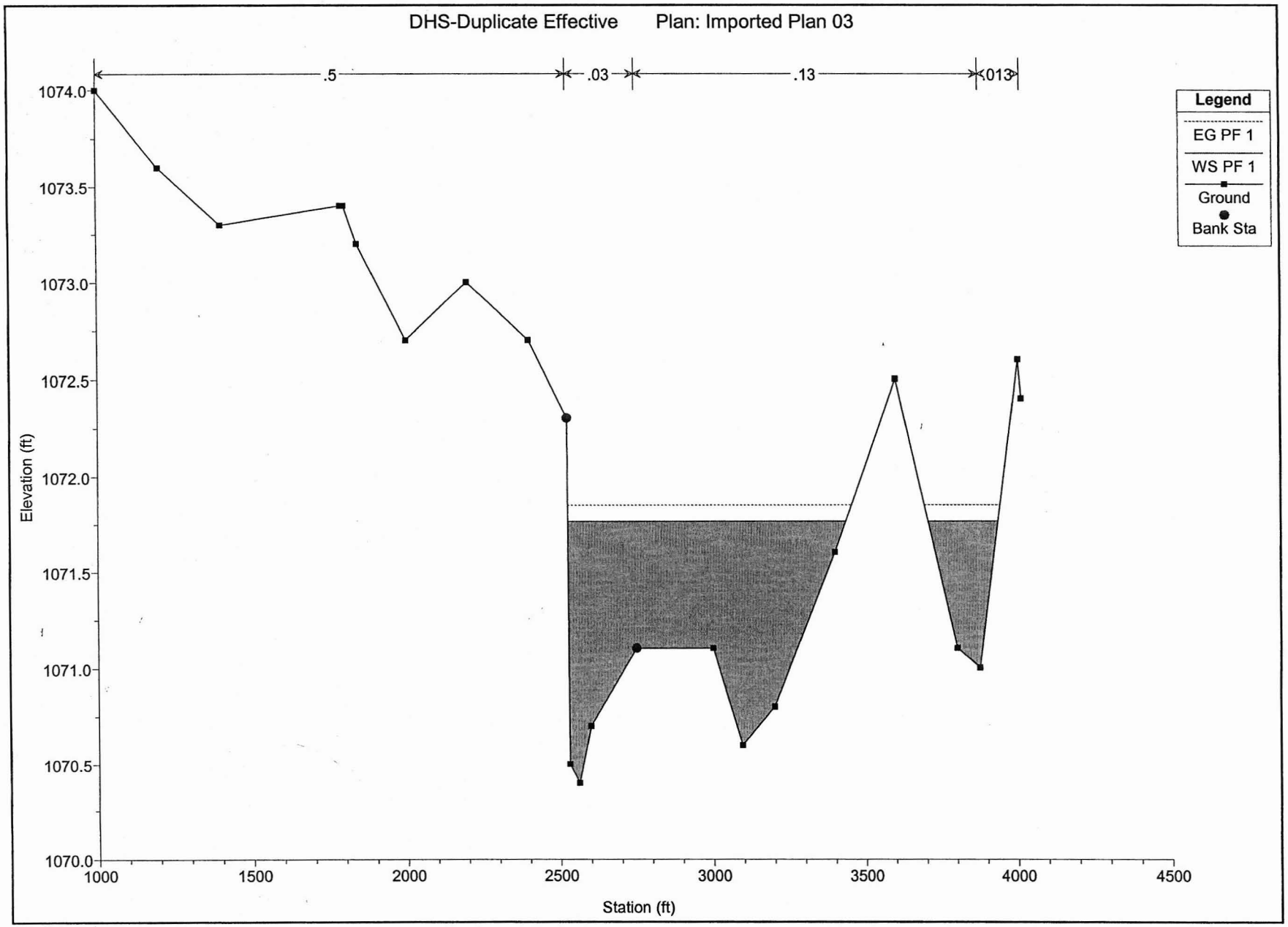
Reach	River Sta	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
		(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
Reach-1	9.61	1119.95	1119.94	0.02	1.98	0.00		712.24	524.76	1480.45
Reach-1	9.55	1117.97	1117.96	0.01	1.63	0.00	434.82	294.23	507.95	1995.83
Reach-1	9.45	1116.34	1116.33	0.01	2.19	0.00	383.22	256.32	597.47	2104.46
Reach-1	9.36	1114.15	1114.14	0.01	1.48	0.01	201.84	188.68	846.48	1859.45
Reach-1	9.27	1112.65	1112.54	0.11	1.62	0.00	386.67	489.81	360.52	1827.07
Reach-1	9.17	1111.03	1110.92	0.12	2.30	0.00	303.34	765.80	167.86	2022.23
Reach-1	9.08	1108.72	1108.56	0.16	1.23	0.02	508.66	557.45	143.89	1861.18
Reach-1	8.98	1107.47	1107.37	0.10	1.44	0.00	567.00	497.20	145.81	2828.35
Reach-1	8.89	1106.02	1105.94	0.08	1.76	0.01	797.24	294.22	118.53	2547.13
Reach-1	8.79	1104.25	1104.19	0.06	1.68	0.01	744.35	354.52	111.13	2181.16
Reach-1	8.7	1102.56	1102.42	0.14	1.88	0.03	561.88	473.62	174.50	2758.75
Reach-1	8.61	1100.65	1100.62	0.03	1.66	0.00	919.15	202.58	88.26	2786.99
Reach-1	8.51	1098.98	1098.96	0.02	1.86	0.00	1073.09	82.40	54.52	2887.68
Reach-1	8.42	1097.12	1097.09	0.03	1.10	0.00	711.32	201.75	296.93	3030.72
Reach-1	8.32	1096.02	1095.99	0.02	1.08	0.00	813.40	232.99	163.61	3142.63
Reach-1	8.23	1094.93	1094.92	0.02	1.19	0.00	961.74	149.09	99.17	2441.97
Reach-1	8.18	1093.74	1093.70	0.05	0.93	0.01	412.07	450.59	512.35	2151.59
Reach-1	8.08	1092.81	1092.79	0.02	1.30	0.01	526.70	477.50	370.80	2226.90
Reach-1	7.99	1091.49	1091.40	0.09	1.96	0.02	318.45	529.66	526.89	1834.11
Reach-1	7.89	1089.51	1089.48	0.03	1.31	0.00	76.26	2.67	1296.07	2464.16
Reach-1	7.8	1088.19	1088.13	0.07	1.59	0.01	138.41	182.91	1053.68	2423.09
Reach-1	7.71	1086.60	1086.56	0.04	0.78	0.00	315.77	178.71	880.51	3125.45
Reach-1	7.66	1085.81	1085.73	0.08	0.59	0.02	170.82	336.73	1183.46	2417.10
Reach-1	7.57	1085.20	1085.18	0.02	0.81	0.01	161.24	340.69	1189.08	4170.48
Reach-1	7.48	1084.38	1084.31	0.07	1.10	0.02	230.53	202.42	1258.06	3974.46
Reach-1	7.38	1083.28	1083.26	0.02	0.56	0.00	144.91	285.53	1260.56	4009.52
Reach-1	7.29	1082.72	1082.69	0.03	0.89	0.00	170.39	322.82	1197.79	3220.65
Reach-1	7.2	1081.82	1081.81	0.02	0.70	0.00	25.23	76.15	1589.62	2790.73
Reach-1	7.11	1081.12	1081.09	0.03	0.96	0.00	136.01	293.09	1435.90	2820.12
Reach-1	7.06	Lat. Weir								
Reach-1	7.01	1080.16	1080.12	0.05	0.66	0.01	209.06	430.56	911.34	2772.29
Reach-1	6.96	Lat. Weir								
Reach-1	6.94	1079.49	1079.48	0.02	0.25	0.00	48.69	186.82	1033.85	2236.85
Reach-1	6.91	Lat. Weir								
Reach-1	6.88	1079.24	1079.23	0.01	0.30	0.00	120.70	25.25	833.60	2436.82
Reach-1	6.8	1078.93	1078.91	0.02	0.94	0.00	57.41	220.65	701.47	2183.99

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

Reach	River Sta	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
		(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
Reach-1	6.7	1077.99	1077.98	0.01	0.97	0.00	141.17	22.30	816.08	1781.21
Reach-1	6.61	1077.02	1077.01	0.01	1.12	0.01	322.97	25.28	631.29	2004.57
Reach-1	6.52	1075.89	1075.79	0.10	0.89	0.02	43.98	47.95	887.62	881.43
Reach-1	6.42	1074.97	1074.95	0.03	0.56	0.00	55.46	92.61	831.46	1305.04
Reach-1	6.33	1074.41	1074.38	0.03	0.65	0.00	210.40	271.63	497.51	1636.60
Reach-1	6.23	1073.77	1073.73	0.04	0.76	0.00	115.00	300.52	564.02	1628.56
Reach-1	6.14	1073.00	1072.94	0.06	1.15	0.00	152.74	314.47	512.33	1103.97
Reach-1	6.05	1071.85	1071.77	0.08	0.60	0.02		631.70	372.83	1141.29
Reach-1	5.95	1071.23	1071.21	0.01	0.43	0.00	340.75	109.75	554.04	1645.07
Reach-1	5.86	1070.79	1070.77	0.02	1.29	0.00	568.98	293.28	142.28	2197.80
Reach-1	5.76	1069.49	1069.46	0.03	0.72	0.01	810.33	172.70	21.51	915.33
Reach-1	5.67	1068.76	1068.76	0.00	0.46	0.00	723.33	121.71	159.50	2009.85
Reach-1	5.57	1068.30	1068.29	0.01	0.64	0.00	559.67	179.83	265.03	1781.77
Reach-1	5.53	Lat. Weir								
Reach-1	5.48	1067.65	1067.64	0.02	1.32	0.01	239.33	224.28	540.93	1501.45
Reach-1	5.38	1066.33	1066.26	0.07	1.17	0.01	309.13	320.98	1007.42	1692.65
Reach-1	5.31	1065.15	1065.13	0.02	0.72	0.01	813.76	191.42	632.36	1439.55
Reach-1	5.25	1064.42	1064.28	0.14	0.82	0.01	804.59	634.09	198.86	1473.09
Reach-1	5.23	Lat. Weir								
Reach-1	5.2	1063.58	1063.48	0.10	1.85	0.01	501.06	588.65	410.40	1309.96
Reach-1	5.15	Lat. Weir								
Reach-1	5.1	1061.73	1061.56	0.16	0.62	0.04	592.21	574.67	218.22	2042.69
Reach-1	5.08	Lat. Weir								
Reach-1	5.07	1061.07	1061.05	0.02	1.25	0.01	680.67	120.00	528.26	2146.17
Reach-1	5.03	1059.79	1059.63	0.17	0.50	0.05			1328.93	985.06
Reach-1	4.98	1059.24	1059.24	0.00	0.02	0.00	1233.65	72.35	22.93	3564.81
Reach-1	4.95	1059.23	1059.23	0.00	0.01	0.00	1089.92	117.80	121.21	3924.15
Reach-1	4.89	1059.22	1059.22	0.00	0.01	0.00	1187.32	98.12	43.49	3099.68
Reach-1	4.79	1059.21	1059.21	0.00			979.89	194.45	154.59	2443.45

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Q US	Q Leaving Total	Q DS	Q Weir	Total Gate Flow	Wr Top Wdth	Weir Max Depth	Weir Avg Depth	Min El Weir Flow	E.G. US.	W.S. US.	E.G. DS	W.S. DS
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
Reach-1	7.06	1865.00	314.09	1550.95	314.09		366.58	0.99	0.54	1079.50	1081.12	1081.09	1080.16	1080.12
Reach-1	6.96	1550.95	281.52	1269.36	281.52		353.59	0.88	0.58	1079.20	1080.16	1080.12	1079.49	1079.48
Reach-1	6.91	1269.36	289.79	979.54	289.79		344.16	0.66	0.54	1078.80	1079.49	1079.48	1079.24	1079.23
Reach-1	5.53	1004.54	0.00	1500.11	0.00					1066.70	1068.30	1068.29	1064.36	1064.23
Reach-1	5.23	1637.54	137.10	1500.11	137.10		227.32	0.78	0.50	1062.90	1064.42	1064.28	1063.61	1063.51
Reach-1	5.15	1500.11	113.38	1385.10	113.38		399.10	0.58	0.31	1061.90	1063.58	1063.48	1061.73	1061.56
Reach-1	5.08	1385.10	56.91	1328.93	56.91		87.39	0.85	0.53	1060.20	1061.73	1061.56	1061.07	1061.05


DHS-Duplicate Effective Plan: Imported Plan 03
.5
.03
.13
.013
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1074.0
1073.5
1073.0
1072.5
1072.0
1071.5
1071.0
1070.5
1070.0
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

HEC-RAS Version 3.0.1 Mar 2001
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX XXXX     XXXXXX    XXXX
X     X  X        X                   X  X     X    X        X
X     X  X        X    X              X   X    X    X        X
X     X  XXXXXX    XXXX               X    X   X    X   XXXXX
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PROJECT DATA
Project Title: DHS-Duplicate Effective
Project File : Dup_effective.prj
Run Date and Time: 10/18/2001 11:02:57 AM

Project in English units

Project Description:
DHS Drainage Study for new Building and parking structure FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA 5062 N. 19TH AVE.
CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA 85015
FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA
5062 N. 19TH AVE.
CAVE CREEK WASH JOB #04856-05-75
PHOENIX, ARIZONA 85015
FEMA FLOOD INSURANCE RE-STUDY
CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA 5062 N.
19TH AVE.
CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA
85015

PLAN DATA

Plan Title: Imported Plan 03
Plan File : p:\PROJECTS\State\Hec-Ras\Dup_effective.p03

Geometry Title: Imported Geom 03
Geometry File : p:\PROJECTS\State\Hec-Ras\Dup_effective.g03

Flow Title : Imported Flow 05
Flow File : p:\PROJECTS\State\Hec-Ras\Dup_effective.f05

Plan Summary Information:

Number of:					
Cross Sections	=	58	Mulitple Openings	=	0
Culverts	=	0	Inline Weirs	=	0
Bridges	=	0			

Computational Information
    Water surface calculation tolerance = 0.01
    Critical depth calculaton tolerance = 0.01
    Maximum number of interations = 20
    Maximum difference tolerance = 0.3
    Flow tolerance factor = 0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method: Average Conveyance
    Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Imported Flow 05
Flow File : p:\PROJECTS\State\Hec-Ras\Dup_effective.f05

Flow Data (cfs)

River	Reach	RS	PF 1
RIVER-1	Reach-1	9.61	1237
RIVER-1	Reach-1	9.08	1210
RIVER-1	Reach-1	8.18	1375
RIVER-1	Reach-1	7.66	1691
RIVER-1	Reach-1	7.11	1865
RIVER-1	Reach-1	6.05	1890
RIVER-1	Reach-1	5.38	2523

oundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	PF 1	Critical	Known WS = 1059.21

GEOMETRY DATA

Geometry Title: Imported Geom 03
Geometry File : p:\PROJECTS\State\Hec-Ras\Dup_effective.g03

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.61

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
3000	1121.6	3024.7	1121.8	3041.6	1121.6	3085.6	1121.5	3101.4	1121.7
3116.6	1121.9	3301.4	1121.9	3501.4	1121.8	3701.4	1121.4	3880	1120
4101.4	1119.1	4301.4	1119.2	4501.4	1118.5	4644.6	1118.6	4701.4	1118.8
4901.4	1119.1	5101.4	1119	5301.4	1119.9	5501.4	1120	5587.5	1120.2

anning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
3000	.16	3880	.16	4644.6	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3880	4644.6	360	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1119.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.160	0.160
W.S. Elev (ft)	1119.94	Reach Len. (ft)	360.00	360.00	360.00
Crit W.S. (ft)	1119.28	Flow Area (sq ft)		659.80	544.01
E.G. Slope (ft/ft)	0.016005	Area (sq ft)		659.80	544.01
Q Total (cfs)	1237.00	Flow (cfs)		712.24	524.76
Top Width (ft)	1480.45	Top Width (ft)		749.17	731.28
Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)		1.08	0.96
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)		0.88	0.74
Conv. Total (cfs)	9777.9	Conv. (cfs)		5630.0	4147.9
Length Wtd. (ft)	360.00	Wetted Per. (ft)		749.17	731.28
Min Ch El (ft)	1118.50	Shear (lb/sq ft)		0.88	0.74
Alpha	1.01	Stream Power (lb/ft s)		0.95	0.72
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	563.11	83.69	443.48
C & E Loss (ft)	0.00	Cum SA (acres)	630.65	92.65	601.44

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.55

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1117.1	1177.4	1117.2	1200	1117.2	1491.9	1117.9	1535	1118.2
1600	1118.1	1800	1117.9	1829.8	1117.8	1857.9	1117.8	1869.5	1118.2
2000	1118.4	2200	1117.6	2400	1117.1	2511.7	1116.8	2540.9	1116.8
2600	1117	2800	1116.7	2803.8	1116.7	2832	1116.7	3000	1116.5
3140	1116.4	3400	1116.5	3467.9	1116.5	3495.5	1116.6	3508	1117.1
3600	1116.9	3800	1117	3951.6	1117.4	4000	1118.2	4022.2	1118.4

4031.8 1121 4046.5 1121.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.09	2800	.16	3140	.16

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
2800 3140 500 500 500 .1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	1535	1118.2

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1117.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.090	0.160	0.160
W.S. Elev (ft)	1117.96	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1117.00	Flow Area (sq ft)	578.16	479.65	958.17
E.G. Slope (ft/ft)	0.002757	Area (sq ft)	578.16	479.65	958.17
Q Total (cfs)	1237.00	Flow (cfs)	434.82	294.23	507.95
Top Width (ft)	1995.83	Top Width (ft)	810.45	340.00	845.38
Vel Total (ft/s)	0.61	Avg. Vel. (ft/s)	0.75	0.61	.53
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	0.71	1.41	1.13
Conv. Total (cfs)	23556.7	Conv. (cfs)	8280.4	5603.1	9673.2
Length Wtd. (ft)	500.00	Wetted Per. (ft)	810.46	340.00	845.40
Min Ch El (ft)	1116.40	Shear (lb/sq ft)	0.12	0.24	0.20
Alpha	1.07	Stream Power (lb/ft s)	0.09	0.15	0.10
Frctn Loss (ft)	1.63	Cum Volume (acre-ft)	560.72	78.98	437.28
C & E Loss (ft)	0.00	Cum SA (acres)	627.30	88.15	594.92

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.45

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1116.5	1010	1116.5	1020	1116.5	1040	1116.5	1050	1116.6
1660	1116.5	1667.7	1116.3	1670	1116.2	1673.6	1116	1680	1116

1683.2	1115.9	1683.3	1115.8	1883.2	1116.1	2083.2	1116.2	2283.2	1116
2332.1	1115.9	2375.2	1116.3	2483.2	1116.5	2681.9	1116.5	2683.2	1116.5
2689.8	1116.4	2712.7	1116.4	2883.2	1116.5	3000.4	1115.9	3029.8	1115.9
3083.2	1115.8	3283.2	1115.5	3600	1115.4	3683	1115.3	3883.2	1115
3940	1114.9	4283.2	1115.1	4306.2	1115.1	4483.2	1115.4	4683.2	1115.5
4883.2	1115.7	4947	1116	5012	1116.2	5054.9	1116.9	5083.2	1116.9
5283.2	1117.6	5483.2	1118.1	5597.3	1117.9	5605	1120.6	5611.8	1120.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.16	2332.1	.09	3600	.16	5605	.165

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3600	3940	470	470	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2483.2	1116.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1116.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.090	0.160	0.160
W.S. Elev (ft)	1116.33	Reach Len. (ft)	470.00	470.00	500.00
Crit W.S. (ft)	1115.54	Flow Area (sq ft)	473.50	397.14	1047.78
E.G. Slope (ft/ft)	0.003926	Area (sq ft)	473.50	397.14	1047.78
Q Total (cfs)	1237.00	Flow (cfs)	383.22	256.32	597.47
Top Width (ft)	2104.46	Top Width (ft)	684.27	340.00	1080.18
Vel Total (ft/s)	0.64	Avg. Vel. (ft/s)	0.81	0.65	0.57
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.69	1.17	0.97
Conv. Total (cfs)	19741.7	Conv. (cfs)	6115.9	4090.7	9535.1
Length Wtd. (ft)	487.51	Wetted Per. (ft)	684.28	340.00	1080.19
Min Ch El (ft)	1114.90	Shear (lb/sq ft)	0.17	0.29	0.24
Alpha	1.07	Stream Power (lb/ft s)	0.14	0.18	0.14
Frctn Loss (ft)	2.19	Cum Volume (acre-ft)	554.69	73.94	425.77
C & E Loss (ft)	0.00	Cum SA (acres)	618.72	84.25	583.87

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.36

INPUT

Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1114.8	1200	1114.5	1226.6	1114.7	1400	1115.1	1568.8	1114.3
1589.5	1114.3	1600	1114.6	1800	1114.2	1907.2	1113.7	2000	1113.6
2200	1113.4	2450	1113.2	2600	1113.1	2700	1112.8	3000	1112.9
3200	1112.6	3233.3	1112.5	3254.8	1113.4	3273.2	1113	3400	1112.8
3600	1113.6	3625.7	1113.7	3657.7	1113.8	3698	1114.8	3800	1115
3845.7	1114.4	3908.4	1114.5	3939	1114.9	4000	1114.8	4200	1115.9
4255.3	1116.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.16	2450	.16	2700	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2450	2700	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1114.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.160	0.160	0.160
W.S. Elev (ft)	1114.14	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	406.50	268.39	1136.90
E.G. Slope (ft/ft)	0.005213	Area (sq ft)	406.50	268.39	1136.90
Q Total (cfs)	1237.00	Flow (cfs)	201.84	188.68	846.48
Top Width (ft)	1859.45	Top Width (ft)	637.91	250.00	971.54
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)	0.50	0.70	0.74
Max Chl Dpth (ft)	1.64	Hydr. Depth (ft)	0.64	1.07	1.17
Conv. Total (cfs)	17133.5	Conv. (cfs)	2795.6	2613.4	11724.5
Length Wtd. (ft)	500.00	Wetted Per. (ft)	637.91	250.00	971.57
Min Ch El (ft)	1112.80	Shear (lb/sq ft)	0.21	0.35	0.38
Alpha	1.06	Stream Power (lb/ft s)	0.10	0.25	0.28
Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	549.94	70.35	413.23
C & E Loss (ft)	0.01	Cum SA (acres)	611.58	81.06	572.10

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
EACH: Reach-1 RS: 9.27

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1114.6	1026	1114.6	1067.7	1113.2	1092.6	1112.7	1105.4	1112.7
1113.5	1114.7	1200	1114.7	1375.6	1114.7	1396.8	1113.6	1400	1113.6
1450	1113.5	1600	1113	1800	1112.5	1896.2	1112	1940.3	1111.9
2000	1111.9	2200	1111.4	2400	1111.5	2700	1111.3	2730.8	1111.1
2741.7	1110.9	2767.4	1110.8	2776.7	1111.3	2880	1111.3	3000	1111.5
3200	1111.7	3400	1111.7	3429.3	1111.7	3434.9	1111.5	3461	1111.5
3472.6	1111.8	3600	1112.1	3608.2	1112.1	3614.8	1112.8	3793.1	1112.6
3800	1112.6	3827.7	1112.6	4000	1113.6	4014.2	1113.6	4077.2	1113.7
4200	1114.3	4400	1115.5	4525.1	1115.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2700	.02	2776.7	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2700	2776.7	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1112.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1112.54	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	827.56	115.11	765.31
E.G. Slope (ft/ft)	0.001910	Area (sq ft)	827.56	115.11	65.31
Q Total (cfs)	1237.00	Flow (cfs)	386.67	489.81	360.52
Top Width (ft)	1827.07	Top Width (ft)	914.75	76.70	835.62
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.47	4.26	0.47
Max Chl Dpth (ft)	1.74	Hydr. Depth (ft)	0.90	1.50	0.92
Conv. Total (cfs)	28305.8	Conv. (cfs)	8848.1	11208.2	8249.6
Length Wtd. (ft)	500.00	Wetted Per. (ft)	914.75	76.72	835.65
Min Ch El (ft)	1110.80	Shear (lb/sq ft)	0.11	0.18	0.11
Alpha	13.92	Stream Power (lb/ft s)	0.05	0.76	0.05
Frctn Loss (ft)	1.62	Cum Volume (acre-ft)	542.86	68.15	402.31
C & E Loss (ft)	0.00	Cum SA (acres)	602.67	79.19	561.72

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.17

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1110.9	1010	1110.9	1020	1110.9	1040	1111	1050	1111.1
1650	1111.1	1651.5	1111	1660	1111	1663.7	1111	1663.8	1110.7
1863.7	1110.7	2063.7	1110.5	2263.7	1110.7	2305.7	1110.7	2360.9	1111
2400	1112.4	2463.7	1111.5	2663.7	1110.8	2863.7	1110.5	2971	1110.5
2984.4	1110.1	3014.4	1110.1	3028.6	1110.9	3063.7	1110.9	3263.7	1110.3
3463.7	1110	3663.7	1110.2	3880	1109.6	4063.7	1110.2	4263.7	1110.8
4291	1110.9	4294.1	1110.6	4325.2	1110.6	4337.6	1110.8	4463.7	1110.7
4582.8	1110.9	4647.6	1110.8	4662.3	1111.1	4663.7	1111.1	4863.7	1111.7
4924.5	1111.9	4986.1	1112.3	5063.7	1112.5	5263.7	1113.3	5394.1	1113.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3663.7	.035	3880	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3663.7	3880	500	520	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2400	1112

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1111.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.130	0.035	0.130
W.S. Elev (ft)	1110.92	Reach Len. (ft)	500.00	520.00	500.00
Crit W.S. (ft)	1110.64	Flow Area (sq ft)	517.05	219.46	322.90
E.G. Slope (ft/ft)	0.006627	Area (sq ft)	517.05	219.46	322.90
Q Total (cfs)	1237.00	Flow (cfs)	303.34	765.80	167.86
Top Width (ft)	2022.23	Top Width (ft)	1032.72	216.30	773.21
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.59	3.49	0.52
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.50	1.01	0.42
Conv. Total (cfs)	15195.6	Conv. (cfs)	3726.3	9407.3	2062.0
Length Wtd. (ft)	510.82	Wetted Per. (ft)	1032.75	216.30	773.23
Min Ch El (ft)	1109.60	Shear (lb/sq ft)	0.21	0.42	0.17
Alpha	5.62	Stream Power (lb/ft s)	0.12	1.46	0.09
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	535.14	66.23	396.06
C & E Loss (ft)	0.00	Cum SA (acres)	591.50	77.51	552.49

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.08

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1109	1010	1109	1020	1109	1040	1109	1050	1109
1700	1109.3	1710	1109.3	1720	1109.4	1730	1109.4	1740	1109.4
1750	1109.4	1760	1109.5	1770	1109.5	1780	1109.5	1790	1109.5
1800	1109.4	1810	1109.4	1820	1109.4	1830	1109.4	1840	1109.4
1850	1109.4	1860	1109.5	1870	1109.5	1880	1109.5	1890	1109.5
1900	1109.6	1904.3	1109.6	1910	1109.5	1920	1109.2	1926.9	1108.9
1930	1108.9	1935.4	1108.9	1935.5	1108.8	2135.4	1108.7	2263.7	1108
2286.8	1108.2	2335.4	1108.7	2535.4	1108.5	2589.3	1108.5	2600	1109
2735.4	1108.6	2935.4	1108.4	3135.4	1107.9	3272.2	1107.4	3303.2	1107.4
3335.4	1107.7	3535.4	1107.4	3735.4	1107.5	3900	1107.3	3935.4	1107.3
3959.2	1107.3	4000	1107.7	4135.4	1107.8	4335.4	1108	4535.4	1108.4
4574.3	1108.2	4599.7	1108.3	4735.4	1109.3	4935.4	1109.7	5135.4	1110.9
5202.7	1110.9	5262.7	1110.8	5275.3	1111.5	5335.4	1112.1	5535.4	1112.1
5681.6	1112.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3900	.02	4000	.13

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
3900 4000 500 500 500 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2600	1109

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1108.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1108.56	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1108.30	Flow Area (sq ft)	904.27	117.98	337.13
E.G. Slope (ft/ft)	0.003245	Area (sq ft)	904.27	117.98	337.13
Q Total (cfs)	1210.00	Flow (cfs)	508.66	557.45	143.89
Top Width (ft)	1861.18	Top Width (ft)	1126.02	100.00	635.17
Vel Total (ft/s)	0.89	Avg. Vel. (ft/s)	0.56	4.73	0.43
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.80	1.18	0.53

Conv. Total (cfs)	21242.5	Conv. (cfs)	8930.0	9786.4	2526.1
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1126.02	100.00	535.17
Min Ch El (ft)	1107.30	Shear (lb/sq ft)	0.16	0.24	0.11
Alpha	13.18	Stream Power (lb/ft s)	0.09	1.13	0.05
Frctn Loss (ft)	1.23	Cum Volume (acre-ft)	526.98	64.22	392.28
C & E Loss (ft)	0.02	Cum SA (acres)	579.11	75.62	544.41

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.98

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1108.2	1010	1108.1	1020	1108	1040	1107.9	1050	1107.9
1060	1107.9	1070	1107.9	1080	1107.8	1090	1107.8	1100	1107.7
1690	1107.8	1700	1107.8	1710	1107.8	1720	1107.8	1730	1107.8
1740	1107.8	1750	1107.9	1760	1107.9	1770	1107.9	1780	1107.9
1790	1107.9	1800	1107.9	1810	1108	1820	1108	1830	1108
1840	1108	1850	1108	1860	1108.1	1870	1108.1	1880	1108.1
1890	1108.1	1900	1108.1	1910	1108.1	1920	1108.1	1930	1107.7
1940	1107.5	1944.3	1107.5	1944.4	1107.3	2144.3	1107.2	2344.3	1107.1
2544.3	1107	2744.3	1106.6	2944.3	1106.3	3144.3	1106.2	3344.3	1106.3
3544.3	1106.5	3744.3	1106.6	3900	1106	3944.3	1106	3965.8	1106
4000	1106.5	4344.3	1106.7	4544.3	1107.1	4572.1	1107.1	4578.8	1106.9
4604.1	1106.8	4744.3	1107.3	4944.3	1107.8	5144.3	1108.9	5208.7	1109.6
5269.8	1109.5	5344.3	1110	5366.4	1110.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3900	.02	4000	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3900	4000	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1107.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1107.37	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1404.74	128.56	428.95
E.G. Slope (ft/ft)	0.001939	Area (sq ft)	1404.74	128.56	428.95
Q Total (cfs)	1210.00	Flow (cfs)	567.00	497.20	145.81
Top Width (ft)	2828.35	Top Width (ft)	1955.64	100.00	772.72
Vel Total (ft/s)	0.62	Avg. Vel. (ft/s)	0.40	3.87	

0.34				
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)	0.72	1.29
0.56				
Conv. Total (cfs)	27482.1	Conv. (cfs)	12877.9	11292.6
3311.6				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1955.68	100.00
772.72				
Min Ch El (ft)	1106.00	Shear (lb/sq ft)	0.09	0.16
0.07				
Alpha	16.40	Stream Power (lb/ft s)	0.04	0.60
0.02				
Frctn Loss (ft)	1.44	Cum Volume (acre-ft)	513.73	62.80
387.88				
C & E Loss (ft)	0.00	Cum SA (acres)	561.42	74.47
536.33				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.89

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1107.6	1063.2	1107.6	1088.6	1106.6	1200	1106.4	1400	1106.4
1600	1106.2	1795.2	1105.3	1800	1105.3	1848.6	1105.3	2000	1105.3
2092.8	1104.8	2178.9	1104.7	2200	1104.7	2210.9	1104.7	2400	1105
2600	1105.1	2800	1105.1	3000	1105.3	3110	1105.2	3134.8	1104.9
3166.1	1105.1	3187.3	1105.5	3200	1105.5	3400	1105.6	3600	1105.7
3779.9	1105.3	3800	1105.5	3805.5	1105.5	4000	1105.7	4200	1105.9
4400	1107.4	4408.1	1108	4469.9	1108.6	4498.9	1109		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3110	.02	3187.3	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3110	3187.3	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1106.02	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.08	Wt. n-Val.	0.130	0.020	
0.130					
W.S. Elev (ft)	1105.94	Reach Len. (ft)	500.00	500.00	
500.00					
Crit W.S. (ft)		Flow Area (sq ft)	1168.70	64.66	
322.99					
E.G. Slope (ft/ft)	0.004759	Area (sq ft)	1168.70	64.66	
322.99					
Q Total (cfs)	1210.00	Flow (cfs)	797.24	294.22	
118.53					
Top Width (ft)	2547.13	Top Width (ft)	1452.49	77.30	
1017.34					

Vel Total (ft/s)	0.78	Avg. Vel. (ft/s)	0.68	4.55 0.37
Max Chl Dpth (ft)	1.23	Hydr. Depth (ft)	0.80	0.84).32
Conv. Total (cfs)	17539.2	Conv. (cfs)	11556.2	4264.8 1718.2
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1452.49	77.31 1017.34
Min Ch El (ft)	1104.90	Shear (lb/sq ft)	0.24	0.25 0.09
Alpha	8.86	Stream Power (lb/ft s)	0.16	1.13 0.03
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	498.96	61.70 383.56
C & E Loss (ft)	0.01	Cum SA (acres)	541.86	73.45 526.05

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.79

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1104.6	1016.4	1104.6	1062.7	1104.5	1400	1104.2	1600	1104.2
1681.2	1104	1692	1103.3	1738.1	1103.3	1800	1103.5	2000	1103.4
2200	1103	2400	1103	2600	1103.1	2692.6	1102.9	2729.2	1103
2800	1103.2	2881.4	1103.3	2975	1103.4	3023.3	1103.4	3030.4	1103
3062.1	1103.1	3080	1103.5	3200	1103.5	3400	1103.6	3600	1104
3663.7	1104	3670.7	1103.8	3701.5	1103.8	3714.1	1104.1	3800	1104.2
4000	1104.6	4200	1105.8	4286.2	1105.4	4302.8	1106.5	4366.4	1106.4
4387.7	1107.3	4400	1107.3	4568.6	1107.3	4575.8	1106.8	4600	1107
4800	1107.1	4968.3	1107.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2975	.02	3080	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2975	3080	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1104.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1104.19	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1296.20	96.74	317.95
E.G. Slope (ft/ft)	0.002715	Area (sq ft)	1296.20	96.74	317.95
Q Total (cfs)	1210.00	Flow (cfs)	744.35	354.52	111.13
Top Width (ft)	2181.16	Top Width (ft)	1368.95	105.00	)07.20
Vel Total (ft/s)	0.71	Avg. Vel. (ft/s)	0.57	3.66	

Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.95	0.92
Conv. Total (cfs)	23222.9	Conv. (cfs)	14286.0	6804.1
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1368.98	105.02
Min Ch El (ft)	1103.00	Shear (lb/sq ft)	0.16	0.16
Alpha	8.30	Stream Power (lb/ft s)	0.09	0.57
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	484.82	60.77
C & E Loss (ft)	0.01	Cum SA (acres)	525.67	72.41

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.7

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1103.4	1146.8	1102.1	1175.3	1102.1	1400	1102.3	1600	1102.3
1800	1101.9	1859.5	1101.2	1915.5	1101.4	2000	1102.2	2200	1101.8
2399.9	1101.9	2527.6	1101.3	2560.8	1101.3	2593.3	1101.9	2599.9	1101.9
2799.9	1101.7	2999.9	1101.6	3170	1101.4	3199.9	1101.4	3270	1101.5
3399.9	1101.6	3599.9	1101.9	3735.5	1102	3778.5	1102.1	3799.9	1102.2
3925	1102.6	3948.3	1103.9	3999.9	1104.2	4199.9	1104.5	4399.9	1103.9
4469.4	1103.6	4532.4	1103.8	4599.9	1105.5	4618.6	1105.8	4755	1104.4
4799.9	1104.5	4999.9	1104.2	5199.8	1105	5399.8	1104.9	5595.1	1105
5599.8	1105.1	5627.6	1105.7	5717.9	1105.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3170	.02	3270	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3270	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1102.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1102.42	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1126.96	98.66	340.98
E.G. Slope (ft/ft)	0.004251	Area (sq ft)	1126.96	98.66	340.98
Q Total (cfs)	1210.00	Flow (cfs)	561.88	473.62	174.50
Top Width (ft)	2758.75	Top Width (ft)	2059.52	100.00	599.23
Vel Total (ft/s)	0.77	Avg. Vel. (ft/s)	0.50	4.80	0.51

Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.55	0.99
0.57				
Conv. Total (cfs)	18558.0	Conv. (cfs)	8617.6	7264.0
676.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	2059.54	100.00
599.23				
Min Ch El (ft)	1101.40	Shear (lb/sq ft)	0.15	0.26
0.15				
Alpha	15.38	Stream Power (lb/ft s)	0.07	1.26
0.08				
Frctn Loss (ft)	1.88	Cum Volume (acre-ft)	470.91	59.65
376.10				
C & E Loss (ft)	0.03	Cum SA (acres)	505.99	71.23
508.66				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.61

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1101.2	1200	1100.2	1400	1100	1800	1099.4	1939.1	1099.4
2000	1099.6	2200	1099.7	2399.9	1099.9	2599.9	1099.8	2799.9	1099.8
2999.9	1100.1	3041.8	1100.2	3190	1100	3226.8	1099.9	3290	1100.1
3542.7	1099.9	3575.5	1099.9	3599.9	1100.3	3608.9	1100.3	3799.9	1100.5
3856.8	1100.6	3866.7	1100.5	3900.7	1100.5	3928.4	1101.7	3999.9	1102
4199.9	1101.7	4399.9	1101.4	4500	1101.1	4569.2	1100.8	4599.9	1101.3
4724.2	1101.3	4799.9	1101.4	4999.9	1102.1	5199.8	1102.7	5399.8	1103.2
5569.2	1103.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3190	.02	3290	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3190	3290	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1100.65	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020	
0.130					
W.S. Elev (ft)	1100.62	Reach Len. (ft)	490.00	490.00	
490.00					
Crit W.S. (ft)		Flow Area (sq ft)	1629.65	63.62	
245.44					
E.G. Slope (ft/ft)	0.003357	Area (sq ft)	1629.65	63.62	
245.44					
Q Total (cfs)	1210.00	Flow (cfs)	919.15	202.58	
88.26					
Top Width (ft)	2786.99	Top Width (ft)	2073.57	100.00	
613.42					
Vel Total (ft/s)	0.62	Avg. Vel. (ft/s)	0.56	3.18	
0.36					
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.79	0.64	
1.40					

Conv. Total (cfs)	20883.1	Conv. (cfs)	15863.5	3496.3 1523.3
Length Wtd. (ft)	490.00	Wetted Per. (ft)	2073.57	100.00 513.43
Min Ch El (ft)	1099.90	Shear (lb/sq ft)	0.16	0.13 0.08
Alpha	5.00	Stream Power (lb/ft s)	0.09	0.42 0.03
Frctn Loss (ft)	1.66	Cum Volume (acre-ft)	455.09	58.72 372.74
C & E Loss (ft)	0.00	Cum SA (acres)	482.27	70.08 501.70

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.51

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1099.1	1200	1099.3	1349.4	1099.3	1524.2	1098.8	1600	1098.7
1800	1098.6	2000	1098.2	2176.6	1098.2	2200	1098.7	2212.4	1098.8
2276.3	1097.9	2325.2	1098.1	2399.9	1098.4	2599.9	1098.6	2799.9	1098.9
2954.1	1098.2	2987.4	1098.2	2999.9	1098.6	3199.9	1098.4	3399.9	1098.2
3599.9	1098.5	3614.8	1098.5	3649.2	1098.5	3690	1098.8	3799.9	1098.9
3809.6	1098.9	3999.9	1098.7	4199.9	1098.5	4263.3	1098.3	4295.5	1098.3
4313.7	1098.7	4351.4	1098.8	4370.2	1099.5	4399.9	1100.2	4525.6	1100
4533.3	1098.8	4599.9	1098.7	4799.9	1098.8	4999.9	1099.1	5199.8	1099.4
5399.8	1099.8	5599.8	1100.3	5648.2	1100.3				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1524.2	.03	2325.2	.13	3599.9	.02	3690	.13

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
3599.9 3690 500 500 500 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4399.9	5648.2	1100.2

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1098.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.054	0.020	0.130
W.S. Elev (ft)	1098.96	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1098.63	Flow Area (sq ft)	1059.15	35.39	188.97
E.G. Slope (ft/ft)	0.003415	Area (sq ft)	1059.15	35.39	188.97
Q Total (cfs)	1210.00	Flow (cfs)	1073.09	82.40	4.52
Top Width (ft)	2887.68	Top Width (ft)	2131.86	90.10	

665.71					
Vel Total (ft/s)	0.94	Avg. Vel. (ft/s)	1.01	2.33	
0.29					
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.50	0.39	
0.28					
Conv. Total (cfs)	20705.9	Conv. (cfs)	18363.0	1410.0	
932.9					
Length Wtd. (ft)	500.00	Wetted Per. (ft)	2131.88	90.10	
665.72					
Min Ch El (ft)	1098.50	Shear (lb/sq ft)	0.11	0.08	
0.06					
Alpha	1.44	Stream Power (lb/ft s)	0.11	0.19	
0.02					
Frctn Loss (ft)	1.86	Cum Volume (acre-ft)	439.97	58.16	
370.29					
C & E Loss (ft)	0.00	Cum SA (acres)	458.62	69.01	
494.50					

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.42

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1097.1	1200	1097.6	1400	1096.5	1800	1096.5	1850.6	1096.4
2000	1096.9	2200	1096.6	2399.9	1096.5	2599.9	1096.7	2799.9	1097
2999.9	1096.7	3110	1096.7	3148.8	1096.3	3181.8	1096.4	3199.9	1096.8
3230	1096.8	3399.9	1096.6	3494.7	1096.8	3535.3	1096.3	3599.9	1096.4
3799.9	1096.2	3999.9	1096.3	4199.9	1096.9	4399.9	1097.2	4422.8	1097.2
4478.9	1097.4	4515.7	1099.1	4538.1	1098.4	4599.9	1098.6	4799.9	1099.4
4999.9	1099.1	5123.5	1099.4	5142	1101.3	5199.8	1101.3	5213.5	1101.3
5242.4	1100.5	5399.8	1101	5599.8	1100.7	5601.4	1100.7		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	1850.6	.13	3110	.02	3230	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3110	3230	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1097.12	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.03	Wt. n-Val.	0.059	0.020	
0.130					
W.S. Elev (ft)	1097.09	Reach Len. (ft)	490.00	490.00	
490.00					
Crit W.S. (ft)	1096.80	Flow Area (sq ft)	771.95	64.46	
604.93					
E.G. Slope (ft/ft)	0.004064	Area (sq ft)	771.95	64.46	
604.93					
Q Total (cfs)	1210.00	Flow (cfs)	711.32	201.75	
296.93					
Top Width (ft)	3030.72	Top Width (ft)	1816.60	120.00	
094.12					
Vel Total (ft/s)	0.84	Avg. Vel. (ft/s)	0.92	3.13	

0.49					
Max Chl Dpth (ft)	0.89	Hydr. Depth (ft)	0.42	0.54	
0.55					
Conv. Total (cfs)	18981.1	Conv. (cfs)	11158.4	3164.8	
4657.9					
Length Wtd. (ft)	490.00	Wetted Per. (ft)	1816.61	120.01	
1094.12					
Min Ch El (ft)	1096.30	Shear (lb/sq ft)	0.11	0.14	
0.14					
Alpha	3.11	Stream Power (lb/ft s)	0.10	0.43	
0.07					
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	429.46	57.59	
365.74					
C & E Loss (ft)	0.00	Cum SA (acres)	435.96	67.81	
484.40					

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.32

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1096.6	1013.9	1094.5	1081.6	1095.8	1400	1095.8	1600	1095.2
1676.6	1094.8	1719.7	1095.1	1800	1095.1	2000	1095.2	2200	1095.6
2333.3	1095.8	2356.5	1095.4	2383.1	1095.4	2399.9	1095.7	2599.9	1095.6
2683.8	1095.3	2719.5	1095.3	2799.9	1095.5	2970	1095.2	3015.6	1095.1
3051.9	1095.1	3066.3	1095.3	3090	1095.5	3338.5	1095.5	3369.4	1094.9
3400.4	1095.3	3800.3	1095.3	4150	1096	4540	1097	5000	1098
5260	1098.2								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1719.7	.13	2970	.02	3090	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2970	3090	500	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1096.02	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.02	Wt. n-Val.	0.049	0.020	
0.130					
W.S. Elev (ft)	1095.99	Reach Len. (ft)	500.00	500.00	
500.00					
Crit W.S. (ft)	1095.56	Flow Area (sq ft)	1072.33	96.37	
572.06					
E.G. Slope (ft/ft)	0.001419	Area (sq ft)	1072.33	96.37	
572.06					
Q Total (cfs)	1210.00	Flow (cfs)	813.40	232.99	
163.61					
Top Width (ft)	3142.63	Top Width (ft)	1965.98	120.00	
1056.65					

Vel Total (ft/s)	0.70	Avg. Vel. (ft/s)	0.76	2.42
0.29				
Max Chl Dpth (ft)	1.49	Hydr. Depth (ft)	0.55	0.80
).54				
Conv. Total (cfs)	32123.2	Conv. (cfs)	21594.2	6185.6
4343.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1966.12	120.00
1056.66				
Min Ch El (ft)	1095.10	Shear (lb/sq ft)	0.05	0.07
0.05				
Alpha	3.15	Stream Power (lb/ft s)	0.04	0.17
0.01				
Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	419.08	56.68
359.12				
C & E Loss (ft)	0.00	Cum SA (acres)	414.68	66.46
472.31				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.23

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1095.7	1200	1094.8	1400	1094.5	1800	1094.3	2000	1094.1
2200	1094.2	2399.9	1094.3	2599.9	1094.3	2799.9	1094.3	2950	1094.4
3150	1094.5	3399.9	1094.7	3599.9	1094.9	3799.9	1095.1	3999.9	1095.2
4199.9	1095.1	4399.9	1095.1	4599.9	1095.6	4799.9	1095.9	4999.9	1096.7
5199.8	1097.3	5399.8	1097.8	5580.8	1097.4				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.013	1200	.13	2399.9	.034	5399.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2950	3150	280	270	270	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1094.93	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.02	Wt. n-Val.	0.067	0.034	
0.034					
W.S. Elev (ft)	1094.92	Reach Len. (ft)	280.00	270.00	
270.00					
Crit W.S. (ft)		Flow Area (sq ft)	1022.41	93.25	
102.43					
E.G. Slope (ft/ft)	0.003702	Area (sq ft)	1022.41	93.25	
102.43					
Q Total (cfs)	1210.00	Flow (cfs)	961.74	149.09	
99.17					
Top Width (ft)	2441.97	Top Width (ft)	1775.83	200.00	
166.14					
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	0.94	1.60	

0.97					
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)	0.58	0.47	
0.22					
Conv. Total (cfs)	19887.4	Conv. (cfs)	15807.0	2450.4	
1630.0					
Length Wtd. (ft)	275.31	Wetted Per. (ft)	1775.83	200.00	
466.14					
Min Ch El (ft)	1094.40	Shear (lb/sq ft)	0.13	0.11	
0.05					
Alpha	1.11	Stream Power (lb/ft s)	0.13	0.17	
0.05					
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	407.06	55.59	
355.25					
C & E Loss (ft)	0.00	Cum SA (acres)	393.21	64.62	
463.57					

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.18

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1094.3	1087.8	1093.2	1105.2	1092.7	1200	1093.5	1400	1093.8
1600	1094	1800	1093.6	1834.1	1093.2	1864.9	1093.2	1875.2	1093.4
2000	1093.2	2200	1093.3	2290	1092.8	2599.9	1093.3	2799.9	1093.1
2999.9	1093.3	3199.9	1093.4	3399.9	1093.5	3599.9	1093.6	3674.3	1094
3714.6	1094.7	3778.5	1095	3799.9	1095.3	3903.5	1096.2	3950.5	1095.5
3999.9	1096	4040.5	1096.1	4073.1	1095.5	4102.9	1095.7	4132.9	1096.3

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1864.9	.035	3799.9	.13	4102.9	.135

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2290	2599.9	520	500	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1093.74	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.05	Wt. n-Val.	0.045	0.035	
0.035					
W.S. Elev (ft)	1093.70	Reach Len. (ft)	520.00	500.00	
490.00					
Crit W.S. (ft)	1093.53	Flow Area (sq ft)	322.57	200.91	
349.25					
E.G. Slope (ft/ft)	0.004973	Area (sq ft)	322.57	200.91	
349.25					
Q Total (cfs)	1375.00	Flow (cfs)	412.07	450.59	
512.35					
Top Width (ft)	2151.59	Top Width (ft)	823.39	309.90	
1018.30					
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	1.28	2.24	
1.47					
Max Chl Dpth (ft)	1.00	Hydr. Depth (ft)	0.39	0.65	
.34					
Conv. Total (cfs)	19497.6	Conv. (cfs)	5843.1	6389.4	

7265.1					
Length Wtd. (ft)	503.62	Wetted Per. (ft)	823.41	309.90	1018.30
Min Ch El (ft)	1092.80	Shear (lb/sq ft)	0.12	0.20	0.11
Alpha	1.18	Stream Power (lb/ft s)	0.16	0.45	0.16
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	402.74	54.68	353.85
C & E Loss (ft)	0.01	Cum SA (acres)	384.85	63.04	458.97

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.08

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1092.9	1165.4	1092.9	1200	1092	1260.8	1091.5	1285.5	1092.1
1303.8	1095.4	1346.6	1095	1394.7	1092.5	1400	1092.4	1600	1092.2
1800	1092.1	2000	1092.2	2086.3	1092	2097.5	1092.9	2111.1	1092.4
2129.3	1094.3	2200	1094.2	2216.7	1094.1	2269.1	1091.8	2399.9	1091.8
2599.9	1091.9	2690	1092.1	2999.9	1092.2	3199.9	1092.4	3399.9	1092.3
3599.9	1092.6	3799.9	1093.8	3826.1	1094.3	3896.7	1094.5	3999.9	1094.9
4199.9	1095	4399.9	1096.3	4429.9	1096.6				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.036	1165.4	.034	2216.7	.036	2690	.035	3896.7	.131
4399.9	.13								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2216.7	2690	550	500	610	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1092.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.034	0.036	0.035
W.S. Elev (ft)	1092.79	Reach Len. (ft)	550.00	500.00	610.00
Crit W.S. (ft)		Flow Area (sq ft)	526.15	401.03	457.91
E.G. Slope (ft/ft)	0.000952	Area (sq ft)	526.15	401.03	457.91
Q Total (cfs)	1375.00	Flow (cfs)	526.70	477.50	370.80
Top Width (ft)	2226.90	Top Width (ft)	841.36	443.52	942.02
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	1.00	1.19	0.81
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.63	0.90	.49
Conv. Total (cfs)	44568.6	Conv. (cfs)	17072.3	15477.4	

12018.8					
Length Wtd. (ft)	551.27	Wetted Per. (ft)	841.51	443.54	942.02
Min Ch El (ft)	1091.80	Shear (lb/sq ft)	0.04	0.05	0.03
Alpha	1.07	Stream Power (lb/ft s)	0.04	0.06	0.02
Frctn Loss (ft)	1.30	Cum Volume (acre-ft)	397.67	51.23	349.31
C & E Loss (ft)	0.01	Cum SA (acres)	374.92	58.72	447.94

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.99

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1091.9	1200	1091.6	1371.1	1091	1400	1090.2	1428.7	1090.2
1459	1091	1600	1091.3	1800	1091.3	2000	1091.5	2088.2	1091.7
2118.5	1092.1	2160	1091.1	2200	1090.9	2399.9	1090.7	2422.2	1090.8
2472.3	1093.5	2522.6	1093.6	2599.9	1090.6	2607.7	1090.3	2799.9	1090.6
2999.9	1090.8	3199.9	1091	3399.9	1091	3479.4	1090.9	3517.6	1092.4
3566.3	1091.4	3599.9	1091.5	3648.7	1091.6	3687.4	1094.2	3743.9	1094.4
3754.5	1092	3784	1092.3	3799.9	1093.8	3844.3	1095.7	3918.3	1095.6
3928	1094.3	3949.3	1094.4	3975.7	1093.7	3998.7	1094.9	3999.9	1095
4063.6	1095.5	4078.1	1096.1	4199.9	1096.2	4399.9	1095.5	4538.8	1094.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	2160	.033	2422.2	.034	2472.3	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2160	2422.2	470	500	570	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1091.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.035	0.033	0.129
W.S. Elev (ft)	1091.40	Reach Len. (ft)	470.00	500.00	570.00
Crit W.S. (ft)	1091.23	Flow Area (sq ft)	163.23	149.04	555.59
E.G. Slope (ft/ft)	0.013231	Area (sq ft)	163.23	149.04	555.59
Q Total (cfs)	1375.00	Flow (cfs)	318.45	529.66	526.89
Top Width (ft)	1834.11	Top Width (ft)	648.30	262.20	23.61
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	1.95	3.55	

0.95					
Max Chl Dpth (ft)	1.19	Hydr. Depth (ft)	0.25	0.57	
0.60					
Conv. Total (cfs)	11954.0	Conv. (cfs)	2768.5	4604.8	
4580.7					
Length Wtd. (ft)	542.10	Wetted Per. (ft)	648.33	262.20	
923.65					
Min Ch El (ft)	1090.70	Shear (lb/sq ft)	0.21	0.47	
0.50					
Alpha	2.43	Stream Power (lb/ft s)	0.41	1.67	
0.47					
Frctn Loss (ft)	1.96	Cum Volume (acre-ft)	393.32	48.07	
342.21					
C & E Loss (ft)	0.02	Cum SA (acres)	365.51	54.67	
434.88					

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1090.5	1200	1090.2	1400	1089.2	1671.5	1089.4	1685.6	1089
1800	1088.8	2000	1089	2200	1089.2	2425	1089.5	2430	1089.5
2435	1089.3	2460	1089.4	2799.9	1089.3	2983.2	1088.5	2999.9	1088.7
3010.7	1088.9	3026.7	1089.2	3099.3	1088.3	3199.9	1089	3265.2	1088.9
3293.1	1090.9	3343.8	1088.3	3399.9	1087.9	3445.4	1087.3	3599.9	1088.7
3675.4	1089.2	3724.3	1088.5	3799.9	1088.7	3813.3	1088.8	3928.3	1090
3990.9	1091.3	3999.9	1091.3	4041.2	1091.3	4063	1090.8	4096.5	1091.1
4138.9	1092.1	4199.9	1092.5	4275.9	1092.4	4293	1091.7	4363.4	1091.4
4399.9	1091.7	4599.9	1091.3	4766.8	1090.9	4797.5	1090.9	4799.9	1090.9
4999.9	1091.3	5032.4	1090.8	5060.8	1090.7	5184.3	1091		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2425	.02	2460	.13	2999.9	.035	3999.9	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2425	2460	500	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1089.51	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020	
0.038					
W.S. Elev (ft)	1089.48	Reach Len. (ft)	500.00	500.00	
500.00					
Crit W.S. (ft)		Flow Area (sq ft)	346.19	3.59	
924.46					
E.G. Slope (ft/ft)	0.001660	Area (sq ft)	346.19	3.59	
924.46					

Q Total (cfs)	1375.00	Flow (cfs)	76.26	2.67 1296.07
Top Width (ft)	2464.16	Top Width (ft)	1064.02	29.45 1370.69
Vel Total (ft/s)	1.08	Avg. Vel. (ft/s)	0.22	0.74 1.40
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.33	0.12 0.67
Conv. Total (cfs)	33752.1	Conv. (cfs)	1871.8	65.6 31814.7
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1064.03	29.45 1370.78
Min Ch El (ft)	1089.30	Shear (lb/sq ft)	0.03	0.01 0.07
Alpha	1.59	Stream Power (lb/ft s)	0.01	0.01 0.10
Frctn Loss (ft)	1.31	Cum Volume (acre-ft)	390.57	47.19 332.53
C & E Loss (ft)	0.00	Cum SA (acres)	356.27	52.99 419.87

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.8

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1090.6	1084.3	1090.9	1111	1088.6	1235.4	1088.6	1244.2	1090.1
1312.8	1090.8	1400	1088.1	1414.6	1087.5	1600	1088.1	1620.5	1088.1
1630.5	1087.3	1673.6	1087.3	1800	1087.9	2000	1087.9	2200	1087.7
2357.9	1087.8	2369.1	1087.2	2398.7	1087.2	2399.9	1087.3	2430	1087.9
2599.9	1087.8	2799.9	1087.7	2929.6	1087.6	2936.7	1087.3	2973	1087.6
2999.9	1087.8	3179.5	1088.1	3199.9	1087.7	3221.4	1087.4	3331.1	1088.3
3373.3	1087.6	3399.9	1087.7	3527.8	1087.4	3599.9	1088.4	3614.6	1088.9
3642.9	1087.7	3693.7	1087.5	3739.4	1085.9	3799.9	1087.1	3883.7	1088.4
3999.9	1088.5	4057.2	1088.1	4199.9	1088.8	4215.4	1088.8	4243.7	1088
4309.8	1088.3	4399.9	1088.4	4599.9	1088.5	4743.6	1088.7	4796.8	1090.7
4799.9	1090.8	4878.2	1091.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2369.1	.02	2430	.13	2973	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2369.1	2430	490	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1088.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.020	0.043

W.S. Elev (ft)	1088.13	Reach Len. (ft)	490.00	490.00 490.00
Crit W.S. (ft)	1087.90	Flow Area (sq ft)	348.25	44.26 646.62
E.G. Slope (ft/ft)	0.004738	Area (sq ft)	348.25	44.26 646.62
Q Total (cfs)	1375.00	Flow (cfs)	138.41	182.91 1053.68
Top Width (ft)	2423.09	Top Width (ft)	969.92	60.90 1392.27
Vel Total (ft/s)	1.32	Avg. Vel. (ft/s)	0.40	4.13 1.63
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.36	0.73 0.46
Conv. Total (cfs)	19975.7	Conv. (cfs)	2010.8	2657.3 15307.6
Length Wtd. (ft)	490.00	Wetted Per. (ft)	969.98	60.91 1392.36
Min Ch El (ft)	1087.20	Shear (lb/sq ft)	0.11	0.21 0.14
Alpha	2.47	Stream Power (lb/ft s)	0.04	0.89 0.22
Frctn Loss (ft)	1.59	Cum Volume (acre-ft)	386.59	46.92 323.51
C & E Loss (ft)	0.01	Cum SA (acres)	344.60	52.47 404.01

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.71

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1087.8	1188.6	1085.9	1200	1086.7	1366.9	1086.5	1400	1086.5
1600	1086.4	1800	1085.9	2000	1085.7	2200	1085.5	2480	1085.5
2525	1085.5	2799.9	1085.6	2999.9	1085.9	3199.9	1086.3	3399.9	1086.9
3599.9	1087	3799.9	1086.7	3999.9	1086.5	4199.9	1086.2	4399.9	1085.7
4599.9	1085.9	4799.9	1086.2	4999.9	1086.5	5199.8	1087.1	5399.8	1087.7
5599.8	1088	5610.8	1088.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2480	.02	2525	.13	2999.9	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2480	2525	220	220	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1086.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.130	0.020	0.060
W.S. Elev (ft)	1086.56	Reach Len. (ft)	220.00	220.00	220.00
Crit W.S. (ft)		Flow Area (sq ft)	773.38	47.71	

1005.89				
E.G. Slope (ft/ft)	0.002351	Area (sq ft)	773.38	47.71
1005.89				
Q Total (cfs)	1375.00	Flow (cfs)	315.77	178.71
880.51				
Top Width (ft)	3125.45	Top Width (ft)	1238.39	45.00
1842.06				
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.41	3.75
0.88				
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.62	1.06
0.55				
Conv. Total (cfs)	28360.0	Conv. (cfs)	6513.0	3686.0
18160.9				
Length Wtd. (ft)	220.00	Wetted Per. (ft)	1238.41	45.00
1842.07				
Min Ch El (ft)	1085.50	Shear (lb/sq ft)	0.09	0.16
0.08				
Alpha	4.15	Stream Power (lb/ft s)	0.04	0.58
0.07				
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	380.28	46.40
314.22				
C & E Loss (ft)	0.00	Cum SA (acres)	332.18	51.88
385.82				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.66

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1087.7	1020.1	1087.3	1064.8	1088.5	1111.2	1086.8	1200	1086.8
1400	1086.3	1600	1086.4	1643.2	1086.3	1675.6	1085.2	1721.4	1085.4
1800	1085.5	2000	1085.2	2045.4	1085.1	2053.8	1084.8	2077.2	1084.8
2097.5	1085.3	2200	1085.3	2397.4	1085.2	2399.9	1085.1	2421	1084.5
2438.3	1084.5	2453.3	1085.1	2540	1085.3	2768.4	1085.1	2777.5	1084.8
2797.2	1084.8	2799.9	1084.8	2813.7	1085.3	2958.8	1085.2	2999.9	1086.2
3040	1086.3	3199.9	1086	3399.9	1085.7	3599.9	1086.3	3799.9	1086.4
3999.9	1084.9	4199.9	1085.4	4271	1085.7	4285.1	1084.8	4342.9	1084.8
4355.5	1085.1	4399.9	1085.2	4599.9	1085.1	4799.9	1085.4	4999.9	1085.8
5199.8	1086.1	5399.8	1086.4	5510.5	1086.7				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2421	.02	2540	.13	3040	.02	4399.9	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2421	2540	480	480	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1085.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.130	0.020	0.042
W.S. Elev (ft)	1085.73	Reach Len. (ft)	480.00	480.00	480.00
Crit W.S. (ft)		Flow Area (sq ft)	346.09	80.54	735.97
E.G. Slope (ft/ft)	0.005330	Area (sq ft)	346.09	80.54	

735.97					
Q Total (cfs)	1691.00	Flow (cfs)	170.82	336.73	
1183.46					
Top Width (ft)	2417.10	Top Width (ft)	760.85	119.00	
1537.25					
Vel Total (ft/s)	1.45	Avg. Vel. (ft/s)	0.49	4.18	
1.61					
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.45	0.68	
0.48					
Conv. Total (cfs)	23161.4	Conv. (cfs)	2339.6	4612.1	
16209.7					
Length Wtd. (ft)	480.00	Wetted Per. (ft)	760.88	119.01	
1537.30					
Min Ch El (ft)	1084.50	Shear (lb/sq ft)	0.15	0.23	
0.16					
Alpha	2.51	Stream Power (lb/ft s)	0.07	0.94	
0.26					
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	377.45	46.08	
309.82					
C & E Loss (ft)	0.02	Cum SA (acres)	327.13	51.47	
377.29					

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.57

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1086.5	1038.5	1085.9	1069.7	1087.7	1200	1085.1	1400	1084.1
1460.6	1083.6	1512.2	1083.9	1574	1084.8	1600	1084.9	1795.9	1084.5
1800	1084.4	1851.1	1083.7	1873.1	1083.7	1896.9	1084.5	2000	1084.5
2050	1084.6	2160	1084.2	2200	1084.1	2208.2	1083.4	2233.3	1083.4
2280	1084.2	2399.9	1084.5	2407.9	1084.6	2554.8	1084.1	2567.4	1083.8
2593.6	1083.8	2599.9	1084.1	2606.6	1084.3	2753	1084.5	2778	1085.3
2799.9	1085.4	2887.9	1084.7	2999.9	1084.7	3199.9	1084.4	3399.9	1084.4
3599.9	1085	3799.9	1084.4	3999.9	1084.7	4055	1084.8	4072.9	1083.6
4137.8	1083.8	4199.9	1084.2	4399.9	1084.5	4599.9	1084.7	4799.9	1085
4999.9	1084.9	5199.8	1084.9	5399.8	1085.1	5410.4	1085.1	5442.9	1085.4
5599.8	1086.3	5602.3	1086.4						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2160	.02	2280	.13	2778	.02	4137.8	.13

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff Contr.	Expan.
	2160	2280		500	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1085.20	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020	
0.037					
W.S. Elev (ft)	1085.18	Reach Len. (ft)	500.00	500.00	
500.00					

Crit W.S. (ft)	1084.73	Flow Area (sq ft)	733.04	162.32 1786.80
E.G. Slope (ft/ft)	0.000534	Area (sq ft)	733.04	162.32 1786.80
Q Total (cfs)	1691.00	Flow (cfs)	161.24	340.69 1189.08
Top Width (ft)	4170.48	Top Width (ft)	964.12	120.00 3086.36
Vel Total (ft/s)	0.63	Avg. Vel. (ft/s)	0.22	2.10 0.67
Max Chl Dpth (ft)	1.78	Hydr. Depth (ft)	0.76	1.35 0.58
Conv. Total (cfs)	73199.1	Conv. (cfs)	6979.6	14747.4 51472.1
Length Wtd. (ft)	500.00	Wetted Per. (ft)	964.16	120.04 3086.43
Min Ch El (ft)	1083.40	Shear (lb/sq ft)	0.03	0.05 0.02
Alpha	3.03	Stream Power (lb/ft s)	0.01	0.09 0.01
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	371.51	44.74 295.92
C & E Loss (ft)	0.01	Cum SA (acres)	317.63	50.15 351.81

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.48

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1085.3	1074.4	1084.5	1200	1084.7	1600	1084.7	1735.6	1083.8
1768.1	1084	1800	1084.4	2000	1084.4	2200	1084.2	2381.5	1083.7
2394.6	1083	2399.9	1083	2437.9	1083	2599.9	1083.4	2771.6	1082.7
2796.9	1082.6	2799.9	1082.7	2999.9	1083.1	3080	1083.1	3132.1	1082.3
3158.5	1082.3	3180.5	1083	3199.9	1083	3399.9	1083.2	3476.6	1083.3
3496.3	1082.7	3518.3	1082.7	3533.7	1083.3	3599.9	1083.3	3663.6	1083.1
3693	1083.7	3736.5	1083.8	3741.5	1079.4	3799.9	1079.2	3999.9	1081.1
4199.9	1085.6	4349.4	1082.8	4356.5	1080.7	4399.9	1080.6	4406.6	1080.7
4414.2	1083	4541.6	1085	4599.9	1085	4788.5	1085.2	4799.9	1084.9
4817.8	1083.8	4985.2	1083.4	4992.2	1082.5	4999.9	1082.5	5058.8	1082.4
5199.8	1083	5399.8	1083.4	5599.8	1083.4	5700	1084	5999.8	1083.2
6199.8	1083.5	6332.8	1084.1	6399.8	1084.5	6406.3	1084.6	6469.9	1085.8

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3080	.02	3199.9	.13	3693	.035	3799.9	.5
4199.9	.02	4349.4	.1	4817.8	.13				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3080	3199.9	500	500	500	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
88	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	5700	1084

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1084.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.020	0.118
W.S. Elev (ft)	1084.31	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1084.10	Flow Area (sq ft)	302.42	37.21	1107.91
E.G. Slope (ft/ft)	0.025525	Area (sq ft)	302.42	37.21	1107.91
Q Total (cfs)	1691.00	Flow (cfs)	230.53	202.42	1258.06
Top Width (ft)	3974.46	Top Width (ft)	1124.44	119.90	2730.12
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.76	5.44	1.14
Max Chl Dpth (ft)	1.11	Hydr. Depth (ft)	0.27	0.31	0.41
Conv. Total (cfs)	10584.3	Conv. (cfs)	1442.9	1267.0	7874.4
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1124.45	119.90	2730.14
Min Ch El (ft)	1084.00	Shear (lb/sq ft)	0.43	0.49	0.65
Alpha	3.36	Stream Power (lb/ft s)	0.33	2.69	0.73
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	365.56	43.60	279.30
C & E Loss (ft)	0.02	Cum SA (acres)	305.64	48.77	318.43

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the
cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.38

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1084.6	1158.3	1083.5	1188.6	1083.5	1387.2	1084.4	1400	1084.4
1512.7	1083.7	1556.9	1083.1	1600	1083.1	1800	1083.1	2000	1083.2
2143.6	1082.9	2160.2	1083.1	2200	1083.1	2399.9	1082.9	2462.1	1082.8
2476.9	1082.3	2520.1	1082.3	2535.1	1082.8	2599.9	1082.7	2799.9	1082.5
2846.2	1082.3	2858.5	1082	2887.2	1082	2999.9	1082.5	3030.6	1082.5
3170	1082.2	3204.1	1082.2	3216.2	1082	3244.5	1082	3280	1082.2
3399.9	1082.2	3556.4	1082.3	3576.6	1082	3599.9	1082	3600.6	1082

3618.8	1082.4	3757.2	1082.7	3786.3	1084.1	3799.9	1083.9	3999.9	1083.7
4199.9	1083.1	4399.9	1083	4599.9	1083.4	4799.9	1082.3	4846	1082.4
4899.7	1081.9	4955.2	1082.3	4999.9	1082.3	5070.8	1082	5079.6	1081.6
5199.8	1082	5399.8	1082.1	5599.8	1082.2	5799.8	1082.1	5891	1081.7
5964.2	1082	5999.8	1082.3	6032.2	1083.5	6032.6	1083.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3170	.02	3280	.13	3799.9	.02	5070.8	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3280	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1083.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020	0.068
W.S. Elev (ft)	1083.26	Reach Len. (ft)	490.00	490.00	490.00
Crit W.S. (ft)		Flow Area (sq ft)	764.49	127.23	2050.88
E.G. Slope (ft/ft)	0.000752	Area (sq ft)	764.49	127.23	2050.88
Q Total (cfs)	1691.00	Flow (cfs)	144.91	285.53	1260.56
Top Width (ft)	4009.52	Top Width (ft)	1625.03	110.00	2274.49
Vel Total (ft/s)	0.57	Avg. Vel. (ft/s)	0.19	2.24	0.61
Max Chl Dpth (ft)	1.66	Hydr. Depth (ft)	0.47	1.16	0.90
Conv. Total (cfs)	61679.2	Conv. (cfs)	5285.6	10414.9	45978.8
Length Wtd. (ft)	490.00	Wetted Per. (ft)	1625.05	110.00	2274.55
Min Ch El (ft)	1082.00	Shear (lb/sq ft)	0.02	0.05	0.04
Alpha	3.44	Stream Power (lb/ft s)	0.00	0.12	0.03
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	359.44	42.65	261.18
C & E Loss (ft)	0.00	Cum SA (acres)	289.86	47.45	289.71

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.29

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1083	1200	1083.7	1297.5	1083.6	1400	1083.3	1600	1083.7
1609	1083.7	1647	1083.8	1667.9	1082.8	1691.2	1083.4	1800	1083.3
1952.8	1082.6	1978.9	1082.6	1991.8	1083.2	2000	1083.2	2200	1082.9

2292.1	1082.3	2313.6	1082.3	2330.4	1082.7	2399.9	1082.7	2599.9	1082.3
2615.6	1082.1	2661.2	1082.1	2799.9	1082.4	2996.5	1081.7	2999.9	1081.7
3026.6	1081.7	3045.2	1082	3176.7	1082.3	3199.9	1082.1	3325	1081.5
3382.7	1081.6	3396.2	1082.1	3450	1082.1	3599.9	1081.8	3716.1	1081.4
3741.1	1081.4	3753	1081.8	3799.9	1081.7	3916.2	1082	3923	1082.9
3972.9	1083.2	3999.9	1083.1	4199.9	1082.5	4399.9	1081.9	4599.9	1081.9
4799.9	1082.1	4981.7	1080.6	4999.9	1080.6	5035.7	1080.6	5048.4	1080.9
5100	1080.9	5213	1080.8	5276.2	1080.9	5399.8	1082.5	5599.8	1082.6
5610.9	1081.6	5624.8	1081.2	5697.1	1082.7				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3325	.02	3450	.13	3999.9	.5	4981.7	.035
5100	.13								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3325	3450	490	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1082.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020	0.099
W.S. Elev (ft)	1082.69	Reach Len. (ft)	490.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	524.09	108.73	1850.32
E.G. Slope (ft/ft)	0.001923	Area (sq ft)	524.09	108.73	1850.32
Q Total (cfs)	1691.00	Flow (cfs)	170.39	322.82	1197.79
Top Width (ft)	3220.65	Top Width (ft)	1064.58	125.00	2031.07
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)	0.33	2.97	0.65
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	0.49	0.87	0.91
Conv. Total (cfs)	38558.5	Conv. (cfs)	3885.3	7361.0	27312.2
Length Wtd. (ft)	499.42	Wetted Per. (ft)	1064.60	125.01	2031.21
Min Ch El (ft)	1081.50	Shear (lb/sq ft)	0.06	0.10	0.11
Alpha	4.29	Stream Power (lb/ft s)	0.02	0.31	0.07
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	352.19	41.32	239.23
C & E Loss (ft)	0.00	Cum SA (acres)	274.73	46.13	265.49

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.2

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082.7	1200	1082.6	1400	1082.5	1800	1082.3	2080	1081.9
2180	1081.6	2399.9	1081.7	2599.9	1081.6	2799.9	1081.6	2999.9	1081.5

3140	1081.4	3399.9	1081	3599.9	1080.9	3799.9	1080.8	3999.9	1080.8
4199.9	1080.6	4399.9	1080.5	4599.9	1080.5	4799.9	1081.4	4999.9	1082.2
5016.6	1082.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2999.9	.02	3140	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3140	450	470	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1081.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020	0.060
W.S. Elev (ft)	1081.81	Reach Len. (ft)	450.00	470.00	470.00
Crit W.S. (ft)		Flow Area (sq ft)	166.00	50.03	1648.47
E.G. Slope (ft/ft)	0.001657	Area (sq ft)	166.00	50.03	1648.47
Q Total (cfs)	1691.00	Flow (cfs)	25.23	76.15	1589.62
Top Width (ft)	2790.73	Top Width (ft)	888.94	140.10	1761.69
Vel Total (ft/s)	0.91	Avg. Vel. (ft/s)	0.15	1.52	0.96
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.19	0.36	0.94
Conv. Total (cfs)	41547.3	Conv. (cfs)	619.9	1871.1	39056.3
Length Wtd. (ft)	469.09	Wetted Per. (ft)	888.94	140.10	1761.69
Min Ch El (ft)	1081.40	Shear (lb/sq ft)	0.02	0.04	0.10
Alpha	1.19	Stream Power (lb/ft s)	0.00	0.06	0.09
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	348.31	40.41	219.15
C & E Loss (ft)	0.00	Cum SA (acres)	263.75	44.61	243.72

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.11

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082	1200	1081.7	1233.4	1081.5	1265.1	1081.1	1286.4	1081.5
1400	1081.5	1600	1081.5	1800	1081.3	1857.6	1081.1	1867.2	1080.9
1911.5	1080.9	1920.5	1080.9	2000	1080.9	2200	1080.8	2399.9	1080.6
2537.2	1080	2563	1080	2575.4	1080.4	2599.9	1080.4	2799.9	1080.3
2846.6	1080.3	2863.9	1079.8	2887	1079.8	2905	1080.2	2950	1080.3
3184.1	1080	3199.9	1080	3399.9	1080.4	3515	1080	3553.5	1080
3566.5	1080.2	3599.9	1080.2	3799.9	1080.1	3841.7	1080	3848.8	1079.9
3884.5	1079.9	3896.9	1080.1	3999.9	1080.1	4037.1	1080.3	4056.7	1079.9
4120.1	1080.3	4181.8	1080	4199.9	1080.1	4399.9	1079.9	4408.2	1079.9
4506.3	1080.1	4567.3	1080.4	4599.9	1080.4	4723.7	1081.5	4741.4	1081.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2846.6	.02	2950	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2846.6	2950	500	530	500 .1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4723.7	4741.4	1081.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1081.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020	0.060
W.S. Elev (ft)	1081.09	Reach Len. (ft)	500.00	530.00	500.00
Crit W.S. (ft)	1080.54	Flow Area (sq ft)	505.41	105.62	1634.14
E.G. Slope (ft/ft)	0.001356	Area (sq ft)	505.41	105.62	1634.14
Q Total (cfs)	1865.00	Flow (cfs)	136.01	293.09	1435.90
Top Width (ft)	2820.12	Top Width (ft)	988.71	103.40	1728.01
Vel Total (ft/s)	0.83	Avg. Vel. (ft/s)	0.27	2.77	0.88
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.51	1.02	0.95
Conv. Total (cfs)	50642.5	Conv. (cfs)	3693.2	7958.7	38990.5
Length Wtd. (ft)	506.36	Wetted Per. (ft)	988.72	103.41	1728.02
Min Ch El (ft)	1079.80	Shear (lb/sq ft)	0.04	0.09	0.08
Alpha	2.62	Stream Power (lb/ft s)	0.01	0.24	0.07
Frctn Loss (ft)	0.96	Cum Volume (acre-ft)	344.84	39.57	201.44
C & E Loss (ft)	0.00	Cum SA (acres)	254.05	43.30	224.90

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 7.06

INPUT
Description: Left Overbank between stations 7.01 and 7.11
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.9
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1081.5	100	1081	300	1080	310	1079.5	490	1079.5
500	1080								

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1081.12	Weir Max Depth (ft)	0.99
W.S. US. (ft)	1081.09	Weir Avg Depth (ft)	0.54
E.G. DS (ft)	1080.16	Weir Submerg	0.00
W.S. DS (ft)	1080.12	Min El Weir Flow (ft)	1079.50
Q US (cfs)	1865.00	Wr Top Wdth (ft)	366.58
Q Leaving Total (cfs)	314.09	Total Gate Flow (cfs)	
Q DS (cfs)	1550.95	Gate Group Q (cfs)	
Perc Q Leaving	16.84	Gate Open Ht (ft)	
Q Weir (cfs)	314.09	Gate #Open	
Wr Flw Area (sq ft)	199.45	Gate Area (sq ft)	
Weir Sta US (ft)	133.42	Gate Submerg	
Weir Sta DS (ft)	500.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.01

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082.1	1182.3	1081.4	1200	1081.4	1400	1082	1600	1081.9
1794.4	1081.4	1800	1080.1	1806	1079.9	1853.2	1079.8	2000	1079.9
2200	1079.5	2400	1079.6	2480	1079	2505.7	1079.5	2599.9	1079.7
2799.9	1079.5	2806.5	1079.5	2865	1079.5	2999.9	1079.5	3100	1079.5
3168.5	1079.5	3199.9	1079.5	3399.9	1079.4	3454.6	1079.5	3487.2	1079.5
3575.9	1079.4	3599.9	1079.9	3621.4	1080	3799.9	1080	3999.9	1079.9
4199.9	1079.4	4399.9	1078.7	4453.1	1078.5	4524.8	1078.6	4599.9	1081
4642	1081								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2865	.02	3100	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2865	3100	360	400	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1080.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.130	0.020	0.060
W.S. Elev (ft)	1080.12	Reach Len. (ft)	360.00	400.00	360.00
Crit W.S. (ft)		Flow Area (sq ft)	527.59	144.64	913.50
E.G. Slope (ft/ft)	0.003066	Area (sq ft)	527.59	144.64	913.50
Q Total (cfs)	1550.95	Flow (cfs)	209.06	430.56	911.34
Top Width (ft)	2772.29	Top Width (ft)	1065.07	235.00	1472.22

Vel Total (ft/s)	0.98	Avg. Vel. (ft/s)	0.40	2.98
1.00				
Max Chl Dpth (ft)	1.62	Hydr. Depth (ft)	0.50	0.62
0.62				
Conv. Total (cfs)	28008.5	Conv. (cfs)	3775.4	7775.4
16457.7				
Length Wtd. (ft)	368.76	Wetted Per. (ft)	1065.08	235.00
1472.25				
Min Ch El (ft)	1079.50	Shear (lb/sq ft)	0.09	0.12
0.12				
Alpha	3.20	Stream Power (lb/ft s)	0.04	0.35
0.12				
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	338.91	38.05
186.82				
C & E Loss (ft)	0.01	Cum SA (acres)	242.26	41.24
206.53				

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 6.96

INPUT
Description: Left Overbank Between Stations 6.94 and 7.01
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.75
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1080	20	1079.2	350	1079.2	360	1080

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1080.16	Weir Max Depth (ft)	0.88
W.S. US. (ft)	1080.12	Weir Avg Depth (ft)	0.58
E.G. DS (ft)	1079.49	Weir Submerg	0.00
W.S. DS (ft)	1079.48	Min El Weir Flow (ft)	1079.20
Q US (cfs)	1550.95	Wr Top Wdth (ft)	353.59
Q Leaving Total (cfs)	281.52	Total Gate Flow (cfs)	
Q DS (cfs)	1269.36	Gate Group Q (cfs)	
Perc Q Leaving	18.16	Gate Open Ht (ft)	
Q Weir (cfs)	281.52	Gate #Open	
Wr Flw Area (sq ft)	204.18	Gate Area (sq ft)	
Weir Sta US (ft)	0.00	Gate Submerg	
Weir Sta DS (ft)	353.59	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.94

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1101.2	1014.6	1101.2	1031.8	1103.6	1137.7	1080.8	1220	1079.3
1225	1079.3	1400	1079.5	1572.6	1079.7	1600	1079.4	1800	1079.5
1882.6	1079.1	1962.3	1079.1	2000	1079.2	2186.7	1079.4	2200	1078.7
2204.6	1078.6	2230	1078.6	2245.5	1079.4	2400	1080.2	2465.1	1079.7
2501.1	1078.7	2599.9	1078.9	2660	1079	2799.9	1079.5	2999.9	1079.4

```
   3199.9  1078.9  3399.9  1078.3  3599.9  1077.7  3799.9  1077.3  3801.5  1077.3
   3824.3  1077.9  3841.3  1076.9  3858.7  1077.8  3923.4  1077.9  3999.9    1080
     4051    1082

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    1000     .06    2400     .02    2660     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
          2400    2660              360     360     360             .1       .3
Sediment Elevation = 0

CROSS SECTION OUTPUT    Profile #PF 1


  E.G. Elev (ft)           1079.49    Element                 Left OB    Channel   Right
OB
  Vel Head (ft)               0.02    Wt. n-Val.               0.060      0.020
0.060
  W.S. Elev (ft)           1079.48    Reach Len. (ft)         360.00     360.00
360.00
  Crit W.S. (ft)                      Flow Area (sq ft)       150.84     109.28
1237.48
  E.G. Slope (ft/ft)       0.001083   Area (sq ft)            150.84     109.28
1237.48
  Q Total (cfs)            1269.36    Flow (cfs)               48.69     186.82
1033.85
  Top Width (ft)           2236.85    Top Width (ft)          783.47     186.84
1266.54
  Vel Total (ft/s)            0.85    Avg. Vel. (ft/s)         0.32       1.71
0.84
  Max Chl Dpth (ft)           2.58    Hydr. Depth (ft)         0.19       0.58
0.98
  Conv. Total (cfs)        38578.7    Conv. (cfs)             1479.8     5677.9
31420.9
  Length Wtd. (ft)          360.00    Wetted Per. (ft)        783.51     186.86
1266.63
  Min Ch El (ft)           1078.70    Shear (lb/sq ft)         0.01       0.04
0.07
  Alpha                       1.40    Stream Power (lb/ft s)   0.00       0.07
0.06
  Frctn Loss (ft)             0.25    Cum Volume (acre-ft)    336.11      36.89
177.93
  C & E Loss (ft)             0.00    Cum SA (acres)          234.62      39.30
195.21


Warning: Divided flow computed for this cross-section.

LATERAL WEIR           RIVER: RIVER-1
REACH: Reach-1            RS: 6.91

INPUT
Description: Left Overbank Between Stations 6.88 and 6.94
Lateral weir position     = Left overbank
Distance from Upstream XS =        0
Deck/Roadway Width        =        0
Weir Coefficient          =      2.1
Weir Flow Reference       = Water Surface
 Weir Embankment Coordinates    num =        4
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    1082      20  1078.8     350  1078.8     360    1079

Weir crest shape                        = Broad Crested
```

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1079.49	Weir Max Depth (ft)	0.66
W.S. US. (ft)	1079.48	Weir Avg Depth (ft)	0.54
E.G. DS (ft)	1079.24	Weir Submerg	0.00
W.S. DS (ft)	1079.23	Min El Weir Flow (ft)	1078.80
Q US (cfs)	1269.36	Wr Top Wdth (ft)	344.16
Q Leaving Total (cfs)	289.79	Total Gate Flow (cfs)	
Q DS (cfs)	979.54	Gate Group Q (cfs)	
Perc Q Leaving	22.83	Gate Open Ht (ft)	
Q Weir (cfs)	289.79	Gate #Open	
Wr Flw Area (sq ft)	186.06	Gate Area (sq ft)	
Weir Sta US (ft)	15.84	Gate Submerg	
Weir Sta DS (ft)	360.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.88

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1093.4	1040	1079	1093.5	1079	1383.4	1079	1389.3	1078.9
1400	1078.9	1424.1	1078.9	1600	1079.6	1759.9	1078.7	1796.2	1080
1800	1080	1987.2	1079.1	2000	1078.2	2002.8	1078.2	2200	1078.4
2320	1079.1	2599.9	1079	2799.9	1078.6	2999.9	1078.4	3110	1078.4
3144.5	1083.1	3199.9	1081.4	3292	1078.2	3399.9	1077.7	3599.9	1077.3
3696	1077	3767.6	1077.3	3799.9	1077.8	3966.2	1079	3966.7	1079.2

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1600	.06	2320	.02	2599.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2320	2599.9	420	420	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1079.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.066	0.020	0.060
W.S. Elev (ft)	1079.23	Reach Len. (ft)	420.00	420.00	420.00
Crit W.S. (ft)		Flow Area (sq ft)	387.68	50.35	1366.29
E.G. Slope (ft/ft)	0.000449	Area (sq ft)	387.68	50.35	1366.29
Q Total (cfs)	979.54	Flow (cfs)	120.70	25.25	833.60
Top Width (ft)	2436.82	Top Width (ft)	936.38	279.90	1220.53
Vel Total (ft/s)	0.54	Avg. Vel. (ft/s)	0.31	0.50	0.61
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.41	0.18	1.12
Conv. Total (cfs)	46246.2	Conv. (cfs)	5698.5	1191.9	39355.8
Length Wtd. (ft)	420.00	Wetted Per. (ft)	936.47	279.90	1220.69

Min Ch El (ft)	1079.00	Shear (lb/sq ft)	0.01	0.01	0.03
Alpha	1.14	Stream Power (lb/ft s)	0.00	0.00	0.02
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	333.89	36.23	167.18
C & E Loss (ft)	0.00	Cum SA (acres)	227.52	37.37	184.94

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.8

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1079.7	1200	1079.9	1400	1079.8	1603.6	1079.5	1611.3	1078.6
1659.5	1078.9	1800	1079.1	1953.5	1078.4	1986	1078.5	2000	1079.1
2007.4	1079.1	2142.5	1079.1	2187.2	1078.6	2200	1078.8	2225.7	1079
2266.4	1078.7	2335.3	1079.4	2400	1079.4	2599.9	1078.8	2799.9	1078.4
2940	1078.2	2999.9	1078	3050	1078.1	3199.9	1078.1	3260.7	1078.9
3302.6	1078.6	3313.2	1077.9	3399.9	1077.9	3403.7	1077.9	3415.2	1078.5
3455.4	1078.5	3468.5	1077.7	3599.9	1077.7	3627.4	1077.2	3661.6	1077.1
3724.7	1077.7	3799.9	1077.7	3999.9	1077.7	4199.9	1077.5	4267.1	1077
4332.8	1077.5	4399.9	1078	4442.4	1079	4469.1	1079.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.1	2940	.02	3050	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2940	3050	500	500	500	.1 .3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1078.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.100	0.020	0.130
W.S. Elev (ft)	1078.91	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	213.31	91.18	1547.02
E.G. Slope (ft/ft)	0.001362	Area (sq ft)	213.31	91.18	1547.02
Q Total (cfs)	979.54	Flow (cfs)	57.41	220.65	701.47
Top Width (ft)	2183.99	Top Width (ft)	685.58	110.00	1388.41
Vel Total (ft/s)	0.53	Avg. Vel. (ft/s)	0.27	2.42	0.45
Max Chl Dpth (ft)	1.91	Hydr. Depth (ft)	0.31	0.83	.11
Conv. Total (cfs)	26537.3	Conv. (cfs)	1555.4	5977.8	

19004.1					
Length Wtd. (ft)	500.00	Wetted Per. (ft)	685.62	110.00	1388.50
Min Ch El (ft)	1078.00	Shear (lb/sq ft)	0.03	0.07	0.09
Alpha	5.25	Stream Power (lb/ft s)	0.01	0.17	0.04
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	330.99	35.54	153.13
C & E Loss (ft)	0.00	Cum SA (acres)	219.70	35.49	172.36

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.7

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1079.1	1042.4	1078.8	1200	1079	1600	1078.7	1648.2	1078.5
1787.1	1078.6	1800	1078.7	2000	1079.2	2200	1079.1	2329.8	1077.9
2365.6	1077.7	2400	1078.6	2423.6	1079	2599.9	1079.5	2799.9	1078.5
2978.8	1077.7	2994.2	1077.2	2999.9	1077.2	3026.3	1077.1	3039.6	1077.7
3170	1077.7	3199.9	1077.7	3370	1077.5	3399.9	1077.4	3534.4	1078.3
3538.5	1077.3	3599.9	1077.8	3600.5	1077.8	3672.7	1076.3	3702.2	1076.3
3719	1077	3799.9	1077.2	3999.9	1077.4	4199.9	1076.4	4336.5	1076
4399.9	1076.5	4599.9	1076.8	4655	1077.8	4800	1078.5		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2978.8	.02	3039.6	.13	4655	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3370	500	500	500	.1 .3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1077.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.029	0.130	0.130
W.S. Elev (ft)	1077.98	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	95.43	72.77	1288.74
E.G. Slope (ft/ft)	0.002766	Area (sq ft)	95.43	72.77	1288.74
Q Total (cfs)	979.54	Flow (cfs)	141.17	22.30	816.08
Top Width (ft)	1781.21	Top Width (ft)	308.52	200.00	1272.69
Vel Total (ft/s)	0.67	Avg. Vel. (ft/s)	1.48	0.31	0.63
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)	0.31	0.36	.01
Conv. Total (cfs)	18624.0	Conv. (cfs)	2684.0	423.9	

15516.1				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	308.54	200.00
1272.82				
Min Ch El (ft)	1077.50	Shear (lb/sq ft)	0.05	0.06
0.17				
Alpha	1.44	Stream Power (lb/ft s)	0.08	0.02
0.11				
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	329.22	34.60
136.86				
C & E Loss (ft)	0.00	Cum SA (acres)	213.99	33.71
157.09				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.61

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1078.2	1137.9	1078.5	1185.1	1077.3	1272.6	1077.3	1400	1077.9
1571.4	1077.9	1583.2	1077.2	1600	1077.2	1626	1077.3	1800	1077.1
2000	1077.2	2200	1077	2279.2	1076.6	2400	1076.9	2599.9	1076.7
2799.9	1076.6	2929.5	1075.8	2975.7	1076	2999.9	1076.1	3020	1076.1
3199.9	1076.2	3300	1076	3399.9	1075.3	3445.4	1075.2	3576.3	1076
3599.9	1076.7	3611.4	1077.1	3799.9	1077.5	3999.9	1077	4199.9	1076.9
4232	1076.6	4266.3	1075	4324.6	1075.1	4399.9	1075.6	4424.6	1075.8
4520	1076	4650	1078	4700	1079				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2929.5	.02	3020	.5	3999.9	.04

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3020	3300	490	490	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1077.02	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.01	Wt. n-Val.	0.040	0.500	
0.082					
W.S. Elev (ft)	1077.01	Reach Len. (ft)	490.00	490.00	
470.00					
Crit W.S. (ft)		Flow Area (sq ft)	357.64	245.06	
887.61					
E.G. Slope (ft/ft)	0.001439	Area (sq ft)	357.64	245.06	
887.61					
Q Total (cfs)	979.54	Flow (cfs)	322.97	25.28	
631.29					
Top Width (ft)	2004.57	Top Width (ft)	827.33	280.00	
897.24					
Vel Total (ft/s)	0.66	Avg. Vel. (ft/s)	0.90	0.10	
0.71					
Max Chl Dpth (ft)	2.01	Hydr. Depth (ft)	0.43	0.88	
0.99					
Conv. Total (cfs)	25821.2	Conv. (cfs)	8513.7	666.4	
16641.1					
Length Wtd. (ft)	474.49	Wetted Per. (ft)	827.33	280.00	
97.31					
Min Ch El (ft)	1076.00	Shear (lb/sq ft)	0.04	0.08	

0.09				
Alpha	1.38	Stream Power (lb/ft s)	0.04	0.01
0.06				
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	326.62	32.78
124.37				
C & E Loss (ft)	0.01	Cum SA (acres)	207.47	30.96
144.63				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.52

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1077.7	1132.4	1076.4	1178.7	1076.9	1400	1076.8	1600	1076.7
1800	1075.8	1804.7	1075.7	1843.1	1075.9	1878.3	1077.9	2000	1078.3
2200	1077.3	2400	1076	2463.8	1075.9	2474	1075.4	2513	1075.2
2541.2	1075.8	2599.9	1075.9	2750	1076	2799.9	1076.1	2940	1075.4
2999.9	1075.5	3199.9	1075.4	3399.9	1075.8	3599.9	1076	3698.2	1076.3
3781.6	1075.7	3799.9	1074.4	3801.8	1074.3	3819.4	1074	3871.2	1074.4
3893.8	1075	3999.9	1075.2	4013.7	1075.5	4035.2	1076.4	4199.9	1076.6
4378.5	1077								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1843.1	.5	2400	.035	2940	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2750	2999.9	500	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4035.5	4378.5	1076.4

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1075.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.035	0.032	0.030
W.S. Elev (ft)	1075.79	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1075.64	Flow Area (sq ft)	29.87	35.67	339.42
E.G. Slope (ft/ft)	0.004545	Area (sq ft)	29.87	35.67	339.42
Q Total (cfs)	979.54	Flow (cfs)	43.98	47.95	887.62

Top Width (ft)	881.43	Top Width (ft)	96.39	138.09	646.95
Vel Total (ft/s)	2.42	Avg. Vel. (ft/s)	1.47	1.34	2.62
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)	0.31	0.26	0.52
Conv. Total (cfs)	14529.1	Conv. (cfs)	652.3	711.2	13165.7
Length Wtd. (ft)	500.00	Wetted Per. (ft)	96.41	138.09	647.02
Min Ch El (ft)	1075.40	Shear (lb/sq ft)	0.09	0.07	0.15
Alpha	1.09	Stream Power (lb/ft s)	0.13	0.10	0.39
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	324.44	31.20	117.75
C & E Loss (ft)	0.02	Cum SA (acres)	202.28	28.61	136.30

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.42

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1076.2	1063.1	1075.5	1103.6	1075.6	1400	1075.8	1600	1075.7
1741.6	1075.1	1775.3	1075.1	1800	1075.9	1803.5	1076	2000	1076.1
2200	1075.6	2400	1074.9	2409.9	1074.8	2452.1	1074.8	2487.3	1074.6
2599.9	1075.3	2799.9	1074.4	2999.9	1074.7	3079.2	1074.2	3105.6	1074.6
3130	1074.4	3199.9	1074.2	3399.9	1074.1	3599.9	1074	3755.6	1073.9
3799.9	1074	3818.4	1074.2	3846.7	1076.4	3872.9	1076.8	3883.9	1076.1
3898.8	1076.1	3949.7	1075.6	3999.9	1076				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1800	.5	2200	.02	2487.3	.06	2999.9	.02
3130	.03								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3130	500	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3999.9	3999.9	1076

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1074.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.052	0.020	0.030

W.S. Elev (ft)	1074.95	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1074.47	Flow Area (sq ft)	137.69	64.55
601.51				
E.G. Slope (ft/ft)	0.000950	Area (sq ft)	137.69	64.55
601.51				
Q Total (cfs)	979.54	Flow (cfs)	55.46	92.61
831.46				
Top Width (ft)	1305.04	Top Width (ft)	476.96	130.10
697.99				
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	0.40	1.43
1.38				
Max Chl Dpth (ft)	1.05	Hydr. Depth (ft)	0.29	0.50
0.86				
Conv. Total (cfs)	31784.8	Conv. (cfs)	1799.7	3005.2
26979.9				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	476.96	130.11
698.02				
Min Ch El (ft)	1074.20	Shear (lb/sq ft)	0.02	0.03
0.05				
Alpha	1.23	Stream Power (lb/ft s)	0.01	0.04
0.07				
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	323.48	30.62
112.35				
C & E Loss (ft)	0.00	Cum SA (acres)	198.99	27.07
128.58				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.33

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1075.7	1200	1075.8	1400	1075.6	1665	1074.9	1800	1075
2000	1075.2	2130	1074	2341.6	1073.8	2375.4	1073.8	2400	1074.2
2599.9	1073.9	2799.9	1073.8	2999.9	1073.9	3050	1073.6	3175	1073.4
3399	1073.3	3599.9	1073.3	3665.9	1073.5	3719.1	1073.8	3736.3	1075.3
3753.5	1075	3758.3	1075.8	3778	1075.8	3786.7	1074.6	4070	1075.5

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2341.6	.06	3050	.02	3175	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3050	3175	500	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3778	4070	1075.8

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1074.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.069	0.020	

0.060					
W.S. Elev (ft)	1074.38	Reach Len. (ft)	500.00	500.00	
500.00					
Crit W.S. (ft)	1073.87	Flow Area (sq ft)	445.28	109.66	
551.64					
E.G. Slope (ft/ft)	0.001323	Area (sq ft)	445.28	109.66	
551.64					
Q Total (cfs)	979.54	Flow (cfs)	210.40	271.63	
497.51					
Top Width (ft)	1636.60	Top Width (ft)	960.88	125.00	
550.72					
Vel Total (ft/s)	0.89	Avg. Vel. (ft/s)	0.47	2.48	
0.90					
Max Chl Dpth (ft)	1.08	Hydr. Depth (ft)	0.46	0.88	
1.00					
Conv. Total (cfs)	26926.8	Conv. (cfs)	5783.6	7466.9	
13676.3					
Length Wtd. (ft)	500.00	Wetted Per. (ft)	960.88	125.00	
550.75					
Min Ch El (ft)	1073.40	Shear (lb/sq ft)	0.04	0.07	
0.08					
Alpha	2.76	Stream Power (lb/ft s)	0.02	0.18	
0.07					
Frctn Loss (ft)	0.65	Cum Volume (acre-ft)	320.13	29.62	
105.73					
C & E Loss (ft)	0.00	Cum SA (acres)	190.73	25.60	
121.42					

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.23

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.8	1200	1075.1	1400	1075	1512.1	1074.2	1537.5	1074.3
1600	1074.6	1800	1074.6	1860.5	1074.3	2000	1074.7	2001.1	1074.7
2018	1074.4	2200	1075	2343.1	1073.5	2376.4	1073.6	2400	1073.7
2599.9	1073.3	2751	1072.9	2799.9	1073.4	2999.9	1073.5	3059	1073
3092.2	1072.6	3129.2	1072.6	3175	1073	3399.9	1072.8	3469.2	1072.2
3499.4	1072.2	3599.9	1072.7	3799.9	1072.9	3999.9	1074		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	3059	.02	3175	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3059	3175	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3999.9	3999.9	1074

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1073.77	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.04	Wt. n-Val.	0.060	0.020	
).060					
W.S. Elev (ft)	1073.73	Reach Len. (ft)	500.00	500.00	

500.00				
Crit W.S. (ft)	1073.21	Flow Area (sq ft)	261.40	114.83
692.34				
E.G. Slope (ft/ft)	0.001258	Area (sq ft)	261.40	114.83
692.34				
Q Total (cfs)	979.54	Flow (cfs)	115.00	300.52
564.02				
Top Width (ft)	1628.56	Top Width (ft)	737.47	116.00
775.09				
Vel Total (ft/s)	0.92	Avg. Vel. (ft/s)	0.44	2.62
0.81				
Max Chl Dpth (ft)	1.53	Hydr. Depth (ft)	0.35	0.99
0.89				
Conv. Total (cfs)	27618.2	Conv. (cfs)	3242.3	8473.3
15902.6				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	737.47	116.00
775.10				
Min Ch El (ft)	1072.60	Shear (lb/sq ft)	0.03	0.08
0.07				
Alpha	2.98	Stream Power (lb/ft s)	0.01	0.20
0.06				
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	316.07	28.34
98.59				
C & E Loss (ft)	0.00	Cum SA (acres)	180.99	24.22
113.81				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.14

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.8	1200	1074.6	1400	1074.7	1649	1074.6	1657.9	1073.8
1695.2	1073.6	1800	1073.7	1856.2	1073.5	1876	1073.9	1903.1	1073.6
2000	1073.6	2200	1073.7	2317.7	1072.8	2400	1073.1	2599.9	1073
2799.9	1072.5	2851.8	1072.5	2860.7	1071.9	2866.2	1072.4	2999.9	1072.5
3072.5	1072	3110.2	1071.8	3130	1072	3199.9	1072.2	3399.9	1072.5
3599.9	1072.1	3627.7	1072.5	3724.6	1073.5	3799.9	1072.9	3900	1073
3999.9	1072	4115	1071.5	4740	1072				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1657.9	.03	1876	.5	2200	.03	2999.9	.02
3130	.03	3799.9	.13						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3130	490	480	450	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3724.6	4740	1073.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1073.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.030	0.020	

0.030					
W.S. Elev (ft)	1072.94	Reach Len. (ft)	490.00	480.00	
450.00					
Crit W.S. (ft)	1072.71	Flow Area (sq ft)	142.36	110.01	
332.39					
E.G. Slope (ft/ft)	0.001851	Area (sq ft)	142.36	110.01	
332.39					
Q Total (cfs)	979.54	Flow (cfs)	152.74	314.47	
512.33					
Top Width (ft)	1103.97	Top Width (ft)	433.45	130.10	
540.43					
Vel Total (ft/s)	1.68	Avg. Vel. (ft/s)	1.07	2.86	
1.54					
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)	0.33	0.85	
0.62					
Conv. Total (cfs)	22765.5	Conv. (cfs)	3549.8	7308.7	
11907.0					
Length Wtd. (ft)	467.39	Wetted Per. (ft)	433.49	130.10	
540.43					
Min Ch El (ft)	1071.80	Shear (lb/sq ft)	0.04	0.10	
0.07					
Alpha	1.44	Stream Power (lb/ft s)	0.04	0.28	
0.11					
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	313.76	27.05	
92.71					
C & E Loss (ft)	0.00	Cum SA (acres)	174.27	22.81	
106.26					

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.05

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074	1200	1073.6	1400	1073.3	1789	1073.4	1800	1073.4
1842.1	1073.2	2000	1072.7	2200	1073	2400	1072.7	2525	1072.3
2530.2	1070.5	2561	1070.4	2599.9	1070.7	2750	1071.1	2999.9	1071.1
3094.1	1070.6	3199.9	1070.8	3399.9	1071.6	3599.9	1072.5	3799.9	1071.1
3874	1071	3999.9	1072.6	4009.6	1072.4				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.5	2525	.03	2750	.13	3874	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2525	2750	560	500	480	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1071.85	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.08	Wt. n-Val.		0.030	
0.104					
W.S. Elev (ft)	1071.77	Reach Len. (ft)	560.00	500.00	
80.00					
Crit W.S. (ft)		Flow Area (sq ft)		220.90	

592.72

E.G. Slope (ft/ft)	0.003389	Area (sq ft)			220.90
592.72					
Q Total (cfs)	1004.54	Flow (cfs)			631.70
372.83					
Top Width (ft)	1141.29	Top Width (ft)			223.47
917.83					
Vel Total (ft/s)	1.23	Avg. Vel. (ft/s)			2.86
0.63					
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)			0.99
0.65					
Conv. Total (cfs)	17254.9	Conv. (cfs)			10850.7
6404.2					
Length Wtd. (ft)	500.95	Wetted Per. (ft)			223.68
917.84					
Min Ch El (ft)	1070.40	Shear (lb/sq ft)			0.21
0.14					
Alpha	3.47	Stream Power (lb/ft s)			0.60
0.09					
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	312.96	25.22	
87.93					
C & E Loss (ft)	0.02	Cum SA (acres)	171.83	20.86	
98.72					

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.95

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1073.1	1200	1072.8	1400	1072	1800	1072.3	1939.2	1072
1992.7	1069.7	2000	1069.8	2179.3	1070	2200	1070.7	2225	1070.8
2385.2	1070.2	2400	1070.2	2599.9	1070.6	2799.9	1070.4	2999.9	1070.3
3199.9	1070.6	3323.1	1070.8	3337.6	1070.5	3375.9	1070.5	3399.9	1070.7
3445.8	1070.8	3599.9	1071.2	3765.7	1072				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1400	.5	1939.2	.035	2999.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2225	2400	510	500	470	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3765.7	3765.7	1072

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1071.23	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.01	Wt. n-Val.	0.035	0.035	0.041
W.S. Elev (ft)	1071.21	Reach Len. (ft)	510.00	500.00	470.00
Crit W.S. (ft)	1070.67	Flow Area (sq ft)	302.13	129.20	797.66
E.G. Slope (ft/ft)	0.000600	Area (sq ft)	302.13	129.20	797.66
Q Total (cfs)	1004.54	Flow (cfs)	340.75	109.75	554.04
Top Width (ft)	1645.07	Top Width (ft)	267.49	175.00	1202.58
Vel Total (ft/s)	0.82	Avg. Vel. (ft/s)	1.13	0.85	0.69
Max Chl Dpth (ft)	1.51	Hydr. Depth (ft)	1.13	0.74	0.66
Conv. Total (cfs)	41007.7	Conv. (cfs)	13910.2	4480.4	22617.1
Length Wtd. (ft)	494.13	Wetted Per. (ft)	267.54	175.00	1202.59
Min Ch El (ft)	1070.20	Shear (lb/sq ft)	0.04	0.03	0.02
Alpha	1.16	Stream Power (lb/ft s)	0.05	0.02	0.02
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	311.01	23.21	80.27
C & E Loss (ft)	0.00	Cum SA (acres)	170.11	18.57	87.04

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.86

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1072.4	1200	1072.5	1295.5	1072.1	1397.4	1070.2	1400	1070.4
1600	1070.6	1800	1069.4	2000	1069.8	2083.5	1069.9	2117.1	1069.3
2168.3	1069.5	2187.8	1070.6	2260	1070.6	2368.8	1069.3	2390	1070
2450	1070	2940	1070.5	3540	1070.5	3680	1072		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	2000	.035	2260	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2000	2260	540	500	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1070.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.035	0.035	0.130
W.S. Elev (ft)	1070.77	Reach Len. (ft)	540.00	500.00	490.00
Crit W.S. (ft)		Flow Area (sq ft)	449.47	211.58	

574.29				
E.G. Slope (ft/ft)	0.001403	Area (sq ft)	449.47	211.58
574.29				
Q Total (cfs)	1004.54	Flow (cfs)	568.98	293.28
142.28				
Top Width (ft)	2197.80	Top Width (ft)	632.96	260.00
1304.84				
Vel Total (ft/s)	0.81	Avg. Vel. (ft/s)	1.27	1.39
0.25				
Max Chl Dpth (ft)	1.47	Hydr. Depth (ft)	0.71	0.81
0.44				
Conv. Total (cfs)	26814.5	Conv. (cfs)	15187.9	7828.5
3798.0				
Length Wtd. (ft)	526.65	Wetted Per. (ft)	632.98	260.04
1304.86				
Min Ch El (ft)	1069.30	Shear (lb/sq ft)	0.06	0.07
0.04				
Alpha	2.23	Stream Power (lb/ft s)	0.08	0.10
0.01				
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	306.61	21.26
72.87				
C & E Loss (ft)	0.00	Cum SA (acres)	164.84	16.08
73.51				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.76

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1070.5	1200	1070	1400	1070	1800	1070	1847.1	1068.4
2000	1068.3	2200	1068.5	2400	1068.5	2599.9	1068.9	2740	1069.5
3040	1070	3300	1070.5	3820	1070	4600	1070.5	4920	1071

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.08	2400	.08	2599.9	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2400	2599.9	490	500	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1069.49	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.03	Wt. n-Val.	0.080	0.080	
0.080					
W.S. Elev (ft)	1069.46	Reach Len. (ft)	490.00	500.00	
470.00					
Crit W.S. (ft)		Flow Area (sq ft)	591.51	152.35	
36.89					
E.G. Slope (ft/ft)	0.005350	Area (sq ft)	591.51	152.35	
36.89					

Q Total (cfs)	1004.54	Flow (cfs)	810.33	172.70 21.51
Top Width (ft)	915.33	Top Width (ft)	584.17	199.90 131.26
Vel Total (ft/s)	1.29	Avg. Vel. (ft/s)	1.37	1.13 0.58
Max Chl Dpth (ft)	1.16	Hydr. Depth (ft)	1.01	0.76 0.28
Conv. Total (cfs)	13733.4	Conv. (cfs)	11078.2	2361.1 294.0
Length Wtd. (ft)	489.66	Wetted Per. (ft)	584.19	199.90 131.26
Min Ch El (ft)	1068.50	Shear (lb/sq ft)	0.34	0.25 0.09
Alpha	1.05	Stream Power (lb/ft s)	0.46	0.29 0.05
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	300.16	19.17 69.43
C & E Loss (ft)	0.01	Cum SA (acres)	157.29	13.44 65.44

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.67

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1069.9	1200	1067.7	1400	1067.2	1800	1067.4	2050	1067.3
2280	1068.1	2400	1067.6	2599.9	1068.6	2799.9	1068	2999.9	1068.3
3199.9	1069.1	3440	1070	3710	1070.5	3960	1070	4040	1069.5
4140	1070	4500	1070						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.08	2050	.08	2280	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2050	2280	530	500	520	.1 .3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1068.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.080	0.080	0.080
W.S. Elev (ft)	1068.76	Reach Len. (ft)	530.00	500.00	520.00
Crit W.S. (ft)		Flow Area (sq ft)	1245.66	242.84	478.13
E.G. Slope (ft/ft)	0.000677	Area (sq ft)	1245.66	242.84	478.13
Q Total (cfs)	1004.54	Flow (cfs)	723.33	121.71	159.50
Top Width (ft)	2009.85	Top Width (ft)	945.99	230.00	833.86
Vel Total (ft/s)	0.51	Avg. Vel. (ft/s)	0.58	0.50	

0.33				
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	1.32	1.06
0.57				
Conv. Total (cfs)	38602.3	Conv. (cfs)	27795.9	4677.0
6129.4				
Length Wtd. (ft)	523.38	Wetted Per. (ft)	945.99	230.00
833.87				
Min Ch El (ft)	1067.30	Shear (lb/sq ft)	0.06	0.04
0.02				
Alpha	1.11	Stream Power (lb/ft s)	0.03	0.02
0.01				
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	289.83	16.90
66.65				
C & E Loss (ft)	0.00	Cum SA (acres)	148.69	10.97
60.23				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.57

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1068.7	1200	1066.9	1356.8	1066.1	1406.1	1066.2	1600	1066.5
1700	1066.6	1830	1066.8	2000	1067	2200	1067.6	2271.1	1066.9
2322.9	1066.8	2400	1068.1	2599.9	1068.4	2710.1	1068.2	2735.5	1067.4
2772.9	1067.6	2799.9	1068	2852.5	1068.1	2916.1	1068.1	2999.9	1068.5
3102.4	1068.7	3600	1068.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1700	.08	1830	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1700	1830	450	500	580	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1068.30	Element	Left OB	Channel	Right
OB					
Vel Head (ft)	0.01	Wt. n-Val.	0.130	0.080	
0.130					
W.S. Elev (ft)	1068.29	Reach Len. (ft)	450.00	500.00	
580.00					
Crit W.S. (ft)		Flow Area (sq ft)	1045.95	207.15	
749.01					
E.G. Slope (ft/ft)	0.001174	Area (sq ft)	1045.95	207.15	
749.01					
Q Total (cfs)	1004.54	Flow (cfs)	559.67	179.83	
265.03					
Top Width (ft)	1781.77	Top Width (ft)	654.83	130.00	
996.94					
Vel Total (ft/s)	0.50	Avg. Vel. (ft/s)	0.54	0.87	
0.35					
Max Chl Dpth (ft)	2.19	Hydr. Depth (ft)	1.60	1.59	
0.75					
Conv. Total (cfs)	29320.9	Conv. (cfs)	16336.0	5249.0	
7735.9					
Length Wtd. (ft)	512.21	Wetted Per. (ft)	654.84	130.00	
996.97					
Min Ch El (ft)	1066.60	Shear (lb/sq ft)	0.12	0.12	
0.06					

Alpha	1.30	Stream Power (lb/ft s)	0.06	0.10 0.02
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	275.89	14.32 59.33
C & E Loss (ft)	0.00	Cum SA (acres)	138.95	8.90 49.30

Warning: Divided flow computed for this cross-section.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.53

INPUT
Description: Left Overbank Between Stations 5.48 and 5.57
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1070	730	1068	860	1066.7	1560	1066.7	1660	1068

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1068.30	Weir Max Depth (ft)	
W.S. US. (ft)	1068.29	Weir Avg Depth (ft)	
E.G. DS (ft)	1064.36	Weir Submerg	0.00
W.S. DS (ft)	1064.23	Min El Weir Flow (ft)	1066.70
Q US (cfs)	1004.54	Wr Top Wdth (ft)	
Q Leaving Total (cfs)	0.00	Total Gate Flow (cfs)	
Q DS (cfs)	1500.11	Gate Group Q (cfs)	
Perc Q Leaving	0.00	Gate Open Ht (ft)	
Q Weir (cfs)	0.00	Gate #Open	
Wr Flw Area (sq ft)		Gate Area (sq ft)	
Weir Sta US (ft)		Gate Submerg	
Weir Sta DS (ft)		Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.48

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY. IN THIS MODEL IT IS ASSUMED THAT
THE SOUTHER PACIFIC RAILROAD DOES NOT FUNCTION AS A LEVEE AND HAS
FAILED ALLOWING FLOW TO FOLLOW ITS NATURAL COURSE.

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
3203.5	1068.6	3399.9	1069.3	3599.9	1068.5	3799.9	1067.6	3999.9	1067.3
4199.9	1067.1	4399.9	1066.6	4599.9	1066.1	4710	1066.4	4799.9	1066.5
4850	1066.4	4899.6	1070.1	4999.9	1070.1	5070.2	1069.7	5088.8	1065.6
5117	1065.5	5123.1	1064.5	5134.6	1066.2	5199.9	1066.4	5399.9	1066.7
5454.2	1066.7	5505.7	1066.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
3203.5	.13	4710	.045	4850	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4710	4850	500	500	520	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1067.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.045	0.060
W.S. Elev (ft)	1067.64	Reach Len. (ft)	500.00	500.00	520.00
Crit W.S. (ft)	1066.74	Flow Area (sq ft)	694.00	166.41	530.65
E.G. Slope (ft/ft)	0.001323	Area (sq ft)	694.00	166.41	530.65
Q Total (cfs)	1004.54	Flow (cfs)	239.33	224.28	540.93
Top Width (ft)	1501.45	Top Width (ft)	918.70	140.00	442.75
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.34	1.35	1.02
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)	0.76	1.19	1.20
Conv. Total (cfs)	27616.9	Conv. (cfs)	6579.7	6166.0	14871.2
Length Wtd. (ft)	511.72	Wetted Per. (ft)	918.70	140.00	444.37
Min Ch El (ft)	1066.40	Shear (lb/sq ft)	0.06	0.10	0.10
Alpha	1.91	Stream Power (lb/ft s)	0.02	0.13	0.10
Frctn Loss (ft)	1.32	Cum Volume (acre-ft)	266.90	12.17	50.81
C & E Loss (ft)	0.01	Cum SA (acres)	130.82	7.35	39.72

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.38

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1068.5	1037.9	1068.5	1065	1070.2	1161.3	1068.7	1200	1068.8
1371.6	1067.7	1400	1067.6	1423	1067.6	1600	1067.2	1800	1066
1991.9	1064.4	2000	1064.5	2051.5	1064.6	2200	1065.6	2400	1066
2599.9	1065.8	2742.2	1066.2	2799.9	1066.5	2999.9	1066.7	3199.9	1066.5
3302.6	1066.8	3353.6	1067.1	3399.9	1067.6	3599.9	1067.7	3799.9	1066.7
3999.9	1066.2	4199.9	1066	4399.9	1065.8	4599.9	1065.7	4799.9	1065.6
4999.9	1065.4	5130	1065.1	5199.9	1065.1	5240	1065	5399.9	1065

5599.8 1065.4 5656.3 1066.1 5698.7 1066.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5130	.045	5240	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
5130	5240	400	400	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	3599.9	1067.7

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1066.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.045	0.045
W.S. Elev (ft)	1066.26	Reach Len. (ft)	400.00	400.00	400.00
Crit W.S. (ft)	1065.82	Flow Area (sq ft)	614.40	129.82	443.92
E.G. Slope (ft/ft)	0.004495	Area (sq ft)	614.40	129.82	443.92
Q Total (cfs)	1637.54	Flow (cfs)	309.13	320.98	1007.42
Top Width (ft)	1692.65	Top Width (ft)	1154.91	110.00	427.75
Vel Total (ft/s)	1.38	Avg. Vel. (ft/s)	0.50	2.47	2.27
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.53	1.18	1.04
Conv. Total (cfs)	24423.9	Conv. (cfs)	4610.7	4787.5	15025.7
Length Wtd. (ft)	400.00	Wetted Per. (ft)	1154.91	110.00	427.75
Min Ch El (ft)	1065.00	Shear (lb/sq ft)	0.15	0.33	0.29
Alpha	2.32	Stream Power (lb/ft s)	0.08	0.82	0.66
Frctn Loss (ft)	1.17	Cum Volume (acre-ft)	259.39	10.47	44.99
C & E Loss (ft)	0.01	Cum SA (acres)	118.92	5.92	34.52

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.31

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE
FLOW

PATH OF CAVE CREEK WASH
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1066.2	1200	1065.1	1400	1064.2	1800	1064.5	2000	1064.5
2117.1	1064.1	2122.4	1063.7	2160	1063.8	2200	1064.2	2400	1065
2599.9	1065.6	2725	1065.3	2781.3	1065.6	2799.9	1066.2	2999.9	1066.6
3199.9	1066.3	3399.9	1066.2	3599.9	1065.3	3799.9	1064.5	3999.9	1064.2
4199.9	1064.2	4399.9	1064.4	4599.9	1063.9	4670	1064	4770	1063.5
4799.9	1063.1	4999.9	1063.8	5106.3	1065.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	4670	.06	4770	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4670	4770	290	280	280	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2999.9	1066.6

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1065.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.060	0.060	0.060
W.S. Elev (ft)	1065.13	Reach Len. (ft)	290.00	280.00	280.00
Crit W.S. (ft)	1064.46	Flow Area (sq ft)	832.46	137.62	444.89
E.G. Slope (ft/ft)	0.002061	Area (sq ft)	832.46	137.62	444.89
Q Total (cfs)	1637.54	Flow (cfs)	813.76	191.42	632.36
Top Width (ft)	1439.55	Top Width (ft)	1026.65	100.00	312.90
Vel Total (ft/s)	1.16	Avg. Vel. (ft/s)	0.98	1.39	1.42
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	0.81	1.38	1.42
Conv. Total (cfs)	36074.1	Conv. (cfs)	17926.7	4216.8	13930.6
Length Wtd. (ft)	284.94	Wetted Per. (ft)	1026.65	100.00	312.92
Min Ch El (ft)	1063.50	Shear (lb/sq ft)	0.10	0.18	0.18
Alpha	1.11	Stream Power (lb/ft s)	0.10	0.25	0.26
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	252.75	9.25	40.91
C & E Loss (ft)	0.01	Cum SA (acres)	108.90	4.95	31.12

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.25

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW

PATH OF CAVE CREEK WASH
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065	1200	1064.5	1400	1064.2	1800	1063.6	2000	1063.2
2200	1062.8	2400	1062.8	2599.9	1062.4	2799.9	1062.2	2999.9	1063
3199.9	1063.4	3399.9	1063.9	3599.9	1064.2	3799.9	1064.5	3999.9	1065
4199.9	1064.6	4399.9	1064	4599.9	1063.3	4799.9	1063.4	4999.9	1062.8
5199.9	1062.4	5350	1062.6	5399.9	1062.6	5430	1062.6	5550.8	1063
5799.8	1064.4	5894.3	1064.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5350	.025	5430	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
5350	5430	290	280	285	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	3999.9	1065

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1064.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1064.28	Reach Len. (ft)	290.00	280.00	285.00
Crit W.S. (ft)	1063.79	Flow Area (sq ft)	1166.67	134.59	325.30
E.G. Slope (ft/ft)	0.003140	Area (sq ft)	1166.67	134.59	325.30
Q Total (cfs)	1637.54	Flow (cfs)	804.59	634.09	198.86
Top Width (ft)	1473.09	Top Width (ft)	1044.22	80.00	348.87
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.69	4.71	0.61
Max Chl Dpth (ft)	1.88	Hydr. Depth (ft)	1.12	1.68	0.93
Conv. Total (cfs)	29222.8	Conv. (cfs)	14358.3	11315.7	3548.8
Length Wtd. (ft)	285.13	Wetted Per. (ft)	1044.22	80.00	348.87
Min Ch El (ft)	1062.60	Shear (lb/sq ft)	0.22	0.33	0.18
Alpha	8.76	Stream Power (lb/ft s)	0.15	1.55	0.11
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	246.09	8.37	38.43
C & E Loss (ft)	0.01	Cum SA (acres)	102.01	4.38	29.00

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.23

INPUT
Description: Left Overbank Between Stations 5.20 and 5.25
Lateral weir position = Left overbank

```
Distance from Upstream XS =       0
Deck/Roadway Width        =       0
Weir Coefficient          =    1.55
Weir Flow Reference       = Water Surface
 Weir Embankment Coordinates    num =        4
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  1064.4      80    1064     180    1063     280  1062.9

Weir crest shape                          = Broad Crested


LATERAL WEIR/SPILLWAY OUTPUT    Profile #PF 1

  E.G. US. (ft)           1064.42    Weir Max Depth (ft)        0.78
  W.S. US. (ft)           1064.28    Weir Avg Depth (ft)        0.50
  E.G. DS (ft)            1063.61    Weir Submerg               0.00
  W.S. DS (ft)            1063.51    Min El Weir Flow (ft)   1062.90
  Q US (cfs)              1637.54    Wr Top Wdth (ft)         227.32
  Q Leaving Total (cfs)    137.10    Total Gate Flow (cfs)
  Q DS (cfs)              1500.11    Gate Group Q (cfs)
  Perc Q Leaving             8.39    Gate Open Ht (ft)
  Q Weir (cfs)             137.10    Gate #Open
  Wr Flw Area (sq ft)      112.72    Gate Area (sq ft)
  Weir Sta US (ft)          52.68    Gate Submerg
  Weir Sta DS (ft)         280.00    Gate Invert (ft)


CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 5.2

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
             PATH
 FOR OVER SPILL IS THE I-10 FREEWAY
 X3 CARD USED SO THAT
             THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
 PATH OF CAVE
             CREEK WASH
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    1000  1065.7    1200  1064.7  1376.5  1064.4    1400  1065.5  1430.6  1065.4
  1439.3  1064.3    1600  1064.3    1800  1063.7    2000  1063.7  2074.4  1063.5
  2086.6  1062.7  2157.5  1062.4    2200  1062.9    2400    1063  2599.9  1063.1
  2799.9  1062.6  2816.3  1062.5  2852.2  1062.3  2999.9  1062.8  3199.9  1063.3
  3399.9  1063.6  3407.4  1063.6  3415.5  1063.3  3478.8  1063.4  3599.9  1063.2
  3799.9  1063.8  3999.9  1065.1  4170.9  1065.8  4180.6  1064.6  4199.9  1064.6
  4399.9    1064  4599.9  1063.2  4739.6  1062.8  4799.9  1062.7  4999.9  1062.3
  5199.9  1062.1  5399.9    1062    5500    1062  5599.8  1061.9  5799.8  1061.8
  5806.4    1062  5839.8  1062.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    1000     .13  5399.9    .025    5500     .13

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       5399.9    5500               500     500     500             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    1000  4170.9  1065.8
Sediment Elevation = 0

CROSS SECTION OUTPUT    Profile #PF 1
```

E.G. Elev (ft)	1063.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1063.48	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1062.86	Flow Area (sq ft)	859.07	148.17	523.59
E.G. Slope (ft/ft)	0.002648	Area (sq ft)	859.07	148.17	523.59
Q Total (cfs)	1500.11	Flow (cfs)	501.06	588.65	410.40
Top Width (ft)	1309.96	Top Width (ft)	870.06	100.10	339.80
Vel Total (ft/s)	0.98	Avg. Vel. (ft/s)	0.58	3.97	0.78
Max Chl Dpth (ft)	1.68	Hydr. Depth (ft)	0.99	1.48	1.54
Conv. Total (cfs)	29149.7	Conv. (cfs)	9736.5	11438.5	7974.7
Length Wtd. (ft)	500.00	Wetted Per. (ft)	870.07	100.10	340.40
Min Ch El (ft)	1062.00	Shear (lb/sq ft)	0.16	0.24	0.25
Alpha	6.74	Stream Power (lb/ft s)	0.10	0.97	0.20
Frctn Loss (ft)	1.85	Cum Volume (acre-ft)	239.35	7.46	35.66
C & E Loss (ft)	0.01	Cum SA (acres)	95.64	3.80	26.74

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.15

INPUT
Description: Left Overbank Between Stations 5.10 and 5.20
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1062.9	200	1062.5	300	1062	500	1061.9

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1063.58	Weir Max Depth (ft)	0.58
W.S. US. (ft)	1063.48	Weir Avg Depth (ft)	0.31
E.G. DS (ft)	1061.73	Weir Submerg	0.00

W.S. DS (ft)	1061.56	Min El Weir Flow (ft)	1061.90
Q US (cfs)	1500.11	Wr Top Wdth (ft)	399.10
Q Leaving Total (cfs)	113.38	Total Gate Flow (cfs)	
Q DS (cfs)	1385.10	Gate Group Q (cfs)	
Perc Q Leaving	7.67	Gate Open Ht (ft)	
Q Weir (cfs)	113.38	Gate #Open	
Wr Flw Area (sq ft)	122.95	Gate Area (sq ft)	
Weir Sta US (ft)	0.00	Gate Submerg	
Weir Sta DS (ft)	399.10	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.1

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY
X3 CARD USED SO THAT
THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE
CREEK WASH

Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1063.5	1200	1063.1	1400	1062.3	1511	1061.5	1564.4	1062.2
1600	1062.2	1800	1062	2000	1062	2169.2	1061.8	2200	1061.9
2213.6	1061.9	2400	1061.5	2600	1061.4	2771.8	1062.2	2799.9	1062.2
2827.2	1062	2859.4	1063.2	2980.9	1062.8	2992	1061.4	2999.9	1061.4
3199.9	1061.2	3399.9	1060.9	3599.9	1061.1	3799.9	1061	3999.9	1061.2
4137.2	1060.7	4148.9	1061	4199.9	1061	4399.9	1060.9	4599.9	1060.5
4730	1060.9	4765	1060.3	4770	1060.3	4830	1060.3	4999.9	1060.4
5012.8	1060.5	5039.9	1061.9	5081	1061.7	5118.8	1060.4	5139.5	1060.5
5150	1061.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	4730	.025	4830	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4730	4830	200	200	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	2859.4	1063.2	5039.9	5150	1061.9

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1061.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1061.56	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	1061.46	Flow Area (sq ft)	994.36	115.87	231.52
E.G. Slope (ft/ft)	0.005722	Area (sq ft)	994.36	115.87	231.52
Q Total (cfs)	1385.10	Flow (cfs)	592.21	574.67	218.22
Top Width (ft)	2042.69	Top Width (ft)	1739.30	100.00	203.39

Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)	0.60	4.96 0.94
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.57	1.16 1.14
Conv. Total (cfs)	18310.8	Conv. (cfs)	7828.9	7597.0 2884.8
Length Wtd. (ft)	200.00	Wetted Per. (ft)	1739.31	100.01 203.42
Min Ch El (ft)	1060.30	Shear (lb/sq ft)	0.20	0.41 0.41
Alpha	9.85	Stream Power (lb/ft s)	0.12	2.05 0.38
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	228.71	5.95 31.32
C & E Loss (ft)	0.04	Cum SA (acres)	80.66	2.65 23.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the
cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.08

INPUT
Description: Left Overbank Between Stations 5.07 and 5.10
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1061.9	100	1061.5	150	1060.6	200	1060.2

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1061.73	Weir Max Depth (ft)	0.85
W.S. US. (ft)	1061.56	Weir Avg Depth (ft)	0.53
E.G. DS (ft)	1061.07	Weir Submerg	0.00
W.S. DS (ft)	1061.05	Min El Weir Flow (ft)	1060.20
Q US (cfs)	1385.10	Wr Top Wdth (ft)	87.39
Q Leaving Total (cfs)	56.91	Total Gate Flow (cfs)	
Q DS (cfs)	1328.93	Gate Group Q (cfs)	
Perc Q Leaving	4.05	Gate Open Ht (ft)	
Q Weir (cfs)	56.91	Gate #Open	
Wr Flw Area (sq ft)	46.38	Gate Area (sq ft)	
Weir Sta US (ft)	112.61	Gate Submerg	
Weir Sta DS (ft)	200.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.07

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SECTION
X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1062.7	1073.2	1062	1200	1062.3	1600	1061.7	1800	1061.5
2000	1061.5	2200	1061.6	2332.5	1063.1	2400	1062	2600	1061
2799.9	1060.6	2999.9	1060.5	3199.9	1060.3	3399.9	1060.2	3599.9	1059.9
3681.8	1059.6	3799.9	1059.8	3999.9	1059.6	4199.9	1059.6	4225	1059.6
4290	1059.6	4599.9	1059.4	4694.3	1059.3	4716.3	1059.5	4736.7	1060.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	4199.9	.025	4225	.13

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
4199.9 4225 210 190 190 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2332.5	1063.1

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1061.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1061.05	Reach Len. (ft)	210.00	190.00	190.00
Crit W.S. (ft)	1060.09	Flow Area (sq ft)	1461.89	36.33	794.50
E.G. Slope (ft/ft)	0.001886	Area (sq ft)	1461.89	36.33	794.50
Q Total (cfs)	1328.93	Flow (cfs)	680.67	120.00	528.26
Top Width (ft)	2146.17	Top Width (ft)	1609.37	25.10	511.70
Vel Total (ft/s)	0.58	Avg. Vel. (ft/s)	0.47	3.30	0.66
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)	0.91	1.45	1.55
Conv. Total (cfs)	30598.7	Conv. (cfs)	15672.5	2762.9	12163.2
Length Wtd. (ft)	195.12	Wetted Per. (ft)	1609.37	25.10	512.56
Min Ch El (ft)	1059.60	Shear (lb/sq ft)	0.11	0.17	0.18
Alpha	3.79	Stream Power (lb/ft s)	0.05	0.56	0.12
Frctn Loss (ft)	1.25	Cum Volume (acre-ft)	223.07	5.60	28.97
C & E Loss (ft)	0.01	Cum SA (acres)	72.98	2.36	21.98

Warning: The cross-section end points had to be extended vertically for the computed water surface.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.03

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1061.7	1008.8	1061.4	1200	1062.2	1519.2	1061.3	1552.3	1061.3
1568.9	1061.8	1600	1061.9	1704.4	1062.1	1722.7	1064.3	1800	1062.8
2000	1062.5	2112.9	1062.4	2119.7	1062.1	2186.3	1061.5	2200	1061.6
2400	1061.3	2600	1060.6	2799.9	1060.2	2994.5	1059.8	2999.9	1060.3
3004.6	1060.4	3140	1060	3240	1059.8	3399.9	1059.4	3509.8	1059.2
3599.9	1059.3	3799.9	1059.2	3999.9	1058.9	4199.9	1059.2	4399.9	1060.1
4548.3	1060.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3140	.025	3240	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3140	3240	270	270	280	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.			0.130
W.S. Elev (ft)	1059.63	Reach Len. (ft)	270.00	270.00	280.00
Crit W.S. (ft)	1059.59	Flow Area (sq ft)			405.78
E.G. Slope (ft/ft)	0.267842	Area (sq ft)			405.78
Q Total (cfs)	1328.93	Flow (cfs)			1328.93
Top Width (ft)	985.06	Top Width (ft)			985.06
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)			3.27
Max Chl Dpth (ft)	0.73	Hydr. Depth (ft)			0.41
Conv. Total (cfs)	2567.8	Conv. (cfs)			2567.8
Length Wtd. (ft)	275.09	Wetted Per. (ft)			985.07
Min Ch El (ft)	1059.80	Shear (lb/sq ft)			6.89
Alpha	1.00	Stream Power (lb/ft s)			22.56
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	219.55	5.52	26.35
C & E Loss (ft)	0.05	Cum SA (acres)	69.10	2.31	18.72

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: There is no flow in the channel. Check that the channel stations are correctly coded. To
force flow into the channel, a levee or ineffective flow may have to be added or the
Manning's n of the overbank could be increased.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.98

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	1060	1200	1058.7	1400	1058.3	1497.3	1060.2	1600	1059.3
1800	1059.3	1841.2	1059.3	1867.3	1058	2000	1057.3	2200	1057.5
2400	1056.7	2450.8	1056.5	2600	1057.1	2800	1057.2	2999.9	1057.3
3199.9	1057.6	3399.9	1057.8	3599.9	1058.5	3799.9	1059.1	3999.9	1059.7
4199.9	1058.9	4237.8	1058.3	4249.7	1059.1	4399.9	1059.2	4599.9	1059.3
4760	1058.5	4799.9	1058.5	4850	1058.5	4999.9	1058.6	5213	1060

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.13	4760	.025	4850	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4760	4850	200	175	170	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1059.24	Reach Len. (ft)	200.00	175.00	170.00
Crit W.S. (ft)		Flow Area (sq ft)	3725.01	66.72	134.94
E.G. Slope (ft/ft)	0.000496	Area (sq ft)	3725.01	66.72	134.94
Q Total (cfs)	1328.93	Flow (cfs)	1233.65	72.35	22.93
Top Width (ft)	3564.81	Top Width (ft)	3227.29	90.00	247.52
Vel Total (ft/s)	0.34	Avg. Vel. (ft/s)	0.33	1.08	0.17
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	1.15	0.74	0.55
Conv. Total (cfs)	59662.4	Conv. (cfs)	55384.9	3248.3	1029.3
Length Wtd. (ft)	196.58	Wetted Per. (ft)	3227.38	90.00	247.52
Min Ch El (ft)	1058.50	Shear (lb/sq ft)	0.04	0.02	0.02
Alpha	1.45	Stream Power (lb/ft s)	0.01	0.02	0.00
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	208.01	5.31	24.61
C & E Loss (ft)	0.00	Cum SA (acres)	59.09	2.03	14.76

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.95

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1078.3	1006.6	1066.9	1031.4	1065.2	1081.3	1059.6	1088.5	1059.1
1129	1058.8	1200	1057.8	1400	1057.7	1600	1056.5	1677.6	1056.8
1701.1	1057.3	1800	1056.9	1848.2	1056.8	1869.9	1056.3	2000	1056.3
2142.3	1056.2	2156.6	1057.2	2177.1	1056.2	2200	1056.3	2400	1055.6
2600	1055.4	2800	1055.7	2875.5	1055.8	2914.1	1055.9	2926.7	1052.4
2933.1	1054.9	2999.9	1055.3	3199.9	1055.5	3399.9	1056.1	3580	1056.8
3599.9	1056.8	3650	1056.8	3799.9	1057.3	3999.9	1058.7	4199.9	1058.5
4399.9	1058.5	4599.9	1057.7	4799.9	1058.2	4999.9	1058.3	5018.8	1059.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3580	.025	3650	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3580	3650	315	315	250	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1059.23	Reach Len. (ft)	315.00	315.00	250.00
Crit W.S. (ft)		Flow Area (sq ft)	7245.06	169.80	1522.23
E.G. Slope (ft/ft)	0.000042	Area (sq ft)	7245.06	169.80	1522.23
Q Total (cfs)	1328.93	Flow (cfs)	1089.92	117.80	121.21
Top Width (ft)	3924.15	Top Width (ft)	2493.31	70.00	1360.84
Vel Total (ft/s)	0.15	Avg. Vel. (ft/s)	0.15	0.69	0.08
Max Chl Dpth (ft)	6.83	Hydr. Depth (ft)	2.91	2.43	1.12
Conv. Total (cfs)	205553.8	Conv. (cfs)	168584.1	18221.0	18748.7
Length Wtd. (ft)	310.97	Wetted Per. (ft)	2494.35	70.00	1360.88
Min Ch El (ft)	1056.80	Shear (lb/sq ft)	0.01	0.01	0.00
Alpha	2.80	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	182.82	4.84	21.38
C & E Loss (ft)	0.00	Cum SA (acres)	45.96	1.71	11.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.89

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065.5	1040.8	1069.9	1109.1	1066.7	1172.3	1060.3	1178.6	1056.5
1200	1056.5	1400	1055.6	1460.9	1055.6	1476.9	1054.9	1600	1055.5
1771	1055.2	1787.3	1054.1	1800	1054.2	2000	1054.2	2200	1053.7
2400	1053.8	2461.4	1053.8	2470.5	1054.7	2600	1054.5	2684.7	1054.2
2800	1055.1	2999.9	1055.2	3199.9	1055.7	3399.9	1057.2	3599.9	1057.3
3799.9	1056.8	3900	1057	3999.9	1057.2	4199.9	1057.5	4290.2	1059.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3799.9	.025	3900	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3799.9	3900	570	500	500	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1059.22	Reach Len. (ft)	570.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	10289.66	232.02	648.61
E.G. Slope (ft/ft)	0.000017	Area (sq ft)	10289.66	232.02	648.61
Q Total (cfs)	1328.93	Flow (cfs)	1187.32	98.12	43.49
Top Width (ft)	3099.68	Top Width (ft)	2625.81	100.10	373.77
Vel Total (ft/s)	0.12	Avg. Vel. (ft/s)	0.12	0.42	0.07
Max Chl Dpth (ft)	5.52	Hydr. Depth (ft)	3.92	2.32	1.74
Conv. Total (cfs)	327127.7	Conv. (cfs)	292269.1	24153.0	10705.6
Length Wtd. (ft)	557.08	Wetted Per. (ft)	2626.68	100.10	373.79
Min Ch El (ft)	1056.80	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.78	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	119.42	3.38	15.15
C & E Loss (ft)	0.00	Cum SA (acres)	27.45	1.09	6.64

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.79

INPUT

Description: THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
FLOODWAY MODEL, CAVE.FLDWY.2. THIS MODEL UTILIZES THE SPLIT
FLOW
AND X3 CARDS. THE X3 CARDS ARE USED TO SET CROSS-SECTION
"BOUNDARIES"
AT TOPOGRAPICALLY HIGH GROUND THAT CONTAINS THE
Q100-YR WITHIN THE
CROSS-SECTION.
CROSS-SECTION EXTENDED
MESSAGES OCCUR AT LOCATIONS OF WEIR FLOW.

Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1077.7	1042.8	1085.6	1120.1	1083.6	1200	1055.7	1260.7	1054.4
1305.3	1054.9	1400	1052	1421	1051.4	1447.4	1054.1	1501.2	1054.7
1600	1054.3	1800	1053.7	2000	1053.6	2200	1054	2400	1054.7
2600	1054.5	2760	1054.4	2789.3	1055.4	2800	1055.4	2850	1055.4
2999.9	1055.8	3199.9	1056.1	3307.6	1056.5	3399.9	1057.8	3599.9	1057.9
3633.4	1059.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2760	.025	2850	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2760	2850	0	0	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1059.21	Reach Len. (ft)			
Crit W.S. (ft)	1054.09	Flow Area (sq ft)	7962.94	357.54	1990.75
E.G. Slope (ft/ft)	0.000013	Area (sq ft)	7962.94	357.54	1990.75
Q Total (cfs)	1328.93	Flow (cfs)	979.89	194.45	154.59
Top Width (ft)	2443.45	Top Width (ft)	1570.05	90.00	783.40
Vel Total (ft/s)	0.13	Avg. Vel. (ft/s)	0.12	0.54	0.08
Max Chl Dpth (ft)	7.81	Hydr. Depth (ft)	5.07	3.97	2.54
Conv. Total (cfs)	364255.9	Conv. (cfs)	268585.2	53299.3	42371.4
Length Wtd. (ft)		Wetted Per. (ft)	1570.86	90.02	783.45
Min Ch El (ft)	1054.40	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	3.32	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:RIVER-1

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8
Reach-1	9.61	.16	.16	.16					
Reach-1	9.55	.09	.16	.16					
Reach-1	9.45	.16	.09	.16	.165				
Reach-1	9.36	.16	.16	.16					
Reach-1	9.27	.13	.02	.13					
Reach-1	9.17	.13	.035	.13					
Reach-1	9.08	.13	.02	.13					
Reach-1	8.98	.13	.02	.13					
Reach-1	8.89	.13	.02	.13					
Reach-1	8.79	.13	.02	.13					
Reach-1	8.7	.13	.02	.13					
Reach-1	8.61	.13	.02	.13					
Reach-1	8.51	.02	.03	.13	.02	.13			
Reach-1	8.42	.035	.13	.02	.13				
Reach-1	8.32	.02	.13	.02	.13				
Reach-1	8.23	.013	.13	.034	.035				
Reach-1	8.18	.13	.035	.13	.135				
Reach-1	8.08	.036	.034	.036	.035	.131			
.13									
Reach-1	7.99	.035	.033	.034	.13				
Reach-1	7.89	.13	.02	.13	.035	.13			
Reach-1	7.8	.13	.02	.13	.035				
Reach-1	7.71	.13	.02	.13	.035				
Reach-1	7.66	.13	.02	.13	.02	.13			
Reach-1	7.57	.13	.02	.13	.02	.13			
Reach-1	7.48	.13	.02	.13	.035	.5			
.02	.1	.13							
Reach-1	7.38	.13	.02	.13	.02	.13			
Reach-1	7.29	.13	.02	.13	.5	.035			
.13									
Reach-1	7.2	.13	.02	.06					
Reach-1	7.11	.13	.02	.06					

Reach-1	7.06	Lat. Weir					
Reach-1	7.01	.13	.02	.06			
Reach-1	6.96	Lat. Weir					
Reach-1	6.94	.06	.02	.06			
Reach-1	6.91	Lat. Weir					
Reach-1	6.88	.13	.06	.02	.06		
Reach-1	6.8	.1	.02	.13			
Reach-1	6.7	.13	.02	.13	.06		
Reach-1	6.61	.13	.02	.5	.04		
Reach-1	6.52	.13	.5	.035	.03		
Reach-1	6.42	.13	.5	.02	.06	.02	
.03							
Reach-1	6.33	.13	.06	.02	.06		
Reach-1	6.23	.06	.02	.06			
Reach-1	6.14	.13	.03	.5	.03	.02	
.03 .13							
Reach-1	6.05	.5	.03	.13	.013		
Reach-1	5.95	.13	.5	.035	.06		
Reach-1	5.86	.035	.035	.13			
Reach-1	5.76	.08	.08	.08			
Reach-1	5.67	.08	.08	.08			
Reach-1	5.57	.13	.08	.13			
Reach-1	5.53	Lat. Weir					
Reach-1	5.48	.13	.045	.06			
Reach-1	5.38	.13	.045	.045			
Reach-1	5.31	.06	.06	.06			
Reach-1	5.25	.13	.025	.13			
Reach-1	5.23	Lat. Weir					
Reach-1	5.2	.13	.025	.13			
Reach-1	5.15	Lat. Weir					
Reach-1	5.1	.13	.025	.13			
Reach-1	5.08	Lat. Weir					
Reach-1	5.07	.13	.025	.13			
Reach-1	5.03	.13	.025	.13			
Reach-1	4.98	.13	.025	.13			

Reach-1	4.95	.13	.025	.13
Reach-1	4.89	.13	.025	.13
Reach-1	4.79	.13	.025	.13

SUMMARY OF REACH LENGTHS

River: RIVER-1

Reach	River Sta.	Left	Channel	Right
Reach-1	9.61	360	360	360
Reach-1	9.55	500	500	500
Reach-1	9.45	470	470	500
Reach-1	9.36	500	500	500
Reach-1	9.27	500	500	500
Reach-1	9.17	500	520	500
Reach-1	9.08	500	500	500
Reach-1	8.98	500	500	500
Reach-1	8.89	500	500	500
Reach-1	8.79	500	500	500
Reach-1	8.7	500	500	500
Reach-1	8.61	490	490	490
Reach-1	8.51	500	500	500
Reach-1	8.42	490	490	490
Reach-1	8.32	500	500	500
Reach-1	8.23	280	270	270
Reach-1	8.18	520	500	490
Reach-1	8.08	550	500	610
Reach-1	7.99	470	500	570
Reach-1	7.89	500	500	500
Reach-1	7.8	490	490	490
Reach-1	7.71	220	220	220
Reach-1	7.66	480	480	480
Reach-1	7.57	500	500	500
Reach-1	7.48	500	500	500
Reach-1	7.38	490	490	490
Reach-1	7.29	490	500	500
Reach-1	7.2	450	470	470
Reach-1	7.11	500	530	500
Reach-1	7.06	Lat. Weir		
Reach-1	7.01	360	400	360
Reach-1	6.96	Lat. Weir		
Reach-1	6.94	360	360	360
Reach-1	6.91	Lat. Weir		
Reach-1	6.88	420	420	420
Reach-1	6.8	500	500	500
Reach-1	6.7	500	500	500
Reach-1	6.61	490	490	470
Reach-1	6.52	500	500	500
Reach-1	6.42	500	500	500
Reach-1	6.33	500	500	500
Reach-1	6.23	500	500	500
Reach-1	6.14	490	480	450
Reach-1	6.05	560	500	480
Reach-1	5.95	510	500	470
Reach-1	5.86	540	500	490
Reach-1	5.76	490	500	470
Reach-1	5.67	530	500	520

Reach-1	5.57	450	500	580
Reach-1	5.53	Lat. Weir		
Reach-1	5.48	500	500	520
Reach-1	5.38	400	400	400
Reach-1	5.31	290	280	280
Reach-1	5.25	290	280	285
Reach-1	5.23	Lat. Weir		
Reach-1	5.2	500	500	500
Reach-1	5.15	Lat. Weir		
Reach-1	5.1	200	200	200
Reach-1	5.08	Lat. Weir		
Reach-1	5.07	210	190	190
Reach-1	5.03	270	270	280
Reach-1	4.98	200	175	170
Reach-1	4.95	315	315	250
Reach-1	4.89	570	500	500
Reach-1	4.79	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: RIVER-1

Reach	River Sta.	Contr.	Expan.
Reach-1	9.61	.1	.3
Reach-1	9.55	.1	.3
Reach-1	9.45	.1	.3
Reach-1	9.36	.1	.3
Reach-1	9.27	.1	.3
Reach-1	9.17	.1	.3
Reach-1	9.08	.1	.3
Reach-1	8.98	.1	.3
Reach-1	8.89	.1	.3
Reach-1	8.79	.1	.3
Reach-1	8.7	.1	.3
Reach-1	8.61	.1	.3
Reach-1	8.51	.1	.3
Reach-1	8.42	.1	.3
Reach-1	8.32	.1	.3
Reach-1	8.23	.1	.3
Reach-1	8.18	.1	.3
Reach-1	8.08	.1	.3
Reach-1	7.99	.1	.3
Reach-1	7.89	.1	.3
Reach-1	7.8	.1	.3
Reach-1	7.71	.1	.3
Reach-1	7.66	.1	.3
Reach-1	7.57	.1	.3
Reach-1	7.48	.1	.3
Reach-1	7.38	.1	.3
Reach-1	7.29	.1	.3
Reach-1	7.2	.1	.3
Reach-1	7.11	.1	.3
Reach-1	7.06	Lat. Weir	
Reach-1	7.01	.1	.3
Reach-1	6.96	Lat. Weir	
Reach-1	6.94	.1	.3
Reach-1	6.91	Lat. Weir	
Reach-1	6.88	.1	.3
Reach-1	6.8	.1	.3
Reach-1	6.7	.1	.3
Reach-1	6.61	.1	.3
Reach-1	6.52	.1	.3

Reach-1	6.42		.1	.3
Reach-1	6.33		.1	.3
Reach-1	6.23		.1	.3
Reach-1	6.14		.1	.3
Reach-1	6.05		.1	.3
Reach-1	5.95		.1	.3
Reach-1	5.86		.1	.3
Reach-1	5.76		.1	.3
Reach-1	5.67		.1	.3
Reach-1	5.57		.1	.3
Reach-1	5.53	Lat. Weir		
Reach-1	5.48		.1	.3
Reach-1	5.38		.1	.3
Reach-1	5.31		.1	.3
Reach-1	5.25		.1	.3
Reach-1	5.23	Lat. Weir		
Reach-1	5.2		.1	.3
Reach-1	5.15	Lat. Weir		
Reach-1	5.1		.1	.3
Reach-1	5.08	Lat. Weir		
Reach-1	5.07		.1	.3
Reach-1	5.03		.1	.3
Reach-1	4.98		.1	.3
Reach-1	4.95		.1	.3
Reach-1	4.89		.1	.3
Reach-1	4.79		.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev
E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl		
	(cfs)		(ft)	(ft)	(ft)	(ft)
(ft/ft)	(ft/s)	(sq ft)	(ft)			
Reach-1	9.61		1237.00	1118.50	1119.94	1119.28	1119.95
0.016005	1.08	1203.81	1480.45	0.20			
Reach-1	9.55		1237.00	1116.40	1117.96	1117.00	1117.97
0.002757	0.61	2015.98	1995.83	0.09			
Reach-1	9.45		1237.00	1114.90	1116.33	1115.54	1116.34
0.003926	0.65	1918.42	2104.46	0.11			
Reach-1	9.36		1237.00	1112.80	1114.14		1114.15
0.005213	0.70	1811.80	1859.45	0.12			
Reach-1	9.27		1237.00	1110.80	1112.54		1112.65
0.001910	4.26	1707.97	1827.07	0.61			
Reach-1	9.17		1237.00	1109.60	1110.92	1110.64	1111.03
0.006627	3.49	1059.41	2022.23	0.61			
Reach-1	9.08		1210.00	1107.30	1108.56	1108.30	1108.72
0.003245	4.73	1359.38	1861.18	0.77			
Reach-1	8.98		1210.00	1106.00	1107.37		1107.47
0.001939	3.87	1962.24	2828.35	0.60			
Reach-1	8.89		1210.00	1104.90	1105.94		1106.02
0.004759	4.55	1556.36	2547.13	0.88			
Reach-1	8.79		1210.00	1103.00	1104.19		1104.25
0.002715	3.66	1710.89	2181.16	0.67			
Reach-1	8.7		1210.00	1101.40	1102.42		1102.56
0.004251	4.80	1566.60	2758.75	0.85			
Reach-1	8.61		1210.00	1099.90	1100.62		1100.65
0.003357	3.18	1938.72	2786.99	0.70			
Reach-1	8.51		1210.00	1098.50	1098.96	1098.63	1098.98
0.003415	2.33	1283.50	2887.68	0.65			
Reach-1	8.42		1210.00	1096.30	1097.09	1096.80	1097.12
0.004064	3.13	1441.35	3030.72	0.75			
Reach-1	8.32		1210.00	1095.10	1095.99	1095.56	1096.02

0.001419	2.42	1740.76	3142.63	0.48			
Reach-1	8.23		1210.00	1094.40	1094.92		1094.93
0.003702	1.60	1218.09	2441.97	0.41			
Reach-1	8.18		1375.00	1092.80	1093.70	1093.53	1093.74
0.004973	2.24	872.73	2151.59	0.49			
Reach-1	8.08		1375.00	1091.80	1092.79		1092.81
0.000952	1.19	1385.10	2226.90	0.22			
Reach-1	7.99		1375.00	1090.70	1091.40	1091.23	1091.49
0.013231	3.55	867.86	1834.11	0.83			
Reach-1	7.89		1375.00	1089.30	1089.48		1089.51
0.001660	0.74	1274.24	2464.16	0.38			
Reach-1	7.8		1375.00	1087.20	1088.13	1087.90	1088.19
0.004738	4.13	1039.12	2423.09	0.85			
Reach-1	7.71		1375.00	1085.50	1086.56		1086.60
0.002351	3.75	1826.99	3125.45	0.64			
Reach-1	7.66		1691.00	1084.50	1085.73		1085.81
0.005330	4.18	1162.59	2417.10	0.90			
Reach-1	7.57		1691.00	1083.40	1085.18	1084.73	1085.20
0.000534	2.10	2682.16	4170.48	0.32			
Reach-1	7.48		1691.00	1084.00	1084.31	1084.10	1084.38
0.025525	5.44	1447.54	3974.46	1.72			
Reach-1	7.38		1691.00	1082.00	1083.26		1083.28
0.000752	2.24	2942.59	4009.52	0.37			
Reach-1	7.29		1691.00	1081.50	1082.69		1082.72
0.001923	2.97	2483.14	3220.65	0.56			
Reach-1	7.2		1691.00	1081.40	1081.81		1081.82
0.001657	1.52	1864.50	2790.73	0.45			
Reach-1	7.11		1865.00	1079.80	1081.09	1080.54	1081.12
0.001356	2.77	2245.17	2820.12	0.48			
Reach-1	7.06		Lat. Weir				
Reach-1	7.01		1550.95	1079.50	1080.12		1080.16
0.003066	2.98	1585.73	2772.29	0.67			
Reach-1	6.96		Lat. Weir				
Reach-1	6.94		1269.36	1078.70	1079.48		1079.49
0.001083	1.71	1497.60	2236.85	0.39			
Reach-1	6.91		Lat. Weir				
Reach-1	6.88		979.54	1079.00	1079.23		1079.24
0.000449	0.50	1804.32	2436.82	0.21			
Reach-1	6.8		979.54	1078.00	1078.91		1078.93
0.001362	2.42	1851.52	2183.99	0.47			
Reach-1	6.7		979.54	1077.50	1077.98		1077.99
0.002766	0.31	1456.93	1781.21	0.09			
Reach-1	6.61		979.54	1076.00	1077.01		1077.02
0.001439	0.10	1490.31	2004.57	0.02			
Reach-1	6.52		979.54	1075.40	1075.79	1075.64	1075.89
0.004545	1.34	404.97	881.43	0.47			
Reach-1	6.42		979.54	1074.20	1074.95	1074.47	1074.97
0.000950	1.43	803.75	1305.04	0.36			
Reach-1	6.33		979.54	1073.40	1074.38	1073.87	1074.41
0.001323	2.48	1106.58	1636.60	0.47			
Reach-1	6.23		979.54	1072.60	1073.73	1073.21	1073.77
0.001258	2.62	1068.56	1628.56	0.46			
Reach-1	6.14		979.54	1071.80	1072.94	1072.71	1073.00
0.001851	2.86	584.77	1103.97	0.55			
Reach-1	6.05		1004.54	1070.40	1071.77		1071.85
0.003389	2.86	813.63	1141.29	0.51			
Reach-1	5.95		1004.54	1070.20	1071.21	1070.67	1071.23
0.000600	0.85	1228.99	1645.07	0.17			
Reach-1	5.86		1004.54	1069.30	1070.77		1070.79
0.001403	1.39	1235.33	2197.80	0.27			
Reach-1	5.76		1004.54	1068.50	1069.46		1069.49
.005350	1.13	780.75	915.33	0.23			
Reach-1	5.67		1004.54	1067.30	1068.76		1068.76

0.000677	0.50	1966.64	2009.85	0.09			
Reach-1	5.57		1004.54	1066.60	1068.29		1068.30
0.001174	0.87	2002.11	1781.77	0.12			
Reach-1	5.53		Lat. Weir				
Reach-1	5.48		1004.54	1066.40	1067.64	1066.74	1067.65
0.001323	1.35	1391.06	1501.45	0.22			
Reach-1	5.38		1637.54	1065.00	1066.26	1065.82	1066.33
0.004495	2.47	1188.14	1692.65	0.40			
Reach-1	5.31		1637.54	1063.50	1065.13	1064.46	1065.15
0.002061	1.39	1414.96	1439.55	0.21			
Reach-1	5.25		1637.54	1062.60	1064.28	1063.79	1064.42
0.003140	4.71	1626.56	1473.09	0.64			
Reach-1	5.23		Lat. Weir				
Reach-1	5.2		1500.11	1062.00	1063.48	1062.86	1063.58
0.002648	3.97	1530.84	1309.96	0.58			
Reach-1	5.15		Lat. Weir				
Reach-1	5.1		1385.10	1060.30	1061.56	1061.46	1061.73
0.005722	4.96	1341.75	2042.69	0.81			
Reach-1	5.08		Lat. Weir				
Reach-1	5.07		1328.93	1059.60	1061.05	1060.09	1061.07
0.001886	3.30	2292.72	2146.17	0.48			
Reach-1	5.03		1328.93	1059.80	1059.63	1059.59	1059.79
0.267842		405.78	985.06	0.00			
Reach-1	4.98		1328.93	1058.50	1059.24		1059.24
0.000496	1.08	3926.67	3564.81	0.22			
Reach-1	4.95		1328.93	1056.80	1059.23		1059.23
0.000042	0.69	8937.10	3924.15	0.08			
Reach-1	4.89		1328.93	1056.80	1059.22		1059.22
0.000017	0.42	11170.30	3099.68	0.05			
Reach-1	4.79		1328.93	1054.40	1059.21	1054.09	1059.21
0.000013	0.54	10311.23	2443.45	0.05			

Profile Output Table - Standard Table 2

Reach	River Sta		E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss
Q Left	Q Channel	Q Right	Top Width (ft)	(ft)	(ft)	(ft)	(ft)
(cfs)	(cfs)	(cfs)					
Reach-1	9.61		1119.95	1119.94	0.02	1.98	0.00
	712.24	524.76	1480.45				
Reach-1	9.55		1117.97	1117.96	0.01	1.63	0.00
434.82	294.23	507.95	1995.83				
Reach-1	9.45		1116.34	1116.33	0.01	2.19	0.00
383.22	256.32	597.47	2104.46				
Reach-1	9.36		1114.15	1114.14	0.01	1.48	0.01
201.84	188.68	846.48	1859.45				
Reach-1	9.27		1112.65	1112.54	0.11	1.62	0.00
386.67	489.81	360.52	1827.07				
Reach-1	9.17		1111.03	1110.92	0.12	2.30	0.00
303.34	765.80	167.86	2022.23				
Reach-1	9.08		1108.72	1108.56	0.16	1.23	0.02
508.66	557.45	143.89	1861.18				
Reach-1	8.98		1107.47	1107.37	0.10	1.44	0.00
567.00	497.20	145.81	2828.35				
Reach-1	8.89		1106.02	1105.94	0.08	1.76	0.01
797.24	294.22	118.53	2547.13				
Reach-1	8.79		1104.25	1104.19	0.06	1.68	0.01

744.35	354.52	111.13	2181.16				
Reach-1	8.7		1102.56	1102.42	0.14	1.88	0.03
561.88	473.62	174.50	2758.75				
Reach-1	8.61		1100.65	1100.62	0.03	1.66	0.00
919.15	202.58	88.26	2786.99				
Reach-1	8.51		1098.98	1098.96	0.02	1.86	0.00
1073.09	82.40	54.52	2887.68				
Reach-1	8.42		1097.12	1097.09	0.03	1.10	0.00
711.32	201.75	296.93	3030.72				
Reach-1	8.32		1096.02	1095.99	0.02	1.08	0.00
813.40	232.99	163.61	3142.63				
Reach-1	8.23		1094.93	1094.92	0.02	1.19	0.00
961.74	149.09	99.17	2441.97				
Reach-1	8.18		1093.74	1093.70	0.05	0.93	0.01
412.07	450.59	512.35	2151.59				
Reach-1	8.08		1092.81	1092.79	0.02	1.30	0.01
526.70	477.50	370.80	2226.90				
Reach-1	7.99		1091.49	1091.40	0.09	1.96	0.02
318.45	529.66	526.89	1834.11				
Reach-1	7.89		1089.51	1089.48	0.03	1.31	0.00
76.26	2.67	1296.07	2464.16				
Reach-1	7.8		1088.19	1088.13	0.07	1.59	0.01
138.41	182.91	1053.68	2423.09				
Reach-1	7.71		1086.60	1086.56	0.04	0.78	0.00
315.77	178.71	880.51	3125.45				
Reach-1	7.66		1085.81	1085.73	0.08	0.59	0.02
170.82	336.73	1183.46	2417.10				
Reach-1	7.57		1085.20	1085.18	0.02	0.81	0.01
161.24	340.69	1189.08	4170.48				
Reach-1	7.48		1084.38	1084.31	0.07	1.10	0.02
230.53	202.42	1258.06	3974.46				
Reach-1	7.38		1083.28	1083.26	0.02	0.56	0.00
144.91	285.53	1260.56	4009.52				
Reach-1	7.29		1082.72	1082.69	0.03	0.89	0.00
170.39	322.82	1197.79	3220.65				
Reach-1	7.2		1081.82	1081.81	0.02	0.70	0.00
25.23	76.15	1589.62	2790.73				
Reach-1	7.11		1081.12	1081.09	0.03	0.96	0.00
136.01	293.09	1435.90	2820.12				
Reach-1	7.06		Lat. Weir				
Reach-1	7.01		1080.16	1080.12	0.05	0.66	0.01
209.06	430.56	911.34	2772.29				
Reach-1	6.96		Lat. Weir				
Reach-1	6.94		1079.49	1079.48	0.02	0.25	0.00
48.69	186.82	1033.85	2236.85				
Reach-1	6.91		Lat. Weir				
Reach-1	6.88		1079.24	1079.23	0.01	0.30	0.00
120.70	25.25	833.60	2436.82				
Reach-1	6.8		1078.93	1078.91	0.02	0.94	0.00
57.41	220.65	701.47	2183.99				
Reach-1	6.7		1077.99	1077.98	0.01	0.97	0.00
141.17	22.30	816.08	1781.21				
Reach-1	6.61		1077.02	1077.01	0.01	1.12	0.01
322.97	25.28	631.29	2004.57				
Reach-1	6.52		1075.89	1075.79	0.10	0.89	0.02
43.98	47.95	887.62	881.43				
Reach-1	6.42		1074.97	1074.95	0.03	0.56	0.00
55.46	92.61	831.46	1305.04				
Reach-1	6.33		1074.41	1074.38	0.03	0.65	0.00
210.40	271.63	497.51	1636.60				
Reach-1	6.23		1073.77	1073.73	0.04	0.76	0.00
115.00	300.52	564.02	1628.56				
Reach-1	6.14		1073.00	1072.94	0.06	1.15	0.00

152.74	314.47	512.33	1103.97				
Reach-1	6.05		1071.85	1071.77	0.08	0.60	0.02
	631.70	372.83	1141.29				
Reach-1	5.95		1071.23	1071.21	0.01	0.43	0.00
340.75	109.75	554.04	1645.07				
Reach-1	5.86		1070.79	1070.77	0.02	1.29	0.00
568.98	293.28	142.28	2197.80				
Reach-1	5.76		1069.49	1069.46	0.03	0.72	0.01
810.33	172.70	21.51	915.33				
Reach-1	5.67		1068.76	1068.76	0.00	0.46	0.00
723.33	121.71	159.50	2009.85				
Reach-1	5.57		1068.30	1068.29	0.01	0.64	0.00
559.67	179.83	265.03	1781.77				
Reach-1	5.53		Lat. Weir				
Reach-1	5.48		1067.65	1067.64	0.02	1.32	0.01
239.33	224.28	540.93	1501.45				
Reach-1	5.38		1066.33	1066.26	0.07	1.17	0.01
309.13	320.98	1007.42	1692.65				
Reach-1	5.31		1065.15	1065.13	0.02	0.72	0.01
813.76	191.42	632.36	1439.55				
Reach-1	5.25		1064.42	1064.28	0.14	0.82	0.01
804.59	634.09	198.86	1473.09				
Reach-1	5.23		Lat. Weir				
Reach-1	5.2		1063.58	1063.48	0.10	1.85	0.01
501.06	588.65	410.40	1309.96				
Reach-1	5.15		Lat. Weir				
Reach-1	5.1		1061.73	1061.56	0.16	0.62	0.04
592.21	574.67	218.22	2042.69				
Reach-1	5.08		Lat. Weir				
Reach-1	5.07		1061.07	1061.05	0.02	1.25	0.01
680.67	120.00	528.26	2146.17				
Reach-1	5.03		1059.79	1059.63	0.17	0.50	0.05
		1328.93	985.06				
Reach-1	4.98		1059.24	1059.24	0.00	0.02	0.00
1233.65	72.35	22.93	3564.81				
Reach-1	4.95		1059.23	1059.23	0.00	0.01	0.00
1089.92	117.80	121.21	3924.15				
Reach-1	4.89		1059.22	1059.22	0.00	0.01	0.00
1187.32	98.12	43.49	3099.68				
Reach-1	4.79		1059.21	1059.21	0.00		
979.89	194.45	154.59	2443.45				

Profile Output Table - Lateral Weir/Spillway

Reach	River Sta	Q US	Q Leaving Total	Q DS	Q Weir	Total
Gate Flow	Wr Top Wdth	Weir Max Depth	Weir Avg Depth	Min El Weir Flow	E.G. US.	W.S.
US.	E.G. DS	W.S. DS				
		(cfs)	(cfs)	(cfs)	(cfs)	
(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	
(ft)	(ft)	(ft)				
Reach-1	7.06	1865.00	314.09	1550.95	314.09	
	366.58	0.99	0.54	1079.50	1081.12	
1081.09	1080.16	1080.12				
Reach-1	6.96	1550.95	281.52	1269.36	281.52	
	353.59	0.88	0.58	1079.20	1080.16	

```
1080.12    1079.49    1079.48
  Reach-1       6.91             1269.36          289.79     979.54     289.79
              344.16             0.66             0.54       1078.80    1079.49
1079.48    1079.24    1079.23
  Reach-1       5.53             1004.54            0.00     1500.11       0.00
                                                             1066.70    1068.30
1068.29    1064.36    1064.23
  Reach-1       5.23             1637.54          137.10     1500.11     137.10
              227.32             0.78             0.50       1062.90    1064.42
1064.28    1063.61    1063.51
  Reach-1       5.15             1500.11          113.38     1385.10     113.38
              399.10             0.58             0.31       1061.90    1063.58
1063.48    1061.73    1061.56
  Reach-1       5.08             1385.10           56.91     1328.93      56.91
               87.39             0.85             0.53       1060.20    1061.73
1061.56    1061.07    1061.05
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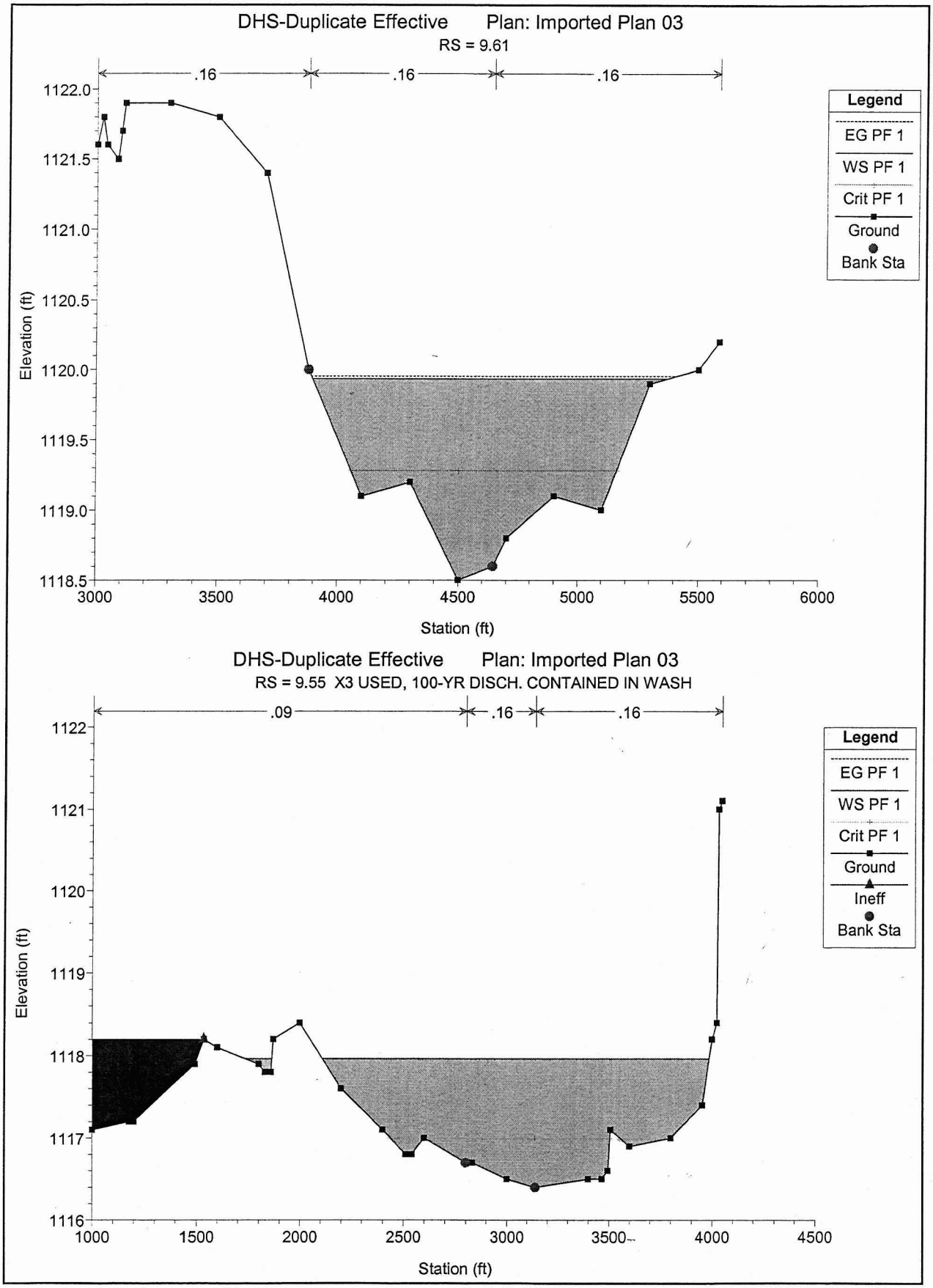
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.16
.16
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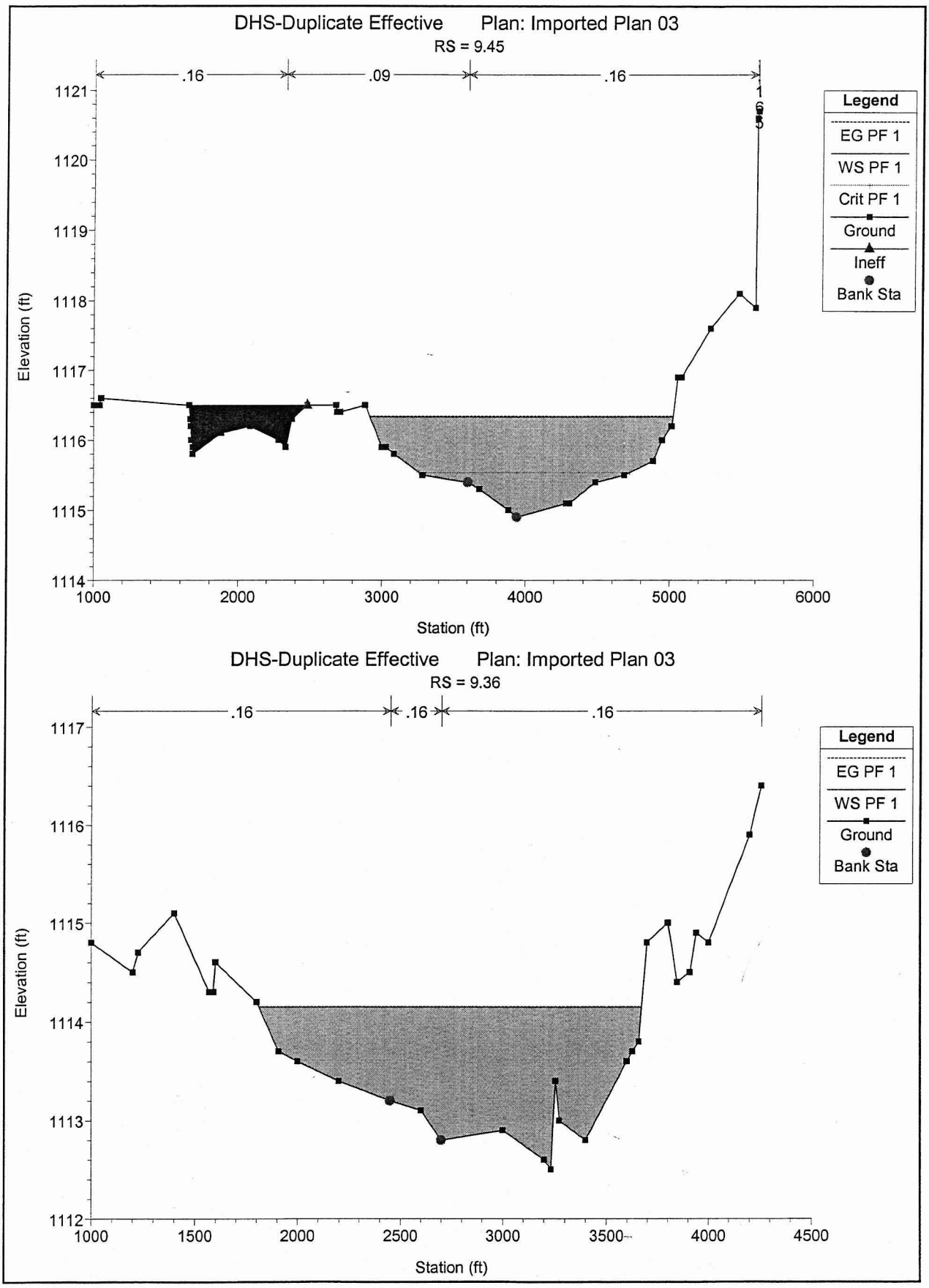
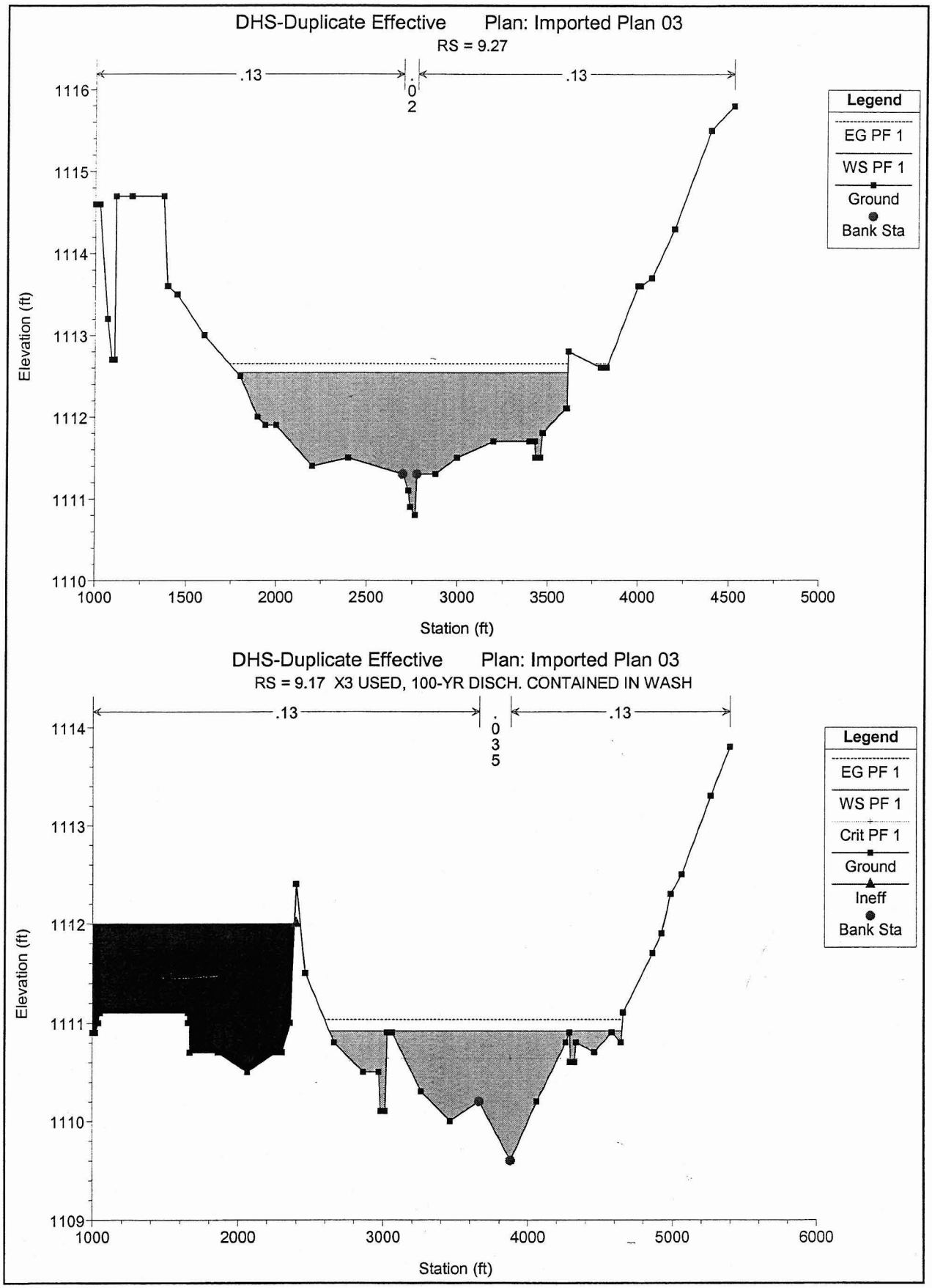
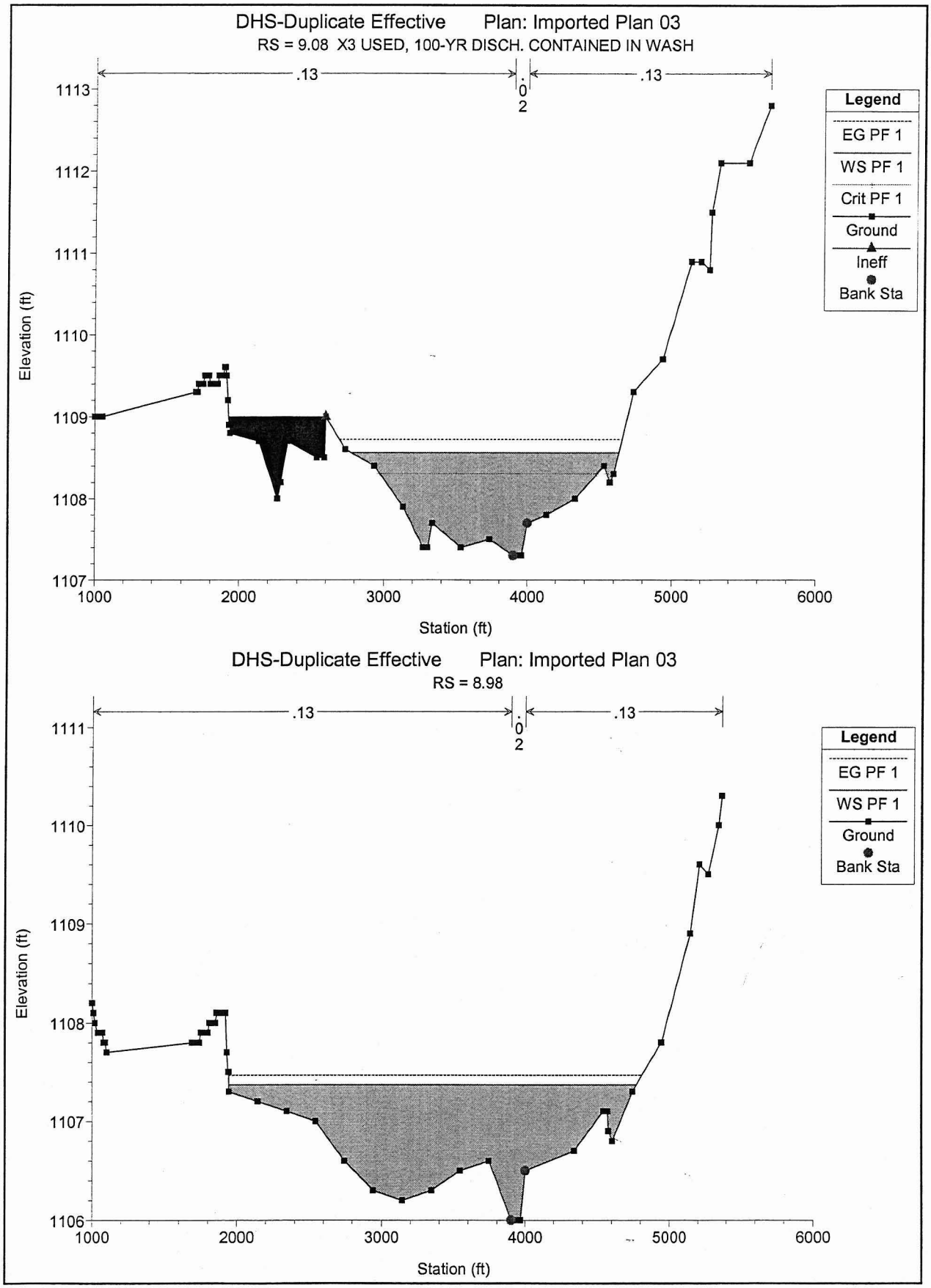
1121.0
1120.5
1120.0
1119.5
1119.0
1118.5
Elevation (ft)
3000
3500
4000
4500
5000
5500
6000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 9.55 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.09
.16
.16
1122
1121
1120
1119
1118
1117
1116
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta


DHS-Duplicate Effective Plan: Imported Plan 03
RS = 9.45
.16
.09
.16
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 9.36
.16
.16
.16
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


DHS-Duplicate Effective Plan: Imported Plan 03
RS = 9.27
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1116
1115
1114
1113
1112
1111
1110
1000
1500
2000
2500
3000
3500
4000
4500
5000
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 9.17 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.035
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1114
1113
1112
1111
1110
1109
1000
2000
3000
4000
5000
6000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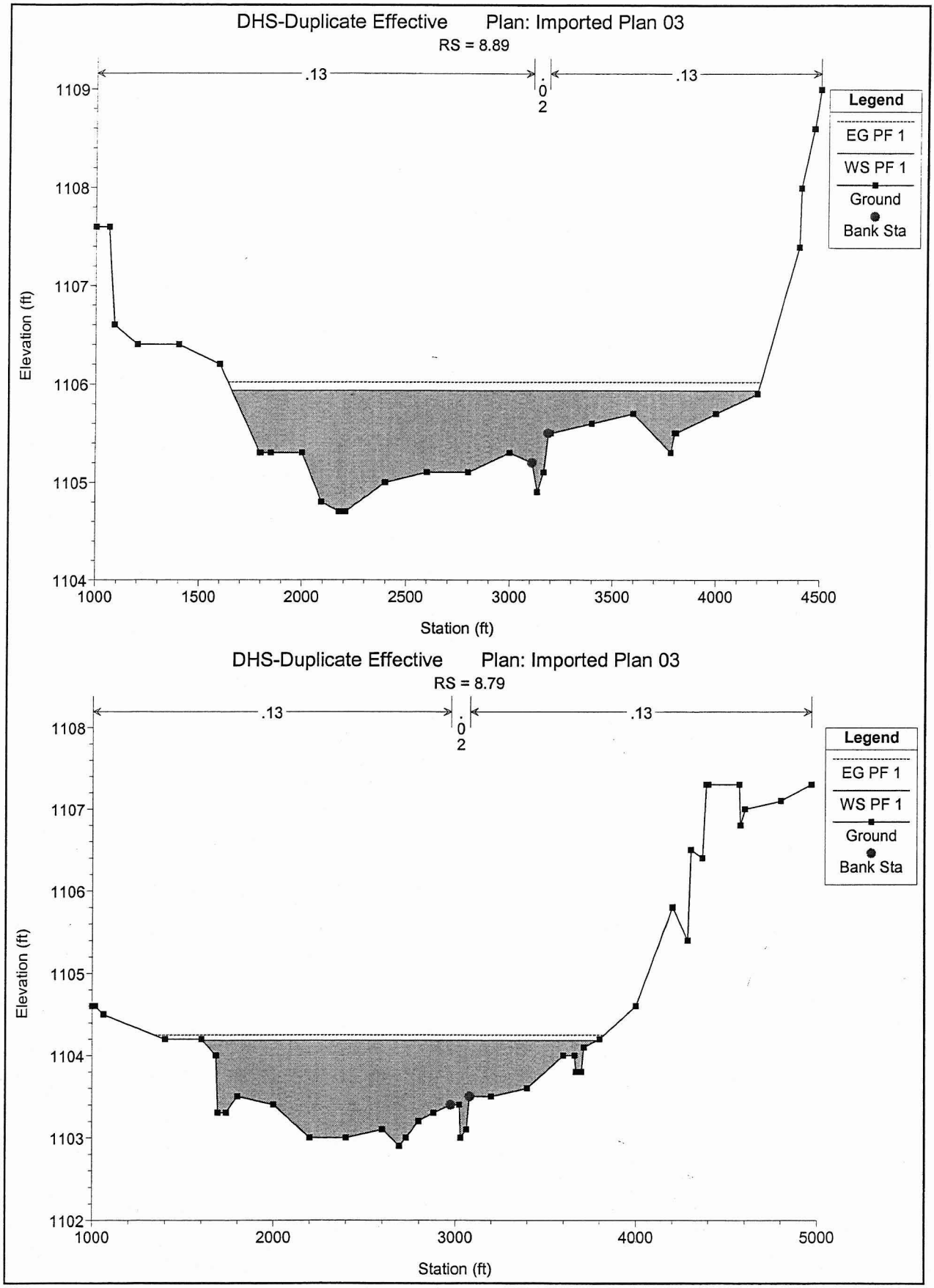
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1113
1112
1111
1110
1109
1108
1107
1000
2000
3000
4000
5000
6000
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 8.98
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1111
1110
1109
1108
1107
1106
1000
2000
3000
4000
5000
6000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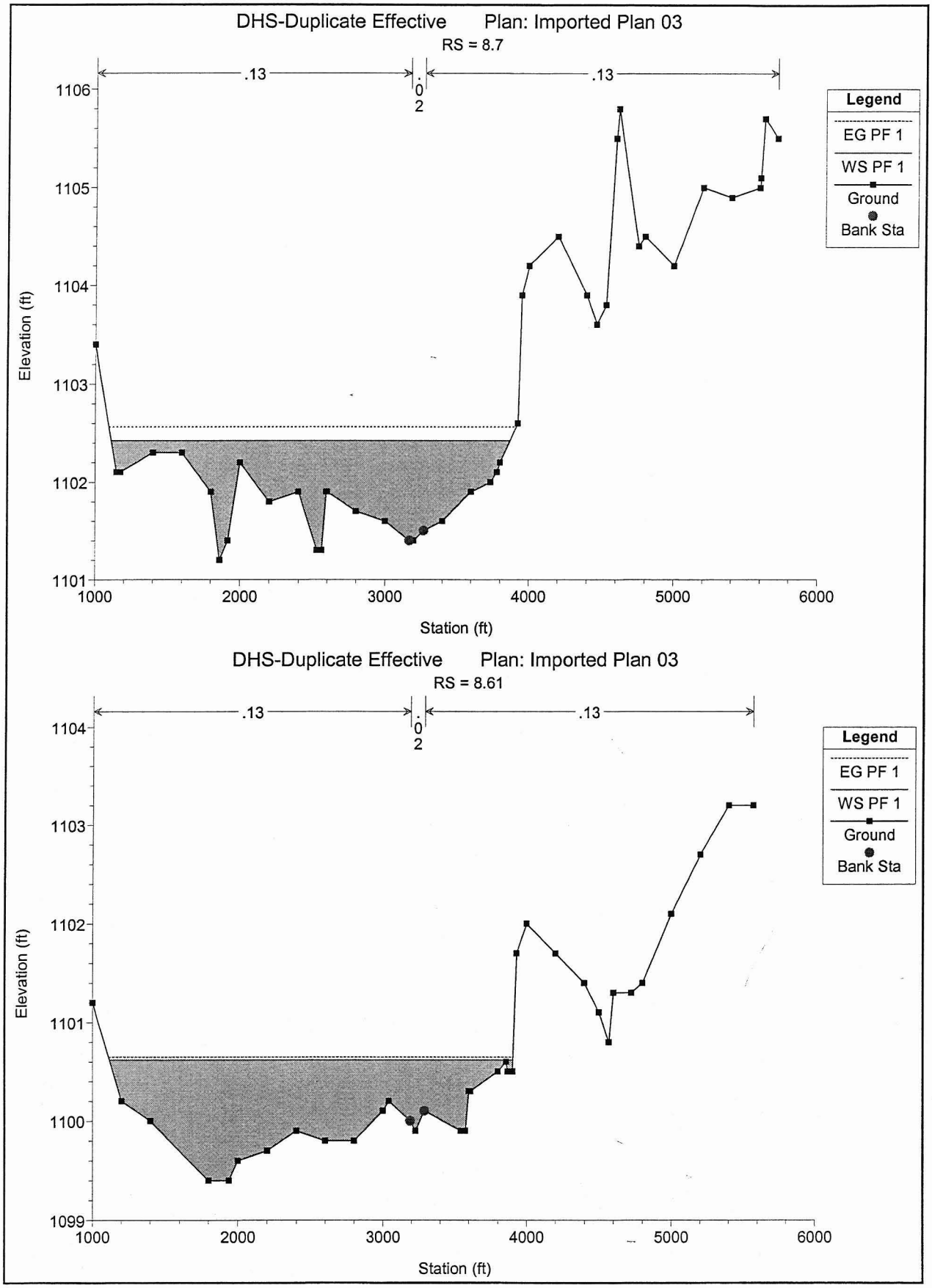
RS = 8.89
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1109
1108
1107
1106
1105
1104
1000
1500
2000
2500
3000
3500
4000
4500
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 8.79
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1108
1107
1106
1105
1104
1103
1102
1000
2000
3000
4000
5000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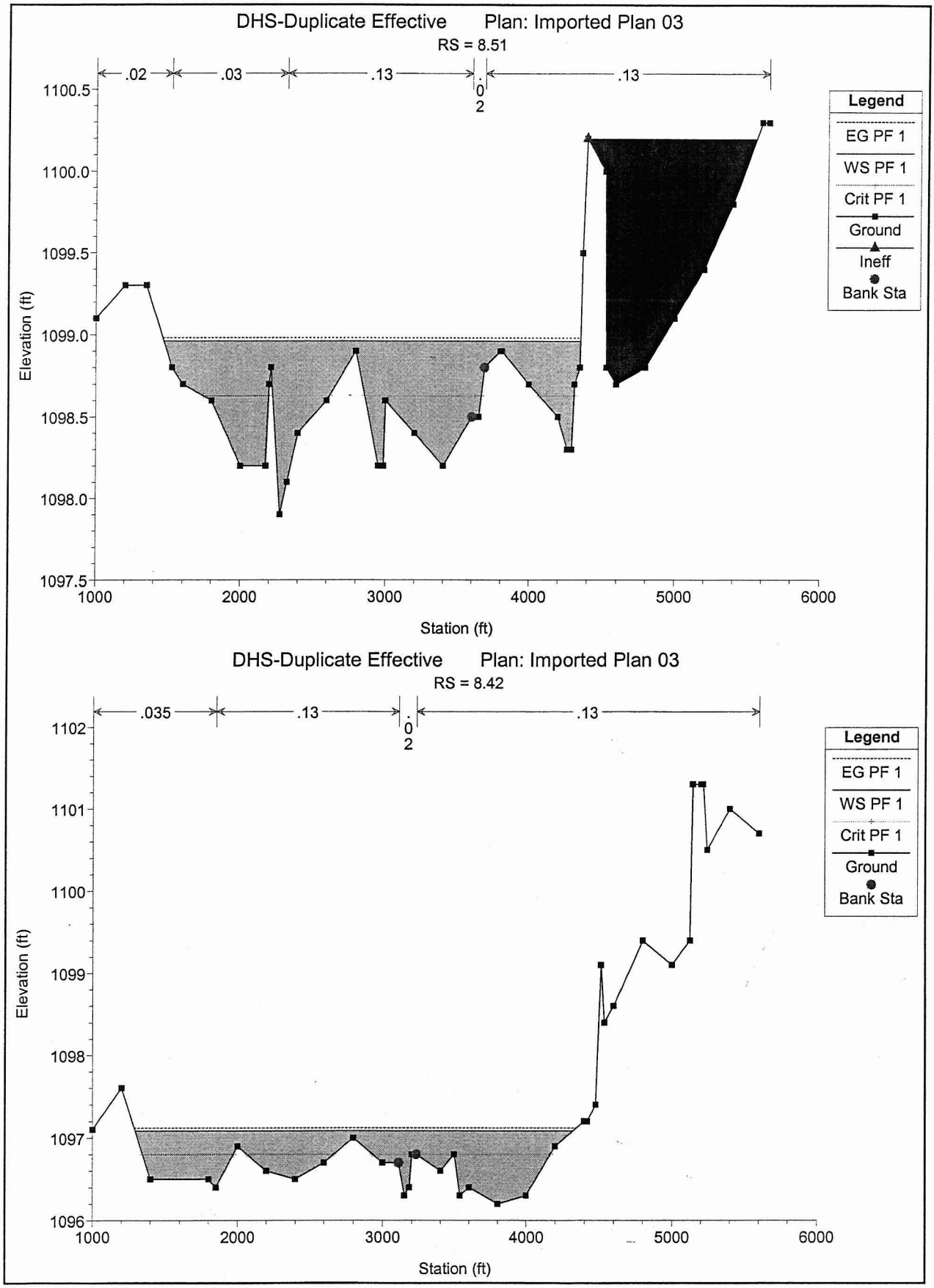
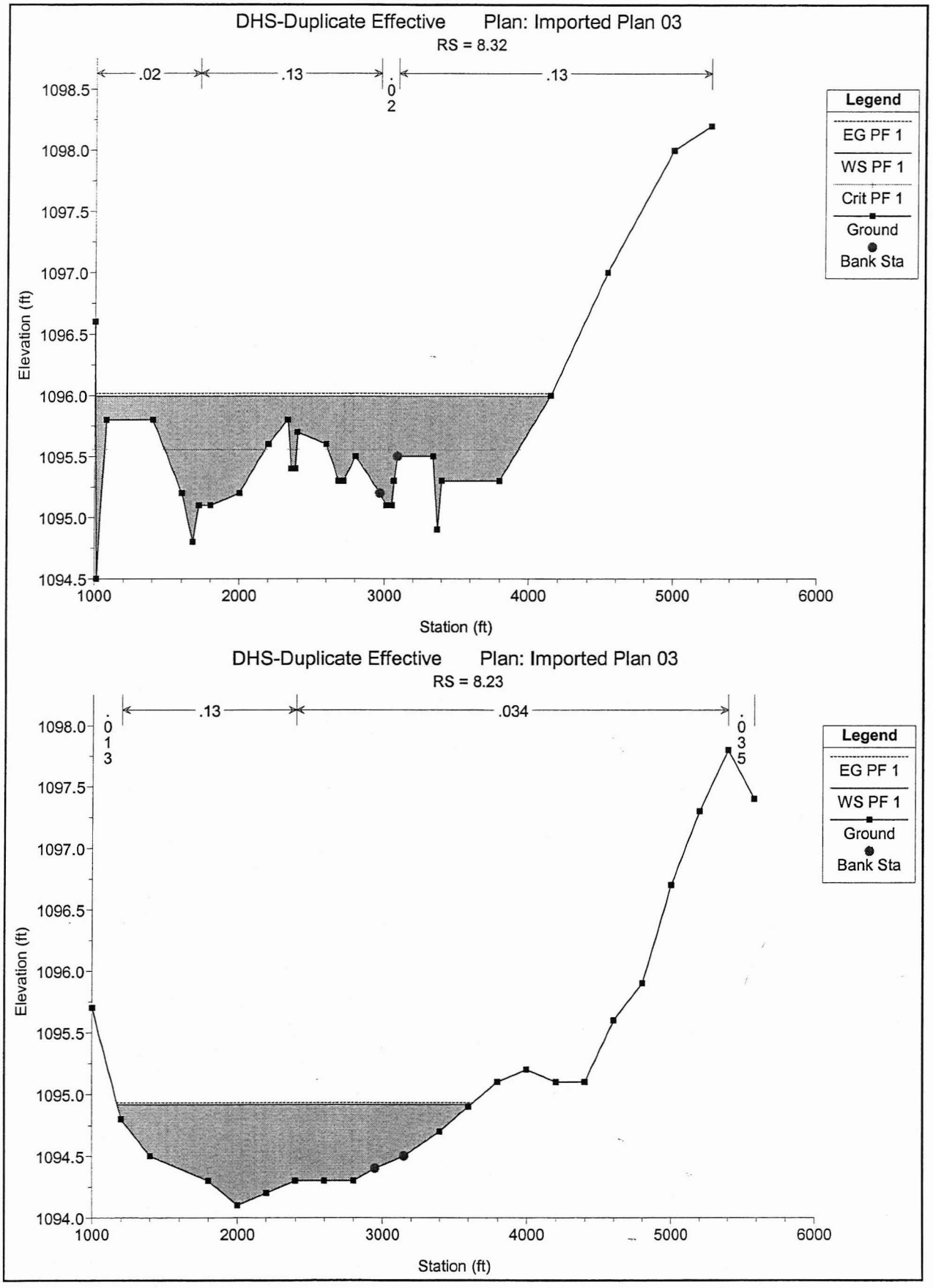
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1106
1105
1104
1103
1102
1101
1000
2000
3000
4000
5000
6000
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 8.61
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1104
1103
1102
1101
1100
1099
1000
2000
3000
4000
5000
6000


DHS-Duplicate Effective Plan: Imported Plan 03
RS = 8.51
.02
.03
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 8.42
.035
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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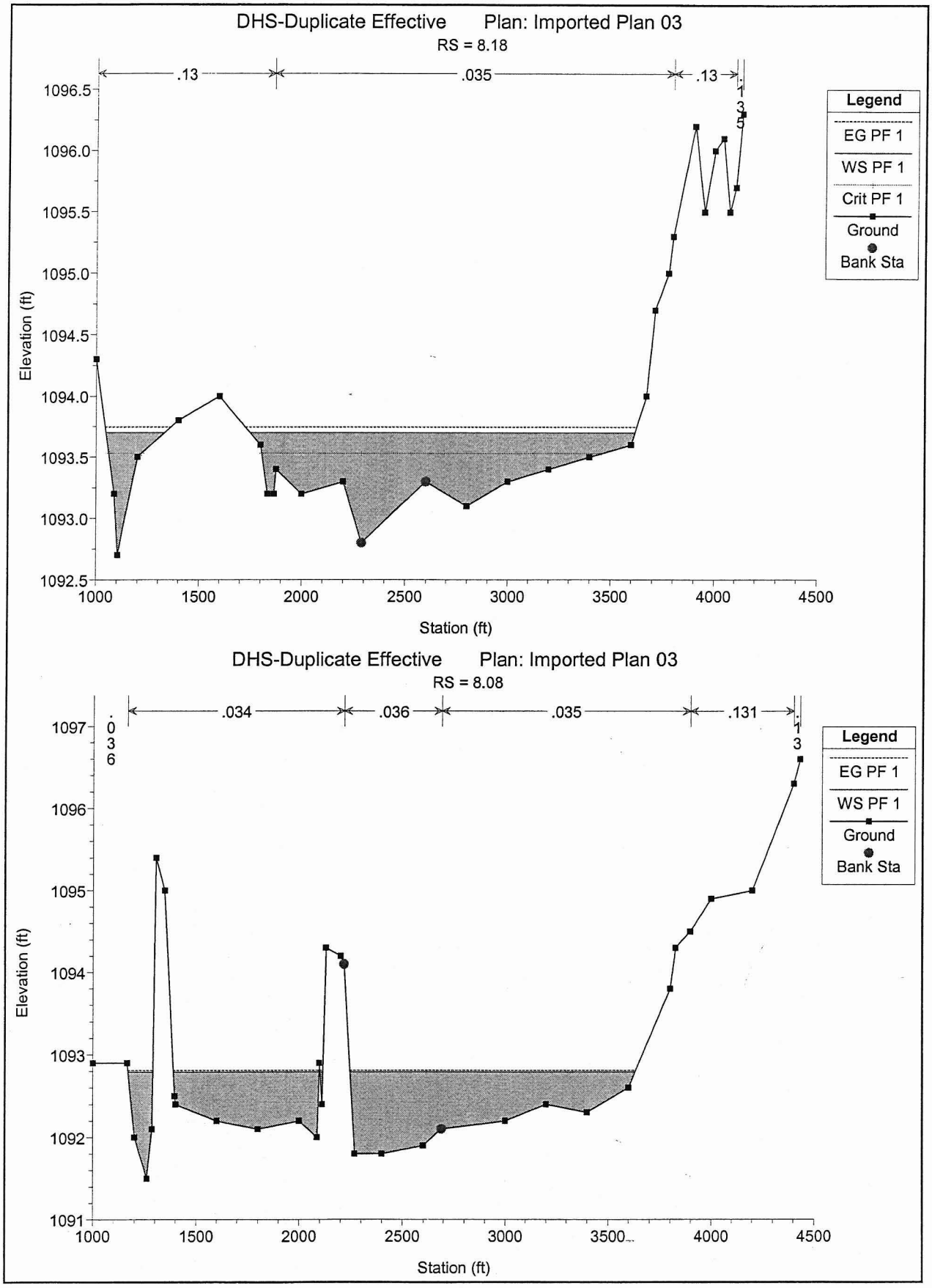
RS = 8.32
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 8.23
.013
.13
.034
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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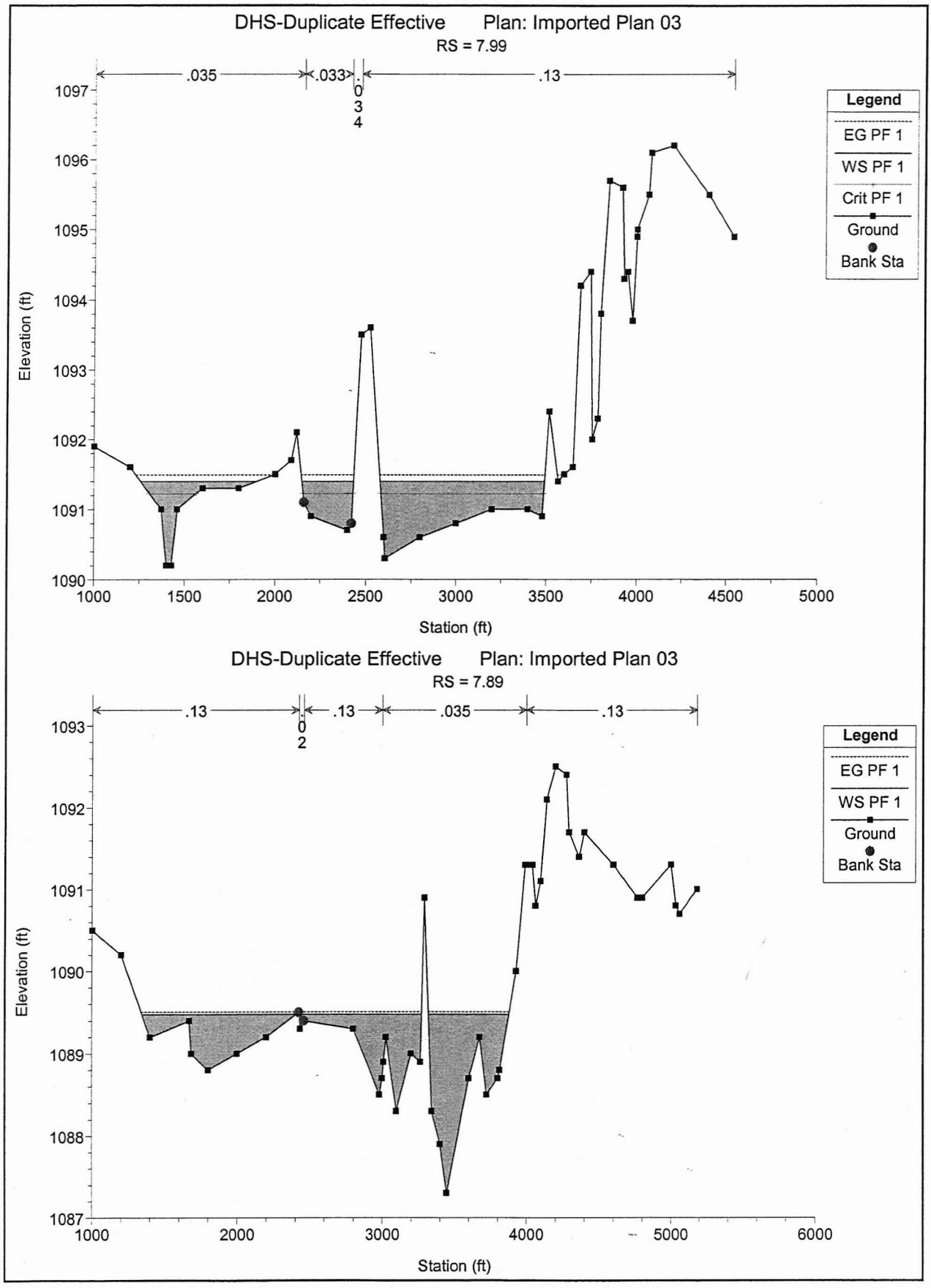
.13
.035
.13
.135
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 8.08
.034
.036
.035
.131
.036
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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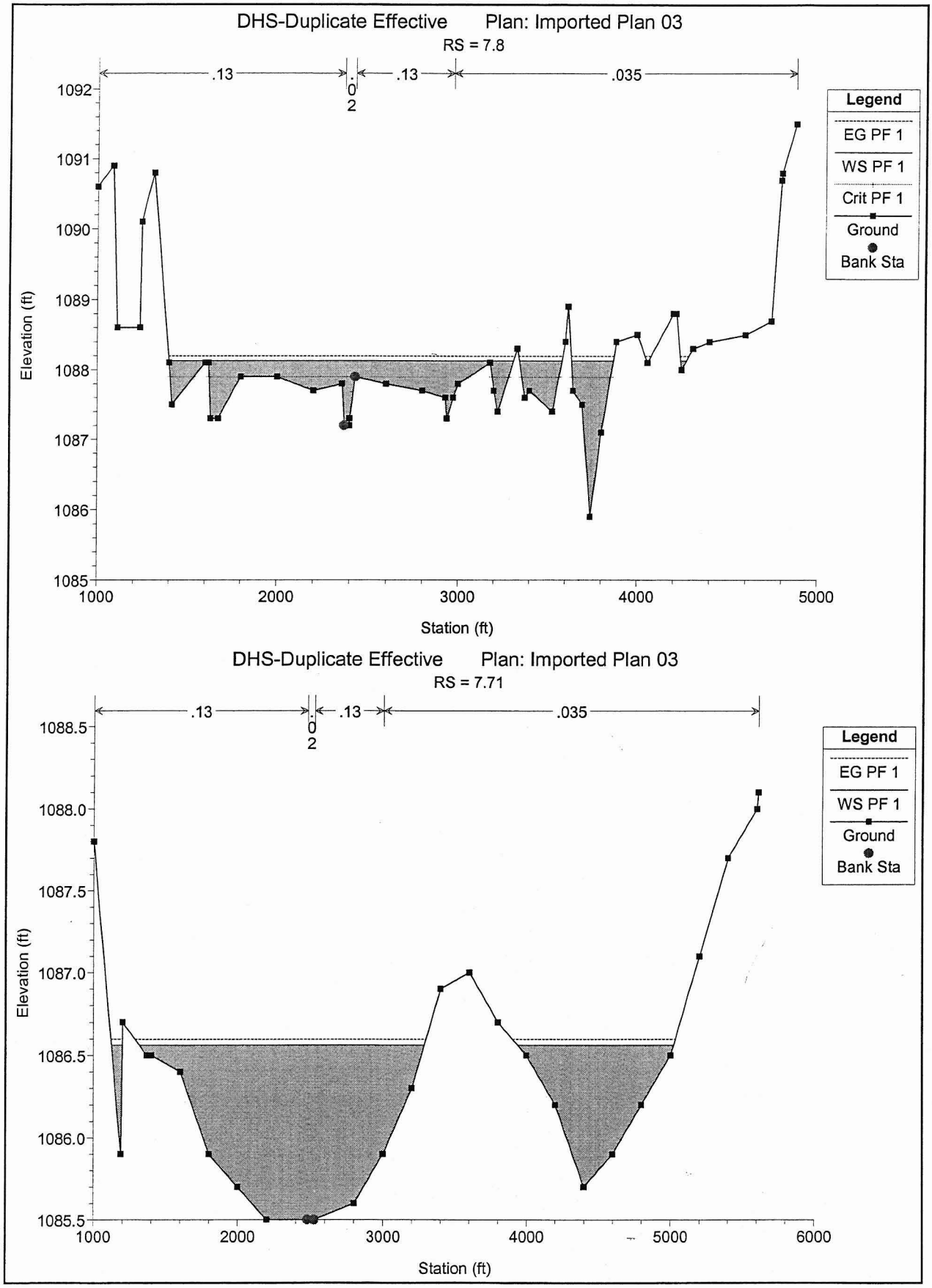
RS = 7.99
.035
.033
.13
0
3
4
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 7.89
.13
.13
.035
.13
0
2
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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.13
.13
.035
0.2
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
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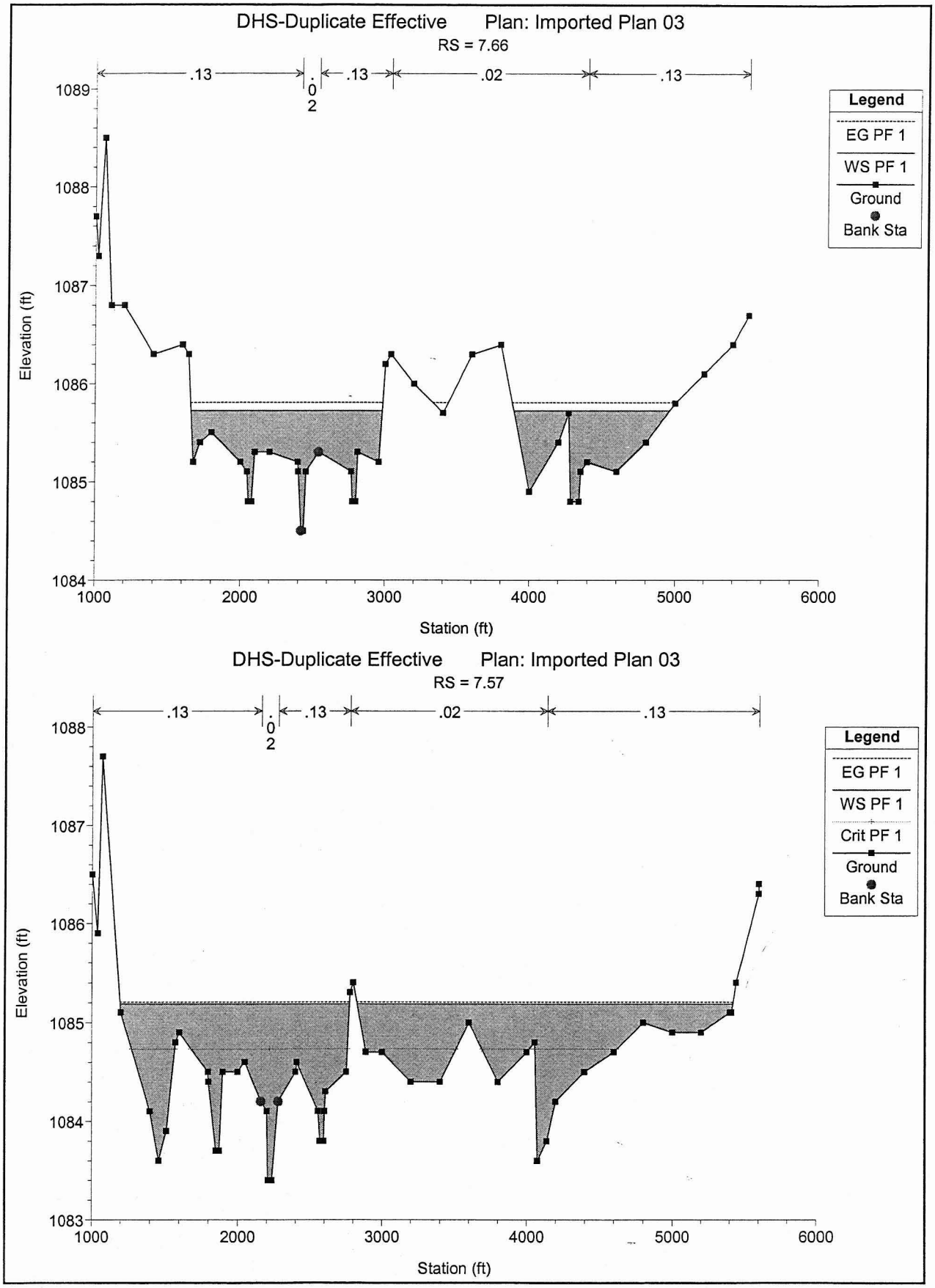
.13
.13
.035
0.2
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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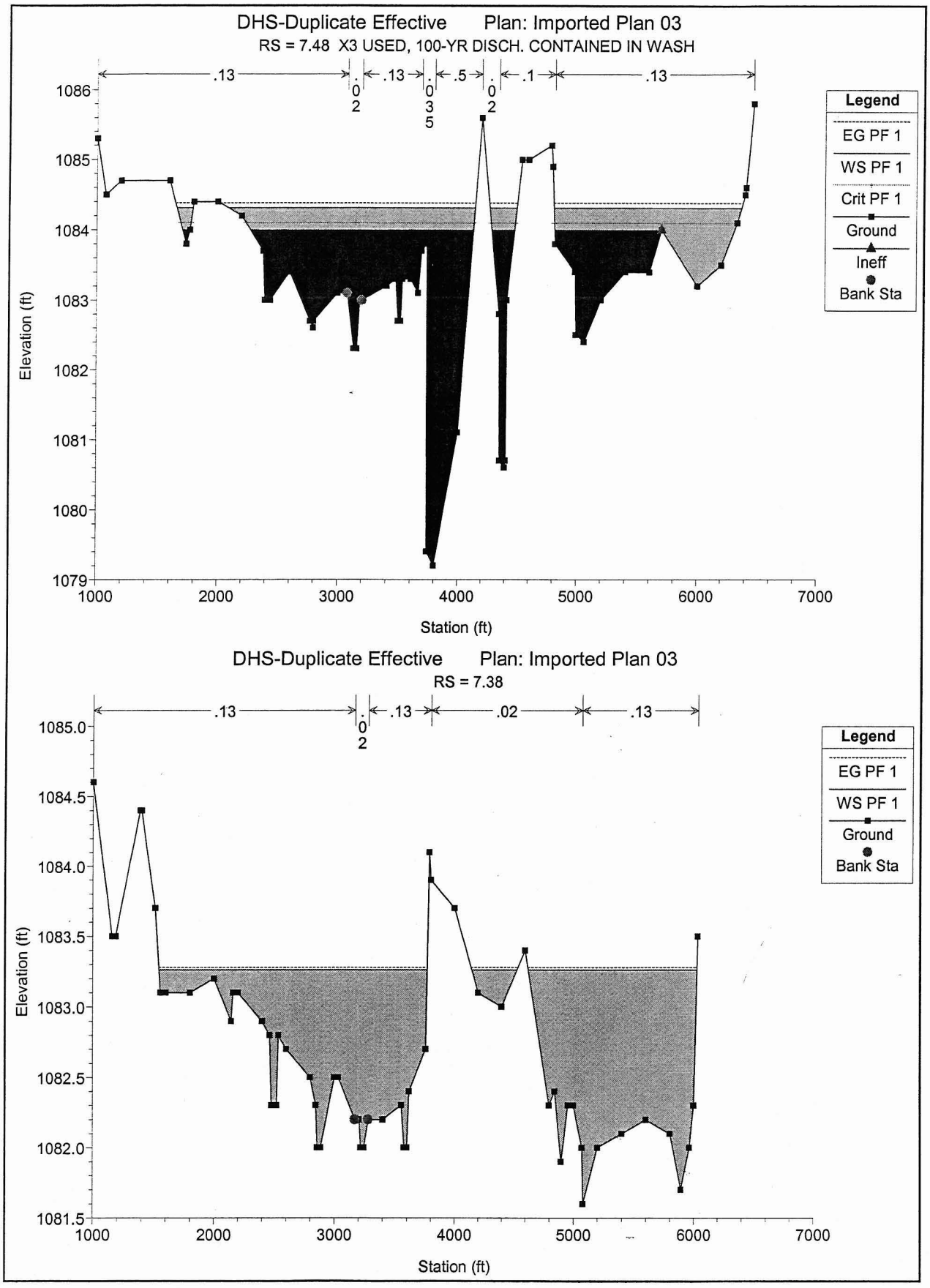
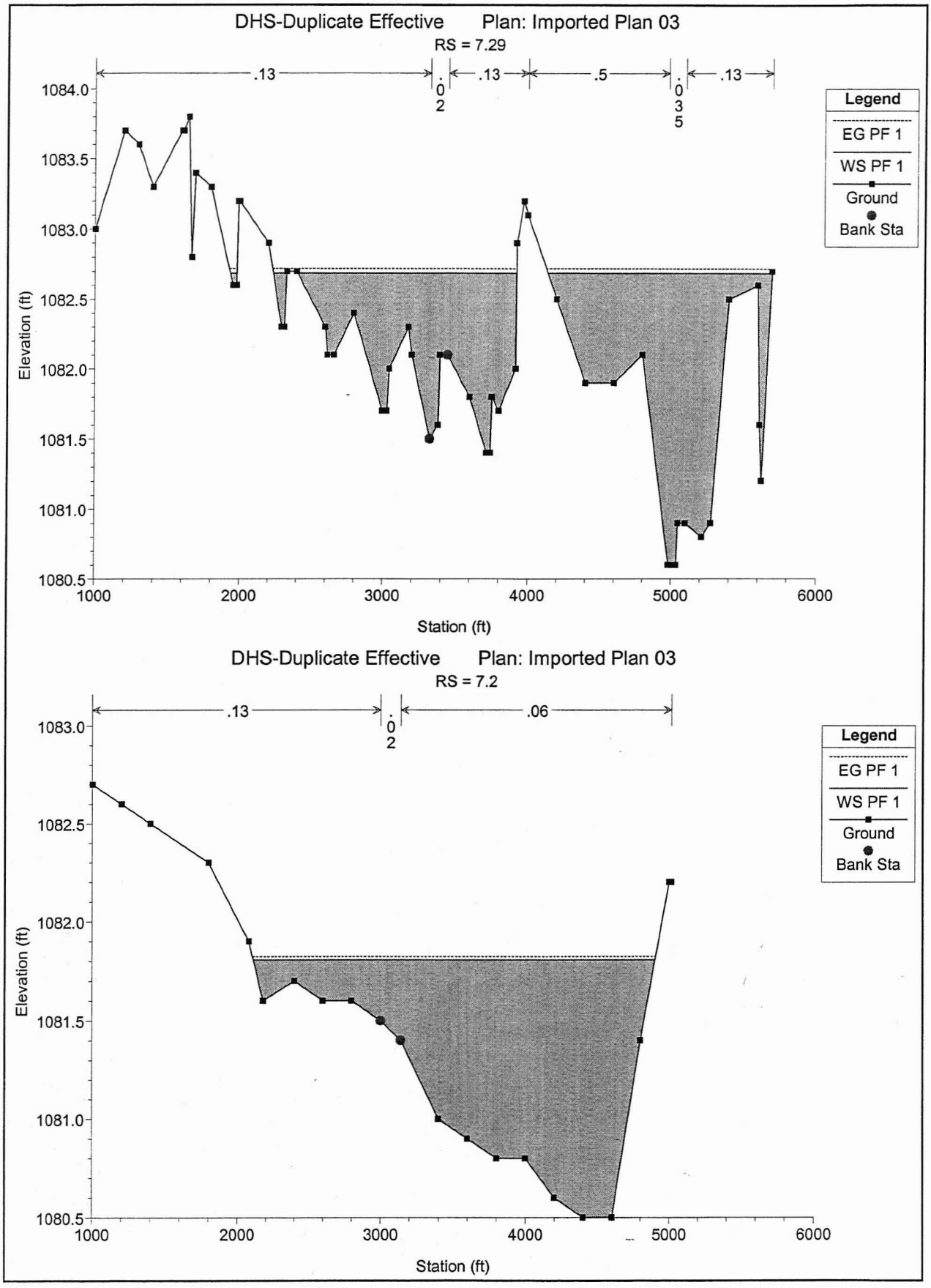
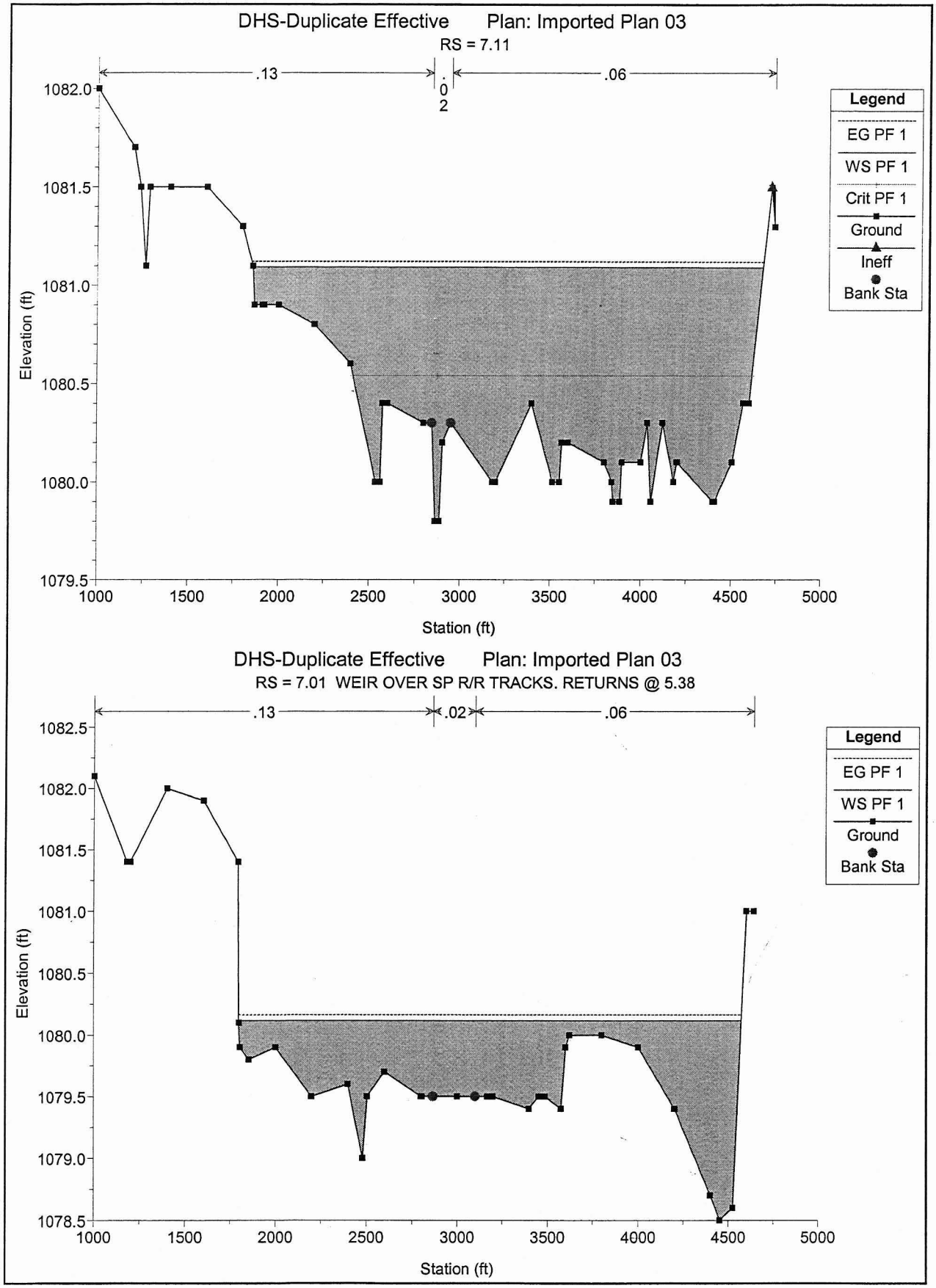
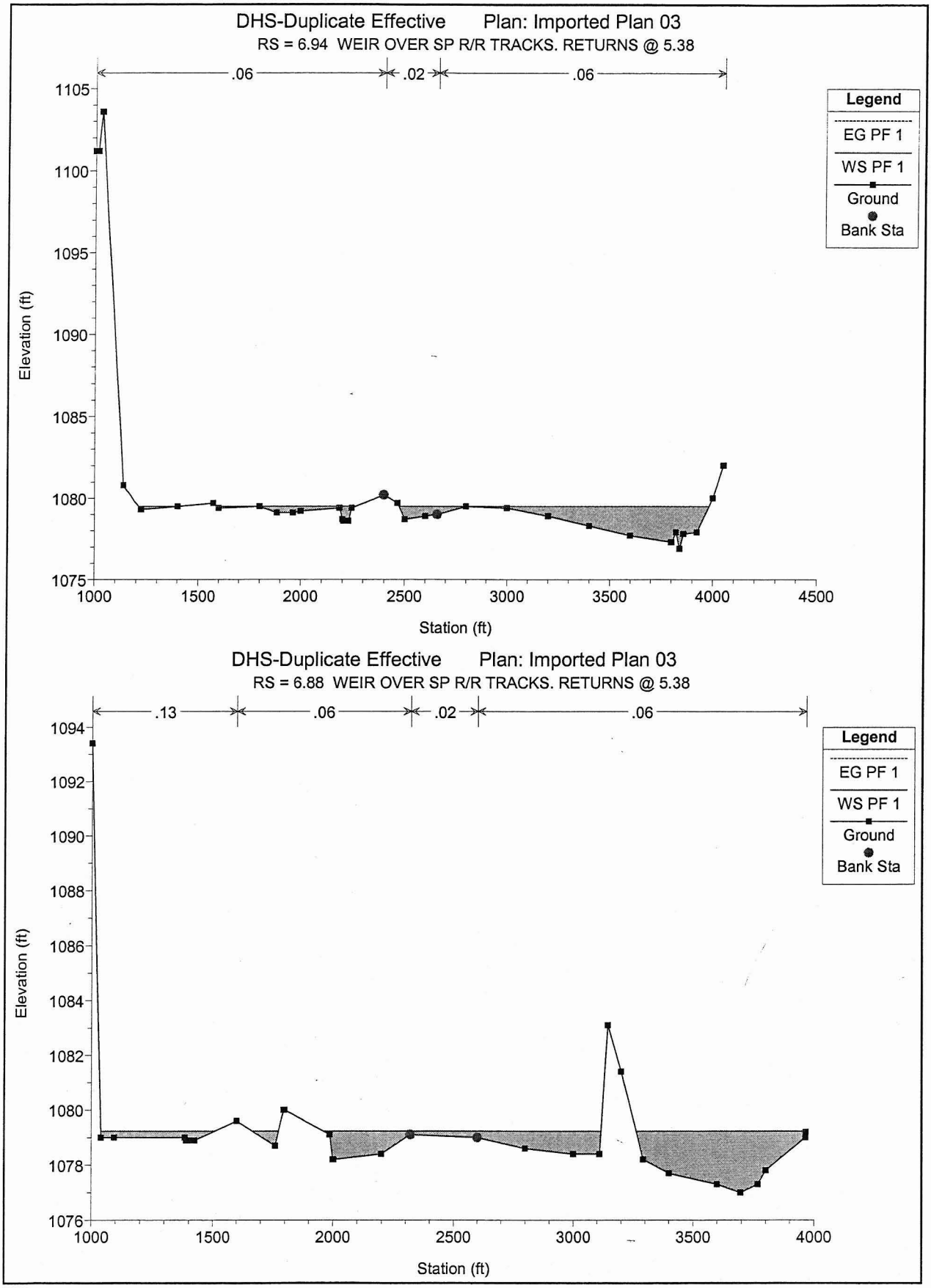
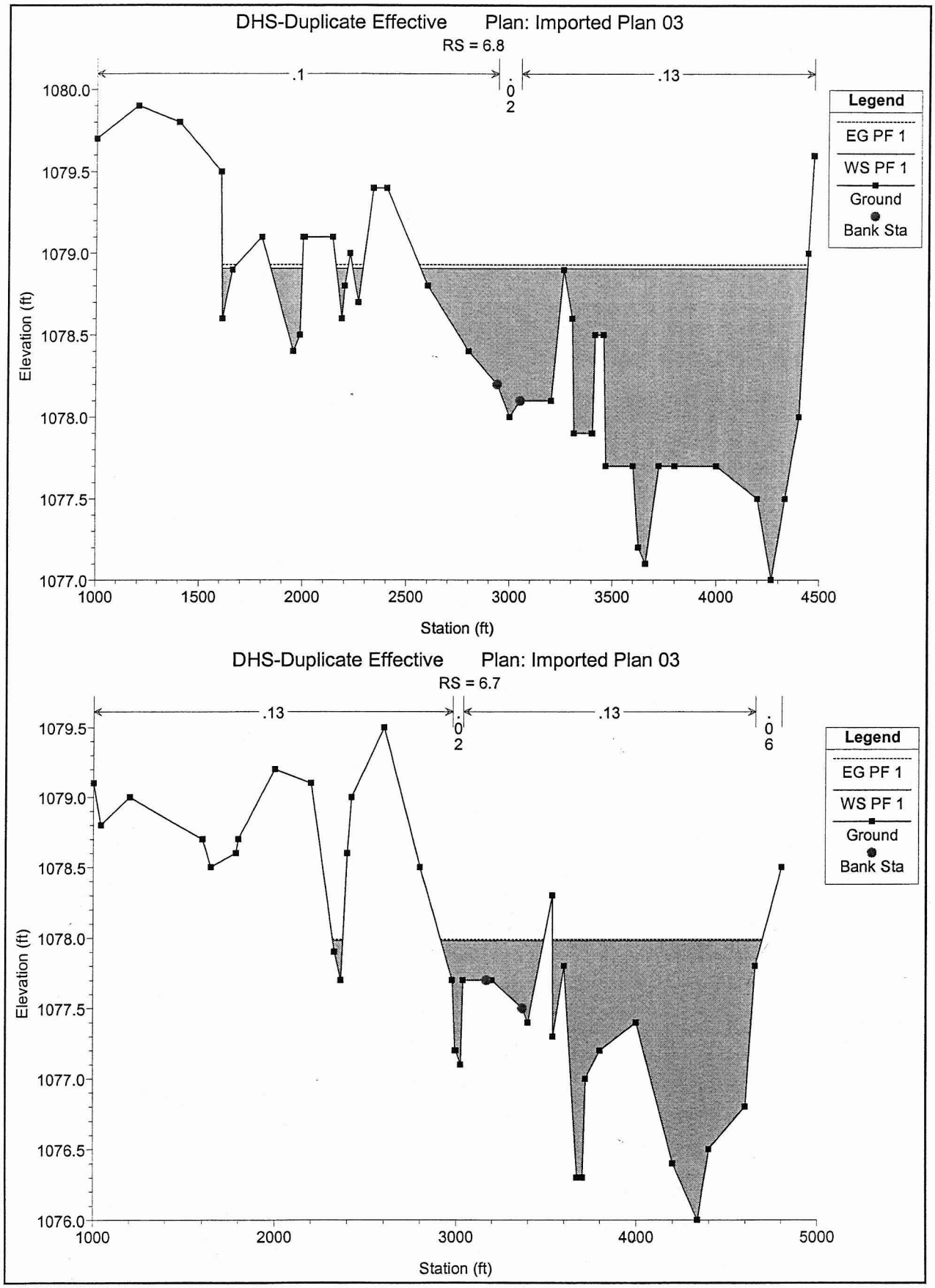
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1089
1088
1087
1086
1085
1084
1000
2000
3000
4000
5000
6000
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 7.57
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1088
1087
1086
1085
1084
1083
1000
2000
3000
4000
5000
6000

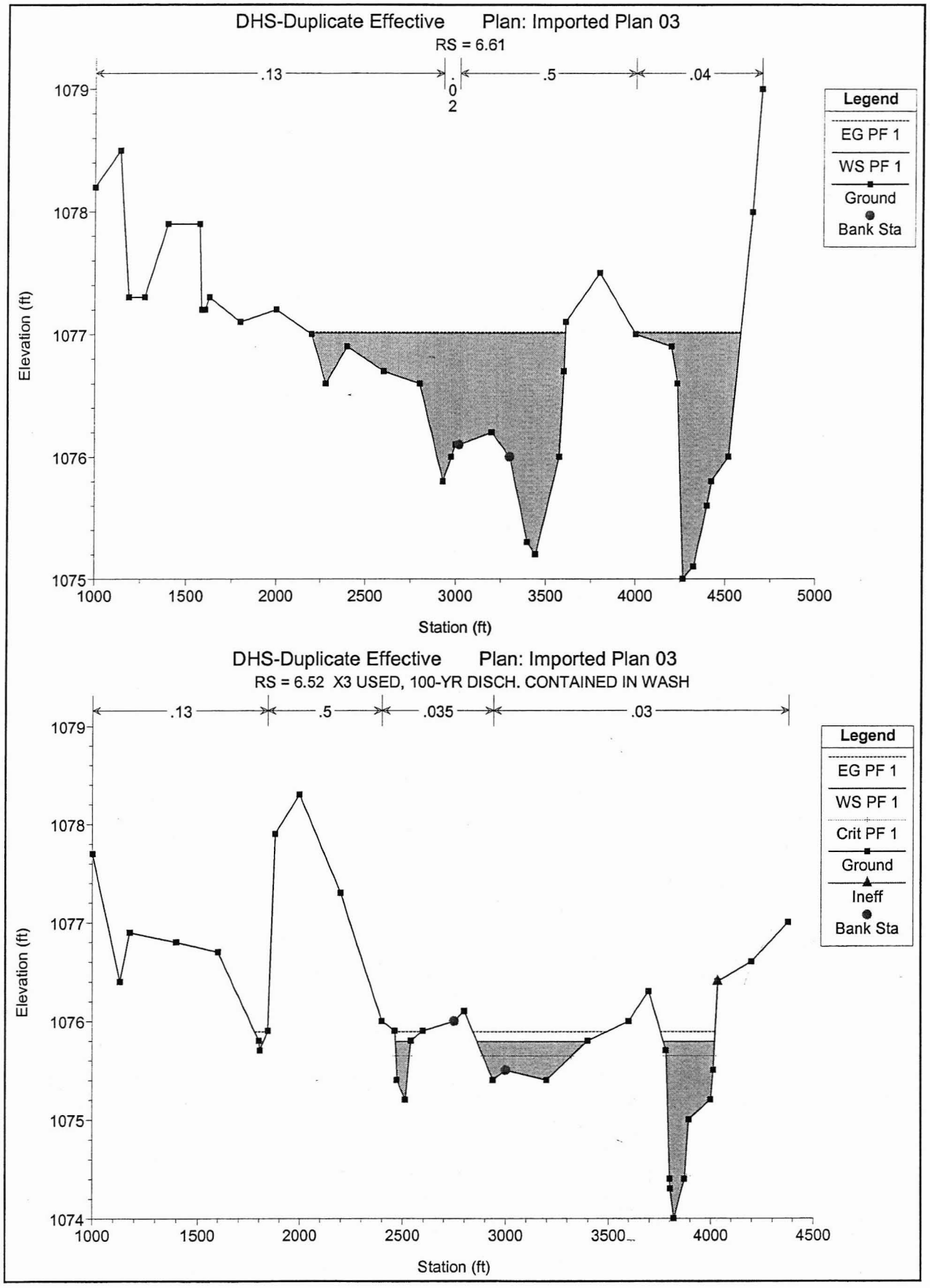

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 7.48 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.02
.13
.035
.5
.02
.1
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1086
1085
1084
1083
1082
1081
1080
1079
1000
2000
3000
4000
5000
6000
7000
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 7.38
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1085.0
1084.5
1084.0
1083.5
1083.0
1082.5
1082.0
1081.5
1000
2000
3000
4000
5000
6000
7000

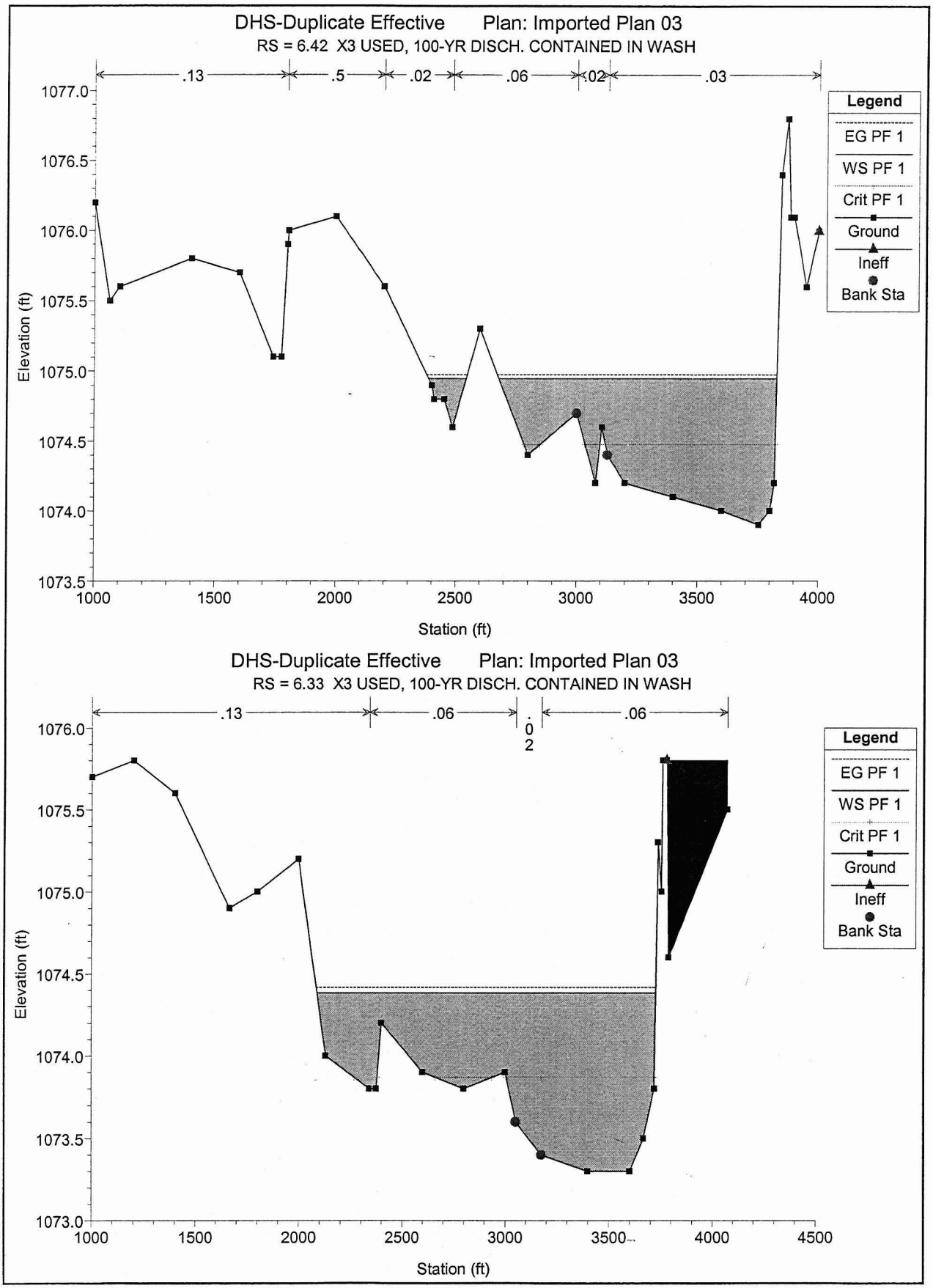

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 7.29
.13
.02
.13
.5
.035
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 7.2
.13
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

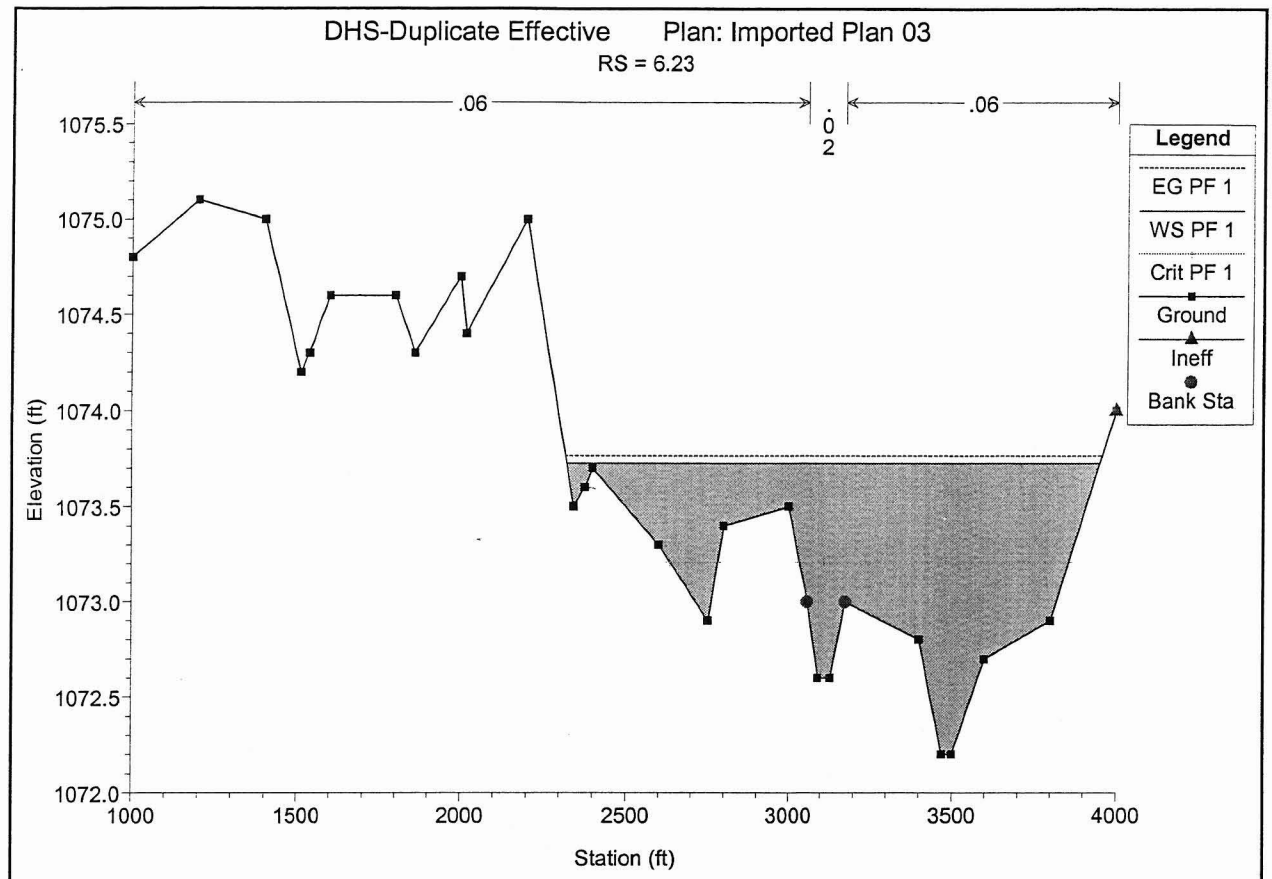

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 7.11
.13
.02
.06
1082.0
1081.5
1081.0
1080.5
1080.0
1079.5
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 7.01 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.13
.02
.06
1082.5
1082.0
1081.5
1081.0
1080.5
1080.0
1079.5
1079.0
1078.5
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

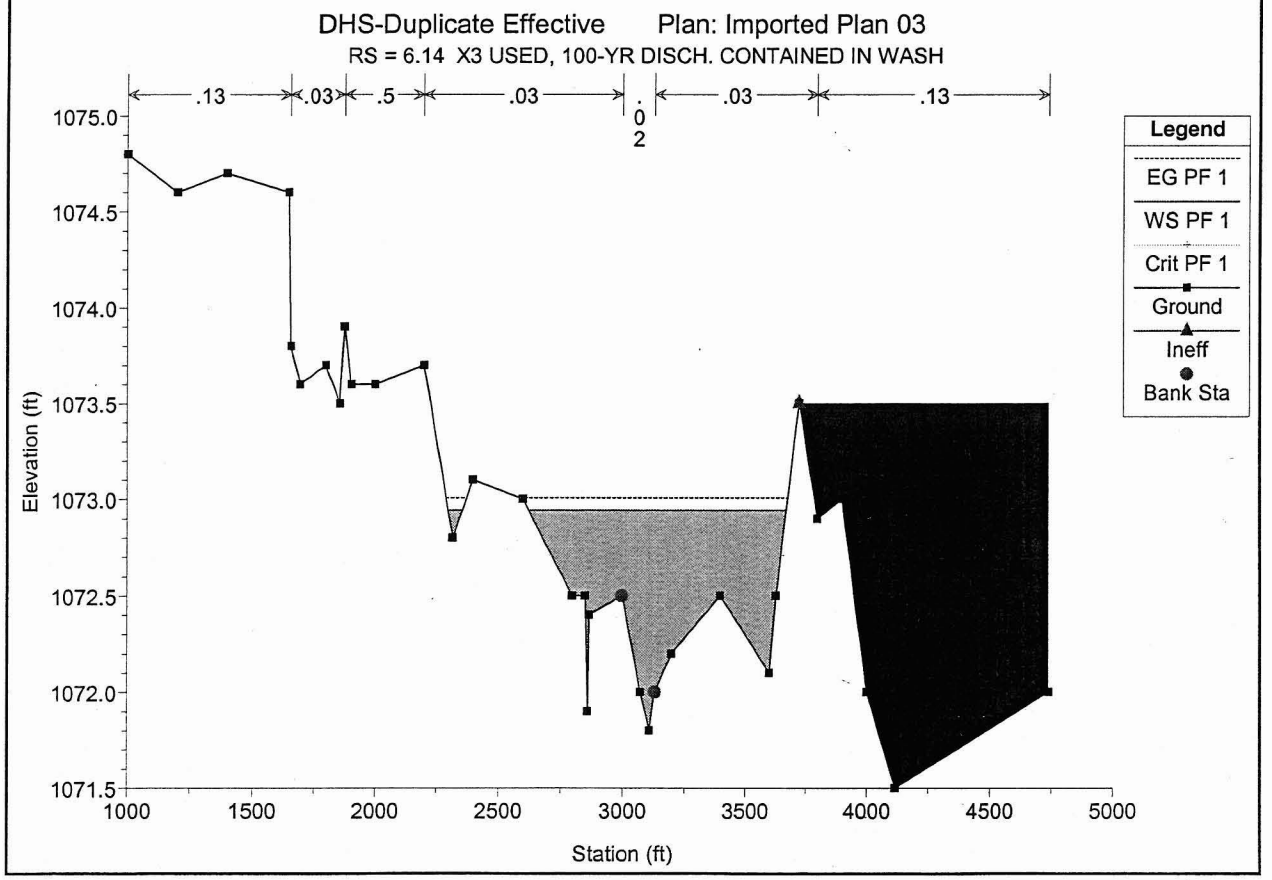

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.94 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.06
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1105
1100
1095
1090
1085
1080
1075
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.88 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.13
.06
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1094
1092
1090
1088
1086
1084
1082
1080
1078
1076
1000
1500
2000
2500
3000
3500
4000
Station (ft)

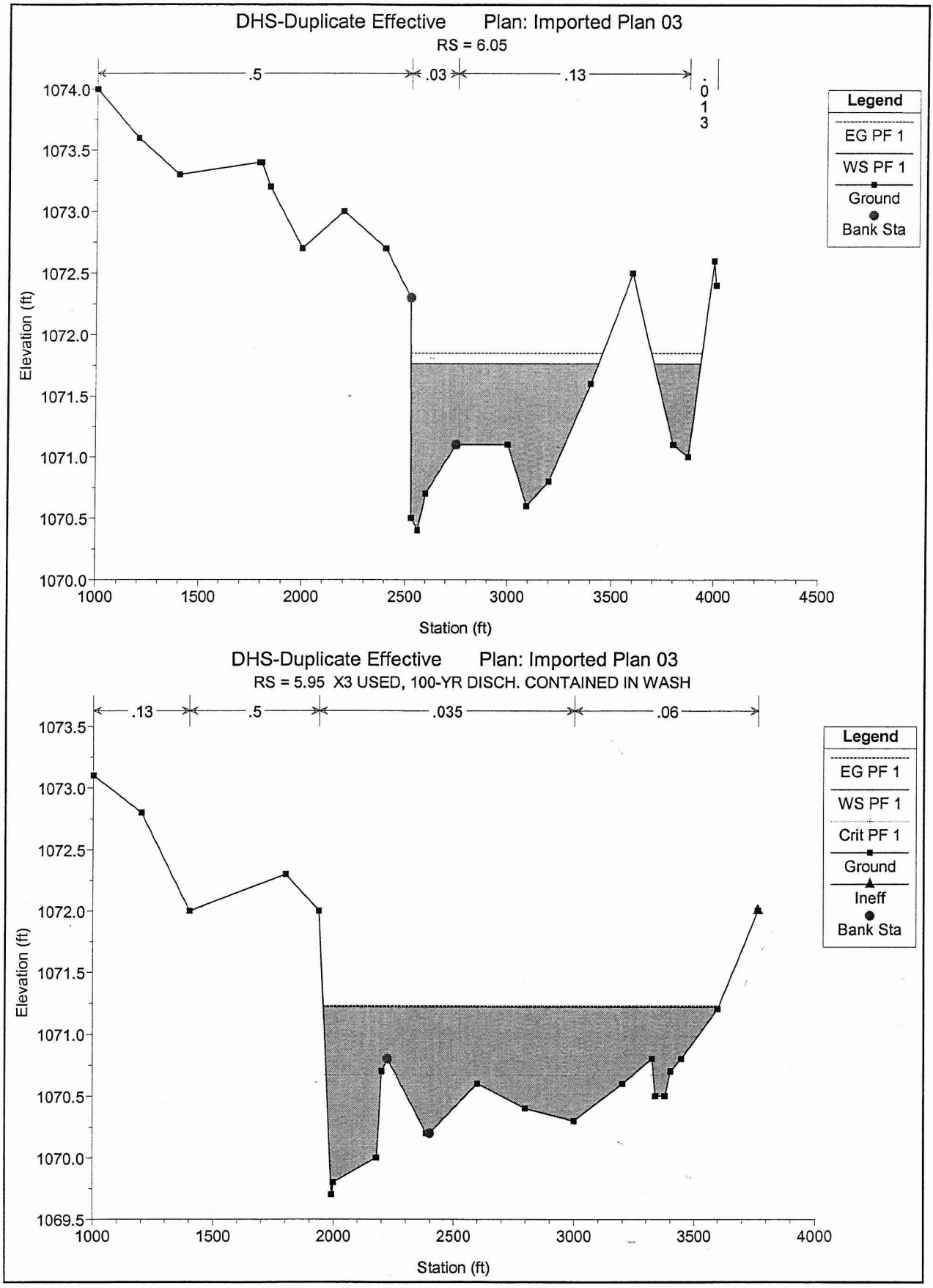

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.8
.1
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1080.0
1079.5
1079.0
1078.5
1078.0
1077.5
1077.0
1000
1500
2000
2500
3000
3500
4000
4500
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.7
.13
.02
.13
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1079.5
1079.0
1078.5
1078.0
1077.5
1077.0
1076.5
1076.0
1000
2000
3000
4000
5000

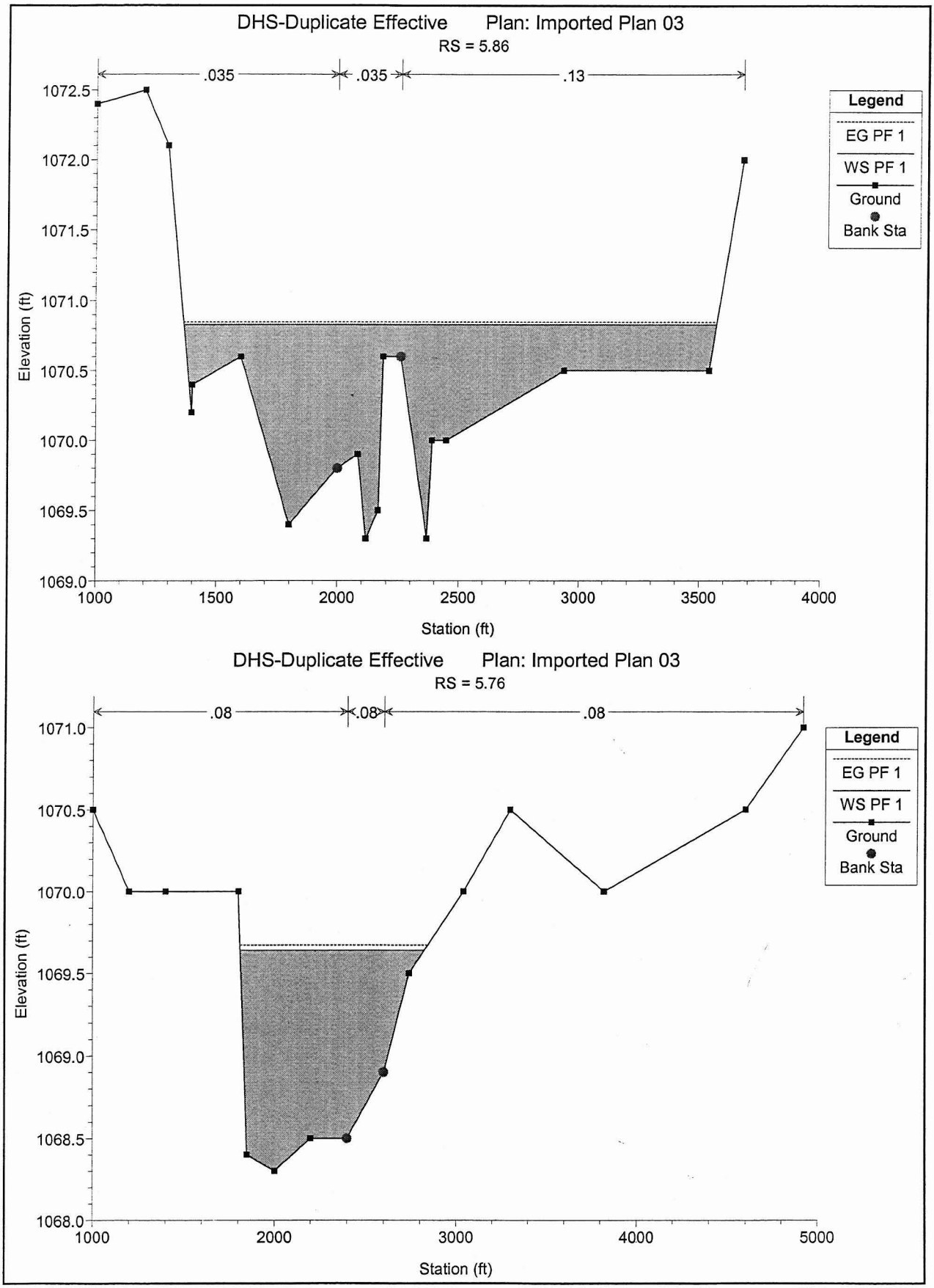

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.61
.13
.02
.5
.04
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.52 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.035
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

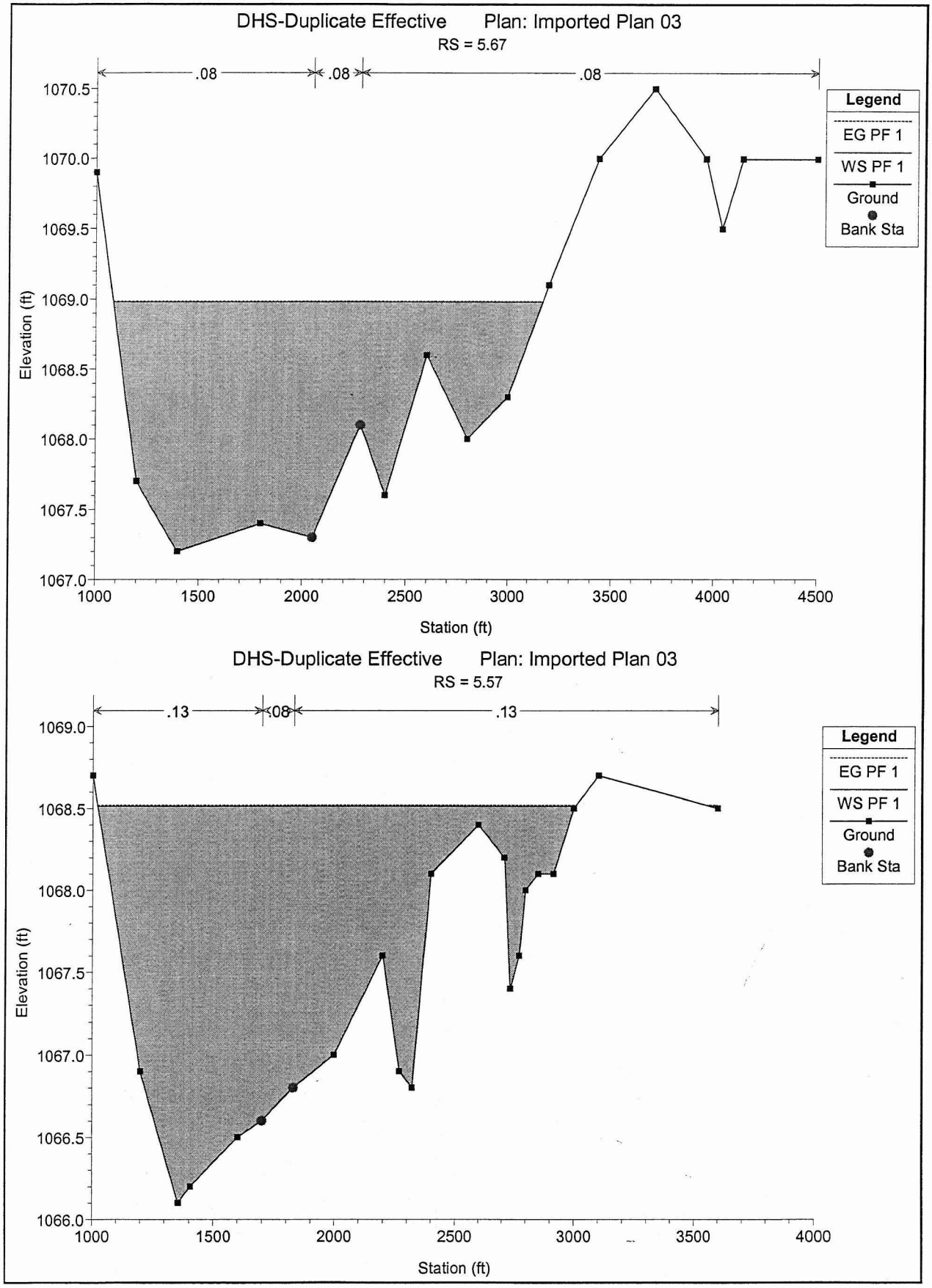

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.42 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.02
.06
.02
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.33 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.06
.02
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

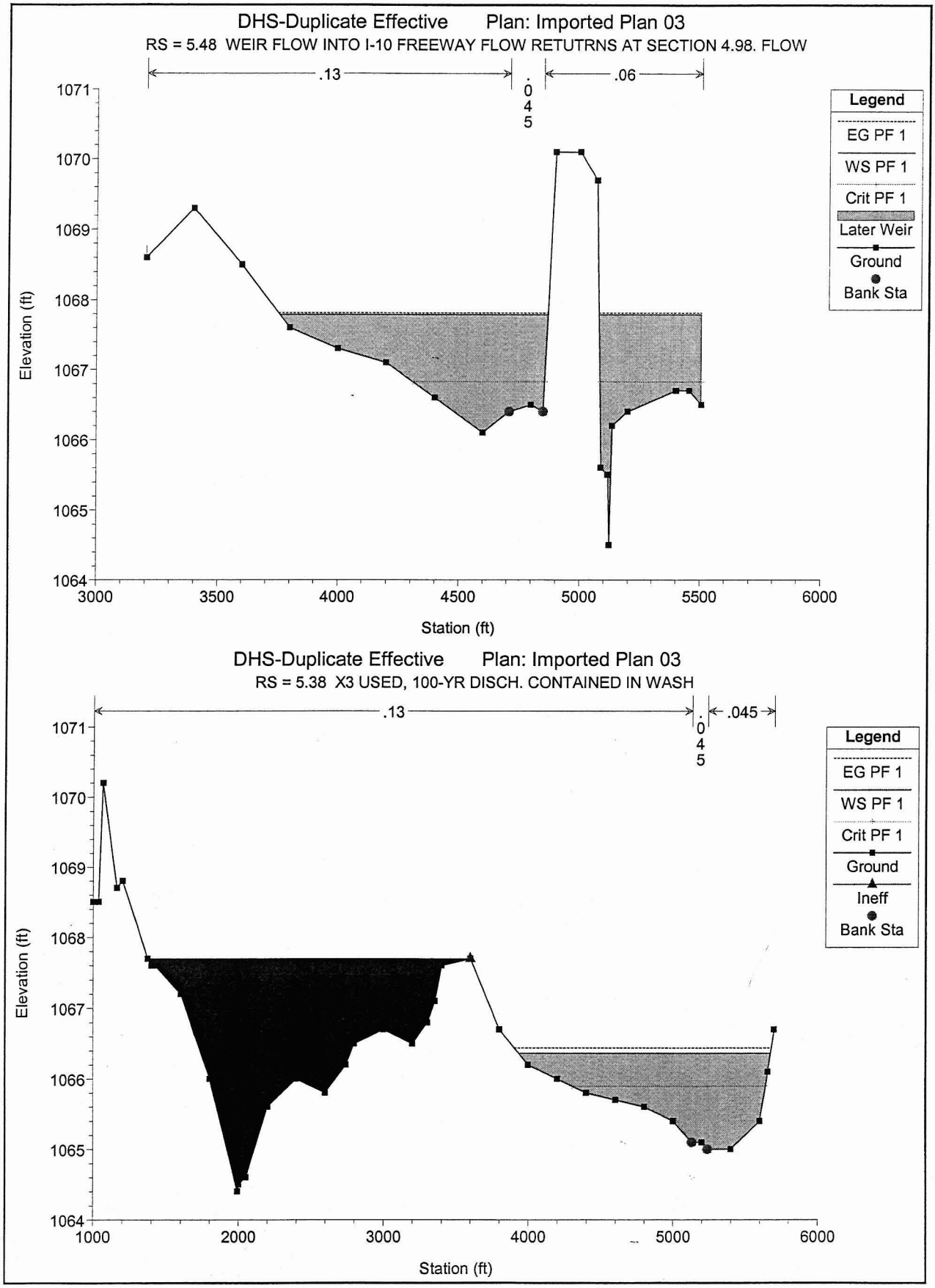

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.23
.06
.02
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1075.5
1075.0
1074.5
1074.0
1073.5
1073.0
1072.5
1072.0
1000
1500
2000
2500
3000
3500
4000

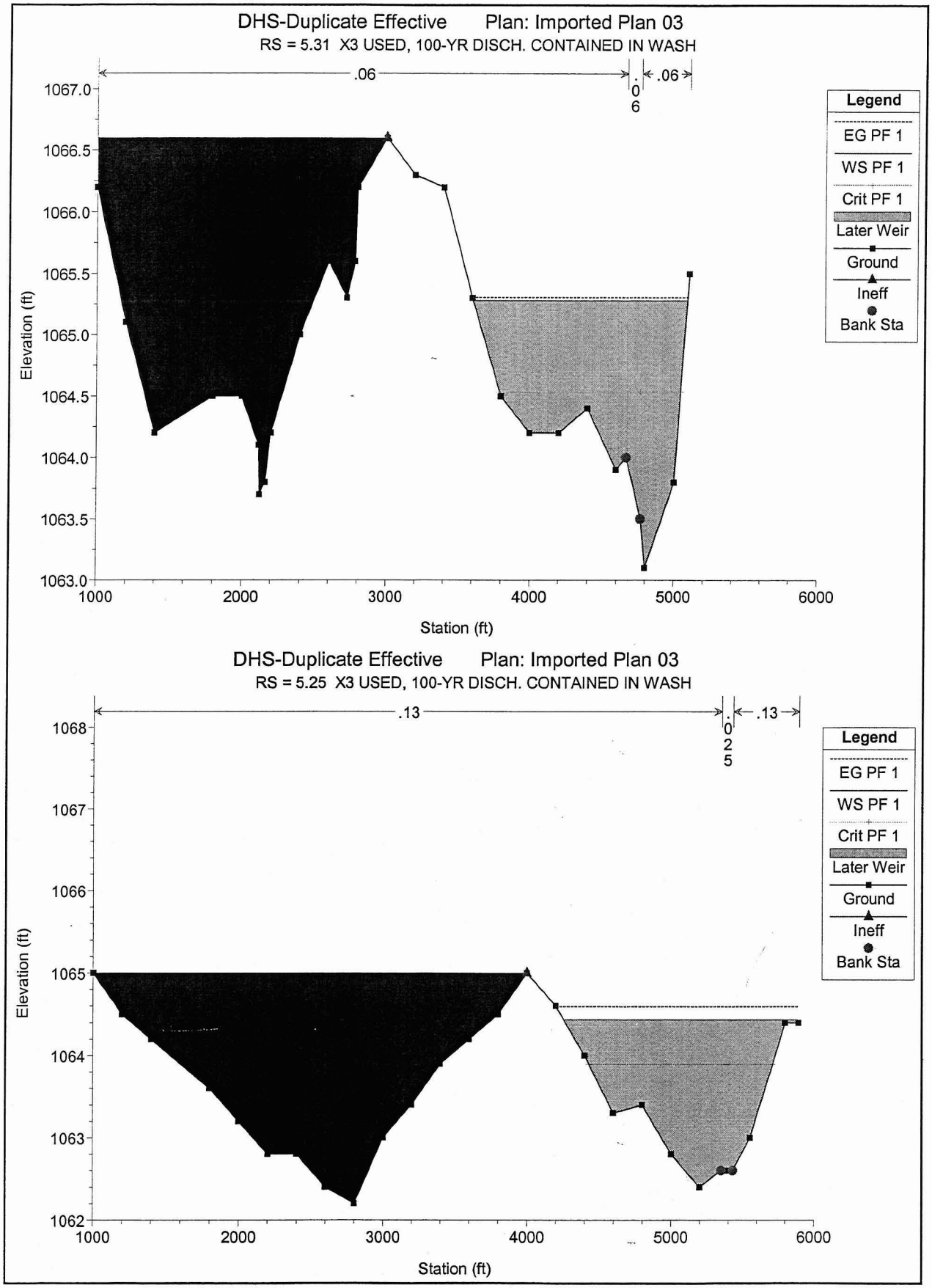

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.14 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.03
.5
.03
.02
.03
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1075.0
1074.5
1074.0
1073.5
1073.0
1072.5
1072.0
1071.5
1000
1500
2000
2500
3000
3500
4000
4500
5000

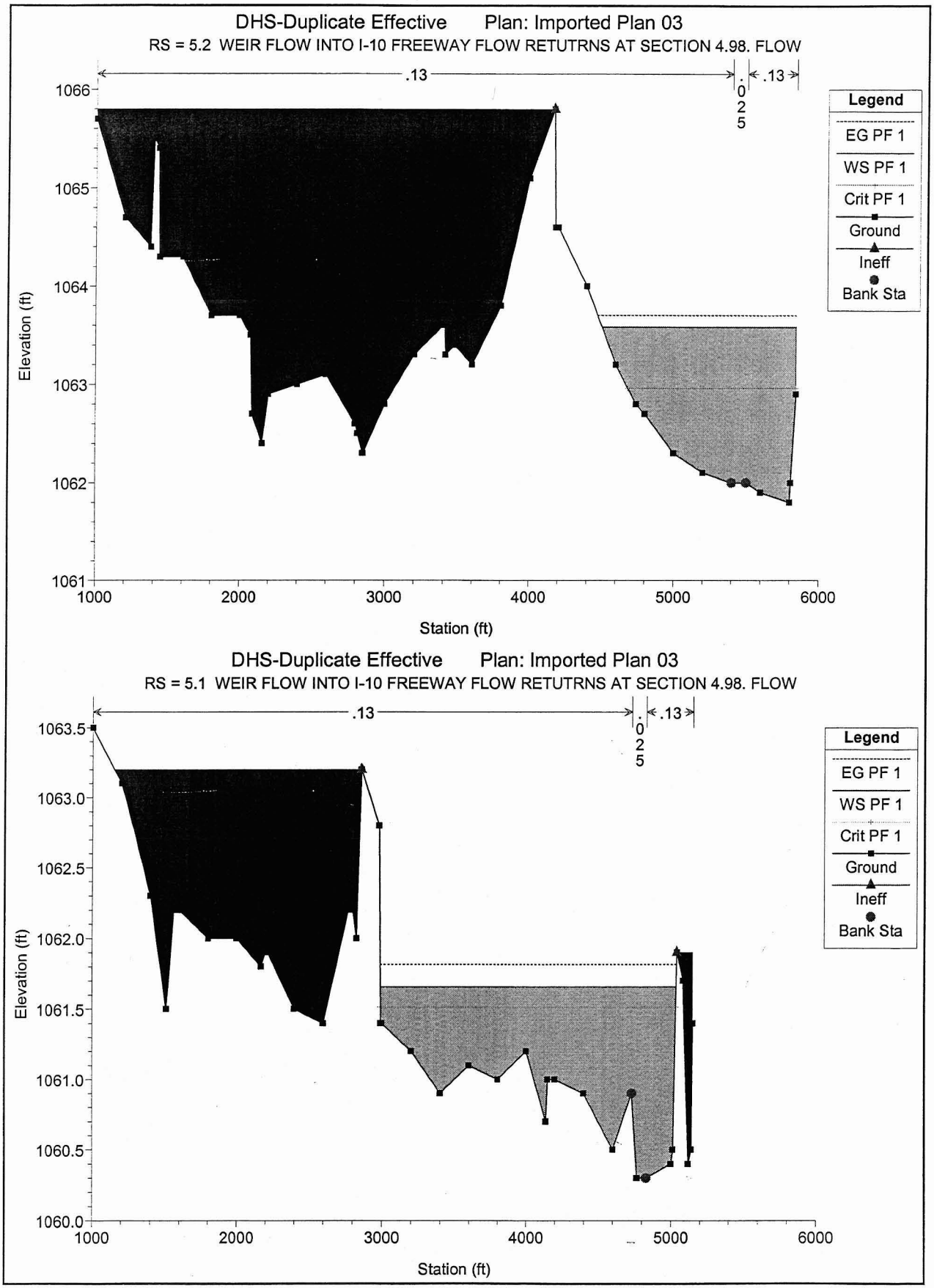

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 6.05
.5
.03
.13
.013
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.95 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.035
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

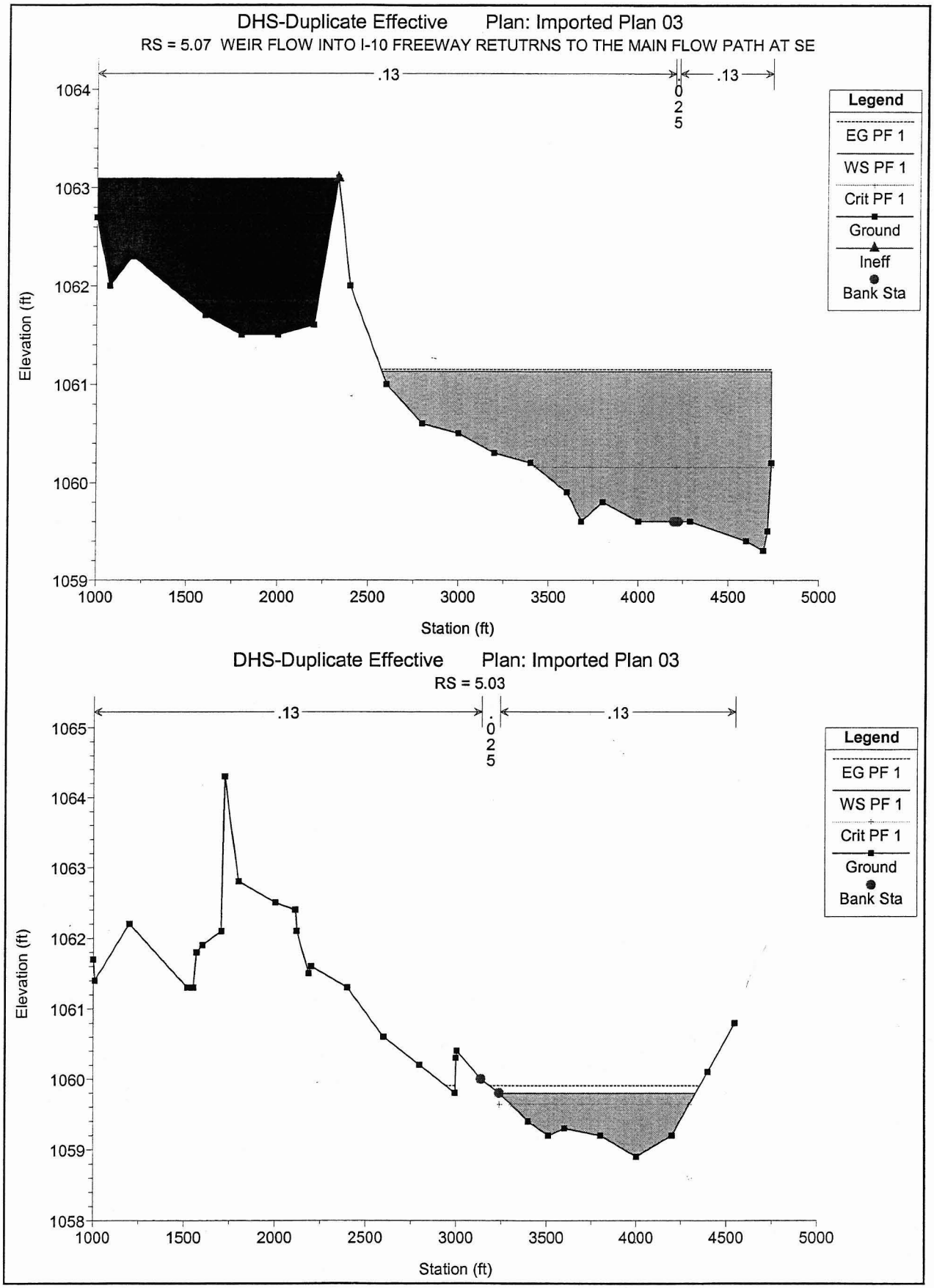

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.86
.035
.035
.13
1072.5
1072.0
1071.5
1071.0
1070.5
1070.0
1069.5
1069.0
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.76
.08
.08
.08
1071.0
1070.5
1070.0
1069.5
1069.0
1068.5
1068.0
Elevation (ft)
1000
2000
3000
4000
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

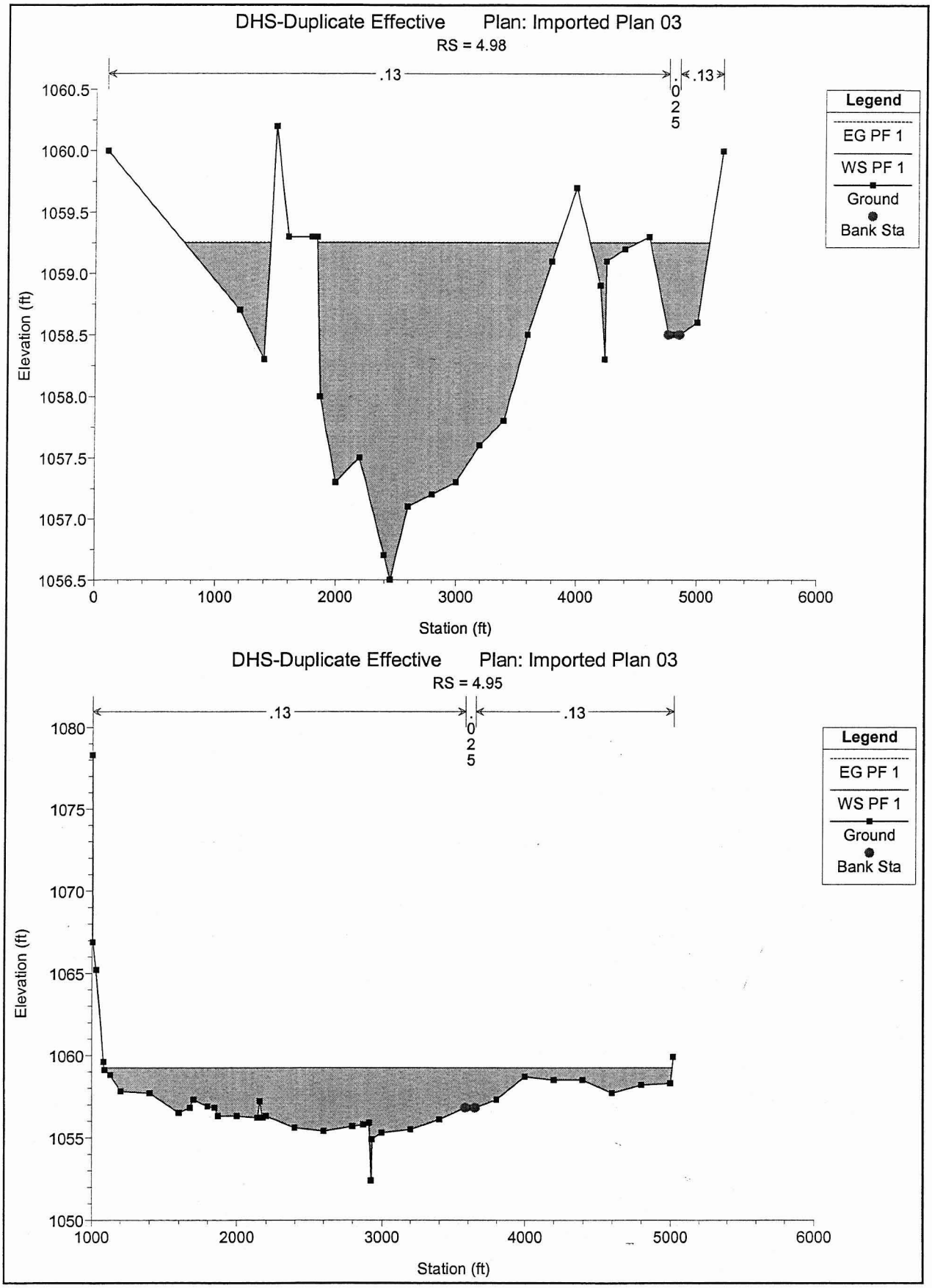

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.67
.08
.08
.08
1070.5
1070.0
1069.5
1069.0
1068.5
1068.0
1067.5
1067.0
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.57
.13
.08
.13
1069.0
1068.5
1068.0
1067.5
1067.0
1066.5
1066.0
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

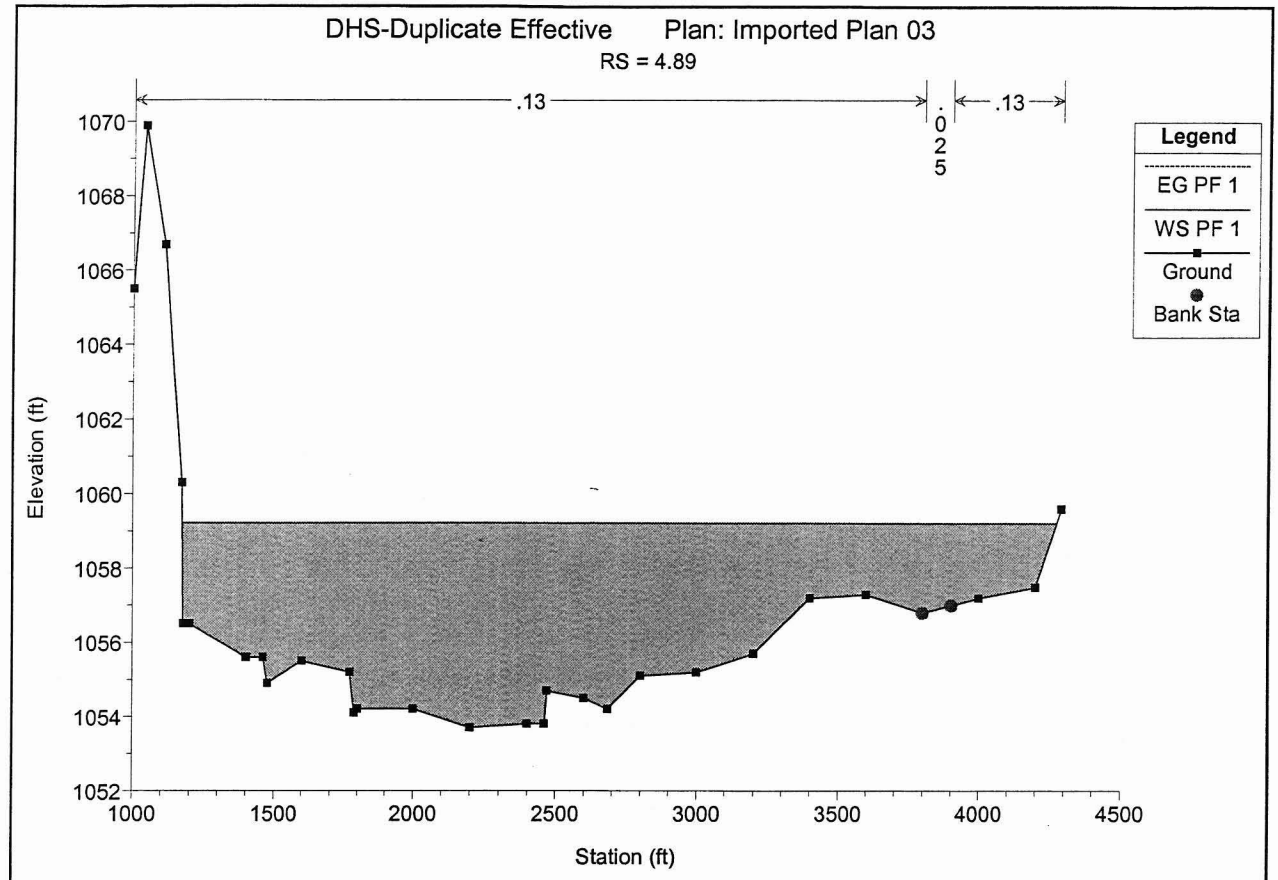

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.48 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.045
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.38 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

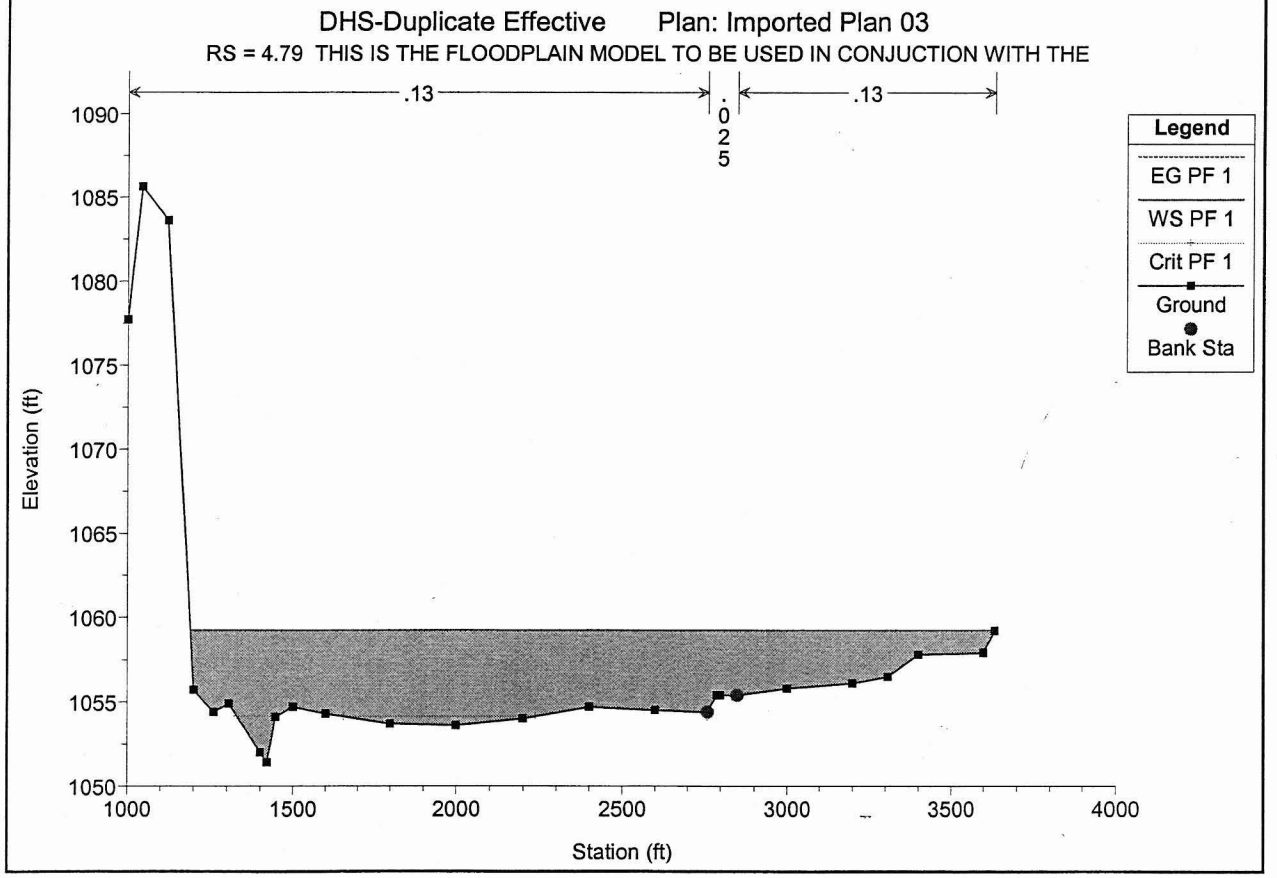

DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.31 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.06
.06
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.25 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.13
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.2 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1066
1065
1064
1063
1062
1061
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.1 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1063.5
1063.0
1062.5
1062.0
1061.5
1061.0
1060.5
1060.0
1000
2000
3000
4000
5000
6000
Station (ft)


DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.07 WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SE
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 5.03
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


DHS-Duplicate Effective Plan: Imported Plan 03
RS = 4.98
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Duplicate Effective Plan: Imported Plan 03
RS = 4.95
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


DHS-Duplicate Effective Plan: Imported Plan 03
RS = 4.89
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1070
1068
1066
1064
1062
1060
1058
1056
1054
1052
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)


DHS-Duplicate Effective Plan: Imported Plan 03
RS = 4.79 THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1090
1085
1080
1075
1070
1065
1060
1055
1050
1000
1500
2000
2500
3000
3500
4000
Station (ft)

Appendix G
HEC-RAS Corrected Effective Model

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	9.61	1237.00	1118.50	1119.94	1119.28	1119.95	0.016005	1.08	1203.81	1480.45	0.20
Reach-1	9.55	1237.00	1116.40	1117.96	1117.00	1117.97	0.002757	0.61	2015.98	1995.83	0.09
Reach-1	9.45	1237.00	1114.90	1116.33	1115.54	1116.34	0.003926	0.65	1918.42	2104.46	0.11
Reach-1	9.36	1237.00	1112.80	1114.14		1114.15	0.005213	0.70	1811.80	1859.45	0.12
Reach-1	9.27	1237.00	1110.80	1112.54		1112.65	0.001910	4.26	1707.97	1827.07	0.61
Reach-1	9.17	1237.00	1109.60	1110.92	1110.64	1111.03	0.006627	3.49	1059.41	2022.23	0.61
Reach-1	9.08	1210.00	1107.30	1108.56	1108.30	1108.72	0.003245	4.73	1359.38	1861.18	0.77
Reach-1	8.98	1210.00	1106.00	1107.37		1107.47	0.001939	3.87	1962.24	2828.35	0.60
Reach-1	8.89	1210.00	1104.90	1105.94		1106.02	0.004759	4.55	1556.36	2547.13	0.88
Reach-1	8.79	1210.00	1103.00	1104.19		1104.25	0.002715	3.66	1710.89	2181.16	0.67
Reach-1	8.7	1210.00	1101.40	1102.42		1102.56	0.004251	4.80	1566.60	2758.75	0.85
Reach-1	8.61	1210.00	1099.90	1100.62		1100.65	0.003357	3.18	1938.72	2786.99	0.70
Reach-1	8.51	1210.00	1098.50	1098.96	1098.63	1098.98	0.003415	2.33	1283.50	2887.68	0.65
Reach-1	8.42	1210.00	1096.30	1097.09	1096.80	1097.12	0.004064	3.13	1441.35	3030.72	0.75
Reach-1	8.32	1210.00	1095.10	1095.99	1095.56	1096.02	0.001419	2.42	1740.76	3142.63	0.48
Reach-1	8.23	1210.00	1094.40	1094.92		1094.93	0.003702	1.60	1218.09	2441.97	0.41
Reach-1	8.18	1375.00	1092.80	1093.70	1093.53	1093.74	0.004973	2.24	872.73	2151.59	0.49
Reach-1	8.08	1375.00	1091.80	1092.79		1092.81	0.000952	1.19	1385.10	2226.90	0.22
Reach-1	7.99	1375.00	1090.70	1091.40	1091.23	1091.49	0.013231	3.55	867.86	1834.11	0.83
Reach-1	7.89	1375.00	1089.30	1089.48		1089.51	0.001660	0.74	1274.24	2464.16	0.38
Reach-1	7.8	1375.00	1087.20	1088.13	1087.90	1088.19	0.004738	4.13	1039.12	2423.09	0.85
Reach-1	7.71	1375.00	1085.50	1086.56		1086.60	0.002351	3.75	1826.99	3125.45	0.64
Reach-1	7.66	1691.00	1084.50	1085.73		1085.81	0.005330	4.18	1162.59	2417.10	0.90
Reach-1	7.57	1691.00	1083.40	1085.18	1084.73	1085.20	0.000534	2.10	2682.16	4170.48	0.32
Reach-1	7.48	1691.00	1084.00	1084.31	1084.10	1084.38	0.025525	5.44	1447.54	3974.46	1.72
Reach-1	7.38	1691.00	1082.00	1083.26		1083.28	0.000752	2.24	2942.59	4009.52	0.37
Reach-1	7.29	1691.00	1081.50	1082.69		1082.72	0.001923	2.97	2483.14	3220.65	0.56
Reach-1	7.2	1691.00	1081.40	1081.81		1081.82	0.001657	1.52	1864.50	2790.73	0.45
Reach-1	7.11	1865.00	1079.80	1081.09	1080.54	1081.12	0.001356	2.77	2245.17	2820.12	0.48
Reach-1	7.06	Lat. Weir									
Reach-1	7.01	1550.95	1079.50	1080.12		1080.16	0.003066	2.98	1585.73	2772.29	0.67
Reach-1	6.96	Lat. Weir									
Reach-1	6.94	1269.36	1078.70	1079.48		1079.49	0.001083	1.71	1497.60	2236.85	0.39
Reach-1	6.91	Lat. Weir									
Reach-1	6.88	979.54	1079.00	1079.23		1079.24	0.000449	0.50	1804.32	2436.82	0.21
Reach-1	6.8	979.54	1078.00	1078.91		1078.93	0.001362	2.42	1851.52	2183.99	0.47

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	6.7	979.54	1077.50	1077.98		1077.99	0.002765	0.31	1457.15	1781.30	0.09
Reach-1	6.61	979.54	1076.00	1077.01		1077.02	0.001440	0.10	1489.82	2004.20	0.02
Reach-1	6.52	979.54	1075.40	1075.79	1075.64	1075.89	0.004515	1.34	406.26	883.14	0.46
Reach-1	6.42	979.54	1074.20	1074.94	1074.47	1074.97	0.000956	1.44	801.84	1304.05	0.36
Reach-1	6.33	979.54	1073.40	1074.37	1073.87	1074.40	0.001379	2.51	1090.80	1635.44	0.47
Reach-1	6.23	979.54	1072.60	1073.78	1073.21	1073.82	0.001006	2.43	1160.65	1644.16	0.42
Reach-1	6.14	979.54	1071.80	1072.81	1072.71	1072.92	0.003989	3.74	444.78	982.95	0.78
Reach-1	6.05	1004.54	1069.80	1071.59		1071.75	0.001738	3.81	326.14	765.63	0.72
Reach-1	5.95	1004.54	1070.20	1071.21	1070.67	1071.23	0.000600	0.85	1228.99	1645.07	
Reach-1	5.86	1004.54	1069.30	1070.77		1070.79	0.001403	1.39	1235.33	2197.80	
Reach-1	5.76	1004.54	1068.50	1069.46		1069.49	0.005350	1.13	780.75	915.33	
Reach-1	5.67	1004.54	1067.30	1068.76		1068.76	0.000677	0.50	1966.64	2009.85	
Reach-1	5.57	1004.54	1066.60	1068.29		1068.30	0.001174	0.87	2002.11	1781.77	0.12
Reach-1	5.53	Lat. Weir									
Reach-1	5.48	1004.54	1066.40	1067.64	1066.74	1067.65	0.001323	1.35	1391.06	1501.45	0.22
Reach-1	5.38	1637.54	1065.00	1066.26	1065.82	1066.33	0.004495	2.47	1188.14	1692.65	0.40
Reach-1	5.31	1637.54	1063.50	1065.13	1064.46	1065.15	0.002061	1.39	1414.96	1439.55	0.21
Reach-1	5.25	1637.54	1062.60	1064.28	1063.79	1064.42	0.003140	4.71	1626.56	1473.09	0.64
Reach-1	5.23	Lat. Weir									
Reach-1	5.2	1500.11	1062.00	1063.48	1062.86	1063.58	0.002648	3.97	1530.84	1309.96	0.58
Reach-1	5.15	Lat. Weir									
Reach-1	5.1	1385.10	1060.30	1061.56	1061.46	1061.73	0.005722	4.96	1341.75	2042.69	0.81
Reach-1	5.08	Lat. Weir									
Reach-1	5.07	1328.93	1059.60	1061.05	1060.09	1061.07	0.001886	3.30	2292.72	2146.17	0.48
Reach-1	5.03	1328.93	1059.80	1059.63	1059.59	1059.79	0.267842		405.78	985.06	0.00
Reach-1	4.98	1328.93	1058.50	1059.24		1059.24	0.000496	1.08	3926.67	3564.81	0.22
Reach-1	4.95	1328.93	1056.80	1059.23		1059.23	0.000042	0.69	8937.10	3924.15	0.08
Reach-1	4.89	1328.93	1056.80	1059.22		1059.22	0.000017	0.42	11170.30	3099.68	0.05
Reach-1	4.79	1328.93	1054.40	1059.21	1054.09	1059.21	0.000013	0.54	10311.23	2443.45	0.05

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

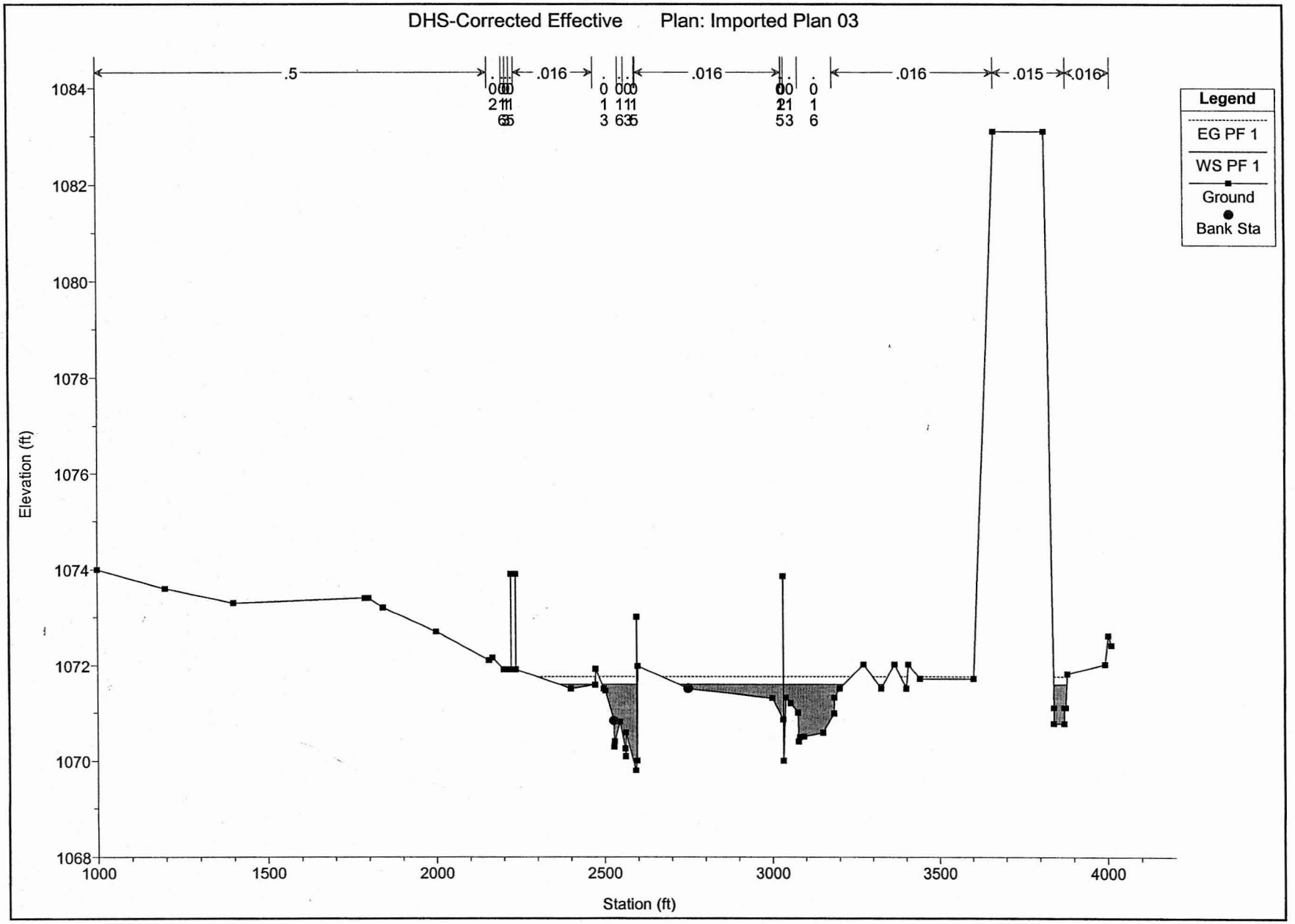
Reach	River Sta	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
		(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
Reach-1	9.61	1119.95	1119.94	0.02	1.98	0.00		712.24	524.76	1480.45
Reach-1	9.55	1117.97	1117.96	0.01	1.63	0.00	434.82	294.23	507.95	1995.83
Reach-1	9.45	1116.34	1116.33	0.01	2.19	0.00	383.22	256.32	597.47	2104.46
Reach-1	9.36	1114.15	1114.14	0.01	1.48	0.01	201.84	188.68	846.48	1859.45
Reach-1	9.27	1112.65	1112.54	0.11	1.62	0.00	386.67	489.81	360.52	1827.07
Reach-1	9.17	1111.03	1110.92	0.12	2.30	0.00	303.34	765.80	167.86	2022.23
Reach-1	9.08	1108.72	1108.56	0.16	1.23	0.02	508.66	557.45	143.89	1861.18
Reach-1	8.98	1107.47	1107.37	0.10	1.44	0.00	567.00	497.20	145.81	2828.35
Reach-1	8.89	1106.02	1105.94	0.08	1.76	0.01	797.24	294.22	118.53	2547.13
Reach-1	8.79	1104.25	1104.19	0.06	1.68	0.01	744.35	354.52	111.13	2181.16
Reach-1	8.7	1102.56	1102.42	0.14	1.88	0.03	561.88	473.62	174.50	2758.75
Reach-1	8.61	1100.65	1100.62	0.03	1.66	0.00	919.15	202.58	88.26	2786.99
Reach-1	8.51	1098.98	1098.96	0.02	1.86	0.00	1073.09	82.40	54.52	2887.68
Reach-1	8.42	1097.12	1097.09	0.03	1.10	0.00	711.32	201.75	296.93	3030.72
Reach-1	8.32	1096.02	1095.99	0.02	1.08	0.00	813.40	232.99	163.61	3142.63
Reach-1	8.23	1094.93	1094.92	0.02	1.19	0.00	961.74	149.09	99.17	2441.97
Reach-1	8.18	1093.74	1093.70	0.05	0.93	0.01	412.07	450.59	512.35	2151.59
Reach-1	8.08	1092.81	1092.79	0.02	1.30	0.01	526.70	477.50	370.80	2226.90
Reach-1	7.99	1091.49	1091.40	0.09	1.96	0.02	318.45	529.66	526.89	1834.11
Reach-1	7.89	1089.51	1089.48	0.03	1.31	0.00	76.26	2.67	1296.07	2464.16
Reach-1	7.8	1088.19	1088.13	0.07	1.59	0.01	138.41	182.91	1053.68	2423.09
Reach-1	7.71	1086.60	1086.56	0.04	0.78	0.00	315.77	178.71	880.51	3125.45
Reach-1	7.66	1085.81	1085.73	0.08	0.59	0.02	170.82	336.73	1183.46	2417.10
Reach-1	7.57	1085.20	1085.18	0.02	0.81	0.01	161.24	340.69	1189.08	4170.48
Reach-1	7.48	1084.38	1084.31	0.07	1.10	0.02	230.53	202.42	1258.06	3974.46
Reach-1	7.38	1083.28	1083.26	0.02	0.56	0.00	144.91	285.53	1260.56	4009.52
Reach-1	7.29	1082.72	1082.69	0.03	0.89	0.00	170.39	322.82	1197.79	3220.65
Reach-1	7.2	1081.82	1081.81	0.02	0.70	0.00	25.23	76.15	1589.62	2790.73
Reach-1	7.11	1081.12	1081.09	0.03	0.96	0.00	136.01	293.09	1435.90	2820.12
Reach-1	7.06	Lat. Weir								
Reach-1	7.01	1080.16	1080.12	0.05	0.66	0.01	209.06	430.56	911.34	2772.29
Reach-1	6.96	Lat. Weir								
Reach-1	6.94	1079.49	1079.48	0.02	0.25	0.00	48.69	186.82	1033.85	2236.85
Reach-1	6.91	Lat. Weir								
Reach-1	6.88	1079.24	1079.23	0.01	0.30	0.00	120.70	25.25	833.60	2436.82
Reach-1	6.8	1078.93	1078.91	0.02	0.94	0.00	57.41	220.65	701.47	2183.99

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

Reach	River Sta	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
		(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
Reach-1	6.7	1077.99	1077.98	0.01	0.97	0.00	141.18	22.30	816.05	1781.30
Reach-1	6.61	1077.02	1077.01	0.01	1.12	0.01	322.97	25.28	631.29	2004.20
Reach-1	6.52	1075.89	1075.79	0.10	0.90	0.02	44.07	48.17	887.30	883.14
Reach-1	6.42	1074.97	1074.94	0.03	0.57	0.00	55.22	92.46	831.86	1304.05
Reach-1	6.33	1074.40	1074.37	0.03	0.59	0.00	207.53	272.21	499.80	1635.44
Reach-1	6.23	1073.82	1073.78	0.03	0.89	0.01	130.93	294.68	553.93	1644.16
Reach-1	6.14	1072.92	1072.81	0.11	1.16	0.00	123.41	346.11	510.02	982.95
Reach-1	6.05	1071.75	1071.59	0.16	0.48	0.04	29.52	328.53	646.49	765.63
Reach-1	5.95	1071.23	1071.21	0.01	0.43	0.00	340.75	109.75	554.04	1645.07
Reach-1	5.86	1070.79	1070.77	0.02	1.29	0.00	568.98	293.28	142.28	2197.80
Reach-1	5.76	1069.49	1069.46	0.03	0.72	0.01	810.33	172.70	21.51	915.33
Reach-1	5.67	1068.76	1068.76	0.00	0.46	0.00	723.33	121.71	159.50	2009.85
Reach-1	5.57	1068.30	1068.29	0.01	0.64	0.00	559.67	179.83	265.03	1781.77
Reach-1	5.53	Lat. Weir								
Reach-1	5.48	1067.65	1067.64	0.02	1.32	0.01	239.33	224.28	540.93	1501.45
Reach-1	5.38	1066.33	1066.26	0.07	1.17	0.01	309.13	320.98	1007.42	1692.65
Reach-1	5.31	1065.15	1065.13	0.02	0.72	0.01	813.76	191.42	632.36	1439.55
Reach-1	5.25	1064.42	1064.28	0.14	0.82	0.01	804.59	634.09	198.86	1473.09
Reach-1	5.23	Lat. Weir								
Reach-1	5.2	1063.58	1063.48	0.10	1.85	0.01	501.06	588.65	410.40	1309.96
Reach-1	5.15	Lat. Weir								
Reach-1	5.1	1061.73	1061.56	0.16	0.62	0.04	592.21	574.67	218.22	2042.69
Reach-1	5.08	Lat. Weir								
Reach-1	5.07	1061.07	1061.05	0.02	1.25	0.01	680.67	120.00	528.26	2146.17
Reach-1	5.03	1059.79	1059.63	0.17	0.50	0.05			1328.93	985.06
Reach-1	4.98	1059.24	1059.24	0.00	0.02	0.00	1233.65	72.35	22.93	3564.81
Reach-1	4.95	1059.23	1059.23	0.00	0.01	0.00	1089.92	117.80	121.21	3924.15
Reach-1	4.89	1059.22	1059.22	0.00	0.01	0.00	1187.32	98.12	43.49	3099.68
Reach-1	4.79	1059.21	1059.21	0.00			979.89	194.45	154.59	2443.45

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Q US	Q Leaving Total	Q DS	Q Weir	Total Gate Flow	Wr Top Wdth	Weir Max Depth	Weir Avg Depth	Min El Weir Flow	E.G. US.	W.S. US.	E.G. DS	W.S. DS
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
Reach-1	7.06	1865.00	314.09	1550.95	314.09		366.58	0.99	0.54	1079.50	1081.12	1081.09	1080.16	1080.12
Reach-1	6.96	1550.95	281.52	1269.36	281.52		353.59	0.88	0.58	1079.20	1080.16	1080.12	1079.49	1079.48
Reach-1	6.91	1269.36	289.79	979.54	289.79		344.16	0.66	0.54	1078.80	1079.49	1079.48	1079.24	1079.23
Reach-1	5.53	1004.54	0.00	1500.11	0.00					1066.70	1068.30	1068.29	1064.36	1064.23
Reach-1	5.23	1637.54	137.10	1500.11	137.10		227.32	0.78	0.50	1062.90	1064.42	1064.28	1063.61	1063.51
Reach-1	5.15	1500.11	113.38	1385.10	113.38		399.10	0.58	0.31	1061.90	1063.58	1063.48	1061.73	1061.56
Reach-1	5.08	1385.10	56.91	1328.93	56.91		87.39	0.85	0.53	1060.20	1061.73	1061.56	1061.07	1061.05


DHS-Corrected Effective
Plan: Imported Plan 03
.5
.016
.016
.016
.015
.016
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1084
1082
1080
1078
1076
1074
1072
1070
1068
1000
1500
2000
2500
3000
3500
4000
Station (ft)

HEC-RAS Version 3.0.1 Mar 2001
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
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X     X  X        X           X  X     X    X        X
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PROJECT DATA
Project Title: DHS-Corrected Effective
Project File : Corrected_effective.prj
Run Date and Time: 10/18/2001 3:42:29 PM

Project in English units

Project Description:
DHS Drainage Study for new Building and parking structure FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES OF MARICOPA COUNTY, ARIZONA 5062 N. 19TH AVE. CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA 85015 FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES OF MARICOPA COUNTY, ARIZONA 5062 N. 19TH AVE. CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA 85015 FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES OF MARICOPA COUNTY, ARIZONA 5062 N. 19TH AVE. CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA 85015

PLAN DATA

Plan Title: Imported Plan 03
Plan File : p:\PROJECTS\State\Hec-Ras\Corrected_effective.p03

Geometry Title: Imported Geom 03
Geometry File : p:\PROJECTS\State\Hec-Ras\Corrected_effective.g03

Flow Title : Imported Flow 05
Flow File : p:\PROJECTS\State\Hec-Ras\Corrected_effective.f05

Plan Summary Information:

Number of: Cross Sections = 58 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Imported Flow 05
Flow File : p:\PROJECTS\State\Hec-Ras\Corrected_effective.f05

Flow Data (cfs)

River	Reach	RS	PF 1
RIVER-1	Reach-1	9.61	1237
RIVER-1	Reach-1	9.08	1210
RIVER-1	Reach-1	8.18	1375
RIVER-1	Reach-1	7.66	1691
RIVER-1	Reach-1	7.11	1865
RIVER-1	Reach-1	6.05	1890
RIVER-1	Reach-1	5.38	2523

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	PF 1	Critical	

Known WS = 1059.21

GEOMETRY DATA

Geometry Title: Imported Geom 03
Geometry File : p:\PROJECTS\State\Hec-Ras\Corrected_effective.g03

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.61

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

3000	1121.6	3024.7	1121.8	3041.6	1121.6	3085.6	1121.5	3101.4	1121.7
3116.6	1121.9	3301.4	1121.9	3501.4	1121.8	3701.4	1121.4	3880	1120
4101.4	1119.1	4301.4	1119.2	4501.4	1118.5	4644.6	1118.6	4701.4	1118.8
4901.4	1119.1	5101.4	1119	5301.4	1119.9	5501.4	1120	5587.5	1120.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
3000	.16	3880	.16	4644.6	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3880	4644.6	360	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1119.95	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.		0.160
0.160				
W.S. Elev (ft)	1119.94	Reach Len. (ft)	360.00	360.00
360.00				
Crit W.S. (ft)	1119.28	Flow Area (sq ft)		659.80
544.01				
E.G. Slope (ft/ft)	0.016005	Area (sq ft)		659.80
544.01				
Q Total (cfs)	1237.00	Flow (cfs)		712.24
524.76				
Top Width (ft)	1480.45	Top Width (ft)		749.17
731.28				
Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)		1.08
0.96				
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)		0.88
0.74				
Conv. Total (cfs)	9777.9	Conv. (cfs)		5630.0
4147.9				
Length Wtd. (ft)	360.00	Wetted Per. (ft)		749.17
731.28				
Min Ch El (ft)	1118.50	Shear (lb/sq ft)		0.88
0.74				
Alpha	1.01	Stream Power (lb/ft s)		0.95
0.72				
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	563.10	82.03
439.20				
C & E Loss (ft)	0.00	Cum SA (acres)	631.19	91.24
597.22				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.55

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW

PATH OF CAVE CREEK WASH
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1117.1	1177.4	1117.2	1200	1117.2	1491.9	1117.9	1535	1118.2
1600	1118.1	1800	1117.9	1829.8	1117.8	1857.9	1117.8	1869.5	1118.2
2000	1118.4	2200	1117.6	2400	1117.1	2511.7	1116.8	2540.9	1116.8
2600	1117	2800	1116.7	2803.8	1116.7	2832	1116.7	3000	1116.5
3140	1116.4	3400	1116.5	3467.9	1116.5	3495.5	1116.6	3508	1117.1
3600	1116.9	3800	1117	3951.6	1117.4	4000	1118.2	4022.2	1118.4
4031.8	1121	4046.5	1121.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.09	2800	.16	3140	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2800	3140	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	1535	1118.2

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1117.97	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.090	0.160
0.160				
W.S. Elev (ft)	1117.96	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1117.00	Flow Area (sq ft)	578.16	479.65
958.17				
E.G. Slope (ft/ft)	0.002757	Area (sq ft)	578.16	479.65
958.17				
Q Total (cfs)	1237.00	Flow (cfs)	434.82	294.23
507.95				
Top Width (ft)	1995.83	Top Width (ft)	810.45	340.00
845.38				
Vel Total (ft/s)	0.61	Avg. Vel. (ft/s)	0.75	0.61
0.53				
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	0.71	1.41
1.13				
Conv. Total (cfs)	23556.7	Conv. (cfs)	8280.4	5603.1
9673.2				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	810.46	340.00
845.40				
Min Ch El (ft)	1116.40	Shear (lb/sq ft)	0.12	0.24
0.20				
Alpha	1.07	Stream Power (lb/ft s)	0.09	0.15
0.10				
Frctn Loss (ft)	1.63	Cum Volume (acre-ft)	560.71	77.33
432.99				
C & E Loss (ft)	0.00	Cum SA (acres)	627.84	86.74
590.71				

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m) between the current and

previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.45

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1116.5	1010	1116.5	1020	1116.5	1040	1116.5	1050	1116.6
1660	1116.5	1667.7	1116.3	1670	1116.2	1673.6	1116	1680	1116
1683.2	1115.9	1683.3	1115.8	1883.2	1116.1	2083.2	1116.2	2283.2	1116
2332.1	1115.9	2375.2	1116.3	2483.2	1116.5	2681.9	1116.5	2683.2	1116.5
2689.8	1116.4	2712.7	1116.4	2883.2	1116.5	3000.4	1115.9	3029.8	1115.9
3083.2	1115.8	3283.2	1115.5	3600	1115.4	3683	1115.3	3883.2	1115
3940	1114.9	4283.2	1115.1	4306.2	1115.1	4483.2	1115.4	4683.2	1115.5
4883.2	1115.7	4947	1116	5012	1116.2	5054.9	1116.9	5083.2	1116.9
5283.2	1117.6	5483.2	1118.1	5597.3	1117.9	5605	1120.6	5611.8	1120.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.16	2332.1	.09	3600	.16	5605	.165

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
3600 3940 470 470 500 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2483.2	1116.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1116.34	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.090	0.160
0.160				
W.S. Elev (ft)	1116.33	Reach Len. (ft)	470.00	470.00
500.00				
Crit W.S. (ft)	1115.54	Flow Area (sq ft)	473.50	397.14
1047.78				
E.G. Slope (ft/ft)	0.003926	Area (sq ft)	473.50	397.14
1047.78				
Q Total (cfs)	1237.00	Flow (cfs)	383.22	256.32
597.47				
Top Width (ft)	2104.46	Top Width (ft)	684.27	340.00
1080.18				
Vel Total (ft/s)	0.64	Avg. Vel. (ft/s)	0.81	0.65
0.57				
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.69	1.17
0.97				
Conv. Total (cfs)	19741.7	Conv. (cfs)	6115.9	4090.7
9535.1				
Length Wtd. (ft)	487.51	Wetted Per. (ft)	684.28	340.00
1080.19				
Min Ch El (ft)	1114.90	Shear (lb/sq ft)	0.17	0.29
0.24				
Alpha	1.07	Stream Power (lb/ft s)	0.14	0.18
0.14				

Frctn Loss (ft)	2.19	Cum Volume (acre-ft)	554.68	72.29
421.48				
C & E Loss (ft)	0.00	Cum SA (acres)	619.26	82.84
579.66				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.36

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1114.8	1200	1114.5	1226.6	1114.7	1400	1115.1	1568.8	1114.3
1589.5	1114.3	1600	1114.6	1800	1114.2	1907.2	1113.7	2000	1113.6
2200	1113.4	2450	1113.2	2600	1113.1	2700	1112.8	3000	1112.9
3200	1112.6	3233.3	1112.5	3254.8	1113.4	3273.2	1113	3400	1112.8
3600	1113.6	3625.7	1113.7	3657.7	1113.8	3698	1114.8	3800	1115
3845.7	1114.4	3908.4	1114.5	3939	1114.9	4000	1114.8	4200	1115.9
4255.3	1116.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.16	2450	.16	2700	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2450	2700	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1114.15	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.160	0.160
0.160				
W.S. Elev (ft)	1114.14	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	406.50	268.39
1136.90				
E.G. Slope (ft/ft)	0.005213	Area (sq ft)	406.50	268.39
1136.90				
Q Total (cfs)	1237.00	Flow (cfs)	201.84	188.68
846.48				
Top Width (ft)	1859.45	Top Width (ft)	637.91	250.00
971.54				
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)	0.50	0.70
0.74				
Max Chl Dpth (ft)	1.64	Hydr. Depth (ft)	0.64	1.07
1.17				
Conv. Total (cfs)	17133.5	Conv. (cfs)	2795.6	2613.4
11724.5				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	637.91	250.00
971.57				
Min Ch El (ft)	1112.80	Shear (lb/sq ft)	0.21	0.35
0.38				
Alpha	1.06	Stream Power (lb/ft s)	0.10	0.25
0.28				

Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	549.93	68.70	408.94
C & E Loss (ft)	0.01	Cum SA (acres)	612.12	79.66	567.88

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.27

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1114.6	1026	1114.6	1067.7	1113.2	1092.6	1112.7	1105.4	1112.7
1113.5	1114.7	1200	1114.7	1375.6	1114.7	1396.8	1113.6	1400	1113.6
1450	1113.5	1600	1113	1800	1112.5	1896.2	1112	1940.3	1111.9
2000	1111.9	2200	1111.4	2400	1111.5	2700	1111.3	2730.8	1111.1
2741.7	1110.9	2767.4	1110.8	2776.7	1111.3	2880	1111.3	3000	1111.5
3200	1111.7	3400	1111.7	3429.3	1111.7	3434.9	1111.5	3461	1111.5
3472.6	1111.8	3600	1112.1	3608.2	1112.1	3614.8	1112.8	3793.1	1112.6
3800	1112.6	3827.7	1112.6	4000	1113.6	4014.2	1113.6	4077.2	1113.7
4200	1114.3	4400	1115.5	4525.1	1115.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2700	.02	2776.7	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2700	2776.7	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1112.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1112.54	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	827.56	115.11	765.31
E.G. Slope (ft/ft)	0.001910	Area (sq ft)	827.56	115.11	765.31
Q Total (cfs)	1237.00	Flow (cfs)	386.67	489.81	360.52
Top Width (ft)	1827.07	Top Width (ft)	914.75	76.70	835.62
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.47	4.26	0.47
Max Chl Dpth (ft)	1.74	Hydr. Depth (ft)	0.90	1.50	0.92
Conv. Total (cfs)	28305.8	Conv. (cfs)	8848.1	11208.2	8249.6

Length Wtd. (ft)	500.00	Wetted Per. (ft)	914.75	76.72
835.65				
Min Ch El (ft)	1110.80	Shear (lb/sq ft)	0.11	0.18
0.11				
Alpha	13.92	Stream Power (lb/ft s)	0.05	0.76
0.05				
Frctn Loss (ft)	1.62	Cum Volume (acre-ft)	542.85	66.50
398.03				
C & E Loss (ft)	0.00	Cum SA (acres)	603.21	77.78
557.51				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.17

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1110.9	1010	1110.9	1020	1110.9	1040	1111	1050	1111.1
1650	1111.1	1651.5	1111	1660	1111	1663.7	1111	1663.8	1110.7
1863.7	1110.7	2063.7	1110.5	2263.7	1110.7	2305.7	1110.7	2360.9	1111
2400	1112.4	2463.7	1111.5	2663.7	1110.8	2863.7	1110.5	2971	1110.5
2984.4	1110.1	3014.4	1110.1	3028.6	1110.9	3063.7	1110.9	3263.7	1110.3
3463.7	1110	3663.7	1110.2	3880	1109.6	4063.7	1110.2	4263.7	1110.8
4291	1110.9	4294.1	1110.6	4325.2	1110.6	4337.6	1110.8	4463.7	1110.7
4582.8	1110.9	4647.6	1110.8	4662.3	1111.1	4663.7	1111.1	4863.7	1111.7
4924.5	1111.9	4986.1	1112.3	5063.7	1112.5	5263.7	1113.3	5394.1	1113.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3663.7	.035	3880	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3663.7	3880	500	520	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2400	1112

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1111.03	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.12	Wt. n-Val.	0.130	0.035
0.130				
W.S. Elev (ft)	1110.92	Reach Len. (ft)	500.00	520.00
500.00				

Crit W.S. (ft)	1110.64	Flow Area (sq ft)	517.05	219.46 322.90
E.G. Slope (ft/ft)	0.006627	Area (sq ft)	517.05	219.46 322.90
Q Total (cfs)	1237.00	Flow (cfs)	303.34	765.80 167.86
Top Width (ft)	2022.23	Top Width (ft)	1032.72	216.30 773.21
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.59	3.49 0.52
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.50	1.01 0.42
Conv. Total (cfs)	15195.6	Conv. (cfs)	3726.3	9407.3 2062.0
Length Wtd. (ft)	510.82	Wetted Per. (ft)	1032.75	216.30 773.23
Min Ch El (ft)	1109.60	Shear (lb/sq ft)	0.21	0.42 0.17
Alpha	5.62	Stream Power (lb/ft s)	0.12	1.46 0.09
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	535.13	64.58 391.78
C & E Loss (ft)	0.00	Cum SA (acres)	592.04	76.10 548.28

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.08

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1109	1010	1109	1020	1109	1040	1109	1050	1109
1700	1109.3	1710	1109.3	1720	1109.4	1730	1109.4	1740	1109.4
1750	1109.4	1760	1109.5	1770	1109.5	1780	1109.5	1790	1109.5
1800	1109.4	1810	1109.4	1820	1109.4	1830	1109.4	1840	1109.4
1850	1109.4	1860	1109.5	1870	1109.5	1880	1109.5	1890	1109.5
1900	1109.6	1904.3	1109.6	1910	1109.5	1920	1109.2	1926.9	1108.9
1930	1108.9	1935.4	1108.9	1935.5	1108.8	2135.4	1108.7	2263.7	1108
2286.8	1108.2	2335.4	1108.7	2535.4	1108.5	2589.3	1108.5	2600	1109
2735.4	1108.6	2935.4	1108.4	3135.4	1107.9	3272.2	1107.4	3303.2	1107.4
3335.4	1107.7	3535.4	1107.4	3735.4	1107.5	3900	1107.3	3935.4	1107.3
3959.2	1107.3	4000	1107.7	4135.4	1107.8	4335.4	1108	4535.4	1108.4
4574.3	1108.2	4599.7	1108.3	4735.4	1109.3	4935.4	1109.7	5135.4	1110.9
5202.7	1110.9	5262.7	1110.8	5275.3	1111.5	5335.4	1112.1	5535.4	1112.1
5681.6	1112.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3900	.02	4000	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3900	4000	500	500	500	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent

888 F
Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2600	1109

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1108.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1108.56	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1108.30	Flow Area (sq ft)	904.27	117.98	337.13
E.G. Slope (ft/ft)	0.003245	Area (sq ft)	904.27	117.98	337.13
Q Total (cfs)	1210.00	Flow (cfs)	508.66	557.45	143.89
Top Width (ft)	1861.18	Top Width (ft)	1126.02	100.00	635.17
Vel Total (ft/s)	0.89	Avg. Vel. (ft/s)	0.56	4.73	0.43
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.80	1.18	0.53
Conv. Total (cfs)	21242.5	Conv. (cfs)	8930.0	9786.4	2526.1
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1126.02	100.00	635.17
Min Ch El (ft)	1107.30	Shear (lb/sq ft)	0.16	0.24	0.11
Alpha	13.18	Stream Power (lb/ft s)	0.09	1.13	0.05
Frctn Loss (ft)	1.23	Cum Volume (acre-ft)	526.97	62.57	387.99
C & E Loss (ft)	0.02	Cum SA (acres)	579.65	74.21	540.19

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.98

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1108.2	1010	1108.1	1020	1108	1040	1107.9	1050	1107.9
1060	1107.9	1070	1107.9	1080	1107.8	1090	1107.8	1100	1107.7
1690	1107.8	1700	1107.8	1710	1107.8	1720	1107.8	1730	1107.8
1740	1107.8	1750	1107.9	1760	1107.9	1770	1107.9	1780	1107.9
1790	1107.9	1800	1107.9	1810	1108	1820	1108	1830	1108
1840	1108	1850	1108	1860	1108.1	1870	1108.1	1880	1108.1
1890	1108.1	1900	1108.1	1910	1108.1	1920	1108.1	1930	1107.7
1940	1107.5	1944.3	1107.5	1944.4	1107.3	2144.3	1107.2	2344.3	1107.1
2544.3	1107	2744.3	1106.6	2944.3	1106.3	3144.3	1106.2	3344.3	1106.3
3544.3	1106.5	3744.3	1106.6	3900	1106	3944.3	1106	3965.8	1106

4000	1106.5	4344.3	1106.7	4544.3	1107.1	4572.1	1107.1	4578.8	1106.9
4604.1	1106.8	4744.3	1107.3	4944.3	1107.8	5144.3	1108.9	5208.7	1109.6
5269.8	1109.5	5344.3	1110	5366.4	1110.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3900	.02	4000	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3900	4000	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1107.47	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.10	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1107.37	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	1404.74	128.56
428.95				
E.G. Slope (ft/ft)	0.001939	Area (sq ft)	1404.74	128.56
428.95				
Q Total (cfs)	1210.00	Flow (cfs)	567.00	497.20
145.81				
Top Width (ft)	2828.35	Top Width (ft)	1955.64	100.00
772.72				
Vel Total (ft/s)	0.62	Avg. Vel. (ft/s)	0.40	3.87
0.34				
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)	0.72	1.29
0.56				
Conv. Total (cfs)	27482.1	Conv. (cfs)	12877.9	11292.6
3311.6				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1955.68	100.00
772.72				
Min Ch El (ft)	1106.00	Shear (lb/sq ft)	0.09	0.16
0.07				
Alpha	16.40	Stream Power (lb/ft s)	0.04	0.60
0.02				
Frctn Loss (ft)	1.44	Cum Volume (acre-ft)	513.72	61.15
383.60				
C & E Loss (ft)	0.00	Cum SA (acres)	561.96	73.06
532.11				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.89

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

1000	1107.6	1063.2	1107.6	1088.6	1106.6	1200	1106.4	1400	1106.4
1600	1106.2	1795.2	1105.3	1800	1105.3	1848.6	1105.3	2000	1105.3
2092.8	1104.8	2178.9	1104.7	2200	1104.7	2210.9	1104.7	2400	1105
2600	1105.1	2800	1105.1	3000	1105.3	3110	1105.2	3134.8	1104.9
3166.1	1105.1	3187.3	1105.5	3200	1105.5	3400	1105.6	3600	1105.7
3779.9	1105.3	3800	1105.5	3805.5	1105.5	4000	1105.7	4200	1105.9
4400	1107.4	4408.1	1108	4469.9	1108.6	4498.9	1109		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3110	.02	3187.3	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3110	3187.3	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1106.02	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.08	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1105.94	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	1168.70	64.66
322.99				
E.G. Slope (ft/ft)	0.004759	Area (sq ft)	1168.70	64.66
322.99				
Q Total (cfs)	1210.00	Flow (cfs)	797.24	294.22
118.53				
Top Width (ft)	2547.13	Top Width (ft)	1452.49	77.30
1017.34				
Vel Total (ft/s)	0.78	Avg. Vel. (ft/s)	0.68	4.55
0.37				
Max Chl Dpth (ft)	1.23	Hydr. Depth (ft)	0.80	0.84
0.32				
Conv. Total (cfs)	17539.2	Conv. (cfs)	11556.2	4264.8
1718.2				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1452.49	77.31
1017.34				
Min Ch El (ft)	1104.90	Shear (lb/sq ft)	0.24	0.25
0.09				
Alpha	8.86	Stream Power (lb/ft s)	0.16	1.13
0.03				
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	498.95	60.04
379.28				
C & E Loss (ft)	0.01	Cum SA (acres)	542.40	72.05
521.84				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.79

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

1000	1104.6	1016.4	1104.6	1062.7	1104.5	1400	1104.2	1600	1104.2
1681.2	1104	1692	1103.3	1738.1	1103.3	1800	1103.5	2000	1103.4
2200	1103	2400	1103	2600	1103.1	2692.6	1102.9	2729.2	1103
2800	1103.2	2881.4	1103.3	2975	1103.4	3023.3	1103.4	3030.4	1103
3062.1	1103.1	3080	1103.5	3200	1103.5	3400	1103.6	3600	1104
3663.7	1104	3670.7	1103.8	3701.5	1103.8	3714.1	1104.1	3800	1104.2
4000	1104.6	4200	1105.8	4286.2	1105.4	4302.8	1106.5	4366.4	1106.4
4387.7	1107.3	4400	1107.3	4568.6	1107.3	4575.8	1106.8	4600	1107
4800	1107.1	4968.3	1107.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2975	.02	3080	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2975	3080	500	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1104.25	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.06	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1104.19	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	1296.20	96.74
317.95				
E.G. Slope (ft/ft)	0.002715	Area (sq ft)	1296.20	96.74
317.95				
Q Total (cfs)	1210.00	Flow (cfs)	744.35	354.52
111.13				
Top Width (ft)	2181.16	Top Width (ft)	1368.95	105.00
707.20				
Vel Total (ft/s)	0.71	Avg. Vel. (ft/s)	0.57	3.66
0.35				
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.95	0.92
0.45				
Conv. Total (cfs)	23222.9	Conv. (cfs)	14286.0	6804.1
2132.8				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1368.98	105.02
707.21				
Min Ch El (ft)	1103.00	Shear (lb/sq ft)	0.16	0.16
0.08				
Alpha	8.30	Stream Power (lb/ft s)	0.09	0.57
0.03				
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	484.80	59.12
375.60				
C & E Loss (ft)	0.01	Cum SA (acres)	526.21	71.00
511.94				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.7

INPUT
Description:

Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1103.4	1146.8	1102.1	1175.3	1102.1	1400	1102.3	1600	1102.3
1800	1101.9	1859.5	1101.2	1915.5	1101.4	2000	1102.2	2200	1101.8
2399.9	1101.9	2527.6	1101.3	2560.8	1101.3	2593.3	1101.9	2599.9	1101.9
2799.9	1101.7	2999.9	1101.6	3170	1101.4	3199.9	1101.4	3270	1101.5
3399.9	1101.6	3599.9	1101.9	3735.5	1102	3778.5	1102.1	3799.9	1102.2
3925	1102.6	3948.3	1103.9	3999.9	1104.2	4199.9	1104.5	4399.9	1103.9
4469.4	1103.6	4532.4	1103.8	4599.9	1105.5	4618.6	1105.8	4755	1104.4
4799.9	1104.5	4999.9	1104.2	5199.8	1105	5399.8	1104.9	5595.1	1105
5599.8	1105.1	5627.6	1105.7	5717.9	1105.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3170	.02	3270	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3270	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1102.56	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.14	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1102.42	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	1126.96	98.66
340.98				
E.G. Slope (ft/ft)	0.004251	Area (sq ft)	1126.96	98.66
340.98				
Q Total (cfs)	1210.00	Flow (cfs)	561.88	473.62
174.50				
Top Width (ft)	2758.75	Top Width (ft)	2059.52	100.00
599.23				
Vel Total (ft/s)	0.77	Avg. Vel. (ft/s)	0.50	4.80
0.51				
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.55	0.99
0.57				
Conv. Total (cfs)	18558.0	Conv. (cfs)	8617.6	7264.0
2676.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	2059.54	100.00
599.23				
Min Ch El (ft)	1101.40	Shear (lb/sq ft)	0.15	0.26
0.15				
Alpha	15.38	Stream Power (lb/ft s)	0.07	1.26
0.08				
Frctn Loss (ft)	1.88	Cum Volume (acre-ft)	470.90	58.00
371.82				
C & E Loss (ft)	0.03	Cum SA (acres)	506.53	69.82
504.44				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.61

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1101.2	1200	1100.2	1400	1100	1800	1099.4	1939.1	1099.4
2000	1099.6	2200	1099.7	2399.9	1099.9	2599.9	1099.8	2799.9	1099.8
2999.9	1100.1	3041.8	1100.2	3190	1100	3226.8	1099.9	3290	1100.1
3542.7	1099.9	3575.5	1099.9	3599.9	1100.3	3608.9	1100.3	3799.9	1100.5
3856.8	1100.6	3866.7	1100.5	3900.7	1100.5	3928.4	1101.7	3999.9	1102
4199.9	1101.7	4399.9	1101.4	4500	1101.1	4569.2	1100.8	4599.9	1101.3
4724.2	1101.3	4799.9	1101.4	4999.9	1102.1	5199.8	1102.7	5399.8	1103.2
5569.2	1103.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3190	.02	3290	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3190	3290	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1100.65	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1100.62	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)		Flow Area (sq ft)	1629.65	63.62
245.44				
E.G. Slope (ft/ft)	0.003357	Area (sq ft)	1629.65	63.62
245.44				
Q Total (cfs)	1210.00	Flow (cfs)	919.15	202.58
88.26				
Top Width (ft)	2786.99	Top Width (ft)	2073.57	100.00
613.42				
Vel Total (ft/s)	0.62	Avg. Vel. (ft/s)	0.56	3.18
0.36				
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.79	0.64
0.40				
Conv. Total (cfs)	20883.1	Conv. (cfs)	15863.5	3496.3
1523.3				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	2073.57	100.00
613.43				
Min Ch El (ft)	1099.90	Shear (lb/sq ft)	0.16	0.13
0.08				
Alpha	5.00	Stream Power (lb/ft s)	0.09	0.42
0.03				
Frctn Loss (ft)	1.66	Cum Volume (acre-ft)	455.08	57.06
368.45				
C & E Loss (ft)	0.00	Cum SA (acres)	482.81	68.67
497.48				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.51

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1099.1	1200	1099.3	1349.4	1099.3	1524.2	1098.8	1600	1098.7
1800	1098.6	2000	1098.2	2176.6	1098.2	2200	1098.7	2212.4	1098.8
2276.3	1097.9	2325.2	1098.1	2399.9	1098.4	2599.9	1098.6	2799.9	1098.9
2954.1	1098.2	2987.4	1098.2	2999.9	1098.6	3199.9	1098.4	3399.9	1098.2
3599.9	1098.5	3614.8	1098.5	3649.2	1098.5	3690	1098.8	3799.9	1098.9
3809.6	1098.9	3999.9	1098.7	4199.9	1098.5	4263.3	1098.3	4295.5	1098.3
4313.7	1098.7	4351.4	1098.8	4370.2	1099.5	4399.9	1100.2	4525.6	1100
4533.3	1098.8	4599.9	1098.7	4799.9	1098.8	4999.9	1099.1	5199.8	1099.4
5399.8	1099.8	5599.8	1100.3	5648.2	1100.3				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1524.2	.03	2325.2	.13	3599.9	.02	3690	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3599.9	3690	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4399.9	5648.2	1100.2

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1098.98	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.054	0.020
0.130				
W.S. Elev (ft)	1098.96	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1098.63	Flow Area (sq ft)	1059.15	35.39
188.97				
E.G. Slope (ft/ft)	0.003415	Area (sq ft)	1059.15	35.39
188.97				
Q Total (cfs)	1210.00	Flow (cfs)	1073.09	82.40
54.52				
Top Width (ft)	2887.68	Top Width (ft)	2131.86	90.10
665.71				
Vel Total (ft/s)	0.94	Avg. Vel. (ft/s)	1.01	2.33
0.29				
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.50	0.39
0.28				
Conv. Total (cfs)	20705.9	Conv. (cfs)	18363.0	1410.0
932.9				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	2131.88	90.10
665.72				
Min Ch El (ft)	1098.50	Shear (lb/sq ft)	0.11	0.08
0.06				
Alpha	1.44	Stream Power (lb/ft s)	0.11	0.19
0.02				
Frctn Loss (ft)	1.86	Cum Volume (acre-ft)	439.95	56.51
366.01				
C & E Loss (ft)	0.00	Cum SA (acres)	459.16	67.61
490.29				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.42

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1097.1	1200	1097.6	1400	1096.5	1800	1096.5	1850.6	1096.4
2000	1096.9	2200	1096.6	2399.9	1096.5	2599.9	1096.7	2799.9	1097
2999.9	1096.7	3110	1096.7	3148.8	1096.3	3181.8	1096.4	3199.9	1096.8
3230	1096.8	3399.9	1096.6	3494.7	1096.8	3535.3	1096.3	3599.9	1096.4
3799.9	1096.2	3999.9	1096.3	4199.9	1096.9	4399.9	1097.2	4422.8	1097.2
4478.9	1097.4	4515.7	1099.1	4538.1	1098.4	4599.9	1098.6	4799.9	1099.4
4999.9	1099.1	5123.5	1099.4	5142	1101.3	5199.8	1101.3	5213.5	1101.3
5242.4	1100.5	5399.8	1101	5599.8	1100.7	5601.4	1100.7		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	1850.6	.13	3110	.02	3230	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3110	3230	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1097.12	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.059	0.020
0.130				
W.S. Elev (ft)	1097.09	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)	1096.80	Flow Area (sq ft)	771.95	64.46
604.93				
E.G. Slope (ft/ft)	0.004064	Area (sq ft)	771.95	64.46
604.93				
Q Total (cfs)	1210.00	Flow (cfs)	711.32	201.75
296.93				
Top Width (ft)	3030.72	Top Width (ft)	1816.60	120.00
1094.12				
Vel Total (ft/s)	0.84	Avg. Vel. (ft/s)	0.92	3.13
0.49				
Max Chl Dpth (ft)	0.89	Hydr. Depth (ft)	0.42	0.54
0.55				
Conv. Total (cfs)	18981.1	Conv. (cfs)	11158.4	3164.8
4657.9				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	1816.61	120.01
1094.12				
Min Ch El (ft)	1096.30	Shear (lb/sq ft)	0.11	0.14
0.14				
Alpha	3.11	Stream Power (lb/ft s)	0.10	0.43
0.07				
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	429.44	55.93
361.45				
C & E Loss (ft)	0.00	Cum SA (acres)	436.50	66.40
480.19				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.32

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1096.6	1013.9	1094.5	1081.6	1095.8	1400	1095.8	1600	1095.2
1676.6	1094.8	1719.7	1095.1	1800	1095.1	2000	1095.2	2200	1095.6
2333.3	1095.8	2356.5	1095.4	2383.1	1095.4	2399.9	1095.7	2599.9	1095.6
2683.8	1095.3	2719.5	1095.3	2799.9	1095.5	2970	1095.2	3015.6	1095.1
3051.9	1095.1	3066.3	1095.3	3090	1095.5	3338.5	1095.5	3369.4	1094.9
3400.4	1095.3	3800.3	1095.3	4150	1096	4540	1097	5000	1098
5260	1098.2								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1719.7	.13	2970	.02	3090	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2970	3090	500	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1096.02	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.049	0.020
0.130				
W.S. Elev (ft)	1095.99	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1095.56	Flow Area (sq ft)	1072.33	96.37
572.06				
E.G. Slope (ft/ft)	0.001419	Area (sq ft)	1072.33	96.37
572.06				
Q Total (cfs)	1210.00	Flow (cfs)	813.40	232.99
163.61				
Top Width (ft)	3142.63	Top Width (ft)	1965.98	120.00
1056.65				
Vel Total (ft/s)	0.70	Avg. Vel. (ft/s)	0.76	2.42
0.29				
Max Chl Dpth (ft)	1.49	Hydr. Depth (ft)	0.55	0.80
0.54				
Conv. Total (cfs)	32123.2	Conv. (cfs)	21594.2	6185.6
4343.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1966.12	120.00
1056.66				
Min Ch El (ft)	1095.10	Shear (lb/sq ft)	0.05	0.07
0.05				
Alpha	3.15	Stream Power (lb/ft s)	0.04	0.17
0.01				

Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	419.07	55.03
354.83				
C & E Loss (ft)	0.00	Cum SA (acres)	415.22	65.05
468.09				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.23

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1095.7	1200	1094.8	1400	1094.5	1800	1094.3	2000	1094.1
2200	1094.2	2399.9	1094.3	2599.9	1094.3	2799.9	1094.3	2950	1094.4
3150	1094.5	3399.9	1094.7	3599.9	1094.9	3799.9	1095.1	3999.9	1095.2
4199.9	1095.1	4399.9	1095.1	4599.9	1095.6	4799.9	1095.9	4999.9	1096.7
5199.8	1097.3	5399.8	1097.8	5580.8	1097.4				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.013	1200	.13	2399.9	.034	5399.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2950	3150	280	270	270	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1094.93	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.067	0.034
0.034				
W.S. Elev (ft)	1094.92	Reach Len. (ft)	280.00	270.00
270.00				
Crit W.S. (ft)		Flow Area (sq ft)	1022.41	93.25
102.43				
E.G. Slope (ft/ft)	0.003702	Area (sq ft)	1022.41	93.25
102.43				
Q Total (cfs)	1210.00	Flow (cfs)	961.74	149.09
99.17				
Top Width (ft)	2441.97	Top Width (ft)	1775.83	200.00
466.14				
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	0.94	1.60
0.97				
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)	0.58	0.47
0.22				
Conv. Total (cfs)	19887.4	Conv. (cfs)	15807.0	2450.4
1630.0				
Length Wtd. (ft)	275.31	Wetted Per. (ft)	1775.83	200.00
466.14				
Min Ch El (ft)	1094.40	Shear (lb/sq ft)	0.13	0.11
0.05				

Alpha	1.11	Stream Power (lb/ft s)	0.13	0.17
0.05				
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	407.05	53.94
350.96				
C & E Loss (ft)	0.00	Cum SA (acres)	393.75	63.21
459.35				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.18

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1094.3	1087.8	1093.2	1105.2	1092.7	1200	1093.5	1400	1093.8
1600	1094	1800	1093.6	1834.1	1093.2	1864.9	1093.2	1875.2	1093.4
2000	1093.2	2200	1093.3	2290	1092.8	2599.9	1093.3	2799.9	1093.1
2999.9	1093.3	3199.9	1093.4	3399.9	1093.5	3599.9	1093.6	3674.3	1094
3714.6	1094.7	3778.5	1095	3799.9	1095.3	3903.5	1096.2	3950.5	1095.5
3999.9	1096	4040.5	1096.1	4073.1	1095.5	4102.9	1095.7	4132.9	1096.3

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1864.9	.035	3799.9	.13	4102.9	.135

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2290	2599.9	520	500	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1093.74	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.05	Wt. n-Val.	0.045	0.035
0.035				
W.S. Elev (ft)	1093.70	Reach Len. (ft)	520.00	500.00
490.00				
Crit W.S. (ft)	1093.53	Flow Area (sq ft)	322.57	200.91
349.25				
E.G. Slope (ft/ft)	0.004973	Area (sq ft)	322.57	200.91
349.25				
Q Total (cfs)	1375.00	Flow (cfs)	412.07	450.59
512.35				
Top Width (ft)	2151.59	Top Width (ft)	823.39	309.90
1018.30				
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	1.28	2.24
1.47				
Max Chl Dpth (ft)	1.00	Hydr. Depth (ft)	0.39	0.65
0.34				
Conv. Total (cfs)	19497.6	Conv. (cfs)	5843.1	6389.4
7265.1				
Length Wtd. (ft)	503.62	Wetted Per. (ft)	823.41	309.90
1018.30				
Min Ch El (ft)	1092.80	Shear (lb/sq ft)	0.12	0.20
0.11				
Alpha	1.18	Stream Power (lb/ft s)	0.16	0.45

0.16					
Frctn Loss (ft)		0.93	Cum Volume (acre-ft)	402.73	53.03
349.56					
C & E Loss (ft)		0.01	Cum SA (acres)	385.39	61.63
454.75					

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.08

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1092.9	1165.4	1092.9	1200	1092	1260.8	1091.5	1285.5	1092.1
1303.8	1095.4	1346.6	1095	1394.7	1092.5	1400	1092.4	1600	1092.2
1800	1092.1	2000	1092.2	2086.3	1092	2097.5	1092.9	2111.1	1092.4
2129.3	1094.3	2200	1094.2	2216.7	1094.1	2269.1	1091.8	2399.9	1091.8
2599.9	1091.9	2690	1092.1	2999.9	1092.2	3199.9	1092.4	3399.9	1092.3
3599.9	1092.6	3799.9	1093.8	3826.1	1094.3	3896.7	1094.5	3999.9	1094.9
4199.9	1095	4399.9	1096.3	4429.9	1096.6				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.036	1165.4	.034	2216.7	.036	2690	.035	3896.7	.131
4399.9	.13								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2216.7	2690	550	500	610	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1092.81	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.034	0.036
0.035				
W.S. Elev (ft)	1092.79	Reach Len. (ft)	550.00	500.00
610.00				
Crit W.S. (ft)		Flow Area (sq ft)	526.15	401.03
457.91				
E.G. Slope (ft/ft)	0.000952	Area (sq ft)	526.15	401.03
457.91				
Q Total (cfs)	1375.00	Flow (cfs)	526.70	477.50
370.80				
Top Width (ft)	2226.90	Top Width (ft)	841.36	443.52
942.02				
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	1.00	1.19
0.81				
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.63	0.90
0.49				
Conv. Total (cfs)	44568.6	Conv. (cfs)	17072.3	15477.4
12018.8				
Length Wtd. (ft)	551.27	Wetted Per. (ft)	841.51	443.54
942.02				

Min Ch El (ft)	1091.80	Shear (lb/sq ft)	0.04	0.05
0.03				
Alpha	1.07	Stream Power (lb/ft s)	0.04	0.06
0.02				
Frctn Loss (ft)	1.30	Cum Volume (acre-ft)	397.66	49.58
345.02				
C & E Loss (ft)	0.01	Cum SA (acres)	375.46	57.31
443.73				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.99

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1091.9	1200	1091.6	1371.1	1091	1400	1090.2	1428.7	1090.2
1459	1091	1600	1091.3	1800	1091.3	2000	1091.5	2088.2	1091.7
2118.5	1092.1	2160	1091.1	2200	1090.9	2399.9	1090.7	2422.2	1090.8
2472.3	1093.5	2522.6	1093.6	2599.9	1090.6	2607.7	1090.3	2799.9	1090.6
2999.9	1090.8	3199.9	1091	3399.9	1091	3479.4	1090.9	3517.6	1092.4
3566.3	1091.4	3599.9	1091.5	3648.7	1091.6	3687.4	1094.2	3743.9	1094.4
3754.5	1092	3784	1092.3	3799.9	1093.8	3844.3	1095.7	3918.3	1095.6
3928	1094.3	3949.3	1094.4	3975.7	1093.7	3998.7	1094.9	3999.9	1095
4063.6	1095.5	4078.1	1096.1	4199.9	1096.2	4399.9	1095.5	4538.8	1094.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	2160	.033	2422.2	.034	2472.3	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2160	2422.2	470	500	570	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1091.49	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.09	Wt. n-Val.	0.035	0.033
0.129				
W.S. Elev (ft)	1091.40	Reach Len. (ft)	470.00	500.00
570.00				
Crit W.S. (ft)	1091.23	Flow Area (sq ft)	163.23	149.04
555.59				
E.G. Slope (ft/ft)	0.013231	Area (sq ft)	163.23	149.04
555.59				
Q Total (cfs)	1375.00	Flow (cfs)	318.45	529.66
526.89				
Top Width (ft)	1834.11	Top Width (ft)	648.30	262.20
923.61				
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	1.95	3.55

0.95				
Max Chl Dpth (ft)	1.19	Hydr. Depth (ft)	0.25	0.57
0.60				
Conv. Total (cfs)	11954.0	Conv. (cfs)	2768.5	4604.8
4580.7				
Length Wtd. (ft)	542.10	Wetted Per. (ft)	648.33	262.20
923.65				
Min Ch El (ft)	1090.70	Shear (lb/sq ft)	0.21	0.47
0.50				
Alpha	2.43	Stream Power (lb/ft s)	0.41	1.67
0.47				
Frctn Loss (ft)	1.96	Cum Volume (acre-ft)	393.31	46.42
337.93				
C & E Loss (ft)	0.02	Cum SA (acres)	366.05	53.26
430.66				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1090.5	1200	1090.2	1400	1089.2	1671.5	1089.4	1685.6	1089
1800	1088.8	2000	1089	2200	1089.2	2425	1089.5	2430	1089.5
2435	1089.3	2460	1089.4	2799.9	1089.3	2983.2	1088.5	2999.9	1088.7
3010.7	1088.9	3026.7	1089.2	3099.3	1088.3	3199.9	1089	3265.2	1088.9
3293.1	1090.9	3343.8	1088.3	3399.9	1087.9	3445.4	1087.3	3599.9	1088.7
3675.4	1089.2	3724.3	1088.5	3799.9	1088.7	3813.3	1088.8	3928.3	1090
3990.9	1091.3	3999.9	1091.3	4041.2	1091.3	4063	1090.8	4096.5	1091.1
4138.9	1092.1	4199.9	1092.5	4275.9	1092.4	4293	1091.7	4363.4	1091.4
4399.9	1091.7	4599.9	1091.3	4766.8	1090.9	4797.5	1090.9	4799.9	1090.9
4999.9	1091.3	5032.4	1090.8	5060.8	1090.7	5184.3	1091		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2425	.02	2460	.13	2999.9	.035	3999.9	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2425	2460	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1089.51	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.038				
W.S. Elev (ft)	1089.48	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	346.19	3.59

924.46				
E.G. Slope (ft/ft)	0.001660	Area (sq ft)	346.19	3.59
924.46				
Q Total (cfs)	1375.00	Flow (cfs)	76.26	2.67
1296.07				
Top Width (ft)	2464.16	Top Width (ft)	1064.02	29.45
1370.69				
Vel Total (ft/s)	1.08	Avg. Vel. (ft/s)	0.22	0.74
1.40				
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.33	0.12
0.67				
Conv. Total (cfs)	33752.1	Conv. (cfs)	1871.8	65.6
31814.7				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1064.03	29.45
1370.78				
Min Ch El (ft)	1089.30	Shear (lb/sq ft)	0.03	0.01
0.07				
Alpha	1.59	Stream Power (lb/ft s)	0.01	0.01
0.10				
Frctn Loss (ft)	1.31	Cum Volume (acre-ft)	390.56	45.54
328.24				
C & E Loss (ft)	0.00	Cum SA (acres)	356.81	51.58
415.65				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.8

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1090.6	1084.3	1090.9	1111	1088.6	1235.4	1088.6	1244.2	1090.1
1312.8	1090.8	1400	1088.1	1414.6	1087.5	1600	1088.1	1620.5	1088.1
1630.5	1087.3	1673.6	1087.3	1800	1087.9	2000	1087.9	2200	1087.7
2357.9	1087.8	2369.1	1087.2	2398.7	1087.2	2399.9	1087.3	2430	1087.9
2599.9	1087.8	2799.9	1087.7	2929.6	1087.6	2936.7	1087.3	2973	1087.6
2999.9	1087.8	3179.5	1088.1	3199.9	1087.7	3221.4	1087.4	3331.1	1088.3
3373.3	1087.6	3399.9	1087.7	3527.8	1087.4	3599.9	1088.4	3614.6	1088.9
3642.9	1087.7	3693.7	1087.5	3739.4	1085.9	3799.9	1087.1	3883.7	1088.4
3999.9	1088.5	4057.2	1088.1	4199.9	1088.8	4215.4	1088.8	4243.7	1088
4309.8	1088.3	4399.9	1088.4	4599.9	1088.5	4743.6	1088.7	4796.8	1090.7
4799.9	1090.8	4878.2	1091.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2369.1	.02	2430	.13	2973	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2369.1	2430	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1088.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.020	0.043
W.S. Elev (ft)	1088.13	Reach Len. (ft)	490.00	490.00	490.00
Crit W.S. (ft)	1087.90	Flow Area (sq ft)	348.25	44.26	646.62
E.G. Slope (ft/ft)	0.004738	Area (sq ft)	348.25	44.26	646.62
Q Total (cfs)	1375.00	Flow (cfs)	138.41	182.91	1053.68
Top Width (ft)	2423.09	Top Width (ft)	969.92	60.90	1392.27
Vel Total (ft/s)	1.32	Avg. Vel. (ft/s)	0.40	4.13	1.63
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.36	0.73	0.46
Conv. Total (cfs)	19975.7	Conv. (cfs)	2010.8	2657.3	15307.6
Length Wtd. (ft)	490.00	Wetted Per. (ft)	969.98	60.91	1392.36
Min Ch El (ft)	1087.20	Shear (lb/sq ft)	0.11	0.21	0.14
Alpha	2.47	Stream Power (lb/ft s)	0.04	0.89	0.22
Frctn Loss (ft)	1.59	Cum Volume (acre-ft)	386.57	45.27	319.23
C & E Loss (ft)	0.01	Cum SA (acres)	345.14	51.07	399.80

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.71

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1087.8	1188.6	1085.9	1200	1086.7	1366.9	1086.5	1400	1086.5
1600	1086.4	1800	1085.9	2000	1085.7	2200	1085.5	2480	1085.5
2525	1085.5	2799.9	1085.6	2999.9	1085.9	3199.9	1086.3	3399.9	1086.9
3599.9	1087	3799.9	1086.7	3999.9	1086.5	4199.9	1086.2	4399.9	1085.7
4599.9	1085.9	4799.9	1086.2	4999.9	1086.5	5199.8	1087.1	5399.8	1087.7
5599.8	1088	5610.8	1088.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2480	.02	2525	.13	2999.9	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2480	2525	220	220	220	.1 .3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1086.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.130	0.020	0.060
W.S. Elev (ft)	1086.56	Reach Len. (ft)	220.00	220.00	220.00
Crit W.S. (ft)		Flow Area (sq ft)	773.38	47.71	1005.89
E.G. Slope (ft/ft)	0.002351	Area (sq ft)	773.38	47.71	1005.89
Q Total (cfs)	1375.00	Flow (cfs)	315.77	178.71	880.51
Top Width (ft)	3125.45	Top Width (ft)	1238.39	45.00	1842.06
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.41	3.75	0.88
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.62	1.06	0.55
Conv. Total (cfs)	28360.0	Conv. (cfs)	6513.0	3686.0	18160.9
Length Wtd. (ft)	220.00	Wetted Per. (ft)	1238.41	45.00	1842.07
Min Ch El (ft)	1085.50	Shear (lb/sq ft)	0.09	0.16	0.08
Alpha	4.15	Stream Power (lb/ft s)	0.04	0.58	0.07
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	380.27	44.75	309.93
C & E Loss (ft)	0.00	Cum SA (acres)	332.72	50.47	381.60

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.66

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1087.7	1020.1	1087.3	1064.8	1088.5	1111.2	1086.8	1200	1086.8
1400	1086.3	1600	1086.4	1643.2	1086.3	1675.6	1085.2	1721.4	1085.4
1800	1085.5	2000	1085.2	2045.4	1085.1	2053.8	1084.8	2077.2	1084.8
2097.5	1085.3	2200	1085.3	2397.4	1085.2	2399.9	1085.1	2421	1084.5
2438.3	1084.5	2453.3	1085.1	2540	1085.3	2768.4	1085.1	2777.5	1084.8
2797.2	1084.8	2799.9	1084.8	2813.7	1085.3	2958.8	1085.2	2999.9	1086.2
3040	1086.3	3199.9	1086	3399.9	1085.7	3599.9	1086.3	3799.9	1086.4
3999.9	1084.9	4199.9	1085.4	4271	1085.7	4285.1	1084.8	4342.9	1084.8
4355.5	1085.1	4399.9	1085.2	4599.9	1085.1	4799.9	1085.4	4999.9	1085.8
5199.8	1086.1	5399.8	1086.4	5510.5	1086.7				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2421	.02	2540	.13	3040	.02	4399.9	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2421	2540	480	480	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1085.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.130	0.020	0.042
W.S. Elev (ft)	1085.73	Reach Len. (ft)	480.00	480.00	480.00
Crit W.S. (ft)		Flow Area (sq ft)	346.09	80.54	735.97
E.G. Slope (ft/ft)	0.005330	Area (sq ft)	346.09	80.54	735.97
Q Total (cfs)	1691.00	Flow (cfs)	170.82	336.73	1183.46
Top Width (ft)	2417.10	Top Width (ft)	760.85	119.00	1537.25
Vel Total (ft/s)	1.45	Avg. Vel. (ft/s)	0.49	4.18	1.61
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.45	0.68	0.48
Conv. Total (cfs)	23161.4	Conv. (cfs)	2339.6	4612.1	16209.7
Length Wtd. (ft)	480.00	Wetted Per. (ft)	760.88	119.01	1537.30
Min Ch El (ft)	1084.50	Shear (lb/sq ft)	0.15	0.23	0.16
Alpha	2.51	Stream Power (lb/ft s)	0.07	0.94	0.26
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	377.44	44.43	305.53
C & E Loss (ft)	0.02	Cum SA (acres)	327.67	50.06	373.07

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.57

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1086.5	1038.5	1085.9	1069.7	1087.7	1200	1085.1	1400	1084.1
1460.6	1083.6	1512.2	1083.9	1574	1084.8	1600	1084.9	1795.9	1084.5
1800	1084.4	1851.1	1083.7	1873.1	1083.7	1896.9	1084.5	2000	1084.5
2050	1084.6	2160	1084.2	2200	1084.1	2208.2	1083.4	2233.3	1083.4
2280	1084.2	2399.9	1084.5	2407.9	1084.6	2554.8	1084.1	2567.4	1083.8
2593.6	1083.8	2599.9	1084.1	2606.6	1084.3	2753	1084.5	2778	1085.3
2799.9	1085.4	2887.9	1084.7	2999.9	1084.7	3199.9	1084.4	3399.9	1084.4
3599.9	1085	3799.9	1084.4	3999.9	1084.7	4055	1084.8	4072.9	1083.6
4137.8	1083.8	4199.9	1084.2	4399.9	1084.5	4599.9	1084.7	4799.9	1085
4999.9	1084.9	5199.8	1084.9	5399.8	1085.1	5410.4	1085.1	5442.9	1085.4
5599.8	1086.3	5602.3	1086.4						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

1000	.13	2160	.02	2280	.13	2778	.02	4137.8	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2160	2280	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1085.20	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020
0.037				
W.S. Elev (ft)	1085.18	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1084.73	Flow Area (sq ft)	733.04	162.32
1786.80				
E.G. Slope (ft/ft)	0.000534	Area (sq ft)	733.04	162.32
1786.80				
Q Total (cfs)	1691.00	Flow (cfs)	161.24	340.69
1189.08				
Top Width (ft)	4170.48	Top Width (ft)	964.12	120.00
3086.36				
Vel Total (ft/s)	0.63	Avg. Vel. (ft/s)	0.22	2.10
0.67				
Max Chl Dpth (ft)	1.78	Hydr. Depth (ft)	0.76	1.35
0.58				
Conv. Total (cfs)	73199.1	Conv. (cfs)	6979.6	14747.4
51472.1				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	964.16	120.04
3086.43				
Min Ch El (ft)	1083.40	Shear (lb/sq ft)	0.03	0.05
0.02				
Alpha	3.03	Stream Power (lb/ft s)	0.01	0.09
0.01				
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	371.49	43.09
291.63				
C & E Loss (ft)	0.01	Cum SA (acres)	318.17	48.74
347.60				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.48

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1085.3	1074.4	1084.5	1200	1084.7	1600	1084.7	1735.6	1083.8
1768.1	1084	1800	1084.4	2000	1084.4	2200	1084.2	2381.5	1083.7
2394.6	1083	2399.9	1083	2437.9	1083	2599.9	1083.4	2771.6	1082.7
2796.9	1082.6	2799.9	1082.7	2999.9	1083.1	3080	1083.1	3132.1	1082.3
3158.5	1082.3	3180.5	1083	3199.9	1083	3399.9	1083.2	3476.6	1083.3
3496.3	1082.7	3518.3	1082.7	3533.7	1083.3	3599.9	1083.3	3663.6	1083.1

3693	1083.7	3736.5	1083.8	3741.5	1079.4	3799.9	1079.2	3999.9	1081.1
4199.9	1085.6	4349.4	1082.8	4356.5	1080.7	4399.9	1080.6	4406.6	1080.7
4414.2	1083	4541.6	1085	4599.9	1085	4788.5	1085.2	4799.9	1084.9
4817.8	1083.8	4985.2	1083.4	4992.2	1082.5	4999.9	1082.5	5058.8	1082.4
5199.8	1083	5399.8	1083.4	5599.8	1083.4	5700	1084	5999.8	1083.2
6199.8	1083.5	6332.8	1084.1	6399.8	1084.5	6406.3	1084.6	6469.9	1085.8

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3080	.02	3199.9	.13	3693	.035	3799.9	.5
4199.9	.02	4349.4	.1	4817.8	.13				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3080	3199.9	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	5700	1084

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1084.38	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.020
0.118				
W.S. Elev (ft)	1084.31	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1084.10	Flow Area (sq ft)	302.42	37.21
1107.91				
E.G. Slope (ft/ft)	0.025525	Area (sq ft)	302.42	37.21
1107.91				
Q Total (cfs)	1691.00	Flow (cfs)	230.53	202.42
1258.06				
Top Width (ft)	3974.46	Top Width (ft)	1124.44	119.90
2730.12				
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.76	5.44
1.14				
Max Chl Dpth (ft)	1.11	Hydr. Depth (ft)	0.27	0.31
0.41				
Conv. Total (cfs)	10584.3	Conv. (cfs)	1442.9	1267.0
7874.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1124.45	119.90
2730.14				
Min Ch El (ft)	1084.00	Shear (lb/sq ft)	0.43	0.49
0.65				
Alpha	3.36	Stream Power (lb/ft s)	0.33	2.69
0.73				
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	365.55	41.94
275.02				
C & E Loss (ft)	0.02	Cum SA (acres)	306.18	47.36
314.21				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the
cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.38

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1084.6	1158.3	1083.5	1188.6	1083.5	1387.2	1084.4	1400	1084.4
1512.7	1083.7	1556.9	1083.1	1600	1083.1	1800	1083.1	2000	1083.2
2143.6	1082.9	2160.2	1083.1	2200	1083.1	2399.9	1082.9	2462.1	1082.8
2476.9	1082.3	2520.1	1082.3	2535.1	1082.8	2599.9	1082.7	2799.9	1082.5
2846.2	1082.3	2858.5	1082	2887.2	1082	2999.9	1082.5	3030.6	1082.5
3170	1082.2	3204.1	1082.2	3216.2	1082	3244.5	1082	3280	1082.2
3399.9	1082.2	3556.4	1082.3	3576.6	1082	3599.9	1082	3600.6	1082
3618.8	1082.4	3757.2	1082.7	3786.3	1084.1	3799.9	1083.9	3999.9	1083.7
4199.9	1083.1	4399.9	1083	4599.9	1083.4	4799.9	1082.3	4846	1082.4
4899.7	1081.9	4955.2	1082.3	4999.9	1082.3	5070.8	1082	5079.6	1081.6
5199.8	1082	5399.8	1082.1	5599.8	1082.2	5799.8	1082.1	5891	1081.7
5964.2	1082	5999.8	1082.3	6032.2	1083.5	6032.6	1083.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3170	.02	3280	.13	3799.9	.02	5070.8	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3280	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1083.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020	0.068
W.S. Elev (ft)	1083.26	Reach Len. (ft)	490.00	490.00	490.00
Crit W.S. (ft)		Flow Area (sq ft)	764.49	127.23	2050.88
E.G. Slope (ft/ft)	0.000752	Area (sq ft)	764.49	127.23	2050.88
Q Total (cfs)	1691.00	Flow (cfs)	144.91	285.53	1260.56
Top Width (ft)	4009.52	Top Width (ft)	1625.03	110.00	2274.49
Vel Total (ft/s)	0.57	Avg. Vel. (ft/s)	0.19	2.24	0.61
Max Chl Dpth (ft)	1.66	Hydr. Depth (ft)	0.47	1.16	0.90
Conv. Total (cfs)	61679.2	Conv. (cfs)	5285.6	10414.9	45978.8
Length Wtd. (ft)	490.00	Wetted Per. (ft)	1625.05	110.00	2274.55
Min Ch El (ft)	1082.00	Shear (lb/sq ft)	0.02	0.05	0.04
Alpha	3.44	Stream Power (lb/ft s)	0.00	0.12	

0.03				
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	359.43	41.00
256.89				
C & E Loss (ft)	0.00	Cum SA (acres)	290.40	46.04
285.49				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.29

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1083	1200	1083.7	1297.5	1083.6	1400	1083.3	1600	1083.7
1609	1083.7	1647	1083.8	1667.9	1082.8	1691.2	1083.4	1800	1083.3
1952.8	1082.6	1978.9	1082.6	1991.8	1083.2	2000	1083.2	2200	1082.9
2292.1	1082.3	2313.6	1082.3	2330.4	1082.7	2399.9	1082.7	2599.9	1082.3
2615.6	1082.1	2661.2	1082.1	2799.9	1082.4	2996.5	1081.7	2999.9	1081.7
3026.6	1081.7	3045.2	1082	3176.7	1082.3	3199.9	1082.1	3325	1081.5
3382.7	1081.6	3396.2	1082.1	3450	1082.1	3599.9	1081.8	3716.1	1081.4
3741.1	1081.4	3753	1081.8	3799.9	1081.7	3916.2	1082	3923	1082.9
3972.9	1083.2	3999.9	1083.1	4199.9	1082.5	4399.9	1081.9	4599.9	1081.9
4799.9	1082.1	4981.7	1080.6	4999.9	1080.6	5035.7	1080.6	5048.4	1080.9
5100	1080.9	5213	1080.8	5276.2	1080.9	5399.8	1082.5	5599.8	1082.6
5610.9	1081.6	5624.8	1081.2	5697.1	1082.7				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3325	.02	3450	.13	3999.9	.5	4981.7	.035
5100	.13								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3325	3450	490	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1082.72	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.099				
W.S. Elev (ft)	1082.69	Reach Len. (ft)	490.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	524.09	108.73
1850.32				
E.G. Slope (ft/ft)	0.001923	Area (sq ft)	524.09	108.73
1850.32				
Q Total (cfs)	1691.00	Flow (cfs)	170.39	322.82
1197.79				
Top Width (ft)	3220.65	Top Width (ft)	1064.58	125.00
2031.07				
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)	0.33	2.97
0.65				
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	0.49	0.87

0.91				
Conv. Total (cfs)	38558.5	Conv. (cfs)	3885.3	7361.0
27312.2				
Length Wtd. (ft)	499.42	Wetted Per. (ft)	1064.60	125.01
2031.21				
Min Ch El (ft)	1081.50	Shear (lb/sq ft)	0.06	0.10
0.11				
Alpha	4.29	Stream Power (lb/ft s)	0.02	0.31
0.07				
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	352.18	39.67
234.95				
C & E Loss (ft)	0.00	Cum SA (acres)	275.27	44.72
261.28				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.2

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082.7	1200	1082.6	1400	1082.5	1800	1082.3	2080	1081.9
2180	1081.6	2399.9	1081.7	2599.9	1081.6	2799.9	1081.6	2999.9	1081.5
3140	1081.4	3399.9	1081	3599.9	1080.9	3799.9	1080.8	3999.9	1080.8
4199.9	1080.6	4399.9	1080.5	4599.9	1080.5	4799.9	1081.4	4999.9	1082.2
5016.6	1082.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2999.9	.02	3140	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3140	450	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1081.82	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1081.81	Reach Len. (ft)	450.00	470.00
470.00				
Crit W.S. (ft)		Flow Area (sq ft)	166.00	50.03
1648.47				
E.G. Slope (ft/ft)	0.001657	Area (sq ft)	166.00	50.03
1648.47				
Q Total (cfs)	1691.00	Flow (cfs)	25.23	76.15
1589.62				
Top Width (ft)	2790.73	Top Width (ft)	888.94	140.10
1761.69				
Vel Total (ft/s)	0.91	Avg. Vel. (ft/s)	0.15	1.52
0.96				
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.19	0.36
0.94				
Conv. Total (cfs)	41547.3	Conv. (cfs)	619.9	1871.1
39056.3				
Length Wtd. (ft)	469.09	Wetted Per. (ft)	888.94	140.10

1761.69				
Min Ch El (ft)	1081.40	Shear (lb/sq ft)	0.02	0.04
0.10				
Alpha	1.19	Stream Power (lb/ft s)	0.00	0.06
0.09				
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	348.30	38.76
214.87				
C & E Loss (ft)	0.00	Cum SA (acres)	264.29	43.20
239.51				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.11

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082	1200	1081.7	1233.4	1081.5	1265.1	1081.1	1286.4	1081.5
1400	1081.5	1600	1081.5	1800	1081.3	1857.6	1081.1	1867.2	1080.9
1911.5	1080.9	1920.5	1080.9	2000	1080.9	2200	1080.8	2399.9	1080.6
2537.2	1080	2563	1080	2575.4	1080.4	2599.9	1080.4	2799.9	1080.3
2846.6	1080.3	2863.9	1079.8	2887	1079.8	2905	1080.2	2950	1080.3
3184.1	1080	3199.9	1080	3399.9	1080.4	3515	1080	3553.5	1080
3566.5	1080.2	3599.9	1080.2	3799.9	1080.1	3841.7	1080	3848.8	1079.9
3884.5	1079.9	3896.9	1080.1	3999.9	1080.1	4037.1	1080.3	4056.7	1079.9
4120.1	1080.3	4181.8	1080	4199.9	1080.1	4399.9	1079.9	4408.2	1079.9
4506.3	1080.1	4567.3	1080.4	4599.9	1080.4	4723.7	1081.5	4741.4	1081.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2846.6	.02	2950	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2846.6	2950	500	530	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4723.7	4741.4	1081.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1081.12	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1081.09	Reach Len. (ft)	500.00	530.00
500.00				
Crit W.S. (ft)	1080.54	Flow Area (sq ft)	505.41	105.62
1634.14				
E.G. Slope (ft/ft)	0.001356	Area (sq ft)	505.41	105.62
1634.14				
Q Total (cfs)	1865.00	Flow (cfs)	136.01	293.09
1435.90				
Top Width (ft)	2820.12	Top Width (ft)	988.71	103.40
1728.01				
Vel Total (ft/s)	0.83	Avg. Vel. (ft/s)	0.27	2.77
0.88				

Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.51	1.02
0.95				
Conv. Total (cfs)	50642.5	Conv. (cfs)	3693.2	7958.7
38990.5				
Length Wtd. (ft)	506.36	Wetted Per. (ft)	988.72	103.41
1728.02				
Min Ch El (ft)	1079.80	Shear (lb/sq ft)	0.04	0.09
0.08				
Alpha	2.62	Stream Power (lb/ft s)	0.01	0.24
0.07				
Frctn Loss (ft)	0.96	Cum Volume (acre-ft)	344.83	37.92
197.16				
C & E Loss (ft)	0.00	Cum SA (acres)	254.59	41.89
220.68				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 7.06

INPUT
Description: Left Overbank between stations 7.01 and 7.11
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.9
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1081.5	100	1081	300	1080	310	1079.5	490	1079.5
500	1080								

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1081.12	Weir Max Depth (ft)	0.99
W.S. US. (ft)	1081.09	Weir Avg Depth (ft)	0.54
E.G. DS (ft)	1080.16	Weir Submerg	0.00
W.S. DS (ft)	1080.12	Min El Weir Flow (ft)	1079.50
Q US (cfs)	1865.00	Wr Top Wdth (ft)	366.58
Q Leaving Total (cfs)	314.09	Total Gate Flow (cfs)	
Q DS (cfs)	1550.95	Gate Group Q (cfs)	
Perc Q Leaving	16.84	Gate Open Ht (ft)	
Q Weir (cfs)	314.09	Gate #Open	
Wr Flw Area (sq ft)	199.45	Gate Area (sq ft)	
Weir Sta US (ft)	133.42	Gate Submerg	
Weir Sta DS (ft)	500.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.01

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082.1	1182.3	1081.4	1200	1081.4	1400	1082	1600	1081.9
1794.4	1081.4	1800	1080.1	1806	1079.9	1853.2	1079.8	2000	1079.9
2200	1079.5	2400	1079.6	2480	1079	2505.7	1079.5	2599.9	1079.7
2799.9	1079.5	2806.5	1079.5	2865	1079.5	2999.9	1079.5	3100	1079.5
3168.5	1079.5	3199.9	1079.5	3399.9	1079.4	3454.6	1079.5	3487.2	1079.5
3575.9	1079.4	3599.9	1079.9	3621.4	1080	3799.9	1080	3999.9	1079.9
4199.9	1079.4	4399.9	1078.7	4453.1	1078.5	4524.8	1078.6	4599.9	1081
4642	1081								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2865	.02	3100	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2865	3100	360	400	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1080.16	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.05	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1080.12	Reach Len. (ft)	360.00	400.00
360.00				
Crit W.S. (ft)		Flow Area (sq ft)	527.59	144.64
913.50				
E.G. Slope (ft/ft)	0.003066	Area (sq ft)	527.59	144.64
913.50				
Q Total (cfs)	1550.95	Flow (cfs)	209.06	430.56
911.34				
Top Width (ft)	2772.29	Top Width (ft)	1065.07	235.00
1472.22				
Vel Total (ft/s)	0.98	Avg. Vel. (ft/s)	0.40	2.98
1.00				
Max Chl Dpth (ft)	1.62	Hydr. Depth (ft)	0.50	0.62
0.62				
Conv. Total (cfs)	28008.5	Conv. (cfs)	3775.4	7775.4
16457.7				
Length Wtd. (ft)	368.76	Wetted Per. (ft)	1065.08	235.00
1472.25				
Min Ch El (ft)	1079.50	Shear (lb/sq ft)	0.09	0.12
0.12				
Alpha	3.20	Stream Power (lb/ft s)	0.04	0.35
0.12				
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	338.90	36.40
182.54				
C & E Loss (ft)	0.01	Cum SA (acres)	242.80	39.83
202.32				

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 6.96

INPUT
Description: Left Overbank Between Stations 6.94 and 7.01
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0

Weir Coefficient = 1.75
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1080	20	1079.2	350	1079.2	360	1080

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1080.16	Weir Max Depth (ft)	0.88
W.S. US. (ft)	1080.12	Weir Avg Depth (ft)	0.58
E.G. DS (ft)	1079.49	Weir Submerg	0.00
W.S. DS (ft)	1079.48	Min El Weir Flow (ft)	1079.20
Q US (cfs)	1550.95	Wr Top Wdth (ft)	353.59
Q Leaving Total (cfs)	281.52	Total Gate Flow (cfs)	
Q DS (cfs)	1269.36	Gate Group Q (cfs)	
Perc Q Leaving	18.16	Gate Open Ht (ft)	
Q Weir (cfs)	281.52	Gate #Open	
Wr Flw Area (sq ft)	204.18	Gate Area (sq ft)	
Weir Sta US (ft)	0.00	Gate Submerg	
Weir Sta DS (ft)	353.59	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.94

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1101.2	1014.6	1101.2	1031.8	1103.6	1137.7	1080.8	1220	1079.3
1225	1079.3	1400	1079.5	1572.6	1079.7	1600	1079.4	1800	1079.5
1882.6	1079.1	1962.3	1079.1	2000	1079.2	2186.7	1079.4	2200	1078.7
2204.6	1078.6	2230	1078.6	2245.5	1079.4	2400	1080.2	2465.1	1079.7
2501.1	1078.7	2599.9	1078.9	2660	1079	2799.9	1079.5	2999.9	1079.4
3199.9	1078.9	3399.9	1078.3	3599.9	1077.7	3799.9	1077.3	3801.5	1077.3
3824.3	1077.9	3841.3	1076.9	3858.7	1077.8	3923.4	1077.9	3999.9	1080
4051	1082								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	2400	.02	2660	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2400	2660	360	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1079.49	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.060	0.020
0.060				
W.S. Elev (ft)	1079.48	Reach Len. (ft)	360.00	360.00
360.00				
Crit W.S. (ft)		Flow Area (sq ft)	150.84	109.28
1237.48				
E.G. Slope (ft/ft)	0.001083	Area (sq ft)	150.84	109.28

1237.48				
Q Total (cfs)	1269.36	Flow (cfs)	48.69	186.82
1033.85				
Top Width (ft)	2236.85	Top Width (ft)	783.47	186.84
1266.54				
Vel Total (ft/s)	0.85	Avg. Vel. (ft/s)	0.32	1.71
0.84				
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)	0.19	0.58
0.98				
Conv. Total (cfs)	38578.7	Conv. (cfs)	1479.8	5677.9
31420.9				
Length Wtd. (ft)	360.00	Wetted Per. (ft)	783.51	186.86
1266.63				
Min Ch El (ft)	1078.70	Shear (lb/sq ft)	0.01	0.04
0.07				
Alpha	1.40	Stream Power (lb/ft s)	0.00	0.07
0.06				
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	336.10	35.23
173.65				
C & E Loss (ft)	0.00	Cum SA (acres)	235.16	37.89
191.00				

Warning: Divided flow computed for this cross-section.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 6.91

INPUT
Description: Left Overbank Between Stations 6.88 and 6.94
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 2.1
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1082	20	1078.8	350	1078.8	360	1079

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1079.49	Weir Max Depth (ft)	0.66
W.S. US. (ft)	1079.48	Weir Avg Depth (ft)	0.54
E.G. DS (ft)	1079.24	Weir Submerg	0.00
W.S. DS (ft)	1079.23	Min El Weir Flow (ft)	1078.80
Q US (cfs)	1269.36	Wr Top Wdth (ft)	344.16
Q Leaving Total (cfs)	289.79	Total Gate Flow (cfs)	
Q DS (cfs)	979.54	Gate Group Q (cfs)	
Perc Q Leaving	22.83	Gate Open Ht (ft)	
Q Weir (cfs)	289.79	Gate #Open	
Wr Flw Area (sq ft)	186.06	Gate Area (sq ft)	
Weir Sta US (ft)	15.84	Gate Submerg	
Weir Sta DS (ft)	360.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.88

INPUT

Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1093.4	1040	1079	1093.5	1079	1383.4	1079	1389.3	1078.9
1400	1078.9	1424.1	1078.9	1600	1079.6	1759.9	1078.7	1796.2	1080
1800	1080	1987.2	1079.1	2000	1078.2	2002.8	1078.2	2200	1078.4
2320	1079.1	2599.9	1079	2799.9	1078.6	2999.9	1078.4	3110	1078.4
3144.5	1083.1	3199.9	1081.4	3292	1078.2	3399.9	1077.7	3599.9	1077.3
3696	1077	3767.6	1077.3	3799.9	1077.8	3966.2	1079	3966.7	1079.2

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1600	.06	2320	.02	2599.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2320	2599.9	420	420	420	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1079.24	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.066	0.020
0.060				
W.S. Elev (ft)	1079.23	Reach Len. (ft)	420.00	420.00
420.00				
Crit W.S. (ft)		Flow Area (sq ft)	387.68	50.35
1366.29				
E.G. Slope (ft/ft)	0.000449	Area (sq ft)	387.68	50.35
1366.29				
Q Total (cfs)	979.54	Flow (cfs)	120.70	25.25
833.60				
Top Width (ft)	2436.82	Top Width (ft)	936.38	279.90
1220.53				
Vel Total (ft/s)	0.54	Avg. Vel. (ft/s)	0.31	0.50
0.61				
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.41	0.18
1.12				
Conv. Total (cfs)	46246.2	Conv. (cfs)	5698.5	1191.9
39355.8				
Length Wtd. (ft)	420.00	Wetted Per. (ft)	936.47	279.90
1220.69				
Min Ch El (ft)	1079.00	Shear (lb/sq ft)	0.01	0.01
0.03				
Alpha	1.14	Stream Power (lb/ft s)	0.00	0.00
0.02				
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	333.87	34.57
162.89				
C & E Loss (ft)	0.00	Cum SA (acres)	228.06	35.96
180.72				

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.8

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1079.7	1200	1079.9	1400	1079.8	1603.6	1079.5	1611.3	1078.6
1659.5	1078.9	1800	1079.1	1953.5	1078.4	1986	1078.5	2000	1079.1
2007.4	1079.1	2142.5	1079.1	2187.2	1078.6	2200	1078.8	2225.7	1079
2266.4	1078.7	2335.3	1079.4	2400	1079.4	2599.9	1078.8	2799.9	1078.4
2940	1078.2	2999.9	1078	3050	1078.1	3199.9	1078.1	3260.7	1078.9
3302.6	1078.6	3313.2	1077.9	3399.9	1077.9	3403.7	1077.9	3415.2	1078.5
3455.4	1078.5	3468.5	1077.7	3599.9	1077.7	3627.4	1077.2	3661.6	1077.1
3724.7	1077.7	3799.9	1077.7	3999.9	1077.7	4199.9	1077.5	4267.1	1077
4332.8	1077.5	4399.9	1078	4442.4	1079	4469.1	1079.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.1	2940	.02	3050	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2940	3050	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1078.93	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.100	0.020
0.130				
W.S. Elev (ft)	1078.91	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	213.31	91.18
1547.02				
E.G. Slope (ft/ft)	0.001362	Area (sq ft)	213.31	91.18
1547.02				
Q Total (cfs)	979.54	Flow (cfs)	57.41	220.65
701.47				
Top Width (ft)	2183.99	Top Width (ft)	685.58	110.00
1388.41				
Vel Total (ft/s)	0.53	Avg. Vel. (ft/s)	0.27	2.42
0.45				
Max Chl Dpth (ft)	1.91	Hydr. Depth (ft)	0.31	0.83
1.11				
Conv. Total (cfs)	26537.3	Conv. (cfs)	1555.4	5977.8
19004.1				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	685.62	110.00
1388.50				
Min Ch El (ft)	1078.00	Shear (lb/sq ft)	0.03	0.07
0.09				
Alpha	5.25	Stream Power (lb/ft s)	0.01	0.17
0.04				
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	330.98	33.89
148.85				
C & E Loss (ft)	0.00	Cum SA (acres)	220.24	34.08
168.14				

Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.7

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1079.1	1042.4	1078.8	1200	1079	1600	1078.7	1648.2	1078.5
1787.1	1078.6	1800	1078.7	2000	1079.2	2200	1079.1	2329.8	1077.9
2365.6	1077.7	2400	1078.6	2423.6	1079	2599.9	1079.5	2799.9	1078.5
2978.8	1077.7	2994.2	1077.2	2999.9	1077.2	3026.3	1077.1	3039.6	1077.7
3170	1077.7	3199.9	1077.7	3370	1077.5	3399.9	1077.4	3534.4	1078.3
3538.5	1077.3	3599.9	1077.8	3600.5	1077.8	3672.7	1076.3	3702.2	1076.3
3719	1077	3799.9	1077.2	3999.9	1077.4	4199.9	1076.4	4336.5	1076
4399.9	1076.5	4599.9	1076.8	4655	1077.8	4800	1078.5		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2978.8	.02	3039.6	.13	4655	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3370	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1077.99	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.029	0.130
0.130				
W.S. Elev (ft)	1077.98	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	95.47	72.79
1288.89				
E.G. Slope (ft/ft)	0.002765	Area (sq ft)	95.47	72.79
1288.89				
Q Total (cfs)	979.54	Flow (cfs)	141.18	22.30
816.05				
Top Width (ft)	1781.30	Top Width (ft)	308.56	200.00
1272.73				
Vel Total (ft/s)	0.67	Avg. Vel. (ft/s)	1.48	0.31
0.63				
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)	0.31	0.36
1.01				
Conv. Total (cfs)	18628.1	Conv. (cfs)	2684.9	424.1
15519.1				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	308.59	200.00
1272.87				
Min Ch El (ft)	1077.50	Shear (lb/sq ft)	0.05	0.06
0.17				
Alpha	1.44	Stream Power (lb/ft s)	0.08	0.02
0.11				
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	329.20	32.95
132.57				
C & E Loss (ft)	0.00	Cum SA (acres)	214.53	32.30
152.87				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.61

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1078.2	1137.9	1078.5	1185.1	1077.3	1272.6	1077.3	1400	1077.9
1571.4	1077.9	1583.2	1077.2	1600	1077.2	1626	1077.3	1800	1077.1
2000	1077.2	2200	1077	2279.2	1076.6	2400	1076.9	2599.9	1076.7
2799.9	1076.6	2929.5	1075.8	2975.7	1076	2999.9	1076.1	3020	1076.1
3199.9	1076.2	3300	1076	3399.9	1075.3	3445.4	1075.2	3576.3	1076
3599.9	1076.7	3611.4	1077.1	3799.9	1077.5	3999.9	1077	4199.9	1076.9
4232	1076.6	4266.3	1075	4324.6	1075.1	4399.9	1075.6	4424.6	1075.8
4520	1076	4650	1078	4700	1079				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2929.5	.02	3020	.5	3999.9	.04

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3020	3300	490	490	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1077.02	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.040	0.500
0.082				
W.S. Elev (ft)	1077.01	Reach Len. (ft)	490.00	490.00
470.00				
Crit W.S. (ft)		Flow Area (sq ft)	357.44	245.00
887.39				
E.G. Slope (ft/ft)	0.001440	Area (sq ft)	357.44	245.00
887.39				
Q Total (cfs)	979.54	Flow (cfs)	322.97	25.28
631.29				
Top Width (ft)	2004.20	Top Width (ft)	827.08	280.00
897.12				
Vel Total (ft/s)	0.66	Avg. Vel. (ft/s)	0.90	0.10
0.71				
Max Chl Dpth (ft)	2.01	Hydr. Depth (ft)	0.43	0.87
0.99				
Conv. Total (cfs)	25808.9	Conv. (cfs)	8509.5	666.1
16633.3				
Length Wtd. (ft)	474.50	Wetted Per. (ft)	827.09	280.00
897.19				
Min Ch El (ft)	1076.00	Shear (lb/sq ft)	0.04	0.08
0.09				
Alpha	1.38	Stream Power (lb/ft s)	0.04	0.01
0.06				
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	326.60	31.13
120.08				
C & E Loss (ft)	0.01	Cum SA (acres)	208.01	29.55
140.42				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.52

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1077.7	1132.4	1076.4	1178.7	1076.9	1400	1076.8	1600	1076.7
1800	1075.8	1804.7	1075.7	1843.1	1075.9	1878.3	1077.9	2000	1078.3
2200	1077.3	2400	1076	2463.8	1075.9	2474	1075.4	2513	1075.2
2541.2	1075.8	2599.9	1075.9	2750	1076	2799.9	1076.1	2940	1075.4
2999.9	1075.5	3199.9	1075.4	3399.9	1075.8	3599.9	1076	3698.2	1076.3
3781.6	1075.7	3799.9	1074.4	3801.8	1074.3	3819.4	1074	3871.2	1074.4
3893.8	1075	3999.9	1075.2	4013.7	1075.5	4035.2	1076.4	4199.9	1076.6
4378.5	1077								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1843.1	.5	2400	.035	2940	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2750	2999.9	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4035.5	4378.5	1076.4

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1075.89	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.10	Wt. n-Val.	0.035	0.032
0.030				
W.S. Elev (ft)	1075.79	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1075.64	Flow Area (sq ft)	30.01	35.88
340.37				
E.G. Slope (ft/ft)	0.004515	Area (sq ft)	30.01	35.88
340.37				
Q Total (cfs)	979.54	Flow (cfs)	44.07	48.17
887.30				
Top Width (ft)	883.14	Top Width (ft)	96.84	138.38
647.92				
Vel Total (ft/s)	2.41	Avg. Vel. (ft/s)	1.47	1.34
2.61				
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)	0.31	0.26
0.53				

Conv. Total (cfs)	14577.7	Conv. (cfs)	655.9	716.9 13204.9
Length Wtd. (ft)	500.00	Wetted Per. (ft)	96.86	138.38 647.99
Min Ch El (ft)	1075.40	Shear (lb/sq ft)	0.09	0.07 0.15
Alpha	1.09	Stream Power (lb/ft s)	0.13	0.10 0.39
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	324.42	29.55 113.46
C & E Loss (ft)	0.02	Cum SA (acres)	202.82	27.20 132.08

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.42

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1076.2	1063.1	1075.5	1103.6	1075.6	1400	1075.8	1600	1075.7
1741.6	1075.1	1775.3	1075.1	1800	1075.9	1803.5	1076	2000	1076.1
2200	1075.6	2400	1074.9	2409.9	1074.8	2452.1	1074.8	2487.3	1074.6
2599.9	1075.3	2799.9	1074.4	2999.9	1074.7	3079.2	1074.2	3105.6	1074.6
3130	1074.4	3199.9	1074.2	3399.9	1074.1	3599.9	1074	3755.6	1073.9
3799.9	1074	3818.4	1074.2	3846.7	1076.4	3872.9	1076.8	3883.9	1076.1
3898.8	1076.1	3949.7	1075.6	3999.9	1076				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1800	.5	2200	.02	2487.3	.06	2999.9	.02
3130	.03								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3130	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3999.9	3999.9	1076

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1074.97	Element	Left OB	Channel Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.052	0.020 0.030
W.S. Elev (ft)	1074.94	Reach Len. (ft)	500.00	500.00 500.00
Crit W.S. (ft)	1074.47	Flow Area (sq ft)	137.00	64.35

600.49				
E.G. Slope (ft/ft)	0.000956	Area (sq ft)	137.00	64.35
600.49				
Q Total (cfs)	979.54	Flow (cfs)	55.22	92.46
831.86				
Top Width (ft)	1304.05	Top Width (ft)	475.98	130.10
697.97				
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	0.40	1.44
1.39				
Max Chl Dpth (ft)	1.04	Hydr. Depth (ft)	0.29	0.49
0.86				
Conv. Total (cfs)	31680.3	Conv. (cfs)	1785.9	2990.4
26904.0				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	475.98	130.11
698.00				
Min Ch El (ft)	1074.20	Shear (lb/sq ft)	0.02	0.03
0.05				
Alpha	1.23	Stream Power (lb/ft s)	0.01	0.04
0.07				
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	323.47	28.97
108.06				
C & E Loss (ft)	0.00	Cum SA (acres)	199.53	25.65
124.36				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.33

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1075.7	1200	1075.8	1400	1075.6	1665	1074.9	1800	1075
2000	1075.2	2130	1074	2341.6	1073.8	2375.4	1073.8	2400	1074.2
2599.9	1073.9	2799.9	1073.8	2999.9	1073.9	3050	1073.6	3175	1073.4
3399	1073.3	3599.9	1073.3	3665.9	1073.5	3719.1	1073.8	3736.3	1075.3
3753.5	1075	3758.3	1075.8	3778	1075.8	3786.7	1074.6	4070	1075.5

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2341.6	.06	3050	.02	3175	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3050	3175	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3778	4070	1075.8

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1074.40	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.069	0.020

0.060				
W.S. Elev (ft)	1074.37	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1073.87	Flow Area (sq ft)	436.02	108.46
546.33				
E.G. Slope (ft/ft)	0.001379	Area (sq ft)	436.02	108.46
546.33				
Q Total (cfs)	979.54	Flow (cfs)	207.53	272.21
499.80				
Top Width (ft)	1635.44	Top Width (ft)	959.83	125.00
550.61				
Vel Total (ft/s)	0.90	Avg. Vel. (ft/s)	0.48	2.51
0.91				
Max Chl Dpth (ft)	1.07	Hydr. Depth (ft)	0.45	0.87
0.99				
Conv. Total (cfs)	26378.7	Conv. (cfs)	5588.8	7330.6
13459.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	959.84	125.00
550.63				
Min Ch El (ft)	1073.40	Shear (lb/sq ft)	0.04	0.07
0.09				
Alpha	2.76	Stream Power (lb/ft s)	0.02	0.19
0.08				
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	320.18	27.98
101.48				
C & E Loss (ft)	0.00	Cum SA (acres)	191.29	24.19
117.19				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.23

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.8	1200	1075.1	1400	1075	1512.1	1074.2	1537.5	1074.3
1600	1074.6	1800	1074.6	1860.5	1074.3	2000	1074.7	2001.1	1074.7
2018	1074.4	2200	1075	2343.1	1073.5	2376.4	1073.6	2400	1073.7
2599.9	1073.3	2751	1072.9	2799.9	1073.4	2999.9	1073.5	3059	1073
3092.2	1072.6	3129.2	1072.6	3175	1073	3399.9	1072.8	3469.2	1072.2
3499.4	1072.2	3599.9	1072.7	3799.9	1072.9	3999.9	1074		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	3059	.02	3175	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3059	3175	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3999.9	3999.9	1074

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1073.82	Element	Left OB	Channel
Right OB				

Vel Head (ft)	0.03	Wt. n-Val.	0.060	0.020
0.060				
W.S. Elev (ft)	1073.78	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1073.21	Flow Area (sq ft)	303.05	121.35
736.24				
E.G. Slope (ft/ft)	0.001006	Area (sq ft)	303.05	121.35
736.24				
Q Total (cfs)	979.54	Flow (cfs)	130.93	294.68
553.93				
Top Width (ft)	1644.16	Top Width (ft)	742.84	116.00
785.33				
Vel Total (ft/s)	0.84	Avg. Vel. (ft/s)	0.43	2.43
0.75				
Max Chl Dpth (ft)	1.58	Hydr. Depth (ft)	0.41	1.05
0.94				
Conv. Total (cfs)	30884.9	Conv. (cfs)	4128.4	9291.3
17465.3				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	742.84	116.00
785.33				
Min Ch El (ft)	1072.60	Shear (lb/sq ft)	0.03	0.07
0.06				
Alpha	2.97	Stream Power (lb/ft s)	0.01	0.16
0.04				
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	315.94	26.66
94.11				
C & E Loss (ft)	0.01	Cum SA (acres)	181.52	22.81
109.52				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.14

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.8	1200	1074.6	1400	1074.7	1649	1074.6	1657.9	1073.8
1695.2	1073.6	1800	1073.7	1856.2	1073.5	1876	1073.9	1903.1	1073.6
2000	1073.6	2200	1073.7	2317.7	1072.8	2400	1073.1	2599.9	1073
2799.9	1072.5	2851.8	1072.5	2860.7	1071.9	2866.2	1072.4	2999.9	1072.5
3072.5	1072	3110.2	1071.8	3130	1072	3199.9	1072.2	3399.9	1072.5
3599.9	1072.1	3627.7	1072.5	3724.6	1073.5	3799.9	1072.9	3900	1073
3999.9	1072	4115	1071.5	4740	1072				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1657.9	.03	1876	.5	2200	.03	2999.9	.02
3130	.03	3799.9	.13						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3130	490	480	450	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3724.6	4740	1073.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1072.92	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.11	Wt. n-Val.	0.030	0.020
0.030				
W.S. Elev (ft)	1072.81	Reach Len. (ft)	490.00	480.00
450.00				
Crit W.S. (ft)	1072.71	Flow Area (sq ft)	91.46	92.56
260.76				
E.G. Slope (ft/ft)	0.003989	Area (sq ft)	91.46	92.56
260.76				
Q Total (cfs)	979.54	Flow (cfs)	123.41	346.11
510.02				
Top Width (ft)	982.95	Top Width (ft)	325.43	130.10
527.43				
Vel Total (ft/s)	2.20	Avg. Vel. (ft/s)	1.35	3.74
1.96				
Max Chl Dpth (ft)	1.01	Hydr. Depth (ft)	0.28	0.71
0.49				
Conv. Total (cfs)	15510.0	Conv. (cfs)	1954.1	5480.2
8075.7				
Length Wtd. (ft)	463.28	Wetted Per. (ft)	325.47	130.10
527.43				
Min Ch El (ft)	1071.80	Shear (lb/sq ft)	0.07	0.18
0.12				
Alpha	1.48	Stream Power (lb/ft s)	0.09	0.66
0.24				
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	313.67	25.43
88.39				
C & E Loss (ft)	0.00	Cum SA (acres)	175.39	21.40
101.99				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.05

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074	1200	1073.6	1400	1073.3	1789	1073.4	1800	1073.4
1842.1	1073.2	2000	1072.7	2156.86	1072.1	2166.64	1072.15	2200	1071.9
2210.09	1071.9	2210.73	1071.9	2217.12	1071.9	2222.11	1071.9	2222.12	1073.9
2236.21	1073.9	2236.22	1071.9	2400	1071.5	2472.43	1071.58	2473.05	1071.91
2497.85	1071.5	2502.86	1071.46	2527.79	1070.83	2528.39	1070.29	2529.62	1070.4
2545.84	1070.81	2561.71	1070.25	2562.93	1070.09	2563.39	1070.58	2592.84	1069.8

2595.84	1070	2595.85	1073	2596.51	1073	2596.52	1070	2598.94	1071.97
2750	1071.5	2999.9	1071.3	3032	1070.85	3032.01	1073.85	3032.34	1073.85
3032.34	1070	3039.65	1071.31	3054.57	1071.2	3076.36	1071	3078.27	1070.4
3081.92	1070.49	3094.1	1070.5	3150.72	1070.58	3183.33	1070.98	3183.83	1071.31
3199.9	1071.5	3271.56	1072	3324.9	1071.5	3364.27	1072	3399.9	1071.5
3405.55	1072	3439.75	1071.7	3599.9	1071.7	3664.06	1083.1	3812.76	1083.1
3838.6	1071.1	3839.1	1070.77	3869.46	1070.77	3869.97	1071.1	3874	1071.1
3877.88	1071.8	3990.25	1072	3999.9	1072.6	4009.6	1072.4		

Manning's n Values num= 18

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.5	2156.86	.02	2200	.016	2210.73	.013	2222.11	.015
2236.22	.016	2472.43	.013	2545.84	.016	2563.39	.013	2595.84	.015
2598.94	.016	3032	.015	3032.34	.02	3039.65	.013	3081.92	.016
3183.83	.016	3664.06	.015	3877.88	.016				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2527.79	2750	560	500	480	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	1071.75	Element			
Vel Head (ft)	0.16	Wt. n-Val.	0.013	0.014	0.016
W.S. Elev (ft)	1071.59	Reach Len. (ft)	560.00	500.00	480.00
Crit W.S. (ft)		Flow Area (sq ft)	16.73	86.12	223.30
E.G. Slope (ft/ft)	0.001738	Area (sq ft)	16.73	86.12	223.30
Q Total (cfs)	1004.54	Flow (cfs)	29.52	328.53	646.49
Top Width (ft)	765.63	Top Width (ft)	143.22	97.95	524.46
Vel Total (ft/s)	3.08	Avg. Vel. (ft/s)	1.76	3.81	2.90
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)	0.12	0.88	0.43
Conv. Total (cfs)	24092.9	Conv. (cfs)	707.9	7879.5	15505.4
Length Wtd. (ft)	499.11	Wetted Per. (ft)	143.24	102.16	527.44
Min Ch El (ft)	1069.80	Shear (lb/sq ft)	0.01	0.09	0.05
Alpha	1.08	Stream Power (lb/ft s)	0.02	0.35	0.13
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	313.06	24.45	85.89
C & E Loss (ft)	0.04	Cum SA (acres)	172.75	20.14	96.56

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.95

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW PATH OF CAVE CREEK WASH

Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1073.1	1200	1072.8	1400	1072	1800	1072.3	1939.2	1072
1992.7	1069.7	2000	1069.8	2179.3	1070	2200	1070.7	2225	1070.8
2385.2	1070.2	2400	1070.2	2599.9	1070.6	2799.9	1070.4	2999.9	1070.3
3199.9	1070.6	3323.1	1070.8	3337.6	1070.5	3375.9	1070.5	3399.9	1070.7
3445.8	1070.8	3599.9	1071.2	3765.7	1072				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1400	.5	1939.2	.035	2999.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2225	2400	510	500	470	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3765.7	3765.7	1072

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1071.23	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.035	0.035
0.041				
W.S. Elev (ft)	1071.21	Reach Len. (ft)	510.00	500.00
470.00				
Crit W.S. (ft)	1070.67	Flow Area (sq ft)	302.13	129.20
797.66				
E.G. Slope (ft/ft)	0.000600	Area (sq ft)	302.13	129.20
797.66				
Q Total (cfs)	1004.54	Flow (cfs)	340.75	109.75
554.04				
Top Width (ft)	1645.07	Top Width (ft)	267.49	175.00
1202.58				
Vel Total (ft/s)	0.82	Avg. Vel. (ft/s)	1.13	0.85
0.69				
Max Chl Dpth (ft)	1.51	Hydr. Depth (ft)	1.13	0.74
0.66				
Conv. Total (cfs)	41007.7	Conv. (cfs)	13910.2	4480.4
22617.1				
Length Wtd. (ft)	494.13	Wetted Per. (ft)	267.54	175.00
1202.59				
Min Ch El (ft)	1070.20	Shear (lb/sq ft)	0.04	0.03
0.02				
Alpha	1.16	Stream Power (lb/ft s)	0.05	0.02
0.02				
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	311.01	23.21
80.27				
C & E Loss (ft)	0.00	Cum SA (acres)	170.11	18.57
87.04				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.86

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1072.4	1200	1072.5	1295.5	1072.1	1397.4	1070.2	1400	1070.4
1600	1070.6	1800	1069.4	2000	1069.8	2083.5	1069.9	2117.1	1069.3
2168.3	1069.5	2187.8	1070.6	2260	1070.6	2368.8	1069.3	2390	1070
2450	1070	2940	1070.5	3540	1070.5	3680	1072		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	2000	.035	2260	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2000	2260	540	500	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1070.79	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.035	0.035
0.130				
W.S. Elev (ft)	1070.77	Reach Len. (ft)	540.00	500.00
490.00				
Crit W.S. (ft)		Flow Area (sq ft)	449.47	211.58
574.29				
E.G. Slope (ft/ft)	0.001403	Area (sq ft)	449.47	211.58
574.29				
Q Total (cfs)	1004.54	Flow (cfs)	568.98	293.28
142.28				
Top Width (ft)	2197.80	Top Width (ft)	632.96	260.00
1304.84				
Vel Total (ft/s)	0.81	Avg. Vel. (ft/s)	1.27	1.39
0.25				
Max Chl Dpth (ft)	1.47	Hydr. Depth (ft)	0.71	0.81
0.44				
Conv. Total (cfs)	26814.5	Conv. (cfs)	15187.9	7828.5
3798.0				
Length Wtd. (ft)	526.65	Wetted Per. (ft)	632.98	260.04
1304.86				
Min Ch El (ft)	1069.30	Shear (lb/sq ft)	0.06	0.07
0.04				
Alpha	2.23	Stream Power (lb/ft s)	0.08	0.10
0.01				
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	306.61	21.26
72.87				
C & E Loss (ft)	0.00	Cum SA (acres)	164.84	16.08
73.51				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.76

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1070.5	1200	1070	1400	1070	1800	1070	1847.1	1068.4
2000	1068.3	2200	1068.5	2400	1068.5	2599.9	1068.9	2740	1069.5
3040	1070	3300	1070.5	3820	1070	4600	1070.5	4920	1071

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.08	2400	.08	2599.9	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2400	2599.9	490	500	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1069.49	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.080	0.080
0.080				
W.S. Elev (ft)	1069.46	Reach Len. (ft)	490.00	500.00
470.00				
Crit W.S. (ft)		Flow Area (sq ft)	591.51	152.35
36.89				
E.G. Slope (ft/ft)	0.005350	Area (sq ft)	591.51	152.35
36.89				
Q Total (cfs)	1004.54	Flow (cfs)	810.33	172.70
21.51				
Top Width (ft)	915.33	Top Width (ft)	584.17	199.90
131.26				
Vel Total (ft/s)	1.29	Avg. Vel. (ft/s)	1.37	1.13
0.58				
Max Chl Dpth (ft)	1.16	Hydr. Depth (ft)	1.01	0.76
0.28				
Conv. Total (cfs)	13733.4	Conv. (cfs)	11078.2	2361.1
294.0				
Length Wtd. (ft)	489.66	Wetted Per. (ft)	584.19	199.90
131.26				
Min Ch El (ft)	1068.50	Shear (lb/sq ft)	0.34	0.25
0.09				
Alpha	1.05	Stream Power (lb/ft s)	0.46	0.29
0.05				
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	300.16	19.17
69.43				
C & E Loss (ft)	0.01	Cum SA (acres)	157.29	13.44
65.44				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.67

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1069.9	1200	1067.7	1400	1067.2	1800	1067.4	2050	1067.3
2280	1068.1	2400	1067.6	2599.9	1068.6	2799.9	1068	2999.9	1068.3
3199.9	1069.1	3440	1070	3710	1070.5	3960	1070	4040	1069.5
4140	1070	4500	1070						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.08	2050	.08	2280	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2050	2280	530	500	520	.1 .3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1068.76	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.080	0.080
0.080				
W.S. Elev (ft)	1068.76	Reach Len. (ft)	530.00	500.00
520.00				
Crit W.S. (ft)		Flow Area (sq ft)	1245.66	242.84
478.13				
E.G. Slope (ft/ft)	0.000677	Area (sq ft)	1245.66	242.84
478.13				
Q Total (cfs)	1004.54	Flow (cfs)	723.33	121.71
159.50				
Top Width (ft)	2009.85	Top Width (ft)	945.99	230.00
833.86				
Vel Total (ft/s)	0.51	Avg. Vel. (ft/s)	0.58	0.50
0.33				
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	1.32	1.06
0.57				
Conv. Total (cfs)	38602.3	Conv. (cfs)	27795.9	4677.0
6129.4				
Length Wtd. (ft)	523.38	Wetted Per. (ft)	945.99	230.00
833.87				
Min Ch El (ft)	1067.30	Shear (lb/sq ft)	0.06	0.04
0.02				
Alpha	1.11	Stream Power (lb/ft s)	0.03	0.02
0.01				
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	289.83	16.90
66.65				
C & E Loss (ft)	0.00	Cum SA (acres)	148.69	10.97
60.23				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.57

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1068.7	1200	1066.9	1356.8	1066.1	1406.1	1066.2	1600	1066.5
1700	1066.6	1830	1066.8	2000	1067	2200	1067.6	2271.1	1066.9
2322.9	1066.8	2400	1068.1	2599.9	1068.4	2710.1	1068.2	2735.5	1067.4
2772.9	1067.6	2799.9	1068	2852.5	1068.1	2916.1	1068.1	2999.9	1068.5
3102.4	1068.7	3600	1068.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1700	.08	1830	.13

Bank Sta: Left 1700 Right 1830 Lengths: Left Channel Right 450 500 580 Coeff Contr. .1 Expan. .3
Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1068.30	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.130	0.080
0.130				
W.S. Elev (ft)	1068.29	Reach Len. (ft)	450.00	500.00
580.00				
Crit W.S. (ft)		Flow Area (sq ft)	1045.95	207.15
749.01				
E.G. Slope (ft/ft)	0.001174	Area (sq ft)	1045.95	207.15
749.01				
Q Total (cfs)	1004.54	Flow (cfs)	559.67	179.83
265.03				
Top Width (ft)	1781.77	Top Width (ft)	654.83	130.00
996.94				
Vel Total (ft/s)	0.50	Avg. Vel. (ft/s)	0.54	0.87
0.35				
Max Chl Dpth (ft)	2.19	Hydr. Depth (ft)	1.60	1.59
0.75				
Conv. Total (cfs)	29320.9	Conv. (cfs)	16336.0	5249.0
7735.9				
Length Wtd. (ft)	512.21	Wetted Per. (ft)	654.84	130.00
996.97				
Min Ch El (ft)	1066.60	Shear (lb/sq ft)	0.12	0.12
0.06				
Alpha	1.30	Stream Power (lb/ft s)	0.06	0.10
0.02				
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	275.89	14.32
59.33				
C & E Loss (ft)	0.00	Cum SA (acres)	138.95	8.90
49.30				

Warning: Divided flow computed for this cross-section.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.53

INPUT
Description: Left Overbank Between Stations 5.48 and 5.57
Lateral weir position = Left overbank

Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1070	730	1068	860	1066.7	1560	1066.7	1660	1068

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1068.30	Weir Max Depth (ft)	
W.S. US. (ft)	1068.29	Weir Avg Depth (ft)	
E.G. DS (ft)	1064.36	Weir Submerg	0.00
W.S. DS (ft)	1064.23	Min El Weir Flow (ft)	1066.70
Q US (cfs)	1004.54	Wr Top Wdth (ft)	
Q Leaving Total (cfs)	0.00	Total Gate Flow (cfs)	
Q DS (cfs)	1500.11	Gate Group Q (cfs)	
Perc Q Leaving	0.00	Gate Open Ht (ft)	
Q Weir (cfs)	0.00	Gate #Open	
Wr Flw Area (sq ft)		Gate Area (sq ft)	
Weir Sta US (ft)		Gate Submerg	
Weir Sta DS (ft)		Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.48

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY. IN THIS MODEL IT IS ASSUMED THAT
THE SOUTHER PACIFIC RAILROAD DOES NOT FUNCTION AS A LEVEE AND HAS
FAILED ALLOWING FLOW TO FOLLOW ITS NATURAL COURSE.

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
3203.5	1068.6	3399.9	1069.3	3599.9	1068.5	3799.9	1067.6	3999.9	1067.3
4199.9	1067.1	4399.9	1066.6	4599.9	1066.1	4710	1066.4	4799.9	1066.5
4850	1066.4	4899.6	1070.1	4999.9	1070.1	5070.2	1069.7	5088.8	1065.6
5117	1065.5	5123.1	1064.5	5134.6	1066.2	5199.9	1066.4	5399.9	1066.7
5454.2	1066.7	5505.7	1066.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
3203.5	.13	4710	.045	4850	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4710	4850	500	500	520	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1067.65	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.045
0.060				

W.S. Elev (ft)	1067.64	Reach Len. (ft)	500.00	500.00
520.00				
Crit W.S. (ft)	1066.74	Flow Area (sq ft)	694.00	166.41
530.65				
E.G. Slope (ft/ft)	0.001323	Area (sq ft)	694.00	166.41
530.65				
Q Total (cfs)	1004.54	Flow (cfs)	239.33	224.28
540.93				
Top Width (ft)	1501.45	Top Width (ft)	918.70	140.00
442.75				
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.34	1.35
1.02				
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)	0.76	1.19
1.20				
Conv. Total (cfs)	27616.9	Conv. (cfs)	6579.7	6166.0
14871.2				
Length Wtd. (ft)	511.72	Wetted Per. (ft)	918.70	140.00
444.37				
Min Ch El (ft)	1066.40	Shear (lb/sq ft)	0.06	0.10
0.10				
Alpha	1.91	Stream Power (lb/ft s)	0.02	0.13
0.10				
Frctn Loss (ft)	1.32	Cum Volume (acre-ft)	266.90	12.17
50.81				
C & E Loss (ft)	0.01	Cum SA (acres)	130.82	7.35
39.72				

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.38

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1068.5	1037.9	1068.5	1065	1070.2	1161.3	1068.7	1200	1068.8
1371.6	1067.7	1400	1067.6	1423	1067.6	1600	1067.2	1800	1066
1991.9	1064.4	2000	1064.5	2051.5	1064.6	2200	1065.6	2400	1066
2599.9	1065.8	2742.2	1066.2	2799.9	1066.5	2999.9	1066.7	3199.9	1066.5
3302.6	1066.8	3353.6	1067.1	3399.9	1067.6	3599.9	1067.7	3799.9	1066.7
3999.9	1066.2	4199.9	1066	4399.9	1065.8	4599.9	1065.7	4799.9	1065.6
4999.9	1065.4	5130	1065.1	5199.9	1065.1	5240	1065	5399.9	1065
5599.8	1065.4	5656.3	1066.1	5698.7	1066.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5130	.045	5240	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
5130 5240 400 400 400 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
888 F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	3599.9	1067.7

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1066.33	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.045
0.045				
W.S. Elev (ft)	1066.26	Reach Len. (ft)	400.00	400.00
400.00				
Crit W.S. (ft)	1065.82	Flow Area (sq ft)	614.40	129.82
443.92				
E.G. Slope (ft/ft)	0.004495	Area (sq ft)	614.40	129.82
443.92				
Q Total (cfs)	1637.54	Flow (cfs)	309.13	320.98
1007.42				
Top Width (ft)	1692.65	Top Width (ft)	1154.91	110.00
427.75				
Vel Total (ft/s)	1.38	Avg. Vel. (ft/s)	0.50	2.47
2.27				
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.53	1.18
1.04				
Conv. Total (cfs)	24423.9	Conv. (cfs)	4610.7	4787.5
15025.7				
Length Wtd. (ft)	400.00	Wetted Per. (ft)	1154.91	110.00
427.75				
Min Ch El (ft)	1065.00	Shear (lb/sq ft)	0.15	0.33
0.29				
Alpha	2.32	Stream Power (lb/ft s)	0.08	0.82
0.66				
Frctn Loss (ft)	1.17	Cum Volume (acre-ft)	259.39	10.47
44.99				
C & E Loss (ft)	0.01	Cum SA (acres)	118.92	5.92
34.52				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.31

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1066.2	1200	1065.1	1400	1064.2	1800	1064.5	2000	1064.5
2117.1	1064.1	2122.4	1063.7	2160	1063.8	2200	1064.2	2400	1065
2599.9	1065.6	2725	1065.3	2781.3	1065.6	2799.9	1066.2	2999.9	1066.6
3199.9	1066.3	3399.9	1066.2	3599.9	1065.3	3799.9	1064.5	3999.9	1064.2
4199.9	1064.2	4399.9	1064.4	4599.9	1063.9	4670	1064	4770	1063.5

4799.9 1063.1 4999.9 1063.8 5106.3 1065.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	4670	.06	4770	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4670	4770	290	280	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2999.9	1066.6

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1065.15	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.060	0.060
0.060				
W.S. Elev (ft)	1065.13	Reach Len. (ft)	290.00	280.00
280.00				
Crit W.S. (ft)	1064.46	Flow Area (sq ft)	832.46	137.62
444.89				
E.G. Slope (ft/ft)	0.002061	Area (sq ft)	832.46	137.62
444.89				
Q Total (cfs)	1637.54	Flow (cfs)	813.76	191.42
632.36				
Top Width (ft)	1439.55	Top Width (ft)	1026.65	100.00
312.90				
Vel Total (ft/s)	1.16	Avg. Vel. (ft/s)	0.98	1.39
1.42				
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	0.81	1.38
1.42				
Conv. Total (cfs)	36074.1	Conv. (cfs)	17926.7	4216.8
13930.6				
Length Wtd. (ft)	284.94	Wetted Per. (ft)	1026.65	100.00
312.92				
Min Ch El (ft)	1063.50	Shear (lb/sq ft)	0.10	0.18
0.18				
Alpha	1.11	Stream Power (lb/ft s)	0.10	0.25
0.26				
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	252.75	9.25
40.91				
C & E Loss (ft)	0.01	Cum SA (acres)	108.90	4.95
31.12				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.25

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065	1200	1064.5	1400	1064.2	1800	1063.6	2000	1063.2
2200	1062.8	2400	1062.8	2599.9	1062.4	2799.9	1062.2	2999.9	1063

3199.9	1063.4	3399.9	1063.9	3599.9	1064.2	3799.9	1064.5	3999.9	1065
4199.9	1064.6	4399.9	1064	4599.9	1063.3	4799.9	1063.4	4999.9	1062.8
5199.9	1062.4	5350	1062.6	5399.9	1062.6	5430	1062.6	5550.8	1063
5799.8	1064.4	5894.3	1064.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5350	.025	5430	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
5350	5430	290	280	285	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	3999.9	1065

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1064.42	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.14	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1064.28	Reach Len. (ft)	290.00	280.00
285.00				
Crit W.S. (ft)	1063.79	Flow Area (sq ft)	1166.67	134.59
325.30				
E.G. Slope (ft/ft)	0.003140	Area (sq ft)	1166.67	134.59
325.30				
Q Total (cfs)	1637.54	Flow (cfs)	804.59	634.09
198.86				
Top Width (ft)	1473.09	Top Width (ft)	1044.22	80.00
348.87				
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.69	4.71
0.61				
Max Chl Dpth (ft)	1.88	Hydr. Depth (ft)	1.12	1.68
0.93				
Conv. Total (cfs)	29222.8	Conv. (cfs)	14358.3	11315.7
3548.8				
Length Wtd. (ft)	285.13	Wetted Per. (ft)	1044.22	80.00
348.87				
Min Ch El (ft)	1062.60	Shear (lb/sq ft)	0.22	0.33
0.18				
Alpha	8.76	Stream Power (lb/ft s)	0.15	1.55
0.11				
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	246.09	8.37
38.43				
C & E Loss (ft)	0.01	Cum SA (acres)	102.01	4.38
29.00				

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.23

INPUT
Description: Left Overbank Between Stations 5.20 and 5.25
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0

Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1064.4	80	1064	180	1063	280	1062.9

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1064.42	Weir Max Depth (ft)	0.78
W.S. US. (ft)	1064.28	Weir Avg Depth (ft)	0.50
E.G. DS (ft)	1063.61	Weir Submerg	0.00
W.S. DS (ft)	1063.51	Min El Weir Flow (ft)	1062.90
Q US (cfs)	1637.54	Wr Top Wdth (ft)	227.32
Q Leaving Total (cfs)	137.10	Total Gate Flow (cfs)	
Q DS (cfs)	1500.11	Gate Group Q (cfs)	
Perc Q Leaving	8.39	Gate Open Ht (ft)	
Q Weir (cfs)	137.10	Gate #Open	
Wr Flw Area (sq ft)	112.72	Gate Area (sq ft)	
Weir Sta US (ft)	52.68	Gate Submerg	
Weir Sta DS (ft)	280.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.2

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY
X3 CARD USED SO THAT
THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE
CREEK WASH

Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065.7	1200	1064.7	1376.5	1064.4	1400	1065.5	1430.6	1065.4
1439.3	1064.3	1600	1064.3	1800	1063.7	2000	1063.7	2074.4	1063.5
2086.6	1062.7	2157.5	1062.4	2200	1062.9	2400	1063	2599.9	1063.1
2799.9	1062.6	2816.3	1062.5	2852.2	1062.3	2999.9	1062.8	3199.9	1063.3
3399.9	1063.6	3407.4	1063.6	3415.5	1063.3	3478.8	1063.4	3599.9	1063.2
3799.9	1063.8	3999.9	1065.1	4170.9	1065.8	4180.6	1064.6	4199.9	1064.6
4399.9	1064	4599.9	1063.2	4739.6	1062.8	4799.9	1062.7	4999.9	1062.3
5199.9	1062.1	5399.9	1062	5500	1062	5599.8	1061.9	5799.8	1061.8
5806.4	1062	5839.8	1062.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5399.9	.025	5500	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
5399.9	5500	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	4170.9	1065.8

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1063.58	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.10	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1063.48	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1062.86	Flow Area (sq ft)	859.07	148.17
523.59				
E.G. Slope (ft/ft)	0.002648	Area (sq ft)	859.07	148.17
523.59				
Q Total (cfs)	1500.11	Flow (cfs)	501.06	588.65
410.40				
Top Width (ft)	1309.96	Top Width (ft)	870.06	100.10
339.80				
Vel Total (ft/s)	0.98	Avg. Vel. (ft/s)	0.58	3.97
0.78				
Max Chl Dpth (ft)	1.68	Hydr. Depth (ft)	0.99	1.48
1.54				
Conv. Total (cfs)	29149.7	Conv. (cfs)	9736.5	11438.5
7974.7				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	870.07	100.10
340.40				
Min Ch El (ft)	1062.00	Shear (lb/sq ft)	0.16	0.24
0.25				
Alpha	6.74	Stream Power (lb/ft s)	0.10	0.97
0.20				
Frctn Loss (ft)	1.85	Cum Volume (acre-ft)	239.35	7.46
35.66				
C & E Loss (ft)	0.01	Cum SA (acres)	95.64	3.80
26.74				

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.15

INPUT
Description: Left Overbank Between Stations 5.10 and 5.20
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1062.9	200	1062.5	300	1062	500	1061.9

Weir crest shape = Broad Crested

E.G. US. (ft)	1063.58	Weir Max Depth (ft)	0.58
W.S. US. (ft)	1063.48	Weir Avg Depth (ft)	0.31
E.G. DS (ft)	1061.73	Weir Submerg	0.00
W.S. DS (ft)	1061.56	Min El Weir Flow (ft)	1061.90
Q US (cfs)	1500.11	Wr Top Wdth (ft)	399.10
Q Leaving Total (cfs)	113.38	Total Gate Flow (cfs)	
Q DS (cfs)	1385.10	Gate Group Q (cfs)	
Perc Q Leaving	7.67	Gate Open Ht (ft)	
Q Weir (cfs)	113.38	Gate #Open	
Wr Flw Area (sq ft)	122.95	Gate Area (sq ft)	
Weir Sta US (ft)	0.00	Gate Submerg	
Weir Sta DS (ft)	399.10	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.1

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY
X3 CARD USED SO THAT
THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE
CREEK WASH

Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1063.5	1200	1063.1	1400	1062.3	1511	1061.5	1564.4	1062.2
1600	1062.2	1800	1062	2000	1062	2169.2	1061.8	2200	1061.9
2213.6	1061.9	2400	1061.5	2600	1061.4	2771.8	1062.2	2799.9	1062.2
2827.2	1062	2859.4	1063.2	2980.9	1062.8	2992	1061.4	2999.9	1061.4
3199.9	1061.2	3399.9	1060.9	3599.9	1061.1	3799.9	1061	3999.9	1061.2
4137.2	1060.7	4148.9	1061	4199.9	1061	4399.9	1060.9	4599.9	1060.5
4730	1060.9	4765	1060.3	4770	1060.3	4830	1060.3	4999.9	1060.4
5012.8	1060.5	5039.9	1061.9	5081	1061.7	5118.8	1060.4	5139.5	1060.5
5150	1061.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	4730	.025	4830	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4730	4830	200	200	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	2859.4	1063.2	5039.9	5150	1061.9

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1061.73	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.16	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1061.56	Reach Len. (ft)	200.00	200.00
200.00				
Crit W.S. (ft)	1061.46	Flow Area (sq ft)	994.36	115.87

231.52				
E.G. Slope (ft/ft)	0.005722	Area (sq ft)	994.36	115.87
231.52				
Q Total (cfs)	1385.10	Flow (cfs)	592.21	574.67
218.22				
Top Width (ft)	2042.69	Top Width (ft)	1739.30	100.00
203.39				
Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)	0.60	4.96
0.94				
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.57	1.16
1.14				
Conv. Total (cfs)	18310.8	Conv. (cfs)	7828.9	7597.0
2884.8				
Length Wtd. (ft)	200.00	Wetted Per. (ft)	1739.31	100.01
203.42				
Min Ch El (ft)	1060.30	Shear (lb/sq ft)	0.20	0.41
0.41				
Alpha	9.85	Stream Power (lb/ft s)	0.12	2.05
0.38				
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	228.71	5.95
31.32				
C & E Loss (ft)	0.04	Cum SA (acres)	80.66	2.65
23.62				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the
cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.08

INPUT
Description: Left Overbank Between Stations 5.07 and 5.10
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1061.9	100	1061.5	150	1060.6	200	1060.2

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1061.73	Weir Max Depth (ft)	0.85
W.S. US. (ft)	1061.56	Weir Avg Depth (ft)	0.53
E.G. DS (ft)	1061.07	Weir Submerg	0.00
W.S. DS (ft)	1061.05	Min El Weir Flow (ft)	1060.20
Q US (cfs)	1385.10	Wr Top Wdth (ft)	87.39
Q Leaving Total (cfs)	56.91	Total Gate Flow (cfs)	
Q DS (cfs)	1328.93	Gate Group Q (cfs)	

Perc Q Leaving	4.05	Gate Open Ht (ft)	
Q Weir (cfs)	56.91	Gate #Open	
Wr Flw Area (sq ft)	46.38	Gate Area (sq ft)	
Weir Sta US (ft)	112.61	Gate Submerg	
Weir Sta DS (ft)	200.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.07

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SECTION
X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1062.7	1073.2	1062	1200	1062.3	1600	1061.7	1800	1061.5
2000	1061.5	2200	1061.6	2332.5	1063.1	2400	1062	2600	1061
2799.9	1060.6	2999.9	1060.5	3199.9	1060.3	3399.9	1060.2	3599.9	1059.9
3681.8	1059.6	3799.9	1059.8	3999.9	1059.6	4199.9	1059.6	4225	1059.6
4290	1059.6	4599.9	1059.4	4694.3	1059.3	4716.3	1059.5	4736.7	1060.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	4199.9	.025	4225	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4199.9	4225	210	190	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2332.5	1063.1

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1061.07	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1061.05	Reach Len. (ft)	210.00	190.00
190.00				
Crit W.S. (ft)	1060.09	Flow Area (sq ft)	1461.89	36.33
794.50				
E.G. Slope (ft/ft)	0.001886	Area (sq ft)	1461.89	36.33
794.50				
Q Total (cfs)	1328.93	Flow (cfs)	680.67	120.00
528.26				
Top Width (ft)	2146.17	Top Width (ft)	1609.37	25.10
511.70				
Vel Total (ft/s)	0.58	Avg. Vel. (ft/s)	0.47	3.30
0.66				
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)	0.91	1.45
1.55				
Conv. Total (cfs)	30598.7	Conv. (cfs)	15672.5	2762.9
12163.2				
Length Wtd. (ft)	195.12	Wetted Per. (ft)	1609.37	25.10
512.56				

Min Ch El (ft)	1059.60	Shear (lb/sq ft)	0.11	0.17
0.18				
Alpha	3.79	Stream Power (lb/ft s)	0.05	0.56
0.12				
Frctn Loss (ft)	1.25	Cum Volume (acre-ft)	223.07	5.60
28.97				
C & E Loss (ft)	0.01	Cum SA (acres)	72.98	2.36
21.98				

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.03

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1061.7	1008.8	1061.4	1200	1062.2	1519.2	1061.3	1552.3	1061.3
1568.9	1061.8	1600	1061.9	1704.4	1062.1	1722.7	1064.3	1800	1062.8
2000	1062.5	2112.9	1062.4	2119.7	1062.1	2186.3	1061.5	2200	1061.6
2400	1061.3	2600	1060.6	2799.9	1060.2	2994.5	1059.8	2999.9	1060.3
3004.6	1060.4	3140	1060	3240	1059.8	3399.9	1059.4	3509.8	1059.2
3599.9	1059.3	3799.9	1059.2	3999.9	1058.9	4199.9	1059.2	4399.9	1060.1
4548.3	1060.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3140	.025	3240	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3140	3240	270	280	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.79	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.17	Wt. n-Val.		
0.130				
W.S. Elev (ft)	1059.63	Reach Len. (ft)	270.00	270.00
280.00				
Crit W.S. (ft)	1059.59	Flow Area (sq ft)		
405.78				
E.G. Slope (ft/ft)	0.267842	Area (sq ft)		
405.78				
Q Total (cfs)	1328.93	Flow (cfs)		
1328.93				
Top Width (ft)	985.06	Top Width (ft)		
985.06				
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)		
3.27				
Max Chl Dpth (ft)	0.73	Hydr. Depth (ft)		

0.41				
Conv. Total (cfs)	2567.8	Conv. (cfs)		
2567.8				
Length Wtd. (ft)	275.09	Wetted Per. (ft)		
985.07				
Min Ch El (ft)	1059.80	Shear (lb/sq ft)		
6.89				
Alpha	1.00	Stream Power (lb/ft s)		
22.56				
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	219.55	5.52
26.35				
C & E Loss (ft)	0.05	Cum SA (acres)	69.10	2.31
18.72				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: There is no flow in the channel. Check that the channel stations are correctly coded. To
force flow into the channel, a levee or ineffective flow may have to be added or the
Manning's n of the overbank could be increased.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.98

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	1060	1200	1058.7	1400	1058.3	1497.3	1060.2	1600	1059.3
1800	1059.3	1841.2	1059.3	1867.3	1058	2000	1057.3	2200	1057.5
2400	1056.7	2450.8	1056.5	2600	1057.1	2800	1057.2	2999.9	1057.3
3199.9	1057.6	3399.9	1057.8	3599.9	1058.5	3799.9	1059.1	3999.9	1059.7
4199.9	1058.9	4237.8	1058.3	4249.7	1059.1	4399.9	1059.2	4599.9	1059.3
4760	1058.5	4799.9	1058.5	4850	1058.5	4999.9	1058.6	5213	1060

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.13	4760	.025	4850	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4760	4850	200	175	170	.1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.24	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1059.24	Reach Len. (ft)	200.00	175.00
170.00				
Crit W.S. (ft)		Flow Area (sq ft)	3725.01	66.72
134.94				
E.G. Slope (ft/ft)	0.000496	Area (sq ft)	3725.01	66.72
134.94				
Q Total (cfs)	1328.93	Flow (cfs)	1233.65	72.35
22.93				
Top Width (ft)	3564.81	Top Width (ft)	3227.29	90.00

247.52					
Vel Total (ft/s)	0.34	Avg. Vel. (ft/s)	0.33	1.08	0.17
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	1.15	0.74	0.55
Conv. Total (cfs)	59662.4	Conv. (cfs)	55384.9	3248.3	1029.3
Length Wtd. (ft)	196.58	Wetted Per. (ft)	3227.38	90.00	247.52
Min Ch El (ft)	1058.50	Shear (lb/sq ft)	0.04	0.02	0.02
Alpha	1.45	Stream Power (lb/ft s)	0.01	0.02	0.00
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	208.01	5.31	24.61
C & E Loss (ft)	0.00	Cum SA (acres)	59.09	2.03	14.76

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.95

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1078.3	1006.6	1066.9	1031.4	1065.2	1081.3	1059.6	1088.5	1059.1
1129	1058.8	1200	1057.8	1400	1057.7	1600	1056.5	1677.6	1056.8
1701.1	1057.3	1800	1056.9	1848.2	1056.8	1869.9	1056.3	2000	1056.3
2142.3	1056.2	2156.6	1057.2	2177.1	1056.2	2200	1056.3	2400	1055.6
2600	1055.4	2800	1055.7	2875.5	1055.8	2914.1	1055.9	2926.7	1052.4
2933.1	1054.9	2999.9	1055.3	3199.9	1055.5	3399.9	1056.1	3580	1056.8
3599.9	1056.8	3650	1056.8	3799.9	1057.3	3999.9	1058.7	4199.9	1058.5
4399.9	1058.5	4599.9	1057.7	4799.9	1058.2	4999.9	1058.3	5018.8	1059.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3580	.025	3650	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3580	3650	315	315	250	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1059.23	Reach Len. (ft)	315.00	315.00	250.00
Crit W.S. (ft)		Flow Area (sq ft)	7245.06	169.80	1522.23
E.G. Slope (ft/ft)	0.000042	Area (sq ft)	7245.06	169.80	1522.23
Q Total (cfs)	1328.93	Flow (cfs)	1089.92	117.80	

121.21				
Top Width (ft)	3924.15	Top Width (ft)	2493.31	70.00
1360.84				
Vel Total (ft/s)	0.15	Avg. Vel. (ft/s)	0.15	0.69
0.08				
Max Chl Dpth (ft)	6.83	Hydr. Depth (ft)	2.91	2.43
1.12				
Conv. Total (cfs)	205553.8	Conv. (cfs)	168584.1	18221.0
18748.7				
Length Wtd. (ft)	310.97	Wetted Per. (ft)	2494.35	70.00
1360.88				
Min Ch El (ft)	1056.80	Shear (lb/sq ft)	0.01	0.01
0.00				
Alpha	2.80	Stream Power (lb/ft s)	0.00	0.00
0.00				
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	182.82	4.84
21.38				
C & E Loss (ft)	0.00	Cum SA (acres)	45.96	1.71
11.62				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.89

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065.5	1040.8	1069.9	1109.1	1066.7	1172.3	1060.3	1178.6	1056.5
1200	1056.5	1400	1055.6	1460.9	1055.6	1476.9	1054.9	1600	1055.5
1771	1055.2	1787.3	1054.1	1800	1054.2	2000	1054.2	2200	1053.7
2400	1053.8	2461.4	1053.8	2470.5	1054.7	2600	1054.5	2684.7	1054.2
2800	1055.1	2999.9	1055.2	3199.9	1055.7	3399.9	1057.2	3599.9	1057.3
3799.9	1056.8	3900	1057	3999.9	1057.2	4199.9	1057.5	4290.2	1059.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3799.9	.025	3900	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3799.9	3900	570	500	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.22	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1059.22	Reach Len. (ft)	570.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	10289.66	232.02
648.61				
E.G. Slope (ft/ft)	0.000017	Area (sq ft)	10289.66	232.02
648.61				
Q Total (cfs)	1328.93	Flow (cfs)	1187.32	98.12
43.49				

Top Width (ft)	3099.68	Top Width (ft)	2625.81	100.10 373.77
Vel Total (ft/s)	0.12	Avg. Vel. (ft/s)	0.12	0.42 0.07
Max Chl Dpth (ft)	5.52	Hydr. Depth (ft)	3.92	2.32 1.74
Conv. Total (cfs)	327127.7	Conv. (cfs)	292269.1	24153.0 10705.6
Length Wtd. (ft)	557.08	Wetted Per. (ft)	2626.68	100.10 373.79
Min Ch El (ft)	1056.80	Shear (lb/sq ft)	0.00	0.00 0.00
Alpha	1.78	Stream Power (lb/ft s)	0.00	0.00 0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	119.42	3.38 15.15
C & E Loss (ft)	0.00	Cum SA (acres)	27.45	1.09 6.64

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.79

INPUT
Description: THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
FLOODWAY MODEL, CAVE.FLDWY.2. THIS MODEL UTILIZES THE SPLIT FLOW
AND X3 CARDS. THE X3 CARDS ARE USED TO SET CROSS-SECTION "BOUNDARIES"
AT TOPOGRAPICALLY HIGH GROUND THAT CONTAINS THE Q100-YR WITHIN THE
CROSS-SECTION.
CROSS-SECTION EXTENDED
MESSAGES OCCUR AT LOCATIONS OF WEIR FLOW.

Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1077.7	1042.8	1085.6	1120.1	1083.6	1200	1055.7	1260.7	1054.4
1305.3	1054.9	1400	1052	1421	1051.4	1447.4	1054.1	1501.2	1054.7
1600	1054.3	1800	1053.7	2000	1053.6	2200	1054	2400	1054.7
2600	1054.5	2760	1054.4	2789.3	1055.4	2800	1055.4	2850	1055.4
2999.9	1055.8	3199.9	1056.1	3307.6	1056.5	3399.9	1057.8	3599.9	1057.9
3633.4	1059.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2760	.025	2850	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2760	2850	0	0	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.21	Element	Left OB	Channel Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025 0.130
W.S. Elev (ft)	1059.21	Reach Len. (ft)		
Crit W.S. (ft)	1054.09	Flow Area (sq ft)	7962.94	357.54

1990.75 E.G. Slope (ft/ft)	0.000013	Area (sq ft)	7962.94	357.54
1990.75 Q Total (cfs)	1328.93	Flow (cfs)	979.89	194.45
154.59 Top Width (ft)	2443.45	Top Width (ft)	1570.05	90.00
783.40 Vel Total (ft/s)	0.13	Avg. Vel. (ft/s)	0.12	0.54
0.08 Max Chl Dpth (ft)	7.81	Hydr. Depth (ft)	5.07	3.97
2.54 Conv. Total (cfs)	364255.9	Conv. (cfs)	268585.2	53299.3
42371.4 Length Wtd. (ft)		Wetted Per. (ft)	1570.86	90.02
783.45 Min Ch El (ft)	1054.40	Shear (lb/sq ft)	0.00	0.00
0.00 Alpha	3.32	Stream Power (lb/ft s)	0.00	0.00
0.00 Frctn Loss (ft)		Cum Volume (acre-ft)		
C & E Loss (ft)		Cum SA (acres)		

SUMMARY OF MANNING'S N VALUES

River:RIVER-1

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10	n11	n12	n13	n14	n15	n16	n17	n18
Reach-1	9.61	.16	.16	.16															
Reach-1	9.55	.09	.16	.16															
Reach-1	9.45	.16	.09	.16	.165														
Reach-1	9.36	.16	.16	.16															
Reach-1	9.27	.13	.02	.13															
Reach-1	9.17	.13	.035	.13															
Reach-1	9.08	.13	.02	.13															
Reach-1	8.98	.13	.02	.13															

Reach-1	8.89	.13	.02	.13		
Reach-1	8.79	.13	.02	.13		
Reach-1	8.7	.13	.02	.13		
Reach-1	8.61	.13	.02	.13		
Reach-1	8.51	.02	.03	.13	.02	.13
Reach-1	8.42	.035	.13	.02	.13	
Reach-1	8.32	.02	.13	.02	.13	
Reach-1	8.23	.013	.13	.034	.035	
Reach-1	8.18	.13	.035	.13	.135	
Reach-1	8.08	.036	.034	.036	.035	.131
.13						
Reach-1	7.99	.035	.033	.034	.13	
Reach-1	7.89	.13	.02	.13	.035	.13
Reach-1	7.8	.13	.02	.13	.035	
Reach-1	7.71	.13	.02	.13	.035	
Reach-1	7.66	.13	.02	.13	.02	.13
Reach-1	7.57	.13	.02	.13	.02	.13
Reach-1	7.48	.13	.02	.13	.035	.5
.02	.1	.13				
Reach-1	7.38	.13	.02	.13	.02	.13
Reach-1	7.29	.13	.02	.13	.5	.035
.13						
Reach-1	7.2	.13	.02	.06		
Reach-1	7.11	.13	.02	.06		

Reach-1	7.06	Lat. Weir										
Reach-1	7.01	.13	.02	.06								
Reach-1	6.96	Lat. Weir										
Reach-1	6.94	.06	.02	.06								
Reach-1	6.91	Lat. Weir										
Reach-1	6.88	.13	.06	.02	.06							
Reach-1	6.8	.1	.02	.13								
Reach-1	6.7	.13	.02	.13	.06							
Reach-1	6.61	.13	.02	.5	.04							
Reach-1	6.52	.13	.5	.035	.03							
Reach-1	6.42	.13	.5	.02	.06	.02	.03					
Reach-1	6.33	.13	.06	.02	.06							
Reach-1	6.23	.06	.02	.06								
Reach-1	6.14	.13	.03	.5	.03	.02	.03	.13				
Reach-1	6.05	.5	.02	.016	.013	.015	.016	.013	.016	.013	.016	.015
.016	.013	.016	.013	.015	.016	.015	.02	.013	.016	.016	.015	.016
Reach-1	5.95	.13	.5	.035	.06							
Reach-1	5.86	.035	.035	.13								
Reach-1	5.76	.08	.08	.08								
Reach-1	5.67	.08	.08	.08								
Reach-1	5.57	.13	.08	.13								
Reach-1	5.53	Lat. Weir										

Reach-1	5.48	.13	.045	.06
Reach-1	5.38	.13	.045	.045
Reach-1	5.31	.06	.06	.06
Reach-1	5.25	.13	.025	.13
Reach-1	5.23	Lat. Weir		
Reach-1	5.2	.13	.025	.13
Reach-1	5.15	Lat. Weir		
Reach-1	5.1	.13	.025	.13
Reach-1	5.08	Lat. Weir		
Reach-1	5.07	.13	.025	.13
Reach-1	5.03	.13	.025	.13
Reach-1	4.98	.13	.025	.13
Reach-1	4.95	.13	.025	.13
Reach-1	4.89	.13	.025	.13
Reach-1	4.79	.13	.025	.13

SUMMARY OF REACH LENGTHS

River: RIVER-1

Reach	River Sta.	Left	Channel	Right
Reach-1	9.61	360	360	360
Reach-1	9.55	500	500	500
Reach-1	9.45	470	470	500
Reach-1	9.36	500	500	500
Reach-1	9.27	500	500	500

Reach-1	9.17	500	520	500
Reach-1	9.08	500	500	500
Reach-1	8.98	500	500	500
Reach-1	8.89	500	500	500
Reach-1	8.79	500	500	500
Reach-1	8.7	500	500	500
Reach-1	8.61	490	490	490
Reach-1	8.51	500	500	500
Reach-1	8.42	490	490	490
Reach-1	8.32	500	500	500
Reach-1	8.23	280	270	270
Reach-1	8.18	520	500	490
Reach-1	8.08	550	500	610
Reach-1	7.99	470	500	570
Reach-1	7.89	500	500	500
Reach-1	7.8	490	490	490
Reach-1	7.71	220	220	220
Reach-1	7.66	480	480	480
Reach-1	7.57	500	500	500
Reach-1	7.48	500	500	500
Reach-1	7.38	490	490	490
Reach-1	7.29	490	500	500
Reach-1	7.2	450	470	470
Reach-1	7.11	500	530	500
Reach-1	7.06	Lat. Weir		
Reach-1	7.01	360	400	360
Reach-1	6.96	Lat. Weir		
Reach-1	6.94	360	360	360
Reach-1	6.91	Lat. Weir		
Reach-1	6.88	420	420	420
Reach-1	6.8	500	500	500
Reach-1	6.7	500	500	500
Reach-1	6.61	490	490	470
Reach-1	6.52	500	500	500
Reach-1	6.42	500	500	500
Reach-1	6.33	500	500	500
Reach-1	6.23	500	500	500
Reach-1	6.14	490	480	450
Reach-1	6.05	560	500	480
Reach-1	5.95	510	500	470
Reach-1	5.86	540	500	490
Reach-1	5.76	490	500	470
Reach-1	5.67	530	500	520
Reach-1	5.57	450	500	580
Reach-1	5.53	Lat. Weir		
Reach-1	5.48	500	500	520
Reach-1	5.38	400	400	400
Reach-1	5.31	290	280	280
Reach-1	5.25	290	280	285
Reach-1	5.23	Lat. Weir		
Reach-1	5.2	500	500	500
Reach-1	5.15	Lat. Weir		
Reach-1	5.1	200	200	200
Reach-1	5.08	Lat. Weir		
Reach-1	5.07	210	190	190
Reach-1	5.03	270	270	280
Reach-1	4.98	200	175	170
Reach-1	4.95	315	315	250
Reach-1	4.89	570	500	500
Reach-1	4.79	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: RIVER-1

Reach	River Sta.	Contr.	Expan.
Reach-1	9.61	.1	.3
Reach-1	9.55	.1	.3
Reach-1	9.45	.1	.3
Reach-1	9.36	.1	.3
Reach-1	9.27	.1	.3
Reach-1	9.17	.1	.3
Reach-1	9.08	.1	.3
Reach-1	8.98	.1	.3
Reach-1	8.89	.1	.3
Reach-1	8.79	.1	.3
Reach-1	8.7	.1	.3
Reach-1	8.61	.1	.3
Reach-1	8.51	.1	.3
Reach-1	8.42	.1	.3
Reach-1	8.32	.1	.3
Reach-1	8.23	.1	.3
Reach-1	8.18	.1	.3
Reach-1	8.08	.1	.3
Reach-1	7.99	.1	.3
Reach-1	7.89	.1	.3
Reach-1	7.8	.1	.3
Reach-1	7.71	.1	.3
Reach-1	7.66	.1	.3
Reach-1	7.57	.1	.3
Reach-1	7.48	.1	.3
Reach-1	7.38	.1	.3
Reach-1	7.29	.1	.3
Reach-1	7.2	.1	.3
Reach-1	7.11	.1	.3
Reach-1	7.06	Lat. Weir	
Reach-1	7.01	.1	.3
Reach-1	6.96	Lat. Weir	
Reach-1	6.94	.1	.3
Reach-1	6.91	Lat. Weir	
Reach-1	6.88	.1	.3
Reach-1	6.8	.1	.3
Reach-1	6.7	.1	.3
Reach-1	6.61	.1	.3
Reach-1	6.52	.1	.3
Reach-1	6.42	.1	.3
Reach-1	6.33	.1	.3
Reach-1	6.23	.1	.3
Reach-1	6.14	.1	.3
Reach-1	6.05	.1	.3
Reach-1	5.95	.1	.3
Reach-1	5.86	.1	.3
Reach-1	5.76	.1	.3
Reach-1	5.67	.1	.3
Reach-1	5.57	.1	.3
Reach-1	5.53	Lat. Weir	
Reach-1	5.48	.1	.3
Reach-1	5.38	.1	.3
Reach-1	5.31	.1	.3
Reach-1	5.25	.1	.3
Reach-1	5.23	Lat. Weir	
Reach-1	5.2	.1	.3

Reach-1	5.15	Lat. Weir	
Reach-1	5.1	.1	.3
Reach-1	5.08	Lat. Weir	
Reach-1	5.07	.1	.3
Reach-1	5.03	.1	.3
Reach-1	4.98	.1	.3
Reach-1	4.95	.1	.3
Reach-1	4.89	.1	.3
Reach-1	4.79	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	9.61	1237.00	1118.50	1119.94	1119.28	1119.95	0.016005	1.08	1203.81	1480.45	0.20
Reach-1	9.55	1237.00	1116.40	1117.96	1117.00	1117.97	0.002757	0.61	2015.98	1995.83	0.09
Reach-1	9.45	1237.00	1114.90	1116.33	1115.54	1116.34	0.003926	0.65	1918.42	2104.46	0.11
Reach-1	9.36	1237.00	1112.80	1114.14		1114.15	0.005213	0.70	1811.80	1859.45	0.12
Reach-1	9.27	1237.00	1110.80	1112.54		1112.65	0.001910	4.26	1707.97	1827.07	0.61
Reach-1	9.17	1237.00	1109.60	1110.92	1110.64	1111.03	0.006627	3.49	1059.41	2022.23	0.61
Reach-1	9.08	1210.00	1107.30	1108.56	1108.30	1108.72	0.003245	4.73	1359.38	1861.18	0.77
Reach-1	8.98	1210.00	1106.00	1107.37		1107.47	0.001939	3.87	1962.24	2828.35	0.60
Reach-1	8.89	1210.00	1104.90	1105.94		1106.02	0.004759	4.55	1556.36	2547.13	0.88
Reach-1	8.79	1210.00	1103.00	1104.19		1104.25	0.002715	3.66	1710.89	2181.16	0.67
Reach-1	8.7	1210.00	1101.40	1102.42		1102.56	0.004251	4.80	1566.60	2758.75	0.85
Reach-1	8.61	1210.00	1099.90	1100.62		1100.65	0.003357	3.18	1938.72	2786.99	0.70
Reach-1	8.51	1210.00	1098.50	1098.96	1098.63	1098.98	0.003415	2.33	1283.50	2887.68	0.65
Reach-1	8.42	1210.00	1096.30	1097.09	1096.80	1097.12	0.004064	3.13	1441.35	3030.72	0.75
Reach-1	8.32	1210.00	1095.10	1095.99	1095.56	1096.02	0.001419	2.42	1740.76	3142.63	0.48
Reach-1	8.23	1210.00	1094.40	1094.92		1094.93	0.003702	1.60	1218.09	2441.97	0.41
Reach-1	8.18	1375.00	1092.80	1093.70	1093.53	1093.74	0.004973	2.24	872.73	2151.59	0.49
Reach-1	8.08	1375.00	1091.80	1092.79		1092.81	0.000952	1.19	1385.10	2226.90	0.22
Reach-1	7.99	1375.00	1090.70	1091.40	1091.23	1091.49	0.013231	3.55	867.86	1834.11	0.83
Reach-1	7.89	1375.00	1089.30	1089.48		1089.51	0.001660	0.74	1274.24	2464.16	0.38
Reach-1	7.8	1375.00	1087.20	1088.13	1087.90	1088.19	0.004738	4.13	1039.12	2423.09	0.85
Reach-1	7.71	1375.00	1085.50	1086.56							

1086.60	0.002351	3.75	1826.99	3125.45	0.64	
Reach-1	7.66		1691.00	1084.50	1085.73	
1085.81	0.005330	4.18	1162.59	2417.10	0.90	
Reach-1	7.57		1691.00	1083.40	1085.18	1084.73
1085.20	0.000534	2.10	2682.16	4170.48	0.32	
Reach-1	7.48		1691.00	1084.00	1084.31	1084.10
1084.38	0.025525	5.44	1447.54	3974.46	1.72	
Reach-1	7.38		1691.00	1082.00	1083.26	
1083.28	0.000752	2.24	2942.59	4009.52	0.37	
Reach-1	7.29		1691.00	1081.50	1082.69	
1082.72	0.001923	2.97	2483.14	3220.65	0.56	
Reach-1	7.2		1691.00	1081.40	1081.81	
1081.82	0.001657	1.52	1864.50	2790.73	0.45	
Reach-1	7.11		1865.00	1079.80	1081.09	1080.54
1081.12	0.001356	2.77	2245.17	2820.12	0.48	
Reach-1	7.06		Lat. Weir			
Reach-1	7.01		1550.95	1079.50	1080.12	
1080.16	0.003066	2.98	1585.73	2772.29	0.67	
Reach-1	6.96		Lat. Weir			
Reach-1	6.94		1269.36	1078.70	1079.48	
1079.49	0.001083	1.71	1497.60	2236.85	0.39	
Reach-1	6.91		Lat. Weir			
Reach-1	6.88		979.54	1079.00	1079.23	
1079.24	0.000449	0.50	1804.32	2436.82	0.21	
Reach-1	6.8		979.54	1078.00	1078.91	
1078.93	0.001362	2.42	1851.52	2183.99	0.47	
Reach-1	6.7		979.54	1077.50	1077.98	
1077.99	0.002765	0.31	1457.15	1781.30	0.09	
Reach-1	6.61		979.54	1076.00	1077.01	
1077.02	0.001440	0.10	1489.82	2004.20	0.02	
Reach-1	6.52		979.54	1075.40	1075.79	1075.64
1075.89	0.004515	1.34	406.26	883.14	0.46	
Reach-1	6.42		979.54	1074.20	1074.94	1074.47
1074.97	0.000956	1.44	801.84	1304.05	0.36	
Reach-1	6.33		979.54	1073.40	1074.37	1073.87
1074.40	0.001379	2.51	1090.80	1635.44	0.47	
Reach-1	6.23		979.54	1072.60	1073.78	1073.21
1073.82	0.001006	2.43	1160.65	1644.16	0.42	
Reach-1	6.14		979.54	1071.80	1072.81	1072.71
1072.92	0.003989	3.74	444.78	982.95	0.78	
Reach-1	6.05		1004.54	1069.80	1071.59	
1071.75	0.001738	3.81	326.14	765.63	0.72	
Reach-1	5.95		1004.54	1070.20	1071.21	1070.67
1071.23	0.000600	0.85	1228.99	1645.07	0.17	
Reach-1	5.86		1004.54	1069.30	1070.77	
1070.79	0.001403	1.39	1235.33	2197.80	0.27	
Reach-1	5.76		1004.54	1068.50	1069.46	
1069.49	0.005350	1.13	780.75	915.33	0.23	
Reach-1	5.67		1004.54	1067.30	1068.76	
1068.76	0.000677	0.50	1966.64	2009.85	0.09	
Reach-1	5.57		1004.54	1066.60	1068.29	
1068.30	0.001174	0.87	2002.11	1781.77	0.12	
Reach-1	5.53		Lat. Weir			
Reach-1	5.48		1004.54	1066.40	1067.64	1066.74
1067.65	0.001323	1.35	1391.06	1501.45	0.22	
Reach-1	5.38		1637.54	1065.00	1066.26	1065.82
1066.33	0.004495	2.47	1188.14	1692.65	0.40	
Reach-1	5.31		1637.54	1063.50	1065.13	1064.46
1065.15	0.002061	1.39	1414.96	1439.55	0.21	

Reach-1	5.25		1637.54	1062.60	1064.28	1063.79
1064.42	0.003140	4.71	1626.56	1473.09	0.64	
Reach-1	5.23		Lat. Weir			
Reach-1	5.2		1500.11	1062.00	1063.48	1062.86
1063.58	0.002648	3.97	1530.84	1309.96	0.58	
Reach-1	5.15		Lat. Weir			
Reach-1	5.1		1385.10	1060.30	1061.56	1061.46
1061.73	0.005722	4.96	1341.75	2042.69	0.81	
Reach-1	5.08		Lat. Weir			
Reach-1	5.07		1328.93	1059.60	1061.05	1060.09
1061.07	0.001886	3.30	2292.72	2146.17	0.48	
Reach-1	5.03		1328.93	1059.80	1059.63	1059.59
1059.79	0.267842		405.78	985.06	0.00	
Reach-1	4.98		1328.93	1058.50	1059.24	
1059.24	0.000496	1.08	3926.67	3564.81	0.22	
Reach-1	4.95		1328.93	1056.80	1059.23	
1059.23	0.000042	0.69	8937.10	3924.15	0.08	
Reach-1	4.89		1328.93	1056.80	1059.22	
1059.22	0.000017	0.42	11170.30	3099.68	0.05	
Reach-1	4.79		1328.93	1054.40	1059.21	1054.09
1059.21	0.000013	0.54	10311.23	2443.45	0.05	

Profile Output Table - Standard Table 2

Reach	River Sta		E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E
Loss	Q Left	Q Channel	Q Right	Top Width			
			(ft)	(ft)	(ft)	(ft)	
(ft)	(cfs)	(cfs)	(cfs)	(ft)			
Reach-1	9.61		1119.95	1119.94	0.02	1.98	
0.00		712.24	524.76	1480.45			
Reach-1	9.55		1117.97	1117.96	0.01	1.63	
0.00	434.82	294.23	507.95	1995.83			
Reach-1	9.45		1116.34	1116.33	0.01	2.19	
0.00	383.22	256.32	597.47	2104.46			
Reach-1	9.36		1114.15	1114.14	0.01	1.48	
0.01	201.84	188.68	846.48	1859.45			
Reach-1	9.27		1112.65	1112.54	0.11	1.62	
0.00	386.67	489.81	360.52	1827.07			
Reach-1	9.17		1111.03	1110.92	0.12	2.30	
0.00	303.34	765.80	167.86	2022.23			
Reach-1	9.08		1108.72	1108.56	0.16	1.23	
0.02	508.66	557.45	143.89	1861.18			
Reach-1	8.98		1107.47	1107.37	0.10	1.44	
0.00	567.00	497.20	145.81	2828.35			
Reach-1	8.89		1106.02	1105.94	0.08	1.76	
0.01	797.24	294.22	118.53	2547.13			
Reach-1	8.79		1104.25	1104.19	0.06	1.68	
0.01	744.35	354.52	111.13	2181.16			
Reach-1	8.7		1102.56	1102.42	0.14	1.88	
0.03	561.88	473.62	174.50	2758.75			
Reach-1	8.61		1100.65	1100.62	0.03	1.66	
0.00	919.15	202.58	88.26	2786.99			
Reach-1	8.51		1098.98	1098.96	0.02	1.86	
0.00	1073.09	82.40	54.52	2887.68			
Reach-1	8.42		1097.12	1097.09	0.03	1.10	

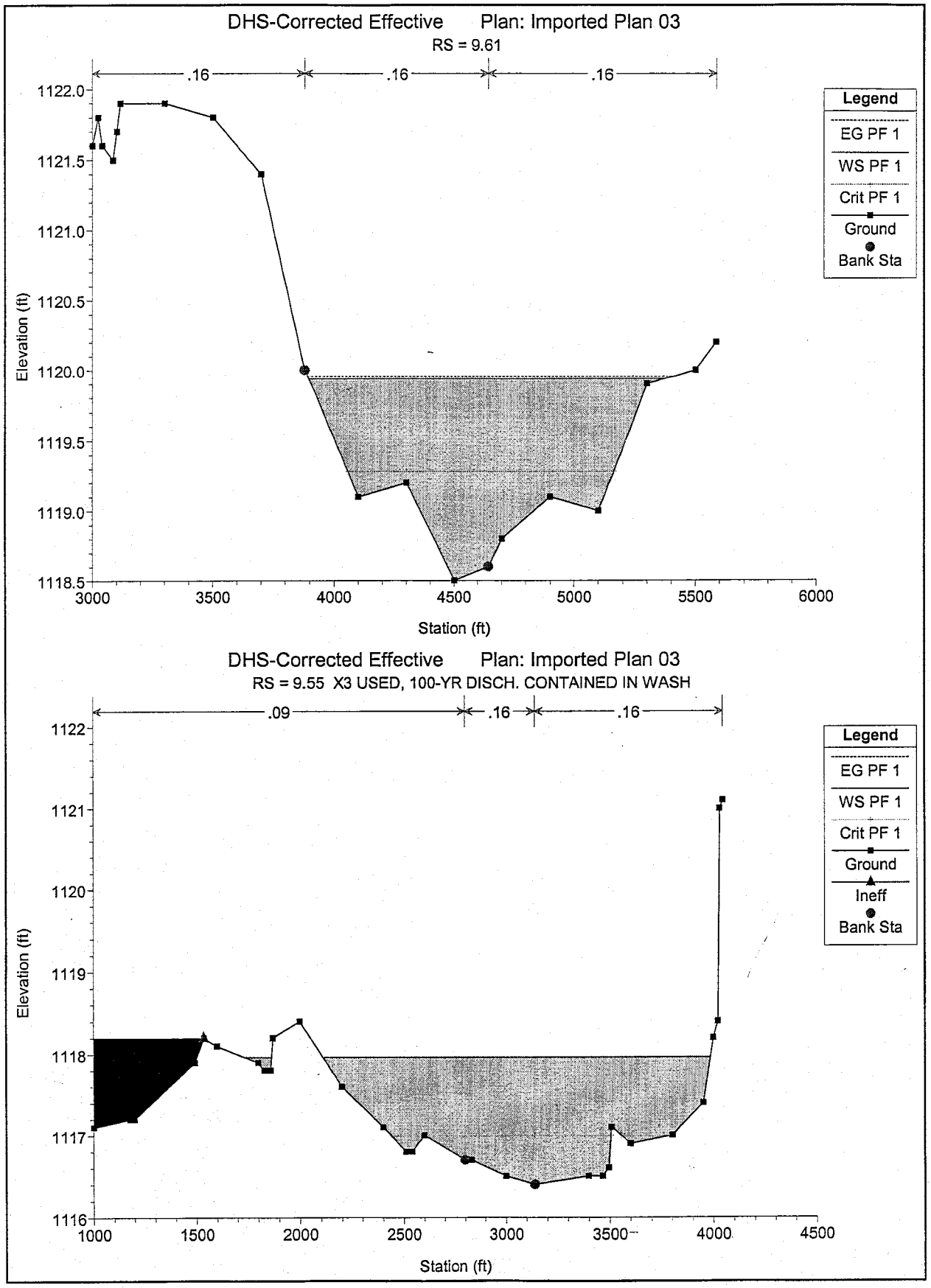
0.00	711.32	201.75	296.93	3030.72		
Reach-1		8.32		1096.02	1095.99	0.02	1.08
0.00	813.40	232.99	163.61	3142.63		
Reach-1		8.23		1094.93	1094.92	0.02	1.19
0.00	961.74	149.09	99.17	2441.97		
Reach-1		8.18		1093.74	1093.70	0.05	0.93
0.01	412.07	450.59	512.35	2151.59		
Reach-1		8.08		1092.81	1092.79	0.02	1.30
0.01	526.70	477.50	370.80	2226.90		
Reach-1		7.99		1091.49	1091.40	0.09	1.96
0.02	318.45	529.66	526.89	1834.11		
Reach-1		7.89		1089.51	1089.48	0.03	1.31
0.00	76.26	2.67	1296.07	2464.16		
Reach-1		7.8		1088.19	1088.13	0.07	1.59
0.01	138.41	182.91	1053.68	2423.09		
Reach-1		7.71		1086.60	1086.56	0.04	0.78
0.00	315.77	178.71	880.51	3125.45		
Reach-1		7.66		1085.81	1085.73	0.08	0.59
0.02	170.82	336.73	1183.46	2417.10		
Reach-1		7.57		1085.20	1085.18	0.02	0.81
0.01	161.24	340.69	1189.08	4170.48		
Reach-1		7.48		1084.38	1084.31	0.07	1.10
0.02	230.53	202.42	1258.06	3974.46		
Reach-1		7.38		1083.28	1083.26	0.02	0.56
0.00	144.91	285.53	1260.56	4009.52		
Reach-1		7.29		1082.72	1082.69	0.03	0.89
0.00	170.39	322.82	1197.79	3220.65		
Reach-1		7.2		1081.82	1081.81	0.02	0.70
0.00	25.23	76.15	1589.62	2790.73		
Reach-1		7.11		1081.12	1081.09	0.03	0.96
0.00	136.01	293.09	1435.90	2820.12		
Reach-1		7.06	Lat. Weir				
Reach-1		7.01		1080.16	1080.12	0.05	0.66
0.01	209.06	430.56	911.34	2772.29		
Reach-1		6.96	Lat. Weir				
Reach-1		6.94		1079.49	1079.48	0.02	0.25
0.00	48.69	186.82	1033.85	2236.85		
Reach-1		6.91	Lat. Weir				
Reach-1		6.88		1079.24	1079.23	0.01	0.30
0.00	120.70	25.25	833.60	2436.82		
Reach-1		6.8		1078.93	1078.91	0.02	0.94
0.00	57.41	220.65	701.47	2183.99		
Reach-1		6.7		1077.99	1077.98	0.01	0.97
0.00	141.18	22.30	816.05	1781.30		
Reach-1		6.61		1077.02	1077.01	0.01	1.12
0.01	322.97	25.28	631.29	2004.20		
Reach-1		6.52		1075.89	1075.79	0.10	0.90
0.02	44.07	48.17	887.30	883.14		
Reach-1		6.42		1074.97	1074.94	0.03	0.57
0.00	55.22	92.46	831.86	1304.05		
Reach-1		6.33		1074.40	1074.37	0.03	0.59
0.00	207.53	272.21	499.80	1635.44		
Reach-1		6.23		1073.82	1073.78	0.03	0.89
0.01	130.93	294.68	553.93	1644.16		
Reach-1		6.14		1072.92	1072.81	0.11	1.16
0.00	123.41	346.11	510.02	982.95		
Reach-1		6.05		1071.75	1071.59	0.16	0.48
0.04	29.52	328.53	646.49	765.63		
Reach-1		5.95		1071.23	1071.21	0.01	0.43
0.00	340.75	109.75	554.04	1645.07		

Reach-1	5.86		1070.79	1070.77	0.02	1.29
0.00	568.98	293.28	142.28	2197.80		
Reach-1	5.76		1069.49	1069.46	0.03	0.72
0.01	810.33	172.70	21.51	915.33		
Reach-1	5.67		1068.76	1068.76	0.00	0.46
0.00	723.33	121.71	159.50	2009.85		
Reach-1	5.57		1068.30	1068.29	0.01	0.64
0.00	559.67	179.83	265.03	1781.77		
Reach-1	5.53		Lat. Weir			
Reach-1	5.48		1067.65	1067.64	0.02	1.32
0.01	239.33	224.28	540.93	1501.45		
Reach-1	5.38		1066.33	1066.26	0.07	1.17
0.01	309.13	320.98	1007.42	1692.65		
Reach-1	5.31		1065.15	1065.13	0.02	0.72
0.01	813.76	191.42	632.36	1439.55		
Reach-1	5.25		1064.42	1064.28	0.14	0.82
0.01	804.59	634.09	198.86	1473.09		
Reach-1	5.23		Lat. Weir			
Reach-1	5.2		1063.58	1063.48	0.10	1.85
0.01	501.06	588.65	410.40	1309.96		
Reach-1	5.15		Lat. Weir			
Reach-1	5.1		1061.73	1061.56	0.16	0.62
0.04	592.21	574.67	218.22	2042.69		
Reach-1	5.08		Lat. Weir			
Reach-1	5.07		1061.07	1061.05	0.02	1.25
0.01	680.67	120.00	528.26	2146.17		
Reach-1	5.03		1059.79	1059.63	0.17	0.50
0.05			1328.93	985.06		
Reach-1	4.98		1059.24	1059.24	0.00	0.02
0.00	1233.65	72.35	22.93	3564.81		
Reach-1	4.95		1059.23	1059.23	0.00	0.01
0.00	1089.92	117.80	121.21	3924.15		
Reach-1	4.89		1059.22	1059.22	0.00	0.01
0.00	1187.32	98.12	43.49	3099.68		
Reach-1	4.79		1059.21	1059.21	0.00	
	979.89	194.45	154.59	2443.45		

Profile Output Table - Lateral Weir/Spillway

Reach	River Sta	Q US.	Q Leaving	Total	Q DS	Q Weir
Total Gate Flow	Wr Top Wdth	Weir Max Depth	Weir Avg Depth		Min El Weir	Flow
E.G. US.	W.S. US.	E.G. DS	W.S. DS			
		(cfs)	(cfs)		(cfs)	(cfs)
(cfs)	(ft)	(ft)	(ft)		(ft)	
(ft)	(ft)	(ft)	(ft)			
Reach-1	7.06	1865.00	314.09	1550.95		314.09
	366.58	0.99	0.54		1079.50	
1081.12	1081.09	1080.16	1080.12			
Reach-1	6.96	1550.95	281.52	1269.36		281.52
	353.59	0.88	0.58		1079.20	
1080.16	1080.12	1079.49	1079.48			
Reach-1	6.91	1269.36	289.79	979.54		289.79

		344.16	0.66	0.54	1078.80	
1079.49	1079.48	1079.24	1079.23			
Reach-1	5.53		1004.54	0.00	1500.11	0.00
					1066.70	
1068.30	1068.29	1064.36	1064.23			
Reach-1	5.23		1637.54	137.10	1500.11	137.10
		227.32	0.78	0.50	1062.90	
1064.42	1064.28	1063.61	1063.51			
Reach-1	5.15		1500.11	113.38	1385.10	113.38
		399.10	0.58	0.31	1061.90	
1063.58	1063.48	1061.73	1061.56			
Reach-1	5.08		1385.10	56.91	1328.93	56.91
		87.39	0.85	0.53	1060.20	
1061.73	1061.56	1061.07	1061.05			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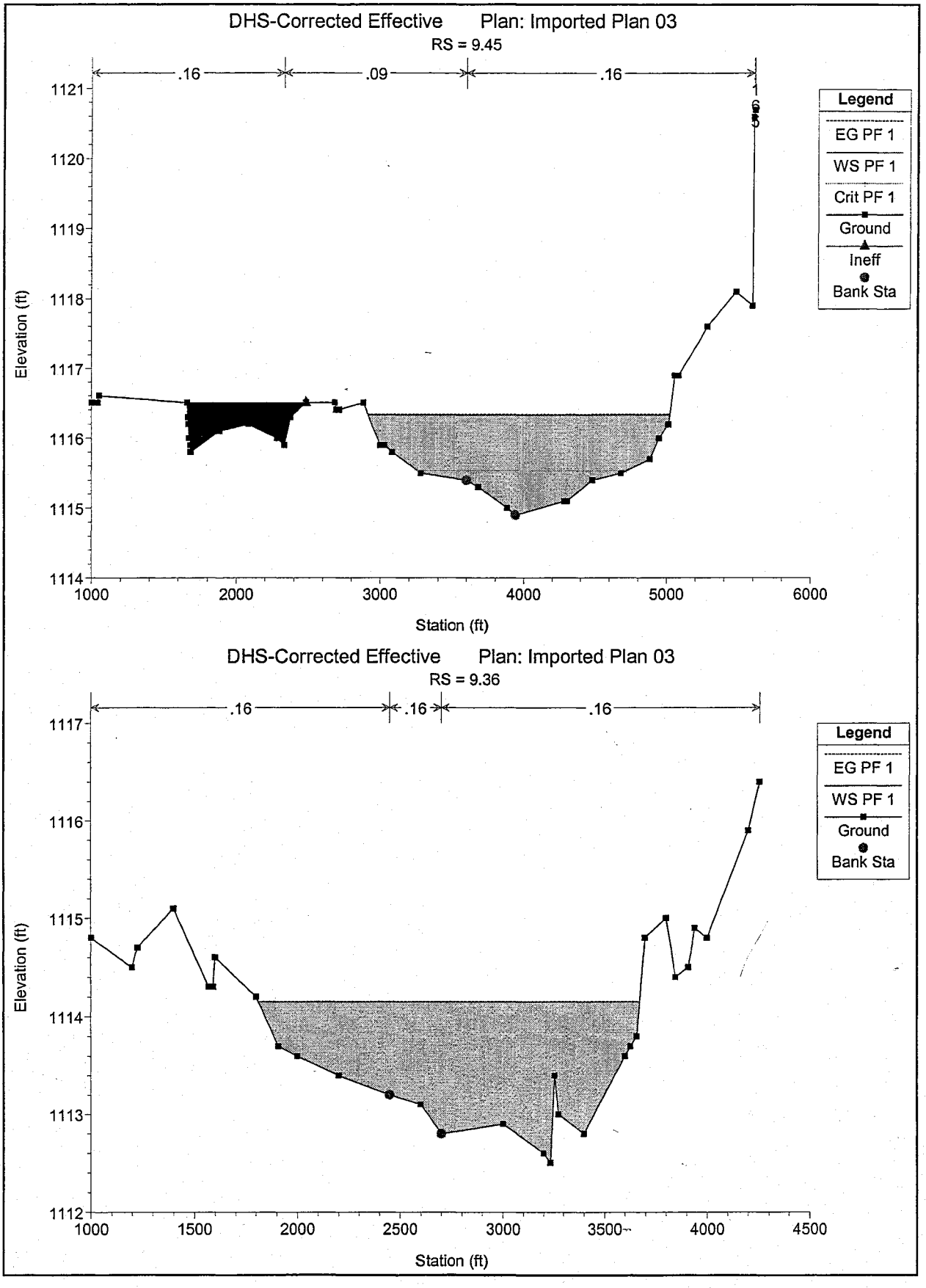
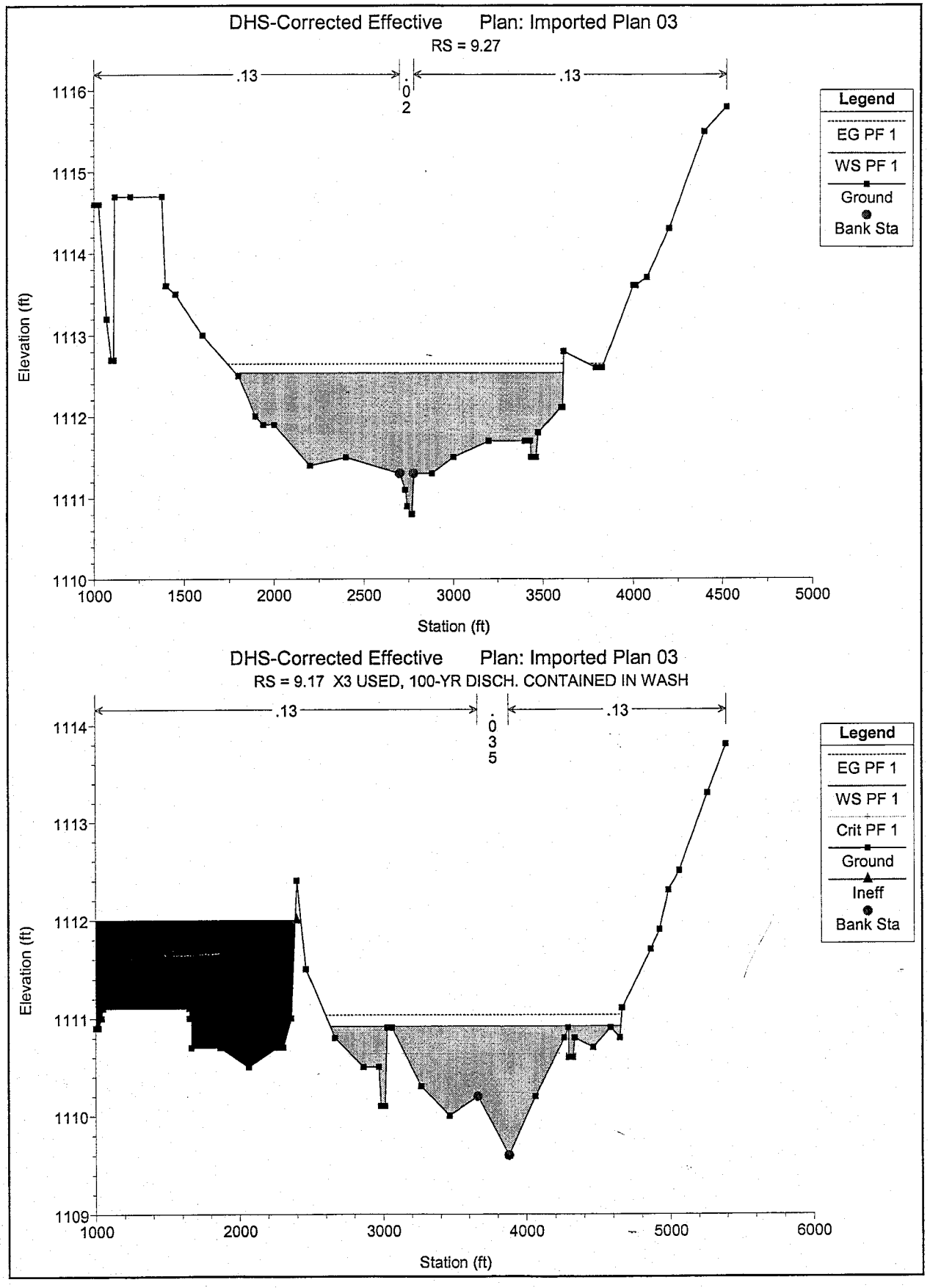
RS = 9.61
.16
.16
.16
1122.0
1121.5
1121.0
1120.5
1120.0
1119.5
1119.0
1118.5
Elevation (ft)
3000
3500
4000
4500
5000
5500
6000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
DHS-Corrected Effective Plan: Imported Plan 03
RS = 9.55 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.09
.16
.16
1122
1121
1120
1119
1118
1117
1116
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta


DHS-Corrected Effective Plan: Imported Plan 03
RS = 9.45
.16
.09
.16
1121
1120
1119
1118
1117
1116
1115
1114
Elevation (ft)
1000
2000
3000
4000
5000
6000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
DHS-Corrected Effective Plan: Imported Plan 03
RS = 9.36
.16
.16
.16
1117
1116
1115
1114
1113
1112
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta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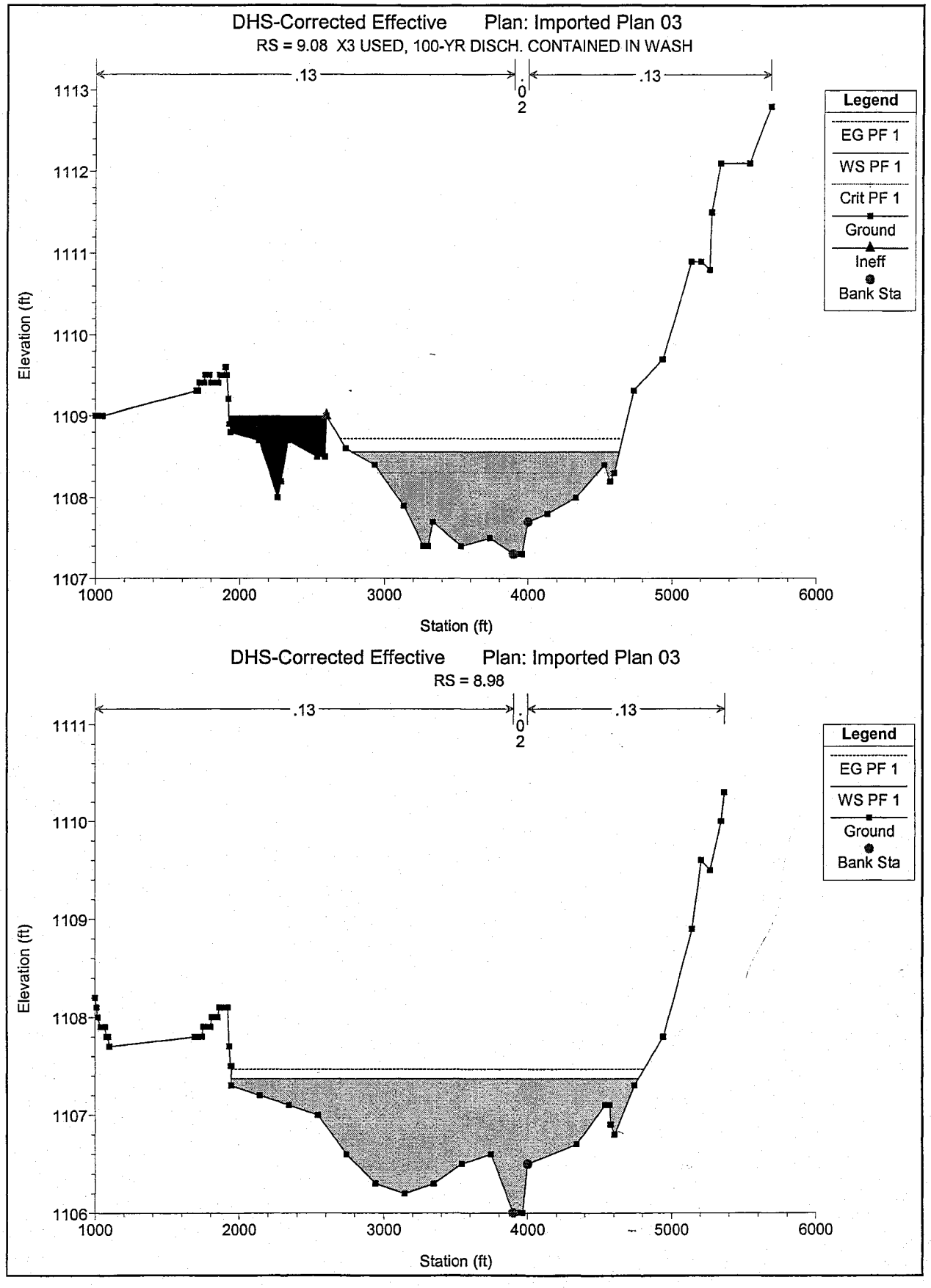
RS = 9.27
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1116
1115
1114
1113
1112
1111
1110
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 9.17 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.035
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1114
1113
1112
1111
1110
1109
1000
2000
3000
4000
5000
6000
Station (ft)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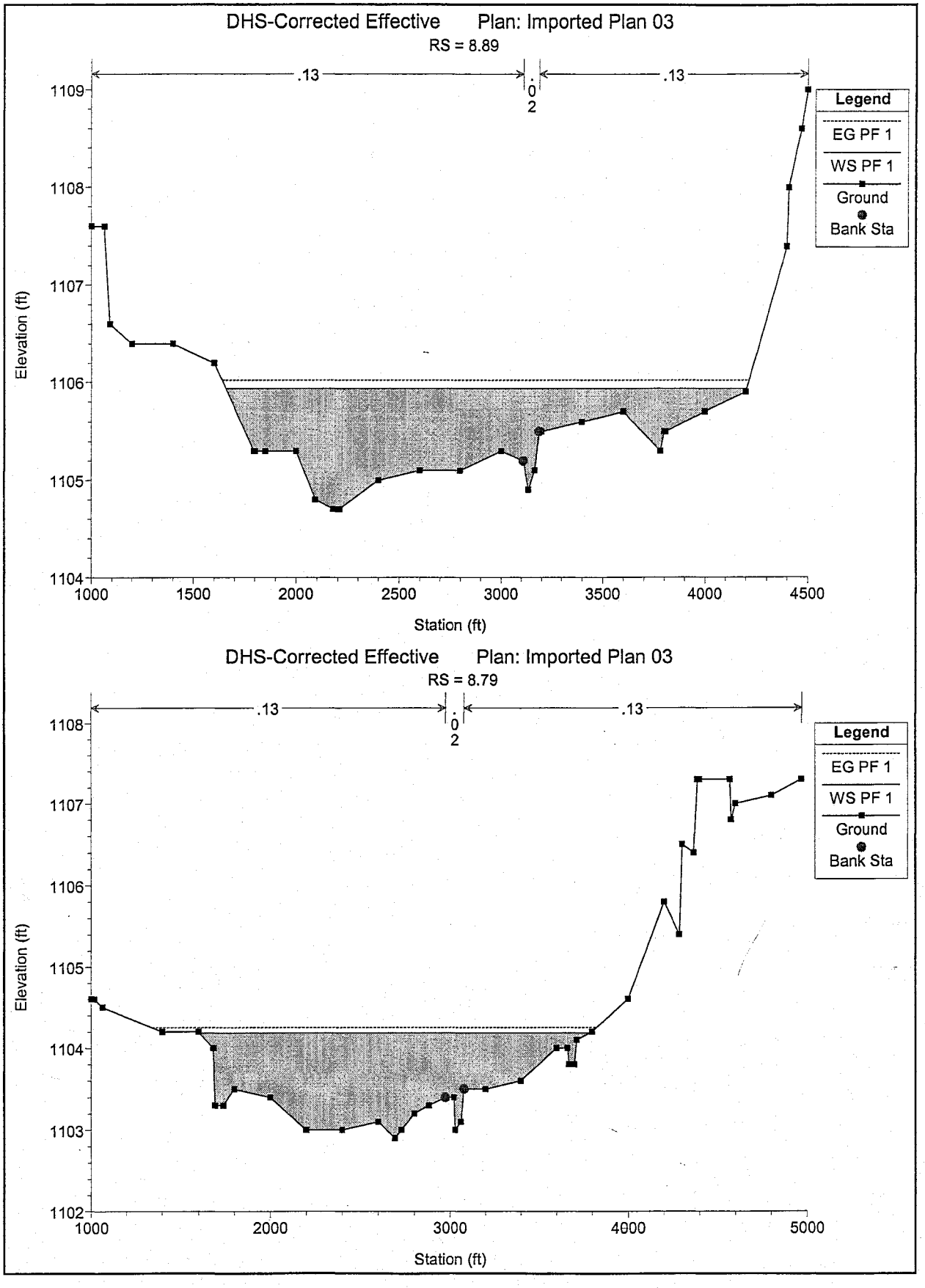
RS = 9.08 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1113
1112
1111
1110
1109
1108
1107
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.98
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1111
1110
1109
1108
1107
1106
1000
2000
3000
4000
5000
6000
Station (ft)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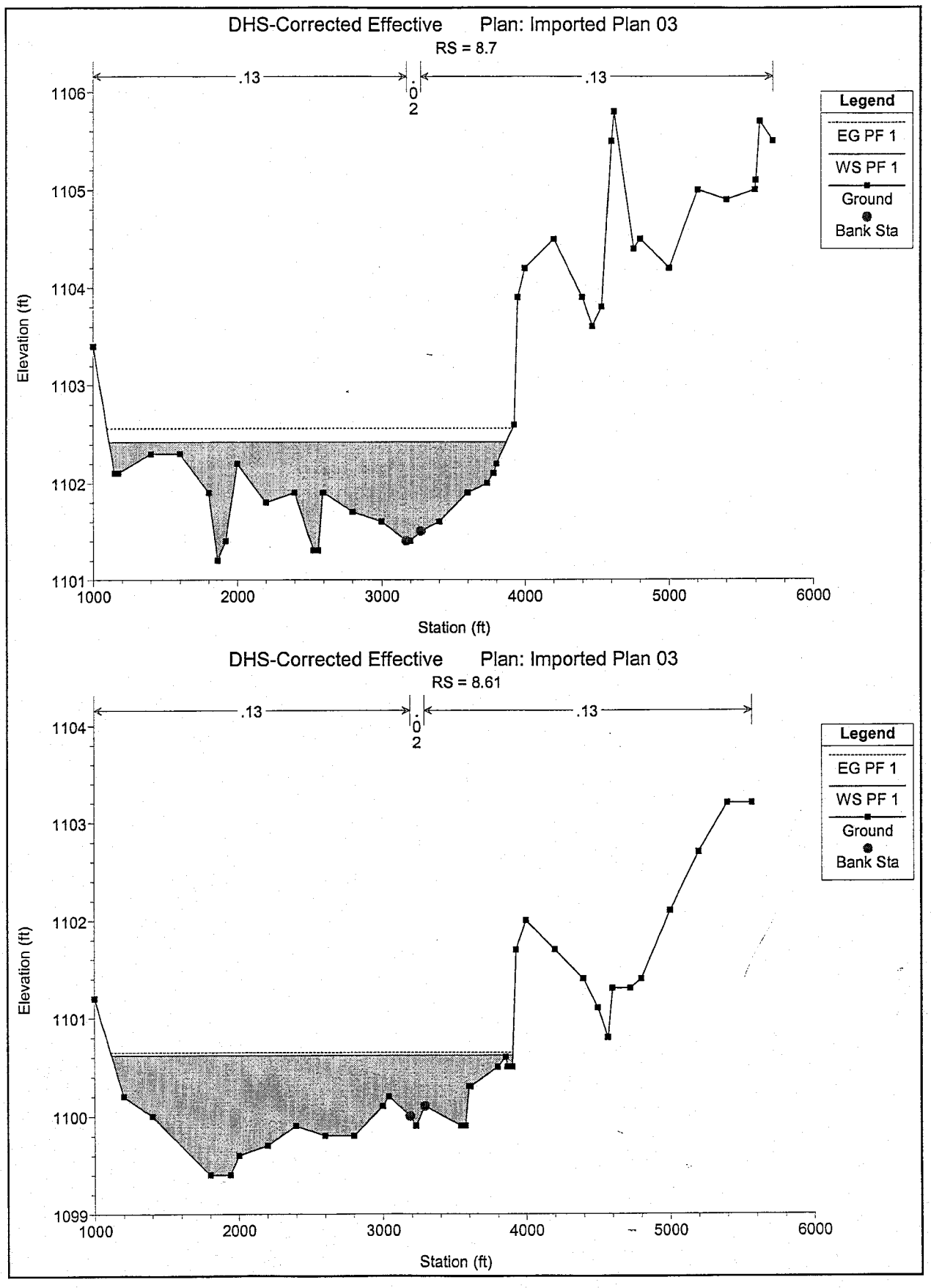
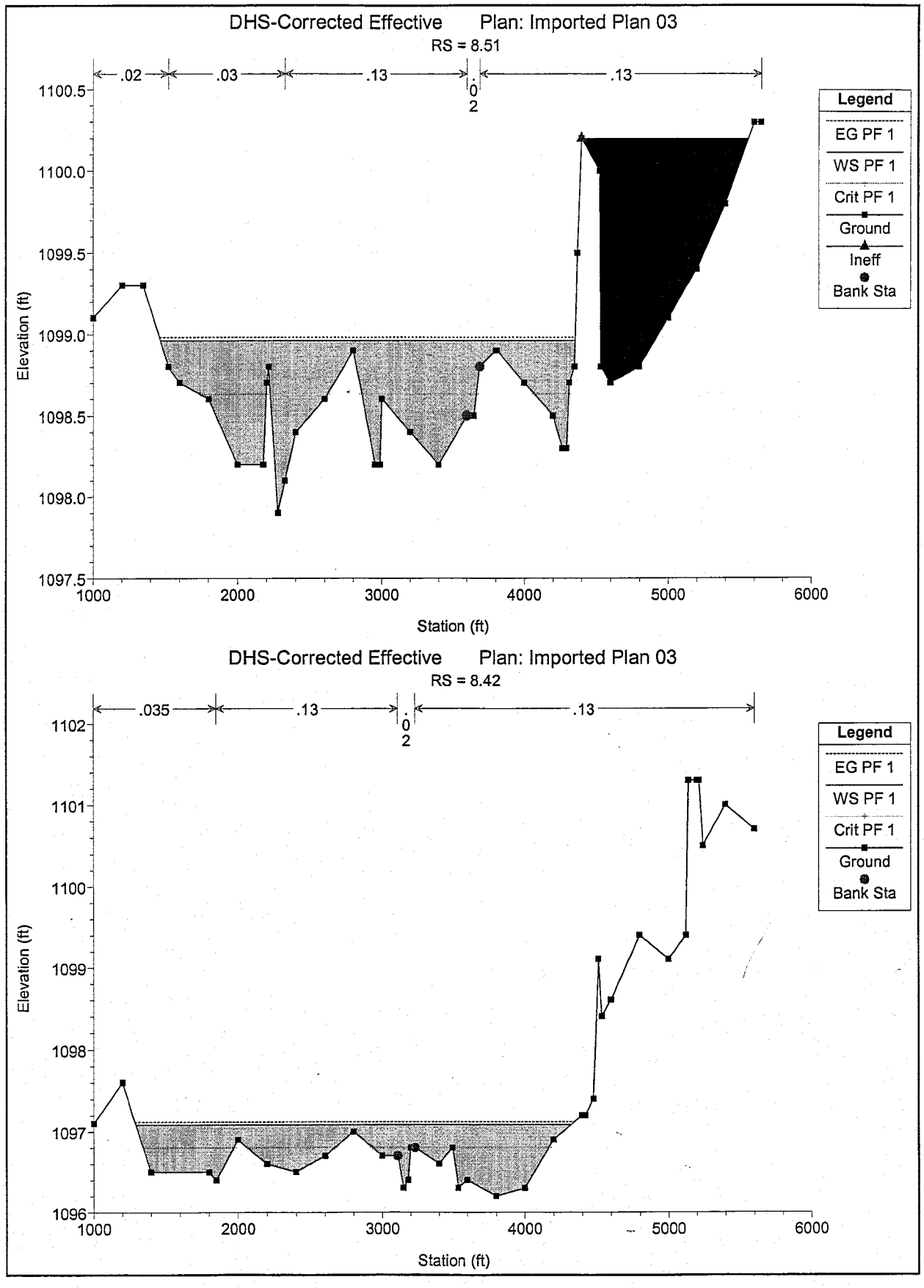
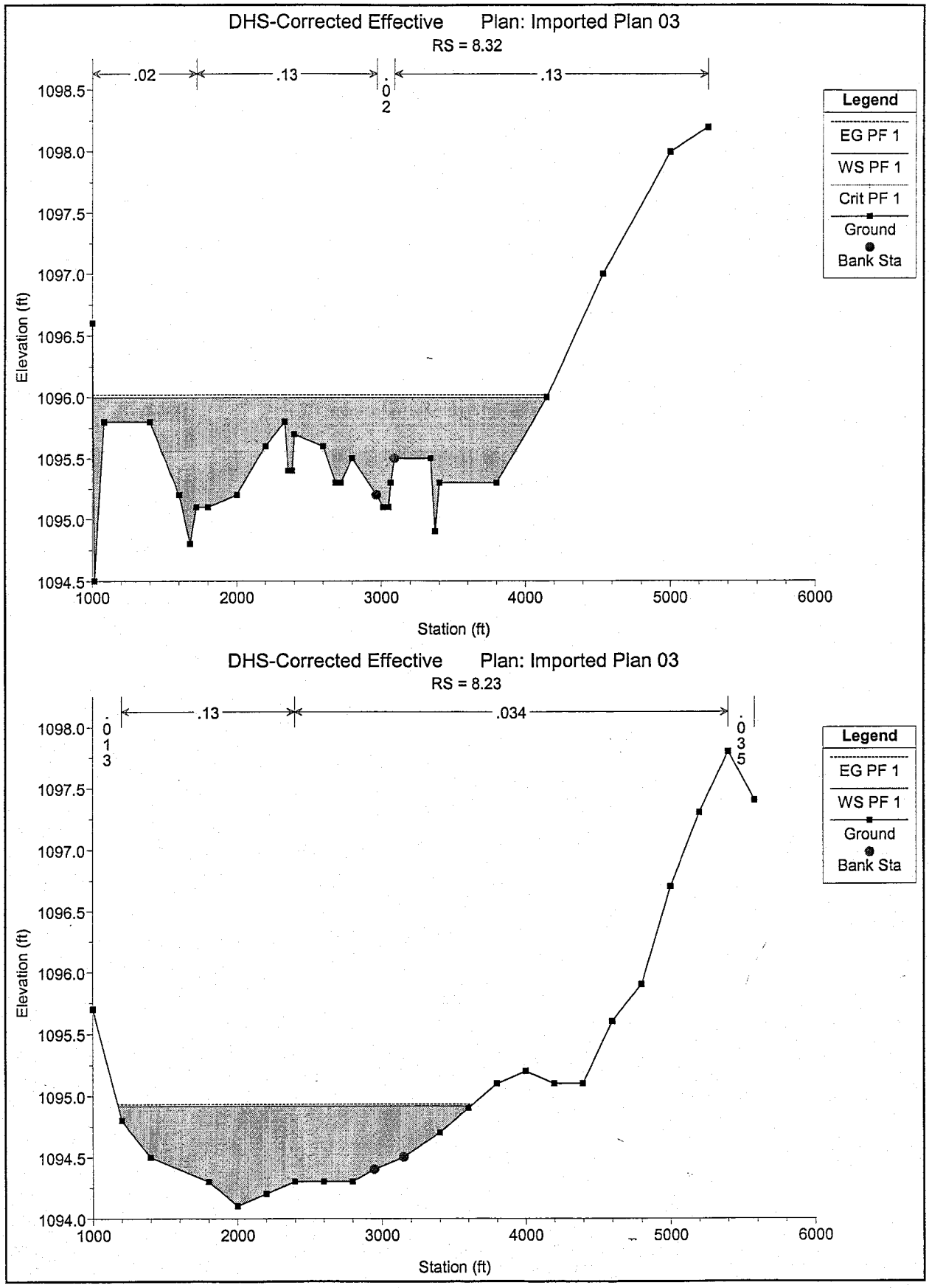
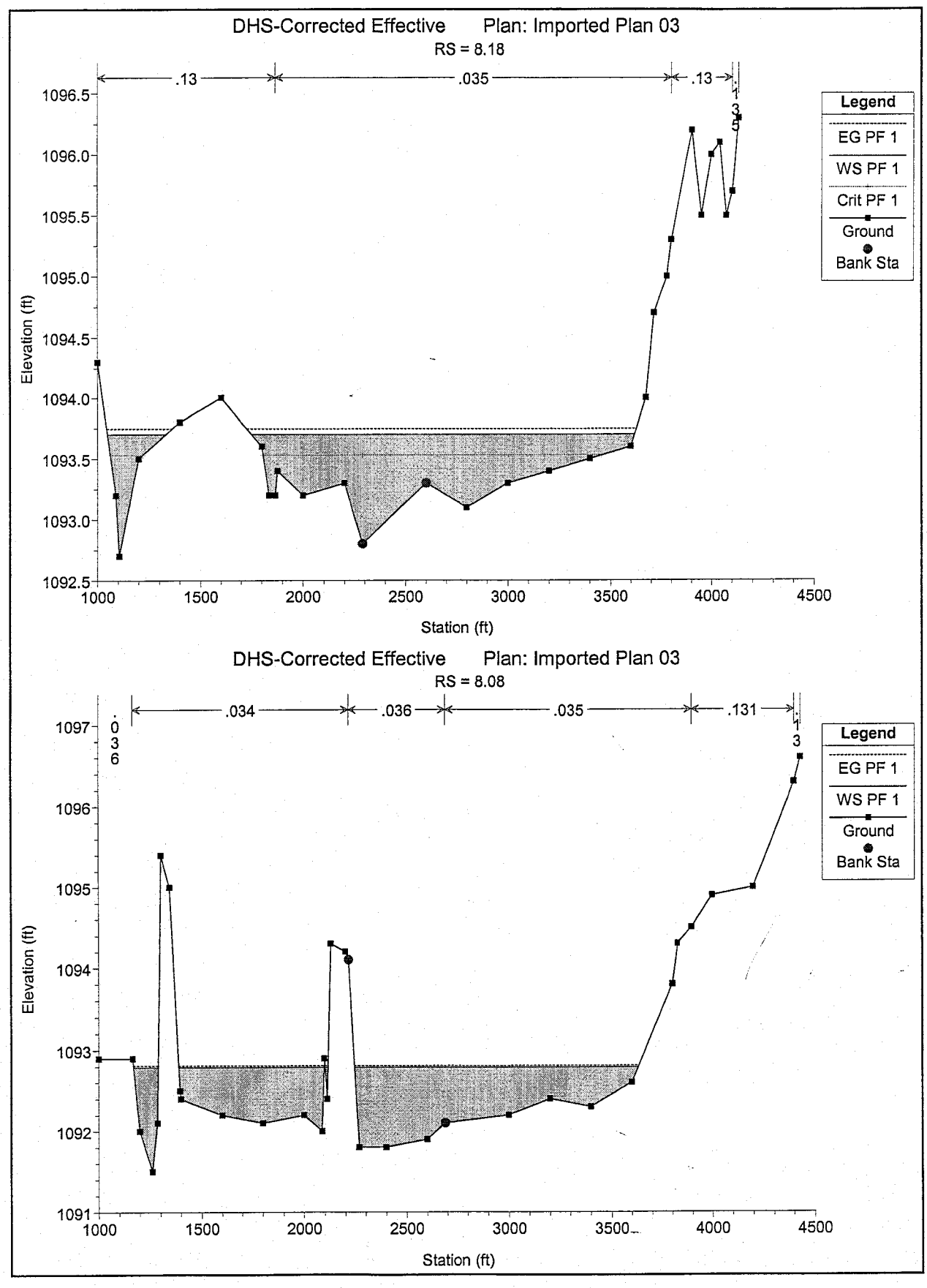
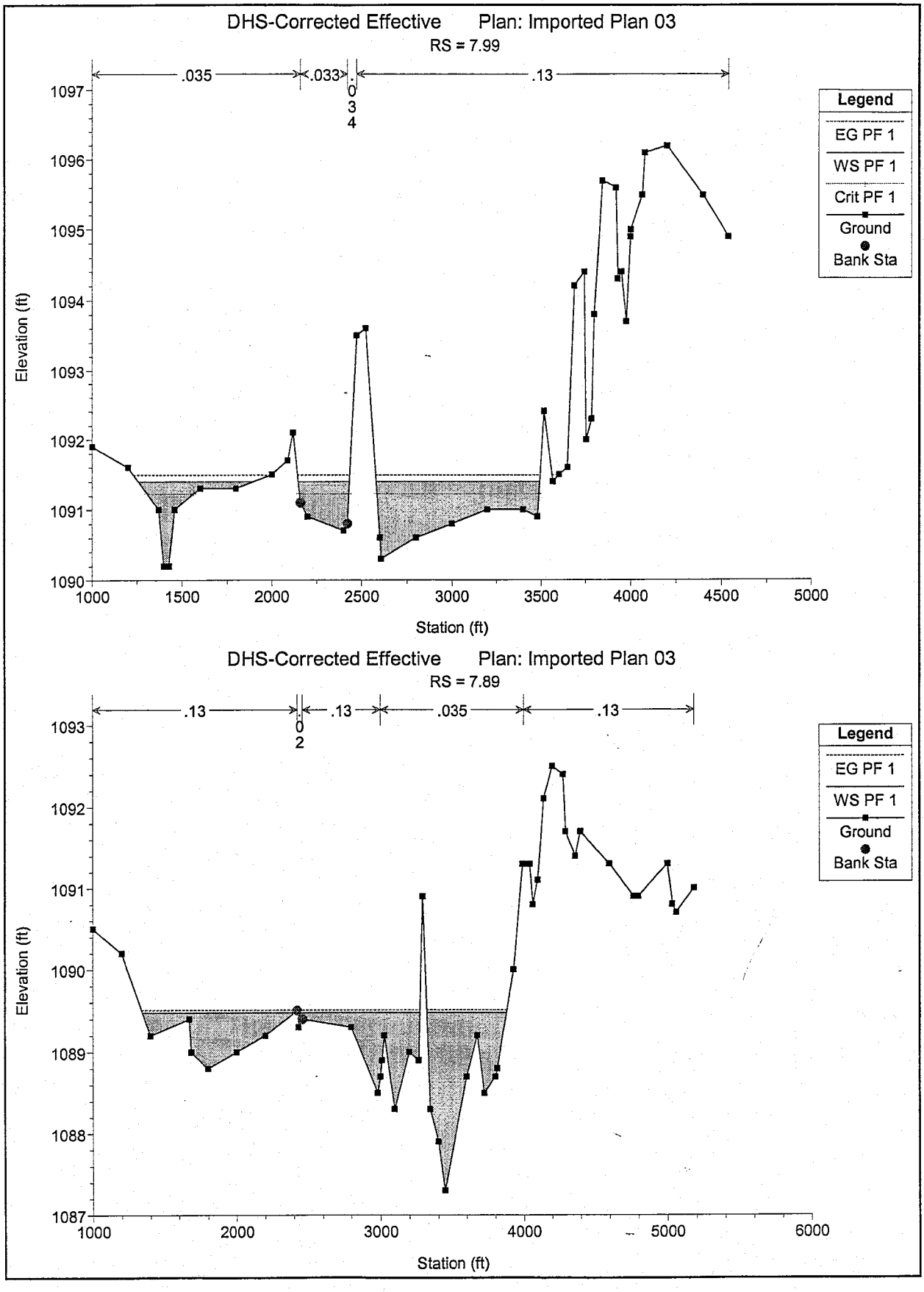
RS = 8.89
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1109
1108
1107
1106
1105
1104
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.79
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1108
1107
1106
1105
1104
1103
1102
1000
2000
3000
4000
5000
Station (ft)

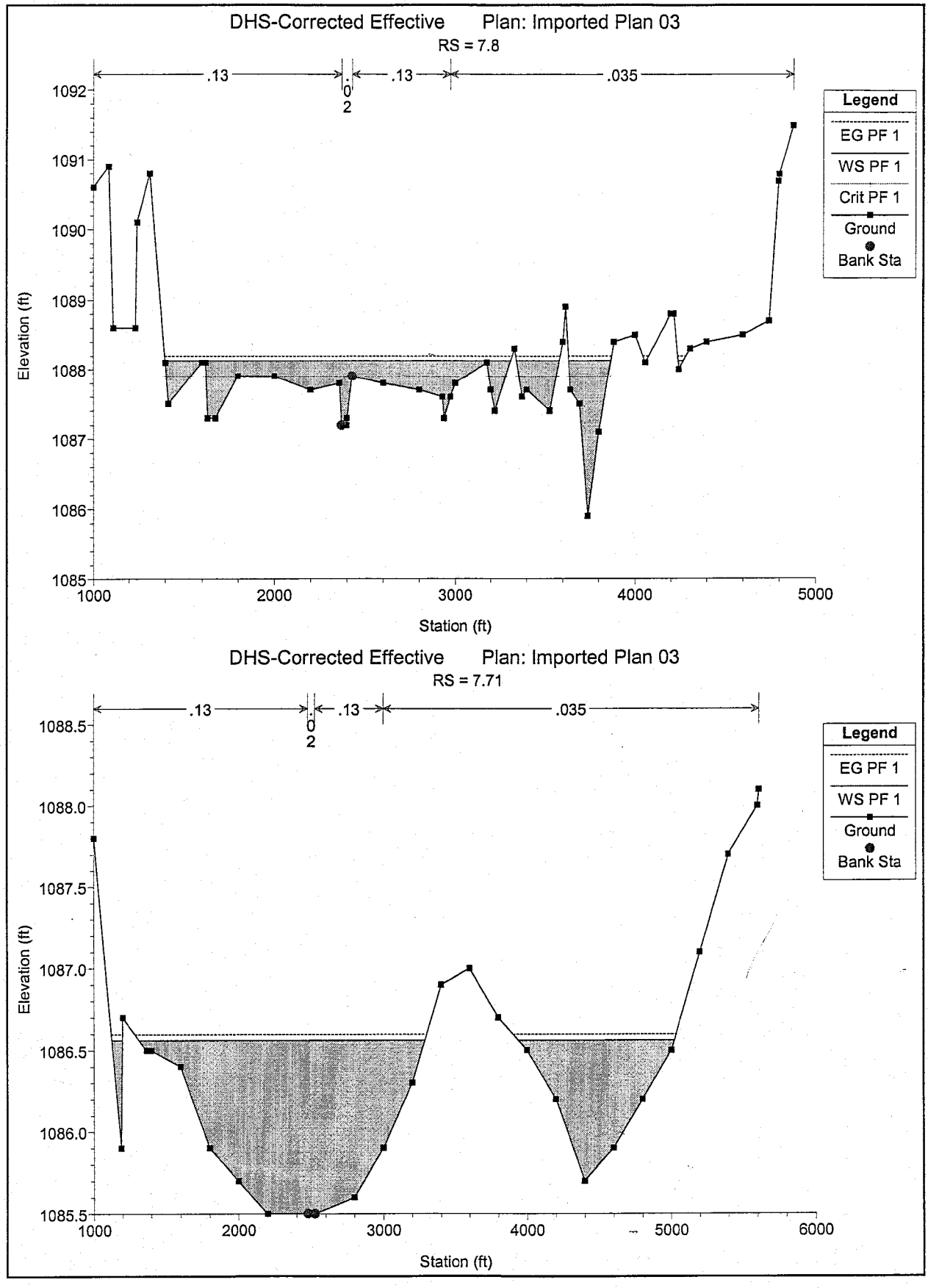

DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.7
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1106
1105
1104
1103
1102
1101
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.61
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1104
1103
1102
1101
1100
1099
1000
2000
3000
4000
5000
6000
Station (ft)

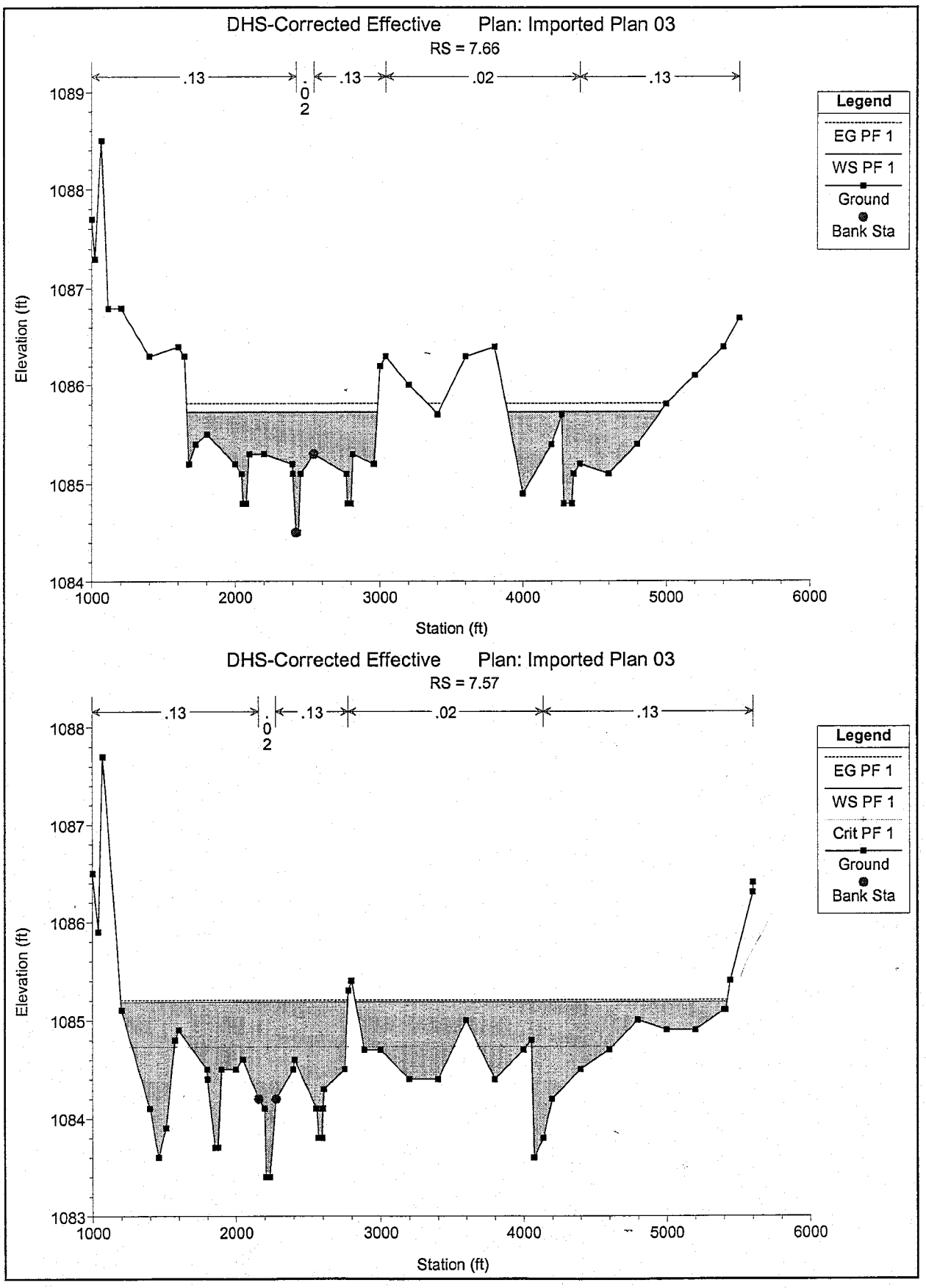

DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.51
.02
.03
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.42
.035
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

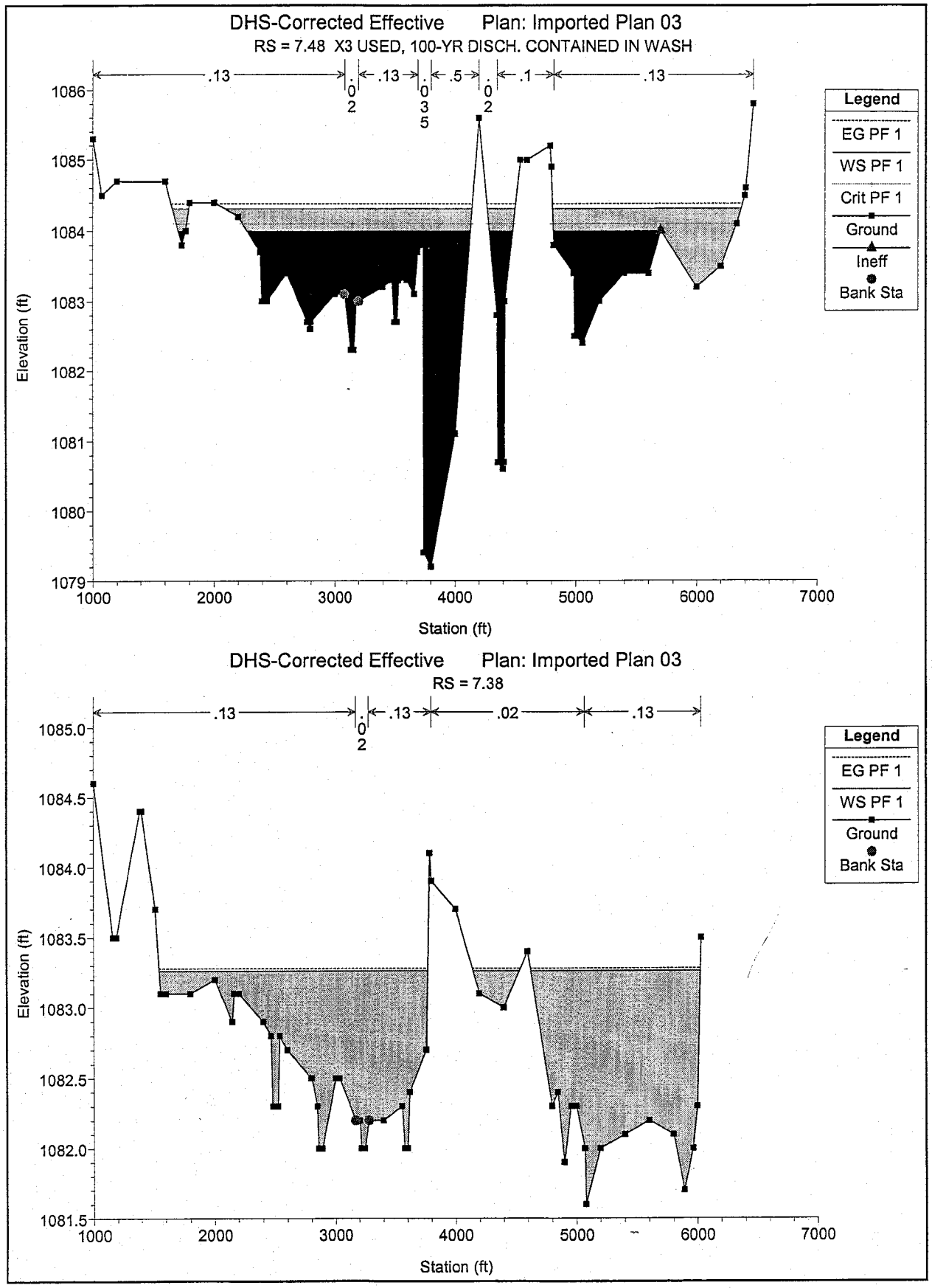

DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.32
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1098.5
1098.0
1097.5
1097.0
1096.5
1096.0
1095.5
1095.0
1094.5
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.23
.013
.13
.034
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1098.0
1097.5
1097.0
1096.5
1096.0
1095.5
1095.0
1094.5
1094.0
1000
2000
3000
4000
5000
6000
Station (ft)

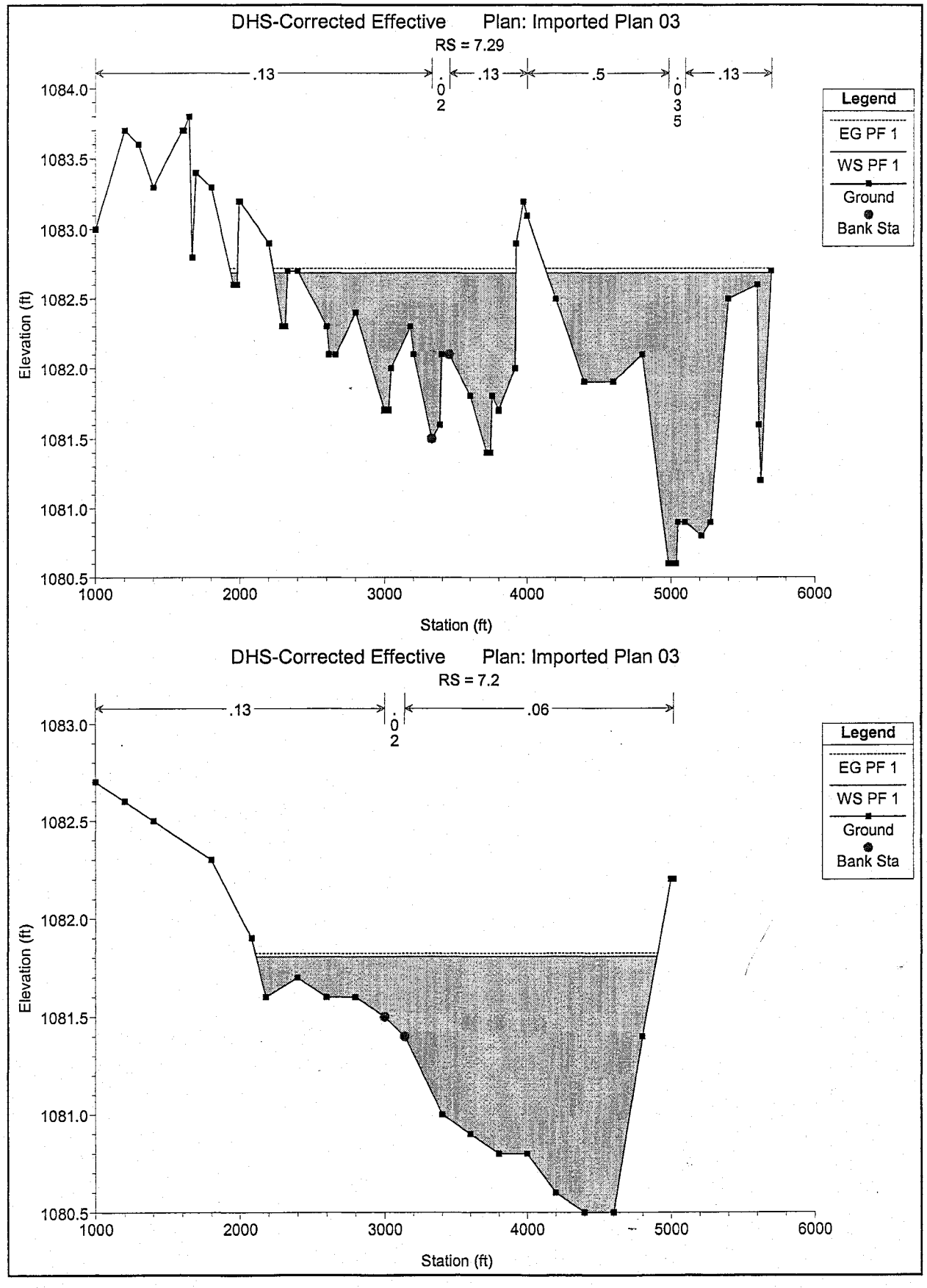

DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.18
.13
.035
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 8.08
.034
.036
.035
.131
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

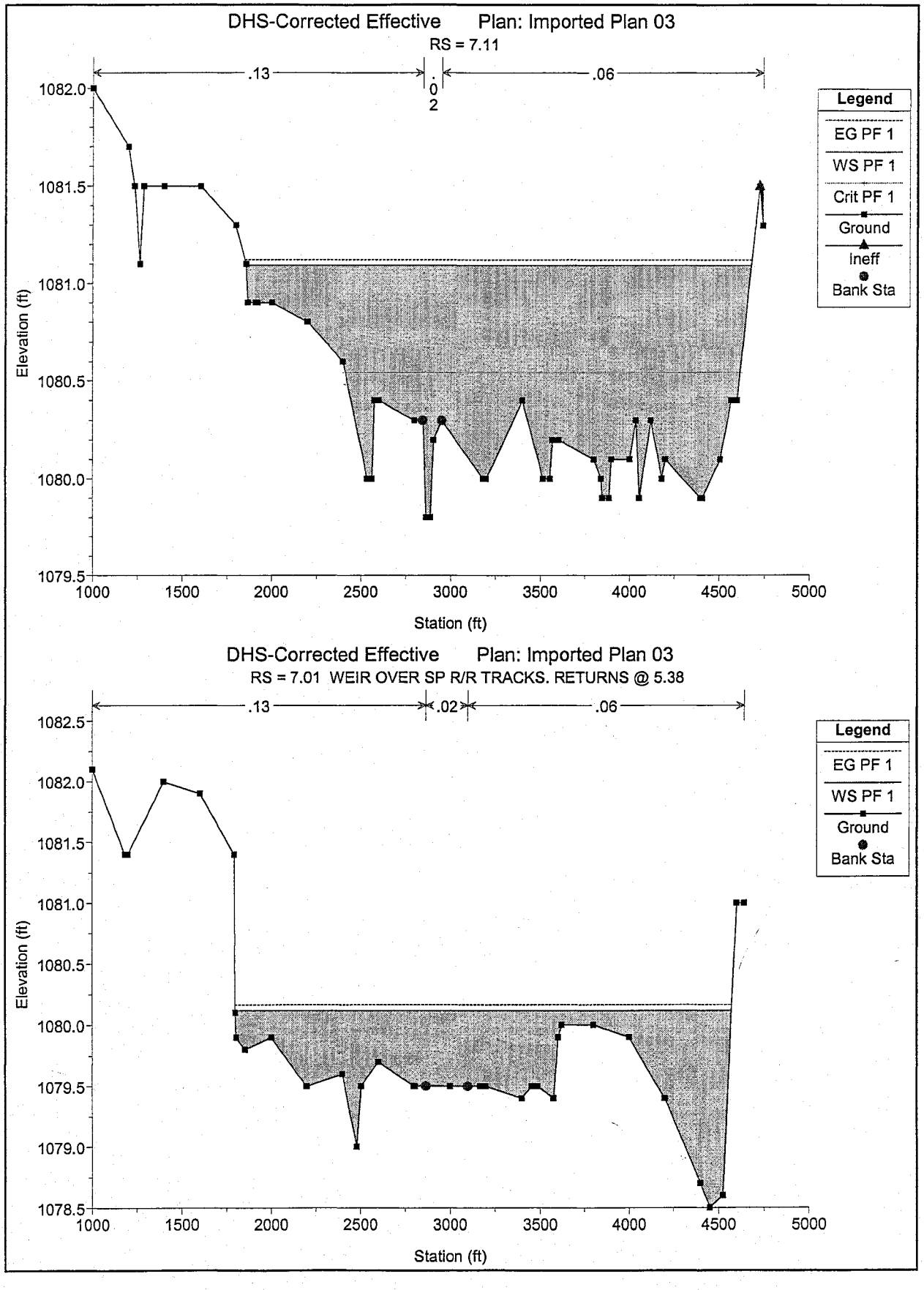

DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.99
.035
.033
.13
0.034
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.89
.13
.13
.035
.13
0.02
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

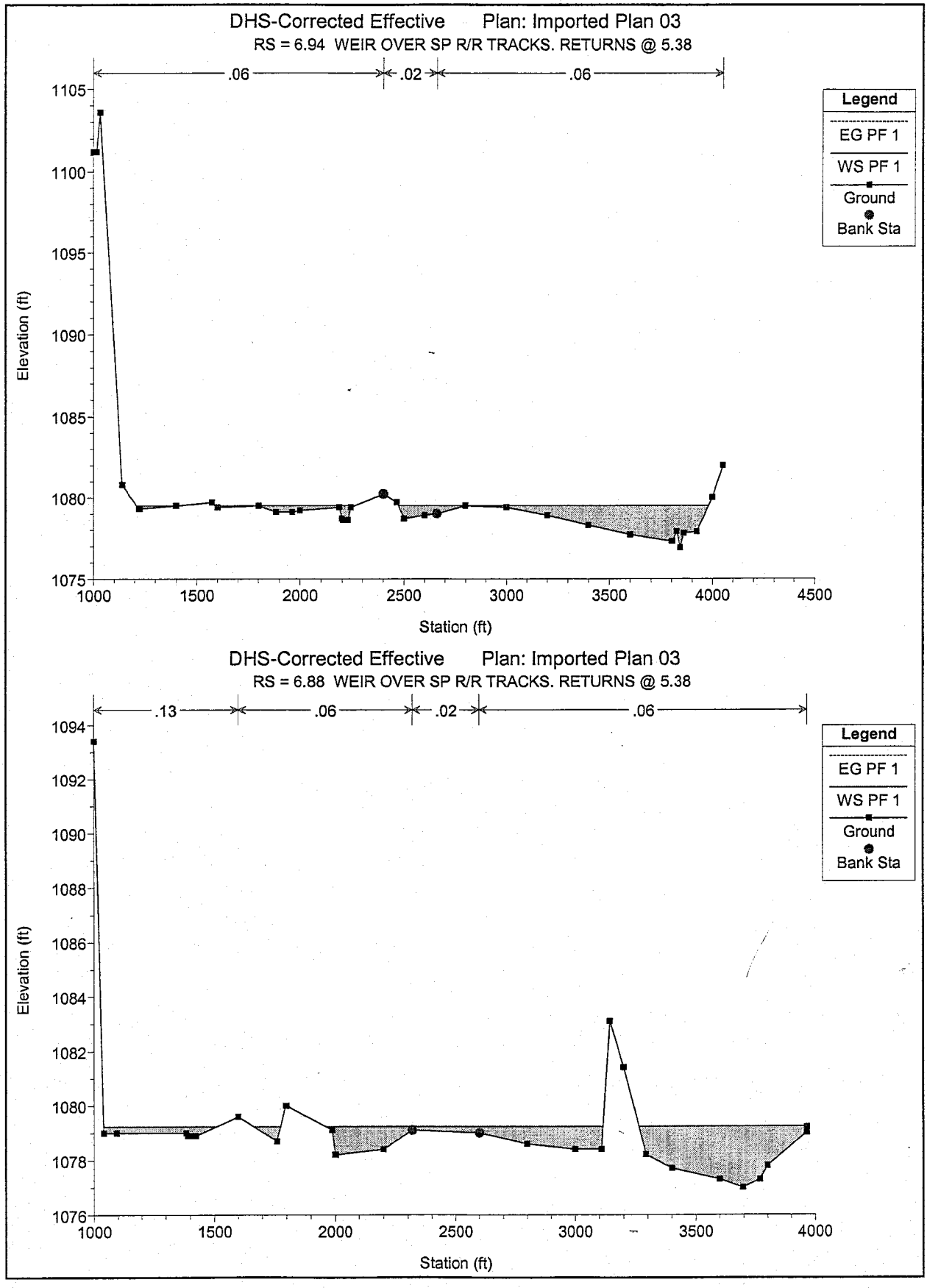

DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.8
.13
.13
.035
0
2
1092
1091
1090
1089
1088
1087
1086
1085
Elevation (ft)
1000
2000
3000
4000
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.71
.13
.13
.035
0
2
1088.5
1088.0
1087.5
1087.0
1086.5
1086.0
1085.5
Elevation (ft)
1000
2000
3000
4000
5000
6000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

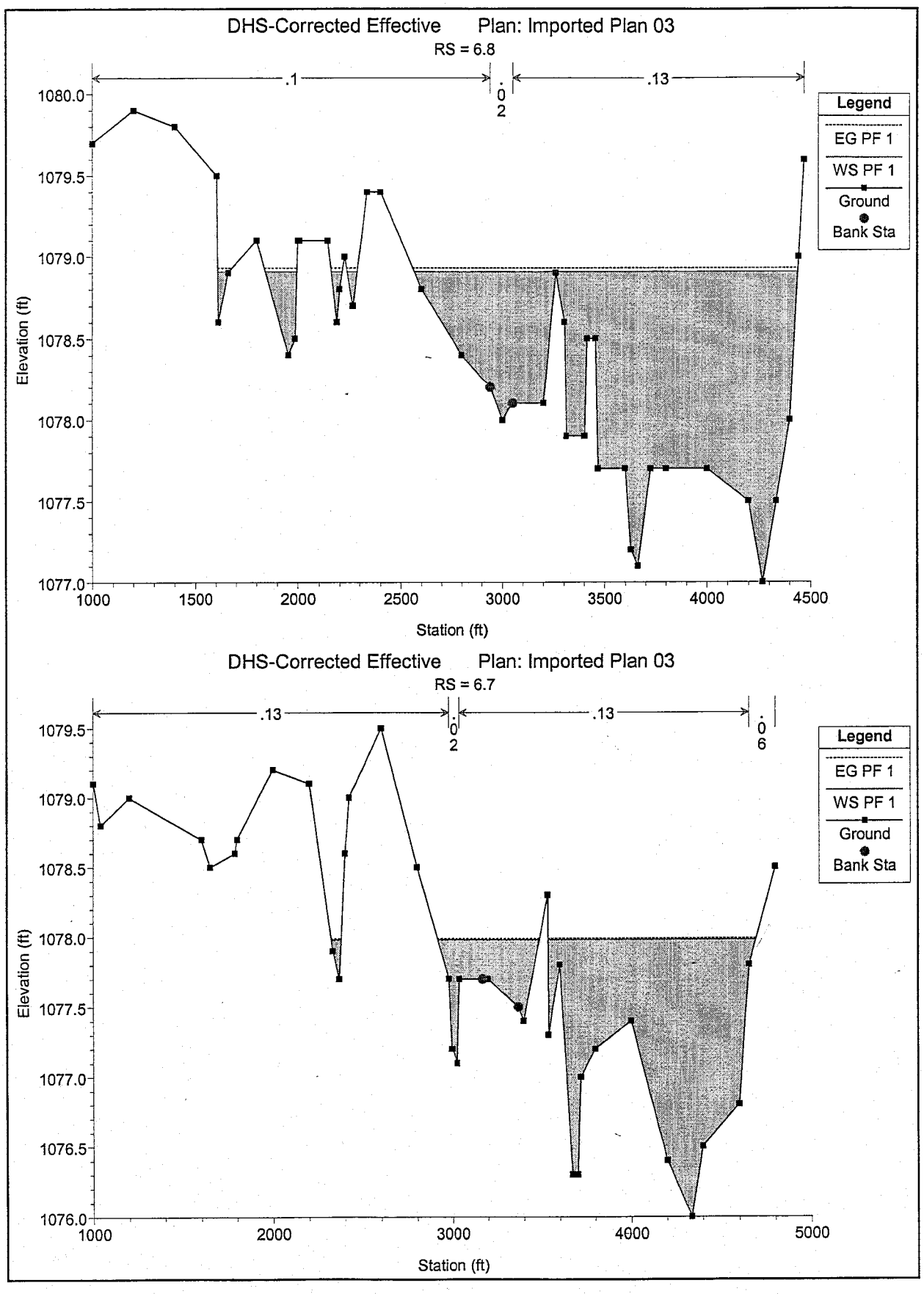

DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.66
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.57
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

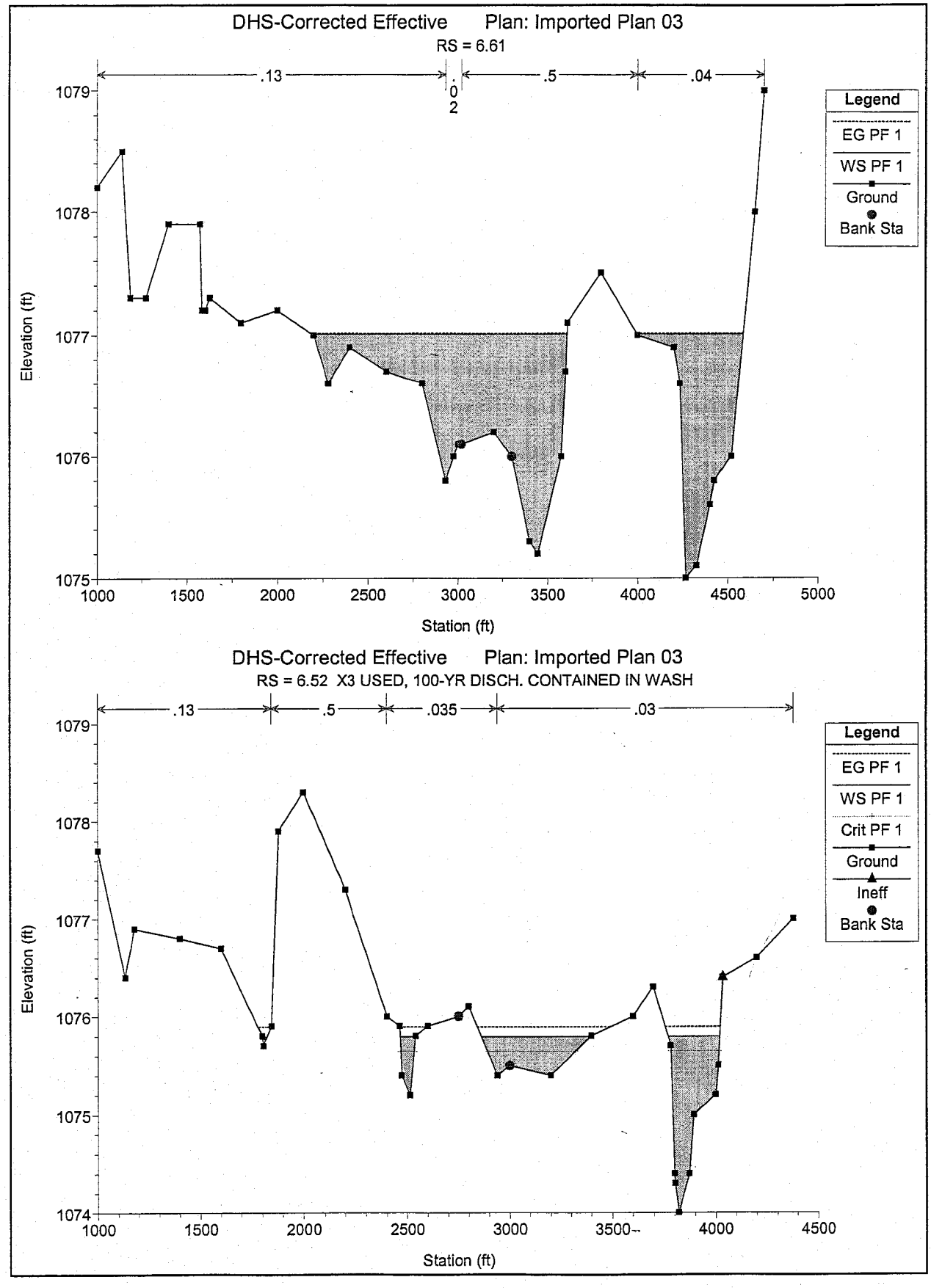

DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.48 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.02
.13
.035
.5
.02
.1
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1086
1085
1084
1083
1082
1081
1080
1079
1000
2000
3000
4000
5000
6000
7000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.38
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1085.0
1084.5
1084.0
1083.5
1083.0
1082.5
1082.0
1081.5
1000
2000
3000
4000
5000
6000
7000
Station (ft)

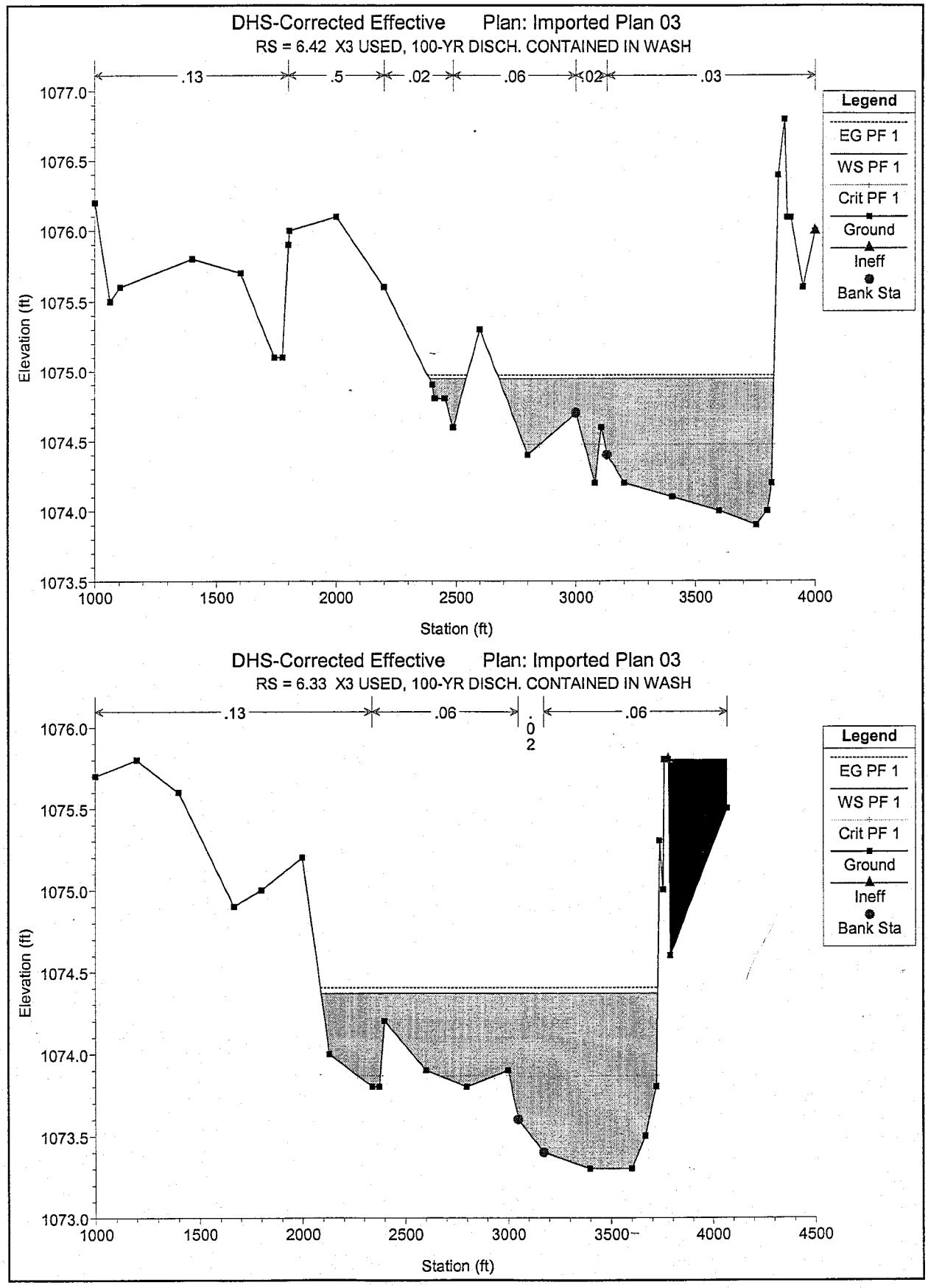

DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.29
.13
.02
.13
.5
.035
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1084.0
1083.5
1083.0
1082.5
1082.0
1081.5
1081.0
1080.5
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.2
.13
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1083.0
1082.5
1082.0
1081.5
1081.0
1080.5
1000
2000
3000
4000
5000
6000
Station (ft)

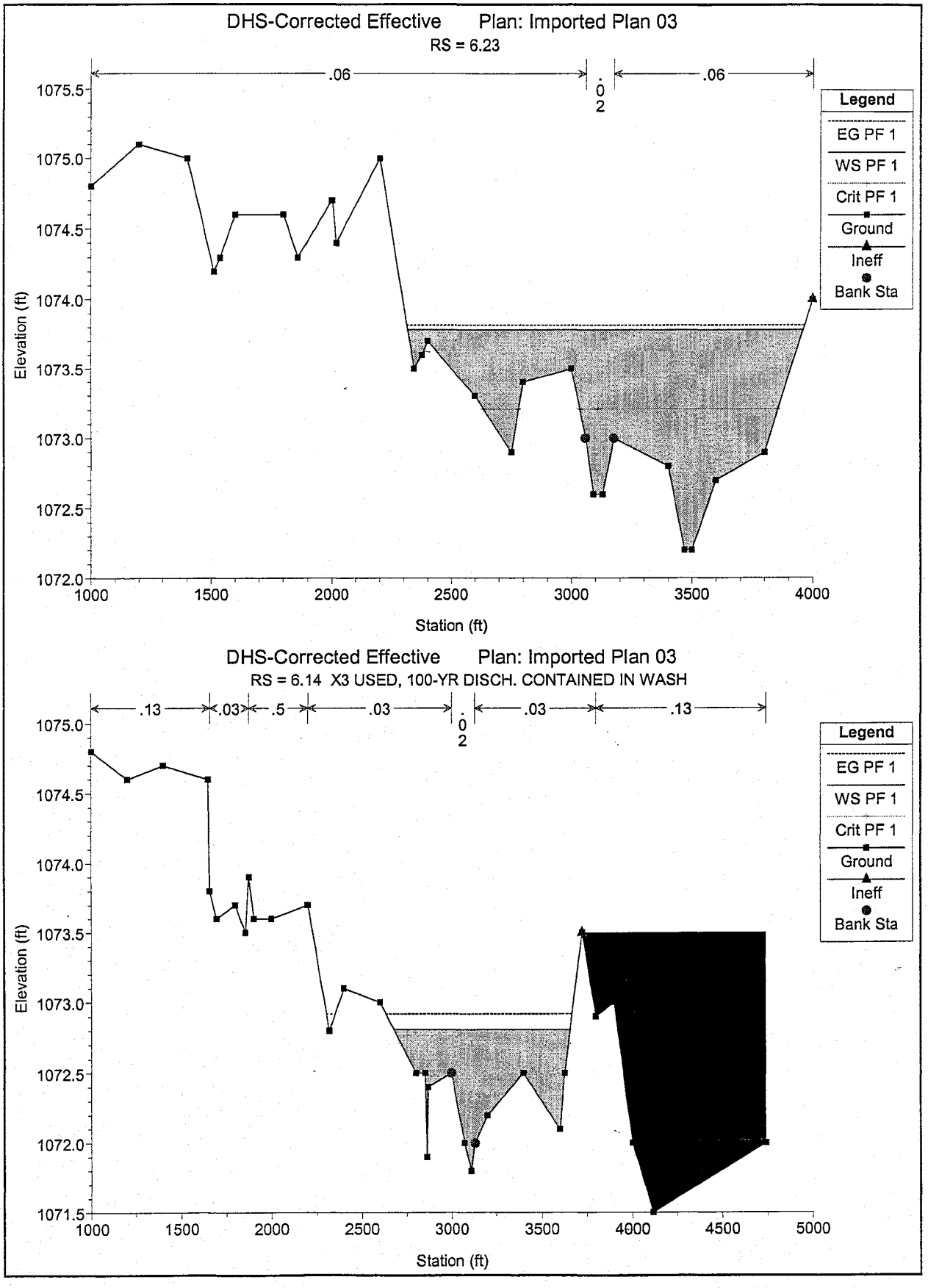

DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.11
.13
.02
.06
1082.0
1081.5
1081.0
1080.5
1080.0
1079.5
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
DHS-Corrected Effective Plan: Imported Plan 03
RS = 7.01 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.13
.02
.06
1082.5
1082.0
1081.5
1081.0
1080.5
1080.0
1079.5
1079.0
1078.5
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

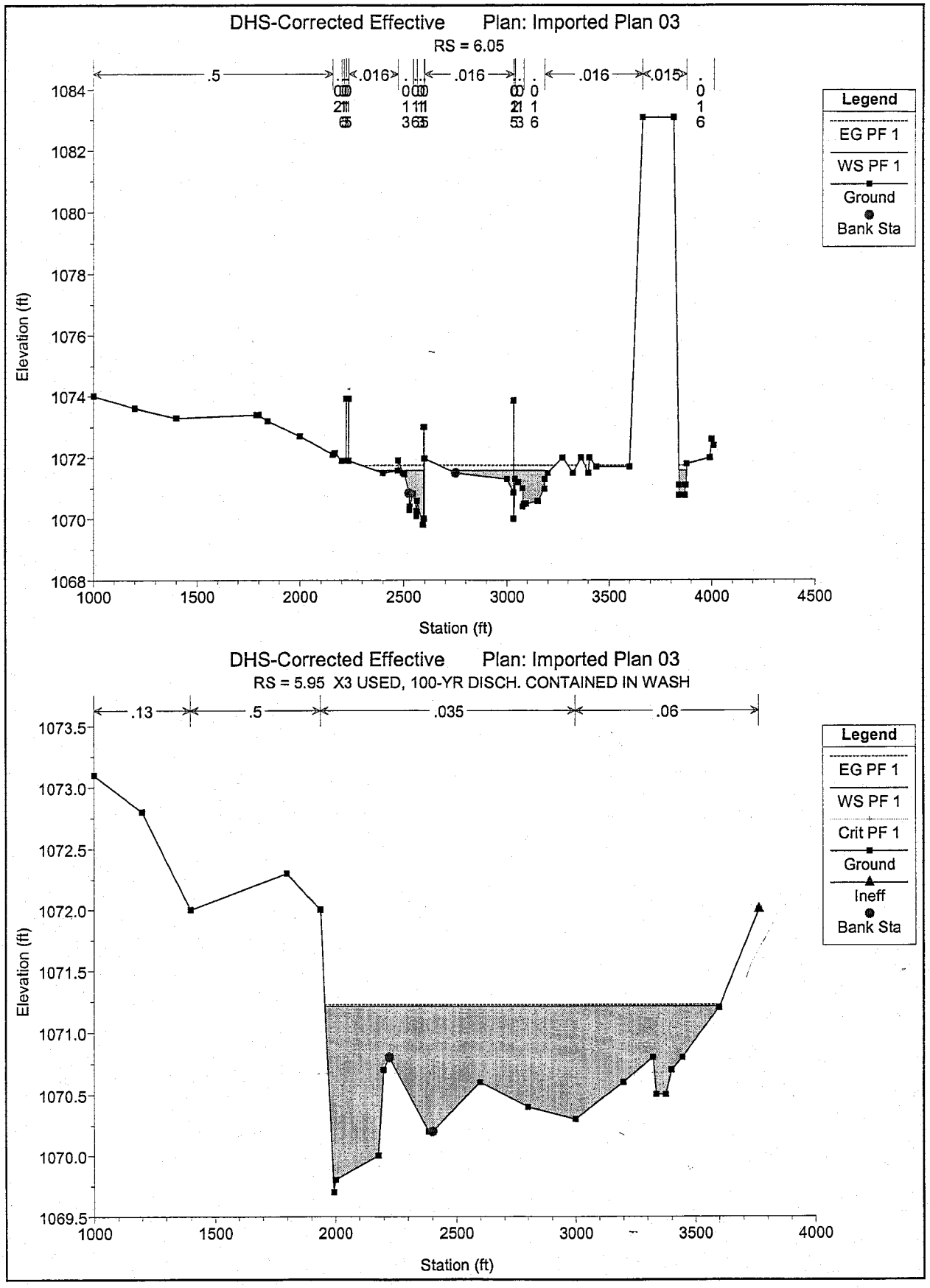

DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.94 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.06
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1105
1100
1095
1090
1085
1080
1075
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.88 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.13
.06
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1094
1092
1090
1088
1086
1084
1082
1080
1078
1076
1000
1500
2000
2500
3000
3500
4000
Station (ft)

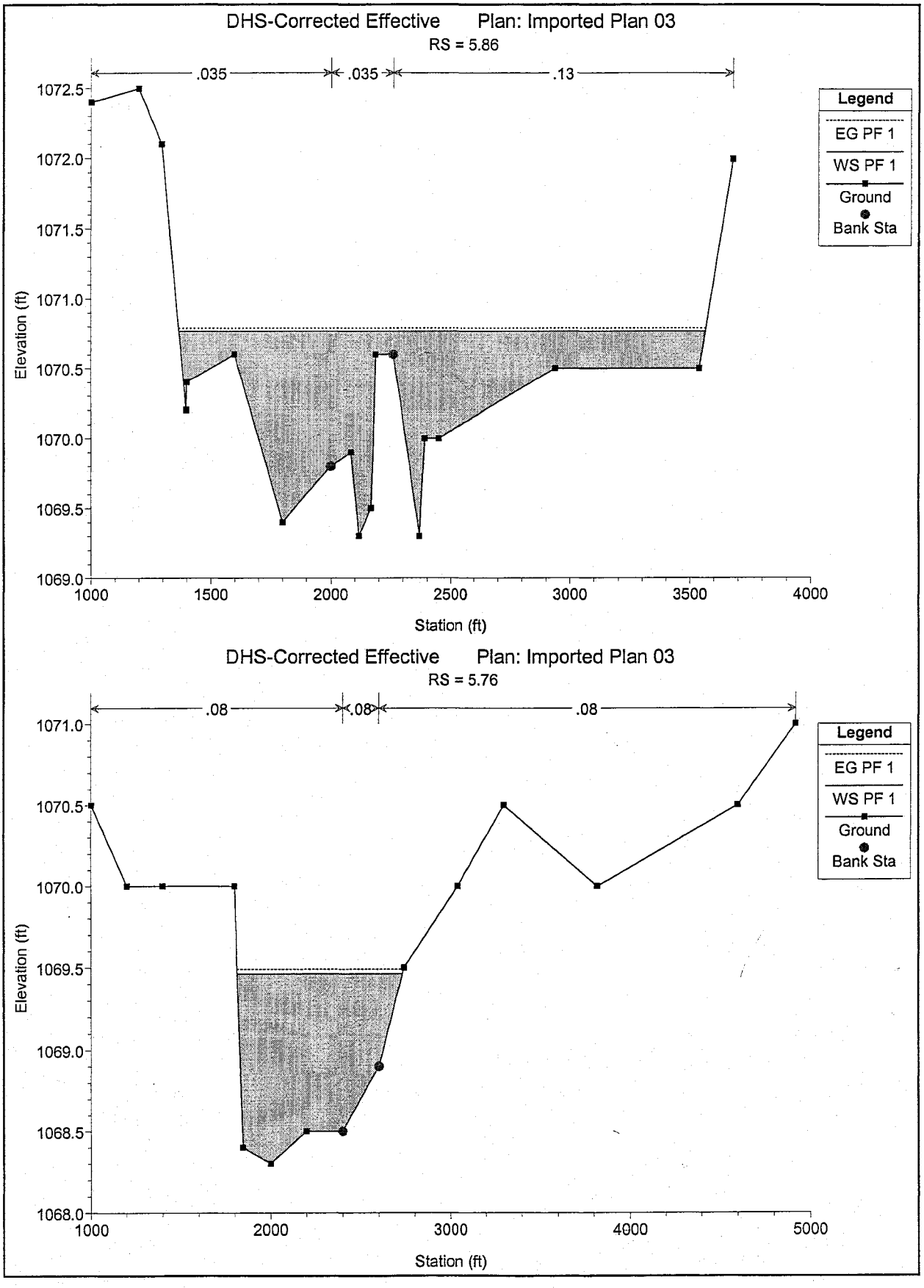

DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.8
.1
.02
.13
1080.0
1079.5
1079.0
1078.5
1078.0
1077.5
1077.0
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.7
.13
.02
.13
.06
1079.5
1079.0
1078.5
1078.0
1077.5
1077.0
1076.5
1076.0
Elevation (ft)
1000
2000
3000
4000
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

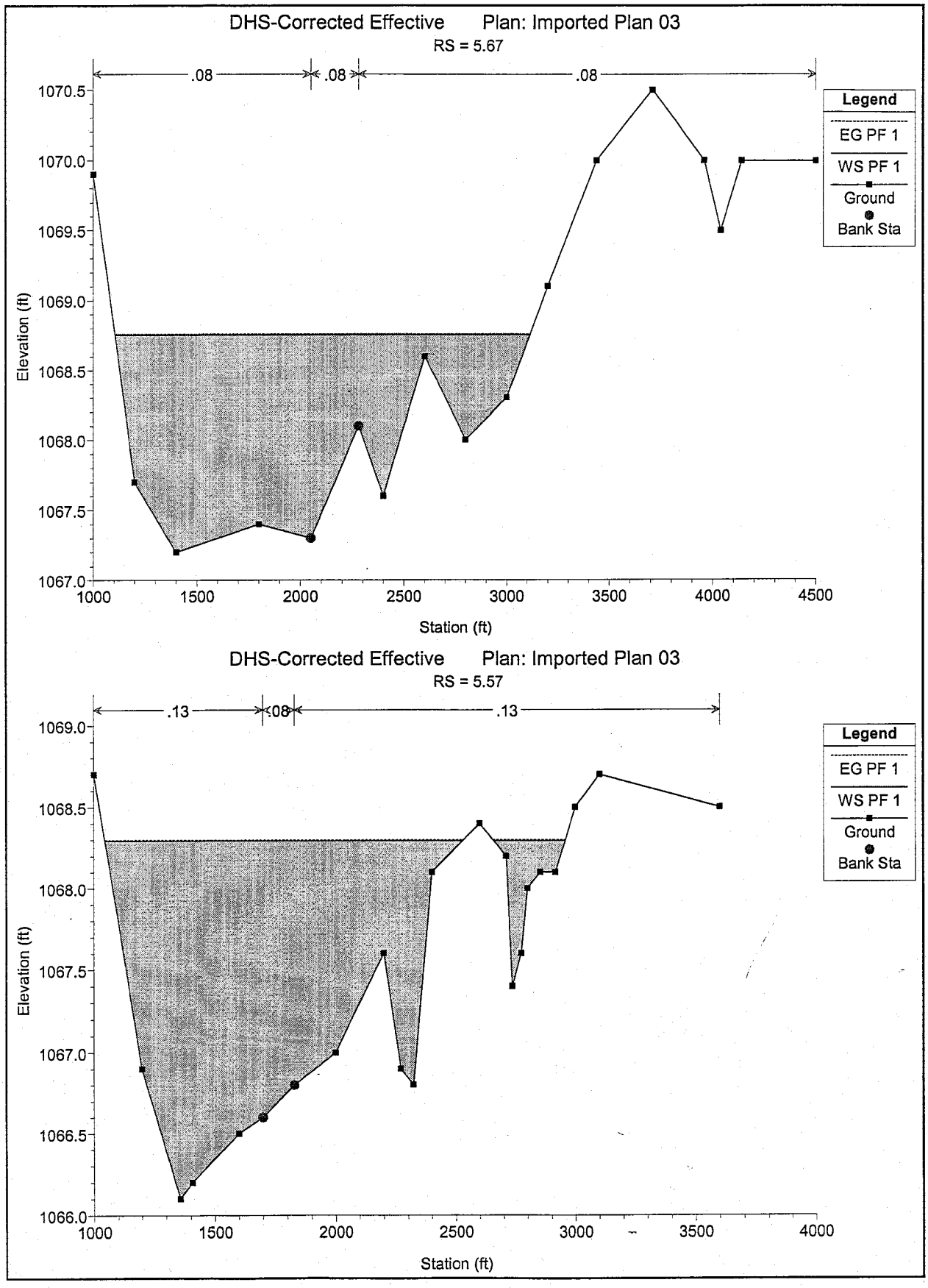

DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.61
.13
.02
.5
.04
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.52 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.035
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

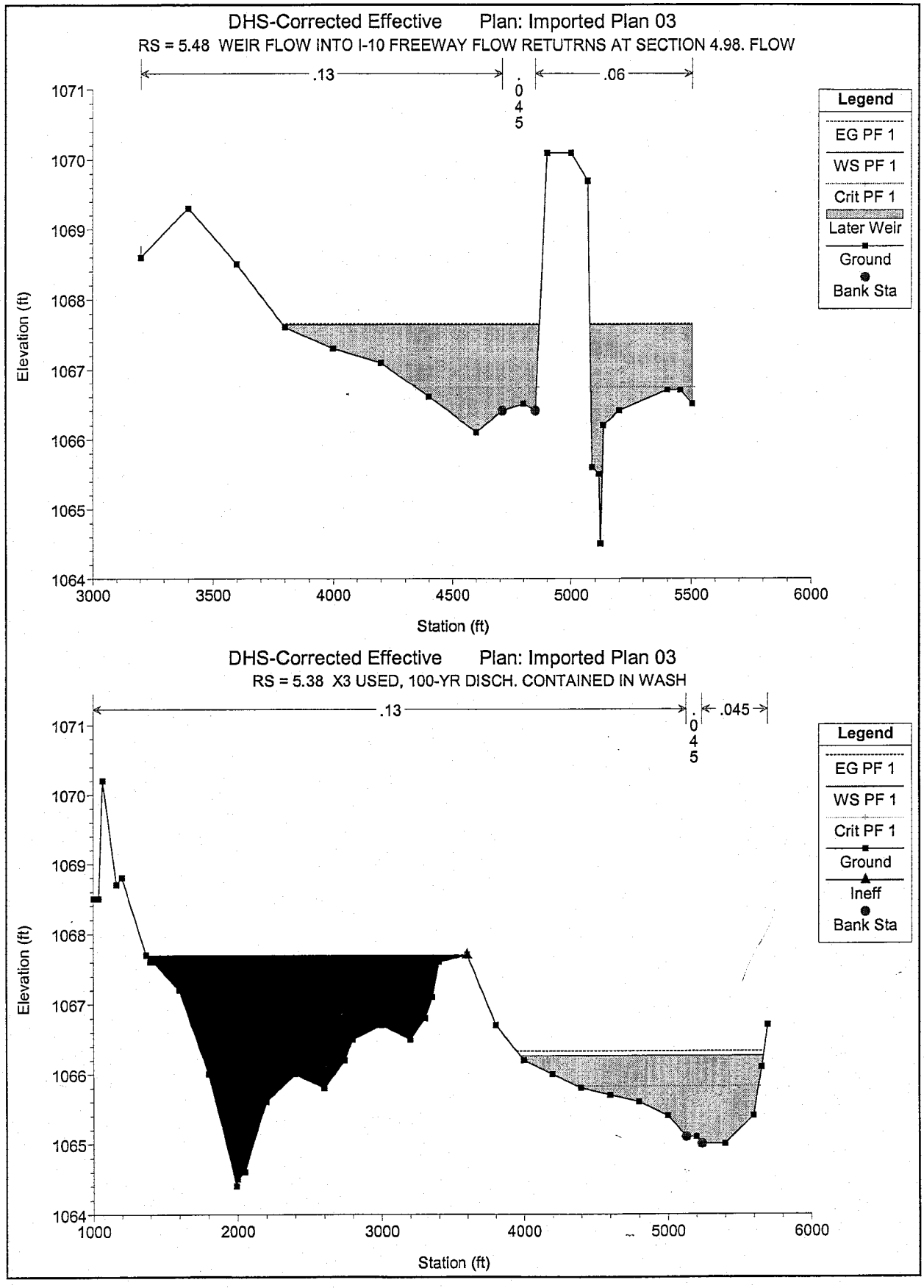

DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.42 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.02
.06
.02
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1077.0
1076.5
1076.0
1075.5
1075.0
1074.5
1074.0
1073.5
1000
1500
2000
2500
3000
3500
4000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.33 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.06
.02
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1076.0
1075.5
1075.0
1074.5
1074.0
1073.5
1073.0
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

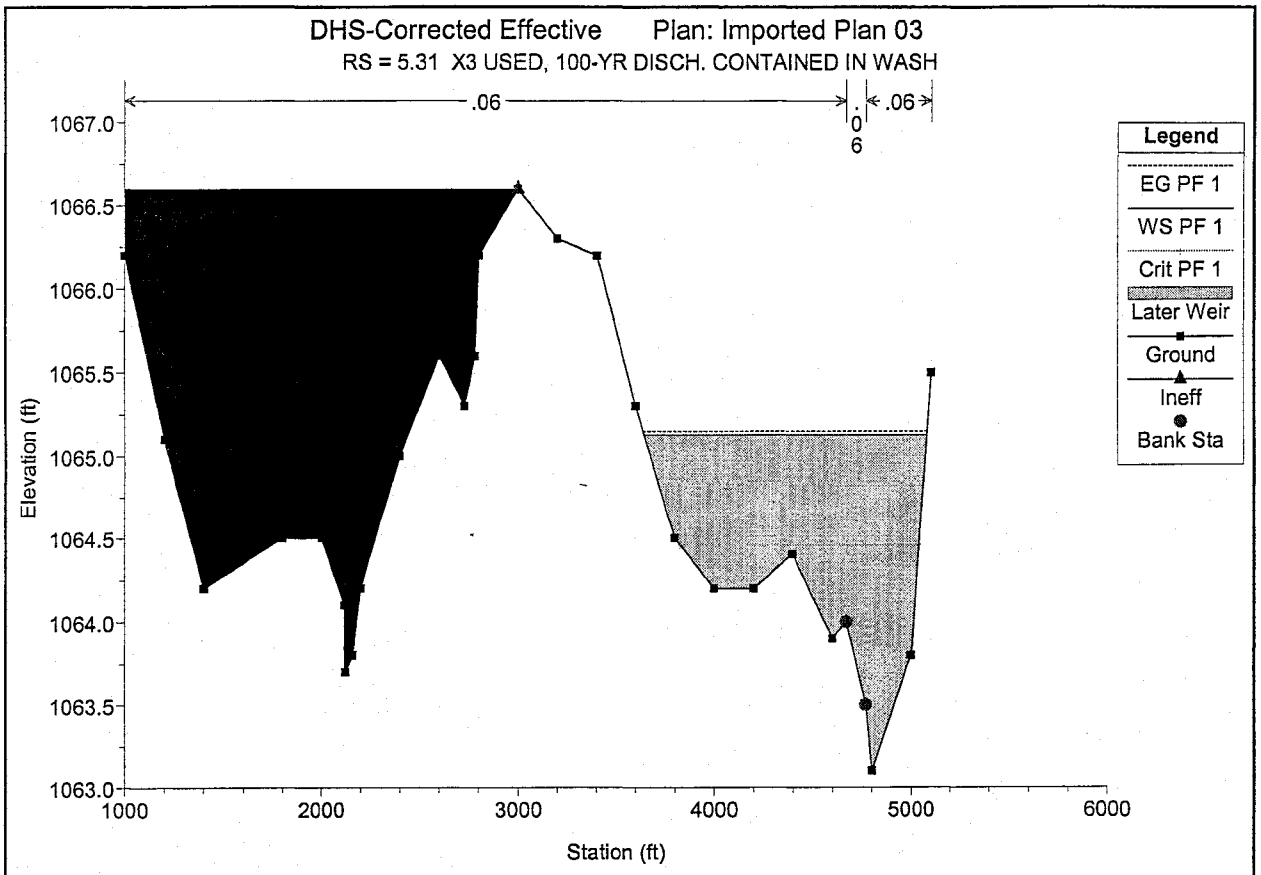

DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.23
.06
.02
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1075.5
1075.0
1074.5
1074.0
1073.5
1073.0
1072.5
1072.0
1000
1500
2000
2500
3000
3500
4000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.14 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.03
.5
.03
.02
.03
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1075.0
1074.5
1074.0
1073.5
1073.0
1072.5
1072.0
1071.5
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)

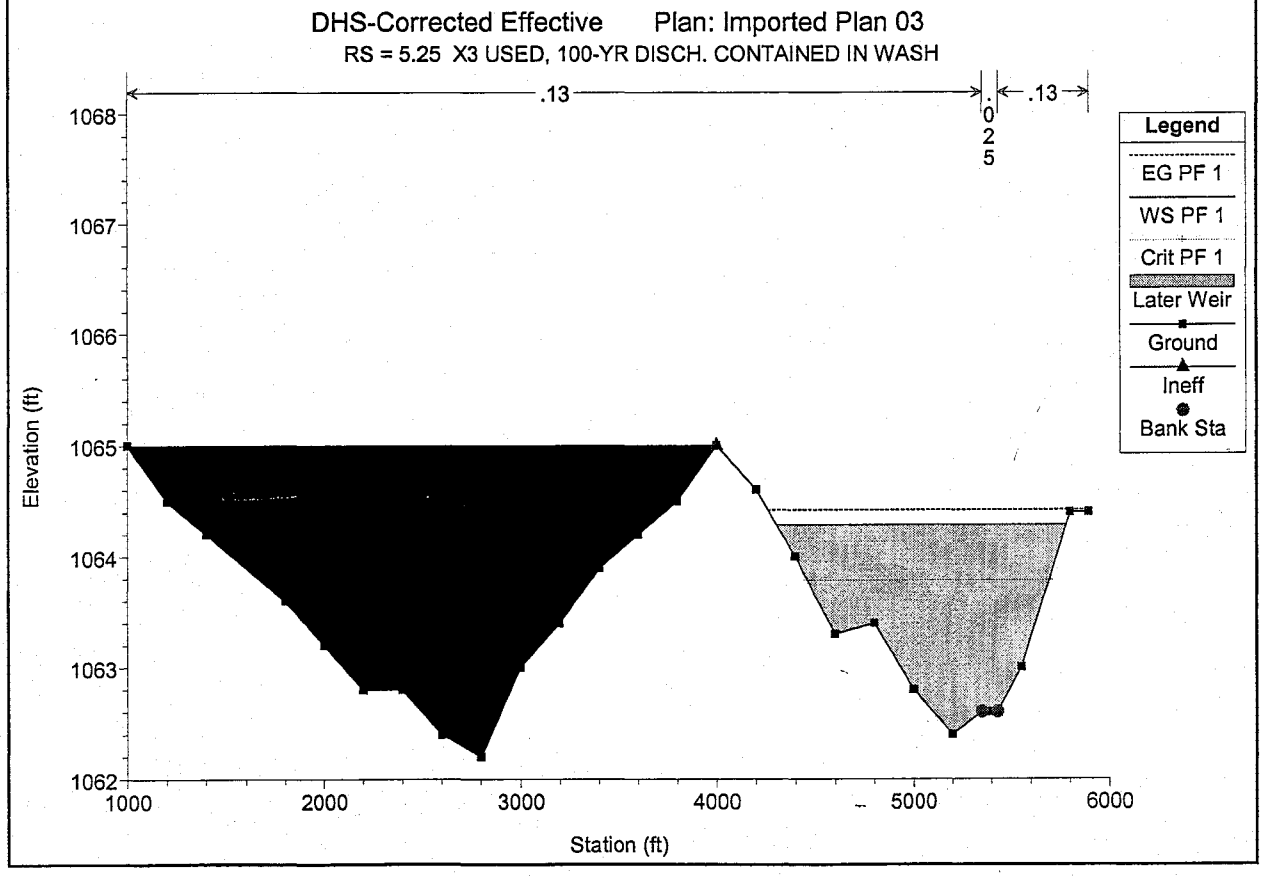

DHS-Corrected Effective Plan: Imported Plan 03
RS = 6.05
.5
.016
.016
.016
.015
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.95 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.035
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

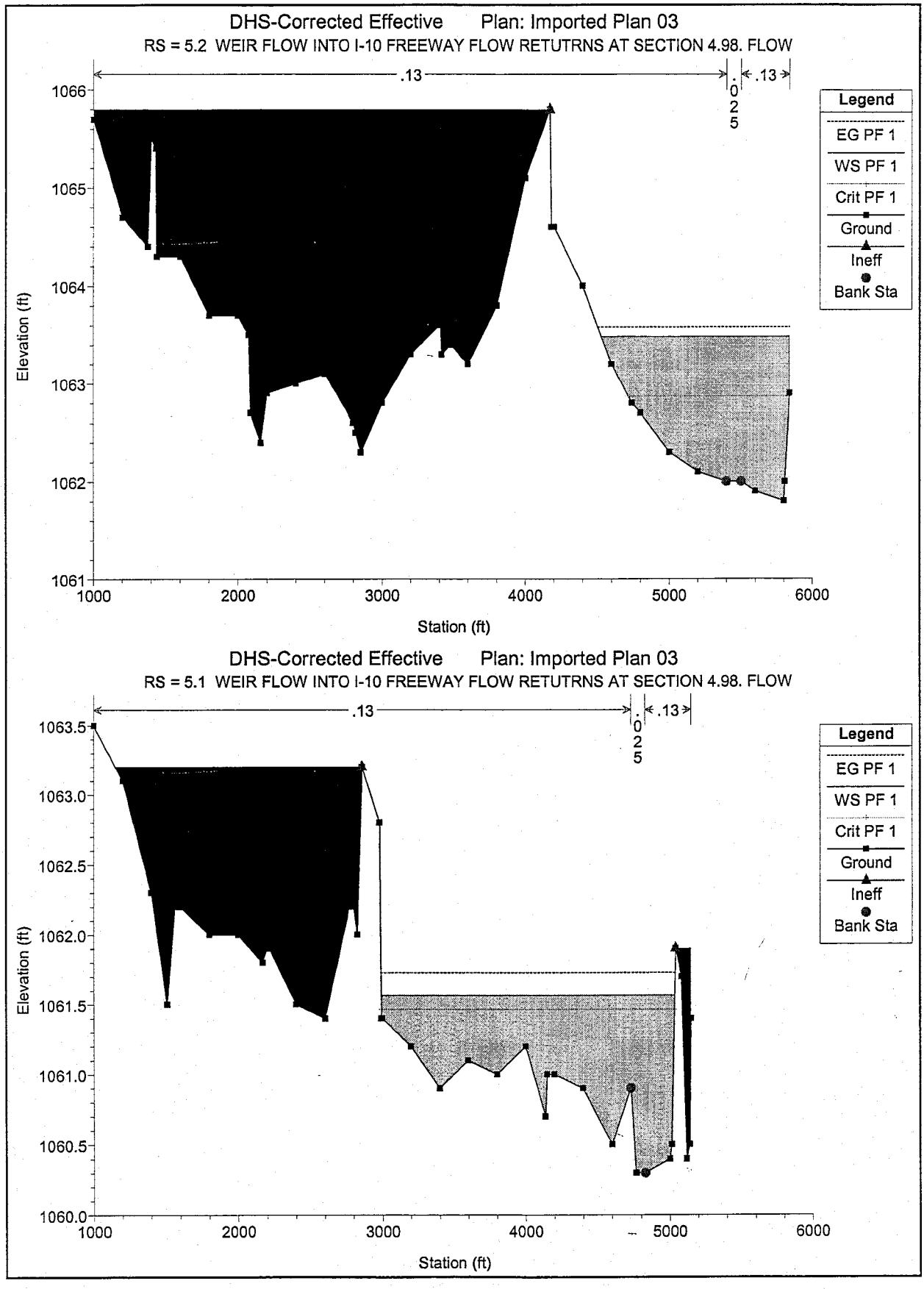

DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.86
.035
.035
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.76
.08
.08
.08
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

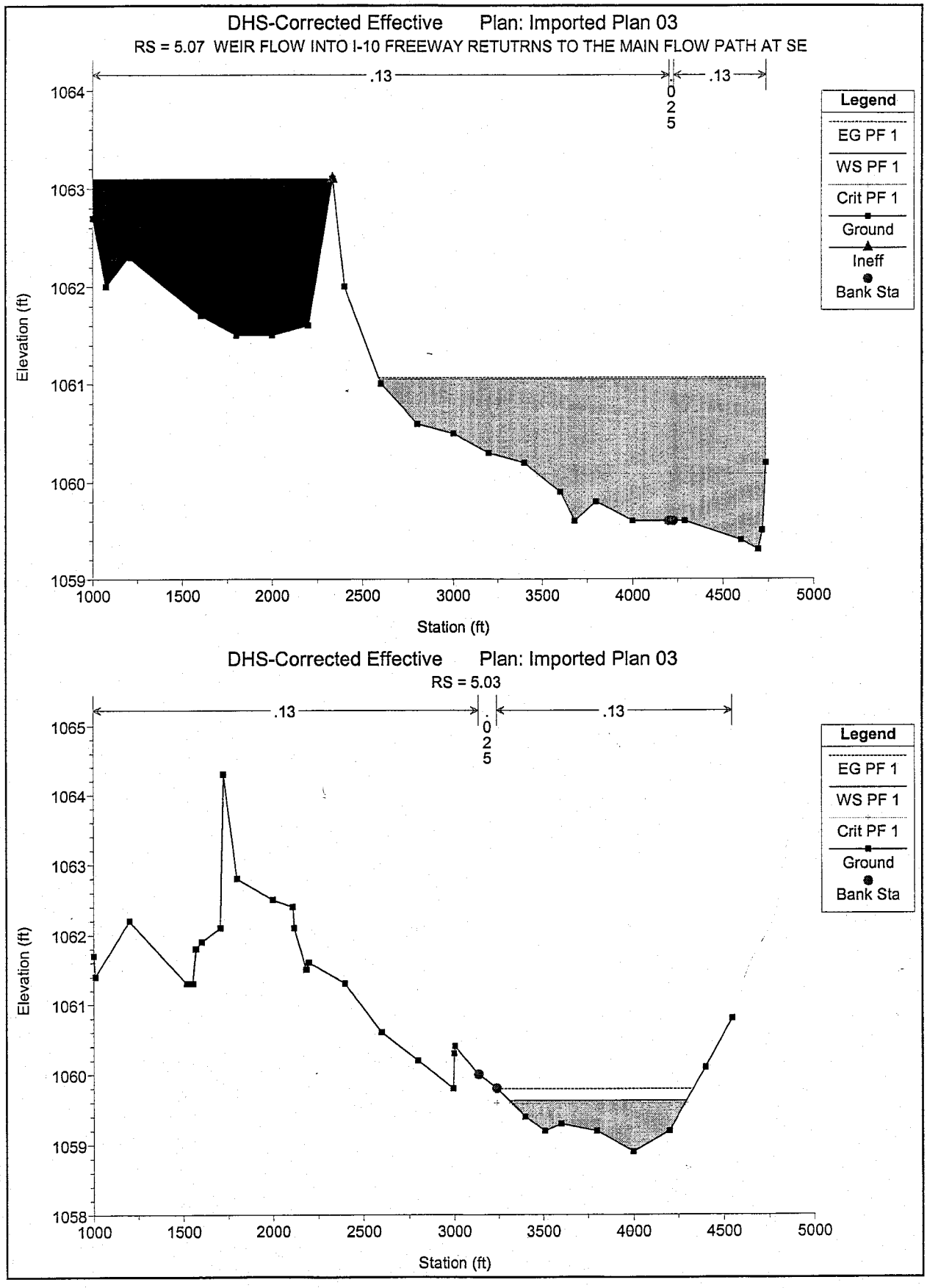

DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.67
.08
.08
.08
1070.5
1070.0
1069.5
1069.0
1068.5
1068.0
1067.5
1067.0
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.57
.13
.08
.13
1069.0
1068.5
1068.0
1067.5
1067.0
1066.5
1066.0
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

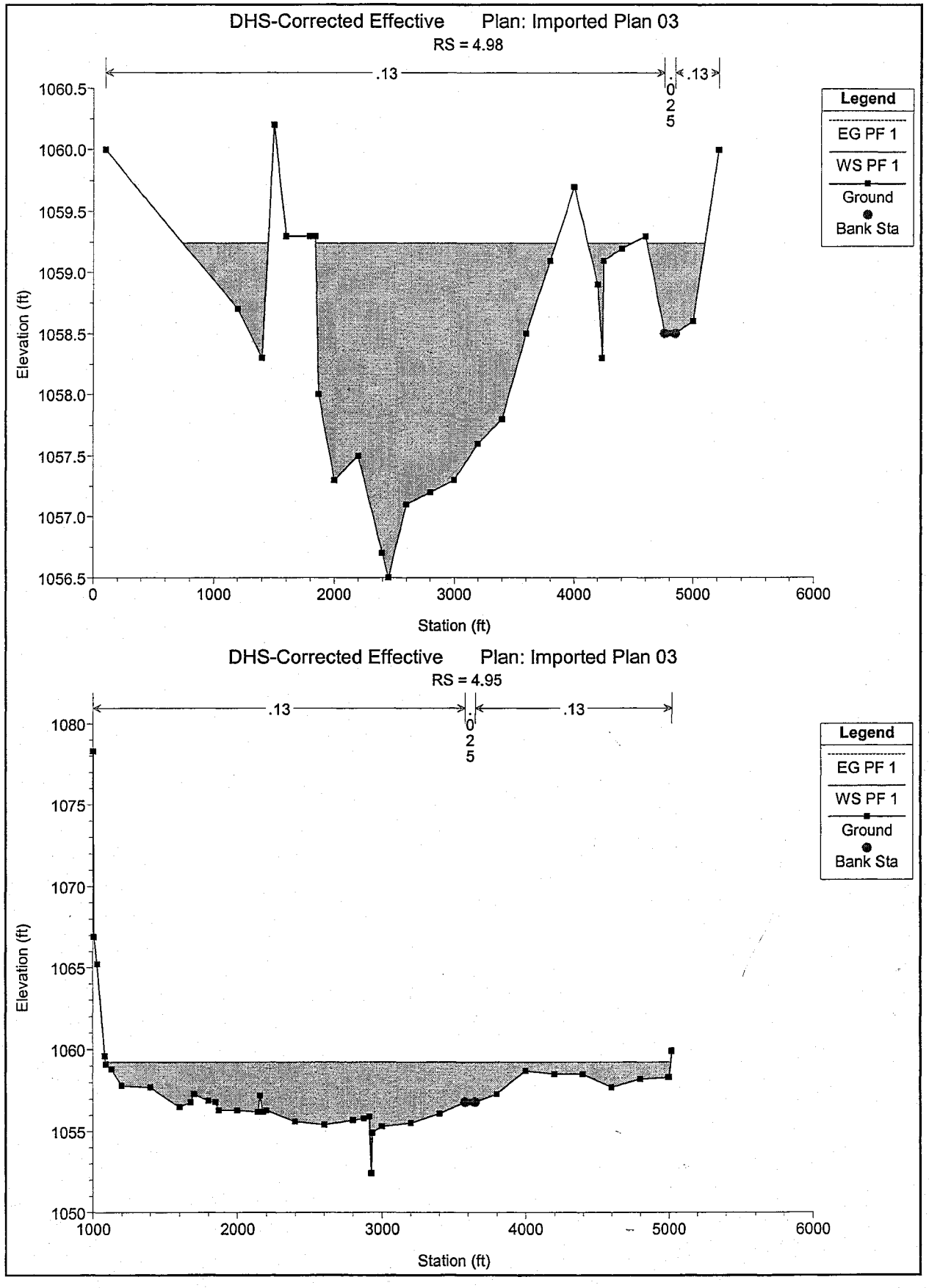

DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.48 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.045
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.38 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

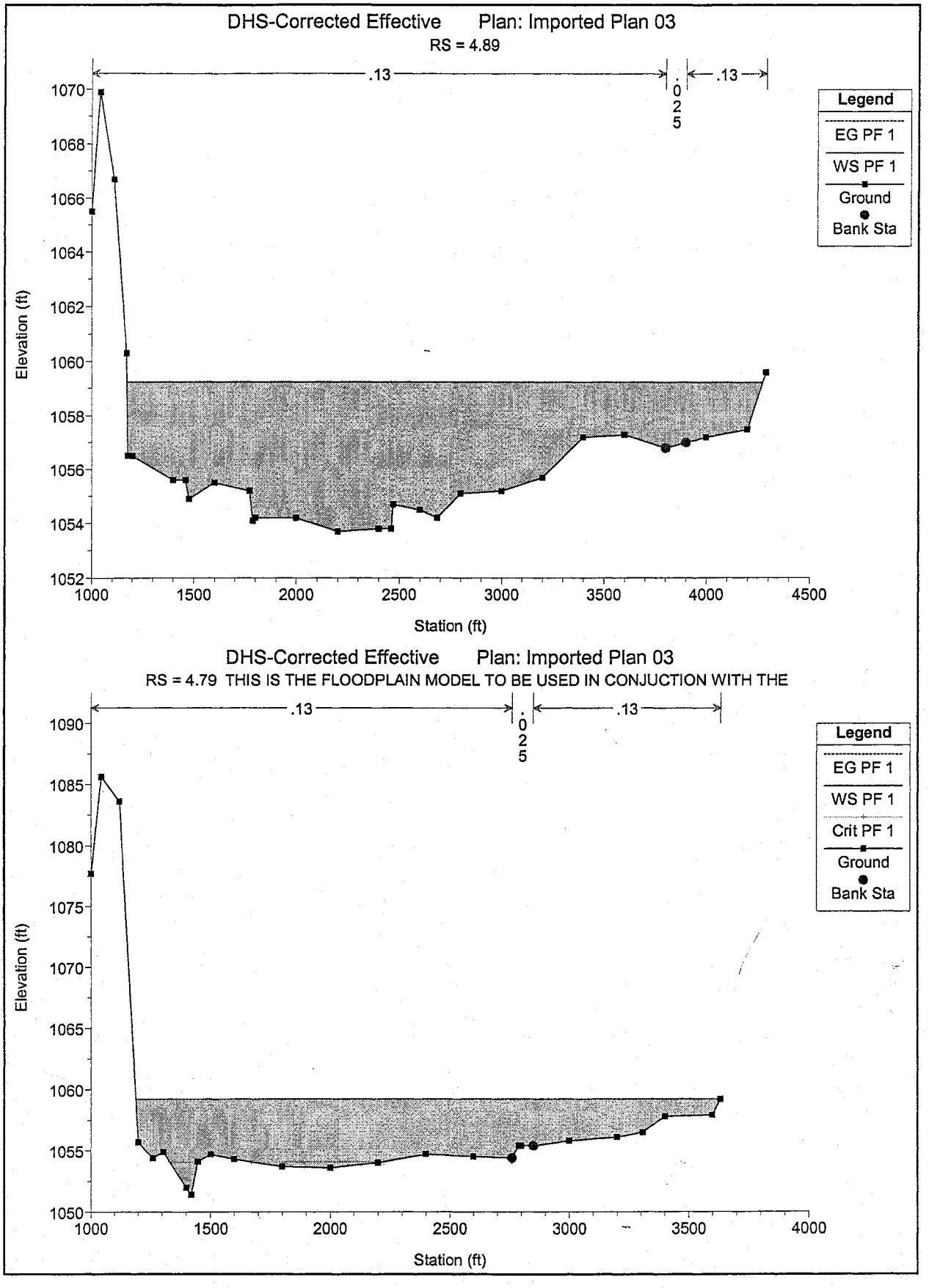

DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.31 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.06
.06
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Ineff
Bank Sta
Elevation (ft)
1067.0
1066.5
1066.0
1065.5
1065.0
1064.5
1064.0
1063.5
1063.0
1000
2000
3000
4000
5000
6000
Station (ft)


DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.25 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.13
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Ineff
Bank Sta
Elevation (ft)
1068
1067
1066
1065
1064
1063
1062
1000
2000
3000
4000
5000
6000
Station (ft)


DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.2 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1066
1065
1064
1063
1062
1061
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.1 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1063.5
1063.0
1062.5
1062.0
1061.5
1061.0
1060.5
1060.0
1000
2000
3000
4000
5000
6000
Station (ft)


DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.07 WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SE
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1064
1063
1062
1061
1060
1059
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 5.03
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1065
1064
1063
1062
1061
1060
1059
1058
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)


DHS-Corrected Effective Plan: Imported Plan 03
RS = 4.98
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 4.95
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


DHS-Corrected Effective Plan: Imported Plan 03
RS = 4.89
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Corrected Effective Plan: Imported Plan 03
RS = 4.79 THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

Appendix H
HEC-RAS DHS Post Development Model

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	9.61	1237.00	1118.50	1119.94	1119.28	1119.95	0.016005	1.08	1203.81	1480.45	0.20
Reach-1	9.55	1237.00	1116.40	1117.96	1117.00	1117.97	0.002757	0.61	2015.98	1995.83	0.09
Reach-1	9.45	1237.00	1114.90	1116.33	1115.54	1116.34	0.003926	0.65	1918.42	2104.46	0.11
Reach-1	9.36	1237.00	1112.80	1114.14		1114.15	0.005213	0.70	1811.80	1859.45	0.12
Reach-1	9.27	1237.00	1110.80	1112.54		1112.65	0.001910	4.26	1707.97	1827.07	0.61
Reach-1	9.17	1237.00	1109.60	1110.92	1110.64	1111.03	0.006627	3.49	1059.41	2022.23	0.61
Reach-1	9.08	1210.00	1107.30	1108.56	1108.30	1108.72	0.003245	4.73	1359.38	1861.18	0.77
Reach-1	8.98	1210.00	1106.00	1107.37		1107.47	0.001939	3.87	1962.24	2828.35	0.60
Reach-1	8.89	1210.00	1104.90	1105.94		1106.02	0.004759	4.55	1556.36	2547.13	0.88
Reach-1	8.79	1210.00	1103.00	1104.19		1104.25	0.002715	3.66	1710.89	2181.16	0.67
Reach-1	8.7	1210.00	1101.40	1102.42		1102.56	0.004251	4.80	1566.60	2758.75	0.85
Reach-1	8.61	1210.00	1099.90	1100.62		1100.65	0.003357	3.18	1938.72	2786.99	0.70
Reach-1	8.51	1210.00	1098.50	1098.96	1098.63	1098.98	0.003415	2.33	1283.50	2887.68	0.65
Reach-1	8.42	1210.00	1096.30	1097.09	1096.80	1097.12	0.004064	3.13	1441.35	3030.72	0.75
Reach-1	8.32	1210.00	1095.10	1095.99	1095.56	1096.02	0.001419	2.42	1740.76	3142.63	0.48
Reach-1	8.23	1210.00	1094.40	1094.92		1094.93	0.003702	1.60	1218.09	2441.97	0.41
Reach-1	8.18	1375.00	1092.80	1093.70	1093.53	1093.74	0.004973	2.24	872.73	2151.59	0.49
Reach-1	8.08	1375.00	1091.80	1092.79		1092.81	0.000952	1.19	1385.10	2226.90	0.22
Reach-1	7.99	1375.00	1090.70	1091.40	1091.23	1091.49	0.013231	3.55	867.86	1834.11	0.83
Reach-1	7.89	1375.00	1089.30	1089.48		1089.51	0.001660	0.74	1274.24	2464.16	0.38
Reach-1	7.8	1375.00	1087.20	1088.13	1087.90	1088.19	0.004738	4.13	1039.12	2423.09	0.85
Reach-1	7.71	1375.00	1085.50	1086.56		1086.60	0.002351	3.75	1826.99	3125.45	0.64
Reach-1	7.66	1691.00	1084.50	1085.73		1085.81	0.005330	4.18	1162.59	2417.10	0.90
Reach-1	7.57	1691.00	1083.40	1085.18	1084.73	1085.20	0.000534	2.10	2682.16	4170.48	0.32
Reach-1	7.48	1691.00	1084.00	1084.31	1084.10	1084.38	0.025525	5.44	1447.54	3974.46	1.72
Reach-1	7.38	1691.00	1082.00	1083.26		1083.28	0.000752	2.24	2942.59	4009.52	0.37
Reach-1	7.29	1691.00	1081.50	1082.69		1082.72	0.001923	2.97	2483.53	3220.81	0.56
Reach-1	7.2	1691.00	1081.40	1081.81		1081.82	0.001657	1.52	1864.16	2790.65	0.45
Reach-1	7.11	1865.00	1079.80	1081.09	1080.54	1081.12	0.001356	2.77	2245.51	2820.14	0.48
Reach-1	7.06	Lat. Weir									
Reach-1	7.01	1551.77	1079.50	1080.12		1080.16	0.003063	2.98	1586.74	2772.30	0.67
Reach-1	6.96	Lat. Weir									
Reach-1	6.94	1270.50	1078.70	1079.48		1079.49	0.001084	1.71	1498.70	2239.67	0.39
Reach-1	6.91	Lat. Weir									
Reach-1	6.88	980.16	1079.00	1079.23		1079.24	0.000448	0.50	1805.51	2437.16	0.21
Reach-1	6.8	980.16	1078.00	1078.91		1078.93	0.001362	2.42	1852.32	2184.64	0.47

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

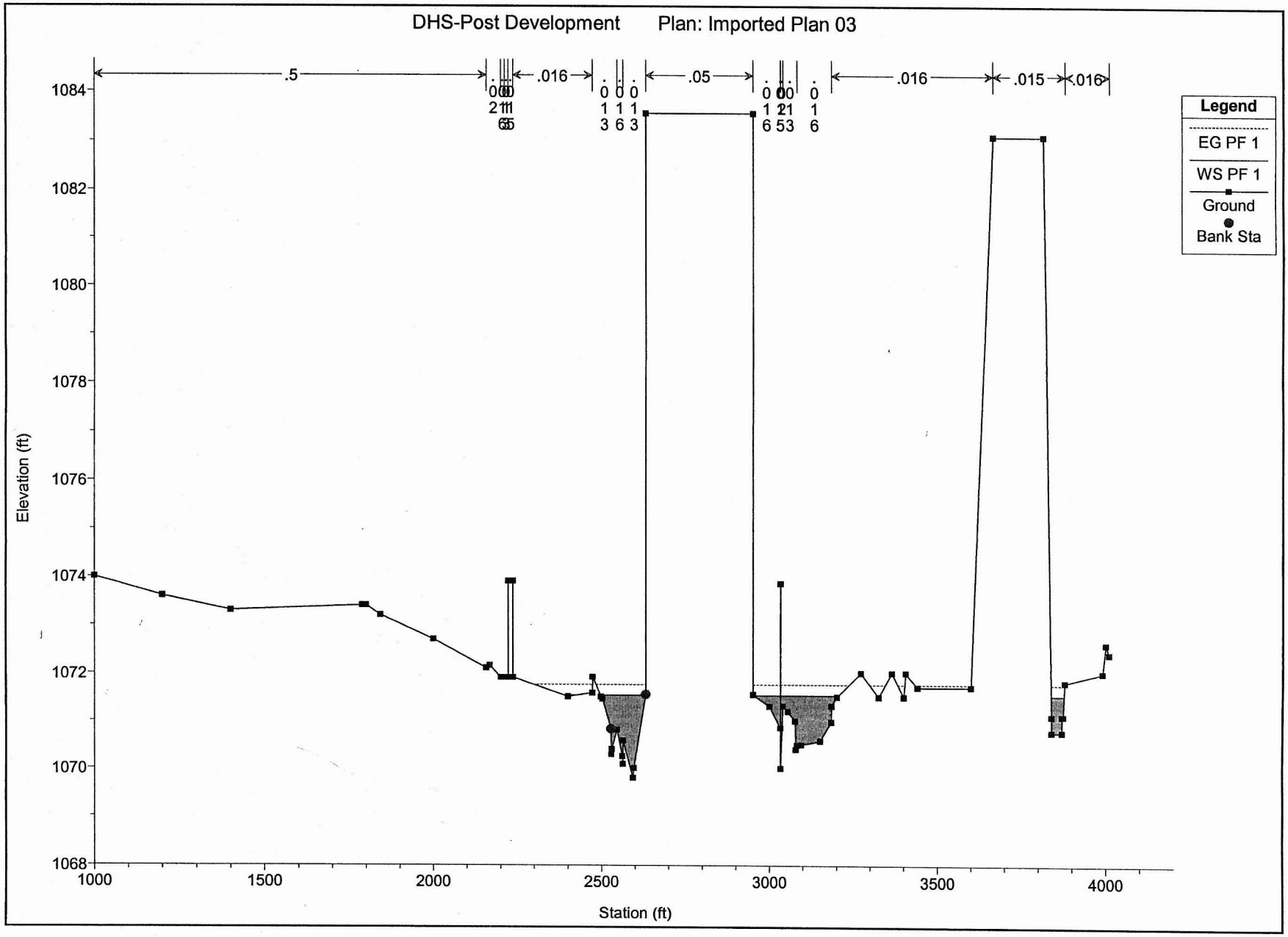
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	6.7	980.16	1077.50	1077.98		1077.99	0.002772	0.31	1456.50	1781.03	0.09
Reach-1	6.61	980.16	1076.00	1077.01		1077.02	0.001432	0.10	1493.50	2006.94	0.02
Reach-1	6.52	980.16	1075.40	1075.78	1075.64	1075.89	0.004695	1.35	398.97	873.44	0.47
Reach-1	6.42	980.16	1074.20	1074.95	1074.47	1074.98	0.000940	1.43	807.26	1306.88	0.36
Reach-1	6.33	980.16	1073.40	1074.37	1073.87	1074.40	0.001382	2.51	1090.41	1635.41	0.48
Reach-1	6.23	980.16	1072.60	1073.79	1073.21	1073.82	0.000990	2.42	1168.08	1645.41	0.42
Reach-1	6.14	980.16	1071.80	1072.80	1072.71	1072.91	0.004317	3.85	432.85	974.16	0.81
Reach-1	6.05	1005.16	1069.80	1071.53		1071.75	0.001609	4.52	283.44	468.67	0.78
Reach-1	5.95	1005.16	1070.20	1071.21	1070.67	1071.23	0.000600	0.85	1229.39	1645.13	
Reach-1	5.86	1005.16	1069.30	1070.77		1070.79	0.001404	1.39	1235.87	2197.84	
Reach-1	5.76	1005.16	1068.50	1069.46		1069.49	0.005350	1.13	781.09	915.43	
Reach-1	5.67	1005.16	1067.30	1068.76		1068.76	0.000677	0.50	1967.62	2010.02	
Reach-1	5.57	1005.16	1066.60	1068.29		1068.30	0.001174	0.87	2002.98	1782.52	0.12
Reach-1	5.53	Lat. Weir									
Reach-1	5.48	1005.16	1066.40	1067.64	1066.74	1067.65	0.001324	1.35	1391.43	1501.51	0.22
Reach-1	5.38	1638.16	1065.00	1066.26	1065.82	1066.33	0.004495	2.47	1188.56	1692.77	0.40
Reach-1	5.31	1638.16	1063.50	1065.13	1064.46	1065.15	0.002060	1.39	1415.49	1439.67	0.21
Reach-1	5.25	1638.16	1062.60	1064.28	1063.79	1064.42	0.003140	4.71	1627.10	1473.28	0.64
Reach-1	5.23	Lat. Weir									
Reach-1	5.2	1500.64	1062.00	1063.48	1062.87	1063.58	0.002649	3.97	1531.16	1310.03	0.58
Reach-1	5.15	Lat. Weir									
Reach-1	5.1	1385.50	1060.30	1061.56	1061.46	1061.73	0.005720	4.96	1342.25	2042.70	0.81
Reach-1	5.08	Lat. Weir									
Reach-1	5.07	1329.34	1059.60	1061.05	1060.09	1061.07	0.001886	3.30	2293.25	2146.22	0.48
Reach-1	5.03	1329.34	1059.80	1059.63	1059.59	1059.79	0.268006		405.78	985.06	0.00
Reach-1	4.98	1329.34	1058.50	1059.24		1059.24	0.000496	1.08	3926.67	3564.81	0.22
Reach-1	4.95	1329.34	1056.80	1059.23		1059.23	0.000042	0.69	8937.10	3924.15	0.08
Reach-1	4.89	1329.34	1056.80	1059.22		1059.22	0.000017	0.42	11170.30	3099.68	0.05
Reach-1	4.79	1329.34	1054.40	1059.21	1054.09	1059.21	0.000013	0.54	10311.23	2443.45	0.05

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
		(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
Reach-1	9.61	1119.95	1119.94	0.02	1.98	0.00		712.24	524.76	1480.45
Reach-1	9.55	1117.97	1117.96	0.01	1.63	0.00	434.82	294.23	507.95	1995.83
Reach-1	9.45	1116.34	1116.33	0.01	2.19	0.00	383.22	256.32	597.47	2104.46
Reach-1	9.36	1114.15	1114.14	0.01	1.48	0.01	201.84	188.68	846.48	1859.45
Reach-1	9.27	1112.65	1112.54	0.11	1.62	0.00	386.67	489.81	360.52	1827.07
Reach-1	9.17	1111.03	1110.92	0.12	2.30	0.00	303.34	765.80	167.86	2022.23
Reach-1	9.08	1108.72	1108.56	0.16	1.23	0.02	508.66	557.45	143.89	1861.18
Reach-1	8.98	1107.47	1107.37	0.10	1.44	0.00	567.00	497.20	145.81	2828.35
Reach-1	8.89	1106.02	1105.94	0.08	1.76	0.01	797.24	294.22	118.53	2547.13
Reach-1	8.79	1104.25	1104.19	0.06	1.68	0.01	744.35	354.52	111.13	2181.16
Reach-1	8.7	1102.56	1102.42	0.14	1.88	0.03	561.88	473.62	174.50	2758.75
Reach-1	8.61	1100.65	1100.62	0.03	1.66	0.00	919.15	202.58	88.26	2786.99
Reach-1	8.51	1098.98	1098.96	0.02	1.86	0.00	1073.09	82.40	54.52	2887.68
Reach-1	8.42	1097.12	1097.09	0.03	1.10	0.00	711.32	201.75	296.93	3030.72
Reach-1	8.32	1096.02	1095.99	0.02	1.08	0.00	813.40	232.99	163.61	3142.63
Reach-1	8.23	1094.93	1094.92	0.02	1.19	0.00	961.74	149.09	99.17	2441.97
Reach-1	8.18	1093.74	1093.70	0.05	0.93	0.01	412.07	450.59	512.35	2151.59
Reach-1	8.08	1092.81	1092.79	0.02	1.30	0.01	526.70	477.50	370.80	2226.90
Reach-1	7.99	1091.49	1091.40	0.09	1.96	0.02	318.45	529.66	526.89	1834.11
Reach-1	7.89	1089.51	1089.48	0.03	1.31	0.00	76.26	2.67	1296.07	2464.16
Reach-1	7.8	1088.19	1088.13	0.07	1.59	0.01	138.41	182.91	1053.68	2423.09
Reach-1	7.71	1086.60	1086.56	0.04	0.78	0.00	315.77	178.71	880.51	3125.45
Reach-1	7.66	1085.81	1085.73	0.08	0.59	0.02	170.82	336.73	1183.46	2417.10
Reach-1	7.57	1085.20	1085.18	0.02	0.81	0.01	161.24	340.69	1189.08	4170.48
Reach-1	7.48	1084.38	1084.31	0.07	1.10	0.02	230.53	202.42	1258.06	3974.46
Reach-1	7.38	1083.28	1083.26	0.02	0.56	0.00	144.91	285.53	1260.56	4009.52
Reach-1	7.29	1082.72	1082.69	0.03	0.89	0.00	170.42	322.84	1197.75	3220.81
Reach-1	7.2	1081.82	1081.81	0.02	0.70	0.00	25.21	76.13	1589.66	2790.65
Reach-1	7.11	1081.12	1081.09	0.03	0.95	0.00	136.03	293.09	1435.88	2820.14
Reach-1	7.06	Lat. Weir								
Reach-1	7.01	1080.16	1080.12	0.05	0.66	0.01	209.21	430.77	911.78	2772.30
Reach-1	6.96	Lat. Weir								
Reach-1	6.94	1079.49	1079.48	0.02	0.25	0.00	48.86	187.15	1034.49	2239.67
Reach-1	6.91	Lat. Weir								
Reach-1	6.88	1079.24	1079.23	0.01	0.30	0.00	120.83	25.35	833.98	2437.16
Reach-1	6.8	1078.93	1078.91	0.02	0.94	0.00	57.50	220.81	701.85	2184.64

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

Reach	River Sta	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
		(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
Reach-1	6.7	1077.99	1077.98	0.01	0.97	0.00	141.22	22.29	816.65	1781.03
Reach-1	6.61	1077.02	1077.01	0.01	1.13	0.01	323.21	25.29	631.66	2006.94
Reach-1	6.52	1075.89	1075.78	0.10	0.90	0.02	43.55	46.92	889.69	873.44
Reach-1	6.42	1074.98	1074.95	0.03	0.56	0.00	55.95	92.95	831.26	1306.88
Reach-1	6.33	1074.40	1074.37	0.03	0.58	0.00	207.59	272.40	500.17	1635.41
Reach-1	6.23	1073.82	1073.79	0.03	0.91	0.01	132.24	294.42	553.51	1645.41
Reach-1	6.14	1072.91	1072.80	0.12	1.15	0.01	120.59	349.83	509.73	974.16
Reach-1	6.05	1071.75	1071.53	0.22	0.46	0.06	20.81	480.88	503.47	468.67
Reach-1	5.95	1071.23	1071.21	0.01	0.43	0.00	340.91	109.83	554.42	1645.13
Reach-1	5.86	1070.79	1070.77	0.02	1.29	0.00	569.31	293.43	142.42	2197.84
Reach-1	5.76	1069.49	1069.46	0.03	0.72	0.01	810.78	172.84	21.54	915.43
Reach-1	5.67	1068.76	1068.76	0.00	0.46	0.00	723.67	121.79	159.70	2010.02
Reach-1	5.57	1068.30	1068.29	0.01	0.64	0.00	559.99	179.94	265.23	1782.52
Reach-1	5.53	Lat. Weir								
Reach-1	5.48	1067.65	1067.64	0.02	1.32	0.01	239.51	224.42	541.24	1501.51
Reach-1	5.38	1066.33	1066.26	0.07	1.17	0.01	309.34	321.08	1007.75	1692.77
Reach-1	5.31	1065.15	1065.13	0.02	0.72	0.01	814.19	191.47	632.50	1439.67
Reach-1	5.25	1064.42	1064.28	0.14	0.82	0.01	804.92	634.29	198.96	1473.28
Reach-1	5.23	Lat. Weir								
Reach-1	5.2	1063.58	1063.48	0.10	1.85	0.01	501.27	588.84	410.53	1310.03
Reach-1	5.15	Lat. Weir								
Reach-1	5.1	1061.73	1061.56	0.16	0.62	0.04	592.51	574.75	218.25	2042.70
Reach-1	5.08	Lat. Weir								
Reach-1	5.07	1061.07	1061.05	0.02	1.25	0.01	680.94	120.03	528.38	2146.22
Reach-1	5.03	1059.79	1059.63	0.17	0.50	0.05			1329.34	985.06
Reach-1	4.98	1059.24	1059.24	0.00	0.02	0.00	1234.03	72.37	22.93	3564.81
Reach-1	4.95	1059.23	1059.23	0.00	0.01	0.00	1090.25	117.84	121.25	3924.15
Reach-1	4.89	1059.22	1059.22	0.00	0.01	0.00	1187.69	98.15	43.50	3099.68
Reach-1	4.79	1059.21	1059.21	0.00			980.19	194.51	154.63	2443.45


DHS-Post Development
Plan: Imported Plan 03
.5
.016
.05
.016
.015
.016
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1084
1082
1080
1078
1076
1074
1072
1070
1068
1000
1500
2000
2500
3000
3500
4000
Station (ft)

HEC-RAS Version 3.0.1 Mar 2001
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: DHS-Post Development
Project File : Post_Development.prj
Run Date and Time: 10/18/2001 4:42:40 PM

Project in English units

Project Description:
DHS Drainage Study for new Building and parking structure FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA 5062 N. 19TH AVE.
CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA 85015
FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA
5062 N. 19TH AVE.
CAVE CREEK WASH JOB #04856-05-75
PHOENIX, ARIZONA 85015
FEMA FLOOD INSURANCE RE-STUDY
CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA 5062 N.
19TH AVE.
CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA
85015

PLAN DATA

Plan Title: Imported Plan 03
Plan File : p:\PROJECTS\State\Hec-Ras\Post_Development.p03

Geometry Title: Imported Geom 03
Geometry File : p:\PROJECTS\State\Hec-Ras\Post_Development.g03

Flow Title : Imported Flow 05
Flow File : p:\PROJECTS\State\Hec-Ras\Post_Development.f05

Plan Summary Information:

Number of: Cross Sections = 58 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Imported Flow 05
Flow File : p:\PROJECTS\State\Hec-Ras\Post_Development.f05

Flow Data (cfs)

River	Reach	RS	PF 1
RIVER-1	Reach-1	9.61	1237
RIVER-1	Reach-1	9.08	1210
RIVER-1	Reach-1	8.18	1375
RIVER-1	Reach-1	7.66	1691
RIVER-1	Reach-1	7.11	1865
RIVER-1	Reach-1	6.05	1890
RIVER-1	Reach-1	5.38	2523

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	PF 1	Critical	

Known WS = 1059.21

GEOMETRY DATA

Geometry Title: Imported Geom 03
Geometry File : p:\PROJECTS\State\Hec-Ras\Post_Development.g03

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.61

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

3000	1121.6	3024.7	1121.8	3041.6	1121.6	3085.6	1121.5	3101.4	1121.7
3116.6	1121.9	3301.4	1121.9	3501.4	1121.8	3701.4	1121.4	3880	1120
4101.4	1119.1	4301.4	1119.2	4501.4	1118.5	4644.6	1118.6	4701.4	1118.8
4901.4	1119.1	5101.4	1119	5301.4	1119.9	5501.4	1120	5587.5	1120.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
3000	.16	3880	.16	4644.6	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3880	4644.6	360	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1119.95	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.		0.160
0.160				
W.S. Elev (ft)	1119.94	Reach Len. (ft)	360.00	360.00
360.00				
Crit W.S. (ft)	1119.28	Flow Area (sq ft)		659.80
544.01				
E.G. Slope (ft/ft)	0.016005	Area (sq ft)		659.80
544.01				
Q Total (cfs)	1237.00	Flow (cfs)		712.24
524.76				
Top Width (ft)	1480.45	Top Width (ft)		749.17
731.28				
Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)		1.08
0.96				
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)		0.88
0.74				
Conv. Total (cfs)	9777.9	Conv. (cfs)		5630.0
4147.9				
Length Wtd. (ft)	360.00	Wetted Per. (ft)		749.17
731.28				
Min Ch El (ft)	1118.50	Shear (lb/sq ft)		0.88
0.74				
Alpha	1.01	Stream Power (lb/ft s)		0.95
0.72				
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	563.09	82.26
438.60				
C & E Loss (ft)	0.00	Cum SA (acres)	630.27	91.29
594.74				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.55

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW

PATH OF CAVE CREEK WASH
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1117.1	1177.4	1117.2	1200	1117.2	1491.9	1117.9	1535	1118.2
1600	1118.1	1800	1117.9	1829.8	1117.8	1857.9	1117.8	1869.5	1118.2
2000	1118.4	2200	1117.6	2400	1117.1	2511.7	1116.8	2540.9	1116.8
2600	1117	2800	1116.7	2803.8	1116.7	2832	1116.7	3000	1116.5
3140	1116.4	3400	1116.5	3467.9	1116.5	3495.5	1116.6	3508	1117.1
3600	1116.9	3800	1117	3951.6	1117.4	4000	1118.2	4022.2	1118.4
4031.8	1121	4046.5	1121.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.09	2800	.16	3140	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2800	3140	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	1535	1118.2

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1117.97	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.090	0.160
0.160				
W.S. Elev (ft)	1117.96	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1117.00	Flow Area (sq ft)	578.16	479.65
958.17				
E.G. Slope (ft/ft)	0.002757	Area (sq ft)	578.16	479.65
958.17				
Q Total (cfs)	1237.00	Flow (cfs)	434.82	294.23
507.95				
Top Width (ft)	1995.83	Top Width (ft)	810.45	340.00
845.38				
Vel Total (ft/s)	0.61	Avg. Vel. (ft/s)	0.75	0.61
0.53				
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	0.71	1.41
1.13				
Conv. Total (cfs)	23556.7	Conv. (cfs)	8280.4	5603.1
9673.2				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	810.46	340.00
845.40				
Min Ch El (ft)	1116.40	Shear (lb/sq ft)	0.12	0.24
0.20				
Alpha	1.07	Stream Power (lb/ft s)	0.09	0.15
0.10				
Frctn Loss (ft)	1.63	Cum Volume (acre-ft)	560.70	77.55
432.39				
C & E Loss (ft)	0.00	Cum SA (acres)	626.92	86.78
588.23				

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m) between the current and

previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.45

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1116.5	1010	1116.5	1020	1116.5	1040	1116.5	1050	1116.6
1660	1116.5	1667.7	1116.3	1670	1116.2	1673.6	1116	1680	1116
1683.2	1115.9	1683.3	1115.8	1883.2	1116.1	2083.2	1116.2	2283.2	1116
2332.1	1115.9	2375.2	1116.3	2483.2	1116.5	2681.9	1116.5	2683.2	1116.5
2689.8	1116.4	2712.7	1116.4	2883.2	1116.5	3000.4	1115.9	3029.8	1115.9
3083.2	1115.8	3283.2	1115.5	3600	1115.4	3683	1115.3	3883.2	1115
3940	1114.9	4283.2	1115.1	4306.2	1115.1	4483.2	1115.4	4683.2	1115.5
4883.2	1115.7	4947	1116	5012	1116.2	5054.9	1116.9	5083.2	1116.9
5283.2	1117.6	5483.2	1118.1	5597.3	1117.9	5605	1120.6	5611.8	1120.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.16	2332.1	.09	3600	.16	5605	.165

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3600	3940	470	470	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2483.2	1116.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1116.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.090	0.160	0.160
W.S. Elev (ft)	1116.33	Reach Len. (ft)	470.00	470.00	500.00
Crit W.S. (ft)	1115.54	Flow Area (sq ft)	473.50	397.14	1047.78
E.G. Slope (ft/ft)	0.003926	Area (sq ft)	473.50	397.14	1047.78
Q Total (cfs)	1237.00	Flow (cfs)	383.22	256.32	597.47
Top Width (ft)	2104.46	Top Width (ft)	684.27	340.00	1080.18
Vel Total (ft/s)	0.64	Avg. Vel. (ft/s)	0.81	0.65	0.57
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.69	1.17	0.97
Conv. Total (cfs)	19741.7	Conv. (cfs)	6115.9	4090.7	9535.1
Length Wtd. (ft)	487.51	Wetted Per. (ft)	684.28	340.00	1080.19
Min Ch El (ft)	1114.90	Shear (lb/sq ft)	0.17	0.29	0.24
Alpha	1.07	Stream Power (lb/ft s)	0.14	0.18	0.14

Frctn Loss (ft)	2.19	Cum Volume (acre-ft)	554.67	72.52	420.88
C & E Loss (ft)	0.00	Cum SA (acres)	618.34	82.88	577.18

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.36

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1114.8	1200	1114.5	1226.6	1114.7	1400	1115.1	1568.8	1114.3
1589.5	1114.3	1600	1114.6	1800	1114.2	1907.2	1113.7	2000	1113.6
2200	1113.4	2450	1113.2	2600	1113.1	2700	1112.8	3000	1112.9
3200	1112.6	3233.3	1112.5	3254.8	1113.4	3273.2	1113	3400	1112.8
3600	1113.6	3625.7	1113.7	3657.7	1113.8	3698	1114.8	3800	1115
3845.7	1114.4	3908.4	1114.5	3939	1114.9	4000	1114.8	4200	1115.9
4255.3	1116.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.16	2450	.16	2700	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2450	2700	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1114.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.160	0.160	0.160
W.S. Elev (ft)	1114.14	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	406.50	268.39	1136.90
E.G. Slope (ft/ft)	0.005213	Area (sq ft)	406.50	268.39	1136.90
Q Total (cfs)	1237.00	Flow (cfs)	201.84	188.68	846.48
Top Width (ft)	1859.45	Top Width (ft)	637.91	250.00	971.54
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)	0.50	0.70	0.74
Max Chl Dpth (ft)	1.64	Hydr. Depth (ft)	0.64	1.07	1.17
Conv. Total (cfs)	17133.5	Conv. (cfs)	2795.6	2613.4	11724.5
Length Wtd. (ft)	500.00	Wetted Per. (ft)	637.91	250.00	971.57
Min Ch El (ft)	1112.80	Shear (lb/sq ft)	0.21	0.35	0.38
Alpha	1.06	Stream Power (lb/ft s)	0.10	0.25	0.28

Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	549.92	68.93	408.34
C & E Loss (ft)	0.01	Cum SA (acres)	611.21	79.70	565.40

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.27

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1114.6	1026	1114.6	1067.7	1113.2	1092.6	1112.7	1105.4	1112.7
1113.5	1114.7	1200	1114.7	1375.6	1114.7	1396.8	1113.6	1400	1113.6
1450	1113.5	1600	1113	1800	1112.5	1896.2	1112	1940.3	1111.9
2000	1111.9	2200	1111.4	2400	1111.5	2700	1111.3	2730.8	1111.1
2741.7	1110.9	2767.4	1110.8	2776.7	1111.3	2880	1111.3	3000	1111.5
3200	1111.7	3400	1111.7	3429.3	1111.7	3434.9	1111.5	3461	1111.5
3472.6	1111.8	3600	1112.1	3608.2	1112.1	3614.8	1112.8	3793.1	1112.6
3800	1112.6	3827.7	1112.6	4000	1113.6	4014.2	1113.6	4077.2	1113.7
4200	1114.3	4400	1115.5	4525.1	1115.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2700	.02	2776.7	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2700	2776.7	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1112.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1112.54	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	827.56	115.11	765.31
E.G. Slope (ft/ft)	0.001910	Area (sq ft)	827.56	115.11	765.31
Q Total (cfs)	1237.00	Flow (cfs)	386.67	489.81	360.52
Top Width (ft)	1827.07	Top Width (ft)	914.75	76.70	835.62
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.47	4.26	0.47
Max Chl Dpth (ft)	1.74	Hydr. Depth (ft)	0.90	1.50	0.92
Conv. Total (cfs)	28305.8	Conv. (cfs)	8848.1	11208.2	8249.6

Length Wtd. (ft)	500.00	Wetted Per. (ft)	914.75	76.72
835.65				
Min Ch El (ft)	1110.80	Shear (lb/sq ft)	0.11	0.18
0.11				
Alpha	13.92	Stream Power (lb/ft s)	0.05	0.76
0.05				
Frctn Loss (ft)	1.62	Cum Volume (acre-ft)	542.84	66.73
397.42				
C & E Loss (ft)	0.00	Cum SA (acres)	602.30	77.82
555.03				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.17

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1110.9	1010	1110.9	1020	1110.9	1040	1111	1050	1111.1
1650	1111.1	1651.5	1111	1660	1111	1663.7	1111	1663.8	1110.7
1863.7	1110.7	2063.7	1110.5	2263.7	1110.7	2305.7	1110.7	2360.9	1111
2400	1112.4	2463.7	1111.5	2663.7	1110.8	2863.7	1110.5	2971	1110.5
2984.4	1110.1	3014.4	1110.1	3028.6	1110.9	3063.7	1110.9	3263.7	1110.3
3463.7	1110	3663.7	1110.2	3880	1109.6	4063.7	1110.2	4263.7	1110.8
4291	1110.9	4294.1	1110.6	4325.2	1110.6	4337.6	1110.8	4463.7	1110.7
4582.8	1110.9	4647.6	1110.8	4662.3	1111.1	4663.7	1111.1	4863.7	1111.7
4924.5	1111.9	4986.1	1112.3	5063.7	1112.5	5263.7	1113.3	5394.1	1113.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3663.7	.035	3880	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3663.7	3880	500	520	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2400	1112

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1111.03	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.12	Wt. n-Val.	0.130	0.035
0.130				
W.S. Elev (ft)	1110.92	Reach Len. (ft)	500.00	520.00
500.00				

Crit W.S. (ft)	1110.64	Flow Area (sq ft)	517.05	219.46 322.90
E.G. Slope (ft/ft)	0.006627	Area (sq ft)	517.05	219.46 322.90
Q Total (cfs)	1237.00	Flow (cfs)	303.34	765.80 167.86
Top Width (ft)	2022.23	Top Width (ft)	1032.72	216.30 773.21
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.59	3.49 0.52
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.50	1.01 0.42
Conv. Total (cfs)	15195.6	Conv. (cfs)	3726.3	9407.3 2062.0
Length Wtd. (ft)	510.82	Wetted Per. (ft)	1032.75	216.30 773.23
Min Ch El (ft)	1109.60	Shear (lb/sq ft)	0.21	0.42 0.17
Alpha	5.62	Stream Power (lb/ft s)	0.12	1.46 0.09
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	535.12	64.81 391.18
C & E Loss (ft)	0.00	Cum SA (acres)	591.12	76.14 545.80

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.08

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1109	1010	1109	1020	1109	1040	1109	1050	1109
1700	1109.3	1710	1109.3	1720	1109.4	1730	1109.4	1740	1109.4
1750	1109.4	1760	1109.5	1770	1109.5	1780	1109.5	1790	1109.5
1800	1109.4	1810	1109.4	1820	1109.4	1830	1109.4	1840	1109.4
1850	1109.4	1860	1109.5	1870	1109.5	1880	1109.5	1890	1109.5
1900	1109.6	1904.3	1109.6	1910	1109.5	1920	1109.2	1926.9	1108.9
1930	1108.9	1935.4	1108.9	1935.5	1108.8	2135.4	1108.7	2263.7	1108
2286.8	1108.2	2335.4	1108.7	2535.4	1108.5	2589.3	1108.5	2600	1109
2735.4	1108.6	2935.4	1108.4	3135.4	1107.9	3272.2	1107.4	3303.2	1107.4
3335.4	1107.7	3535.4	1107.4	3735.4	1107.5	3900	1107.3	3935.4	1107.3
3959.2	1107.3	4000	1107.7	4135.4	1107.8	4335.4	1108	4535.4	1108.4
4574.3	1108.2	4599.7	1108.3	4735.4	1109.3	4935.4	1109.7	5135.4	1110.9
5202.7	1110.9	5262.7	1110.8	5275.3	1111.5	5335.4	1112.1	5535.4	1112.1
5681.6	1112.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3900	.02	4000	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3900	4000	500	500	500 .1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent

888 F
Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2600	1109

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1108.72	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.16	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1108.56	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1108.30	Flow Area (sq ft)	904.27	117.98
337.13				
E.G. Slope (ft/ft)	0.003245	Area (sq ft)	904.27	117.98
337.13				
Q Total (cfs)	1210.00	Flow (cfs)	508.66	557.45
143.89				
Top Width (ft)	1861.18	Top Width (ft)	1126.02	100.00
635.17				
Vel Total (ft/s)	0.89	Avg. Vel. (ft/s)	0.56	4.73
0.43				
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.80	1.18
0.53				
Conv. Total (cfs)	21242.5	Conv. (cfs)	8930.0	9786.4
2526.1				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1126.02	100.00
635.17				
Min Ch El (ft)	1107.30	Shear (lb/sq ft)	0.16	0.24
0.11				
Alpha	13.18	Stream Power (lb/ft s)	0.09	1.13
0.05				
Frctn Loss (ft)	1.23	Cum Volume (acre-ft)	526.96	62.79
387.39				
C & E Loss (ft)	0.02	Cum SA (acres)	578.73	74.25
537.72				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.98

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1108.2	1010	1108.1	1020	1108	1040	1107.9	1050	1107.9
1060	1107.9	1070	1107.9	1080	1107.8	1090	1107.8	1100	1107.7
1690	1107.8	1700	1107.8	1710	1107.8	1720	1107.8	1730	1107.8
1740	1107.8	1750	1107.9	1760	1107.9	1770	1107.9	1780	1107.9
1790	1107.9	1800	1107.9	1810	1108	1820	1108	1830	1108
1840	1108	1850	1108	1860	1108.1	1870	1108.1	1880	1108.1
1890	1108.1	1900	1108.1	1910	1108.1	1920	1108.1	1930	1107.7
1940	1107.5	1944.3	1107.5	1944.4	1107.3	2144.3	1107.2	2344.3	1107.1
2544.3	1107	2744.3	1106.6	2944.3	1106.3	3144.3	1106.2	3344.3	1106.3
3544.3	1106.5	3744.3	1106.6	3900	1106	3944.3	1106	3965.8	1106

4000	1106.5	4344.3	1106.7	4544.3	1107.1	4572.1	1107.1	4578.8	1106.9
4604.1	1106.8	4744.3	1107.3	4944.3	1107.8	5144.3	1108.9	5208.7	1109.6
5269.8	1109.5	5344.3	1110	5366.4	1110.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3900	.02	4000	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3900	4000	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1107.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1107.37	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1404.74	128.56	428.95
E.G. Slope (ft/ft)	0.001939	Area (sq ft)	1404.74	128.56	428.95
Q Total (cfs)	1210.00	Flow (cfs)	567.00	497.20	145.81
Top Width (ft)	2828.35	Top Width (ft)	1955.64	100.00	772.72
Vel Total (ft/s)	0.62	Avg. Vel. (ft/s)	0.40	3.87	0.34
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)	0.72	1.29	0.56
Conv. Total (cfs)	27482.1	Conv. (cfs)	12877.9	11292.6	3311.6
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1955.68	100.00	772.72
Min Ch El (ft)	1106.00	Shear (lb/sq ft)	0.09	0.16	0.07
Alpha	16.40	Stream Power (lb/ft s)	0.04	0.60	0.02
Frctn Loss (ft)	1.44	Cum Volume (acre-ft)	513.71	61.38	382.99
C & E Loss (ft)	0.00	Cum SA (acres)	561.05	73.11	529.63

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.89

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

1000	1107.6	1063.2	1107.6	1088.6	1106.6	1200	1106.4	1400	1106.4
1600	1106.2	1795.2	1105.3	1800	1105.3	1848.6	1105.3	2000	1105.3
2092.8	1104.8	2178.9	1104.7	2200	1104.7	2210.9	1104.7	2400	1105
2600	1105.1	2800	1105.1	3000	1105.3	3110	1105.2	3134.8	1104.9
3166.1	1105.1	3187.3	1105.5	3200	1105.5	3400	1105.6	3600	1105.7
3779.9	1105.3	3800	1105.5	3805.5	1105.5	4000	1105.7	4200	1105.9
4400	1107.4	4408.1	1108	4469.9	1108.6	4498.9	1109		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3110	.02	3187.3	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3110	3187.3	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1106.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1105.94	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1168.70	64.66	322.99
E.G. Slope (ft/ft)	0.004759	Area (sq ft)	1168.70	64.66	322.99
Q Total (cfs)	1210.00	Flow (cfs)	797.24	294.22	118.53
Top Width (ft)	2547.13	Top Width (ft)	1452.49	77.30	1017.34
Vel Total (ft/s)	0.78	Avg. Vel. (ft/s)	0.68	4.55	0.37
Max Chl Dpth (ft)	1.23	Hydr. Depth (ft)	0.80	0.84	0.32
Conv. Total (cfs)	17539.2	Conv. (cfs)	11556.2	4264.8	1718.2
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1452.49	77.31	1017.34
Min Ch El (ft)	1104.90	Shear (lb/sq ft)	0.24	0.25	0.09
Alpha	8.86	Stream Power (lb/ft s)	0.16	1.13	0.03
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	498.94	60.27	378.68
C & E Loss (ft)	0.01	Cum SA (acres)	541.49	72.09	519.36

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.79

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

1000	1104.6	1016.4	1104.6	1062.7	1104.5	1400	1104.2	1600	1104.2
1681.2	1104	1692	1103.3	1738.1	1103.3	1800	1103.5	2000	1103.4
2200	1103	2400	1103	2600	1103.1	2692.6	1102.9	2729.2	1103
2800	1103.2	2881.4	1103.3	2975	1103.4	3023.3	1103.4	3030.4	1103
3062.1	1103.1	3080	1103.5	3200	1103.5	3400	1103.6	3600	1104
3663.7	1104	3670.7	1103.8	3701.5	1103.8	3714.1	1104.1	3800	1104.2
4000	1104.6	4200	1105.8	4286.2	1105.4	4302.8	1106.5	4366.4	1106.4
4387.7	1107.3	4400	1107.3	4568.6	1107.3	4575.8	1106.8	4600	1107
4800	1107.1	4968.3	1107.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2975	.02	3080	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2975	3080	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1104.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1104.19	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1296.20	96.74	317.95
E.G. Slope (ft/ft)	0.002715	Area (sq ft)	1296.20	96.74	317.95
Q Total (cfs)	1210.00	Flow (cfs)	744.35	354.52	111.13
Top Width (ft)	2181.16	Top Width (ft)	1368.95	105.00	707.20
Vel Total (ft/s)	0.71	Avg. Vel. (ft/s)	0.57	3.66	0.35
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.95	0.92	0.45
Conv. Total (cfs)	23222.9	Conv. (cfs)	14286.0	6804.1	2132.8
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1368.98	105.02	707.21
Min Ch El (ft)	1103.00	Shear (lb/sq ft)	0.16	0.16	0.08
Alpha	8.30	Stream Power (lb/ft s)	0.09	0.57	0.03
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	484.80	59.34	375.00
C & E Loss (ft)	0.01	Cum SA (acres)	525.29	71.04	509.46

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.7

INPUT
Description:

Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1103.4	1146.8	1102.1	1175.3	1102.1	1400	1102.3	1600	1102.3
1800	1101.9	1859.5	1101.2	1915.5	1101.4	2000	1102.2	2200	1101.8
2399.9	1101.9	2527.6	1101.3	2560.8	1101.3	2593.3	1101.9	2599.9	1101.9
2799.9	1101.7	2999.9	1101.6	3170	1101.4	3199.9	1101.4	3270	1101.5
3399.9	1101.6	3599.9	1101.9	3735.5	1102	3778.5	1102.1	3799.9	1102.2
3925	1102.6	3948.3	1103.9	3999.9	1104.2	4199.9	1104.5	4399.9	1103.9
4469.4	1103.6	4532.4	1103.8	4599.9	1105.5	4618.6	1105.8	4755	1104.4
4799.9	1104.5	4999.9	1104.2	5199.8	1105	5399.8	1104.9	5595.1	1105
5599.8	1105.1	5627.6	1105.7	5717.9	1105.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3170	.02	3270	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3270	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1102.56	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.14	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1102.42	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	1126.96	98.66
340.98				
E.G. Slope (ft/ft)	0.004251	Area (sq ft)	1126.96	98.66
340.98				
Q Total (cfs)	1210.00	Flow (cfs)	561.88	473.62
174.50				
Top Width (ft)	2758.75	Top Width (ft)	2059.52	100.00
599.23				
Vel Total (ft/s)	0.77	Avg. Vel. (ft/s)	0.50	4.80
0.51				
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.55	0.99
0.57				
Conv. Total (cfs)	18558.0	Conv. (cfs)	8617.6	7264.0
2676.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	2059.54	100.00
599.23				
Min Ch El (ft)	1101.40	Shear (lb/sq ft)	0.15	0.26
0.15				
Alpha	15.38	Stream Power (lb/ft s)	0.07	1.26
0.08				
Frctn Loss (ft)	1.88	Cum Volume (acre-ft)	470.89	58.22
371.22				
C & E Loss (ft)	0.03	Cum SA (acres)	505.62	69.87
501.97				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.61

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1101.2	1200	1100.2	1400	1100	1800	1099.4	1939.1	1099.4
2000	1099.6	2200	1099.7	2399.9	1099.9	2599.9	1099.8	2799.9	1099.8
2999.9	1100.1	3041.8	1100.2	3190	1100	3226.8	1099.9	3290	1100.1
3542.7	1099.9	3575.5	1099.9	3599.9	1100.3	3608.9	1100.3	3799.9	1100.5
3856.8	1100.6	3866.7	1100.5	3900.7	1100.5	3928.4	1101.7	3999.9	1102
4199.9	1101.7	4399.9	1101.4	4500	1101.1	4569.2	1100.8	4599.9	1101.3
4724.2	1101.3	4799.9	1101.4	4999.9	1102.1	5199.8	1102.7	5399.8	1103.2
5569.2	1103.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3190	.02	3290	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3190	3290	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1100.65	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1100.62	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)		Flow Area (sq ft)	1629.65	63.62
245.44				
E.G. Slope (ft/ft)	0.003357	Area (sq ft)	1629.65	63.62
245.44				
Q Total (cfs)	1210.00	Flow (cfs)	919.15	202.58
88.26				
Top Width (ft)	2786.99	Top Width (ft)	2073.57	100.00
613.42				
Vel Total (ft/s)	0.62	Avg. Vel. (ft/s)	0.56	3.18
0.36				
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.79	0.64
0.40				
Conv. Total (cfs)	20883.1	Conv. (cfs)	15863.5	3496.3
1523.3				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	2073.57	100.00
613.43				
Min Ch El (ft)	1099.90	Shear (lb/sq ft)	0.16	0.13
0.08				
Alpha	5.00	Stream Power (lb/ft s)	0.09	0.42
0.03				
Frctn Loss (ft)	1.66	Cum Volume (acre-ft)	455.07	57.29
367.85				
C & E Loss (ft)	0.00	Cum SA (acres)	481.90	68.72
495.01				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.51

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1099.1	1200	1099.3	1349.4	1099.3	1524.2	1098.8	1600	1098.7
1800	1098.6	2000	1098.2	2176.6	1098.2	2200	1098.7	2212.4	1098.8
2276.3	1097.9	2325.2	1098.1	2399.9	1098.4	2599.9	1098.6	2799.9	1098.9
2954.1	1098.2	2987.4	1098.2	2999.9	1098.6	3199.9	1098.4	3399.9	1098.2
3599.9	1098.5	3614.8	1098.5	3649.2	1098.5	3690	1098.8	3799.9	1098.9
3809.6	1098.9	3999.9	1098.7	4199.9	1098.5	4263.3	1098.3	4295.5	1098.3
4313.7	1098.7	4351.4	1098.8	4370.2	1099.5	4399.9	1100.2	4525.6	1100
4533.3	1098.8	4599.9	1098.7	4799.9	1098.8	4999.9	1099.1	5199.8	1099.4
5399.8	1099.8	5599.8	1100.3	5648.2	1100.3				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1524.2	.03	2325.2	.13	3599.9	.02	3690	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3599.9	3690	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4399.9	5648.2	1100.2

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1098.98	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.054	0.020
0.130				
W.S. Elev (ft)	1098.96	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1098.63	Flow Area (sq ft)	1059.15	35.39
188.97				
E.G. Slope (ft/ft)	0.003415	Area (sq ft)	1059.15	35.39
188.97				
Q Total (cfs)	1210.00	Flow (cfs)	1073.09	82.40
54.52				
Top Width (ft)	2887.68	Top Width (ft)	2131.86	90.10
665.71				
Vel Total (ft/s)	0.94	Avg. Vel. (ft/s)	1.01	2.33
0.29				
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.50	0.39
0.28				
Conv. Total (cfs)	20705.9	Conv. (cfs)	18363.0	1410.0
932.9				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	2131.88	90.10
665.72				
Min Ch El (ft)	1098.50	Shear (lb/sq ft)	0.11	0.08
0.06				
Alpha	1.44	Stream Power (lb/ft s)	0.11	0.19
0.02				
Frctn Loss (ft)	1.86	Cum Volume (acre-ft)	439.94	56.73
365.41				
C & E Loss (ft)	0.00	Cum SA (acres)	458.24	67.65
487.81				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.42

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1097.1	1200	1097.6	1400	1096.5	1800	1096.5	1850.6	1096.4
2000	1096.9	2200	1096.6	2399.9	1096.5	2599.9	1096.7	2799.9	1097
2999.9	1096.7	3110	1096.7	3148.8	1096.3	3181.8	1096.4	3199.9	1096.8
3230	1096.8	3399.9	1096.6	3494.7	1096.8	3535.3	1096.3	3599.9	1096.4
3799.9	1096.2	3999.9	1096.3	4199.9	1096.9	4399.9	1097.2	4422.8	1097.2
4478.9	1097.4	4515.7	1099.1	4538.1	1098.4	4599.9	1098.6	4799.9	1099.4
4999.9	1099.1	5123.5	1099.4	5142	1101.3	5199.8	1101.3	5213.5	1101.3
5242.4	1100.5	5399.8	1101	5599.8	1100.7	5601.4	1100.7		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	1850.6	.13	3110	.02	3230	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3110	3230	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1097.12	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.059	0.020
0.130				
W.S. Elev (ft)	1097.09	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)	1096.80	Flow Area (sq ft)	771.95	64.46
604.93				
E.G. Slope (ft/ft)	0.004064	Area (sq ft)	771.95	64.46
604.93				
Q Total (cfs)	1210.00	Flow (cfs)	711.32	201.75
296.93				
Top Width (ft)	3030.72	Top Width (ft)	1816.60	120.00
1094.12				
Vel Total (ft/s)	0.84	Avg. Vel. (ft/s)	0.92	3.13
0.49				
Max Chl Dpth (ft)	0.89	Hydr. Depth (ft)	0.42	0.54
0.55				
Conv. Total (cfs)	18981.1	Conv. (cfs)	11158.4	3164.8
4657.9				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	1816.61	120.01
1094.12				
Min Ch El (ft)	1096.30	Shear (lb/sq ft)	0.11	0.14
0.14				
Alpha	3.11	Stream Power (lb/ft s)	0.10	0.43
0.07				
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	429.44	56.16
360.85				
C & E Loss (ft)	0.00	Cum SA (acres)	435.58	66.44
477.71				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.32

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1096.6	1013.9	1094.5	1081.6	1095.8	1400	1095.8	1600	1095.2
1676.6	1094.8	1719.7	1095.1	1800	1095.1	2000	1095.2	2200	1095.6
2333.3	1095.8	2356.5	1095.4	2383.1	1095.4	2399.9	1095.7	2599.9	1095.6
2683.8	1095.3	2719.5	1095.3	2799.9	1095.5	2970	1095.2	3015.6	1095.1
3051.9	1095.1	3066.3	1095.3	3090	1095.5	3338.5	1095.5	3369.4	1094.9
3400.4	1095.3	3800.3	1095.3	4150	1096	4540	1097	5000	1098
5260	1098.2								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1719.7	.13	2970	.02	3090	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2970	3090	500	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1096.02	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.049	0.020
0.130				
W.S. Elev (ft)	1095.99	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1095.56	Flow Area (sq ft)	1072.33	96.37
572.06				
E.G. Slope (ft/ft)	0.001419	Area (sq ft)	1072.33	96.37
572.06				
Q Total (cfs)	1210.00	Flow (cfs)	813.40	232.99
163.61				
Top Width (ft)	3142.63	Top Width (ft)	1965.98	120.00
1056.65				
Vel Total (ft/s)	0.70	Avg. Vel. (ft/s)	0.76	2.42
0.29				
Max Chl Dpth (ft)	1.49	Hydr. Depth (ft)	0.55	0.80
0.54				
Conv. Total (cfs)	32123.2	Conv. (cfs)	21594.2	6185.6
4343.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1966.12	120.00
1056.66				
Min Ch El (ft)	1095.10	Shear (lb/sq ft)	0.05	0.07
0.05				
Alpha	3.15	Stream Power (lb/ft s)	0.04	0.17
0.01				

Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	419.06	55.25	354.23
C & E Loss (ft)	0.00	Cum SA (acres)	414.31	65.09	465.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.23

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1095.7	1200	1094.8	1400	1094.5	1800	1094.3	2000	1094.1
2200	1094.2	2399.9	1094.3	2599.9	1094.3	2799.9	1094.3	2950	1094.4
3150	1094.5	3399.9	1094.7	3599.9	1094.9	3799.9	1095.1	3999.9	1095.2
4199.9	1095.1	4399.9	1095.1	4599.9	1095.6	4799.9	1095.9	4999.9	1096.7
5199.8	1097.3	5399.8	1097.8	5580.8	1097.4				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.013	1200	.13	2399.9	.034	5399.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2950	3150	280	270	270	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1094.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.067	0.034	0.034
W.S. Elev (ft)	1094.92	Reach Len. (ft)	280.00	270.00	270.00
Crit W.S. (ft)		Flow Area (sq ft)	1022.41	93.25	102.43
E.G. Slope (ft/ft)	0.003702	Area (sq ft)	1022.41	93.25	102.43
Q Total (cfs)	1210.00	Flow (cfs)	961.74	149.09	99.17
Top Width (ft)	2441.97	Top Width (ft)	1775.83	200.00	466.14
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	0.94	1.60	0.97
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)	0.58	0.47	0.22
Conv. Total (cfs)	19887.4	Conv. (cfs)	15807.0	2450.4	1630.0
Length Wtd. (ft)	275.31	Wetted Per. (ft)	1775.83	200.00	466.14
Min Ch El (ft)	1094.40	Shear (lb/sq ft)	0.13	0.11	0.05

Alpha	1.11	Stream Power (lb/ft s)	0.13	0.17
0.05				
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	407.04	54.17
350.36				
C & E Loss (ft)	0.00	Cum SA (acres)	392.83	63.26
456.88				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.18

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1094.3	1087.8	1093.2	1105.2	1092.7	1200	1093.5	1400	1093.8
1600	1094	1800	1093.6	1834.1	1093.2	1864.9	1093.2	1875.2	1093.4
2000	1093.2	2200	1093.3	2290	1092.8	2599.9	1093.3	2799.9	1093.1
2999.9	1093.3	3199.9	1093.4	3399.9	1093.5	3599.9	1093.6	3674.3	1094
3714.6	1094.7	3778.5	1095	3799.9	1095.3	3903.5	1096.2	3950.5	1095.5
3999.9	1096	4040.5	1096.1	4073.1	1095.5	4102.9	1095.7	4132.9	1096.3

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1864.9	.035	3799.9	.13	4102.9	.135

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2290	2599.9	520	500	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1093.74	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.05	Wt. n-Val.	0.045	0.035
0.035				
W.S. Elev (ft)	1093.70	Reach Len. (ft)	520.00	500.00
490.00				
Crit W.S. (ft)	1093.53	Flow Area (sq ft)	322.57	200.91
349.25				
E.G. Slope (ft/ft)	0.004973	Area (sq ft)	322.57	200.91
349.25				
Q Total (cfs)	1375.00	Flow (cfs)	412.07	450.59
512.35				
Top Width (ft)	2151.59	Top Width (ft)	823.39	309.90
1018.30				
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	1.28	2.24
1.47				
Max Chl Dpth (ft)	1.00	Hydr. Depth (ft)	0.39	0.65
0.34				
Conv. Total (cfs)	19497.6	Conv. (cfs)	5843.1	6389.4
7265.1				
Length Wtd. (ft)	503.62	Wetted Per. (ft)	823.41	309.90
1018.30				
Min Ch El (ft)	1092.80	Shear (lb/sq ft)	0.12	0.20
0.11				
Alpha	1.18	Stream Power (lb/ft s)	0.16	0.45

0.16					
Frctn Loss (ft)		0.93	Cum Volume (acre-ft)	402.72	53.25
348.96					
C & E Loss (ft)		0.01	Cum SA (acres)	384.48	61.68
452.28					

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.08

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1092.9	1165.4	1092.9	1200	1092	1260.8	1091.5	1285.5	1092.1
1303.8	1095.4	1346.6	1095	1394.7	1092.5	1400	1092.4	1600	1092.2
1800	1092.1	2000	1092.2	2086.3	1092	2097.5	1092.9	2111.1	1092.4
2129.3	1094.3	2200	1094.2	2216.7	1094.1	2269.1	1091.8	2399.9	1091.8
2599.9	1091.9	2690	1092.1	2999.9	1092.2	3199.9	1092.4	3399.9	1092.3
3599.9	1092.6	3799.9	1093.8	3826.1	1094.3	3896.7	1094.5	3999.9	1094.9
4199.9	1095	4399.9	1096.3	4429.9	1096.6				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.036	1165.4	.034	2216.7	.036	2690	.035	3896.7	.131
4399.9	.13								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2216.7	2690	550	500	610	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1092.81	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.034	0.036
0.035				
W.S. Elev (ft)	1092.79	Reach Len. (ft)	550.00	500.00
610.00				
Crit W.S. (ft)		Flow Area (sq ft)	526.15	401.03
457.91				
E.G. Slope (ft/ft)	0.000952	Area (sq ft)	526.15	401.03
457.91				
Q Total (cfs)	1375.00	Flow (cfs)	526.70	477.50
370.80				
Top Width (ft)	2226.90	Top Width (ft)	841.36	443.52
942.02				
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	1.00	1.19
0.81				
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.63	0.90
0.49				
Conv. Total (cfs)	44568.6	Conv. (cfs)	17072.3	15477.4
12018.8				
Length Wtd. (ft)	551.27	Wetted Per. (ft)	841.51	443.54
942.02				

Min Ch El (ft)	1091.80	Shear (lb/sq ft)	0.04	0.05	0.03
Alpha	1.07	Stream Power (lb/ft s)	0.04	0.06	0.02
Frctn Loss (ft)	1.30	Cum Volume (acre-ft)	397.65	49.80	344.42
C & E Loss (ft)	0.01	Cum SA (acres)	374.54	57.35	441.25

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.99

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1091.9	1200	1091.6	1371.1	1091	1400	1090.2	1428.7	1090.2
1459	1091	1600	1091.3	1800	1091.3	2000	1091.5	2088.2	1091.7
2118.5	1092.1	2160	1091.1	2200	1090.9	2399.9	1090.7	2422.2	1090.8
2472.3	1093.5	2522.6	1093.6	2599.9	1090.6	2607.7	1090.3	2799.9	1090.6
2999.9	1090.8	3199.9	1091	3399.9	1091	3479.4	1090.9	3517.6	1092.4
3566.3	1091.4	3599.9	1091.5	3648.7	1091.6	3687.4	1094.2	3743.9	1094.4
3754.5	1092	3784	1092.3	3799.9	1093.8	3844.3	1095.7	3918.3	1095.6
3928	1094.3	3949.3	1094.4	3975.7	1093.7	3998.7	1094.9	3999.9	1095
4063.6	1095.5	4078.1	1096.1	4199.9	1096.2	4399.9	1095.5	4538.8	1094.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	2160	.033	2422.2	.034	2472.3	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2160	2422.2	470	500	570	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1091.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.035	0.033	0.129
W.S. Elev (ft)	1091.40	Reach Len. (ft)	470.00	500.00	570.00
Crit W.S. (ft)	1091.23	Flow Area (sq ft)	163.23	149.04	555.59
E.G. Slope (ft/ft)	0.013231	Area (sq ft)	163.23	149.04	555.59
Q Total (cfs)	1375.00	Flow (cfs)	318.45	529.66	526.89
Top Width (ft)	1834.11	Top Width (ft)	648.30	262.20	923.61
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	1.95	3.55	

0.95				
Max Chl Dpth (ft)	1.19	Hydr. Depth (ft)	0.25	0.57
0.60				
Conv. Total (cfs)	11954.0	Conv. (cfs)	2768.5	4604.8
4580.7				
Length Wtd. (ft)	542.10	Wetted Per. (ft)	648.33	262.20
923.65				
Min Ch El (ft)	1090.70	Shear (lb/sq ft)	0.21	0.47
0.50				
Alpha	2.43	Stream Power (lb/ft s)	0.41	1.67
0.47				
Frctn Loss (ft)	1.96	Cum Volume (acre-ft)	393.30	46.64
337.33				
C & E Loss (ft)	0.02	Cum SA (acres)	365.14	53.30
428.19				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1090.5	1200	1090.2	1400	1089.2	1671.5	1089.4	1685.6	1089
1800	1088.8	2000	1089	2200	1089.2	2425	1089.5	2430	1089.5
2435	1089.3	2460	1089.4	2799.9	1089.3	2983.2	1088.5	2999.9	1088.7
3010.7	1088.9	3026.7	1089.2	3099.3	1088.3	3199.9	1089	3265.2	1088.9
3293.1	1090.9	3343.8	1088.3	3399.9	1087.9	3445.4	1087.3	3599.9	1088.7
3675.4	1089.2	3724.3	1088.5	3799.9	1088.7	3813.3	1088.8	3928.3	1090
3990.9	1091.3	3999.9	1091.3	4041.2	1091.3	4063	1090.8	4096.5	1091.1
4138.9	1092.1	4199.9	1092.5	4275.9	1092.4	4293	1091.7	4363.4	1091.4
4399.9	1091.7	4599.9	1091.3	4766.8	1090.9	4797.5	1090.9	4799.9	1090.9
4999.9	1091.3	5032.4	1090.8	5060.8	1090.7	5184.3	1091		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2425	.02	2460	.13	2999.9	.035	3999.9	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2425	2460	500	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1089.51	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.038				
W.S. Elev (ft)	1089.48	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	346.19	3.59

924.46				
E.G. Slope (ft/ft)	0.001660	Area (sq ft)	346.19	3.59
924.46				
Q Total (cfs)	1375.00	Flow (cfs)	76.26	2.67
1296.07				
Top Width (ft)	2464.16	Top Width (ft)	1064.02	29.45
1370.69				
Vel Total (ft/s)	1.08	Avg. Vel. (ft/s)	0.22	0.74
1.40				
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.33	0.12
0.67				
Conv. Total (cfs)	33752.1	Conv. (cfs)	1871.8	65.6
31814.7				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1064.03	29.45
1370.78				
Min Ch El (ft)	1089.30	Shear (lb/sq ft)	0.03	0.01
0.07				
Alpha	1.59	Stream Power (lb/ft s)	0.01	0.01
0.10				
Frctn Loss (ft)	1.31	Cum Volume (acre-ft)	390.55	45.77
327.64				
C & E Loss (ft)	0.00	Cum SA (acres)	355.90	51.63
413.18				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.8

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1090.6	1084.3	1090.9	1111	1088.6	1235.4	1088.6	1244.2	1090.1
1312.8	1090.8	1400	1088.1	1414.6	1087.5	1600	1088.1	1620.5	1088.1
1630.5	1087.3	1673.6	1087.3	1800	1087.9	2000	1087.9	2200	1087.7
2357.9	1087.8	2369.1	1087.2	2398.7	1087.2	2399.9	1087.3	2430	1087.9
2599.9	1087.8	2799.9	1087.7	2929.6	1087.6	2936.7	1087.3	2973	1087.6
2999.9	1087.8	3179.5	1088.1	3199.9	1087.7	3221.4	1087.4	3331.1	1088.3
3373.3	1087.6	3399.9	1087.7	3527.8	1087.4	3599.9	1088.4	3614.6	1088.9
3642.9	1087.7	3693.7	1087.5	3739.4	1085.9	3799.9	1087.1	3883.7	1088.4
3999.9	1088.5	4057.2	1088.1	4199.9	1088.8	4215.4	1088.8	4243.7	1088
4309.8	1088.3	4399.9	1088.4	4599.9	1088.5	4743.6	1088.7	4796.8	1090.7
4799.9	1090.8	4878.2	1091.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2369.1	.02	2430	.13	2973	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2369.1	2430	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1088.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.020	0.043
W.S. Elev (ft)	1088.13	Reach Len. (ft)	490.00	490.00	490.00
Crit W.S. (ft)	1087.90	Flow Area (sq ft)	348.25	44.26	646.62
E.G. Slope (ft/ft)	0.004738	Area (sq ft)	348.25	44.26	646.62
Q Total (cfs)	1375.00	Flow (cfs)	138.41	182.91	1053.68
Top Width (ft)	2423.09	Top Width (ft)	969.92	60.90	1392.27
Vel Total (ft/s)	1.32	Avg. Vel. (ft/s)	0.40	4.13	1.63
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.36	0.73	0.46
Conv. Total (cfs)	19975.7	Conv. (cfs)	2010.8	2657.3	15307.6
Length Wtd. (ft)	490.00	Wetted Per. (ft)	969.98	60.91	1392.36
Min Ch El (ft)	1087.20	Shear (lb/sq ft)	0.11	0.21	0.14
Alpha	2.47	Stream Power (lb/ft s)	0.04	0.89	0.22
Frctn Loss (ft)	1.59	Cum Volume (acre-ft)	386.57	45.49	318.63
C & E Loss (ft)	0.01	Cum SA (acres)	344.23	51.11	397.32

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.71

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1087.8	1188.6	1085.9	1200	1086.7	1366.9	1086.5	1400	1086.5
1600	1086.4	1800	1085.9	2000	1085.7	2200	1085.5	2480	1085.5
2525	1085.5	2799.9	1085.6	2999.9	1085.9	3199.9	1086.3	3399.9	1086.9
3599.9	1087	3799.9	1086.7	3999.9	1086.5	4199.9	1086.2	4399.9	1085.7
4599.9	1085.9	4799.9	1086.2	4999.9	1086.5	5199.8	1087.1	5399.8	1087.7
5599.8	1088	5610.8	1088.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2480	.02	2525	.13	2999.9	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2480	2525	220	220	220	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1086.60	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.04	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1086.56	Reach Len. (ft)	220.00	220.00
220.00				
Crit W.S. (ft)		Flow Area (sq ft)	773.38	47.71
1005.89				
E.G. Slope (ft/ft)	0.002351	Area (sq ft)	773.38	47.71
1005.89				
Q Total (cfs)	1375.00	Flow (cfs)	315.77	178.71
880.51				
Top Width (ft)	3125.45	Top Width (ft)	1238.39	45.00
1842.06				
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.41	3.75
0.88				
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.62	1.06
0.55				
Conv. Total (cfs)	28360.0	Conv. (cfs)	6513.0	3686.0
18160.9				
Length Wtd. (ft)	220.00	Wetted Per. (ft)	1238.41	45.00
1842.07				
Min Ch El (ft)	1085.50	Shear (lb/sq ft)	0.09	0.16
0.08				
Alpha	4.15	Stream Power (lb/ft s)	0.04	0.58
0.07				
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	380.26	44.98
309.33				
C & E Loss (ft)	0.00	Cum SA (acres)	331.81	50.51
379.13				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.66

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1087.7	1020.1	1087.3	1064.8	1088.5	1111.2	1086.8	1200	1086.8
1400	1086.3	1600	1086.4	1643.2	1086.3	1675.6	1085.2	1721.4	1085.4
1800	1085.5	2000	1085.2	2045.4	1085.1	2053.8	1084.8	2077.2	1084.8
2097.5	1085.3	2200	1085.3	2397.4	1085.2	2399.9	1085.1	2421	1084.5
2438.3	1084.5	2453.3	1085.1	2540	1085.3	2768.4	1085.1	2777.5	1084.8
2797.2	1084.8	2799.9	1084.8	2813.7	1085.3	2958.8	1085.2	2999.9	1086.2
3040	1086.3	3199.9	1086	3399.9	1085.7	3599.9	1086.3	3799.9	1086.4
3999.9	1084.9	4199.9	1085.4	4271	1085.7	4285.1	1084.8	4342.9	1084.8
4355.5	1085.1	4399.9	1085.2	4599.9	1085.1	4799.9	1085.4	4999.9	1085.8
5199.8	1086.1	5399.8	1086.4	5510.5	1086.7				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2421	.02	2540	.13	3040	.02	4399.9	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2421	2540	480	480	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1085.81	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.08	Wt. n-Val.	0.130	0.020
0.042				
W.S. Elev (ft)	1085.73	Reach Len. (ft)	480.00	480.00
480.00				
Crit W.S. (ft)		Flow Area (sq ft)	346.09	80.54
735.97				
E.G. Slope (ft/ft)	0.005330	Area (sq ft)	346.09	80.54
735.97				
Q Total (cfs)	1691.00	Flow (cfs)	170.82	336.73
1183.46				
Top Width (ft)	2417.10	Top Width (ft)	760.85	119.00
1537.25				
Vel Total (ft/s)	1.45	Avg. Vel. (ft/s)	0.49	4.18
1.61				
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.45	0.68
0.48				
Conv. Total (cfs)	23161.4	Conv. (cfs)	2339.6	4612.1
16209.7				
Length Wtd. (ft)	480.00	Wetted Per. (ft)	760.88	119.01
1537.30				
Min Ch El (ft)	1084.50	Shear (lb/sq ft)	0.15	0.23
0.16				
Alpha	2.51	Stream Power (lb/ft s)	0.07	0.94
0.26				
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	377.43	44.65
304.93				
C & E Loss (ft)	0.02	Cum SA (acres)	326.76	50.10
370.59				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.57

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1086.5	1038.5	1085.9	1069.7	1087.7	1200	1085.1	1400	1084.1
1460.6	1083.6	1512.2	1083.9	1574	1084.8	1600	1084.9	1795.9	1084.5
1800	1084.4	1851.1	1083.7	1873.1	1083.7	1896.9	1084.5	2000	1084.5
2050	1084.6	2160	1084.2	2200	1084.1	2208.2	1083.4	2233.3	1083.4
2280	1084.2	2399.9	1084.5	2407.9	1084.6	2554.8	1084.1	2567.4	1083.8
2593.6	1083.8	2599.9	1084.1	2606.6	1084.3	2753	1084.5	2778	1085.3
2799.9	1085.4	2887.9	1084.7	2999.9	1084.7	3199.9	1084.4	3399.9	1084.4
3599.9	1085	3799.9	1084.4	3999.9	1084.7	4055	1084.8	4072.9	1083.6
4137.8	1083.8	4199.9	1084.2	4399.9	1084.5	4599.9	1084.7	4799.9	1085
4999.9	1084.9	5199.8	1084.9	5399.8	1085.1	5410.4	1085.1	5442.9	1085.4
5599.8	1086.3	5602.3	1086.4						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

1000	.13	2160	.02	2280	.13	2778	.02	4137.8	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2160	2280	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1085.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020	0.037
W.S. Elev (ft)	1085.18	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1084.73	Flow Area (sq ft)	733.04	162.32	1786.80
E.G. Slope (ft/ft)	0.000534	Area (sq ft)	733.04	162.32	1786.80
Q Total (cfs)	1691.00	Flow (cfs)	161.24	340.69	1189.08
Top Width (ft)	4170.48	Top Width (ft)	964.12	120.00	3086.36
Vel Total (ft/s)	0.63	Avg. Vel. (ft/s)	0.22	2.10	0.67
Max Chl Dpth (ft)	1.78	Hydr. Depth (ft)	0.76	1.35	0.58
Conv. Total (cfs)	73199.1	Conv. (cfs)	6979.6	14747.4	51472.1
Length Wtd. (ft)	500.00	Wetted Per. (ft)	964.16	120.04	3086.43
Min Ch El (ft)	1083.40	Shear (lb/sq ft)	0.03	0.05	0.02
Alpha	3.03	Stream Power (lb/ft s)	0.01	0.09	0.01
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	371.49	43.31	291.03
C & E Loss (ft)	0.01	Cum SA (acres)	317.25	48.78	345.12

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.48

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1085.3	1074.4	1084.5	1200	1084.7	1600	1084.7	1735.6	1083.8
1768.1	1084	1800	1084.4	2000	1084.4	2200	1084.2	2381.5	1083.7
2394.6	1083	2399.9	1083	2437.9	1083	2599.9	1083.4	2771.6	1082.7
2796.9	1082.6	2799.9	1082.7	2999.9	1083.1	3080	1083.1	3132.1	1082.3
3158.5	1082.3	3180.5	1083	3199.9	1083	3399.9	1083.2	3476.6	1083.3
3496.3	1082.7	3518.3	1082.7	3533.7	1083.3	3599.9	1083.3	3663.6	1083.1

3693	1083.7	3736.5	1083.8	3741.5	1079.4	3799.9	1079.2	3999.9	1081.1
4199.9	1085.6	4349.4	1082.8	4356.5	1080.7	4399.9	1080.6	4406.6	1080.7
4414.2	1083	4541.6	1085	4599.9	1085	4788.5	1085.2	4799.9	1084.9
4817.8	1083.8	4985.2	1083.4	4992.2	1082.5	4999.9	1082.5	5058.8	1082.4
5199.8	1083	5399.8	1083.4	5599.8	1083.4	5700	1084	5999.8	1083.2
6199.8	1083.5	6332.8	1084.1	6399.8	1084.5	6406.3	1084.6	6469.9	1085.8

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3080	.02	3199.9	.13	3693	.035	3799.9	.5
4199.9	.02	4349.4	.1	4817.8	.13				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3080	3199.9	500	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	5700	1084

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1084.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.020	0.118
W.S. Elev (ft)	1084.31	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1084.10	Flow Area (sq ft)	302.42	37.21	1107.91
E.G. Slope (ft/ft)	0.025525	Area (sq ft)	302.42	37.21	1107.91
Q Total (cfs)	1691.00	Flow (cfs)	230.53	202.42	1258.06
Top Width (ft)	3974.46	Top Width (ft)	1124.44	119.90	2730.12
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.76	5.44	1.14
Max Chl Dpth (ft)	1.11	Hydr. Depth (ft)	0.27	0.31	0.41
Conv. Total (cfs)	10584.3	Conv. (cfs)	1442.9	1267.0	7874.4
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1124.45	119.90	2730.14
Min Ch El (ft)	1084.00	Shear (lb/sq ft)	0.43	0.49	0.65
Alpha	3.36	Stream Power (lb/ft s)	0.33	2.69	0.73
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	365.54	42.17	274.42
C & E Loss (ft)	0.02	Cum SA (acres)	305.27	47.41	311.74

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the
cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.38

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1084.6	1158.3	1083.5	1188.6	1083.5	1387.2	1084.4	1400	1084.4
1512.7	1083.7	1556.9	1083.1	1600	1083.1	1800	1083.1	2000	1083.2
2143.6	1082.9	2160.2	1083.1	2200	1083.1	2399.9	1082.9	2462.1	1082.8
2476.9	1082.3	2520.1	1082.3	2535.1	1082.8	2599.9	1082.7	2799.9	1082.5
2846.2	1082.3	2858.5	1082	2887.2	1082	2999.9	1082.5	3030.6	1082.5
3170	1082.2	3204.1	1082.2	3216.2	1082	3244.5	1082	3280	1082.2
3399.9	1082.2	3556.4	1082.3	3576.6	1082	3599.9	1082	3600.6	1082
3618.8	1082.4	3757.2	1082.7	3786.3	1084.1	3799.9	1083.9	3999.9	1083.7
4199.9	1083.1	4399.9	1083	4599.9	1083.4	4799.9	1082.3	4846	1082.4
4899.7	1081.9	4955.2	1082.3	4999.9	1082.3	5070.8	1082	5079.6	1081.6
5199.8	1082	5399.8	1082.1	5599.8	1082.2	5799.8	1082.1	5891	1081.7
5964.2	1082	5999.8	1082.3	6032.2	1083.5	6032.6	1083.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3170	.02	3280	.13	3799.9	.02	5070.8	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3280	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1083.28	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020
0.068				
W.S. Elev (ft)	1083.26	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)		Flow Area (sq ft)	764.49	127.23
2050.88				
E.G. Slope (ft/ft)	0.000752	Area (sq ft)	764.49	127.23
2050.88				
Q Total (cfs)	1691.00	Flow (cfs)	144.91	285.53
1260.56				
Top Width (ft)	4009.52	Top Width (ft)	1625.03	110.00
2274.49				
Vel Total (ft/s)	0.57	Avg. Vel. (ft/s)	0.19	2.24
0.61				
Max Chl Dpth (ft)	1.66	Hydr. Depth (ft)	0.47	1.16
0.90				
Conv. Total (cfs)	61679.2	Conv. (cfs)	5285.6	10414.9
45978.8				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	1625.05	110.00
2274.55				
Min Ch El (ft)	1082.00	Shear (lb/sq ft)	0.02	0.05
0.04				
Alpha	3.44	Stream Power (lb/ft s)	0.00	0.12

0.03					
Frctn Loss (ft)		0.56	Cum Volume (acre-ft)	359.42	41.22
256.29					
C & E Loss (ft)		0.00	Cum SA (acres)	289.49	46.09
283.01					

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.29

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1083	1200	1083.7	1297.5	1083.6	1400	1083.3	1600	1083.7
1609	1083.7	1647	1083.8	1667.9	1082.8	1691.2	1083.4	1800	1083.3
1952.8	1082.6	1978.9	1082.6	1991.8	1083.2	2000	1083.2	2200	1082.9
2292.1	1082.3	2313.6	1082.3	2330.4	1082.7	2399.9	1082.7	2599.9	1082.3
2615.6	1082.1	2661.2	1082.1	2799.9	1082.4	2996.5	1081.7	2999.9	1081.7
3026.6	1081.7	3045.2	1082	3176.7	1082.3	3199.9	1082.1	3325	1081.5
3382.7	1081.6	3396.2	1082.1	3450	1082.1	3599.9	1081.8	3716.1	1081.4
3741.1	1081.4	3753	1081.8	3799.9	1081.7	3916.2	1082	3923	1082.9
3972.9	1083.2	3999.9	1083.1	4199.9	1082.5	4399.9	1081.9	4599.9	1081.9
4799.9	1082.1	4981.7	1080.6	4999.9	1080.6	5035.7	1080.6	5048.4	1080.9
5100	1080.9	5213	1080.8	5276.2	1080.9	5399.8	1082.5	5599.8	1082.6
5610.9	1081.6	5624.8	1081.2	5697.1	1082.7				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3325	.02	3450	.13	3999.9	.5	4981.7	.035
5100	.13								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3325	3450	490	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1082.72	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.099				
W.S. Elev (ft)	1082.69	Reach Len. (ft)	490.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	524.22	108.75
1850.57				
E.G. Slope (ft/ft)	0.001923	Area (sq ft)	524.22	108.75
1850.57				
Q Total (cfs)	1691.00	Flow (cfs)	170.42	322.84
1197.75				
Top Width (ft)	3220.81	Top Width (ft)	1064.70	125.00
2031.12				
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)	0.33	2.97
0.65				
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	0.49	0.87

0.91					
Conv. Total (cfs)	38565.8	Conv. (cfs)	3886.6	7362.8	27316.4
Length Wtd. (ft)	499.42	Wetted Per. (ft)	1064.71	125.01	2031.26
Min Ch El (ft)	1081.50	Shear (lb/sq ft)	0.06	0.10	0.11
Alpha	4.29	Stream Power (lb/ft s)	0.02	0.31	0.07
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	352.17	39.90	234.35
C & E Loss (ft)	0.00	Cum SA (acres)	274.36	44.77	258.80

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.2

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082.7	1200	1082.6	1400	1082.5	1800	1082.3	2080	1081.9
2180	1081.6	2399.9	1081.7	2599.9	1081.6	2799.9	1081.6	2999.9	1081.5
3140	1081.4	3399.9	1081	3599.9	1080.9	3799.9	1080.8	3999.9	1080.8
4199.9	1080.6	4399.9	1080.5	4599.9	1080.5	4799.9	1081.4	4999.9	1082.2
5016.6	1082.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2999.9	.02	3140	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3140	450	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1081.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020	0.060
W.S. Elev (ft)	1081.81	Reach Len. (ft)	450.00	470.00	470.00
Crit W.S. (ft)		Flow Area (sq ft)	165.90	50.01	1648.25
E.G. Slope (ft/ft)	0.001657	Area (sq ft)	165.90	50.01	1648.25
Q Total (cfs)	1691.00	Flow (cfs)	25.21	76.13	1589.66
Top Width (ft)	2790.65	Top Width (ft)	888.90	140.10	1761.66
Vel Total (ft/s)	0.91	Avg. Vel. (ft/s)	0.15	1.52	0.96
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.19	0.36	0.94
Conv. Total (cfs)	41537.5	Conv. (cfs)	619.3	1870.0	39048.3
Length Wtd. (ft)	469.09	Wetted Per. (ft)	888.90	140.10	

1761.66				
Min Ch El (ft)	1081.40	Shear (lb/sq ft)	0.02	0.04
0.10				
Alpha	1.19	Stream Power (lb/ft s)	0.00	0.06
0.09				
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	348.29	38.99
214.27				
C & E Loss (ft)	0.00	Cum SA (acres)	263.37	43.24
237.03				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.11

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082	1200	1081.7	1233.4	1081.5	1265.1	1081.1	1286.4	1081.5
1400	1081.5	1600	1081.5	1800	1081.3	1857.6	1081.1	1867.2	1080.9
1911.5	1080.9	1920.5	1080.9	2000	1080.9	2200	1080.8	2399.9	1080.6
2537.2	1080	2563	1080	2575.4	1080.4	2599.9	1080.4	2799.9	1080.3
2846.6	1080.3	2863.9	1079.8	2887	1079.8	2905	1080.2	2950	1080.3
3184.1	1080	3199.9	1080	3399.9	1080.4	3515	1080	3553.5	1080
3566.5	1080.2	3599.9	1080.2	3799.9	1080.1	3841.7	1080	3848.8	1079.9
3884.5	1079.9	3896.9	1080.1	3999.9	1080.1	4037.1	1080.3	4056.7	1079.9
4120.1	1080.3	4181.8	1080	4199.9	1080.1	4399.9	1079.9	4408.2	1079.9
4506.3	1080.1	4567.3	1080.4	4599.9	1080.4	4723.7	1081.5	4741.4	1081.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2846.6	.02	2950	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2846.6	2950	500	530	500	.1

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4723.7	4741.4	1081.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1081.12	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1081.09	Reach Len. (ft)	500.00	530.00
500.00				
Crit W.S. (ft)	1080.54	Flow Area (sq ft)	505.53	105.63
1634.35				
E.G. Slope (ft/ft)	0.001356	Area (sq ft)	505.53	105.63
1634.35				
Q Total (cfs)	1865.00	Flow (cfs)	136.03	293.09
1435.88				
Top Width (ft)	2820.14	Top Width (ft)	988.72	103.40
1728.02				
Vel Total (ft/s)	0.83	Avg. Vel. (ft/s)	0.27	2.77
0.88				

Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.51	1.02
0.95				
Conv. Total (cfs)	50653.7	Conv. (cfs)	3694.7	7960.3
38998.7				
Length Wtd. (ft)	506.36	Wetted Per. (ft)	988.73	103.41
1728.04				
Min Ch El (ft)	1079.80	Shear (lb/sq ft)	0.04	0.09
0.08				
Alpha	2.62	Stream Power (lb/ft s)	0.01	0.24
0.07				
Frctn Loss (ft)	0.95	Cum Volume (acre-ft)	344.82	38.15
196.56				
C & E Loss (ft)	0.00	Cum SA (acres)	253.67	41.93
218.20				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 7.06

INPUT
Description: Left Overbank between stations 7.01 and 7.11
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.9
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1081.5	100	1081	300	1080	310	1079.5	490	1079.5
500	1080								

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1081.12	Weir Max Depth (ft)	0.99
W.S. US. (ft)	1081.09	Weir Avg Depth (ft)	0.54
E.G. DS (ft)	1080.16	Weir Submerg	0.00
W.S. DS (ft)	1080.12	Min El Weir Flow (ft)	1079.50
Q US (cfs)	1865.00	Wr Top Wdth (ft)	366.63
Q Leaving Total (cfs)	314.30	Total Gate Flow (cfs)	
Q DS (cfs)	1551.77	Gate Group Q (cfs)	
Perc Q Leaving	16.80	Gate Open Ht (ft)	
Q Weir (cfs)	314.30	Gate #Open	
Wr Flw Area (sq ft)	199.55	Gate Area (sq ft)	
Weir Sta US (ft)	133.37	Gate Submerg	
Weir Sta DS (ft)	500.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.01

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082.1	1182.3	1081.4	1200	1081.4	1400	1082	1600	1081.9
1794.4	1081.4	1800	1080.1	1806	1079.9	1853.2	1079.8	2000	1079.9
2200	1079.5	2400	1079.6	2480	1079	2505.7	1079.5	2599.9	1079.7
2799.9	1079.5	2806.5	1079.5	2865	1079.5	2999.9	1079.5	3100	1079.5
3168.5	1079.5	3199.9	1079.5	3399.9	1079.4	3454.6	1079.5	3487.2	1079.5
3575.9	1079.4	3599.9	1079.9	3621.4	1080	3799.9	1080	3999.9	1079.9
4199.9	1079.4	4399.9	1078.7	4453.1	1078.5	4524.8	1078.6	4599.9	1081
4642	1081								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2865	.02	3100	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2865	3100	360	400	360	.1

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1080.16	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.05	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1080.12	Reach Len. (ft)	360.00	400.00
360.00				
Crit W.S. (ft)		Flow Area (sq ft)	527.98	144.72
914.04				
E.G. Slope (ft/ft)	0.003063	Area (sq ft)	527.98	144.72
914.04				
Q Total (cfs)	1551.77	Flow (cfs)	209.21	430.77
911.78				
Top Width (ft)	2772.30	Top Width (ft)	1065.07	235.00
1472.23				
Vel Total (ft/s)	0.98	Avg. Vel. (ft/s)	0.40	2.98
1.00				
Max Chl Dpth (ft)	1.62	Hydr. Depth (ft)	0.50	0.62
0.62				
Conv. Total (cfs)	28036.9	Conv. (cfs)	3780.0	7783.1
16473.8				
Length Wtd. (ft)	368.76	Wetted Per. (ft)	1065.08	235.00
1472.27				
Min Ch El (ft)	1079.50	Shear (lb/sq ft)	0.09	0.12
0.12				
Alpha	3.21	Stream Power (lb/ft s)	0.04	0.35
0.12				
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	338.89	36.62
181.93				
C & E Loss (ft)	0.01	Cum SA (acres)	241.88	39.87
199.84				

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 6.96

INPUT
Description: Left Overbank Between Stations 6.94 and 7.01
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0

Weir Coefficient = 1.75
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1080	20	1079.2	350	1079.2	360	1080

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1080.16	Weir Max Depth (ft)	0.88
W.S. US. (ft)	1080.12	Weir Avg Depth (ft)	0.58
E.G. DS (ft)	1079.49	Weir Submerg	0.00
W.S. DS (ft)	1079.48	Min El Weir Flow (ft)	1079.20
Q US (cfs)	1551.77	Wr Top Wdth (ft)	353.60
Q Leaving Total (cfs)	281.81	Total Gate Flow (cfs)	
Q DS (cfs)	1270.50	Gate Group Q (cfs)	
Perc Q Leaving	18.13	Gate Open Ht (ft)	
Q Weir (cfs)	281.81	Gate #Open	
Wr Flw Area (sq ft)	204.34	Gate Area (sq ft)	
Weir Sta US (ft)	0.00	Gate Submerg	
Weir Sta DS (ft)	353.60	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.94

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1101.2	1014.6	1101.2	1031.8	1103.6	1137.7	1080.8	1220	1079.3
1225	1079.3	1400	1079.5	1572.6	1079.7	1600	1079.4	1800	1079.5
1882.6	1079.1	1962.3	1079.1	2000	1079.2	2186.7	1079.4	2200	1078.7
2204.6	1078.6	2230	1078.6	2245.5	1079.4	2400	1080.2	2465.1	1079.7
2501.1	1078.7	2599.9	1078.9	2660	1079	2799.9	1079.5	2999.9	1079.4
3199.9	1078.9	3399.9	1078.3	3599.9	1077.7	3799.9	1077.3	3801.5	1077.3
3824.3	1077.9	3841.3	1076.9	3858.7	1077.8	3923.4	1077.9	3999.9	1080
4051	1082								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	2400	.02	2660	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2400	2660	360	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1079.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.060	0.020	0.060
W.S. Elev (ft)	1079.48	Reach Len. (ft)	360.00	360.00	360.00
Crit W.S. (ft)		Flow Area (sq ft)	151.22	109.37	1238.10
E.G. Slope (ft/ft)	0.001084	Area (sq ft)	151.22	109.37	

1238.10				
Q Total (cfs)	1270.50	Flow (cfs)	48.86	187.15
1034.49				
Top Width (ft)	2239.67	Top Width (ft)	785.14	186.86
1267.67				
Vel Total (ft/s)	0.85	Avg. Vel. (ft/s)	0.32	1.71
0.84				
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)	0.19	0.59
0.98				
Conv. Total (cfs)	38597.1	Conv. (cfs)	1484.3	5685.5
31427.4				
Length Wtd. (ft)	360.00	Wetted Per. (ft)	785.18	186.87
1267.76				
Min Ch El (ft)	1078.70	Shear (lb/sq ft)	0.01	0.04
0.07				
Alpha	1.40	Stream Power (lb/ft s)	0.00	0.07
0.06				
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	336.08	35.46
173.04				
C & E Loss (ft)	0.00	Cum SA (acres)	234.24	37.93
188.52				

Warning: Divided flow computed for this cross-section.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 6.91

INPUT
Description: Left Overbank Between Stations 6.88 and 6.94
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 2.1
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1082	20	1078.8	350	1078.8	360	1079

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1079.49	Weir Max Depth (ft)	0.66
W.S. US. (ft)	1079.48	Weir Avg Depth (ft)	0.54
E.G. DS (ft)	1079.24	Weir Submerg	0.00
W.S. DS (ft)	1079.23	Min El Weir Flow (ft)	1078.80
Q US (cfs)	1270.50	Wr Top Wdth (ft)	344.16
Q Leaving Total (cfs)	290.18	Total Gate Flow (cfs)	
Q DS (cfs)	980.16	Gate Group Q (cfs)	
Perc Q Leaving	22.85	Gate Open Ht (ft)	
Q Weir (cfs)	290.18	Gate #Open	
Wr Flw Area (sq ft)	186.23	Gate Area (sq ft)	
Weir Sta US (ft)	15.84	Gate Submerg	
Weir Sta DS (ft)	360.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.88

INPUT

Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1093.4	1040	1079	1093.5	1079	1383.4	1079	1389.3	1078.9
1400	1078.9	1424.1	1078.9	1600	1079.6	1759.9	1078.7	1796.2	1080
1800	1080	1987.2	1079.1	2000	1078.2	2002.8	1078.2	2200	1078.4
2320	1079.1	2599.9	1079	2799.9	1078.6	2999.9	1078.4	3110	1078.4
3144.5	1083.1	3199.9	1081.4	3292	1078.2	3399.9	1077.7	3599.9	1077.3
3696	1077	3767.6	1077.3	3799.9	1077.8	3966.2	1079	3966.7	1079.2

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1600	.06	2320	.02	2599.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2320	2599.9	420	420	420	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1079.24	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.066	0.020
0.060				
W.S. Elev (ft)	1079.23	Reach Len. (ft)	420.00	420.00
420.00				
Crit W.S. (ft)		Flow Area (sq ft)	388.14	50.48
1366.88				
E.G. Slope (ft/ft)	0.000448	Area (sq ft)	388.14	50.48
1366.88				
Q Total (cfs)	980.16	Flow (cfs)	120.83	25.35
833.98				
Top Width (ft)	2437.16	Top Width (ft)	936.71	279.90
1220.55				
Vel Total (ft/s)	0.54	Avg. Vel. (ft/s)	0.31	0.50
0.61				
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.41	0.18
1.12				
Conv. Total (cfs)	46284.2	Conv. (cfs)	5705.5	1197.3
39381.4				
Length Wtd. (ft)	420.00	Wetted Per. (ft)	936.80	279.90
1220.71				
Min Ch El (ft)	1079.00	Shear (lb/sq ft)	0.01	0.01
0.03				
Alpha	1.14	Stream Power (lb/ft s)	0.00	0.00
0.02				
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	333.85	34.80
162.27				
C & E Loss (ft)	0.00	Cum SA (acres)	227.12	36.01
178.23				

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.8

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1079.7	1200	1079.9	1400	1079.8	1603.6	1079.5	1611.3	1078.6
1659.5	1078.9	1800	1079.1	1953.5	1078.4	1986	1078.5	2000	1079.1
2007.4	1079.1	2142.5	1079.1	2187.2	1078.6	2200	1078.8	2225.7	1079
2266.4	1078.7	2335.3	1079.4	2400	1079.4	2599.9	1078.8	2799.9	1078.4
2940	1078.2	2999.9	1078	3050	1078.1	3199.9	1078.1	3260.7	1078.9
3302.6	1078.6	3313.2	1077.9	3399.9	1077.9	3403.7	1077.9	3415.2	1078.5
3455.4	1078.5	3468.5	1077.7	3599.9	1077.7	3627.4	1077.2	3661.6	1077.1
3724.7	1077.7	3799.9	1077.7	3999.9	1077.7	4199.9	1077.5	4267.1	1077
4332.8	1077.5	4399.9	1078	4442.4	1079	4469.1	1079.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.1	2940	.02	3050	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2940	3050	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1078.93	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.100	0.020
0.130				
W.S. Elev (ft)	1078.91	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	213.56	91.22
1547.53				
E.G. Slope (ft/ft)	0.001362	Area (sq ft)	213.56	91.22
1547.53				
Q Total (cfs)	980.16	Flow (cfs)	57.50	220.81
701.85				
Top Width (ft)	2184.64	Top Width (ft)	686.22	110.00
1388.43				
Vel Total (ft/s)	0.53	Avg. Vel. (ft/s)	0.27	2.42
0.45				
Max Chl Dpth (ft)	1.91	Hydr. Depth (ft)	0.31	0.83
1.11				
Conv. Total (cfs)	26554.3	Conv. (cfs)	1557.7	5982.2
19014.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	686.25	110.00
1388.52				
Min Ch El (ft)	1078.00	Shear (lb/sq ft)	0.03	0.07
0.09				
Alpha	5.26	Stream Power (lb/ft s)	0.01	0.17
0.04				
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	330.95	34.11
148.22				
C & E Loss (ft)	0.00	Cum SA (acres)	219.30	34.13
165.66				

Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.7

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1079.1	1042.4	1078.8	1200	1079	1600	1078.7	1648.2	1078.5
1787.1	1078.6	1800	1078.7	2000	1079.2	2200	1079.1	2329.8	1077.9
2365.6	1077.7	2400	1078.6	2423.6	1079	2599.9	1079.5	2799.9	1078.5
2978.8	1077.7	2994.2	1077.2	2999.9	1077.2	3026.3	1077.1	3039.6	1077.7
3170	1077.7	3199.9	1077.7	3370	1077.5	3399.9	1077.4	3534.4	1078.3
3538.5	1077.3	3599.9	1077.8	3600.5	1077.8	3672.7	1076.3	3702.2	1076.3
3719	1077	3799.9	1077.2	3999.9	1077.4	4199.9	1076.4	4336.5	1076
4399.9	1076.5	4599.9	1076.8	4655	1077.8	4800	1078.5		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2978.8	.02	3039.6	.13	4655	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3370	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1077.99	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.029	0.130
0.130				
W.S. Elev (ft)	1077.98	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	95.35	72.72
1288.43				
E.G. Slope (ft/ft)	0.002772	Area (sq ft)	95.35	72.72
1288.43				
Q Total (cfs)	980.16	Flow (cfs)	141.22	22.29
816.65				
Top Width (ft)	1781.03	Top Width (ft)	308.43	200.00
1272.60				
Vel Total (ft/s)	0.67	Avg. Vel. (ft/s)	1.48	0.31
0.63				
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)	0.31	0.36
1.01				
Conv. Total (cfs)	18615.9	Conv. (cfs)	2682.2	423.4
15510.3				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	308.45	200.00
1272.73				
Min Ch El (ft)	1077.50	Shear (lb/sq ft)	0.05	0.06
0.18				
Alpha	1.44	Stream Power (lb/ft s)	0.08	0.02
0.11				
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	329.18	33.17
131.95				
C & E Loss (ft)	0.00	Cum SA (acres)	213.59	32.35
150.38				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.61

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1078.2	1137.9	1078.5	1185.1	1077.3	1272.6	1077.3	1400	1077.9
1571.4	1077.9	1583.2	1077.2	1600	1077.2	1626	1077.3	1800	1077.1
2000	1077.2	2200	1077	2279.2	1076.6	2400	1076.9	2599.9	1076.7
2799.9	1076.6	2929.5	1075.8	2975.7	1076	2999.9	1076.1	3020	1076.1
3199.9	1076.2	3300	1076	3399.9	1075.3	3445.4	1075.2	3576.3	1076
3599.9	1076.7	3611.4	1077.1	3799.9	1077.5	3999.9	1077	4199.9	1076.9
4232	1076.6	4266.3	1075	4324.6	1075.1	4399.9	1075.6	4424.6	1075.8
4520	1076	4650	1078	4700	1079				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2929.5	.02	3020	.5	3999.9	.04

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3020	3300	490	490	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1077.02	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.040	0.500
0.082				
W.S. Elev (ft)	1077.01	Reach Len. (ft)	490.00	490.00
470.00				
Crit W.S. (ft)		Flow Area (sq ft)	358.96	245.51
889.03				
E.G. Slope (ft/ft)	0.001432	Area (sq ft)	358.96	245.51
889.03				
Q Total (cfs)	980.16	Flow (cfs)	323.21	25.29
631.66				
Top Width (ft)	2006.94	Top Width (ft)	828.91	280.00
898.03				
Vel Total (ft/s)	0.66	Avg. Vel. (ft/s)	0.90	0.10
0.71				
Max Chl Dpth (ft)	2.01	Hydr. Depth (ft)	0.43	0.88
0.99				
Conv. Total (cfs)	25901.2	Conv. (cfs)	8540.8	668.4
16692.0				
Length Wtd. (ft)	474.48	Wetted Per. (ft)	828.92	280.00
898.10				
Min Ch El (ft)	1076.00	Shear (lb/sq ft)	0.04	0.08
0.09				
Alpha	1.38	Stream Power (lb/ft s)	0.03	0.01
0.06				
Frctn Loss (ft)	1.13	Cum Volume (acre-ft)	326.57	31.35
119.45				
C & E Loss (ft)	0.01	Cum SA (acres)	207.06	29.59
137.93				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.52

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1077.7	1132.4	1076.4	1178.7	1076.9	1400	1076.8	1600	1076.7
1800	1075.8	1804.7	1075.7	1843.1	1075.9	1878.3	1077.9	2000	1078.3
2200	1077.3	2400	1076	2463.8	1075.9	2474	1075.4	2513	1075.2
2541.2	1075.8	2599.9	1075.9	2750	1076	2799.9	1076.1	2940	1075.4
2999.9	1075.5	3199.9	1075.4	3399.9	1075.8	3599.9	1076	3698.2	1076.3
3781.6	1075.7	3799.9	1074.4	3801.8	1074.3	3819.4	1074	3871.2	1074.4
3893.8	1075	3999.9	1075.2	4013.7	1075.5	4035.2	1076.4	4199.9	1076.6
4378.5	1077								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1843.1	.5	2400	.035	2940	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
2750 2999.9 500 500 500 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4035.5	4378.5	1076.4

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1075.89	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.10	Wt. n-Val.	0.035	0.032
0.030				
W.S. Elev (ft)	1075.78	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1075.64	Flow Area (sq ft)	29.22	34.74
335.02				
E.G. Slope (ft/ft)	0.004695	Area (sq ft)	29.22	34.74
335.02				
Q Total (cfs)	980.16	Flow (cfs)	43.55	46.92
889.69				
Top Width (ft)	873.44	Top Width (ft)	94.30	136.72
642.42				
Vel Total (ft/s)	2.46	Avg. Vel. (ft/s)	1.49	1.35
2.66				
Max Chl Dpth (ft)	1.78	Hydr. Depth (ft)	0.31	0.25
0.52				

Conv. Total (cfs)	14304.3	Conv. (cfs)	635.6	684.8 12983.9
Length Wtd. (ft)	500.00	Wetted Per. (ft)	94.32	136.72 642.49
Min Ch El (ft)	1075.40	Shear (lb/sq ft)	0.09	0.07 0.15
Alpha	1.09	Stream Power (lb/ft s)	0.14	0.10 0.41
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	324.39	29.77 112.85
C & E Loss (ft)	0.02	Cum SA (acres)	201.87	27.25 129.62

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.42

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1076.2	1063.1	1075.5	1103.6	1075.6	1400	1075.8	1600	1075.7
1741.6	1075.1	1775.3	1075.1	1800	1075.9	1803.5	1076	2000	1076.1
2200	1075.6	2400	1074.9	2409.9	1074.8	2452.1	1074.8	2487.3	1074.6
2599.9	1075.3	2799.9	1074.4	2999.9	1074.7	3079.2	1074.2	3105.6	1074.6
3130	1074.4	3199.9	1074.2	3399.9	1074.1	3599.9	1074	3755.6	1073.9
3799.9	1074	3818.4	1074.2	3846.7	1076.4	3872.9	1076.8	3883.9	1076.1
3898.8	1076.1	3949.7	1075.6	3999.9	1076				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1800	.5	2200	.02	2487.3	.06	2999.9	.02
3130	.03								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3130	500	500	500	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3999.9	3999.9	1076

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1074.98	Element	Left OB	Channel Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.052	0.020 0.030
W.S. Elev (ft)	1074.95	Reach Len. (ft)	500.00	500.00 500.00
Crit W.S. (ft)	1074.47	Flow Area (sq ft)	138.98	64.89

603.39				
E.G. Slope (ft/ft)	0.000940	Area (sq ft)	138.98	64.89
603.39				
Q Total (cfs)	980.16	Flow (cfs)	55.95	92.95
831.26				
Top Width (ft)	1306.88	Top Width (ft)	478.75	130.10
698.02				
Vel Total (ft/s)	1.21	Avg. Vel. (ft/s)	0.40	1.43
1.38				
Max Chl Dpth (ft)	1.05	Hydr. Depth (ft)	0.29	0.50
0.86				
Conv. Total (cfs)	31977.0	Conv. (cfs)	1825.3	3032.4
27119.3				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	478.76	130.11
698.05				
Min Ch El (ft)	1074.20	Shear (lb/sq ft)	0.02	0.03
0.05				
Alpha	1.23	Stream Power (lb/ft s)	0.01	0.04
0.07				
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	323.42	29.20
107.46				
C & E Loss (ft)	0.00	Cum SA (acres)	198.58	25.72
121.92				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.33

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1075.7	1200	1075.8	1400	1075.6	1665	1074.9	1800	1075
2000	1075.2	2130	1074	2341.6	1073.8	2375.4	1073.8	2400	1074.2
2599.9	1073.9	2799.9	1073.8	2999.9	1073.9	3050	1073.6	3175	1073.4
3399	1073.3	3599.9	1073.3	3665.9	1073.5	3719.1	1073.8	3736.3	1075.3
3753.5	1075	3758.3	1075.8	3778	1075.8	3786.7	1074.6	4070	1075.5

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2341.6	.06	3050	.02	3175	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3050	3175	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3778	4070	1075.8

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1074.40	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.069	0.020

0.060				
W.S. Elev (ft)	1074.37	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1073.87	Flow Area (sq ft)	435.78	108.43
546.19				
E.G. Slope (ft/ft)	0.001382	Area (sq ft)	435.78	108.43
546.19				
Q Total (cfs)	980.16	Flow (cfs)	207.59	272.40
500.17				
Top Width (ft)	1635.41	Top Width (ft)	959.81	125.00
550.61				
Vel Total (ft/s)	0.90	Avg. Vel. (ft/s)	0.48	2.51
0.92				
Max Chl Dpth (ft)	1.07	Hydr. Depth (ft)	0.45	0.87
0.99				
Conv. Total (cfs)	26364.9	Conv. (cfs)	5583.9	7327.1
13453.9				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	959.81	125.00
550.63				
Min Ch El (ft)	1073.40	Shear (lb/sq ft)	0.04	0.07
0.09				
Alpha	2.76	Stream Power (lb/ft s)	0.02	0.19
0.08				
Frctn Loss (ft)	0.58	Cum Volume (acre-ft)	320.13	28.20
100.86				
C & E Loss (ft)	0.00	Cum SA (acres)	190.33	24.25
114.76				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.23

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.8	1200	1075.1	1400	1075	1512.1	1074.2	1537.5	1074.3
1600	1074.6	1800	1074.6	1860.5	1074.3	2000	1074.7	2001.1	1074.7
2018	1074.4	2200	1075	2343.1	1073.5	2376.4	1073.6	2400	1073.7
2599.9	1073.3	2751	1072.9	2799.9	1073.4	2999.9	1073.5	3059	1073
3092.2	1072.6	3129.2	1072.6	3175	1073	3399.9	1072.8	3469.2	1072.2
3499.4	1072.2	3599.9	1072.7	3799.9	1072.9	3999.9	1074		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	3059	.02	3175	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3059	3175	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3999.9	3999.9	1074

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1073.82	Element	Left OB	Channel
Right OB				

Vel Head (ft)	0.03	Wt. n-Val.	0.060	0.020	0.060
W.S. Elev (ft)	1073.79	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1073.21	Flow Area (sq ft)	306.41	121.88	739.79
E.G. Slope (ft/ft)	0.000990	Area (sq ft)	306.41	121.88	739.79
Q Total (cfs)	980.16	Flow (cfs)	132.24	294.42	553.51
Top Width (ft)	1645.41	Top Width (ft)	743.27	116.00	786.15
Vel Total (ft/s)	0.84	Avg. Vel. (ft/s)	0.43	2.42	0.75
Max Chl Dpth (ft)	1.59	Hydr. Depth (ft)	0.41	1.05	0.94
Conv. Total (cfs)	31155.0	Conv. (cfs)	4203.2	9358.2	17593.6
Length Wtd. (ft)	500.00	Wetted Per. (ft)	743.27	116.00	786.15
Min Ch El (ft)	1072.60	Shear (lb/sq ft)	0.03	0.06	0.06
Alpha	2.97	Stream Power (lb/ft s)	0.01	0.16	0.04
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	315.87	26.88	93.48
C & E Loss (ft)	0.01	Cum SA (acres)	180.55	22.87	107.08

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.14

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.8	1200	1074.6	1400	1074.7	1649	1074.6	1657.9	1073.8
1695.2	1073.6	1800	1073.7	1856.2	1073.5	1876	1073.9	1903.1	1073.6
2000	1073.6	2200	1073.7	2317.7	1072.8	2400	1073.1	2599.9	1073
2799.9	1072.5	2851.8	1072.5	2860.7	1071.9	2866.2	1072.4	2999.9	1072.5
3072.5	1072	3110.2	1071.8	3130	1072	3199.9	1072.2	3399.9	1072.5
3599.9	1072.1	3627.7	1072.5	3724.6	1073.5	3799.9	1072.9	3900	1073
3999.9	1072	4115	1071.5	4740	1072				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1657.9	.03	1876	.5	2200	.03	2999.9	.02
3130	.03	3799.9	.13						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3130	490	480	450	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3724.6	4740	1073.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1072.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.030	0.020	0.030
W.S. Elev (ft)	1072.80	Reach Len. (ft)	490.00	480.00	450.00
Crit W.S. (ft)	1072.71	Flow Area (sq ft)	87.54	90.97	254.33
E.G. Slope (ft/ft)	0.004317	Area (sq ft)	87.54	90.97	254.33
Q Total (cfs)	980.16	Flow (cfs)	120.59	349.83	509.73
Top Width (ft)	974.16	Top Width (ft)	317.82	130.10	526.24
Vel Total (ft/s)	2.26	Avg. Vel. (ft/s)	1.38	3.85	2.00
Max Chl Dpth (ft)	0.99	Hydr. Depth (ft)	0.28	0.70	0.48
Conv. Total (cfs)	14917.9	Conv. (cfs)	1835.4	5324.4	7758.1
Length Wtd. (ft)	465.40	Wetted Per. (ft)	317.87	130.10	526.25
Min Ch El (ft)	1071.80	Shear (lb/sq ft)	0.07	0.19	0.13
Alpha	1.48	Stream Power (lb/ft s)	0.10	0.72	0.26
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	313.61	25.66	87.78
C & E Loss (ft)	0.01	Cum SA (acres)	174.46	21.46	99.55

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.05

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074	1200	1073.6	1400	1073.3	1789	1073.4	1800	1073.4
1842.1	1073.2	2000	1072.7	2156.86	1072.1	2166.64	1072.15	2200	1071.9
2210.09	1071.9	2210.73	1071.9	2217.12	1071.9	2222.11	1071.9	2222.12	1073.9
2236.21	1073.9	2236.22	1071.9	2400	1071.5	2472.43	1071.58	2473.05	1071.91
2497.85	1071.5	2502.86	1071.46	2527.79	1070.83	2528.39	1070.29	2529.62	1070.4
2545.84	1070.81	2561.71	1070.25	2562.93	1070.09	2563.39	1070.58	2592.84	1069.8
2595.84	1070	2631.78	1071.55	2631.79	1083.55	2950.56	1083.55	2950.57	1071.55

2999.9	1071.3	3032	1070.85	3032.01	1073.85	3032.34	1073.85	3032.34	1070
3039.65	1071.31	3054.57	1071.2	3076.36	1071	3078.27	1070.4	3081.92	1070.49
3094.1	1070.5	3150.72	1070.58	3183.33	1070.98	3183.83	1071.31	3199.9	1071.5
3271.56	1072	3324.9	1071.5	3364.27	1072	3399.9	1071.5	3405.55	1072
3439.75	1071.7	3599.9	1071.7	3664.06	1083.1	3812.76	1083.1	3838.6	1071.1
3839.1	1070.77	3869.46	1070.77	3869.97	1071.1	3874	1071.1	3877.88	1071.8
3990.25	1072	3999.9	1072.6	4009.6	1072.4				

Manning's n Values num= 18

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.5	2156.86	.02	2200	.016	2210.73	.013	2222.11	.015
2236.22	.016	2472.43	.013	2545.84	.016	2563.39	.013	2631.79	.05
2950.57	.016	3032	.015	3032.34	.02	3039.65	.013	3081.92	.016
3183.83	.016	3664.06	.015	3877.88	.016				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2527.79	2631.78	560	500	480	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1071.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.013	0.013	0.016
W.S. Elev (ft)	1071.53	Reach Len. (ft)	560.00	500.00	480.00
Crit W.S. (ft)		Flow Area (sq ft)	10.39	106.50	166.55
E.G. Slope (ft/ft)	0.001609	Area (sq ft)	10.39	106.50	166.55
Q Total (cfs)	1005.16	Flow (cfs)	20.81	480.88	503.47
Top Width (ft)	468.67	Top Width (ft)	69.74	103.50	295.42
Vel Total (ft/s)	3.55	Avg. Vel. (ft/s)	2.00	4.52	3.02
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	0.15	1.03	0.56
Conv. Total (cfs)	25061.5	Conv. (cfs)	518.9	11989.7	12552.8
Length Wtd. (ft)	500.27	Wetted Per. (ft)	69.75	104.00	298.26
Min Ch El (ft)	1069.80	Shear (lb/sq ft)	0.01	0.10	0.06
Alpha	1.15	Stream Power (lb/ft s)	0.03	0.46	0.17
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	313.05	24.57	85.60
C & E Loss (ft)	0.06	Cum SA (acres)	172.28	20.17	95.31

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.95

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1073.1	1200	1072.8	1400	1072	1800	1072.3	1939.2	1072
1992.7	1069.7	2000	1069.8	2179.3	1070	2200	1070.7	2225	1070.8
2385.2	1070.2	2400	1070.2	2599.9	1070.6	2799.9	1070.4	2999.9	1070.3
3199.9	1070.6	3323.1	1070.8	3337.6	1070.5	3375.9	1070.5	3399.9	1070.7
3445.8	1070.8	3599.9	1071.2	3765.7	1072				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1400	.5	1939.2	.035	2999.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2225	2400	510	500	470	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3765.7	3765.7	1072

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1071.23	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.035	0.035
0.041				
W.S. Elev (ft)	1071.21	Reach Len. (ft)	510.00	500.00
470.00				
Crit W.S. (ft)	1070.67	Flow Area (sq ft)	302.20	129.24
797.95				
E.G. Slope (ft/ft)	0.000600	Area (sq ft)	302.20	129.24
797.95				
Q Total (cfs)	1005.16	Flow (cfs)	340.91	109.83
554.42				
Top Width (ft)	1645.13	Top Width (ft)	267.50	175.00
1202.63				
Vel Total (ft/s)	0.82	Avg. Vel. (ft/s)	1.13	0.85
0.69				
Max Chl Dpth (ft)	1.51	Hydr. Depth (ft)	1.13	0.74
0.66				
Conv. Total (cfs)	41027.6	Conv. (cfs)	13915.0	4482.9
22629.7				
Length Wtd. (ft)	494.13	Wetted Per. (ft)	267.54	175.00
1202.64				
Min Ch El (ft)	1070.20	Shear (lb/sq ft)	0.04	0.03
0.02				
Alpha	1.16	Stream Power (lb/ft s)	0.05	0.02
0.02				
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	311.05	23.22
80.29				
C & E Loss (ft)	0.00	Cum SA (acres)	170.11	18.57
87.05				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.86

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1072.4	1200	1072.5	1295.5	1072.1	1397.4	1070.2	1400	1070.4
1600	1070.6	1800	1069.4	2000	1069.8	2083.5	1069.9	2117.1	1069.3
2168.3	1069.5	2187.8	1070.6	2260	1070.6	2368.8	1069.3	2390	1070
2450	1070	2940	1070.5	3540	1070.5	3680	1072		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	2000	.035	2260	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2000	2260	540	500	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1070.79	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.035	0.035
0.130				
W.S. Elev (ft)	1070.77	Reach Len. (ft)	540.00	500.00
490.00				
Crit W.S. (ft)		Flow Area (sq ft)	449.62	211.64
574.61				
E.G. Slope (ft/ft)	0.001404	Area (sq ft)	449.62	211.64
574.61				
Q Total (cfs)	1005.16	Flow (cfs)	569.31	293.43
142.42				
Top Width (ft)	2197.84	Top Width (ft)	632.98	260.00
1304.86				
Vel Total (ft/s)	0.81	Avg. Vel. (ft/s)	1.27	1.39
0.25				
Max Chl Dpth (ft)	1.47	Hydr. Depth (ft)	0.71	0.81
0.44				
Conv. Total (cfs)	26830.4	Conv. (cfs)	15196.4	7832.5
3801.5				
Length Wtd. (ft)	526.64	Wetted Per. (ft)	632.99	260.04
1304.88				
Min Ch El (ft)	1069.30	Shear (lb/sq ft)	0.06	0.07
0.04				
Alpha	2.23	Stream Power (lb/ft s)	0.08	0.10
0.01				
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	306.64	21.26
72.88				
C & E Loss (ft)	0.00	Cum SA (acres)	164.84	16.08
73.53				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less

than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.76

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1070.5	1200	1070	1400	1070	1800	1070	1847.1	1068.4
2000	1068.3	2200	1068.5	2400	1068.5	2599.9	1068.9	2740	1069.5
3040	1070	3300	1070.5	3820	1070	4600	1070.5	4920	1071

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.08	2400	.08	2599.9	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2400	2599.9	490	500	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1069.49	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.080	0.080
0.080				
W.S. Elev (ft)	1069.46	Reach Len. (ft)	490.00	500.00
470.00				
Crit W.S. (ft)		Flow Area (sq ft)	591.72	152.43
36.94				
E.G. Slope (ft/ft)	0.005350	Area (sq ft)	591.72	152.43
36.94				
Q Total (cfs)	1005.16	Flow (cfs)	810.78	172.84
21.54				
Top Width (ft)	915.43	Top Width (ft)	584.18	199.90
131.35				
Vel Total (ft/s)	1.29	Avg. Vel. (ft/s)	1.37	1.13
0.58				
Max Chl Dpth (ft)	1.16	Hydr. Depth (ft)	1.01	0.76
0.28				
Conv. Total (cfs)	13742.3	Conv. (cfs)	11084.8	2363.0
294.5				
Length Wtd. (ft)	489.66	Wetted Per. (ft)	584.20	199.90
131.35				
Min Ch El (ft)	1068.50	Shear (lb/sq ft)	0.34	0.25
0.09				
Alpha	1.05	Stream Power (lb/ft s)	0.46	0.29
0.05				
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	300.19	19.17
69.45				
C & E Loss (ft)	0.01	Cum SA (acres)	157.30	13.44
65.45				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less

than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.67

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1069.9	1200	1067.7	1400	1067.2	1800	1067.4	2050	1067.3
2280	1068.1	2400	1067.6	2599.9	1068.6	2799.9	1068	2999.9	1068.3
3199.9	1069.1	3440	1070	3710	1070.5	3960	1070	4040	1069.5
4140	1070	4500	1070						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.08	2050	.08	2280	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2050	2280	530	500	520	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1068.76	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.080	0.080
0.080				
W.S. Elev (ft)	1068.76	Reach Len. (ft)	530.00	500.00
520.00				
Crit W.S. (ft)		Flow Area (sq ft)	1246.13	242.96
478.54				
E.G. Slope (ft/ft)	0.000677	Area (sq ft)	1246.13	242.96
478.54				
Q Total (cfs)	1005.16	Flow (cfs)	723.67	121.79
159.70				
Top Width (ft)	2010.02	Top Width (ft)	946.03	230.00
833.99				
Vel Total (ft/s)	0.51	Avg. Vel. (ft/s)	0.58	0.50
0.33				
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	1.32	1.06
0.57				
Conv. Total (cfs)	38630.3	Conv. (cfs)	27812.2	4680.6
6137.5				
Length Wtd. (ft)	523.38	Wetted Per. (ft)	946.04	230.00
833.99				
Min Ch El (ft)	1067.30	Shear (lb/sq ft)	0.06	0.04
0.02				
Alpha	1.11	Stream Power (lb/ft s)	0.03	0.02
0.01				
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	289.85	16.90
66.66				
C & E Loss (ft)	0.00	Cum SA (acres)	148.69	10.97
60.24				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.57

INPUT

Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1068.7	1200	1066.9	1356.8	1066.1	1406.1	1066.2	1600	1066.5
1700	1066.6	1830	1066.8	2000	1067	2200	1067.6	2271.1	1066.9
2322.9	1066.8	2400	1068.1	2599.9	1068.4	2710.1	1068.2	2735.5	1067.4
2772.9	1067.6	2799.9	1068	2852.5	1068.1	2916.1	1068.1	2999.9	1068.5
3102.4	1068.7	3600	1068.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1700	.08	1830	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1700	1830	450	500	580	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1068.30	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.130	0.080
0.130				
W.S. Elev (ft)	1068.29	Reach Len. (ft)	450.00	500.00
580.00				
Crit W.S. (ft)		Flow Area (sq ft)	1046.27	207.21
749.50				
E.G. Slope (ft/ft)	0.001174	Area (sq ft)	1046.27	207.21
749.50				
Q Total (cfs)	1005.16	Flow (cfs)	559.99	179.94
265.23				
Top Width (ft)	1782.52	Top Width (ft)	654.89	130.00
997.63				
Vel Total (ft/s)	0.50	Avg. Vel. (ft/s)	0.54	0.87
0.35				
Max Chl Dpth (ft)	2.19	Hydr. Depth (ft)	1.60	1.59
0.75				
Conv. Total (cfs)	29335.9	Conv. (cfs)	16343.5	5251.7
7740.8				
Length Wtd. (ft)	512.21	Wetted Per. (ft)	654.90	130.00
997.67				
Min Ch El (ft)	1066.60	Shear (lb/sq ft)	0.12	0.12
0.06				
Alpha	1.30	Stream Power (lb/ft s)	0.06	0.10
0.02				
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	275.91	14.32
59.33				
C & E Loss (ft)	0.00	Cum SA (acres)	138.95	8.90
49.31				

Warning: Divided flow computed for this cross-section.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.53

INPUT
Description: Left Overbank Between Stations 5.48 and 5.57
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0

Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1070	730	1068	860	1066.7	1560	1066.7	1660	1068

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1068.30	Weir Max Depth (ft)	
W.S. US. (ft)	1068.29	Weir Avg Depth (ft)	
E.G. DS (ft)	1064.36	Weir Submerg	0.00
W.S. DS (ft)	1064.23	Min El Weir Flow (ft)	1066.70
Q US (cfs)	1005.16	Wr Top Wdth (ft)	
Q Leaving Total (cfs)	0.00	Total Gate Flow (cfs)	
Q DS (cfs)	1500.64	Gate Group Q (cfs)	
Perc Q Leaving	0.00	Gate Open Ht (ft)	
Q Weir (cfs)	0.00	Gate #Open	
Wr Flw Area (sq ft)		Gate Area (sq ft)	
Weir Sta US (ft)		Gate Submerg	
Weir Sta DS (ft)		Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.48

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY. IN THIS MODEL IT IS ASSUMED THAT
THE SOUTHER PACIFIC RAILROAD DOES NOT FUNCTION AS A LEVEE AND HAS
FAILED ALLOWING FLOW TO FOLLOW ITS NATURAL COURSE.

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
3203.5	1068.6	3399.9	1069.3	3599.9	1068.5	3799.9	1067.6	3999.9	1067.3
4199.9	1067.1	4399.9	1066.6	4599.9	1066.1	4710	1066.4	4799.9	1066.5
4850	1066.4	4899.6	1070.1	4999.9	1070.1	5070.2	1069.7	5088.8	1065.6
5117	1065.5	5123.1	1064.5	5134.6	1066.2	5199.9	1066.4	5399.9	1066.7
5454.2	1066.7	5505.7	1066.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
3203.5	.13	4710	.045	4850	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4710	4850	500	500	520	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1067.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.045	0.060
W.S. Elev (ft)	1067.64	Reach Len. (ft)	500.00	500.00	520.00

Crit W.S. (ft)	1066.74	Flow Area (sq ft)	694.23	166.45	530.75
E.G. Slope (ft/ft)	0.001324	Area (sq ft)	694.23	166.45	530.75
Q Total (cfs)	1005.16	Flow (cfs)	239.51	224.42	541.24
Top Width (ft)	1501.51	Top Width (ft)	918.75	140.00	442.76
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.34	1.35	1.02
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)	0.76	1.19	1.20
Conv. Total (cfs)	27627.2	Conv. (cfs)	6582.9	6168.1	14876.1
Length Wtd. (ft)	511.72	Wetted Per. (ft)	918.76	140.00	444.37
Min Ch El (ft)	1066.40	Shear (lb/sq ft)	0.06	0.10	0.10
Alpha	1.91	Stream Power (lb/ft s)	0.02	0.13	0.10
Frctn Loss (ft)	1.32	Cum Volume (acre-ft)	266.92	12.18	50.81
C & E Loss (ft)	0.01	Cum SA (acres)	130.82	7.35	39.72

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.38

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1068.5	1037.9	1068.5	1065	1070.2	1161.3	1068.7	1200	1068.8
1371.6	1067.7	1400	1067.6	1423	1067.6	1600	1067.2	1800	1066
1991.9	1064.4	2000	1064.5	2051.5	1064.6	2200	1065.6	2400	1066
2599.9	1065.8	2742.2	1066.2	2799.9	1066.5	2999.9	1066.7	3199.9	1066.5
3302.6	1066.8	3353.6	1067.1	3399.9	1067.6	3599.9	1067.7	3799.9	1066.7
3999.9	1066.2	4199.9	1066	4399.9	1065.8	4599.9	1065.7	4799.9	1065.6
4999.9	1065.4	5130	1065.1	5199.9	1065.1	5240	1065	5399.9	1065
5599.8	1065.4	5656.3	1066.1	5698.7	1066.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5130	.045	5240	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
5130	5240	400	400	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev

1000 3599.9 1067.7
Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1066.33	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.045
0.045				
W.S. Elev (ft)	1066.26	Reach Len. (ft)	400.00	400.00
400.00				
Crit W.S. (ft)	1065.82	Flow Area (sq ft)	614.68	129.85
444.03				
E.G. Slope (ft/ft)	0.004495	Area (sq ft)	614.68	129.85
444.03				
Q Total (cfs)	1638.16	Flow (cfs)	309.34	321.08
1007.75				
Top Width (ft)	1692.77	Top Width (ft)	1155.00	110.00
427.76				
Vel Total (ft/s)	1.38	Avg. Vel. (ft/s)	0.50	2.47
2.27				
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.53	1.18
1.04				
Conv. Total (cfs)	24434.3	Conv. (cfs)	4614.0	4789.1
15031.2				
Length Wtd. (ft)	400.00	Wetted Per. (ft)	1155.00	110.00
427.77				
Min Ch El (ft)	1065.00	Shear (lb/sq ft)	0.15	0.33
0.29				
Alpha	2.32	Stream Power (lb/ft s)	0.08	0.82
0.66				
Frctn Loss (ft)	1.17	Cum Volume (acre-ft)	259.40	10.48
44.99				
C & E Loss (ft)	0.01	Cum SA (acres)	118.92	5.92
34.52				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.31

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1066.2	1200	1065.1	1400	1064.2	1800	1064.5	2000	1064.5
2117.1	1064.1	2122.4	1063.7	2160	1063.8	2200	1064.2	2400	1065
2599.9	1065.6	2725	1065.3	2781.3	1065.6	2799.9	1066.2	2999.9	1066.6
3199.9	1066.3	3399.9	1066.2	3599.9	1065.3	3799.9	1064.5	3999.9	1064.2
4199.9	1064.2	4399.9	1064.4	4599.9	1063.9	4670	1064	4770	1063.5
4799.9	1063.1	4999.9	1063.8	5106.3	1065.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	4670	.06	4770	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4670	4770	290	280	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2999.9	1066.6

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1065.15	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.060	0.060
0.060				
W.S. Elev (ft)	1065.13	Reach Len. (ft)	290.00	280.00
280.00				
Crit W.S. (ft)	1064.46	Flow Area (sq ft)	832.83	137.66
445.00				
E.G. Slope (ft/ft)	0.002060	Area (sq ft)	832.83	137.66
445.00				
Q Total (cfs)	1638.16	Flow (cfs)	814.19	191.47
632.50				
Top Width (ft)	1439.67	Top Width (ft)	1026.74	100.00
312.93				
Vel Total (ft/s)	1.16	Avg. Vel. (ft/s)	0.98	1.39
1.42				
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	0.81	1.38
1.42				
Conv. Total (cfs)	36093.7	Conv. (cfs)	17939.1	4218.7
13935.9				
Length Wtd. (ft)	284.94	Wetted Per. (ft)	1026.74	100.00
312.94				
Min Ch El (ft)	1063.50	Shear (lb/sq ft)	0.10	0.18
0.18				
Alpha	1.11	Stream Power (lb/ft s)	0.10	0.25
0.26				
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	252.76	9.25
40.91				
C & E Loss (ft)	0.01	Cum SA (acres)	108.91	4.95
31.12				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.25

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065	1200	1064.5	1400	1064.2	1800	1063.6	2000	1063.2
2200	1062.8	2400	1062.8	2599.9	1062.4	2799.9	1062.2	2999.9	1063
3199.9	1063.4	3399.9	1063.9	3599.9	1064.2	3799.9	1064.5	3999.9	1065
4199.9	1064.6	4399.9	1064	4599.9	1063.3	4799.9	1063.4	4999.9	1062.8

5199.9 1062.4 5350 1062.6 5399.9 1062.6 5430 1062.6 5550.8 1063
5799.8 1064.4 5894.3 1064.4

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5350	.025	5430	.13

Bank Sta: Left 5350 Right 5430 Lengths: Left Channel 290 Right 280 Coeff Contr. .1 Expan. .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	3999.9	1065

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1064.42	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.14	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1064.28	Reach Len. (ft)	290.00	280.00
285.00				
Crit W.S. (ft)	1063.79	Flow Area (sq ft)	1167.05	134.62
325.43				
E.G. Slope (ft/ft)	0.003140	Area (sq ft)	1167.05	134.62
325.43				
Q Total (cfs)	1638.16	Flow (cfs)	804.92	634.29
198.96				
Top Width (ft)	1473.28	Top Width (ft)	1044.34	80.00
348.94				
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.69	4.71
0.61				
Max Chl Dpth (ft)	1.88	Hydr. Depth (ft)	1.12	1.68
0.93				
Conv. Total (cfs)	29235.6	Conv. (cfs)	14365.0	11319.8
3550.7				
Length Wtd. (ft)	285.13	Wetted Per. (ft)	1044.35	80.00
348.94				
Min Ch El (ft)	1062.60	Shear (lb/sq ft)	0.22	0.33
0.18				
Alpha	8.76	Stream Power (lb/ft s)	0.15	1.55
0.11				
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	246.10	8.37
38.43				
C & E Loss (ft)	0.01	Cum SA (acres)	102.01	4.38
29.00				

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.23

INPUT
Description: Left Overbank Between Stations 5.20 and 5.25
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface

Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1064.4	80	1064	180	1063	280	1062.9

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1064.42	Weir Max Depth (ft)	0.78
W.S. US. (ft)	1064.28	Weir Avg Depth (ft)	0.50
E.G. DS (ft)	1063.61	Weir Submerg	0.00
W.S. DS (ft)	1063.51	Min El Weir Flow (ft)	1062.90
Q US (cfs)	1638.16	Wr Top Wdth (ft)	227.49
Q Leaving Total (cfs)	137.21	Total Gate Flow (cfs)	
Q DS (cfs)	1500.64	Gate Group Q (cfs)	
Perc Q Leaving	8.40	Gate Open Ht (ft)	
Q Weir (cfs)	137.21	Gate #Open	
Wr Flw Area (sq ft)	112.80	Gate Area (sq ft)	
Weir Sta US (ft)	52.51	Gate Submerg	
Weir Sta DS (ft)	280.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.2

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY
X3 CARD USED SO THAT
THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE
CREEK WASH

Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065.7	1200	1064.7	1376.5	1064.4	1400	1065.5	1430.6	1065.4
1439.3	1064.3	1600	1064.3	1800	1063.7	2000	1063.7	2074.4	1063.5
2086.6	1062.7	2157.5	1062.4	2200	1062.9	2400	1063	2599.9	1063.1
2799.9	1062.6	2816.3	1062.5	2852.2	1062.3	2999.9	1062.8	3199.9	1063.3
3399.9	1063.6	3407.4	1063.6	3415.5	1063.3	3478.8	1063.4	3599.9	1063.2
3799.9	1063.8	3999.9	1065.1	4170.9	1065.8	4180.6	1064.6	4199.9	1064.6
4399.9	1064	4599.9	1063.2	4739.6	1062.8	4799.9	1062.7	4999.9	1062.3
5199.9	1062.1	5399.9	1062	5500	1062	5599.8	1061.9	5799.8	1061.8
5806.4	1062	5839.8	1062.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5399.9	.025	5500	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
5399.9	5500	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	4170.9	1065.8

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1063.58	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.10	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1063.48	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1062.87	Flow Area (sq ft)	859.29	148.20
523.67				
E.G. Slope (ft/ft)	0.002649	Area (sq ft)	859.29	148.20
523.67				
Q Total (cfs)	1500.64	Flow (cfs)	501.27	588.84
410.53				
Top Width (ft)	1310.03	Top Width (ft)	870.13	100.10
339.80				
Vel Total (ft/s)	0.98	Avg. Vel. (ft/s)	0.58	3.97
0.78				
Max Chl Dpth (ft)	1.68	Hydr. Depth (ft)	0.99	1.48
1.54				
Conv. Total (cfs)	29158.5	Conv. (cfs)	9740.0	11441.6
7976.8				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	870.13	100.10
340.40				
Min Ch El (ft)	1062.00	Shear (lb/sq ft)	0.16	0.24
0.25				
Alpha	6.74	Stream Power (lb/ft s)	0.10	0.97
0.20				
Frctn Loss (ft)	1.85	Cum Volume (acre-ft)	239.36	7.46
35.66				
C & E Loss (ft)	0.01	Cum SA (acres)	95.64	3.80
26.74				

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.15

INPUT
Description: Left Overbank Between Stations 5.10 and 5.20
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1062.9	200	1062.5	300	1062	500	1061.9

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1063.58	Weir Max Depth (ft)	0.58

W.S. US. (ft)	1063.48	Weir Avg Depth (ft)	0.31
E.G. DS (ft)	1061.73	Weir Submerg	0.00
W.S. DS (ft)	1061.56	Min El Weir Flow (ft)	1061.90
Q US (cfs)	1500.64	Wr Top Wdth (ft)	399.18
Q Leaving Total (cfs)	113.51	Total Gate Flow (cfs)	
Q DS (cfs)	1385.50	Gate Group Q (cfs)	
Perc Q Leaving	7.67	Gate Open Ht (ft)	
Q Weir (cfs)	113.51	Gate #Open	
Wr Flw Area (sq ft)	123.05	Gate Area (sq ft)	
Weir Sta US (ft)	0.00	Gate Submerg	
Weir Sta DS (ft)	399.18	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.1

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY
X3 CARD USED SO THAT
THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE
CREEK WASH

Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1063.5	1200	1063.1	1400	1062.3	1511	1061.5	1564.4	1062.2
1600	1062.2	1800	1062	2000	1062	2169.2	1061.8	2200	1061.9
2213.6	1061.9	2400	1061.5	2600	1061.4	2771.8	1062.2	2799.9	1062.2
2827.2	1062	2859.4	1063.2	2980.9	1062.8	2992	1061.4	2999.9	1061.4
3199.9	1061.2	3399.9	1060.9	3599.9	1061.1	3799.9	1061	3999.9	1061.2
4137.2	1060.7	4148.9	1061	4199.9	1061	4399.9	1060.9	4599.9	1060.5
4730	1060.9	4765	1060.3	4770	1060.3	4830	1060.3	4999.9	1060.4
5012.8	1060.5	5039.9	1061.9	5081	1061.7	5118.8	1060.4	5139.5	1060.5
5150	1061.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	4730	.025	4830	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4730	4830	200	200	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	2859.4	1063.2	5039.9	5150	1061.9

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1061.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1061.56	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)	1061.46	Flow Area (sq ft)	994.78	115.89	231.57
E.G. Slope (ft/ft)	0.005720	Area (sq ft)	994.78	115.89	

231.57				
Q Total (cfs)	1385.50	Flow (cfs)	592.51	574.75
218.25				
Top Width (ft)	2042.70	Top Width (ft)	1739.30	100.00
203.40				
Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)	0.60	4.96
0.94				
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.57	1.16
1.14				
Conv. Total (cfs)	18320.0	Conv. (cfs)	7834.5	7599.7
2885.8				
Length Wtd. (ft)	200.00	Wetted Per. (ft)	1739.32	100.01
203.42				
Min Ch El (ft)	1060.30	Shear (lb/sq ft)	0.20	0.41
0.41				
Alpha	9.85	Stream Power (lb/ft s)	0.12	2.05
0.38				
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	228.72	5.95
31.32				
C & E Loss (ft)	0.04	Cum SA (acres)	80.66	2.65
23.62				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the
cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.08

INPUT
Description: Left Overbank Between Stations 5.07 and 5.10
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1061.9	100	1061.5	150	1060.6	200	1060.2

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1061.73	Weir Max Depth (ft)	0.85
W.S. US. (ft)	1061.56	Weir Avg Depth (ft)	0.53
E.G. DS (ft)	1061.07	Weir Submerg	0.00
W.S. DS (ft)	1061.05	Min El Weir Flow (ft)	1060.20
Q US (cfs)	1385.50	Wr Top Wdth (ft)	87.41
Q Leaving Total (cfs)	56.95	Total Gate Flow (cfs)	
Q DS (cfs)	1329.34	Gate Group Q (cfs)	
Perc Q Leaving	4.05	Gate Open Ht (ft)	
Q Weir (cfs)	56.95	Gate #Open	

Wr Flw Area (sq ft)	46.40	Gate Area (sq ft)	
Weir Sta US (ft)	112.60	Gate Submerg	
Weir Sta DS (ft)	200.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.07

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SECTION
X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1062.7	1073.2	1062	1200	1062.3	1600	1061.7	1800	1061.5
2000	1061.5	2200	1061.6	2332.5	1063.1	2400	1062	2600	1061
2799.9	1060.6	2999.9	1060.5	3199.9	1060.3	3399.9	1060.2	3599.9	1059.9
3681.8	1059.6	3799.9	1059.8	3999.9	1059.6	4199.9	1059.6	4225	1059.6
4290	1059.6	4599.9	1059.4	4694.3	1059.3	4716.3	1059.5	4736.7	1060.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	4199.9	.025	4225	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4199.9	4225	210	190	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2332.5	1063.1

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1061.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1061.05	Reach Len. (ft)	210.00	190.00	190.00
Crit W.S. (ft)	1060.09	Flow Area (sq ft)	1462.28	36.34	794.63
E.G. Slope (ft/ft)	0.001886	Area (sq ft)	1462.28	36.34	794.63
Q Total (cfs)	1329.34	Flow (cfs)	680.94	120.03	528.38
Top Width (ft)	2146.22	Top Width (ft)	1609.42	25.10	511.70
Vel Total (ft/s)	0.58	Avg. Vel. (ft/s)	0.47	3.30	0.66
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)	0.91	1.45	1.55
Conv. Total (cfs)	30609.3	Conv. (cfs)	15679.2	2763.7	12166.4
Length Wtd. (ft)	195.12	Wetted Per. (ft)	1609.42	25.10	512.56
Min Ch El (ft)	1059.60	Shear (lb/sq ft)	0.11	0.17	0.18

Alpha	3.79	Stream Power (lb/ft s)	0.05	0.56	0.12
Frctn Loss (ft)	1.25	Cum Volume (acre-ft)	223.07	5.60	28.97
C & E Loss (ft)	0.01	Cum SA (acres)	72.98	2.36	21.98

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.03

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1061.7	1008.8	1061.4	1200	1062.2	1519.2	1061.3	1552.3	1061.3
1568.9	1061.8	1600	1061.9	1704.4	1062.1	1722.7	1064.3	1800	1062.8
2000	1062.5	2112.9	1062.4	2119.7	1062.1	2186.3	1061.5	2200	1061.6
2400	1061.3	2600	1060.6	2799.9	1060.2	2994.5	1059.8	2999.9	1060.3
3004.6	1060.4	3140	1060	3240	1059.8	3399.9	1059.4	3509.8	1059.2
3599.9	1059.3	3799.9	1059.2	3999.9	1058.9	4199.9	1059.2	4399.9	1060.1
4548.3	1060.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3140	.025	3240	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3140	3240	270	270	280	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.79	Element	Left OB	Channel
Vel Head (ft)	0.17	Wt. n-Val.		0.130
W.S. Elev (ft)	1059.63	Reach Len. (ft)	270.00	270.00
Crit W.S. (ft)	1059.59	Flow Area (sq ft)		405.78
E.G. Slope (ft/ft)	0.268006	Area (sq ft)		405.78
Q Total (cfs)	1329.34	Flow (cfs)		1329.34
Top Width (ft)	985.06	Top Width (ft)		985.06
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)		3.28
Max Chl Dpth (ft)	0.73	Hydr. Depth (ft)		0.41
Conv. Total (cfs)	2567.8	Conv. (cfs)		

2567.8				
Length Wtd. (ft)	275.09	Wetted Per. (ft)		
985.07				
Min Ch El (ft)	1059.80	Shear (lb/sq ft)		
6.89				
Alpha	1.00	Stream Power (lb/ft s)		
22.58				
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	219.55	5.52
26.35				
C & E Loss (ft)	0.05	Cum SA (acres)	69.10	2.31
18.72				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: There is no flow in the channel. Check that the channel stations are correctly coded. To
force flow into the channel, a levee or ineffective flow may have to be added or the
Manning's n of the overbank could be increased.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.98

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	1060	1200	1058.7	1400	1058.3	1497.3	1060.2	1600	1059.3
1800	1059.3	1841.2	1059.3	1867.3	1058	2000	1057.3	2200	1057.5
2400	1056.7	2450.8	1056.5	2600	1057.1	2800	1057.2	2999.9	1057.3
3199.9	1057.6	3399.9	1057.8	3599.9	1058.5	3799.9	1059.1	3999.9	1059.7
4199.9	1058.9	4237.8	1058.3	4249.7	1059.1	4399.9	1059.2	4599.9	1059.3
4760	1058.5	4799.9	1058.5	4850	1058.5	4999.9	1058.6	5213	1060

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.13	4760	.025	4850	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4760	4850	200	175	170	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.24	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1059.24	Reach Len. (ft)	200.00	175.00
170.00				
Crit W.S. (ft)		Flow Area (sq ft)	3725.01	66.72
134.94				
E.G. Slope (ft/ft)	0.000496	Area (sq ft)	3725.01	66.72
134.94				
Q Total (cfs)	1329.34	Flow (cfs)	1234.03	72.37
22.93				
Top Width (ft)	3564.81	Top Width (ft)	3227.29	90.00
247.52				
Vel Total (ft/s)	0.34	Avg. Vel. (ft/s)	0.33	1.08

0.17				
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	1.15	0.74
0.55				
Conv. Total (cfs)	59662.4	Conv. (cfs)	55384.9	3248.3
1029.3				
Length Wtd. (ft)	196.58	Wetted Per. (ft)	3227.38	90.00
247.52				
Min Ch El (ft)	1058.50	Shear (lb/sq ft)	0.04	0.02
0.02				
Alpha	1.45	Stream Power (lb/ft s)	0.01	0.02
0.00				
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	208.01	5.31
24.61				
C & E Loss (ft)	0.00	Cum SA (acres)	59.09	2.03
14.76				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.95

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1078.3	1006.6	1066.9	1031.4	1065.2	1081.3	1059.6	1088.5	1059.1
1129	1058.8	1200	1057.8	1400	1057.7	1600	1056.5	1677.6	1056.8
1701.1	1057.3	1800	1056.9	1848.2	1056.8	1869.9	1056.3	2000	1056.3
2142.3	1056.2	2156.6	1057.2	2177.1	1056.2	2200	1056.3	2400	1055.6
2600	1055.4	2800	1055.7	2875.5	1055.8	2914.1	1055.9	2926.7	1052.4
2933.1	1054.9	2999.9	1055.3	3199.9	1055.5	3399.9	1056.1	3580	1056.8
3599.9	1056.8	3650	1056.8	3799.9	1057.3	3999.9	1058.7	4199.9	1058.5
4399.9	1058.5	4599.9	1057.7	4799.9	1058.2	4999.9	1058.3	5018.8	1059.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3580	.025	3650	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3580	3650	315	315	250	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.23	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1059.23	Reach Len. (ft)	315.00	315.00
250.00				
Crit W.S. (ft)		Flow Area (sq ft)	7245.06	169.80
1522.23				
E.G. Slope (ft/ft)	0.000042	Area (sq ft)	7245.06	169.80
1522.23				
Q Total (cfs)	1329.34	Flow (cfs)	1090.25	117.84
121.25				
Top Width (ft)	3924.15	Top Width (ft)	2493.31	70.00

1360.84					
Vel Total (ft/s)	0.15	Avg. Vel. (ft/s)	0.15	0.69	0.08
Max Chl Dpth (ft)	6.83	Hydr. Depth (ft)	2.91	2.43	1.12
Conv. Total (cfs)	205553.8	Conv. (cfs)	168584.1	18221.0	18748.7
Length Wtd. (ft)	310.97	Wetted Per. (ft)	2494.35	70.00	1360.88
Min Ch El (ft)	1056.80	Shear (lb/sq ft)	0.01	0.01	0.00
Alpha	2.80	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	182.82	4.84	21.38
C & E Loss (ft)	0.00	Cum SA (acres)	45.96	1.71	11.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.89

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065.5	1040.8	1069.9	1109.1	1066.7	1172.3	1060.3	1178.6	1056.5
1200	1056.5	1400	1055.6	1460.9	1055.6	1476.9	1054.9	1600	1055.5
1771	1055.2	1787.3	1054.1	1800	1054.2	2000	1054.2	2200	1053.7
2400	1053.8	2461.4	1053.8	2470.5	1054.7	2600	1054.5	2684.7	1054.2
2800	1055.1	2999.9	1055.2	3199.9	1055.7	3399.9	1057.2	3599.9	1057.3
3799.9	1056.8	3900	1057	3999.9	1057.2	4199.9	1057.5	4290.2	1059.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3799.9	.025	3900	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3799.9	3900	570	500	500	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1059.22	Reach Len. (ft)	570.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	10289.66	232.02	648.61
E.G. Slope (ft/ft)	0.000017	Area (sq ft)	10289.66	232.02	648.61
Q Total (cfs)	1329.34	Flow (cfs)	1187.69	98.15	43.50
Top Width (ft)	3099.68	Top Width (ft)	2625.81	100.10	373.77

Vel Total (ft/s)	0.12	Avg. Vel. (ft/s)	0.12	0.42
0.07				
Max Chl Dpth (ft)	5.52	Hydr. Depth (ft)	3.92	2.32
1.74				
Conv. Total (cfs)	327127.7	Conv. (cfs)	292269.1	24153.0
10705.6				
Length Wtd. (ft)	557.08	Wetted Per. (ft)	2626.68	100.10
373.79				
Min Ch El (ft)	1056.80	Shear (lb/sq ft)	0.00	0.00
0.00				
Alpha	1.78	Stream Power (lb/ft s)	0.00	0.00
0.00				
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	119.42	3.38
15.15				
C & E Loss (ft)	0.00	Cum SA (acres)	27.45	1.09
6.64				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.79

INPUT
Description: THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
FLOODWAY MODEL, CAVE.FLDWY.2. THIS MODEL UTILIZES THE SPLIT
FLOW
AND X3 CARDS. THE X3 CARDS ARE USED TO SET CROSS-SECTION
"BOUNDARIES"
AT TOPOGRAPICALLY HIGH GROUND THAT CONTAINS THE
Q100-YR WITHIN THE
CROSS-SECTION.
CROSS-SECTION EXTENDED
MESSAGES OCCUR AT LOCATIONS OF WEIR FLOW.

Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1077.7	1042.8	1085.6	1120.1	1083.6	1200	1055.7	1260.7	1054.4
1305.3	1054.9	1400	1052	1421	1051.4	1447.4	1054.1	1501.2	1054.7
1600	1054.3	1800	1053.7	2000	1053.6	2200	1054	2400	1054.7
2600	1054.5	2760	1054.4	2789.3	1055.4	2800	1055.4	2850	1055.4
2999.9	1055.8	3199.9	1056.1	3307.6	1056.5	3399.9	1057.8	3599.9	1057.9
3633.4	1059.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2760	.025	2850	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2760	2850	0	0	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.21	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1059.21	Reach Len. (ft)		
Crit W.S. (ft)	1054.09	Flow Area (sq ft)	7962.94	357.54
1990.75				
E.G. Slope (ft/ft)	0.000013	Area (sq ft)	7962.94	357.54

1990.75				
Q Total (cfs)	1329.34	Flow (cfs)	980.19	194.51
154.63				
Top Width (ft)	2443.45	Top Width (ft)	1570.05	90.00
783.40				
Vel Total (ft/s)	0.13	Avg. Vel. (ft/s)	0.12	0.54
0.08				
Max Chl Dpth (ft)	7.81	Hydr. Depth (ft)	5.07	3.97
2.54				
Conv. Total (cfs)	364255.9	Conv. (cfs)	268585.2	53299.3
42371.4				
Length Wtd. (ft)		Wetted Per. (ft)	1570.86	90.02
783.45				
Min Ch El (ft)	1054.40	Shear (lb/sq ft)	0.00	0.00
0.00				
Alpha	3.32	Stream Power (lb/ft s)	0.00	0.00
0.00				
Frctn Loss (ft)		Cum Volume (acre-ft)		
C & E Loss (ft)		Cum SA (acres)		

SUMMARY OF MANNING'S N VALUES

River:RIVER-1

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10	n11	n12	n13	n14	n15	n16	n17	n18
Reach-1	9.61	.16	.16	.16															
Reach-1	9.55	.09	.16	.16															
Reach-1	9.45	.16	.09	.16	.165														
Reach-1	9.36	.16	.16	.16															
Reach-1	9.27	.13	.02	.13															
Reach-1	9.17	.13	.035	.13															
Reach-1	9.08	.13	.02	.13															
Reach-1	8.98	.13	.02	.13															
Reach-1	8.89	.13	.02	.13															

Reach-1	8.79	.13	.02	.13		
Reach-1	8.7	.13	.02	.13		
Reach-1	8.61	.13	.02	.13		
Reach-1	8.51	.02	.03	.13	.02	.13
Reach-1	8.42	.035	.13	.02	.13	
Reach-1	8.32	.02	.13	.02	.13	
Reach-1	8.23	.013	.13	.034	.035	
Reach-1	8.18	.13	.035	.13	.135	
Reach-1	8.08	.036	.034	.036	.035	.131
.13						
Reach-1	7.99	.035	.033	.034	.13	
Reach-1	7.89	.13	.02	.13	.035	.13
Reach-1	7.8	.13	.02	.13	.035	
Reach-1	7.71	.13	.02	.13	.035	
Reach-1	7.66	.13	.02	.13	.02	.13
Reach-1	7.57	.13	.02	.13	.02	.13
Reach-1	7.48	.13	.02	.13	.035	.5
.02	.1	.13				
Reach-1	7.38	.13	.02	.13	.02	.13
Reach-1	7.29	.13	.02	.13	.5	.035
.13						
Reach-1	7.2	.13	.02	.06		
Reach-1	7.11	.13	.02	.06		
Reach-1	7.06	Lat. Weir				

Reach-1 7.01 .13 .02 .06

Reach-1 6.96 Lat. Weir

Reach-1 6.94 .06 .02 .06

Reach-1 6.91 Lat. Weir

Reach-1 6.88 .13 .06 .02 .06

Reach-1 6.8 .1 .02 .13

Reach-1 6.7 .13 .02 .13 .06

Reach-1 6.61 .13 .02 .5 .04

Reach-1 6.52 .13 .5 .035 .03

Reach-1 6.42 .13 .5 .02 .06 .02 .03

Reach-1 6.33 .13 .06 .02 .06

Reach-1 6.23 .06 .02 .06

Reach-1 6.14 .13 .03 .5 .03 .02 .03 .13

Reach-1 6.05 .5 .02 .016 .013 .015 .016 .013 .016 .013 .05 .016 .015 .02 .013 .016 .016 .015 .016

Reach-1 5.95 .13 .5 .035 .06

Reach-1 5.86 .035 .035 .13

Reach-1 5.76 .08 .08 .08

Reach-1 5.67 .08 .08 .08

Reach-1 5.57 .13 .08 .13

Reach-1 5.53 Lat. Weir

Reach-1 5.48 .13 .045 .06

Reach-1	5.38	.13	.045	.045
Reach-1	5.31	.06	.06	.06
Reach-1	5.25	.13	.025	.13
Reach-1	5.23	Lat. Weir		
Reach-1	5.2	.13	.025	.13
Reach-1	5.15	Lat. Weir		
Reach-1	5.1	.13	.025	.13
Reach-1	5.08	Lat. Weir		
Reach-1	5.07	.13	.025	.13
Reach-1	5.03	.13	.025	.13
Reach-1	4.98	.13	.025	.13
Reach-1	4.95	.13	.025	.13
Reach-1	4.89	.13	.025	.13
Reach-1	4.79	.13	.025	.13

SUMMARY OF REACH LENGTHS

River: RIVER-1

Reach	River Sta.	Left	Channel	Right
Reach-1	9.61	360	360	360
Reach-1	9.55	500	500	500
Reach-1	9.45	470	470	500
Reach-1	9.36	500	500	500
Reach-1	9.27	500	500	500
Reach-1	9.17	500	520	500
Reach-1	9.08	500	500	500

Reach-1	8.98	500	500	500
Reach-1	8.89	500	500	500
Reach-1	8.79	500	500	500
Reach-1	8.7	500	500	500
Reach-1	8.61	490	490	490
Reach-1	8.51	500	500	500
Reach-1	8.42	490	490	490
Reach-1	8.32	500	500	500
Reach-1	8.23	280	270	270
Reach-1	8.18	520	500	490
Reach-1	8.08	550	500	610
Reach-1	7.99	470	500	570
Reach-1	7.89	500	500	500
Reach-1	7.8	490	490	490
Reach-1	7.71	220	220	220
Reach-1	7.66	480	480	480
Reach-1	7.57	500	500	500
Reach-1	7.48	500	500	500
Reach-1	7.38	490	490	490
Reach-1	7.29	490	500	500
Reach-1	7.2	450	470	470
Reach-1	7.11	500	530	500
Reach-1	7.06	Lat. Weir		
Reach-1	7.01	360	400	360
Reach-1	6.96	Lat. Weir		
Reach-1	6.94	360	360	360
Reach-1	6.91	Lat. Weir		
Reach-1	6.88	420	420	420
Reach-1	6.8	500	500	500
Reach-1	6.7	500	500	500
Reach-1	6.61	490	490	470
Reach-1	6.52	500	500	500
Reach-1	6.42	500	500	500
Reach-1	6.33	500	500	500
Reach-1	6.23	500	500	500
Reach-1	6.14	490	480	450
Reach-1	6.05	560	500	480
Reach-1	5.95	510	500	470
Reach-1	5.86	540	500	490
Reach-1	5.76	490	500	470
Reach-1	5.67	530	500	520
Reach-1	5.57	450	500	580
Reach-1	5.53	Lat. Weir		
Reach-1	5.48	500	500	520
Reach-1	5.38	400	400	400
Reach-1	5.31	290	280	280
Reach-1	5.25	290	280	285
Reach-1	5.23	Lat. Weir		
Reach-1	5.2	500	500	500
Reach-1	5.15	Lat. Weir		
Reach-1	5.1	200	200	200
Reach-1	5.08	Lat. Weir		
Reach-1	5.07	210	190	190
Reach-1	5.03	270	270	280
Reach-1	4.98	200	175	170
Reach-1	4.95	315	315	250
Reach-1	4.89	570	500	500
Reach-1	4.79	0	0	0

River: RIVER-1

Reach	River Sta.	Contr.	Expan.
Reach-1	9.61	.1	.3
Reach-1	9.55	.1	.3
Reach-1	9.45	.1	.3
Reach-1	9.36	.1	.3
Reach-1	9.27	.1	.3
Reach-1	9.17	.1	.3
Reach-1	9.08	.1	.3
Reach-1	8.98	.1	.3
Reach-1	8.89	.1	.3
Reach-1	8.79	.1	.3
Reach-1	8.7	.1	.3
Reach-1	8.61	.1	.3
Reach-1	8.51	.1	.3
Reach-1	8.42	.1	.3
Reach-1	8.32	.1	.3
Reach-1	8.23	.1	.3
Reach-1	8.18	.1	.3
Reach-1	8.08	.1	.3
Reach-1	7.99	.1	.3
Reach-1	7.89	.1	.3
Reach-1	7.8	.1	.3
Reach-1	7.71	.1	.3
Reach-1	7.66	.1	.3
Reach-1	7.57	.1	.3
Reach-1	7.48	.1	.3
Reach-1	7.38	.1	.3
Reach-1	7.29	.1	.3
Reach-1	7.2	.1	.3
Reach-1	7.11	.1	.3
Reach-1	7.06	Lat. Weir	
Reach-1	7.01	.1	.3
Reach-1	6.96	Lat. Weir	
Reach-1	6.94	.1	.3
Reach-1	6.91	Lat. Weir	
Reach-1	6.88	.1	.3
Reach-1	6.8	.1	.3
Reach-1	6.7	.1	.3
Reach-1	6.61	.1	.3
Reach-1	6.52	.1	.3
Reach-1	6.42	.1	.3
Reach-1	6.33	.1	.3
Reach-1	6.23	.1	.3
Reach-1	6.14	.1	.3
Reach-1	6.05	.1	.3
Reach-1	5.95	.1	.3
Reach-1	5.86	.1	.3
Reach-1	5.76	.1	.3
Reach-1	5.67	.1	.3
Reach-1	5.57	.1	.3
Reach-1	5.53	Lat. Weir	
Reach-1	5.48	.1	.3
Reach-1	5.38	.1	.3
Reach-1	5.31	.1	.3
Reach-1	5.25	.1	.3
Reach-1	5.23	Lat. Weir	
Reach-1	5.2	.1	.3
Reach-1	5.15	Lat. Weir	
Reach-1	5.1	.1	.3

Reach-1	5.08	Lat. Weir
Reach-1	5.07	.1 .3
Reach-1	5.03	.1 .3
Reach-1	4.98	.1 .3
Reach-1	4.95	.1 .3
Reach-1	4.89	.1 .3
Reach-1	4.79	.1 .3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	9.61	1237.00	1118.50	1119.94	1119.28	1119.95	0.016005	1.08	1203.81	1480.45	0.20
Reach-1	9.55	1237.00	1116.40	1117.96	1117.00	1117.97	0.002757	0.61	2015.98	1995.83	0.09
Reach-1	9.45	1237.00	1114.90	1116.33	1115.54	1116.34	0.003926	0.65	1918.42	2104.46	0.11
Reach-1	9.36	1237.00	1112.80	1114.14		1114.15	0.005213	0.70	1811.80	1859.45	0.12
Reach-1	9.27	1237.00	1110.80	1112.54		1112.65	0.001910	4.26	1707.97	1827.07	0.61
Reach-1	9.17	1237.00	1109.60	1110.92	1110.64	1111.03	0.006627	3.49	1059.41	2022.23	0.61
Reach-1	9.08	1210.00	1107.30	1108.56	1108.30	1108.72	0.003245	4.73	1359.38	1861.18	0.77
Reach-1	8.98	1210.00	1106.00	1107.37		1107.47	0.001939	3.87	1962.24	2828.35	0.60
Reach-1	8.89	1210.00	1104.90	1105.94		1106.02	0.004759	4.55	1556.36	2547.13	0.88
Reach-1	8.79	1210.00	1103.00	1104.19		1104.25	0.002715	3.66	1710.89	2181.16	0.67
Reach-1	8.7	1210.00	1101.40	1102.42		1102.56	0.004251	4.80	1566.60	2758.75	0.85
Reach-1	8.61	1210.00	1099.90	1100.62		1100.65	0.003357	3.18	1938.72	2786.99	0.70
Reach-1	8.51	1210.00	1098.50	1098.96	1098.63	1098.98	0.003415	2.33	1283.50	2887.68	0.65
Reach-1	8.42	1210.00	1096.30	1097.09	1096.80	1097.12	0.004064	3.13	1441.35	3030.72	0.75
Reach-1	8.32	1210.00	1095.10	1095.99	1095.56	1096.02	0.001419	2.42	1740.76	3142.63	0.48
Reach-1	8.23	1210.00	1094.40	1094.92		1094.93	0.003702	1.60	1218.09	2441.97	0.41
Reach-1	8.18	1375.00	1092.80	1093.70	1093.53	1093.74	0.004973	2.24	872.73	2151.59	0.49
Reach-1	8.08	1375.00	1091.80	1092.79		1092.81	0.000952	1.19	1385.10	2226.90	0.22
Reach-1	7.99	1375.00	1090.70	1091.40	1091.23	1091.49	0.013231	3.55	867.86	1834.11	0.83
Reach-1	7.89	1375.00	1089.30	1089.48		1089.51	0.001660	0.74	1274.24	2464.16	0.38
Reach-1	7.8	1375.00	1087.20	1088.13	1087.90	1088.19	0.004738	4.13	1039.12	2423.09	0.85
Reach-1	7.71	1375.00	1085.50	1086.56		1086.60	0.002351	3.75	1826.99	3125.45	0.64
Reach-1	7.66	1691.00	1084.50	1085.73							

1085.81	0.005330	4.18	1162.59	2417.10	0.90	
Reach-1	7.57		1691.00	1083.40	1085.18	1084.73
1085.20	0.000534	2.10	2682.16	4170.48	0.32	
Reach-1	7.48		1691.00	1084.00	1084.31	1084.10
1084.38	0.025525	5.44	1447.54	3974.46	1.72	
Reach-1	7.38		1691.00	1082.00	1083.26	
1083.28	0.000752	2.24	2942.59	4009.52	0.37	
Reach-1	7.29		1691.00	1081.50	1082.69	
1082.72	0.001923	2.97	2483.53	3220.81	0.56	
Reach-1	7.2		1691.00	1081.40	1081.81	
1081.82	0.001657	1.52	1864.16	2790.65	0.45	
Reach-1	7.11		1865.00	1079.80	1081.09	1080.54
1081.12	0.001356	2.77	2245.51	2820.14	0.48	
Reach-1	7.06		Lat. Weir			
Reach-1	7.01		1551.77	1079.50	1080.12	
1080.16	0.003063	2.98	1586.74	2772.30	0.67	
Reach-1	6.96		Lat. Weir			
Reach-1	6.94		1270.50	1078.70	1079.48	
1079.49	0.001084	1.71	1498.70	2239.67	0.39	
Reach-1	6.91		Lat. Weir			
Reach-1	6.88		980.16	1079.00	1079.23	
1079.24	0.000448	0.50	1805.51	2437.16	0.21	
Reach-1	6.8		980.16	1078.00	1078.91	
1078.93	0.001362	2.42	1852.32	2184.64	0.47	
Reach-1	6.7		980.16	1077.50	1077.98	
1077.99	0.002772	0.31	1456.50	1781.03	0.09	
Reach-1	6.61		980.16	1076.00	1077.01	
1077.02	0.001432	0.10	1493.50	2006.94	0.02	
Reach-1	6.52		980.16	1075.40	1075.78	1075.64
1075.89	0.004695	1.35	398.97	873.44	0.47	
Reach-1	6.42		980.16	1074.20	1074.95	1074.47
1074.98	0.000940	1.43	807.26	1306.88	0.36	
Reach-1	6.33		980.16	1073.40	1074.37	1073.87
1074.40	0.001382	2.51	1090.41	1635.41	0.48	
Reach-1	6.23		980.16	1072.60	1073.79	1073.21
1073.82	0.000990	2.42	1168.08	1645.41	0.42	
Reach-1	6.14		980.16	1071.80	1072.80	1072.71
1072.91	0.004317	3.85	432.85	974.16	0.81	
Reach-1	6.05		1005.16	1069.80	1071.53	
1071.75	0.001609	4.52	283.44	468.67	0.78	
Reach-1	5.95		1005.16	1070.20	1071.21	1070.67
1071.23	0.000600	0.85	1229.39	1645.13	0.17	
Reach-1	5.86		1005.16	1069.30	1070.77	
1070.79	0.001404	1.39	1235.87	2197.84	0.27	
Reach-1	5.76		1005.16	1068.50	1069.46	
1069.49	0.005350	1.13	781.09	915.43	0.23	
Reach-1	5.67		1005.16	1067.30	1068.76	
1068.76	0.000677	0.50	1967.62	2010.02	0.09	
Reach-1	5.57		1005.16	1066.60	1068.29	
1068.30	0.001174	0.87	2002.98	1782.52	0.12	
Reach-1	5.53		Lat. Weir			
Reach-1	5.48		1005.16	1066.40	1067.64	1066.74
1067.65	0.001324	1.35	1391.43	1501.51	0.22	
Reach-1	5.38		1638.16	1065.00	1066.26	1065.82
1066.33	0.004495	2.47	1188.56	1692.77	0.40	
Reach-1	5.31		1638.16	1063.50	1065.13	1064.46
1065.15	0.002060	1.39	1415.49	1439.67	0.21	
Reach-1	5.25		1638.16	1062.60	1064.28	1063.79
1064.42	0.003140	4.71	1627.10	1473.28	0.64	

Reach-1	5.23		Lat. Weir			
Reach-1	5.2		1500.64	1062.00	1063.48	1062.87
1063.58	0.002649	3.97	1531.16	1310.03	0.58	
Reach-1	5.15		Lat. Weir			
Reach-1	5.1		1385.50	1060.30	1061.56	1061.46
1061.73	0.005720	4.96	1342.25	2042.70	0.81	
Reach-1	5.08		Lat. Weir			
Reach-1	5.07		1329.34	1059.60	1061.05	1060.09
1061.07	0.001886	3.30	2293.25	2146.22	0.48	
Reach-1	5.03		1329.34	1059.80	1059.63	1059.59
1059.79	0.268006		405.78	985.06	0.00	
Reach-1	4.98		1329.34	1058.50	1059.24	
1059.24	0.000496	1.08	3926.67	3564.81	0.22	
Reach-1	4.95		1329.34	1056.80	1059.23	
1059.23	0.000042	0.69	8937.10	3924.15	0.08	
Reach-1	4.89		1329.34	1056.80	1059.22	
1059.22	0.000017	0.42	11170.30	3099.68	0.05	
Reach-1	4.79		1329.34	1054.40	1059.21	1054.09
1059.21	0.000013	0.54	10311.23	2443.45	0.05	

Profile Output Table - Standard Table 2

Reach	River Sta	Q Left	Q Channel	Q Right	E.G. Elev (ft)	W.S. Elev (ft)	Top Width (ft)	Vel Head (ft)	Frctn Loss (ft)	C & E Loss (ft)
Reach-1	9.61				1119.95	1119.94		0.02	1.98	
			712.24		524.76	1480.45				0.00
Reach-1	9.55				1117.97	1117.96		0.01	1.63	
		434.82	294.23		507.95	1995.83				0.00
Reach-1	9.45				1116.34	1116.33		0.01	2.19	
		383.22	256.32		597.47	2104.46				0.00
Reach-1	9.36				1114.15	1114.14		0.01	1.48	
		201.84	188.68		846.48	1859.45				0.01
Reach-1	9.27				1112.65	1112.54		0.11	1.62	
		386.67	489.81		360.52	1827.07				0.00
Reach-1	9.17				1111.03	1110.92		0.12	2.30	
		303.34	765.80		167.86	2022.23				0.00
Reach-1	9.08				1108.72	1108.56		0.16	1.23	
		508.66	557.45		143.89	1861.18				0.02
Reach-1	8.98				1107.47	1107.37		0.10	1.44	
		567.00	497.20		145.81	2828.35				0.00
Reach-1	8.89				1106.02	1105.94		0.08	1.76	
		797.24	294.22		118.53	2547.13				0.01
Reach-1	8.79				1104.25	1104.19		0.06	1.68	
		744.35	354.52		111.13	2181.16				0.01
Reach-1	8.7				1102.56	1102.42		0.14	1.88	
		561.88	473.62		174.50	2758.75				0.03
Reach-1	8.61				1100.65	1100.62		0.03	1.66	
		919.15	202.58		88.26	2786.99				0.00
Reach-1	8.51				1098.98	1098.96		0.02	1.86	
		1073.09	82.40		54.52	2887.68				0.00
Reach-1	8.42				1097.12	1097.09		0.03	1.10	
		711.32	201.75		296.93	3030.72				0.00
Reach-1	8.32				1096.02	1095.99		0.02	1.08	

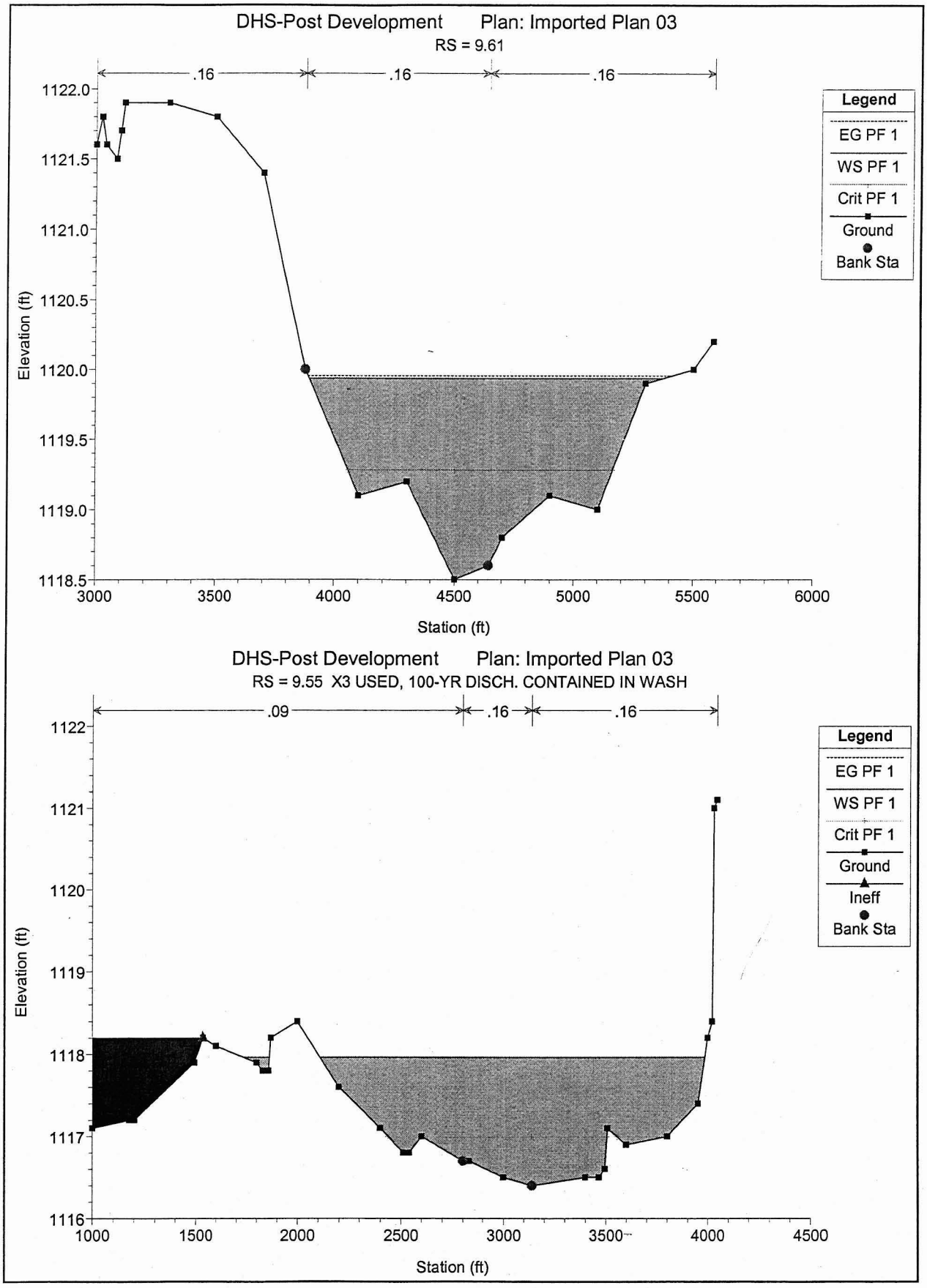
0.00	813.40	232.99	163.61	3142.63		
Reach-1		8.23	1094.93	1094.92	0.02	1.19
0.00	961.74	149.09	99.17	2441.97		
Reach-1		8.18	1093.74	1093.70	0.05	0.93
0.01	412.07	450.59	512.35	2151.59		
Reach-1		8.08	1092.81	1092.79	0.02	1.30
0.01	526.70	477.50	370.80	2226.90		
Reach-1		7.99	1091.49	1091.40	0.09	1.96
0.02	318.45	529.66	526.89	1834.11		
Reach-1		7.89	1089.51	1089.48	0.03	1.31
0.00	76.26	2.67	1296.07	2464.16		
Reach-1		7.8	1088.19	1088.13	0.07	1.59
0.01	138.41	182.91	1053.68	2423.09		
Reach-1		7.71	1086.60	1086.56	0.04	0.78
0.00	315.77	178.71	880.51	3125.45		
Reach-1		7.66	1085.81	1085.73	0.08	0.59
0.02	170.82	336.73	1183.46	2417.10		
Reach-1		7.57	1085.20	1085.18	0.02	0.81
0.01	161.24	340.69	1189.08	4170.48		
Reach-1		7.48	1084.38	1084.31	0.07	1.10
0.02	230.53	202.42	1258.06	3974.46		
Reach-1		7.38	1083.28	1083.26	0.02	0.56
0.00	144.91	285.53	1260.56	4009.52		
Reach-1		7.29	1082.72	1082.69	0.03	0.89
0.00	170.42	322.84	1197.75	3220.81		
Reach-1		7.2	1081.82	1081.81	0.02	0.70
0.00	25.21	76.13	1589.66	2790.65		
Reach-1		7.11	1081.12	1081.09	0.03	0.95
0.00	136.03	293.09	1435.88	2820.14		
Reach-1		7.06	Lat. Weir			
Reach-1		7.01	1080.16	1080.12	0.05	0.66
0.01	209.21	430.77	911.78	2772.30		
Reach-1		6.96	Lat. Weir			
Reach-1		6.94	1079.49	1079.48	0.02	0.25
0.00	48.86	187.15	1034.49	2239.67		
Reach-1		6.91	Lat. Weir			
Reach-1		6.88	1079.24	1079.23	0.01	0.30
0.00	120.83	25.35	833.98	2437.16		
Reach-1		6.8	1078.93	1078.91	0.02	0.94
0.00	57.50	220.81	701.85	2184.64		
Reach-1		6.7	1077.99	1077.98	0.01	0.97
0.00	141.22	22.29	816.65	1781.03		
Reach-1		6.61	1077.02	1077.01	0.01	1.13
0.01	323.21	25.29	631.66	2006.94		
Reach-1		6.52	1075.89	1075.78	0.10	0.90
0.02	43.55	46.92	889.69	873.44		
Reach-1		6.42	1074.98	1074.95	0.03	0.56
0.00	55.95	92.95	831.26	1306.88		
Reach-1		6.33	1074.40	1074.37	0.03	0.58
0.00	207.59	272.40	500.17	1635.41		
Reach-1		6.23	1073.82	1073.79	0.03	0.91
0.01	132.24	294.42	553.51	1645.41		
Reach-1		6.14	1072.91	1072.80	0.12	1.15
0.01	120.59	349.83	509.73	974.16		
Reach-1		6.05	1071.75	1071.53	0.22	0.46
0.06	20.81	480.88	503.47	468.67		
Reach-1		5.95	1071.23	1071.21	0.01	0.43
0.00	340.91	109.83	554.42	1645.13		
Reach-1		5.86	1070.79	1070.77	0.02	1.29
0.00	569.31	293.43	142.42	2197.84		

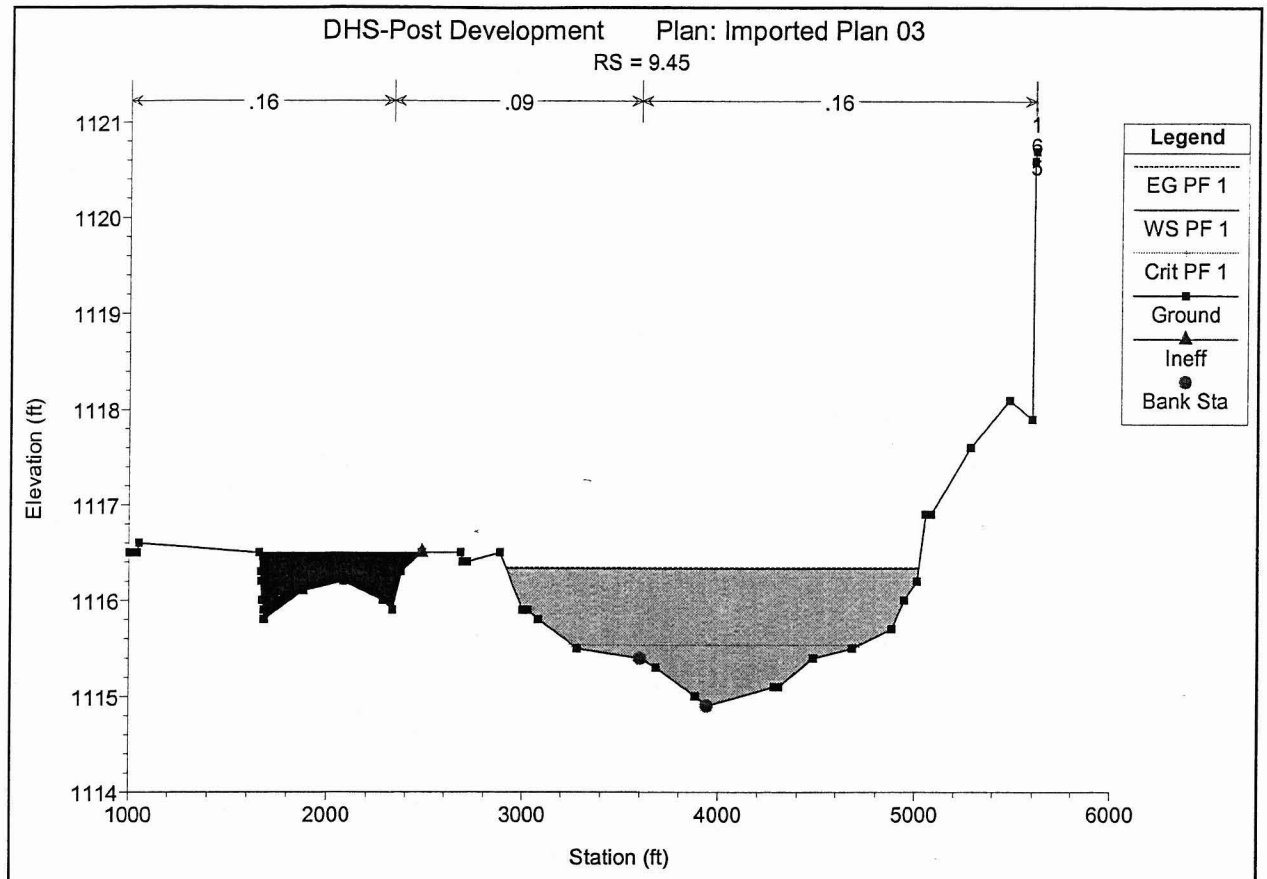
Reach-1	5.76		1069.49	1069.46	0.03	0.72	
0.01	810.78	172.84	21.54	915.43			
Reach-1	5.67		1068.76	1068.76	0.00	0.46	
0.00	723.67	121.79	159.70	2010.02			
Reach-1	5.57		1068.30	1068.29	0.01	0.64	
0.00	559.99	179.94	265.23	1782.52			
Reach-1	5.53		Lat. Weir				
Reach-1	5.48		1067.65	1067.64	0.02	1.32	
0.01	239.51	224.42	541.24	1501.51			
Reach-1	5.38		1066.33	1066.26	0.07	1.17	
0.01	309.34	321.08	1007.75	1692.77			
Reach-1	5.31		1065.15	1065.13	0.02	0.72	
0.01	814.19	191.47	632.50	1439.67			
Reach-1	5.25		1064.42	1064.28	0.14	0.82	
0.01	804.92	634.29	198.96	1473.28			
Reach-1	5.23		Lat. Weir				
Reach-1	5.2		1063.58	1063.48	0.10	1.85	
0.01	501.27	588.84	410.53	1310.03			
Reach-1	5.15		Lat. Weir				
Reach-1	5.1		1061.73	1061.56	0.16	0.62	
0.04	592.51	574.75	218.25	2042.70			
Reach-1	5.08		Lat. Weir				
Reach-1	5.07		1061.07	1061.05	0.02	1.25	
0.01	680.94	120.03	528.38	2146.22			
Reach-1	5.03		1059.79	1059.63	0.17	0.50	
0.05			1329.34	985.06			
Reach-1	4.98		1059.24	1059.24	0.00	0.02	
0.00	1234.03	72.37	22.93	3564.81			
Reach-1	4.95		1059.23	1059.23	0.00	0.01	
0.00	1090.25	117.84	121.25	3924.15			
Reach-1	4.89		1059.22	1059.22	0.00	0.01	
0.00	1187.69	98.15	43.50	3099.68			
Reach-1	4.79		1059.21	1059.21	0.00		
	980.19	194.51	154.63	2443.45			

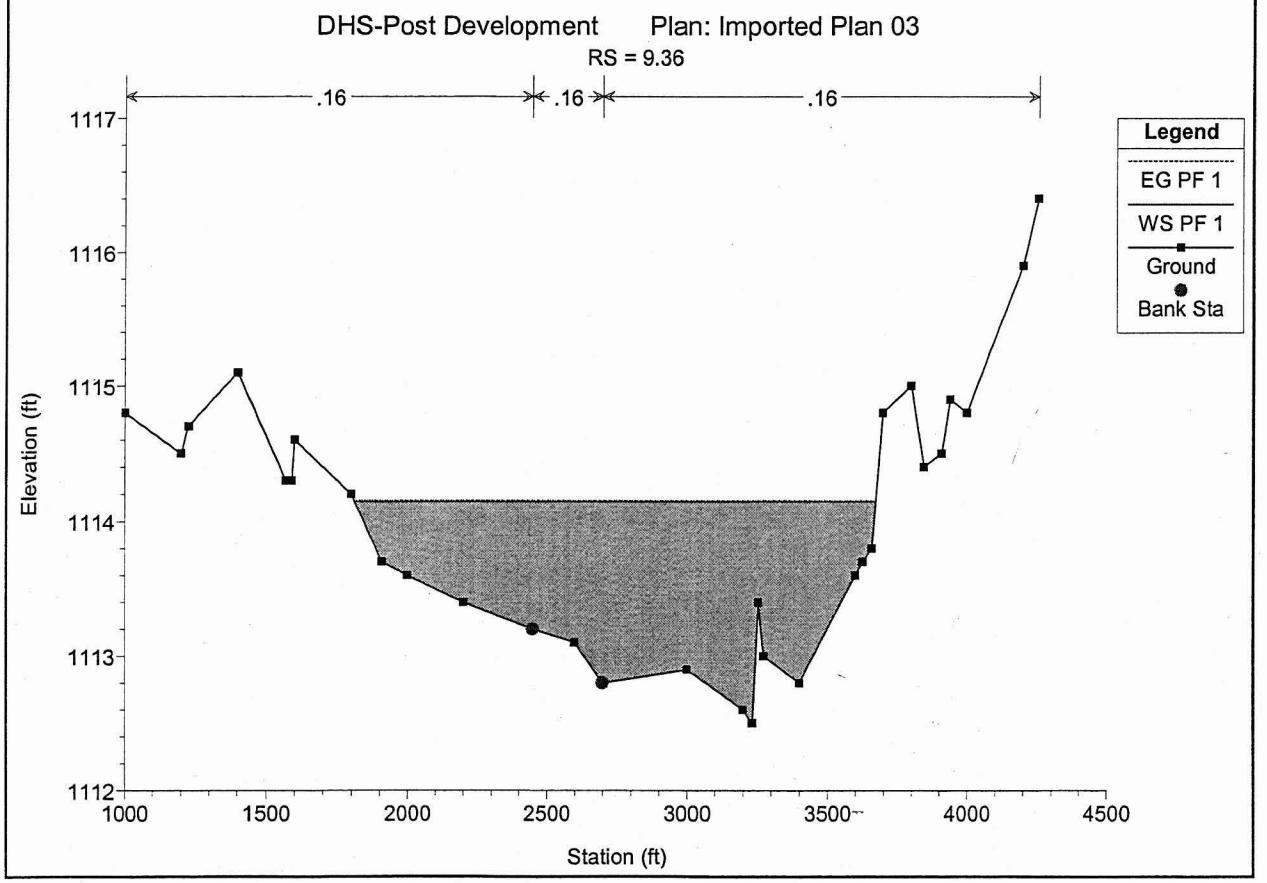
Profile Output Table - Lateral Weir/Spillway

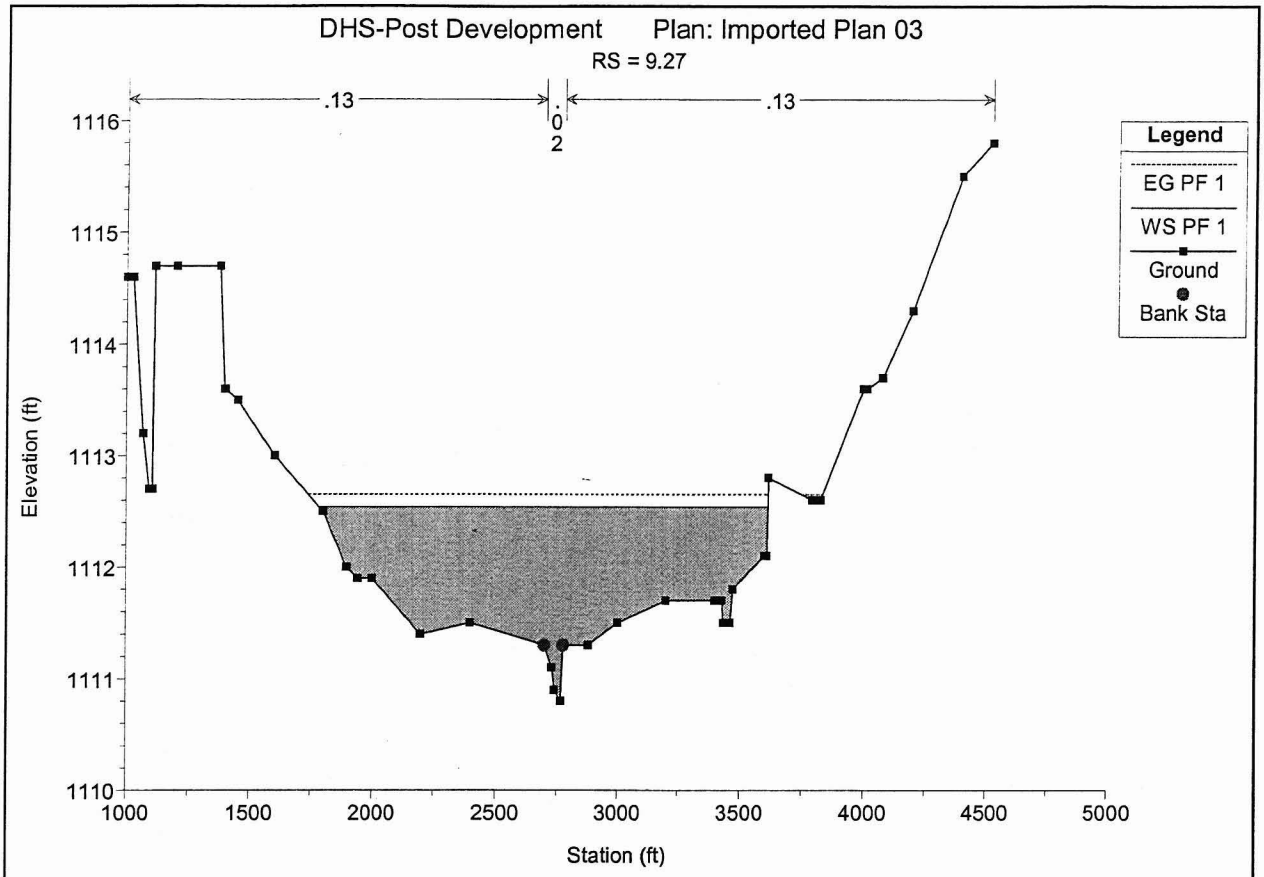
Reach	River Sta	Q US	Q Leaving Total	Q DS	Q Weir
Total Gate Flow	Wr Top Wdth	Weir Max Depth	Weir Avg Depth	Min El Weir Flow	
E.G. US.	W.S. US.	E.G. DS	W.S. DS		
		(cfs)	(cfs)	(cfs)	(cfs)
(cfs)	(ft)	(ft)	(ft)	(ft)	
(ft)	(ft)	(ft)	(ft)		
Reach-1	7.06	1865.00	314.30	1551.77	314.30
	366.63	0.99	0.54	1079.50	
1081.12	1081.09	1080.16	1080.12		
Reach-1	6.96	1551.77	281.81	1270.50	281.81
	353.60	0.88	0.58	1079.20	
1080.16	1080.12	1079.49	1079.48		
Reach-1	6.91	1270.50	290.18	980.16	290.18
	344.16	0.66	0.54	1078.80	
1079.49	1079.48	1079.24	1079.23		

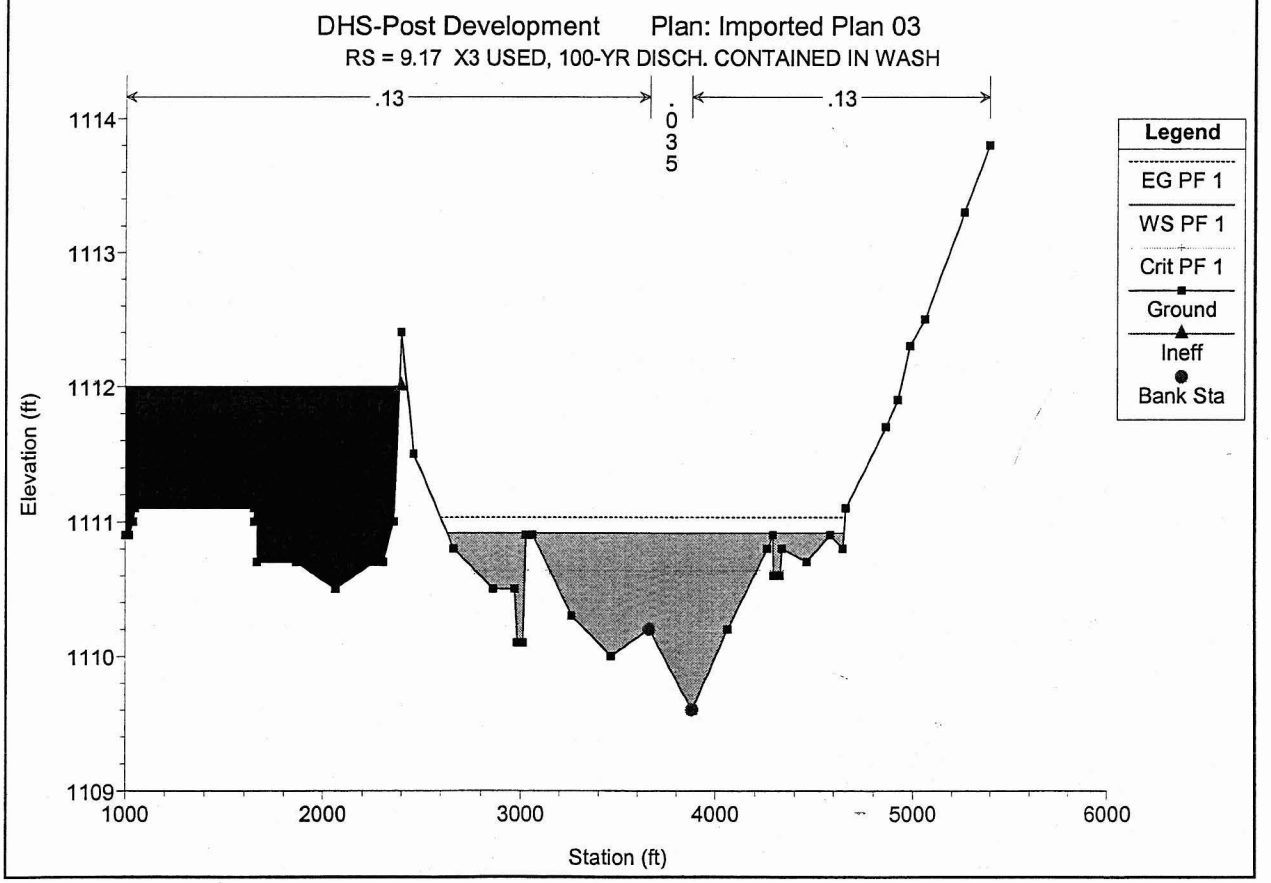
```
  Reach-1       5.53              1005.16              0.00    1500.64       0.00
                                                                      1066.70
1068.30    1068.29    1064.36    1064.23
  Reach-1       5.23              1638.16            137.21    1500.64     137.21
                 227.49                 0.78              0.50          1062.90
1064.42    1064.28    1063.61    1063.51
  Reach-1       5.15              1500.64            113.51    1385.50     113.51
                 399.18                 0.58              0.31          1061.90
1063.58    1063.48    1061.73    1061.56
  Reach-1       5.08              1385.50             56.95    1329.34      56.95
                  87.41                 0.85              0.53          1060.20
1061.73    1061.56    1061.07    1061.05
```

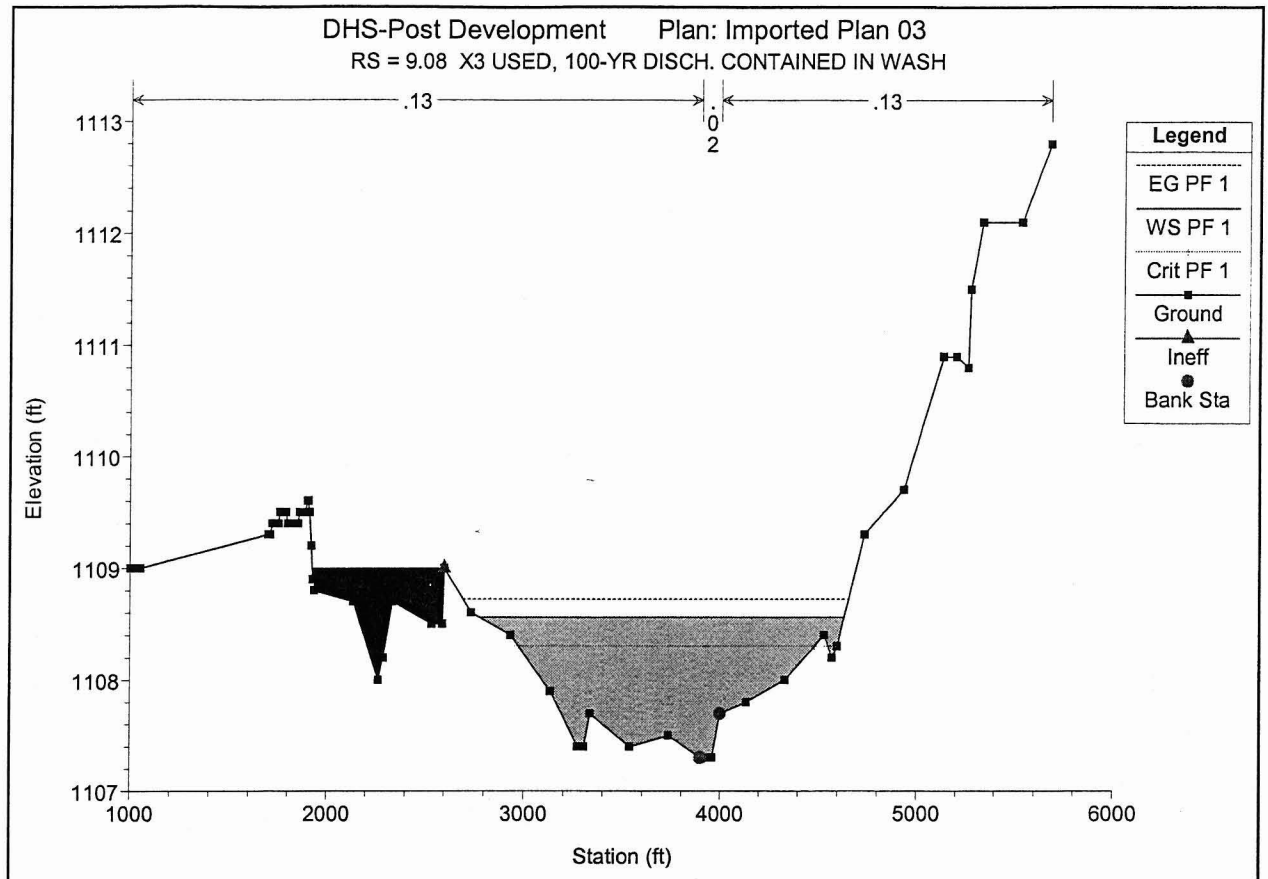

DHS-Post Development Plan: Imported Plan 03
RS = 9.61
.16
.16
.16
1122.0
1121.5
1121.0
1120.5
1120.0
1119.5
1119.0
1118.5
Elevation (ft)
3000
3500
4000
4500
5000
5500
6000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
DHS-Post Development Plan: Imported Plan 03
RS = 9.55 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.09
.16
.16
1122
1121
1120
1119
1118
1117
1116
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta

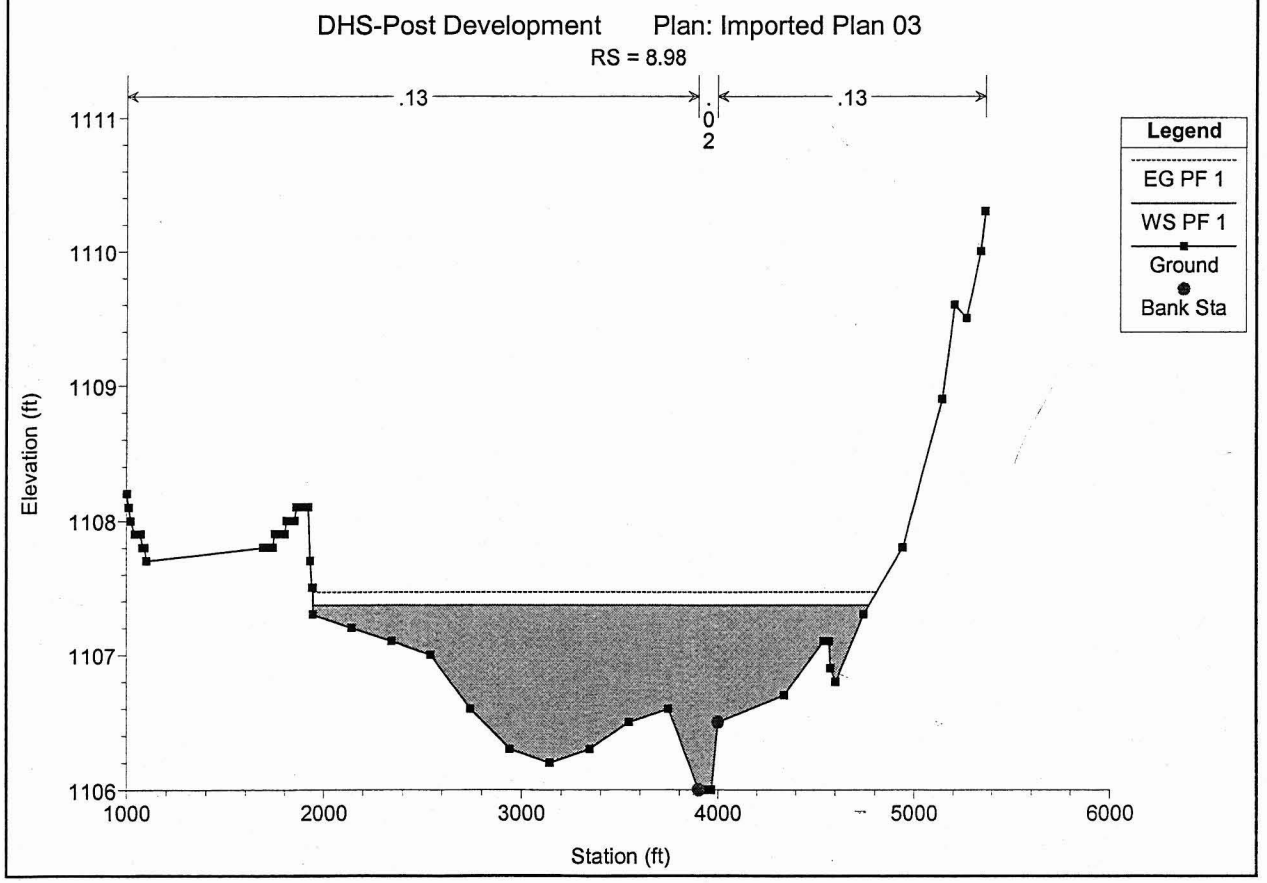

DHS-Post Development Plan: Imported Plan 03
RS = 9.45
.16
.09
.16
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1121
1120
1119
1118
1117
1116
1115
1114
1000
2000
3000
4000
5000
6000
Station (ft)

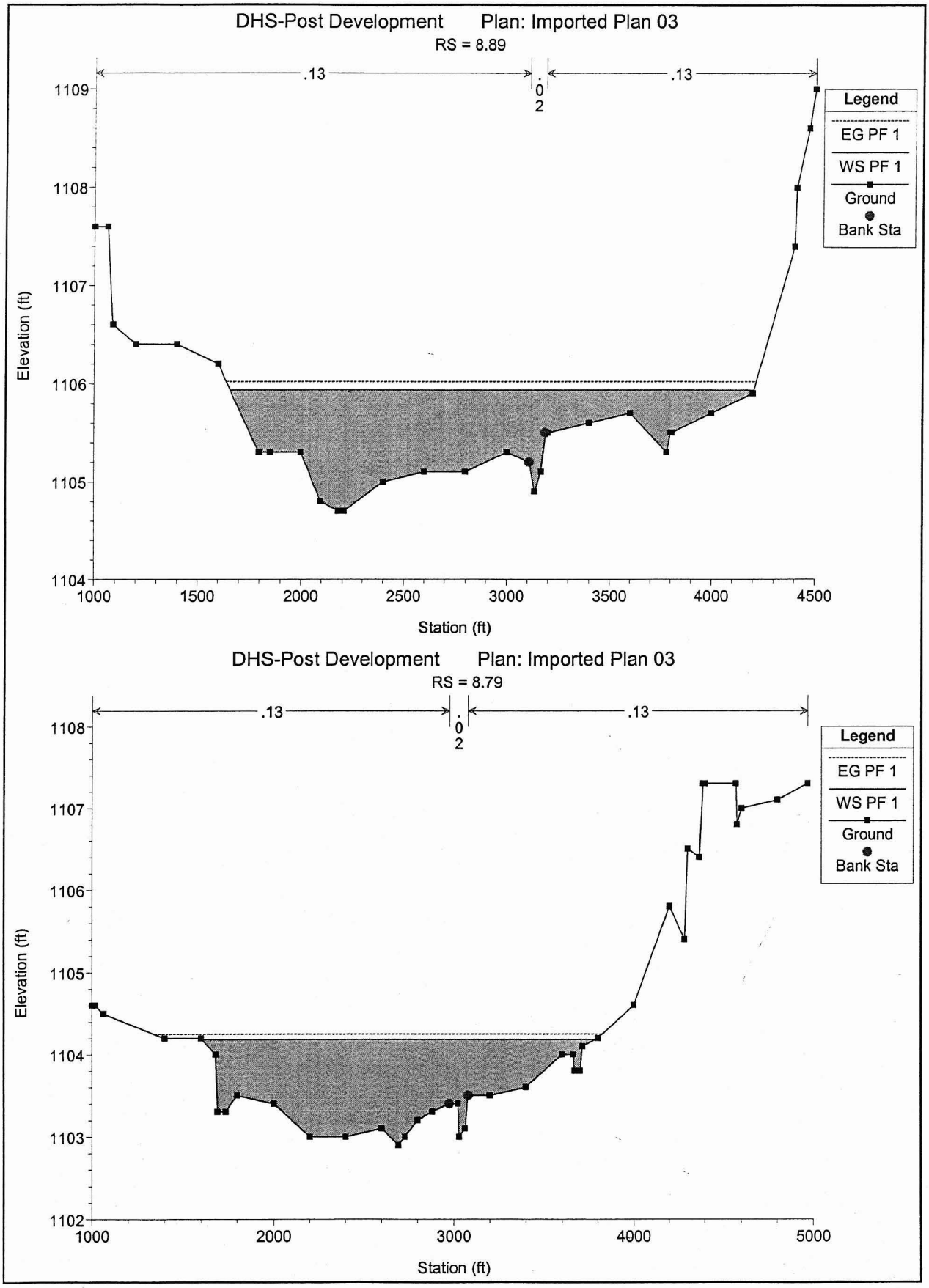

DHS-Post Development Plan: Imported Plan 03
RS = 9.36
.16
.16
.16
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1117
1116
1115
1114
1113
1112
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

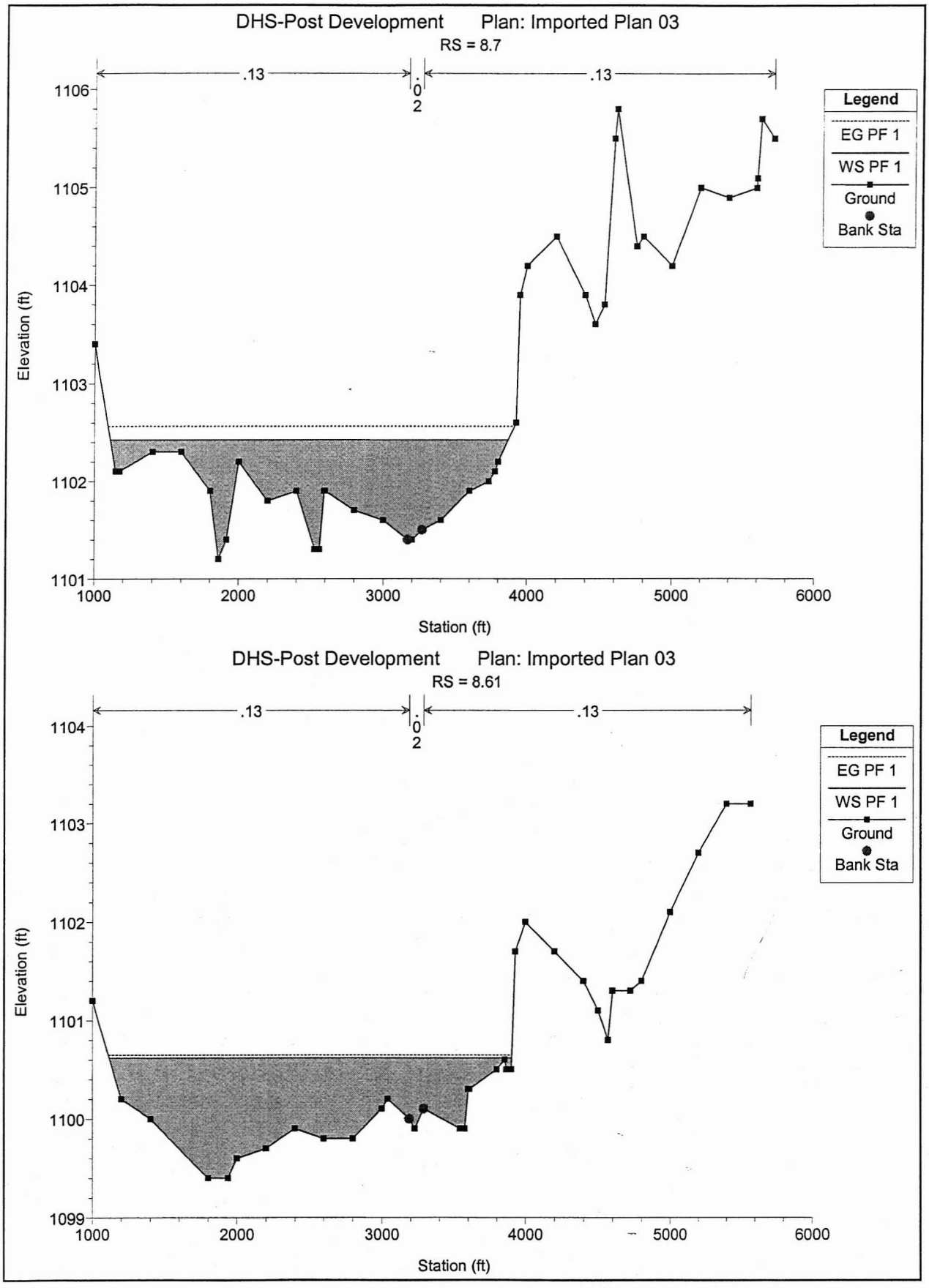

DHS-Post Development Plan: Imported Plan 03
RS = 9.27
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1116
1115
1114
1113
1112
1111
1110
1000
1500
2000
2500
3000
3500
4000
4500
5000

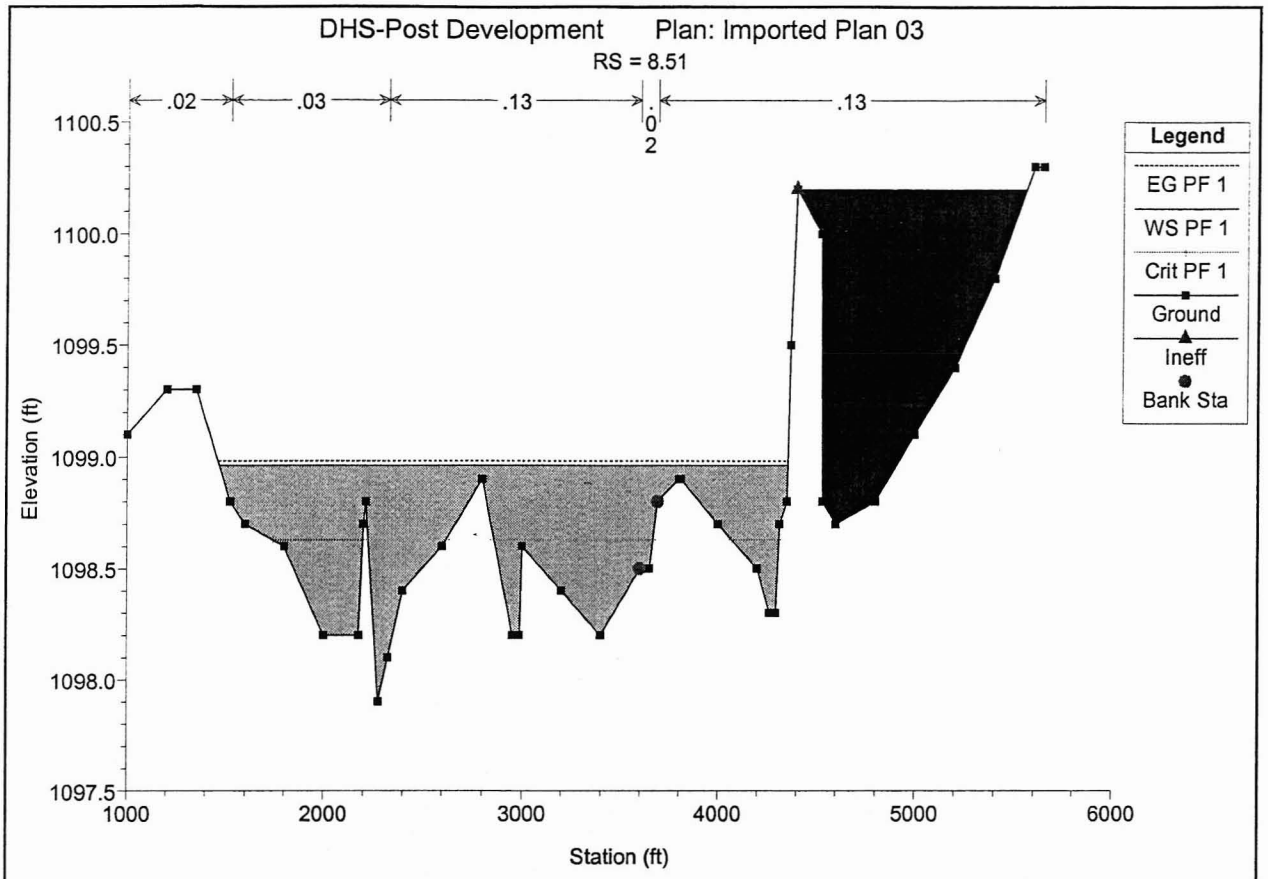

DHS-Post Development Plan: Imported Plan 03
RS = 9.17 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.035
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1114
1113
1112
1111
1110
1109
1000
2000
3000
4000
5000
6000

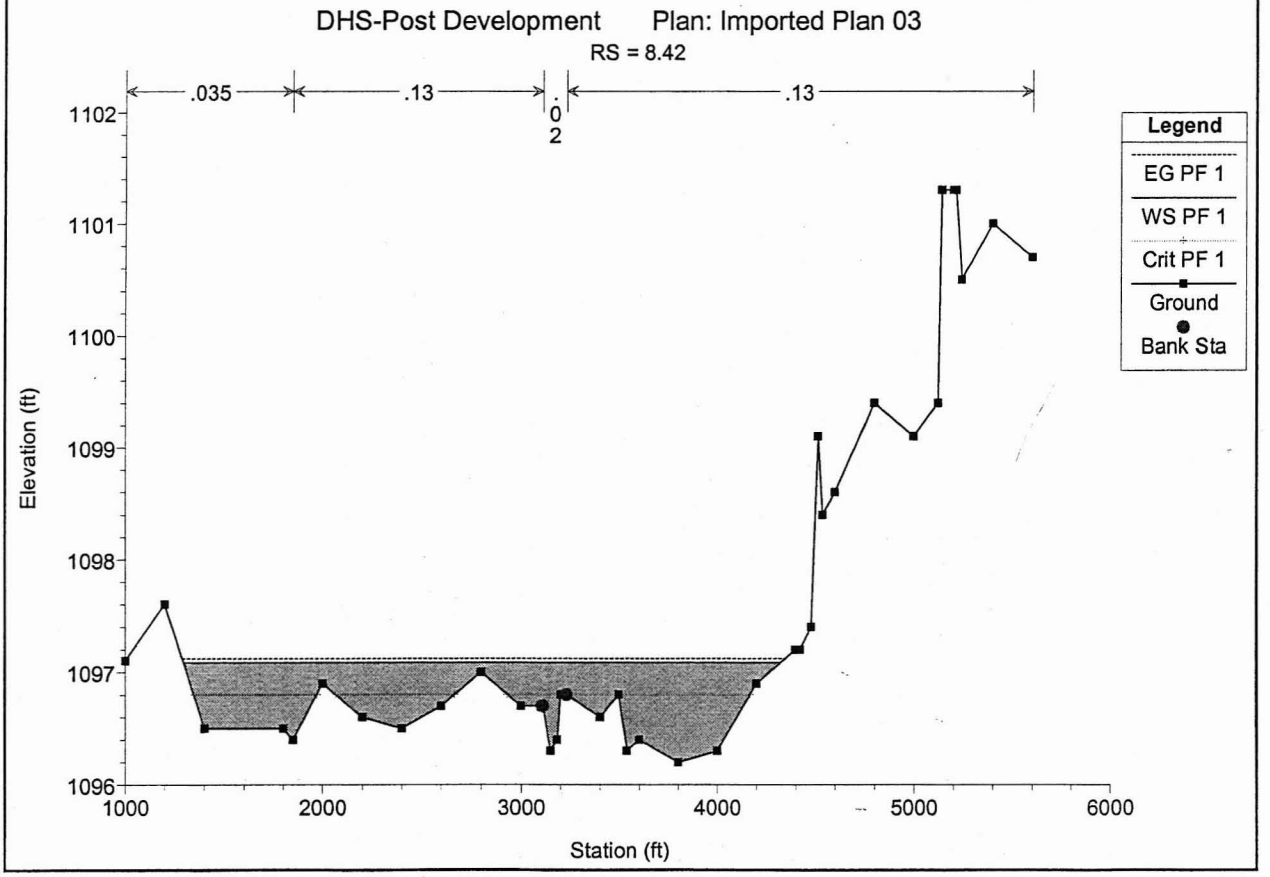

DHS-Post Development Plan: Imported Plan 03
RS = 9.08 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1113
1112
1111
1110
1109
1108
1107
1000
2000
3000
4000
5000
6000

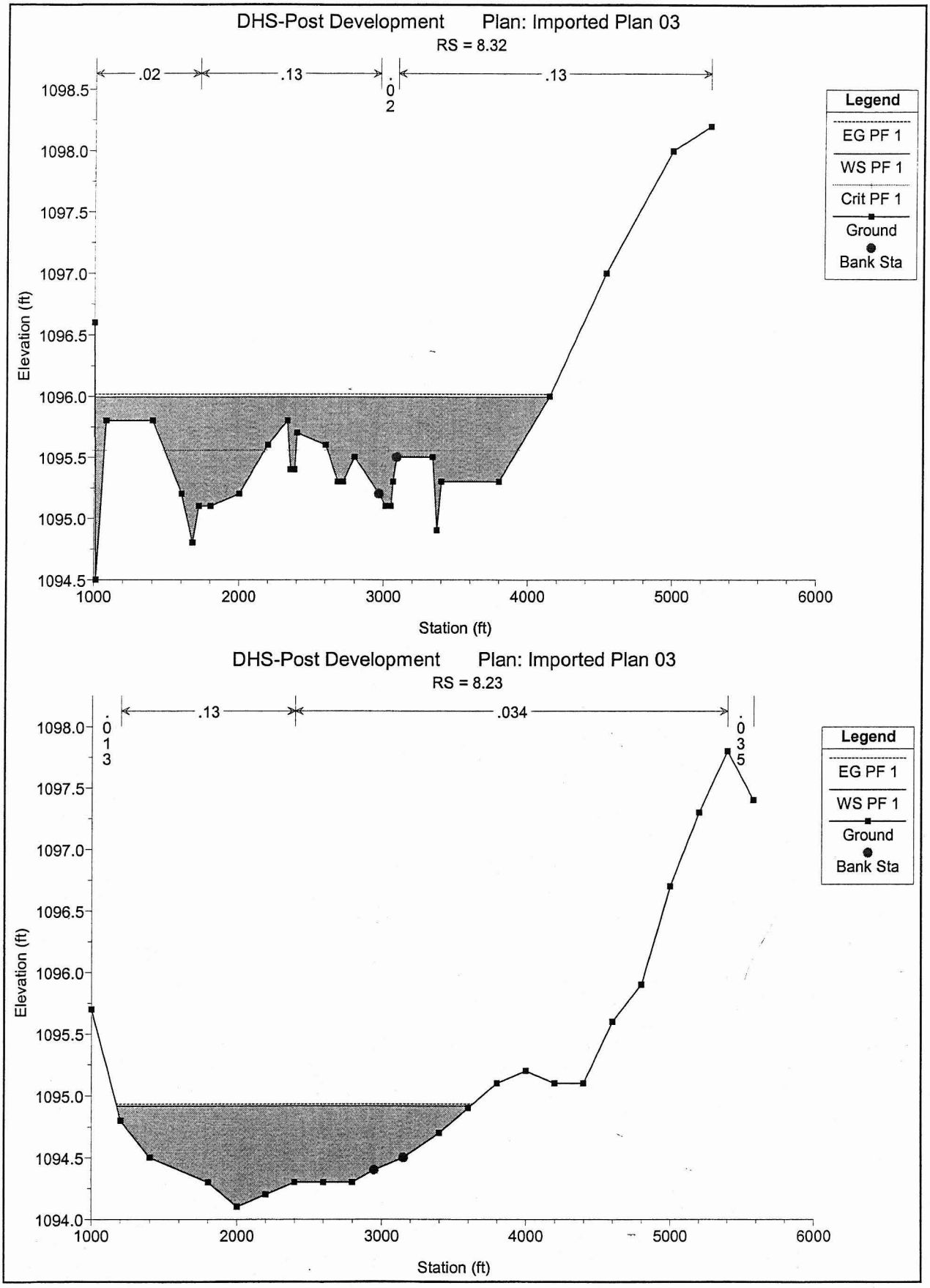

DHS-Post Development Plan: Imported Plan 03
RS = 8.98
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1111
1110
1109
1108
1107
1106
1000
2000
3000
4000
5000
6000

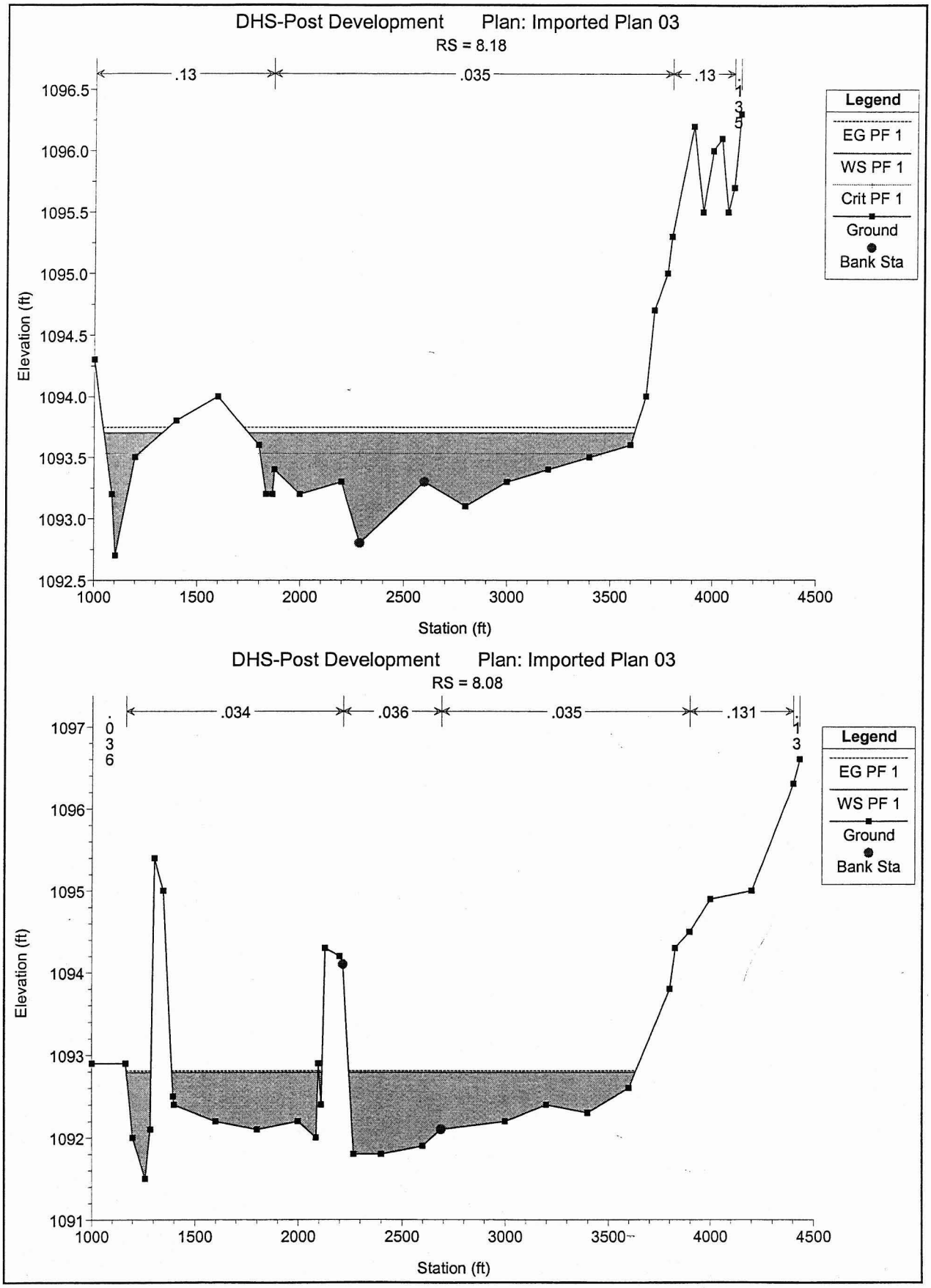

DHS-Post Development Plan: Imported Plan 03
RS = 8.89
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1109
1108
1107
1106
1105
1104
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
DHS-Post Development Plan: Imported Plan 03
RS = 8.79
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1108
1107
1106
1105
1104
1103
1102
1000
2000
3000
4000
5000
Station (ft)

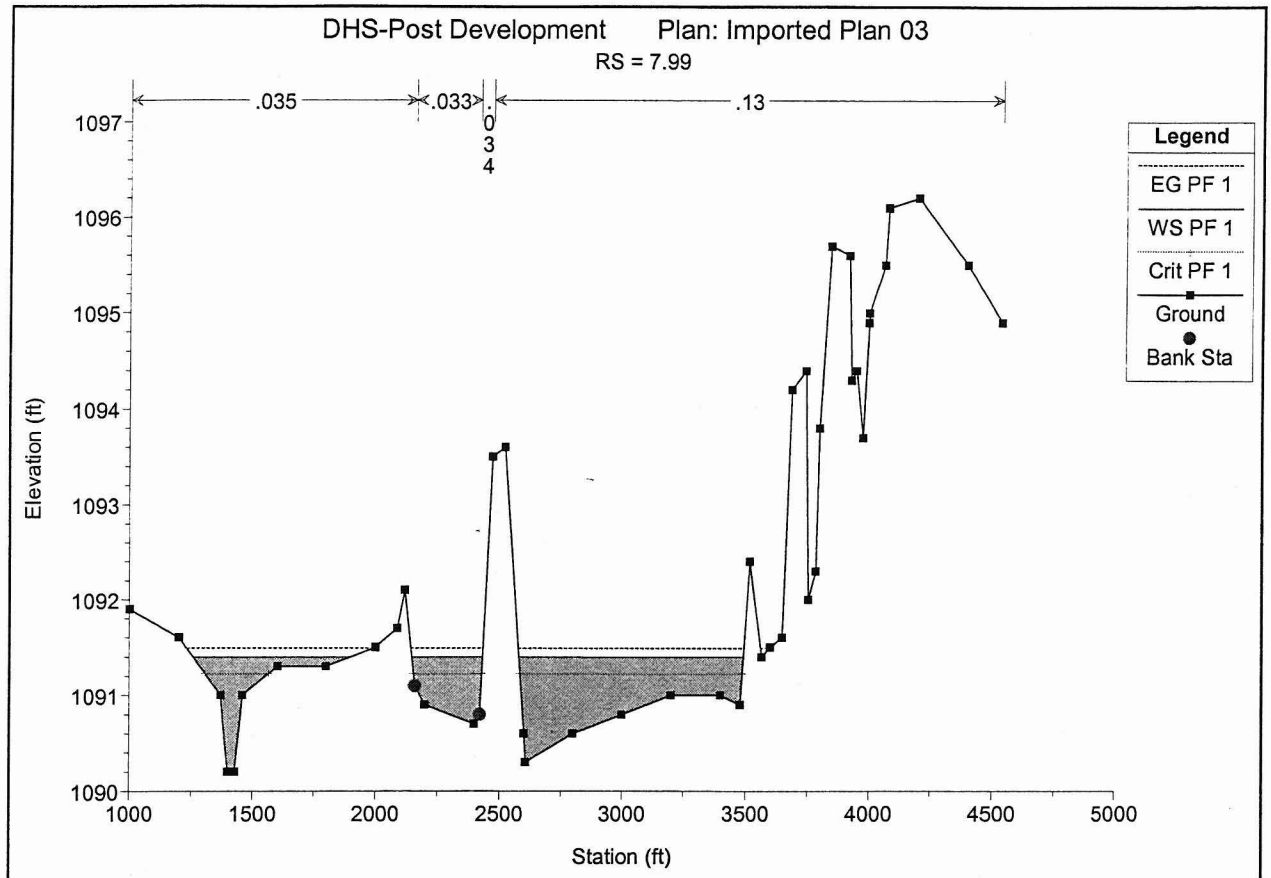

DHS-Post Development Plan: Imported Plan 03
RS = 8.7
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1106
1105
1104
1103
1102
1101
1000
2000
3000
4000
5000
6000
DHS-Post Development Plan: Imported Plan 03
RS = 8.61
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1104
1103
1102
1101
1100
1099
1000
2000
3000
4000
5000
6000

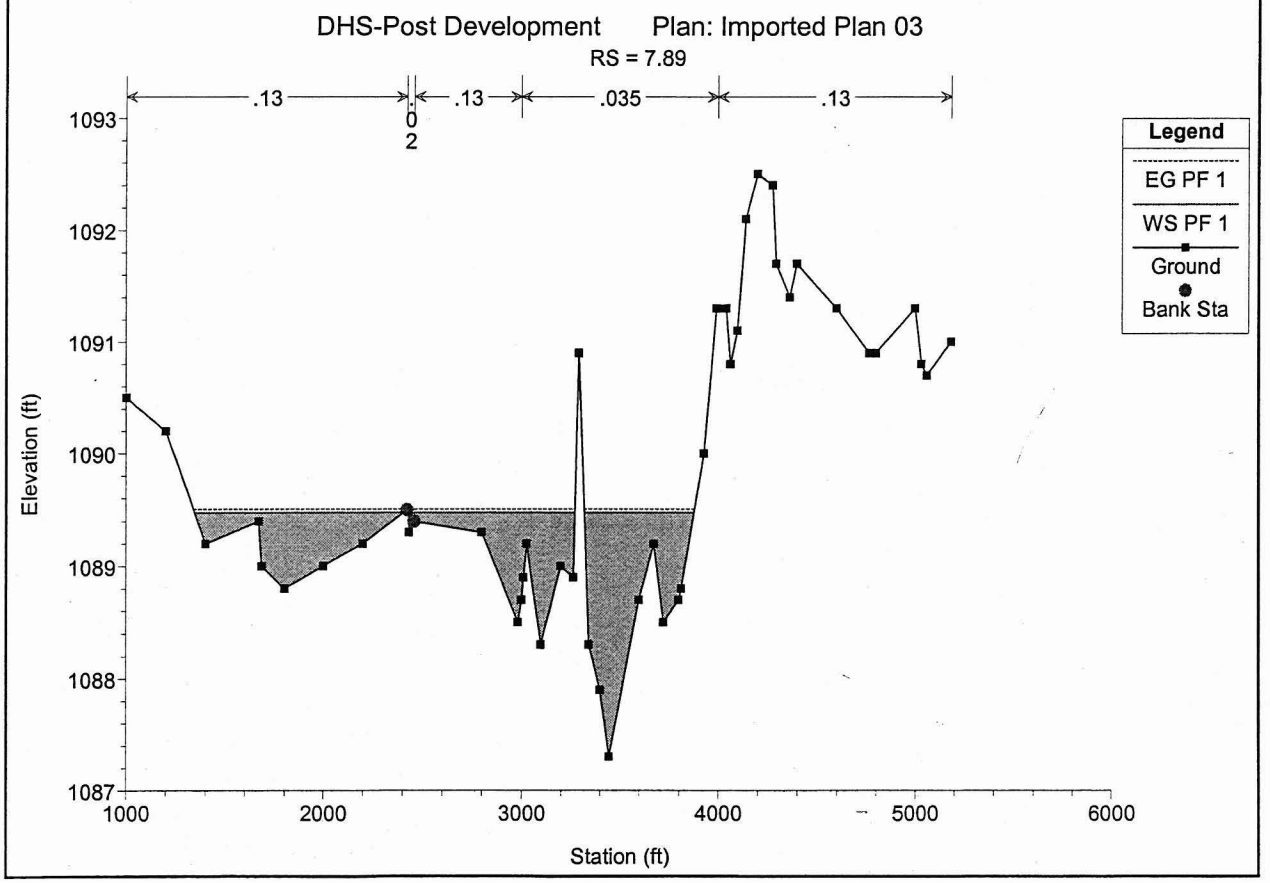

DHS-Post Development Plan: Imported Plan 03
RS = 8.51
.02
.03
.13
.0
2
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1100.5
1100.0
1099.5
1099.0
1098.5
1098.0
1097.5
1000
2000
3000
4000
5000
6000
Station (ft)

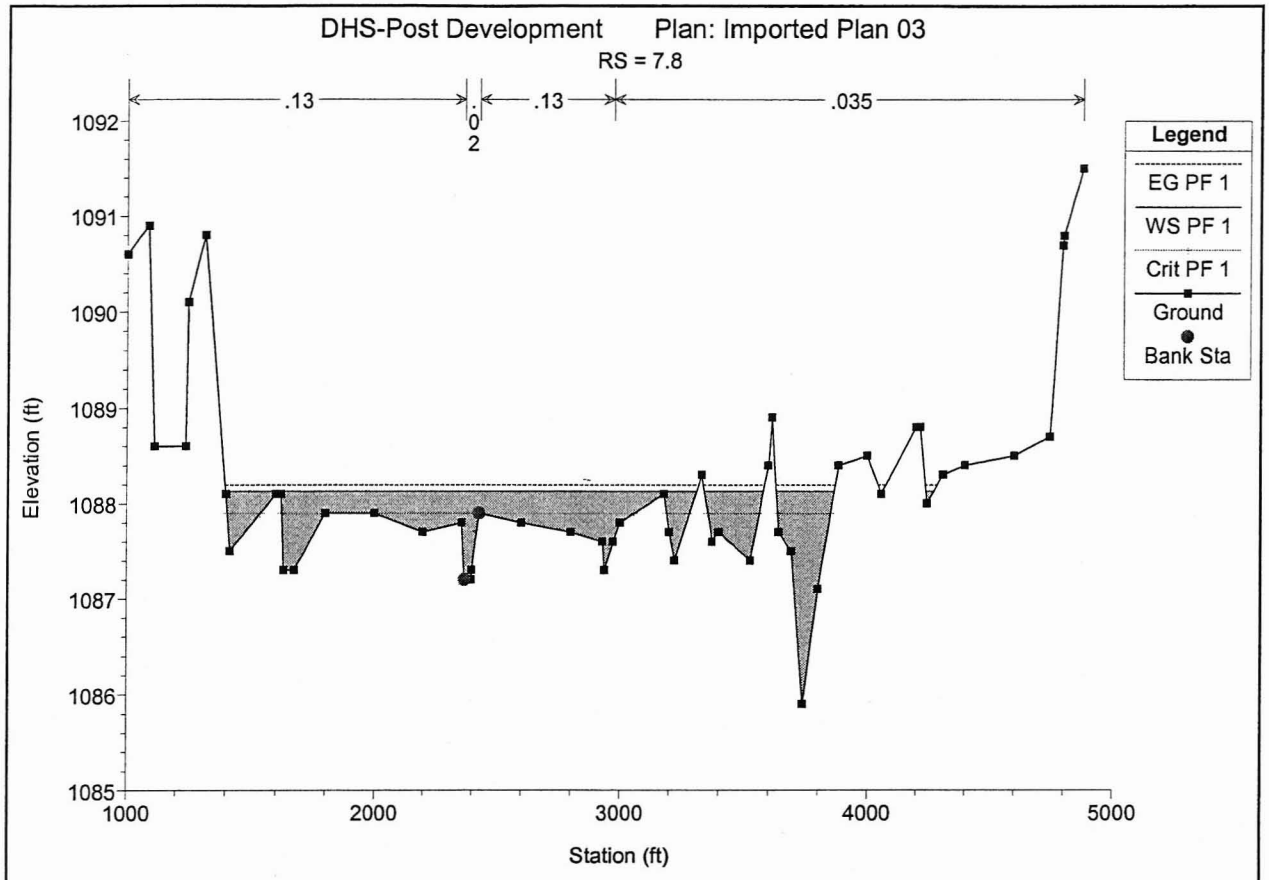

DHS-Post Development Plan: Imported Plan 03
RS = 8.42
.035
.13
.0
2
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1102
1101
1100
1099
1098
1097
1096
1000
2000
3000
4000
5000
6000
Station (ft)

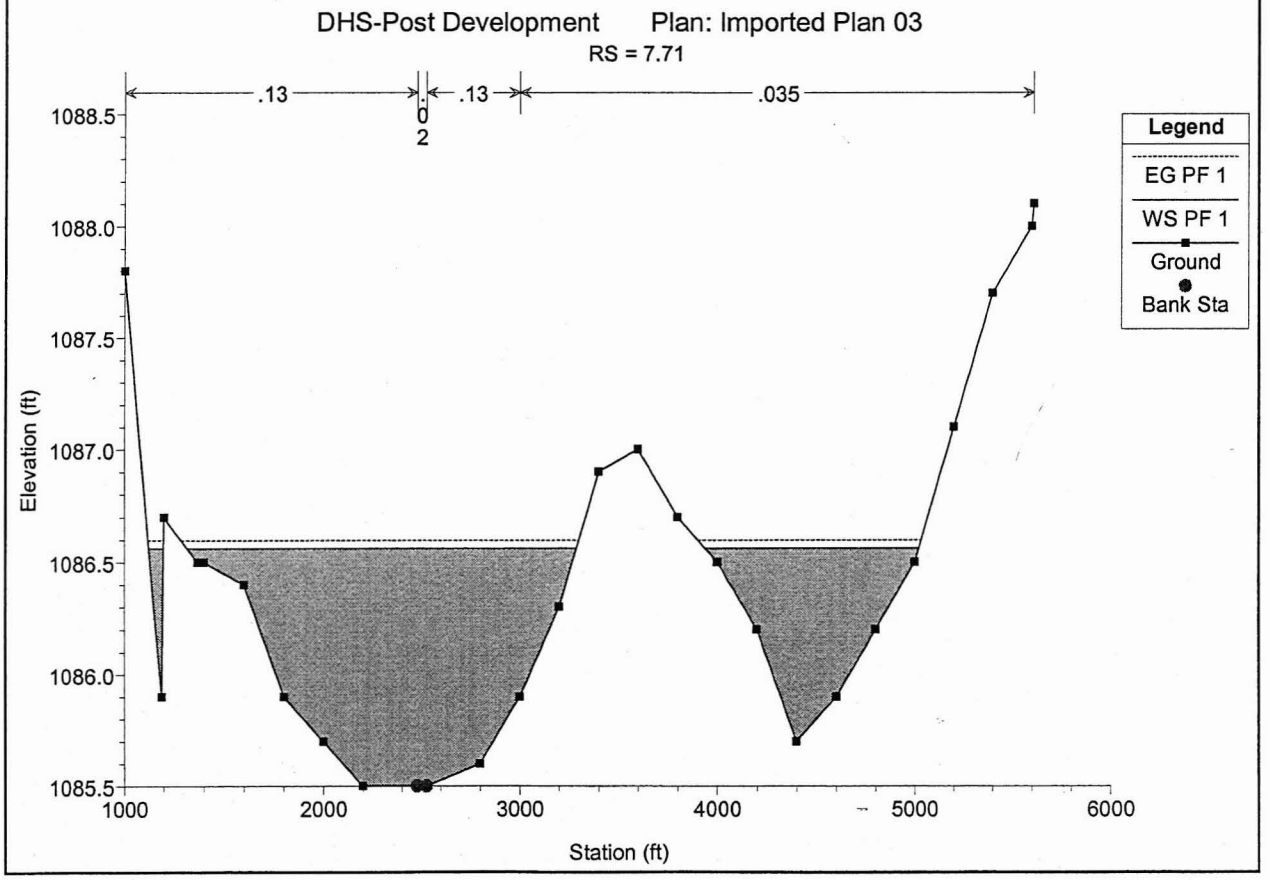

DHS-Post Development Plan: Imported Plan 03
RS = 8.32
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development Plan: Imported Plan 03
RS = 8.23
.13
.034
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

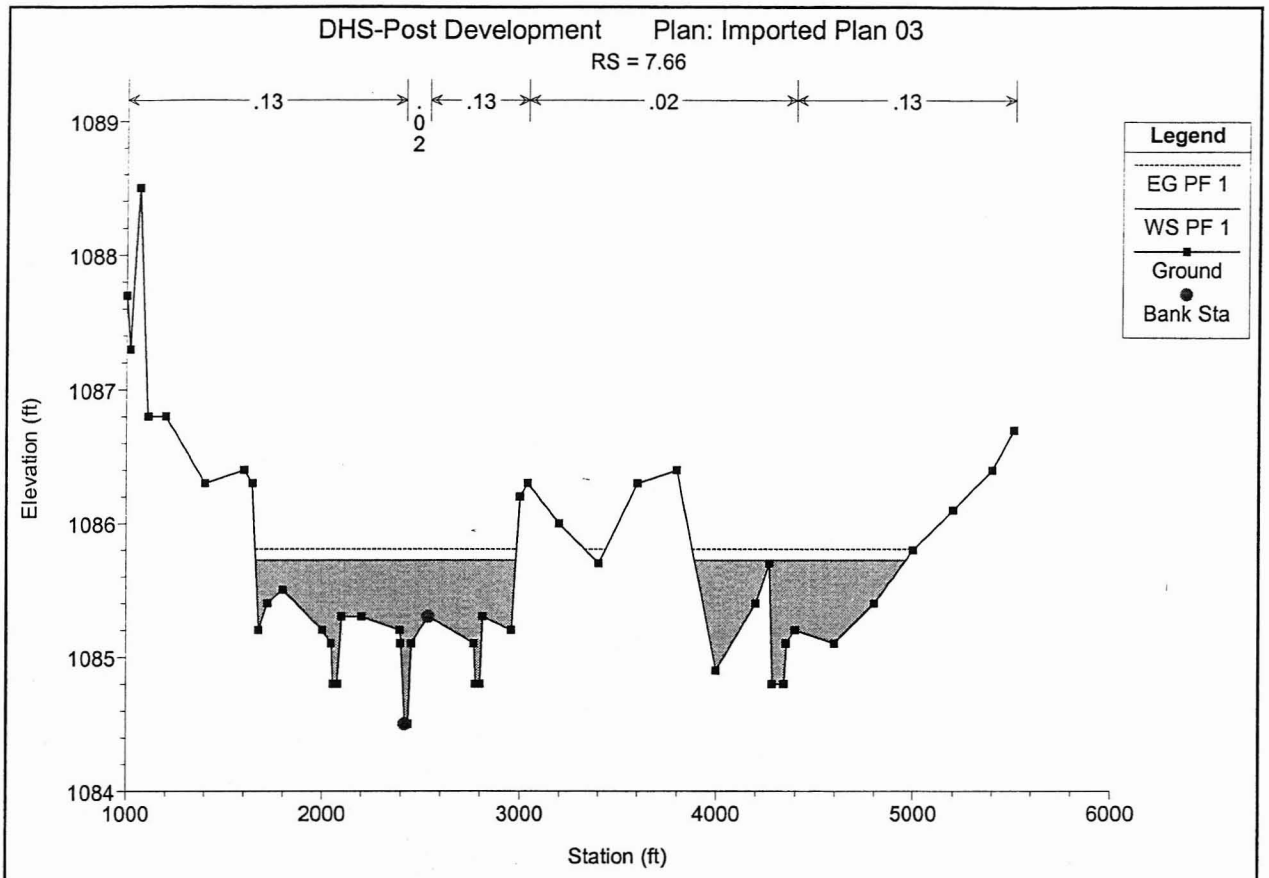

DHS-Post Development Plan: Imported Plan 03
RS = 8.18
.13
.035
.13
.135
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1096.5
1096.0
1095.5
1095.0
1094.5
1094.0
1093.5
1093.0
1092.5
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
DHS-Post Development Plan: Imported Plan 03
RS = 8.08
.036
.034
.036
.035
.131
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1097
1096
1095
1094
1093
1092
1091
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

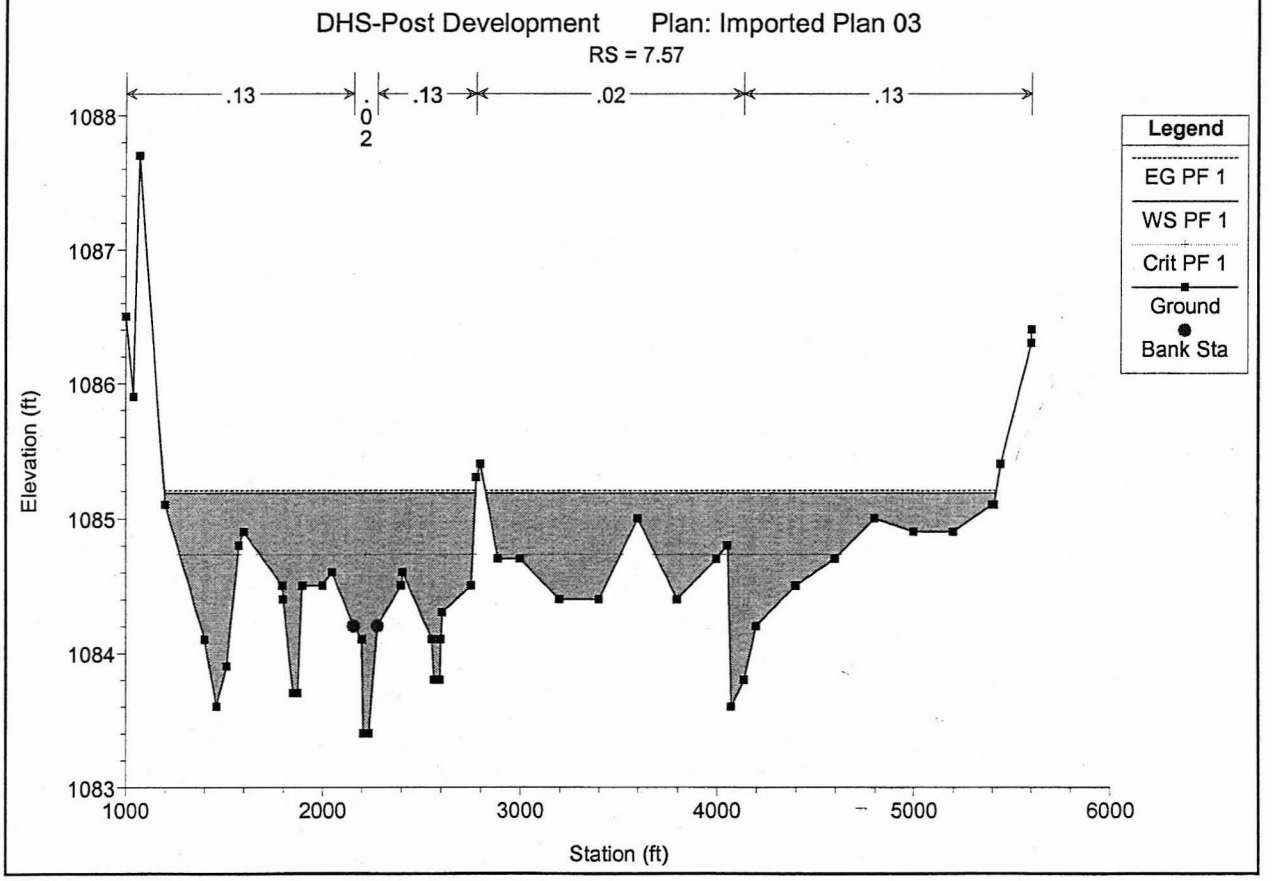

DHS-Post Development Plan: Imported Plan 03
RS = 7.99
.035
.033
.034
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1097
1096
1095
1094
1093
1092
1091
1090
1000
1500
2000
2500
3000
3500
4000
4500
5000

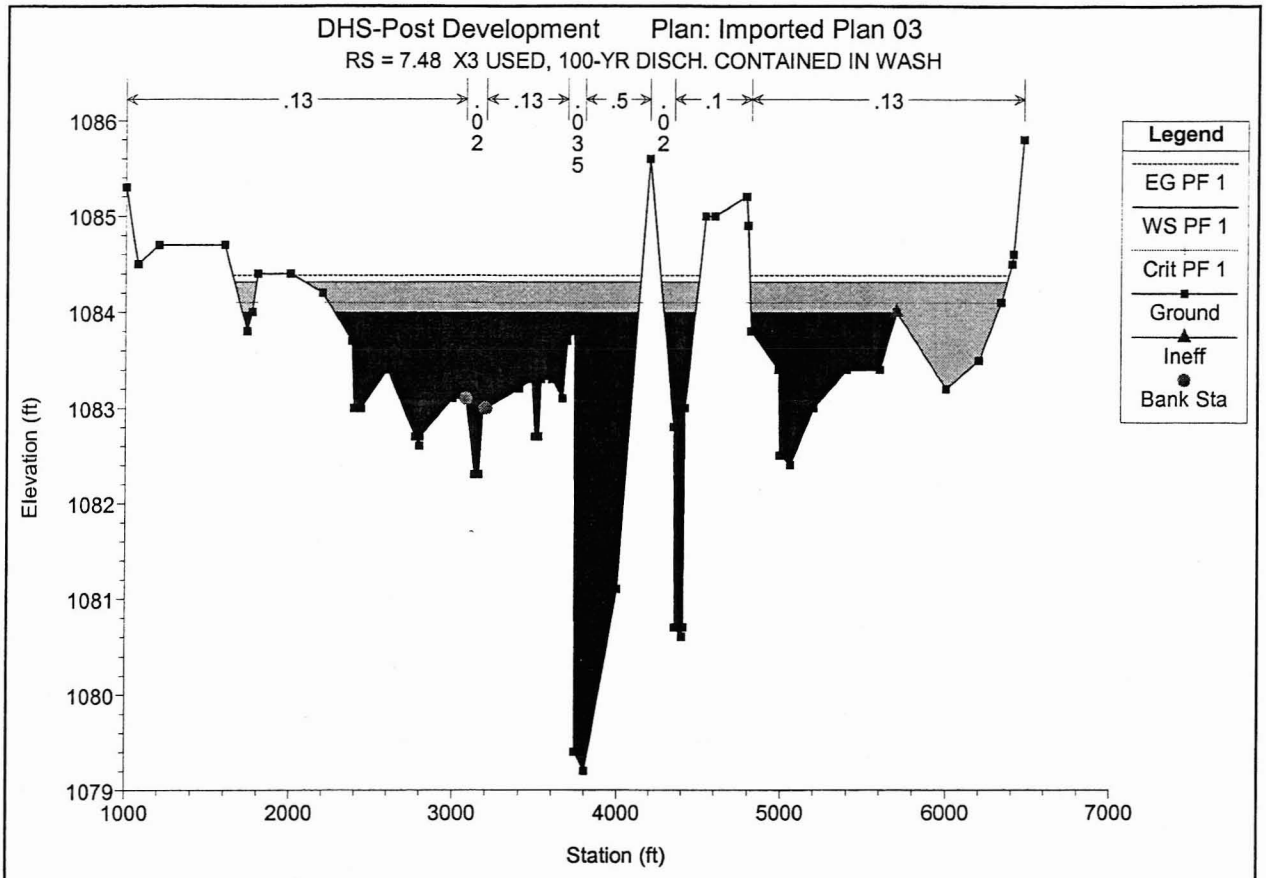

DHS-Post Development Plan: Imported Plan 03
RS = 7.89
.13
.13
.035
.13
.02
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1093
1092
1091
1090
1089
1088
1087
1000
2000
3000
4000
5000
6000

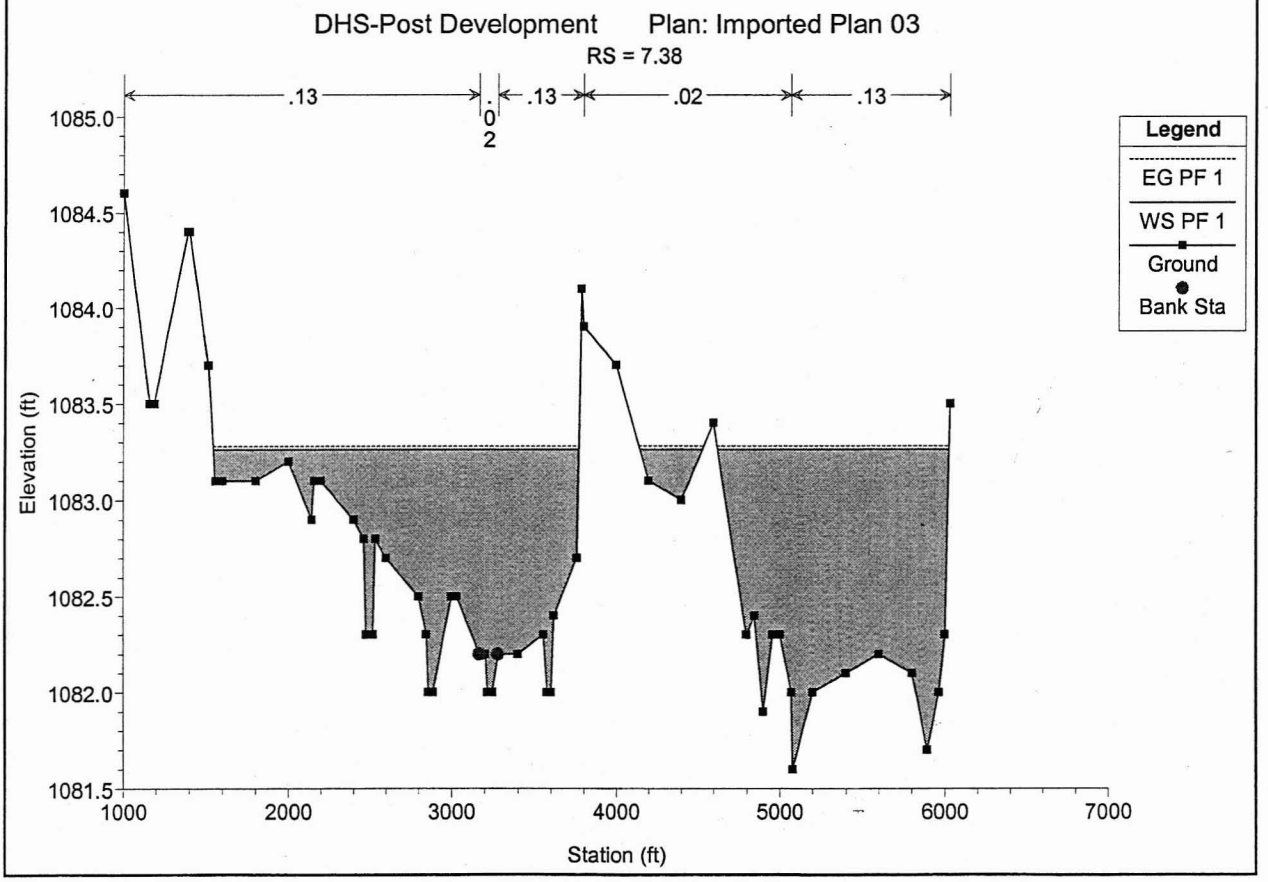

DHS-Post Development Plan: Imported Plan 03
RS = 7.8
.13
.02
.13
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1085
1086
1087
1088
1089
1090
1091
1092
1000
2000
3000
4000
5000

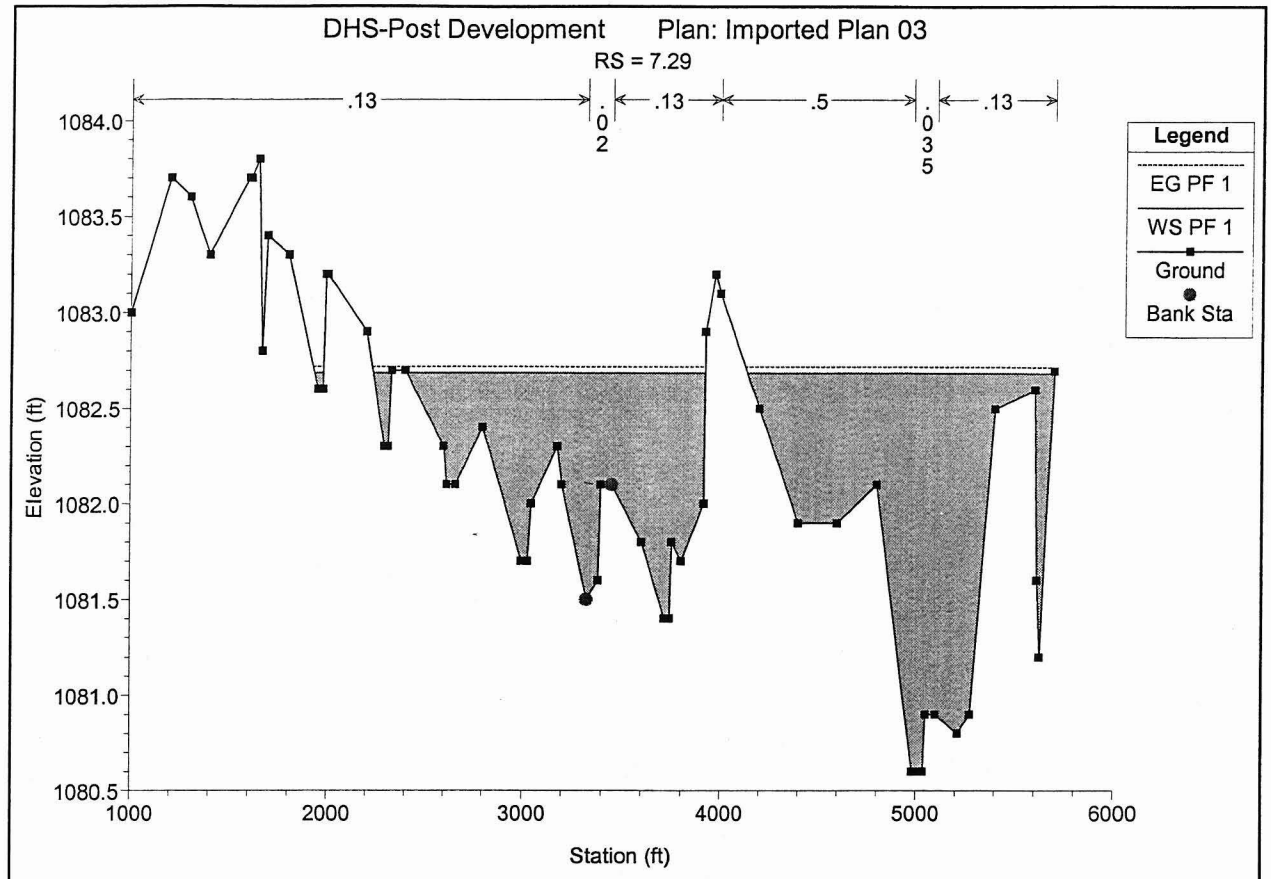

DHS-Post Development Plan: Imported Plan 03
RS = 7.71
.13
.02
.13
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1085.5
1086.0
1086.5
1087.0
1087.5
1088.0
1088.5
1000
2000
3000
4000
5000
6000

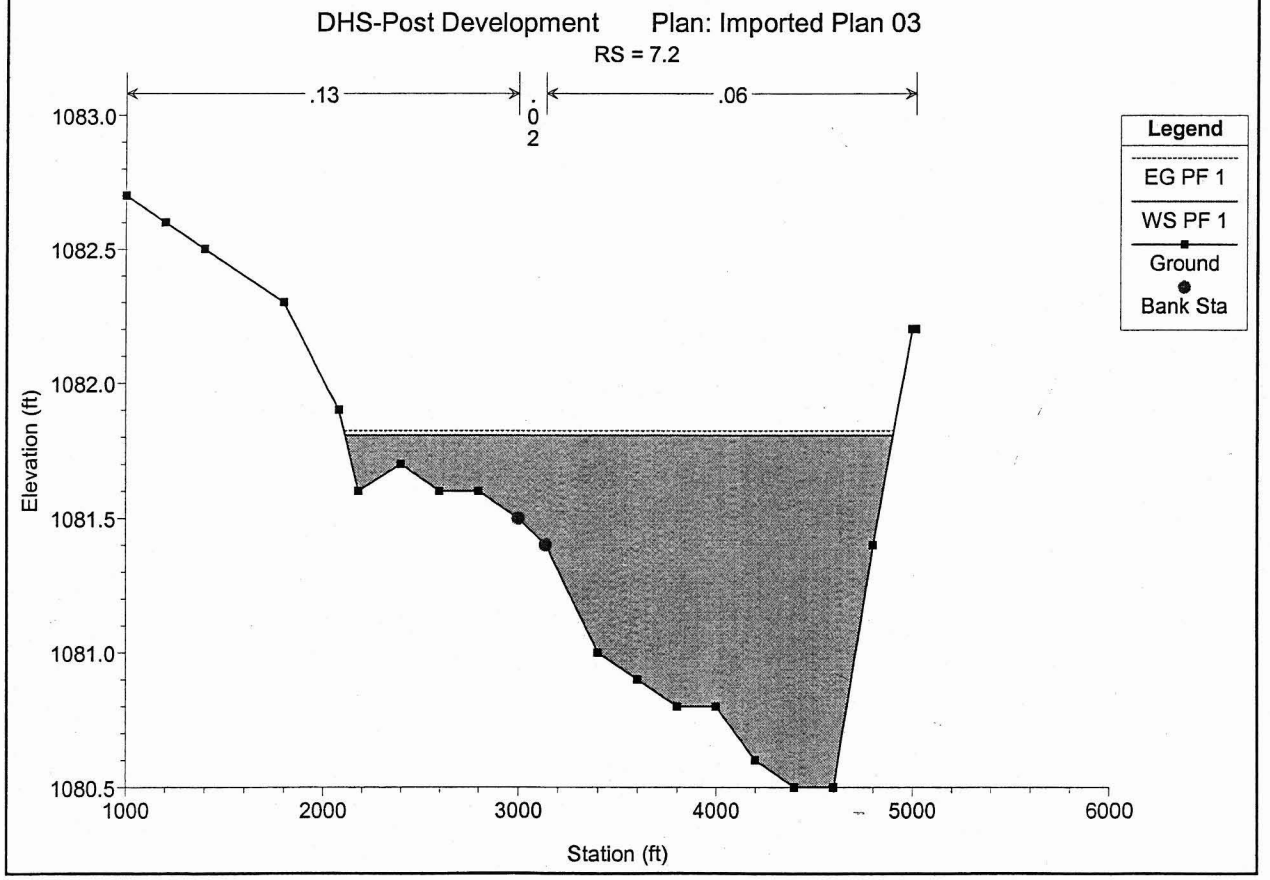

DHS-Post Development Plan: Imported Plan 03
RS = 7.66
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1089
1088
1087
1086
1085
1084
1000
2000
3000
4000
5000
6000

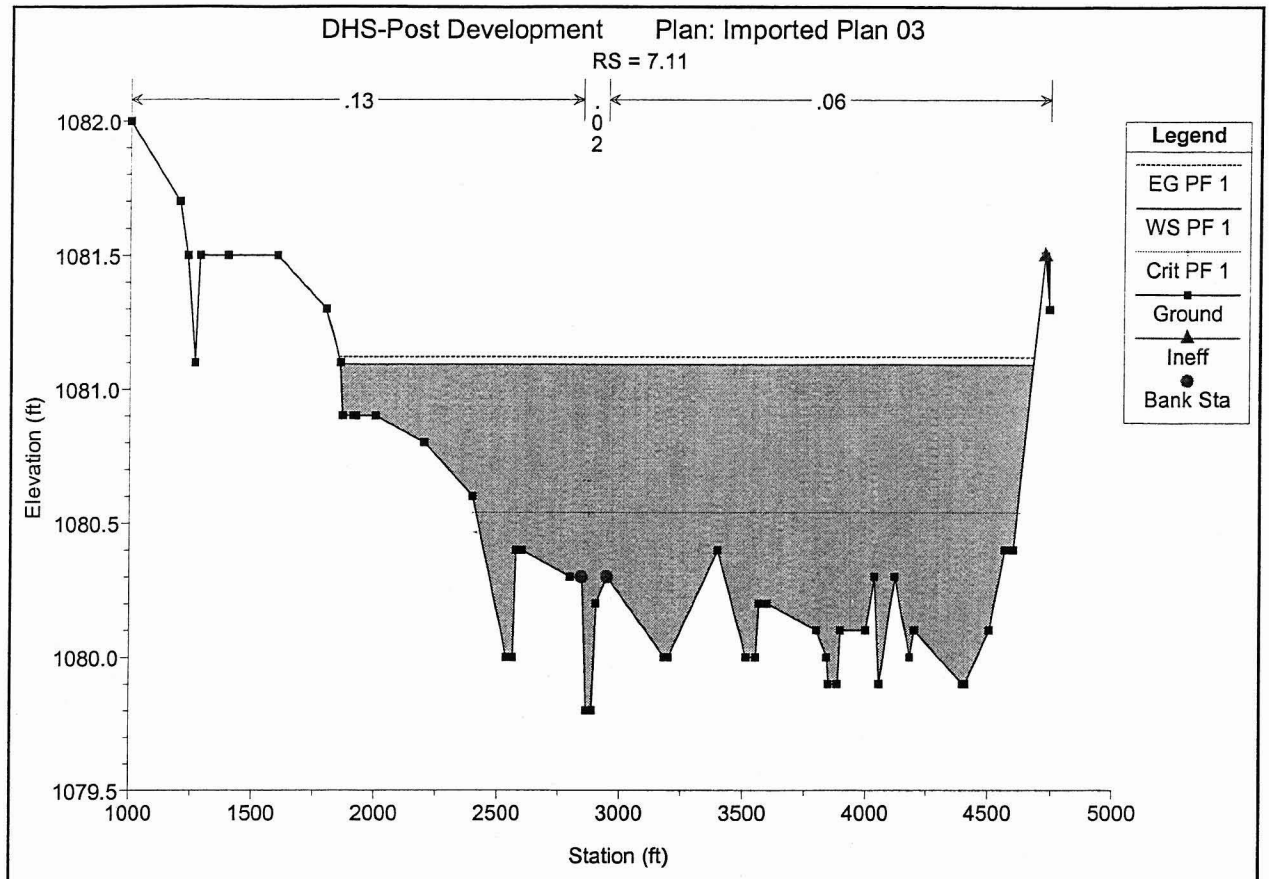

DHS-Post Development Plan: Imported Plan 03
RS = 7.57
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1088
1087
1086
1085
1084
1083
1000
2000
3000
4000
5000
6000

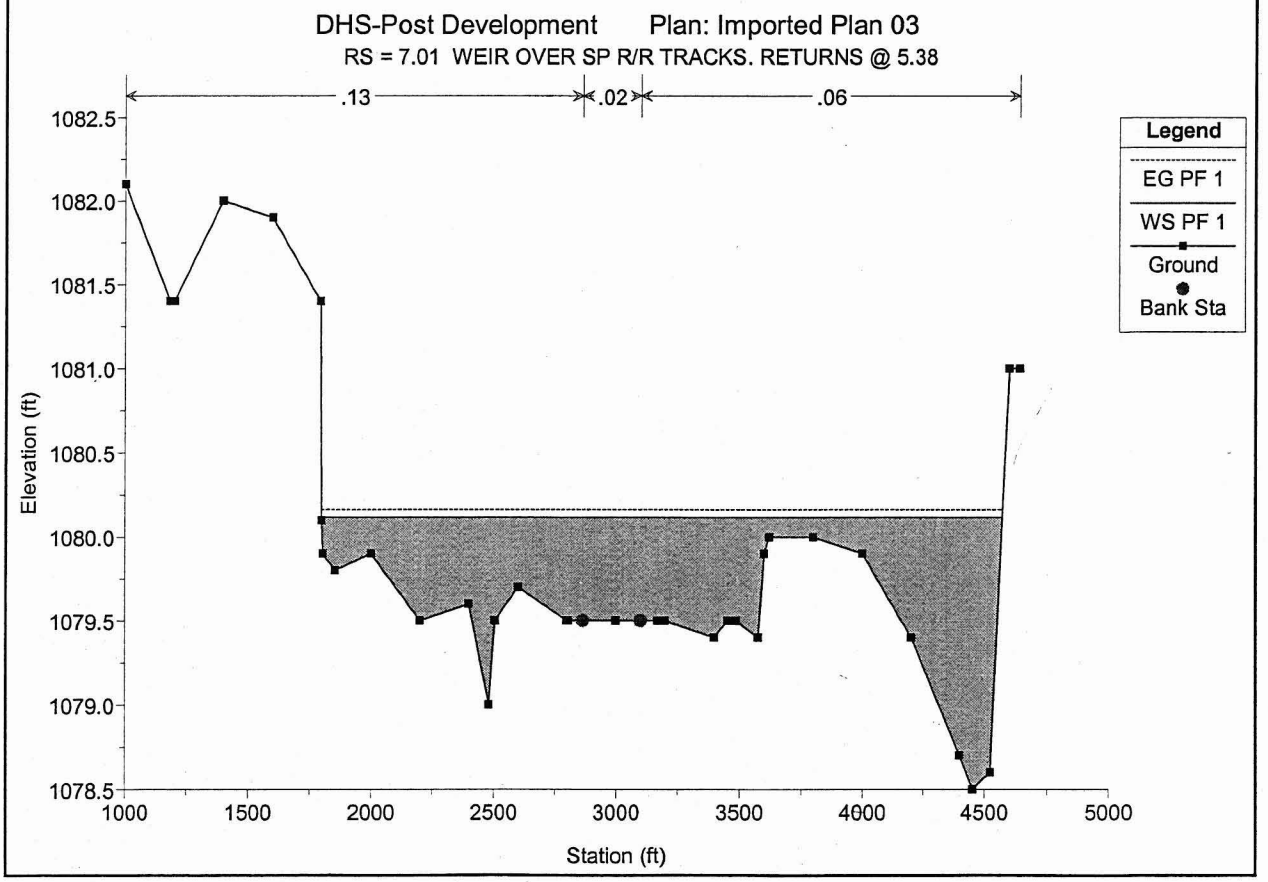

DHS-Post Development Plan: Imported Plan 03
RS = 7.48 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.02
.13
.035
.5
.02
.1
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1086
1085
1084
1083
1082
1081
1080
1079
1000
2000
3000
4000
5000
6000
7000

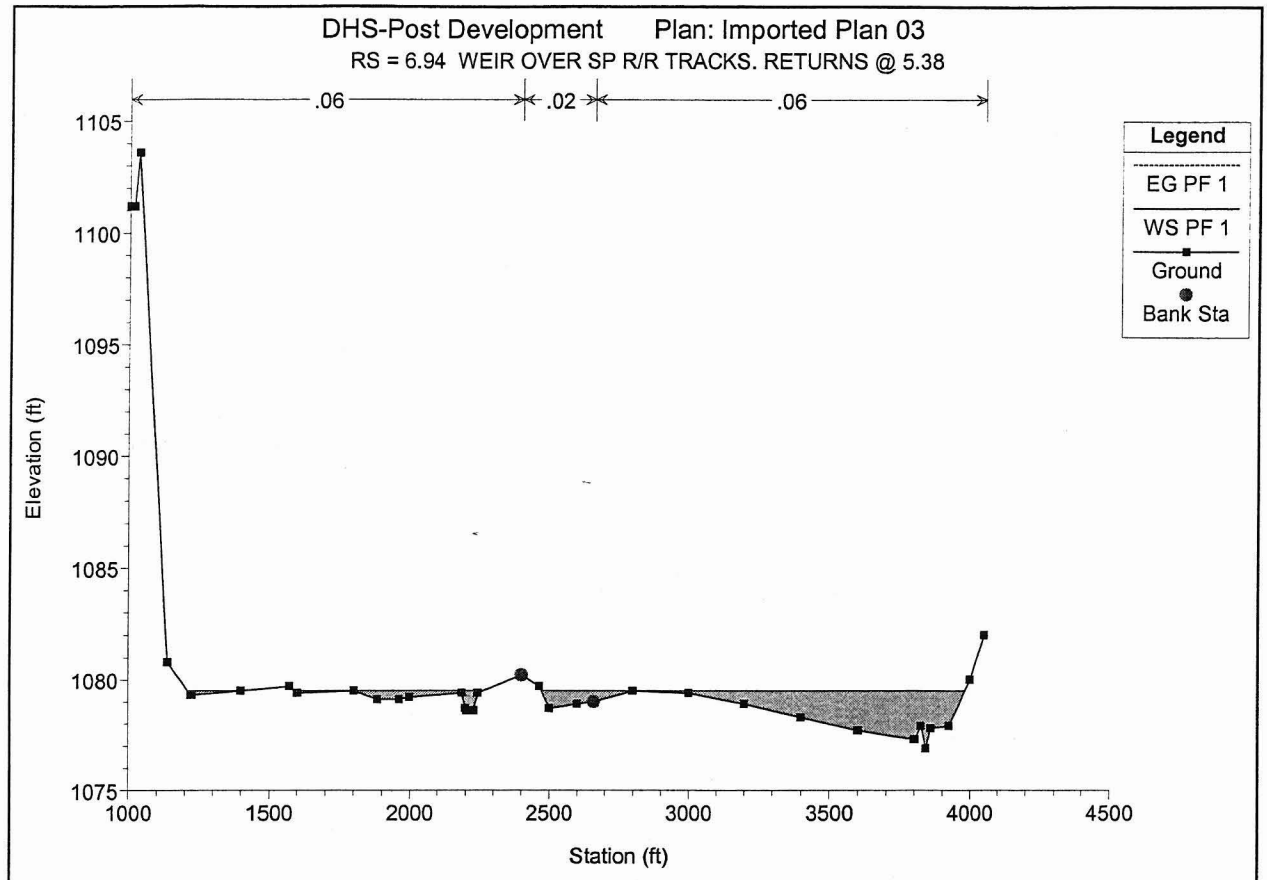

DHS-Post Development Plan: Imported Plan 03
RS = 7.38
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1085.0
1084.5
1084.0
1083.5
1083.0
1082.5
1082.0
1081.5
1000
2000
3000
4000
5000
6000
7000

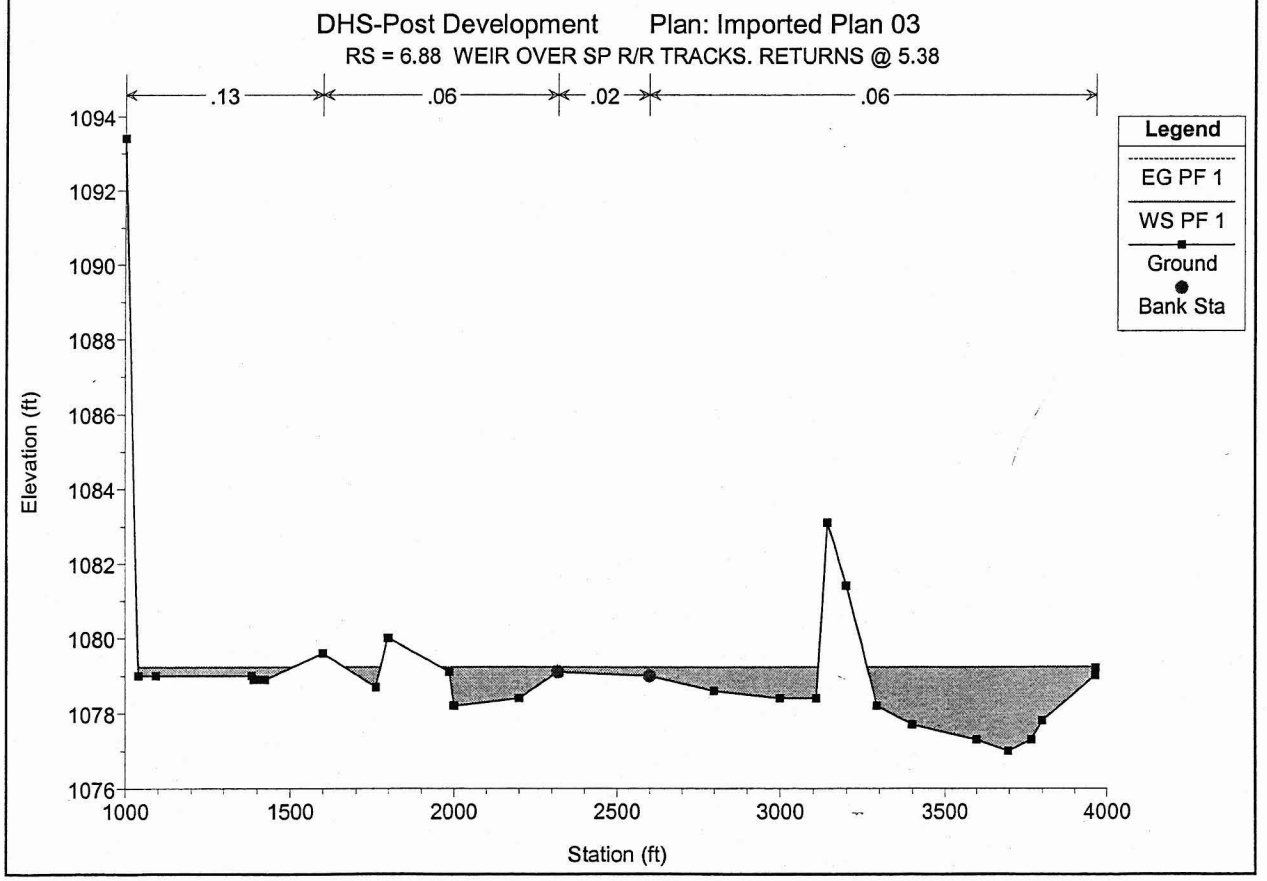

DHS-Post Development Plan: Imported Plan 03
RS = 7.29
.13
.02
.13
.5
.035
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1084.0
1083.5
1083.0
1082.5
1082.0
1081.5
1081.0
1080.5
1000
2000
3000
4000
5000
6000
Station (ft)

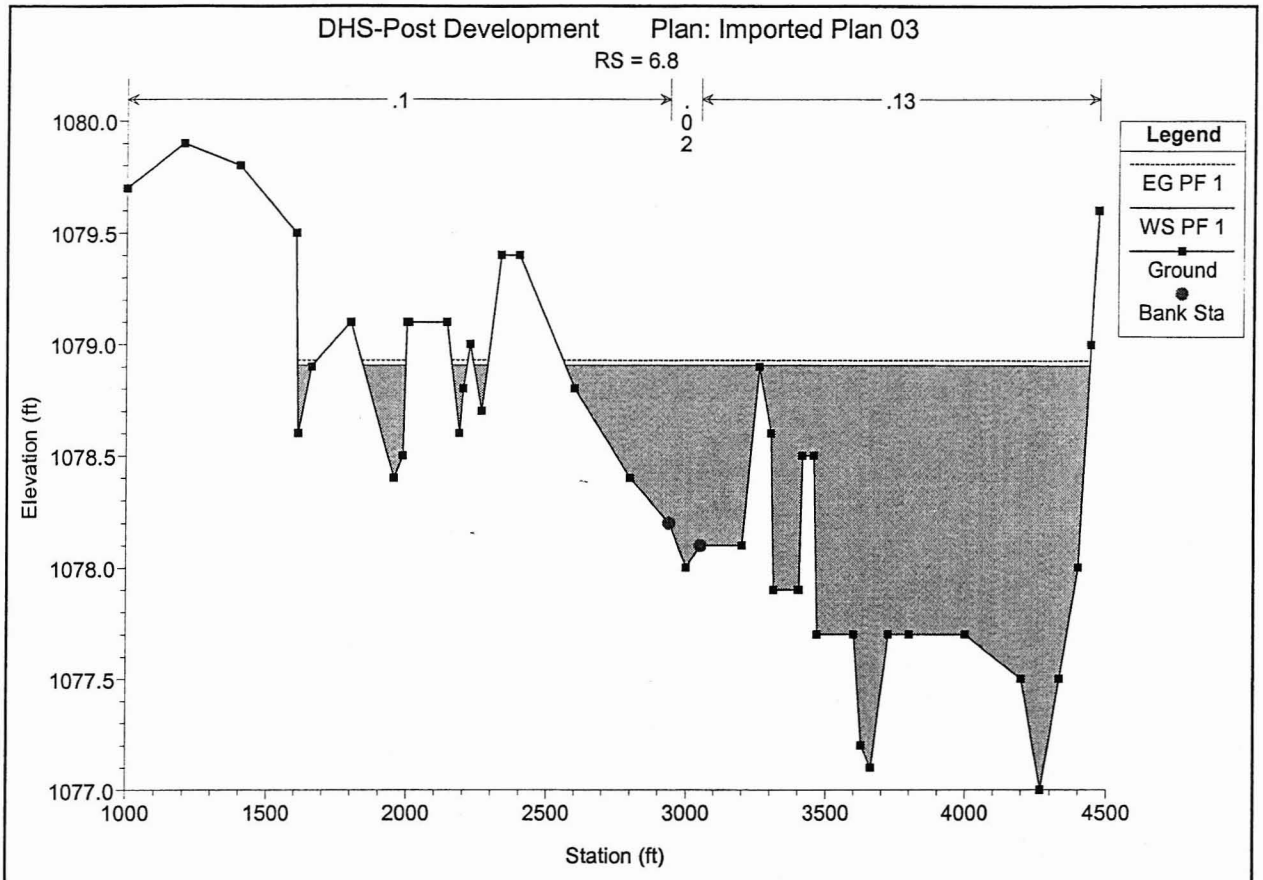

DHS-Post Development Plan: Imported Plan 03
RS = 7.2
.13
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1083.0
1082.5
1082.0
1081.5
1081.0
1080.5
1000
2000
3000
4000
5000
6000
Station (ft)

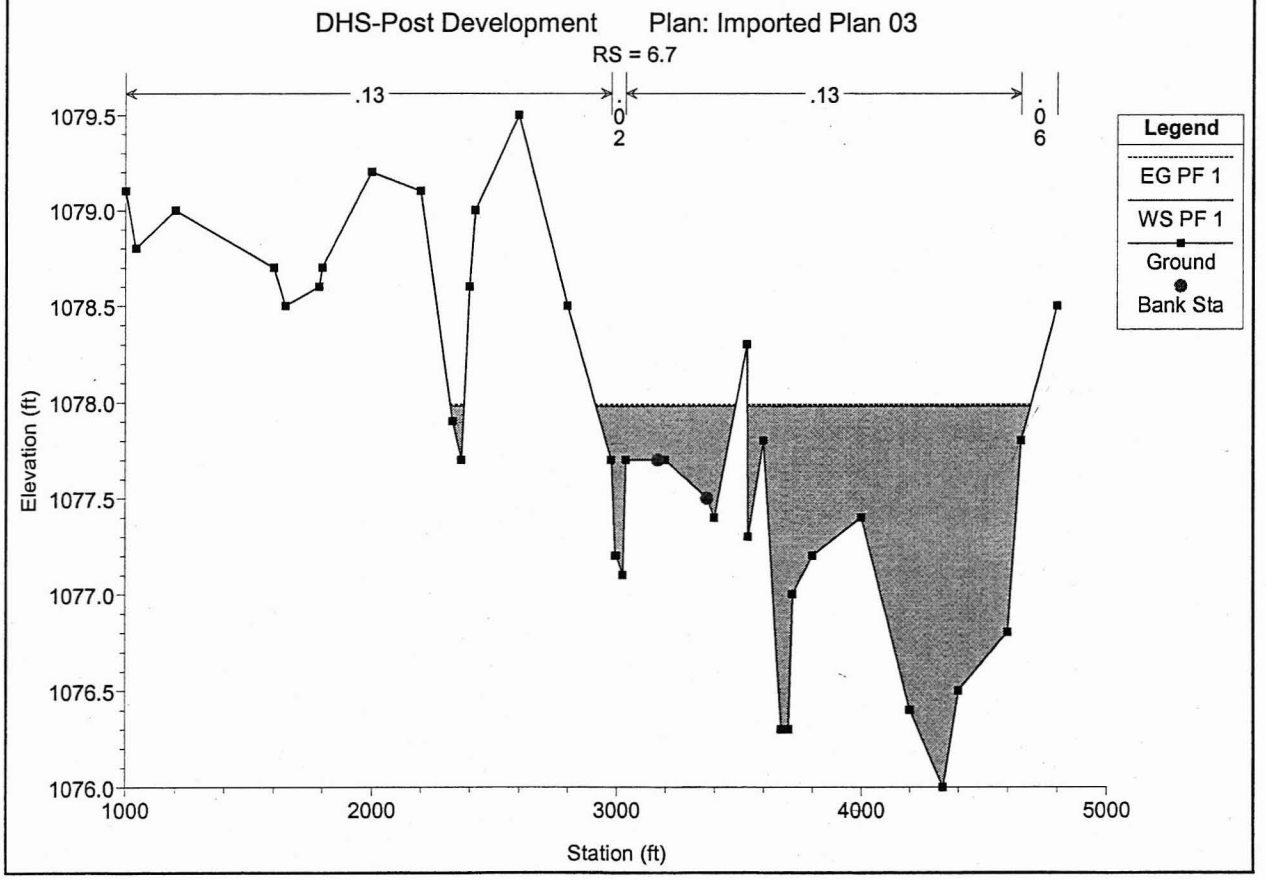

DHS-Post Development Plan: Imported Plan 03
RS = 7.11
.13
.02
.06
1082.0
1081.5
1081.0
1080.5
1080.0
1079.5
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta

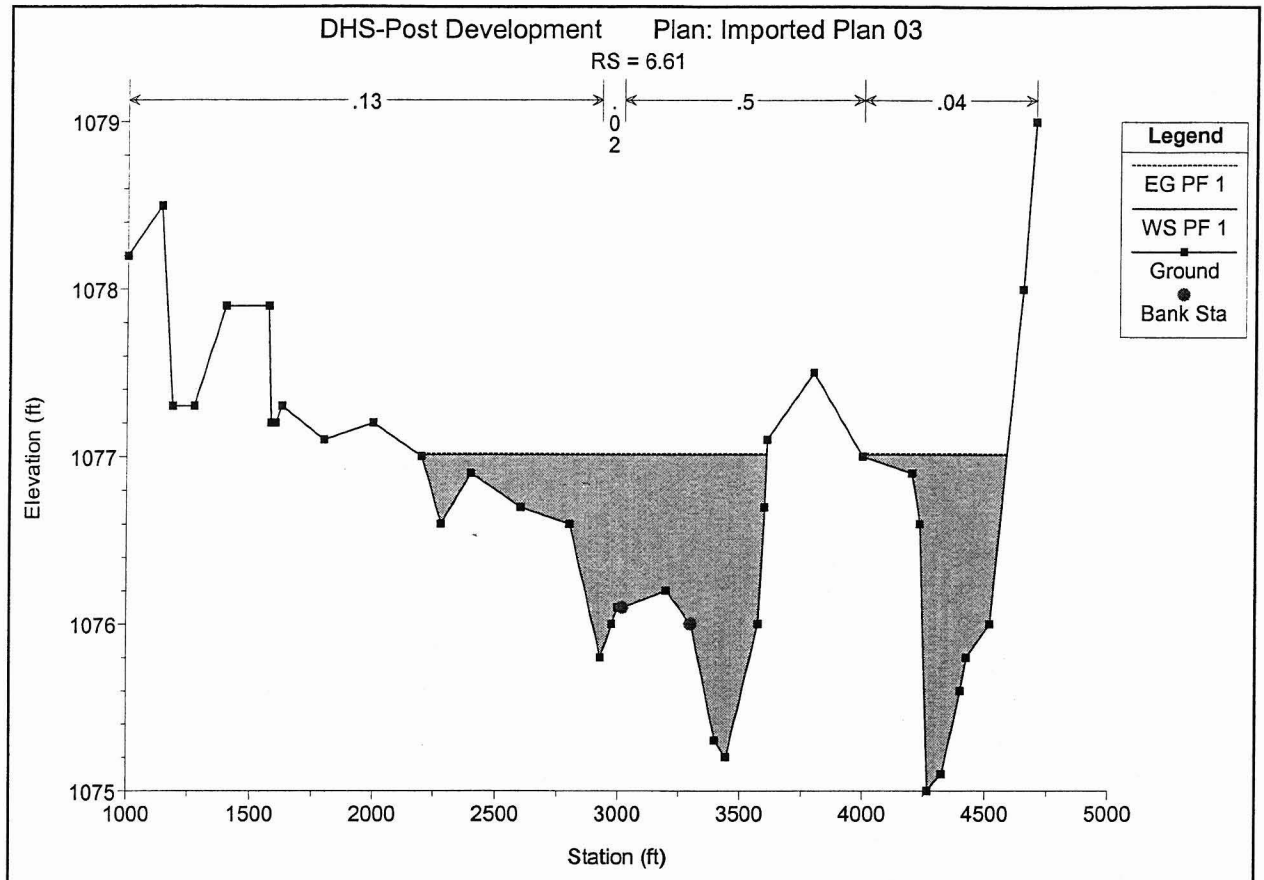

DHS-Post Development Plan: Imported Plan 03
RS = 7.01 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.13
.02
.06
1082.5
1082.0
1081.5
1081.0
1080.5
1080.0
1079.5
1079.0
1078.5
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

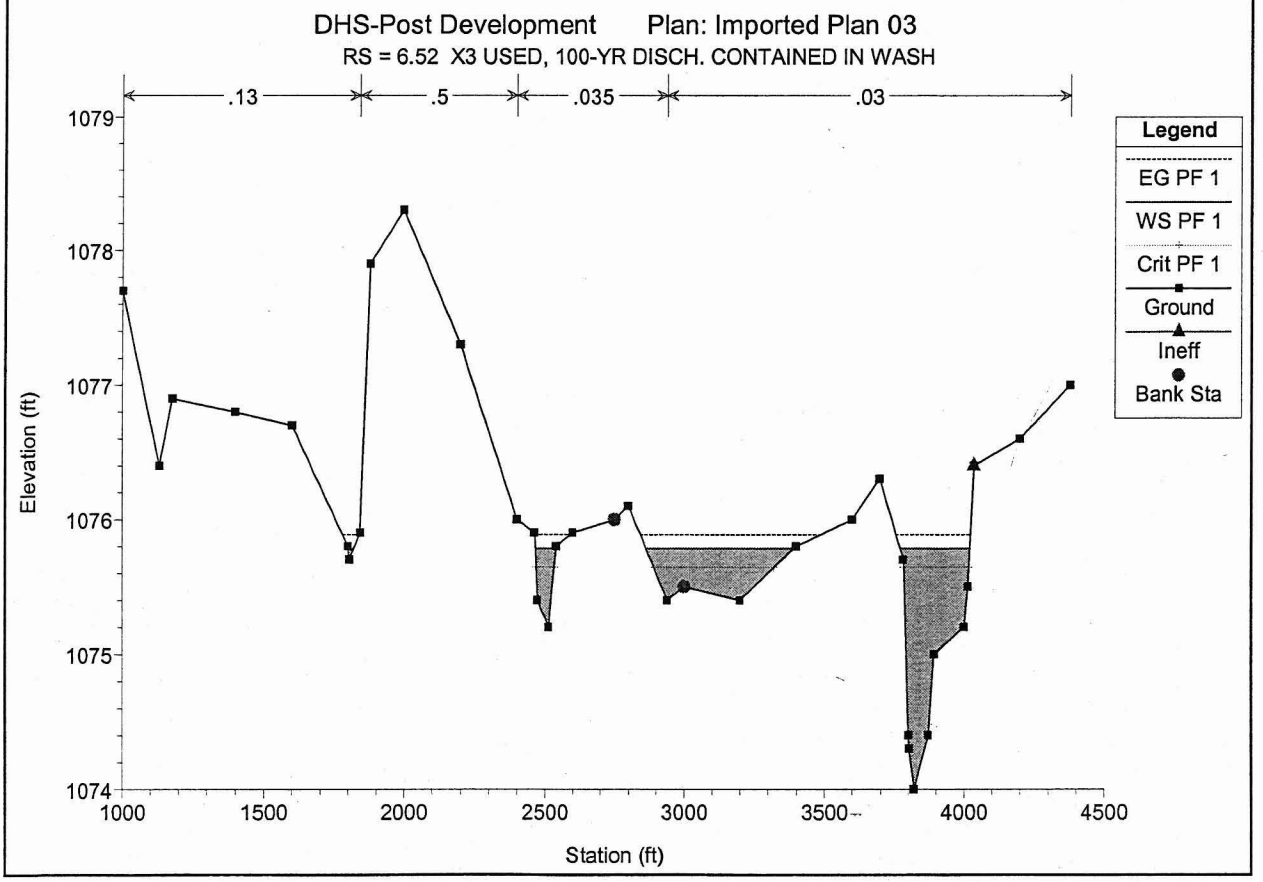

DHS-Post Development Plan: Imported Plan 03
RS = 6.94 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.06
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1105
1100
1095
1090
1085
1080
1075
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

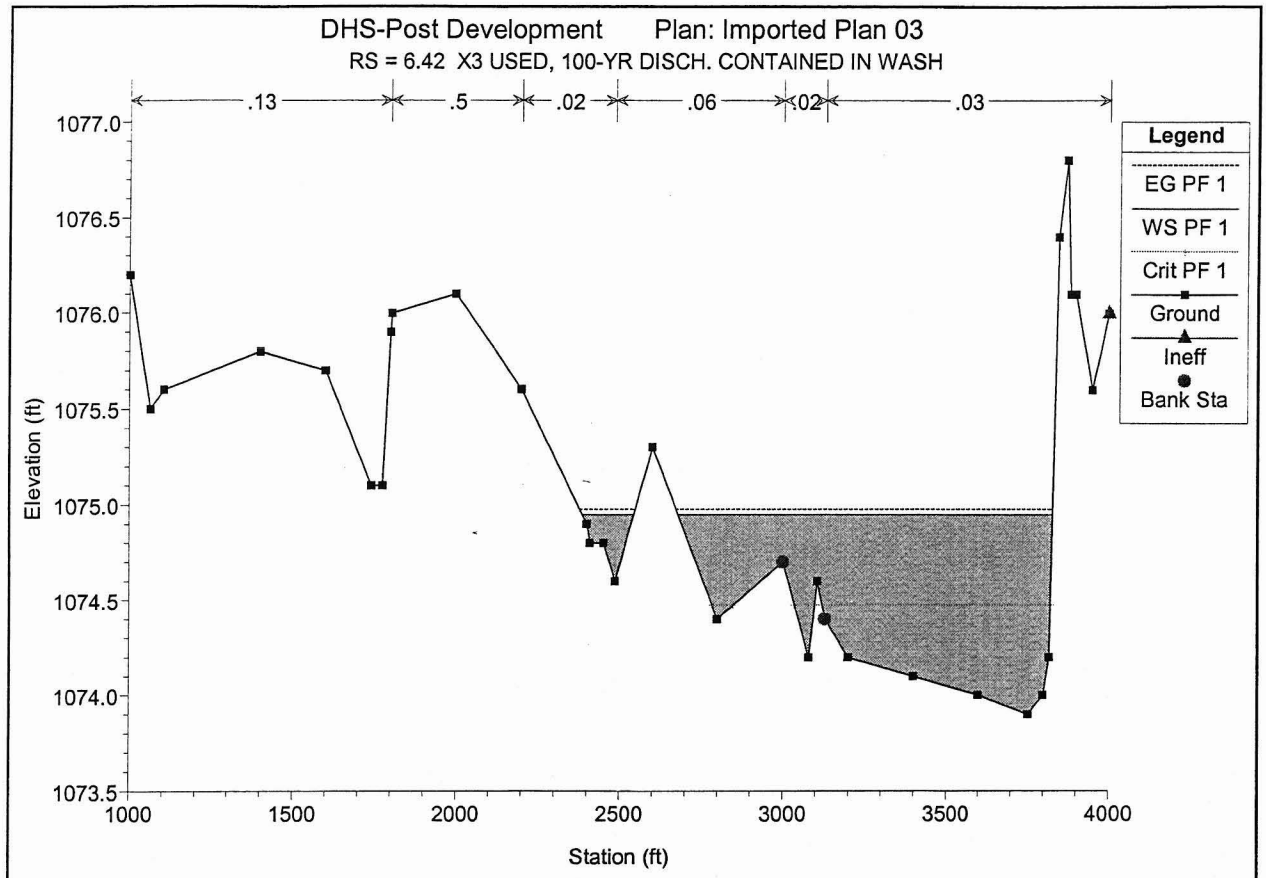

DHS-Post Development Plan: Imported Plan 03
RS = 6.88 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.13
.06
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1094
1092
1090
1088
1086
1084
1082
1080
1078
1076
1000
1500
2000
2500
3000
3500
4000
Station (ft)

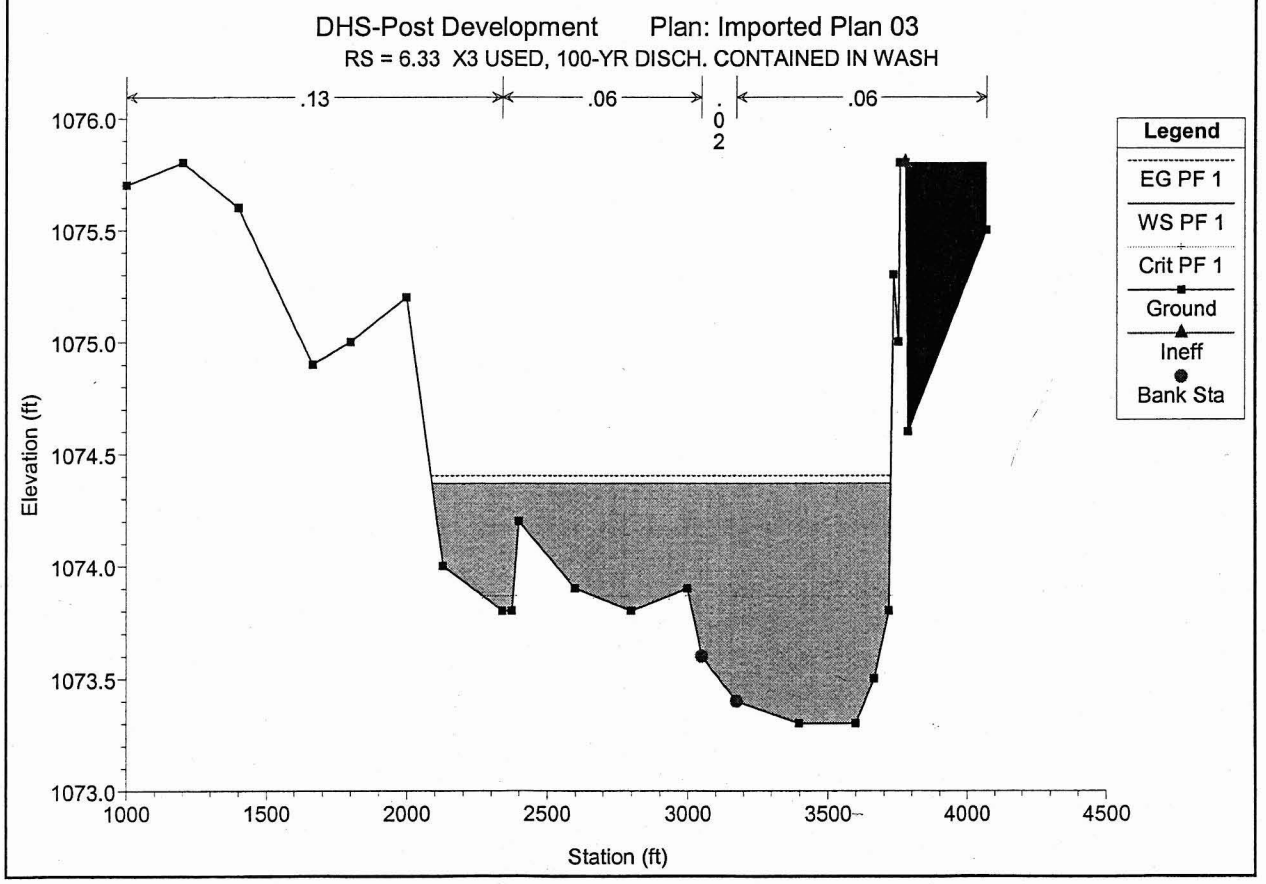

DHS-Post Development Plan: Imported Plan 03
RS = 6.8
.1
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1080.0
1079.5
1079.0
1078.5
1078.0
1077.5
1077.0
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

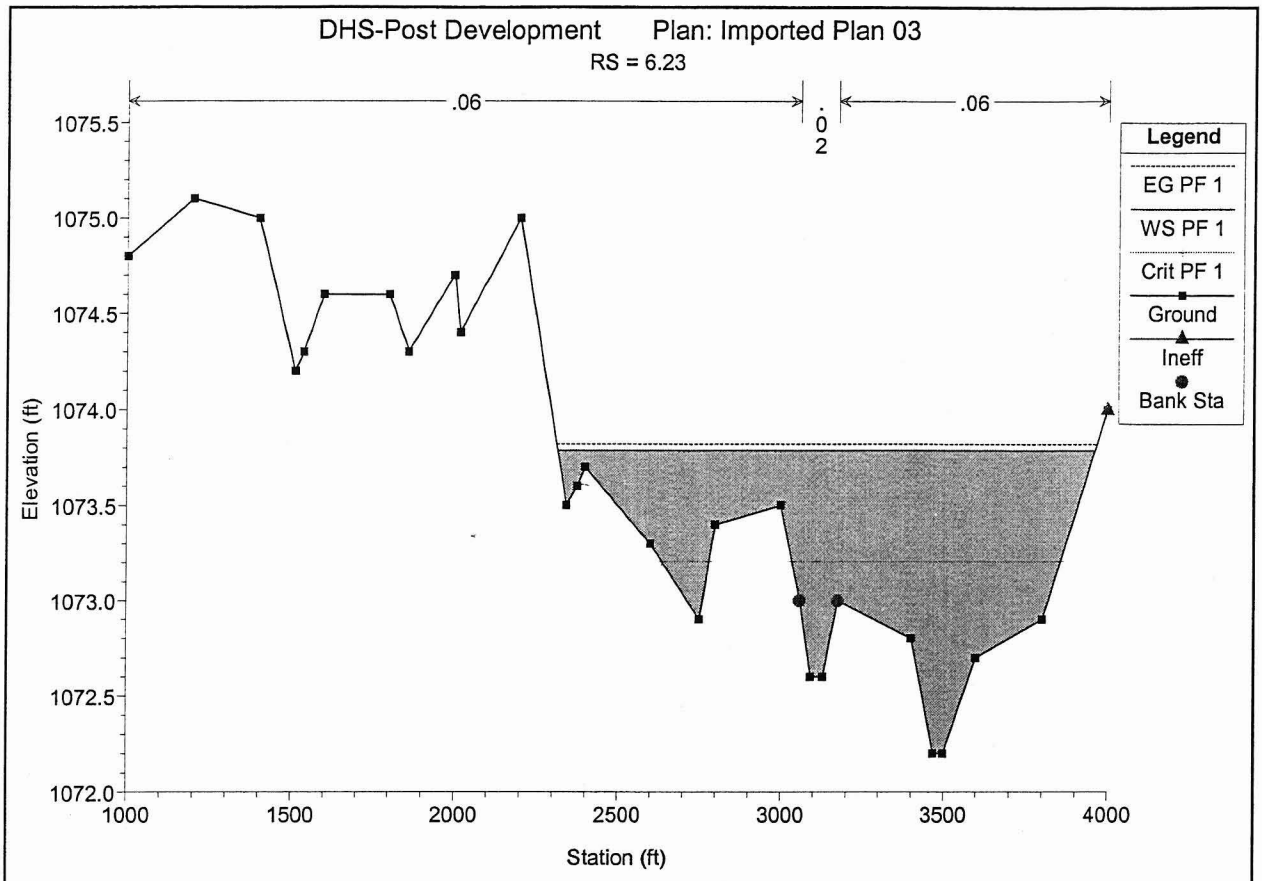

DHS-Post Development Plan: Imported Plan 03
RS = 6.7
.13
.02
.13
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1079.5
1079.0
1078.5
1078.0
1077.5
1077.0
1076.5
1076.0
1000
2000
3000
4000
5000
Station (ft)

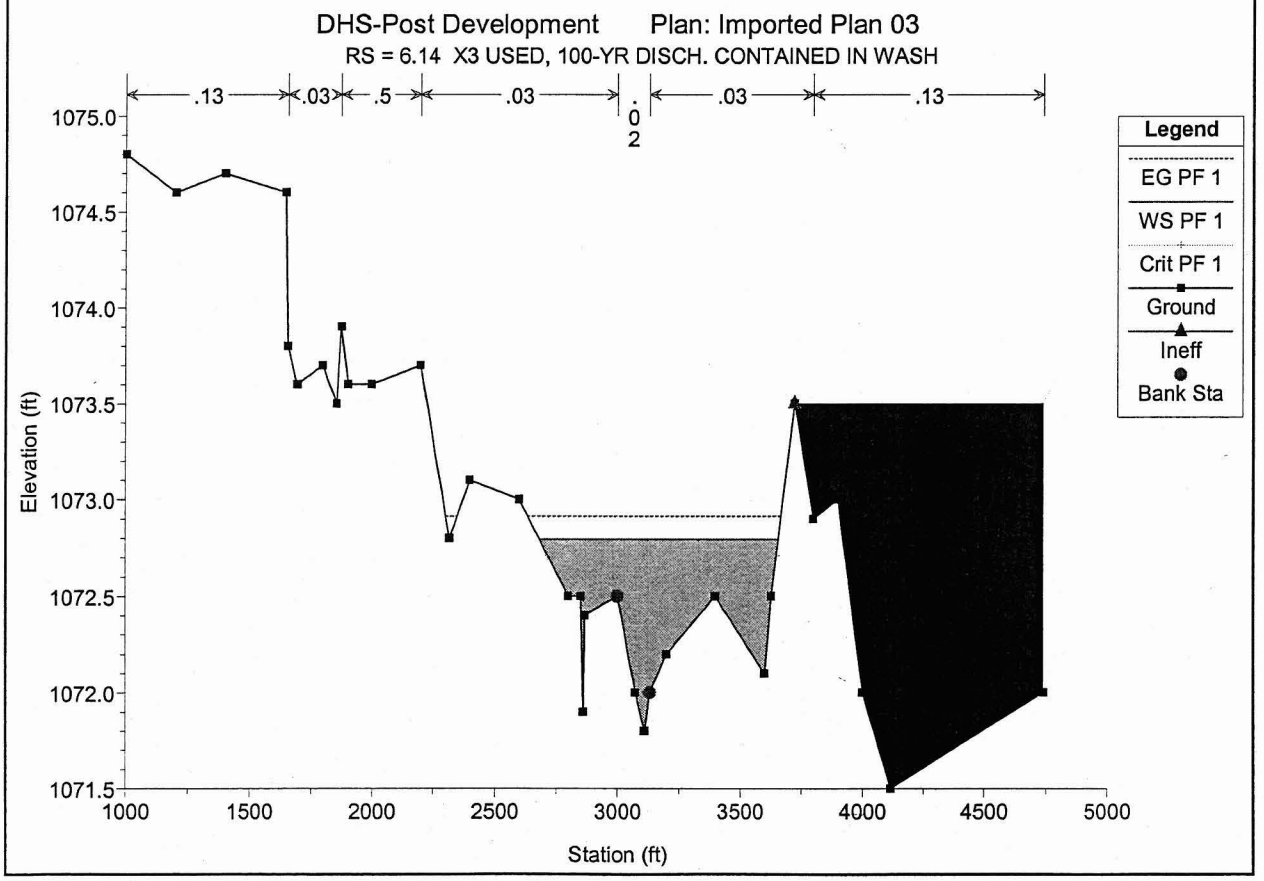

DHS-Post Development Plan: Imported Plan 03
RS = 6.61
.13
.02
.5
.04
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1079
1078
1077
1076
1075
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)

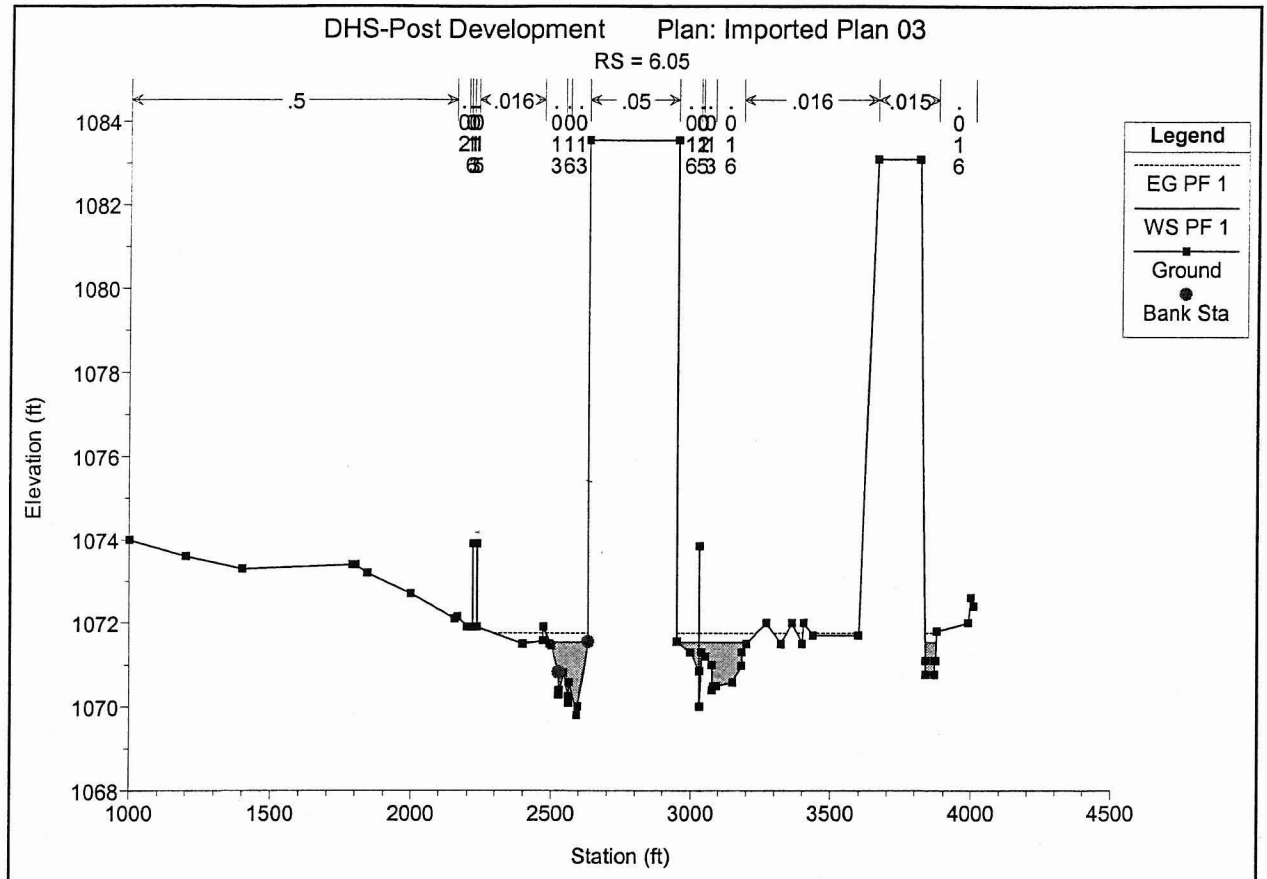

DHS-Post Development Plan: Imported Plan 03
RS = 6.52 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.035
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1079
1078
1077
1076
1075
1074
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

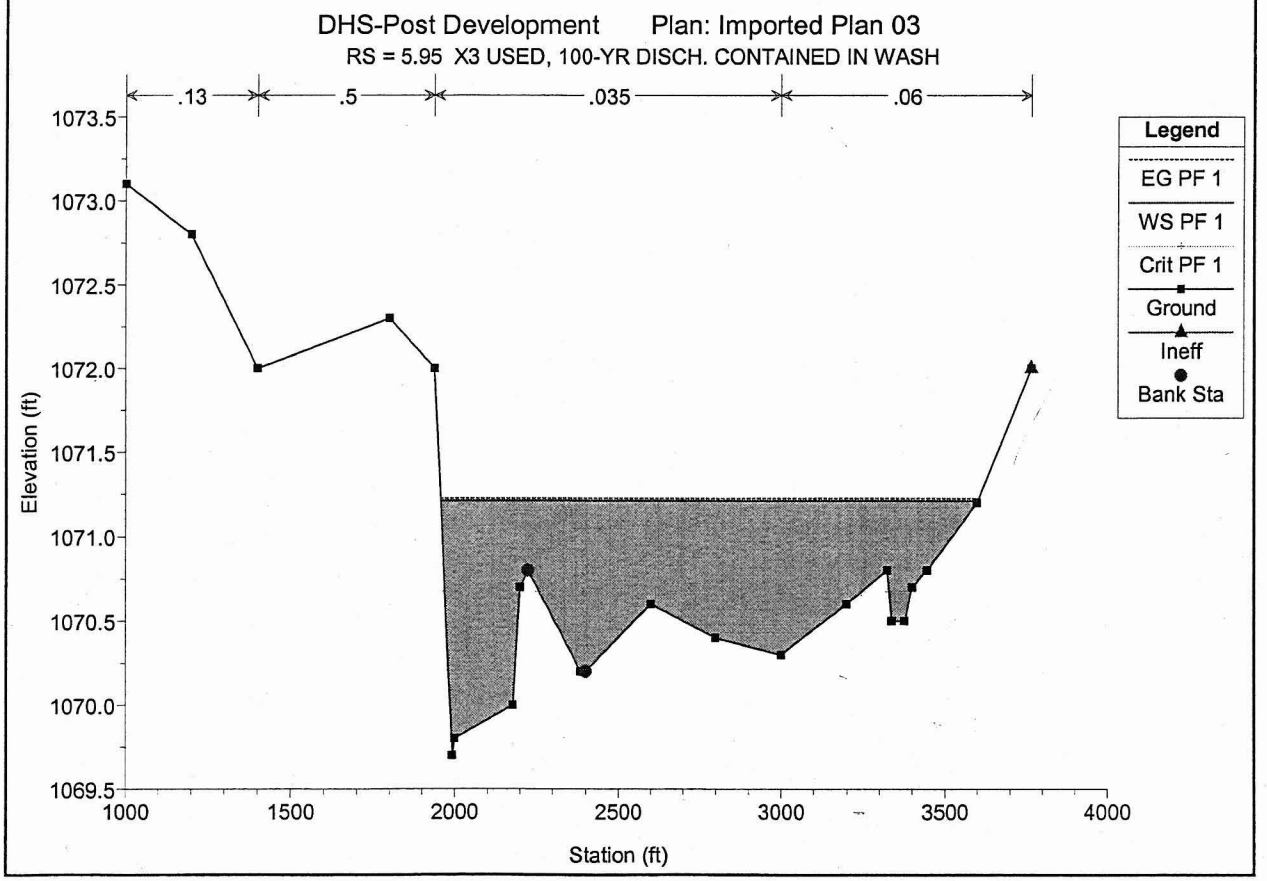

DHS-Post Development Plan: Imported Plan 03
RS = 6.42 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.02
.06
.02
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

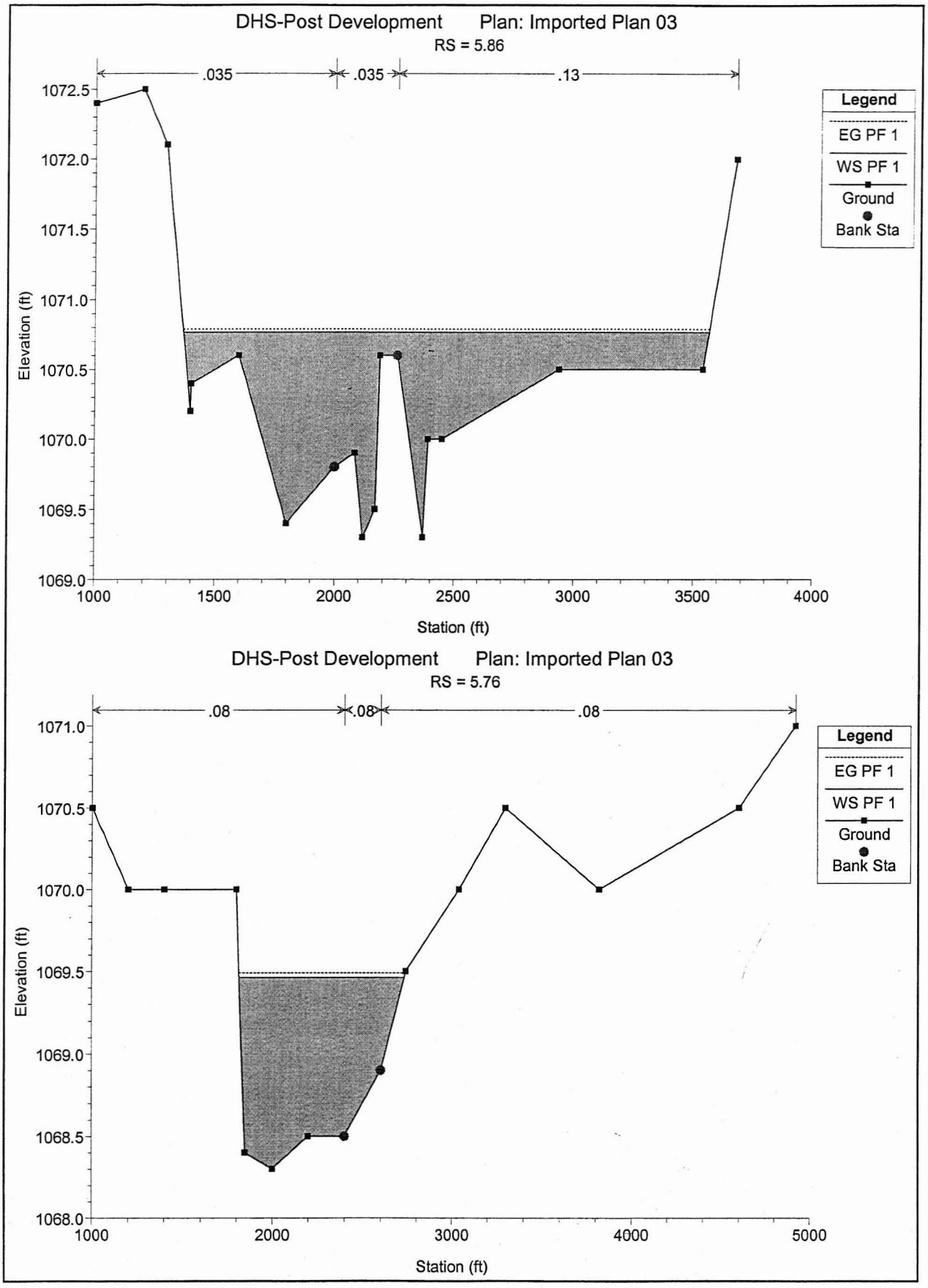

DHS-Post Development Plan: Imported Plan 03
RS = 6.33 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.06
.02
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

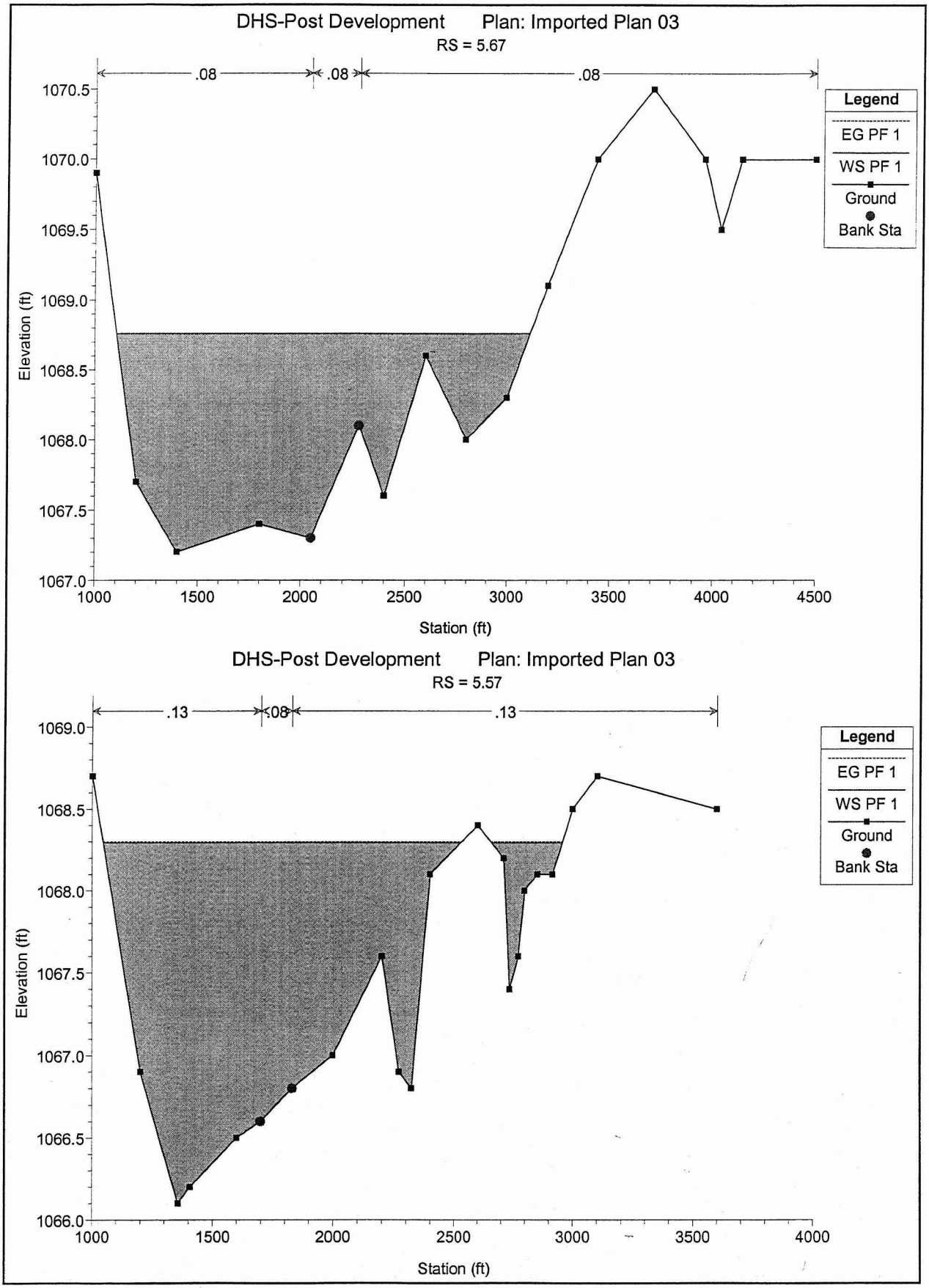

DHS-Post Development Plan: Imported Plan 03
RS = 6.23
.06
.02
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1075.5
1075.0
1074.5
1074.0
1073.5
1073.0
1072.5
1072.0
1000
1500
2000
2500
3000
3500
4000
Station (ft)

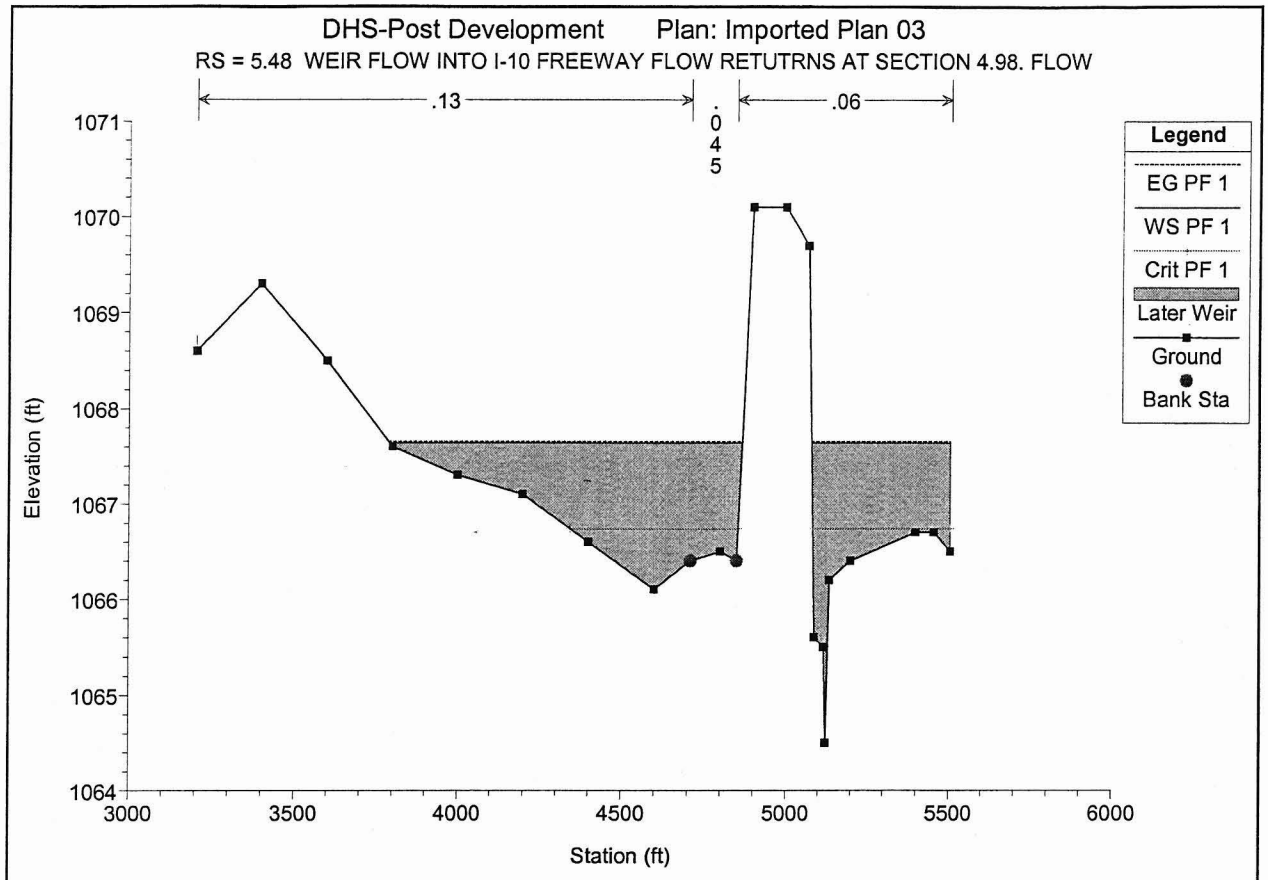

DHS-Post Development Plan: Imported Plan 03
RS = 6.14 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.03
.5
.03
.02
.03
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1075.0
1074.5
1074.0
1073.5
1073.0
1072.5
1072.0
1071.5
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)

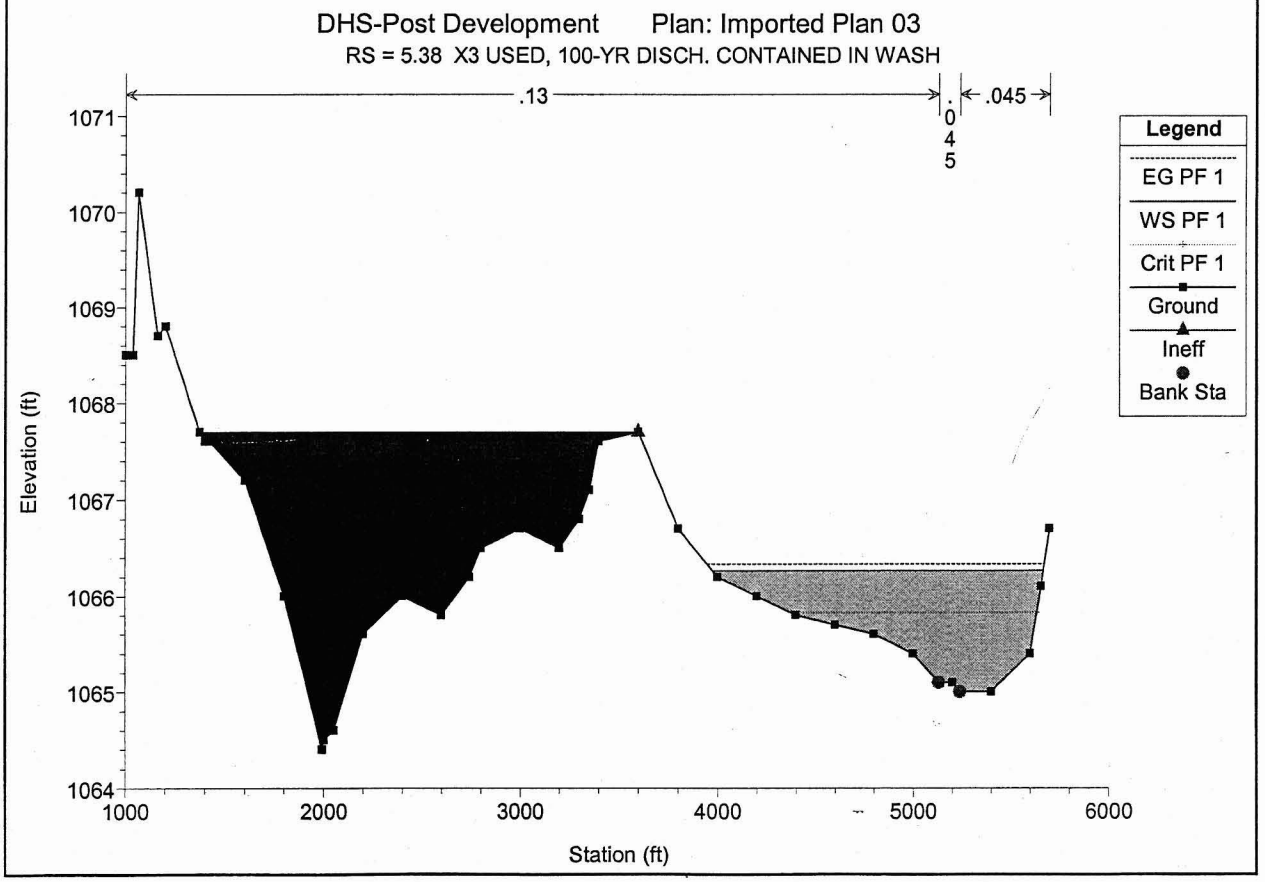

DHS-Post Development Plan: Imported Plan 03
RS = 6.05
.5
.016
.05
.016
.015
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

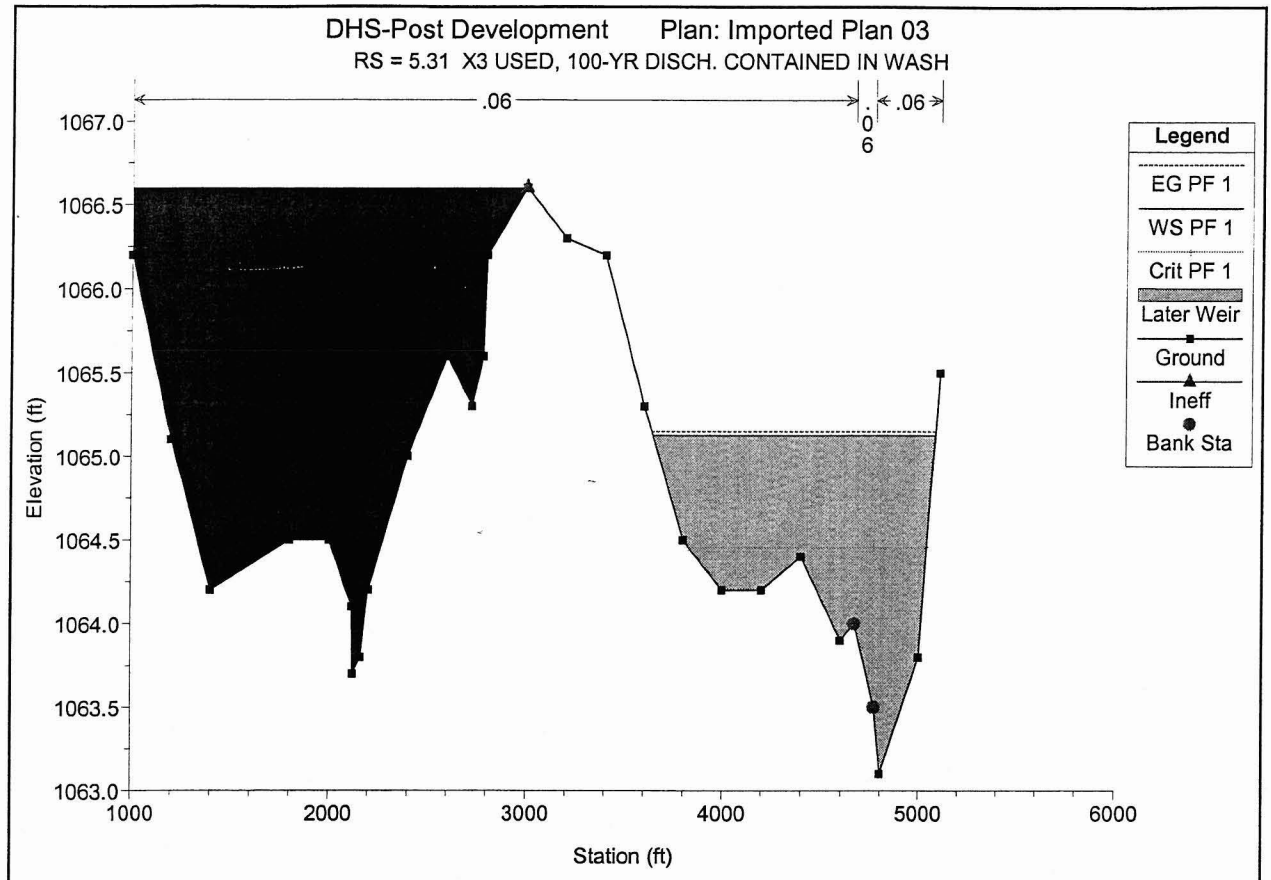

DHS-Post Development Plan: Imported Plan 03
RS = 5.95 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.035
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

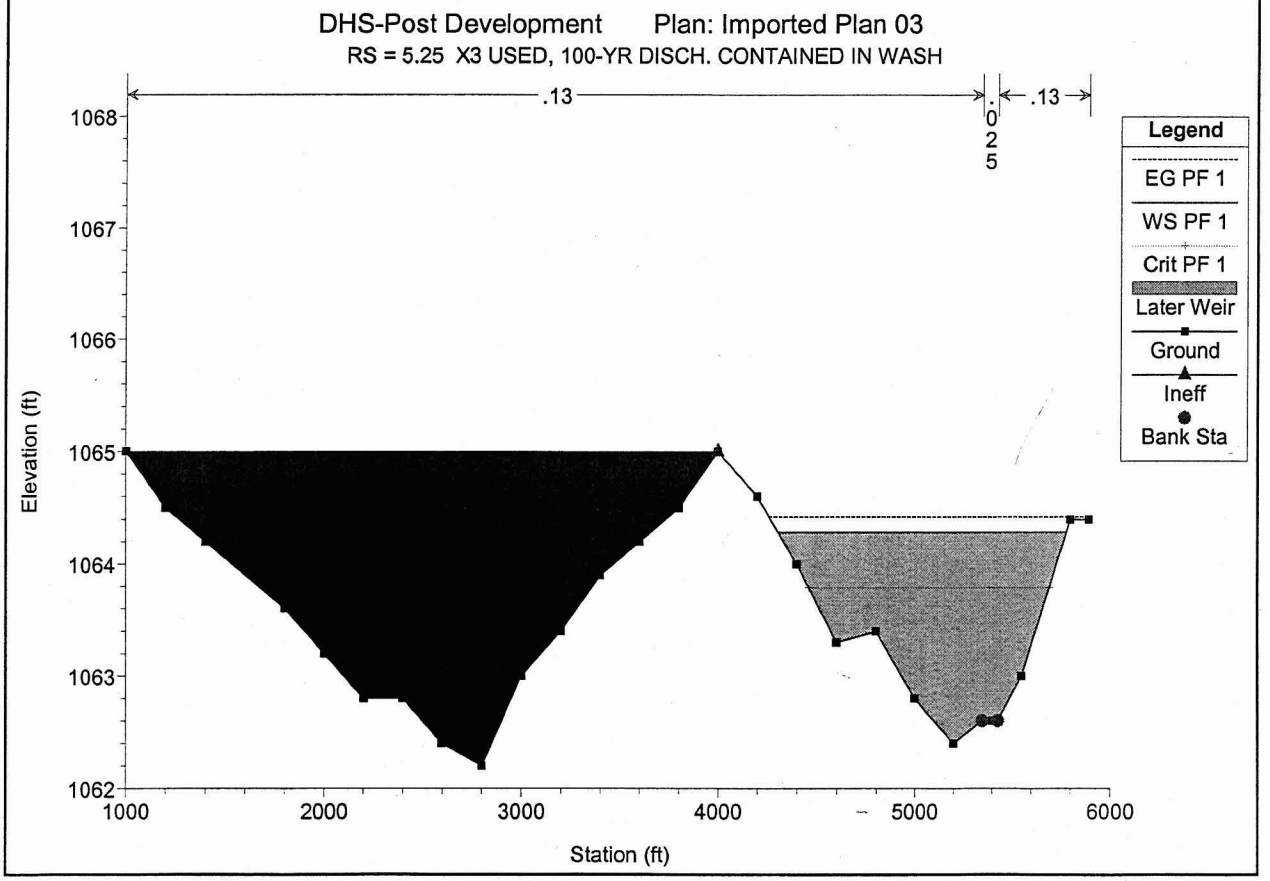

DHS-Post Development Plan: Imported Plan 03
RS = 5.86
.035
.035
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development Plan: Imported Plan 03
RS = 5.76
.08
.08
.08
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

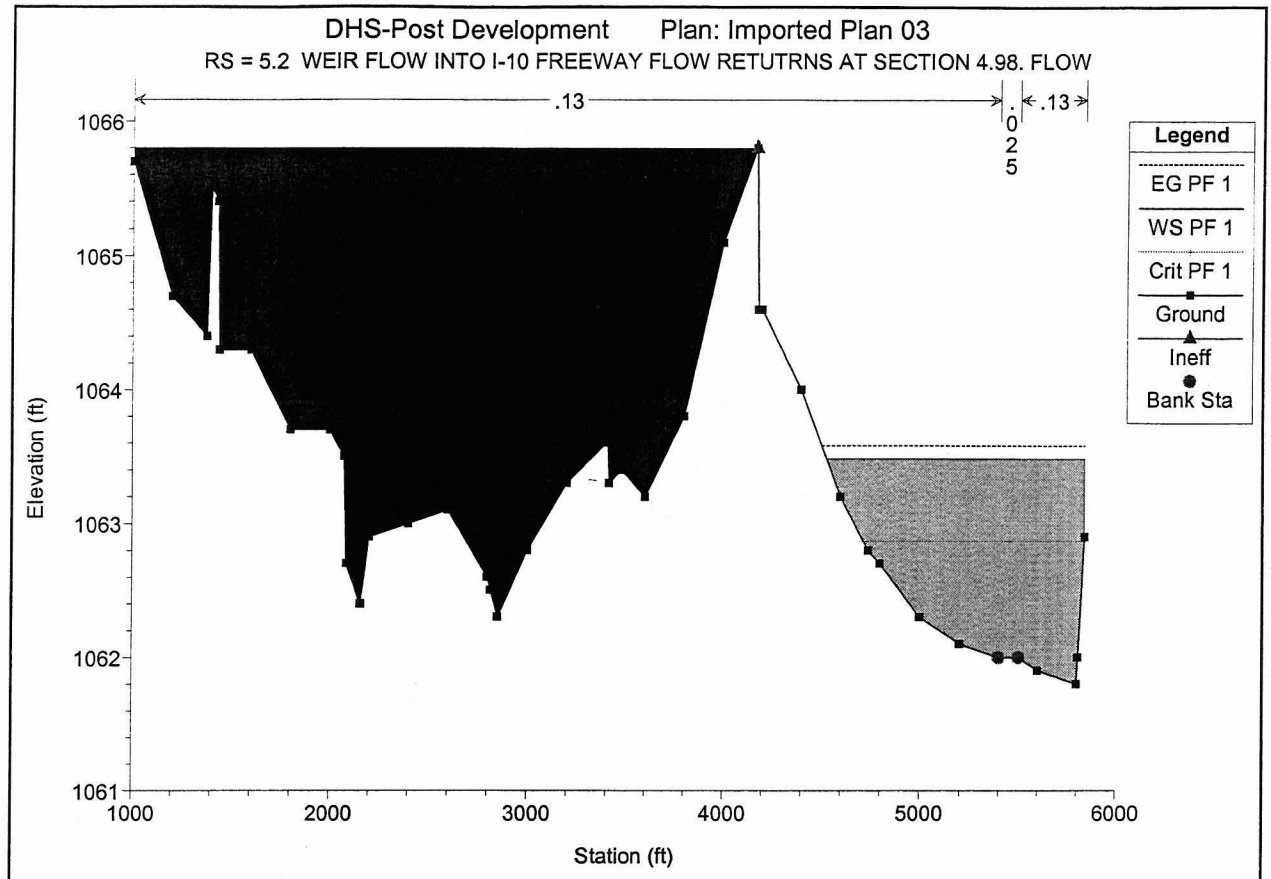

DHS-Post Development Plan: Imported Plan 03
RS = 5.67
.08
.08
.08
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development Plan: Imported Plan 03
RS = 5.57
.13
.08
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

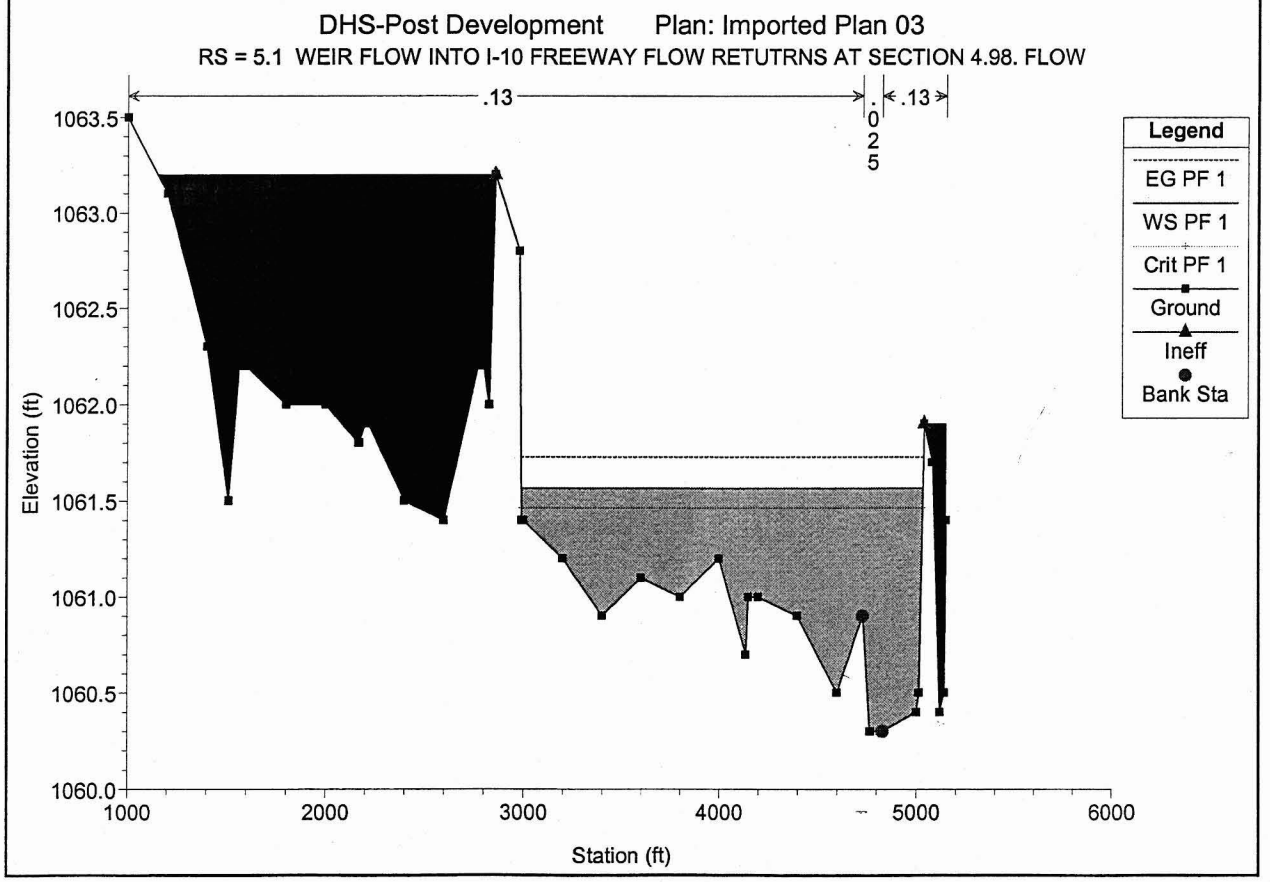

DHS-Post Development Plan: Imported Plan 03
RS = 5.48 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.045
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Bank Sta
Elevation (ft)
Station (ft)
1071
1070
1069
1068
1067
1066
1065
1064
3000
3500
4000
4500
5000
5500
6000

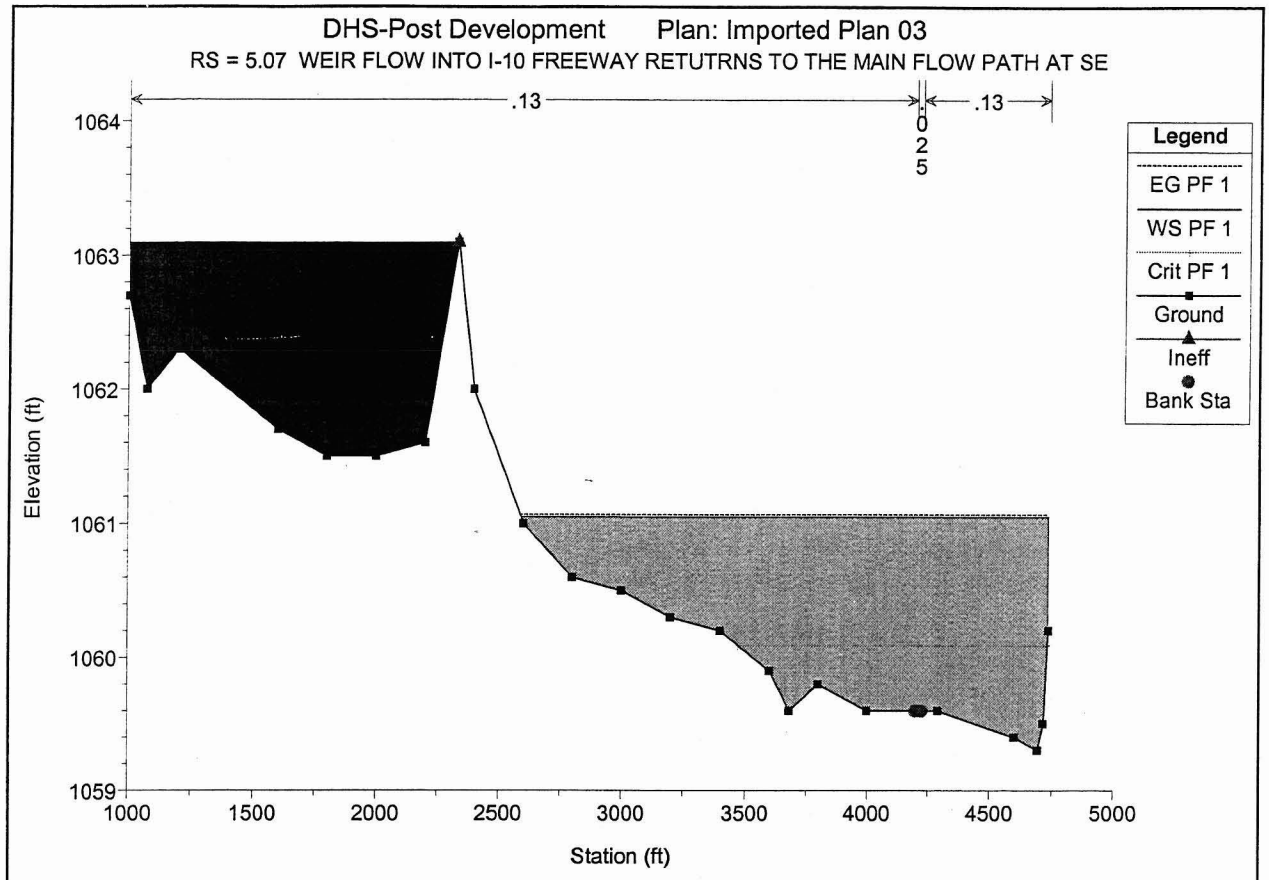

DHS-Post Development Plan: Imported Plan 03
RS = 5.38 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1071
1070
1069
1068
1067
1066
1065
1064
1000
2000
3000
4000
5000
6000

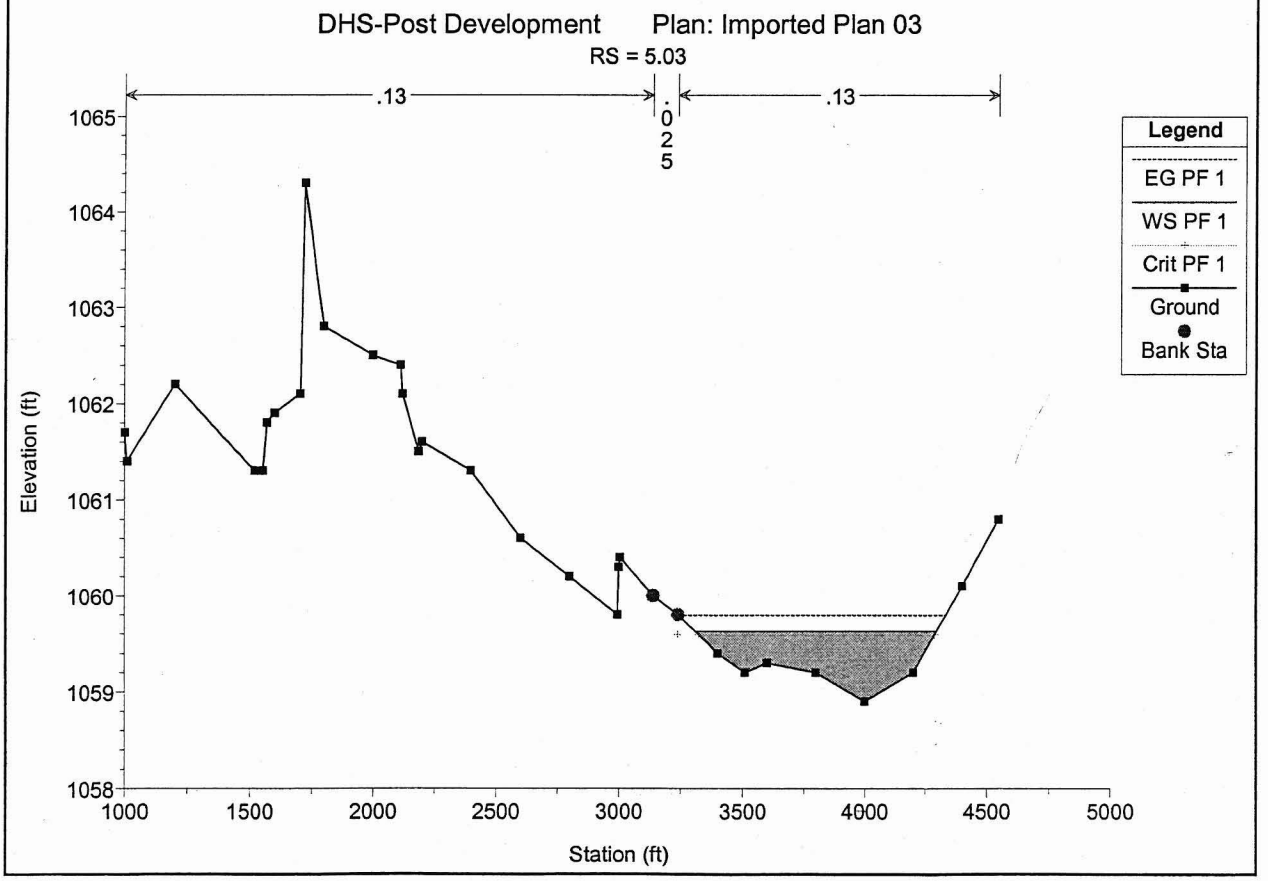

DHS-Post Development Plan: Imported Plan 03
RS = 5.31 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.06
.06
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1067.0
1066.5
1066.0
1065.5
1065.0
1064.5
1064.0
1063.5
1063.0
1000
2000
3000
4000
5000
6000

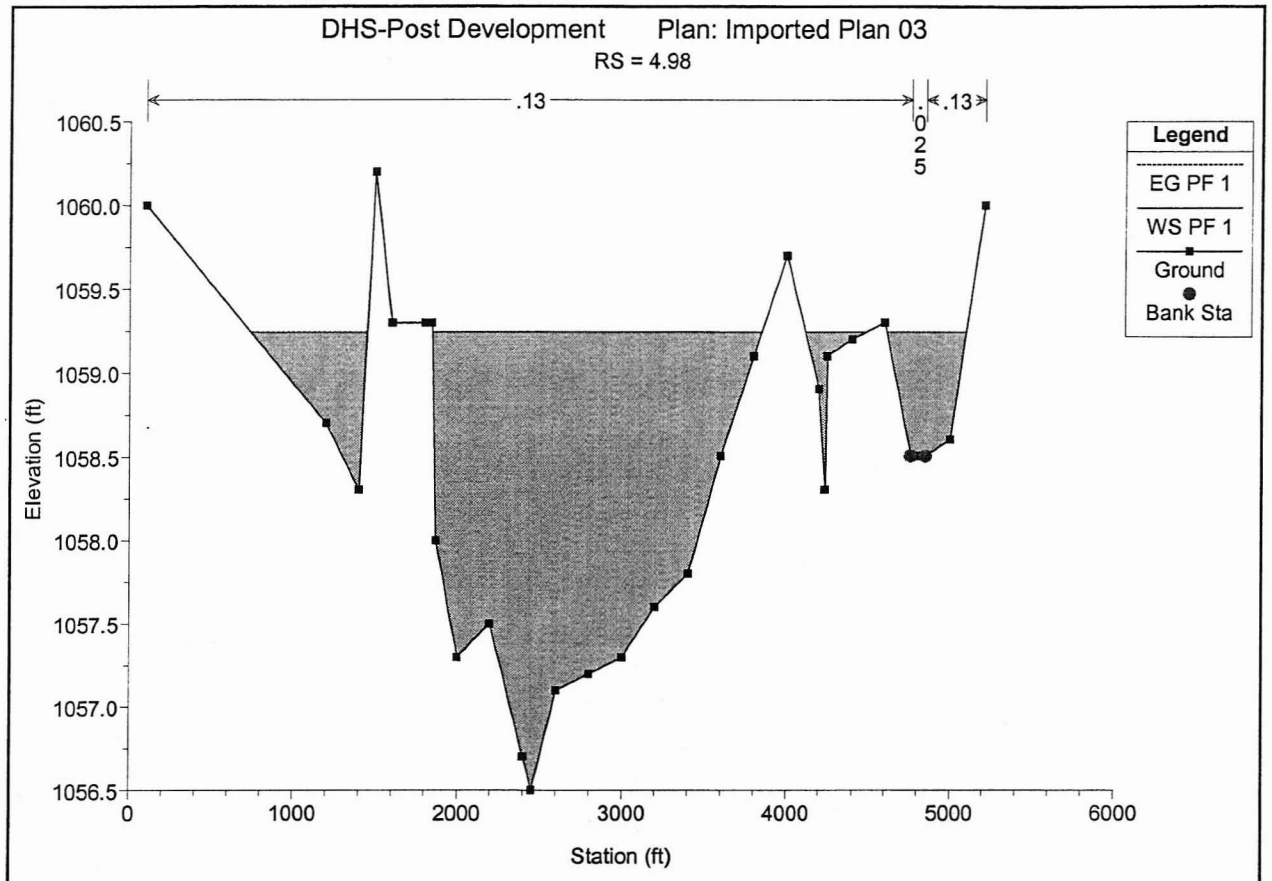

DHS-Post Development Plan: Imported Plan 03
RS = 5.25 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.13
.025
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1068
1067
1066
1065
1064
1063
1062
1000
2000
3000
4000
5000
6000

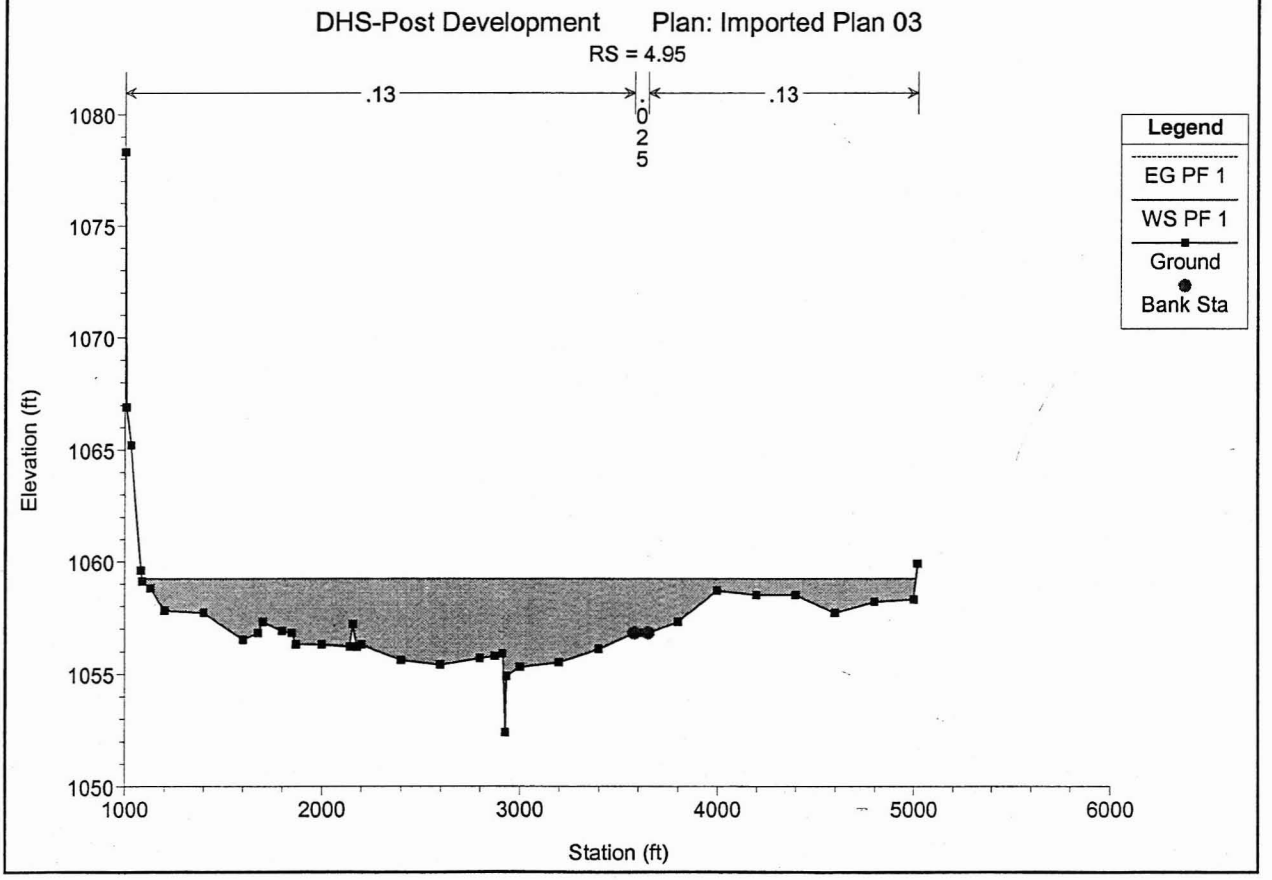

DHS-Post Development Plan: Imported Plan 03
RS = 5.2 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1066
1065
1064
1063
1062
1061
1000
2000
3000
4000
5000
6000
Station (ft)

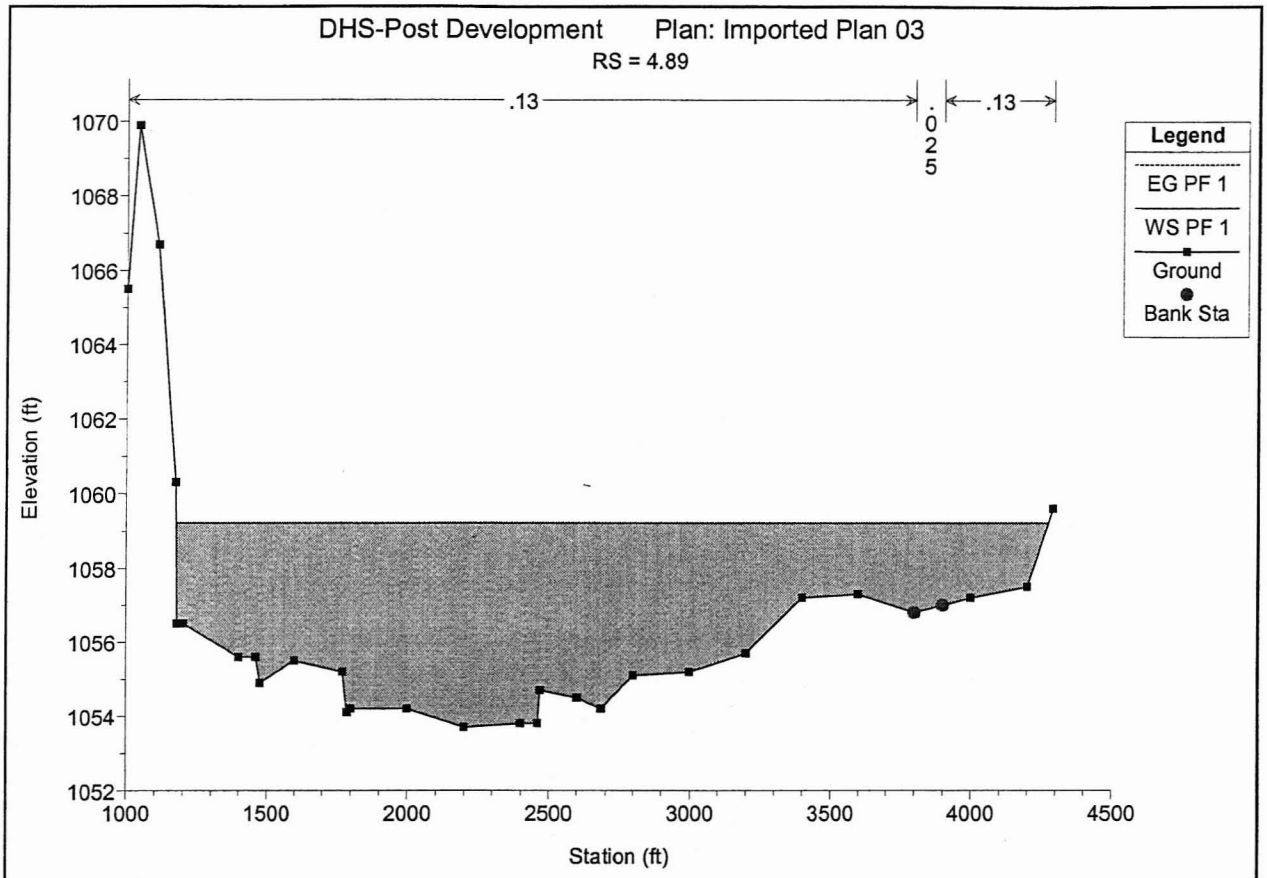

DHS-Post Development Plan: Imported Plan 03
RS = 5.1 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1063.5
1063.0
1062.5
1062.0
1061.5
1061.0
1060.5
1060.0
1000
2000
3000
4000
5000
6000
Station (ft)

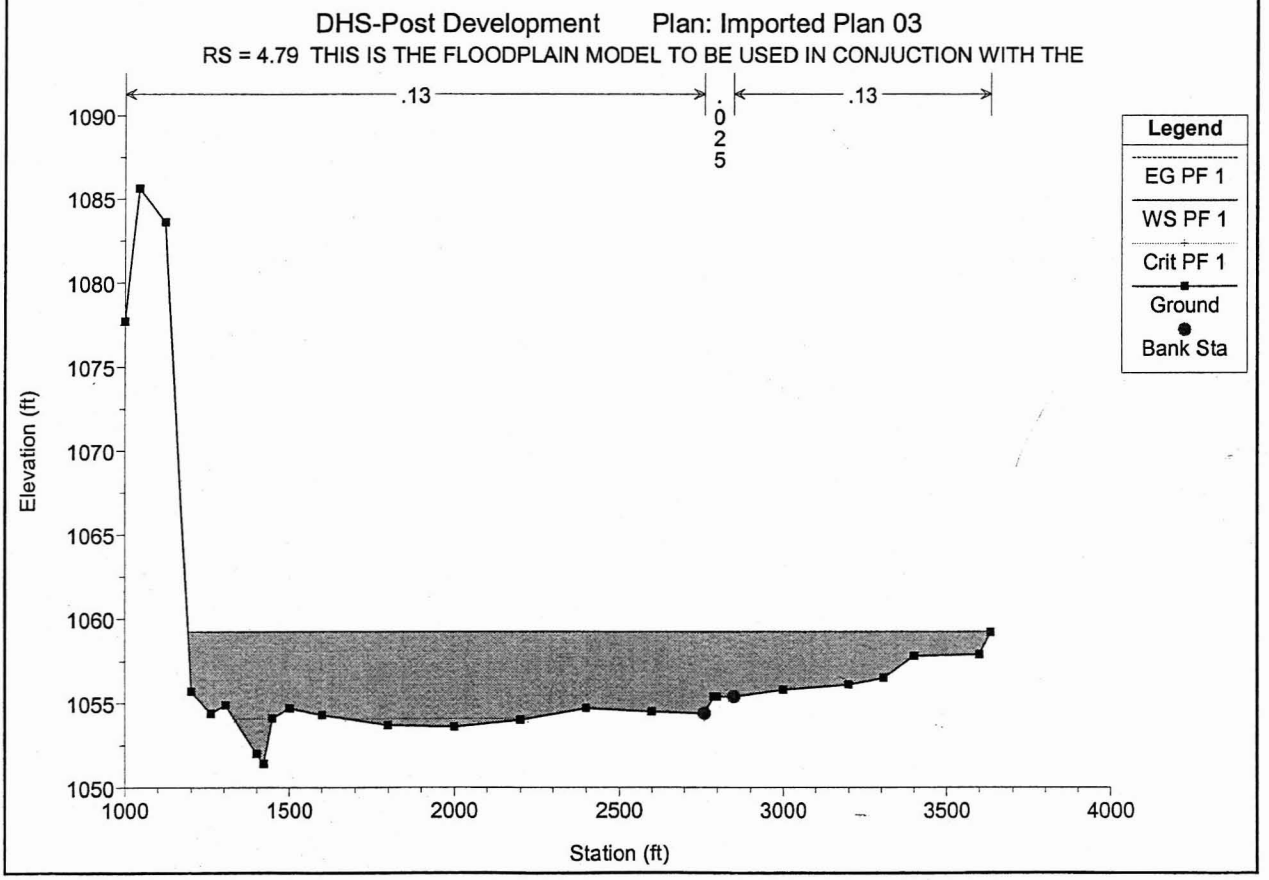

DHS-Post Development Plan: Imported Plan 03
RS = 5.07 WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SE
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1064
1063
1062
1061
1060
1059
1000
1500
2000
2500
3000
3500
4000
4500
5000


DHS-Post Development Plan: Imported Plan 03
RS = 5.03
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1065
1064
1063
1062
1061
1060
1059
1058
1000
1500
2000
2500
3000
3500
4000
4500
5000


DHS-Post Development Plan: Imported Plan 03
RS = 4.98
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1060.5
1060.0
1059.5
1059.0
1058.5
1058.0
1057.5
1057.0
1056.5
0
1000
2000
3000
4000
5000
6000


DHS-Post Development Plan: Imported Plan 03
RS = 4.95
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1080
1075
1070
1065
1060
1055
1050
1000
2000
3000
4000
5000
6000


DHS-Post Development Plan: Imported Plan 03
RS = 4.89
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1070
1068
1066
1064
1062
1060
1058
1056
1054
1052
1000
1500
2000
2500
3000
3500
4000
4500


DHS-Post Development Plan: Imported Plan 03
RS = 4.79 THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1090
1085
1080
1075
1070
1065
1060
1055
1050
1000
1500
2000
2500
3000
3500
4000

Appendix I
HEC-RAS DHS Post Development/ Parking Garage Model

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	9.61	1237.00	1118.50	1119.94	1119.28	1119.95	0.016005	1.08	1203.81	1480.45	0.20
Reach-1	9.55	1237.00	1116.40	1117.96	1117.00	1117.97	0.002757	0.61	2015.98	1995.83	0.09
Reach-1	9.45	1237.00	1114.90	1116.33	1115.54	1116.34	0.003926	0.65	1918.42	2104.46	0.11
Reach-1	9.36	1237.00	1112.80	1114.14		1114.15	0.005213	0.70	1811.80	1859.45	0.12
Reach-1	9.27	1237.00	1110.80	1112.54		1112.65	0.001910	4.26	1707.97	1827.07	0.61
Reach-1	9.17	1237.00	1109.60	1110.92	1110.64	1111.03	0.006627	3.49	1059.41	2022.23	0.61
Reach-1	9.08	1210.00	1107.30	1108.56	1108.30	1108.72	0.003245	4.73	1359.38	1861.18	0.77
Reach-1	8.98	1210.00	1106.00	1107.37		1107.47	0.001939	3.87	1962.24	2828.35	0.60
Reach-1	8.89	1210.00	1104.90	1105.94		1106.02	0.004759	4.55	1556.36	2547.13	0.88
Reach-1	8.79	1210.00	1103.00	1104.19		1104.25	0.002715	3.66	1710.89	2181.16	0.67
Reach-1	8.7	1210.00	1101.40	1102.42		1102.56	0.004251	4.80	1566.60	2758.75	0.85
Reach-1	8.61	1210.00	1099.90	1100.62		1100.65	0.003357	3.18	1938.72	2786.99	0.70
Reach-1	8.51	1210.00	1098.50	1098.96	1098.63	1098.98	0.003415	2.33	1283.50	2887.68	0.65
Reach-1	8.42	1210.00	1096.30	1097.09	1096.80	1097.12	0.004064	3.13	1441.35	3030.72	0.75
Reach-1	8.32	1210.00	1095.10	1095.99	1095.56	1096.02	0.001419	2.42	1740.76	3142.63	0.48
Reach-1	8.23	1210.00	1094.40	1094.92		1094.93	0.003702	1.60	1218.09	2441.97	0.41
Reach-1	8.18	1375.00	1092.80	1093.70	1093.53	1093.74	0.004973	2.24	872.73	2151.59	0.49
Reach-1	8.08	1375.00	1091.80	1092.79		1092.81	0.000952	1.19	1385.10	2226.90	0.22
Reach-1	7.99	1375.00	1090.70	1091.40	1091.23	1091.49	0.013231	3.55	867.86	1834.11	0.83
Reach-1	7.89	1375.00	1089.30	1089.48		1089.51	0.001660	0.74	1274.24	2464.16	0.38
Reach-1	7.8	1375.00	1087.20	1088.13	1087.90	1088.19	0.004738	4.13	1039.12	2423.09	0.85
Reach-1	7.71	1375.00	1085.50	1086.56		1086.60	0.002351	3.75	1826.99	3125.45	0.64
Reach-1	7.66	1691.00	1084.50	1085.73		1085.81	0.005330	4.18	1162.59	2417.10	0.90
Reach-1	7.57	1691.00	1083.40	1085.18	1084.73	1085.20	0.000534	2.10	2682.16	4170.48	0.32
Reach-1	7.48	1691.00	1084.00	1084.31	1084.10	1084.38	0.025525	5.44	1447.54	3974.46	1.72
Reach-1	7.38	1691.00	1082.00	1083.26		1083.28	0.000752	2.24	2942.59	4009.52	0.37
Reach-1	7.29	1691.00	1081.50	1082.69		1082.72	0.001923	2.97	2483.53	3220.81	0.56
Reach-1	7.2	1691.00	1081.40	1081.81		1081.82	0.001657	1.52	1864.16	2790.65	0.45
Reach-1	7.11	1865.00	1079.80	1081.09	1080.54	1081.12	0.001356	2.77	2245.51	2820.14	0.48
Reach-1	7.06	Lat. Weir									
Reach-1	7.01	1551.77	1079.50	1080.12		1080.16	0.003063	2.98	1586.74	2772.30	0.67
Reach-1	6.96	Lat. Weir									
Reach-1	6.94	1270.50	1078.70	1079.48		1079.49	0.001084	1.71	1498.70	2239.67	0.39
Reach-1	6.91	Lat. Weir									
Reach-1	6.88	980.16	1079.00	1079.23		1079.24	0.000448	0.50	1805.51	2437.16	0.21
Reach-1	6.8	980.16	1078.00	1078.91		1078.93	0.001362	2.42	1852.32	2184.64	0.47

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

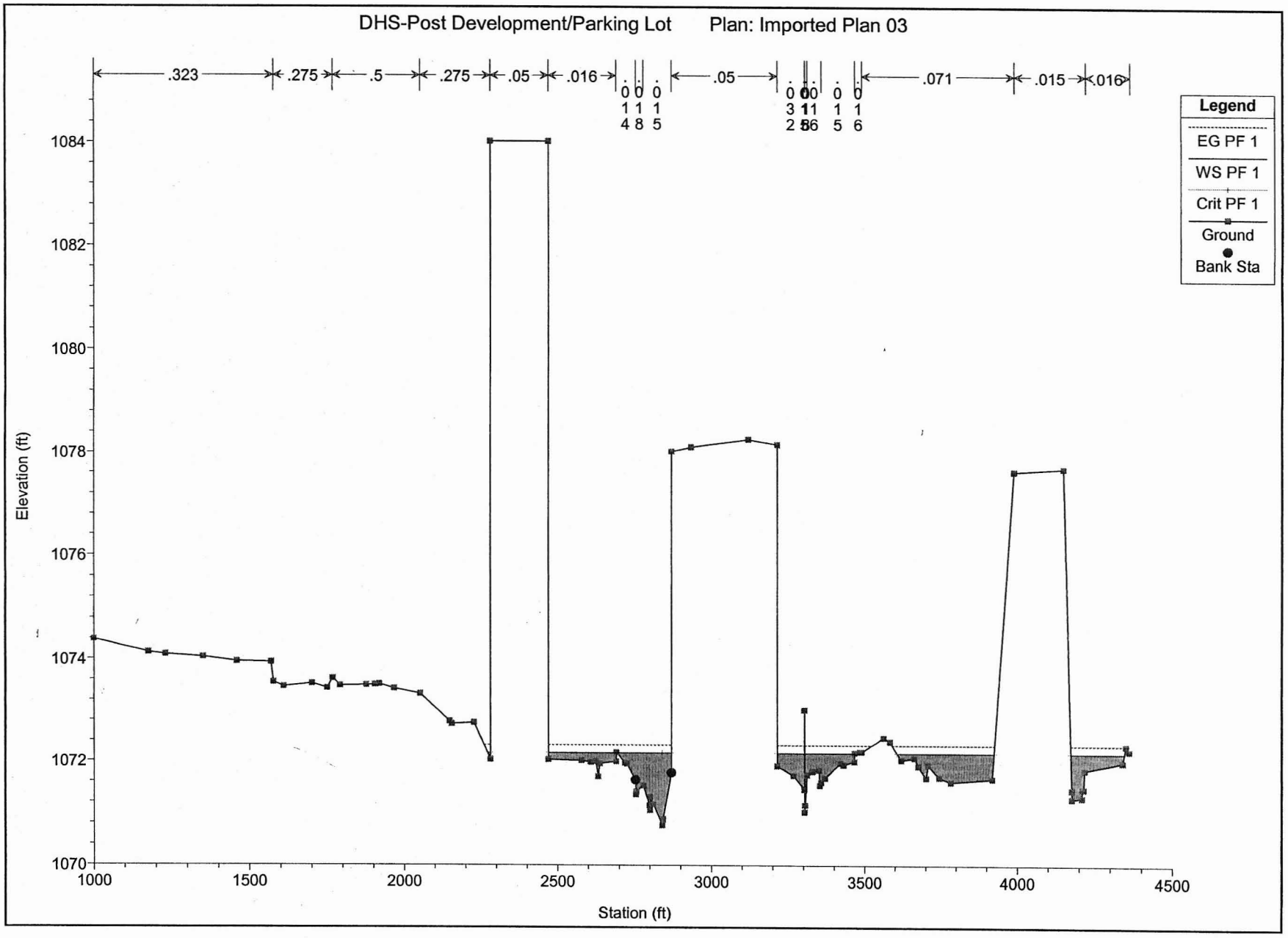
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	6.7	980.16	1077.50	1077.98		1077.99	0.002766	0.31	1457.59	1781.48	0.09
Reach-1	6.61	980.16	1076.00	1077.01		1077.02	0.001440	0.10	1490.56	2004.75	0.02
Reach-1	6.52	980.16	1075.40	1075.79	1075.64	1075.89	0.004516	1.34	406.48	883.43	0.46
Reach-1	6.42	980.16	1074.20	1074.94	1074.47	1074.97	0.000956	1.44	802.32	1304.30	0.36
Reach-1	6.33	980.16	1073.40	1074.37	1073.87	1074.41	0.001360	2.50	1096.59	1635.87	0.47
Reach-1	6.23	980.16	1072.60	1073.76	1073.21	1073.80	0.001087	2.49	1128.39	1638.71	0.43
Reach-1	6.14	980.16	1071.80	1072.86	1072.73	1072.94	0.002986	3.38	492.85	1026.12	0.68
Reach-1	6.09312*	980.16	1070.76	1072.16	1072.16	1072.32	0.002184	4.33	448.12	1150.12	0.79
Reach-1	6.05	1005.16	1069.80	1071.53	1071.42	1071.75	0.001609	4.52	283.44	468.67	0.78
Reach-1	5.95	1005.16	1070.20	1071.21	1070.67	1071.23	0.000600	0.85	1229.39	1645.13	
Reach-1	5.86	1005.16	1069.30	1070.77		1070.79	0.001404	1.39	1235.87	2197.84	
Reach-1	5.76	1005.16	1068.50	1069.46		1069.49	0.005350	1.13	781.09	915.43	
Reach-1	5.67	1005.16	1067.30	1068.76		1068.76	0.000677	0.50	1967.62	2010.02	0.09
Reach-1	5.57	1005.16	1066.60	1068.29		1068.30	0.001174	0.87	2002.98	1782.52	0.12
Reach-1	5.53	Lat. Weir									
Reach-1	5.48	1005.16	1066.40	1067.64	1066.74	1067.65	0.001324	1.35	1391.43	1501.51	0.22
Reach-1	5.38	1638.16	1065.00	1066.26	1065.82	1066.33	0.004495	2.47	1188.56	1692.77	0.40
Reach-1	5.31	1638.16	1063.50	1065.13	1064.46	1065.15	0.002060	1.39	1415.49	1439.67	0.21
Reach-1	5.25	1638.16	1062.60	1064.28	1063.79	1064.42	0.003140	4.71	1627.10	1473.28	0.64
Reach-1	5.23	Lat. Weir									
Reach-1	5.2	1500.64	1062.00	1063.48	1062.87	1063.58	0.002649	3.97	1531.00	1310.00	0.58
Reach-1	5.15	Lat. Weir									
Reach-1	5.1	1385.50	1060.30	1061.56	1061.46	1061.73	0.005717	4.96	1342.49	2042.70	0.81
Reach-1	5.08	Lat. Weir									
Reach-1	5.07	1329.42	1059.60	1061.05	1060.09	1061.07	0.001893	3.31	2290.63	2145.98	0.48
Reach-1	5.03	1329.42	1059.80	1059.63	1059.59	1059.79	0.270905		404.34	984.15	0.00
Reach-1	4.98	1329.42	1058.50	1059.24		1059.25	0.000495	1.08	3932.33	3570.93	0.22
Reach-1	4.95	1329.42	1056.80	1059.23		1059.23	0.000042	0.69	8942.84	3924.19	0.08
Reach-1	4.89	1329.42	1056.80	1059.22		1059.22	0.000017	0.42	11172.57	3099.71	0.05
Reach-1	4.79	1329.42	1054.40	1059.21	1054.08	1059.21	0.000013	0.54	10311.23	2443.45	0.05

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
		(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
Reach-1	9.61	1119.95	1119.94	0.02	1.98	0.00		712.24	524.76	1480.45
Reach-1	9.55	1117.97	1117.96	0.01	1.63	0.00	434.82	294.23	507.95	1995.83
Reach-1	9.45	1116.34	1116.33	0.01	2.19	0.00	383.22	256.32	597.47	2104.46
Reach-1	9.36	1114.15	1114.14	0.01	1.48	0.01	201.84	188.68	846.48	1859.45
Reach-1	9.27	1112.65	1112.54	0.11	1.62	0.00	386.67	489.81	360.52	1827.07
Reach-1	9.17	1111.03	1110.92	0.12	2.30	0.00	303.34	765.80	167.86	2022.23
Reach-1	9.08	1108.72	1108.56	0.16	1.23	0.02	508.66	557.45	143.89	1861.18
Reach-1	8.98	1107.47	1107.37	0.10	1.44	0.00	567.00	497.20	145.81	2828.35
Reach-1	8.89	1106.02	1105.94	0.08	1.76	0.01	797.24	294.22	118.53	2547.13
Reach-1	8.79	1104.25	1104.19	0.06	1.68	0.01	744.35	354.52	111.13	2181.16
Reach-1	8.7	1102.56	1102.42	0.14	1.88	0.03	561.88	473.62	174.50	2758.75
Reach-1	8.61	1100.65	1100.62	0.03	1.66	0.00	919.15	202.58	88.26	2786.99
Reach-1	8.51	1098.98	1098.96	0.02	1.86	0.00	1073.09	82.40	54.52	2887.68
Reach-1	8.42	1097.12	1097.09	0.03	1.10	0.00	711.32	201.75	296.93	3030.72
Reach-1	8.32	1096.02	1095.99	0.02	1.08	0.00	813.40	232.99	163.61	3142.63
Reach-1	8.23	1094.93	1094.92	0.02	1.19	0.00	961.74	149.09	99.17	2441.97
Reach-1	8.18	1093.74	1093.70	0.05	0.93	0.01	412.07	450.59	512.35	2151.59
Reach-1	8.08	1092.81	1092.79	0.02	1.30	0.01	526.70	477.50	370.80	2226.90
Reach-1	7.99	1091.49	1091.40	0.09	1.96	0.02	318.45	529.66	526.89	1834.11
Reach-1	7.89	1089.51	1089.48	0.03	1.31	0.00	76.26	2.67	1296.07	2464.16
Reach-1	7.8	1088.19	1088.13	0.07	1.59	0.01	138.41	182.91	1053.68	2423.09
Reach-1	7.71	1086.60	1086.56	0.04	0.78	0.00	315.77	178.71	880.51	3125.45
Reach-1	7.66	1085.81	1085.73	0.08	0.59	0.02	170.82	336.73	1183.46	2417.10
Reach-1	7.57	1085.20	1085.18	0.02	0.81	0.01	161.24	340.69	1189.08	4170.48
Reach-1	7.48	1084.38	1084.31	0.07	1.10	0.02	230.53	202.42	1258.06	3974.46
Reach-1	7.38	1083.28	1083.26	0.02	0.56	0.00	144.91	285.53	1260.56	4009.52
Reach-1	7.29	1082.72	1082.69	0.03	0.89	0.00	170.42	322.84	1197.75	3220.81
Reach-1	7.2	1081.82	1081.81	0.02	0.70	0.00	25.21	76.13	1589.66	2790.65
Reach-1	7.11	1081.12	1081.09	0.03	0.95	0.00	136.03	293.09	1435.88	2820.14
Reach-1	7.06	Lat. Weir								
Reach-1	7.01	1080.16	1080.12	0.05	0.66	0.01	209.21	430.77	911.78	2772.30
Reach-1	6.96	Lat. Weir								
Reach-1	6.94	1079.49	1079.48	0.02	0.25	0.00	48.86	187.15	1034.49	2239.67
Reach-1	6.91	Lat. Weir								
Reach-1	6.88	1079.24	1079.23	0.01	0.30	0.00	120.83	25.35	833.98	2437.16
Reach-1	6.8	1078.93	1078.91	0.02	0.94	0.00	57.50	220.81	701.85	2184.64

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1 (Continued)

Reach	River Sta	E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E Loss	Q Left	Q Channel	Q Right	Top Width
		(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)
Reach-1	6.7	1077.99	1077.98	0.01	0.97	0.00	141.31	22.33	816.52	1781.48
Reach-1	6.61	1077.02	1077.01	0.01	1.12	0.01	323.18	25.30	631.69	2004.75
Reach-1	6.52	1075.89	1075.79	0.10	0.90	0.02	44.11	48.24	887.81	883.43
Reach-1	6.42	1074.97	1074.94	0.03	0.57	0.00	55.31	92.56	832.29	1304.30
Reach-1	6.33	1074.41	1074.37	0.03	0.61	0.00	208.72	272.17	499.27	1635.87
Reach-1	6.23	1073.80	1073.76	0.03	0.85	0.01	125.61	296.86	557.70	1638.71
Reach-1	6.14	1072.94	1072.86	0.09	0.62	0.01	134.36	333.76	512.04	1026.12
Reach-1	6.09312*	1072.32	1072.16	0.16	0.42	0.01	77.32	466.74	436.10	1150.12
Reach-1	6.05	1071.75	1071.53	0.22	0.46	0.06	20.81	480.88	503.47	468.67
Reach-1	5.95	1071.23	1071.21	0.01	0.43	0.00	340.91	109.83	554.42	1645.13
Reach-1	5.86	1070.79	1070.77	0.02	1.29	0.00	569.31	293.43	142.42	2197.84
Reach-1	5.76	1069.49	1069.46	0.03	0.72	0.01	810.78	172.84	21.54	915.43
Reach-1	5.67	1068.76	1068.76	0.00	0.46	0.00	723.67	121.79	159.70	2010.02
Reach-1	5.57	1068.30	1068.29	0.01	0.64	0.00	559.99	179.94	265.23	1782.52
Reach-1	5.53	Lat. Weir								
Reach-1	5.48	1067.65	1067.64	0.02	1.32	0.01	239.51	224.42	541.24	1501.51
Reach-1	5.38	1066.33	1066.26	0.07	1.17	0.01	309.34	321.08	1007.75	1692.77
Reach-1	5.31	1065.15	1065.13	0.02	0.72	0.01	814.19	191.47	632.50	1439.67
Reach-1	5.25	1064.42	1064.28	0.14	0.82	0.01	804.92	634.29	198.96	1473.28
Reach-1	5.23	Lat. Weir								
Reach-1	5.2	1063.58	1063.48	0.10	1.85	0.01	501.25	588.85	410.53	1310.00
Reach-1	5.15	Lat. Weir								
Reach-1	5.1	1061.73	1061.56	0.16	0.62	0.04	592.57	574.71	218.23	2042.70
Reach-1	5.08	Lat. Weir								
Reach-1	5.07	1061.07	1061.05	0.02	1.26	0.01	680.71	120.07	528.64	2145.98
Reach-1	5.03	1059.79	1059.63	0.17	0.50	0.05			1329.42	984.15
Reach-1	4.98	1059.25	1059.24	0.00	0.02	0.00	1233.92	72.51	22.99	3570.93
Reach-1	4.95	1059.23	1059.23	0.00	0.01	0.00	1090.17	117.85	121.40	3924.19
Reach-1	4.89	1059.22	1059.22	0.00	0.01	0.00	1187.73	98.17	43.52	3099.71
Reach-1	4.79	1059.21	1059.21	0.00			980.25	194.53	154.64	2443.45


DHS-Post Development/Parking Lot
Plan: Imported Plan 03
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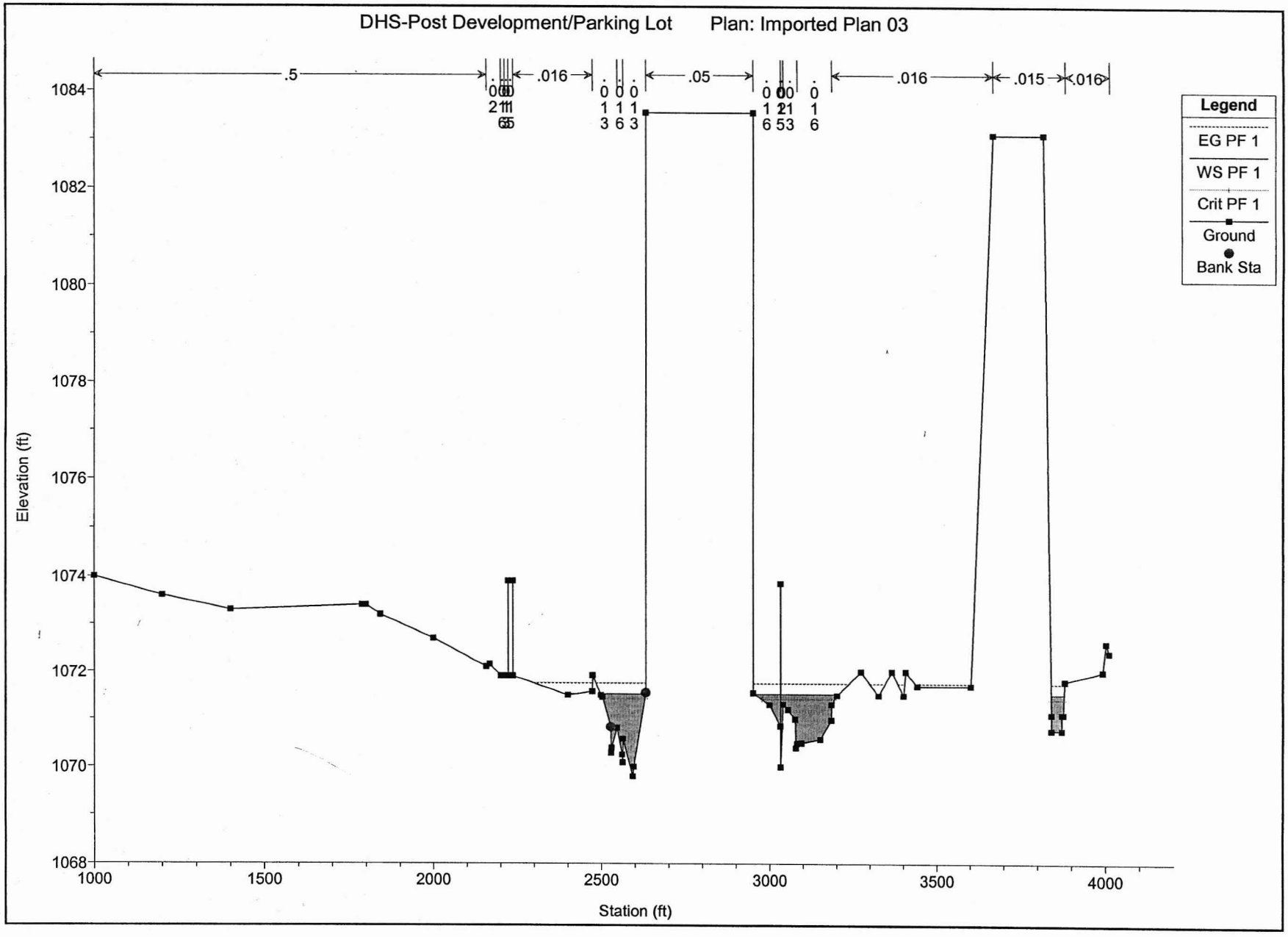
.275
.5
.275
.05
.016
.05
.071
.015
.016
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1084
1082
1080
1078
1076
1074
1072
1070
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)


DHS-Post Development/Parking Lot
Plan: Imported Plan 03
.5
.016
.05
.016
.015
.016
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1084
1082
1080
1078
1076
1074
1072
1070
1068
1000
1500
2000
2500
3000
3500
4000
Station (ft)

HEC-RAS Version 3.0.1 Mar 2001
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X     X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX   XXXX
X     X  X        X           X  X      X    X       X
X     X  X        X    X      X   X     X    X       X
X     X  XXXXXX    XXXX       X    X    X    X   XXXXX
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PROJECT DATA
Project Title: DHS-Post Development/Parking Lot
Project File : Pot_Parking_lot.prj
Run Date and Time: 10/19/2001 10:36:56 AM

Project in English units

Project Description:
DHS Drainage Study for new Building and parking structure FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA 5062 N. 19TH AVE.
CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA 85015
FEMA FLOOD INSURANCE RE-STUDY CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA
5062 N. 19TH AVE.
CAVE CREEK WASH JOB #04856-05-75
PHOENIX, ARIZONA 85015
FEMA FLOOD INSURANCE RE-STUDY
CELLA BARR ASSPCIATES
OF MARICOPA COUNTY, ARIZONA 5062 N.
19TH AVE.
CAVE CREEK WASH JOB #04856-05-75 PHOENIX, ARIZONA
85015

PLAN DATA

Plan Title: Imported Plan 03
Plan File : p:\PROJECTS\State\Hec-Ras\Pot_Parking_lot.p03

Geometry Title: Imported Geom 03
Geometry File : p:\PROJECTS\State\Hec-Ras\Pot_Parking_lot.g03

Flow Title : Imported Flow 05
Flow File : p:\PROJECTS\State\Hec-Ras\Pot_Parking_lot.f05

Plan Summary Information:

Number of: Cross Sections = 59 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Imported Flow 05
Flow File : p:\PROJECTS\State\Hec-Ras\Pot_Parking_lot.f05

Flow Data (cfs)

River	Reach	RS	PF 1
RIVER-1	Reach-1	9.61	1237
RIVER-1	Reach-1	9.08	1210
RIVER-1	Reach-1	8.18	1375
RIVER-1	Reach-1	7.66	1691
RIVER-1	Reach-1	7.11	1865
RIVER-1	Reach-1	6.05	1890
RIVER-1	Reach-1	5.38	2523

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	PF 1		Critical

Known WS = 1059.21

GEOMETRY DATA

Geometry Title: Imported Geom 03
Geometry File : p:\PROJECTS\State\Hec-Ras\Pot_Parking_lot.g03

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.61

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

3000	1121.6	3024.7	1121.8	3041.6	1121.6	3085.6	1121.5	3101.4	1121.7
3116.6	1121.9	3301.4	1121.9	3501.4	1121.8	3701.4	1121.4	3880	1120
4101.4	1119.1	4301.4	1119.2	4501.4	1118.5	4644.6	1118.6	4701.4	1118.8
4901.4	1119.1	5101.4	1119	5301.4	1119.9	5501.4	1120	5587.5	1120.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
3000	.16	3880	.16	4644.6	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3880	4644.6	360	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1119.95	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.		0.160
0.160				
W.S. Elev (ft)	1119.94	Reach Len. (ft)	360.00	360.00
360.00				
Crit W.S. (ft)	1119.28	Flow Area (sq ft)		659.80
544.01				
E.G. Slope (ft/ft)	0.016005	Area (sq ft)		659.80
544.01				
Q Total (cfs)	1237.00	Flow (cfs)		712.24
524.76				
Top Width (ft)	1480.45	Top Width (ft)		749.17
731.28				
Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)		1.08
0.96				
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)		0.88
0.74				
Conv. Total (cfs)	9777.9	Conv. (cfs)		5630.0
4147.9				
Length Wtd. (ft)	360.00	Wetted Per. (ft)		749.17
731.28				
Min Ch El (ft)	1118.50	Shear (lb/sq ft)		0.88
0.74				
Alpha	1.01	Stream Power (lb/ft s)		0.95
0.72				
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	563.17	82.35
439.11				
C & E Loss (ft)	0.00	Cum SA (acres)	631.25	91.31
596.53				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.55

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW

PATH OF CAVE CREEK WASH
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1117.1	1177.4	1117.2	1200	1117.2	1491.9	1117.9	1535	1118.2
1600	1118.1	1800	1117.9	1829.8	1117.8	1857.9	1117.8	1869.5	1118.2
2000	1118.4	2200	1117.6	2400	1117.1	2511.7	1116.8	2540.9	1116.8
2600	1117	2800	1116.7	2803.8	1116.7	2832	1116.7	3000	1116.5
3140	1116.4	3400	1116.5	3467.9	1116.5	3495.5	1116.6	3508	1117.1
3600	1116.9	3800	1117	3951.6	1117.4	4000	1118.2	4022.2	1118.4
4031.8	1121	4046.5	1121.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.09	2800	.16	3140	.16

Bank Sta: Left 2800 Right 3140 Lengths: Left Channel 500 Right 500 Coeff Contr. .1 Expan. .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	1535	1118.2

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1117.97	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.090	0.160
0.160				
W.S. Elev (ft)	1117.96	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1117.00	Flow Area (sq ft)	578.16	479.65
958.17				
E.G. Slope (ft/ft)	0.002757	Area (sq ft)	578.16	479.65
958.17				
Q Total (cfs)	1237.00	Flow (cfs)	434.82	294.23
507.95				
Top Width (ft)	1995.83	Top Width (ft)	810.45	340.00
845.38				
Vel Total (ft/s)	0.61	Avg. Vel. (ft/s)	0.75	0.61
0.53				
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	0.71	1.41
1.13				
Conv. Total (cfs)	23556.7	Conv. (cfs)	8280.4	5603.1
9673.2				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	810.46	340.00
845.40				
Min Ch El (ft)	1116.40	Shear (lb/sq ft)	0.12	0.24
0.20				
Alpha	1.07	Stream Power (lb/ft s)	0.09	0.15
0.10				
Frctn Loss (ft)	1.63	Cum Volume (acre-ft)	560.78	77.64
432.90				
C & E Loss (ft)	0.00	Cum SA (acres)	627.90	86.81
590.01				

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m) between the current and

previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.45

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1116.5	1010	1116.5	1020	1116.5	1040	1116.5	1050	1116.6
1660	1116.5	1667.7	1116.3	1670	1116.2	1673.6	1116	1680	1116
1683.2	1115.9	1683.3	1115.8	1883.2	1116.1	2083.2	1116.2	2283.2	1116
2332.1	1115.9	2375.2	1116.3	2483.2	1116.5	2681.9	1116.5	2683.2	1116.5
2689.8	1116.4	2712.7	1116.4	2883.2	1116.5	3000.4	1115.9	3029.8	1115.9
3083.2	1115.8	3283.2	1115.5	3600	1115.4	3683	1115.3	3883.2	1115
3940	1114.9	4283.2	1115.1	4306.2	1115.1	4483.2	1115.4	4683.2	1115.5
4883.2	1115.7	4947	1116	5012	1116.2	5054.9	1116.9	5083.2	1116.9
5283.2	1117.6	5483.2	1118.1	5597.3	1117.9	5605	1120.6	5611.8	1120.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.16	2332.1	.09	3600	.16	5605	.165

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3600	3940	470	470	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2483.2	1116.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1116.34	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.090	0.160
0.160				
W.S. Elev (ft)	1116.33	Reach Len. (ft)	470.00	470.00
500.00				
Crit W.S. (ft)	1115.54	Flow Area (sq ft)	473.50	397.14
1047.78				
E.G. Slope (ft/ft)	0.003926	Area (sq ft)	473.50	397.14
1047.78				
Q Total (cfs)	1237.00	Flow (cfs)	383.22	256.32
597.47				
Top Width (ft)	2104.46	Top Width (ft)	684.27	340.00
1080.18				
Vel Total (ft/s)	0.64	Avg. Vel. (ft/s)	0.81	0.65
0.57				
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.69	1.17
0.97				
Conv. Total (cfs)	19741.7	Conv. (cfs)	6115.9	4090.7
9535.1				
Length Wtd. (ft)	487.51	Wetted Per. (ft)	684.28	340.00
1080.19				
Min Ch El (ft)	1114.90	Shear (lb/sq ft)	0.17	0.29
0.24				
Alpha	1.07	Stream Power (lb/ft s)	0.14	0.18
0.14				

Frctn Loss (ft)	2.19	Cum Volume (acre-ft)	554.75	72.61
421.39				
C & E Loss (ft)	0.00	Cum SA (acres)	619.32	82.90
578.96				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.36

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1114.8	1200	1114.5	1226.6	1114.7	1400	1115.1	1568.8	1114.3
1589.5	1114.3	1600	1114.6	1800	1114.2	1907.2	1113.7	2000	1113.6
2200	1113.4	2450	1113.2	2600	1113.1	2700	1112.8	3000	1112.9
3200	1112.6	3233.3	1112.5	3254.8	1113.4	3273.2	1113	3400	1112.8
3600	1113.6	3625.7	1113.7	3657.7	1113.8	3698	1114.8	3800	1115
3845.7	1114.4	3908.4	1114.5	3939	1114.9	4000	1114.8	4200	1115.9
4255.3	1116.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.16	2450	.16	2700	.16

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2450	2700	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1114.15	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.160	0.160
0.160				
W.S. Elev (ft)	1114.14	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	406.50	268.39
1136.90				
E.G. Slope (ft/ft)	0.005213	Area (sq ft)	406.50	268.39
1136.90				
Q Total (cfs)	1237.00	Flow (cfs)	201.84	188.68
846.48				
Top Width (ft)	1859.45	Top Width (ft)	637.91	250.00
971.54				
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)	0.50	0.70
0.74				
Max Chl Dpth (ft)	1.64	Hydr. Depth (ft)	0.64	1.07
1.17				
Conv. Total (cfs)	17133.5	Conv. (cfs)	2795.6	2613.4
11724.5				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	637.91	250.00
971.57				
Min Ch El (ft)	1112.80	Shear (lb/sq ft)	0.21	0.35
0.38				
Alpha	1.06	Stream Power (lb/ft s)	0.10	0.25
0.28				

Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	550.00	69.02	408.85
C & E Loss (ft)	0.01	Cum SA (acres)	612.19	79.72	567.19

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.27

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1114.6	1026	1114.6	1067.7	1113.2	1092.6	1112.7	1105.4	1112.7
1113.5	1114.7	1200	1114.7	1375.6	1114.7	1396.8	1113.6	1400	1113.6
1450	1113.5	1600	1113	1800	1112.5	1896.2	1112	1940.3	1111.9
2000	1111.9	2200	1111.4	2400	1111.5	2700	1111.3	2730.8	1111.1
2741.7	1110.9	2767.4	1110.8	2776.7	1111.3	2880	1111.3	3000	1111.5
3200	1111.7	3400	1111.7	3429.3	1111.7	3434.9	1111.5	3461	1111.5
3472.6	1111.8	3600	1112.1	3608.2	1112.1	3614.8	1112.8	3793.1	1112.6
3800	1112.6	3827.7	1112.6	4000	1113.6	4014.2	1113.6	4077.2	1113.7
4200	1114.3	4400	1115.5	4525.1	1115.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2700	.02	2776.7	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2700	2776.7	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1112.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1112.54	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	827.56	115.11	765.31
E.G. Slope (ft/ft)	0.001910	Area (sq ft)	827.56	115.11	765.31
Q Total (cfs)	1237.00	Flow (cfs)	386.67	489.81	360.52
Top Width (ft)	1827.07	Top Width (ft)	914.75	76.70	835.62
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.47	4.26	0.47
Max Chl Dpth (ft)	1.74	Hydr. Depth (ft)	0.90	1.50	0.92
Conv. Total (cfs)	28305.8	Conv. (cfs)	8848.1	11208.2	8249.6

Length Wtd. (ft)	500.00	Wetted Per. (ft)	914.75	76.72
835.65				
Min Ch El (ft)	1110.80	Shear (lb/sq ft)	0.11	0.18
0.11				
Alpha	13.92	Stream Power (lb/ft s)	0.05	0.76
0.05				
Frctn Loss (ft)	1.62	Cum Volume (acre-ft)	542.92	66.82
397.94				
C & E Loss (ft)	0.00	Cum SA (acres)	603.28	77.84
556.81				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.17

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1110.9	1010	1110.9	1020	1110.9	1040	1111	1050	1111.1
1650	1111.1	1651.5	1111	1660	1111	1663.7	1111	1663.8	1110.7
1863.7	1110.7	2063.7	1110.5	2263.7	1110.7	2305.7	1110.7	2360.9	1111
2400	1112.4	2463.7	1111.5	2663.7	1110.8	2863.7	1110.5	2971	1110.5
2984.4	1110.1	3014.4	1110.1	3028.6	1110.9	3063.7	1110.9	3263.7	1110.3
3463.7	1110	3663.7	1110.2	3880	1109.6	4063.7	1110.2	4263.7	1110.8
4291	1110.9	4294.1	1110.6	4325.2	1110.6	4337.6	1110.8	4463.7	1110.7
4582.8	1110.9	4647.6	1110.8	4662.3	1111.1	4663.7	1111.1	4863.7	1111.7
4924.5	1111.9	4986.1	1112.3	5063.7	1112.5	5263.7	1113.3	5394.1	1113.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3663.7	.035	3880	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3663.7	3880	500	520	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2400	1112

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1111.03	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.12	Wt. n-Val.	0.130	0.035
0.130				
W.S. Elev (ft)	1110.92	Reach Len. (ft)	500.00	520.00
500.00				

Crit W.S. (ft)	1110.64	Flow Area (sq ft)	517.05	219.46 322.90
E.G. Slope (ft/ft)	0.006627	Area (sq ft)	517.05	219.46 322.90
Q Total (cfs)	1237.00	Flow (cfs)	303.34	765.80 167.86
Top Width (ft)	2022.23	Top Width (ft)	1032.72	216.30 773.21
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.59	3.49 0.52
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.50	1.01 0.42
Conv. Total (cfs)	15195.6	Conv. (cfs)	3726.3	9407.3 2062.0
Length Wtd. (ft)	510.82	Wetted Per. (ft)	1032.75	216.30 773.23
Min Ch El (ft)	1109.60	Shear (lb/sq ft)	0.21	0.42 0.17
Alpha	5.62	Stream Power (lb/ft s)	0.12	1.46 0.09
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	535.20	64.90 391.69
C & E Loss (ft)	0.00	Cum SA (acres)	592.10	76.16 547.58

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 9.08

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1109	1010	1109	1020	1109	1040	1109	1050	1109
1700	1109.3	1710	1109.3	1720	1109.4	1730	1109.4	1740	1109.4
1750	1109.4	1760	1109.5	1770	1109.5	1780	1109.5	1790	1109.5
1800	1109.4	1810	1109.4	1820	1109.4	1830	1109.4	1840	1109.4
1850	1109.4	1860	1109.5	1870	1109.5	1880	1109.5	1890	1109.5
1900	1109.6	1904.3	1109.6	1910	1109.5	1920	1109.2	1926.9	1108.9
1930	1108.9	1935.4	1108.9	1935.5	1108.8	2135.4	1108.7	2263.7	1108
2286.8	1108.2	2335.4	1108.7	2535.4	1108.5	2589.3	1108.5	2600	1109
2735.4	1108.6	2935.4	1108.4	3135.4	1107.9	3272.2	1107.4	3303.2	1107.4
3335.4	1107.7	3535.4	1107.4	3735.4	1107.5	3900	1107.3	3935.4	1107.3
3959.2	1107.3	4000	1107.7	4135.4	1107.8	4335.4	1108	4535.4	1108.4
4574.3	1108.2	4599.7	1108.3	4735.4	1109.3	4935.4	1109.7	5135.4	1110.9
5202.7	1110.9	5262.7	1110.8	5275.3	1111.5	5335.4	1112.1	5535.4	1112.1
5681.6	1112.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3900	.02	4000	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3900	4000	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent

888 F
Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2600	1109

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1108.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1108.56	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1108.30	Flow Area (sq ft)	904.27	117.98	337.13
E.G. Slope (ft/ft)	0.003245	Area (sq ft)	904.27	117.98	337.13
Q Total (cfs)	1210.00	Flow (cfs)	508.66	557.45	143.89
Top Width (ft)	1861.18	Top Width (ft)	1126.02	100.00	635.17
Vel Total (ft/s)	0.89	Avg. Vel. (ft/s)	0.56	4.73	0.43
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.80	1.18	0.53
Conv. Total (cfs)	21242.5	Conv. (cfs)	8930.0	9786.4	2526.1
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1126.02	100.00	635.17
Min Ch El (ft)	1107.30	Shear (lb/sq ft)	0.16	0.24	0.11
Alpha	13.18	Stream Power (lb/ft s)	0.09	1.13	0.05
Frctn Loss (ft)	1.23	Cum Volume (acre-ft)	527.04	62.89	387.90
C & E Loss (ft)	0.02	Cum SA (acres)	579.71	74.28	539.50

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.98

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1108.2	1010	1108.1	1020	1108	1040	1107.9	1050	1107.9
1060	1107.9	1070	1107.9	1080	1107.8	1090	1107.8	1100	1107.7
1690	1107.8	1700	1107.8	1710	1107.8	1720	1107.8	1730	1107.8
1740	1107.8	1750	1107.9	1760	1107.9	1770	1107.9	1780	1107.9
1790	1107.9	1800	1107.9	1810	1108	1820	1108	1830	1108
1840	1108	1850	1108	1860	1108.1	1870	1108.1	1880	1108.1
1890	1108.1	1900	1108.1	1910	1108.1	1920	1108.1	1930	1107.7
1940	1107.5	1944.3	1107.5	1944.4	1107.3	2144.3	1107.2	2344.3	1107.1
2544.3	1107	2744.3	1106.6	2944.3	1106.3	3144.3	1106.2	3344.3	1106.3
3544.3	1106.5	3744.3	1106.6	3900	1106	3944.3	1106	3965.8	1106

4000	1106.5	4344.3	1106.7	4544.3	1107.1	4572.1	1107.1	4578.8	1106.9
4604.1	1106.8	4744.3	1107.3	4944.3	1107.8	5144.3	1108.9	5208.7	1109.6
5269.8	1109.5	5344.3	1110	5366.4	1110.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3900	.02	4000	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3900	4000	500	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1107.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1107.37	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1404.74	128.56	428.95
E.G. Slope (ft/ft)	0.001939	Area (sq ft)	1404.74	128.56	428.95
Q Total (cfs)	1210.00	Flow (cfs)	567.00	497.20	145.81
Top Width (ft)	2828.35	Top Width (ft)	1955.64	100.00	772.72
Vel Total (ft/s)	0.62	Avg. Vel. (ft/s)	0.40	3.87	0.34
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)	0.72	1.29	0.56
Conv. Total (cfs)	27482.1	Conv. (cfs)	12877.9	11292.6	3311.6
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1955.68	100.00	772.72
Min Ch El (ft)	1106.00	Shear (lb/sq ft)	0.09	0.16	0.07
Alpha	16.40	Stream Power (lb/ft s)	0.04	0.60	0.02
Frctn Loss (ft)	1.44	Cum Volume (acre-ft)	513.79	61.47	383.50
C & E Loss (ft)	0.00	Cum SA (acres)	562.03	73.13	531.42

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.89

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

1000	1107.6	1063.2	1107.6	1088.6	1106.6	1200	1106.4	1400	1106.4
1600	1106.2	1795.2	1105.3	1800	1105.3	1848.6	1105.3	2000	1105.3
2092.8	1104.8	2178.9	1104.7	2200	1104.7	2210.9	1104.7	2400	1105
2600	1105.1	2800	1105.1	3000	1105.3	3110	1105.2	3134.8	1104.9
3166.1	1105.1	3187.3	1105.5	3200	1105.5	3400	1105.6	3600	1105.7
3779.9	1105.3	3800	1105.5	3805.5	1105.5	4000	1105.7	4200	1105.9
4400	1107.4	4408.1	1108	4469.9	1108.6	4498.9	1109		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3110	.02	3187.3	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3110	3187.3	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1106.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1105.94	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1168.70	64.66	322.99
E.G. Slope (ft/ft)	0.004759	Area (sq ft)	1168.70	64.66	322.99
Q Total (cfs)	1210.00	Flow (cfs)	797.24	294.22	118.53
Top Width (ft)	2547.13	Top Width (ft)	1452.49	77.30	1017.34
Vel Total (ft/s)	0.78	Avg. Vel. (ft/s)	0.68	4.55	0.37
Max Chl Dpth (ft)	1.23	Hydr. Depth (ft)	0.80	0.84	0.32
Conv. Total (cfs)	17539.2	Conv. (cfs)	11556.2	4264.8	1718.2
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1452.49	77.31	1017.34
Min Ch El (ft)	1104.90	Shear (lb/sq ft)	0.24	0.25	0.09
Alpha	8.86	Stream Power (lb/ft s)	0.16	1.13	0.03
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	499.02	60.36	379.19
C & E Loss (ft)	0.01	Cum SA (acres)	542.47	72.11	521.14

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.79

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

1000	1104.6	1016.4	1104.6	1062.7	1104.5	1400	1104.2	1600	1104.2
1681.2	1104	1692	1103.3	1738.1	1103.3	1800	1103.5	2000	1103.4
2200	1103	2400	1103	2600	1103.1	2692.6	1102.9	2729.2	1103
2800	1103.2	2881.4	1103.3	2975	1103.4	3023.3	1103.4	3030.4	1103
3062.1	1103.1	3080	1103.5	3200	1103.5	3400	1103.6	3600	1104
3663.7	1104	3670.7	1103.8	3701.5	1103.8	3714.1	1104.1	3800	1104.2
4000	1104.6	4200	1105.8	4286.2	1105.4	4302.8	1106.5	4366.4	1106.4
4387.7	1107.3	4400	1107.3	4568.6	1107.3	4575.8	1106.8	4600	1107
4800	1107.1	4968.3	1107.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2975	.02	3080	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2975	3080	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1104.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.130	0.020	0.130
W.S. Elev (ft)	1104.19	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1296.20	96.74	317.95
E.G. Slope (ft/ft)	0.002715	Area (sq ft)	1296.20	96.74	317.95
Q Total (cfs)	1210.00	Flow (cfs)	744.35	354.52	111.13
Top Width (ft)	2181.16	Top Width (ft)	1368.95	105.00	707.20
Vel Total (ft/s)	0.71	Avg. Vel. (ft/s)	0.57	3.66	0.35
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.95	0.92	0.45
Conv. Total (cfs)	23222.9	Conv. (cfs)	14286.0	6804.1	2132.8
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1368.98	105.02	707.21
Min Ch El (ft)	1103.00	Shear (lb/sq ft)	0.16	0.16	0.08
Alpha	8.30	Stream Power (lb/ft s)	0.09	0.57	0.03
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	484.88	59.44	375.51
C & E Loss (ft)	0.01	Cum SA (acres)	526.27	71.06	511.25

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.7

INPUT
Description:

Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1103.4	1146.8	1102.1	1175.3	1102.1	1400	1102.3	1600	1102.3
1800	1101.9	1859.5	1101.2	1915.5	1101.4	2000	1102.2	2200	1101.8
2399.9	1101.9	2527.6	1101.3	2560.8	1101.3	2593.3	1101.9	2599.9	1101.9
2799.9	1101.7	2999.9	1101.6	3170	1101.4	3199.9	1101.4	3270	1101.5
3399.9	1101.6	3599.9	1101.9	3735.5	1102	3778.5	1102.1	3799.9	1102.2
3925	1102.6	3948.3	1103.9	3999.9	1104.2	4199.9	1104.5	4399.9	1103.9
4469.4	1103.6	4532.4	1103.8	4599.9	1105.5	4618.6	1105.8	4755	1104.4
4799.9	1104.5	4999.9	1104.2	5199.8	1105	5399.8	1104.9	5595.1	1105
5599.8	1105.1	5627.6	1105.7	5717.9	1105.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3170	.02	3270	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3270	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1102.56	Element	Left OB	Channel
Vel Head (ft)	0.14	Wt. n-Val.	0.130	0.020
W.S. Elev (ft)	1102.42	Reach Len. (ft)	500.00	500.00
Crit W.S. (ft)		Flow Area (sq ft)	1126.96	98.66
E.G. Slope (ft/ft)	0.004251	Area (sq ft)	1126.96	98.66
Q Total (cfs)	1210.00	Flow (cfs)	561.88	473.62
Top Width (ft)	2758.75	Top Width (ft)	2059.52	100.00
Vel Total (ft/s)	0.77	Avg. Vel. (ft/s)	0.50	4.80
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.55	0.99
Conv. Total (cfs)	18558.0	Conv. (cfs)	8617.6	7264.0
Length Wtd. (ft)	500.00	Wetted Per. (ft)	2059.54	100.00
Min Ch El (ft)	1101.40	Shear (lb/sq ft)	0.15	0.26
Alpha	15.38	Stream Power (lb/ft s)	0.07	1.26
Frctn Loss (ft)	1.88	Cum Volume (acre-ft)	470.97	58.32
C & E Loss (ft)	0.03	Cum SA (acres)	506.60	69.89

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.61

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1101.2	1200	1100.2	1400	1100	1800	1099.4	1939.1	1099.4
2000	1099.6	2200	1099.7	2399.9	1099.9	2599.9	1099.8	2799.9	1099.8
2999.9	1100.1	3041.8	1100.2	3190	1100	3226.8	1099.9	3290	1100.1
3542.7	1099.9	3575.5	1099.9	3599.9	1100.3	3608.9	1100.3	3799.9	1100.5
3856.8	1100.6	3866.7	1100.5	3900.7	1100.5	3928.4	1101.7	3999.9	1102
4199.9	1101.7	4399.9	1101.4	4500	1101.1	4569.2	1100.8	4599.9	1101.3
4724.2	1101.3	4799.9	1101.4	4999.9	1102.1	5199.8	1102.7	5399.8	1103.2
5569.2	1103.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3190	.02	3290	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3190	3290	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1100.65	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.130				
W.S. Elev (ft)	1100.62	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)		Flow Area (sq ft)	1629.65	63.62
245.44				
E.G. Slope (ft/ft)	0.003357	Area (sq ft)	1629.65	63.62
245.44				
Q Total (cfs)	1210.00	Flow (cfs)	919.15	202.58
88.26				
Top Width (ft)	2786.99	Top Width (ft)	2073.57	100.00
613.42				
Vel Total (ft/s)	0.62	Avg. Vel. (ft/s)	0.56	3.18
0.36				
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.79	0.64
0.40				
Conv. Total (cfs)	20883.1	Conv. (cfs)	15863.5	3496.3
1523.3				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	2073.57	100.00
613.43				
Min Ch El (ft)	1099.90	Shear (lb/sq ft)	0.16	0.13
0.08				
Alpha	5.00	Stream Power (lb/ft s)	0.09	0.42
0.03				
Frctn Loss (ft)	1.66	Cum Volume (acre-ft)	455.15	57.38
368.36				
C & E Loss (ft)	0.00	Cum SA (acres)	482.88	68.74
496.79				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.51

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1099.1	1200	1099.3	1349.4	1099.3	1524.2	1098.8	1600	1098.7
1800	1098.6	2000	1098.2	2176.6	1098.2	2200	1098.7	2212.4	1098.8
2276.3	1097.9	2325.2	1098.1	2399.9	1098.4	2599.9	1098.6	2799.9	1098.9
2954.1	1098.2	2987.4	1098.2	2999.9	1098.6	3199.9	1098.4	3399.9	1098.2
3599.9	1098.5	3614.8	1098.5	3649.2	1098.5	3690	1098.8	3799.9	1098.9
3809.6	1098.9	3999.9	1098.7	4199.9	1098.5	4263.3	1098.3	4295.5	1098.3
4313.7	1098.7	4351.4	1098.8	4370.2	1099.5	4399.9	1100.2	4525.6	1100
4533.3	1098.8	4599.9	1098.7	4799.9	1098.8	4999.9	1099.1	5199.8	1099.4
5399.8	1099.8	5599.8	1100.3	5648.2	1100.3				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1524.2	.03	2325.2	.13	3599.9	.02	3690	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3599.9	3690	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4399.9	5648.2	1100.2

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1098.98	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.054	0.020
0.130				
W.S. Elev (ft)	1098.96	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1098.63	Flow Area (sq ft)	1059.15	35.39
188.97				
E.G. Slope (ft/ft)	0.003415	Area (sq ft)	1059.15	35.39
188.97				
Q Total (cfs)	1210.00	Flow (cfs)	1073.09	82.40
54.52				
Top Width (ft)	2887.68	Top Width (ft)	2131.86	90.10
665.71				
Vel Total (ft/s)	0.94	Avg. Vel. (ft/s)	1.01	2.33
0.29				
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.50	0.39
0.28				
Conv. Total (cfs)	20705.9	Conv. (cfs)	18363.0	1410.0
932.9				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	2131.88	90.10
665.72				
Min Ch El (ft)	1098.50	Shear (lb/sq ft)	0.11	0.08
0.06				
Alpha	1.44	Stream Power (lb/ft s)	0.11	0.19
0.02				
Frctn Loss (ft)	1.86	Cum Volume (acre-ft)	440.02	56.83
365.92				
C & E Loss (ft)	0.00	Cum SA (acres)	459.22	67.67
489.59				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.42

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1097.1	1200	1097.6	1400	1096.5	1800	1096.5	1850.6	1096.4
2000	1096.9	2200	1096.6	2399.9	1096.5	2599.9	1096.7	2799.9	1097
2999.9	1096.7	3110	1096.7	3148.8	1096.3	3181.8	1096.4	3199.9	1096.8
3230	1096.8	3399.9	1096.6	3494.7	1096.8	3535.3	1096.3	3599.9	1096.4
3799.9	1096.2	3999.9	1096.3	4199.9	1096.9	4399.9	1097.2	4422.8	1097.2
4478.9	1097.4	4515.7	1099.1	4538.1	1098.4	4599.9	1098.6	4799.9	1099.4
4999.9	1099.1	5123.5	1099.4	5142	1101.3	5199.8	1101.3	5213.5	1101.3
5242.4	1100.5	5399.8	1101	5599.8	1100.7	5601.4	1100.7		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	1850.6	.13	3110	.02	3230	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3110	3230	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1097.12	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.059	0.020
0.130				
W.S. Elev (ft)	1097.09	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)	1096.80	Flow Area (sq ft)	771.95	64.46
604.93				
E.G. Slope (ft/ft)	0.004064	Area (sq ft)	771.95	64.46
604.93				
Q Total (cfs)	1210.00	Flow (cfs)	711.32	201.75
296.93				
Top Width (ft)	3030.72	Top Width (ft)	1816.60	120.00
1094.12				
Vel Total (ft/s)	0.84	Avg. Vel. (ft/s)	0.92	3.13
0.49				
Max Chl Dpth (ft)	0.89	Hydr. Depth (ft)	0.42	0.54
0.55				
Conv. Total (cfs)	18981.1	Conv. (cfs)	11158.4	3164.8
4657.9				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	1816.61	120.01
1094.12				
Min Ch El (ft)	1096.30	Shear (lb/sq ft)	0.11	0.14
0.14				
Alpha	3.11	Stream Power (lb/ft s)	0.10	0.43
0.07				
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	429.52	56.25
361.36				
C & E Loss (ft)	0.00	Cum SA (acres)	436.56	66.46
479.49				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.32

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1096.6	1013.9	1094.5	1081.6	1095.8	1400	1095.8	1600	1095.2
1676.6	1094.8	1719.7	1095.1	1800	1095.1	2000	1095.2	2200	1095.6
2333.3	1095.8	2356.5	1095.4	2383.1	1095.4	2399.9	1095.7	2599.9	1095.6
2683.8	1095.3	2719.5	1095.3	2799.9	1095.5	2970	1095.2	3015.6	1095.1
3051.9	1095.1	3066.3	1095.3	3090	1095.5	3338.5	1095.5	3369.4	1094.9
3400.4	1095.3	3800.3	1095.3	4150	1096	4540	1097	5000	1098
5260	1098.2								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.02	1719.7	.13	2970	.02	3090	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2970	3090	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1096.02	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.049	0.020
0.130				
W.S. Elev (ft)	1095.99	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1095.56	Flow Area (sq ft)	1072.33	96.37
572.06				
E.G. Slope (ft/ft)	0.001419	Area (sq ft)	1072.33	96.37
572.06				
Q Total (cfs)	1210.00	Flow (cfs)	813.40	232.99
163.61				
Top Width (ft)	3142.63	Top Width (ft)	1965.98	120.00
1056.65				
Vel Total (ft/s)	0.70	Avg. Vel. (ft/s)	0.76	2.42
0.29				
Max Chl Dpth (ft)	1.49	Hydr. Depth (ft)	0.55	0.80
0.54				
Conv. Total (cfs)	32123.2	Conv. (cfs)	21594.2	6185.6
4343.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1966.12	120.00
1056.66				
Min Ch El (ft)	1095.10	Shear (lb/sq ft)	0.05	0.07
0.05				
Alpha	3.15	Stream Power (lb/ft s)	0.04	0.17
0.01				

Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	419.14	55.35	354.74
C & E Loss (ft)	0.00	Cum SA (acres)	415.29	65.11	467.40

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.23

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1095.7	1200	1094.8	1400	1094.5	1800	1094.3	2000	1094.1
2200	1094.2	2399.9	1094.3	2599.9	1094.3	2799.9	1094.3	2950	1094.4
3150	1094.5	3399.9	1094.7	3599.9	1094.9	3799.9	1095.1	3999.9	1095.2
4199.9	1095.1	4399.9	1095.1	4599.9	1095.6	4799.9	1095.9	4999.9	1096.7
5199.8	1097.3	5399.8	1097.8	5580.8	1097.4				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.013	1200	.13	2399.9	.034	5399.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2950	3150	280	270	270	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1094.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.067	0.034	0.034
W.S. Elev (ft)	1094.92	Reach Len. (ft)	280.00	270.00	270.00
Crit W.S. (ft)		Flow Area (sq ft)	1022.41	93.25	102.43
E.G. Slope (ft/ft)	0.003702	Area (sq ft)	1022.41	93.25	102.43
Q Total (cfs)	1210.00	Flow (cfs)	961.74	149.09	99.17
Top Width (ft)	2441.97	Top Width (ft)	1775.83	200.00	466.14
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	0.94	1.60	0.97
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)	0.58	0.47	0.22
Conv. Total (cfs)	19887.4	Conv. (cfs)	15807.0	2450.4	1630.0
Length Wtd. (ft)	275.31	Wetted Per. (ft)	1775.83	200.00	466.14
Min Ch El (ft)	1094.40	Shear (lb/sq ft)	0.13	0.11	0.05

Alpha	1.11	Stream Power (lb/ft s)	0.13	0.17
0.05				
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	407.12	54.26
350.87				
C & E Loss (ft)	0.00	Cum SA (acres)	393.81	63.28
458.66				

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.18

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1094.3	1087.8	1093.2	1105.2	1092.7	1200	1093.5	1400	1093.8
1600	1094	1800	1093.6	1834.1	1093.2	1864.9	1093.2	1875.2	1093.4
2000	1093.2	2200	1093.3	2290	1092.8	2599.9	1093.3	2799.9	1093.1
2999.9	1093.3	3199.9	1093.4	3399.9	1093.5	3599.9	1093.6	3674.3	1094
3714.6	1094.7	3778.5	1095	3799.9	1095.3	3903.5	1096.2	3950.5	1095.5
3999.9	1096	4040.5	1096.1	4073.1	1095.5	4102.9	1095.7	4132.9	1096.3

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1864.9	.035	3799.9	.13	4102.9	.135

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2290	2599.9	520	500	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1093.74	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.05	Wt. n-Val.	0.045	0.035
0.035				
W.S. Elev (ft)	1093.70	Reach Len. (ft)	520.00	500.00
490.00				
Crit W.S. (ft)	1093.53	Flow Area (sq ft)	322.57	200.91
349.25				
E.G. Slope (ft/ft)	0.004973	Area (sq ft)	322.57	200.91
349.25				
Q Total (cfs)	1375.00	Flow (cfs)	412.07	450.59
512.35				
Top Width (ft)	2151.59	Top Width (ft)	823.39	309.90
1018.30				
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	1.28	2.24
1.47				
Max Chl Dpth (ft)	1.00	Hydr. Depth (ft)	0.39	0.65
0.34				
Conv. Total (cfs)	19497.6	Conv. (cfs)	5843.1	6389.4
7265.1				
Length Wtd. (ft)	503.62	Wetted Per. (ft)	823.41	309.90
1018.30				
Min Ch El (ft)	1092.80	Shear (lb/sq ft)	0.12	0.20
0.11				
Alpha	1.18	Stream Power (lb/ft s)	0.16	0.45

0.16					
Frctn Loss (ft)		0.93	Cum Volume (acre-ft)	402.80	53.35
349.47					
C & E Loss (ft)		0.01	Cum SA (acres)	385.46	61.70
454.06					

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 8.08

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1092.9	1165.4	1092.9	1200	1092	1260.8	1091.5	1285.5	1092.1
1303.8	1095.4	1346.6	1095	1394.7	1092.5	1400	1092.4	1600	1092.2
1800	1092.1	2000	1092.2	2086.3	1092	2097.5	1092.9	2111.1	1092.4
2129.3	1094.3	2200	1094.2	2216.7	1094.1	2269.1	1091.8	2399.9	1091.8
2599.9	1091.9	2690	1092.1	2999.9	1092.2	3199.9	1092.4	3399.9	1092.3
3599.9	1092.6	3799.9	1093.8	3826.1	1094.3	3896.7	1094.5	3999.9	1094.9
4199.9	1095	4399.9	1096.3	4429.9	1096.6				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.036	1165.4	.034	2216.7	.036	2690	.035	3896.7	.131
4399.9	.13								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2216.7	2690	550	500	610	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1092.81	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.034	0.036
0.035				
W.S. Elev (ft)	1092.79	Reach Len. (ft)	550.00	500.00
610.00				
Crit W.S. (ft)		Flow Area (sq ft)	526.15	401.03
457.91				
E.G. Slope (ft/ft)	0.000952	Area (sq ft)	526.15	401.03
457.91				
Q Total (cfs)	1375.00	Flow (cfs)	526.70	477.50
370.80				
Top Width (ft)	2226.90	Top Width (ft)	841.36	443.52
942.02				
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	1.00	1.19
0.81				
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.63	0.90
0.49				
Conv. Total (cfs)	44568.6	Conv. (cfs)	17072.3	15477.4
12018.8				
Length Wtd. (ft)	551.27	Wetted Per. (ft)	841.51	443.54
942.02				

Min Ch El (ft)	1091.80	Shear (lb/sq ft)	0.04	0.05
0.03				
Alpha	1.07	Stream Power (lb/ft s)	0.04	0.06
0.02				
Frctn Loss (ft)	1.30	Cum Volume (acre-ft)	397.73	49.89
344.93				
C & E Loss (ft)	0.01	Cum SA (acres)	375.52	57.37
443.03				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.99

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1091.9	1200	1091.6	1371.1	1091	1400	1090.2	1428.7	1090.2
1459	1091	1600	1091.3	1800	1091.3	2000	1091.5	2088.2	1091.7
2118.5	1092.1	2160	1091.1	2200	1090.9	2399.9	1090.7	2422.2	1090.8
2472.3	1093.5	2522.6	1093.6	2599.9	1090.6	2607.7	1090.3	2799.9	1090.6
2999.9	1090.8	3199.9	1091	3399.9	1091	3479.4	1090.9	3517.6	1092.4
3566.3	1091.4	3599.9	1091.5	3648.7	1091.6	3687.4	1094.2	3743.9	1094.4
3754.5	1092	3784	1092.3	3799.9	1093.8	3844.3	1095.7	3918.3	1095.6
3928	1094.3	3949.3	1094.4	3975.7	1093.7	3998.7	1094.9	3999.9	1095
4063.6	1095.5	4078.1	1096.1	4199.9	1096.2	4399.9	1095.5	4538.8	1094.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	2160	.033	2422.2	.034	2472.3	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2160	2422.2	470	500	570	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1091.49	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.09	Wt. n-Val.	0.035	0.033
0.129				
W.S. Elev (ft)	1091.40	Reach Len. (ft)	470.00	500.00
570.00				
Crit W.S. (ft)	1091.23	Flow Area (sq ft)	163.23	149.04
555.59				
E.G. Slope (ft/ft)	0.013231	Area (sq ft)	163.23	149.04
555.59				
Q Total (cfs)	1375.00	Flow (cfs)	318.45	529.66
526.89				
Top Width (ft)	1834.11	Top Width (ft)	648.30	262.20
923.61				
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	1.95	3.55

0.95				
Max Chl Dpth (ft)	1.19	Hydr. Depth (ft)	0.25	0.57
0.60				
Conv. Total (cfs)	11954.0	Conv. (cfs)	2768.5	4604.8
4580.7				
Length Wtd. (ft)	542.10	Wetted Per. (ft)	648.33	262.20
923.65				
Min Ch El (ft)	1090.70	Shear (lb/sq ft)	0.21	0.47
0.50				
Alpha	2.43	Stream Power (lb/ft s)	0.41	1.67
0.47				
Frctn Loss (ft)	1.96	Cum Volume (acre-ft)	393.38	46.74
337.84				
C & E Loss (ft)	0.02	Cum SA (acres)	366.12	53.32
429.97				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1090.5	1200	1090.2	1400	1089.2	1671.5	1089.4	1685.6	1089
1800	1088.8	2000	1089	2200	1089.2	2425	1089.5	2430	1089.5
2435	1089.3	2460	1089.4	2799.9	1089.3	2983.2	1088.5	2999.9	1088.7
3010.7	1088.9	3026.7	1089.2	3099.3	1088.3	3199.9	1089	3265.2	1088.9
3293.1	1090.9	3343.8	1088.3	3399.9	1087.9	3445.4	1087.3	3599.9	1088.7
3675.4	1089.2	3724.3	1088.5	3799.9	1088.7	3813.3	1088.8	3928.3	1090
3990.9	1091.3	3999.9	1091.3	4041.2	1091.3	4063	1090.8	4096.5	1091.1
4138.9	1092.1	4199.9	1092.5	4275.9	1092.4	4293	1091.7	4363.4	1091.4
4399.9	1091.7	4599.9	1091.3	4766.8	1090.9	4797.5	1090.9	4799.9	1090.9
4999.9	1091.3	5032.4	1090.8	5060.8	1090.7	5184.3	1091		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2425	.02	2460	.13	2999.9	.035	3999.9	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2425	2460	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1089.51	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.038				
W.S. Elev (ft)	1089.48	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	346.19	3.59

924.46				
E.G. Slope (ft/ft)	0.001660	Area (sq ft)	346.19	3.59
924.46				
Q Total (cfs)	1375.00	Flow (cfs)	76.26	2.67
1296.07				
Top Width (ft)	2464.16	Top Width (ft)	1064.02	29.45
1370.69				
Vel Total (ft/s)	1.08	Avg. Vel. (ft/s)	0.22	0.74
1.40				
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.33	0.12
0.67				
Conv. Total (cfs)	33752.1	Conv. (cfs)	1871.8	65.6
31814.7				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1064.03	29.45
1370.78				
Min Ch El (ft)	1089.30	Shear (lb/sq ft)	0.03	0.01
0.07				
Alpha	1.59	Stream Power (lb/ft s)	0.01	0.01
0.10				
Frctn Loss (ft)	1.31	Cum Volume (acre-ft)	390.63	45.86
328.15				
C & E Loss (ft)	0.00	Cum SA (acres)	356.88	51.65
414.96				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.8

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1090.6	1084.3	1090.9	1111	1088.6	1235.4	1088.6	1244.2	1090.1
1312.8	1090.8	1400	1088.1	1414.6	1087.5	1600	1088.1	1620.5	1088.1
1630.5	1087.3	1673.6	1087.3	1800	1087.9	2000	1087.9	2200	1087.7
2357.9	1087.8	2369.1	1087.2	2398.7	1087.2	2399.9	1087.3	2430	1087.9
2599.9	1087.8	2799.9	1087.7	2929.6	1087.6	2936.7	1087.3	2973	1087.6
2999.9	1087.8	3179.5	1088.1	3199.9	1087.7	3221.4	1087.4	3331.1	1088.3
3373.3	1087.6	3399.9	1087.7	3527.8	1087.4	3599.9	1088.4	3614.6	1088.9
3642.9	1087.7	3693.7	1087.5	3739.4	1085.9	3799.9	1087.1	3883.7	1088.4
3999.9	1088.5	4057.2	1088.1	4199.9	1088.8	4215.4	1088.8	4243.7	1088
4309.8	1088.3	4399.9	1088.4	4599.9	1088.5	4743.6	1088.7	4796.8	1090.7
4799.9	1090.8	4878.2	1091.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2369.1	.02	2430	.13	2973	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2369.1	2430	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1088.19	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.020
0.043				
W.S. Elev (ft)	1088.13	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)	1087.90	Flow Area (sq ft)	348.25	44.26
646.62				
E.G. Slope (ft/ft)	0.004738	Area (sq ft)	348.25	44.26
646.62				
Q Total (cfs)	1375.00	Flow (cfs)	138.41	182.91
1053.68				
Top Width (ft)	2423.09	Top Width (ft)	969.92	60.90
1392.27				
Vel Total (ft/s)	1.32	Avg. Vel. (ft/s)	0.40	4.13
1.63				
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.36	0.73
0.46				
Conv. Total (cfs)	19975.7	Conv. (cfs)	2010.8	2657.3
15307.6				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	969.98	60.91
1392.36				
Min Ch El (ft)	1087.20	Shear (lb/sq ft)	0.11	0.21
0.14				
Alpha	2.47	Stream Power (lb/ft s)	0.04	0.89
0.22				
Frctn Loss (ft)	1.59	Cum Volume (acre-ft)	386.65	45.59
319.14				
C & E Loss (ft)	0.01	Cum SA (acres)	345.21	51.13
399.10				

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.71

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1087.8	1188.6	1085.9	1200	1086.7	1366.9	1086.5	1400	1086.5
1600	1086.4	1800	1085.9	2000	1085.7	2200	1085.5	2480	1085.5
2525	1085.5	2799.9	1085.6	2999.9	1085.9	3199.9	1086.3	3399.9	1086.9
3599.9	1087	3799.9	1086.7	3999.9	1086.5	4199.9	1086.2	4399.9	1085.7
4599.9	1085.9	4799.9	1086.2	4999.9	1086.5	5199.8	1087.1	5399.8	1087.7
5599.8	1088	5610.8	1088.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2480	.02	2525	.13	2999.9	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2480	2525	220	220	220	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1086.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.130	0.020	0.060
W.S. Elev (ft)	1086.56	Reach Len. (ft)	220.00	220.00	220.00
Crit W.S. (ft)		Flow Area (sq ft)	773.38	47.71	1005.89
E.G. Slope (ft/ft)	0.002351	Area (sq ft)	773.38	47.71	1005.89
Q Total (cfs)	1375.00	Flow (cfs)	315.77	178.71	880.51
Top Width (ft)	3125.45	Top Width (ft)	1238.39	45.00	1842.06
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.41	3.75	0.88
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.62	1.06	0.55
Conv. Total (cfs)	28360.0	Conv. (cfs)	6513.0	3686.0	18160.9
Length Wtd. (ft)	220.00	Wetted Per. (ft)	1238.41	45.00	1842.07
Min Ch El (ft)	1085.50	Shear (lb/sq ft)	0.09	0.16	0.08
Alpha	4.15	Stream Power (lb/ft s)	0.04	0.58	0.07
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	380.34	45.07	309.84
C & E Loss (ft)	0.00	Cum SA (acres)	332.79	50.54	380.91

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.66

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1087.7	1020.1	1087.3	1064.8	1088.5	1111.2	1086.8	1200	1086.8
1400	1086.3	1600	1086.4	1643.2	1086.3	1675.6	1085.2	1721.4	1085.4
1800	1085.5	2000	1085.2	2045.4	1085.1	2053.8	1084.8	2077.2	1084.8
2097.5	1085.3	2200	1085.3	2397.4	1085.2	2399.9	1085.1	2421	1084.5
2438.3	1084.5	2453.3	1085.1	2540	1085.3	2768.4	1085.1	2777.5	1084.8
2797.2	1084.8	2799.9	1084.8	2813.7	1085.3	2958.8	1085.2	2999.9	1086.2
3040	1086.3	3199.9	1086	3399.9	1085.7	3599.9	1086.3	3799.9	1086.4
3999.9	1084.9	4199.9	1085.4	4271	1085.7	4285.1	1084.8	4342.9	1084.8
4355.5	1085.1	4399.9	1085.2	4599.9	1085.1	4799.9	1085.4	4999.9	1085.8
5199.8	1086.1	5399.8	1086.4	5510.5	1086.7				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2421	.02	2540	.13	3040	.02	4399.9	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2421	2540	480	480	480	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1085.81	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.08	Wt. n-Val.	0.130	0.020
0.042				
W.S. Elev (ft)	1085.73	Reach Len. (ft)	480.00	480.00
480.00				
Crit W.S. (ft)		Flow Area (sq ft)	346.09	80.54
735.97				
E.G. Slope (ft/ft)	0.005330	Area (sq ft)	346.09	80.54
735.97				
Q Total (cfs)	1691.00	Flow (cfs)	170.82	336.73
1183.46				
Top Width (ft)	2417.10	Top Width (ft)	760.85	119.00
1537.25				
Vel Total (ft/s)	1.45	Avg. Vel. (ft/s)	0.49	4.18
1.61				
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)	0.45	0.68
0.48				
Conv. Total (cfs)	23161.4	Conv. (cfs)	2339.6	4612.1
16209.7				
Length Wtd. (ft)	480.00	Wetted Per. (ft)	760.88	119.01
1537.30				
Min Ch El (ft)	1084.50	Shear (lb/sq ft)	0.15	0.23
0.16				
Alpha	2.51	Stream Power (lb/ft s)	0.07	0.94
0.26				
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	377.51	44.75
305.44				
C & E Loss (ft)	0.02	Cum SA (acres)	327.74	50.12
372.38				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.57

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1086.5	1038.5	1085.9	1069.7	1087.7	1200	1085.1	1400	1084.1
1460.6	1083.6	1512.2	1083.9	1574	1084.8	1600	1084.9	1795.9	1084.5
1800	1084.4	1851.1	1083.7	1873.1	1083.7	1896.9	1084.5	2000	1084.5
2050	1084.6	2160	1084.2	2200	1084.1	2208.2	1083.4	2233.3	1083.4
2280	1084.2	2399.9	1084.5	2407.9	1084.6	2554.8	1084.1	2567.4	1083.8
2593.6	1083.8	2599.9	1084.1	2606.6	1084.3	2753	1084.5	2778	1085.3
2799.9	1085.4	2887.9	1084.7	2999.9	1084.7	3199.9	1084.4	3399.9	1084.4
3599.9	1085	3799.9	1084.4	3999.9	1084.7	4055	1084.8	4072.9	1083.6
4137.8	1083.8	4199.9	1084.2	4399.9	1084.5	4599.9	1084.7	4799.9	1085
4999.9	1084.9	5199.8	1084.9	5399.8	1085.1	5410.4	1085.1	5442.9	1085.4
5599.8	1086.3	5602.3	1086.4						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

1000	.13	2160	.02	2280	.13	2778	.02	4137.8	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2160	2280	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1085.20	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020
0.037				
W.S. Elev (ft)	1085.18	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1084.73	Flow Area (sq ft)	733.04	162.32
1786.80				
E.G. Slope (ft/ft)	0.000534	Area (sq ft)	733.04	162.32
1786.80				
Q Total (cfs)	1691.00	Flow (cfs)	161.24	340.69
1189.08				
Top Width (ft)	4170.48	Top Width (ft)	964.12	120.00
3086.36				
Vel Total (ft/s)	0.63	Avg. Vel. (ft/s)	0.22	2.10
0.67				
Max Chl Dpth (ft)	1.78	Hydr. Depth (ft)	0.76	1.35
0.58				
Conv. Total (cfs)	73199.1	Conv. (cfs)	6979.6	14747.4
51472.1				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	964.16	120.04
3086.43				
Min Ch El (ft)	1083.40	Shear (lb/sq ft)	0.03	0.05
0.02				
Alpha	3.03	Stream Power (lb/ft s)	0.01	0.09
0.01				
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	371.57	43.41
291.54				
C & E Loss (ft)	0.01	Cum SA (acres)	318.23	48.80
346.90				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.48

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1085.3	1074.4	1084.5	1200	1084.7	1600	1084.7	1735.6	1083.8
1768.1	1084	1800	1084.4	2000	1084.4	2200	1084.2	2381.5	1083.7
2394.6	1083	2399.9	1083	2437.9	1083	2599.9	1083.4	2771.6	1082.7
2796.9	1082.6	2799.9	1082.7	2999.9	1083.1	3080	1083.1	3132.1	1082.3
3158.5	1082.3	3180.5	1083	3199.9	1083	3399.9	1083.2	3476.6	1083.3
3496.3	1082.7	3518.3	1082.7	3533.7	1083.3	3599.9	1083.3	3663.6	1083.1

3693	1083.7	3736.5	1083.8	3741.5	1079.4	3799.9	1079.2	3999.9	1081.1
4199.9	1085.6	4349.4	1082.8	4356.5	1080.7	4399.9	1080.6	4406.6	1080.7
4414.2	1083	4541.6	1085	4599.9	1085	4788.5	1085.2	4799.9	1084.9
4817.8	1083.8	4985.2	1083.4	4992.2	1082.5	4999.9	1082.5	5058.8	1082.4
5199.8	1083	5399.8	1083.4	5599.8	1083.4	5700	1084	5999.8	1083.2
6199.8	1083.5	6332.8	1084.1	6399.8	1084.5	6406.3	1084.6	6469.9	1085.8

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3080	.02	3199.9	.13	3693	.035	3799.9	.5
4199.9	.02	4349.4	.1	4817.8	.13				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3080	3199.9	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	5700	1084

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1084.38	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.020
0.118				
W.S. Elev (ft)	1084.31	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1084.10	Flow Area (sq ft)	302.42	37.21
1107.91				
E.G. Slope (ft/ft)	0.025525	Area (sq ft)	302.42	37.21
1107.91				
Q Total (cfs)	1691.00	Flow (cfs)	230.53	202.42
1258.06				
Top Width (ft)	3974.46	Top Width (ft)	1124.44	119.90
2730.12				
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.76	5.44
1.14				
Max Chl Dpth (ft)	1.11	Hydr. Depth (ft)	0.27	0.31
0.41				
Conv. Total (cfs)	10584.3	Conv. (cfs)	1442.9	1267.0
7874.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	1124.45	119.90
2730.14				
Min Ch El (ft)	1084.00	Shear (lb/sq ft)	0.43	0.49
0.65				
Alpha	3.36	Stream Power (lb/ft s)	0.33	2.69
0.73				
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	365.62	42.26
274.93				
C & E Loss (ft)	0.02	Cum SA (acres)	306.25	47.43
313.52				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the
cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.38

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1084.6	1158.3	1083.5	1188.6	1083.5	1387.2	1084.4	1400	1084.4
1512.7	1083.7	1556.9	1083.1	1600	1083.1	1800	1083.1	2000	1083.2
2143.6	1082.9	2160.2	1083.1	2200	1083.1	2399.9	1082.9	2462.1	1082.8
2476.9	1082.3	2520.1	1082.3	2535.1	1082.8	2599.9	1082.7	2799.9	1082.5
2846.2	1082.3	2858.5	1082	2887.2	1082	2999.9	1082.5	3030.6	1082.5
3170	1082.2	3204.1	1082.2	3216.2	1082	3244.5	1082	3280	1082.2
3399.9	1082.2	3556.4	1082.3	3576.6	1082	3599.9	1082	3600.6	1082
3618.8	1082.4	3757.2	1082.7	3786.3	1084.1	3799.9	1083.9	3999.9	1083.7
4199.9	1083.1	4399.9	1083	4599.9	1083.4	4799.9	1082.3	4846	1082.4
4899.7	1081.9	4955.2	1082.3	4999.9	1082.3	5070.8	1082	5079.6	1081.6
5199.8	1082	5399.8	1082.1	5599.8	1082.2	5799.8	1082.1	5891	1081.7
5964.2	1082	5999.8	1082.3	6032.2	1083.5	6032.6	1083.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3170	.02	3280	.13	3799.9	.02	5070.8	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3280	490	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1083.28	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020
0.068				
W.S. Elev (ft)	1083.26	Reach Len. (ft)	490.00	490.00
490.00				
Crit W.S. (ft)		Flow Area (sq ft)	764.49	127.23
2050.88				
E.G. Slope (ft/ft)	0.000752	Area (sq ft)	764.49	127.23
2050.88				
Q Total (cfs)	1691.00	Flow (cfs)	144.91	285.53
1260.56				
Top Width (ft)	4009.52	Top Width (ft)	1625.03	110.00
2274.49				
Vel Total (ft/s)	0.57	Avg. Vel. (ft/s)	0.19	2.24
0.61				
Max Chl Dpth (ft)	1.66	Hydr. Depth (ft)	0.47	1.16
0.90				
Conv. Total (cfs)	61679.2	Conv. (cfs)	5285.6	10414.9
45978.8				
Length Wtd. (ft)	490.00	Wetted Per. (ft)	1625.05	110.00
2274.55				
Min Ch El (ft)	1082.00	Shear (lb/sq ft)	0.02	0.05
0.04				
Alpha	3.44	Stream Power (lb/ft s)	0.00	0.12

0.03				
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	359.50	41.32
256.80				
C & E Loss (ft)	0.00	Cum SA (acres)	290.47	46.11
284.80				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.29

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1083	1200	1083.7	1297.5	1083.6	1400	1083.3	1600	1083.7
1609	1083.7	1647	1083.8	1667.9	1082.8	1691.2	1083.4	1800	1083.3
1952.8	1082.6	1978.9	1082.6	1991.8	1083.2	2000	1083.2	2200	1082.9
2292.1	1082.3	2313.6	1082.3	2330.4	1082.7	2399.9	1082.7	2599.9	1082.3
2615.6	1082.1	2661.2	1082.1	2799.9	1082.4	2996.5	1081.7	2999.9	1081.7
3026.6	1081.7	3045.2	1082	3176.7	1082.3	3199.9	1082.1	3325	1081.5
3382.7	1081.6	3396.2	1082.1	3450	1082.1	3599.9	1081.8	3716.1	1081.4
3741.1	1081.4	3753	1081.8	3799.9	1081.7	3916.2	1082	3923	1082.9
3972.9	1083.2	3999.9	1083.1	4199.9	1082.5	4399.9	1081.9	4599.9	1081.9
4799.9	1082.1	4981.7	1080.6	4999.9	1080.6	5035.7	1080.6	5048.4	1080.9
5100	1080.9	5213	1080.8	5276.2	1080.9	5399.8	1082.5	5599.8	1082.6
5610.9	1081.6	5624.8	1081.2	5697.1	1082.7				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3325	.02	3450	.13	3999.9	.5	4981.7	.035
5100	.13								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3325	3450	490	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1082.72	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.099				
W.S. Elev (ft)	1082.69	Reach Len. (ft)	490.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	524.22	108.75
1850.57				
E.G. Slope (ft/ft)	0.001923	Area (sq ft)	524.22	108.75
1850.57				
Q Total (cfs)	1691.00	Flow (cfs)	170.42	322.84
1197.75				
Top Width (ft)	3220.81	Top Width (ft)	1064.70	125.00
2031.12				
Vel Total (ft/s)	0.68	Avg. Vel. (ft/s)	0.33	2.97
0.65				
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	0.49	0.87

0.91				
Conv. Total (cfs)	38565.8	Conv. (cfs)	3886.6	7362.8
27316.4				
Length Wtd. (ft)	499.42	Wetted Per. (ft)	1064.71	125.01
2031.26				
Min Ch El (ft)	1081.50	Shear (lb/sq ft)	0.06	0.10
0.11				
Alpha	4.29	Stream Power (lb/ft s)	0.02	0.31
0.07				
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	352.25	39.99
234.86				
C & E Loss (ft)	0.00	Cum SA (acres)	275.34	44.79
260.58				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.2

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082.7	1200	1082.6	1400	1082.5	1800	1082.3	2080	1081.9
2180	1081.6	2399.9	1081.7	2599.9	1081.6	2799.9	1081.6	2999.9	1081.5
3140	1081.4	3399.9	1081	3599.9	1080.9	3799.9	1080.8	3999.9	1080.8
4199.9	1080.6	4399.9	1080.5	4599.9	1080.5	4799.9	1081.4	4999.9	1082.2
5016.6	1082.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2999.9	.02	3140	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3140	450	470	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1081.82	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1081.81	Reach Len. (ft)	450.00	470.00
470.00				
Crit W.S. (ft)		Flow Area (sq ft)	165.90	50.01
1648.25				
E.G. Slope (ft/ft)	0.001657	Area (sq ft)	165.90	50.01
1648.25				
Q Total (cfs)	1691.00	Flow (cfs)	25.21	76.13
1589.66				
Top Width (ft)	2790.65	Top Width (ft)	888.90	140.10
1761.66				
Vel Total (ft/s)	0.91	Avg. Vel. (ft/s)	0.15	1.52
0.96				
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.19	0.36
0.94				
Conv. Total (cfs)	41537.5	Conv. (cfs)	619.3	1870.0
39048.3				
Length Wtd. (ft)	469.09	Wetted Per. (ft)	888.90	140.10

1761.66				
Min Ch El (ft)	1081.40	Shear (lb/sq ft)	0.02	0.04
0.10				
Alpha	1.19	Stream Power (lb/ft s)	0.00	0.06
0.09				
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	348.37	39.08
214.78				
C & E Loss (ft)	0.00	Cum SA (acres)	264.35	43.26
238.81				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.11

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082	1200	1081.7	1233.4	1081.5	1265.1	1081.1	1286.4	1081.5
1400	1081.5	1600	1081.5	1800	1081.3	1857.6	1081.1	1867.2	1080.9
1911.5	1080.9	1920.5	1080.9	2000	1080.9	2200	1080.8	2399.9	1080.6
2537.2	1080	2563	1080	2575.4	1080.4	2599.9	1080.4	2799.9	1080.3
2846.6	1080.3	2863.9	1079.8	2887	1079.8	2905	1080.2	2950	1080.3
3184.1	1080	3199.9	1080	3399.9	1080.4	3515	1080	3553.5	1080
3566.5	1080.2	3599.9	1080.2	3799.9	1080.1	3841.7	1080	3848.8	1079.9
3884.5	1079.9	3896.9	1080.1	3999.9	1080.1	4037.1	1080.3	4056.7	1079.9
4120.1	1080.3	4181.8	1080	4199.9	1080.1	4399.9	1079.9	4408.2	1079.9
4506.3	1080.1	4567.3	1080.4	4599.9	1080.4	4723.7	1081.5	4741.4	1081.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2846.6	.02	2950	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2846.6	2950	500	530	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4723.7	4741.4	1081.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1081.12	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1081.09	Reach Len. (ft)	500.00	530.00
500.00				
Crit W.S. (ft)	1080.54	Flow Area (sq ft)	505.53	105.63
1634.35				
E.G. Slope (ft/ft)	0.001356	Area (sq ft)	505.53	105.63
1634.35				
Q Total (cfs)	1865.00	Flow (cfs)	136.03	293.09
1435.88				
Top Width (ft)	2820.14	Top Width (ft)	988.72	103.40
1728.02				
Vel Total (ft/s)	0.83	Avg. Vel. (ft/s)	0.27	2.77
0.88				

Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)	0.51	1.02
0.95				
Conv. Total (cfs)	50653.7	Conv. (cfs)	3694.7	7960.3
38998.7				
Length Wtd. (ft)	506.36	Wetted Per. (ft)	988.73	103.41
1728.04				
Min Ch El (ft)	1079.80	Shear (lb/sq ft)	0.04	0.09
0.08				
Alpha	2.62	Stream Power (lb/ft s)	0.01	0.24
0.07				
Frctn Loss (ft)	0.95	Cum Volume (acre-ft)	344.90	38.24
197.07				
C & E Loss (ft)	0.00	Cum SA (acres)	254.65	41.95
219.99				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 7.06

INPUT
Description: Left Overbank between stations 7.01 and 7.11
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.9
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1081.5	100	1081	300	1080	310	1079.5	490	1079.5
500	1080								

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1081.12	Weir Max Depth (ft)	0.99
W.S. US. (ft)	1081.09	Weir Avg Depth (ft)	0.54
E.G. DS (ft)	1080.16	Weir Submerg	0.00
W.S. DS (ft)	1080.12	Min El Weir Flow (ft)	1079.50
Q US (cfs)	1865.00	Wr Top Wdth (ft)	366.63
Q Leaving Total (cfs)	314.30	Total Gate Flow (cfs)	
Q DS (cfs)	1551.77	Gate Group Q (cfs)	
Perc Q Leaving	16.80	Gate Open Ht (ft)	
Q Weir (cfs)	314.30	Gate #Open	
Wr Flw Area (sq ft)	199.55	Gate Area (sq ft)	
Weir Sta US (ft)	133.37	Gate Submerg	
Weir Sta DS (ft)	500.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 7.01

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1082.1	1182.3	1081.4	1200	1081.4	1400	1082	1600	1081.9
1794.4	1081.4	1800	1080.1	1806	1079.9	1853.2	1079.8	2000	1079.9
2200	1079.5	2400	1079.6	2480	1079	2505.7	1079.5	2599.9	1079.7
2799.9	1079.5	2806.5	1079.5	2865	1079.5	2999.9	1079.5	3100	1079.5
3168.5	1079.5	3199.9	1079.5	3399.9	1079.4	3454.6	1079.5	3487.2	1079.5
3575.9	1079.4	3599.9	1079.9	3621.4	1080	3799.9	1080	3999.9	1079.9
4199.9	1079.4	4399.9	1078.7	4453.1	1078.5	4524.8	1078.6	4599.9	1081
4642	1081								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2865	.02	3100	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2865	3100	360	400	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1080.16	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.05	Wt. n-Val.	0.130	0.020
0.060				
W.S. Elev (ft)	1080.12	Reach Len. (ft)	360.00	400.00
360.00				
Crit W.S. (ft)		Flow Area (sq ft)	527.98	144.72
914.04				
E.G. Slope (ft/ft)	0.003063	Area (sq ft)	527.98	144.72
914.04				
Q Total (cfs)	1551.77	Flow (cfs)	209.21	430.77
911.78				
Top Width (ft)	2772.30	Top Width (ft)	1065.07	235.00
1472.23				
Vel Total (ft/s)	0.98	Avg. Vel. (ft/s)	0.40	2.98
1.00				
Max Chl Dpth (ft)	1.62	Hydr. Depth (ft)	0.50	0.62
0.62				
Conv. Total (cfs)	28036.9	Conv. (cfs)	3780.0	7783.1
16473.8				
Length Wtd. (ft)	368.76	Wetted Per. (ft)	1065.08	235.00
1472.27				
Min Ch El (ft)	1079.50	Shear (lb/sq ft)	0.09	0.12
0.12				
Alpha	3.21	Stream Power (lb/ft s)	0.04	0.35
0.12				
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	338.97	36.72
182.44				
C & E Loss (ft)	0.01	Cum SA (acres)	242.87	39.89
201.62				

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 6.96

INPUT
Description: Left Overbank Between Stations 6.94 and 7.01
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0

Weir Coefficient = 1.75
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1080	20	1079.2	350	1079.2	360	1080

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1080.16	Weir Max Depth (ft)	0.88
W.S. US. (ft)	1080.12	Weir Avg Depth (ft)	0.58
E.G. DS (ft)	1079.49	Weir Submerg	0.00
W.S. DS (ft)	1079.48	Min El Weir Flow (ft)	1079.20
Q US (cfs)	1551.77	Wr Top Wdth (ft)	353.60
Q Leaving Total (cfs)	281.81	Total Gate Flow (cfs)	
Q DS (cfs)	1270.50	Gate Group Q (cfs)	
Perc Q Leaving	18.13	Gate Open Ht (ft)	
Q Weir (cfs)	281.81	Gate #Open	
Wr Flw Area (sq ft)	204.34	Gate Area (sq ft)	
Weir Sta US (ft)	0.00	Gate Submerg	
Weir Sta DS (ft)	353.60	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.94

INPUT
Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1101.2	1014.6	1101.2	1031.8	1103.6	1137.7	1080.8	1220	1079.3
1225	1079.3	1400	1079.5	1572.6	1079.7	1600	1079.4	1800	1079.5
1882.6	1079.1	1962.3	1079.1	2000	1079.2	2186.7	1079.4	2200	1078.7
2204.6	1078.6	2230	1078.6	2245.5	1079.4	2400	1080.2	2465.1	1079.7
2501.1	1078.7	2599.9	1078.9	2660	1079	2799.9	1079.5	2999.9	1079.4
3199.9	1078.9	3399.9	1078.3	3599.9	1077.7	3799.9	1077.3	3801.5	1077.3
3824.3	1077.9	3841.3	1076.9	3858.7	1077.8	3923.4	1077.9	3999.9	1080
4051	1082								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	2400	.02	2660	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2400	2660	360	360	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1079.49	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.060	0.020
0.060				
W.S. Elev (ft)	1079.48	Reach Len. (ft)	360.00	360.00
360.00				
Crit W.S. (ft)		Flow Area (sq ft)	151.22	109.37
1238.10				
E.G. Slope (ft/ft)	0.001084	Area (sq ft)	151.22	109.37

1238.10				
Q Total (cfs)	1270.50	Flow (cfs)	48.86	187.15
1034.49				
Top Width (ft)	2239.67	Top Width (ft)	785.14	186.86
1267.67				
Vel Total (ft/s)	0.85	Avg. Vel. (ft/s)	0.32	1.71
0.84				
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)	0.19	0.59
0.98				
Conv. Total (cfs)	38597.1	Conv. (cfs)	1484.3	5685.5
31427.4				
Length Wtd. (ft)	360.00	Wetted Per. (ft)	785.18	186.87
1267.76				
Min Ch El (ft)	1078.70	Shear (lb/sq ft)	0.01	0.04
0.07				
Alpha	1.40	Stream Power (lb/ft s)	0.00	0.07
0.06				
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	336.16	35.55
173.55				
C & E Loss (ft)	0.00	Cum SA (acres)	235.22	37.96
190.30				

Warning: Divided flow computed for this cross-section.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 6.91

INPUT
Description: Left Overbank Between Stations 6.88 and 6.94
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 2.1
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1082	20	1078.8	350	1078.8	360	1079

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1079.49	Weir Max Depth (ft)	0.66
W.S. US. (ft)	1079.48	Weir Avg Depth (ft)	0.54
E.G. DS (ft)	1079.24	Weir Submerg	0.00
W.S. DS (ft)	1079.23	Min El Weir Flow (ft)	1078.80
Q US (cfs)	1270.50	Wr Top Wdth (ft)	344.16
Q Leaving Total (cfs)	290.18	Total Gate Flow (cfs)	
Q DS (cfs)	980.16	Gate Group Q (cfs)	
Perc Q Leaving	22.85	Gate Open Ht (ft)	
Q Weir (cfs)	290.18	Gate #Open	
Wr Flw Area (sq ft)	186.23	Gate Area (sq ft)	
Weir Sta US (ft)	15.84	Gate Submerg	
Weir Sta DS (ft)	360.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.88

INPUT

Description: WEIR FLOW OVER SOUTHERN PACFIC RAILROAD TRACKS. FLOW RETURNS AT SECTION

Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1093.4	1040	1079	1093.5	1079	1383.4	1079	1389.3	1078.9
1400	1078.9	1424.1	1078.9	1600	1079.6	1759.9	1078.7	1796.2	1080
1800	1080	1987.2	1079.1	2000	1078.2	2002.8	1078.2	2200	1078.4
2320	1079.1	2599.9	1079	2799.9	1078.6	2999.9	1078.4	3110	1078.4
3144.5	1083.1	3199.9	1081.4	3292	1078.2	3399.9	1077.7	3599.9	1077.3
3696	1077	3767.6	1077.3	3799.9	1077.8	3966.2	1079	3966.7	1079.2

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1600	.06	2320	.02	2599.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2320	2599.9	420	420	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1079.24	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.066	0.020
0.060				
W.S. Elev (ft)	1079.23	Reach Len. (ft)	420.00	420.00
420.00				
Crit W.S. (ft)		Flow Area (sq ft)	388.14	50.48
1366.88				
E.G. Slope (ft/ft)	0.000448	Area (sq ft)	388.14	50.48
1366.88				
Q Total (cfs)	980.16	Flow (cfs)	120.83	25.35
833.98				
Top Width (ft)	2437.16	Top Width (ft)	936.71	279.90
1220.55				
Vel Total (ft/s)	0.54	Avg. Vel. (ft/s)	0.31	0.50
0.61				
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.41	0.18
1.12				
Conv. Total (cfs)	46284.2	Conv. (cfs)	5705.5	1197.3
39381.4				
Length Wtd. (ft)	420.00	Wetted Per. (ft)	936.80	279.90
1220.71				
Min Ch El (ft)	1079.00	Shear (lb/sq ft)	0.01	0.01
0.03				
Alpha	1.14	Stream Power (lb/ft s)	0.00	0.00
0.02				
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	333.93	34.89
162.79				
C & E Loss (ft)	0.00	Cum SA (acres)	228.10	36.03
180.02				

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.8

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1079.7	1200	1079.9	1400	1079.8	1603.6	1079.5	1611.3	1078.6
1659.5	1078.9	1800	1079.1	1953.5	1078.4	1986	1078.5	2000	1079.1
2007.4	1079.1	2142.5	1079.1	2187.2	1078.6	2200	1078.8	2225.7	1079
2266.4	1078.7	2335.3	1079.4	2400	1079.4	2599.9	1078.8	2799.9	1078.4
2940	1078.2	2999.9	1078	3050	1078.1	3199.9	1078.1	3260.7	1078.9
3302.6	1078.6	3313.2	1077.9	3399.9	1077.9	3403.7	1077.9	3415.2	1078.5
3455.4	1078.5	3468.5	1077.7	3599.9	1077.7	3627.4	1077.2	3661.6	1077.1
3724.7	1077.7	3799.9	1077.7	3999.9	1077.7	4199.9	1077.5	4267.1	1077
4332.8	1077.5	4399.9	1078	4442.4	1079	4469.1	1079.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.1	2940	.02	3050	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2940	3050	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1078.93	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.100	0.020
0.130				
W.S. Elev (ft)	1078.91	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	213.56	91.22
1547.53				
E.G. Slope (ft/ft)	0.001362	Area (sq ft)	213.56	91.22
1547.53				
Q Total (cfs)	980.16	Flow (cfs)	57.50	220.81
701.85				
Top Width (ft)	2184.64	Top Width (ft)	686.22	110.00
1388.43				
Vel Total (ft/s)	0.53	Avg. Vel. (ft/s)	0.27	2.42
0.45				
Max Chl Dpth (ft)	1.91	Hydr. Depth (ft)	0.31	0.83
1.11				
Conv. Total (cfs)	26554.3	Conv. (cfs)	1557.7	5982.2
19014.4				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	686.25	110.00
1388.52				
Min Ch El (ft)	1078.00	Shear (lb/sq ft)	0.03	0.07
0.09				
Alpha	5.26	Stream Power (lb/ft s)	0.01	0.17
0.04				
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	331.03	34.21
148.74				
C & E Loss (ft)	0.00	Cum SA (acres)	220.28	34.15
167.44				

Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.7

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1079.1	1042.4	1078.8	1200	1079	1600	1078.7	1648.2	1078.5
1787.1	1078.6	1800	1078.7	2000	1079.2	2200	1079.1	2329.8	1077.9
2365.6	1077.7	2400	1078.6	2423.6	1079	2599.9	1079.5	2799.9	1078.5
2978.8	1077.7	2994.2	1077.2	2999.9	1077.2	3026.3	1077.1	3039.6	1077.7
3170	1077.7	3199.9	1077.7	3370	1077.5	3399.9	1077.4	3534.4	1078.3
3538.5	1077.3	3599.9	1077.8	3600.5	1077.8	3672.7	1076.3	3702.2	1076.3
3719	1077	3799.9	1077.2	3999.9	1077.4	4199.9	1076.4	4336.5	1076
4399.9	1076.5	4599.9	1076.8	4655	1077.8	4800	1078.5		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2978.8	.02	3039.6	.13	4655	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3170	3370	500	500	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1077.99	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.029	0.130
0.130				
W.S. Elev (ft)	1077.98	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	95.54	72.84
1289.20				
E.G. Slope (ft/ft)	0.002766	Area (sq ft)	95.54	72.84
1289.20				
Q Total (cfs)	980.16	Flow (cfs)	141.31	22.33
816.52				
Top Width (ft)	1781.48	Top Width (ft)	308.65	200.00
1272.82				
Vel Total (ft/s)	0.67	Avg. Vel. (ft/s)	1.48	0.31
0.63				
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)	0.31	0.36
1.01				
Conv. Total (cfs)	18636.3	Conv. (cfs)	2686.7	424.6
15524.9				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	308.68	200.00
1272.95				
Min Ch El (ft)	1077.50	Shear (lb/sq ft)	0.05	0.06
0.17				
Alpha	1.44	Stream Power (lb/ft s)	0.08	0.02
0.11				
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	329.26	33.27
132.45				
C & E Loss (ft)	0.00	Cum SA (acres)	214.57	32.37
152.17				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.61

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1078.2	1137.9	1078.5	1185.1	1077.3	1272.6	1077.3	1400	1077.9
1571.4	1077.9	1583.2	1077.2	1600	1077.2	1626	1077.3	1800	1077.1
2000	1077.2	2200	1077	2279.2	1076.6	2400	1076.9	2599.9	1076.7
2799.9	1076.6	2929.5	1075.8	2975.7	1076	2999.9	1076.1	3020	1076.1
3199.9	1076.2	3300	1076	3399.9	1075.3	3445.4	1075.2	3576.3	1076
3599.9	1076.7	3611.4	1077.1	3799.9	1077.5	3999.9	1077	4199.9	1076.9
4232	1076.6	4266.3	1075	4324.6	1075.1	4399.9	1075.6	4424.6	1075.8
4520	1076	4650	1078	4700	1079				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2929.5	.02	3020	.5	3999.9	.04

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3020	3300	490	490	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1077.02	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.040	0.500
0.082				
W.S. Elev (ft)	1077.01	Reach Len. (ft)	490.00	490.00
470.00				
Crit W.S. (ft)		Flow Area (sq ft)	357.74	245.10
887.72				
E.G. Slope (ft/ft)	0.001440	Area (sq ft)	357.74	245.10
887.72				
Q Total (cfs)	980.16	Flow (cfs)	323.18	25.30
631.69				
Top Width (ft)	2004.75	Top Width (ft)	827.45	280.00
897.30				
Vel Total (ft/s)	0.66	Avg. Vel. (ft/s)	0.90	0.10
0.71				
Max Chl Dpth (ft)	2.01	Hydr. Depth (ft)	0.43	0.88
0.99				
Conv. Total (cfs)	25827.4	Conv. (cfs)	8515.8	666.5
16645.1				
Length Wtd. (ft)	474.50	Wetted Per. (ft)	827.45	280.00
897.37				
Min Ch El (ft)	1076.00	Shear (lb/sq ft)	0.04	0.08
0.09				
Alpha	1.38	Stream Power (lb/ft s)	0.04	0.01
0.06				
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	326.66	31.44
119.96				
C & E Loss (ft)	0.01	Cum SA (acres)	208.05	29.61
139.71				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.52

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1077.7	1132.4	1076.4	1178.7	1076.9	1400	1076.8	1600	1076.7
1800	1075.8	1804.7	1075.7	1843.1	1075.9	1878.3	1077.9	2000	1078.3
2200	1077.3	2400	1076	2463.8	1075.9	2474	1075.4	2513	1075.2
2541.2	1075.8	2599.9	1075.9	2750	1076	2799.9	1076.1	2940	1075.4
2999.9	1075.5	3199.9	1075.4	3399.9	1075.8	3599.9	1076	3698.2	1076.3
3781.6	1075.7	3799.9	1074.4	3801.8	1074.3	3819.4	1074	3871.2	1074.4
3893.8	1075	3999.9	1075.2	4013.7	1075.5	4035.2	1076.4	4199.9	1076.6
4378.5	1077								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1843.1	.5	2400	.035	2940	.03

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2750	2999.9	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
4035.5	4378.5	1076.4

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1075.89	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.10	Wt. n-Val.	0.035	0.032
0.030				
W.S. Elev (ft)	1075.79	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1075.64	Flow Area (sq ft)	30.04	35.91
340.53				
E.G. Slope (ft/ft)	0.004516	Area (sq ft)	30.04	35.91
340.53				
Q Total (cfs)	980.16	Flow (cfs)	44.11	48.24
887.81				
Top Width (ft)	883.43	Top Width (ft)	96.92	138.43
648.08				
Vel Total (ft/s)	2.41	Avg. Vel. (ft/s)	1.47	1.34
2.61				
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)	0.31	0.26
0.53				

Conv. Total (cfs)	14585.8	Conv. (cfs)	656.5	717.9
13211.5				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	96.93	138.43
648.15				
Min Ch El (ft)	1075.40	Shear (lb/sq ft)	0.09	0.07
0.15				
Alpha	1.09	Stream Power (lb/ft s)	0.13	0.10
0.39				
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	324.48	29.86
113.33				
C & E Loss (ft)	0.02	Cum SA (acres)	202.85	27.26
131.37				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.42

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1076.2	1063.1	1075.5	1103.6	1075.6	1400	1075.8	1600	1075.7
1741.6	1075.1	1775.3	1075.1	1800	1075.9	1803.5	1076	2000	1076.1
2200	1075.6	2400	1074.9	2409.9	1074.8	2452.1	1074.8	2487.3	1074.6
2599.9	1075.3	2799.9	1074.4	2999.9	1074.7	3079.2	1074.2	3105.6	1074.6
3130	1074.4	3199.9	1074.2	3399.9	1074.1	3599.9	1074	3755.6	1073.9
3799.9	1074	3818.4	1074.2	3846.7	1076.4	3872.9	1076.8	3883.9	1076.1
3898.8	1076.1	3949.7	1075.6	3999.9	1076				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1800	.5	2200	.02	2487.3	.06	2999.9	.02
3130	.03								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3130	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3999.9	3999.9	1076

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1074.97	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.052	0.020
0.030				
W.S. Elev (ft)	1074.94	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1074.47	Flow Area (sq ft)	137.17	64.40

600.75				
E.G. Slope (ft/ft)	0.000956	Area (sq ft)	137.17	64.40
600.75				
Q Total (cfs)	980.16	Flow (cfs)	55.31	92.56
832.29				
Top Width (ft)	1304.30	Top Width (ft)	476.22	130.10
697.97				
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	0.40	1.44
1.39				
Max Chl Dpth (ft)	1.04	Hydr. Depth (ft)	0.29	0.50
0.86				
Conv. Total (cfs)	31706.4	Conv. (cfs)	1789.3	2994.1
26923.0				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	476.23	130.11
698.00				
Min Ch El (ft)	1074.20	Shear (lb/sq ft)	0.02	0.03
0.05				
Alpha	1.23	Stream Power (lb/ft s)	0.01	0.04
0.07				
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	323.52	29.29
107.93				
C & E Loss (ft)	0.00	Cum SA (acres)	199.56	25.72
123.65				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.33

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1075.7	1200	1075.8	1400	1075.6	1665	1074.9	1800	1075
2000	1075.2	2130	1074	2341.6	1073.8	2375.4	1073.8	2400	1074.2
2599.9	1073.9	2799.9	1073.8	2999.9	1073.9	3050	1073.6	3175	1073.4
3399	1073.3	3599.9	1073.3	3665.9	1073.5	3719.1	1073.8	3736.3	1075.3
3753.5	1075	3758.3	1075.8	3778	1075.8	3786.7	1074.6	4070	1075.5

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2341.6	.06	3050	.02	3175	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3050	3175	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3778	4070	1075.8

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1074.41	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.069	0.020

0.060				
W.S. Elev (ft)	1074.37	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1073.87	Flow Area (sq ft)	439.41	108.90
548.28				
E.G. Slope (ft/ft)	0.001360	Area (sq ft)	439.41	108.90
548.28				
Q Total (cfs)	980.16	Flow (cfs)	208.72	272.17
499.27				
Top Width (ft)	1635.87	Top Width (ft)	960.22	125.00
550.65				
Vel Total (ft/s)	0.89	Avg. Vel. (ft/s)	0.48	2.50
0.91				
Max Chl Dpth (ft)	1.07	Hydr. Depth (ft)	0.46	0.87
1.00				
Conv. Total (cfs)	26579.3	Conv. (cfs)	5660.0	7380.5
13538.8				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	960.22	125.00
550.68				
Min Ch El (ft)	1073.40	Shear (lb/sq ft)	0.04	0.07
0.08				
Alpha	2.76	Stream Power (lb/ft s)	0.02	0.18
0.08				
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	320.21	28.29
101.34				
C & E Loss (ft)	0.00	Cum SA (acres)	191.32	24.25
116.48				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.23

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.8	1200	1075.1	1400	1075	1512.1	1074.2	1537.5	1074.3
1600	1074.6	1800	1074.6	1860.5	1074.3	2000	1074.7	2001.1	1074.7
2018	1074.4	2200	1075	2343.1	1073.5	2376.4	1073.6	2400	1073.7
2599.9	1073.3	2751	1072.9	2799.9	1073.4	2999.9	1073.5	3059	1073
3092.2	1072.6	3129.2	1072.6	3175	1073	3399.9	1072.8	3469.2	1072.2
3499.4	1072.2	3599.9	1072.7	3799.9	1072.9	3999.9	1074		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	3059	.02	3175	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3059	3175	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3999.9	3999.9	1074

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1073.80	Element	Left OB	Channel
Right OB				

Vel Head (ft)	0.03	Wt. n-Val.	0.060	0.020	0.060
W.S. Elev (ft)	1073.76	Reach Len. (ft)	500.00	500.00	500.00
Crit W.S. (ft)	1073.21	Flow Area (sq ft)	288.47	119.07	720.84
E.G. Slope (ft/ft)	0.001087	Area (sq ft)	288.47	119.07	720.84
Q Total (cfs)	980.16	Flow (cfs)	125.61	296.86	557.70
Top Width (ft)	1638.71	Top Width (ft)	740.96	116.00	781.75
Vel Total (ft/s)	0.87	Avg. Vel. (ft/s)	0.44	2.49	0.77
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	0.39	1.03	0.92
Conv. Total (cfs)	29723.3	Conv. (cfs)	3809.1	9002.2	16912.0
Length Wtd. (ft)	500.00	Wetted Per. (ft)	740.97	116.00	781.76
Min Ch El (ft)	1072.60	Shear (lb/sq ft)	0.03	0.07	0.06
Alpha	2.98	Stream Power (lb/ft s)	0.01	0.17	0.05
Frctn Loss (ft)	0.85	Cum Volume (acre-ft)	316.03	26.98	94.05
C & E Loss (ft)	0.01	Cum SA (acres)	181.55	22.87	108.83

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.14

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.8	1200	1074.6	1400	1074.7	1649	1074.6	1657.9	1073.8
1695.2	1073.6	1800	1073.7	1856.2	1073.5	1876	1073.9	1903.1	1073.6
2000	1073.6	2200	1073.7	2317.7	1072.8	2400	1073.1	2599.9	1073
2799.9	1072.5	2851.8	1072.5	2860.7	1071.9	2866.2	1072.4	2999.9	1072.5
3072.5	1072	3110.2	1071.8	3130	1072	3199.9	1072.2	3399.9	1072.5
3599.9	1072.1	3627.7	1072.5	3724.6	1073.5	3799.9	1072.9	3900	1073
3999.9	1072	4115	1071.5	4740	1072				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1657.9	.03	1876	.5	2200	.03	2999.9	.02
3130	.03	3799.9	.13						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2999.9	3130	255.21	250	234.38	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3724.6	4740	1073.5

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1072.94	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.09	Wt. n-Val.	0.030	0.020
0.030				
W.S. Elev (ft)	1072.86	Reach Len. (ft)	255.21	250.00
234.38				
Crit W.S. (ft)	1072.73	Flow Area (sq ft)	107.95	98.78
286.11				
E.G. Slope (ft/ft)	0.002986	Area (sq ft)	107.95	98.78
286.11				
Q Total (cfs)	980.16	Flow (cfs)	134.36	333.76
512.04				
Top Width (ft)	1026.12	Top Width (ft)	363.96	130.10
532.06				
Vel Total (ft/s)	1.99	Avg. Vel. (ft/s)	1.24	3.38
1.79				
Max Chl Dpth (ft)	1.05	Hydr. Depth (ft)	0.30	0.76
0.54				
Conv. Total (cfs)	17938.5	Conv. (cfs)	2459.1	6108.3
9371.2				
Length Wtd. (ft)	243.01	Wetted Per. (ft)	364.00	130.10
532.07				
Min Ch El (ft)	1071.80	Shear (lb/sq ft)	0.06	0.14
0.10				
Alpha	1.46	Stream Power (lb/ft s)	0.07	0.48
0.18				
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	313.76	25.73
88.27				
C & E Loss (ft)	0.01	Cum SA (acres)	175.21	21.46
101.29				

Warning: Divided flow computed for this cross-section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.09312*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074.38	1175.41	1074.13	1229.61	1074.09	1350.82	1074.04	1459.23	1073.95
1569.2	1073.94	1577.01	1073.55	1609.72	1073.46	1701.64	1073.52	1750.93	1073.43
1768.29	1073.62	1792.06	1073.48	1877.05	1073.49	1905.83	1073.5	1918.46	1073.51
1966.79	1073.42	2052.46	1073.32	2148.07	1072.78	2155.69	1072.73	2227.87	1072.75
2280.98	1072.03	2280.99	1084.03	2469.81	1084.03	2469.82	1072.03	2578.6	1072.01
2607.3	1071.98	2624.12	1071.99	2631.92	1071.7	2636.75	1071.95	2690.45	1071.99
2691.16	1072.17	2719.64	1071.97	2725.39	1071.95	2754.01	1071.63	2754.81	1071.35
2756.45	1071.4	2778.08	1071.52	2799.24	1071.14	2800.86	1071.05	2801.48	1071.3
2811.1	1071.16	2840.74	1070.76	2843.04	1070.87	2870.51	1071.77	2870.52	1078.02
2935.16	1078.11	3120.14	1078.26	3215.03	1078.16	3215.04	1071.91	3268.35	1071.72
3303.05	1071.45	3303.06	1073.01	3303.41	1073.01	3303.41	1071.01	3305.12	1071.15
3311.31	1071.73	3327.44	1071.8	3330.83	1071.81	3350.99	1071.83	3353.05	1071.53
3357	1071.59	3370.16	1071.67	3420.45	1071.97	3431.35	1071.93	3466.6	1072

3467.14 1072.17 3484.5 1072.19 3490.09 1072.19 3561.95 1072.47 3582.68 1072.39
3619.6 1072.03 3662.15 1072.07 3675.07 1071.91 3700.65 1071.68 3706.76 1071.93
3743.72 1071.69 3781.53 1071.6 3916.8 1071.66 3986.14 1077.63 4146.85 1077.69
4174.78 1071.45 4175.32 1071.28 4208.13 1071.3 4208.68 1071.47 4213.03 1071.47
4217.23 1071.84 4338.67 1071.99 4349.1 1072.31 4359.58 1072.21

Manning's n Values num= 20

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.323	1577.01	.275	1768.29	.5	2052.46	.275	2280.98	.05
2469.82	.016	2690.45	.014	2754.01	.018	2778.08	.015	2870.52	.05
3215.04	.032	3303.05	.015	3303.41	.018	3311.31	.016	3357	.015
3467.14	.016	3490.09	.071	3986.14	.015	4217.23	.016	4359.58	.071

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2754.01	2870.51	234.79	230 215.62	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1072.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.015	0.015	0.026
W.S. Elev (ft)	1072.16	Reach Len. (ft)	234.79	230.00	215.62
Crit W.S. (ft)	1072.16	Flow Area (sq ft)	52.69	107.75	287.68
E.G. Slope (ft/ft)	0.002184	Area (sq ft)	52.69	107.75	287.68
Q Total (cfs)	980.16	Flow (cfs)	77.32	466.74	436.10
Top Width (ft)	1150.12	Top Width (ft)	292.69	116.50	740.93
Vel Total (ft/s)	2.19	Avg. Vel. (ft/s)	1.47	4.33	1.52
Max Chl Dpth (ft)	1.40	Hydr. Depth (ft)	0.18	0.92	0.39
Conv. Total (cfs)	20971.7	Conv. (cfs)	1654.4	9986.4	9330.9
Length Wtd. (ft)	223.43	Wetted Per. (ft)	292.73	116.62	743.77
Min Ch El (ft)	1070.76	Shear (lb/sq ft)	0.02	0.13	0.05
Alpha	2.12	Stream Power (lb/ft s)	0.04	0.55	0.08
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	313.28	25.14	86.73
C & E Loss (ft)	0.01	Cum SA (acres)	173.29	20.75	97.87

Warning: The energy equation could not be balanced within the specified number of iterations. The
program selected the water surface that had the least amount of error between computed
and assumed values.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to
critical depth, the calculated water surface came back below critical depth. This indicates

that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 6.05

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1074	1200	1073.6	1400	1073.3	1789	1073.4	1800	1073.4
1842.1	1073.2	2000	1072.7	2156.86	1072.1	2166.64	1072.15	2200	1071.9
2210.09	1071.9	2210.73	1071.9	2217.12	1071.9	2222.11	1071.9	2222.12	1073.9
2236.21	1073.9	2236.22	1071.9	2400	1071.5	2472.43	1071.58	2473.05	1071.91
2497.85	1071.5	2502.86	1071.46	2527.79	1070.83	2528.39	1070.29	2529.62	1070.4
2545.84	1070.81	2561.71	1070.25	2562.93	1070.09	2563.39	1070.58	2592.84	1069.8
2595.84	1070	2631.78	1071.55	2631.79	1083.55	2950.56	1083.55	2950.57	1071.55
2999.9	1071.3	3032	1070.85	3032.01	1073.85	3032.34	1073.85	3032.34	1070
3039.65	1071.31	3054.57	1071.2	3076.36	1071	3078.27	1070.4	3081.92	1070.49
3094.1	1070.5	3150.72	1070.58	3183.33	1070.98	3183.83	1071.31	3199.9	1071.5
3271.56	1072	3324.9	1071.5	3364.27	1072	3399.9	1071.5	3405.55	1072
3439.75	1071.7	3599.9	1071.7	3664.06	1083.1	3812.76	1083.1	3838.6	1071.1
3839.1	1070.77	3869.46	1070.77	3869.97	1071.1	3874	1071.1	3877.88	1071.8
3990.25	1072	3999.9	1072.6	4009.6	1072.4				

Manning's n Values num= 18

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.5	2156.86	.02	2200	.016	2210.73	.013	2222.11	.015
2236.22	.016	2472.43	.013	2545.84	.016	2563.39	.013	2631.79	.05
2950.57	.016	3032	.015	3032.34	.02	3039.65	.013	3081.92	.016
3183.83	.016	3664.06	.015	3877.88	.016				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2527.79	2631.78	560	500	480	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1071.75	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.22	Wt. n-Val.	0.013	0.013
0.016				
W.S. Elev (ft)	1071.53	Reach Len. (ft)	560.00	500.00
480.00				
Crit W.S. (ft)	1071.42	Flow Area (sq ft)	10.39	106.50
166.55				
E.G. Slope (ft/ft)	0.001609	Area (sq ft)	10.39	106.50
166.55				
Q Total (cfs)	1005.16	Flow (cfs)	20.81	480.88
503.47				
Top Width (ft)	468.67	Top Width (ft)	69.74	103.50
295.42				
Vel Total (ft/s)	3.55	Avg. Vel. (ft/s)	2.00	4.52
3.02				
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	0.15	1.03
0.56				
Conv. Total (cfs)	25061.5	Conv. (cfs)	518.9	11989.7
12552.8				
Length Wtd. (ft)	500.27	Wetted Per. (ft)	69.75	104.00
298.26				
Min Ch El (ft)	1069.80	Shear (lb/sq ft)	0.01	0.10
0.06				

Alpha 0.17	1.15	Stream Power (lb/ft s)	0.03	0.46
Frctn Loss (ft) 85.61	0.46	Cum Volume (acre-ft)	313.11	24.57
C & E Loss (ft) 95.30	0.06	Cum SA (acres)	172.31	20.17

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.95

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1073.1	1200	1072.8	1400	1072	1800	1072.3	1939.2	1072
1992.7	1069.7	2000	1069.8	2179.3	1070	2200	1070.7	2225	1070.8
2385.2	1070.2	2400	1070.2	2599.9	1070.6	2799.9	1070.4	2999.9	1070.3
3199.9	1070.6	3323.1	1070.8	3337.6	1070.5	3375.9	1070.5	3399.9	1070.7
3445.8	1070.8	3599.9	1071.2	3765.7	1072				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1400	.5	1939.2	.035	2999.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2225	2400	510	500	470	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
3765.7	3765.7	1072

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1071.23	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.01	Wt. n-Val.	0.035	0.035
0.041				
W.S. Elev (ft)	1071.21	Reach Len. (ft)	510.00	500.00
470.00				
Crit W.S. (ft)	1070.67	Flow Area (sq ft)	302.20	129.24
797.95				
E.G. Slope (ft/ft)	0.000600	Area (sq ft)	302.20	129.24
797.95				
Q Total (cfs)	1005.16	Flow (cfs)	340.91	109.83
554.42				
Top Width (ft)	1645.13	Top Width (ft)	267.50	175.00
1202.63				

Vel Total (ft/s)	0.82	Avg. Vel. (ft/s)	1.13	0.85
0.69				
Max Chl Dpth (ft)	1.51	Hydr. Depth (ft)	1.13	0.74
0.66				
Conv. Total (cfs)	41027.6	Conv. (cfs)	13915.0	4482.9
22629.7				
Length Wtd. (ft)	494.13	Wetted Per. (ft)	267.54	175.00
1202.64				
Min Ch El (ft)	1070.20	Shear (lb/sq ft)	0.04	0.03
0.02				
Alpha	1.16	Stream Power (lb/ft s)	0.05	0.02
0.02				
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	311.11	23.22
80.29				
C & E Loss (ft)	0.00	Cum SA (acres)	170.15	18.57
87.05				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.86

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1072.4	1200	1072.5	1295.5	1072.1	1397.4	1070.2	1400	1070.4
1600	1070.6	1800	1069.4	2000	1069.8	2083.5	1069.9	2117.1	1069.3
2168.3	1069.5	2187.8	1070.6	2260	1070.6	2368.8	1069.3	2390	1070
2450	1070	2940	1070.5	3540	1070.5	3680	1072		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.035	2000	.035	2260	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2000	2260	540	500	490	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1070.79	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.035	0.035
0.130				
W.S. Elev (ft)	1070.77	Reach Len. (ft)	540.00	500.00
490.00				
Crit W.S. (ft)		Flow Area (sq ft)	449.62	211.64
574.61				
E.G. Slope (ft/ft)	0.001404	Area (sq ft)	449.62	211.64
574.61				
Q Total (cfs)	1005.16	Flow (cfs)	569.31	293.43
142.42				
Top Width (ft)	2197.84	Top Width (ft)	632.98	260.00
1304.86				
Vel Total (ft/s)	0.81	Avg. Vel. (ft/s)	1.27	1.39
0.25				

Max Chl Dpth (ft)	1.47	Hydr. Depth (ft)	0.71	0.81
0.44				
Conv. Total (cfs)	26830.4	Conv. (cfs)	15196.4	7832.5
3801.5				
Length Wtd. (ft)	526.64	Wetted Per. (ft)	632.99	260.04
1304.88				
Min Ch El (ft)	1069.30	Shear (lb/sq ft)	0.06	0.07
0.04				
Alpha	2.23	Stream Power (lb/ft s)	0.08	0.10
0.01				
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	306.70	21.26
72.89				
C & E Loss (ft)	0.00	Cum SA (acres)	164.87	16.08
73.52				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.76

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1070.5	1200	1070	1400	1070	1800	1070	1847.1	1068.4
2000	1068.3	2200	1068.5	2400	1068.5	2599.9	1068.9	2740	1069.5
3040	1070	3300	1070.5	3820	1070	4600	1070.5	4920	1071

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.08	2400	.08	2599.9	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2400	2599.9	490	500	470	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1069.49	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.03	Wt. n-Val.	0.080	0.080
0.080				
W.S. Elev (ft)	1069.46	Reach Len. (ft)	490.00	500.00
470.00				
Crit W.S. (ft)		Flow Area (sq ft)	591.72	152.43
36.94				
E.G. Slope (ft/ft)	0.005350	Area (sq ft)	591.72	152.43
36.94				
Q Total (cfs)	1005.16	Flow (cfs)	810.78	172.84
21.54				
Top Width (ft)	915.43	Top Width (ft)	584.18	199.90
131.35				
Vel Total (ft/s)	1.29	Avg. Vel. (ft/s)	1.37	1.13
0.58				

Max Chl Dpth (ft)	1.16	Hydr. Depth (ft)	1.01	0.76
0.28				
Conv. Total (cfs)	13742.3	Conv. (cfs)	11084.8	2363.0
294.5				
Length Wtd. (ft)	489.66	Wetted Per. (ft)	584.20	199.90
131.35				
Min Ch El (ft)	1068.50	Shear (lb/sq ft)	0.34	0.25
0.09				
Alpha	1.05	Stream Power (lb/ft s)	0.46	0.29
0.05				
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	300.25	19.17
69.45				
C & E Loss (ft)	0.01	Cum SA (acres)	157.33	13.44
65.45				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.67

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1069.9	1200	1067.7	1400	1067.2	1800	1067.4	2050	1067.3
2280	1068.1	2400	1067.6	2599.9	1068.6	2799.9	1068	2999.9	1068.3
3199.9	1069.1	3440	1070	3710	1070.5	3960	1070	4040	1069.5
4140	1070	4500	1070						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.08	2050	.08	2280	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2050	2280	530	500	520	.1 .3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1068.76	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.080	0.080
0.080				
W.S. Elev (ft)	1068.76	Reach Len. (ft)	530.00	500.00
520.00				
Crit W.S. (ft)		Flow Area (sq ft)	1246.13	242.96
478.54				
E.G. Slope (ft/ft)	0.000677	Area (sq ft)	1246.13	242.96
478.54				
Q Total (cfs)	1005.16	Flow (cfs)	723.67	121.79
159.70				
Top Width (ft)	2010.02	Top Width (ft)	946.03	230.00
833.99				
Vel Total (ft/s)	0.51	Avg. Vel. (ft/s)	0.58	0.50
0.33				
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	1.32	1.06
0.57				

Conv. Total (cfs)	38630.3	Conv. (cfs)	27812.2	4680.6 6137.5
Length Wtd. (ft)	523.38	Wetted Per. (ft)	946.04	230.00 833.99
Min Ch El (ft)	1067.30	Shear (lb/sq ft)	0.06	0.04 0.02
Alpha	1.11	Stream Power (lb/ft s)	0.03	0.02 0.01
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	289.91	16.91 66.67
C & E Loss (ft)	0.00	Cum SA (acres)	148.72	10.97 60.24

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.57

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1068.7	1200	1066.9	1356.8	1066.1	1406.1	1066.2	1600	1066.5
1700	1066.6	1830	1066.8	2000	1067	2200	1067.6	2271.1	1066.9
2322.9	1066.8	2400	1068.1	2599.9	1068.4	2710.1	1068.2	2735.5	1067.4
2772.9	1067.6	2799.9	1068	2852.5	1068.1	2916.1	1068.1	2999.9	1068.5
3102.4	1068.7	3600	1068.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	1700	.08	1830	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1700	1830	450	500	580	.1 .3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1068.30	Element	Left OB	Channel Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.130	0.080 0.130
W.S. Elev (ft)	1068.29	Reach Len. (ft)	450.00	500.00 580.00
Crit W.S. (ft)		Flow Area (sq ft)	1046.27	207.21 749.50
E.G. Slope (ft/ft)	0.001174	Area (sq ft)	1046.27	207.21 749.50
Q Total (cfs)	1005.16	Flow (cfs)	559.99	179.94 265.23
Top Width (ft)	1782.52	Top Width (ft)	654.89	130.00 997.63
Vel Total (ft/s)	0.50	Avg. Vel. (ft/s)	0.54	0.87 0.35
Max Chl Dpth (ft)	2.19	Hydr. Depth (ft)	1.60	1.59 0.75
Conv. Total (cfs)	29335.9	Conv. (cfs)	16343.5	5251.7 7740.8
Length Wtd. (ft)	512.21	Wetted Per. (ft)	654.90	130.00 997.67
Min Ch El (ft)	1066.60	Shear (lb/sq ft)	0.12	0.12 0.06

Alpha	1.30	Stream Power (lb/ft s)	0.06	0.10	0.02
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	275.97	14.32	59.34
C & E Loss (ft)	0.00	Cum SA (acres)	138.98	8.90	49.31

Warning: Divided flow computed for this cross-section.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.53

INPUT
Description: Left Overbank Between Stations 5.48 and 5.57
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 5

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1070	730	1068	860	1066.7	1560	1066.7	1660	1068

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1068.30	Weir Max Depth (ft)	
W.S. US. (ft)	1068.29	Weir Avg Depth (ft)	
E.G. DS (ft)	1064.36	Weir Submerg	0.00
W.S. DS (ft)	1064.23	Min El Weir Flow (ft)	1066.70
Q US (cfs)	1005.16	Wr Top Wdth (ft)	
Q Leaving Total (cfs)	0.00	Total Gate Flow (cfs)	
Q DS (cfs)	1500.64	Gate Group Q (cfs)	
Perc Q Leaving	0.00	Gate Open Ht (ft)	
Q Weir (cfs)	0.00	Gate #Open	
Wr Flw Area (sq ft)		Gate Area (sq ft)	
Weir Sta US (ft)		Gate Submerg	
Weir Sta DS (ft)		Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.48

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY. IN THIS MODEL IT IS ASSUMED THAT
THE SOUTHER PACIFIC RAILROAD DOES NOT FUNCTION AS A LEVEE AND HAS
FAILED ALLOWING FLOW TO FOLLOW ITS NATURAL COURSE.

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
3203.5	1068.6	3399.9	1069.3	3599.9	1068.5	3799.9	1067.6	3999.9	1067.3
4199.9	1067.1	4399.9	1066.6	4599.9	1066.1	4710	1066.4	4799.9	1066.5
4850	1066.4	4899.6	1070.1	4999.9	1070.1	5070.2	1069.7	5088.8	1065.6
5117	1065.5	5123.1	1064.5	5134.6	1066.2	5199.9	1066.4	5399.9	1066.7

5454.2 1066.7 5505.7 1066.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
3203.5	.13	4710	.045	4850	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4710	4850	500	500 520	.1	.3

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1067.65	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.045
0.060				
W.S. Elev (ft)	1067.64	Reach Len. (ft)	500.00	500.00
520.00				
Crit W.S. (ft)	1066.74	Flow Area (sq ft)	694.23	166.45
530.75				
E.G. Slope (ft/ft)	0.001324	Area (sq ft)	694.23	166.45
530.75				
Q Total (cfs)	1005.16	Flow (cfs)	239.51	224.42
541.24				
Top Width (ft)	1501.51	Top Width (ft)	918.75	140.00
442.76				
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.34	1.35
1.02				
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)	0.76	1.19
1.20				
Conv. Total (cfs)	27627.2	Conv. (cfs)	6582.9	6168.1
14876.1				
Length Wtd. (ft)	511.72	Wetted Per. (ft)	918.76	140.00
444.37				
Min Ch El (ft)	1066.40	Shear (lb/sq ft)	0.06	0.10
0.10				
Alpha	1.91	Stream Power (lb/ft s)	0.02	0.13
0.10				
Frctn Loss (ft)	1.32	Cum Volume (acre-ft)	266.98	12.18
50.81				
C & E Loss (ft)	0.01	Cum SA (acres)	130.86	7.35
39.72				

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.38

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1068.5	1037.9	1068.5	1065	1070.2	1161.3	1068.7	1200	1068.8

1371.6	1067.7	1400	1067.6	1423	1067.6	1600	1067.2	1800	1066
1991.9	1064.4	2000	1064.5	2051.5	1064.6	2200	1065.6	2400	1066
2599.9	1065.8	2742.2	1066.2	2799.9	1066.5	2999.9	1066.7	3199.9	1066.5
3302.6	1066.8	3353.6	1067.1	3399.9	1067.6	3599.9	1067.7	3799.9	1066.7
3999.9	1066.2	4199.9	1066	4399.9	1065.8	4599.9	1065.7	4799.9	1065.6
4999.9	1065.4	5130	1065.1	5199.9	1065.1	5240	1065	5399.9	1065
5599.8	1065.4	5656.3	1066.1	5698.7	1066.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5130	.045	5240	.045

Bank Sta: Left 5130 Right 5240 Lengths: Left Channel 400 Right 400 Coeff Contr. .1 Expan. .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	3599.9	1067.7

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1066.33	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.07	Wt. n-Val.	0.130	0.045
0.045				
W.S. Elev (ft)	1066.26	Reach Len. (ft)	400.00	400.00
400.00				
Crit W.S. (ft)	1065.82	Flow Area (sq ft)	614.68	129.85
444.03				
E.G. Slope (ft/ft)	0.004495	Area (sq ft)	614.68	129.85
444.03				
Q Total (cfs)	1638.16	Flow (cfs)	309.34	321.08
1007.75				
Top Width (ft)	1692.77	Top Width (ft)	1155.00	110.00
427.76				
Vel Total (ft/s)	1.38	Avg. Vel. (ft/s)	0.50	2.47
2.27				
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.53	1.18
1.04				
Conv. Total (cfs)	24434.3	Conv. (cfs)	4614.0	4789.1
15031.2				
Length Wtd. (ft)	400.00	Wetted Per. (ft)	1155.00	110.00
427.77				
Min Ch El (ft)	1065.00	Shear (lb/sq ft)	0.15	0.33
0.29				
Alpha	2.32	Stream Power (lb/ft s)	0.08	0.82
0.66				
Frctn Loss (ft)	1.17	Cum Volume (acre-ft)	259.46	10.48
45.00				
C & E Loss (ft)	0.01	Cum SA (acres)	118.95	5.92
34.52				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m) between the current and

previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.31

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1066.2	1200	1065.1	1400	1064.2	1800	1064.5	2000	1064.5
2117.1	1064.1	2122.4	1063.7	2160	1063.8	2200	1064.2	2400	1065
2599.9	1065.6	2725	1065.3	2781.3	1065.6	2799.9	1066.2	2999.9	1066.6
3199.9	1066.3	3399.9	1066.2	3599.9	1065.3	3799.9	1064.5	3999.9	1064.2
4199.9	1064.2	4399.9	1064.4	4599.9	1063.9	4670	1064	4770	1063.5
4799.9	1063.1	4999.9	1063.8	5106.3	1065.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.06	4670	.06	4770	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4670	4770	290	280	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2999.9	1066.6

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1065.15	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.060	0.060
0.060				
W.S. Elev (ft)	1065.13	Reach Len. (ft)	290.00	280.00
280.00				
Crit W.S. (ft)	1064.46	Flow Area (sq ft)	832.83	137.66
445.00				
E.G. Slope (ft/ft)	0.002060	Area (sq ft)	832.83	137.66
445.00				
Q Total (cfs)	1638.16	Flow (cfs)	814.19	191.47
632.50				
Top Width (ft)	1439.67	Top Width (ft)	1026.74	100.00
312.93				
Vel Total (ft/s)	1.16	Avg. Vel. (ft/s)	0.98	1.39
1.42				
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	0.81	1.38
1.42				
Conv. Total (cfs)	36093.7	Conv. (cfs)	17939.1	4218.7
13935.9				
Length Wtd. (ft)	284.94	Wetted Per. (ft)	1026.74	100.00
312.94				
Min Ch El (ft)	1063.50	Shear (lb/sq ft)	0.10	0.18
0.18				
Alpha	1.11	Stream Power (lb/ft s)	0.10	0.25
0.26				
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	252.82	9.25

40.91
C & E Loss (ft) 0.01 Cum SA (acres) 108.94 4.95
31.12

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.25

INPUT
Description: X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065	1200	1064.5	1400	1064.2	1800	1063.6	2000	1063.2
2200	1062.8	2400	1062.8	2599.9	1062.4	2799.9	1062.2	2999.9	1063
3199.9	1063.4	3399.9	1063.9	3599.9	1064.2	3799.9	1064.5	3999.9	1065
4199.9	1064.6	4399.9	1064	4599.9	1063.3	4799.9	1063.4	4999.9	1062.8
5199.9	1062.4	5350	1062.6	5399.9	1062.6	5430	1062.6	5550.8	1063
5799.8	1064.4	5894.3	1064.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5350	.025	5430	.13

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
5350 5430 290 280 285 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	3999.9	1065

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1064.42	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.14	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1064.28	Reach Len. (ft)	290.00	280.00
285.00				
Crit W.S. (ft)	1063.79	Flow Area (sq ft)	1167.05	134.62
325.43				
E.G. Slope (ft/ft)	0.003140	Area (sq ft)	1167.05	134.62
325.43				
Q Total (cfs)	1638.16	Flow (cfs)	804.92	634.29
198.96				
Top Width (ft)	1473.28	Top Width (ft)	1044.34	80.00
348.94				
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.69	4.71
0.61				
Max Chl Dpth (ft)	1.88	Hydr. Depth (ft)	1.12	1.68
0.93				
Conv. Total (cfs)	29235.6	Conv. (cfs)	14365.0	11319.8
3550.7				
Length Wtd. (ft)	285.13	Wetted Per. (ft)	1044.35	80.00
348.94				
Min Ch El (ft)	1062.60	Shear (lb/sq ft)	0.22	0.33
0.18				

Alpha	8.76	Stream Power (lb/ft s)	0.15	1.55
0.11				
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	246.16	8.37
38.44				
C & E Loss (ft)	0.01	Cum SA (acres)	102.04	4.38
28.99				

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.23

INPUT
Description: Left Overbank Between Stations 5.20 and 5.25
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1064.4	80	1064	180	1063	280	1062.9

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1064.42	Weir Max Depth (ft)	0.78
W.S. US. (ft)	1064.28	Weir Avg Depth (ft)	0.50
E.G. DS (ft)	1063.61	Weir Submerg	0.00
W.S. DS (ft)	1063.51	Min El Weir Flow (ft)	1062.90
Q US (cfs)	1638.16	Wr Top Wdth (ft)	227.49
Q Leaving Total (cfs)	137.18	Total Gate Flow (cfs)	
Q DS (cfs)	1500.64	Gate Group Q (cfs)	
Perc Q Leaving	8.40	Gate Open Ht (ft)	
Q Weir (cfs)	137.18	Gate #Open	
Wr Flw Area (sq ft)	112.78	Gate Area (sq ft)	
Weir Sta US (ft)	52.51	Gate Submerg	
Weir Sta DS (ft)	280.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.2

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY
X3 CARD USED SO THAT
THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE
CREEK WASH
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065.7	1200	1064.7	1376.5	1064.4	1400	1065.5	1430.6	1065.4
1439.3	1064.3	1600	1064.3	1800	1063.7	2000	1063.7	2074.4	1063.5
2086.6	1062.7	2157.5	1062.4	2200	1062.9	2400	1063	2599.9	1063.1
2799.9	1062.6	2816.3	1062.5	2852.2	1062.3	2999.9	1062.8	3199.9	1063.3
3399.9	1063.6	3407.4	1063.6	3415.5	1063.3	3478.8	1063.4	3599.9	1063.2
3799.9	1063.8	3999.9	1065.1	4170.9	1065.8	4180.6	1064.6	4199.9	1064.6
4399.9	1064	4599.9	1063.2	4739.6	1062.8	4799.9	1062.7	4999.9	1062.3
5199.9	1062.1	5399.9	1062	5500	1062	5599.8	1061.9	5799.8	1061.8

5806.4 1062 5839.8 1062.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	5399.9	.025	5500	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
5399.9	5500	500	500	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	4170.9	1065.8

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1063.58	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.10	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1063.48	Reach Len. (ft)	500.00	500.00
500.00				
Crit W.S. (ft)	1062.87	Flow Area (sq ft)	859.18	148.18
523.63				
E.G. Slope (ft/ft)	0.002649	Area (sq ft)	859.18	148.18
523.63				
Q Total (cfs)	1500.64	Flow (cfs)	501.25	588.85
410.53				
Top Width (ft)	1310.00	Top Width (ft)	870.09	100.10
339.80				
Vel Total (ft/s)	0.98	Avg. Vel. (ft/s)	0.58	3.97
0.78				
Max Chl Dpth (ft)	1.68	Hydr. Depth (ft)	0.99	1.48
1.54				
Conv. Total (cfs)	29154.1	Conv. (cfs)	9738.2	11440.1
7975.8				
Length Wtd. (ft)	500.00	Wetted Per. (ft)	870.10	100.10
340.40				
Min Ch El (ft)	1062.00	Shear (lb/sq ft)	0.16	0.24
0.25				
Alpha	6.74	Stream Power (lb/ft s)	0.10	0.97
0.20				
Frctn Loss (ft)	1.85	Cum Volume (acre-ft)	239.42	7.46
35.66				
C & E Loss (ft)	0.01	Cum SA (acres)	95.67	3.80
26.74				

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

REACH: Reach-1 RS: 5.15

INPUT
Description: Left Overbank Between Stations 5.10 and 5.20
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1062.9	200	1062.5	300	1062	500	1061.9

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1063.58	Weir Max Depth (ft)	0.58
W.S. US. (ft)	1063.48	Weir Avg Depth (ft)	0.31
E.G. DS (ft)	1061.73	Weir Submerg	0.00
W.S. DS (ft)	1061.56	Min El Weir Flow (ft)	1061.90
Q US (cfs)	1500.64	Wr Top Wdth (ft)	399.19
Q Leaving Total (cfs)	113.49	Total Gate Flow (cfs)	
Q DS (cfs)	1385.50	Gate Group Q (cfs)	
Perc Q Leaving	7.67	Gate Open Ht (ft)	
Q Weir (cfs)	113.49	Gate #Open	
Wr Flw Area (sq ft)	123.04	Gate Area (sq ft)	
Weir Sta US (ft)	0.00	Gate Submerg	
Weir Sta DS (ft)	399.19	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.1

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW PATH
FOR OVER SPILL IS THE I-10 FREEWAY
X3 CARD USED SO THAT
THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE
CREEK WASH
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1063.5	1200	1063.1	1400	1062.3	1511	1061.5	1564.4	1062.2
1600	1062.2	1800	1062	2000	1062	2169.2	1061.8	2200	1061.9
2213.6	1061.9	2400	1061.5	2600	1061.4	2771.8	1062.2	2799.9	1062.2
2827.2	1062	2859.4	1063.2	2980.9	1062.8	2992	1061.4	2999.9	1061.4
3199.9	1061.2	3399.9	1060.9	3599.9	1061.1	3799.9	1061	3999.9	1061.2
4137.2	1060.7	4148.9	1061	4199.9	1061	4399.9	1060.9	4599.9	1060.5
4730	1060.9	4765	1060.3	4770	1060.3	4830	1060.3	4999.9	1060.4
5012.8	1060.5	5039.9	1061.9	5081	1061.7	5118.8	1060.4	5139.5	1060.5
5150	1061.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	4730	.025	4830	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4730	4830	200	200	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent

888 F
888 F
Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1000	2859.4	1063.2	5039.9	5150	1061.9

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1061.73	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.16	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1061.56	Reach Len. (ft)	200.00	200.00
200.00				
Crit W.S. (ft)	1061.46	Flow Area (sq ft)	994.99	115.90
231.60				
E.G. Slope (ft/ft)	0.005717	Area (sq ft)	994.99	115.90
231.60				
Q Total (cfs)	1385.50	Flow (cfs)	592.57	574.71
218.23				
Top Width (ft)	2042.70	Top Width (ft)	1739.30	100.00
203.40				
Vel Total (ft/s)	1.03	Avg. Vel. (ft/s)	0.60	4.96
0.94				
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.57	1.16
1.14				
Conv. Total (cfs)	18324.6	Conv. (cfs)	7837.3	7601.0
2886.3				
Length Wtd. (ft)	200.00	Wetted Per. (ft)	1739.32	100.01
203.42				
Min Ch El (ft)	1060.30	Shear (lb/sq ft)	0.20	0.41
0.41				
Alpha	9.85	Stream Power (lb/ft s)	0.12	2.05
0.38				
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	228.78	5.95
31.33				
C & E Loss (ft)	0.04	Cum SA (acres)	80.69	2.65
23.62				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the
cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

LATERAL WEIR RIVER: RIVER-1
REACH: Reach-1 RS: 5.08

INPUT
Description: Left Overbank Between Stations 5.07 and 5.10
Lateral weir position = Left overbank
Distance from Upstream XS = 0
Deck/Roadway Width = 0
Weir Coefficient = 1.55

Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1061.9	100	1061.5	150	1060.6	200	1060.2

Weir crest shape = Broad Crested

LATERAL WEIR/SPILLWAY OUTPUT Profile #PF 1

E.G. US. (ft)	1061.73	Weir Max Depth (ft)	0.85
W.S. US. (ft)	1061.56	Weir Avg Depth (ft)	0.53
E.G. DS (ft)	1061.07	Weir Submerg	0.00
W.S. DS (ft)	1061.05	Min El Weir Flow (ft)	1060.20
Q US (cfs)	1385.50	Wr Top Wdth (ft)	87.37
Q Leaving Total (cfs)	56.81	Total Gate Flow (cfs)	
Q DS (cfs)	1329.42	Gate Group Q (cfs)	
Perc Q Leaving	4.05	Gate Open Ht (ft)	
Q Weir (cfs)	56.81	Gate #Open	
Wr Flw Area (sq ft)	46.31	Gate Area (sq ft)	
Weir Sta US (ft)	112.63	Gate Submerg	
Weir Sta DS (ft)	200.00	Gate Invert (ft)	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.07

INPUT
Description: WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SECTION
X3 CARD USED SO THAT THE 100-YR DISCHARGE IS CONTAINED WITHIN THE FLOW
PATH OF CAVE CREEK WASH

Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1062.7	1073.2	1062	1200	1062.3	1600	1061.7	1800	1061.5
2000	1061.5	2200	1061.6	2332.5	1063.1	2400	1062	2600	1061
2799.9	1060.6	2999.9	1060.5	3199.9	1060.3	3399.9	1060.2	3599.9	1059.9
3681.8	1059.6	3799.9	1059.8	3999.9	1059.6	4199.9	1059.6	4225	1059.6
4290	1059.6	4599.9	1059.4	4694.3	1059.3	4716.3	1059.5	4736.7	1060.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	4199.9	.025	4225	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4199.9	4225	210	190	190	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1000	2332.5	1063.1

Sediment Elevation = 0

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1061.07	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.02	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1061.05	Reach Len. (ft)	210.00	190.00

190.00				
Crit W.S. (ft)	1060.09	Flow Area (sq ft)	1460.32	36.31
794.00				
E.G. Slope (ft/ft)	0.001893	Area (sq ft)	1460.32	36.31
794.00				
Q Total (cfs)	1329.42	Flow (cfs)	680.71	120.07
528.64				
Top Width (ft)	2145.98	Top Width (ft)	1609.18	25.10
511.70				
Vel Total (ft/s)	0.58	Avg. Vel. (ft/s)	0.47	3.31
0.67				
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)	0.91	1.45
1.55				
Conv. Total (cfs)	30556.0	Conv. (cfs)	15645.7	2759.8
12150.5				
Length Wtd. (ft)	195.12	Wetted Per. (ft)	1609.18	25.10
512.56				
Min Ch El (ft)	1059.60	Shear (lb/sq ft)	0.11	0.17
0.18				
Alpha	3.79	Stream Power (lb/ft s)	0.05	0.57
0.12				
Frctn Loss (ft)	1.26	Cum Volume (acre-ft)	223.14	5.60
28.97				
C & E Loss (ft)	0.01	Cum SA (acres)	73.01	2.36
21.98				

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 5.03

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1061.7	1008.8	1061.4	1200	1062.2	1519.2	1061.3	1552.3	1061.3
1568.9	1061.8	1600	1061.9	1704.4	1062.1	1722.7	1064.3	1800	1062.8
2000	1062.5	2112.9	1062.4	2119.7	1062.1	2186.3	1061.5	2200	1061.6
2400	1061.3	2600	1060.6	2799.9	1060.2	2994.5	1059.8	2999.9	1060.3
3004.6	1060.4	3140	1060	3240	1059.8	3399.9	1059.4	3509.8	1059.2
3599.9	1059.3	3799.9	1059.2	3999.9	1058.9	4199.9	1059.2	4399.9	1060.1
4548.3	1060.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3140	.025	3240	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3140	3240	270	270	280	.1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.79	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.17	Wt. n-Val.		
0.130				
W.S. Elev (ft)	1059.63	Reach Len. (ft)	270.00	270.00
280.00				
Crit W.S. (ft)	1059.59	Flow Area (sq ft)		
404.34				
E.G. Slope (ft/ft)	0.270905	Area (sq ft)		
404.34				
Q Total (cfs)	1329.42	Flow (cfs)		
1329.42				
Top Width (ft)	984.15	Top Width (ft)		
984.15				
Vel Total (ft/s)	3.29	Avg. Vel. (ft/s)		
3.29				
Max Chl Dpth (ft)	0.72	Hydr. Depth (ft)		
0.41				
Conv. Total (cfs)	2554.2	Conv. (cfs)		
2554.2				
Length Wtd. (ft)	275.09	Wetted Per. (ft)		
984.16				
Min Ch El (ft)	1059.80	Shear (lb/sq ft)		
6.95				
Alpha	1.00	Stream Power (lb/ft s)		
22.85				
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	219.62	5.52
26.36				
C & E Loss (ft)	0.05	Cum SA (acres)	69.13	2.31
18.72				

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: There is no flow in the channel. Check that the channel stations are correctly coded. To
force flow into the channel, a levee or ineffective flow may have to be added or the
Manning's n of the overbank could be increased.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.98

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
100	1060	1200	1058.7	1400	1058.3	1497.3	1060.2	1600	1059.3
1800	1059.3	1841.2	1059.3	1867.3	1058	2000	1057.3	2200	1057.5
2400	1056.7	2450.8	1056.5	2600	1057.1	2800	1057.2	2999.9	1057.3
3199.9	1057.6	3399.9	1057.8	3599.9	1058.5	3799.9	1059.1	3999.9	1059.7
4199.9	1058.9	4237.8	1058.3	4249.7	1059.1	4399.9	1059.2	4599.9	1059.3
4760	1058.5	4799.9	1058.5	4850	1058.5	4999.9	1058.6	5213	1060

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
100	.13	4760	.025	4850	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
4760	4850	200	175	170 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.25	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1059.24	Reach Len. (ft)	200.00	175.00
170.00				
Crit W.S. (ft)		Flow Area (sq ft)	3730.14	66.86
135.33				
E.G. Slope (ft/ft)	0.000495	Area (sq ft)	3730.14	66.86
135.33				
Q Total (cfs)	1329.42	Flow (cfs)	1233.92	72.51
22.99				
Top Width (ft)	3570.93	Top Width (ft)	3233.16	90.00
247.76				
Vel Total (ft/s)	0.34	Avg. Vel. (ft/s)	0.33	1.08
0.17				
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	1.15	0.74
0.55				
Conv. Total (cfs)	59766.5	Conv. (cfs)	55473.0	3259.9
1033.6				
Length Wtd. (ft)	196.58	Wetted Per. (ft)	3233.25	90.00
247.77				
Min Ch El (ft)	1058.50	Shear (lb/sq ft)	0.04	0.02
0.02				
Alpha	1.45	Stream Power (lb/ft s)	0.01	0.02
0.00				
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	208.06	5.31
24.62				
C & E Loss (ft)	0.00	Cum SA (acres)	59.11	2.03
14.76				

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.95

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1078.3	1006.6	1066.9	1031.4	1065.2	1081.3	1059.6	1088.5	1059.1
1129	1058.8	1200	1057.8	1400	1057.7	1600	1056.5	1677.6	1056.8
1701.1	1057.3	1800	1056.9	1848.2	1056.8	1869.9	1056.3	2000	1056.3
2142.3	1056.2	2156.6	1057.2	2177.1	1056.2	2200	1056.3	2400	1055.6
2600	1055.4	2800	1055.7	2875.5	1055.8	2914.1	1055.9	2926.7	1052.4
2933.1	1054.9	2999.9	1055.3	3199.9	1055.5	3399.9	1056.1	3580	1056.8
3599.9	1056.8	3650	1056.8	3799.9	1057.3	3999.9	1058.7	4199.9	1058.5
4399.9	1058.5	4599.9	1057.7	4799.9	1058.2	4999.9	1058.3	5018.8	1059.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3580	.025	3650	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3580	3650	315	315 250	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025	0.130
W.S. Elev (ft)	1059.23	Reach Len. (ft)	315.00	315.00	250.00
Crit W.S. (ft)		Flow Area (sq ft)	7248.71	169.91	1524.22
E.G. Slope (ft/ft)	0.000042	Area (sq ft)	7248.71	169.91	1524.22
Q Total (cfs)	1329.42	Flow (cfs)	1090.17	117.85	121.40
Top Width (ft)	3924.19	Top Width (ft)	2493.33	70.00	1360.85
Vel Total (ft/s)	0.15	Avg. Vel. (ft/s)	0.15	0.69	0.08
Max Chl Dpth (ft)	6.83	Hydr. Depth (ft)	2.91	2.43	1.12
Conv. Total (cfs)	205753.6	Conv. (cfs)	168724.8	18239.4	18789.5
Length Wtd. (ft)	310.97	Wetted Per. (ft)	2494.38	70.00	1360.90
Min Ch El (ft)	1056.80	Shear (lb/sq ft)	0.01	0.01	0.00
Alpha	2.80	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	182.85	4.84	21.39
C & E Loss (ft)	0.00	Cum SA (acres)	45.96	1.71	11.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.89

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1065.5	1040.8	1069.9	1109.1	1066.7	1172.3	1060.3	1178.6	1056.5
1200	1056.5	1400	1055.6	1460.9	1055.6	1476.9	1054.9	1600	1055.5
1771	1055.2	1787.3	1054.1	1800	1054.2	2000	1054.2	2200	1053.7
2400	1053.8	2461.4	1053.8	2470.5	1054.7	2600	1054.5	2684.7	1054.2
2800	1055.1	2999.9	1055.2	3199.9	1055.7	3399.9	1057.2	3599.9	1057.3
3799.9	1056.8	3900	1057	3999.9	1057.2	4199.9	1057.5	4290.2	1059.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	3799.9	.025	3900	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.

3799.9 3900 570 500 500 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.22	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1059.22	Reach Len. (ft)	570.00	500.00
500.00				
Crit W.S. (ft)		Flow Area (sq ft)	10291.58	232.09
648.89				
E.G. Slope (ft/ft)	0.000017	Area (sq ft)	10291.58	232.09
648.89				
Q Total (cfs)	1329.42	Flow (cfs)	1187.73	98.17
43.52				
Top Width (ft)	3099.71	Top Width (ft)	2625.81	100.10
373.80				
Vel Total (ft/s)	0.12	Avg. Vel. (ft/s)	0.12	0.42
0.07				
Max Chl Dpth (ft)	5.52	Hydr. Depth (ft)	3.92	2.32
1.74				
Conv. Total (cfs)	327238.2	Conv. (cfs)	292359.9	24165.7
10712.5				
Length Wtd. (ft)	557.08	Wetted Per. (ft)	2626.68	100.10
373.82				
Min Ch El (ft)	1056.80	Shear (lb/sq ft)	0.00	0.00
0.00				
Alpha	1.78	Stream Power (lb/ft s)	0.00	0.00
0.00				
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	119.43	3.38
15.15				
C & E Loss (ft)	0.00	Cum SA (acres)	27.45	1.09
6.64				

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 4.79

INPUT
Description: THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
FLOODWAY MODEL, CAVE.FLDWY.2. THIS MODEL UTILIZES THE SPLIT
FLOW
AND X3 CARDS. THE X3 CARDS ARE USED TO SET CROSS-SECTION
"BOUNDARIES"
AT TOPOGRAPICALLY HIGH GROUND THAT CONTAINS THE
Q100-YR WITHIN THE
CROSS-SECTION.
CROSS-SECTION EXTENDED
MESSAGES OCCUR AT LOCATIONS OF WEIR FLOW.

Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1000	1077.7	1042.8	1085.6	1120.1	1083.6	1200	1055.7	1260.7	1054.4
1305.3	1054.9	1400	1052	1421	1051.4	1447.4	1054.1	1501.2	1054.7
1600	1054.3	1800	1053.7	2000	1053.6	2200	1054	2400	1054.7
2600	1054.5	2760	1054.4	2789.3	1055.4	2800	1055.4	2850	1055.4
2999.9	1055.8	3199.9	1056.1	3307.6	1056.5	3399.9	1057.8	3599.9	1057.9
3633.4	1059.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
1000	.13	2760	.025	2850	.13

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2760	2850	0	0	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	1059.21	Element	Left OB	Channel
Right OB				
Vel Head (ft)	0.00	Wt. n-Val.	0.130	0.025
0.130				
W.S. Elev (ft)	1059.21	Reach Len. (ft)		
Crit W.S. (ft)	1054.08	Flow Area (sq ft)	7962.94	357.54
1990.75				
E.G. Slope (ft/ft)	0.000013	Area (sq ft)	7962.94	357.54
1990.75				
Q Total (cfs)	1329.42	Flow (cfs)	980.25	194.53
154.64				
Top Width (ft)	2443.45	Top Width (ft)	1570.05	90.00
783.40				
Vel Total (ft/s)	0.13	Avg. Vel. (ft/s)	0.12	0.54
0.08				
Max Chl Dpth (ft)	7.81	Hydr. Depth (ft)	5.07	3.97
2.54				
Conv. Total (cfs)	364255.9	Conv. (cfs)	268585.2	53299.3
42371.4				
Length Wtd. (ft)		Wetted Per. (ft)	1570.86	90.02
783.45				
Min Ch El (ft)	1054.40	Shear (lb/sq ft)	0.00	0.00
0.00				
Alpha	3.32	Stream Power (lb/ft s)	0.00	0.00
0.00				
Frctn Loss (ft)		Cum Volume (acre-ft)		
C & E Loss (ft)		Cum SA (acres)		

SUMMARY OF MANNING'S N VALUES

River:RIVER-1

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10	n11	n12	n13	n14	n15	n16	n17	n18	n19	n20
Reach-1	9.61	.16	.16	.16																	
Reach-1	9.55	.09	.16	.16																	

Reach-1	9.45	.16	.09	.16	.165	
Reach-1	9.36	.16	.16	.16		
Reach-1	9.27	.13	.02	.13		
Reach-1	9.17	.13	.035	.13		
Reach-1	9.08	.13	.02	.13		
Reach-1	8.98	.13	.02	.13		
Reach-1	8.89	.13	.02	.13		
Reach-1	8.79	.13	.02	.13		
Reach-1	8.7	.13	.02	.13		
Reach-1	8.61	.13	.02	.13		
Reach-1	8.51	.02	.03	.13	.02	.13
Reach-1	8.42	.035	.13	.02	.13	
Reach-1	8.32	.02	.13	.02	.13	
Reach-1	8.23	.013	.13	.034	.035	
Reach-1	8.18	.13	.035	.13	.135	
Reach-1	8.08	.036	.034	.036	.035	.131
.13						
Reach-1	7.99	.035	.033	.034	.13	
Reach-1	7.89	.13	.02	.13	.035	.13
Reach-1	7.8	.13	.02	.13	.035	
Reach-1	7.71	.13	.02	.13	.035	
Reach-1	7.66	.13	.02	.13	.02	.13

Reach-1	7.57	.13	.02	.13	.02	.13
Reach-1	7.48	.13	.02	.13	.035	.5
.02	.1	.13				
Reach-1	7.38	.13	.02	.13	.02	.13
Reach-1	7.29	.13	.02	.13	.5	.035
.13						
Reach-1	7.2	.13	.02	.06		
Reach-1	7.11	.13	.02	.06		
Reach-1	7.06	Lat. Weir				
Reach-1	7.01	.13	.02	.06		
Reach-1	6.96	Lat. Weir				
Reach-1	6.94	.06	.02	.06		
Reach-1	6.91	Lat. Weir				
Reach-1	6.88	.13	.06	.02	.06	
Reach-1	6.8	.1	.02	.13		
Reach-1	6.7	.13	.02	.13	.06	
Reach-1	6.61	.13	.02	.5	.04	
Reach-1	6.52	.13	.5	.035	.03	
Reach-1	6.42	.13	.5	.02	.06	.02
.03						
Reach-1	6.33	.13	.06	.02	.06	
Reach-1	6.23	.06	.02	.06		
Reach-1	6.14	.13	.03	.5	.03	.02
.03	.13					
Reach-1	6.09312*	.323	.275	.5	.275	.05
.016	.014	.018	.015	.05	.032	.015	.018
.016	.015	.016	.071	.015	.016	.071	

Reach-1 6.05 .5 .02 .016 .013 .015
.016 .013 .016 .013 .05 .016 .015 .02
.013 .016 .016 .015 .016
Reach-1 5.95 .13 .5 .035 .06

Reach-1 5.86 .035 .035 .13

Reach-1 5.76 .08 .08 .08

Reach-1 5.67 .08 .08 .08

Reach-1 5.57 .13 .08 .13

Reach-1 5.53 Lat. Weir

Reach-1 5.48 .13 .045 .06

Reach-1 5.38 .13 .045 .045

Reach-1 5.31 .06 .06 .06

Reach-1 5.25 .13 .025 .13

Reach-1 5.23 Lat. Weir

Reach-1 5.2 .13 .025 .13

Reach-1 5.15 Lat. Weir

Reach-1 5.1 .13 .025 .13

Reach-1 5.08 Lat. Weir

Reach-1 5.07 .13 .025 .13

Reach-1 5.03 .13 .025 .13

Reach-1 4.98 .13 .025 .13

Reach-1 4.95 .13 .025 .13

Reach-1 4.89 .13 .025 .13

Reach-1	4.79	.13	.025	.13

SUMMARY OF REACH LENGTHS

River: RIVER-1

Reach	River Sta.	Left	Channel	Right
Reach-1	9.61	360	360	360
Reach-1	9.55	500	500	500
Reach-1	9.45	470	470	500
Reach-1	9.36	500	500	500
Reach-1	9.27	500	500	500
Reach-1	9.17	500	520	500
Reach-1	9.08	500	500	500
Reach-1	8.98	500	500	500
Reach-1	8.89	500	500	500
Reach-1	8.79	500	500	500
Reach-1	8.7	500	500	500
Reach-1	8.61	490	490	490
Reach-1	8.51	500	500	500
Reach-1	8.42	490	490	490
Reach-1	8.32	500	500	500
Reach-1	8.23	280	270	270
Reach-1	8.18	520	500	490
Reach-1	8.08	550	500	610
Reach-1	7.99	470	500	570
Reach-1	7.89	500	500	500
Reach-1	7.8	490	490	490
Reach-1	7.71	220	220	220
Reach-1	7.66	480	480	480
Reach-1	7.57	500	500	500
Reach-1	7.48	500	500	500
Reach-1	7.38	490	490	490
Reach-1	7.29	490	500	500
Reach-1	7.2	450	470	470
Reach-1	7.11	500	530	500
Reach-1	7.06	Lat. Weir		
Reach-1	7.01	360	400	360
Reach-1	6.96	Lat. Weir		
Reach-1	6.94	360	360	360
Reach-1	6.91	Lat. Weir		
Reach-1	6.88	420	420	420
Reach-1	6.8	500	500	500
Reach-1	6.7	500	500	500
Reach-1	6.61	490	490	470
Reach-1	6.52	500	500	500
Reach-1	6.42	500	500	500
Reach-1	6.33	500	500	500
Reach-1	6.23	500	500	500
Reach-1	6.14	255.21	250	234.38
Reach-1	6.09312*	234.79	230	215.62
Reach-1	6.05	560	500	480
Reach-1	5.95	510	500	470
Reach-1	5.86	540	500	490
Reach-1	5.76	490	500	470

Reach-1	5.67	530	500	520
Reach-1	5.57	450	500	580
Reach-1	5.53	Lat. Weir		
Reach-1	5.48	500	500	520
Reach-1	5.38	400	400	400
Reach-1	5.31	290	280	280
Reach-1	5.25	290	280	285
Reach-1	5.23	Lat. Weir		
Reach-1	5.2	500	500	500
Reach-1	5.15	Lat. Weir		
Reach-1	5.1	200	200	200
Reach-1	5.08	Lat. Weir		
Reach-1	5.07	210	190	190
Reach-1	5.03	270	270	280
Reach-1	4.98	200	175	170
Reach-1	4.95	315	315	250
Reach-1	4.89	570	500	500
Reach-1	4.79	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: RIVER-1

Reach	River Sta.	Contr.	Expan.
Reach-1	9.61	.1	.3
Reach-1	9.55	.1	.3
Reach-1	9.45	.1	.3
Reach-1	9.36	.1	.3
Reach-1	9.27	.1	.3
Reach-1	9.17	.1	.3
Reach-1	9.08	.1	.3
Reach-1	8.98	.1	.3
Reach-1	8.89	.1	.3
Reach-1	8.79	.1	.3
Reach-1	8.7	.1	.3
Reach-1	8.61	.1	.3
Reach-1	8.51	.1	.3
Reach-1	8.42	.1	.3
Reach-1	8.32	.1	.3
Reach-1	8.23	.1	.3
Reach-1	8.18	.1	.3
Reach-1	8.08	.1	.3
Reach-1	7.99	.1	.3
Reach-1	7.89	.1	.3
Reach-1	7.8	.1	.3
Reach-1	7.71	.1	.3
Reach-1	7.66	.1	.3
Reach-1	7.57	.1	.3
Reach-1	7.48	.1	.3
Reach-1	7.38	.1	.3
Reach-1	7.29	.1	.3
Reach-1	7.2	.1	.3
Reach-1	7.11	.1	.3
Reach-1	7.06	Lat. Weir	
Reach-1	7.01	.1	.3
Reach-1	6.96	Lat. Weir	
Reach-1	6.94	.1	.3
Reach-1	6.91	Lat. Weir	
Reach-1	6.88	.1	.3

Reach-1	6.8		.1	.3
Reach-1	6.7		.1	.3
Reach-1	6.61		.1	.3
Reach-1	6.52		.1	.3
Reach-1	6.42		.1	.3
Reach-1	6.33		.1	.3
Reach-1	6.23		.1	.3
Reach-1	6.14		.1	.3
Reach-1	6.09312*		.1	.3
Reach-1	6.05		.1	.3
Reach-1	5.95		.1	.3
Reach-1	5.86		.1	.3
Reach-1	5.76		.1	.3
Reach-1	5.67		.1	.3
Reach-1	5.57		.1	.3
Reach-1	5.53	Lat. Weir		
Reach-1	5.48		.1	.3
Reach-1	5.38		.1	.3
Reach-1	5.31		.1	.3
Reach-1	5.25		.1	.3
Reach-1	5.23	Lat. Weir		
Reach-1	5.2		.1	.3
Reach-1	5.15	Lat. Weir		
Reach-1	5.1		.1	.3
Reach-1	5.08	Lat. Weir		
Reach-1	5.07		.1	.3
Reach-1	5.03		.1	.3
Reach-1	4.98		.1	.3
Reach-1	4.95		.1	.3
Reach-1	4.89		.1	.3
Reach-1	4.79		.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	9.61	1237.00	1118.50	1119.94	1119.28	1119.95	0.016005	1.08	1203.81	1480.45	0.20
Reach-1	9.55	1237.00	1116.40	1117.96	1117.00	1117.97	0.002757	0.61	2015.98	1995.83	0.09
Reach-1	9.45	1237.00	1114.90	1116.33	1115.54	1116.34	0.003926	0.65	1918.42	2104.46	0.11
Reach-1	9.36	1237.00	1112.80	1114.14		1114.15	0.005213	0.70	1811.80	1859.45	0.12
Reach-1	9.27	1237.00	1110.80	1112.54		1112.65	0.001910	4.26	1707.97	1827.07	0.61
Reach-1	9.17	1237.00	1109.60	1110.92	1110.64	1111.03	0.006627	3.49	1059.41	2022.23	0.61
Reach-1	9.08	1210.00	1107.30	1108.56	1108.30	1108.72	0.003245	4.73	1359.38	1861.18	0.77
Reach-1	8.98	1210.00	1106.00	1107.37		1107.47	0.001939	3.87	1962.24	2828.35	0.60
Reach-1	8.89	1210.00	1104.90	1105.94		1106.02	0.004759	4.55	1556.36	2547.13	0.88
Reach-1	8.79	1210.00	1103.00	1104.19		1104.25	0.002715	3.66	1710.89	2181.16	0.67
Reach-1	8.7	1210.00	1101.40	1102.42							

1102.56	0.004251	4.80	1566.60	2758.75	0.85	
Reach-1	8.61		1210.00	1099.90	1100.62	
1100.65	0.003357	3.18	1938.72	2786.99	0.70	
Reach-1	8.51		1210.00	1098.50	1098.96	1098.63
1098.98	0.003415	2.33	1283.50	2887.68	0.65	
Reach-1	8.42		1210.00	1096.30	1097.09	1096.80
1097.12	0.004064	3.13	1441.35	3030.72	0.75	
Reach-1	8.32		1210.00	1095.10	1095.99	1095.56
1096.02	0.001419	2.42	1740.76	3142.63	0.48	
Reach-1	8.23		1210.00	1094.40	1094.92	
1094.93	0.003702	1.60	1218.09	2441.97	0.41	
Reach-1	8.18		1375.00	1092.80	1093.70	1093.53
1093.74	0.004973	2.24	872.73	2151.59	0.49	
Reach-1	8.08		1375.00	1091.80	1092.79	
1092.81	0.000952	1.19	1385.10	2226.90	0.22	
Reach-1	7.99		1375.00	1090.70	1091.40	1091.23
1091.49	0.013231	3.55	867.86	1834.11	0.83	
Reach-1	7.89		1375.00	1089.30	1089.48	
1089.51	0.001660	0.74	1274.24	2464.16	0.38	
Reach-1	7.8		1375.00	1087.20	1088.13	1087.90
1088.19	0.004738	4.13	1039.12	2423.09	0.85	
Reach-1	7.71		1375.00	1085.50	1086.56	
1086.60	0.002351	3.75	1826.99	3125.45	0.64	
Reach-1	7.66		1691.00	1084.50	1085.73	
1085.81	0.005330	4.18	1162.59	2417.10	0.90	
Reach-1	7.57		1691.00	1083.40	1085.18	1084.73
1085.20	0.000534	2.10	2682.16	4170.48	0.32	
Reach-1	7.48		1691.00	1084.00	1084.31	1084.10
1084.38	0.025525	5.44	1447.54	3974.46	1.72	
Reach-1	7.38		1691.00	1082.00	1083.26	
1083.28	0.000752	2.24	2942.59	4009.52	0.37	
Reach-1	7.29		1691.00	1081.50	1082.69	
1082.72	0.001923	2.97	2483.53	3220.81	0.56	
Reach-1	7.2		1691.00	1081.40	1081.81	
1081.82	0.001657	1.52	1864.16	2790.65	0.45	
Reach-1	7.11		1865.00	1079.80	1081.09	1080.54
1081.12	0.001356	2.77	2245.51	2820.14	0.48	
Reach-1	7.06		Lat. Weir			
Reach-1	7.01		1551.77	1079.50	1080.12	
1080.16	0.003063	2.98	1586.74	2772.30	0.67	
Reach-1	6.96		Lat. Weir			
Reach-1	6.94		1270.50	1078.70	1079.48	
1079.49	0.001084	1.71	1498.70	2239.67	0.39	
Reach-1	6.91		Lat. Weir			
Reach-1	6.88		980.16	1079.00	1079.23	
1079.24	0.000448	0.50	1805.51	2437.16	0.21	
Reach-1	6.8		980.16	1078.00	1078.91	
1078.93	0.001362	2.42	1852.32	2184.64	0.47	
Reach-1	6.7		980.16	1077.50	1077.98	
1077.99	0.002766	0.31	1457.59	1781.48	0.09	
Reach-1	6.61		980.16	1076.00	1077.01	
1077.02	0.001440	0.10	1490.56	2004.75	0.02	
Reach-1	6.52		980.16	1075.40	1075.79	1075.64
1075.89	0.004516	1.34	406.48	883.43	0.46	
Reach-1	6.42		980.16	1074.20	1074.94	1074.47
1074.97	0.000956	1.44	802.32	1304.30	0.36	
Reach-1	6.33		980.16	1073.40	1074.37	1073.87
1074.41	0.001360	2.50	1096.59	1635.87	0.47	
Reach-1	6.23		980.16	1072.60	1073.76	1073.21
1073.80	0.001087	2.49	1128.39	1638.71	0.43	

Reach-1	6.14		980.16	1071.80	1072.86	1072.73
1072.94	0.002986	3.38	492.85	1026.12	0.68	
Reach-1	6.09312*		980.16	1070.76	1072.16	1072.16
1072.32	0.002184	4.33	448.12	1150.12	0.79	
Reach-1	6.05		1005.16	1069.80	1071.53	1071.42
1071.75	0.001609	4.52	283.44	468.67	0.78	
Reach-1	5.95		1005.16	1070.20	1071.21	1070.67
1071.23	0.000600	0.85	1229.39	1645.13	0.17	
Reach-1	5.86		1005.16	1069.30	1070.77	
1070.79	0.001404	1.39	1235.87	2197.84	0.27	
Reach-1	5.76		1005.16	1068.50	1069.46	
1069.49	0.005350	1.13	781.09	915.43	0.23	
Reach-1	5.67		1005.16	1067.30	1068.76	
1068.76	0.000677	0.50	1967.62	2010.02	0.09	
Reach-1	5.57		1005.16	1066.60	1068.29	
1068.30	0.001174	0.87	2002.98	1782.52	0.12	
Reach-1	5.53		Lat. Weir			
Reach-1	5.48		1005.16	1066.40	1067.64	1066.74
1067.65	0.001324	1.35	1391.43	1501.51	0.22	
Reach-1	5.38		1638.16	1065.00	1066.26	1065.82
1066.33	0.004495	2.47	1188.56	1692.77	0.40	
Reach-1	5.31		1638.16	1063.50	1065.13	1064.46
1065.15	0.002060	1.39	1415.49	1439.67	0.21	
Reach-1	5.25		1638.16	1062.60	1064.28	1063.79
1064.42	0.003140	4.71	1627.10	1473.28	0.64	
Reach-1	5.23		Lat. Weir			
Reach-1	5.2		1500.64	1062.00	1063.48	1062.87
1063.58	0.002649	3.97	1531.00	1310.00	0.58	
Reach-1	5.15		Lat. Weir			
Reach-1	5.1		1385.50	1060.30	1061.56	1061.46
1061.73	0.005717	4.96	1342.49	2042.70	0.81	
Reach-1	5.08		Lat. Weir			
Reach-1	5.07		1329.42	1059.60	1061.05	1060.09
1061.07	0.001893	3.31	2290.63	2145.98	0.48	
Reach-1	5.03		1329.42	1059.80	1059.63	1059.59
1059.79	0.270905		404.34	984.15	0.00	
Reach-1	4.98		1329.42	1058.50	1059.24	
1059.25	0.000495	1.08	3932.33	3570.93	0.22	
Reach-1	4.95		1329.42	1056.80	1059.23	
1059.23	0.000042	0.69	8942.84	3924.19	0.08	
Reach-1	4.89		1329.42	1056.80	1059.22	
1059.22	0.000017	0.42	11172.57	3099.71	0.05	
Reach-1	4.79		1329.42	1054.40	1059.21	1054.08
1059.21	0.000013	0.54	10311.23	2443.45	0.05	

Profile Output Table - Standard Table 2

Reach	River Sta		E.G. Elev	W.S. Elev	Vel Head	Frctn Loss	C & E
Loss	Q Left	Q Channel	Q Right	Top Width (ft)	(ft)	(ft)	
(ft)	(cfs)	(cfs)	(cfs)	(ft)			
Reach-1	9.61		1119.95	1119.94	0.02	1.98	
0.00		712.24	524.76	1480.45			
Reach-1	9.55		1117.97	1117.96	0.01	1.63	

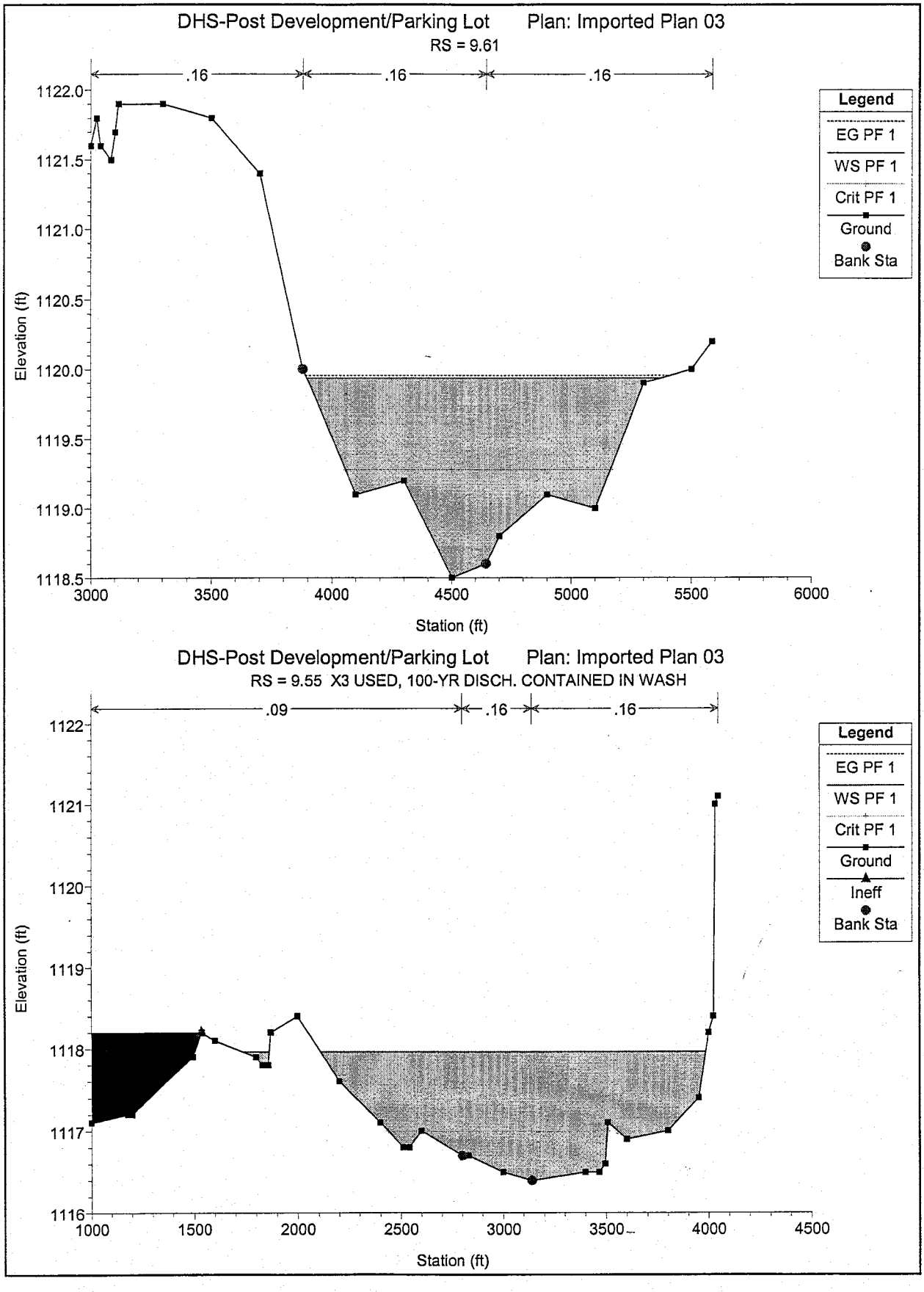
0.00	434.82	294.23	507.95	1995.83		
Reach-1		9.45	1116.34	1116.33	0.01	2.19
0.00	383.22	256.32	597.47	2104.46		
Reach-1		9.36	1114.15	1114.14	0.01	1.48
0.01	201.84	188.68	846.48	1859.45		
Reach-1		9.27	1112.65	1112.54	0.11	1.62
0.00	386.67	489.81	360.52	1827.07		
Reach-1		9.17	1111.03	1110.92	0.12	2.30
0.00	303.34	765.80	167.86	2022.23		
Reach-1		9.08	1108.72	1108.56	0.16	1.23
0.02	508.66	557.45	143.89	1861.18		
Reach-1		8.98	1107.47	1107.37	0.10	1.44
0.00	567.00	497.20	145.81	2828.35		
Reach-1		8.89	1106.02	1105.94	0.08	1.76
0.01	797.24	294.22	118.53	2547.13		
Reach-1		8.79	1104.25	1104.19	0.06	1.68
0.01	744.35	354.52	111.13	2181.16		
Reach-1		8.7	1102.56	1102.42	0.14	1.88
0.03	561.88	473.62	174.50	2758.75		
Reach-1		8.61	1100.65	1100.62	0.03	1.66
0.00	919.15	202.58	88.26	2786.99		
Reach-1		8.51	1098.98	1098.96	0.02	1.86
0.00	1073.09	82.40	54.52	2887.68		
Reach-1		8.42	1097.12	1097.09	0.03	1.10
0.00	711.32	201.75	296.93	3030.72		
Reach-1		8.32	1096.02	1095.99	0.02	1.08
0.00	813.40	232.99	163.61	3142.63		
Reach-1		8.23	1094.93	1094.92	0.02	1.19
0.00	961.74	149.09	99.17	2441.97		
Reach-1		8.18	1093.74	1093.70	0.05	0.93
0.01	412.07	450.59	512.35	2151.59		
Reach-1		8.08	1092.81	1092.79	0.02	1.30
0.01	526.70	477.50	370.80	2226.90		
Reach-1		7.99	1091.49	1091.40	0.09	1.96
0.02	318.45	529.66	526.89	1834.11		
Reach-1		7.89	1089.51	1089.48	0.03	1.31
0.00	76.26	2.67	1296.07	2464.16		
Reach-1		7.8	1088.19	1088.13	0.07	1.59
0.01	138.41	182.91	1053.68	2423.09		
Reach-1		7.71	1086.60	1086.56	0.04	0.78
0.00	315.77	178.71	880.51	3125.45		
Reach-1		7.66	1085.81	1085.73	0.08	0.59
0.02	170.82	336.73	1183.46	2417.10		
Reach-1		7.57	1085.20	1085.18	0.02	0.81
0.01	161.24	340.69	1189.08	4170.48		
Reach-1		7.48	1084.38	1084.31	0.07	1.10
0.02	230.53	202.42	1258.06	3974.46		
Reach-1		7.38	1083.28	1083.26	0.02	0.56
0.00	144.91	285.53	1260.56	4009.52		
Reach-1		7.29	1082.72	1082.69	0.03	0.89
0.00	170.42	322.84	1197.75	3220.81		
Reach-1		7.2	1081.82	1081.81	0.02	0.70
0.00	25.21	76.13	1589.66	2790.65		
Reach-1		7.11	1081.12	1081.09	0.03	0.95
0.00	136.03	293.09	1435.88	2820.14		
Reach-1		7.06	Lat. Weir			
Reach-1		7.01	1080.16	1080.12	0.05	0.66
0.01	209.21	430.77	911.78	2772.30		
Reach-1		6.96	Lat. Weir			
Reach-1		6.94	1079.49	1079.48	0.02	0.25
0.00	48.86	187.15	1034.49	2239.67		

```
  Reach-1        6.91              Lat. Weir

  Reach-1        6.88                1079.24    1079.23       0.01         0.30
0.00     120.83       25.35      833.98    2437.16
  Reach-1        6.8                 1078.93    1078.91       0.02         0.94
0.00      57.50      220.81      701.85    2184.64
  Reach-1        6.7                 1077.99    1077.98       0.01         0.97
0.00     141.31       22.33      816.52    1781.48
  Reach-1        6.61                1077.02    1077.01       0.01         1.12
0.01     323.18       25.30      631.69    2004.75
  Reach-1        6.52                1075.89    1075.79       0.10         0.90
0.02      44.11       48.24      887.81     883.43
  Reach-1        6.42                1074.97    1074.94       0.03         0.57
0.00      55.31       92.56      832.29    1304.30
  Reach-1        6.33                1074.41    1074.37       0.03         0.61
0.00     208.72      272.17      499.27    1635.87
  Reach-1        6.23                1073.80    1073.76       0.03         0.85
0.01     125.61      296.86      557.70    1638.71
  Reach-1        6.14                1072.94    1072.86       0.09         0.62
0.01     134.36      333.76      512.04    1026.12
  Reach-1        6.09312*            1072.32    1072.16       0.16         0.42
0.01      77.32      466.74      436.10    1150.12
  Reach-1        6.05                1071.75    1071.53       0.22         0.46
0.06      20.81      480.88      503.47     468.67
  Reach-1        5.95                1071.23    1071.21       0.01         0.43
0.00     340.91      109.83      554.42    1645.13
  Reach-1        5.86                1070.79    1070.77       0.02         1.29
0.00     569.31      293.43      142.42    2197.84
  Reach-1        5.76                1069.49    1069.46       0.03         0.72
0.01     810.78      172.84       21.54     915.43
  Reach-1        5.67                1068.76    1068.76       0.00         0.46
0.00     723.67      121.79      159.70    2010.02
  Reach-1        5.57                1068.30    1068.29       0.01         0.64
0.00     559.99      179.94      265.23    1782.52
  Reach-1        5.53              Lat. Weir

  Reach-1        5.48                1067.65    1067.64       0.02         1.32
0.01     239.51      224.42      541.24    1501.51
  Reach-1        5.38                1066.33    1066.26       0.07         1.17
0.01     309.34      321.08     1007.75    1692.77
  Reach-1        5.31                1065.15    1065.13       0.02         0.72
0.01     814.19      191.47      632.50    1439.67
  Reach-1        5.25                1064.42    1064.28       0.14         0.82
0.01     804.92      634.29      198.96    1473.28
  Reach-1        5.23              Lat. Weir

  Reach-1        5.2                 1063.58    1063.48       0.10         1.85
0.01     501.25      588.85      410.53    1310.00
  Reach-1        5.15              Lat. Weir

  Reach-1        5.1                 1061.73    1061.56       0.16         0.62
0.04     592.57      574.71      218.23    2042.70
  Reach-1        5.08              Lat. Weir

  Reach-1        5.07                1061.07    1061.05       0.02         1.26
0.01     680.71      120.07      528.64    2145.98
  Reach-1        5.03                1059.79    1059.63       0.17         0.50
0.05                                1329.42     984.15
  Reach-1        4.98                1059.25    1059.24       0.00         0.02
0.00    1233.92       72.51       22.99    3570.93
  Reach-1        4.95                1059.23    1059.23       0.00         0.01
0.00    1090.17      117.85      121.40    3924.19
  Reach-1        4.89                1059.22    1059.22       0.00         0.01
```

0.00 1187.73 98.17 43.52 3099.71
Reach-1 4.79 1059.21 1059.21 0.00
980.25 194.53 154.64 2443.45

Profile Output Table - Lateral Weir/Spillway

Reach	River Sta	Q US	Q Leaving Total	Q DS	Q Weir
Total Gate Flow	Wr Top Wdth	Weir Max Depth	Weir Avg Depth	Min El Weir Flow	
E.G. US.	W.S. US.	E.G. DS	W.S. DS		
	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
Reach-1	7.06	1865.00	314.30	1551.77	314.30
	366.63	0.99	0.54	1079.50	
1081.12	1081.09	1080.16	1080.12		
Reach-1	6.96	1551.77	281.81	1270.50	281.81
	353.60	0.88	0.58	1079.20	
1080.16	1080.12	1079.49	1079.48		
Reach-1	6.91	1270.50	290.18	980.16	290.18
	344.16	0.66	0.54	1078.80	
1079.49	1079.48	1079.24	1079.23		
Reach-1	5.53	1005.16	0.00	1500.64	0.00
				1066.70	
1068.30	1068.29	1064.36	1064.23		
Reach-1	5.23	1638.16	137.18	1500.64	137.18
	227.49	0.78	0.50	1062.90	
1064.42	1064.28	1063.61	1063.51		
Reach-1	5.15	1500.64	113.49	1385.50	113.49
	399.19	0.58	0.31	1061.90	
1063.58	1063.48	1061.73	1061.56		
Reach-1	5.08	1385.50	56.81	1329.42	56.81
	87.37	0.85	0.53	1060.20	
1061.73	1061.56	1061.07	1061.05		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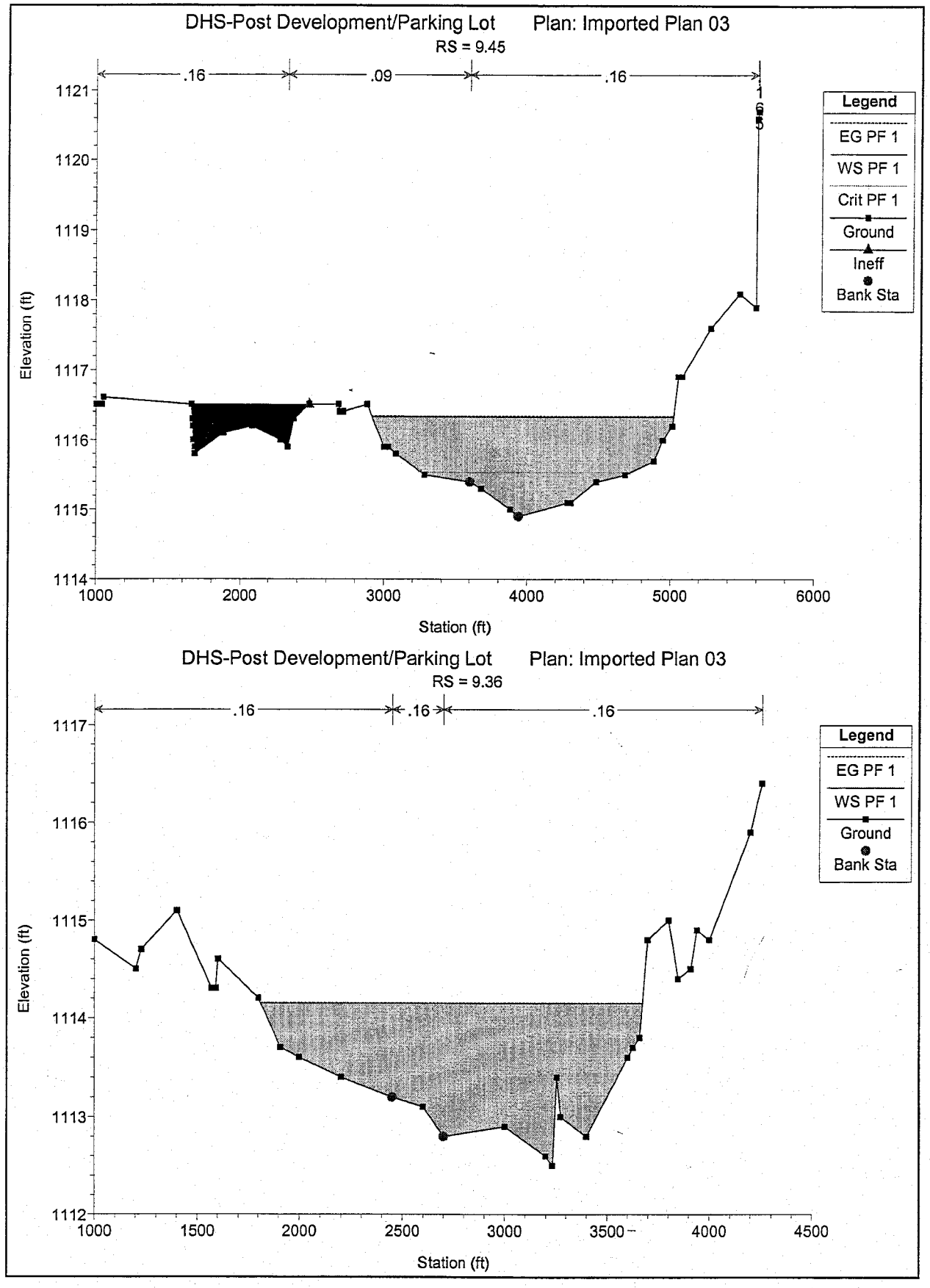
.16
.16
1122.0
1121.5
1121.0
1120.5
1120.0
1119.5
1119.0
1118.5
Elevation (ft)
3000
3500
4000
4500
5000
5500
6000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 9.55 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.09
.16
.16
1122
1121
1120
1119
1118
1117
1116
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta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.09
.16
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1121
1120
1119
1118
1117
1116
1115
1114
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 9.36
.16
.16
.16
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
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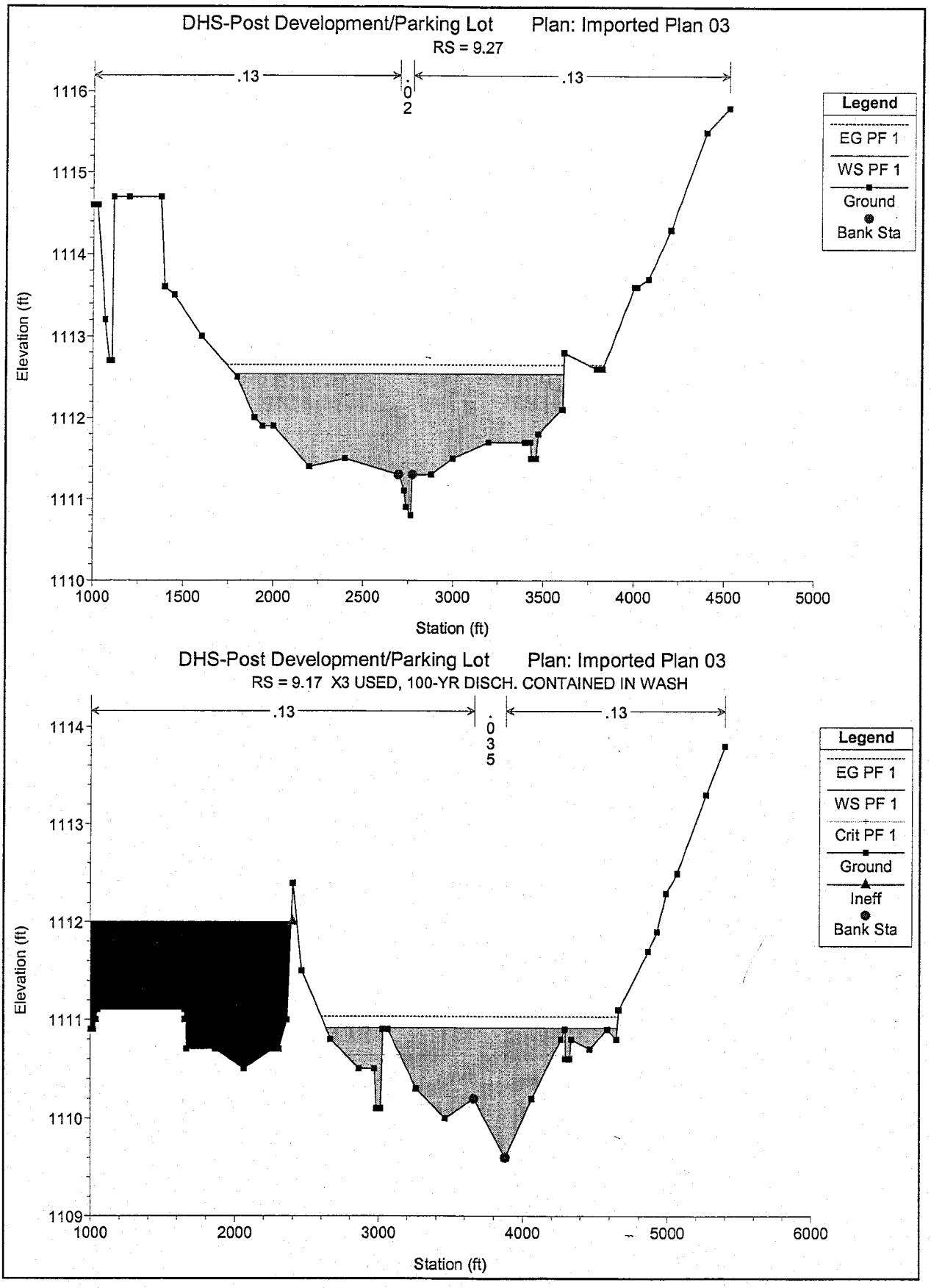
1115
1114
1113
1112
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)


DHS-Post Development/Parking Lot Plan: Imported Plan 03
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.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1116
1115
1114
1113
1112
1111
1110
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 9.17 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.035
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1114
1113
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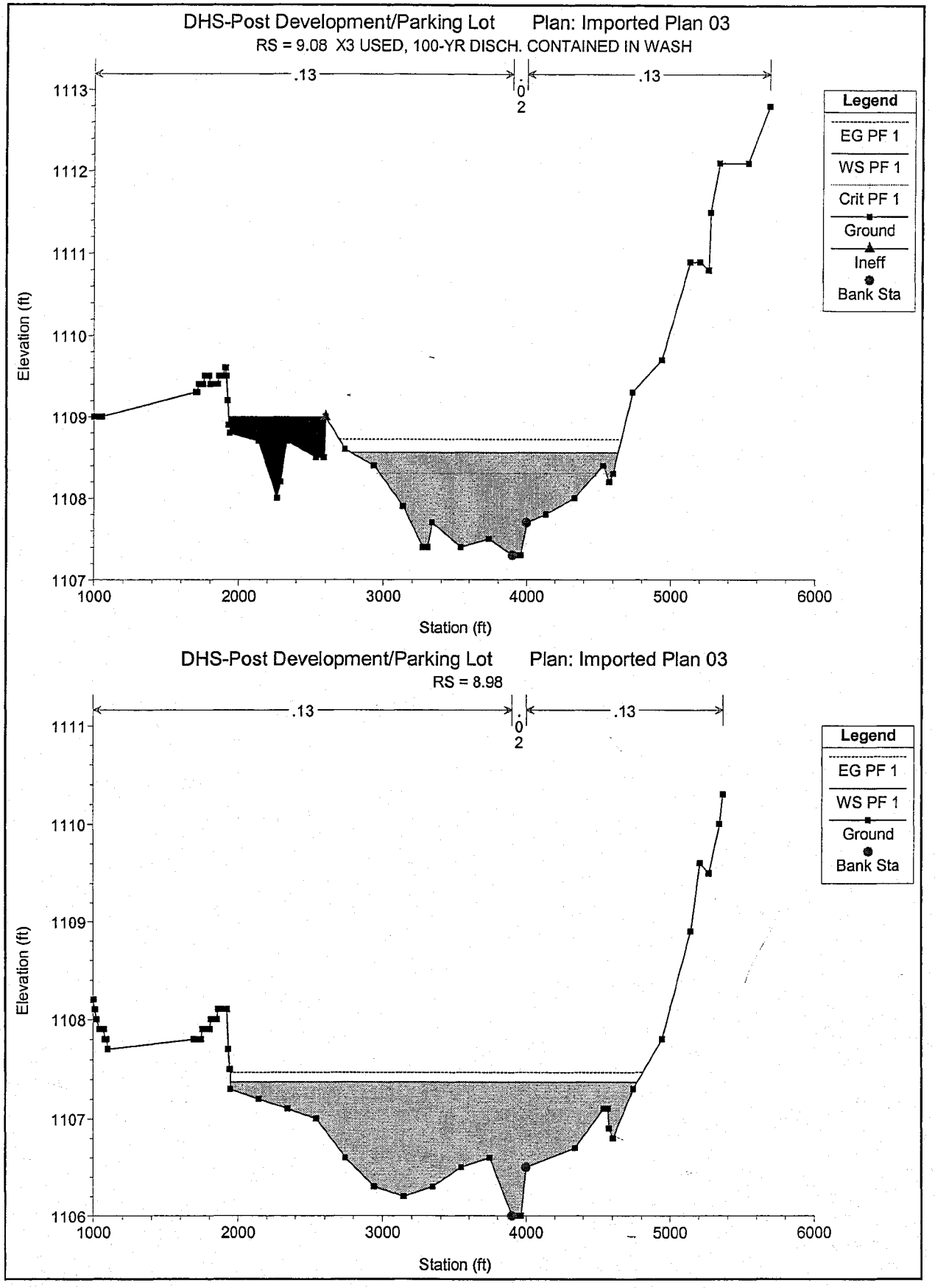
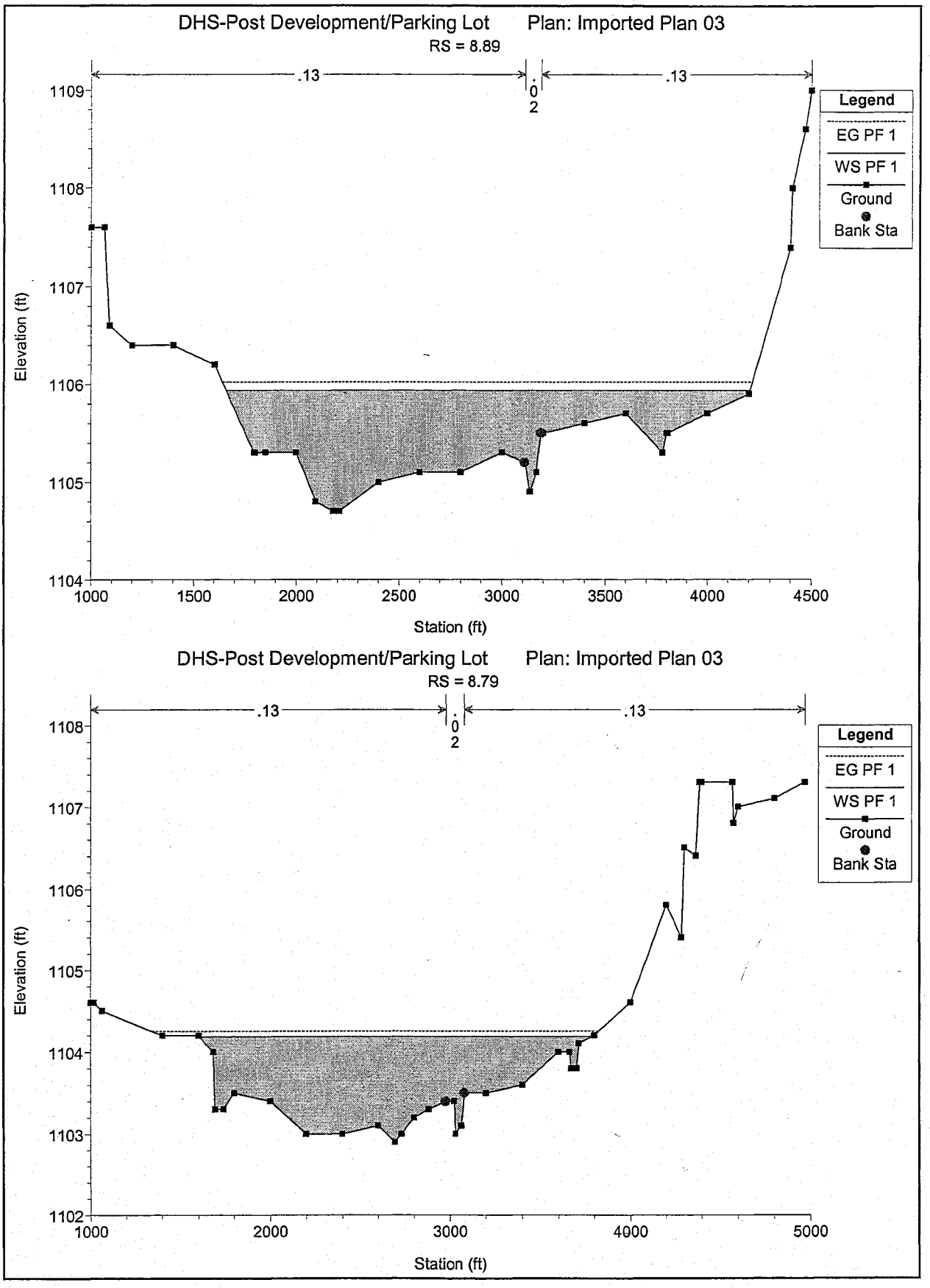
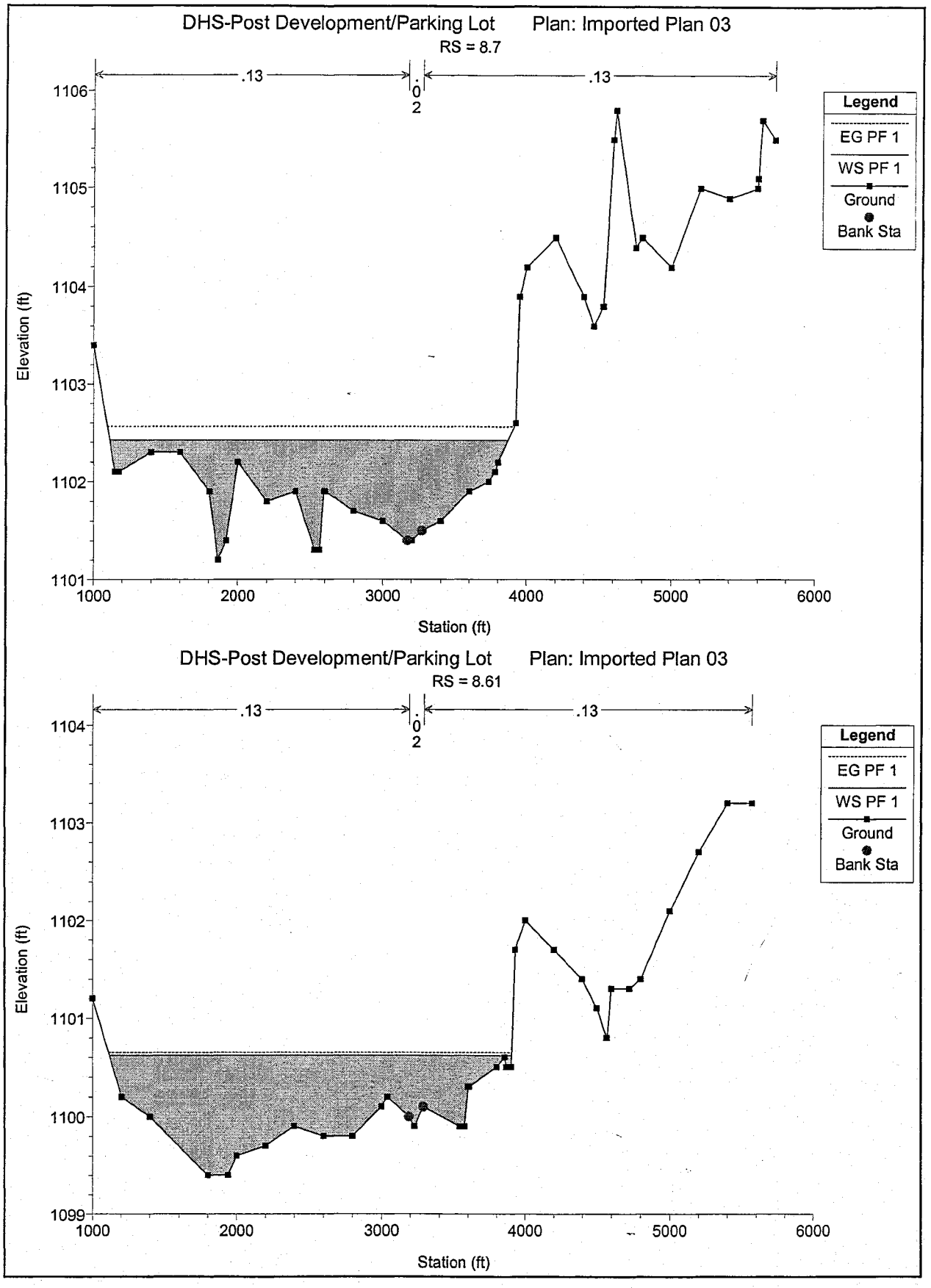
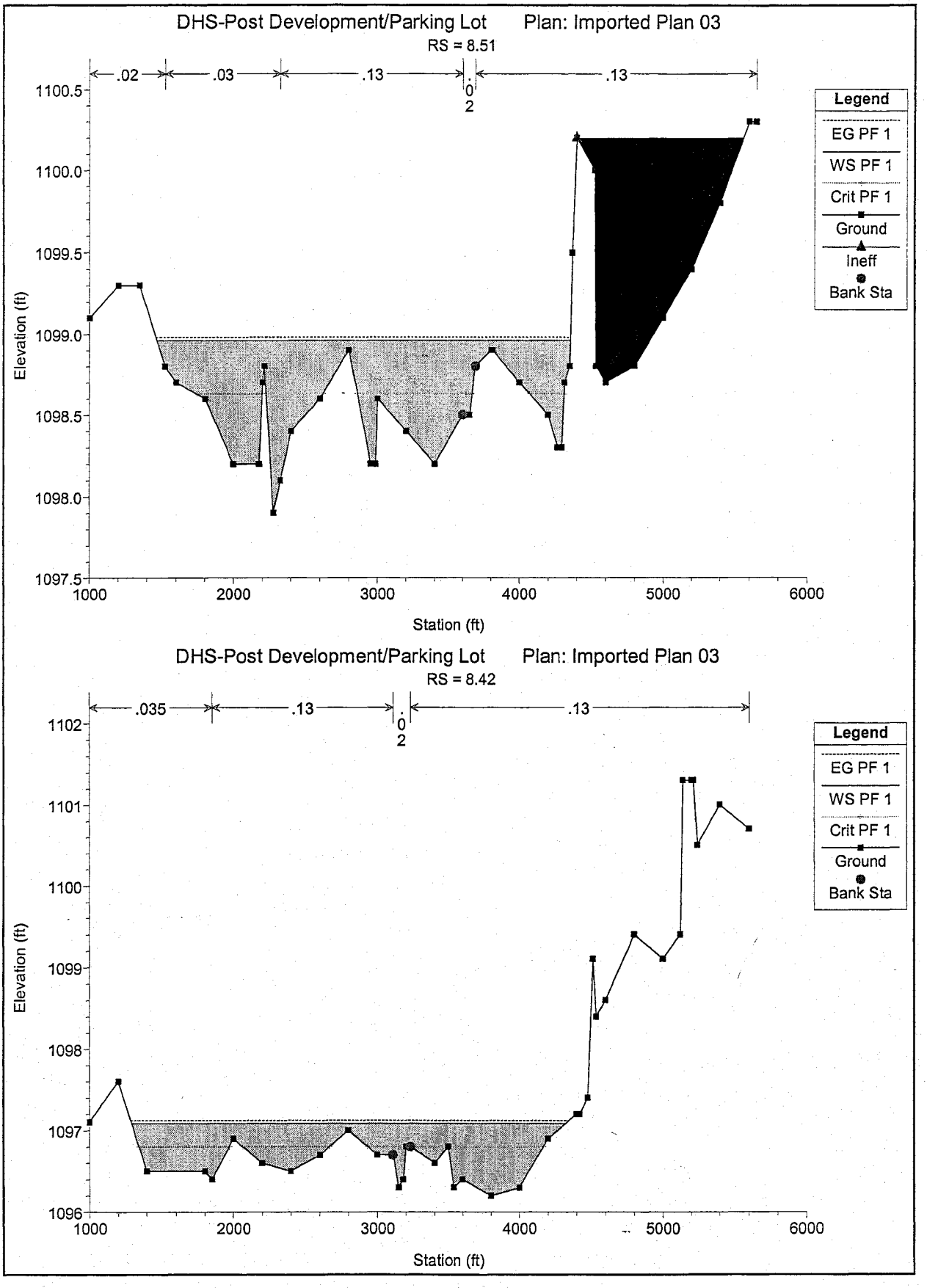
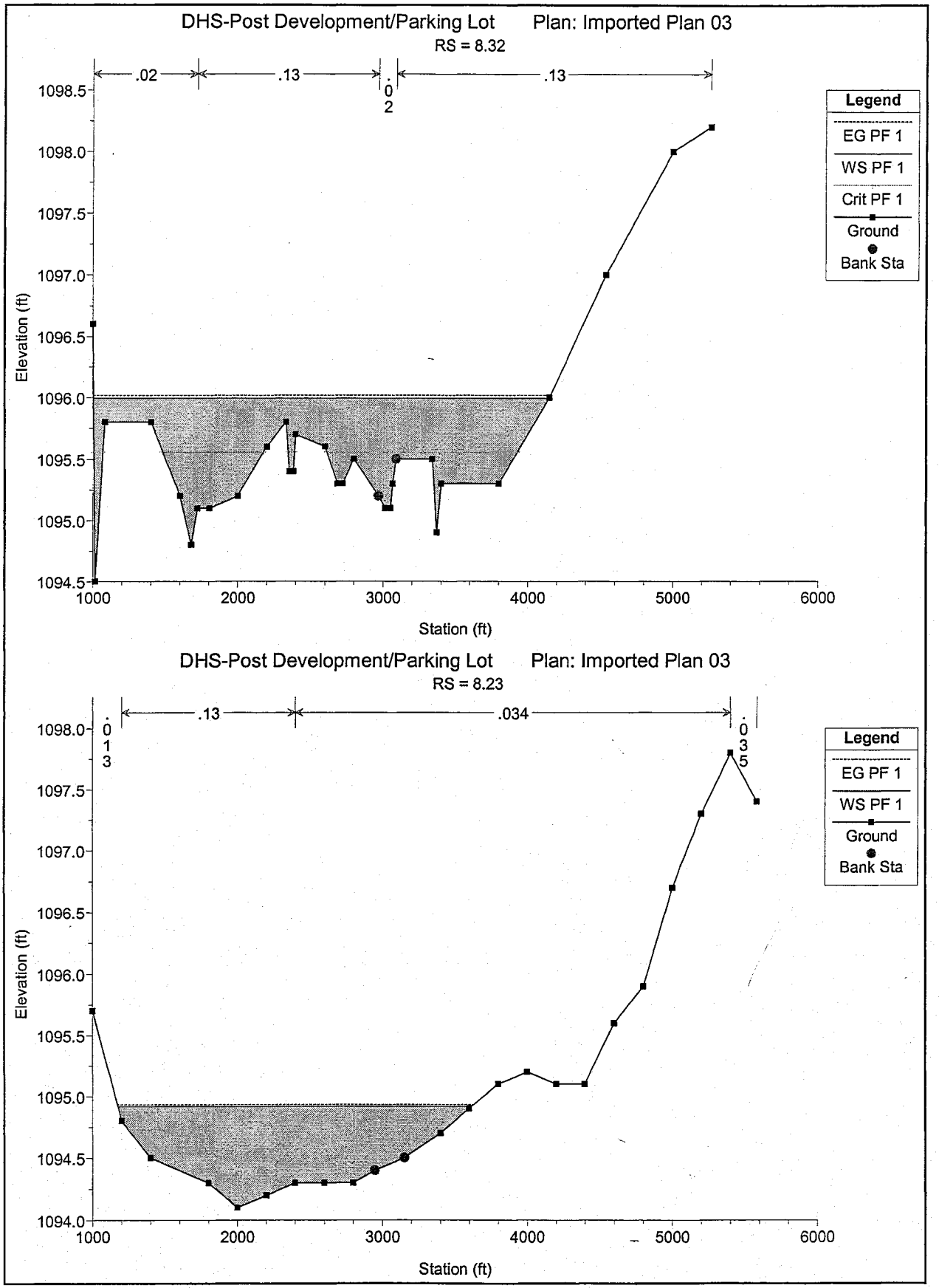
5000
6000
Station (ft)

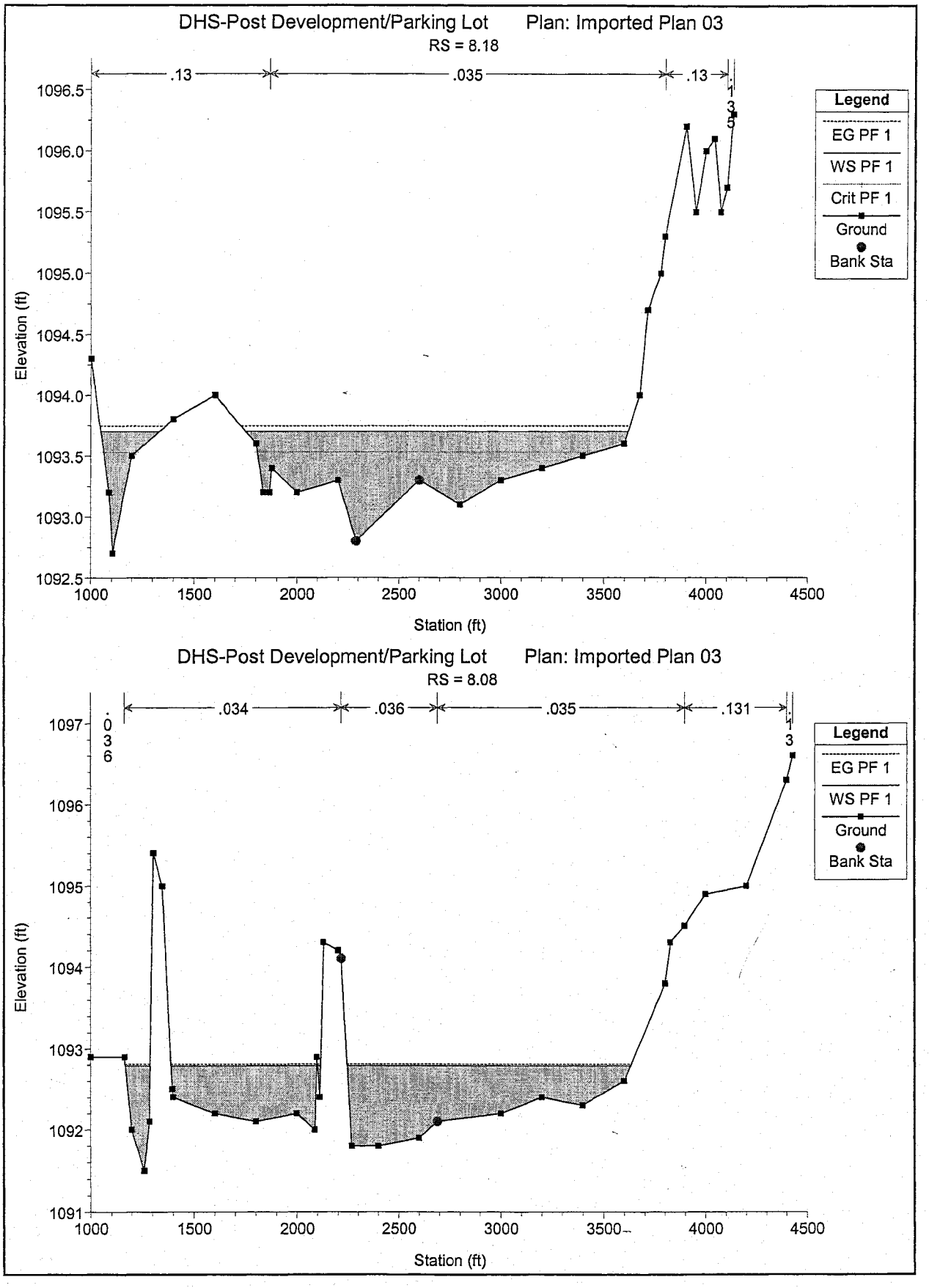

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 9.08 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1113
1112
1111
1110
1109
1108
1107
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.98
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1111
1110
1109
1108
1107
1106
1000
2000
3000
4000
5000
6000
Station (ft)

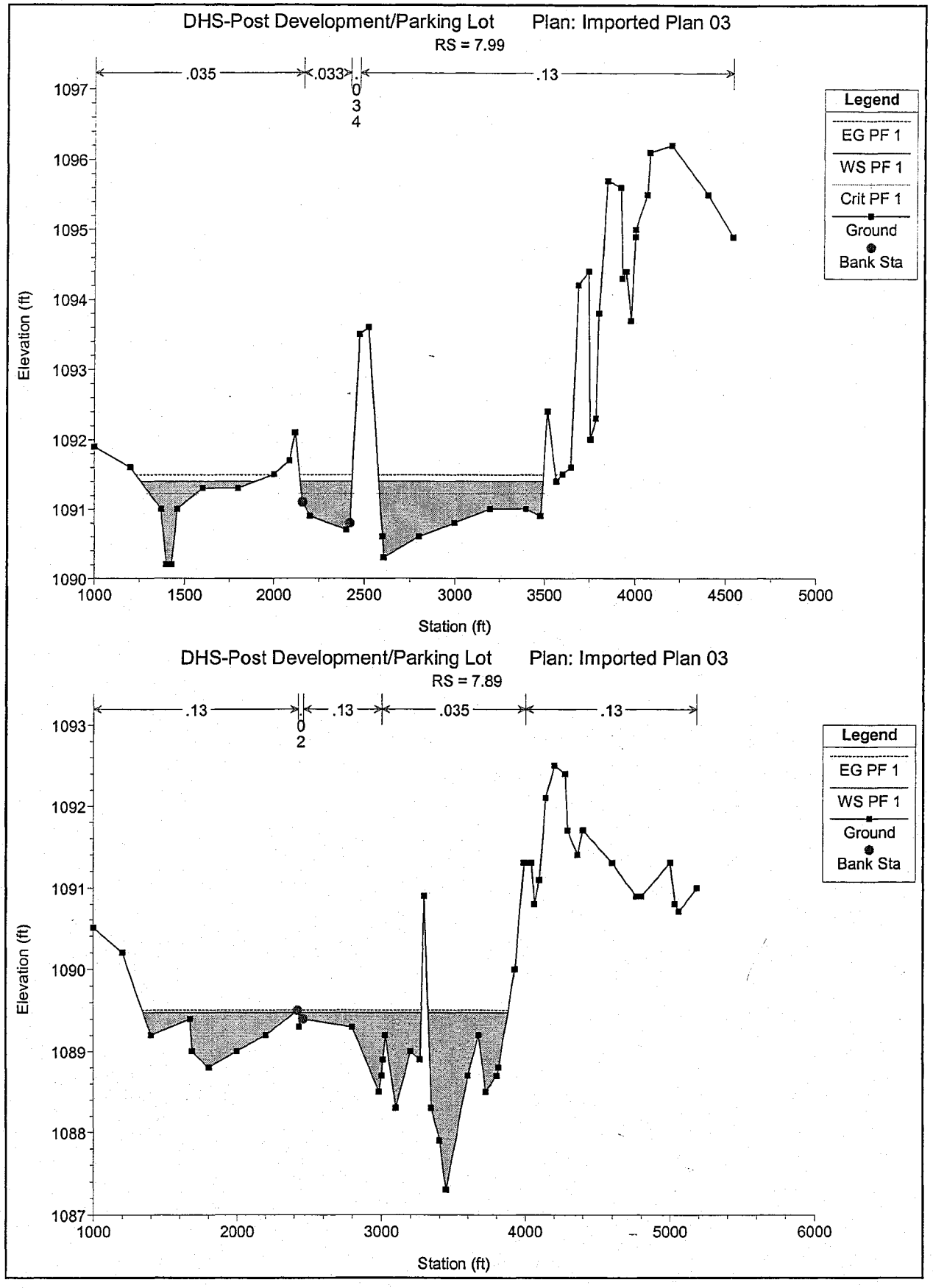

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.89
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1109
1108
1107
1106
1105
1104
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.79
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1108
1107
1106
1105
1104
1103
1102
1000
2000
3000
4000
5000
Station (ft)

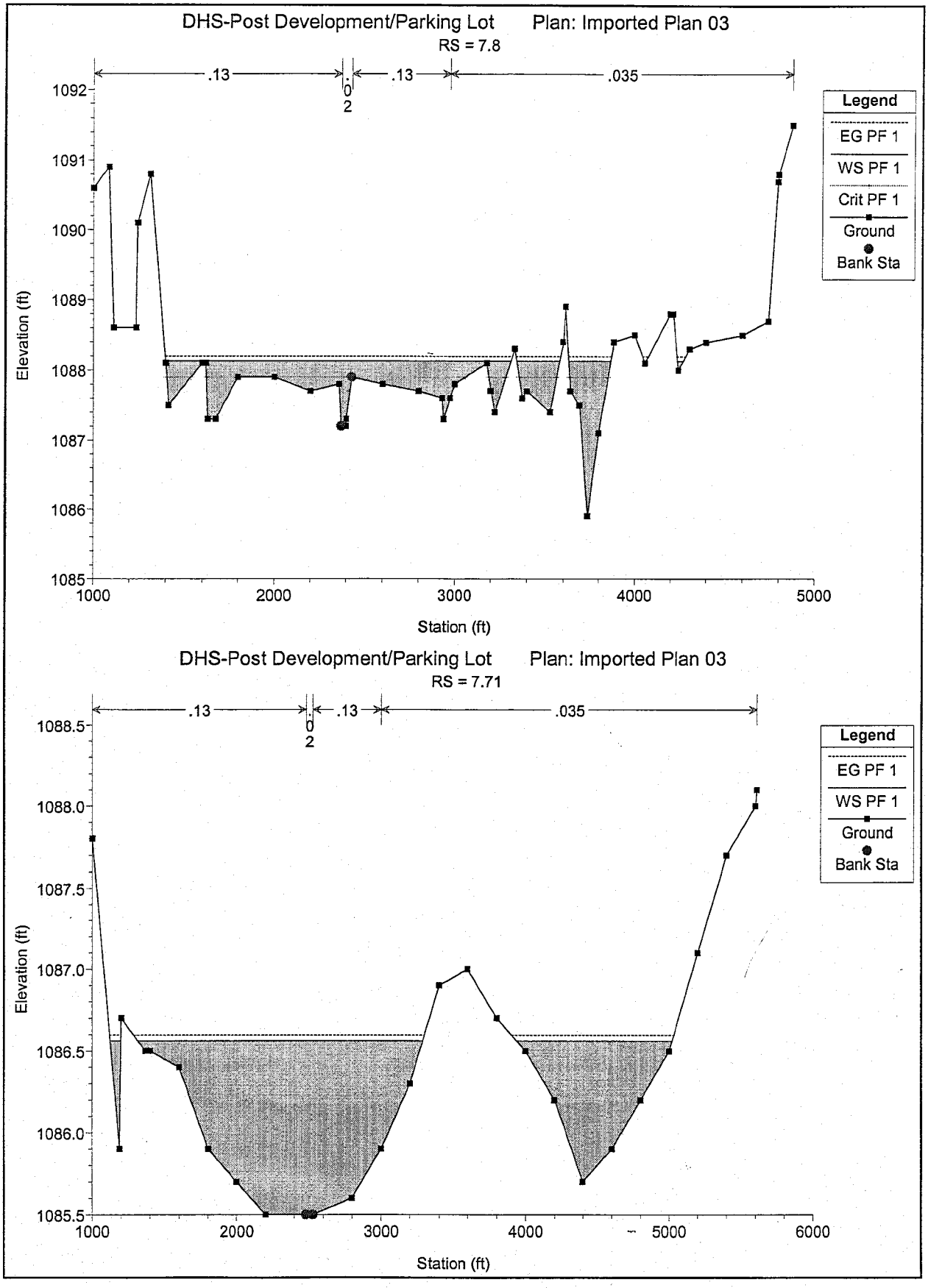

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.7
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1106
1105
1104
1103
1102
1101
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.61
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1104
1103
1102
1101
1100
1099
1000
2000
3000
4000
5000
6000
Station (ft)

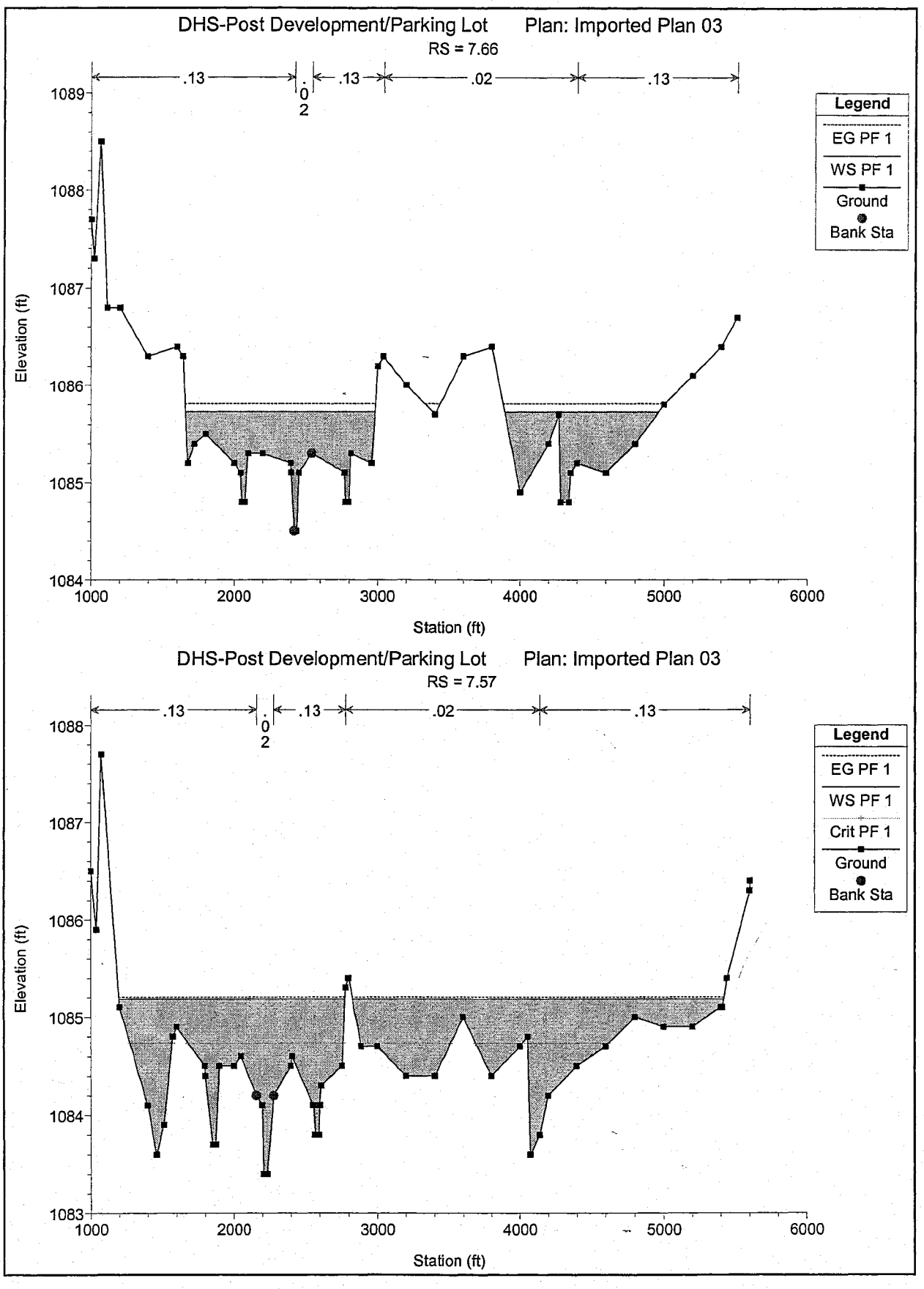

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.51
.02
.03
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.42
.035
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

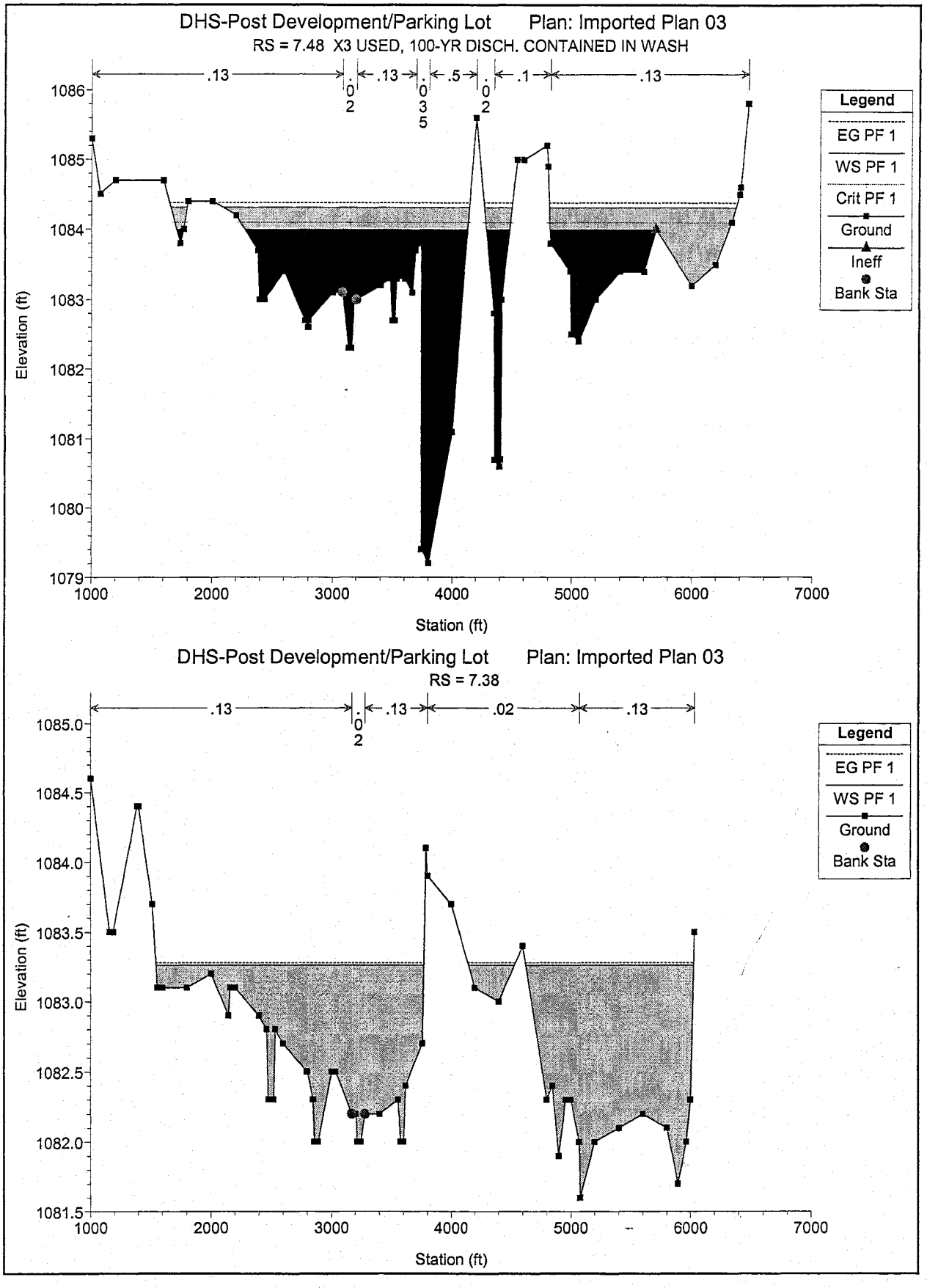

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.32
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1098.5
1098.0
1097.5
1097.0
1096.5
1096.0
1095.5
1095.0
1094.5
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.23
.13
.034
.013
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1098.0
1097.5
1097.0
1096.5
1096.0
1095.5
1095.0
1094.5
1094.0
1000
2000
3000
4000
5000
6000
Station (ft)

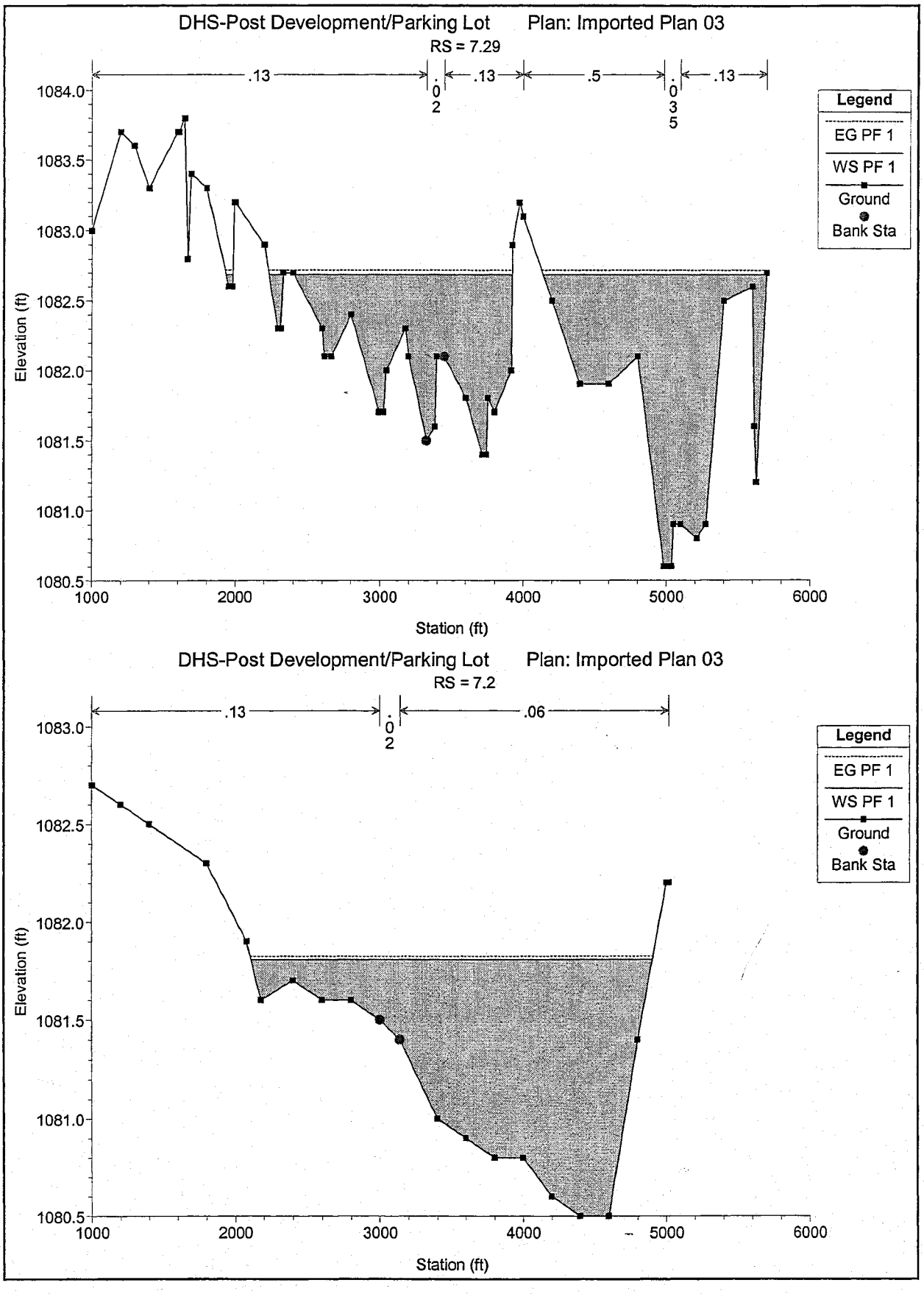

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.18
.13
.035
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 8.08
.034
.036
.035
.131
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

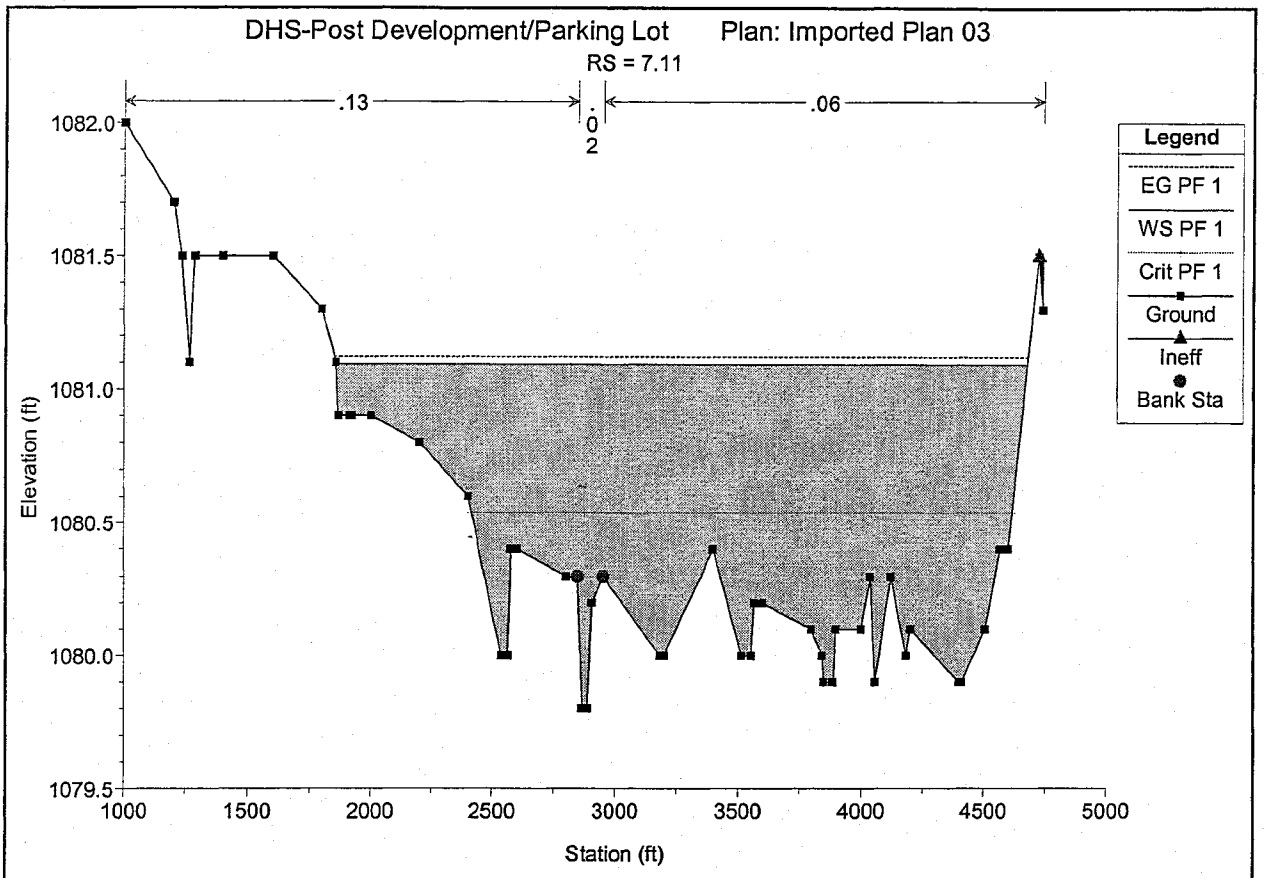

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.99
.035
.033
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.89
.13
.13
.035
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

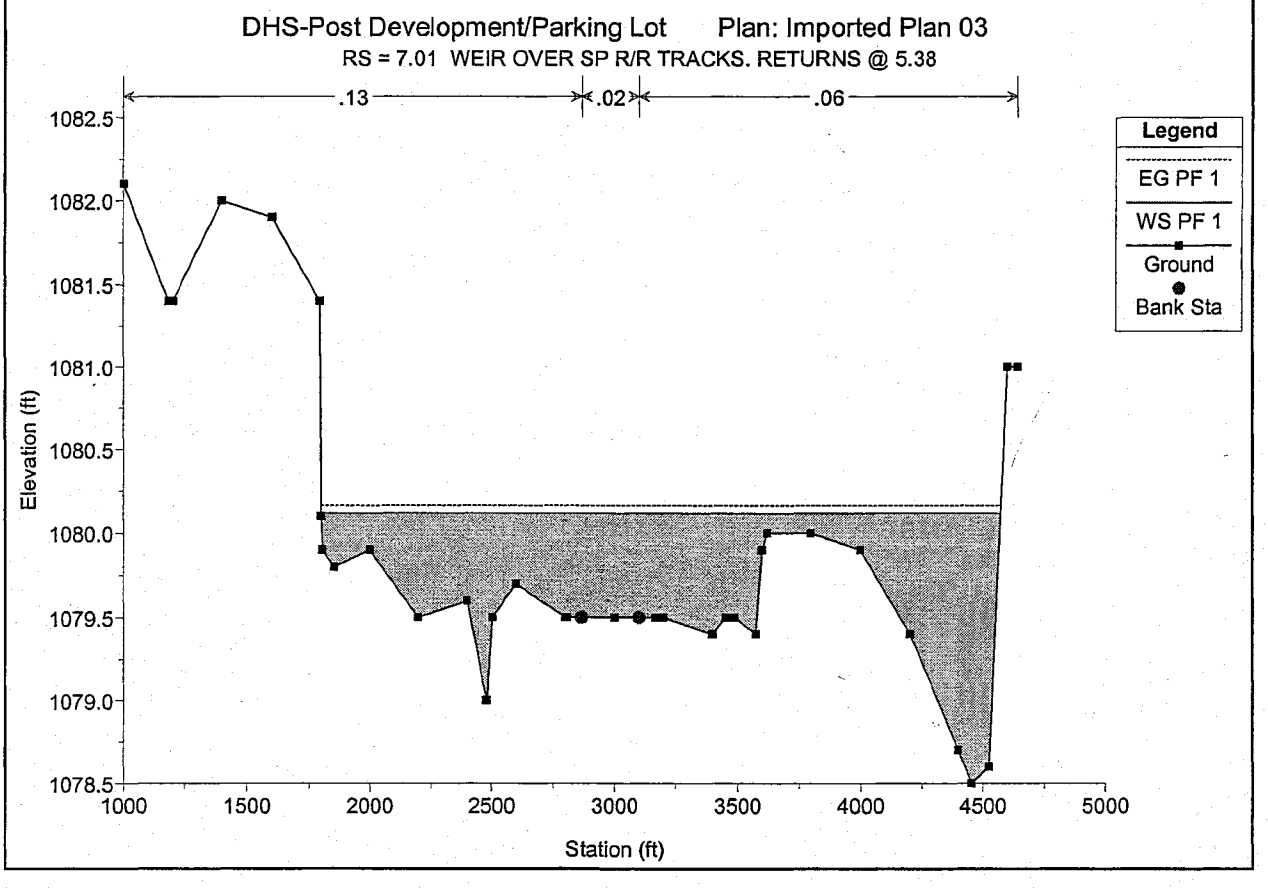

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.8
.13
.13
.035
.02
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.71
.13
.13
.035
.02
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

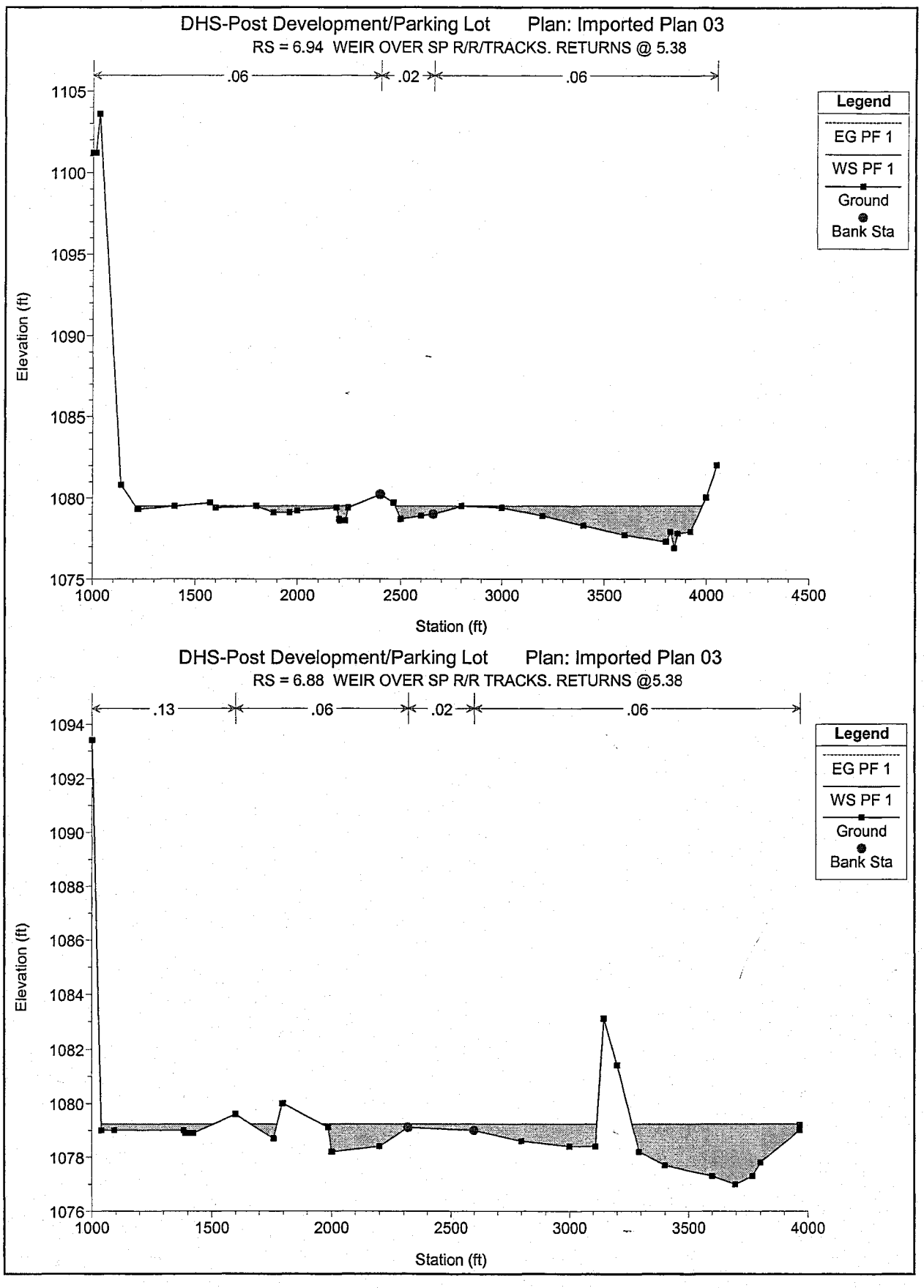

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.66
.13
.02
.13
.13
.02
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1089
1088
1087
1086
1085
1084
1000
2000
3000
4000
5000
6000
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.57
.13
.02
.13
.13
.02
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
1088
1087
1086
1085
1084
1083
1000
2000
3000
4000
5000
6000

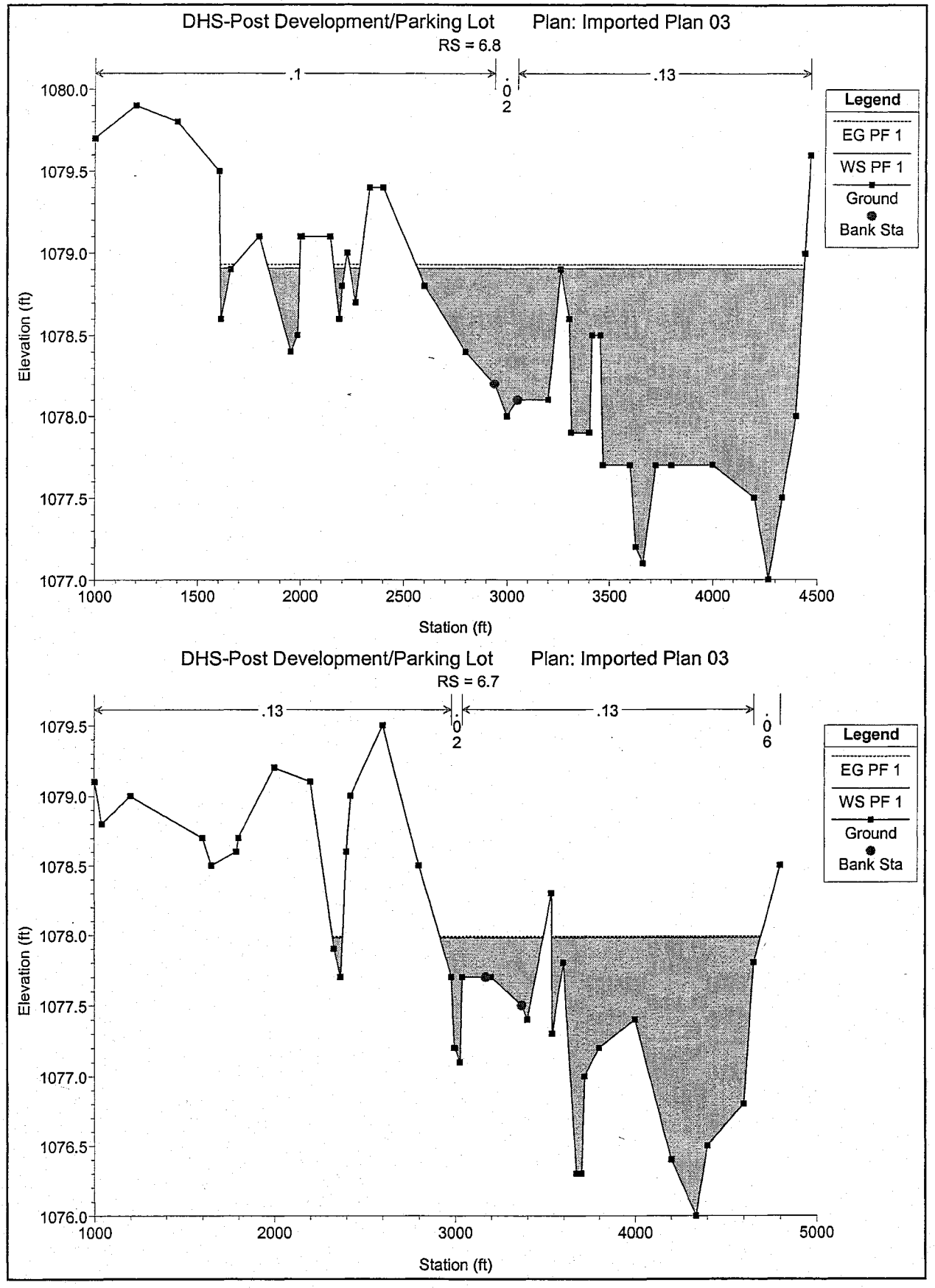

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.48 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.02
.13
.035
.5
.02
.1
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1086
1085
1084
1083
1082
1081
1080
1079
1000
2000
3000
4000
5000
6000
7000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.38
.13
.02
.13
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1085.0
1084.5
1084.0
1083.5
1083.0
1082.5
1082.0
1081.5
1000
2000
3000
4000
5000
6000
7000
Station (ft)

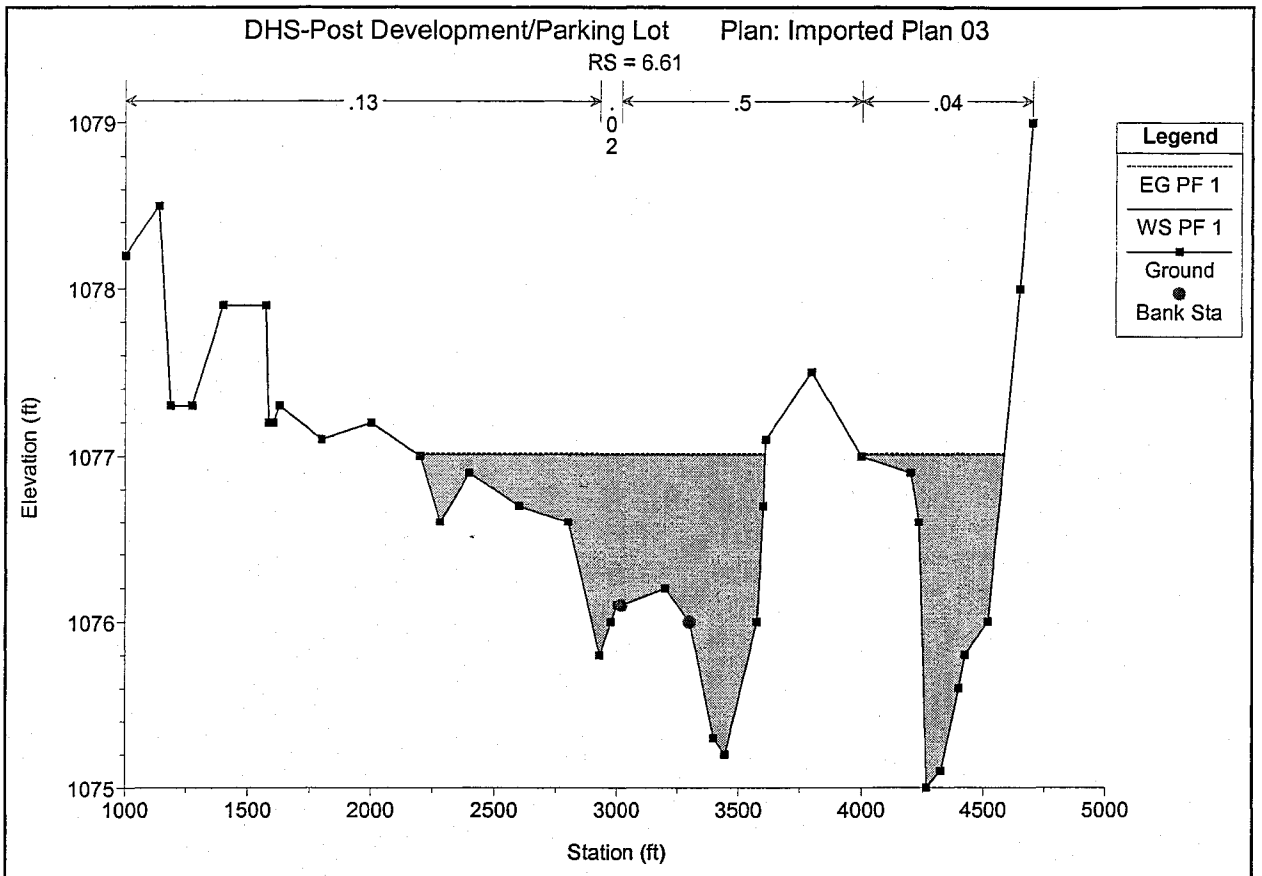

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.29
.13
.02
.13
.5
.035
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1084.0
1083.5
1083.0
1082.5
1082.0
1081.5
1081.0
1080.5
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.2
.13
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1083.0
1082.5
1082.0
1081.5
1081.0
1080.5
1000
2000
3000
4000
5000
6000
Station (ft)

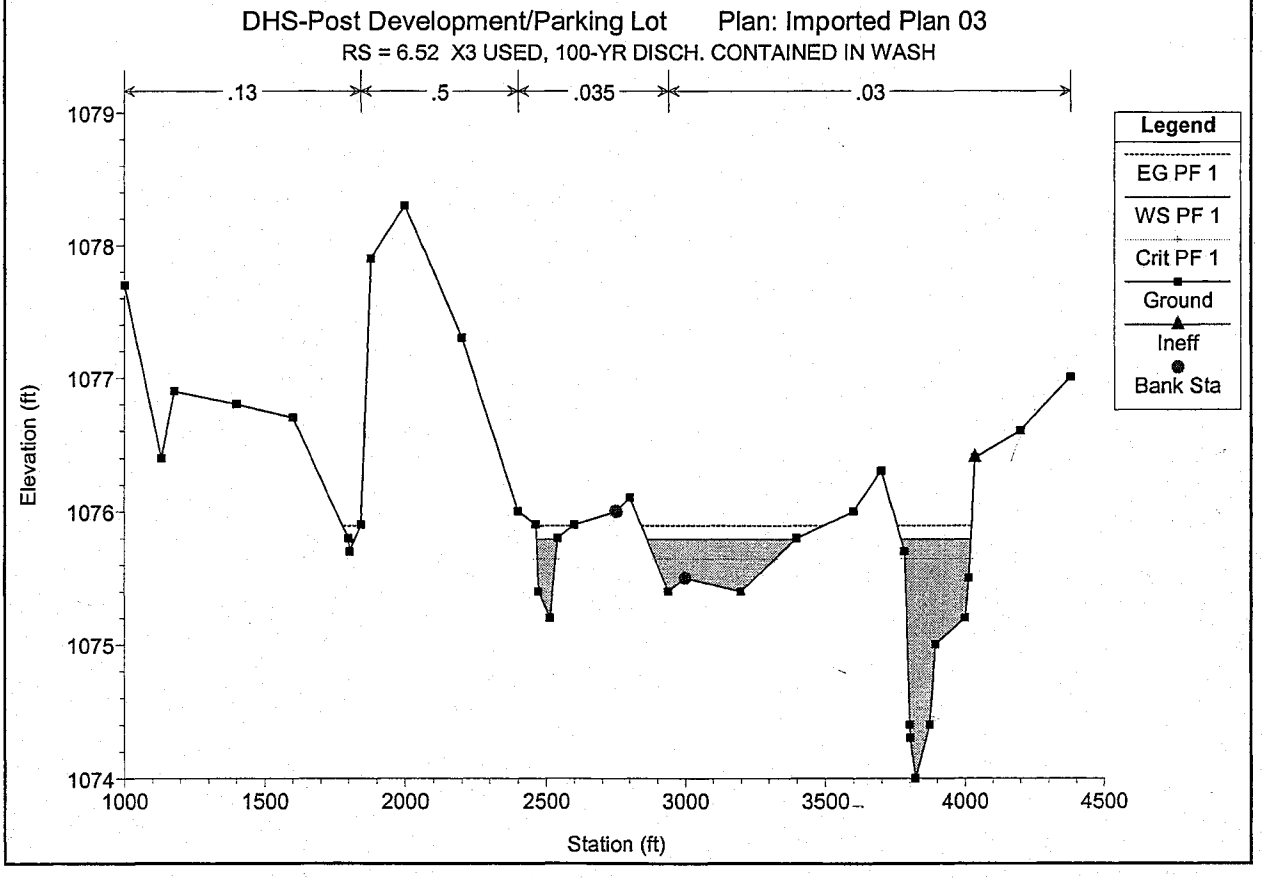

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.11
.13
.02
.06
1082.0
1081.5
1081.0
1080.5
1080.0
1079.5
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta

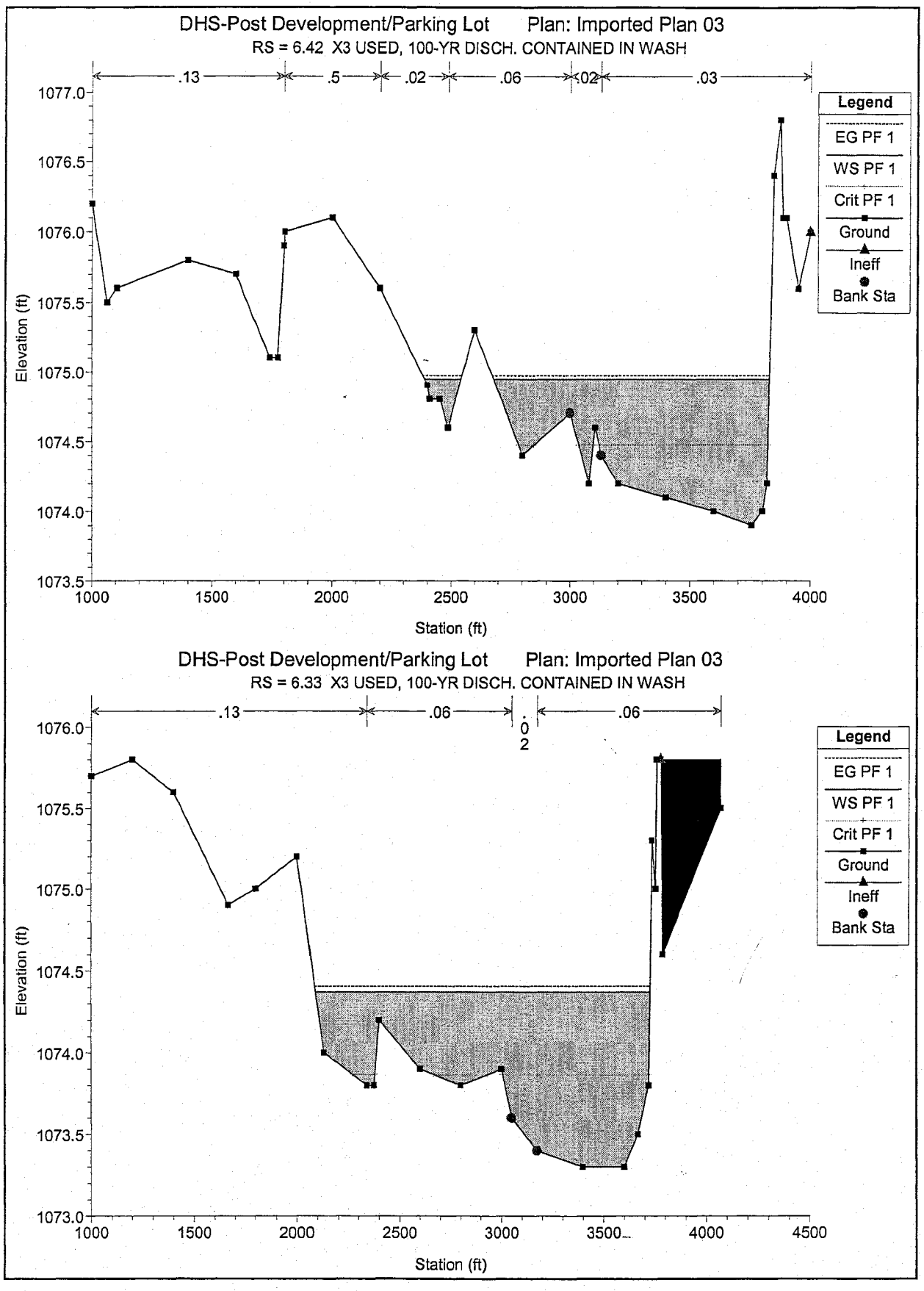

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 7.01 WEIR OVER SP R/R TRACKS. RETURNS @ 5.38
.13
.02
.06
1082.5
1082.0
1081.5
1081.0
1080.5
1080.0
1079.5
1079.0
1078.5
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

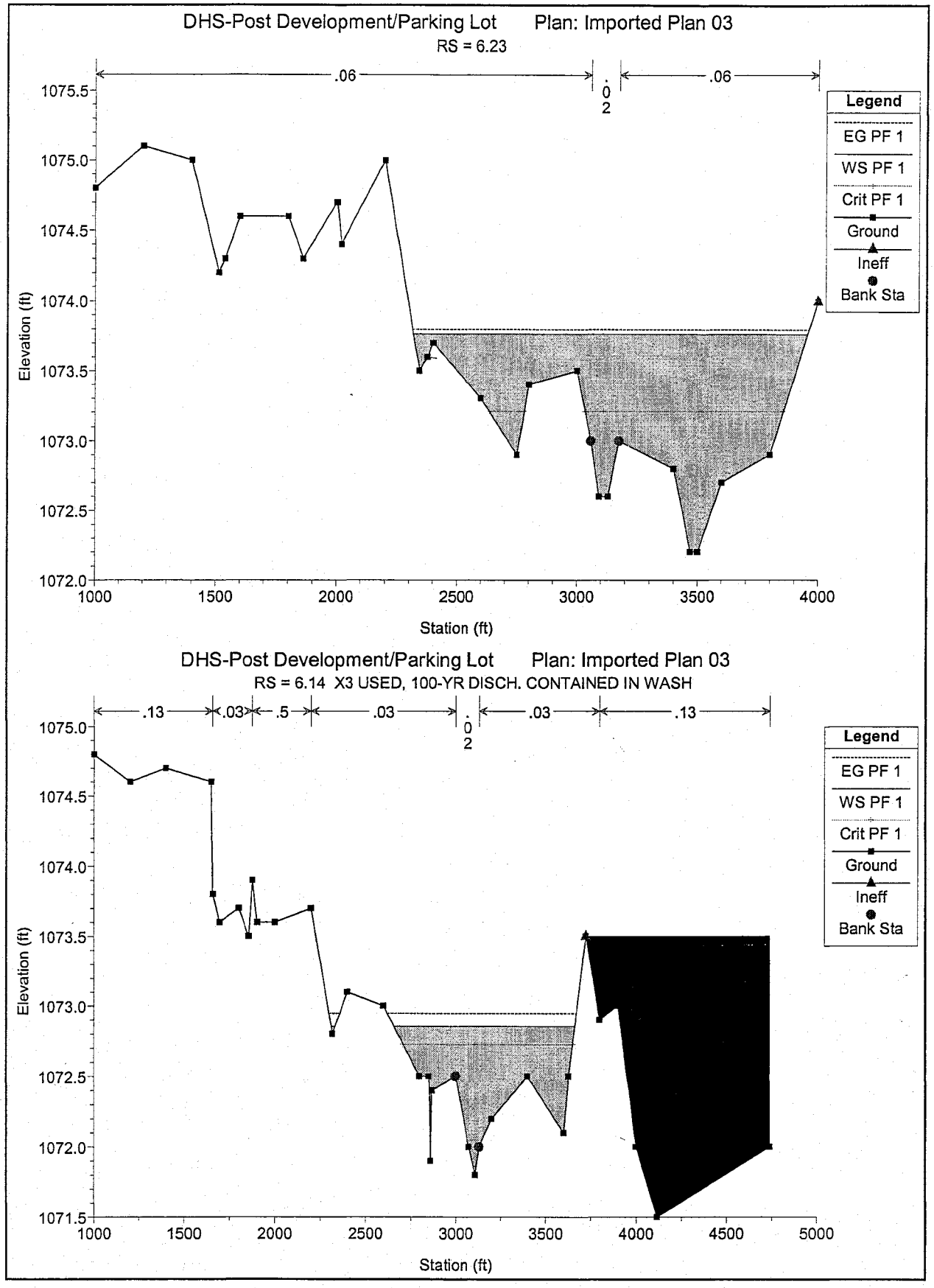

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.94 WEIR OVER SP R/R/TRACKS. RETURNS @ 5.38
.06
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1105
1100
1095
1090
1085
1080
1075
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.88 WEIR OVER SP R/R TRACKS. RETURNS @5.38
.13
.06
.02
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1094
1092
1090
1088
1086
1084
1082
1080
1078
1076
1000
1500
2000
2500
3000
3500
4000
Station (ft)

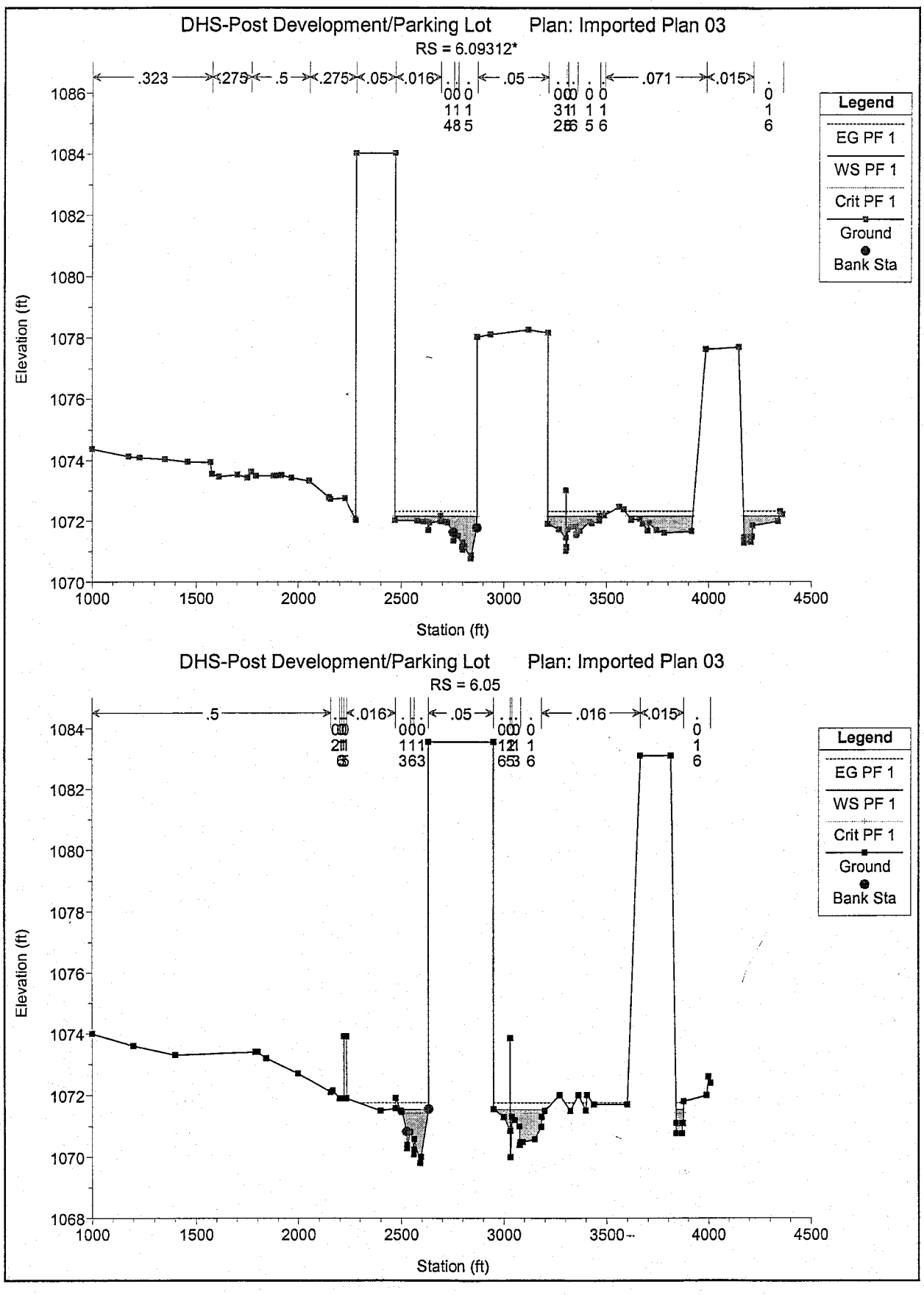

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.8
.1
.02
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1080.0
1079.5
1079.0
1078.5
1078.0
1077.5
1077.0
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.7
.13
.02
.13
.06
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1079.5
1079.0
1078.5
1078.0
1077.5
1077.0
1076.5
1076.0
1000
2000
3000
4000
5000
Station (ft)

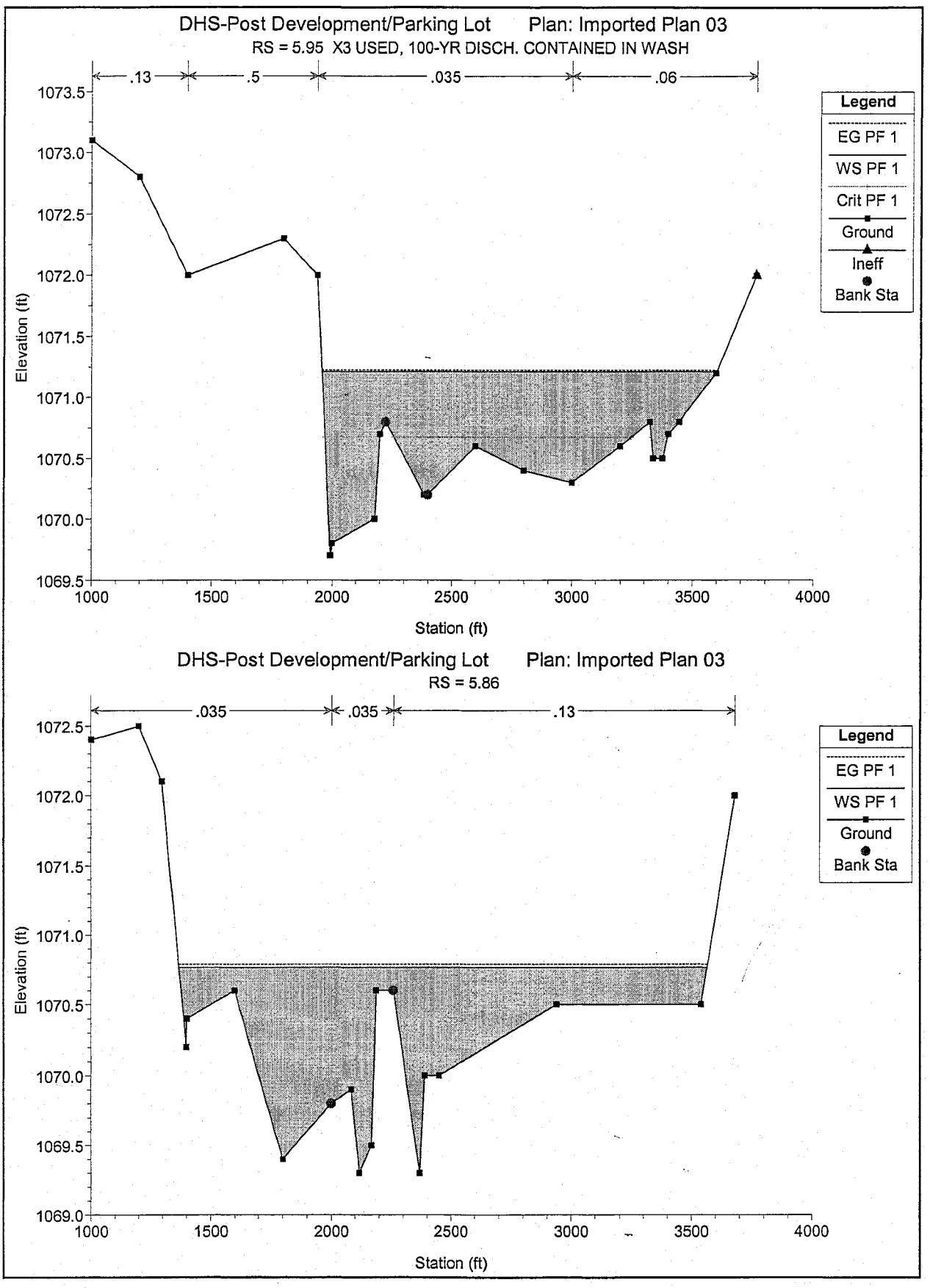

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.61
.13
.02
.5
.04
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1079
1078
1077
1076
1075
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)

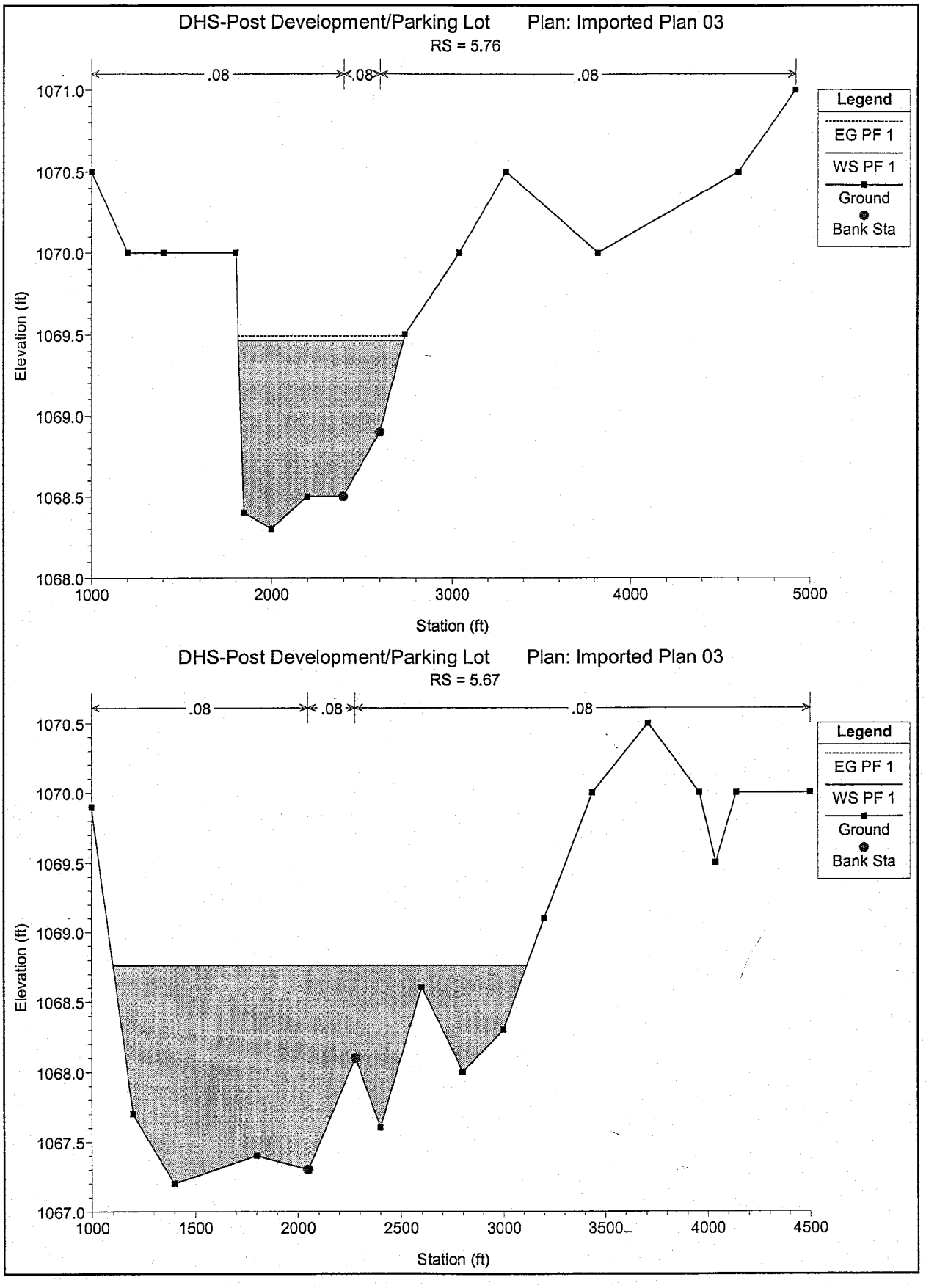

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.52 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.035
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1079
1078
1077
1076
1075
1074
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

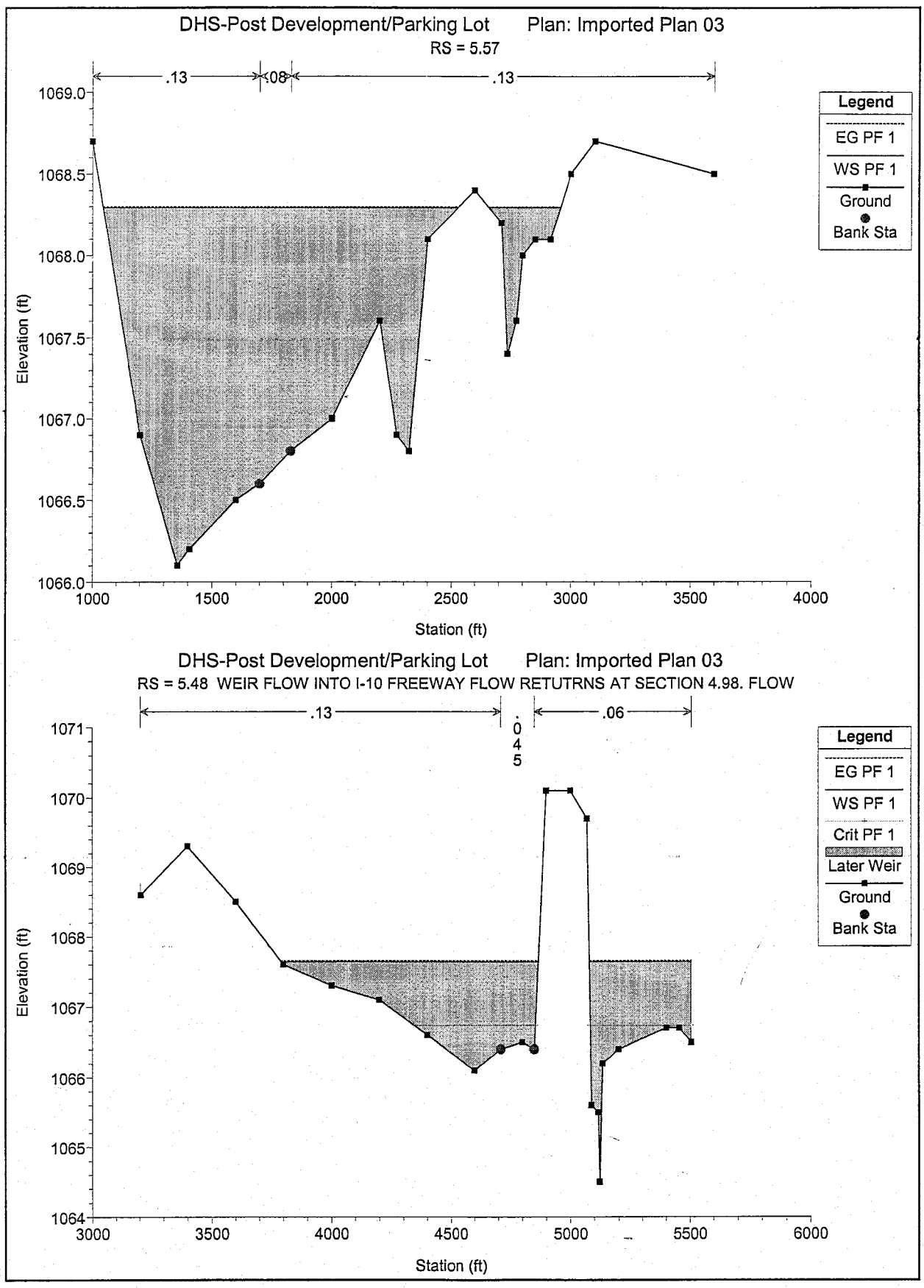

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.42 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.02
.06
.02
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1077.0
1076.5
1076.0
1075.5
1075.0
1074.5
1074.0
1073.5
1000
1500
2000
2500
3000
3500
4000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.33 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.06
.02
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1076.0
1075.5
1075.0
1074.5
1074.0
1073.5
1073.0
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)

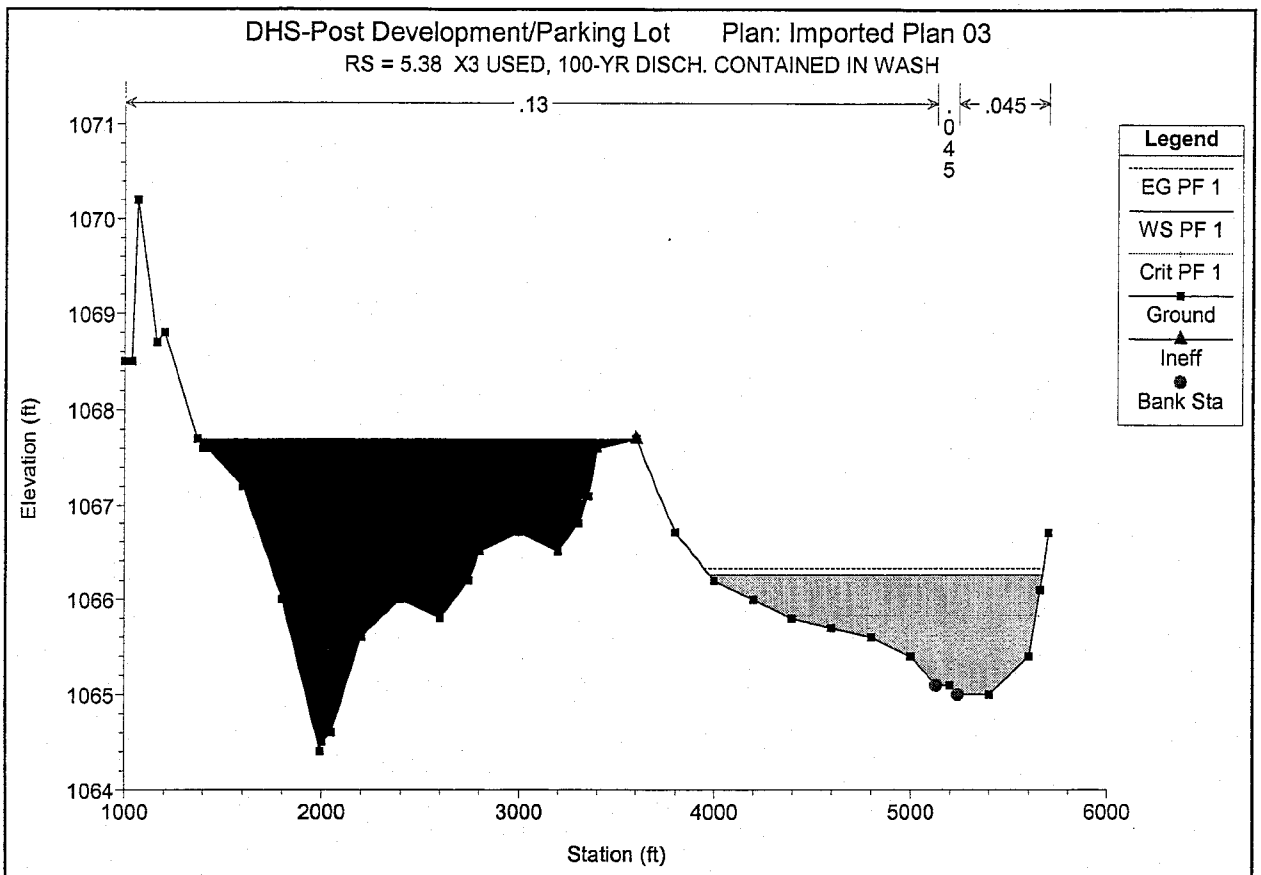

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.23
.06
.02
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1075.5
1075.0
1074.5
1074.0
1073.5
1073.0
1072.5
1072.0
1000
1500
2000
2500
3000
3500
4000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.14 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.03
.5
.03
.02
.03
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1075.0
1074.5
1074.0
1073.5
1073.0
1072.5
1072.0
1071.5
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)

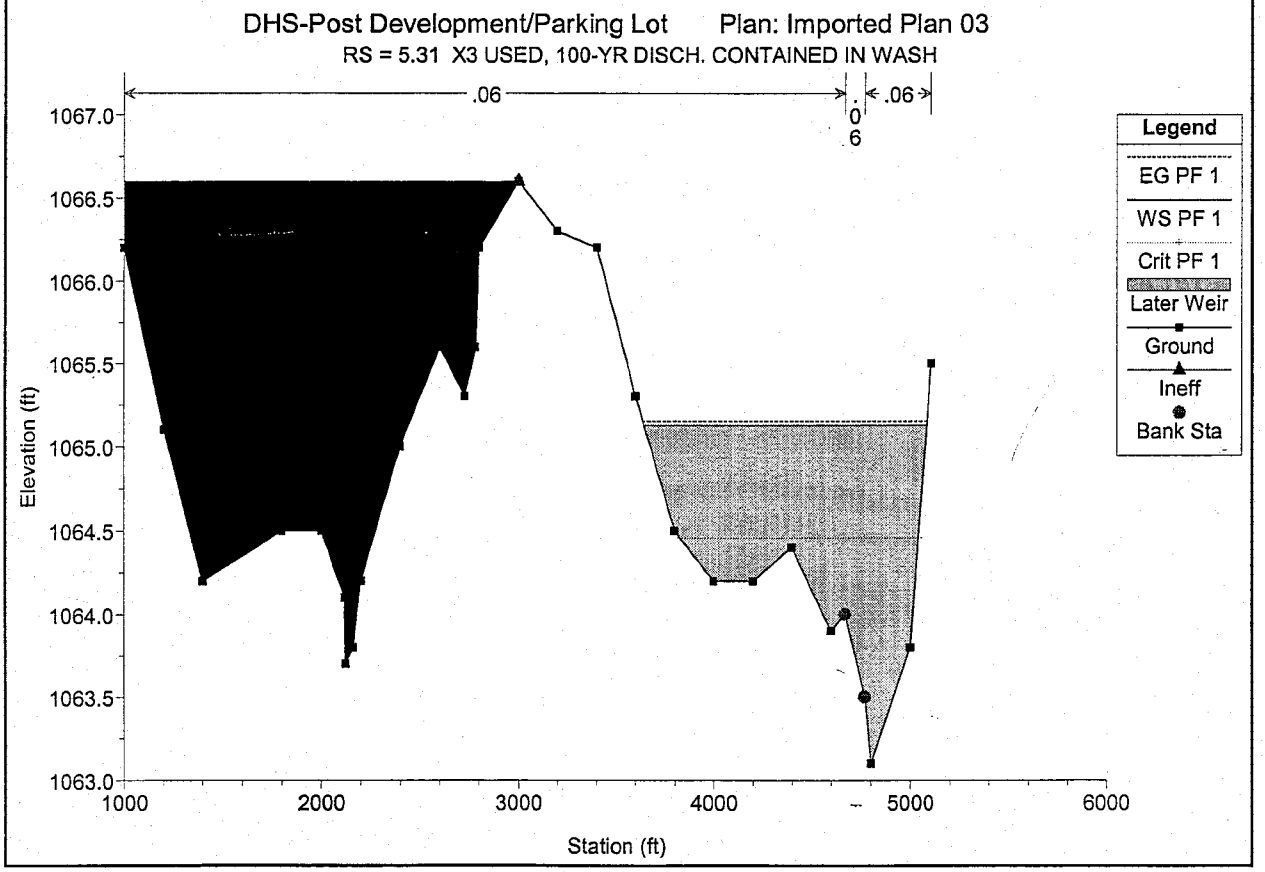

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.09312*
.323
.275
.5
.275
.05
.016
.05
.071
.015
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 6.05
.5
.016
.05
.016
.015
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

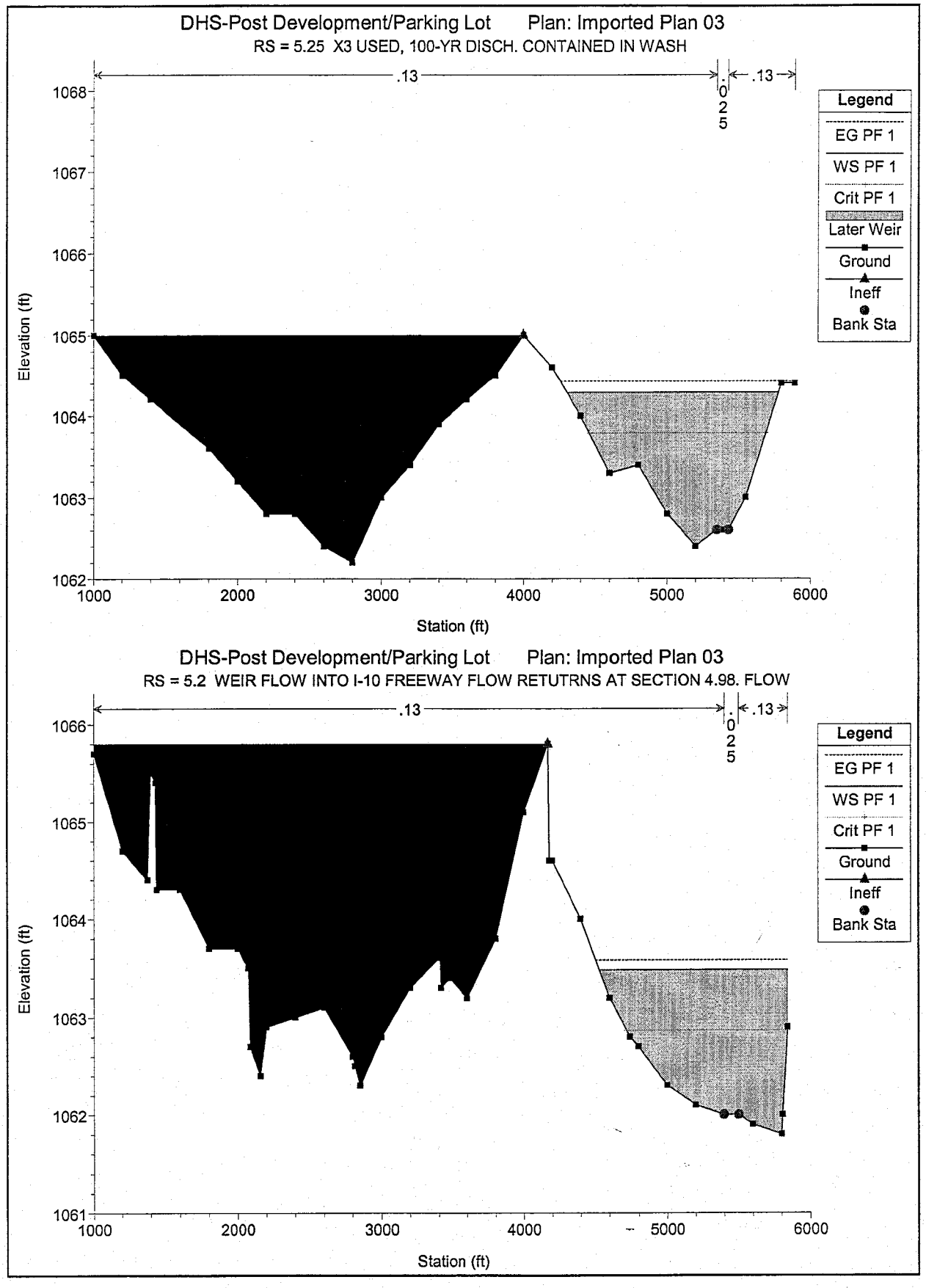

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.95 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.5
.035
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1073.5
1073.0
1072.5
1072.0
1071.5
1071.0
1070.5
1070.0
1069.5
1000
1500
2000
2500
3000
3500
4000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.86
.035
.035
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1072.5
1072.0
1071.5
1071.0
1070.5
1070.0
1069.5
1069.0
1000
1500
2000
2500
3000
3500
4000
Station (ft)

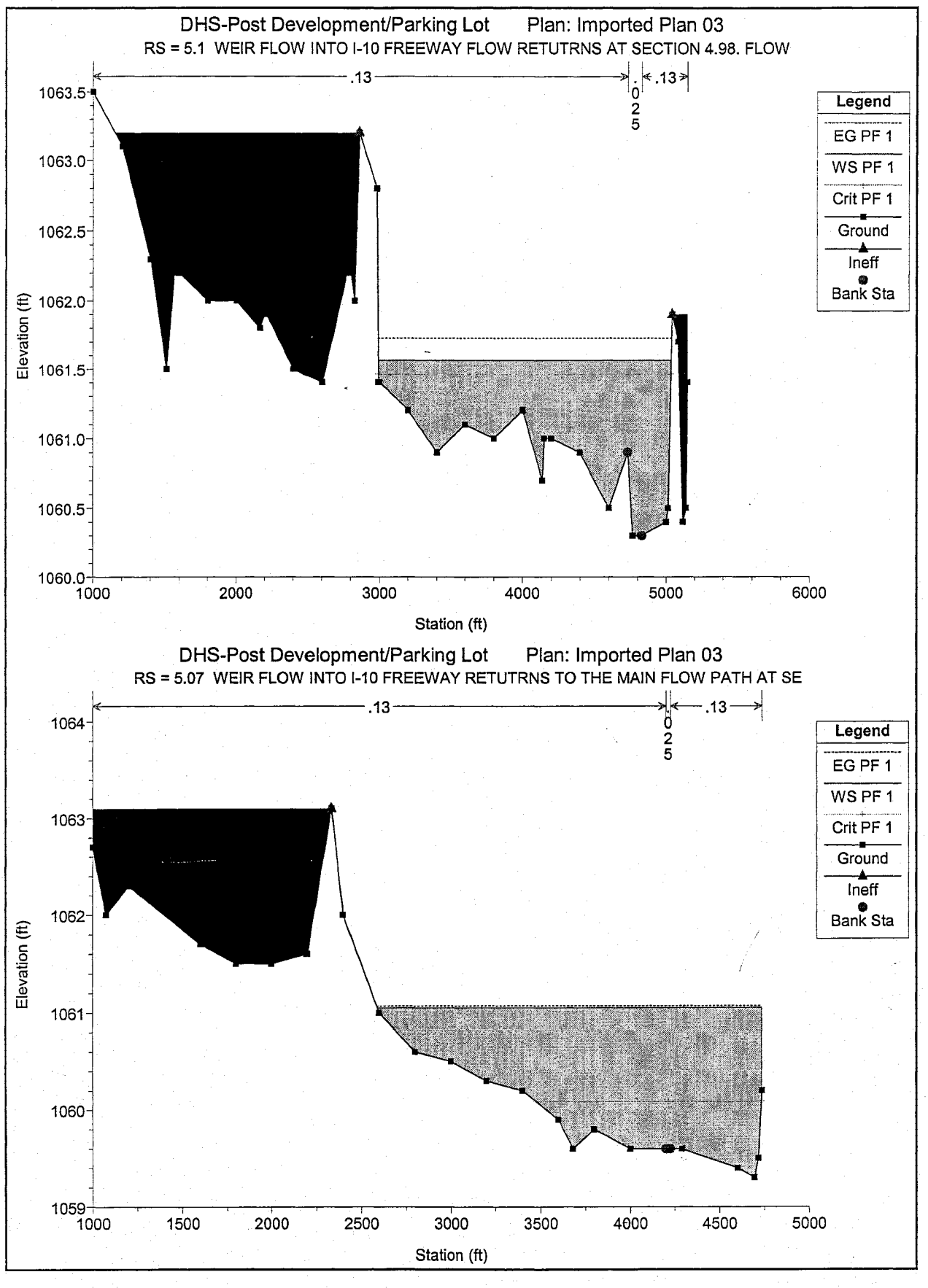

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.76
.08
.08
.08
1071.0
1070.5
1070.0
1069.5
1069.0
1068.5
1068.0
Elevation (ft)
1000
2000
3000
4000
5000
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.67
.08
.08
.08
1070.5
1070.0
1069.5
1069.0
1068.5
1068.0
1067.5
1067.0
Elevation (ft)
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)
Legend
EG PF 1
WS PF 1
Ground
Bank Sta

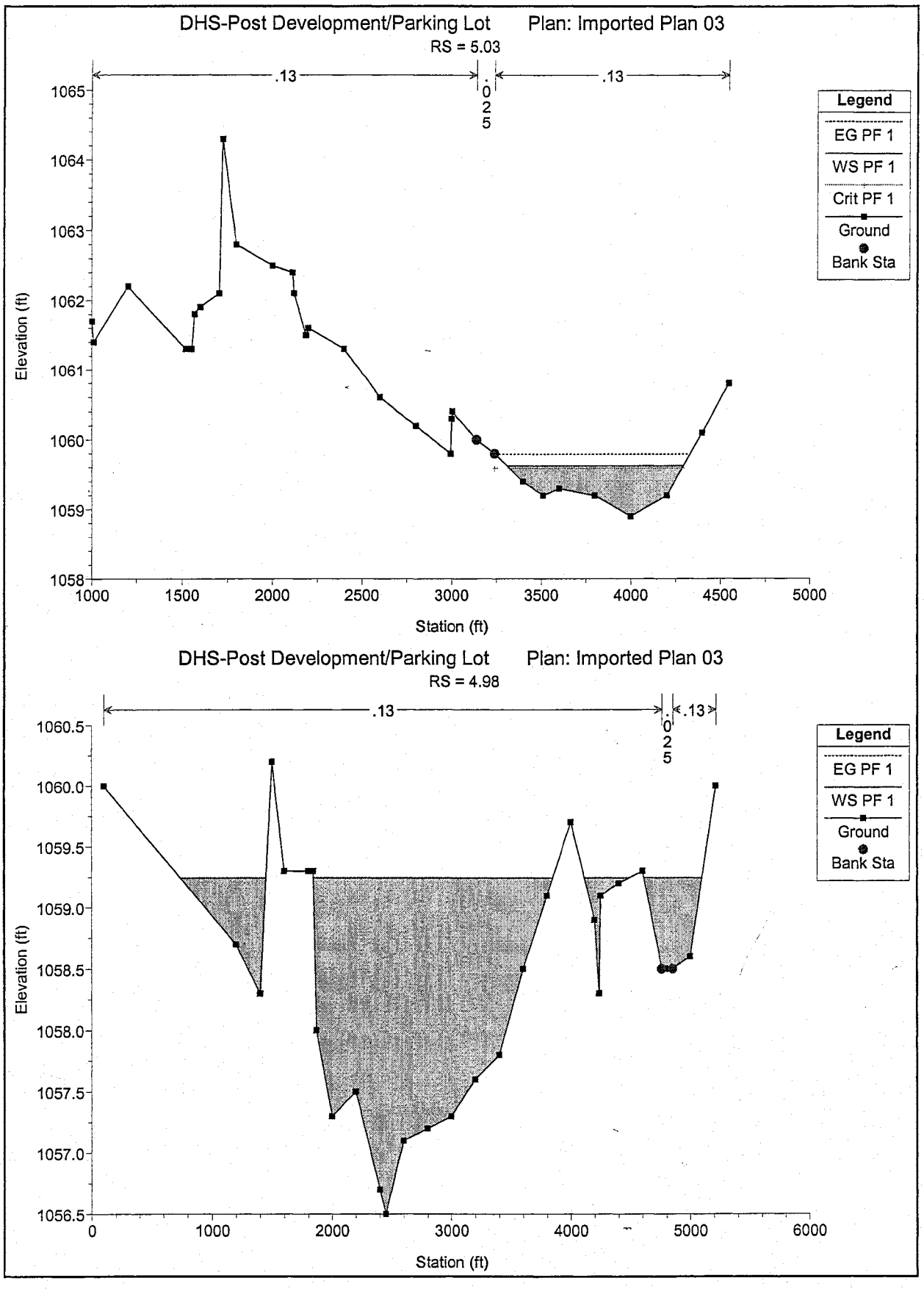

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.57
.13
.08
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1069.0
1068.5
1068.0
1067.5
1067.0
1066.5
1066.0
1000
1500
2000
2500
3000
3500
4000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.48 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.045
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Bank Sta
Elevation (ft)
1071
1070
1069
1068
1067
1066
1065
1064
3000
3500
4000
4500
5000
5500
6000
Station (ft)

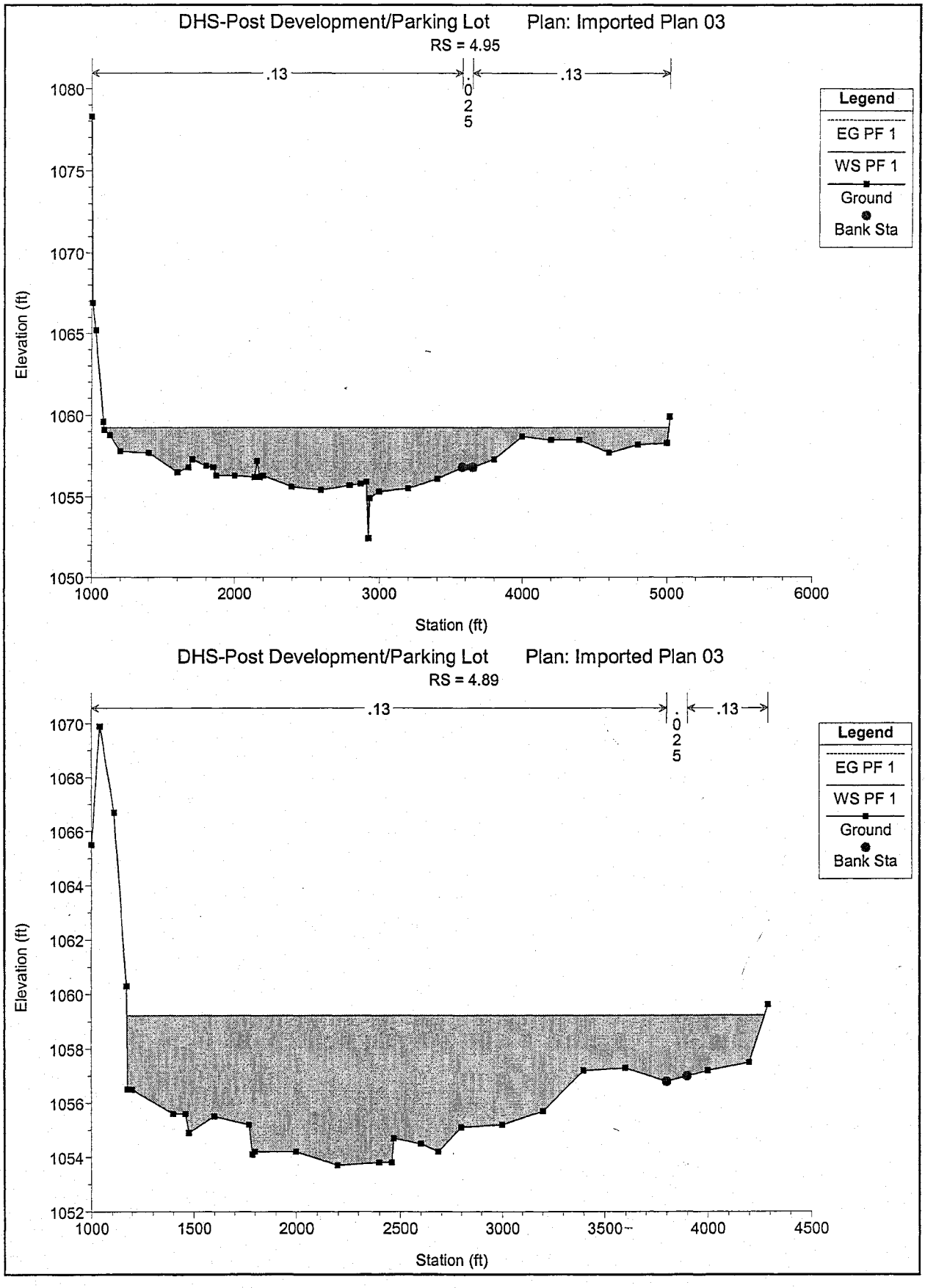

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.38 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.045
.045
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1071
1070
1069
1068
1067
1066
1065
1064
1000
2000
3000
4000
5000
6000

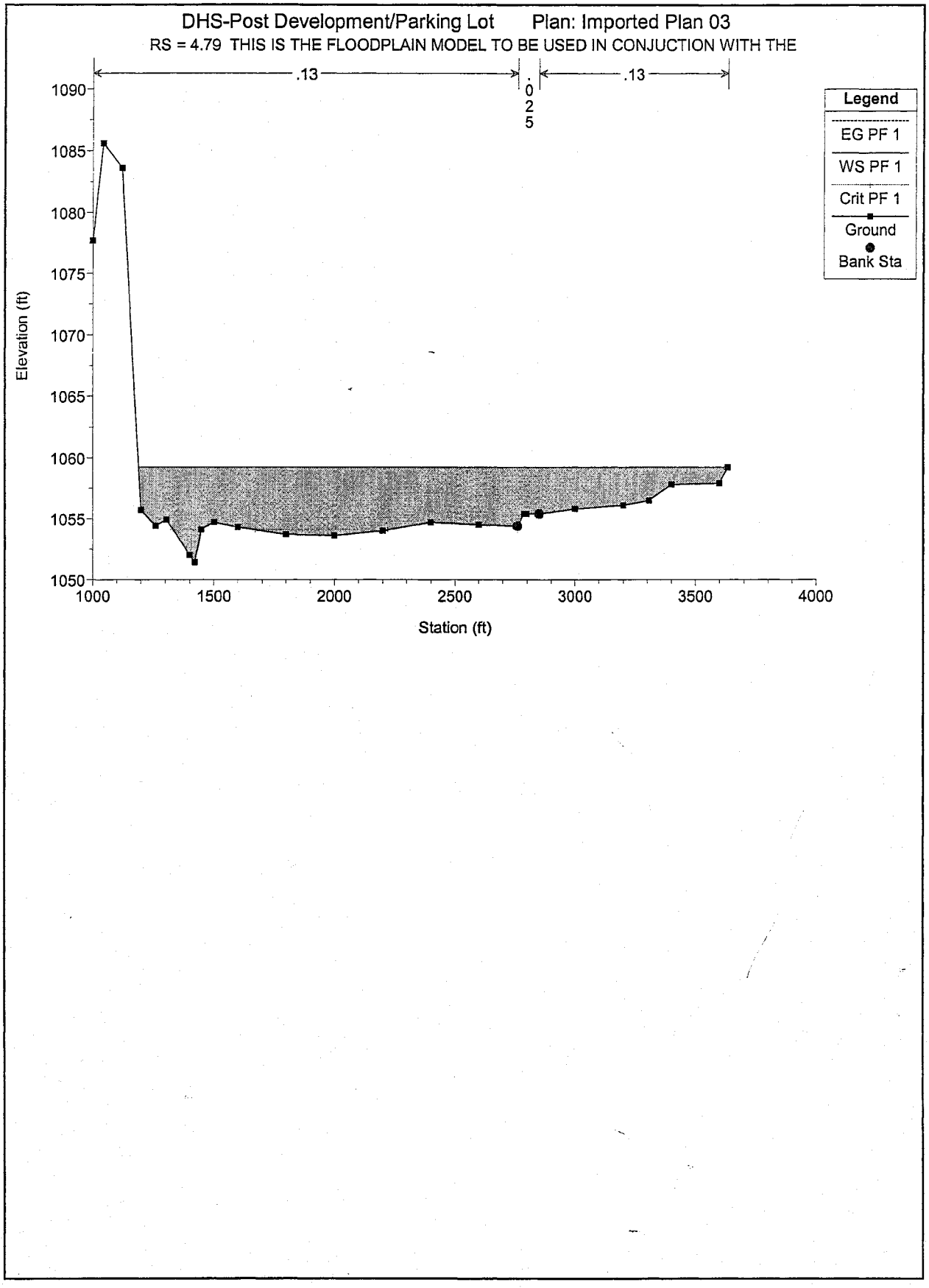

DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.31 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.06
.06
.06
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1067.0
1066.5
1066.0
1065.5
1065.0
1064.5
1064.0
1063.5
1063.0
1000
2000
3000
4000
5000
6000


DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.25 X3 USED, 100-YR DISCH. CONTAINED IN WASH
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Later Weir
Ground
Ineff
Bank Sta
Elevation (ft)
1068
1067
1066
1065
1064
1063
1062
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.2 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1066
1065
1064
1063
1062
1061
1000
2000
3000
4000
5000
6000
Station (ft)


DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.1 WEIR FLOW INTO I-10 FREEWAY FLOW RETUTRNS AT SECTION 4.98. FLOW
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1063.5
1063.0
1062.5
1062.0
1061.5
1061.0
1060.5
1060.0
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.07 WEIR FLOW INTO I-10 FREEWAY RETUTRNS TO THE MAIN FLOW PATH AT SE
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Ineff
Bank Sta
Elevation (ft)
1064
1063
1062
1061
1060
1059
1000
1500
2000
2500
3000
3500
4000
4500
5000
Station (ft)


DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 5.03
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 4.98
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 4.95
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1080
1075
1070
1065
1060
1055
1050
1000
2000
3000
4000
5000
6000
Station (ft)
DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 4.89
.13
.025
.13
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1070
1068
1066
1064
1062
1060
1058
1056
1054
1052
1000
1500
2000
2500
3000
3500
4000
4500
Station (ft)


DHS-Post Development/Parking Lot Plan: Imported Plan 03
RS = 4.79 THIS IS THE FLOODPLAIN MODEL TO BE USED IN CONJUCTION WITH THE
.13
.025
.13
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1090
1085
1080
1075
1070
1065
1060
1055
1050
1000
1500
2000
2500
3000
3500
4000
Station (ft)

APPENDIX J

Monroe Street – West
of 19th Avenue
Looking Southeast at
Driveway Entry

Driveway into Site on
Monroe Street

19th Avenue at alley
South of Monroe
looking East

Southwest Corner of Building Site

Monroe Street at 18th Avenue looking West

Monroe Street looking West to 19th Avenue

Monroe Street looking West – Screen Wall around Site

19th Avenue and Monroe Street – looking North

19th Avenue and Monroe Street looking Northwest

19th Avenue and Monroe Street looking South

19th Avenue at Monroe Street – West Side of 19th Avenue looking South

19th Avenue and Monroe Street – looking East

19th Avenue and Monroe Street – looking East

19th Avenue and Adams Street - looking South

19th Avenue and Adams Street - looking North

Adams Street at 19th Avenue – looking East

19th Avenue and Adams Street - looking Northwest

19th Avenue and Adams Street - looking Northeast

19th Avenue and Adams Street - looking East

18th Avenue and Monroe Street - looking Northwest

Monroe Street and 18th Avenue – looking Northwest

Monroe Street and 18th Avenue – looking West

18th Avenue and Monroe Street - looking Southwest onto DHS Building Site

Monroe Street at 18th Avenue – looking South

Monroe Street at 18th Avenue – looking Southeast

Monroe Street at 1st Avenue – looking East

Monroe Street at 18th Avenue – looking Northeast

Monroe Street at 18th Avenue – looking Northeast

Monroe Street East of 18th Avenue at Parking Lot Driveway – looking West

18th Avenue North of Monroe Street – looking South

18th Avenue North of Monroe Street – looking Southeast

18th Avenue North of Monroe Street – looking South