Letter of Map Revision Request
for
Skunk Creek
(Additional Data)

City of Phoenix

October 17, 2003

* As built Plans for Pasco Highlands Park.
* Elevations in Cell 6 Phases II & III
* More Delineation of Cell 6.
* Delineation across Pauleside lane.
* Supporting documentation for Pauleside lane delineation.

* Email HEC-2 model for Bedana Wash to Sache Tahme STahme@mbakercorp.com

City of Phoenix

October 17, 2003

Andrea L. Ryon, P.E. Director
Engineering Division
Michael Baker Jr., Inc.
3601 Eisenhower Avenue
Suite 600
Alexandria, Virginia 22304-6425

IN REPLY TO:

Case No.:	03-09-0661P
Community:	City of Phoenix, AZ
Community No.:	040051
	316-ACK.FRQ

Attention: Sacha TOHME, Civil Associate

Dear Ms. Ryon:

This is a response to your request, dated April 2, 2003, requesting additional data to complete the review of the above-mentioned request to issue a revision to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Skunk Creek Delineation from I-17 to Adobe Dam
Flooding Source:	Skunk Creek
FIRM Panel(s) Affected:	04013C1185 G and 1205 F

The following discussions are responses to your review comments in your letter dated April 2, 2003.

ITEM

FEMA Comment No. 1:
The report entitled "Letter of Map Revision Request for Skunk Creek", prepared by Tetra Tech, Inc., dated November 2002, specifies existing and proposed landfill areas that provide soil-cement bank protection along the entire length of the Skunk Creek Landfill channelization project. Please provide as-built plans, certified by a registered professional engineer, that show the elevations of the existing landfill areas, and how they tie into natural ground

Response:

The Skunk Creek Landfill is a currently operating landfill and elevations of currently open landfill cells are continuously changing. However, a copy of a recent (April 2003) topographic map developed for currently open portions of the landfill north of Happy

Valley Road is included in Attachment A. Also included in Attachment A is a copy of the landfill permit design plan drawings, which show proposed landfill elevations upon site closure (currently scheduled for 2006).

FEMA Comment No. 2:

The aforementioned report states that the elevations of the proposed landfill areas behind the bank protection are lower than the elevations of the flood having 1-percent chance of being equaled or exceeding in any given year (base flood), and that parapet concrete walls were built on top of the bank protection to provide adequate freeboard, thus creating a levee situation. Please comply with one of the following alternative conditions:

a. *If the Skunk Creek Landfill will act as soil-cement bank protection, please submit as-built plans, certified by a registered professional engineer, that shows the elevations of the proposed landfill areas behind the bank protection are higher than the Base Flood Elevations (BFE).*
b. *If the Skunk Creek Landfill will act as a levee, please provide as-built plans, certified by a registered professional engineer; a completed Application/Certification Form 3, entitled "Riverine Structures Form" (copy enclosed); and evidence that the existing soil-cement levees and concrete parapet walls meet the requirements of Section 65.10 of the NFIP regulations. Operation and maintenance plans for all levees should also be submitted.*

Response:

Proposed final elevations of landfill areas behind the Skunk Creek bank protection are higher than both the elevation of the top of the bank protection system and the base flood elevation. Drawings, certified by a registered professional engineer, showing the proposed landfill elevations upon site closure are provided in Attachment A (see response to previous comment).

FEMA Comment No. 3:

Our initial review of the revised conditions HEC-2 hydraulic analysis for Skunk Creek revealed that a flow breakout of about 1,000 cubic feet per second (cfs) occurs over the right overbank from Cross Section 9.42 to Cross Section 9.25. A hydraulic analysis was submitted to support this flow breakout, but no delineation of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, resulting from the flow breakout was provided. Furthermore, a review of the HEC-2 cross section plots for Skunk Creek revealed BFEs higher than the right end points of the cross sections for Cross Sections 9.54 to 9.25, which result in additional flow breakout between Cross Sections 9.54 to 9.4. Please extend the cross sections so that the right end points are equal to or higher than the corresponding BFEs, or provide a hydraulic analysis for the additional portion of the base flood that would overtop the right overbank from Cross Section 9.54 to Cross Section 9.42. In either case, please submit a topographic work map, certified by a registered professional engineer that shows the boundary delineations of the SFHA that result from the flow breakout.

Response:
In response to this comment as well as FEMA Comments 4 and 5, a revised HEC-2 hydraulic analysis was performed by EMCON/OWT, Inc. to combine previous HEC-2 models developed by Tetra-Tech, Inc. (T-T) and Coe and Van Loo, Inc. (CVL) Results of this modeling are included in Attachment B, in both hard-copy and electronic format. This revised analysis utilizes previous cross-sectional information from the T-T and CVL models, with cross-sections extended as necessary to contain elevations above the predicted base flood water surface elevations. This revised analysis includes a split flow analysis to both quantify the flowrate leaving the main Skunk Creek channel/floodplain at River Mile (RM) 9.25 and delineate the extent of floodplain in this split flow area from RM 9.25 to the southern end of the CVL model reach. The previous T-T split flow model was performed to provide a conservative estimate of the flowrate leaving the main Skunk Creek channel but did not include a detailed study of flow conditions in the left overbank area north of Pinnacle Peak Road. The previous CVL model utilized the breakout flowrate estimated by T-T, but only modeled the area south of Pinnacle Peak Road. Responses to FEMA comments 4 and 5 provide more details on the revised hydraulic analysis in this area.

The revised hydraulic analysis was run for two scenarios related to the linear topographic feature (referred to as the "rockwall") running northeasterly from the southeastern corner of the Skunk Creek drop structure near RM 9.22. In the first scenario, the "rockwall" was assumed to remain in place during the base flood event, and in the second scenario this feature was assumed to have washed out. It is assumed that the first scenario would provide a conservative estimate of potential base flood water surface elevations along the west bank in the reach from RM 9.22 to RM 9.65, while the second scenario would provide a conservative estimate of the magnitude of breakout flows and the resultant floodplain delineation east of the main Skunk Creek channel.

The results of the modeling for the first scenario (MAIN-W.OUT) indicate that the base flood elevations are contained by the right (west) bank protection in the area between RM 9.25 and RM 9.45, except for a short area immediately downstream of RM 9.42. At this location, the bank is overtopped by less than one foot over a 60 foot length and ponds in the lower end of a local drainage channel. The right bank area beyond the line indicated on the Revised Work Study Map (Attachment C) as "Floodway Limit – Limit of Detailed Study" between RM 9.45 and RM 9.65, was modeled as an ineffective flow area. However, a Special Flood Hazard Area (SFHA) depicting the estimated extent of backwater ponding in this area is shown on the Revised Work Study Map.

FEMA Comment No. 4:
Our initial review of the submitted revised conditions HEC-2 hydraulic analysis for Skunk Creek revealed that a split flow of about 15,500 cfs occurs over the left overbank from Cross Section 9.25 to Cross Section 9.08, leaving a flow value of 23,500 cfs to model the regulatory floodway for Skunk Creek. From the submitted information, it is not clear what causes this split flow and how a flow value of 15,500 cfs was computed, considering that the effective model for Skunk Creek does not include any split flow in this area. The effective information indicates that the base flood ponds behind Pinnacle

Peak Road, and therefore the area upstream of Pinnacle Peak Road, are ineffective flow areas. Please comply with one of the following alternative conditions:

a. *If a split flow occurs, please provide backup information that shows how a flow value of 15,500 cfs was computed for the split flow. Please revise the submitted HEC-2 hydraulic analysis for Skunk Creek to show that the entire base flood discharge of 39,000 cfs can be conveyed within the regulatory floodway for Skunk Creek without causing a negative surcharge or a surcharge of more than 1.0 foot. If the regulatory floodway for Skunk Creek cannot be modeled with the entire base flood discharge of 39,000 cfs, the floodway along the split flow must also be determined. Therefore, please revise the HEC-2 model for the split flow to include a floodway analysis, and provide a topographic map with modified BFEs and floodway boundary delineations for Skunk Creek and the split flow.*
b. *If a split flow does not occur, please revise the submitted HEC-2 hydraulic analysis for Skunk Creek to include an unencroached analysis, and extended Cross Section 9.42 to 9.16 to contain the entire base flood. Please also modify the floodway analysis to show that the entire base flood can be conveyed within the regulatory floodway for Skunk Creek without causing a negative surcharge or a surcharge or more than 1.0 foot.*

Response:

The information depicted on the effective Flood Insurance Rate Map (FIRM) for the vicinity of the intersection of Skunk Creek and Pinnacle Peak Road appears to be incorrect. It appears to be based on an assumption that the entire base flood discharge is constrained by natural topography north of Pinnacle Peak Road and passes under the Pinnacle Peak Road bridge in modeling performed for a Letter of Map Revision request for the area south of Pinnacle Peak Road. In fact, under base flood conditions, flows begin breaking out of the left bank of the main Skunk Creek channel immediately downstream of RM 9.54 and flow predominantly southward (main channel flows in this reach are southwesterly), crossing over Pinnacle Peak Road and flowing over portions of Paseo Highlands Park, before the majority of the flows spill back into the main channel between the Pinnacle Peak Road bridge and the pool behind Adobe Dam. No significant rises in topography (other than the "rockwall" feature discussed in the response to FEMA comment 3, which is overtopped during base flood conditions) are present which would constrain flows breaking out of the main channel to the area north of Pinnacle Peak Road.

A revised hydraulic analysis was performed to modify the previous Skunk Creek model prepared by T-T by splicing in the previous Paseo Highlands model prepared by CVL and extend cross-sections of the T-T model between RM 9.25 and RM 9.45 to model left (east) overbank flow conditions. The CVL cross-sections, which were labeled in feet from the downstream end of the model, were re-titled to match the river mile notation of the T-T model. This revised analysis assumes that a flow split occurs at RM 9.25, with the majority of the flow (27,780 cfs) passing west of the flow split, eventually dropping through the Skunk Creek drop structure at RM 9.22 and passing under the Pinnacle Peak Road bridge. The remainder of the flow (11,220 cfs) passes east of the flow split. Water from the flow split re-enters the Skunk Creek channel by spilling down over the top of

the Skunk Creek bank protection. This condition was modeled as a weir flow over the 35th Avenue alignment between RM 8.72 and RM 9.10, as it was modeled in the CVL model. The water surface elevation and resulting flow split flowrates were determined by iteration of two models (MAINBAS and BKTBAS). This iteration was performed with the entire 39,000 cfs passing through the main channel model down to RM 9.25, then removing a portion of the flow from the main channel model (MAINBAS) and using the portion removed as the flowrate at RM 9.25 in the split flow model (BKTBAS), varying the amount removed from the main channel until the modeled water surface elevation at RM 9.25 in both models matched. No change was made to the boundary conditions for the two models from the previous (T-T and CVL) models. The initial water surface for the main channel model was the 1378.0 water surface elevation of the Adobe Dam Reservoir. The initial water surface elevation for the split flow analysis was determined by the slope-area method.

As requested by FEMA, an encroachment analysis was used to delineate the floodway through this reach of Skunk Creek. Since the proposed floodplain delineation in this area contains a split flow in which breakout flows from Skunk Creek pass over Pinnacle Peak Road east of the Pinnacle Peak Road bridge and the effective FIRM appears to incorrectly assume that existing topography prevents these flows from crossing Pinnacle Peak Road, the encroachment analysis was performed to determine whether the entire 39,000 cfs flow could be contained within the main channel without exceeding 1 foot of surcharge above the water surface elevations predicted by the main channel model (MAINBAS). This analysis is presented in Attachment B (ENCROCH).

The only cross-sections at which the water surface elevation difference between the two models exceeded 1.0 feet were the three sections in the immediate vicinity of the Skunk Creek drop structure (RM 9.16, RM 9.21 and RM 9.22). At this location, flows pass through critical depth going over the brink of the drop structure and undergo a hydraulic jump at the base of the drop structure. Flows are contained within the geometry of the drop structure and channel (no encroachment was modeled on these cross-sections in the ENCROCH run). Therefore, the depth of flow predicted at these locations is solely based on the increased flow remaining in the main channel and is independent of any encroachments upstream or downstream of this location. Since the flow at these stations is contained within the channel at these locations and the surcharge effect upstream is less than 1.0 foot, the surcharge of 1.05, 1.54, and 1.15 feet at these cross-sections respectively does not represent a substantial increase in flooding risk. Therefore, the floodway delineation depicted on the Revised Work Study Map (Attachment C) shows the left bank encroachment stations at RM 9.25, RM 9.30, and RM 9.45 from the ENCROCH run and the right bank encroachment station at RM 9.54 (limit of effective flow in both the base flood [MAINBAS] and floodway analysis [ENCROCH] models). The eastern bank of the Skunk Creek main channel from RM 8.69 to RM 9.22 corresponding to the water surface elevation in the main channel under base flood conditions is defined as the floodway. The floodplain and floodway are coincident at all other locations modeled.

Because of revisions to the floodway modeling, three lines of the floodway data table (Table 7-1) in Tetra-Tech's Technical Data Notebook would need to be revised as follows:

Flooding Source		Floodway			Water Surface Elevation		
Cross Section	Distance	Width (ft)	Section Area (ft^2)	Velocity (ft/s)	With Floodway (ft)	Without Floodway (ft)	Difference (ft)
AG	8.79	896	4,669	8.4	1378.7	1378.7	0
AH	9.08	350	3,568	10.9	1385.4	1385.4	0
AI	9.35	829	4,512	9.6	1401.5	1401.0	0.5

FEMA Comment No. 5:

Please provide a topographic work map, certified by a registered professional engineer, with the as-built elevations of Pinnacle Peak Road and the boundary delineations of the SFHA, resulting from the split flow that tie into the revised conditions SFHA south of Pinnacle Peak Road, which is included in the report entitled "Split Flow Analysis Over Pinnacle Peak Road" (CVL report), prepared by Coe and Van Loo Consultants, Inc., dated October 7, 2002.

Response:

The floodplain modeling discussed in the response to the previous comment was used to delineate the SFHA between RM 9.54 and Pinnacle Peak Road. This delineation is indicated on the Revised Work Study Map (Attachment C).

FEMA Comment No. 6:

The revised floodplain boundary delineations south of Pinnacle Peak Road that are included in the CVL report are based on the existence of two 36-inch-diameter corrugated-metal pipe culverts (CMPs) under an access road to Paseo Highlands Park and of a proposed berm just upstream of Parkside Lane. Please provide as-built plans, certified by a registered professional engineer, for both elements; a completed Form 3; and evidence that that the berm meets the requirements of Section 65.10 of the NFIP regulations, including but not limited to, the require freeboard and the operation and maintenance plans for the berm. Alternatively, please provide a hydraulic analysis based on the failure of the berm, along with a certified topographic map that shows the resulting floodplain boundary delineations and the as-built elevations of Parkside Lane and the Adobe Highlands Subdivision lots.

Response:

As built plans for the Paseo Highlands Park, which includes the two 36-inch diameter corrugated-metal pipe culverts, under the access road from 35th Avenue are included in Attachment D. Accordingly, a completed MT-2 Form-3 is also included for the two 36-inch CM pipes. The Paseo Highlands Park has been designed and constructed with swales on the north, west and the south sides to guide and direct smaller frequency flows. A major portion of the park site functions as ponded area for the floodwater to travel

through. The southern swale, collects storm water from the east side of the park, with an invert elevation of 86.0 ft., to the south-western corner of the park at an invert elevation of 82.0'. The revised HEC-2 hydraulic modeling performed for the split flow traveling through the Paseo Highlands Park uses the curb profile of the south side of Parkside Lane for the purpose of floodplain delineation. The elevation information was obtained from the as-built paving and grading & drainage plans for the Adobe Highlands subdivision. Attachment D includes copies of the supporting documents.

FEMA Comment No. 7:

Our initial review of the revised conditions HEC-2 hydraulic analysis for the flow entering Paseo Highlands Park revealed that the weir flow to Skunk Creek has been overestimated from Cross Section 2937 to Cross Section 1359. For example, between Cross Sections 2937 and 2800, the flow is reduced by approximately 4,500 cfs over a 150-foot distance. From the submitted information, it is unclear how such high values for the weir flow were computed, considering the relatively short distance between cross sections. Please revise the HEC-2 hydraulic analysis to make the appropriate changes, and provide new SFHA boundary delineations if applicable, or provide detailed information to support the computed weir flows to Skunk Creek.

Response:

Although revised hydraulic analysis was performed in this area, weir flow across the 35th Avenue alignment was modeled to represent the return of flows back into the main channel, as was performed in the original CVL model. Between RM 9.08 and RM 9.10, 3,647 cfs are returned to the main channel. It should be noted that the head across this side weir ranges from 4.45 to 4.85 feet over the approximate 150 foot weir length. Using a broad-crested weir calculation ($Q=CLH^{1.5}$) with a weir coefficient of 2.65 and the minimum head of 4.45, an approximate weir flow of 3,731 cfs would be predicted. This compares well with the 3,647 cfs predicted by the model.

FEMA Comment No. 8:

The NFIP regulations, cited in Paragraph 60.3(b)(7), require that communities ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. Please submit an officially adopted maintenance plan for the channelized part of Skunk Creek, the drop structure, the bridge on Pinnacle Peak Road, and the two 36-inch-diameter CMPs. This plan, which may be in the form of a written statement from the community Chief Executive Officer, an ordinance, or other legislation, must describe the nature of the maintenance activities, the frequency with which they will be performed, and the title of the local community official who will be responsible for ensuring that the maintenance activities are accomplished.

Response:

A letter from the community official ensuring the flood carrying capacity within the altered or relocated portion the Skunk Creek Wash in included in Attachment E. Also, a copy of the Street Maintenance Division Policy and Procedure 4.14 and a copy of the Floodplain ordinance are included in Attachment F.

Should you have further questions in this regard, please do not hesitate to contact Mr. Garth Bowers, P.E., EMCON/OWT, Inc., 305 S. Euclid Avenue, Suite 101, Tucson, Arizona 85719-6649, Telephone (520) 792-2800. If you have any other questions, please contact this office at (602)-262-4960.

Sincerely,

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

Cc: Garth Bowers, P.E.
EMCON/OWT, Inc.

Tim Murphy, P.E., CFM
Flood Control District of Maricopa County

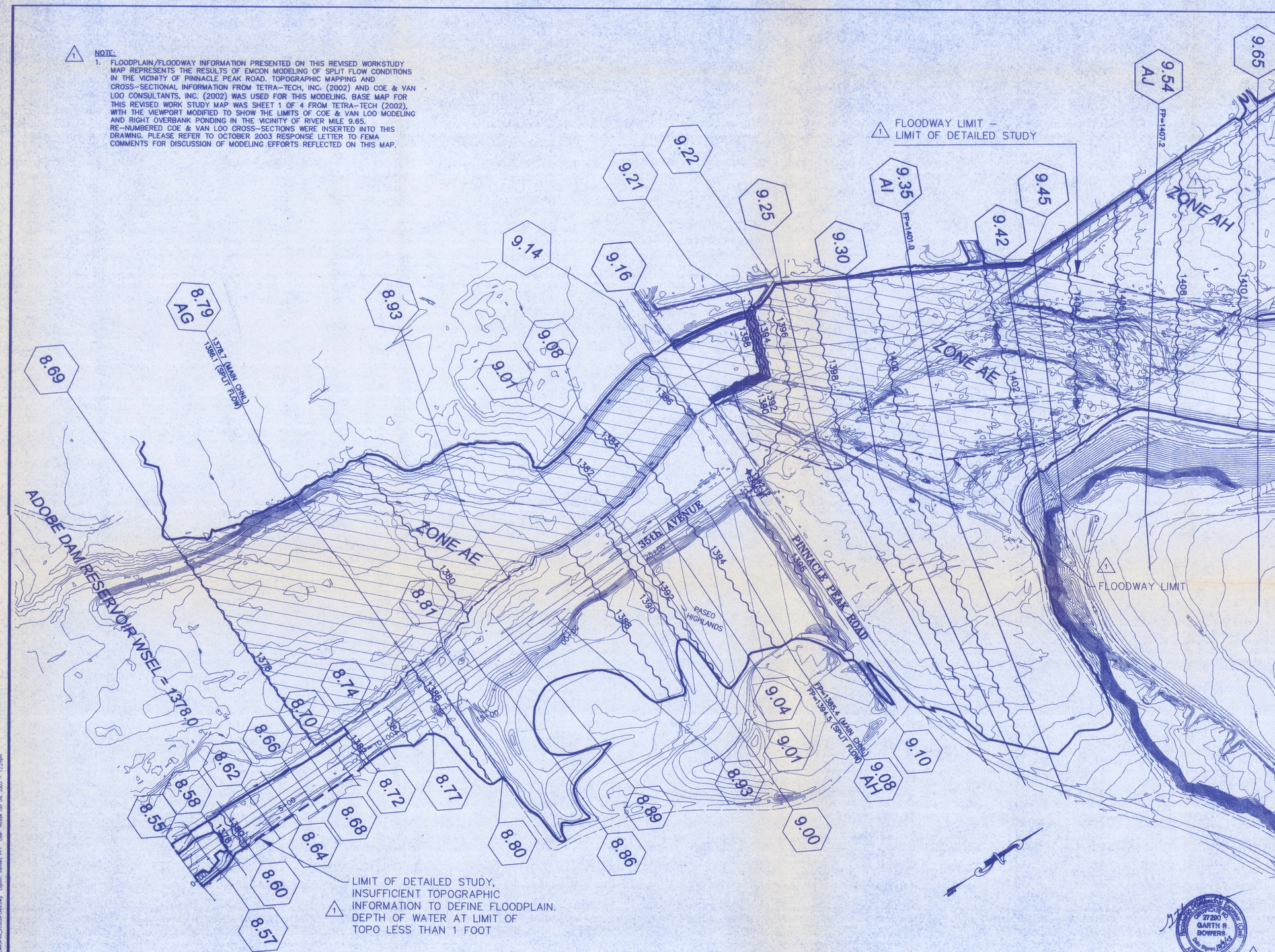
Terri Miller
NFIP Coordinator

ATTACHMENT A

EXISTING/PROPOSED GROUND CONTOURS
SKUNK CREEK LANDFILL

(Included under separate cover.)

NOTE:
1. FLOODPLAIN/FLOODWAY INFORMATION PRESENTED ON THIS REVISED WORKSTUDY MAP REPRESENTS THE RESULTS OF EMCON MODELING OF SPLIT FLOW CONDITIONS IN THE VICINITY OF PINNACLE PEAK ROAD. TOPOGRAPHIC MAPPING AND CROSS-SECTIONAL INFORMATION FROM TETRA-TECH, INC. (2002) AND COE & VAN LOO CONSULTANTS, INC. (2002) WAS USED FOR THIS MODELING. BASE MAP FOR THIS REVISED WORK STUDY MAP WAS SHEET 1 OF 4 FROM TETRA-TECH (2002), WITH THE VIEWPORT MODIFIED TO SHOW THE LIMITS OF COE & VAN LOO MODELING AND RIGHT OVERBANK PONDING IN THE VICINITY OF RIVER MILE 9.65. RE-NUMBERED COE & VAN LOO CROSS-SECTIONS WERE INSERTED INTO THIS DRAWING. PLEASE REFER TO OCTOBER 2003 RESPONSE LETTER TO FEMA COMMENTS FOR DISCUSSION OF MODELING EFFORTS REFLECTED ON THIS MAP.



TOPOGRAPHY NOTE: PASEO HIGHLANDS PARK TOPOGRAPHY PROVIDED BY EEC. EMCON/OWT, INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE CONTROL SURVEY OR THE BASE TOPOGRAPHIC MAPPING.

THE BASE TOPOGRAPHIC MAPPING USED TO CONDUCT THIS FLOODPLAIN DELINEATION STUDY WAS PREPARED BY M & B AERIAL MAPPING COMPANY, INC. THIS MAPPING IS BASED ON AERIAL PHOTOGRAPHY TAKEN FEB 11, 2000 AND JAN 24, 2001. PROJECT CONTROL WAS PROVIDED BY MORRISON-MAIERLE, INC. TETRA TECH, INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE CONTROL SURVEY OR THE BASE TOPOGRAPHIC MAPPING.

200 0 200 400
SCALE: 1"= 200 FEET
CONTOUR INTERVAL = 2 FEET

LEGEND

100-YR FLOODPLAIN BOUNDARY
HYDRAULIC BASE LINE
CROSS SECTION — 0.10 A — CROSS SECTION INDEX MILE — FS INDEX CROSS SECTION — FP= 1483.6 — FLOOD-IN-BOX SURFACE ELEVATION
ELEVATION REFERENCE MARK — ERM XXX
BASE FLOOD ELEVATION — 1462
SFH ZONE DESIGNATION — ZONE AE
FLOODWAY

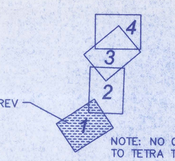
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
ERM #1	1392.12	FOUND BRASS CAP IN HANDHOLE IN INTERSECTION OF 35TH AVENUE AND PINNACLE PEAK ROAD. N: 981,636.31 E: 433,844.66

FOR CONTINUATION SEE SHEET 2

KEY MAP



NOTE: NO CHANGES WERE MADE TO TETRA TECH SHEETS 3 & 4

NO.	REVISION	BY	DATE
2			
1	SEE NOTE 1	DS/GB	10/03

CITY OF PHOENIX
MARICOPA COUNTY, ARIZONA

SKUNK CREEK
REVISED WORK STUDY MAP
LETTER OF MAP REVISION

Shaw™ EMCON/OWT, Inc.

TETRA TECH, INC.
INFRASTRUCTURE SOUTHWEST GROUP
4801 East Washington Street, Suite 260, Phoenix, AZ 85034
(602) 452-2000 FAX (602) 244-1164

ORIGINAL WORK STUDY MAP SEALED BY PEDRO A. CALZA AZ PE No. 30493 OF TETRA-TECH, INC.

Registered Professional Engineer (Civil) CERTIFICATE NO. 27290 GARTH R. BOWERS Date Signed 10/14/03 ARIZONA, U.S.A.

	BY	DATE
DESIGN	LML	09/2002
DESIGN CHK.	PAC	09/2002
PLANS	LML	09/2002
PLANS CHK.	PAC	09/2002

XREF Files: XUMR001 SC-XT1 SC-XB1 IMAGE Files:
File: E:\CAD\PROJECTS\CDP\LUMP\PLANSPRO_FLOODPLAIN.dwg Layout: Revised FP1 User: mcase Oct 09, 2003 - 12:27pm

ATTACHMENT B

HEC-2 MODEL INPUT/OUTPUT

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    07OCT03    TIME   22:41:37 *
 *****************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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1

07OCT03 22:41:37

THIS RUN EXECUTED 07OCT03 22:41:37

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

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

```
T1    MODIFIED SKUNK CREEK FLOODPLAIN STUDY - SKUNK CREEK FROM ADOBE DAM TO I-17
T2    INPUT FILE: main-w.dat       100-YR BASE FLOOD ELEVATION
T3    ORIGINAL MODEL SKNKLOMR.IH2 BY TETRA TECH, INC. SEPTEMBER 2002
T4    October 2003 EMCON/OWT Inc.

      This model is used to determine the main channel Base Floodplain
      Extended x-section data used for stationing 9.21 - 9.35 (rockwall removed)
      Split flowrates are applied from bktbas.dat and are partitioned across
      relevant cross sections.

      Starting WSEL is Adobe Dam reservoir 100-yr WSEL from effective FIS study.
      Boundary conditions were taken from Tetra Tech modeling.
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2			0		0	0	1378.00	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1	0	-1	0	0		-1	0		

```
J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43        1         2         26        8         4         25        68        53
     54
   100-yr peak discharge is from effective FIS study.

QT        1      38888

NC    0.045     0.045     0.035     0.1       0.3
ET                5.1                         3796.61   5556.89
X1     8.69        95   4025.25   5073.77
GR   1380.0   3796.61   1380.00   3854.47   1379.00   3861.47   1378.00   3868.42   1378.00   3878.69
GR   1378.6   3884.04   1380.00   3896.01   1380.00   3907.92   1379.82   3923.26   1379.91   3925.58
GR   1380.0   4002.41   1380.54   4004.61   1382.00   4011.19   1382.00   4016.12   1381.16   4025.25
GR   1380.0   4037.88   1379.55   4039.54   1378.00   4045.04   1376.66   4058.92   1376.33   4063.23
GR   1376.0   4067.80   1375.66   4071.80   1374.51   4084.66   1374.14   4088.53   1374.00   4090.42
GR   1373.8   4091.18   1373.53   4092.99   1372.00   4102.33   1371.23   4129.14   1370.00   4171.62
GR   1370.0   4446.38   1370.04   4448.91   1372.00   4550.37   1372.00   4583.65   1371.80   4601.95
GR   1371.2   4726.77   1371.45   4741.81   1371.10   4787.06   1371.00   4796.71   1370.54   4837.32
GR   1370.6   4872.36   1370.52   4876.45   1370.60   4881.98   1370.60   4882.00   1370.82   4897.47
GR   1371.4   4906.65   1371.83   4913.95   1372.00   4917.45   1372.34   4920.12   1374.00   4933.03
GR   1374.3   4936.71   1374.00   4958.00   1373.51   4959.38   1372.00   4963.60   1371.80   4964.16
GR   1370.0   4969.21   1368.37   4973.77   1368.00   4974.80   1366.00   4980.35   1365.56   4981.39
1
   07OCT03      22:41:37                                                                          PAGE     2

GR   1364.7   4987.21   1364.21   4990.25   1364.00   4992.46   1364.00   5000.00   1364.00   5003.25
GR   1365.5   5010.85   1365.78   5012.36   1366.00   5013.46   1366.52   5014.69   1368.00   5018.15
GR   1368.3   5018.85   1370.00   5022.82   1370.70   5024.49   1372.00   5027.49   1373.05   5031.15
GR   1374.0   5034.40   1375.00   5039.27   1376.00   5044.17   1376.23   5045.52   1377.39   5052.81
GR   1378.0   5059.14   1378.78   5065.36   1379.49   5073.77   1379.70   5074.11   1379.26   5077.51
GR   1378.7   5079.93   1378.00   5082.02   1378.00   5116.40   1378.13   5146.24   1378.00   5177.10
GR   1378.0   5181.33   1377.50   5273.67   1377.18   5375.38   1377.56   5451.37   1377.29   5556.89

QT        1      38875
ET                5.1                         3855.70   5475.95
X1     8.79        89   4095.41   5039.30       530       546       539
GR   1384.0   3855.70   1384.00   3973.82   1382.64   3980.66   1384.00   3998.09   1382.65   4051.20
GR   1382.6   4058.69   1382.49   4060.23   1382.89   4064.63   1384.00   4067.90   1384.00   4095.41
GR   1382.2   4107.84   1382.00   4109.37   1380.85   4117.39   1380.00   4123.50   1378.49   4137.14
GR   1378.0   4141.55   1376.51   4154.98   1376.00   4159.65   1374.00   4171.01   1373.84   4176.47
GR   1372.0   4222.80   1372.00   4265.74   1371.40   4267.19   1370.00   4271.65   1370.02   4277.10
GR   1370.5   4303.75   1372.00   4387.79   1372.60   4464.89   1373.01   4509.16   1373.45   4564.23
GR   1373.6   4589.91   1374.00   4659.42   1374.00   4677.54   1373.79   4707.25   1374.00   4731.92
GR   1375.0   4815.01   1375.48   4838.28   1375.82   4866.71   1375.01   4881.51   1374.70   4887.04
GR   1374.0   4898.81   1374.00   4914.20   1376.00   4932.06   1377.09   4941.83   1377.77   4948.33
GR   1378.0   4950.51   1378.00   4973.99   1377.74   4974.57   1376.00   4978.35   1375.92   4978.54
GR   1375.3   4979.92   1374.00   4982.54   1373.68   4983.19   1372.00   4986.64   1371.40   4987.87
GR   1370.0   4990.74   1369.23   4992.31   1368.00   4994.83   1367.12   4996.63   1366.00   4998.93
GR   1366.0   5000.00   1367.19   5002.89   1368.00   5004.26   1369.43   5006.66   1370.00   5007.63
GR   1371.8   5010.72   1372.00   5011.01   1372.55   5011.93   1374.00   5014.64   1374.46   5015.50
GR   1376.0   5018.37   1377.54   5024.62   1378.00   5026.26   1378.19   5027.55   1378.48   5029.47
GR   1380.0   5039.30   1380.47   5053.53   1381.00   5070.14   1381.05   5074.82   1381.51   5092.11
GR   1381.8   5130.27   1381.56   5144.28   1381.81   5200.42   1381.90   5207.46   1381.92   5219.18
GR   1382.0   5303.86   1382.00   5320.81   1381.88   5345.60   1381.56   5475.95
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QT        1      37676
ET                 5.1                          4279.99      5437.79
X1     8.93         71    4541.12    5252.00       565          711          722
GR   1386.3    4279.99    1386.00    4295.47    1386.34      4315.43      1386.00      4350.00      1385.51      4354.32
GR   1386.0    4371.17    1386.00    4454.56    1386.25      4457.97      1387.66      4480.76      1388.00      4485.92
GR   1388.0    4526.66    1386.72    4541.12    1386.00      4552.20      1385.40      4560.69      1385.02      4564.36
GR   1384.5    4569.41    1384.00    4573.51    1382.63      4586.39      1382.43      4588.53      1382.00      4594.51
GR   1381.7    4598.20    1380.48    4604.38    1380.00      4606.94      1379.91      4608.36      1378.58      4632.57
GR   1378.0    4639.26    1376.00    4653.50    1375.35      4704.64      1374.00      4828.12      1373.68      4850.43
GR   1373.1    4888.01    1372.88    4901.73    1372.00      4950.77      1371.17      4970.32      1370.00      4996.16
GR   1370.1    5000.00    1370.40    5014.94    1370.52      5018.25      1370.89      5033.81      1371.01      5037.53
GR   1371.3    5046.38    1371.00    5056.40    1370.55      5068.53      1370.60      5102.71      1370.78      5109.11
GR   1371.1    5116.39    1371.60    5131.46    1372.00      5139.38      1373.19      5146.05      1373.89      5149.69
GR   1374.0    5150.47    1374.30    5152.78    1374.67      5155.69      1376.00      5166.46      1376.39      5169.57
GR   1378.0    5182.62    1379.50    5195.03    1380.00      5200.27      1380.58      5207.92      1381.76      5224.62
GR   1382.0    5227.77    1382.80    5252.00    1384.00      5330.07      1384.00      5333.71      1384.91      5347.75
GR   1386.0    5362.52    1386.60    5376.48    1386.90      5391.40      1387.03      5397.63      1387.24      5419.21
GR   1387.0    5437.79
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QT        1      37207
ET                 5.1                          4519.91      5433.52
X1     9.01         81    4817.29    5340.88       363          558          430
GR   1388.4    4519.91    1388.00    4559.91    1388.00      4561.41      1388.84      4570.06      1388.45      4571.71
GR   1388.0    4573.70    1388.00    4576.09    1388.46      4578.03      1388.77      4579.51      1388.28      4582.90
GR   1388.0    4583.57    1388.00    4677.39    1388.26      4681.88      1389.30      4700.64      1389.76      4708.44
GR   1389.3    4717.62    1388.98    4718.21    1388.52      4718.22      1388.00      4721.78      1387.37      4732.92
GR   1387.1    4737.05    1386.95    4738.08    1386.40      4758.07      1386.64      4764.66      1386.86      4770.00
GR   1387.0    4774.77    1387.38    4799.17    1387.08      4803.47      1386.92      4804.87      1386.44      4811.50
GR   1386.0    4817.29    1384.00    4825.73    1383.63      4827.33      1382.00      4834.13      1380.26      4841.49
GR   1380.0    4842.58    1379.21    4845.86    1378.00      4850.84      1376.45      4856.91      1376.00      4858.68
GR   1375.8    4859.41    1374.00    4866.60    1373.72      4878.11      1373.33      4898.38      1373.06      4911.20
GR   1372.9    4920.39    1372.51    4939.85    1372.35      4949.90      1372.19      4962.38      1372.32      4994.02
GR   1372.4    5000.00    1372.50    5005.13    1373.08      5052.28      1373.49      5089.07      1373.86      5118.83
GR   1374.0    5130.57    1375.57    5137.72    1376.00      5139.67      1377.54      5146.76      1378.00      5149.27
GR   1379.4    5157.21    1380.00    5161.68    1380.57      5169.64      1380.83      5173.36      1380.91      5174.01
GR   1381.2    5177.53    1381.59    5182.69    1382.00      5188.14      1382.37      5193.51      1383.14      5206.05
GR   1384.0    5217.34    1385.32    5244.41    1385.68      5252.28      1386.00      5257.06      1387.77      5292.41
GR   1388.0    5296.60    1388.84    5320.16    1389.58      5340.88      1389.68      5346.00      1390.00      5351.31
GR   1390.0    5433.52

QT        1      31427
ET                 5.1                          4515.30      5233.18
X1     9.08         70    4796.92    5198.84       432          165          365
GR   1391.1    4515.30    1390.24    4539.50    1390.00      4540.45      1390.00      4625.97      1390.21      4628.50
GR   1390.6    4632.33    1390.69    4632.97    1390.44      4647.05      1390.08      4647.52      1390.00      4647.64
GR   1389.6    4649.23    1388.00    4655.18    1388.00      4670.31      1388.16      4671.07      1388.14      4787.35
GR   1388.0    4796.92    1387.24    4809.20    1386.69      4817.41      1386.00      4827.18      1384.79      4833.74
GR   1384.0    4837.38    1383.79    4838.28    1382.78      4842.68      1382.00      4845.64      1381.40      4847.91
GR   1380.0    4853.19    1378.86    4857.51    1378.00      4860.75      1377.03      4864.25      1376.00      4868.13
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GR    1375.1    4871.58    1374.00    4875.67    1373.97    4878.43    1373.92    4884.08    1373.76    4895.74
GR    1373.7    4902.64    1373.65    4905.82    1373.59    4911.57    1373.49    4920.43    1373.47    5000.00
GR    1373.5    5095.48    1373.56    5107.93    1373.59    5109.03    1373.62    5112.59    1373.70    5119.31
GR    1373.8    5122.87    1373.82    5124.67    1373.85    5126.00    1373.92    5128.16    1373.94    5130.06
GR    1374.0    5131.14    1374.13    5131.77    1376.00    5140.79    1377.41    5147.57    1378.00    5150.02
GR    1378.6    5152.38    1380.00    5158.25    1381.29    5163.54    1382.00    5166.47    1383.45    5172.44
GR    1384.0    5174.70    1385.73    5181.83    1386.00    5182.93    1387.10    5187.46    1388.00    5190.99
GR    1388.1    5191.61    1389.08    5195.22    1390.00    5198.84    1390.04    5199.45    1390.27    5233.18

QT         1     27780
NC     0.035     0.035      0.035
ET                 5.1                          4525.85    5437.55
X1      9.14        94    4835.60    5165.24        288        385        333
GR    1392.1    4525.85    1392.00    4598.96    1391.59    4608.73    1390.99    4723.68    1391.42    4775.78
GR    1391.5    4789.87    1391.64    4805.14    1391.00    4830.80    1390.59    4832.90    1390.00    4835.60
GR    1389.7    4836.69    1389.00    4839.12    1388.44    4841.11    1388.00    4842.60    1387.57    4843.96
GR    1387.0    4845.55    1386.47    4846.70    1386.00    4847.68    1385.71    4848.28    1385.00    4849.75
GR    1384.7    4850.41    1384.00    4851.87    1383.84    4852.20    1383.32    4853.25    1383.00    4853.91
GR    1382.8    4854.33    1382.00    4856.07    1381.65    4856.77    1381.00    4858.07    1380.00    4860.14
GR    1379.7    4861.00    1379.19    4861.98    1379.00    4862.42    1378.49    4863.58    1378.00    4864.71
GR    1377.4    4866.13    1377.00    4867.28    1376.43    4869.03    1376.00    4869.56    1375.54    4872.43
1
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GR    1374.5    4874.14    1374.00    4875.08    1374.00    5000.00    1374.00    5062.13    1374.39    5091.47
GR    1375.0    5121.35    1375.00    5125.45    1375.71    5129.68    1376.00    5131.10    1376.94    5133.66
GR    1377.0    5134.06    1377.77    5135.68    1378.00    5136.16    1379.00    5138.25    1379.92    5140.18
GR    1380.0    5140.35    1380.80    5142.03    1381.00    5142.44    1381.45    5143.38    1382.00    5144.53
GR    1382.9    5146.34    1383.00    5146.63    1383.72    5148.14    1384.00    5148.75    1384.46    5149.37
GR    1385.0    5150.09    1385.25    5150.43    1386.00    5151.41    1386.80    5152.48    1387.00    5152.75
GR    1387.2    5153.56    1388.00    5156.83    1388.60    5159.29    1389.00    5160.92    1389.34    5162.35
GR    1389.7    5164.16    1390.00    5165.24    1390.00    5165.45    1390.42    5166.34    1391.00    5168.32
GR    1391.8    5170.94    1391.91    5171.50    1392.00    5171.73    1392.22    5174.81    1392.64    5180.92
GR    1393.0    5184.53    1392.55    5196.46    1392.91    5224.81    1392.45    5256.91    1392.29    5293.65
GR    1392.1    5328.16    1392.00    5380.42    1392.00    5416.53    1391.87    5437.55
  DOWNSTREAM FACE OF PINNACLE PEAK ROAD BRIDGE

QT         1     27780
X1     9.145        66       5015       5325          8          8          8
X3        10         0          0          0          0          0          0     1392.2     1393.1
BT       -16      5015     1394.5     1394.5    5015.01     1394.5       1390       5045     1394.8     1390.3
BT                5085     1395.2     1390.7    5088.75     1395.2     1390.8    5093.75     1395.3     1390.8
BT                5125     1395.6     1391.1       5170     1395.7     1391.2       5205     1395.7     1391.2
BT                5245     1395.5       1391    5246.25     1395.5       1391    5251.25     1395.5       1391
BT                5285     1395.2     1390.7       5295     1395.1     1390.6    5324.99     1394.7     1390.2
BT                5325     1394.7     1394.7
GR    1395.6    3767.9     1395.5     3820.9     1395.4     3873.6     1395.4     3891.5     1395.4     3939.2
GR    1395.2    3990.7     1395.4     4052.6     1395.4     4113.7     1395.3     4176.6     1395.1     4229.3
GR    1395.1    4287.4     1394.9     4334.4     1394.8     4385.2     1394.7     4450.4     1394.8     4489.6
GR    1394.5    4524.7     1394.1     4576.1       1394     4617.7     1393.7     4656.6     1393.2     4693.1
GR    1393.1    4730.9     1392.4       4761     1392.2       4821     1392.4       4881    1393.59       4956
GR    1394.4      5006     1394.5       5015       1390    5015.01    1374.94       5045    1374.94       5085
GR    1374.9   5088.74    1390.80    5088.75    1390.80    5093.75    1374.94    5093.76    1374.94       5125
GR    1374.9   5167.49     1391.2     5167.5     1391.2       5170     1391.2     5172.5    1374.94    5172.51
GR    1374.9      5205    1374.94       5245    1374.94    5246.24       1391    5246.25       1391    5251.25
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GR    1374.9    5251.26    1374.94      5285    1374.94      5295     1390.2    5324.99    1394.7      5325
GR    1394.8       5326    1393.95      5376    1393.27      5453    1393.07       5520    1393.1    5541.9
GR    1392.9     5588.6     1392.7    5636.9     1392.7    5681.4     1392.5     5740.6    1392.6    5796.6
GR    1392.6     5855.7     1392.4    5922.7     1392.3      5988     1392.3     6032.1    1392.1    6079.5
GR    1392.1       6085
  UPSTREAM FACE OF PINNACLE PEAK ROAD BRIDGE

QT         1      27780
X1     9.155         66       5015      5325       80.2      80.2       80.2
X3        10          0          0         0          0         0          0    1392.2    1393.1
BT       -16       5015     1394.5    1394.5    5015.01    1394.5       1390       5045    1394.8    1390.3
BT                 5085     1395.2    1390.7    5088.75    1395.2     1390.8    5093.75    1395.3    1390.8
BT                 5125     1395.6    1391.1       5170    1395.7     1391.2       5205    1395.7    1391.2
BT                 5245     1395.5      1391    5246.25    1395.5       1391    5251.25    1395.5      1391
BT                 5285     1395.2    1390.7       5295    1395.1     1390.6    5324.99    1394.7    1390.2
BT                 5325     1394.7    1394.7
GR    1395.6     3767.9     1395.5    3820.9     1395.4    3873.6     1395.4     3891.5    1395.4    3939.2
GR    1395.2     3990.7     1395.4    4052.6     1395.4    4113.7     1395.3     4176.6    1395.1    4229.3
GR    1395.1     4287.4     1394.9    4334.4     1394.8    4385.2     1394.7     4450.4    1394.8    4489.6
GR    1394.5     4524.7     1394.1    4576.1       1394    4617.7     1393.7     4656.6    1393.2    4693.1
GR    1393.1     4730.9     1392.4      4761     1392.2      4821     1392.4       4881   1393.59      4956
GR    1394.4       5006     1394.5      5015       1390   5015.01    1375.14       5045    1375.14      5085
GR    1375.1    5088.74     1390.8    5088.75     1390.8    5093.75    1375.14    5093.76    1375.14      5125
1
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GR    1375.1    5167.49     1391.2    5167.5     1391.2      5170     1391.2     5172.5    1375.14   5172.51
GR    1375.1       5205    1375.14      5245    1375.14    5246.24      1391    5246.25      1391   5251.25
GR    1375.1    5251.26    1375.14      5285    1375.14      5295     1390.2    5324.99     1394.7      5325
GR    1394.8       5326    1393.95      5376    1393.27      5453    1393.07       5520    1393.1    5541.9
GR    1392.9     5588.6     1392.7    5636.9     1392.7    5681.4     1392.5     5740.6    1392.6    5796.6
GR    1392.6     5855.7     1392.4    5922.7     1392.3      5988     1392.3     6032.1    1392.1    6079.5
GR    1392.1       6085

QT         1      27780
ET                  5.1                          4528.66    5445.27
X1      9.16         89    4852.56    5164.29         8         8          8
GR    1392.6    4528.66    1392.16    4581.89    1392.81    4592.32    1392.00    4643.39   1391.85   4708.61
GR    1392.0    4756.55    1392.50    4805.50    1392.00    4836.76    1391.23    4838.82   1391.00   4839.41
GR    1390.5    4842.05    1390.00    4852.56    1389.00    4854.43    1388.00    4856.29   1387.00   4857.94
GR    1386.0    4859.59    1385.00    4861.24    1384.00    4862.89    1383.40    4863.88   1383.00   4864.54
GR    1382.5    4865.33    1382.00    4866.18    1381.00    4867.82    1380.61    4868.61   1380.00   4869.92
GR    1379.8    4870.35    1379.00    4872.01    1378.40    4873.27    1378.00    4874.11   1377.29   4875.60
GR    1377.0    4876.20    1376.18    4877.92    1376.00    4878.30    1375.00    4880.39   1374.81   4915.05
GR    1374.0    4961.04    1374.20    5000.00    1374.50    5083.02    1374.70    5107.91   1375.00   5129.31
GR    1375.6    5132.84    1376.00    5135.04    1377.00    5138.70    1378.00    5140.93   1379.00   5142.76
GR    1379.6    5143.88    1380.00    5144.79    1380.41    5145.63    1381.00    5146.82   1381.33   5147.49
GR    1382.0    5148.85    1382.47    5149.81    1383.64    5152.18    1384.00    5152.91   1384.55   5154.02
GR    1385.0    5154.94    1386.00    5156.58    1386.42    5157.20    1387.00    5158.07   1388.00   5161.31
GR    1388.6    5162.08    1389.00    5162.75    1389.58    5163.63    1390.00    5164.29   1390.52   5165.66
GR    1390.7    5169.65    1390.00    5170.91    1390.00    5171.15    1390.65    5172.70   1391.00   5173.49
GR    1391.5    5174.67    1392.00    5175.74    1392.49    5177.88    1393.00    5180.15   1393.00   5215.17
GR    1392.8    5239.51    1393.00    5302.86    1393.00    5330.00    1393.00    5335.30   1393.52   5343.99
GR    1394.0    5352.89    1394.20    5356.22    1394.67    5363.95    1395.00    5372.98   1395.00   5394.93
GR    1394.9    5404.04    1394.00    5430.80    1393.15    5432.47    1393.36    5445.27
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BOTTOM OF DROP STRUCTURE

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QT        1      27780
NC    0.035      0.035      0.020
ET                 5.1                          4732     5190.05
X1     9.21          7       4732    5174.57     145         355        279
GR     1389       4732       1376       4765    1376        4901       1376       5000       1376    5140.72
GR     1391    5174.57       1392    5190.05
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TOP OF DROP STRUCTURE

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QT        1      27780
NC    0.040      0.035      0.035
ET                 5.1                          4664     5314.09
X1     9.22         14       4664    5192.98     122         104         39
GR     1395       4664       1390       4708    1390     4871.20       1390       5000       1390    5167.75
GR     1391    5173.76       1392    5177.14    1393     5179.36       1394    5181.58       1395    5184.44
GR     1396    5187.36       1397    5192.98    1398     5219.20       1399    5314.09
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QT        1      27780
ET                 5.1                       4572.95     5304.55
X1     9.25         45       4825    5285.60     155          82        141
GR     1400       3023     1399.1       3123  1397.6        3223     1395.8       3323     1392.7       3423
GR     1392       3523       1393       3623  1393.6        3723     1393.5       3762       1394       3874
GR     1394       3898       1394    4003.81    1394     4062.18       1395    4283.87       1395    4298.29
GR     1395    4301.25       1395    4365.84    1395      4385.4     1395.7    4563.07       1395    4565.34
GR     1395    4570.45     1395.57    4572.95  1395.46     4582.97       1395    4585.82       1395    4590.84
GR     1395    4598.19       1395    4614.18    1395     4621.31       1394    4735.08       1394    4738.18
GR     1394    4838.32       1393    4871.51    1392     4892.27       1392       5000       1392     5077.8
GR     1393    5179.38       1394    5266.49    1395     5275.95       1396    5278.52       1397    5281.09
GR     1398    5283.83     1398.64     5285.6    1399     5290.86       1400    5304.55       1399    5325.36
```

END FLOW SPLIT; RETURN TO FULL FLOW

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QT        1      39000
ET                 5.1                       4441.50     5290.19
X1     9.30         52     4779.69    5280.97     262         282        261
GR   1401.5       2940      1402.6       2970  1400.5        3070     1398.6       3170       1397       3270
GR     1394       3370       1394       3470    1394        3570       1394       3670     1394.8       3770
GR     1395       3820       1394       3930    1394     4045.09       1395    4108.19       1395       4117
GR     1396    4323.15     1396.42    4425.34    1396     4429.71       1396    4434.42       1396     4441.5
GR     1396    4445.67       1396     4449.8    1395     4453.93    1394.13    4458.61       1394    4462.74
GR     1393    4494.69       1393    4512.86    1394     4520.79       1395    4539.92       1395    4544.55
GR     1395    4549.38       1396    4554.31    1397      4672.3       1397    4703.41       1397    4730.49
GR     1397    4737.81     1396.5       4750    1396     4768.57       1395    4779.69       1394     4811.1
GR     1393     4973.9       1393       5000    1393     5090.01       1394    5237.22       1395    5265.28
GR     1395    5270.89       1396    5273.07    1397     5275.25       1398    5277.47       1399    5279.81
GR   1399.5    5280.97       1400    5290.19

ET                 5.1                       4252.38     5287.77
```

X1	9.35	64	4775	5275.88	291	274	274			
GR	1403.4	2913	1404	2963	1401.9	3063	1400.6	3163	1399.1	3263
GR	1396	3363	1396	3463	1394.8	3563	1395.2	3663	1396	3763
GR	1396	3863	1396	3873	1396	3970	1396	4133.14	1397	4227.56
GR	1397	4246.88	1397	4251.02	1397	4252.38	1397	4261.99	1397	4262.89
GR	1397	4266.45	1397	4272.25	1396	4279.28	1395	4304.83	1395	4325.29
GR	1396	4342.7	1397	4379.18	1398	4402.1	1399	4459.05	1399	4467.32
GR	1399	4490.46	1399	4657.95	1399	4675.14	1399	4775	1399	4817.89
GR	1398	4824.28	1398	4830.91	1398	4833.58	1397	4841.76	1396	4854.67
GR	1395	4861.17	1394	4882.23	1393	4897.87	1392	4929.89	1392	4995.23
GR	1392.2	5000	1393	5015.98	1394	5050.46	1394	5062.07	1394	5081.74
GR	1394	5098.98	1393	5104.45	1393	5165.77	1394	5255.79	1394.16	5261.12
GR	1395	5263.15	1396	5265.55	1397	5267.94	1398	5270.34	1399	5272.74
GR	1399.9	5274.92	1400	5275.88	1401	5287.77	1401	5364.41		

FIRST LANDFILL CROSS SECTION

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X1	9.42	84	4717	5216.97	400	402	399			
GR	1428	4000	1426	4011.37	1424	4051.66	1424	4057.37	1426	4081.68
GR	1428	4110.92	1428	4121.45	1426	4129.13	1424	4134.76	1422	4139.19
GR	1421	4142.73	1420	4161.87	1419.19	4203.29	1418	4205.11	1416	4226.25
GR	1414	4237.19	1412	4246.78	1410	4256.36	1408	4267.25	1406	4278.32
GR	1404	4313.42	1402	4319.63	1401	4385.11	1401	4391.49	1400	4399.73
GR	1400	4402.48	1400	4425	1399	4435.31	1399	4437.98	1400	4464.1
GR	1400	4473.55	1401	4478.99	1401	4489.28	1401	4501.38	1401	4506.58
GR	1401	4519.28	1401	4549.48	1401	4609.38	1401	4631.43	1401	4640
GR	1401	4717	1401	4808.53	1401	4810.26	1400	4816.66	1399	4821.3
GR	1398	4826.32	1397	4831.26	1396	4836.2	1395	4840.81	1394	4845.47
GR	1394	4861.29	1394	4874.91	1394	4881.71	1395	4899.25	1395	4935.92
GR	1394	4952.05	1393	4968.09	1393	4971.63	1393	4977.75	1393	5000
GR	1393	5022.4	1394	5029.45	1395	5047.57	1396	5049.85	1397	5052.12
GR	1397	5069.99	1396	5075.09	1395	5080.13	1394	5086.54	1393	5111.54
GR	1393	5144.13	1394	5187.94	1395	5201.29	1396	5203.58	1397	5205.87
GR	1398	5208.12	1399	5210.33	1400	5212.55	1401	5214.76	1402	5216.97
GR	1402.1	5217.23	1403	5227.59	1404	5237.39	1404.24	5239.73		

NC	0.040	0.040	0.040							
X1	9.45	97	4709	5209	93	126	118			
GR	1444	4000	1446	4007.9	1448	4067.98	1448	4129.56	1446	4153.01
GR	1444	4163.3	1442	4166.26	1440	4169.22	1438	4175.44	1436	4186.62
GR	1434	4200.28	1432	4214.71	1430	4223.41	1428	4230.51	1426	4245.88
GR	1424	4268.57	1422.59	4278.96	1422	4280.89	1420	4290.71	1418	4299.79
GR	1416	4308.72	1414	4317.57	1412	4326.42	1410	4337.33	1408	4350.71
GR	1406	4364.09	1404	4377.47	1402	4400.54	1401	4461.44	1400	4466.82
GR	1400	4480.64	1400	4491.26	1400	4512.14	1401	4518.92	1401.69	4560.74
GR	1402	4579.32	1403	4582.89	1403	4591.95	1402	4596.75	1402	4660
GR	1402	4672.46	1401.7	4709	1401	4801.15	1400	4808.19	1399	4812.86
GR	1398	4817.28	1397	4822.04	1396	4829.31	1395	4850.48	1395	4874.85
GR	1396	4881.97	1397	4899.1	1397	4923.02	1396	4938.23	1395	4946.05
GR	1394	4960.72	1394	4965.12	1394	4968.36	1394	4997.02	1393.39	5000
GR	1393	5001.91	1393	5029.22	1394	5035.16	1395	5037.25	1396	5039.33
GR	1397	5041.64	1398	5043.96	1399	5046.15	1400	5048.19	1401	5065.48

GR	1401	5071.95	1401	5081.45	1401	5133.8	1400	5156.91	1399	5160.41
GR	1398	5163.93	1397	5167.45	1396	5170.97	1395	5174.49	1394	5180.55
GR	1394	5209	1394	5237.19	1395	5242.58	1396	5247.96	1397	5251.97
GR	1398	5255.85	1399	5259.53	1400	5261.9	1401	5264.27	1404.8	5265.18
GR	1402	5266.67	1403	5269.03	1404	5271.38	1405.2	5272.32	1404.6	5276.7
GR	1405	5277.23	1405	5281.63						

NC	0.035	0.040	0.040							
ET		5.1			4663.35	5177				
X1	9.54	85	4685.93	5177	410	515	500			
GR	1456	4000	1456	4021.5	1454	4238.02	1454	4370.23	1456	4373.71
GR	1458	4382.67	1460	4392.58	1462	4402.82	1464	4414.23	1464	4416.59
GR	1462	4419.16	1460	4421.73	1458	4424.3	1456	4426.86	1454	4429.43
GR	1452	4432.03	1450	4434.89	1448	4437.71	1446	4440.53	1444	4443.94
GR	1442	4455.27	1440	4466.36	1438	4475.82	1436	4485.28	1434	4494.74
GR	1432	4503.98	1430	4512.83	1428	4521.68	1426	4530.63	1424	4537.95

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GR	1422	4543.4	1420	4548.8	1418	4566.76	1416	4576.41	1414	4588.78
GR	1412	4606.7	1410	4618.24	1408	4626.12	1406	4646.3	1405.45	4653.56
GR	1406	4654.9	1408	4659.52	1409.53	4663.35	1409.41	4679.83	1408	4685.93
GR	1406	4694.77	1404	4704.62	1402	4714.47	1400	4759.39	1399	4817.12
GR	1399	4833.11	1399	4849.47	1399	4877	1398	4880.23	1397	4889.16
GR	1397	4922.52	1398	4930.18	1398	4954.06	1397	4978.17	1397	5000
GR	1397	5021.85	1398	5031.11	1399	5044.96	1400	5072.02	1401	5077.75
GR	1402	5083.41	1403	5099.61	1404	5131.49	1404	5150.42	1404	5168.37
GR	1404	5177	1404	5197.33	1404	5199.5	1404	5210.97	1404	5253.08
GR	1404	5391.09	1403	5589.76	1403	5598.79	1404	5665.44	1405	5677.3
GR	1406	5688.92	1407	5698.83	1408	5708.08	1408.1	5709.05	1408	5712.42

ET		5.1			4736.39	5231.86				
X1	9.65	77	4754.19	5231.86	475	503	558			
GR	1464	4000	1464	4008.95	1464	4009.76	1462	4321.74	1460	4399.87
GR	1458	4431.45	1456	4444.62	1454	4455.94	1452	4520.78	1450	4527.92
GR	1448	4534.57	1446	4541.22	1444	4547.9	1442	4555.79	1440	4564.66
GR	1438	4573.56	1436	4582.53	1434	4591.5	1432	4600.47	1430	4609.44
GR	1428	4617.73	1426	4626.65	1424	4636.67	1422	4647.12	1420	4657.56
GR	1418	4668.01	1416	4678.25	1415.47	4681.09	1414	4684.72	1412	4698.82
GR	1410	4712.91	1408.84	4718.95	1410	4724.03	1412	4732.19	1412.28	4733.95
GR	1412.3	4736.39	1412.23	4752.15	1412.23	4753.27	1412	4754.19	1410	4762.26
GR	1408	4770.81	1406	4779.35	1404	4787.89	1402	4808.39	1402	4880.47
GR	1402	5000	1402	5117.6	1402	5177.99	1404	5201.2	1406	5208.98
GR	1408	5216.75	1410	5224.53	1411.67	5231.28	1411.74	5231.86	1411.54	5244.69
GR	1411.6	5244.92	1410	5251.38	1408	5258.75	1406	5266.02	1405	5297.23
GR	1405	5320.44	1406	5347.25	1406	5388.09	1406	5408.08	1407	5541.7
GR	1407	5718.14	1406	5754.4	1406	5784.09	1406	5792.77	1406	5810.87
GR	1406	5820.41	1406	5838.97	1407	5936.82	1408	6017.23	1409	6081.83
GR	1410	6155.49	1411	6165.28						

NC	0.035	0.035	0.035				
ET		5.1			4752.73	5283.89	
X1	9.70	45	4757.14	5273.18	253	259	256

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GR      1466      4109      1464    4316.8      1462    4420.43      1460    4447.14      1458    4478.14
GR      1456   4489.46      1454   4500.45      1452    4509.98      1450    4519.51      1448    4529.04
GR      1446   4538.57      1444    4548.1      1442    4557.38      1440    4566.27      1438    4575.05
GR      1436   4583.83      1434   4592.61      1432    4601.39      1430    4609.72      1428    4617.43
GR      1426   4627.56      1424   4668.02      1422    4677.03      1420    4686.23      1418    4694.23
GR      1416   4702.22      1414   4725.62   1413.09    4738.64   1413.15    4752.73      1412    4757.14
GR      1410   4765.55      1408   4773.94      1406     4782.3      1404    4790.65      1404       5000
GR      1404   5228.02      1406   5244.34      1408    5253.96      1412    5273.18   1412.96    5277.81
GR    1413.2   5283.89      1414   5286.99      1416    5294.01      1418    5300.98      1420    5310.97

ET                 5.1                      4761.98    5298.67
X1      9.73        47   4763.41   5284.93       187        151       169
GR      1468      4092      1466   4213.55      1464       4379      1462     4470.4      1460    4508.81
GR      1458   4525.45      1456   4535.99      1454    4546.24      1452     4556.5      1450    4565.64
GR      1448   4574.49      1446   4582.67      1444    4590.66      1442    4598.64      1440    4606.63
GR      1438   4614.61      1436    4622.6      1434     4630.3      1432    4638.03      1430    4646.07
GR      1428   4654.12      1426   4662.16      1424     4670.2      1422    4678.24      1420    4686.28
1
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GR      1418   4694.59      1416   4735.51      1414    4745.63   1413.77    4747.24      1414    4754.45
GR    1414.2   4761.98      1414   4763.41      1412    4771.23      1410    4779.05      1408    4786.93
GR      1406   4794.83      1404   4807.46      1404       5000      1404    5232.22      1406    5255.68
GR      1408   5265.54      1410   5275.37      1412    5284.93      1414    5298.67      1416    5306.36
GR      1418   5314.06      1420   5322.58

ET                 5.1                      4698.37    5217.67
X1      9.80        62   4738.89   5206.55       383        349       365
GR      1476      4000      1476   4071.22      1474     4291.9      1472    4368.03      1470    4404.99
GR      1468   4419.78      1466   4435.01      1464    4454.29      1462    4489.38      1460    4517.69
GR      1458   4526.82      1456   4535.94      1454    4545.06      1452    4554.19      1450    4563.31
GR      1448   4572.44      1446   4580.51      1444    4588.95      1442    4597.51      1440    4606.07
GR      1438   4614.65      1436   4623.22      1434    4631.58      1432    4639.42      1430    4647.25
GR      1428   4655.08      1426   4662.93      1424    4670.84      1422    4678.74      1420    4686.85
GR      1418   4698.37      1416   4738.89      1416    4742.87      1416    4745.09   1415.15    4749.88
GR    1415.7   4766.09      1414   4773.04      1412    4781.48      1410    4789.92      1408    4798.11
GR      1406   4814.33      1406      5000      1406     5168.2      1408    5177.78      1410    5187.37
GR      1412   5196.96      1414   5206.55   1414.61    5209.05    1414.9    5217.67      1416    5221.57
GR      1418   5228.59      1420   5235.61      1422    5242.63      1424    5250.86      1426     5260.4
GR      1428   5270.06      1430   5279.73      1432       5290      1434    5301.13      1436    5313.24
GR      1438   5329.65      1440   5350.74

ET                 5.1                      4678.48    5167.47
X1      9.89        61   4741.17   5163.70       509        484       495
GR      1480      4000      1480   4097.31      1478     4315.5      1476    4369.55      1474    4409.22
GR      1472   4428.88      1470   4447.01      1468    4467.06      1466    4484.74      1464    4501.35
GR      1462   4517.81      1460   4528.28      1458    4538.09      1456    4547.75      1454    4557.31
GR      1452   4566.31      1450   4574.08      1448    4581.28      1446    4588.48      1444     4595.7
GR      1442   4603.03      1440   4610.35      1438    4617.67      1436    4624.99      1434    4631.68
GR      1432   4638.82      1430   4646.76      1428    4654.71      1426    4662.61      1424    4670.44
GR      1422   4678.48      1422   4689.89   1422.06    4691.09      1422    4691.98   1421.45     4699.1
GR      1420   4741.17      1418   4771.38      1416    4778.99      1414    4786.68      1412    4794.99
GR      1410    4803.8      1408    4840.1      1406    4951.17      1406    4964.91   1407.43       5000
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GR      1408    5114.09      1410    5126.94      1412    5136.13      1414    5145.32      1416    5154.51
GR      1418     5163.7    1418.8    5167.47    1418.7    5180.97      1418    5182.68      1418    5202.91
GR      1420    5221.64      1422    5236.46      1424    5244.79      1426    5252.68      1428     5260.3
GR      1430    5267.91

ET               5.1                           4813.54    5284.14
X1      9.98       68    4828.11    5274.26       462        469       475
GR      1476     4020      1476    4135.18      1474    4180.69      1472    4242.44      1472    4405.93
GR      1474   4459.87      1474     4532.3      1472    4564.64      1470    4600.47      1468    4627.43
GR      1466   4644.39      1464    4650.73      1462    4658.68      1460    4666.95      1458    4675.21
GR      1456   4683.48      1454    4692.64      1452    4702.53      1450    4711.67      1448    4720.68
GR      1446   4728.08      1444     4734.3      1442    4740.53      1440    4746.75      1438    4752.97
GR      1436   4759.19      1434    4766.97      1432    4775.44      1430    4783.95      1428    4813.54
GR      1428    4821.2    1428.96    4826.63      1428    4828.11      1426    4830.93    1425.95    4831.02
GR    1425.7    4834.7      1424    4840.53      1422     4847.1      1420    4853.67      1418    4860.24
GR      1416   4866.81      1414    4874.06      1412    4895.31      1410    4925.82      1410    4957.15
GR      1410    4985.2      1410       5000      1410    5196.05      1412    5234.32      1414    5243.75
GR      1416   5253.18      1418    5262.85      1420    5274.26   1421.67    5284.14    1421.15    5293.67
1
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GR      1420    5297.1    1418.2    5302.27      1420    5323.38      1422     5337.3      1424    5349.84
GR      1426   5361.61      1428    5370.82      1430    5379.99      1432    5389.15      1434     5398.3
GR      1436   5407.46      1438     5416.8      1440    5427.51

ET               5.1                           4840.61    5275.34
X1     10.08       60    4841.72    5274.76       508        514       511
GR      1476     4000      1478    4028.78      1480    4085.32      1480    4214.24      1478    4270.59
GR      1476   4333.92      1474    4385.59      1472    4415.91      1470    4435.24      1468    4453.48
GR      1466   4471.72      1464    4489.47      1462    4507.08      1460    4524.24      1458    4540.43
GR      1456   4560.04      1454    4579.47      1452    4664.02      1450    4686.12      1448    4711.59
GR      1446   4736.49      1444    4743.04      1442    4749.49      1440    4755.86      1438    4761.79
GR      1436   4767.07      1434    4772.52      1432    4778.04      1430    4783.56      1428    4789.08
GR      1426   4795.68      1426    4838.85   1426.35    4840.61      1426    4841.72      1424    4848.12
GR      1422   4854.53      1420    4861.27      1418    4869.07      1416    4880.94      1414    4903.67
GR    1412.5      5000      1412    5028.73      1412    5119.72      1414    5215.45      1416    5233.54
GR      1418   5244.05      1420    5254.55      1422    5265.05      1424    5274.76    1424.17    5275.34
GR      1424   5277.85    1423.5    5284.05      1422    5288.76      1420     5294.8      1420     5307.7
GR      1422   5411.56      1424    5519.39      1426    5568.38      1428    5584.58      1430    5600.76

ET               5.1                           4784.92    5288.33
X1     10.16       48    4797.94    5270.13       447        418       430
GR      1438     4000      1436     4021.6      1434    4039.29      1432    4060.58      1430    4087.84
GR      1428   4116.35      1426    4163.37      1426     4172.5      1426     4329.8      1424    4615.05
GR      1422   4727.69      1422    4765.14      1424    4772.65      1426    4779.85     1427.4    4784.92
GR    1426.9   4794.24      1426    4797.94      1424    4806.13      1422    4814.72      1420    4823.31
GR      1418   4831.89      1416    4850.45      1416       5000      1416     5206.7      1418    5231.48
GR      1420   5241.03      1422    5250.58      1424    5260.12      1426    5270.13    1426.69    5273.76
GR    1426.8   5288.33      1426    5290.46      1424    5295.56   1423.73    5296.35      1424    5299.13
GR      1426   5318.58      1428    5331.54      1430    5343.77      1432    5355.48      1434     5367.2
GR      1436   5379.53      1438    5392.13      1440    5404.93      1442    5417.74      1444    5430.71
GR      1446   5445.59      1448    5460.48      1450    5475.78
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ET                5.1                          4772.87     5312.98
X1    10.25        50    4772.87    5312.98       496         420         460
GR     1462      4000       1462     4353.1      1462     4360.97        1464     4372.48        1466      4380.6
GR     1466   4394.69       1464    4399.98      1462     4402.86        1460     4405.73        1458     4408.62
GR     1456   4420.57       1454    4432.06      1452     4443.38        1450      4454.7        1448     4465.92
GR     1446   4476.55       1444    4487.22      1442     4497.92        1440     4509.43        1438     4521.31
GR     1436   4534.04       1434    4573.89      1434     4576.65        1434     4582.76        1432     4590.09
GR     1430   4597.07       1428    4604.05      1426     4740.78        1426     4758.62        1428     4766.33
GR   1429.7   4772.87    1429.36    4781.13      1428     4786.37        1426     4794.42        1424     4802.47
GR     1422   4810.53       1420    4841.46      1420     5225.51        1422     5254.59        1424     5264.85
GR     1426   5274.47       1428    5284.05    1429.2     5289.83     1429.27     5312.98        1430     5319.77
GR     1432   5338.35       1434    5354.33      1436     5382.04        1438     5398.07        1440     5414.09
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ET                5.1                          4766.40     5271.99
X1    10.33        47    4782.32    5269.64       519         373         444
GR     1450      4000       1448    4073.55      1448     4076.89        1448     4151.72        1446     4166.89
GR     1444   4179.19       1442    4193.45      1440     4215.25        1438     4234.67        1436     4254.62
GR     1434   4273.64       1432    4293.27      1430     4335.46        1428     4352.32        1428     4394.66
GR     1430   4399.29       1432    4405.29      1434     4417.32        1436     4573.71        1434      4592.8
GR     1432   4607.16       1430     4731.8      1430     4744.77        1432     4752.19        1434     4759.52
GR   1435.8    4766.4    1435.17    4782.32      1434     4787.13        1432     4795.34        1430     4802.67
GR     1428      4810       1426    4817.69      1424     4826.71     1422.57        5000        1422     5069.23
GR     1422   5172.18       1424    5223.94      1426     5234.36        1428     5243.12        1430     5251.96
GR     1432    5260.8       1434    5269.64   1434.83     5271.99     1434.09     5290.23        1434     5290.52
GR     1432   5296.74       1430    5302.97

ET                5.1                          4756.86     5252.58
X1    10.34        38    4775.45    5243.36       104          42          73
GR     1434      4000       1434    4020.85      1432     4060.47        1432     4210.33        1432     4230.74
GR     1430      4304       1430       4351      1430     4400.08        1430     4476.92        1432     4558.77
GR     1432   4579.43       1430    4699.87      1430     4741.11        1432     4746.28        1434     4751.62
GR   1435.9   4756.86       1435    4775.45      1434     4779.27        1432     4786.85        1430     4794.42
GR     1428   4803.16       1426    4811.92      1424     4839.17     1422.77        5000        1422     5099.99
GR     1422   5118.31       1424    5204.31      1426     5212.97        1428     5217.15        1430      5226.8
GR     1432   5234.78       1434    5243.36   1435.48     5252.58     1434.92     5272.38        1434     5274.21
GR     1432   5278.35       1430    5282.48      1430     5283.56
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HAPPY VALLEY ROAD CROSSING

```
NC    0.030     0.030     0.030
ET                5.1                          4823.21        5272
X1    10.38        34    4823.21    5293.86       173         143         162
GR     1432      4050       1432    4345.47      1434     4359.49        1436     4382.17        1436     4444.22
GR     1434   4514.59       1434    4523.97      1436     4605.62        1436     4667.41        1434     4710.47
GR     1434    4776.7    1435.99    4798.29   1435.82     4823.21        1434     4831.49        1432     4838.95
GR     1430   4845.97       1428    4854.29      1426     4860.89        1424      4952.8        1424        5000
GR     1424   5110.95       1426     5223.7      1428     5293.86        1430     5418.28        1432     5426.63
GR     1434   5436.09       1436    5445.55      1436     5462.06     1438.33     5462.07     1438.33     5463.07
GR     1436   5463.08       1436    5478.57   1435.96     5479.62        1434     5488.87
```

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NC    0.035      0.035      0.035
ET                 5.1                          4783.08     5262.74
X1    10.41         52    4791.83    5251.18       198         142        171
GR     1434       4064       1434    4072.38      1436      4078.9       1438    4083.68       1440    4114.64
GR     1442    4124.08       1444    4141.29      1444    4186.45       1442    4196.42       1438    4216.34
GR     1436    4223.27       1434    4229.95      1432    4236.99       1432    4370.62       1434    4373.56
GR     1436     4376.5       1438    4379.45      1440    4383.45       1440    4469.41       1438     4505.1
GR     1436    4516.74       1434    4526.64      1432    4535.95       1432    4754.33       1434    4759.91
GR   1435.7    4764.94       1436    4772.28      1436    4782.06    1438.34    4782.07    1438.34    4783.07
GR     1436    4783.08       1436    4791.83      1434    4800.27       1432    4808.85       1430    4817.15
GR     1428     4863.1       1428       5000      1428    5071.88       1428    5119.31       1428    5202.52
GR     1430    5229.35       1432    5236.74      1434    5244.12       1436    5251.18       1436    5262.73
GR   1438.9    5262.74     1438.9    5262.75      1436    5262.76       1436    5274.27       1434     5279.7
GR     1432    5285.08       1430     5290.4
1
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ET                 5.1                          4758.78     5239.41
X1    10.42         46    4772.17    5239.37        70          58         64
GR     1434       4057       1434    4122.12      1434    4141.01       1432    4192.42       1432    4500.07
GR     1434    4518.47       1436    4524.56      1438    4530.85       1438       4566       1436    4602.78
GR     1434    4617.91       1432    4648.14      1432    4733.89       1434     4738.7       1436    4743.37
GR     1436    4757.77       1439    4757.78      1439    4758.78       1436    4758.79       1436    4772.17
GR     1434    4781.27       1432     4790.3   1431.35    4793.22       1430    4857.83       1428     4863.2
GR     1426    4872.34       1426       5000      1426    5035.16       1428    5059.55       1430    5071.52
GR     1430    5178.76       1430     5209.5      1432     5217.1       1434    5224.61       1436    5232.04
GR     1438    5239.37       1438    5239.40    1439.8    5239.41     1439.8    5240.41       1438    5240.42
GR     1438    5240.71     1437.62    5260.38      1436    5263.54       1434    5267.47       1432    5271.31
GR     1430    5275.13

ET                 5.1                          4717.29     5219.45
X1    10.51         85    4720.44    5201.75       439         487        472
GR     1434       4000       1432    4130.14      1428    4139.76       1426     4144.4       1424    4149.04
GR     1422    4153.68       1418    4208.59      1418    4223.25       1418     4230.6       1418    4282.85
GR     1418    4360.51       1416    4368.14      1414    4375.06       1412    4381.98       1408    4395.81
GR     1406    4403.31       1404     4411.2      1402    4420.45       1398    4444.12       1396    4455.04
GR     1396    4458.71       1398    4462.24      1400    4465.78       1402     4469.3       1404     4472.7
GR     1406    4476.09       1406    4476.39      1404    4480.43       1402    4489.41       1400    4498.38
GR     1398    4511.86       1398    4523.62      1402    4606.66       1404    4619.36       1406    4625.57
GR     1408    4631.74       1412    4641.43      1414     4645.8       1416    4650.17       1418    4654.55
GR     1422    4663.24       1424    4666.88      1426    4670.52       1428    4674.16       1432    4681.45
GR     1434    4685.09       1436    4688.73      1438    4692.35       1440    4695.92       1440    4716.28
GR   1443.2    4716.29     1443.2    4717.29   1440.66    4717.32       1440    4720.44       1438    4729.62
GR     1436     4738.8       1434    4747.98   1432.68    4754.05       1434    4795.05       1434    4811.47
GR     1432    4826.23       1430    4844.12      1428    4880.89       1428    4916.32       1428     4916.6
GR     1428    4924.94       1430    4975.63      1430    4993.27       1430       5000       1430    5004.42
GR     1430    5038.01       1430    5060.04      1432    5076.82       1434    5173.28       1436     5182.8
GR     1438    5192.33       1440    5201.75      1440    5219.44    1443.73    5219.45    1443.73    5220.45
GR   1440.7    5220.46     1440.7    5237.12      1442    5243.12       1444    5251.74       1444     5270.2

NC    0.035       0.05      0.035
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ET                5.1                          4664.91     5132.57
X1    10.62        87     4665.97     5128.07      535         618         596
GR     1438      4000        1438     4067.63     1438     4119.75        1438     4123.09        1436     4126.37
GR     1434   4129.64        1432     4132.91     1428     4139.57        1426     4142.92        1424     4157.62
GR     1422   4197.88        1422     4274.19     1422     4279.99        1418     4285.73        1416     4288.61
GR     1414   4291.48        1412     4294.36     1408      4300.1        1406     4302.98        1404     4305.85
GR     1402   4308.72        1398     4314.87     1396     4318.05        1394     4326.83        1392     4337.52
GR     1392    4407.2        1394     4430.83     1396     4477.86        1398     4520.73        1402     4551.89
GR     1404   4565.94        1406     4587.33     1408     4591.51        1412     4599.92        1414      4604.3
GR     1416   4608.68        1418     4613.06     1422     4621.46        1424     4625.35        1426     4629.24
GR     1428   4633.13        1432     4640.85     1434     4644.69        1436     4648.53        1438     4652.37
GR     1440   4656.21        1442     4660.05     1444     4663.89        1444     4663.90      1445.7     4663.91
GR   1445.7   4664.91        1444     4664.92     1444     4665.97     1443.33     4681.76        1442     4687.65
GR     1440   4696.48        1438     4705.29  1436.53     4711.79        1436     4760.05        1434     4774.11
GR     1432    4791.7        1432     4792.06     1434     4804.84        1434     4812.38        1434     4844.64
GR     1434   4908.11        1432     4978.39     1430     4993.25        1430        5000        1430     5019.08
1
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GR     1432   5025.21        1434     5047.48     1436     5072.96     1436.27     5078.41        1438     5088.52
GR     1440   5100.18        1442      5111.6     1444     5128.07     1444.34     5132.57        1446     5140.61
GR     1448    5150.2        1450     5159.88     1452     5169.67        1454     5179.15        1454     5200.76
GR     1454    5213.3        1456     5219.38

NC    0.035     0.035       0.035
ET                5.1                          4748.11      5211.3
X1    10.70        43     4759.88      5193.3      390         382         402
GR     1444      4000        1444     4038.07     1444     4066.66        1444     4284.59        1442     4345.59
GR     1440    4412.2        1440     4618.19     1442     4696.02     1442.67     4720.77        1444     4727.26
GR   1446.2   4734.32      1446.2     4747.10  1448.10     4747.11     1448.10     4748.11      1446.2     4748.12
GR   1446.2   4759.88        1444     4767.51     1442     4775.38     1440.89     4779.56        1440     4856.65
GR     1438   4908.41        1436     4929.27     1434     4963.32        1434        5000        1434     5015.86
GR     1436   5039.71        1436     5072.24     1436     5119.55        1438     5144.54        1440     5154.48
GR     1442   5163.53        1444     5172.15     1446     5188.42     1446.48      5193.3        1448     5197.69
GR     1450   5201.41        1452     5205.12     1454     5208.74     1455.47      5211.3        1456     5213.46
GR     1458   5222.24        1458     5238.92     1456     5256.86

ET                5.1                          4782.29     5310.03
X1    10.83        54     4800.8      5298.85      642         704         717
GR     1448      4234        1448     4375.81     1448     4583.91        1446     4610.95        1446      4656.3
GR     1446   4742.93     1444.39      4761.2     1446     4765.18        1448     4769.97        1450     4774.76
GR     1452   4779.31        1452     4781.28  1454.60     4781.29     1454.60     4782.29        1452     4782.30
GR     1452    4800.8        1450     4808.34     1448     4816.39        1446     4825.37        1444     4844.86
GR     1442   4867.57        1440     4888.99     1438     4911.48        1438      4931.3        1440     4955.08
GR     1440   4961.15        1440        5000     1440     5073.72        1442     5081.76        1444     5085.61
GR     1446   5088.41        1446     5095.29     1446     5268.61        1448      5283.3        1450     5291.33
GR     1452   5298.85        1452     5310.02  1454.25     5310.03     1454.25     5311.03        1452     5311.04
GR     1452   5321.19        1450     5325.84     1448     5330.48        1446      5352.1        1444      5429.4
GR     1442   5433.87        1442      5453.7     1442     5462.01        1440     5467.15        1438     5472.69
GR     1438   5487.43        1440     5493.52     1442     5499.62        1444     5505.79

ET                5.1                          4766.74        5290
X1    10.93        47     4790.58      5279.54      456         557         516
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GR     1450       4075       1450    4401.05       1450    4472.44       1450    4658.68       1448    4685.74
GR     1446    4692.07       1446    4738.32       1448    4747.74       1450    4752.28       1452    4756.82
GR     1454    4761.36       1456    4765.91    1456.34    4766.74    1456.31     4782.2       1456    4783.11
GR     1454    4790.58       1452    4801.13       1450    4811.94       1448    4852.07       1446    4882.26
GR     1444     4895.5       1442    4901.64       1440    4907.78       1440    4909.75       1440       5000
GR     1442    5025.23       1444    5039.36       1446    5045.88       1448    5065.33       1448    5141.49
GR     1446    5151.73       1446    5160.63       1448       5249       1450    5259.77       1452    5267.62
GR     1454    5275.29     1455.1    5279.54    1458.23       5290    1458.23       5291     1455.6    5291.01
GR   1455.6    5301.19       1454    5303.86       1452    5307.17       1450    5311.25       1448    5317.12
GR     1446    5322.99       1446    5329.64

  CONFLUENCE WITH BUCHANAN WASH
1
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ET                 5.1                            4581.43    5120.83
X1    11.03         59    4598.63    5120.83        506        504        525
GR     1454       4082       1454     4316.5       1454    4398.81       1454    4405.76       1454    4444.05
GR     1454    4463.63       1452    4472.52       1452    4546.98       1452    4556.11     1451.02    4559.09
GR     1452    4561.67       1454    4566.38       1456    4571.08       1458    4575.79       1460    4580.49
GR   1460.3    4581.43    1460.24    4597.21       1460    4598.63       1458    4606.22       1456    4613.78
GR     1454    4621.09       1452    4629.76       1450    4642.89       1449    4647.63       1448    4693.69
GR     1448    4736.54       1450    4814.76       1450    4864.18       1448    4942.71       1446    4949.67
GR     1444    4956.46       1442    4984.22       1442       5000       1442    5002.45       1444    5021.76
GR     1446    5026.06       1448     5043.9       1448    5055.01       1446    5062.54       1444    5069.86
GR     1442     5077.4       1442    5100.06       1444    5110.31       1446    5120.83       1448    5131.74
GR     1448    5143.33       1448    5159.14       1450    5172.98       1452    5186.65       1454       5200
GR     1456    5213.08       1458    5227.34       1460    5242.36    1460.78    5249.29     1460.5    5289.31
GR     1460    5290.38       1458    5301.57       1456    5314.34       1454    5329.62

NC    0.050      0.035      0.035
ET                 5.1                               4762    5149.91
X1    11.14         32       4762    5149.91        606        610        606
GR     1460    4331.11       1460    4359.12       1458    4450.29       1456    4510.13       1454    4516.73
GR     1452    4523.33       1450    4529.82       1450    4653.75       1452    4685.50       1452       4762
GR     1452    4830.94       1450    4913.55       1450    4965.11       1448    4975.89       1448       5000
GR     1448    5056.87       1450    5060.92       1452    5064.99       1452    5097.48       1454    5121.70
GR     1456    5126.41       1458    5131.13       1460    5135.85       1462    5140.57       1464    5145.28
GR     1466    5149.91       1466    5173.09       1464    5177.70       1462    5182.56       1460    5187.75
GR     1458    5192.64       1456    5197.53

  BEGIN CORPS LEVEES

NC    0.035      0.035      0.020
ET                 5.1                            4825.06    5165.90
X1    11.19         80    4825.06    5161.07        277        212        225
GR   1466.0    4799.55     1466.00    4823.70    1466.00    4825.06    1465.44    4826.50    1464.00    4830.18
GR   1463.6    4831.26     1462.00    4835.30    1461.78    4835.87    1460.47    4839.23    1460.00    4840.18
GR   1459.8    4840.67     1458.00    4844.27    1457.08    4846.17    1456.00    4848.37    1454.68    4851.08
GR   1454.0    4852.47     1452.35    4858.63    1452.00    4861.70    1452.00    4865.26    1452.00    4867.38
GR   1452.0    4906.20     1452.00    4944.98    1452.00    4945.21    1452.00    4948.20    1452.00    4955.59
GR   1452.0    4974.23     1452.00    4983.63    1452.00    5000.00    1452.00    5052.40    1452.00    5075.88
GR   1452.0    5079.43     1452.00    5080.15    1452.00    5083.16    1452.00    5085.12    1452.21    5091.07
GR   1452.2    5091.41     1452.82    5104.84    1453.40    5118.66    1453.68    5124.97    1454.00    5131.82
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GR   1455.9    5136.57    1456.00    5136.91    1456.04    5136.99    1458.00    5141.74    1458.38    5142.66
GR   1460.0    5146.57    1460.56    5147.92    1462.00    5151.40    1462.67    5153.01    1464.00    5156.23
GR   1464.7    5158.02    1466.00    5161.07    1466.79    5162.98    1468.00    5165.90    1468.00    5172.97
GR   1468.0    5198.33    1468.00    5198.71    1468.00    5208.06    1467.82    5208.79    1467.42    5210.39
GR   1466.0    5213.89    1464.59    5217.33    1464.00    5218.79    1462.10    5223.33    1462.00    5223.58
GR   1461.9    5223.73    1460.00    5228.27    1459.05    5230.49    1458.00    5232.96    1456.96    5238.16
GR   1456.5    5239.87    1456.32    5241.27    1456.00    5249.77    1456.00    5262.87    1455.84    5273.99
GR   1456.0    5290.85    1456.15    5294.26    1456.26    5305.86    1456.31    5328.45    1456.18    5342.81
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ET                5.1                                4827.39    5184.66
X1    11.29        94    4827.39    5184.66        486        591        536
GR   1458.6    4498.36    1458.15    4531.48    1458.00    4544.39    1457.54    4552.02    1456.00    4556.76
GR   1455.7    4557.78    1454.54    4561.02    1454.00    4562.59    1454.00    4605.58    1454.95    4629.82
GR   1456.0    4655.24    1456.33    4661.92    1456.76    4672.63    1456.93    4675.47    1457.17    4678.43
GR   1457.5    4684.77    1456.93    4728.58    1456.76    4749.58    1457.01    4757.49    1457.65    4782.78
GR   1458.0    4791.03    1459.18    4795.59    1460.00    4799.16    1461.62    4803.60    1462.00    4804.63
GR   1462.5    4805.93    1464.00    4810.36    1464.90    4812.84    1466.00    4815.95    1466.99    4818.67
GR   1468.0    4821.53    1469.43    4825.50    1469.95    4827.39    1469.68    4829.36    1468.00    4841.57
GR   1466.8    4844.22    1466.00    4846.08    1464.73    4848.95    1464.00    4850.59    1462.59    4853.77
GR   1462.0    4855.10    1460.39    4858.74    1460.00    4859.58    1459.55    4860.64    1458.00    4864.17
GR   1456.8    4866.84    1456.00    4868.69    1454.77    4871.46    1454.00    4873.20    1453.89    4874.55
GR   1454.0    4879.94    1453.00    5000.00    1452.00    5012.73    1452.37    5018.03    1454.00    5112.94
GR   1454.0    5148.06    1456.00    5152.69    1458.00    5157.26    1460.00    5161.76    1462.00    5166.34
GR   1464.0    5170.83    1466.00    5175.45    1467.53    5178.97    1468.00    5180.06    1469.67    5183.89
GR   1470.0    5184.66    1470.00    5197.62    1468.00    5202.94    1466.00    5208.26    1464.00    5213.46
GR   1463.4    5215.12    1462.00    5218.65    1460.33    5224.18    1460.00    5225.24    1459.63    5239.24
GR   1459.4    5247.72    1459.19    5284.15    1459.63    5287.69    1460.00    5297.44    1461.23    5325.09
GR   1462.0    5340.83    1463.27    5373.45    1463.76    5392.61    1463.91    5397.59    1464.00    5403.23
GR   1464.0    5404.95    1463.47    5430.53    1463.48    5446.78    1463.10    5468.14    1463.01    5472.72
GR   1462.8    5480.65    1462.48    5495.44    1462.00    5521.62    1462.00    5562.61

ET                5.1                                4826.47    5170.48
X1    11.39        88    4826.47    5170.48        520        577        548
GR   1463.4    4540.53    1462.24    4575.55    1462.00    4587.19    1461.52    4589.31    1460.82    4592.35
GR   1460.0    4595.75    1459.40    4598.25    1458.00    4604.08    1457.77    4611.59    1457.02    4638.45
GR   1456.6    4651.90    1456.25    4664.52    1456.00    4673.48    1456.00    4685.48    1457.34    4692.89
GR   1458.0    4696.00    1458.60    4698.45    1460.00    4704.69    1460.84    4725.05    1461.22    4734.45
GR   1461.5    4742.42    1461.65    4747.02    1462.00    4766.90    1462.17    4770.00    1464.00    4788.85
GR   1465.9    4795.51    1466.00    4795.86    1468.00    4802.87    1469.82    4809.24    1470.00    4809.88
GR   1470.0    4826.47    1469.00    4828.70    1468.00    4830.90    1466.98    4833.16    1466.00    4835.34
GR   1465.0    4837.62    1464.00    4839.77    1462.95    4842.10    1462.00    4844.21    1460.92    4846.60
GR   1460.0    4848.64    1458.80    4851.31    1458.00    4853.08    1456.24    4856.99    1456.00    4857.51
GR   1454.1    4861.74    1454.00    4861.94    1453.77    4869.54    1453.41    4939.48    1453.70    5000.00
GR   1454.0    5052.77    1454.00    5137.60    1454.79    5139.20    1456.00    5141.80    1457.23    5144.29
GR   1458.0    5145.86    1459.52    5148.94    1460.00    5149.91    1461.94    5153.84    1462.00    5153.96
GR   1462.2    5154.43    1464.00    5158.09    1464.41    5158.94    1466.00    5162.22    1466.71    5163.68
GR   1468.0    5166.35    1468.90    5168.21    1470.00    5170.48    1471.01    5177.47    1471.30    5178.73
GR   1471.0    5187.97    1470.52    5189.60    1470.00    5191.33    1469.06    5193.63    1468.00    5196.22
GR   1466.9    5199.00    1466.00    5201.12    1464.50    5204.79    1464.00    5205.96    1463.56    5227.10
GR   1463.3    5302.27    1463.50    5392.62    1464.00    5459.82    1464.00    5496.38    1464.34    5500.49
GR   1466.0    5520.78    1466.48    5534.57    1467.00    5553.06
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ET                 5.1                          4831.85     5174.56
X1    11.48         93    4831.85    5174.56       443         532         487
GR   1469.5    4463.12    1470.00    4514.20   1470.67     4526.19     1472.00     4532.14     1472.00     4536.27
GR   1471.2    4545.52    1472.00    4549.52   1471.16     4556.05     1470.89     4562.81     1470.59     4569.92
GR   1470.0    4586.17    1470.00    4654.03   1469.53     4674.85     1469.10     4688.69     1468.83     4699.75
GR   1468.6    4709.20    1468.27    4720.52   1468.00     4733.02     1467.35     4737.19     1467.59     4745.21
GR   1467.3    4752.17    1466.00    4781.13   1465.37     4784.00     1465.14     4788.41     1465.46     4789.08
GR   1465.9    4791.67    1466.00    4791.93   1467.84     4797.88     1468.00     4798.37     1468.75     4800.80
1
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GR   1469.1    4801.97    1469.53    4803.27   1470.00     4804.79     1472.00     4813.30     1472.00     4827.27
GR   1471.5    4828.31    1470.00    4831.85   1469.59     4832.79     1468.00     4836.43     1467.65     4837.23
GR   1466.0    4841.01    1465.73    4841.62   1464.00     4845.59     1463.85     4845.93     1462.31     4849.46
GR   1462.0    4850.16    1461.96    4850.24   1460.00     4854.68     1459.78     4855.19     1458.00     4859.04
GR   1456.8    4861.86    1456.00    4863.63   1454.62     4866.83     1454.00     4868.24     1454.00     4891.27
GR   1454.5    4982.94    1454.00    5000.00   1454.00     5139.53     1455.68     5143.25     1456.00     5143.95
GR   1457.7    5147.78    1458.00    5148.36   1459.81     5152.35     1460.00     5152.78     1461.90     5156.97
GR   1462.0    5157.19    1463.56    5160.62   1464.00     5161.59     1466.00     5165.91     1468.00     5170.24
GR   1468.3    5170.98    1470.00    5174.56   1471.57     5177.96     1472.00     5179.19     1472.00     5194.00
GR   1470.3    5199.62    1470.00    5200.65   1468.88     5204.39     1468.00     5207.39     1467.56     5217.72
GR   1466.9    5233.75    1466.58    5241.08   1466.33     5246.90     1466.40     5250.99     1466.61     5264.73
GR   1467.0    5289.91    1467.20    5306.66   1467.34     5341.05     1467.60     5361.43     1467.94     5383.99
GR   1467.8    5395.19    1467.56    5419.40   1468.00     5430.41

  END CORPS LEVEES; BEGIN BOX CHANNEL UNDER I-17

ET                 5.1                          4845.32     5152.45
X1    11.56         87    4845.32    5152.45       386         396         390
GR   1471.8    4676.86    1471.19    4685.14   1470.77     4690.44     1470.54     4693.47     1470.29     4696.28
GR   1470.3    4700.82    1470.50    4703.37   1470.83     4707.69     1471.29     4713.13     1472.00     4721.56
GR   1472.0    4845.32    1470.73    4853.22   1470.34     4856.19     1470.00     4857.83     1469.42     4859.18
GR   1468.0    4862.39    1467.55    4863.42   1466.00     4867.01     1464.74     4869.91     1464.00     4871.63
GR   1462.4    4875.29    1462.00    4876.26   1460.24     4880.32     1460.00     4880.88     1459.55     4891.07
GR   1459.2    4900.27    1459.14    4911.50   1459.18     4917.72     1459.27     4936.45     1459.28     4951.90
GR   1459.3    4956.77    1459.32    4970.56   1459.36     4977.34     1459.35     4986.98     1459.40     5000.00
GR   1459.5    5006.02    1459.50    5012.85   1459.48     5022.30     1459.43     5032.20     1459.31     5049.20
GR   1459.3    5049.41    1459.31    5049.51   1459.31     5049.72     1459.30     5060.17     1459.48     5072.34
GR   1459.5    5084.60    1459.48    5091.51   1459.47     5098.77     1459.30     5109.95     1459.40     5114.80
GR   1459.6    5117.41    1459.59    5117.63   1460.00     5124.33     1461.59     5127.25     1461.65     5127.38
GR   1462.0    5128.28    1462.29    5129.00   1462.54     5129.65     1463.39     5131.68     1464.00     5133.13
GR   1465.0    5135.40    1466.00    5137.90   1466.70     5139.56     1468.00     5142.66     1468.53     5143.93
GR   1470.0    5147.43    1470.90    5149.69   1472.00     5152.45     1472.00     5165.70     1471.55     5168.67
GR   1471.2    5170.75    1470.00    5178.38   1470.00     5225.76     1470.27     5226.00     1472.00     5227.56
GR   1472.5    5228.46    1472.76    5229.77   1472.00     5233.24     1471.71     5234.57     1471.42     5235.87
GR   1471.4    5236.02    1470.93    5237.02   1470.00     5239.41     1470.00     5268.37     1470.59     5293.04
GR   1470.9    5296.51    1471.02    5306.55

  OUTLET OF I-17 CROSSING

ET                 5.1                          4880.47     5126.63
X1    11.57         92    4880.47    5126.63        72          75          73
GR   1470.8    4670.15    1471.04    4676.02   1471.81     4692.20     1472.00     4696.83     1472.63     4707.63
GR   1472.8    4711.11    1473.05    4715.60   1473.66     4746.09     1473.57     4751.49     1473.41     4760.54
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 GR   1474.0    4769.16    1474.00    4816.39    1473.19    4827.23    1472.71    4833.86    1472.64    4834.85
 GR   1472.0    4844.37    1472.00    4861.16    1472.54    4870.52    1472.00    4880.47    1471.79    4880.62
 GR   1470.1    4881.77    1470.00    4881.79    1468.35    4882.11    1468.00    4882.18    1466.41    4882.49
 GR   1466.0    4882.57    1464.43    4882.88    1464.00    4882.96    1462.45    4883.27    1462.00    4883.35
 GR   1461.6    4896.00    1461.53    4899.52    1461.22    4909.97    1461.03    4926.96    1460.86    4934.09
 GR   1460.6    4946.27    1460.36    4961.63    1460.29    4993.04    1460.30    5000.00    1460.41    5002.11
 GR   1460.5    5010.81    1460.63    5019.07    1461.14    5020.57    1461.34    5048.98    1461.18    5074.02
 GR   1460.9    5090.68    1461.37    5103.14    1461.81    5115.32    1461.86    5116.93    1462.00    5120.67
 GR   1462.6    5120.78    1464.00    5121.06    1464.40    5121.17    1466.00    5121.48    1466.51    5121.56
 GR   1467.1    5121.69    1468.00    5121.86    1469.43    5122.14    1470.00    5122.25    1470.50    5123.25
 GR   1471.7    5125.87    1472.00    5126.63    1472.00    5154.31    1471.46    5159.70    1470.38    5170.04
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 GR   1470.4    5174.42    1470.49    5174.60    1470.77    5175.42    1472.00    5179.41    1472.00    5180.09
 GR   1471.6    5182.32    1470.00    5193.35    1470.00    5209.59    1470.38    5210.71    1471.63    5215.00
 GR   1472.0    5216.25    1472.00    5216.38    1472.00    5218.35    1471.83    5219.05    1470.00    5223.24
 GR   1470.0    5225.98    1470.22    5226.92    1470.00    5227.88    1470.00    5234.90    1470.81    5241.05
 GR   1470.8    5241.43    1471.05    5249.44    1470.99    5250.35    1470.90    5250.66    1470.72    5261.88
 GR   1471.0    5291.96    1471.60    5306.88

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

 *PROF 1

 CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

 CCHV=      .100 CEHV=      .300
 *SECNO 8.690

 3265 DIVIDED FLOW

 3280 CROSS SECTION      8.69 EXTENDED       .71 FEET

 3470 ENCROACHMENT STATIONS=     3796.6    5556.9  TYPE=      1  TARGET=     1760.280
      8.690     14.00   1378.00   1374.49       .00   1378.47       .47       .00       .00   1381.16
    38888.0       .0   38726.0     162.0        .0    7026.5     198.7        .0        .0   1379.49
       .00       .00      5.51       .82      .000      .035      .045      .000   1364.00   4045.04
    .001283       0.        0.        0.         0        13         0       .00   1389.66   5556.89

 *SECNO 8.790

 3301 HV CHANGED MORE THAN HVINS
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3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .55

3470 ENCROACHMENT STATIONS=     3855.7    5476.0  TYPE=      1  TARGET=     1620.250
     8.790     12.73   1378.73   1377.36       .00   1379.81      1.08      1.16       .18   1384.00
   38875.0        .0   38875.0        .0        .0    4665.6        .0      73.6      14.2   1380.00
       .02       .00      8.33       .00      .000      .035      .000      .000   1366.00   4134.96
   .004310      530.      539.      546.         2        14         0       .00    896.14   5031.10

*SECNO 8.930

3470 ENCROACHMENT STATIONS=     4280.0    5437.8  TYPE=      1  TARGET=     1157.800
     8.930     11.20   1381.20   1378.47       .00   1382.30      1.10      2.49       .01   1386.72
   37676.0        .0   37676.0        .0        .0    4475.5        .0     149.3      26.7   1382.80
       .04       .00      8.42       .00      .000      .035      .000      .000   1370.00   4600.73
   .002799      565.      722.      711.         2        19         0       .00    615.96   5216.70
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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 9.010

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .56

3470 ENCROACHMENT STATIONS=     4519.9    5433.5  TYPE=      1  TARGET=      913.610
     9.010      9.36   1381.55   1381.32       .00   1384.94      3.39      1.95       .69   1386.00
   37207.0        .0   37207.0        .0        .0    2519.4        .0     183.9      31.5   1389.58
       .05       .00     14.77       .00      .000      .035      .000      .000   1372.19   4836.01
   .008632      363.      430.      558.         3        15         0       .00    346.24   5182.25

*SECNO 9.080

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.75

3470 ENCROACHMENT STATIONS=     4515.3    5233.2  TYPE=      1  TARGET=      717.880
     9.080     11.88   1385.35   1381.03       .00   1386.57      1.22      1.42       .22   1388.00
   31427.0        .0   31427.0        .0        .0    3545.3        .0     209.3      34.4   1390.00
       .06       .00      8.86       .00      .000      .035      .000      .000   1373.47   4830.71
   .002006      432.      365.      165.         3        15         0       .00    349.55   5180.26
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*SECNO 9.140

3470 ENCROACHMENT STATIONS=     4525.9    5437.5  TYPE=      1  TARGET=      911.700
     9.140     12.12   1386.12   1381.16       .00   1387.18      1.06       .60       .02   1390.00
   27780.0        .0   27780.0        .0        .0    3354.4        .0     235.6      36.9   1390.00
       .07       .00      8.28       .00      .000      .035      .000      .000   1374.00   4847.42
   .001586      288.      333.      385.         2        14         0       .00    304.16   5151.58

*SECNO 9.145

3265 DIVIDED FLOW

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


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .68

3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=  1394.50 MAX ELLC=  1394.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1392.20 ELREA=      1393.10

     9.145     10.90   1385.80   1382.34       .00   1387.34      1.54       .02       .14   1394.50
   27780.0        .0   27780.0        .0        .0    2789.0        .0     236.2      36.9   1394.70
       .07       .00      9.96       .00      .000      .035      .000      .000   1374.90   5023.37
   .003437        8.        8.        8.         2        15         0       .00    277.96   5316.35

*SECNO 9.155

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=  1394.50 MAX ELLC=  1394.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1392.20 ELREA=      1393.10

     9.155     11.01   1386.11   1382.53       .00   1387.62      1.50       .27       .00   1394.50
   27780.0        .0   27780.0        .0        .0    2822.7        .0     241.4      37.4   1394.70
       .07       .00      9.84       .00      .000      .035      .000      .000   1375.10   5022.85
   .003323       80.       80.       80.         2        15         0       .00    278.98   5316.85

*SECNO 9.160
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3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.46

3470 ENCROACHMENT STATIONS=     4528.7    5445.3  TYPE=      1  TARGET=      916.610
     9.160     12.61   1386.61   1381.55       .00   1387.68      1.07       .02       .04   1390.00
   27780.0        .0   27780.0        .0        .0    3352.8        .0     241.9      37.5   1390.00
       .08       .00      8.29       .00      .000      .035      .000      .000   1374.00   4858.57
   .001554        8.        8.        8.         2        14         0       .00    298.92   5157.49


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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 9.210

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.30

3470 ENCROACHMENT STATIONS=     4732.0    5190.0  TYPE=      1  TARGET=      458.050
     9.210     11.31   1387.31   1381.46       .00   1387.89       .58       .16       .05   1439.00
   27780.0        .0   27780.0        .0        .0    4555.4        .0     267.3      39.8   1391.00
       .09       .00      6.10       .00      .000      .020      .000      .000   1376.00   4736.29
   .000294      145.      279.      355.         2        14         0       .00    429.95   5166.24

*SECNO 9.220

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4664.0    5314.1  TYPE=      1  TARGET=      650.090
     9.220      4.71   1394.71   1394.71       .00   1396.96      2.25       .03       .50   1445.00
   27780.0        .0   27780.0        .0        .0    2305.7        .0     270.3      40.2   1397.00
       .09       .00     12.05       .00      .000      .035      .000      .000   1390.00   4666.58
   .010999      122.       39.      104.         0        18         0       .00    517.02   5183.60

*SECNO 9.250
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4573.0    5304.5  TYPE=      1  TARGET=      731.600
     9.250      5.01   1397.01   1397.01       .00   1398.86      1.85      1.53       .04   1394.00
   27780.0    2633.6   25146.4        .0     386.6    2234.9        .0     278.4      42.3   1398.64
       .09      6.81     11.25       .00      .040      .035      .000      .000   1392.00   4572.95
   .010658      155.      141.       82.         0         8         0       .00    708.17   5281.12
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*SECNO 9.300

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

3470 ENCROACHMENT STATIONS=     4441.5    5290.2  TYPE=      1  TARGET=      848.690
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

     9.300       6.33    1399.33    1398.63        .00    1400.85       1.53       1.96        .03    1395.00
   39000.0     8658.8    30341.2         .0     1204.3     2873.5         .0      298.5       46.9    1399.50
       .10       7.19      10.56        .00       .040       .035       .000       .000    1393.00    4441.50
   .006038       262.       261.       282.          2          8          0        .00     839.07    5280.57

*SECNO 9.350
3280 CROSS SECTION      9.35 EXTENDED       .03 FEET

3470 ENCROACHMENT STATIONS=     4252.4    5287.8  TYPE=      1  TARGET=     1035.390
     9.350       9.03    1401.03    1399.77        .00    1402.15       1.12       1.26        .04    1399.00
   39000.0     7419.3    31570.3       10.4     1505.2     3456.6        6.3      327.4       53.0    1400.00
       .11       4.93       9.13       1.65       .040       .035       .035       .000    1392.00    4252.38
   .003537       291.       274.       274.          3         11          0        .00    1035.39    5287.77

*SECNO 9.420

3301 HV CHANGED MORE THAN HVINS

     9.420       9.29    1402.29    1401.85        .00    1404.15       1.85       1.77        .22    1401.00
   39000.0     2293.9    36705.9         .1      582.3     3271.6         .3      367.9       61.8    1402.00
       .12       3.94      11.22        .53       .040       .035       .035       .000    1393.00    4318.72
   .005753       400.       399.       402.          3          8          0        .00     900.72    5219.44

*SECNO 9.450

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     9.450      10.03    1403.03    1403.03        .00    1405.13       2.10        .87        .07    1401.70
   39000.0     2709.4    30053.8     6236.9      486.9     2663.1      422.0      377.7       64.0    1394.00
       .12       5.57      11.29      14.78       .040       .040       .040       .000    1393.00    4388.62
   .010000        93.       118.       126.          0          8          0        .00     879.13    5269.11

*SECNO 9.540
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3470 ENCROACHMENT STATIONS=     4663.4    5177.0  TYPE=      1  TARGET=      513.650
     9.540     10.19   1407.19   1405.70       .00   1409.08      1.89      3.93       .02   1408.00
   39000.0        .0   39000.0        .0        .0    3531.0        .0     418.0      71.6 100000.00
       .13       .00     11.04       .00      .000      .040      .000      .000   1397.00   4689.53
   .006382      410.      500.      515.         2        15         0       .00    487.47   5177.00
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*SECNO 9.650

3470 ENCROACHMENT STATIONS=     4736.4    5231.9  TYPE=      1  TARGET=      495.470
     9.650      8.57   1410.57   1408.58       .00   1412.32      1.75      3.22       .01   1412.00
   39000.0        .0   39000.0        .0        .0    3673.8        .0     464.1      77.7 100000.00
       .15       .00     10.62       .00      .000      .040      .000      .000   1402.00   4759.96
   .005242      475.      558.      503.         2        14         0       .00    466.86   5226.83

*SECNO 9.700

3470 ENCROACHMENT STATIONS=     4752.7    5283.9  TYPE=      1  TARGET=      531.160
     9.700      7.86   1411.86   1410.10       .00   1413.53      1.67      1.20       .01   1412.00
   39000.0        .0   39000.0        .0        .0    3761.4        .0     486.0      80.6   1412.00
       .16       .00     10.37       .00      .000      .035      .000      .000   1404.00   4757.73
   .004224      253.      256.      259.         2        15         0       .00    514.78   5272.51

*SECNO 9.730

3470 ENCROACHMENT STATIONS=     4762.0    5298.7  TYPE=      1  TARGET=      536.690
     9.730      8.83   1412.83   1410.11       .00   1414.14      1.31       .58       .04   1414.00
   39000.0        .0   38997.0       3.0        .0    4237.6       2.4     501.5      82.6   1412.00
       .16       .00      9.20      1.25      .000      .035      .035      .000   1404.00   4767.99
   .002855      187.      169.      151.         2        15         0       .00    522.64   5290.63

*SECNO 9.800

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS=     4698.4    5217.7  TYPE=      1  TARGET=      519.300
     9.800      7.42   1413.42   1412.91       .00   1416.18      2.76      1.61       .43   1416.00
   39000.0        .0   39000.0        .0        .0    2923.9        .0     531.5      86.6   1414.00
       .17       .00     13.34       .00      .000      .035      .000      .000   1406.00   4775.48
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   .007657      383.      365.      349.         3        15         0       .00    428.31   5203.78

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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 9.890

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=     4678.5    5167.5  TYPE=      1  TARGET=      488.990
     9.890     10.91   1416.91   1415.10       .00   1419.14      2.23      2.90       .05   1420.00
   39000.0        .0   39000.0        .0        .0   3255.5        .0     566.6      91.2   1418.00
       .18       .00     11.98       .00      .000      .035      .000      .000   1406.00   4775.54
   .004620      509.      495.      484.         3        11         0       .00    383.14   5158.68

 *SECNO 9.980

 3470 ENCROACHMENT STATIONS=     4813.5    5284.1  TYPE=      1  TARGET=      470.600
     9.980      9.25   1419.25   1417.47       .00   1421.32      2.07      2.17       .02   1428.00
   39000.0        .0   39000.0        .0        .0   3377.5        .0     602.8      95.5   1420.00
       .19       .00     11.55       .00      .000      .035      .000      .000   1410.00   4856.10
   .004527      462.      475.      469.         2        14         0       .00    413.94   5270.04

 *SECNO 10.080

 3470 ENCROACHMENT STATIONS=     4840.6    5275.3  TYPE=      1  TARGET=      434.730
    10.080      9.59   1421.59   1420.21       .00   1423.90      2.31      2.50       .07   1426.00
   39000.0        .0   39000.0        .0        .0   3196.8        .0     641.4     100.3   1424.00
       .20       .00     12.20       .00      .000      .035      .000      .000   1412.00   4855.91
   .005312      508.      511.      514.         0        11         0       .00    406.99   5262.90

 *SECNO 10.160

 3470 ENCROACHMENT STATIONS=     4784.9    5288.3  TYPE=      1  TARGET=      503.410
    10.160      8.09   1424.09   1422.72       .00   1426.19      2.10      2.27       .02   1426.00
   39000.0        .0   39000.0        .0        .0   3356.3        .0     673.7     104.6   1426.00
       .21       .00     11.62       .00      .000      .035      .000      .000   1416.00   4805.77
   .005236      447.      430.      418.         2        19         0       .00    454.79   5260.56

 *SECNO 10.250

 3470 ENCROACHMENT STATIONS=     4772.9    5313.0  TYPE=      1  TARGET=      540.110
    10.250      6.71   1426.71   1426.31       .00   1429.30      2.59      2.96       .15   1429.70
   39000.0        .0   39000.0        .0        .0   3020.7        .0     707.4     109.6 100000.00
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      .22        .00      12.91        .00       .000       .035       .000       .000   1420.00   4791.56
  .008124       496.       460.       420.          2         15          0        .00    486.32   5277.88

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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 10.330
3280 CROSS SECTION     10.33 EXTENDED       .13 FEET

3470 ENCROACHMENT STATIONS=     4766.4    5272.0  TYPE=      1  TARGET=      505.590
   10.330       8.13   1430.13   1429.33       .00   1432.58       2.45       3.27        .01   1435.17
  39000.0         .0   39000.0        .0        .0    3105.2         .0      738.6      114.3   1434.00
      .23        .00     12.56        .00       .000       .035       .000       .000   1422.00   4802.19
  .006696       519.       444.       373.          3          8          0        .00    450.35   5252.54

*SECNO 10.340
3280 CROSS SECTION     10.34 EXTENDED       .57 FEET

3470 ENCROACHMENT STATIONS=     4756.9    5252.6  TYPE=      1  TARGET=      495.720
   10.340       8.57   1430.57   1429.81       .00   1433.09       2.53        .49        .02   1435.00
  39000.0         .0   39000.0        .0        .0    3057.7         .0      743.8      115.1   1434.00
      .24        .00     12.75        .00       .000       .035       .000       .000   1422.00   4792.27
  .006771       104.        73.        42.          2          8          0        .00    436.80   5229.07

*SECNO 10.380

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4823.2    5272.0  TYPE=      1  TARGET=      448.790
   10.380       7.33   1431.33   1431.33       .00   1434.50       3.17       1.13        .19   1435.82
  39000.0         .0   39000.0        .0        .0    2728.3         .0      754.5      116.7 100000.00
      .24        .00     14.29        .00       .000       .030       .000       .000   1424.00   4841.32
  .007208       173.       162.       143.          0         11          0        .00    430.68   5272.00

*SECNO 10.410
3280 CROSS SECTION     10.41 EXTENDED      4.66 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4783.1    5262.7  TYPE=      1  TARGET=      479.660
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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

 10.410      6.66    1434.66    1434.66        .00    1437.76       3.11       1.44        .01    1436.00
39000.0        .0    39000.0        .0         .0     2756.2         .0      765.3      118.4    1436.00
   .24        .00      14.15        .00       .000       .035       .000       .000    1428.00    4797.50
.009916      198.       171.       142.          0         11          0        .00     448.93    5246.44

*SECNO 10.420
3280 CROSS SECTION     10.42 EXTENDED      6.39 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.48

3470 ENCROACHMENT STATIONS=     4758.8    5239.4  TYPE=      1  TARGET=      480.630
 10.420      10.40    1436.40    1434.71        .00    1438.30       1.90        .41        .12    1436.00
39000.0        8.0    38992.0        .0        5.3     3521.5         .0      769.9      119.1    1438.00
   .24       1.51      11.07        .00       .035       .035       .000       .000    1426.00    4758.79
.004553       70.        64.        58.          4         11          0        .00     474.70    5233.48

*SECNO 10.510

3470 ENCROACHMENT STATIONS=     4717.3    5219.5  TYPE=      1  TARGET=      502.160
 10.510      42.61    1438.61    1437.03        .00    1440.72       2.11       2.36        .06    1440.00
39000.0        .0    39000.0        .0         .0     3346.3         .0      807.1      124.2    1440.00
   .25        .00      11.65        .00       .000       .035       .000       .000    1396.00    4726.81
.005501      439.       472.       487.          3         15          0        .00     468.40    5195.21

*SECNO 10.620

3470 ENCROACHMENT STATIONS=     4664.9    5132.6  TYPE=      1  TARGET=      467.660
 10.620      49.81    1441.81    1440.35        .00    1444.20       2.39       3.40        .08    1444.00
39000.0        .0    39000.0        .0         .0     3143.4         .0      851.5      130.3    1444.00
   .27        .00      12.41        .00       .000       .035       .000       .000    1392.00    4688.49
.005909      535.       596.       618.          2         17          0        .00     422.02    5110.51

*SECNO 10.700
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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


3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     4748.1    5211.3  TYPE=      1  TARGET=      463.190
    10.700     10.16   1444.16   1444.03       .00   1447.38      3.22       2.93        .25   1446.20
   39000.0        .0   39000.0        .0        .0    2707.8        .0      878.5      134.1   1446.48
       .28       .00     14.40       .00      .000      .035      .000       .000    1434.00   4766.96
   .009224      390.      402.      382.         2        21         0        .00     406.49   5173.45

*SECNO 10.830
3280 CROSS SECTION     10.83 EXTENDED      6.36 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     4782.3    5310.0  TYPE=      1  TARGET=      527.740
    10.830     12.36   1450.36   1448.93       .00   1452.32      1.95       4.81        .13   1452.00
   39000.0        .0   39000.0        .0        .0    3476.2        .0      929.4      141.5   1452.00
       .29       .00     11.22       .00      .000      .035      .000       .000    1438.00   4807.00
   .005100      642.      717.      704.         2         8         0        .00     485.67   5292.67

*SECNO 10.930
3280 CROSS SECTION     10.93 EXTENDED      6.96 FEET

3470 ENCROACHMENT STATIONS=     4766.7    5290.0  TYPE=      1  TARGET=      523.260
    10.930     12.96   1452.96   1451.39       .00   1454.89      1.94       2.57        .00   1454.00
   39000.0        .0   39000.0        .0        .0    3493.4        .0      970.7      147.1   1455.10
       .31       .00     11.16       .00      .000      .035      .000       .000    1440.00   4796.08
   .004871      456.      516.      557.         3        15         0        .00     475.20   5271.29

*SECNO 11.030
3280 CROSS SECTION     11.03 EXTENDED      1.58 FEET

3301 HV CHANGED MORE THAN HVINS
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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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3470 ENCROACHMENT STATIONS=     4581.4    5120.8  TYPE=      1  TARGET=      539.400
   11.030      13.58   1455.58   1453.00       .00   1456.98      1.40      2.03       .05   1460.00
  39000.0         .0   39000.0        .0        .0    4113.8        .0    1016.6     153.1 100000.00
      .32        .00      9.48       .00      .000      .035      .000      .000   1442.00   4615.31
  .003149       506.      525.      504.         2        15         0       .00    505.52   5120.83


*SECNO 11.140
3280 CROSS SECTION     11.14 EXTENDED      1.62 FEET


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4762.0    5149.9  TYPE=      1  TARGET=      387.910
   11.140       9.62   1457.62   1457.62       .00   1461.19      3.57      3.11       .65   1452.00
  39000.0         .0   39000.0        .0        .0    2572.7        .0    1063.1     159.1 100000.00
      .33        .00     15.16       .00      .000      .035      .000      .000   1448.00   4762.00
  .009806       606.      606.      610.         0        19         0       .00    368.24   5130.24


*SECNO 11.190
3280 CROSS SECTION     11.19 EXTENDED      4.38 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4825.1    5165.9  TYPE=      1  TARGET=      340.840
   11.190       8.56   1460.56   1460.56       .00   1464.54      3.99      1.12       .13   1466.00
  39000.0         .0   39000.0        .0        .0    2434.4        .0    1076.0     160.9   1466.00
      .34        .00     16.02       .00      .000      .020      .000      .000   1452.00   4839.01
  .003003       277.      225.      212.         0        11         0       .00    308.90   5147.91


*SECNO 11.290
3280 CROSS SECTION     11.29 EXTENDED       .87 FEET


3301 HV CHANGED MORE THAN HVINS

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


3470 ENCROACHMENT STATIONS=     4827.4    5184.7  TYPE=      1  TARGET=      357.270
   11.290      10.88   1462.88   1461.79       .00   1465.93      3.05      1.29       .09   1469.95
  39000.0         .0   39000.0        .0        .0    2784.2        .0    1108.1     164.7 100000.00
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      .35       .00     14.01       .00      .000      .020      .000      .000   1452.00   4853.13
  .001977      486.      536.      591.         3         8         0       .00    315.16   5168.30

*SECNO 11.390

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     4826.5    5170.5  TYPE=      1  TARGET=      344.010
   11.390     11.17   1464.58   1462.10       .00   1466.85      2.28       .85       .08   1470.00
  39000.0        .0   39000.0        .0        .0    3220.8        .0    1145.9     168.7 100000.00
      .36       .00     12.11       .00      .000      .020      .000      .000   1453.41   4838.52
  .001250      520.      548.      577.         2        15         0       .00    320.78   5159.30

*SECNO 11.480

3470 ENCROACHMENT STATIONS=     4831.9    5174.6  TYPE=      1  TARGET=      342.710
   11.480     11.32   1465.32   1462.48       .00   1467.45      2.13       .58       .01   1470.00
  39000.0        .0   39000.0        .0        .0    3329.2        .0    1182.5     172.3 100000.00
      .37       .00     11.71       .00      .000      .020      .000      .000   1454.00   4842.57
  .001125      443.      487.      532.         2        15         0       .00    321.86   5164.43

*SECNO 11.560

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4845.3    5152.5  TYPE=      1  TARGET=      307.130
   11.560      9.29   1468.43   1468.43       .00   1472.66      4.24       .67       .63   1472.00
  39000.0        .0   39000.0        .0        .0    2361.1        .0    1208.0     175.0 100000.00
      .38       .00     16.52       .00      .000      .020      .000      .000   1459.14   4861.43
  .002959      386.      390.      396.         0        15         0       .00    282.25   5143.68

1
   07OCT03      22:41:37                                                                          PAGE    30

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

*SECNO 11.570
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4880.5    5126.6  TYPE=      1  TARGET=      246.160
   11.570     10.10   1470.39   1470.39       .00   1475.08      4.69       .22       .14   1472.00
  39000.0        .0   39000.0        .0        .0    2243.6        .0    1211.8     175.5 100000.00
      .38       .00     17.38       .00      .000      .020      .000      .000   1460.29   4881.57
```

.003014 72. 73. 75. 0 8 0 .00 241.45 5123.02

1
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THIS RUN EXECUTED 07OCT03 22:41:38

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

IGINAL MODEL SKNKLOMR.IH

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
	8.690	38888.00	1378.00	1374.49	5.51	14.00	1389.66	7225.27	.37	4045.04	5556.89
*	8.790	38875.00	1378.73	1377.36	8.33	12.73	896.14	4665.65	.64	4134.96	5031.10
	8.930	37676.00	1381.20	1378.47	8.42	11.20	615.96	4475.54	.55	4600.73	5216.70
*	9.010	37207.00	1381.55	1381.32	14.77	9.36	346.24	2519.44	.96	4836.01	5182.25
*	9.080	31427.00	1385.35	1381.03	8.86	11.88	349.55	3545.34	.49	4830.71	5180.26
	9.140	27780.00	1386.12	1381.16	8.28	12.12	304.16	3354.43	.44	4847.42	5151.58
*	9.145	27780.00	1385.80	1382.34	9.96	10.90	277.96	2788.99	.57	5023.37	5316.35
	9.155	27780.00	1386.11	1382.53	9.84	11.01	278.98	2822.72	.56	5022.85	5316.85
*	9.160	27780.00	1386.61	1381.55	8.29	12.61	298.92	3352.84	.44	4858.57	5157.49
*	9.210	27780.00	1387.31	1381.46	6.10	11.31	429.95	4555.37	.33	4736.29	5166.24
*	9.220	27780.00	1394.71	1394.71	12.05	4.71	517.02	2305.71	1.01	4666.58	5183.60
*	9.250	27780.00	1397.01	1397.01	11.25	5.01	708.17	2621.46	.98	4572.95	5281.12
*	9.300	39000.00	1399.33	1398.63	10.56	6.33	839.07	4077.78	.78	4441.50	5280.57
	9.350	39000.00	1401.03	1399.77	9.13	9.03	1035.39	4968.11	.61	4252.38	5287.77
	9.420	39000.00	1402.29	1401.85	11.22	9.29	900.72	3854.21	.77	4318.72	5219.44

*	9.450	39000.00	1403.03	1403.03	11.29	10.03	879.13	3571.95	.86	4388.62	5269.11
	9.540	39000.00	1407.19	1405.70	11.04	10.19	487.47	3531.03	.72	4689.53	5177.00

1

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	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
	9.650	39000.00	1410.57	1408.58	10.62	8.57	466.86	3673.84	.67	4759.96	5226.83
	9.700	39000.00	1411.86	1410.10	10.37	7.86	514.78	3761.41	.68	4757.73	5272.51
	9.730	39000.00	1412.83	1410.11	9.20	8.83	522.64	4239.95	.57	4767.99	5290.63
*	9.800	39000.00	1413.42	1412.91	13.34	7.42	428.31	2923.88	.90	4775.48	5203.78
	9.890	39000.00	1416.91	1415.10	11.98	10.91	383.14	3255.50	.72	4775.54	5158.68
	9.980	39000.00	1419.25	1417.47	11.55	9.25	413.94	3377.51	.71	4856.10	5270.04
	10.080	39000.00	1421.59	1420.21	12.20	9.59	406.99	3196.75	.77	4855.91	5262.90
	10.160	39000.00	1424.09	1422.72	11.62	8.09	454.79	3356.29	.75	4805.77	5260.56
	10.250	39000.00	1426.71	1426.31	12.91	6.71	486.32	3020.73	.91	4791.56	5277.88
	10.330	39000.00	1430.13	1429.33	12.56	8.13	450.35	3105.21	.84	4802.19	5252.54
	10.340	39000.00	1430.57	1429.81	12.75	8.57	436.80	3057.69	.85	4792.27	5229.07
*	10.380	39000.00	1431.33	1431.33	14.29	7.33	430.68	2728.34	1.00	4841.32	5272.00
*	10.410	39000.00	1434.66	1434.66	14.15	6.66	448.93	2756.23	1.01	4797.50	5246.44
*	10.420	39000.00	1436.40	1434.71	11.07	10.40	474.70	3526.77	.71	4758.79	5233.48
	10.510	39000.00	1438.61	1437.03	11.65	42.61	468.40	3346.32	.77	4726.81	5195.21
	10.620	39000.00	1441.81	1440.35	12.41	49.81	422.02	3143.43	.80	4688.49	5110.51
	10.700	39000.00	1444.16	1444.03	14.40	10.16	406.49	2707.75	.98	4766.96	5173.45
	10.830	39000.00	1450.36	1448.93	11.22	12.36	485.67	3476.25	.74	4807.00	5292.67
	10.930	39000.00	1452.96	1451.39	11.16	12.96	475.20	3493.44	.73	4796.08	5271.29
	11.030	39000.00	1455.58	1453.00	9.48	13.58	505.52	4113.78	.59	4615.31	5120.83
*	11.140	39000.00	1457.62	1457.62	15.16	9.62	368.24	2572.74	1.01	4762.00	5130.24
*	11.190	39000.00	1460.56	1460.56	16.02	8.56	308.90	2434.44	1.01	4839.01	5147.91
	11.290	39000.00	1462.88	1461.79	14.01	10.88	315.16	2784.22	.83	4853.13	5168.30
	11.390	39000.00	1464.58	1462.10	12.11	11.17	320.78	3220.78	.67	4838.52	5159.30

	11.480	39000.00	1465.32	1462.48	11.71	11.32	321.86	3329.18	.64	4842.57	5164.43
*	11.560	39000.00	1468.43	1468.43	16.52	9.29	282.25	2361.09	1.01	4861.43	5143.68

1
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	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
*	11.570	39000.00	1470.39	1470.39	17.38	10.10	241.45	2243.58	1.00	4881.57	5123.02

1
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SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=      8.790  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.010  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.080  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.145  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.160  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.210  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.220  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.220  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      9.250  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.250  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.300  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.450  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.450  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.800  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     10.380  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.380  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     10.410  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.410  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     10.420  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     11.140  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.140  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     11.190  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.190  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     11.560  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.560  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     11.570  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.570  PROFILE=  1  MINIMUM SPECIFIC ENERGY
```

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    06OCT03    TIME   15:22:16 *
 *****************************************
```

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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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1

06OCT03 15:22:16 PAGE 1

THIS RUN EXECUTED 06OCT03 15:22:16

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

 Version   4.6.2;  May 1991
*************************************
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```
  Combined Split Flow Model
  WEIR IS SET ALONG HIGH GROUND RIDGE WEST OF 35TH AVENUE AND
  SOUTH OF PINNACLE PEAK ROAD

SPLIT FLOW BEING PERFORMED

SF

JC     SPLIT FLOW ANALYSIS DUE TO WEIR ACTION
JP     0     0.5     100       1       0

TW      RIGHT BANK WEIR BETWEEN SECTION 8.55 AND 8.57
WS     2    8.55    8.57      -1    2.65
WC        1381.9      97 1380.27

TW      RIGHT BANK WEIR BETWEEN SECTION 8.57 AND 8.58
WS     2    8.57    8.58      -1    2.65
WC       1380.27      92 1378.96
```

```
TW      RIGHT BANK WEIR BETWEEN SECTION 8.58 AND 8.60
WS     2    8.58    8.60      -1    2.65
WC       1378.96      80 1378.76

TW      RIGHT BANK WEIR BETWEEN SECTION 8.60 AND 8.62
WS     2    8.60    8.62      -1    2.65
WC       1378.76     128  1379.5

TW      RIGHT BANK WEIR BETWEEN SECTION 8.62 AND 8.64
WS     2    8.62    8.64      -1    2.65
WC        1379.5     100 1379.87

TW      RIGHT BANK WEIR BETWEEN SECTION 8.64 AND 8.66
WS     2    8.64    8.66      -1    2.65
WC       1379.87     100 1380.23

TW      RIGHT BANK WEIR BETWEEN SECTION 8.66 AND 8.68
WS     2    8.66    8.68      -1    2.65
WC       1380.23     100 1380.64

TW      RIGHT BANK WEIR BETWEEN SECTION 8.68 AND 8.70
WS     2    8.68    8.70      -1    2.65
WC       1380.64     100 1381.27
1
   06OCT03      15:22:16
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```
TW      RIGHT BANK WEIR BETWEEN SECTION 8.70 AND 8.72
WS     2    8.70    8.72      -1    2.65
WC       1381.27     100  1381.9

TW      RIGHT BANK WEIR BETWEEN SECTION 8.72 AND 8.74
WS     2    8.72    8.74      -1    2.65
WC        1381.9     100 1382.55

TW      RIGHT BANK WEIR BETWEEN SECTION 8.74 AND 8.77
WS     2    8.74    8.77      -1    2.65
WC       1382.55     200 1384.48

TW      RIGHT BANK WEIR BETWEEN SECTION 8.77 AND 8.79
WS     2    8.77    8.79      -1    2.65
WC       1384.48      81 1385.31

TW      RIGHT BANK WEIR BETWEEN SECTION 8.79 AND 8.80
WS     2    8.79    8.80      -1    2.65
WC       1385.31      49 1385.75

TW      RIGHT BANK WEIR BETWEEN SECTION 8.80 AND 8.81
WS     2    8.80    8.81      -1    2.65
WC       1385.75     105    1386

TW      RIGHT BANK WEIR BETWEEN SECTION 8.81 AND 8.86
WS     2    8.81    8.86      -1    2.65
WC          1386     266    1386

TW      RIGHT BANK WEIR BETWEEN SECTION 8.86 AND 8.89
```

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WS      2    8.86    8.89      -1    2.65
WC           1386     175    1386

TW      RIGHT BANK WEIR BETWEEN SECTION 8.89 AND 8.93
WS      2    8.89    8.93      -1    2.65
WC           1386     217    1387

TW      RIGHT BANK WEIR BETWEEN SECTION 8.93 AND 9.00
WS      2    8.93    9.00      -1    2.65
WC           1387     370    1390

TW      RIGHT BANK WEIR BETWEEN SECTION 9.00 AND 9.01
WS      2    9.00    9.01      -1    2.65
WC           1390      76    1390

TW      RIGHT BANK WEIR BETWEEN SECTION 9.01 AND 9.04
WS      2    9.01    9.04      -1    2.65
WC           1390     137    1390

TW      RIGHT BANK WEIR BETWEEN SECTION 9.04 AND 9.08
WS      2    9.04    9.08      -1    2.65
WC           1390     200    1391
1
   06OCT03      15:22:16                                                                    PAGE    3


TW      RIGHT BANK WEIR BETWEEN SECTION 9.08 AND 9.10
WS      2    9.08    9.10      -1    2.65
WC           1391     137  1392.0
1
   06OCT03      15:22:16                                                                    PAGE    4


T1      COMBINED CVL (North and South) AND TETRA TECH'S EAST SPLIT FLOW MODEL
T2      INPUT FILE: bktbas.dat
T3      EMCON 9/22/03 by: DNS
T4      CVL'S X-SECTIONS (8.55 - 9.15) HAVE BEEN RE-NAMED TO MATCH
T5      TETRA TECH'S RIVER MILE NOMENCLATURE
T6      BOUNDARY CONDITIONS WERE TAKEN FROM TETRA TECH'S EAST SPLIT FLOW MODEL
T7      FLOWRATE WAS DETERMINED BY MATCHING WSEL AT RIVER MILE 9.25 IN THE
T8      MAINBAS.DAT MODEL.


J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0        2                          0.007                   0         0

QT        1     11220
NC    0.040     0.040     0.040       0.1       0.3
X1     8.55        10      9965     10072         0         0         0
GR   1381.7      9915    1380.9      9965   1378.36   9979.42   1377.36   9985.03      1374   9999.67
GR   1375.0  10003.77    1376.0  10012.77      1378  10046.83    1380.0  10052.41    1381.9     10072
  CVL STATION 3

X1     8.57         9      9975     10062        97        97        97
GR   1382.2      9905    1381.0   9957.55      1381      9968    1380.0      9975   1374.69   9995.58
```

```
GR     1376    9998.47       1376   10001.60      1378.0    10022.35     1380.27       10062
  CVL STATION 100

X1     8.58         14    9973.96      10030          92          92          92
X3       10
GR   1382.2       9875    1381.34    9925.30      1380.0     9935.97      1380.0     9950.56     1378.72     9963.92
GR   1378.9    9973.96     1378.0    9979.62     1377.29     9984.99     1375.95     9990.91      1376.4     9997.51
GR   1376.4   10003.79     1376.7   10009.69      1378.0    10014.44     1378.96       10030
  DOWNSTREAM SIDE OF CULVERTS - CVL STATION 192

SC    3.013         .5        2.7                      2           0          80         2.1      1376.5      1376.4
X1     8.60         11    9970.83      10030          80          80          80
X2                                     2                 1380.5
X3       10
BT        3     9973.9     1381.3                 10004     1380.5                 10030     1378.82
GR     1383    9924.75     1382.3    9925.90      1382.3     9970.83      1381.3      9973.9        1378     9983.49
GR   1376.5    9991.93     1376.5    9997.91      1376.5    10001.78      1376.7       10004      1378.0    10013.25
GR   1378.7      10030
  UPSTREAM SIDE OF CULVERTS - CVL STATION 272

X1     8.62          6    9983.94      10037         128         128         128
GR   1382.5    9924.19     1382.8       9970     1378.00     9983.94     1377.11     9994.73     1377.11    10004.77
GR   1379.5      10037
  CVL STATION 400

X1     8.64          4       9970      10028         100         100         100
GR   1382.5    9923.75     1381.7       9970     1377.62       10000     1379.87       10028
  SOUTH OF HANCE BOULIVARD - CVL STATION 500
1
   06OCT03      15:22:16                                                                                    PAGE     5


X1     8.66          5    9931.53   10029.76         100         100         100
GR   1382.0    9924.19     1381.3    9931.53     1380.68        9970     1378.13       10000     1380.23    10029.76
  CVL STATION 600

X1     8.68          5       9972      10031         100         100         100
GR   1382.2    9927.05    1381.05       9972     1378.00     9990.92     1378.92       10000     1380.64       10031
  CVL STATION 700

X1     8.70          5      9984.5      10033         100         100         100
GR   1382.2       9910    1381.35       9960     1379.59     9984.50      1379.8       10000     1381.27       10033
  CVL STATION 800

X1     8.72          4    9983.26      10030         100         100         100
GR   1383.2    9925.99       1383    9983.26      1380.9       10000     1381.9       10030
  CVL STATION 900

X1     8.74          5       9982   10029.18         100         100         100
GR   1385.3    9927.33       1385    9957.83        1385        9982        1382       10000     1382.55    10029.18
  CVL STATION 1000

X1     8.77          6       9989      10017         200         200         200
GR   1385.6    9936.14     1385.4       9989     1383.6        9995     1383.6       10005      1384.4       10017
GR   1384.4      10040
  CVL STATION 1200
```

```
NH        1       .016      10048
X1     8.79          3      10011      10048         81         81         81
GR   1385.3       9963    1385.99      10011    1385.31      10048
  SOUTH OF PARKSIDE LANE - TETRA TECH STATION MATCH - CVL STATION 1281

NH        1       .016      10052
X1     8.80          3      10015      10052         49         49         49
GR   1385.1       9966    1385.79      10015    1385.75      10052
  CVL STATION 1330

NH        1       .016   10100.74
X1     8.81         15       9980   10100.74         20        105         29
GR     1388       9725       1388    9758.88       1388    9773.41       1388    9847.74       1388    9873.96
GR     1388    9898.54       1388    9920.62       1388    9949.55       1388    9959.31       1388       9980
GR   1384.7   10003.87    1385.00   10035.11    1385.00   10042.29    1385.00   10069.88       1386   10100.74
  CVL STATION 1359

NH        1        .03   10079.07
X1     8.86         23    9874.59   10079.07        266        266        266
X3                              9700    1386.67
GR   1387.5       9386       1387       9433       1386       9471       1385       9491       1385       9548
GR     1386       9574    1386.32    9597.38    1386.63    9626.66    1386.67    9713.22     1386.5    9774.68
GR   1386.3    9822.26       1386    9874.59    1385.69    9893.32    1385.53    9914.97    1385.01    9952.81
GR   1383.8    9969.32       1383    9981.35       1382    9992.12       1382   10009.37       1383   10023.87
GR     1384   10039.45    1384.73   10053.84       1386   10079.07
  CVL STATION 1625
1
   06OCT03      15:22:16                                                                                PAGE     6


NH        1        .03   10065.05
X1     8.89         23    9942.52   10065.05        175        175        175
X3                              9601       1388
GR   1390.3    9289.97    1390.00    9326.96    1390.00    9340.05    1389.00    9373.44    1388.00    9413.37
GR   1387.0    9482.88    1386.31    9501.52    1386.29    9513.91    1386.48    9523.04    1387.00    9535.79
GR   1387.9    9585.07    1387.99    9601.04    1387.63    9687.08    1387.38    9757.74    1387.00    9820.33
GR   1386.0    9942.52    1385.00    9958.61    1384.00    9970.67    1382.00    9991.61    1382.00   10009.81
GR   1383.4   10022.67    1385.01   10041.63    1386.00   10065.05
  CVL STATION 1800

NH        2        .03   10044.82       .016   10046.99
X1     8.93         38    9968.52   10044.82        217        217        217
GR   1397.0    9120.13    1397.00    9134.51    1396.00    9153.49    1395.00    9155.41    1395.00    9162.29
GR   1394.6    9192.51    1394.00    9229.41    1393.57    9241.75    1393.00    9275.34    1393.00    9277.60
GR   1392.0    9287.63    1391.00    9310.35    1391.00    9342.55    1390.40    9360.99    1389.80    9371.35
GR   1389.0    9379.50    1388.95    9385.38    1388.00    9472.01    1388.00    9480.92    1387.36    9496.67
GR   1387.1    9525.25    1387.24    9574.28    1387.23    9658.54    1386.96    9737.74    1386.48    9823.34
GR   1386.0    9894.09    1386.00    9923.16    1387.00    9954.39    1387.00    9968.52    1385.00    9988.91
GR   1384.9    9993.20    1385.00   10003.66    1384.67   10006.10    1385.00   10012.74    1385.00   10019.94
GR   1386.0   10038.35    1387.00   10044.82    1386.92   10046.99
  CVL STATION 2017

NH        2        .03   10035.65       .016       10040
X1     9.00         28    9968.22   10035.65         370        370        370
X3       10
```

```
GR    1394.9    9185.54    1394.37    9231.03    1394.00    9248.91    1393.20    9263.39    1392.67    9275.80
GR    1392.7    9294.12    1392.01    9300.06    1391.95    9320.94    1391.32    9344.61    1391.00    9357.15
GR    1391.0    9370.24    1390.51    9444.59    1390.00    9553.58    1389.69    9607.41    1389.37    9693.57
GR    1389.0    9791.14    1388.57    9847.63    1388.45    9912.41    1388.51    9946.72    1388.54    9968.22
GR    1388.0    9979.69    1385.93    9988.45    1385.00    9993.90    1385.03   10004.08    1386.05   10009.74
GR    1389.0   10021.77    1390.00   10035.65       1390      10040
  CVL STATION 2387

SC     2.013         .5        2.7                    3          0         75        2.1    1386.02       1385
NH         2        .03   10037.29       .016      10040
X1      9.01         33    9947.35   10037.29         76         76         76
X2                                        2       1389.89
X3        10
BT         4     9896.9    1389.37               9930.05    1389.98               10006.96    1390.27
BT    10037.    1389.89
GR    1397.8    9185.54    1397.00    9201.36    1397.00    9206.41    1396.00    9206.73    1396.00    9219.83
GR    1395.4    9242.50    1395.00    9252.28    1393.89    9317.37    1393.16    9347.04    1392.00    9381.56
GR    1391.4    9405.92    1391.00    9432.55    1391.00    9465.97    1390.72    9533.86    1390.59    9603.95
GR    1390.2    9682.01    1389.87    9740.25    1389.67    9804.11    1389.45    9885.39    1389.39    9896.69
GR    1390.0    9930.05    1390.05    9936.10    1391.00    9938.65    1391.00    9944.23    1391.22    9947.35
GR    1390.8    9956.07    1390.00    9963.63    1389.00    9982.55    1386.02    9994.89    1386.02   10006.96
GR    1389.0   10018.85    1390.00   10037.29       1390      10040
  CVL STATION 2463
1
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NH         2        .03   10034.44       .016      10040
X1      9.04         18    9965.89   10034.44        137        137        137
GR    1397.5    9317.90    1397.49    9325.05    1397.00    9353.18    1397.00    9377.94    1394.00    9387.32
GR    1393.0    9393.21    1392.95    9424.18    1392.00    9629.08    1391.36    9785.41    1391.35    9851.75
GR    1391.0    9883.49    1391.00    9965.89    1390.52    9972.28    1387.00    9989.15    1387.00   10011.45
GR    1389.2   10022.01       1390   10034.44       1390      10040
  CVL STATION 2600

NH         2        .03   10029.03       .016      10040
X1      9.08         15     9968.5   10033.71        200        200        200
GR    1396.0    9300.07    1396.00    9353.28    1395.36    9370.91    1395.00    9379.29    1394.00    9385.46
GR    1394.0    9451.69    1393.41    9534.65    1393.00    9710.81    1392.01    9961.65    1392.00    9968.50
GR    1388.0    9989.48    1388.00   10009.46    1391.00   10029.03    1391.00   10033.71       1391      10040
  CVL STATION 2800

NH         1        .03    10025.6
X1      9.10         25    9963.69    10025.6        137        137        137
GR    1397.0    9327.52    1397.00    9330.04    1397.84    9337.46    1396.00    9358.21    1395.00    9368.07
GR    1394.6    9376.12    1394.44    9384.36    1394.44    9395.42    1394.29    9408.30    1394.27    9432.12
GR    1394.0    9443.12    1394.00    9709.01    1393.96    9714.46    1393.81    9772.64    1393.00    9863.05
GR    1393.0    9963.69    1392.00    9969.68    1390.74    9979.26    1388.78    9989.57    1388.03    9998.62
GR    1388.6   10006.61    1389.00   10009.41    1391.00   10015.48    1391.00   10020.98    1392.00   10025.60
  END OF CVL CROSS-SECTIONS - CVL STATION 2937

NC     0.016      0.016      0.016        0.1        0.3
ET                  5.1                          4118.87    5417.09
X1      9.13         14       4918    5058.33         98         98         98
GR      1398    3791.43       1396    3900.27       1394    4218.11       1394    4768.19     1393.5       4918
GR    1393.2       5000       1393    5058.33     1392.7       5085       1392    5150.02       1392    5159.91
```

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GR      1392    5184.70       1391       5264       1392    5371.23       1392    5418.98
  CENTERLINE OF PINNACLE PEAK ROAD - BEGIN TETRA TECH'S EAST SPLIT X-SECTIONS

ET                 5.1                            4133.61    5424.01
X1      9.14        14    4904.57    5104.30         33         33         33
GR      1398    3778.24       1396    3970.46       1394    4372.20       1394    4430.01      1394.4    4623.96
GR      1394    4904.57     1393.6       5000     1393.6    5007.96       1393    5104.30        1392    5183.96
GR    1391.5    5279.96       1392    5352.33     1392.8    5407.96     1392.8    5429.75
  UPSTREAM SIDE OF PINNACLE PEAK ROAD

NC     0.040      0.040      0.040
ET                 5.1                            4161.93    5443.67
X1      9.15        11    4994.21    5082.19         43         43         43
GR      1398    3719.90       1396    3900.98       1394    4069.81       1393    4325.58        1393      4814
GR      1393    4994.21       1393       5000       1393    5082.19       1392    5210.16        1392    5403.10
GR      1392    5443.67
  RIGHT BANK ENCROACHMENT SET AT FLOW SPLIT BOUNDARY FOR BREAKOUT WSEL MATCHING

ET                 5.1                             3023    4572.95
X1      9.25        45       4825    5285.60        155         82        141
GR      1400       3023     1399.1       3123     1397.6       3223     1395.8       3323     1392.7       3423
GR      1392       3523       1393       3623     1393.6       3723     1393.5       3762       1394       3874
GR      1394       3898       1394    4003.81       1394    4062.18       1395    4283.87       1395    4298.29
GR      1395    4301.25       1395    4365.84       1395     4385.4     1395.7    4563.07       1396    4565.34
1
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GR      1397    4570.45    1397.57    4572.95    1397.46    4582.97       1397    4585.82       1396    4590.84
GR      1395    4598.19       1395    4614.18       1395    4621.31       1394    4735.08       1394    4738.18
GR      1394    4838.32       1393    4871.51       1392    4892.27       1392       5000       1392     5077.8
GR      1393    5179.38       1394    5266.49       1395    5275.95       1396    5278.52       1397    5281.09
GR      1398    5283.83    1398.64     5285.6       1399    5290.86       1400    5304.55       1399    5325.36

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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

CCHV=      .100 CEHV=      .300
*SECNO 8.550
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
     8.550      2.58   1376.58       .00       .00   1376.73       .16       .00       .00   1380.90
     112.2        .0     112.2        .0        .0      35.4        .0        .0        .0   1381.90
       .00       .00      3.17       .00      .000      .040      .000      .000   1374.00   9988.45
   .007030        0.        0.        0.         0         0         6       .00     34.11  10022.56

*SECNO 8.570
     8.570      2.61   1377.30       .00       .00   1377.49       .20       .75       .01   1380.00
```

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     112.2        .0     112.2        .0        .0      31.7        .0       .1        .1   1380.27
       .01       .00      3.54       .00      .000      .040      .000     .000   1374.69   9985.47
   .008581       97.       97.       97.         2         0         0      .00     29.61  10015.08

*SECNO 8.580

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.43

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1378.90 ELREA=      1378.96

     8.580      1.97   1377.92       .00       .00   1378.04       .11       .54       .01   1378.90
     112.2        .0     112.2        .0        .0      41.2        .0        .2        .1   1378.96
       .02       .00      2.72       .00      .000      .040      .000      .000   1375.95   9980.19
   .004208       92.       92.       92.         3         0         0       .00     33.98  10014.17


SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     3          .013      .50      2.70       .00      2.00       .00     80.00      2         1       1376.50   1376.40

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  1 - HEADWALL

5140, NORMAL DEPTH EXCEEDS CULVERT HEIGHT
*SECNO 8.600
5155, 20 TRIALS OF QWEIR NOT ENOUGH; POSSIBLY INVALID
FINAL QWEIR + QCULV =       142. DOES NOT EQUAL ACTUAL Q =       112.


SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1380.59
3280 CROSS SECTION      8.60 EXTENDED      1.89 FEET
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  6.47

SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
   1383.25   1381.67      2.55       63.       80.      .727       9.4   1380.50       29.


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1382.30 ELREA=      1378.70
```

```
     8.600      4.08   1380.58       .00       .00   1380.59       .01      2.55       .00   1382.30
     112.2        .0     112.2        .0        .0     154.4        .0        .3        .2   1378.70
       .05       .00       .73       .00      .000      .040      .000      .000   1376.50   9975.97
   .000100       80.       80.       80.         0         0         0       .00     54.03  10030.00

*SECNO 8.620
3280 CROSS SECTION      8.62 EXTENDED      1.09 FEET

     8.620      3.48   1380.59       .00       .00   1380.60       .01       .01       .00   1378.00
     112.2       4.5     107.7        .0       9.8     141.4        .0        .8        .4   1379.50
       .10       .46       .76       .00      .040      .040      .000      .000   1377.11   9976.41
   .000117      128.      128.      128.         2         0         0       .00     60.59  10037.00

*SECNO 8.640
3280 CROSS SECTION      8.64 EXTENDED       .73 FEET

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

     8.640      2.98   1380.60       .00       .00   1380.63       .03       .02       .01   1381.70
     112.2        .0     112.2        .0        .0      84.7        .0       1.1        .5   1379.87
       .12       .00      1.32       .00      .000      .040      .000      .000   1377.62   9978.07
   .000645      100.      100.      100.         2         0         0       .00     49.93  10028.00

*SECNO 8.660
3280 CROSS SECTION      8.66 EXTENDED       .45 FEET

     8.660      2.55   1380.68       .00       .00   1380.70       .03       .07       .00   1381.30
     112.2        .0     112.2        .0        .0      82.8        .0       1.2        .6   1380.23
       .14       .00      1.36       .00      .000      .040      .000      .000   1378.13   9970.02
   .000873      100.      100.      100.         2         0         0       .00     59.74  10029.76
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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 8.680
3280 CROSS SECTION      8.68 EXTENDED       .13 FEET

     8.680      2.77   1380.77       .00       .00   1380.80       .03       .10       .00   1381.05
     112.2        .0     112.2        .0        .0      75.5        .0       1.4        .8   1380.64
       .16       .00      1.49       .00      .000      .040      .000      .000   1378.00   9973.73
   .001116      100.      100.      100.         2         0         0       .00     57.27  10031.00

*SECNO 8.700
```

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

     8.700      1.36   1380.95       .00       .00   1381.04       .09       .22       .02   1379.59
     112.2      27.7      84.5        .0      12.8      34.1        .0       1.6        .9   1381.27
       .17      2.17      2.48       .00      .040      .040      .000      .000   1379.59   9965.64
   .005744      100.      100.      100.         3         0         0       .00     60.06  10025.70

*SECNO 8.720
3280 CROSS SECTION      8.72 EXTENDED       .14 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     8.720      1.14   1382.04   1382.04       .00   1382.37       .33      1.09       .07   1383.00
     112.2        .0     112.2        .0        .0      24.5        .0       1.6       1.0   1381.90
       .17       .00      4.58       .00      .000      .040      .000      .000   1380.90   9990.88
   .028489      100.      100.      100.         2        15         0       .00     39.12  10030.00

*SECNO 8.740
3280 CROSS SECTION      8.74 EXTENDED       .85 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.16

     8.740      1.40   1383.40       .00       .00   1383.53       .13      1.14       .02   1385.00
     112.2        .0     112.2        .0        .0      38.6        .0       1.7       1.1   1382.55
       .18       .00      2.90       .00      .000      .040      .000      .000   1382.00   9991.61
   .006095      100.      100.      100.         4         0         0       .00     37.57  10029.18

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

*SECNO 8.770
3280 CROSS SECTION      8.77 EXTENDED       .46 FEET

     8.770      1.26   1384.86       .00       .00   1385.03       .17      1.49       .01   1385.40
     112.2        .0      89.8      22.4        .0      25.6      10.6       1.9       1.3   1384.40
       .20       .00      3.51      2.11      .000      .040      .040      .000   1383.60   9990.80
   .009297      200.      200.      200.         3         0         0       .00     49.20  10040.00

1490 NH CARD USED
*SECNO 8.790
3280 CROSS SECTION      8.79 EXTENDED       .75 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
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     8.790       .75   1386.05   1386.05       .00   1386.26       .21       .56       .01   1385.99
     124.9      71.3      53.7        .0      19.3      14.7        .0       2.0       1.4   1385.31
       .21      3.69      3.65       .00      .016      .016      .000      .000   1385.30   9963.00
   .005408       81.       81.       81.         4        14         0       .00     85.00  10048.00

1490 NH CARD USED
*SECNO 8.800
3280 CROSS SECTION      8.80 EXTENDED      1.10 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     8.800      1.10   1386.20   1386.20       .00   1386.51       .31       .21       .03   1385.79
     228.1     175.6      52.5        .0      37.2      16.0        .0       2.0       1.5   1385.75
       .21      4.72      3.28       .00      .016      .016      .000      .000   1385.10   9966.00
   .003855       49.       49.       49.         4        14         0       .00     86.00  10052.00

1490 NH CARD USED
*SECNO 8.810
3280 CROSS SECTION      8.81 EXTENDED       .44 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.14

     8.810      1.74   1386.44       .00       .00   1386.55       .11       .03       .02   1388.00
     377.6        .0     377.6        .0        .0     139.7        .0       2.1       1.6   1386.00
       .21       .00      2.70       .00      .000      .016      .000      .000   1384.70   9991.28
   .000616       20.       29.      105.         4         0         0       .00    109.46  10100.74

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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 8.860
3280 CROSS SECTION      8.86 EXTENDED       .63 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.65

3470 ENCROACHMENT STATIONS=     9700.0   10079.1  TYPE=      1  TARGET=    -9700.000
 ELENCL=   1386.67  ELENCR= 100000.00
     8.860      4.63   1386.63       .00       .00   1386.67       .03       .10       .01   1386.00
     715.4      17.8     697.6        .0      39.5     461.8        .0       4.0       3.0 100000.00
       .26       .45      1.51       .00      .030      .030      .000      .000   1382.00   9726.85
   .000316      266.      266.      266.         4         0         0       .00    352.22  10079.07
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1490 NH CARD USED
*SECNO 8.890
3280 CROSS SECTION      8.89 EXTENDED       .66 FEET

3470 ENCROACHMENT STATIONS=     9601.0   10065.0  TYPE=      1  TARGET=    -9601.000
 ELENCL=   1388.00  ELENCR= 100000.00
     8.890      4.66   1386.66       .00       .00   1386.79       .14       .10       .03   1386.00
    1006.9      19.6     987.3        .0      26.5     330.5        .0       5.7       4.1 100000.00
       .28       .74      2.99       .00      .030      .030      .000      .000   1382.00   9862.09
   .000979      175.      175.      175.         2         0         0       .00    202.96  10065.05

1490 NH CARD USED
*SECNO 8.930

3265 DIVIDED FLOW

3280 CROSS SECTION      8.93 EXTENDED       .24 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     8.930      2.49   1387.16   1387.16       .00   1387.54       .38       .51       .07   1387.00
    1323.9     576.7     746.1       1.1     167.3     128.1        .4       7.4       5.6   1387.00
       .29      3.45      5.83      2.50      .030      .030      .016      .000   1384.67   9518.21
   .006966      217.      217.      217.        20        11         0       .00    398.60  10046.99
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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 9.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1388.54 ELREA=      1390.00

     9.000      4.42   1389.42   1389.42       .00   1389.90       .47      2.20       .03   1388.54
    1455.7     501.6     954.2        .0     170.5     147.3        .0      10.0       8.8   1390.00
       .31      2.94      6.48       .00      .030      .030      .000      .000   1385.00   9679.21
   .005192      370.      370.      370.         2        15         0       .00    348.44  10027.65


SPECIAL CULVERT

SC  CUNO       CUNV       ENTLC      COFQ       RDLEN      RISE       SPAN       CULVLN     CHRT       SCL        ELCHU      ELCHD
     2          .013       .50       2.70       .00        3.00       .00        75.00      2          1        1386.02    1385.00
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CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  1 - HEADWALL

5130, EGIC= 1789.93..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1725.71 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 9.010

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1392.66
3280 CROSS SECTION      9.01 EXTENDED      2.65 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  8.04

SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
  1789.93   1725.71      2.76     1635.      156.     1.353      14.1   1389.89      140.


    9.010      6.62   1392.64       .00       .00   1392.66       .02      2.76       .00   1391.22
   1793.2    1305.9     478.3       8.9    1318.0     353.5       7.2      11.7       9.7   1390.00
      .33       .99      1.35      1.25      .030      .030      .016      .000   1386.02   9362.23
  .000122       76.       76.       76.         1         0         0       .00    677.77  10040.00


1490 NH CARD USED
*SECNO 9.040
3280 CROSS SECTION      9.04 EXTENDED      2.56 FEET

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


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
    9.040      5.56   1392.56   1392.56       .00   1393.18       .62       .08       .18   1391.00
   3607.2    1349.6    2143.1     114.5     422.3     283.3      14.2      15.5      11.6   1390.00
      .34      3.20      7.57      8.05      .030      .030      .016      .000   1387.00   9509.01
  .003562      137.      137.      137.        20        10         0       .00    530.99  10040.00


1490 NH CARD USED
*SECNO 9.080
3280 CROSS SECTION      9.08 EXTENDED      3.52 FEET
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3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     9.080      6.52   1394.52   1394.52       .00   1395.46       .93       .81       .09   1392.00
    7573.2    3911.1    3429.4     232.7     859.4     340.1      22.2      19.9      14.3   1391.00
       .34      4.55     10.08     10.50      .030      .029      .016      .000   1388.00   9382.23
   .004312      200.      200.      200.        20        11         0       .00    657.77  10040.00

1490 NH CARD USED
*SECNO 9.100
3280 CROSS SECTION      9.10 EXTENDED      3.76 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     9.100      7.73   1395.76   1395.76       .00   1396.85      1.10       .70       .05   1393.00
   11220.0    7224.9    3995.1        .0    1181.5     349.6        .0      24.3      16.4   1392.00
       .35      6.12     11.43       .00      .030      .030      .000      .000   1388.03   9360.62
   .005827      137.      137.      137.        20        11         0       .00    664.98  10025.60

CCHV=     .100 CEHV=     .300
*SECNO 9.130
3280 CROSS SECTION      9.13 EXTENDED      4.89 FEET

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

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  7.06

3470 ENCROACHMENT STATIONS=     4118.9    5417.1  TYPE=      1  TARGET=     1298.220
     9.130      5.89   1396.89       .00   1396.89   1396.99       .10       .04       .10   1393.50
   11220.0    4721.3    1214.7    5284.1    2313.9     511.0    1801.3      31.2      18.6   1393.00
       .36      2.04      2.38      2.93      .016      .016      .016      .000   1391.00   4118.87
   .000117       98.       98.       98.         3         0         0       .00   1298.22   5417.09

*SECNO 9.140
3280 CROSS SECTION      9.14 EXTENDED      4.07 FEET

3470 ENCROACHMENT STATIONS=     4133.6    5424.0  TYPE=      1  TARGET=     1290.400
     9.140      5.37   1396.87       .00   1396.87   1397.00       .12       .00       .01   1394.00
   11220.0    4385.8    1743.5    5090.8    1978.5     663.6    1525.2      34.5      19.6   1393.00
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      .36       2.22       2.63       3.34       .016       .016       .016       .000   1391.50   4133.61
  .000161        33.        33.        33.          2          0          0        .00   1290.40   5424.01

*SECNO 9.150
3280 CROSS SECTION      9.15 EXTENDED      4.95 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .58

3470 ENCROACHMENT STATIONS=     4161.9    5443.7  TYPE=      1  TARGET=     1281.740
     9.150       4.95   1396.95        .00   1396.95   1397.02        .07        .01        .01   1393.00
   11220.0     6534.6     710.7     3974.6    3232.0     347.2     1724.0       39.2       20.9   1393.00
      .37       2.02       2.05       2.31       .040       .040       .040       .000   1392.00   4161.93
  .000487        43.        43.        43.          2          0          0        .00   1281.74   5443.67

*SECNO 9.250

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .59
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

3470 ENCROACHMENT STATIONS=     3023.0    4573.0  TYPE=      1  TARGET=     1549.950
     9.250       5.01   1397.01        .00   1397.01   1397.15        .14        .11        .02 100000.00
   11220.0    11220.0         .0         .0    3725.9         .0         .0       53.8       25.2 100000.00
      .38       3.01        .00        .00       .040       .000       .000       .000   1392.00   3256.03
  .001412       155.       141.        82.          2          0          0        .00   1314.45   4570.47
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 TW      RIGHT BANK WEIR BETWEEN SECTION 8.55 AND 8.57

    ASQ       QCOMP      ERRAC      TASQ       TCQ       TABER      NITER     DSWS      USWS      DSSNO     USSNO
     .00        .00        .00        .00       .00        .00         26  1376.731  1377.494      8.550     8.570

 TW      RIGHT BANK WEIR BETWEEN SECTION 8.57 AND 8.58

    ASQ       QCOMP      ERRAC      TASQ       TCQ       TABER      NITER     DSWS      USWS      DSSNO     USSNO
     .00        .00        .00        .00       .00        .00         26  1377.494  1378.038      8.570     8.580
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TW RIGHT BANK WEIR BETWEEN SECTION 8.58 AND 8.60

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
139.09	139.09	.00	139.09	139.09	.00	26	1378.038	1380.586	8.580	8.600

TW RIGHT BANK WEIR BETWEEN SECTION 8.60 AND 8.62

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
605.14	605.14	.00	744.23	744.23	.00	26	1380.586	1380.600	8.600	8.620

TW RIGHT BANK WEIR BETWEEN SECTION 8.62 AND 8.64

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
238.57	238.57	.00	982.80	982.80	.00	26	1380.600	1380.629	8.620	8.640

TW RIGHT BANK WEIR BETWEEN SECTION 8.64 AND 8.66

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
129.16	129.16	.00	1111.96	1111.96	.00	26	1380.629	1380.704	8.640	8.660

TW RIGHT BANK WEIR BETWEEN SECTION 8.66 AND 8.68

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
49.20	49.20	.00	1161.16	1161.16	.00	26	1380.704	1380.804	8.660	8.680

TW RIGHT BANK WEIR BETWEEN SECTION 8.68 AND 8.70

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
2.91	2.91	.02	1164.07	1164.07	.00	26	1380.804	1381.036	8.680	8.700

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TW RIGHT BANK WEIR BETWEEN SECTION 8.70 AND 8.72

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
22.69	22.69	.00	1186.76	1186.76	.00	26	1381.036	1382.369	8.700	8.720

TW RIGHT BANK WEIR BETWEEN SECTION 8.72 AND 8.74

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
165.56	165.56	.00	1352.32	1352.32	.00	26	1382.369	1383.528	8.720	8.740

TW RIGHT BANK WEIR BETWEEN SECTION 8.74 AND 8.77

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
356.59	356.59	.00	1708.91	1708.90	.00	26	1383.528	1385.028	8.740	8.770

TW RIGHT BANK WEIR BETWEEN SECTION 8.77 AND 8.79

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
140.26	139.88	.27	1849.17	1848.78	.02	26	1385.028	1386.257	8.770	8.790

TW RIGHT BANK WEIR BETWEEN SECTION 8.79 AND 8.80

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
103.12	102.39	.71	1952.29	1951.17	.06	26	1386.257	1386.509	8.790	8.800

TW RIGHT BANK WEIR BETWEEN SECTION 8.80 AND 8.81

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
149.57	148.37	.80	2101.86	2099.55	.11	26	1386.509	1386.554	8.800	8.810

TW RIGHT BANK WEIR BETWEEN SECTION 8.81 AND 8.86

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
337.78	335.77	.60	2439.64	2435.31	.18	26	1386.554	1386.665	8.810	8.860

TW RIGHT BANK WEIR BETWEEN SECTION 8.86 AND 8.89

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
291.47	289.37	.72	2731.11	2724.68	.24	26	1386.665	1386.794	8.860	8.890

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TW RIGHT BANK WEIR BETWEEN SECTION 8.89 AND 8.93

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
317.04	315.34	.54	3048.15	3040.03	.27	26	1386.794	1387.542	8.890	8.930

TW RIGHT BANK WEIR BETWEEN SECTION 8.93 AND 9.00

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
131.81	131.28	.41	3179.96	3171.30	.27	26	1387.542	1389.897	8.930	9.000

TW RIGHT BANK WEIR BETWEEN SECTION 9.00 AND 9.01

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
337.42	336.19	.36	3517.38	3507.50	.28	26	1389.897	1392.659	9.000	9.010

TW RIGHT BANK WEIR BETWEEN SECTION 9.01 AND 9.04

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1814.01	1810.83	.18	5331.39	5318.33	.25	26	1392.659	1393.176	9.010	9.040

TW RIGHT BANK WEIR BETWEEN SECTION 9.04 AND 9.08

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
3965.99	3965.97	.00	9297.37	9284.30	.14	26	1393.176	1395.458	9.040	9.080

TW RIGHT BANK WEIR BETWEEN SECTION 9.08 AND 9.10

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
3646.85	3646.88	.00	12944.22	12931.18	.10	26	1395.458	1396.852	9.080	9.100

1
PROFILE FOR STREAM EMCON 9/22/03 by: DNS

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION  1374.     1379.     1384.     1389.     1394.     1399.     1404.     1409.     1414.     1419.
    SECNO   CUMDIS

     8.55     0.  I    E    .   LMR   .         .         .         .         .         .         .         .
             20.  I    WE   .  L R    .         .         .         .         .         .         .         .
             40.  CI    E   .  LR     .         .         .         .         .         .         .         .
             60.  CI    E   .  LR     .         .         .         .         .         .         .         .
             80.  CI    WE  . LR      .         .         .         .         .         .         .         .
     8.57   100.  CI     E  . LR      .         .         .         .         .         .         .         .
            120.  C I    E  . L       .         .         .         .         .         .         .         .
            140.  C I    E  .L        .         .         .         .         .         .         .         .
            160.  C  I   WE .L        .         .         .         .         .         .         .         .
            180.  C   I   E L         .         .         .         .         .         .         .         .
     8.58   200.  C   I   E L         .         .         .         .         .         .         .         .
            220.  C   I    ER L       .         .         .         .         .         .         .         .
            240.  C   I     RE L      .         .         .         .         .         .         .         .
            260.  C    I    R E  L    .         .         .         .         .         .         .         .
     8.60   280.  C    I   R.  E   L  .         .         .         .         .         .         .         .
            300.  C    I    R  E L    .         .         .         .         .         .         .         .
            320.  C    I    R  EL     .         .         .         .         .         .         .         .
            340.  C     I   R  E      .         .         .         .         .         .         .         .
            360.  C     I   RL E      .         .         .         .         .         .         .         .
            380.  C     I   LR E      .         .         .         .         .         .         .         .
     8.62   400.  C     I L .R E      .         .         .         .         .         .         .         .
            420.  C     I  L.R E      .         .         .         .         .         .         .         .
            440.  C      I  .L E      .         .         .         .         .         .         .         .
            460.  C      I  .RLE      .         .         .         .         .         .         .         .
            480.  C      I  . REL     .         .         .         .         .         .         .         .
     8.64   500.  C      I  . RE L    .         .         .         .         .         .         .         .
            520.  C      I  . RE L    .         .         .         .         .         .         .         .
            540.  C       I . RE L    .         .         .         .         .         .         .         .
            560.  C       I . RE L    .         .         .         .         .         .         .         .
            580.  C       I . RE L    .         .         .         .         .         .         .         .
     8.66   600.  C       I . RE L    .         .         .         .         .         .         .         .
            620.  C       I .  E L    .         .         .         .         .         .         .         .
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       640.  C        I .  EL     .         .         .         .         .         .         .         .
       660.  C        I .  WE     .         .         .         .         .         .         .         .
       680.  C        I .  RE     .         .         .         .         .         .         .         .
8.68   700.  C        I .  RE     .         .         .         .         .         .         .         .
       720.  C         I.   E     .         .         .         .         .         .         .         .
       740.  C         I.  LE     .         .         .         .         .         .         .         .
       760.  C          I L E     .         .         .         .         .         .         .         .
       780.  C          .IL E     .         .         .         .         .         .         .         .
8.70   800.  C          .I  ER    .         .         .         .         .         .         .         .
       820.  C          . ILWE    .         .         .         .         .         .         .         .
       840.  C          . I LE    .         .         .         .         .         .         .         .
       860.  C          .  I WE   .         .         .         .         .         .         .         .
       880.  C          .  I  EL  .         .         .         .         .         .         .         .
8.72   900.  .          .   I WEL .         .         .         .         .         .         .         .
       920.  C          .   I RE L.         .         .         .         .         .         .         .
       940.  C          .    IRWE L         .         .         .         .         .         .         .
       960.  C          .    I RE L         .         .         .         .         .         .         .
       980.  C          .     IRWE.L        .         .         .         .         .         .         .
8.74  1000.  C          .     IR E. L       .         .         .         .         .         .         .
      1020.  C          .     IR E. L       .         .         .         .         .         .         .
      1040.  C          .      IRWE L       .         .         .         .         .         .         .
      1060.  C          .      IR E L       .         .         .         .         .         .         .
      1080.  C          .      I RE L       .         .         .         .         .         .         .
      1100.  C          .       IRWEL       .         .         .         .         .         .         .
      1120.  C          .       IR.EL       .         .         .         .         .         .         .
      1140.  C          .       I RE L      .         .         .         .         .         .         .
      1160.  C          .        IRE L      .         .         .         .         .         .         .
      1180.  C          .        IRWEL      .         .         .         .         .         .         .
8.77  1200.  C          .        I.REL      .         .         .         .         .         .         .
      1220.  C          .         IRWE      .         .         .         .         .         .         .
      1240.  C          .         .IRE      .         .         .         .         .         .         .
      1260.  C          .         . IWE     .         .         .         .         .         .         .
8.79  1280.  .          .         .  IWE    .         .         .         .         .         .         .
      1300.  .          .         . IRWE    .         .         .         .         .         .         .
      1320.  .          .         . IRWE    .         .         .         .         .         .         .
8.80  1340.  .          .         . I WE    .         .         .         .         .         .         .
8.81  1360.  C          .         .I  RE  L .         .         .         .         .         .         .
      1380.  C          .         .I  ME  L .         .         .         .         .         .         R
      1400.  C          .         .I  ME L  .         .         .         .         .         .         R
      1420.  C          .         I   ME L  .         .         .         .         .         .         R
      1440.  C          .         I   ME L  .         .         .         .         .         .         R
      1460.  C          .        I.   MEL   .         .         .         .         .         .         R
      1480.  C          .        I.   MEL   .         .         .         .         .         .         R
      1500.  C          .        I.   MEL   .         .         .         .         .         .         R
      1520.  C          .       I .   MEL   .         .         .         .         .         .         R
      1540.  C          .       I .   ME    .         .         .         .         .         .         R
      1560.  C          .      I  .   ME    .         .         .         .         .         .         R
      1580.  C          .      I  .   ME    .         .         .         .         .         .         R
      1600.  C          .      I  .   LE    .         .         .         .         .         .         R
      1620.  C          .     I   .   LE    .         .         .         .         .         .         R
8.86  1640.  C          .     I   .   LE    .         .         .         .         .         .         R
      1660.  C          .     I   .   LE    .         .         .         .         .         .         R
      1680.  C          .     I   .   LE    .         .         .         .         .         .         R
      1700.  C          .     I   .   LE    .         .         .         .         .         .         R
      1720.  C          .     I   .   LE    .         .         .         .         .         .         R
      1740.  C          .     I   .   LE    .         .         .         .         .         .         R
      1760.  C          .     I   .   LWE   .         .         .         .         .         .         R
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      1780.  C         .     I   .   LWE   .         .         .         .         .         .         .         R
8.89  1800.  C         .     I   .   LWE   .         .         .         .         .         .         .         R
      1820.  C         .     I   .   LWE   .         .         .         .         .         .         .         R
      1840.  C         .      I  .   L E   .         .         .         .         .         .         .         R
      1860.  C         .      I  .    LE   .         .         .         .         .         .         .         R
      1880.  C         .       I .    LE   .         .         .         .         .         .         .         R
      1900.  C         .       I .    LE   .         .         .         .         .         .         .         R
      1920.  C         .        I.    LE   .         .         .         .         .         .         .         R
      1940.  C         .        I.    LWE  .         .         .         .         .         .         .         R
      1960.  C         .         I    LWE  .         .         .         .         .         .         .         R
      1980.  C         .         I     WE  .         .         .         .         .         .         .         R
      2000.  C         .         .I    WE  .         .         .         .         .         .         .         R
8.93  2020.  .         .         .I    WE  .         .         .         .         .         .         .         .
      2040.  .         .         .I    LE  .         .         .         .         .         .         .         .
      2060.  .         .         .I    LWE .         .         .         .         .         .         .         .
      2080.  .         .         .I    LWE .         .         .         .         .         .         .         .
      2100.  .         .         .I     WE .         .         .         .         .         .         .         .
      2120.  .         .         . I    LE .         .         .         .         .         .         .         .
      2140.  .         .         . I    LWE.         .         .         .         .         .         .         .
      2160.  .         .         . I    LWE.         .         .         .         .         .         .         .
      2180.  .         .         . I    LWE.         .         .         .         .         .         .         .
      2200.  .         .         . I    L E.         .         .         .         .         .         .         .
      2220.  .         .         . I     LWE         .         .         .         .         .         .         .
      2240.  .         .         . I     LWE         .         .         .         .         .         .         .
      2260.  .         .         . I     LWE         .         .         .         .         .         .         .
      2280.  .         .         . I     LWE         .         .         .         .         .         .         .
      2300.  .         .         . I     L WE        .         .         .         .         .         .         .
      2320.  .         .         . I     L WE        .         .         .         .         .         .         .
      2340.  .         .         . I      LWE        .         .         .         .         .         .         .
      2360.  .         .         . I      LWER       .         .         .         .         .         .         .
      2380.  .         .         . I      L.WE       .         .         .         .         .         .         .
9.00  2400.  .         .         . I      L.WE       .         .         .         .         .         .         .
      2420.  C         .         .  I      L RE      .         .         .         .         .         .         .
      2440.  C         .         .  I      . L WE    .         .         .         .         .         .         .
9.01  2460.  C         .         .   I     . R L  E  .         .         .         .         .         .         .
      2480.  C         .         .   I     . R L  E  .         .         .         .         .         .         .
      2500.  C         .         .    I    . R L  WE .         .         .         .         .         .         .
      2520.  C         .         .    I    . R L  WE .         .         .         .         .         .         .
      2540.  C         .         .    I    . R L  WE .         .         .         .         .         .         .
      2560.  C         .         .    I    . R L  WE .         .         .         .         .         .         .
      2580.  C         .         .     I   . R L  WE .         .         .         .         .         .         .
9.04  2600.  .         .         .     I   . R L  WE .         .         .         .         .         .         .
      2620.  .         .         .     I   . R L   WE.         .         .         .         .         .         .
      2640.  .         .         .     I   . R L   WE.         .         .         .         .         .         .
      2660.  .         .         .      I  .  R L  W E         .         .         .         .         .         .
      2680.  .         .         .      I  .  R L   WE         .         .         .         .         .         .
      2700.  .         .         .      I  .  R L   W.E        .         .         .         .         .         .
      2720.  .         .         .      I  .  R L   W.E        .         .         .         .         .         .
      2740.  .         .         .      I  .  R L    W E       .         .         .         .         .         .
      2760.  .         .         .       I .   R L   W E       .         .         .         .         .         .
      2780.  .         .         .       I .   R L   .WE       .         .         .         .         .         .
9.08  2800.  .         .         .       I .   R L   .W E      .         .         .         .         .         .
      2820.  .         .         .       I .   R L   .W E      .         .         .         .         .         .
      2840.  .         .         .       I .    R L  . W E     .         .         .         .         .         .
      2860.  .         .         .       I .    R L  . W E     .         .         .         .         .         .
      2880.  .         .         .       I .    R L  . W  E    .         .         .         .         .         .
      2900.  .         .         .       I .    R L  .  W E    .         .         .         .         .         .
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```
        2920.  .        .        .      I .     R L .  W E    .        .        .        .        .        .
 9.10   2940.  .        .        .      I .     R L .   W E   .        .        .        .        .        .
        2960.  C        .        .       I.     R L .   W E   .        .        .        .        .        .
        2980.  C        .        .        I     MRL .   W E   .        .        .        .        .        .
        3000.  C        .        .        . I   MR L.    WE   .        .        .        .        .        .
        3020.  C        .        .        .  I  M RL.    WE   .        .        .        .        .        .
 9.13   3040.  C        .        .        .   I M RL.     E   .        .        .        .        .        .
        3060.  C        .        .        .    I MR L     E   .        .        .        .        .        .
 9.14   3080.  C        .        .        .    I  R L     E   .        .        .        .        .        .
        3100.  C        .        .        .    I MRL.     E   .        .        .        .        .        .
 9.15   3120.  C        .        .        .     I L .     E   .        .        .        .        .        .
        3140.  C        .        .        .     I M .     E   .        .        .        .        .        .
        3160.  C        .        .        .     I   M     E   .        .        .        .        .        L
        3180.  C        .        .        .     I   . M   E   .        .        .        .        .        L
        3200.  C        .        .        .     I   .   M E   .        .        .        .        .        L
        3220.  C        .        .        .     I   .     E   .        .        .        .        .        L
        3240.  C        .        .        .     I   .     E M .        .        .        .        .        L
 9.25   3260.  C        .        .        .     I   .     E   M        .        .        .        .        L
1
   06OCT03      15:22:16
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THIS RUN EXECUTED 06OCT03 15:22:17

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

 Version   4.6.2;  May 1991
**************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

EMCON 9/22/03 by: DNS

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	8.550	.00	.00	.00	1374.00	112.20	1376.58	.00	1376.73	70.30	3.17	35.44	13.38
	8.570	97.00	.00	.00	1374.69	112.20	1377.30	.00	1377.49	85.81	3.54	31.65	12.11
*	8.580	92.00	.00	.00	1375.95	112.20	1377.92	.00	1378.04	42.08	2.72	41.23	17.30
*	8.600	80.00	1380.50	.00	1376.50	112.20	1380.58	.00	1380.59	1.00	.73	154.38	111.97
	8.620	128.00	.00	.00	1377.11	112.20	1380.59	.00	1380.60	1.17	.76	151.17	103.63
*	8.640	100.00	.00	.00	1377.62	112.20	1380.60	.00	1380.63	6.45	1.32	84.73	44.18
	8.660	100.00	.00	.00	1378.13	112.20	1380.68	.00	1380.70	8.73	1.36	82.79	37.96
	8.680	100.00	.00	.00	1378.00	112.20	1380.77	.00	1380.80	11.16	1.49	75.55	33.58

*	8.700	100.00	.00	.00	1379.59	112.20	1380.95	.00	1381.04	57.44	2.48	46.85	14.80
*	8.720	100.00	.00	.00	1380.90	112.20	1382.04	1382.04	1382.37	284.89	4.58	24.52	6.65
*	8.740	100.00	.00	.00	1382.00	112.20	1383.40	.00	1383.53	60.95	2.90	38.62	14.37
	8.770	200.00	.00	.00	1383.60	112.20	1384.86	.00	1385.03	92.97	3.51	36.21	11.64
*	8.790	81.00	.00	.00	1385.30	124.95	1386.05	1386.05	1386.26	54.08	3.65	34.06	16.99
*	8.800	49.00	.00	.00	1385.10	228.07	1386.20	1386.20	1386.51	38.55	3.28	53.19	36.73
*	8.810	29.00	.00	.00	1384.70	377.63	1386.44	.00	1386.55	6.16	2.70	139.71	152.14
*	8.860	266.00	.00	.00	1382.00	715.42	1386.63	.00	1386.67	3.16	1.51	501.28	402.69
	8.890	175.00	.00	.00	1382.00	1006.89	1386.66	.00	1386.79	9.79	2.99	356.93	321.72

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	8.930	217.00	.00	.00	1384.67	1323.92	1387.16	1387.16	1387.54	69.66	5.83	295.84	158.63
*	9.000	370.00	.00	.00	1385.00	1455.74	1389.42	1389.42	1389.90	51.92	6.48	317.82	202.02
*	9.010	76.00	1389.89	.00	1386.02	1793.15	1392.64	.00	1392.66	1.22	1.35	1678.67	1625.08
*	9.040	137.00	.00	.00	1387.00	3607.16	1392.56	1392.56	1393.18	35.62	7.57	719.77	604.43
*	9.080	200.00	.00	.00	1388.00	7573.15	1394.52	1394.52	1395.46	43.12	10.08	1221.58	1153.26
*	9.100	137.00	.00	.00	1388.03	11220.00	1395.76	1395.76	1396.85	58.27	11.43	1531.05	1469.81
*	9.130	98.00	.00	.00	1391.00	11220.00	1396.89	.00	1396.99	1.17	2.38	4626.17	10376.22
	9.140	33.00	.00	.00	1391.50	11220.00	1396.87	.00	1397.00	1.61	2.63	4167.22	8830.83
*	9.150	43.00	.00	.00	1392.00	11220.00	1396.95	.00	1397.02	4.87	2.05	5303.09	5084.69
*	9.250	141.00	.00	.00	1392.00	11220.00	1397.01	.00	1397.15	14.12	.00	3725.92	2985.44

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EMCON 9/22/03 by: DNS

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
8.550	112.20	1376.58	.00	.00	.00	34.11	.00

	8.570	112.20	1377.30	.00	.72	.00	29.61	97.00
*	8.580	112.20	1377.92	.00	.62	.00	33.98	92.00
*	8.600	112.20	1380.58	.00	2.66	.00	54.03	80.00
	8.620	112.20	1380.59	.00	.01	.00	60.59	128.00
*	8.640	112.20	1380.60	.00	.01	.00	49.93	100.00
	8.660	112.20	1380.68	.00	.07	.00	59.74	100.00
	8.680	112.20	1380.77	.00	.09	.00	57.27	100.00
*	8.700	112.20	1380.95	.00	.18	.00	60.06	100.00
*	8.720	112.20	1382.04	.00	1.10	.00	39.12	100.00
*	8.740	112.20	1383.40	.00	1.35	.00	37.57	100.00
	8.770	112.20	1384.86	.00	1.46	.00	49.20	200.00
*	8.790	124.95	1386.05	.00	1.19	.00	85.00	81.00
*	8.800	228.07	1386.20	.00	.16	.00	86.00	49.00
*	8.810	377.63	1386.44	.00	.24	.00	109.46	29.00
*	8.860	715.42	1386.63	.00	.19	.00	352.22	266.00
	8.890	1006.89	1386.66	.00	.03	.00	202.96	175.00
*	8.930	1323.92	1387.16	.00	.51	.00	398.60	217.00
*	9.000	1455.74	1389.42	.00	2.26	.00	348.44	370.00
*	9.010	1793.15	1392.64	.00	3.22	.00	677.77	76.00
*	9.040	3607.16	1392.56	.00	-.08	.00	530.99	137.00
*	9.080	7573.15	1394.52	.00	1.97	.00	657.77	200.00
*	9.100	11220.00	1395.76	.00	1.23	.00	664.98	137.00
*	9.130	11220.00	1396.89	.00	1.13	.00	1298.22	98.00

1
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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	9.140	11220.00	1396.87	.00	-.01	.00	1290.40	33.00
*	9.150	11220.00	1396.95	.00	.07	.00	1281.74	43.00

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*      9.250  11220.00   1397.01       .00       .06       .00   1314.45    141.00
1
   06OCT03      15:22:16
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SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=      8.580  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.600  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.640  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.700  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      8.720  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      8.720  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      8.740  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      8.790  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      8.790  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      8.800  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      8.800  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      8.810  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.860  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      8.930  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      8.930  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      8.930  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=      9.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.010  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.040  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.040  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      9.040  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=      9.080  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.080  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      9.080  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=      9.100  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.100  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      9.100  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=      9.130  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=      9.150  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      9.250  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    07OCT03    TIME   22:36:17 *
 *****************************************
```

```
*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                  X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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1
07OCT03 22:36:17

THIS RUN EXECUTED 07OCT03 22:36:17

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

 Version   4.6.2;  May 1991
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```
T1    MODIFIED SKUNK CREEK FLOODPLAIN STUDY - SKUNK CREEK FROM ADOBE DAM TO I-17
T2    INPUT FILE: main-w.dat       100-YR BASE FLOOD ELEVATION
T3    ORIGINAL MODEL SKNKLOMR.IH2 BY TETRA TECH, INC. SEPTEMBER 2002
T4    October 2003 EMCON/OWT Inc.

      This model is used to determine the main channel WSEL for the West Bank.
      New topographic data used for stationing 9.21 - 9.35
      Split flowrates are applied from bkout-w.dat and are partitioned across
      relevant cross sections
      This model assumes that the Rockwall does exist (RS 9.21 - 9.35)
      as a worst-case assumption for right (west) bank WSE.
      Flowrate for 100-yr base flood was taken from previous modeling by
      Tetra Tech

      Starting WSEL is Adobe Dam reservoir 100-yr WSEL from effective FIS study.
      Boundary conditions were taken from Tetra Tech modeling.
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2			0		0	0	1378.00	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1	0	-1	0	0		-1	0		

```
J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38         43         1          2          26         8          4          25         68         53
     54
   100-yr peak discharge is from effective FIS study.

QT        1      38887

NC    0.045      0.045      0.035      0.1        0.3
ET                 5.1                          4025.25    5073.77
X1     8.69         95    4025.25    5073.77
GR   1380.0    3796.61    1380.00    3854.47    1379.00    3861.47    1378.00    3868.42    1378.00    3878.69
GR   1378.6    3884.04    1380.00    3896.01    1380.00    3907.92    1379.82    3923.26    1379.91    3925.58
GR   1380.0    4002.41    1380.54    4004.61    1382.00    4011.19    1382.00    4016.12    1381.16    4025.25
GR   1380.0    4037.88    1379.55    4039.54    1378.00    4045.04    1376.66    4058.92    1376.33    4063.23
GR   1376.0    4067.80    1375.66    4071.80    1374.51    4084.66    1374.14    4088.53    1374.00    4090.42
GR   1373.8    4091.18    1373.53    4092.99    1372.00    4102.33    1371.23    4129.14    1370.00    4171.62
GR   1370.0    4446.38    1370.04    4448.91    1372.00    4550.37    1372.00    4583.65    1371.80    4601.95
1
   07OCT03      22:36:17                                                                                PAGE     2

GR   1371.2    4726.77    1371.45    4741.81    1371.10    4787.06    1371.00    4796.71    1370.54    4837.32
GR   1370.6    4872.36    1370.52    4876.45    1370.60    4881.98    1370.60    4882.00    1370.82    4897.47
GR   1371.4    4906.65    1371.83    4913.95    1372.00    4917.45    1372.34    4920.12    1374.00    4933.03
GR   1374.3    4936.71    1374.00    4958.00    1373.51    4959.38    1372.00    4963.60    1371.80    4964.16
GR   1370.0    4969.21    1368.37    4973.77    1368.00    4974.80    1366.00    4980.35    1365.56    4981.39
GR   1364.7    4987.21    1364.21    4990.25    1364.00    4992.46    1364.00    5000.00    1364.00    5003.25
GR   1365.5    5010.85    1365.78    5012.36    1366.00    5013.46    1366.52    5014.69    1368.00    5018.15
GR   1368.3    5018.85    1370.00    5022.82    1370.70    5024.49    1372.00    5027.49    1373.05    5031.15
GR   1374.0    5034.40    1375.00    5039.27    1376.00    5044.17    1376.23    5045.52    1377.39    5052.81
GR   1378.0    5059.14    1378.78    5065.36    1379.49    5073.77    1379.70    5074.11    1379.26    5077.51
GR   1378.7    5079.93    1378.00    5082.02    1378.00    5116.40    1378.13    5146.24    1378.00    5177.10
GR   1378.0    5181.33    1377.50    5273.67    1377.18    5375.38    1377.56    5451.37    1377.29    5556.89

QT        1      38873
ET                 5.1                          4095.41    5039.30
X1     8.79         89    4095.41    5039.30        530        546        539
GR   1384.0    3855.70    1384.00    3973.82    1382.64    3980.66    1384.00    3998.09    1382.65    4051.20
GR   1382.6    4058.69    1382.49    4060.23    1382.89    4064.63    1384.00    4067.90    1384.00    4095.41
GR   1382.2    4107.84    1382.00    4109.37    1380.85    4117.39    1380.00    4123.50    1378.49    4137.14
GR   1378.0    4141.55    1376.51    4154.98    1376.00    4159.65    1374.00    4171.01    1373.84    4176.47
GR   1372.0    4222.80    1372.00    4265.74    1371.40    4267.19    1370.00    4271.65    1370.02    4277.10
GR   1370.5    4303.75    1372.00    4387.79    1372.60    4464.89    1373.01    4509.16    1373.45    4564.23
GR   1373.6    4589.91    1374.00    4659.42    1374.00    4677.54    1373.79    4707.25    1374.00    4731.92
GR   1375.0    4815.01    1375.48    4838.28    1375.82    4866.71    1375.01    4881.51    1374.70    4887.04
GR   1374.0    4898.81    1374.00    4914.20    1376.00    4932.06    1377.09    4941.83    1377.77    4948.33
GR   1378.0    4950.51    1378.00    4973.99    1377.74    4974.57    1376.00    4978.35    1375.92    4978.54
GR   1375.3    4979.92    1374.00    4982.54    1373.68    4983.19    1372.00    4986.64    1371.40    4987.87
GR   1370.0    4990.74    1369.23    4992.31    1368.00    4994.83    1367.12    4996.63    1366.00    4998.93
GR   1366.0    5000.00    1367.19    5002.89    1368.00    5004.26    1369.43    5006.66    1370.00    5007.63
GR   1371.8    5010.72    1372.00    5011.01    1372.55    5011.93    1374.00    5014.64    1374.46    5015.50
GR   1376.0    5018.37    1377.54    5024.62    1378.00    5026.26    1378.19    5027.55    1378.48    5029.47
GR   1380.0    5039.30    1380.47    5053.53    1381.00    5070.14    1381.05    5074.82    1381.51    5092.11
GR   1381.8    5130.27    1381.56    5144.28    1381.81    5200.42    1381.90    5207.46    1381.92    5219.18
GR   1382.0    5303.86    1382.00    5320.81    1381.88    5345.60    1381.56    5475.95

QT        1      37665
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ET                5.1                                4541.12     5252.00
X1       8.93        71    4541.12    5252.00        565         711         722
GR     1386.3   4279.99    1386.00    4295.47    1386.34     4315.43     1386.00     4350.00     1385.51     4354.32
GR     1386.0   4371.17    1386.00    4454.56    1386.25     4457.97     1387.66     4480.76     1388.00     4485.92
GR     1388.0   4526.66    1386.72    4541.12    1386.00     4552.20     1385.40     4560.69     1385.02     4564.36
GR     1384.5   4569.41    1384.00    4573.51    1382.63     4586.39     1382.43     4588.53     1382.00     4594.51
GR     1381.7   4598.20    1380.48    4604.38    1380.00     4606.94     1379.91     4608.36     1378.58     4632.57
GR     1378.0   4639.26    1376.00    4653.50    1375.35     4704.64     1374.00     4828.12     1373.68     4850.43
GR     1373.1   4888.01    1372.88    4901.73    1372.00     4950.77     1371.17     4970.32     1370.00     4996.16
GR     1370.1   5000.00    1370.40    5014.94    1370.52     5018.25     1370.89     5033.81     1371.01     5037.53
GR     1371.3   5046.38    1371.00    5056.40    1370.55     5068.53     1370.60     5102.71     1370.78     5109.11
GR     1371.1   5116.39    1371.60    5131.46    1372.00     5139.38     1373.19     5146.05     1373.89     5149.69
GR     1374.0   5150.47    1374.30    5152.78    1374.67     5155.69     1376.00     5166.46     1376.39     5169.57
GR     1378.0   5182.62    1379.50    5195.03    1380.00     5200.27     1380.58     5207.92     1381.76     5224.62
GR     1382.0   5227.77    1382.80    5252.00    1384.00     5330.07     1384.00     5333.71     1384.91     5347.75
GR     1386.0   5362.52    1386.60    5376.48    1386.90     5391.40     1387.03     5397.63     1387.24     5419.21
1
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GR     1387.0   5437.79

QT        1     37188
ET                5.1                                4817.29     5340.88
X1       9.01        81    4817.29    5340.88        363         558         430
GR     1388.4   4519.91    1388.00    4559.91    1388.00     4561.41     1388.84     4570.06     1388.45     4571.71
GR     1388.0   4573.70    1388.00    4576.09    1388.46     4578.03     1388.77     4579.51     1388.28     4582.90
GR     1388.0   4583.57    1388.00    4677.39    1388.26     4681.88     1389.30     4700.64     1389.76     4708.44
GR     1389.3   4717.62    1388.98    4718.21    1388.52     4718.22     1388.00     4721.78     1387.37     4732.92
GR     1387.1   4737.05    1386.95    4738.08    1386.40     4758.07     1386.64     4764.66     1386.86     4770.00
GR     1387.0   4774.77    1387.38    4799.17    1387.08     4803.47     1386.92     4804.87     1386.44     4811.50
GR     1386.0   4817.29    1384.00    4825.73    1383.63     4827.33     1382.00     4834.13     1380.26     4841.49
GR     1380.0   4842.58    1379.21    4845.86    1378.00     4850.84     1376.45     4856.91     1376.00     4858.68
GR     1375.8   4859.41    1374.00    4866.60    1373.72     4878.11     1373.33     4898.38     1373.06     4911.20
GR     1372.9   4920.39    1372.51    4939.85    1372.35     4949.90     1372.19     4962.38     1372.32     4994.02
GR     1372.4   5000.00    1372.50    5005.13    1373.08     5052.28     1373.49     5089.07     1373.86     5118.83
GR     1374.0   5130.57    1375.57    5137.72    1376.00     5139.67     1377.54     5146.76     1378.00     5149.27
GR     1379.4   5157.21    1380.00    5161.68    1380.57     5169.64     1380.83     5173.36     1380.91     5174.01
GR     1381.2   5177.53    1381.59    5182.69    1382.00     5188.14     1382.37     5193.51     1383.14     5206.05
GR     1384.0   5217.34    1385.32    5244.41    1385.68     5252.28     1386.00     5257.06     1387.77     5292.41
GR     1388.0   5296.60    1388.84    5320.16    1389.58     5340.88     1389.68     5346.00     1390.00     5351.31
GR     1390.0   5433.52

QT        1     31379
ET                5.1                                4796.92     5198.84
X1       9.08        70    4796.92    5198.84        432         165         365
GR     1391.1   4515.30    1390.24    4539.50    1390.00     4540.45     1390.00     4625.97     1390.21     4628.50
GR     1390.6   4632.33    1390.69    4632.97    1390.44     4647.05     1390.08     4647.52     1390.00     4647.64
GR     1389.6   4649.23    1388.00    4655.18    1388.00     4670.31     1388.16     4671.07     1388.14     4787.35
GR     1388.0   4796.92    1387.24    4809.20    1386.69     4817.41     1386.00     4827.18     1384.79     4833.74
GR     1384.0   4837.38    1383.79    4838.28    1382.78     4842.68     1382.00     4845.64     1381.40     4847.91
GR     1380.0   4853.19    1378.86    4857.51    1378.00     4860.75     1377.03     4864.25     1376.00     4868.13
GR     1375.1   4871.58    1374.00    4875.67    1373.97     4878.43     1373.92     4884.08     1373.76     4895.74
GR     1373.7   4902.64    1373.65    4905.82    1373.59     4911.57     1373.49     4920.43     1373.47     5000.00
GR     1373.5   5095.48    1373.56    5107.93    1373.59     5109.03     1373.62     5112.59     1373.70     5119.31
GR     1373.8   5122.87    1373.82    5124.67    1373.85     5126.00     1373.92     5128.16     1373.94     5130.06
GR     1374.0   5131.14    1374.13    5131.77    1376.00     5140.79     1377.41     5147.57     1378.00     5150.02
GR     1378.6   5152.38    1380.00    5158.25    1381.29     5163.54     1382.00     5166.47     1383.45     5172.44
GR     1384.0   5174.70    1385.73    5181.83    1386.00     5182.93     1387.10     5187.46     1388.00     5190.99
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GR    1388.1    5191.61    1389.08    5195.22    1390.00    5198.84    1390.04    5199.45    1390.27    5233.18

QT         1      27720
NC     0.035      0.035      0.035
ET                  5.1                          4835.60    5165.24
X1      9.14         94    4835.60    5165.24        288        385        333
GR    1392.1    4525.85    1392.00    4598.96    1391.59    4608.73    1390.99    4723.68    1391.42    4775.78
GR    1391.5    4789.87    1391.64    4805.14    1391.00    4830.80    1390.59    4832.90    1390.00    4835.60
GR    1389.7    4836.69    1389.00    4839.12    1388.44    4841.11    1388.00    4842.60    1387.57    4843.96
GR    1387.0    4845.55    1386.47    4846.70    1386.00    4847.68    1385.71    4848.28    1385.00    4849.75
GR    1384.7    4850.41    1384.00    4851.87    1383.84    4852.20    1383.32    4853.25    1383.00    4853.91
GR    1382.8    4854.33    1382.00    4856.07    1381.65    4856.77    1381.00    4858.07    1380.00    4860.14
1
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GR    1379.7    4861.00    1379.19    4861.98    1379.00    4862.42    1378.49    4863.58    1378.00    4864.71
GR    1377.4    4866.13    1377.00    4867.28    1376.43    4869.03    1376.00    4869.56    1375.54    4872.43
GR    1374.5    4874.14    1374.00    4875.08    1374.00    5000.00    1374.00    5062.13    1374.39    5091.47
GR    1375.0    5121.35    1375.00    5125.45    1375.71    5129.68    1376.00    5131.10    1376.94    5133.66
GR    1377.0    5134.06    1377.77    5135.68    1378.00    5136.16    1379.00    5138.25    1379.92    5140.18
GR    1380.0    5140.35    1380.80    5142.03    1381.00    5142.44    1381.45    5143.38    1382.00    5144.53
GR    1382.9    5146.34    1383.00    5146.63    1383.72    5148.14    1384.00    5148.75    1384.46    5149.37
GR    1385.0    5150.09    1385.25    5150.43    1386.00    5151.41    1386.80    5152.48    1387.00    5152.75
GR    1387.2    5153.56    1388.00    5156.83    1388.60    5159.29    1389.00    5160.92    1389.34    5162.35
GR    1389.7    5164.16    1390.00    5165.24    1390.00    5165.45    1390.42    5166.34    1391.00    5168.32
GR    1391.8    5170.94    1391.91    5171.50    1392.00    5171.73    1392.22    5174.81    1392.64    5180.92
GR    1393.0    5184.53    1392.55    5196.46    1392.91    5224.81    1392.45    5256.91    1392.29    5293.65
GR    1392.1    5328.16    1392.00    5380.42    1392.00    5416.53    1391.87    5437.55
  DOWNSTREAM FACE OF PINNACLE PEAK ROAD BRIDGE

QT         1      27720
X1     9.145         66       5015       5325          8          8          8
X3        10          0          0          0          0          0          0     1392.2     1393.1
BT       -16       5015     1394.5     1394.5    5015.01     1394.5       1390       5045     1394.8     1390.3
BT                 5085     1395.2     1390.7    5088.75     1395.2     1390.8    5093.75     1395.3     1390.8
BT                 5125     1395.6     1391.1       5170     1395.7     1391.2       5205     1395.7     1391.2
BT                 5245     1395.5       1391    5246.25     1395.5       1391    5251.25     1395.5       1391
BT                 5285     1395.2     1390.7       5295     1395.1     1390.6    5324.99     1394.7     1390.2
BT                 5325     1394.7     1394.7
GR    1395.6    3767.9     1395.5     3820.9     1395.4     3873.6     1395.4     3891.5     1395.4     3939.2
GR    1395.2    3990.7     1395.4     4052.6     1395.4     4113.7     1395.3     4176.6     1395.1     4229.3
GR    1395.1    4287.4     1394.9     4334.4     1394.8     4385.2     1394.7     4450.4     1394.8     4489.6
GR    1394.5    4524.7     1394.1     4576.1       1394     4617.7     1393.7     4656.6     1393.2     4693.1
GR    1393.1    4730.9     1392.4       4761     1392.2       4821     1392.4       4881    1393.59       4956
GR    1394.4      5006     1394.5       5015       1390    5015.01    1374.94       5045    1374.94       5085
GR    1374.9   5088.74    1390.80    5088.75    1390.80    5093.75    1374.94    5093.76    1374.94       5125
GR    1374.9   5167.49     1391.2     5167.5     1391.2       5170     1391.2     5172.5    1374.94    5172.51
GR    1374.9      5205    1374.94       5245    1374.94    5246.24       1391    5246.25       1391    5251.25
GR    1374.9   5251.26    1374.94       5285    1374.94       5295     1390.2    5324.99     1394.7       5325
GR    1394.8      5326    1393.95       5376    1393.27       5453    1393.07       5520     1393.1     5541.9
GR    1392.9    5588.6     1392.7     5636.9     1392.7     5681.4     1392.5     5740.6     1392.6     5796.6
GR    1392.6    5855.7     1392.4     5922.7     1392.3       5988     1392.3     6032.1     1392.1     6079.5
GR    1392.1      6085
  UPSTREAM FACE OF PINNACLE PEAK ROAD BRIDGE

QT         1      27720
X1     9.155         66       5015       5325       80.2       80.2       80.2
X3        10          0          0          0          0          0          0     1392.2     1393.1
BT       -16       5015     1394.5     1394.5    5015.01     1394.5       1390       5045     1394.8     1390.3
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BT                5085     1395.2     1390.7    5088.75     1395.2     1390.8    5093.75     1395.3     1390.8
BT                5125     1395.6     1391.1       5170     1395.7     1391.2       5205     1395.7     1391.2
BT                5245     1395.5       1391    5246.25     1395.5       1391    5251.25     1395.5       1391
BT                5285     1395.2     1390.7       5295     1395.1     1390.6    5324.99     1394.7     1390.2
BT                5325     1394.7     1394.7
GR   1395.6     3767.9     1395.5     3820.9     1395.4     3873.6     1395.4     3891.5     1395.4     3939.2
GR   1395.2     3990.7     1395.4     4052.6     1395.4     4113.7     1395.3     4176.6     1395.1     4229.3
GR   1395.1     4287.4     1394.9     4334.4     1394.8     4385.2     1394.7     4450.4     1394.8     4489.6
GR   1394.5     4524.7     1394.1     4576.1       1394     4617.7     1393.7     4656.6     1393.2     4693.1
GR   1393.1     4730.9     1392.4       4761     1392.2       4821     1392.4       4881    1393.59       4956
1
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GR   1394.4       5006     1394.5       5015       1390    5015.01    1375.14       5045    1375.14       5085
GR   1375.1    5088.74     1390.8    5088.75     1390.8    5093.75    1375.14    5093.76    1375.14       5125
GR   1375.1    5167.49     1391.2     5167.5     1391.2       5170     1391.2     5172.5    1375.14    5172.51
GR   1375.1       5205    1375.14       5245    1375.14    5246.24       1391    5246.25       1391    5251.25
GR   1375.1    5251.26    1375.14       5285    1375.14       5295     1390.2    5324.99     1394.7       5325
GR   1394.8       5326    1393.95       5376    1393.27       5453    1393.07       5520     1393.1     5541.9
GR   1392.9      5588.6     1392.7     5636.9     1392.7     5681.4     1392.5     5740.6     1392.6     5796.6
GR   1392.6      5855.7     1392.4     5922.7     1392.3       5988     1392.3     6032.1     1392.1     6079.5
GR   1392.1        6085

QT        1      27720
ET                 5.1                           4852.56    5164.29
X1     9.16          89    4852.56    5164.29          8          8          8
GR   1392.6    4528.66    1392.16    4581.89    1392.81    4592.32    1392.00    4643.39    1391.85    4708.61
GR   1392.0    4756.55    1392.50    4805.50    1392.00    4836.76    1391.23    4838.82    1391.00    4839.41
GR   1390.5    4842.05    1390.00    4852.56    1389.00    4854.43    1388.00    4856.29    1387.00    4857.94
GR   1386.0    4859.59    1385.00    4861.24    1384.00    4862.89    1383.40    4863.88    1383.00    4864.54
GR   1382.5    4865.33    1382.00    4866.18    1381.00    4867.82    1380.61    4868.61    1380.00    4869.92
GR   1379.8    4870.35    1379.00    4872.01    1378.40    4873.27    1378.00    4874.11    1377.29    4875.60
GR   1377.0    4876.20    1376.18    4877.92    1376.00    4878.30    1375.00    4880.39    1374.81    4915.05
GR   1374.0    4961.04    1374.20    5000.00    1374.50    5083.02    1374.70    5107.91    1375.00    5129.31
GR   1375.6    5132.84    1376.00    5135.04    1377.00    5138.70    1378.00    5140.93    1379.00    5142.76
GR   1379.6    5143.88    1380.00    5144.79    1380.41    5145.63    1381.00    5146.82    1381.33    5147.49
GR   1382.0    5148.85    1382.47    5149.81    1383.64    5152.18    1384.00    5152.91    1384.55    5154.02
GR   1385.0    5154.94    1386.00    5156.58    1386.42    5157.20    1387.00    5158.07    1388.00    5161.31
GR   1388.6    5162.08    1389.00    5162.75    1389.58    5163.63    1390.00    5164.29    1390.52    5165.66
GR   1390.7    5169.65    1390.00    5170.91    1390.00    5171.15    1390.65    5172.70    1391.00    5173.49
GR   1391.5    5174.67    1392.00    5175.74    1392.49    5177.88    1393.00    5180.15    1393.00    5215.17
GR   1392.8    5239.51    1393.00    5302.86    1393.00    5330.00    1393.00    5335.30    1393.52    5343.99
GR   1394.0    5352.89    1394.20    5356.22    1394.67    5363.95    1395.00    5372.98    1395.00    5394.93
GR   1394.9    5404.04    1394.00    5430.80    1393.15    5432.47    1393.36    5445.27

  BOTTOM OF DROP STRUCTURE
  ROCKWALL HAS BEEN LOWERED IN ELEVATION

QT        1      27720
NC    0.035      0.035      0.020
ET                 5.1                            4732    5190.05
X1     9.21          7       4732    5174.57       145        355        279
GR     1389       4732       1376       4765      1376       4901       1376       5000       1376    5140.72
GR     1391    5174.57       1392    5190.05

  TOP OF DROP STRUCTURE
  ROCKWALL HAS BEEN LOWERED IN ELEVATION

QT        1      27720
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NC     0.040      0.035      0.035
ET                  5.1                          4664     5314.09
X1      9.22         14       4664    5192.98     122         104         39
GR      1395       4664       1390       4708    1390     4871.20       1390       5000       1390    5167.75
GR      1391    5173.76       1392    5177.14    1393     5179.36       1394    5181.58       1395    5184.44
GR      1396    5187.36       1397    5192.98    1398     5219.20       1399    5314.09
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LEFT BANK ENCROACHMENT SET AT ROCKWALL BOUNDARY FOR BREAKOUT WSEL MATCHING

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QT         1      27720
ET                  5.1                       4572.95     5304.55
X1      9.25         45       4825    5285.60     155          82        141
GR      1400       3023     1399.1       3123  1397.6        3223     1395.8       3323     1392.7       3423
GR      1392       3523       1393       3623  1393.6        3723     1393.5       3762       1394       3874
GR      1394       3898       1394    4003.81    1394     4062.18       1395    4283.87       1395    4298.29
GR      1395    4301.25       1395    4365.84    1395      4385.4     1395.7    4563.07       1396    4565.34
GR      1397    4570.45    1397.57    4572.95  1397.46     4582.97       1397    4585.82       1396    4590.84
GR      1395    4598.19       1395    4614.18    1395     4621.31       1394    4735.08       1394    4738.18
GR      1394    4838.32       1393    4871.51    1392     4892.27       1392       5000       1392     5077.8
GR      1393    5179.38       1394    5266.49    1395     5275.95       1396    5278.52       1397    5281.09
GR      1398    5283.83    1398.64     5285.6    1399     5290.86       1400    5304.55       1399    5325.36
```

END FLOW SPLIT; RETURN TO FULL FLOW

```
QT         1      39000
ET                  5.1                       4441.50     5290.19
X1      9.30         52    4779.69    5280.97     262         282        261
GR    1401.5       2940     1402.6       2970  1400.5        3070     1398.6       3170       1397       3270
GR      1394       3370       1394       3470    1394        3570       1394       3670     1394.8       3770
GR      1395       3820       1394       3930    1394     4045.09       1395    4108.19       1395       4117
GR      1396    4323.15    1396.42    4425.34    1397     4429.71     1397.92    4434.42     1397.94     4441.5
GR      1397    4445.67       1396     4449.8    1395     4453.93     1394.13    4458.61       1394    4462.74
GR      1393    4494.69       1393    4512.86    1394     4520.79       1395    4539.92       1395    4544.55
GR      1395    4549.38       1396    4554.31    1397      4672.3       1397    4703.41       1397    4730.49
GR      1397    4737.81     1396.5       4750    1396     4768.57       1395    4779.69       1394     4811.1
GR      1393     4973.9       1393       5000    1393     5090.01       1394    5237.22       1395    5265.28
GR      1395    5270.89       1396    5273.07    1397     5275.25       1398    5277.47       1399    5279.81
GR    1399.5    5280.97       1400    5290.19

ET                  5.1                       4252.38     5287.77
X1      9.35         64       4775    5275.88     291         274        274
GR    1403.4       2913       1404       2963  1401.9        3063     1400.6       3163     1399.1       3263
GR      1396       3363       1396       3463  1394.8        3563     1395.2       3663       1396       3763
GR      1396       3863       1396       3873    1396        3970       1396    4133.14       1397    4227.56
GR      1398    4246.88       1399    4251.02  1399.3     4252.38    1399.19    4261.99       1399    4262.89
GR      1398    4266.45       1397    4272.25    1396     4279.28       1395    4304.83       1395    4325.29
GR      1396     4342.7       1397    4379.18    1398      4402.1       1399    4459.05       1399    4467.32
GR      1399    4490.46       1399    4657.95    1399     4675.14       1399       4775       1399    4817.89
GR      1398    4824.28       1398    4830.91    1398     4833.58       1397    4841.76       1396    4854.67
GR      1395    4861.17       1394    4882.23    1393     4897.87       1392    4929.89       1392    4995.23
GR    1392.2       5000       1393    5015.98    1394     5050.46       1394    5062.07       1394    5081.74
GR      1394    5098.98       1393    5104.45    1393     5165.77       1394    5255.79     1394.16    5261.12
GR      1395    5263.15       1396    5265.55    1397     5267.94       1398    5270.34       1399    5272.74
GR    1399.9    5274.92       1400    5275.88    1401     5287.77       1401    5364.41
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FIRST LANDFILL CROSS SECTION

X1	9.42	84	4717	5216.97	400	402	399			
GR	1428	4000	1426	4011.37	1424	4051.66	1424	4057.37	1426	4081.68
GR	1428	4110.92	1428	4121.45	1426	4129.13	1424	4134.76	1422	4139.19
GR	1421	4142.73	1420	4161.87	1419.19	4203.29	1418	4205.11	1416	4226.25
GR	1414	4237.19	1412	4246.78	1410	4256.36	1408	4267.25	1406	4278.32
GR	1404	4313.42	1402	4319.63	1401	4385.11	1401	4391.49	1400	4399.73
GR	1400	4402.48	1400	4425	1399	4435.31	1399	4437.98	1400	4464.1
GR	1400	4473.55	1401	4478.99	1401	4489.28	1401	4501.38	1401	4506.58
GR	1401	4519.28	1401	4549.48	1401	4609.38	1401	4631.43	1401	4640
GR	1401	4717	1401	4808.53	1401	4810.26	1400	4816.66	1399	4821.3
GR	1398	4826.32	1397	4831.26	1396	4836.2	1395	4840.81	1394	4845.47
GR	1394	4861.29	1394	4874.91	1394	4881.71	1395	4899.25	1395	4935.92
GR	1394	4952.05	1393	4968.09	1393	4971.63	1393	4977.75	1393	5000
GR	1393	5022.4	1394	5029.45	1395	5047.57	1396	5049.85	1397	5052.12
GR	1397	5069.99	1396	5075.09	1395	5080.13	1394	5086.54	1393	5111.54
GR	1393	5144.13	1394	5187.94	1395	5201.29	1396	5203.58	1397	5205.87
GR	1398	5208.12	1399	5210.33	1400	5212.55	1401	5214.76	1402	5216.97
GR	1402.1	5217.23	1403	5227.59	1404	5237.39	1404.24	5239.73		

NC	0.040	0.040	0.040							
X1	9.45	97	4709	5209	93	126	118			
GR	1444	4000	1446	4007.9	1448	4067.98	1448	4129.56	1446	4153.01
GR	1444	4163.3	1442	4166.26	1440	4169.22	1438	4175.44	1436	4186.62
GR	1434	4200.28	1432	4214.71	1430	4223.41	1428	4230.51	1426	4245.88
GR	1424	4268.57	1422.59	4278.96	1422	4280.89	1420	4290.71	1418	4299.79
GR	1416	4308.72	1414	4317.57	1412	4326.42	1410	4337.33	1408	4350.71
GR	1406	4364.09	1404	4377.47	1402	4400.54	1401	4461.44	1400	4466.82
GR	1400	4480.64	1400	4491.26	1400	4512.14	1401	4518.92	1401.69	4560.74
GR	1402	4579.32	1403	4582.89	1403	4591.95	1402	4596.75	1402	4660
GR	1402	4672.46	1401.7	4709	1401	4801.15	1400	4808.19	1399	4812.86
GR	1398	4817.28	1397	4822.04	1396	4829.31	1395	4850.48	1395	4874.85
GR	1396	4881.97	1397	4899.1	1397	4923.02	1396	4938.23	1395	4946.05
GR	1394	4960.72	1394	4965.12	1394	4968.36	1394	4997.02	1393.39	5000
GR	1393	5001.91	1393	5029.22	1394	5035.16	1395	5037.25	1396	5039.33
GR	1397	5041.64	1398	5043.96	1399	5046.15	1400	5048.19	1401	5065.48
GR	1401	5071.95	1401	5081.45	1401	5133.8	1400	5156.91	1399	5160.41
GR	1398	5163.93	1397	5167.45	1396	5170.97	1395	5174.49	1394	5180.55
GR	1394	5209	1394	5237.19	1395	5242.58	1396	5247.96	1397	5251.97
GR	1398	5255.85	1399	5259.53	1400	5261.9	1401	5264.27	1404.8	5265.18
GR	1402	5266.67	1403	5269.03	1404	5271.38	1405.2	5272.32	1404.6	5276.7
GR	1405	5277.23	1405	5281.63						

NC	0.035	0.040	0.040							
ET		5.1			4663.35	5177				
X1	9.54	85	4685.93	5177	410	515	500			
GR	1456	4000	1456	4021.5	1454	4238.02	1454	4370.23	1456	4373.71
GR	1458	4382.67	1460	4392.58	1462	4402.82	1464	4414.23	1464	4416.59
GR	1462	4419.16	1460	4421.73	1458	4424.3	1456	4426.86	1454	4429.43
GR	1452	4432.03	1450	4434.89	1448	4437.71	1446	4440.53	1444	4443.94
GR	1442	4455.27	1440	4466.36	1438	4475.82	1436	4485.28	1434	4494.74
GR	1432	4503.98	1430	4512.83	1428	4521.68	1426	4530.63	1424	4537.95

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GR      1422     4543.4      1420     4548.8      1418     4566.76      1416     4576.41      1414     4588.78
GR      1412     4606.7      1410     4618.24     1408     4626.12      1406      4646.3   1405.45     4653.56
GR      1406     4654.9      1408     4659.52  1409.53     4663.35   1409.41     4679.83      1408     4685.93
GR      1406    4694.77      1404     4704.62     1402     4714.47      1400     4759.39      1399     4817.12
GR      1399    4833.11      1399     4849.47     1399        4877      1398     4880.23      1397     4889.16
GR      1397    4922.52      1398     4930.18     1398     4954.06      1397     4978.17      1397        5000
GR      1397    5021.85      1398     5031.11     1399     5044.96      1400     5072.02      1401     5077.75
GR      1402    5083.41      1403     5099.61     1404     5131.49      1404     5150.42      1404     5168.37
GR      1404       5177      1404     5197.33     1404      5199.5      1404     5210.97      1404     5253.08
GR      1404    5391.09      1403     5589.76     1403     5598.79      1404     5665.44      1405      5677.3
GR      1406    5688.92      1407     5698.83     1408     5708.08    1408.1     5709.05      1408     5712.42

ET                  5.1                          4736.39     5231.86
X1      9.65         77   4754.19     5231.86      475         503      558
GR      1464       4000      1464     4008.95     1464     4009.76      1462     4321.74      1460     4399.87
GR      1458    4431.45      1456     4444.62     1454     4455.94      1452     4520.78      1450     4527.92
GR      1448    4534.57      1446     4541.22     1444      4547.9      1442     4555.79      1440     4564.66
GR      1438    4573.56      1436     4582.53     1434      4591.5      1432     4600.47      1430     4609.44
GR      1428    4617.73      1426     4626.65     1424     4636.67      1422     4647.12      1420     4657.56
GR      1418    4668.01      1416     4678.25  1415.47     4681.09      1414     4684.72      1412     4698.82
GR      1410    4712.91   1408.84     4718.95     1410     4724.03      1412     4732.19   1412.28     4733.95
GR    1412.3    4736.39   1412.23     4752.15  1412.23     4753.27      1412     4754.19      1410     4762.26
GR      1408    4770.81      1406     4779.35     1404     4787.89      1402     4808.39      1402     4880.47
GR      1402       5000      1402      5117.6     1402     5177.99      1404      5201.2      1406     5208.98
GR      1408    5216.75      1410     5224.53  1411.67     5231.28   1411.74     5231.86   1411.54     5244.69
GR    1411.6    5244.92      1410     5251.38     1408     5258.75      1406     5266.02      1405     5297.23
GR      1405    5320.44      1406     5347.25     1406     5388.09      1406     5408.08      1407      5541.7
GR      1407    5718.14      1406      5754.4     1406     5784.09      1406     5792.77      1406     5810.87
GR      1406    5820.41      1406     5838.97     1407     5936.82      1408     6017.23      1409     6081.83
GR      1410    6155.49      1411     6165.28

NC     0.035      0.035      0.035
ET                  5.1                          4752.73     5283.89
X1      9.70         45   4757.14     5273.18      253         259      256
GR      1466       4109      1464      4316.8     1462     4420.43      1460     4447.14      1458     4478.14
GR      1456    4489.46      1454     4500.45     1452     4509.98      1450     4519.51      1448     4529.04
GR      1446    4538.57      1444      4548.1     1442     4557.38      1440     4566.27      1438     4575.05
GR      1436    4583.83      1434     4592.61     1432     4601.39      1430     4609.72      1428     4617.43
GR      1426    4627.56      1424     4668.02     1422     4677.03      1420     4686.23      1418     4694.23
GR      1416    4702.22      1414     4725.62  1413.09     4738.64   1413.15     4752.73      1412     4757.14
GR      1410    4765.55      1408     4773.94     1406      4782.3      1404     4790.65      1404        5000
GR      1404    5228.02      1406     5244.34     1408     5253.96      1412     5273.18   1412.96     5277.81
GR    1413.2    5283.89      1414     5286.99     1416     5294.01      1418     5300.98      1420     5310.97

ET                  5.1                          4761.98     5298.67
X1      9.73         47   4763.41     5284.93      187         151      169
GR      1468       4092      1466     4213.55     1464        4379      1462      4470.4      1460     4508.81
GR      1458    4525.45      1456     4535.99     1454     4546.24      1452      4556.5      1450     4565.64
GR      1448    4574.49      1446     4582.67     1444     4590.66      1442     4598.64      1440     4606.63
GR      1438    4614.61      1436      4622.6     1434      4630.3      1432     4638.03      1430     4646.07
GR      1428    4654.12      1426     4662.16     1424      4670.2      1422     4678.24      1420     4686.28
1
   07OCT03      22:36:17                                                                          PAGE     9

GR      1418    4694.59      1416     4735.51     1414     4745.63   1413.77     4747.24      1414     4754.45
GR    1414.2    4761.98      1414     4763.41     1412     4771.23      1410     4779.05      1408     4786.93
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GR	1406	4794.83	1404	4807.46	1404	5000	1404	5232.22	1406	5255.68
GR	1408	5265.54	1410	5275.37	1412	5284.93	1414	5298.67	1416	5306.36
GR	1418	5314.06	1420	5322.58						

ET		5.1			4698.37	5217.67				
X1	9.80	62	4738.89	5206.55	383	349	365			
GR	1476	4000	1476	4071.22	1474	4291.9	1472	4368.03	1470	4404.99
GR	1468	4419.78	1466	4435.01	1464	4454.29	1462	4489.38	1460	4517.69
GR	1458	4526.82	1456	4535.94	1454	4545.06	1452	4554.19	1450	4563.31
GR	1448	4572.44	1446	4580.51	1444	4588.95	1442	4597.51	1440	4606.07
GR	1438	4614.65	1436	4623.22	1434	4631.58	1432	4639.42	1430	4647.25
GR	1428	4655.08	1426	4662.93	1424	4670.84	1422	4678.74	1420	4686.85
GR	1418	4698.37	1416	4738.89	1416	4742.87	1416	4745.09	1415.15	4749.88
GR	1415.7	4766.09	1414	4773.04	1412	4781.48	1410	4789.92	1408	4798.11
GR	1406	4814.33	1406	5000	1406	5168.2	1408	5177.78	1410	5187.37
GR	1412	5196.96	1414	5206.55	1414.61	5209.05	1414.9	5217.67	1416	5221.57
GR	1418	5228.59	1420	5235.61	1422	5242.63	1424	5250.86	1426	5260.4
GR	1428	5270.06	1430	5279.73	1432	5290	1434	5301.13	1436	5313.24
GR	1438	5329.65	1440	5350.74						

ET		5.1			4678.48	5167.47				
X1	9.89	61	4741.17	5163.70	509	484	495			
GR	1480	4000	1480	4097.31	1478	4315.5	1476	4369.55	1474	4409.22
GR	1472	4428.88	1470	4447.01	1468	4467.06	1466	4484.74	1464	4501.35
GR	1462	4517.81	1460	4528.28	1458	4538.09	1456	4547.75	1454	4557.31
GR	1452	4566.31	1450	4574.08	1448	4581.28	1446	4588.48	1444	4595.7
GR	1442	4603.03	1440	4610.35	1438	4617.67	1436	4624.99	1434	4631.68
GR	1432	4638.82	1430	4646.76	1428	4654.71	1426	4662.61	1424	4670.44
GR	1422	4678.48	1422	4689.89	1422.06	4691.09	1422	4691.98	1421.45	4699.1
GR	1420	4741.17	1418	4771.38	1416	4778.99	1414	4786.68	1412	4794.99
GR	1410	4803.8	1408	4840.1	1406	4951.17	1406	4964.91	1407.43	5000
GR	1408	5114.09	1410	5126.94	1412	5136.13	1414	5145.32	1416	5154.51
GR	1418	5163.7	1418.8	5167.47	1418.7	5180.97	1418	5182.68	1418	5202.91
GR	1420	5221.64	1422	5236.46	1424	5244.79	1426	5252.68	1428	5260.3
GR	1430	5267.91								

ET		5.1			4813.54	5284.14				
X1	9.98	68	4828.11	5274.26	462	469	475			
GR	1476	4020	1476	4135.18	1474	4180.69	1472	4242.44	1472	4405.93
GR	1474	4459.87	1474	4532.3	1472	4564.64	1470	4600.47	1468	4627.43
GR	1466	4644.39	1464	4650.73	1462	4658.68	1460	4666.95	1458	4675.21
GR	1456	4683.48	1454	4692.64	1452	4702.53	1450	4711.67	1448	4720.68
GR	1446	4728.08	1444	4734.3	1442	4740.53	1440	4746.75	1438	4752.97
GR	1436	4759.19	1434	4766.97	1432	4775.44	1430	4783.95	1428	4813.54
GR	1428	4821.2	1428.96	4826.63	1428	4828.11	1426	4830.93	1425.95	4831.02
GR	1425.7	4834.7	1424	4840.53	1422	4847.1	1420	4853.67	1418	4860.24
GR	1416	4866.81	1414	4874.06	1412	4895.31	1410	4925.82	1410	4957.15
GR	1410	4985.2	1410	5000	1410	5196.05	1412	5234.32	1414	5243.75
GR	1416	5253.18	1418	5262.85	1420	5274.26	1421.67	5284.14	1421.15	5293.67

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GR	1420	5297.1	1418.2	5302.27	1420	5323.38	1422	5337.3	1424	5349.84
GR	1426	5361.61	1428	5370.82	1430	5379.99	1432	5389.15	1434	5398.3
GR	1436	5407.46	1438	5416.8	1440	5427.51				

ET		5.1			4840.61	5275.34				
X1	10.08	60	4841.72	5274.76	508	514	511			
GR	1476	4000	1478	4028.78	1480	4085.32	1480	4214.24	1478	4270.59
GR	1476	4333.92	1474	4385.59	1472	4415.91	1470	4435.24	1468	4453.48
GR	1466	4471.72	1464	4489.47	1462	4507.08	1460	4524.24	1458	4540.43
GR	1456	4560.04	1454	4579.47	1452	4664.02	1450	4686.12	1448	4711.59
GR	1446	4736.49	1444	4743.04	1442	4749.49	1440	4755.86	1438	4761.79
GR	1436	4767.07	1434	4772.52	1432	4778.04	1430	4783.56	1428	4789.08
GR	1426	4795.68	1426	4838.85	1426.35	4840.61	1426	4841.72	1424	4848.12
GR	1422	4854.53	1420	4861.27	1418	4869.07	1416	4880.94	1414	4903.67
GR	1412.5	5000	1412	5028.73	1412	5119.72	1414	5215.45	1416	5233.54
GR	1418	5244.05	1420	5254.55	1422	5265.05	1424	5274.76	1424.17	5275.34
GR	1424	5277.85	1423.5	5284.05	1422	5288.76	1420	5294.8	1420	5307.7
GR	1422	5411.56	1424	5519.39	1426	5568.38	1428	5584.58	1430	5600.76

ET		5.1			4784.92	5288.33				
X1	10.16	48	4797.94	5270.13	447	418	430			
GR	1438	4000	1436	4021.6	1434	4039.29	1432	4060.58	1430	4087.84
GR	1428	4116.35	1426	4163.37	1426	4172.5	1426	4329.8	1424	4615.05
GR	1422	4727.69	1422	4765.14	1424	4772.65	1426	4779.85	1427.4	4784.92
GR	1426.9	4794.24	1426	4797.94	1424	4806.13	1422	4814.72	1420	4823.31
GR	1418	4831.89	1416	4850.45	1416	5000	1416	5206.7	1418	5231.48
GR	1420	5241.03	1422	5250.58	1424	5260.12	1426	5270.13	1426.69	5273.76
GR	1426.8	5288.33	1426	5290.46	1424	5295.56	1423.73	5296.35	1424	5299.13
GR	1426	5318.58	1428	5331.54	1430	5343.77	1432	5355.48	1434	5367.2
GR	1436	5379.53	1438	5392.13	1440	5404.93	1442	5417.74	1444	5430.71
GR	1446	5445.59	1448	5460.48	1450	5475.78				

ET		5.1			4772.87	5312.98				
X1	10.25	50	4772.87	5312.98	496	420	460			
GR	1462	4000	1462	4353.1	1462	4360.97	1464	4372.48	1466	4380.6
GR	1466	4394.69	1464	4399.98	1462	4402.86	1460	4405.73	1458	4408.62
GR	1456	4420.57	1454	4432.06	1452	4443.38	1450	4454.7	1448	4465.92
GR	1446	4476.55	1444	4487.22	1442	4497.92	1440	4509.43	1438	4521.31
GR	1436	4534.04	1434	4573.89	1434	4576.65	1434	4582.76	1432	4590.09
GR	1430	4597.07	1428	4604.05	1426	4740.78	1426	4758.62	1428	4766.33
GR	1429.7	4772.87	1429.36	4781.13	1428	4786.37	1426	4794.42	1424	4802.47
GR	1422	4810.53	1420	4841.46	1420	5225.51	1422	5254.59	1424	5264.85
GR	1426	5274.47	1428	5284.05	1429.2	5289.83	1429.27	5312.98	1430	5319.77
GR	1432	5338.35	1434	5354.33	1436	5382.04	1438	5398.07	1440	5414.09

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ET		5.1			4766.40	5271.99				
X1	10.33	47	4782.32	5269.64	519	373	444			
GR	1450	4000	1448	4073.55	1448	4076.89	1448	4151.72	1446	4166.89
GR	1444	4179.19	1442	4193.45	1440	4215.25	1438	4234.67	1436	4254.62
GR	1434	4273.64	1432	4293.27	1430	4335.46	1428	4352.32	1428	4394.66
GR	1430	4399.29	1432	4405.29	1434	4417.32	1436	4573.71	1434	4592.8
GR	1432	4607.16	1430	4731.8	1430	4744.77	1432	4752.19	1434	4759.52
GR	1435.8	4766.4	1435.17	4782.32	1434	4787.13	1432	4795.34	1430	4802.67
GR	1428	4810	1426	4817.69	1424	4826.71	1422.57	5000	1422	5069.23
GR	1422	5172.18	1424	5223.94	1426	5234.36	1428	5243.12	1430	5251.96
GR	1432	5260.8	1434	5269.64	1434.83	5271.99	1434.09	5290.23	1434	5290.52
GR	1432	5296.74	1430	5302.97						

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ET                5.1                          4756.86     5252.58
X1    10.34        38    4775.45    5243.36       104          42          73
GR     1434      4000       1434    4020.85      1432     4060.47        1432     4210.33        1432     4230.74
GR     1430      4304       1430       4351      1430     4400.08        1430     4476.92        1432     4558.77
GR     1432   4579.43       1430    4699.87      1430     4741.11        1432     4746.28        1434     4751.62
GR   1435.9   4756.86       1435    4775.45      1434     4779.27        1432     4786.85        1430     4794.42
GR     1428   4803.16       1426    4811.92      1424     4839.17     1422.77        5000        1422     5099.99
GR     1422   5118.31       1424    5204.31      1426     5212.97        1428     5217.15        1430      5226.8
GR     1432   5234.78       1434    5243.36   1435.48     5252.58     1434.92     5272.38        1434     5274.21
GR     1432   5278.35       1430    5282.48      1430     5283.56

  HAPPY VALLEY ROAD CROSSING

NC    0.030     0.030      0.030
ET                5.1                          4823.21        5272
X1    10.38        34    4823.21    5293.86       173         143         162
GR     1432      4050       1432    4345.47      1434     4359.49        1436     4382.17        1436     4444.22
GR     1434   4514.59       1434    4523.97      1436     4605.62        1436     4667.41        1434     4710.47
GR     1434    4776.7    1435.99    4798.29   1435.82     4823.21        1434     4831.49        1432     4838.95
GR     1430   4845.97       1428    4854.29      1426     4860.89        1424      4952.8        1424        5000
GR     1424   5110.95       1426     5223.7      1428     5293.86        1430     5418.28        1432     5426.63
GR     1434   5436.09       1436    5445.55      1436     5462.06     1438.33     5462.07     1438.33     5463.07
GR     1436   5463.08       1436    5478.57   1435.96     5479.62        1434     5488.87

NC    0.035     0.035      0.035
ET                5.1                          4783.08     5262.74
X1    10.41        52    4791.83    5251.18       198         142         171
GR     1434      4064       1434    4072.38      1436      4078.9        1438     4083.68        1440     4114.64
GR     1442   4124.08       1444    4141.29      1444     4186.45        1442     4196.42        1438     4216.34
GR     1436   4223.27       1434    4229.95      1432     4236.99        1432     4370.62        1434     4373.56
GR     1436    4376.5       1438    4379.45      1440     4383.45        1440     4469.41        1438      4505.1
GR     1436   4516.74       1434    4526.64      1432     4535.95        1432     4754.33        1434     4759.91
GR   1435.7   4764.94       1436    4772.28      1436     4782.06     1438.34     4782.07     1438.34     4783.07
GR     1436   4783.08       1436    4791.83      1434     4800.27        1432     4808.85        1430     4817.15
GR     1428    4863.1       1428       5000      1428     5071.88        1428     5119.31        1428     5202.52
GR     1430   5229.35       1432    5236.74      1434     5244.12        1436     5251.18        1436     5262.73
GR   1438.9   5262.74     1438.9    5262.75      1436     5262.76        1436     5274.27        1434      5279.7
GR     1432   5285.08       1430     5290.4
1
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ET                5.1                          4758.78     5239.41
X1    10.42        46    4772.17    5239.37        70          58          64
GR     1434      4057       1434    4122.12      1434     4141.01        1432     4192.42        1432     4500.07
GR     1434   4518.47       1436    4524.56      1438     4530.85        1438       4566        1436     4602.78
GR     1434   4617.91       1432    4648.14      1432     4733.89        1434      4738.7        1436     4743.37
GR     1436   4757.77       1439    4757.78      1439     4758.78        1436     4758.79        1436     4772.17
GR     1434   4781.27       1432     4790.3   1431.35     4793.22        1430     4857.83        1428      4863.2
GR     1426   4872.34       1426       5000      1426     5035.16        1428     5059.55        1430     5071.52
GR     1430   5178.76       1430     5209.5      1432      5217.1        1434     5224.61        1436     5232.04
GR     1438   5239.37       1438    5239.40     1439.8     5239.41     1439.8     5240.41        1438     5240.42
GR     1438   5240.71    1437.62    5260.38      1436     5263.54        1434     5267.47        1432     5271.31
GR     1430   5275.13

ET                5.1                          4717.29     5219.45
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X1     10.51        85    4720.44    5201.75       439        487        472
GR      1434      4000       1432    4130.14      1428    4139.76       1426    4144.4       1424    4149.04
GR      1422   4153.68       1418    4208.59      1418    4223.25       1418    4230.6       1418    4282.85
GR      1418   4360.51       1416    4368.14      1414    4375.06       1412   4381.98       1408    4395.81
GR      1406   4403.31       1404     4411.2      1402    4420.45       1398   4444.12       1396    4455.04
GR      1396   4458.71       1398    4462.24      1400    4465.78       1402    4469.3       1404     4472.7
GR      1406   4476.09       1406    4476.39      1404    4480.43       1402   4489.41       1400    4498.38
GR      1398   4511.86       1398    4523.62      1402    4606.66       1404   4619.36       1406    4625.57
GR      1408   4631.74       1412    4641.43      1414     4645.8       1416   4650.17       1418    4654.55
GR      1422   4663.24       1424    4666.88      1426    4670.52       1428   4674.16       1432    4681.45
GR      1434   4685.09       1436    4688.73      1438    4692.35       1440   4695.92       1440    4716.28
GR    1443.2   4716.29     1443.2    4717.29   1440.66    4717.32       1440   4720.44       1438    4729.62
GR      1436    4738.8       1434    4747.98   1432.68    4754.05       1434   4795.05       1434    4811.47
GR      1432   4826.23       1430    4844.12      1428    4880.89       1428   4916.32       1428     4916.6
GR      1428   4924.94       1430    4975.63      1430    4993.27       1430      5000       1430    5004.42
GR      1430   5038.01       1430    5060.04      1432    5076.82       1434   5173.28       1436     5182.8
GR      1438   5192.33       1440    5201.75      1440    5219.44    1443.73   5219.45    1443.73    5220.45
GR    1440.7   5220.46     1440.7    5237.12      1442    5243.12       1444   5251.74       1444     5270.2

NC     0.035      0.05      0.035
ET                 5.1                          4664.91    5132.57
X1     10.62        87    4665.97    5128.07       535        618        596
GR      1438      4000       1438    4067.63      1438    4119.75       1438   4123.09       1436    4126.37
GR      1434   4129.64       1432    4132.91      1428    4139.57       1426   4142.92       1424    4157.62
GR      1422   4197.88       1422    4274.19      1422    4279.99       1418   4285.73       1416    4288.61
GR      1414   4291.48       1412    4294.36      1408     4300.1       1406   4302.98       1404    4305.85
GR      1402   4308.72       1398    4314.87      1396    4318.05       1394   4326.83       1392    4337.52
GR      1392    4407.2       1394    4430.83      1396    4477.86       1398   4520.73       1402    4551.89
GR      1404   4565.94       1406    4587.33      1408    4591.51       1412   4599.92       1414     4604.3
GR      1416   4608.68       1418    4613.06      1422    4621.46       1424   4625.35       1426    4629.24
GR      1428   4633.13       1432    4640.85      1434    4644.69       1436   4648.53       1438    4652.37
GR      1440   4656.21       1442    4660.05      1444    4663.89       1444   4663.90     1445.7    4663.91
GR    1445.7   4664.91       1444    4664.92      1444    4665.97    1443.33   4681.76       1442    4687.65
GR      1440   4696.48       1438    4705.29   1436.53    4711.79       1436   4760.05       1434    4774.11
GR      1432    4791.7       1432    4792.06      1434    4804.84       1434   4812.38       1434    4844.64
GR      1434   4908.11       1432    4978.39      1430    4993.25       1430      5000       1430    5019.08
1
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GR      1432   5025.21       1434    5047.48      1436    5072.96    1436.27   5078.41       1438    5088.52
GR      1440   5100.18       1442     5111.6      1444    5128.07    1444.34   5132.57       1446    5140.61
GR      1448    5150.2       1450    5159.88      1452    5169.67       1454   5179.15       1454    5200.76
GR      1454    5213.3       1456    5219.38

NC     0.035      0.035     0.035
ET                 5.1                          4748.11     5211.3
X1     10.70        43    4759.88     5193.3       390        382        402
GR      1444      4000       1444    4038.07      1444    4066.66       1444   4284.59       1442    4345.59
GR      1440    4412.2       1440    4618.19      1442    4696.02    1442.67   4720.77       1444    4727.26
GR    1446.2   4734.32     1446.2    4747.10   1448.10    4747.11    1448.10   4748.11     1446.2    4748.12
GR    1446.2   4759.88       1444    4767.51      1442    4775.38    1440.89   4779.56       1440    4856.65
GR      1438   4908.41       1436    4929.27      1434    4963.32       1434      5000       1434    5015.86
GR      1436   5039.71       1436    5072.24      1436    5119.55       1438   5144.54       1440    5154.48
GR      1442   5163.53       1444    5172.15      1446    5188.42    1446.48    5193.3       1448    5197.69
GR      1450   5201.41       1452    5205.12      1454    5208.74    1455.47    5211.3       1456    5213.46
GR      1458   5222.24       1458    5238.92      1456    5256.86
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ET                5.1                                4782.29    5310.03
X1    10.83        54     4800.8    5298.85          642        704        717
GR     1448      4234      1448    4375.81         1448    4583.91       1446    4610.95       1446     4656.3
GR     1446   4742.93   1444.39     4761.2         1446    4765.18       1448    4769.97       1450    4774.76
GR     1452   4779.31      1452    4781.28      1454.60    4781.29    1454.60    4782.29       1452    4782.30
GR     1452    4800.8      1450    4808.34         1448    4816.39       1446    4825.37       1444    4844.86
GR     1442   4867.57      1440    4888.99         1438    4911.48       1438     4931.3       1440    4955.08
GR     1440   4961.15      1440       5000         1440    5073.72       1442    5081.76       1444    5085.61
GR     1446   5088.41      1446    5095.29         1446    5268.61       1448     5283.3       1450    5291.33
GR     1452   5298.85      1452    5310.02      1454.25    5310.03    1454.25    5311.03       1452    5311.04
GR     1452   5321.19      1450    5325.84         1448    5330.48       1446     5352.1       1444     5429.4
GR     1442   5433.87      1442     5453.7         1442    5462.01       1440    5467.15       1438    5472.69
GR     1438   5487.43      1440    5493.52         1442    5499.62       1444    5505.79

ET                5.1                                4766.74       5290
X1    10.93        47    4790.58    5279.54          456        557        516
GR     1450      4075      1450    4401.05         1450    4472.44       1450    4658.68       1448    4685.74
GR     1446   4692.07      1446    4738.32         1448    4747.74       1450    4752.28       1452    4756.82
GR     1454   4761.36      1456    4765.91      1456.34    4766.74    1456.31     4782.2       1456    4783.11
GR     1454   4790.58      1452    4801.13         1450    4811.94       1448    4852.07       1446    4882.26
GR     1444    4895.5      1442    4901.64         1440    4907.78       1440    4909.75       1440       5000
GR     1442   5025.23      1444    5039.36         1446    5045.88       1448    5065.33       1448    5141.49
GR     1446   5151.73      1446    5160.63         1448       5249       1450    5259.77       1452    5267.62
GR     1454   5275.29    1455.1    5279.54      1458.23       5290    1458.23       5291     1455.6    5291.01
GR   1455.6   5301.19      1454    5303.86         1452    5307.17       1450    5311.25       1448    5317.12
GR     1446   5322.99      1446    5329.64
```

CONFLUENCE WITH BUCHANAN WASH

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ET                5.1                                4581.43    5120.83
X1    11.03        59    4598.63    5120.83          506        504        525
GR     1454      4082      1454     4316.5         1454    4398.81       1454    4405.76       1454    4444.05
GR     1454   4463.63      1452    4472.52         1452    4546.98       1452    4556.11    1451.02    4559.09
GR     1452   4561.67      1454    4566.38         1456    4571.08       1458    4575.79       1460    4580.49
GR   1460.3   4581.43    1460.24    4597.21         1460    4598.63       1458    4606.22       1456    4613.78
GR     1454   4621.09      1452    4629.76         1450    4642.89       1449    4647.63       1448    4693.69
GR     1448   4736.54      1450    4814.76         1450    4864.18       1448    4942.71       1446    4949.67
GR     1444   4956.46      1442    4984.22         1442       5000       1442    5002.45       1444    5021.76
GR     1446   5026.06      1448     5043.9         1448    5055.01       1446    5062.54       1444    5069.86
GR     1442    5077.4      1442    5100.06         1444    5110.31       1446    5120.83       1448    5131.74
GR     1448   5143.33      1448    5159.14         1450    5172.98       1452    5186.65       1454       5200
GR     1456   5213.08      1458    5227.34         1460    5242.36    1460.78    5249.29     1460.5    5289.31
GR     1460   5290.38      1458    5301.57         1456    5314.34       1454    5329.62

NC    0.050     0.035      0.035
ET                5.1                                 4762    5149.91
X1    11.14        32       4762    5149.91          606        610        606
GR     1460   4331.11      1460    4359.12         1458    4450.29       1456    4510.13       1454    4516.73
GR     1452   4523.33      1450    4529.82         1450    4653.75       1452    4685.50       1452       4762
GR     1452   4830.94      1450    4913.55         1450    4965.11       1448    4975.89       1448       5000
GR     1448   5056.87      1450    5060.92         1452    5064.99       1452    5097.48       1454    5121.70
GR     1456   5126.41      1458    5131.13         1460    5135.85       1462    5140.57       1464    5145.28
GR     1466   5149.91      1466    5173.09         1464    5177.70       1462    5182.56       1460    5187.75
GR     1458   5192.64      1456    5197.53
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BEGIN CORPS LEVEES

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NC     0.035      0.035      0.020
ET                  5.1                          4825.06    5165.90
X1     11.19         80    4825.06    5161.07       277        212        225
GR    1466.0    4799.55    1466.00    4823.70    1466.00    4825.06    1465.44    4826.50    1464.00    4830.18
GR    1463.6    4831.26    1462.00    4835.30    1461.78    4835.87    1460.47    4839.23    1460.00    4840.18
GR    1459.8    4840.67    1458.00    4844.27    1457.08    4846.17    1456.00    4848.37    1454.68    4851.08
GR    1454.0    4852.47    1452.35    4858.63    1452.00    4861.70    1452.00    4865.26    1452.00    4867.38
GR    1452.0    4906.20    1452.00    4944.98    1452.00    4945.21    1452.00    4948.20    1452.00    4955.59
GR    1452.0    4974.23    1452.00    4983.63    1452.00    5000.00    1452.00    5052.40    1452.00    5075.88
GR    1452.0    5079.43    1452.00    5080.15    1452.00    5083.16    1452.00    5085.12    1452.21    5091.07
GR    1452.2    5091.41    1452.82    5104.84    1453.40    5118.66    1453.68    5124.97    1454.00    5131.82
GR    1455.9    5136.57    1456.00    5136.91    1456.04    5136.99    1458.00    5141.74    1458.38    5142.66
GR    1460.0    5146.57    1460.56    5147.92    1462.00    5151.40    1462.67    5153.01    1464.00    5156.23
GR    1464.7    5158.02    1466.00    5161.07    1466.79    5162.98    1468.00    5165.90    1468.00    5172.97
GR    1468.0    5198.33    1468.00    5198.71    1468.00    5208.06    1467.82    5208.79    1467.42    5210.39
GR    1466.0    5213.89    1464.59    5217.33    1464.00    5218.79    1462.10    5223.33    1462.00    5223.58
GR    1461.9    5223.73    1460.00    5228.27    1459.05    5230.49    1458.00    5232.96    1456.96    5238.16
GR    1456.5    5239.87    1456.32    5241.27    1456.00    5249.77    1456.00    5262.87    1455.84    5273.99
GR    1456.0    5290.85    1456.15    5294.26    1456.26    5305.86    1456.31    5328.45    1456.18    5342.81
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ET                  5.1                          4827.39    5184.66
X1     11.29         94    4827.39    5184.66       486        591        536
GR    1458.6    4498.36    1458.15    4531.48    1458.00    4544.39    1457.54    4552.02    1456.00    4556.76
GR    1455.7    4557.78    1454.54    4561.02    1454.00    4562.59    1454.00    4605.58    1454.95    4629.82
GR    1456.0    4655.24    1456.33    4661.92    1456.76    4672.63    1456.93    4675.47    1457.17    4678.43
GR    1457.5    4684.77    1456.93    4728.58    1456.76    4749.58    1457.01    4757.49    1457.65    4782.78
GR    1458.0    4791.03    1459.18    4795.59    1460.00    4799.16    1461.62    4803.60    1462.00    4804.63
GR    1462.5    4805.93    1464.00    4810.36    1464.90    4812.84    1466.00    4815.95    1466.99    4818.67
GR    1468.0    4821.53    1469.43    4825.50    1469.95    4827.39    1469.68    4829.36    1468.00    4841.57
GR    1466.8    4844.22    1466.00    4846.08    1464.73    4848.95    1464.00    4850.59    1462.59    4853.77
GR    1462.0    4855.10    1460.39    4858.74    1460.00    4859.58    1459.55    4860.64    1458.00    4864.17
GR    1456.8    4866.84    1456.00    4868.69    1454.77    4871.46    1454.00    4873.20    1453.89    4874.55
GR    1454.0    4879.94    1453.00    5000.00    1452.00    5012.73    1452.37    5018.03    1454.00    5112.94
GR    1454.0    5148.06    1456.00    5152.69    1458.00    5157.26    1460.00    5161.76    1462.00    5166.34
GR    1464.0    5170.83    1466.00    5175.45    1467.53    5178.97    1468.00    5180.06    1469.67    5183.89
GR    1470.0    5184.66    1470.00    5197.62    1468.00    5202.94    1466.00    5208.26    1464.00    5213.46
GR    1463.4    5215.12    1462.00    5218.65    1460.33    5224.18    1460.00    5225.24    1459.63    5239.24
GR    1459.4    5247.72    1459.19    5284.15    1459.63    5287.69    1460.00    5297.44    1461.23    5325.09
GR    1462.0    5340.83    1463.27    5373.45    1463.76    5392.61    1463.91    5397.59    1464.00    5403.23
GR    1464.0    5404.95    1463.47    5430.53    1463.48    5446.78    1463.10    5468.14    1463.01    5472.72
GR    1462.8    5480.65    1462.48    5495.44    1462.00    5521.62    1462.00    5562.61

ET                  5.1                          4826.47    5170.48
X1     11.39         88    4826.47    5170.48       520        577        548
GR    1463.4    4540.53    1462.24    4575.55    1462.00    4587.19    1461.52    4589.31    1460.82    4592.35
GR    1460.0    4595.75    1459.40    4598.25    1458.00    4604.08    1457.77    4611.59    1457.02    4638.45
GR    1456.6    4651.90    1456.25    4664.52    1456.00    4673.48    1456.00    4685.48    1457.34    4692.89
GR    1458.0    4696.00    1458.60    4698.45    1460.00    4704.69    1460.84    4725.05    1461.22    4734.45
GR    1461.5    4742.42    1461.65    4747.02    1462.00    4766.90    1462.17    4770.00    1464.00    4788.85
GR    1465.9    4795.51    1466.00    4795.86    1468.00    4802.87    1469.82    4809.24    1470.00    4809.88
GR    1470.0    4826.47    1469.00    4828.70    1468.00    4830.90    1466.98    4833.16    1466.00    4835.34
GR    1465.0    4837.62    1464.00    4839.77    1462.95    4842.10    1462.00    4844.21    1460.92    4846.60
GR    1460.0    4848.64    1458.80    4851.31    1458.00    4853.08    1456.24    4856.99    1456.00    4857.51
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GR   1454.1    4861.74    1454.00    4861.94    1453.77    4869.54    1453.41    4939.48    1453.70    5000.00
GR   1454.0    5052.77    1454.00    5137.60    1454.79    5139.20    1456.00    5141.80    1457.23    5144.29
GR   1458.0    5145.86    1459.52    5148.94    1460.00    5149.91    1461.94    5153.84    1462.00    5153.96
GR   1462.2    5154.43    1464.00    5158.09    1464.41    5158.94    1466.00    5162.22    1466.71    5163.68
GR   1468.0    5166.35    1468.90    5168.21    1470.00    5170.48    1471.01    5177.47    1471.30    5178.73
GR   1471.0    5187.97    1470.52    5189.60    1470.00    5191.33    1469.06    5193.63    1468.00    5196.22
GR   1466.9    5199.00    1466.00    5201.12    1464.50    5204.79    1464.00    5205.96    1463.56    5227.10
GR   1463.3    5302.27    1463.50    5392.62    1464.00    5459.82    1464.00    5496.38    1464.34    5500.49
GR   1466.0    5520.78    1466.48    5534.57    1467.00    5553.06

ET                 5.1                           4831.85    5174.56
X1    11.48         93    4831.85    5174.56       443        532        487
GR   1469.5    4463.12    1470.00    4514.20    1470.67    4526.19    1472.00    4532.14    1472.00    4536.27
GR   1471.2    4545.52    1472.00    4549.52    1471.16    4556.05    1470.89    4562.81    1470.59    4569.92
GR   1470.0    4586.17    1470.00    4654.03    1469.53    4674.85    1469.10    4688.69    1468.83    4699.75
GR   1468.6    4709.20    1468.27    4720.52    1468.00    4733.02    1467.35    4737.19    1467.59    4745.21
GR   1467.3    4752.17    1466.00    4781.13    1465.37    4784.00    1465.14    4788.41    1465.46    4789.08
GR   1465.9    4791.67    1466.00    4791.93    1467.84    4797.88    1468.00    4798.37    1468.75    4800.80
1
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GR   1469.1    4801.97    1469.53    4803.27    1470.00    4804.79    1472.00    4813.30    1472.00    4827.27
GR   1471.5    4828.31    1470.00    4831.85    1469.59    4832.79    1468.00    4836.43    1467.65    4837.23
GR   1466.0    4841.01    1465.73    4841.62    1464.00    4845.59    1463.85    4845.93    1462.31    4849.46
GR   1462.0    4850.16    1461.96    4850.24    1460.00    4854.68    1459.78    4855.19    1458.00    4859.04
GR   1456.8    4861.86    1456.00    4863.63    1454.62    4866.83    1454.00    4868.24    1454.00    4891.27
GR   1454.5    4982.94    1454.00    5000.00    1454.00    5139.53    1455.68    5143.25    1456.00    5143.95
GR   1457.7    5147.78    1458.00    5148.36    1459.81    5152.35    1460.00    5152.78    1461.90    5156.97
GR   1462.0    5157.19    1463.56    5160.62    1464.00    5161.59    1466.00    5165.91    1468.00    5170.24
GR   1468.3    5170.98    1470.00    5174.56    1471.57    5177.96    1472.00    5179.19    1472.00    5194.00
GR   1470.3    5199.62    1470.00    5200.65    1468.88    5204.39    1468.00    5207.39    1467.56    5217.72
GR   1466.9    5233.75    1466.58    5241.08    1466.33    5246.90    1466.40    5250.99    1466.61    5264.73
GR   1467.0    5289.91    1467.20    5306.66    1467.34    5341.05    1467.60    5361.43    1467.94    5383.99
GR   1467.8    5395.19    1467.56    5419.40    1468.00    5430.41

  END CORPS LEVEES; BEGIN BOX CHANNEL UNDER I-17

ET                 5.1                           4845.32    5152.45
X1    11.56         87    4845.32    5152.45       386        396        390
GR   1471.8    4676.86    1471.19    4685.14    1470.77    4690.44    1470.54    4693.47    1470.29    4696.28
GR   1470.3    4700.82    1470.50    4703.37    1470.83    4707.69    1471.29    4713.13    1472.00    4721.56
GR   1472.0    4845.32    1470.73    4853.22    1470.34    4856.19    1470.00    4857.83    1469.42    4859.18
GR   1468.0    4862.39    1467.55    4863.42    1466.00    4867.01    1464.74    4869.91    1464.00    4871.63
GR   1462.4    4875.29    1462.00    4876.26    1460.24    4880.32    1460.00    4880.88    1459.55    4891.07
GR   1459.2    4900.27    1459.14    4911.50    1459.18    4917.72    1459.27    4936.45    1459.28    4951.90
GR   1459.3    4956.77    1459.32    4970.56    1459.36    4977.34    1459.35    4986.98    1459.40    5000.00
GR   1459.5    5006.02    1459.50    5012.85    1459.48    5022.30    1459.43    5032.20    1459.31    5049.20
GR   1459.3    5049.41    1459.31    5049.51    1459.31    5049.72    1459.30    5060.17    1459.48    5072.34
GR   1459.5    5084.60    1459.48    5091.51    1459.47    5098.77    1459.30    5109.95    1459.40    5114.80
GR   1459.6    5117.41    1459.59    5117.63    1460.00    5124.33    1461.59    5127.25    1461.65    5127.38
GR   1462.0    5128.28    1462.29    5129.00    1462.54    5129.65    1463.39    5131.68    1464.00    5133.13
GR   1465.0    5135.40    1466.00    5137.90    1466.70    5139.56    1468.00    5142.66    1468.53    5143.93
GR   1470.0    5147.43    1470.90    5149.69    1472.00    5152.45    1472.00    5165.70    1471.55    5168.67
GR   1471.2    5170.75    1470.00    5178.38    1470.00    5225.76    1470.27    5226.00    1472.00    5227.56
GR   1472.5    5228.46    1472.76    5229.77    1472.00    5233.24    1471.71    5234.57    1471.42    5235.87
GR   1471.4    5236.02    1470.93    5237.02    1470.00    5239.41    1470.00    5268.37    1470.59    5293.04
GR   1470.9    5296.51    1471.02    5306.55

  OUTLET OF I-17 CROSSING
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ET                 5.1                                4880.47     5126.63
X1    11.57         92     4880.47     5126.63            72          75          73
GR   1470.8     4670.15     1471.04     4676.02     1471.81     4692.20     1472.00     4696.83     1472.63     4707.63
GR   1472.8     4711.11     1473.05     4715.60     1473.66     4746.09     1473.57     4751.49     1473.41     4760.54
GR   1474.0     4769.16     1474.00     4816.39     1473.19     4827.23     1472.71     4833.86     1472.64     4834.85
GR   1472.0     4844.37     1472.00     4861.16     1472.54     4870.52     1472.00     4880.47     1471.79     4880.62
GR   1470.1     4881.77     1470.00     4881.79     1468.35     4882.11     1468.00     4882.18     1466.41     4882.49
GR   1466.0     4882.57     1464.43     4882.88     1464.00     4882.96     1462.45     4883.27     1462.00     4883.35
GR   1461.6     4896.00     1461.53     4899.52     1461.22     4909.97     1461.03     4926.96     1460.86     4934.09
GR   1460.6     4946.27     1460.36     4961.63     1460.29     4993.04     1460.30     5000.00     1460.41     5002.11
GR   1460.5     5010.81     1460.63     5019.07     1461.14     5020.57     1461.34     5048.98     1461.18     5074.02
GR   1460.9     5090.68     1461.37     5103.14     1461.81     5115.32     1461.86     5116.93     1462.00     5120.67
GR   1462.6     5120.78     1464.00     5121.06     1464.40     5121.17     1466.00     5121.48     1466.51     5121.56
GR   1467.1     5121.69     1468.00     5121.86     1469.43     5122.14     1470.00     5122.25     1470.50     5123.25
GR   1471.7     5125.87     1472.00     5126.63     1472.00     5154.31     1471.46     5159.70     1470.38     5170.04
1
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GR   1470.4     5174.42     1470.49     5174.60     1470.77     5175.42     1472.00     5179.41     1472.00     5180.09
GR   1471.6     5182.32     1470.00     5193.35     1470.00     5209.59     1470.38     5210.71     1471.63     5215.00
GR   1472.0     5216.25     1472.00     5216.38     1472.00     5218.35     1471.83     5219.05     1470.00     5223.24
GR   1470.0     5225.98     1470.22     5226.92     1470.00     5227.88     1470.00     5234.90     1470.81     5241.05
GR   1470.8     5241.43     1471.05     5249.44     1470.99     5250.35     1470.90     5250.66     1470.72     5261.88
GR   1471.0     5291.96     1471.60     5306.88
1
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     SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
     Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
     TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
     SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

 *PROF 1

 CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

 CCHV=      .100 CEHV=      .300
 *SECNO 8.690
 3280 CROSS SECTION       8.69 EXTENDED        .71 FEET

 3470 ENCROACHMENT STATIONS=     4025.3     5073.8  TYPE=       1  TARGET=     1048.520
      8.690      14.00   1378.00   1374.49       .00   1378.48       .48        .00        .00   1381.16
    38887.0         .0   38887.0        .0        .0    7026.5        .0         .0         .0 100000.00
       .00        .00      5.53       .00      .000      .035      .000       .000    1364.00   4045.04
   .001293         0.        0.        0.         0        13         0        .00    1014.10   5059.14

 *SECNO 8.790

 3301 HV CHANGED MORE THAN HVINS

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =    .55
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3470 ENCROACHMENT STATIONS=     4095.4    5039.3  TYPE=      1  TARGET=      943.890
     8.790     12.74   1378.74   1377.36       .00   1379.82      1.07      1.16       .18   1384.00
   38873.0        .0   38873.0        .0        .0    4675.6        .0      72.4      11.8 100000.00
       .02       .00      8.31       .00      .000      .035      .000      .000   1366.00   4134.86
   .004280      530.      539.      546.         2        14         0       .00    896.31   5031.17

*SECNO 8.930

3470 ENCROACHMENT STATIONS=     4541.1    5252.0  TYPE=      1  TARGET=      710.880
     8.930     11.20   1381.20   1378.47       .00   1382.30      1.10      2.48       .01   1386.72
   37665.0        .0   37665.0        .0        .0    4475.2        .0     148.2      24.4 100000.00
       .04       .00      8.42       .00      .000      .035      .000      .000   1370.00   4600.73
   .002798      565.      722.      711.         2        19         0       .00    615.95   5216.69

*SECNO 9.010
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .56

3470 ENCROACHMENT STATIONS=     4817.3    5340.9  TYPE=      1  TARGET=      523.590
     9.010      9.36   1381.55   1381.32       .00   1384.93      3.38      1.95       .68   1386.00
   37188.0        .0   37188.0        .0        .0    2519.5        .0     182.8      29.1 100000.00
       .05       .00     14.76       .00      .000      .035      .000      .000   1372.19   4836.00
   .008623      363.      430.      558.         3        15         0       .00    346.25   5182.25

*SECNO 9.080

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.75

3470 ENCROACHMENT STATIONS=     4796.9    5198.8  TYPE=      1  TARGET=      401.920
     9.080     11.88   1385.35   1381.02       .00   1386.56      1.22      1.41       .22   1388.00
   31379.0        .0   31379.0        .0        .0    3544.5        .0     208.2      32.0 100000.00
       .06       .00      8.85       .00      .000      .035      .000      .000   1373.47   4830.72
   .002001      432.      365.      165.         3        15         0       .00    349.53   5180.25

*SECNO 9.140

3470 ENCROACHMENT STATIONS=     4835.6    5165.2  TYPE=      1  TARGET=      329.640
     9.140     12.11   1386.11   1381.15       .00   1387.17      1.06       .59       .02   1390.00
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   27720.0        .0   27720.0        .0        .0    3353.6        .0     234.5      34.5 100000.00
      .07       .00      8.27       .00      .000      .035      .000      .000   1374.00   4847.42
  .001580      288.      333.      385.         2        14         0       .00    304.15   5151.57

*SECNO 9.145

3265 DIVIDED FLOW

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


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .68

3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=  1394.50 MAX ELLC=  1394.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1392.20 ELREA=      1393.10

     9.145     10.90   1385.80   1382.30       .00   1387.33      1.53       .02       .14   1394.50
   27720.0        .0   27720.0        .0        .0    2788.5        .0     235.1      34.6   1394.70
      .07       .00      9.94       .00      .000      .035      .000      .000   1374.90   5023.37
  .003423        8.        8.        8.         2        19         0       .00    277.96   5316.35

*SECNO 9.155

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=  1394.50 MAX ELLC=  1394.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1392.20 ELREA=      1393.10

     9.155     11.01   1386.11   1382.52       .00   1387.61      1.50       .27       .00   1394.50
   27720.0        .0   27720.0        .0        .0    2821.8        .0     240.3      35.1   1394.70
      .08       .00      9.82       .00      .000      .035      .000      .000   1375.10   5022.86
  .003312       80.       80.       80.         2        15         0       .00    278.97   5316.85

*SECNO 9.160

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.46

3470 ENCROACHMENT STATIONS=     4852.6    5164.3  TYPE=      1  TARGET=      311.730
     9.160     12.61   1386.61   1381.54       .00   1387.67      1.06       .02       .04   1390.00
   27720.0        .0   27720.0        .0        .0    3351.2        .0     240.8      35.1 100000.00
      .08       .00      8.27       .00      .000      .035      .000      .000   1374.00   4858.58
  .001550        8.        8.        8.         2        14         0       .00    298.90   5157.49
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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 9.210

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.30

3470 ENCROACHMENT STATIONS= 4732.0 5190.0 TYPE= 1 TARGET= 458.050

9.210	11.30	1387.30	1381.45	.00	1387.88	.58	.16	.05	1439.00
27720.0	.0	27720.0	.0	.0	4552.0	.0	266.1	37.5	1391.00
.09	.00	6.09	.00	.000	.020	.000	.000	1376.00	4736.31
.000293	145.	279.	355.	2	14	0	.00	429.91	5166.22

*SECNO 9.220

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 4664.0 5314.1 TYPE= 1 TARGET= 650.090

9.220	4.70	1394.70	1394.70	.00	1396.95	2.25	.03	.50	1445.00
27720.0	.0	27720.0	.0	.0	2302.5	.0	269.2	37.9	1397.00
.09	.00	12.04	.00	.000	.035	.000	.000	1390.00	4666.64
.011000	122.	39.	104.	0	18	0	.00	516.95	5183.58

*SECNO 9.250
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 4573.0 5304.5 TYPE= 1 TARGET= 731.600

9.250	5.02	1397.02	1397.02	.00	1398.89	1.87	1.54	.04	1394.00
27720.0	2460.2	25259.8	.0	355.9	2237.1	.0	277.2	39.9	1398.64
.09	6.91	11.29	.00	.040	.035	.000	.000	1392.00	4585.72
.010720	155.	141.	82.	0	8	0	.00	695.41	5281.13

*SECNO 9.300

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.89

3470 ENCROACHMENT STATIONS= 4441.5 5290.2 TYPE= 1 TARGET= 848.690

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

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    SLOPE      XLOBL      XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR     TOPWID    ENDST

     9.300      6.35   1399.35   1398.64       .00   1400.87      1.51      1.95       .04   1395.00
   39000.0    8640.5   30359.5        .0    1204.8    2886.3        .0     297.2      44.5   1399.50
       .10      7.17     10.52       .00      .040      .035      .000      .000   1393.00   4441.50
   .005957      262.      261.      282.         2         8         0       .00    839.13   5280.63

*SECNO 9.350
3280 CROSS SECTION      9.35 EXTENDED       .03 FEET

3470 ENCROACHMENT STATIONS=     4252.4    5287.8  TYPE=      1  TARGET=     1035.390
     9.350      9.03   1401.03   1399.80       .00   1402.17      1.14      1.26       .04   1399.00
   39000.0    7246.7   31742.8      10.4    1472.3    3455.4       6.3     326.1      50.5   1400.00
       .11      4.92      9.19      1.66      .040      .035      .035      .000   1392.00   4252.38
   .003580      291.      274.      274.         3        11         0       .00   1035.39   5287.77

*SECNO 9.420

3301 HV CHANGED MORE THAN HVINS

     9.420      9.31   1402.31   1401.85       .00   1404.15      1.84      1.78       .21   1401.00
   39000.0    2332.3   36667.5        .2     591.4    3283.0        .3     366.5      59.4   1402.00
       .12      3.94     11.17       .58      .040      .035      .035      .000   1393.00   4318.65
   .005674      400.      399.      402.         3         8         0       .00    901.05   5219.70

*SECNO 9.450

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     9.450     10.03   1403.03   1403.03       .00   1405.13      2.10       .86       .08   1401.70
   39000.0    2706.0   30055.5    6238.5     486.2    2662.1     421.8     376.3      61.6   1394.00
       .12      5.57     11.29     14.79      .040      .040      .040      .000   1393.00   4388.64
   .010014       93.      118.      126.         0         8         0       .00    879.10   5269.10

*SECNO 9.540

3470 ENCROACHMENT STATIONS=     4663.4    5177.0  TYPE=      1  TARGET=      513.650
     9.540     10.19   1407.19   1405.70       .00   1409.08      1.89      3.93       .02   1408.00
   39000.0        .0   39000.0        .0        .0    3532.0        .0     416.6      69.2 100000.00
       .13       .00     11.04       .00      .000      .040      .000      .000   1397.00   4689.52
   .006376      410.      500.      515.         2        15         0       .00    487.48   5177.00
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST
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*SECNO 9.650

3470 ENCROACHMENT STATIONS=     4736.4    5231.9  TYPE=      1  TARGET=      495.470
     9.650      8.57   1410.57   1408.58       .00   1412.32      1.75      3.22       .01   1412.00
   39000.0        .0   39000.0        .0        .0    3673.6        .0     462.8      75.3 100000.00
       .15       .00     10.62       .00      .000      .040      .000      .000   1402.00   4759.97
   .005243      475.      558.      503.         2        14         0       .00    466.86   5226.83

*SECNO 9.700

3470 ENCROACHMENT STATIONS=     4752.7    5283.9  TYPE=      1  TARGET=      531.160
     9.700      7.86   1411.86   1410.07       .00   1413.53      1.67      1.20       .01   1412.00
   39000.0        .0   39000.0        .0        .0    3761.5        .0     484.6      78.2   1412.00
       .16       .00     10.37       .00      .000      .035      .000      .000   1404.00   4757.73
   .004223      253.      256.      259.         2        19         0       .00    514.78   5272.51

*SECNO 9.730

3470 ENCROACHMENT STATIONS=     4762.0    5298.7  TYPE=      1  TARGET=      536.690
     9.730      8.83   1412.83   1410.11       .00   1414.14      1.32       .58       .04   1414.00
   39000.0        .0   38997.0       3.0        .0    4237.3       2.4     500.2      80.2   1412.00
       .16       .00      9.20      1.25      .000      .035      .035      .000   1404.00   4767.99
   .002855      187.      169.      151.         2        15         0       .00    522.64   5290.63

*SECNO 9.800

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS=     4698.4    5217.7  TYPE=      1  TARGET=      519.300
     9.800      7.42   1413.42   1412.91       .00   1416.18      2.76      1.61       .43   1416.00
   39000.0        .0   39000.0        .0        .0    2924.0        .0     530.2      84.1   1414.00
       .17       .00     13.34       .00      .000      .035      .000      .000   1406.00   4775.47
   .007656      383.      365.      349.         3        15         0       .00    428.31   5203.78
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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 9.890

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     4678.5    5167.5  TYPE=      1  TARGET=      488.990
     9.890     10.91   1416.91   1415.10       .00   1419.14      2.23      2.90       .05   1420.00
   39000.0        .0   39000.0        .0        .0    3255.5        .0     565.3      88.8   1418.00
       .18       .00     11.98       .00      .000      .035      .000      .000   1406.00   4775.54
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   .004621      509.      495.      484.         3        11         0       .00    383.14   5158.68

*SECNO 9.980

3470 ENCROACHMENT STATIONS=     4813.5    5284.1  TYPE=      1  TARGET=      470.600
     9.980      9.25   1419.25   1417.47       .00   1421.32      2.07      2.17       .02   1428.00
   39000.0        .0   39000.0        .0        .0    3377.6        .0     601.5      93.1   1420.00
       .19       .00     11.55       .00      .000      .035      .000      .000   1410.00   4856.10
   .004527      462.      475.      469.         2        14         0       .00    413.94   5270.04

*SECNO 10.080

3470 ENCROACHMENT STATIONS=     4840.6    5275.3  TYPE=      1  TARGET=      434.730
    10.080      9.59   1421.59   1420.21       .00   1423.90      2.31      2.50       .07   1426.00
   39000.0        .0   39000.0        .0        .0    3196.8        .0     640.0      97.9   1424.00
       .20       .00     12.20       .00      .000      .035      .000      .000   1412.00   4855.91
   .005312      508.      511.      514.         0        11         0       .00    406.99   5262.90

*SECNO 10.160

3470 ENCROACHMENT STATIONS=     4784.9    5288.3  TYPE=      1  TARGET=      503.410
    10.160      8.09   1424.09   1422.72       .00   1426.19      2.10      2.27       .02   1426.00
   39000.0        .0   39000.0        .0        .0    3356.2        .0     672.4     102.2   1426.00
       .21       .00     11.62       .00      .000      .035      .000      .000   1416.00   4805.77
   .005236      447.      430.      418.         2        19         0       .00    454.78   5260.56

*SECNO 10.250

3470 ENCROACHMENT STATIONS=     4772.9    5313.0  TYPE=      1  TARGET=      540.110
    10.250      6.71   1426.71   1426.31       .00   1429.30      2.59      2.96       .15   1429.70
   39000.0        .0   39000.0        .0        .0    3020.6        .0     706.0     107.1 100000.00
       .22       .00     12.91       .00      .000      .035      .000      .000   1420.00   4791.56
   .008125      496.      460.      420.         2        15         0       .00    486.32   5277.88

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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 10.330
3280 CROSS SECTION     10.33 EXTENDED       .13 FEET

3470 ENCROACHMENT STATIONS=     4766.4    5272.0  TYPE=      1  TARGET=      505.590
    10.330      8.13   1430.13   1429.33       .00   1432.58      2.45      3.27       .01   1435.17
   39000.0        .0   39000.0        .0        .0    3105.3        .0     737.3     111.9   1434.00
       .23       .00     12.56       .00      .000      .035      .000      .000   1422.00   4802.19
   .006695      519.      444.      373.         3         8         0       .00    450.35   5252.54

*SECNO 10.340
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3280 CROSS SECTION     10.34 EXTENDED       .57 FEET

3470 ENCROACHMENT STATIONS=     4756.9    5252.6  TYPE=      1  TARGET=      495.720
    10.340      8.57   1430.57   1429.81       .00   1433.09      2.53       .49       .02   1435.00
   39000.0        .0   39000.0        .0        .0    3057.8        .0     742.4     112.7   1434.00
       .24       .00     12.75       .00      .000      .035      .000      .000   1422.00   4792.27
   .006770      104.       73.       42.         2         8         0       .00    436.80   5229.07

*SECNO 10.380

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4823.2    5272.0  TYPE=      1  TARGET=      448.790
    10.380      7.30   1431.30   1431.30       .00   1434.50      3.20      1.14       .20   1435.82
   39000.0        .0   39000.0        .0        .0    2716.2        .0     753.2     114.3 100000.00
       .24       .00     14.36       .00      .000      .030      .000      .000   1424.00   4841.41
   .007313      173.      162.      143.         0        15         0       .00    430.58   5272.00

*SECNO 10.410
3280 CROSS SECTION     10.41 EXTENDED      4.66 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4783.1    5262.7  TYPE=      1  TARGET=      479.660
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

    10.410      6.66   1434.66   1434.66       .00   1437.76      3.11      1.45       .01   1436.00
   39000.0        .0   39000.0        .0        .0    2756.6        .0     763.9     116.0   1436.00
       .24       .00     14.15       .00      .000      .035      .000      .000   1428.00   4797.50
   .009913      198.      171.      142.         0        11         0       .00    448.94   5246.44

*SECNO 10.420
3280 CROSS SECTION     10.42 EXTENDED      6.39 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.48

3470 ENCROACHMENT STATIONS=     4758.8    5239.4  TYPE=      1  TARGET=      480.630
    10.420     10.40   1436.40   1434.71       .00   1438.30      1.90       .41       .12   1436.00
   39000.0        8.0   38992.0        .0       5.3    3521.4        .0     768.5     116.7   1438.00
       .24      1.51     11.07       .00      .035      .035      .000      .000   1426.00   4758.79
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   .004553       70.       64.       58.        4       11        0       .00    474.69   5233.48

*SECNO 10.510

3470 ENCROACHMENT STATIONS=     4717.3    5219.5  TYPE=      1  TARGET=      502.160
    10.510     42.61   1438.61   1437.03      .00   1440.72     2.11      2.36       .06   1440.00
   39000.0        .0   39000.0        .0       .0    3346.3       .0     805.7     121.8   1440.00
       .25       .00     11.65       .00     .000      .035     .000      .000   1396.00   4726.81
   .005501      439.      472.      487.        3        15        0       .00    468.40   5195.21

*SECNO 10.620

3470 ENCROACHMENT STATIONS=     4664.9    5132.6  TYPE=      1  TARGET=      467.660
    10.620     49.81   1441.81   1440.35      .00   1444.20     2.39      3.40       .08   1444.00
   39000.0        .0   39000.0        .0       .0    3143.5       .0     850.1     127.9   1444.00
       .27       .00     12.41       .00     .000      .035     .000      .000   1392.00   4688.49
   .005909      535.      596.      618.        2        17        0       .00    422.02   5110.51

*SECNO 10.700
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     4748.1    5211.3  TYPE=      1  TARGET=      463.190
    10.700     10.16   1444.16   1444.03      .00   1447.38     3.22      2.93       .25   1446.20
   39000.0        .0   39000.0        .0       .0    2707.7       .0     877.1     131.7   1446.48
       .28       .00     14.40       .00     .000      .035     .000      .000   1434.00   4766.96
   .009225      390.      402.      382.        2        21        0       .00    406.49   5173.45

*SECNO 10.830
3280 CROSS SECTION     10.83 EXTENDED      6.36 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     4782.3    5310.0  TYPE=      1  TARGET=      527.740
    10.830     12.36   1450.36   1448.93      .00   1452.32     1.95      4.81       .13   1452.00
   39000.0        .0   39000.0        .0       .0    3476.3       .0     928.0     139.0   1452.00
       .29       .00     11.22       .00     .000      .035     .000      .000   1438.00   4807.00
   .005100      642.      717.      704.        2         8        0       .00    485.68   5292.67

*SECNO 10.930
3280 CROSS SECTION     10.93 EXTENDED      6.96 FEET
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3470 ENCROACHMENT STATIONS=     4766.7    5290.0  TYPE=      1  TARGET=      523.260
   10.930      12.96   1452.96   1451.39       .00   1454.89      1.94      2.57       .00   1454.00
   39000.0        .0   39000.0        .0        .0    3493.4        .0     969.3     144.7   1455.10
      .31        .00     11.16       .00      .000      .035      .000      .000   1440.00   4796.08
   .004871      456.      516.      557.         3        15         0       .00    475.20   5271.29

*SECNO 11.030
3280 CROSS SECTION     11.03 EXTENDED      1.58 FEET

3301 HV CHANGED MORE THAN HVINS

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


3470 ENCROACHMENT STATIONS=     4581.4    5120.8  TYPE=      1  TARGET=      539.400
   11.030      13.58   1455.58   1453.00       .00   1456.98      1.40      2.03       .05   1460.00
   39000.0        .0   39000.0        .0        .0    4113.8        .0    1015.2     150.6 100000.00
      .32        .00      9.48       .00      .000      .035      .000      .000   1442.00   4615.31
   .003149      506.      525.      504.         2        15         0       .00    505.52   5120.83

*SECNO 11.140
3280 CROSS SECTION     11.14 EXTENDED      1.62 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4762.0    5149.9  TYPE=      1  TARGET=      387.910
   11.140       9.62   1457.62   1457.62       .00   1461.19      3.57      3.11       .65   1452.00
   39000.0        .0   39000.0        .0        .0    2572.7        .0    1061.7     156.7 100000.00
      .33        .00     15.16       .00      .000      .035      .000      .000   1448.00   4762.00
   .009806      606.      606.      610.         0        19         0       .00    368.24   5130.24

*SECNO 11.190
3280 CROSS SECTION     11.19 EXTENDED      4.38 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4825.1    5165.9  TYPE=      1  TARGET=      340.840
   11.190       8.56   1460.56   1460.56       .00   1464.54      3.99      1.12       .13   1466.00
   39000.0        .0   39000.0        .0        .0    2434.4        .0    1074.6     158.5   1466.00
      .34        .00     16.02       .00      .000      .020      .000      .000   1452.00   4839.01
   .003003      277.      225.      212.         0        11         0       .00    308.90   5147.91

*SECNO 11.290
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3280 CROSS SECTION     11.29 EXTENDED       .87 FEET

3301 HV CHANGED MORE THAN HVINS

1
   07OCT03      22:36:17                                                                                                PAGE   29

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


3470 ENCROACHMENT STATIONS=     4827.4    5184.7  TYPE=      1  TARGET=      357.270
   11.290     10.88   1462.88   1461.79       .00   1465.93      3.05       1.29       .09   1469.95
   39000.0       .0   39000.0       .0        .0    2784.2        .0     1106.7     162.3 100000.00
       .35      .00     14.01       .00      .000      .020      .000       .000   1452.00   4853.13
   .001977     486.      536.      591.         3         8         0        .00    315.16   5168.30

*SECNO 11.390

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     4826.5    5170.5  TYPE=      1  TARGET=      344.010
   11.390     11.17   1464.58   1462.10       .00   1466.85      2.28        .85       .08   1470.00
   39000.0       .0   39000.0       .0        .0    3220.8        .0     1144.5     166.3 100000.00
       .36      .00     12.11       .00      .000      .020      .000       .000   1453.41   4838.52
   .001250     520.      548.      577.         2        15         0        .00    320.78   5159.30

*SECNO 11.480

3470 ENCROACHMENT STATIONS=     4831.9    5174.6  TYPE=      1  TARGET=      342.710
   11.480     11.32   1465.32   1462.48       .00   1467.45      2.13        .58       .01   1470.00
   39000.0       .0   39000.0       .0        .0    3329.2        .0     1181.1     169.9 100000.00
       .37      .00     11.71       .00      .000      .020      .000       .000   1454.00   4842.57
   .001125     443.      487.      532.         2        15         0        .00    321.86   5164.43

*SECNO 11.560

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4845.3    5152.5  TYPE=      1  TARGET=      307.130
   11.560      9.29   1468.43   1468.43       .00   1472.66      4.24        .67       .63   1472.00
   39000.0       .0   39000.0       .0        .0    2361.1        .0     1206.6     172.6 100000.00
       .38      .00     16.52       .00      .000      .020      .000       .000   1459.14   4861.43
   .002959     386.      390.      396.         0        15         0        .00    282.25   5143.68

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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 11.570
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4880.5    5126.6  TYPE=      1  TARGET=      246.160
   11.570     10.10   1470.39   1470.39       .00   1475.08      4.69       .22       .14   1472.00
  39000.0        .0   39000.0        .0        .0    2243.6        .0    1210.4     173.0 100000.00
      .38       .00     17.38       .00      .000      .020      .000      .000   1460.29   4881.57
  .003014       72.       73.       75.         0         8         0       .00    241.45   5123.02
```

1

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THIS RUN EXECUTED 07OCT03 22:36:18

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

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

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

IGINAL MODEL SKNKLOMR.IH

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
	8.690	38887.00	1378.00	1374.49	5.53	14.00	1014.10	7026.52	.37	4045.04	5059.14
*	8.790	38873.00	1378.74	1377.36	8.31	12.74	896.31	4675.60	.64	4134.86	5031.17
	8.930	37665.00	1381.20	1378.47	8.42	11.20	615.95	4475.24	.55	4600.73	5216.69
*	9.010	37188.00	1381.55	1381.32	14.76	9.36	346.25	2519.49	.96	4836.00	5182.25
*	9.080	31379.00	1385.35	1381.02	8.85	11.88	349.53	3544.49	.49	4830.72	5180.25
	9.140	27720.00	1386.11	1381.15	8.27	12.11	304.15	3353.61	.44	4847.42	5151.57
*	9.145	27720.00	1385.80	1382.30	9.94	10.90	277.96	2788.52	.57	5023.37	5316.35
	9.155	27720.00	1386.11	1382.52	9.82	11.01	278.97	2821.77	.56	5022.86	5316.85
*	9.160	27720.00	1386.61	1381.54	8.27	12.61	298.90	3351.20	.44	4858.58	5157.49
*	9.210	27720.00	1387.30	1381.45	6.09	11.30	429.91	4552.01	.33	4736.31	5166.22

*	9.220	27720.00	1394.70	1394.70	12.04	4.70	516.95	2302.49	1.01	4666.64	5183.58
*	9.250	27720.00	1397.02	1397.02	11.29	5.02	695.41	2592.98	.98	4585.72	5281.13
*	9.300	39000.00	1399.35	1398.64	10.52	6.35	839.13	4091.10	.77	4441.50	5280.63
	9.350	39000.00	1401.03	1399.80	9.19	9.03	1035.39	4934.00	.62	4252.38	5287.77
	9.420	39000.00	1402.31	1401.85	11.17	9.31	901.05	3874.77	.77	4318.65	5219.70
*	9.450	39000.00	1403.03	1403.03	11.29	10.03	879.10	3570.12	.86	4388.64	5269.10
	9.540	39000.00	1407.19	1405.70	11.04	10.19	487.48	3531.98	.72	4689.52	5177.00

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	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
	9.650	39000.00	1410.57	1408.58	10.62	8.57	466.86	3673.61	.67	4759.97	5226.83
	9.700	39000.00	1411.86	1410.07	10.37	7.86	514.78	3761.47	.68	4757.73	5272.51
	9.730	39000.00	1412.83	1410.11	9.20	8.83	522.64	4239.70	.57	4767.99	5290.63
*	9.800	39000.00	1413.42	1412.91	13.34	7.42	428.31	2923.99	.90	4775.47	5203.78
	9.890	39000.00	1416.91	1415.10	11.98	10.91	383.14	3255.45	.72	4775.54	5158.68
	9.980	39000.00	1419.25	1417.47	11.55	9.25	413.94	3377.56	.71	4856.10	5270.04
	10.080	39000.00	1421.59	1420.21	12.20	9.59	406.99	3196.75	.77	4855.91	5262.90
	10.160	39000.00	1424.09	1422.72	11.62	8.09	454.78	3356.24	.75	4805.77	5260.56
	10.250	39000.00	1426.71	1426.31	12.91	6.71	486.32	3020.61	.91	4791.56	5277.88
	10.330	39000.00	1430.13	1429.33	12.56	8.13	450.35	3105.32	.84	4802.19	5252.54
	10.340	39000.00	1430.57	1429.81	12.75	8.57	436.80	3057.85	.85	4792.27	5229.07
*	10.380	39000.00	1431.30	1431.30	14.36	7.30	430.58	2716.20	1.01	4841.41	5272.00
*	10.410	39000.00	1434.66	1434.66	14.15	6.66	448.94	2756.56	1.01	4797.50	5246.44
*	10.420	39000.00	1436.40	1434.71	11.07	10.40	474.69	3526.71	.71	4758.79	5233.48
	10.510	39000.00	1438.61	1437.03	11.65	42.61	468.40	3346.26	.77	4726.81	5195.21
	10.620	39000.00	1441.81	1440.35	12.41	49.81	422.02	3143.53	.80	4688.49	5110.51
	10.700	39000.00	1444.16	1444.03	14.40	10.16	406.49	2707.65	.98	4766.96	5173.45
	10.830	39000.00	1450.36	1448.93	11.22	12.36	485.68	3476.31	.74	4807.00	5292.67
	10.930	39000.00	1452.96	1451.39	11.16	12.96	475.20	3493.44	.73	4796.08	5271.29
	11.030	39000.00	1455.58	1453.00	9.48	13.58	505.52	4113.78	.59	4615.31	5120.83

*	11.140	39000.00	1457.62	1457.62	15.16	9.62	368.24	2572.74	1.01	4762.00	5130.24
*	11.190	39000.00	1460.56	1460.56	16.02	8.56	308.90	2434.44	1.01	4839.01	5147.91
	11.290	39000.00	1462.88	1461.79	14.01	10.88	315.16	2784.22	.83	4853.13	5168.30
	11.390	39000.00	1464.58	1462.10	12.11	11.17	320.78	3220.78	.67	4838.52	5159.30
	11.480	39000.00	1465.32	1462.48	11.71	11.32	321.86	3329.18	.64	4842.57	5164.43
*	11.560	39000.00	1468.43	1468.43	16.52	9.29	282.25	2361.09	1.01	4861.43	5143.68

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	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
*	11.570	39000.00	1470.39	1470.39	17.38	10.10	241.45	2243.58	1.00	4881.57	5123.02

1
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SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=      8.790  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.010  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.080  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.145  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.160  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.210  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.220  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.220  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      9.250  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.250  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.300  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.450  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.450  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.800  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     10.380  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.380  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     10.410  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.410  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     10.420  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=     11.140  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.140  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     11.190  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.190  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     11.560  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.560  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     11.570  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.570  PROFILE=  1  MINIMUM SPECIFIC ENERGY
```

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1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    07OCT03    TIME   22:36:56 *
 *****************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
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```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX             XXXXXXX
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07OCT03 22:36:56

THIS RUN EXECUTED 07OCT03 22:36:56

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

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

Combined Split Flow Model
WEIR IS SET ALONG HIGH GROUND RIDGE WEST OF 35TH AVENUE AND
SOUTH OF PINNACLE PEAK ROAD

SPLIT FLOW BEING PERFORMED

SF

```
JC      SPLIT FLOW ANALYSIS DUE TO WEIR ACTION
JP      0     0.5     100       1       0

TW       RIGHT BANK WEIR BETWEEN SECTION 8.55 AND 8.57
WS      2    8.55    8.57      -1    2.65
WC         1381.9      97 1380.27

TW       RIGHT BANK WEIR BETWEEN SECTION 8.57 AND 8.58
WS      2    8.57    8.58      -1    2.65
WC        1380.27      92 1378.96

TW       RIGHT BANK WEIR BETWEEN SECTION 8.58 AND 8.60
WS      2    8.58    8.60      -1    2.65
WC        1378.96      80 1378.76
```

```
TW      RIGHT BANK WEIR BETWEEN SECTION 8.60 AND 8.62
WS     2    8.60    8.62      -1    2.65
WC       1378.76     128  1379.5

TW      RIGHT BANK WEIR BETWEEN SECTION 8.62 AND 8.64
WS     2    8.62    8.64      -1    2.65
WC        1379.5     100 1379.87

TW      RIGHT BANK WEIR BETWEEN SECTION 8.64 AND 8.66
WS     2    8.64    8.66      -1    2.65
WC       1379.87     100 1380.23

TW      RIGHT BANK WEIR BETWEEN SECTION 8.66 AND 8.68
WS     2    8.66    8.68      -1    2.65
WC       1380.23     100 1380.64

TW      RIGHT BANK WEIR BETWEEN SECTION 8.68 AND 8.70
WS     2    8.68    8.70      -1    2.65
WC       1380.64     100 1381.27
1
   07OCT03      22:36:56
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```
TW      RIGHT BANK WEIR BETWEEN SECTION 8.70 AND 8.72
WS     2    8.70    8.72      -1    2.65
WC       1381.27     100  1381.9

TW      RIGHT BANK WEIR BETWEEN SECTION 8.72 AND 8.74
WS     2    8.72    8.74      -1    2.65
WC        1381.9     100 1382.55

TW      RIGHT BANK WEIR BETWEEN SECTION 8.74 AND 8.77
WS     2    8.74    8.77      -1    2.65
WC       1382.55     200 1384.48

TW      RIGHT BANK WEIR BETWEEN SECTION 8.77 AND 8.79
WS     2    8.77    8.79      -1    2.65
WC       1384.48      81 1385.31

TW      RIGHT BANK WEIR BETWEEN SECTION 8.79 AND 8.80
WS     2    8.79    8.80      -1    2.65
WC       1385.31      49 1385.75

TW      RIGHT BANK WEIR BETWEEN SECTION 8.80 AND 8.81
WS     2    8.80    8.81      -1    2.65
WC       1385.75     105    1386

TW      RIGHT BANK WEIR BETWEEN SECTION 8.81 AND 8.86
WS     2    8.81    8.86      -1    2.65
WC          1386     266    1386

TW      RIGHT BANK WEIR BETWEEN SECTION 8.86 AND 8.89
WS     2    8.86    8.89      -1    2.65
WC          1386     175    1386

TW      RIGHT BANK WEIR BETWEEN SECTION 8.89 AND 8.93
WS     2    8.89    8.93      -1    2.65
WC          1386     217    1387

TW      RIGHT BANK WEIR BETWEEN SECTION 8.93 AND 9.00
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WS      2    8.93    9.00      -1    2.65
WC          1387     370    1390

TW      RIGHT BANK WEIR BETWEEN SECTION 9.00 AND 9.01
WS      2    9.00    9.01      -1    2.65
WC          1390      76    1390

TW      RIGHT BANK WEIR BETWEEN SECTION 9.01 AND 9.04
WS      2    9.01    9.04      -1    2.65
WC          1390     137    1390

TW      RIGHT BANK WEIR BETWEEN SECTION 9.04 AND 9.08
WS      2    9.04    9.08      -1    2.65
WC          1390     200    1391
1
   07OCT03      22:36:56                                                                    PAGE    3


TW      RIGHT BANK WEIR BETWEEN SECTION 9.08 AND 9.10
WS      2    9.08    9.10      -1    2.65
WC          1391     137  1392.0
1
   07OCT03      22:36:56                                                                    PAGE    4


T1      COMBINED CVL (North and South) AND TETRA TECH'S EAST SPLIT FLOW MODEL
T2      INPUT FILE: bkout-w.dat
T3      EMCON 9/22/03 by: DNS
T4      CVL'S X-SECTIONS (8.55 - 9.15) HAVE BEEN RE-NAMED TO MATCH
T5      TETRA TECH'S RIVER MILE NOMENCLATURE
T6      BOUNDARY CONDITIONS WERE TAKEN FROM TETRA TECH'S EAST SPLIT FLOW MODEL
T7      FLOWRATE WAS DETERMINED BY MATCHING WSEL AT RIVER MILE 9.25 IN THE
T8      MAIN-W.DAT MODEL.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0        2                          0.007                   0         0


QT        1      11280
  FLOWRATE THAT MATCHES WSEL AT RIVER MILE 9.25 IN THE MAIN-W.DAT MODEL
NC    0.040      0.040      0.040        0.1        0.3
X1     8.55         10       9965      10072          0          0          0
GR   1381.7       9915     1380.9       9965    1378.36    9979.42    1377.36    9985.03       1374    9999.67
GR   1375.0   10003.77     1376.0   10012.77       1378   10046.83     1380.0   10052.41     1381.9      10072
  CVL STATION 3

X1     8.57          9       9975      10062         97         97         97
GR   1382.2       9905     1381.0    9957.55       1381       9968     1380.0       9975    1374.69    9995.58
GR     1376    9998.47       1376   10001.60     1378.0   10022.35    1380.27      10062
  CVL STATION 100

X1     8.58         14    9973.96      10030         92         92         92
X3       10
GR   1382.2       9875    1381.34    9925.30     1380.0    9935.97     1380.0    9950.56    1378.72    9963.92
GR   1378.9    9973.96     1378.0    9979.62    1377.29    9984.99    1375.95    9990.91     1376.4    9997.51
GR   1376.4   10003.79     1376.7   10009.69     1378.0   10014.44    1378.96      10030
  DOWNSTREAM SIDE OF CULVERTS - CVL STATION 192

SC    3.013         .5        2.7                    2          0         80        2.1     1376.5     1376.4
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X1      8.60          11    9970.83      10030          80          80          80
X2                     2                 1380.5
X3        10
BT         3     9973.9     1381.3                  10004     1380.5                 10030     1378.82
GR      1383    9924.75     1382.3    9925.90      1382.3    9970.83      1381.3     9973.9        1378     9983.49
GR    1376.5    9991.93     1376.5    9997.91      1376.5   10001.78      1376.7      10004      1378.0    10013.25
GR    1378.7      10030
  UPSTREAM SIDE OF CULVERTS - CVL STATION 272

X1      8.62           6    9983.94      10037         128         128         128
GR    1382.5    9924.19     1382.8       9970     1378.00    9983.94     1377.11    9994.73     1377.11    10004.77
GR    1379.5      10037
  CVL STATION 400
1
   07OCT03      22:36:56                                                                                    PAGE     5


X1      8.64           4       9970      10028         100         100         100
GR    1382.5    9923.75     1381.7       9970     1377.62       10000     1379.87      10028
  SOUTH OF HANCE BOULIVARD - CVL STATION 500

X1      8.66           5    9931.53   10029.76         100         100         100
GR    1382.0    9924.19     1381.3    9931.53     1380.68        9970     1378.13      10000     1380.23    10029.76
  CVL STATION 600

X1      8.68           5       9972      10031         100         100         100
GR    1382.2    9927.05    1381.05       9972     1378.00    9990.92     1378.92      10000     1380.64       10031
  CVL STATION 700

X1      8.70           5      9984.5      10033         100         100         100
GR    1382.2      9910    1381.35       9960     1379.59    9984.50      1379.8      10000     1381.27       10033
  CVL STATION 800

X1      8.72           4    9983.26      10030         100         100         100
GR    1383.2    9925.99       1383    9983.26      1380.9       10000     1381.9      10030
  CVL STATION 900

X1      8.74           5       9982   10029.18         100         100         100
GR    1385.3    9927.33       1385    9957.83        1385        9982       1382      10000     1382.55    10029.18
  CVL STATION 1000

X1      8.77           6       9989      10017         200         200         200
GR    1385.6    9936.14     1385.4       9989      1383.6        9995     1383.6      10005      1384.4       10017
GR    1384.4      10040
  CVL STATION 1200

NH         1        .016      10048
X1      8.79           3      10011      10048          81          81          81
GR    1385.3       9963    1385.99      10011     1385.31       10048
  SOUTH OF PARKSIDE LANE - TETRA TECH STATION MATCH - CVL STATION 1281

NH         1        .016      10052
X1      8.80           3      10015      10052          49          49          49
GR    1385.1       9966    1385.79      10015     1385.75       10052
  CVL STATION 1330

NH         1        .016   10100.74
X1      8.81          15       9980   10100.74          20         105          29
GR      1388        9725       1388    9758.88        1388     9773.41        1388    9847.74        1388     9873.96
GR      1388     9898.54       1388    9920.62        1388     9949.55        1388    9959.31        1388        9980
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GR   1384.7   10003.87    1385.00   10035.11    1385.00   10042.29    1385.00   10069.88       1386   10100.74
  CVL STATION 1359

NH        1        .03   10079.07
X1     8.86         23    9874.59   10079.07       266       266       266
X3                                      9700    1386.67
GR   1387.5       9386       1387       9433      1386      9471      1385      9491      1385      9548
GR     1386       9574    1386.32    9597.38   1386.63   9626.66   1386.67   9713.22    1386.5   9774.68
GR   1386.3    9822.26       1386    9874.59   1385.69   9893.32   1385.53   9914.97   1385.01   9952.81
GR   1383.8    9969.32       1383    9981.35      1382   9992.12      1382  10009.37      1383  10023.87
1
   07OCT03      22:36:56                                                                          PAGE     6

GR     1384   10039.45    1384.73   10053.84      1386   10079.07
  CVL STATION 1625

NH        1        .03   10065.05
X1     8.89         23    9942.52   10065.05       175       175       175
X3                                      9601      1388
GR   1390.3    9289.97    1390.00    9326.96   1390.00   9340.05   1389.00   9373.44   1388.00   9413.37
GR   1387.0    9482.88    1386.31    9501.52   1386.29   9513.91   1386.48   9523.04   1387.00   9535.79
GR   1387.9    9585.07    1387.99    9601.04   1387.63   9687.08   1387.38   9757.74   1387.00   9820.33
GR   1386.0    9942.52    1385.00    9958.61   1384.00   9970.67   1382.00   9991.61   1382.00  10009.81
GR   1383.4   10022.67    1385.01   10041.63   1386.00  10065.05
  CVL STATION 1800

NH        2        .03   10044.82       .016  10046.99
X1     8.93         38    9968.52   10044.82       217       217       217
GR   1397.0    9120.13    1397.00    9134.51   1396.00   9153.49   1395.00   9155.41   1395.00   9162.29
GR   1394.6    9192.51    1394.00    9229.41   1393.57   9241.75   1393.00   9275.34   1393.00   9277.60
GR   1392.0    9287.63    1391.00    9310.35   1391.00   9342.55   1390.40   9360.99   1389.80   9371.35
GR   1389.0    9379.50    1388.95    9385.38   1388.00   9472.01   1388.00   9480.92   1387.36   9496.67
GR   1387.1    9525.25    1387.24    9574.28   1387.23   9658.54   1386.96   9737.74   1386.48   9823.34
GR   1386.0    9894.09    1386.00    9923.16   1387.00   9954.39   1387.00   9968.52   1385.00   9988.91
GR   1384.9    9993.20    1385.00   10003.66   1384.67  10006.10   1385.00  10012.74   1385.00  10019.94
GR   1386.0   10038.35    1387.00   10044.82   1386.92  10046.99
  CVL STATION 2017

NH        2        .03   10035.65       .016     10040
X1     9.00         28    9968.22   10035.65       370       370       370
X3       10
GR   1394.9    9185.54    1394.37    9231.03   1394.00   9248.91   1393.20   9263.39   1392.67   9275.80
GR   1392.7    9294.12    1392.01    9300.06   1391.95   9320.94   1391.32   9344.61   1391.00   9357.15
GR   1391.0    9370.24    1390.51    9444.59   1390.00   9553.58   1389.69   9607.41   1389.37   9693.57
GR   1389.0    9791.14    1388.57    9847.63   1388.45   9912.41   1388.51   9946.72   1388.54   9968.22
GR   1388.0    9979.69    1385.93    9988.45   1385.00   9993.90   1385.03  10004.08   1386.05  10009.74
GR   1389.0   10021.77    1390.00   10035.65      1390     10040
  CVL STATION 2387

SC    2.013         .5       2.7                    3         0        75       2.1   1386.02      1385
NH        2        .03   10037.29       .016     10040
X1     9.01         33    9947.35   10037.29        76        76        76
X2                                       2    1389.89
X3       10
BT        4     9896.9    1389.37               9930.05   1389.98            10006.96   1390.27
BT   10037.    1389.89
GR   1397.8    9185.54    1397.00    9201.36   1397.00   9206.41   1396.00   9206.73   1396.00   9219.83
GR   1395.4    9242.50    1395.00    9252.28   1393.89   9317.37   1393.16   9347.04   1392.00   9381.56
GR   1391.4    9405.92    1391.00    9432.55   1391.00   9465.97   1390.72   9533.86   1390.59   9603.95
GR   1390.2    9682.01    1389.87    9740.25   1389.67   9804.11   1389.45   9885.39   1389.39   9896.69
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GR   1390.0    9930.05    1390.05    9936.10     1391.00     9938.65     1391.00     9944.23     1391.22     9947.35
GR   1390.8    9956.07    1390.00    9963.63     1389.00     9982.55     1386.02     9994.89     1386.02    10006.96
GR   1389.0   10018.85    1390.00   10037.29        1390       10040
  CVL STATION 2463
1
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NH        2        .03   10034.44       .016       10040
X1     9.04         18    9965.89   10034.44         137         137         137
GR   1397.5    9317.90    1397.49    9325.05     1397.00     9353.18     1397.00     9377.94     1394.00     9387.32
GR   1393.0    9393.21    1392.95    9424.18     1392.00     9629.08     1391.36     9785.41     1391.35     9851.75
GR   1391.0    9883.49    1391.00    9965.89     1390.52     9972.28     1387.00     9989.15     1387.00    10011.45
GR   1389.2   10022.01       1390   10034.44        1390       10040
  CVL STATION 2600

NH        2        .03   10029.03       .016       10040
X1     9.08         15    9968.5    10033.71         200         200         200
GR   1396.0    9300.07    1396.00    9353.28     1395.36     9370.91     1395.00     9379.29     1394.00     9385.46
GR   1394.0    9451.69    1393.41    9534.65     1393.00     9710.81     1392.01     9961.65     1392.00     9968.50
GR   1388.0    9989.48    1388.00   10009.46     1391.00    10029.03     1391.00    10033.71        1391       10040
  CVL STATION 2800

NH        1        .03    10025.6
X1     9.10         25    9963.69    10025.6         137         137         137
GR   1397.0    9327.52    1397.00    9330.04     1397.84     9337.46     1396.00     9358.21     1395.00     9368.07
GR   1394.6    9376.12    1394.44    9384.36     1394.44     9395.42     1394.29     9408.30     1394.27     9432.12
GR   1394.0    9443.12    1394.00    9709.01     1393.96     9714.46     1393.81     9772.64     1393.00     9863.05
GR   1393.0    9963.69    1392.00    9969.68     1390.74     9979.26     1388.78     9989.57     1388.03     9998.62
GR   1388.6   10006.61    1389.00   10009.41     1391.00    10015.48     1391.00    10020.98     1392.00    10025.60
  END OF CVL CROSS-SECTIONS - CVL STATION 2937

NC    0.016      0.016      0.016        0.1         0.3
ET                 5.1                            4118.87     5417.09
X1     9.13         14       4918    5058.33          98          98          98
GR     1398    3791.43       1396    3900.27        1394     4218.11        1394     4768.19      1393.5        4918
GR   1393.2       5000       1393    5058.33      1392.7        5085        1392     5150.02        1392     5159.91
GR     1392    5184.70       1391       5264        1392     5371.23        1392     5418.98
  CENTERLINE OF PINNACLE PEAK ROAD - BEGIN TETRA TECH'S EAST SPLIT X-SECTIONS

ET                 5.1                            4133.61     5424.01
X1     9.14         14    4904.57    5104.30          33          33          33
GR     1398    3778.24       1396    3970.46        1394     4372.20        1394     4430.01      1394.4     4623.96
GR     1394    4904.57     1393.6       5000      1393.6     5007.96        1393     5104.30        1392     5183.96
GR   1391.5    5279.96       1392    5352.33      1392.8     5407.96      1392.8     5429.75
  UPSTREAM SIDE OF PINNACLE PEAK ROAD

NC    0.040      0.040      0.040
ET                 5.1                            4161.93     5443.67
X1     9.15         11    4994.21    5082.19          43          43          43
GR     1398    3719.90       1396    3900.98        1394     4069.81        1393     4325.58        1393       4814
GR     1393    4994.21       1393       5000        1393     5082.19        1392     5210.16        1392     5403.10
GR     1392    5443.67
  REMOVED NON-CONVEYING DEPRESSION BETWEEN STA 3874 AND 4000
  RIGHT BANK ENCROACHMENT SET AT FLOW SPLIT BOUNDARY FOR BREAKOUT WSEL MATCHING
1
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ET                5.1                                   3023     4572.95
X1     9.25        45       4825    5285.60             155          82         141
GR     1400      3023     1399.1       3123          1397.6        3223      1395.8       3323      1392.7       3423
GR     1392      3523       1393       3623          1393.6        3723      1393.5       3762        1394       3874
GR     1394      3898       1394    4003.81            1394     4062.18        1395    4283.87        1395    4298.29
GR     1395   4301.25       1395    4365.84            1395      4385.4      1395.7    4563.07        1396    4565.34
GR     1397   4570.45    1397.57    4572.95         1397.46     4582.97        1397    4585.82        1396    4590.84
GR     1395   4598.19       1395    4614.18            1395     4621.31        1394    4735.08        1394    4738.18
GR     1394   4838.32       1393    4871.51            1392     4892.27        1392       5000        1392     5077.8
GR     1393   5179.38       1394    5266.49            1395     5275.95        1396    5278.52        1397    5281.09
GR     1398   5283.83    1398.64     5285.6            1399     5290.86        1400    5304.55        1399    5325.36
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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

CCHV=     .100 CEHV=     .300
*SECNO 8.550
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
     8.550      2.58   1376.58       .00       .00   1376.74       .16       .00       .00   1380.90
     112.8        .0     112.8        .0        .0      35.6        .0        .0        .0   1381.90
       .00       .00      3.17       .00      .000      .040      .000      .000   1374.00   9988.43
   .007031        0.        0.        0.         0         0         6       .00     34.21  10022.64

*SECNO 8.570
     8.570      2.61   1377.30       .00       .00   1377.50       .20       .75       .01   1380.00
     112.8        .0     112.8        .0        .0      31.8        .0        .1        .1   1380.27
       .01       .00      3.55       .00      .000      .040      .000      .000   1374.69   9985.45
   .008582       97.       97.       97.         2         0         0       .00     29.67  10015.12

*SECNO 8.580

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.43

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1378.90 ELREA=      1378.96

     8.580      1.98   1377.93       .00       .00   1378.04       .12       .54       .01   1378.90
     112.8        .0     112.8        .0        .0      41.4        .0        .2        .1   1378.96
       .02       .00      2.73       .00      .000      .040      .000      .000   1375.95   9980.15
   .004209       92.       92.       92.         3         0         0       .00     34.03  10014.18


SPECIAL CULVERT

SC  CUNO       CUNV      ENTLC      COFQ      RDLEN      RISE      SPAN      CULVLN     CHRT      SCL       ELCHU     ELCHD
     3          .013       .50      2.70        .00      2.00       .00      80.00      2         1       1376.50   1376.40

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  1 - HEADWALL
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5140, NORMAL DEPTH EXCEEDS CULVERT HEIGHT
*SECNO 8.600
5155, 20 TRIALS OF QWEIR NOT ENOUGH; POSSIBLY INVALID
FINAL QWEIR + QCULV =       142. DOES NOT EQUAL ACTUAL Q =       113.

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG =   1380.58
3280 CROSS SECTION      8.60 EXTENDED      1.88 FEET

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

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  6.42

SPECIAL CULVERT

     EGIC       EGOC        H4      QWEIR      QCULV       VCH      ACULV     ELTRD     WEIRLN
   1383.31    1381.70      2.54       62.        80.      .732        9.4   1380.50       29.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1382.30 ELREA=      1378.70

     8.600       4.07   1380.57        .00        .00   1380.58        .01       2.54        .00   1382.30
     112.8         .0     112.8         .0         .0     154.1         .0         .3         .2   1378.70
       .05        .00       .73        .00       .000      .040       .000       .000    1376.50   9975.99
   .000102        80.       80.        80.          0         0          0        .00      54.01  10030.00

*SECNO 8.620
3280 CROSS SECTION      8.62 EXTENDED      1.09 FEET

     8.620       3.48   1380.59        .00        .00   1380.60        .01        .01        .00   1378.00
     112.8        4.5     108.3         .0        9.7     141.2         .0         .8         .4   1379.50
       .09        .46       .77        .00       .040      .040       .000       .000    1377.11   9976.43
   .000119       128.      128.       128.          2         0          0        .00      60.57  10037.00

*SECNO 8.640
3280 CROSS SECTION      8.64 EXTENDED       .73 FEET

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

     8.640       2.98   1380.60        .00        .00   1380.63        .03        .02        .01   1381.70
     112.8         .0     112.8         .0         .0      84.5         .0        1.1         .5   1379.87
       .12        .00      1.33        .00       .000      .040       .000       .000    1377.62   9978.10
   .000657       100.      100.       100.          2         0          0        .00      49.90  10028.00

*SECNO 8.660
3280 CROSS SECTION      8.66 EXTENDED       .45 FEET
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     8.660      2.54   1380.67       .00       .00   1380.70       .03       .08       .00   1381.30
     112.8        .0     112.8        .0        .0      82.6        .0       1.2        .6   1380.23
       .14       .00      1.37       .00      .000      .040      .000      .000   1378.13   9970.05
   .000888      100.      100.      100.         2         0         0       .00     59.71  10029.76

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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 8.680
 3280 CROSS SECTION      8.68 EXTENDED       .13 FEET

     8.680      2.77   1380.77       .00       .00   1380.80       .03       .10       .00   1381.05
     112.8        .0     112.8        .0        .0      75.5        .0       1.4        .8   1380.64
       .15       .00      1.49       .00      .000      .040      .000      .000   1378.00   9973.74
   .001132      100.      100.      100.         2         0         0       .00     57.26  10031.00

 *SECNO 8.700

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

     8.700      1.36   1380.95       .00       .00   1381.04       .09       .22       .02   1379.59
     112.8      27.8      85.0        .0      12.8      34.1        .0       1.6        .9   1381.27
       .17      2.18      2.49       .00      .040      .040      .000      .000   1379.59   9965.63
   .005788      100.      100.      100.         3         0         0       .00     60.09  10025.72

 *SECNO 8.720
 3280 CROSS SECTION      8.72 EXTENDED       .15 FEET

 7185 MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED
     8.720      1.15   1382.05   1382.05       .00   1382.37       .33      1.10       .07   1383.00
     112.8        .0     112.8        .0        .0      24.6        .0       1.6       1.0   1381.90
       .17       .00      4.59       .00      .000      .040      .000      .000   1380.90   9990.87
   .028515      100.      100.      100.         1        15         0       .00     39.13  10030.00

 *SECNO 8.740
 3280 CROSS SECTION      8.74 EXTENDED       .85 FEET

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.16

     8.740      1.40   1383.40       .00       .00   1383.53       .13      1.14       .02   1385.00
     112.8        .0     112.8        .0        .0      38.8        .0       1.7       1.1   1382.55
       .18       .00      2.91       .00      .000      .040      .000      .000   1382.00   9991.59
   .006096      100.      100.      100.         4         0         0       .00     37.59  10029.18

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

*SECNO 8.770
3280 CROSS SECTION      8.77 EXTENDED       .46 FEET

     8.770      1.26   1384.86       .00       .00   1385.03       .17       1.49       .01   1385.40
     112.8        .0      90.2      22.6        .0      25.7      10.7        1.9       1.3   1384.40
       .20       .00      3.51      2.12      .000      .040      .040       .000   1383.60   9990.79
   .009287      200.      200.      200.         3         0         0        .00     49.21  10040.00

1490 NH CARD USED
*SECNO 8.790
3280 CROSS SECTION      8.79 EXTENDED       .75 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     8.790       .75   1386.05   1386.05       .00   1386.26       .21        .55       .01   1385.99
     126.7      72.3      54.4        .0      19.6      14.9        .0        2.0       1.4   1385.31
       .20      3.70      3.66       .00      .016      .016      .000       .000   1385.30   9963.00
   .005356       81.       81.       81.         4        14         0        .00     85.00  10048.00

1490 NH CARD USED
*SECNO 8.800
3280 CROSS SECTION      8.80 EXTENDED      1.11 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     8.800      1.11   1386.21   1386.21       .00   1386.51       .31        .21       .03   1385.79
     230.1     176.9      53.2        .0      37.3      16.2        .0        2.0       1.5   1385.75
       .21      4.74      3.29       .00      .016      .016      .000       .000   1385.10   9966.00
   .003853       49.       49.       49.         4        14         0        .00     86.00  10052.00

1490 NH CARD USED
*SECNO 8.810
3280 CROSS SECTION      8.81 EXTENDED       .44 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.13

     8.810      1.75   1386.45       .00       .00   1386.56       .11        .03       .02   1388.00
     380.5        .0     380.5        .0        .0     140.2        .0        2.1       1.6   1386.00
       .21       .00      2.71       .00      .000      .016      .000       .000   1384.70   9991.25
   .000618       20.       29.      105.         4         0         0        .00    109.49  10100.74
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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
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    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

1490 NH CARD USED
*SECNO 8.860
3280 CROSS SECTION      8.86 EXTENDED       .64 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.64

3470 ENCROACHMENT STATIONS=     9700.0   10079.1  TYPE=      1  TARGET=    -9700.000
 ELENCL=   1386.67  ELENCR= 100000.00
     8.860      4.64   1386.64       .00       .00   1386.67       .03       .10       .01   1386.00
     721.3      18.3     702.9        .0      40.3     463.0        .0       4.0       3.0 100000.00
       .26       .45      1.52       .00      .030      .030      .000      .000   1382.00   9724.74
   .000318      266.      266.      266.         4         0         0       .00    354.33  10079.07

1490 NH CARD USED
*SECNO 8.890
3280 CROSS SECTION      8.89 EXTENDED       .66 FEET

3470 ENCROACHMENT STATIONS=     9601.0   10065.0  TYPE=      1  TARGET=    -9601.000
 ELENCL=   1388.00  ELENCR= 100000.00
     8.890      4.66   1386.66       .00       .00   1386.80       .14       .10       .03   1386.00
    1014.6      20.1     994.5        .0      26.9     331.2        .0       5.8       4.1 100000.00
       .28       .75      3.00       .00      .030      .030      .000      .000   1382.00   9861.38
   .000987      175.      175.      175.         2         0         0       .00    203.67  10065.05

1490 NH CARD USED
*SECNO 8.930

3265 DIVIDED FLOW

3280 CROSS SECTION      8.93 EXTENDED       .25 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     8.930      2.50   1387.17   1387.17       .00   1387.55       .38       .51       .07   1387.00
    1335.0     585.1     748.7       1.2     170.1     128.7        .5       7.4       5.6   1387.00
       .29      3.44      5.82      2.55      .030      .030      .016      .000   1384.67   9517.25
   .006894      217.      217.      217.        20        11         0       .00    405.13  10046.99

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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 9.000
7185 MINIMUM SPECIFIC ENERGY
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3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1388.54 ELREA= 1390.00

9.000	4.44	1389.44	1389.44	.00	1389.90	.47	2.17	.03	1388.54
1470.3	515.7	954.6	.0	175.0	148.2	.0	10.0	8.9	1390.00
.31	2.95	6.44	.00	.030	.030	.000	.000	1385.00	9675.06
.005115	370.	370.	370.	2	15	0	.00	352.80	10027.86

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	2	.013	.50	2.70	.00	3.00	.00	75.00	2	1	1386.02	1385.00

CHART 2 - CORRUGATED METAL PIPE CULVERT
SCALE 1 - HEADWALL

5130, EGIC= 1798.01..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 1732.48 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
1490 NH CARD USED
*SECNO 9.010

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG = 1392.68
3280 CROSS SECTION 9.01 EXTENDED 2.67 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 7.99

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
1798.01	1732.48	2.77	1651.	156.	1.356	14.1	1389.89	140.

9.010	6.64	1392.66	.00	.00	1392.68	.02	2.77	.00	1391.22
1811.6	1321.0	481.6	9.0	1328.1	355.1	7.2	11.8	9.8	1390.00
.33	.99	1.36	1.25	.030	.030	.016	.000	1386.02	9361.72
.000122	76.	76.	76.	1	0	0	.00	678.28	10040.00

1490 NH CARD USED
*SECNO 9.040
3280 CROSS SECTION 9.04 EXTENDED 2.57 FEET

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

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY

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3720 CRITICAL DEPTH ASSUMED
     9.040      5.57   1392.57   1392.57       .00   1393.19       .62       .08       .18   1391.00
    3638.4    1371.8    2151.5     115.1     427.5     284.0      14.3      15.6      11.7   1390.00
       .33      3.21      7.57      8.06      .030      .030      .016      .000   1387.00   9506.57
   .003557      137.      137.      137.        20        10         0       .00    533.43  10040.00

1490 NH CARD USED
*SECNO 9.080
3280 CROSS SECTION      9.08 EXTENDED      3.53 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     9.080      6.53   1394.53   1394.53       .00   1395.47       .94       .81       .10   1392.00
    7620.9    3946.5    3440.8     233.6     864.1     340.6      22.2      20.1      14.4   1391.00
       .34      4.57     10.10     10.52      .030      .029      .016      .000   1388.00   9382.18
   .004319      200.      200.      200.        20        11         0       .00    657.82  10040.00

1490 NH CARD USED
*SECNO 9.100
3280 CROSS SECTION      9.10 EXTENDED      3.76 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
     9.100      7.73   1395.76   1395.76       .00   1396.86      1.10       .70       .05   1393.00
   11280.0    7273.2    4006.8        .0    1185.8     350.0        .0      24.4      16.5   1392.00
       .35      6.13     11.45       .00      .030      .030      .000      .000   1388.03   9360.55
   .005838      137.      137.      137.        20        11         0       .00    665.05  10025.60

CCHV=     .100 CEHV=     .300
*SECNO 9.130
3280 CROSS SECTION      9.13 EXTENDED      4.90 FEET

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

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  7.06

3470 ENCROACHMENT STATIONS=     4118.9    5417.1  TYPE=      1  TARGET=     1298.220
     9.130      5.90   1396.90       .00   1396.90   1397.00       .10       .04       .10   1393.50
   11280.0    4752.8    1221.3    5305.9    2322.2     512.5    1805.0      31.4      18.7   1393.00
       .36      2.05      2.38      2.94      .016      .016      .016      .000   1391.00   4118.87
   .000117       98.       98.       98.         3         0         0       .00   1298.22   5417.09
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*SECNO 9.140
3280 CROSS SECTION      9.14 EXTENDED      4.08 FEET

3470 ENCROACHMENT STATIONS=     4133.6    5424.0  TYPE=      1  TARGET=     1290.400
     9.140      5.38   1396.88       .00   1396.88   1397.01       .13       .00       .01   1394.00
   11280.0    4416.4    1753.1    5110.5    1986.5     665.6    1528.5      34.7      19.7   1393.00
       .36      2.22      2.63      3.34      .016      .016      .016      .000   1391.50   4133.61
   .000162       33.       33.       33.         2         0         0       .00   1290.40   5424.01

*SECNO 9.150
3280 CROSS SECTION      9.15 EXTENDED      4.96 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .58

3470 ENCROACHMENT STATIONS=     4161.9    5443.7  TYPE=      1  TARGET=     1281.740
     9.150      4.96   1396.96       .00   1396.96   1397.03       .07       .01       .01   1393.00
   11280.0    6571.6     714.7    3993.7    3240.9     348.1    1727.8      39.4      20.9   1393.00
       .37      2.03      2.05      2.31      .040      .040      .040      .000   1392.00   4161.93
   .000488       43.       43.       43.         2         0         0       .00   1281.74   5443.67

*SECNO 9.250

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .59
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

3470 ENCROACHMENT STATIONS=     3023.0    4573.0  TYPE=      1  TARGET=     1549.950
     9.250      5.02   1397.02       .00   1397.02   1397.16       .14       .11       .02 100000.00
   11280.0   11280.0        .0        .0    3739.9        .0        .0      54.0      25.2 100000.00
       .38      3.02       .00       .00      .040      .000      .000      .000   1392.00   3255.44
   .001411      155.      141.       82.         2         0         0       .00   1315.08   4570.52
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  TW      RIGHT BANK WEIR BETWEEN SECTION 8.55 AND 8.57

    ASQ       QCOMP      ERRAC      TASQ       TCQ       TABER      NITER      DSWS       USWS      DSSNO      USSNO
     .00        .00        .00       .00       .00        .00         33  1376.735   1377.499      8.550      8.570

  TW      RIGHT BANK WEIR BETWEEN SECTION 8.57 AND 8.58

    ASQ       QCOMP      ERRAC      TASQ       TCQ       TABER      NITER      DSWS       USWS      DSSNO      USSNO
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.00	.00	.00	.00	.00	.00	33	1377.499	1378.043	8.570	8.580

TW RIGHT BANK WEIR BETWEEN SECTION 8.58 AND 8.60

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
138.69	138.69	.00	138.69	138.69	.00	33	1378.043	1380.582	8.580	8.600

TW RIGHT BANK WEIR BETWEEN SECTION 8.60 AND 8.62

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
602.36	602.36	.00	741.05	741.05	.00	33	1380.582	1380.596	8.600	8.620

TW RIGHT BANK WEIR BETWEEN SECTION 8.62 AND 8.64

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
236.98	236.98	.00	978.03	978.03	.00	33	1380.596	1380.625	8.620	8.640

TW RIGHT BANK WEIR BETWEEN SECTION 8.64 AND 8.66

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
128.13	128.13	.00	1106.16	1106.16	.00	33	1380.625	1380.701	8.640	8.660

TW RIGHT BANK WEIR BETWEEN SECTION 8.66 AND 8.68

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
48.77	48.77	.00	1154.93	1154.93	.00	33	1380.701	1380.803	8.660	8.680

TW RIGHT BANK WEIR BETWEEN SECTION 8.68 AND 8.70

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
2.88	2.88	.00	1157.81	1157.81	.00	33	1380.803	1381.038	8.680	8.700

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TW RIGHT BANK WEIR BETWEEN SECTION 8.70 AND 8.72

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
23.04	23.04	.00	1180.84	1180.84	.00	33	1381.038	1382.372	8.700	8.720

TW RIGHT BANK WEIR BETWEEN SECTION 8.72 AND 8.74

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
166.76	166.76	.00	1347.60	1347.60	.00	33	1382.372	1383.532	8.720	8.740

TW RIGHT BANK WEIR BETWEEN SECTION 8.74 AND 8.77

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
358.97	358.97	.00	1706.56	1706.56	.00	33	1383.532	1385.031	8.740	8.770

TW RIGHT BANK WEIR BETWEEN SECTION 8.77 AND 8.79

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
141.25	141.10	.11	1847.81	1847.66	.01	33	1385.031	1386.262	8.770	8.790

TW RIGHT BANK WEIR BETWEEN SECTION 8.79 AND 8.80

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
103.46	103.38	.08	1951.27	1951.04	.01	33	1386.262	1386.514	8.790	8.800

TW RIGHT BANK WEIR BETWEEN SECTION 8.80 AND 8.81

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
150.32	150.23	.06	2101.59	2101.28	.02	33	1386.514	1386.560	8.800	8.810

TW RIGHT BANK WEIR BETWEEN SECTION 8.81 AND 8.86

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
340.80	340.67	.04	2442.39	2441.94	.02	33	1386.560	1386.671	8.810	8.860

TW RIGHT BANK WEIR BETWEEN SECTION 8.86 AND 8.89

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
293.32	293.38	.02	2735.71	2735.32	.01	33	1386.671	1386.802	8.860	8.890

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TW RIGHT BANK WEIR BETWEEN SECTION 8.89 AND 8.93

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
320.40	320.18	.07	3056.11	3055.49	.02	33	1386.802	1387.548	8.890	8.930

TW RIGHT BANK WEIR BETWEEN SECTION 8.93 AND 9.00

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
135.30	135.46	.12	3191.41	3190.96	.01	33	1387.548	1389.904	8.930	9.000

TW RIGHT BANK WEIR BETWEEN SECTION 9.00 AND 9.01

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
341.30	340.52	.23	3532.71	3531.48	.03	33	1389.904	1392.676	9.000	9.010

TW RIGHT BANK WEIR BETWEEN SECTION 9.01 AND 9.04

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1826.80	1824.08	.15	5359.52	5355.56	.07	33	1392.676	1393.187	9.010	9.040

TW RIGHT BANK WEIR BETWEEN SECTION 9.04 AND 9.08

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO

3982.56	3982.43	.00	9342.07	9337.99	.04	33	1393.187	1395.468	9.040	9.080

TW RIGHT BANK WEIR BETWEEN SECTION 9.08 AND 9.10

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
3659.05	3659.01	.00	13001.13	12997.01	.03	33	1395.468	1396.863	9.080	9.100

1
PROFILE FOR STREAM EMCON 9/22/03 by: DNS

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION  1374.     1379.     1384.     1389.     1394.     1399.     1404.     1409.     1414.     1419.
    SECNO   CUMDIS

     8.55      0.  I    E    .   LMR   .         .         .         .         .         .         .         .
              20.  I    WE   .  L R    .         .         .         .         .         .         .         .
              40.  CI    E   .  LR     .         .         .         .         .         .         .         .
              60.  CI    E   .  LR     .         .         .         .         .         .         .         .
              80.  CI    WE  . LR      .         .         .         .         .         .         .         .
     8.57    100.  CI     E  . LR      .         .         .         .         .         .         .         .
             120.  C I    E  . L       .         .         .         .         .         .         .         .
             140.  C I    E  .L        .         .         .         .         .         .         .         .
             160.  C  I   WE .L        .         .         .         .         .         .         .         .
             180.  C   I   E L         .         .         .         .         .         .         .         .
     8.58    200.  C   I   E L         .         .         .         .         .         .         .         .
             220.  C   I    ER L       .         .         .         .         .         .         .         .
             240.  C   I     RE L      .         .         .         .         .         .         .         .
             260.  C    I    R E  L    .         .         .         .         .         .         .         .
     8.60    280.  C    I   R.  E   L  .         .         .         .         .         .         .         .
             300.  C    I    R  E L    .         .         .         .         .         .         .         .
             320.  C    I    R  EL     .         .         .         .         .         .         .         .
             340.  C     I   R  E      .         .         .         .         .         .         .         .
             360.  C     I   RL E      .         .         .         .         .         .         .         .
             380.  C     I   LR E      .         .         .         .         .         .         .         .
     8.62    400.  C     I L .R E      .         .         .         .         .         .         .         .
             420.  C     I  L.R E      .         .         .         .         .         .         .         .
             440.  C      I  .L E      .         .         .         .         .         .         .         .
             460.  C      I  .RLE      .         .         .         .         .         .         .         .
             480.  C      I  . REL     .         .         .         .         .         .         .         .
     8.64    500.  C      I  . RE L    .         .         .         .         .         .         .         .
             520.  C      I  . RE L    .         .         .         .         .         .         .         .
             540.  C       I . RE L    .         .         .         .         .         .         .         .
             560.  C       I . RE L    .         .         .         .         .         .         .         .
             580.  C       I . RE L    .         .         .         .         .         .         .         .
     8.66    600.  C       I . RE L    .         .         .         .         .         .         .         .
             620.  C       I .  E L    .         .         .         .         .         .         .         .
             640.  C       I .  EL     .         .         .         .         .         .         .         .
             660.  C       I .  WE     .         .         .         .         .         .         .         .
             680.  C       I .  RE     .         .         .         .         .         .         .         .
     8.68    700.  C       I .  RE     .         .         .         .         .         .         .         .
             720.  C        I.   E     .         .         .         .         .         .         .         .
             740.  C        I.  LE     .         .         .         .         .         .         .         .
             760.  C         I L E     .         .         .         .         .         .         .         .
             780.  C         .IL E     .         .         .         .         .         .         .         .
     8.70    800.  C         .I  ER    .         .         .         .         .         .         .         .
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       820.  C          . ILWE    .          .          .          .          .          .          .
       840.  C          . I LE    .          .          .          .          .          .          .
       860.  C          .  I WE   .          .          .          .          .          .          .
       880.  C          .  I  EL  .          .          .          .          .          .          .
8.72   900.  .          .   I WEL .          .          .          .          .          .          .
       920.  C          .   I RE L.          .          .          .          .          .          .
       940.  C          .    IRWE L          .          .          .          .          .          .
       960.  C          .    I RE L          .          .          .          .          .          .
       980.  C          .     IRWE.L         .          .          .          .          .          .
8.74  1000.  C          .     IR E. L        .          .          .          .          .          .
      1020.  C          .     IR E. L        .          .          .          .          .          .
      1040.  C          .      IRWE L        .          .          .          .          .          .
      1060.  C          .      IR E L        .          .          .          .          .          .
      1080.  C          .      I RE L        .          .          .          .          .          .
      1100.  C          .       IRWEL        .          .          .          .          .          .
      1120.  C          .       IR.EL        .          .          .          .          .          .
      1140.  C          .       I RE L       .          .          .          .          .          .
      1160.  C          .        IRE L       .          .          .          .          .          .
      1180.  C          .        IRWEL       .          .          .          .          .          .
8.77  1200.  C          .        I.REL       .          .          .          .          .          .
      1220.  C          .         IRWE       .          .          .          .          .          .
      1240.  C          .         .IRE       .          .          .          .          .          .
      1260.  C          .         . IWE      .          .          .          .          .          .
8.79  1280.  .          .         .  IWE     .          .          .          .          .          .
      1300.  .          .         . IRWE     .          .          .          .          .          .
      1320.  .          .         . IRWE     .          .          .          .          .          .
8.80  1340.  .          .         . I WE     .          .          .          .          .          .
8.81  1360.  C          .         .I  RE  L  .          .          .          .          .          .
      1380.  C          .         .I  ME  L  .          .          .          .          .          R
      1400.  C          .         .I  ME L   .          .          .          .          .          R
      1420.  C          .         I   ME L   .          .          .          .          .          R
      1440.  C          .         I   ME L   .          .          .          .          .          R
      1460.  C          .        I.   MEL    .          .          .          .          .          R
      1480.  C          .        I.   MEL    .          .          .          .          .          R
      1500.  C          .        I.   MEL    .          .          .          .          .          R
      1520.  C          .       I .   MEL    .          .          .          .          .          R
      1540.  C          .       I .   ME     .          .          .          .          .          R
      1560.  C          .      I  .   ME     .          .          .          .          .          R
      1580.  C          .      I  .   ME     .          .          .          .          .          R
      1600.  C          .      I  .   LE     .          .          .          .          .          R
      1620.  C          .     I   .   LE     .          .          .          .          .          R
8.86  1640.  C          .     I   .   LE     .          .          .          .          .          R
      1660.  C          .     I   .   LE     .          .          .          .          .          R
      1680.  C          .     I   .   LE     .          .          .          .          .          R
      1700.  C          .     I   .   LE     .          .          .          .          .          R
      1720.  C          .     I   .   LE     .          .          .          .          .          R
      1740.  C          .     I   .   LE     .          .          .          .          .          R
      1760.  C          .     I   .   LWE    .          .          .          .          .          R
      1780.  C          .     I   .   LWE    .          .          .          .          .          R
8.89  1800.  C          .     I   .   LWE    .          .          .          .          .          R
      1820.  C          .     I   .   LWE    .          .          .          .          .          R
      1840.  C          .      I  .   L E    .          .          .          .          .          R
      1860.  C          .      I  .    LE    .          .          .          .          .          R
      1880.  C          .       I .    LE    .          .          .          .          .          R
      1900.  C          .       I .    LE    .          .          .          .          .          R
      1920.  C          .        I.    LE    .          .          .          .          .          R
      1940.  C          .        I.    LWE   .          .          .          .          .          R
      1960.  C          .         I    LWE   .          .          .          .          .          R
      1980.  C          .         I     WE   .          .          .          .          .          R
      2000.  C          .         .I    WE   .          .          .          .          .          R
8.93  2020.  .          .         .I    WE   .          .          .          .          .          .
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       2040.  .         .        .I    LE  .         .         .         .         .         .         .
       2060.  .         .        .I    LWE .         .         .         .         .         .         .
       2080.  .         .        .I    LWE .         .         .         .         .         .         .
       2100.  .         .        .I     WE .         .         .         .         .         .         .
       2120.  .         .        . I    LE .         .         .         .         .         .         .
       2140.  .         .        . I    LWE.         .         .         .         .         .         .
       2160.  .         .        . I    LWE.         .         .         .         .         .         .
       2180.  .         .        . I    LWE.         .         .         .         .         .         .
       2200.  .         .        . I    L E.         .         .         .         .         .         .
       2220.  .         .        . I     LWE         .         .         .         .         .         .
       2240.  .         .        . I     LWE         .         .         .         .         .         .
       2260.  .         .        . I     LWE         .         .         .         .         .         .
       2280.  .         .        . I     L E         .         .         .         .         .         .
       2300.  .         .        . I     L WE        .         .         .         .         .         .
       2320.  .         .        . I     L WE        .         .         .         .         .         .
       2340.  .         .        . I      LWE        .         .         .         .         .         .
       2360.  .         .        . I      L.ER       .         .         .         .         .         .
       2380.  .         .        . I      L.WE       .         .         .         .         .         .
9.00   2400.  .         .        . I      L.WE       .         .         .         .         .         .
       2420.  C         .        .  I      L RE      .         .         .         .         .         .
       2440.  C         .        .  I      . L WE    .         .         .         .         .         .
9.01   2460.  C         .        .   I     . R L  E  .         .         .         .         .         .
       2480.  C         .        .   I     . R L  WE .         .         .         .         .         .
       2500.  C         .        .    I    . R L  WE .         .         .         .         .         .
       2520.  C         .        .    I    . R L  WE .         .         .         .         .         .
       2540.  C         .        .    I    . R L  WE .         .         .         .         .         .
       2560.  C         .        .    I    . R L  WE .         .         .         .         .         .
       2580.  C         .        .     I   . R L  WE .         .         .         .         .         .
9.04   2600.  .         .        .     I   . R L  WE .         .         .         .         .         .
       2620.  .         .        .     I   . R L   WE.         .         .         .         .         .
       2640.  .         .        .     I   . R L   WE.         .         .         .         .         .
       2660.  .         .        .      I  .  R L  W E         .         .         .         .         .
       2680.  .         .        .      I  .  R L   WE         .         .         .         .         .
       2700.  .         .        .      I  .  R L   W.E        .         .         .         .         .
       2720.  .         .        .      I  .  R L   W.E        .         .         .         .         .
       2740.  .         .        .      I  .  R L    W E       .         .         .         .         .
       2760.  .         .        .       I .   R L   W E       .         .         .         .         .
       2780.  .         .        .       I .   R L   .WE       .         .         .         .         .
9.08   2800.  .         .        .       I .   R L   .W E      .         .         .         .         .
       2820.  .         .        .       I .   R L   .W E      .         .         .         .         .
       2840.  .         .        .       I .    R L  . W E     .         .         .         .         .
       2860.  .         .        .       I .    R L  . W E     .         .         .         .         .
       2880.  .         .        .       I .    R L  . W  E    .         .         .         .         .
       2900.  .         .        .       I .    R L  .  W E    .         .         .         .         .
       2920.  .         .        .       I .     R L .  W E     .         .         .         .         .
9.10   2940.  .         .        .       I .     R L .   W E    .         .         .         .         .
       2960.  C         .        .        I.     R L .   W E    .         .         .         .         .
       2980.  C         .        .         I     MRL .   W E    .         .         .         .         .
       3000.  C         .        .         . I   MR L.    WE    .         .         .         .         .
       3020.  C         .        .         .  I  M RL.    WE    .         .         .         .         .
9.13   3040.  C         .        .         .   I M RL.     E    .         .         .         .         .
       3060.  C         .        .         .    I MR L     E    .         .         .         .         .
9.14   3080.  C         .        .         .    I  R L     E    .         .         .         .         .
       3100.  C         .        .         .    I MRL.     E    .         .         .         .         .
9.15   3120.  C         .        .         .     I L .     E    .         .         .         .         .
       3140.  C         .        .         .     I M .     E    .         .         .         .         L
       3160.  C         .        .         .     I   M     E    .         .         .         .         L
       3180.  C         .        .         .     I   . M   E    .         .         .         .         L
       3200.  C         .        .         .     I   .   M E    .         .         .         .         L
       3220.  C         .        .         .     I   .     E    .         .         .         .         L
       3240.  C         .        .         .     I   .     E M  .         .         .         .         L
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THIS RUN EXECUTED 07OCT03 22:36:58

****
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

EMCON 9/22/03 by: DNS

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	8.550	.00	.00	.00	1374.00	112.80	1376.58	.00	1376.74	70.31	3.17	35.60	13.45
	8.570	97.00	.00	.00	1374.69	112.80	1377.30	.00	1377.50	85.82	3.55	31.78	12.18
*	8.580	92.00	.00	.00	1375.95	112.80	1377.93	.00	1378.04	42.09	2.73	41.38	17.39
*	8.600	80.00	1380.50	.00	1376.50	112.80	1380.57	.00	1380.58	1.02	.73	154.13	111.70
	8.620	128.00	.00	.00	1377.11	112.80	1380.59	.00	1380.60	1.19	.77	150.88	103.32
*	8.640	100.00	.00	.00	1377.62	112.80	1380.60	.00	1380.63	6.57	1.33	84.53	44.02
	8.660	100.00	.00	.00	1378.13	112.80	1380.67	.00	1380.70	8.88	1.37	82.61	37.85
	8.680	100.00	.00	.00	1378.00	112.80	1380.77	.00	1380.80	11.32	1.49	75.46	33.52
*	8.700	100.00	.00	.00	1379.59	112.80	1380.95	.00	1381.04	57.88	2.49	46.90	14.83
*	8.720	100.00	.00	.00	1380.90	112.80	1382.05	1382.05	1382.37	285.15	4.59	24.60	6.68
*	8.740	100.00	.00	.00	1382.00	112.80	1383.40	.00	1383.53	60.96	2.91	38.76	14.45
	8.770	200.00	.00	.00	1383.60	112.80	1384.86	.00	1385.03	92.87	3.51	36.36	11.71
*	8.790	81.00	.00	.00	1385.30	126.69	1386.05	1386.05	1386.26	53.56	3.66	34.44	17.31
*	8.800	49.00	.00	.00	1385.10	230.15	1386.21	1386.21	1386.51	38.53	3.29	53.51	37.08
*	8.810	29.00	.00	.00	1384.70	380.47	1386.45	.00	1386.56	6.18	2.71	140.21	153.03
*	8.860	266.00	.00	.00	1382.00	721.27	1386.64	.00	1386.67	3.18	1.52	503.35	404.66
	8.890	175.00	.00	.00	1382.00	1014.58	1386.66	.00	1386.80	9.87	3.00	358.13	323.01

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	8.930	217.00	.00	.00	1384.67	1334.98	1387.17	1387.17	1387.55	68.94	5.82	299.32	160.78
*	9.000	370.00	.00	.00	1385.00	1470.28	1389.44	1389.44	1389.90	51.15	6.44	323.21	205.58
*	9.010	76.00	1389.89	.00	1386.02	1811.59	1392.66	.00	1392.68	1.22	1.36	1690.43	1642.55
*	9.040	137.00	.00	.00	1387.00	3638.39	1392.57	1392.57	1393.19	35.57	7.57	725.81	610.05
*	9.080	200.00	.00	.00	1388.00	7620.95	1394.53	1394.53	1395.47	43.19	10.10	1226.88	1159.68
*	9.100	137.00	.00	.00	1388.03	11280.00	1395.76	1395.76	1396.86	58.38	11.45	1535.76	1476.34
*	9.130	98.00	.00	.00	1391.00	11280.00	1396.90	.00	1397.00	1.17	2.38	4639.64	10424.26
	9.140	33.00	.00	.00	1391.50	11280.00	1396.88	.00	1397.01	1.62	2.63	4180.61	8875.57
*	9.150	43.00	.00	.00	1392.00	11280.00	1396.96	.00	1397.03	4.88	2.05	5316.86	5106.52
*	9.250	141.00	.00	.00	1392.00	11280.00	1397.02	.00	1397.16	14.11	.00	3739.89	3002.42

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EMCON 9/22/03 by: DNS

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	8.550	112.80	1376.58	.00	.00	.00	34.21	.00
	8.570	112.80	1377.30	.00	.72	.00	29.67	97.00
*	8.580	112.80	1377.93	.00	.62	.00	34.03	92.00
*	8.600	112.80	1380.57	.00	2.65	.00	54.01	80.00
	8.620	112.80	1380.59	.00	.01	.00	60.57	128.00
*	8.640	112.80	1380.60	.00	.01	.00	49.90	100.00
	8.660	112.80	1380.67	.00	.08	.00	59.71	100.00
	8.680	112.80	1380.77	.00	.10	.00	57.26	100.00
*	8.700	112.80	1380.95	.00	.18	.00	60.09	100.00
*	8.720	112.80	1382.05	.00	1.10	.00	39.13	100.00
*	8.740	112.80	1383.40	.00	1.35	.00	37.59	100.00
	8.770	112.80	1384.86	.00	1.46	.00	49.21	200.00
*	8.790	126.69	1386.05	.00	1.19	.00	85.00	81.00

*	8.800	230.15	1386.21	.00	.15	.00	86.00	49.00
*	8.810	380.47	1386.45	.00	.24	.00	109.49	29.00
*	8.860	721.27	1386.64	.00	.19	.00	354.33	266.00
	8.890	1014.58	1386.66	.00	.03	.00	203.67	175.00
*	8.930	1334.98	1387.17	.00	.51	.00	405.13	217.00
*	9.000	1470.28	1389.44	.00	2.27	.00	352.80	370.00
*	9.010	1811.59	1392.66	.00	3.22	.00	678.28	76.00
*	9.040	3638.39	1392.57	.00	-.09	.00	533.43	137.00
*	9.080	7620.95	1394.53	.00	1.96	.00	657.82	200.00
*	9.100	11280.00	1395.76	.00	1.23	.00	665.05	137.00
*	9.130	11280.00	1396.90	.00	1.13	.00	1298.22	98.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
9.140	11280.00	1396.88	.00	-.01	.00	1290.40	33.00
* 9.150	11280.00	1396.96	.00	.07	.00	1281.74	43.00
* 9.250	11280.00	1397.02	.00	.06	.00	1315.08	141.00

1
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SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=      8.580  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.600  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.640  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.700  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      8.720  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      8.720  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      8.740  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      8.790  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      8.790  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      8.800  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      8.800  PROFILE=  1  MINIMUM SPECIFIC ENERGY
```

```
WARNING SECNO=      8.810  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.860  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      8.930  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      8.930  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      8.930  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=      9.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.010  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.040  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.040  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      9.040  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=      9.080  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.080  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      9.080  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=      9.100  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.100  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      9.100  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=      9.130  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.150  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.250  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

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1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    07OCT03    TIME   23:02:19 *
 *****************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
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X     X  XXXXXXX   XXXXX            XXXXX
X     X  X        X     X          X     X
X     X  X        X                      X
XXXXXXX  XXXX     X         XXXXX   XXXXX
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX            XXXXXXX
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THIS RUN EXECUTED 07OCT03 23:02:19

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

 Version   4.6.2;  May 1991
*************************************
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```
T1    MODIFIED SKUNK CREEK FLOODPLAIN STUDY - SKUNK CREEK FROM ADOBE DAM TO I-17
T2    INPUT FILE: encroch.dat       100-YR BASE FLOOD ELEVATION
T3    ORIGINAL MODEL SKNKLOMR.IH2 BY TETRA TECH, INC. SEPTEMBER 2002
T4    October 2003 EMCON/OWT Inc.

      This model is used to determine the Floodway Boundary.
      New topographic data used for stationing 9.21 - 9.35

      Starting WSEL is Adobe Dam reservoir 100-yr WSEL from effective FIS study.
      Boundary conditions were taken from Tetra Tech modeling.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0        2                           0                   0         0   1378.00

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1        0        -1         0         0                  -1         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         2        26         8         4        25        68        53
     54
   100-yr peak discharge is from effective FIS study.
```

```
QT        1      39000

NC    0.045      0.045      0.035        0.1        0.3
ET               5.1                               3796.61     5556.89
X1     8.69         95    4025.25    5073.77
GR   1380.0    3796.61    1380.00    3854.47    1379.00     3861.47    1378.00    3868.42    1378.00    3878.69
GR   1378.6    3884.04    1380.00    3896.01    1380.00     3907.92    1379.82    3923.26    1379.91    3925.58
GR   1380.0    4002.41    1380.54    4004.61    1382.00     4011.19    1382.00    4016.12    1381.16    4025.25
GR   1380.0    4037.88    1379.55    4039.54    1378.00     4045.04    1376.66    4058.92    1376.33    4063.23
GR   1376.0    4067.80    1375.66    4071.80    1374.51     4084.66    1374.14    4088.53    1374.00    4090.42
GR   1373.8    4091.18    1373.53    4092.99    1372.00     4102.33    1371.23    4129.14    1370.00    4171.62
GR   1370.0    4446.38    1370.04    4448.91    1372.00     4550.37    1372.00    4583.65    1371.80    4601.95
GR   1371.2    4726.77    1371.45    4741.81    1371.10     4787.06    1371.00    4796.71    1370.54    4837.32
GR   1370.6    4872.36    1370.52    4876.45    1370.60     4881.98    1370.60    4882.00    1370.82    4897.47
GR   1371.4    4906.65    1371.83    4913.95    1372.00     4917.45    1372.34    4920.12    1374.00    4933.03
GR   1374.3    4936.71    1374.00    4958.00    1373.51     4959.38    1372.00    4963.60    1371.80    4964.16
GR   1370.0    4969.21    1368.37    4973.77    1368.00     4974.80    1366.00    4980.35    1365.56    4981.39
GR   1364.7    4987.21    1364.21    4990.25    1364.00     4992.46    1364.00    5000.00    1364.00    5003.25
1
    07OCT03      23:02:19                                                                          PAGE     2

GR   1365.5    5010.85    1365.78    5012.36    1366.00     5013.46    1366.52    5014.69    1368.00    5018.15
GR   1368.3    5018.85    1370.00    5022.82    1370.70     5024.49    1372.00    5027.49    1373.05    5031.15
GR   1374.0    5034.40    1375.00    5039.27    1376.00     5044.17    1376.23    5045.52    1377.39    5052.81
GR   1378.0    5059.14    1378.78    5065.36    1379.49     5073.77    1379.70    5074.11    1379.26    5077.51
GR   1378.7    5079.93    1378.00    5082.02    1378.00     5116.40    1378.13    5146.24    1378.00    5177.10
GR   1378.0    5181.33    1377.50    5273.67    1377.18     5375.38    1377.56    5451.37    1377.29    5556.89

ET               5.1                               3855.70     5475.95
X1     8.79         89    4095.41    5039.30        530         546        539
GR   1384.0    3855.70    1384.00    3973.82    1382.64     3980.66    1384.00    3998.09    1382.65    4051.20
GR   1382.6    4058.69    1382.49    4060.23    1382.89     4064.63    1384.00    4067.90    1384.00    4095.41
GR   1382.2    4107.84    1382.00    4109.37    1380.85     4117.39    1380.00    4123.50    1378.49    4137.14
GR   1378.0    4141.55    1376.51    4154.98    1376.00     4159.65    1374.00    4171.01    1373.84    4176.47
GR   1372.0    4222.80    1372.00    4265.74    1371.40     4267.19    1370.00    4271.65    1370.02    4277.10
GR   1370.5    4303.75    1372.00    4387.79    1372.60     4464.89    1373.01    4509.16    1373.45    4564.23
GR   1373.6    4589.91    1374.00    4659.42    1374.00     4677.54    1373.79    4707.25    1374.00    4731.92
GR   1375.0    4815.01    1375.48    4838.28    1375.82     4866.71    1375.01    4881.51    1374.70    4887.04
GR   1374.0    4898.81    1374.00    4914.20    1376.00     4932.06    1377.09    4941.83    1377.77    4948.33
GR   1378.0    4950.51    1378.00    4973.99    1377.74     4974.57    1376.00    4978.35    1375.92    4978.54
GR   1375.3    4979.92    1374.00    4982.54    1373.68     4983.19    1372.00    4986.64    1371.40    4987.87
GR   1370.0    4990.74    1369.23    4992.31    1368.00     4994.83    1367.12    4996.63    1366.00    4998.93
GR   1366.0    5000.00    1367.19    5002.89    1368.00     5004.26    1369.43    5006.66    1370.00    5007.63
GR   1371.8    5010.72    1372.00    5011.01    1372.55     5011.93    1374.00    5014.64    1374.46    5015.50
GR   1376.0    5018.37    1377.54    5024.62    1378.00     5026.26    1378.19    5027.55    1378.48    5029.47
GR   1380.0    5039.30    1380.47    5053.53    1381.00     5070.14    1381.05    5074.82    1381.51    5092.11
GR   1381.8    5130.27    1381.56    5144.28    1381.81     5200.42    1381.90    5207.46    1381.92    5219.18
GR   1382.0    5303.86    1382.00    5320.81    1381.88     5345.60    1381.56    5475.95

ET               5.1                               4279.99     5437.79
X1     8.93         71    4541.12    5252.00        565         711        722
GR   1386.3    4279.99    1386.00    4295.47    1386.34     4315.43    1386.00    4350.00    1385.51    4354.32
GR   1386.0    4371.17    1386.00    4454.56    1386.25     4457.97    1387.66    4480.76    1388.00    4485.92
GR   1388.0    4526.66    1386.72    4541.12    1386.00     4552.20    1385.40    4560.69    1385.02    4564.36
GR   1384.5    4569.41    1384.00    4573.51    1382.63     4586.39    1382.43    4588.53    1382.00    4594.51
GR   1381.7    4598.20    1380.48    4604.38    1380.00     4606.94    1379.91    4608.36    1378.58    4632.57
GR   1378.0    4639.26    1376.00    4653.50    1375.35     4704.64    1374.00    4828.12    1373.68    4850.43
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GR   1373.1   4888.01   1372.88   4901.73   1372.00   4950.77   1371.17   4970.32   1370.00   4996.16
GR   1370.1   5000.00   1370.40   5014.94   1370.52   5018.25   1370.89   5033.81   1371.01   5037.53
GR   1371.3   5046.38   1371.00   5056.40   1370.55   5068.53   1370.60   5102.71   1370.78   5109.11
GR   1371.1   5116.39   1371.60   5131.46   1372.00   5139.38   1373.19   5146.05   1373.89   5149.69
GR   1374.0   5150.47   1374.30   5152.78   1374.67   5155.69   1376.00   5166.46   1376.39   5169.57
GR   1378.0   5182.62   1379.50   5195.03   1380.00   5200.27   1380.58   5207.92   1381.76   5224.62
GR   1382.0   5227.77   1382.80   5252.00   1384.00   5330.07   1384.00   5333.71   1384.91   5347.75
GR   1386.0   5362.52   1386.60   5376.48   1386.90   5391.40   1387.03   5397.63   1387.24   5419.21
GR   1387.0   5437.79

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ET                 5.1                          4519.91   5433.52
X1    9.01         81   4817.29   5340.88       363       558       430
GR   1388.4   4519.91   1388.00   4559.91   1388.00   4561.41   1388.84   4570.06   1388.45   4571.71
GR   1388.0   4573.70   1388.00   4576.09   1388.46   4578.03   1388.77   4579.51   1388.28   4582.90
GR   1388.0   4583.57   1388.00   4677.39   1388.26   4681.88   1389.30   4700.64   1389.76   4708.44
GR   1389.3   4717.62   1388.98   4718.21   1388.52   4718.22   1388.00   4721.78   1387.37   4732.92
GR   1387.1   4737.05   1386.95   4738.08   1386.40   4758.07   1386.64   4764.66   1386.86   4770.00
GR   1387.0   4774.77   1387.38   4799.17   1387.08   4803.47   1386.92   4804.87   1386.44   4811.50
GR   1386.0   4817.29   1384.00   4825.73   1383.63   4827.33   1382.00   4834.13   1380.26   4841.49
GR   1380.0   4842.58   1379.21   4845.86   1378.00   4850.84   1376.45   4856.91   1376.00   4858.68
GR   1375.8   4859.41   1374.00   4866.60   1373.72   4878.11   1373.33   4898.38   1373.06   4911.20
GR   1372.9   4920.39   1372.51   4939.85   1372.35   4949.90   1372.19   4962.38   1372.32   4994.02
GR   1372.4   5000.00   1372.50   5005.13   1373.08   5052.28   1373.49   5089.07   1373.86   5118.83
GR   1374.0   5130.57   1375.57   5137.72   1376.00   5139.67   1377.54   5146.76   1378.00   5149.27
GR   1379.4   5157.21   1380.00   5161.68   1380.57   5169.64   1380.83   5173.36   1380.91   5174.01
GR   1381.2   5177.53   1381.59   5182.69   1382.00   5188.14   1382.37   5193.51   1383.14   5206.05
GR   1384.0   5217.34   1385.32   5244.41   1385.68   5252.28   1386.00   5257.06   1387.77   5292.41
GR   1388.0   5296.60   1388.84   5320.16   1389.58   5340.88   1389.68   5346.00   1390.00   5351.31
GR   1390.0   5433.52


ET                 5.1                          4515.30   5233.18
X1    9.08         70   4796.92   5198.84       432       165       365
GR   1391.1   4515.30   1390.24   4539.50   1390.00   4540.45   1390.00   4625.97   1390.21   4628.50
GR   1390.6   4632.33   1390.69   4632.97   1390.44   4647.05   1390.08   4647.52   1390.00   4647.64
GR   1389.6   4649.23   1388.00   4655.18   1388.00   4670.31   1388.16   4671.07   1388.14   4787.35
GR   1388.0   4796.92   1387.24   4809.20   1386.69   4817.41   1386.00   4827.18   1384.79   4833.74
GR   1384.0   4837.38   1383.79   4838.28   1382.78   4842.68   1382.00   4845.64   1381.40   4847.91
GR   1380.0   4853.19   1378.86   4857.51   1378.00   4860.75   1377.03   4864.25   1376.00   4868.13
GR   1375.1   4871.58   1374.00   4875.67   1373.97   4878.43   1373.92   4884.08   1373.76   4895.74
GR   1373.7   4902.64   1373.65   4905.82   1373.59   4911.57   1373.49   4920.43   1373.47   5000.00
GR   1373.5   5095.48   1373.56   5107.93   1373.59   5109.03   1373.62   5112.59   1373.70   5119.31
GR   1373.8   5122.87   1373.82   5124.67   1373.85   5126.00   1373.92   5128.16   1373.94   5130.06
GR   1374.0   5131.14   1374.13   5131.77   1376.00   5140.79   1377.41   5147.57   1378.00   5150.02
GR   1378.6   5152.38   1380.00   5158.25   1381.29   5163.54   1382.00   5166.47   1383.45   5172.44
GR   1384.0   5174.70   1385.73   5181.83   1386.00   5182.93   1387.10   5187.46   1388.00   5190.99
GR   1388.1   5191.61   1389.08   5195.22   1390.00   5198.84   1390.04   5199.45   1390.27   5233.18


NC   0.035     0.035     0.035
ET                 5.1                          4525.85   5437.55
X1    9.14         94   4835.60   5165.24       288       385       333
GR   1392.1   4525.85   1392.00   4598.96   1391.59   4608.73   1390.99   4723.68   1391.42   4775.78
GR   1391.5   4789.87   1391.64   4805.14   1391.00   4830.80   1390.59   4832.90   1390.00   4835.60
GR   1389.7   4836.69   1389.00   4839.12   1388.44   4841.11   1388.00   4842.60   1387.57   4843.96
GR   1387.0   4845.55   1386.47   4846.70   1386.00   4847.68   1385.71   4848.28   1385.00   4849.75
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GR   1384.7    4850.41    1384.00    4851.87    1383.84    4852.20    1383.32    4853.25    1383.00    4853.91
GR   1382.8    4854.33    1382.00    4856.07    1381.65    4856.77    1381.00    4858.07    1380.00    4860.14
GR   1379.7    4861.00    1379.19    4861.98    1379.00    4862.42    1378.49    4863.58    1378.00    4864.71
GR   1377.4    4866.13    1377.00    4867.28    1376.43    4869.03    1376.00    4869.56    1375.54    4872.43
GR   1374.5    4874.14    1374.00    4875.08    1374.00    5000.00    1374.00    5062.13    1374.39    5091.47
GR   1375.0    5121.35    1375.00    5125.45    1375.71    5129.68    1376.00    5131.10    1376.94    5133.66
GR   1377.0    5134.06    1377.77    5135.68    1378.00    5136.16    1379.00    5138.25    1379.92    5140.18
1
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GR   1380.0    5140.35    1380.80    5142.03    1381.00    5142.44    1381.45    5143.38    1382.00    5144.53
GR   1382.9    5146.34    1383.00    5146.63    1383.72    5148.14    1384.00    5148.75    1384.46    5149.37
GR   1385.0    5150.09    1385.25    5150.43    1386.00    5151.41    1386.80    5152.48    1387.00    5152.75
GR   1387.2    5153.56    1388.00    5156.83    1388.60    5159.29    1389.00    5160.92    1389.34    5162.35
GR   1389.7    5164.16    1390.00    5165.24    1390.00    5165.45    1390.42    5166.34    1391.00    5168.32
GR   1391.8    5170.94    1391.91    5171.50    1392.00    5171.73    1392.22    5174.81    1392.64    5180.92
GR   1393.0    5184.53    1392.55    5196.46    1392.91    5224.81    1392.45    5256.91    1392.29    5293.65
GR   1392.1    5328.16    1392.00    5380.42    1392.00    5416.53    1391.87    5437.55
  DOWNSTREAM FACE OF PINNACLE PEAK ROAD BRIDGE

X1    9.145        66       5015       5325          8          8          8
X3       10         0          0          0          0          0          0     1392.2     1393.1
BT      -16      5015     1394.5     1394.5    5015.01     1394.5       1390       5045     1394.8     1390.3
BT               5085     1395.2     1390.7    5088.75     1395.2     1390.8    5093.75     1395.3     1390.8
BT               5125     1395.6     1391.1       5170     1395.7     1391.2       5205     1395.7     1391.2
BT               5245     1395.5       1391    5246.25     1395.5       1391    5251.25     1395.5       1391
BT               5285     1395.2     1390.7       5295     1395.1     1390.6    5324.99     1394.7     1390.2
BT               5325     1394.7     1394.7
GR   1395.6     3767.9     1395.5     3820.9     1395.4     3873.6     1395.4     3891.5     1395.4     3939.2
GR   1395.2     3990.7     1395.4     4052.6     1395.4     4113.7     1395.3     4176.6     1395.1     4229.3
GR   1395.1     4287.4     1394.9     4334.4     1394.8     4385.2     1394.7     4450.4     1394.8     4489.6
GR   1394.5     4524.7     1394.1     4576.1       1394     4617.7     1393.7     4656.6     1393.2     4693.1
GR   1393.1     4730.9     1392.4       4761     1392.2       4821     1392.4       4881    1393.59       4956
GR   1394.4       5006     1394.5       5015       1390    5015.01    1374.94       5045    1374.94       5085
GR   1374.9    5088.74    1390.80    5088.75    1390.80    5093.75    1374.94    5093.76    1374.94       5125
GR   1374.9    5167.49     1391.2     5167.5     1391.2       5170     1391.2     5172.5    1374.94    5172.51
GR   1374.9       5205    1374.94       5245    1374.94    5246.24       1391    5246.25       1391    5251.25
GR   1374.9    5251.26    1374.94       5285    1374.94       5295     1390.2    5324.99     1394.7       5325
GR   1394.8       5326    1393.95       5376    1393.27       5453    1393.07       5520     1393.1     5541.9
GR   1392.9     5588.6     1392.7     5636.9     1392.7     5681.4     1392.5     5740.6     1392.6     5796.6
GR   1392.6     5855.7     1392.4     5922.7     1392.3       5988     1392.3     6032.1     1392.1     6079.5
GR   1392.1       6085
  UPSTREAM FACE OF PINNACLE PEAK ROAD BRIDGE

X1    9.155        66       5015       5325       80.2       80.2       80.2
X3       10         0          0          0          0          0          0     1392.2     1393.1
BT      -16      5015     1394.5     1394.5    5015.01     1394.5       1390       5045     1394.8     1390.3
BT               5085     1395.2     1390.7    5088.75     1395.2     1390.8    5093.75     1395.3     1390.8
BT               5125     1395.6     1391.1       5170     1395.7     1391.2       5205     1395.7     1391.2
BT               5245     1395.5       1391    5246.25     1395.5       1391    5251.25     1395.5       1391
BT               5285     1395.2     1390.7       5295     1395.1     1390.6    5324.99     1394.7     1390.2
BT               5325     1394.7     1394.7
GR   1395.6     3767.9     1395.5     3820.9     1395.4     3873.6     1395.4     3891.5     1395.4     3939.2
GR   1395.2     3990.7     1395.4     4052.6     1395.4     4113.7     1395.3     4176.6     1395.1     4229.3
GR   1395.1     4287.4     1394.9     4334.4     1394.8     4385.2     1394.7     4450.4     1394.8     4489.6
GR   1394.5     4524.7     1394.1     4576.1       1394     4617.7     1393.7     4656.6     1393.2     4693.1
GR   1393.1     4730.9     1392.4       4761     1392.2       4821     1392.4       4881    1393.59       4956
GR   1394.4       5006     1394.5       5015       1390    5015.01    1375.14       5045    1375.14       5085
GR   1375.1    5088.74     1390.8    5088.75     1390.8    5093.75    1375.14    5093.76    1375.14       5125
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GR    1375.1    5167.49    1391.2    5167.5    1391.2    5170      1391.2    5172.5    1375.14    5172.51
GR    1375.1       5205    1375.14     5245    1375.14    5246.24     1391    5246.25       1391    5251.25
GR    1375.1    5251.26    1375.14     5285    1375.14    5295      1390.2    5324.99    1394.7       5325
GR    1394.8       5326    1393.95     5376    1393.27    5453      1393.07      5520    1393.1     5541.9
1
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GR    1392.9     5588.6    1392.7    5636.9    1392.7    5681.4    1392.5    5740.6    1392.6    5796.6
GR    1392.6     5855.7    1392.4    5922.7    1392.3       5988   1392.3    6032.1    1392.1    6079.5
GR    1392.1       6085

ET                  5.1                         4528.66   5445.27
X1      9.16         89    4852.56   5164.29         8         8         8
GR    1392.6    4528.66    1392.16   4581.89   1392.81   4592.32   1392.00   4643.39   1391.85   4708.61
GR    1392.0    4756.55    1392.50   4805.50   1392.00   4836.76   1391.23   4838.82   1391.00   4839.41
GR    1390.5    4842.05    1390.00   4852.56   1389.00   4854.43   1388.00   4856.29   1387.00   4857.94
GR    1386.0    4859.59    1385.00   4861.24   1384.00   4862.89   1383.40   4863.88   1383.00   4864.54
GR    1382.5    4865.33    1382.00   4866.18   1381.00   4867.82   1380.61   4868.61   1380.00   4869.92
GR    1379.8    4870.35    1379.00   4872.01   1378.40   4873.27   1378.00   4874.11   1377.29   4875.60
GR    1377.0    4876.20    1376.18   4877.92   1376.00   4878.30   1375.00   4880.39   1374.81   4915.05
GR    1374.0    4961.04    1374.20   5000.00   1374.50   5083.02   1374.70   5107.91   1375.00   5129.31
GR    1375.6    5132.84    1376.00   5135.04   1377.00   5138.70   1378.00   5140.93   1379.00   5142.76
GR    1379.6    5143.88    1380.00   5144.79   1380.41   5145.63   1381.00   5146.82   1381.33   5147.49
GR    1382.0    5148.85    1382.47   5149.81   1383.64   5152.18   1384.00   5152.91   1384.55   5154.02
GR    1385.0    5154.94    1386.00   5156.58   1386.42   5157.20   1387.00   5158.07   1388.00   5161.31
GR    1388.6    5162.08    1389.00   5162.75   1389.58   5163.63   1390.00   5164.29   1390.52   5165.66
GR    1390.7    5169.65    1390.00   5170.91   1390.00   5171.15   1390.65   5172.70   1391.00   5173.49
GR    1391.5    5174.67    1392.00   5175.74   1392.49   5177.88   1393.00   5180.15   1393.00   5215.17
GR    1392.8    5239.51    1393.00   5302.86   1393.00   5330.00   1393.00   5335.30   1393.52   5343.99
GR    1394.0    5352.89    1394.20   5356.22   1394.67   5363.95   1395.00   5372.98   1395.00   5394.93
GR    1394.9    5404.04    1394.00   5430.80   1393.15   5432.47   1393.36   5445.27

  BOTTOM OF DROP STRUCTURE

NC      0.035     0.035     0.020
ET                  5.1                          4074   5274.57
X1      9.21         29      4732   5174.57       145       355       279
GR    1397.1       3174    1395.7      3274    1393.8      3374    1392.5      3474    1392.1      3574
GR      1392       3674    1392.8      3774      1393      3874    1393.4      3974      1394      4074
GR      1394       4174      1394      4274      1394      4374    1393.2      4474      1393      4569
GR      1393       4574    1393.6      4624    1392.5      4674      1389      4732      1376      4765
GR      1376       4901      1376      5000      1376   5140.72      1391   5174.57      1392   5190.05
GR      1393    5204.57    1394.2   5259.57    1398.6   5274.57    1398.2   5304.51

  TOP OF DROP STRUCTURE

NC      0.040     0.035     0.035
ET                  5.1                          4498   5314.09
X1      9.22         35      4664   5192.98       122       104        39
GR    1398.6       3038    1396.7      3138    1394.2      3238      1392      3338      1392      3438
GR      1392       3538      1392      3638    1392.8      3738    1393.1      3838    1393.7      3938
GR      1394       4038    1394.4      4138    1394.5      4238    1394.5      4338    1393.7      4438
GR    1394.6       4478    1394.3      4498    1394.6      4508    1394.2      4538      1393      4638
GR    1391.8       4648      1395      4664      1390      4708      1390   4871.20      1390      5000
GR      1390    5167.75      1391   5173.76      1392   5177.14      1393   5179.36      1394   5181.58
GR      1395    5184.44      1396   5187.36      1397   5192.98      1398   5219.20      1399   5314.09
1
   07OCT03      23:02:19                                                                                PAGE    6
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ET                 5.1                          4472.95      5304.55
  ENCROACHMENT STATION ADJUSTED FOR FLOODWAY DELINEATION
X1      9.25        45       4825    5285.60        155           82         141
GR      1400      3023     1399.1       3123     1397.6         3223      1395.8        3323      1392.7        3423
GR      1392      3523       1393       3623     1393.6         3723      1393.5        3762        1394        3874
GR      1394      3898       1394    4003.81       1394      4062.18        1395     4283.87        1395     4298.29
GR      1395   4301.25       1395    4365.84       1395       4385.4      1395.7     4563.07        1395     4565.34
GR      1395   4570.45    1395.57    4572.95    1395.46      4582.97        1395     4585.82        1395     4590.84
GR      1395   4598.19       1395    4614.18       1395      4621.31        1394     4735.08        1394     4738.18
GR      1394   4838.32       1393    4871.51       1392      4892.27        1392        5000        1392      5077.8
GR      1393   5179.38       1394    5266.49       1395      5275.95        1396     5278.52        1397     5281.09
GR      1398   5283.83    1398.64     5285.6       1399      5290.86        1400     5304.55        1399     5325.36

ET                 5.1                          4553.41      5290.19
  ENCROACHMENT STATION ADJUSTED FOR FLOODWAY DELINEATION
X1      9.30        52    4779.69    5280.97        262          282         261
GR    1401.5      2940     1402.6       2970    1400.5         3070      1398.6        3170        1397        3270
GR      1394      3370       1394       3470      1394         3570        1394        3670      1394.8        3770
GR      1395      3820       1394       3930      1394      4045.09        1395     4108.19        1395        4117
GR      1396   4323.15    1396.42    4425.34      1396      4429.71        1396     4434.42        1396      4441.5
GR      1396   4445.67       1396     4449.8      1395      4453.93     1394.13     4458.61        1394     4462.74
GR      1393   4494.69       1393    4512.86      1394      4520.79        1395     4539.92        1395     4544.55
GR      1395   4549.38       1396    4554.31      1397       4672.3        1397     4703.41        1397     4730.49
GR      1397   4737.81     1396.5       4750      1396      4768.57        1395     4779.69        1394      4811.1
GR      1393    4973.9       1393       5000      1393      5090.01        1394     5237.22        1395     5265.28
GR      1395   5270.89       1396    5273.07      1397      5275.25        1398     5277.47        1399     5279.81
GR    1399.5   5280.97       1400    5290.19

ET                 5.1                          4459.05      5287.77
  ENCROACHMENT STATION ADJUSTED FOR FLOODWAY DELINEATION
X1      9.35        64       4775    5275.88        291          274         274
GR    1403.4      2913       1404       2963    1401.9         3063      1400.6        3163      1399.1        3263
GR      1396      3363       1396       3463    1394.8         3563      1395.2        3663        1396        3763
GR      1396      3863       1396       3873      1396         3970        1396     4133.14        1397     4227.56
GR      1397   4246.88       1397    4251.02      1397      4252.38        1397     4261.99        1397     4262.89
GR      1397   4266.45       1397    4272.25      1396      4279.28        1395     4304.83        1395     4325.29
GR      1396    4342.7       1397    4379.18      1398       4402.1        1399     4459.05        1399     4467.32
GR      1399   4490.46       1399    4657.95      1399      4675.14        1399        4775        1399     4817.89
GR      1398   4824.28       1398    4830.91      1398      4833.58        1397     4841.76        1396     4854.67
GR      1395   4861.17       1394    4882.23      1393      4897.87        1392     4929.89        1392     4995.23
GR    1392.2      5000       1393    5015.98      1394      5050.46        1394     5062.07        1394     5081.74
GR      1394   5098.98       1393    5104.45      1393      5165.77        1394     5255.79     1394.16     5261.12
GR      1395   5263.15       1396    5265.55      1397      5267.94        1398     5270.34        1399     5272.74
GR    1399.9   5274.92       1400    5275.88      1401      5287.77        1401     5364.41

  FIRST LANDFILL CROSS SECTION
  ENCROACHMENT STATION ADJUSTED FOR FLOODWAY DELINEATION
1
   07OCT03      23:02:19                                                                                    PAGE     7

ET                 5.1                          4437.98      5216.97
X1      9.42        84       4717    5216.97        400          402         399
GR      1428      4000       1426    4011.37      1424      4051.66        1424     4057.37        1426     4081.68
GR      1428   4110.92       1428    4121.45      1426      4129.13        1424     4134.76        1422     4139.19
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GR	1421	4142.73	1420	4161.87	1419.19	4203.29	1418	4205.11	1416	4226.25
GR	1414	4237.19	1412	4246.78	1410	4256.36	1408	4267.25	1406	4278.32
GR	1404	4313.42	1402	4319.63	1401	4385.11	1401	4391.49	1400	4399.73
GR	1400	4402.48	1400	4425	1399	4435.31	1399	4437.98	1400	4464.1
GR	1400	4473.55	1401	4478.99	1401	4489.28	1401	4501.38	1401	4506.58
GR	1401	4519.28	1401	4549.48	1401	4609.38	1401	4631.43	1401	4640
GR	1401	4717	1401	4808.53	1401	4810.26	1400	4816.66	1399	4821.3
GR	1398	4826.32	1397	4831.26	1396	4836.2	1395	4840.81	1394	4845.47
GR	1394	4861.29	1394	4874.91	1394	4881.71	1395	4899.25	1395	4935.92
GR	1394	4952.05	1393	4968.09	1393	4971.63	1393	4977.75	1393	5000
GR	1393	5022.4	1394	5029.45	1395	5047.57	1396	5049.85	1397	5052.12
GR	1397	5069.99	1396	5075.09	1395	5080.13	1394	5086.54	1393	5111.54
GR	1393	5144.13	1394	5187.94	1395	5201.29	1396	5203.58	1397	5205.87
GR	1398	5208.12	1399	5210.33	1400	5212.55	1401	5214.76	1402	5216.97
GR	1402.1	5217.23	1403	5227.59	1404	5237.39	1404.24	5239.73		

ENCROACHMENT STATION ADJUSTED FOR FLOODWAY DELINEATION

ET		5.1			4480.64	5209				
NC	0.040	0.040	0.040							
X1	9.45	97	4709	5209	93	126	118			
GR	1444	4000	1446	4007.9	1448	4067.98	1448	4129.56	1446	4153.01
GR	1444	4163.3	1442	4166.26	1440	4169.22	1438	4175.44	1436	4186.62
GR	1434	4200.28	1432	4214.71	1430	4223.41	1428	4230.51	1426	4245.88
GR	1424	4268.57	1422.59	4278.96	1422	4280.89	1420	4290.71	1418	4299.79
GR	1416	4308.72	1414	4317.57	1412	4326.42	1410	4337.33	1408	4350.71
GR	1406	4364.09	1404	4377.47	1402	4400.54	1401	4461.44	1400	4466.82
GR	1400	4480.64	1400	4491.26	1400	4512.14	1401	4518.92	1401.69	4560.74
GR	1402	4579.32	1403	4582.89	1403	4591.95	1402	4596.75	1402	4660
GR	1402	4672.46	1401.7	4709	1401	4801.15	1400	4808.19	1399	4812.86
GR	1398	4817.28	1397	4822.04	1396	4829.31	1395	4850.48	1395	4874.85
GR	1396	4881.97	1397	4899.1	1397	4923.02	1396	4938.23	1395	4946.05
GR	1394	4960.72	1394	4965.12	1394	4968.36	1394	4997.02	1393.39	5000
GR	1393	5001.91	1393	5029.22	1394	5035.16	1395	5037.25	1396	5039.33
GR	1397	5041.64	1398	5043.96	1399	5046.15	1400	5048.19	1401	5065.48
GR	1401	5071.95	1401	5081.45	1401	5133.8	1400	5156.91	1399	5160.41
GR	1398	5163.93	1397	5167.45	1396	5170.97	1395	5174.49	1394	5180.55
GR	1394	5209	1394	5237.19	1395	5242.58	1396	5247.96	1397	5251.97
GR	1398	5255.85	1399	5259.53	1400	5261.9	1401	5264.27	1404.8	5265.18
GR	1402	5266.67	1403	5269.03	1404	5271.38	1405.2	5272.32	1404.6	5276.7
GR	1405	5277.23	1405	5281.63						

NC	0.035	0.040	0.040							
ET		5.1			4653.56	5177				

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X1	9.54	85	4685.93	5177	410	515	500			
GR	1456	4000	1456	4021.5	1454	4238.02	1454	4370.23	1456	4373.71
GR	1458	4382.67	1460	4392.58	1462	4402.82	1464	4414.23	1464	4416.59
GR	1462	4419.16	1460	4421.73	1458	4424.3	1456	4426.86	1454	4429.43
GR	1452	4432.03	1450	4434.89	1448	4437.71	1446	4440.53	1444	4443.94
GR	1442	4455.27	1440	4466.36	1438	4475.82	1436	4485.28	1434	4494.74
GR	1432	4503.98	1430	4512.83	1428	4521.68	1426	4530.63	1424	4537.95
GR	1422	4543.4	1420	4548.8	1418	4566.76	1416	4576.41	1414	4588.78
GR	1412	4606.7	1410	4618.24	1408	4626.12	1406	4646.3	1405.45	4653.56
GR	1406	4654.9	1408	4659.52	1409.53	4663.35	1409.41	4679.83	1408	4685.93
GR	1406	4694.77	1404	4704.62	1402	4714.47	1400	4759.39	1399	4817.12
GR	1399	4833.11	1399	4849.47	1399	4877	1398	4880.23	1397	4889.16

GR	1397	4922.52	1398	4930.18	1398	4954.06	1397	4978.17	1397	5000
GR	1397	5021.85	1398	5031.11	1399	5044.96	1400	5072.02	1401	5077.75
GR	1402	5083.41	1403	5099.61	1404	5131.49	1404	5150.42	1404	5168.37
GR	1404	5177	1404	5197.33	1404	5199.5	1404	5210.97	1404	5253.08
GR	1404	5391.09	1403	5589.76	1403	5598.79	1404	5665.44	1405	5677.3
GR	1406	5688.92	1407	5698.83	1408	5708.08	1408.1	5709.05	1408	5712.42
ET		5.1			4736.39	5231.86				
X1	9.65	77	4754.19	5231.86	475	503	558			
GR	1464	4000	1464	4008.95	1464	4009.76	1462	4321.74	1460	4399.87
GR	1458	4431.45	1456	4444.62	1454	4455.94	1452	4520.78	1450	4527.92
GR	1448	4534.57	1446	4541.22	1444	4547.9	1442	4555.79	1440	4564.66
GR	1438	4573.56	1436	4582.53	1434	4591.5	1432	4600.47	1430	4609.44
GR	1428	4617.73	1426	4626.65	1424	4636.67	1422	4647.12	1420	4657.56
GR	1418	4668.01	1416	4678.25	1415.47	4681.09	1414	4684.72	1412	4698.82
GR	1410	4712.91	1408.84	4718.95	1410	4724.03	1412	4732.19	1412.28	4733.95
GR	1412.3	4736.39	1412.23	4752.15	1412.23	4753.27	1412	4754.19	1410	4762.26
GR	1408	4770.81	1406	4779.35	1404	4787.89	1402	4808.39	1402	4880.47
GR	1402	5000	1402	5117.6	1402	5177.99	1404	5201.2	1406	5208.98
GR	1408	5216.75	1410	5224.53	1411.67	5231.28	1411.74	5231.86	1411.54	5244.69
GR	1411.6	5244.92	1410	5251.38	1408	5258.75	1406	5266.02	1405	5297.23
GR	1405	5320.44	1406	5347.25	1406	5388.09	1406	5408.08	1407	5541.7
GR	1407	5718.14	1406	5754.4	1406	5784.09	1406	5792.77	1406	5810.87
GR	1406	5820.41	1406	5838.97	1407	5936.82	1408	6017.23	1409	6081.83
GR	1410	6155.49	1411	6165.28						
NC	0.035	0.035	0.035							
ET		5.1			4752.73	5283.89				
X1	9.70	45	4757.14	5273.18	253	259	256			
GR	1466	4109	1464	4316.8	1462	4420.43	1460	4447.14	1458	4478.14
GR	1456	4489.46	1454	4500.45	1452	4509.98	1450	4519.51	1448	4529.04
GR	1446	4538.57	1444	4548.1	1442	4557.38	1440	4566.27	1438	4575.05
GR	1436	4583.83	1434	4592.61	1432	4601.39	1430	4609.72	1428	4617.43
GR	1426	4627.56	1424	4668.02	1422	4677.03	1420	4686.23	1418	4694.23
GR	1416	4702.22	1414	4725.62	1413.09	4738.64	1413.15	4752.73	1412	4757.14
GR	1410	4765.55	1408	4773.94	1406	4782.3	1404	4790.65	1404	5000
GR	1404	5228.02	1406	5244.34	1408	5253.96	1412	5273.18	1412.96	5277.81
GR	1413.2	5283.89	1414	5286.99	1416	5294.01	1418	5300.98	1420	5310.97

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ET		5.1			4761.98	5298.67				
X1	9.73	47	4763.41	5284.93	187	151	169			
GR	1468	4092	1466	4213.55	1464	4379	1462	4470.4	1460	4508.81
GR	1458	4525.45	1456	4535.99	1454	4546.24	1452	4556.5	1450	4565.64
GR	1448	4574.49	1446	4582.67	1444	4590.66	1442	4598.64	1440	4606.63
GR	1438	4614.61	1436	4622.6	1434	4630.3	1432	4638.03	1430	4646.07
GR	1428	4654.12	1426	4662.16	1424	4670.2	1422	4678.24	1420	4686.28
GR	1418	4694.59	1416	4735.51	1414	4745.63	1413.77	4747.24	1414	4754.45
GR	1414.2	4761.98	1414	4763.41	1412	4771.23	1410	4779.05	1408	4786.93
GR	1406	4794.83	1404	4807.46	1404	5000	1404	5232.22	1406	5255.68
GR	1408	5265.54	1410	5275.37	1412	5284.93	1414	5298.67	1416	5306.36
GR	1418	5314.06	1420	5322.58						
ET		5.1			4698.37	5217.67				

X1	9.80	62	4738.89	5206.55	383	349	365			
GR	1476	4000	1476	4071.22	1474	4291.9	1472	4368.03	1470	4404.99
GR	1468	4419.78	1466	4435.01	1464	4454.29	1462	4489.38	1460	4517.69
GR	1458	4526.82	1456	4535.94	1454	4545.06	1452	4554.19	1450	4563.31
GR	1448	4572.44	1446	4580.51	1444	4588.95	1442	4597.51	1440	4606.07
GR	1438	4614.65	1436	4623.22	1434	4631.58	1432	4639.42	1430	4647.25
GR	1428	4655.08	1426	4662.93	1424	4670.84	1422	4678.74	1420	4686.85
GR	1418	4698.37	1416	4738.89	1416	4742.87	1416	4745.09	1415.15	4749.88
GR	1415.7	4766.09	1414	4773.04	1412	4781.48	1410	4789.92	1408	4798.11
GR	1406	4814.33	1406	5000	1406	5168.2	1408	5177.78	1410	5187.37
GR	1412	5196.96	1414	5206.55	1414.61	5209.05	1414.9	5217.67	1416	5221.57
GR	1418	5228.59	1420	5235.61	1422	5242.63	1424	5250.86	1426	5260.4
GR	1428	5270.06	1430	5279.73	1432	5290	1434	5301.13	1436	5313.24
GR	1438	5329.65	1440	5350.74						

ET		5.1			4678.48	5167.47				
X1	9.89	61	4741.17	5163.70	509	484	495			
GR	1480	4000	1480	4097.31	1478	4315.5	1476	4369.55	1474	4409.22
GR	1472	4428.88	1470	4447.01	1468	4467.06	1466	4484.74	1464	4501.35
GR	1462	4517.81	1460	4528.28	1458	4538.09	1456	4547.75	1454	4557.31
GR	1452	4566.31	1450	4574.08	1448	4581.28	1446	4588.48	1444	4595.7
GR	1442	4603.03	1440	4610.35	1438	4617.67	1436	4624.99	1434	4631.68
GR	1432	4638.82	1430	4646.76	1428	4654.71	1426	4662.61	1424	4670.44
GR	1422	4678.48	1422	4689.89	1422.06	4691.09	1422	4691.98	1421.45	4699.1
GR	1420	4741.17	1418	4771.38	1416	4778.99	1414	4786.68	1412	4794.99
GR	1410	4803.8	1408	4840.1	1406	4951.17	1406	4964.91	1407.43	5000
GR	1408	5114.09	1410	5126.94	1412	5136.13	1414	5145.32	1416	5154.51
GR	1418	5163.7	1418.8	5167.47	1418.7	5180.97	1418	5182.68	1418	5202.91
GR	1420	5221.64	1422	5236.46	1424	5244.79	1426	5252.68	1428	5260.3
GR	1430	5267.91								

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ET		5.1			4813.54	5284.14				
X1	9.98	68	4828.11	5274.26	462	469	475			
GR	1476	4020	1476	4135.18	1474	4180.69	1472	4242.44	1472	4405.93
GR	1474	4459.87	1474	4532.3	1472	4564.64	1470	4600.47	1468	4627.43
GR	1466	4644.39	1464	4650.73	1462	4658.68	1460	4666.95	1458	4675.21
GR	1456	4683.48	1454	4692.64	1452	4702.53	1450	4711.67	1448	4720.68
GR	1446	4728.08	1444	4734.3	1442	4740.53	1440	4746.75	1438	4752.97
GR	1436	4759.19	1434	4766.97	1432	4775.44	1430	4783.95	1428	4813.54
GR	1428	4821.2	1428.96	4826.63	1428	4828.11	1426	4830.93	1425.95	4831.02
GR	1425.7	4834.7	1424	4840.53	1422	4847.1	1420	4853.67	1418	4860.24
GR	1416	4866.81	1414	4874.06	1412	4895.31	1410	4925.82	1410	4957.15
GR	1410	4985.2	1410	5000	1410	5196.05	1412	5234.32	1414	5243.75
GR	1416	5253.18	1418	5262.85	1420	5274.26	1421.67	5284.14	1421.15	5293.67
GR	1420	5297.1	1418.2	5302.27	1420	5323.38	1422	5337.3	1424	5349.84
GR	1426	5361.61	1428	5370.82	1430	5379.99	1432	5389.15	1434	5398.3
GR	1436	5407.46	1438	5416.8	1440	5427.51				

ET		5.1			4840.61	5275.34				
X1	10.08	60	4841.72	5274.76	508	514	511			
GR	1476	4000	1478	4028.78	1480	4085.32	1480	4214.24	1478	4270.59
GR	1476	4333.92	1474	4385.59	1472	4415.91	1470	4435.24	1468	4453.48
GR	1466	4471.72	1464	4489.47	1462	4507.08	1460	4524.24	1458	4540.43
GR	1456	4560.04	1454	4579.47	1452	4664.02	1450	4686.12	1448	4711.59

GR	1446	4736.49	1444	4743.04	1442	4749.49	1440	4755.86	1438	4761.79
GR	1436	4767.07	1434	4772.52	1432	4778.04	1430	4783.56	1428	4789.08
GR	1426	4795.68	1426	4838.85	1426.35	4840.61	1426	4841.72	1424	4848.12
GR	1422	4854.53	1420	4861.27	1418	4869.07	1416	4880.94	1414	4903.67
GR	1412.5	5000	1412	5028.73	1412	5119.72	1414	5215.45	1416	5233.54
GR	1418	5244.05	1420	5254.55	1422	5265.05	1424	5274.76	1424.17	5275.34
GR	1424	5277.85	1423.5	5284.05	1422	5288.76	1420	5294.8	1420	5307.7
GR	1422	5411.56	1424	5519.39	1426	5568.38	1428	5584.58	1430	5600.76

ET		5.1			4784.92	5288.33				
X1	10.16	48	4797.94	5270.13	447	418	430			
GR	1438	4000	1436	4021.6	1434	4039.29	1432	4060.58	1430	4087.84
GR	1428	4116.35	1426	4163.37	1426	4172.5	1426	4329.8	1424	4615.05
GR	1422	4727.69	1422	4765.14	1424	4772.65	1426	4779.85	1427.4	4784.92
GR	1426.9	4794.24	1426	4797.94	1424	4806.13	1422	4814.72	1420	4823.31
GR	1418	4831.89	1416	4850.45	1416	5000	1416	5206.7	1418	5231.48
GR	1420	5241.03	1422	5250.58	1424	5260.12	1426	5270.13	1426.69	5273.76
GR	1426.8	5288.33	1426	5290.46	1424	5295.56	1423.73	5296.35	1424	5299.13
GR	1426	5318.58	1428	5331.54	1430	5343.77	1432	5355.48	1434	5367.2
GR	1436	5379.53	1438	5392.13	1440	5404.93	1442	5417.74	1444	5430.71
GR	1446	5445.59	1448	5460.48	1450	5475.78				

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ET		5.1			4772.87	5312.98				
X1	10.25	50	4772.87	5312.98	496	420	460			
GR	1462	4000	1462	4353.1	1462	4360.97	1464	4372.48	1466	4380.6
GR	1466	4394.69	1464	4399.98	1462	4402.86	1460	4405.73	1458	4408.62
GR	1456	4420.57	1454	4432.06	1452	4443.38	1450	4454.7	1448	4465.92
GR	1446	4476.55	1444	4487.22	1442	4497.92	1440	4509.43	1438	4521.31
GR	1436	4534.04	1434	4573.89	1434	4576.65	1434	4582.76	1432	4590.09
GR	1430	4597.07	1428	4604.05	1426	4740.78	1426	4758.62	1428	4766.33
GR	1429.7	4772.87	1429.36	4781.13	1428	4786.37	1426	4794.42	1424	4802.47
GR	1422	4810.53	1420	4841.46	1420	5225.51	1422	5254.59	1424	5264.85
GR	1426	5274.47	1428	5284.05	1429.2	5289.83	1429.27	5312.98	1430	5319.77
GR	1432	5338.35	1434	5354.33	1436	5382.04	1438	5398.07	1440	5414.09

ET		5.1			4766.40	5271.99				
X1	10.33	47	4782.32	5269.64	519	373	444			
GR	1450	4000	1448	4073.55	1448	4076.89	1448	4151.72	1446	4166.89
GR	1444	4179.19	1442	4193.45	1440	4215.25	1438	4234.67	1436	4254.62
GR	1434	4273.64	1432	4293.27	1430	4335.46	1428	4352.32	1428	4394.66
GR	1430	4399.29	1432	4405.29	1434	4417.32	1436	4573.71	1434	4592.8
GR	1432	4607.16	1430	4731.8	1430	4744.77	1432	4752.19	1434	4759.52
GR	1435.8	4766.4	1435.17	4782.32	1434	4787.13	1432	4795.34	1430	4802.67
GR	1428	4810	1426	4817.69	1424	4826.71	1422.57	5000	1422	5069.23
GR	1422	5172.18	1424	5223.94	1426	5234.36	1428	5243.12	1430	5251.96
GR	1432	5260.8	1434	5269.64	1434.83	5271.99	1434.09	5290.23	1434	5290.52
GR	1432	5296.74	1430	5302.97						

ET		5.1			4756.86	5252.58				
X1	10.34	38	4775.45	5243.36	104	42	73			
GR	1434	4000	1434	4020.85	1432	4060.47	1432	4210.33	1432	4230.74
GR	1430	4304	1430	4351	1430	4400.08	1430	4476.92	1432	4558.77
GR	1432	4579.43	1430	4699.87	1430	4741.11	1432	4746.28	1434	4751.62

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GR   1435.9    4756.86      1435    4775.45      1434    4779.27      1432    4786.85      1430    4794.42
GR     1428    4803.16      1426    4811.92      1424    4839.17   1422.77      5000      1422    5099.99
GR     1422    5118.31      1424    5204.31      1426    5212.97      1428    5217.15      1430     5226.8
GR     1432    5234.78      1434    5243.36   1435.48    5252.58   1434.92    5272.38      1434    5274.21
GR     1432    5278.35      1430    5282.48      1430    5283.56

  HAPPY VALLEY ROAD CROSSING

NC    0.030      0.030      0.030
ET                 5.1                        4823.21       5272
X1    10.38         34    4823.21    5293.86      173        143        162
GR     1432       4050      1432    4345.47      1434    4359.49      1436    4382.17      1436    4444.22
GR     1434    4514.59      1434    4523.97      1436    4605.62      1436    4667.41      1434    4710.47
GR     1434     4776.7   1435.99    4798.29   1435.82    4823.21      1434    4831.49      1432    4838.95
GR     1430    4845.97      1428    4854.29      1426    4860.89      1424     4952.8      1424       5000
GR     1424    5110.95      1426     5223.7      1428    5293.86      1430    5418.28      1432    5426.63
GR     1434    5436.09      1436    5445.55      1436    5462.06   1438.33    5462.07   1438.33    5463.07
GR     1436    5463.08      1436    5478.57   1435.96    5479.62      1434    5488.87
```



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NC    0.035      0.035      0.035
ET                 5.1                        4783.08    5262.74
X1    10.41         52    4791.83    5251.18      198        142        171
GR     1434       4064      1434    4072.38      1436     4078.9      1438    4083.68      1440    4114.64
GR     1442    4124.08      1444    4141.29      1444    4186.45      1442    4196.42      1438    4216.34
GR     1436    4223.27      1434    4229.95      1432    4236.99      1432    4370.62      1434    4373.56
GR     1436     4376.5      1438    4379.45      1440    4383.45      1440    4469.41      1438     4505.1
GR     1436    4516.74      1434    4526.64      1432    4535.95      1432    4754.33      1434    4759.91
GR   1435.7    4764.94      1436    4772.28      1436    4782.06   1438.34    4782.07   1438.34    4783.07
GR     1436    4783.08      1436    4791.83      1434    4800.27      1432    4808.85      1430    4817.15
GR     1428     4863.1      1428       5000      1428    5071.88      1428    5119.31      1428    5202.52
GR     1430    5229.35      1432    5236.74      1434    5244.12      1436    5251.18      1436    5262.73
GR   1438.9    5262.74    1438.9    5262.75      1436    5262.76      1436    5274.27      1434     5279.7
GR     1432    5285.08      1430     5290.4

ET                 5.1                        4758.78    5239.41
X1    10.42         46    4772.17    5239.37       70         58         64
GR     1434       4057      1434    4122.12      1434    4141.01      1432    4192.42      1432    4500.07
GR     1434    4518.47      1436    4524.56      1438    4530.85      1438       4566      1436    4602.78
GR     1434    4617.91      1432    4648.14      1432    4733.89      1434     4738.7      1436    4743.37
GR     1436    4757.77      1439    4757.78      1439    4758.78      1436    4758.79      1436    4772.17
GR     1434    4781.27      1432     4790.3   1431.35    4793.22      1430    4857.83      1428     4863.2
GR     1426    4872.34      1426       5000      1426    5035.16      1428    5059.55      1430    5071.52
GR     1430    5178.76      1430     5209.5      1432     5217.1      1434    5224.61      1436    5232.04
GR     1438    5239.37      1438    5239.40     1439.8    5239.41    1439.8    5240.41      1438    5240.42
GR     1438    5240.71   1437.62    5260.38      1436    5263.54      1434    5267.47      1432    5271.31
GR     1430    5275.13

ET                 5.1                        4717.29    5219.45
X1    10.51         85    4720.44    5201.75      439        487        472
GR     1434       4000      1432    4130.14      1428    4139.76      1426     4144.4      1424    4149.04
GR     1422    4153.68      1418    4208.59      1418    4223.25      1418     4230.6      1418    4282.85
GR     1418    4360.51      1416    4368.14      1414    4375.06      1412    4381.98      1408    4395.81
GR     1406    4403.31      1404     4411.2      1402    4420.45      1398    4444.12      1396    4455.04
GR     1396    4458.71      1398    4462.24      1400    4465.78      1402     4469.3      1404     4472.7
```

GR	1406	4476.09	1406	4476.39	1404	4480.43	1402	4489.41	1400	4498.38
GR	1398	4511.86	1398	4523.62	1402	4606.66	1404	4619.36	1406	4625.57
GR	1408	4631.74	1412	4641.43	1414	4645.8	1416	4650.17	1418	4654.55
GR	1422	4663.24	1424	4666.88	1426	4670.52	1428	4674.16	1432	4681.45
GR	1434	4685.09	1436	4688.73	1438	4692.35	1440	4695.92	1440	4716.28
GR	1443.2	4716.29	1443.2	4717.29	1440.66	4717.32	1440	4720.44	1438	4729.62
GR	1436	4738.8	1434	4747.98	1432.68	4754.05	1434	4795.05	1434	4811.47
GR	1432	4826.23	1430	4844.12	1428	4880.89	1428	4916.32	1428	4916.6
GR	1428	4924.94	1430	4975.63	1430	4993.27	1430	5000	1430	5004.42
GR	1430	5038.01	1430	5060.04	1432	5076.82	1434	5173.28	1436	5182.8
GR	1438	5192.33	1440	5201.75	1440	5219.44	1443.73	5219.45	1443.73	5220.45
GR	1440.7	5220.46	1440.7	5237.12	1442	5243.12	1444	5251.74	1444	5270.2

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NC	0.035	0.05	0.035							
ET		5.1			4664.91	5132.57				
X1	10.62	87	4665.97	5128.07	535	618	596			
GR	1438	4000	1438	4067.63	1438	4119.75	1438	4123.09	1436	4126.37
GR	1434	4129.64	1432	4132.91	1428	4139.57	1426	4142.92	1424	4157.62
GR	1422	4197.88	1422	4274.19	1422	4279.99	1418	4285.73	1416	4288.61
GR	1414	4291.48	1412	4294.36	1408	4300.1	1406	4302.98	1404	4305.85
GR	1402	4308.72	1398	4314.87	1396	4318.05	1394	4326.83	1392	4337.52
GR	1392	4407.2	1394	4430.83	1396	4477.86	1398	4520.73	1402	4551.89
GR	1404	4565.94	1406	4587.33	1408	4591.51	1412	4599.92	1414	4604.3
GR	1416	4608.68	1418	4613.06	1422	4621.46	1424	4625.35	1426	4629.24
GR	1428	4633.13	1432	4640.85	1434	4644.69	1436	4648.53	1438	4652.37
GR	1440	4656.21	1442	4660.05	1444	4663.89	1444	4663.90	1445.7	4663.91
GR	1445.7	4664.91	1444	4664.92	1444	4665.97	1443.33	4681.76	1442	4687.65
GR	1440	4696.48	1438	4705.29	1436.53	4711.79	1436	4760.05	1434	4774.11
GR	1432	4791.7	1432	4792.06	1434	4804.84	1434	4812.38	1434	4844.64
GR	1434	4908.11	1432	4978.39	1430	4993.25	1430	5000	1430	5019.08
GR	1432	5025.21	1434	5047.48	1436	5072.96	1436.27	5078.41	1438	5088.52
GR	1440	5100.18	1442	5111.6	1444	5128.07	1444.34	5132.57	1446	5140.61
GR	1448	5150.2	1450	5159.88	1452	5169.67	1454	5179.15	1454	5200.76
GR	1454	5213.3	1456	5219.38						

NC	0.035	0.035	0.035							
ET		5.1			4748.11	5211.3				
X1	10.70	43	4759.88	5193.3	390	382	402			
GR	1444	4000	1444	4038.07	1444	4066.66	1444	4284.59	1442	4345.59
GR	1440	4412.2	1440	4618.19	1442	4696.02	1442.67	4720.77	1444	4727.26
GR	1446.2	4734.32	1446.2	4747.10	1448.10	4747.11	1448.10	4748.11	1446.2	4748.12
GR	1446.2	4759.88	1444	4767.51	1442	4775.38	1440.89	4779.56	1440	4856.65
GR	1438	4908.41	1436	4929.27	1434	4963.32	1434	5000	1434	5015.86
GR	1436	5039.71	1436	5072.24	1436	5119.55	1438	5144.54	1440	5154.48
GR	1442	5163.53	1444	5172.15	1446	5188.42	1446.48	5193.3	1448	5197.69
GR	1450	5201.41	1452	5205.12	1454	5208.74	1455.47	5211.3	1456	5213.46
GR	1458	5222.24	1458	5238.92	1456	5256.86				

ET		5.1			4782.29	5310.03				
X1	10.83	54	4800.8	5298.85	642	704	717			
GR	1448	4234	1448	4375.81	1448	4583.91	1446	4610.95	1446	4656.3
GR	1446	4742.93	1444.39	4761.2	1446	4765.18	1448	4769.97	1450	4774.76
GR	1452	4779.31	1452	4781.28	1454.60	4781.29	1454.60	4782.29	1452	4782.30
GR	1452	4800.8	1450	4808.34	1448	4816.39	1446	4825.37	1444	4844.86

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GR      1442    4867.57      1440    4888.99      1438    4911.48      1438     4931.3      1440    4955.08
GR      1440    4961.15      1440       5000      1440    5073.72      1442    5081.76      1444    5085.61
GR      1446    5088.41      1446    5095.29      1446    5268.61      1448     5283.3      1450    5291.33
GR      1452    5298.85      1452    5310.02   1454.25    5310.03   1454.25    5311.03      1452    5311.04
GR      1452    5321.19      1450    5325.84      1448    5330.48      1446     5352.1      1444     5429.4
GR      1442    5433.87      1442     5453.7      1442    5462.01      1440    5467.15      1438    5472.69
GR      1438    5487.43      1440    5493.52      1442    5499.62      1444    5505.79
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ET                5.1                          4766.74       5290
X1    10.93        47    4790.58    5279.54      456        557       516
GR     1450      4075      1450    4401.05     1450    4472.44      1450    4658.68      1448    4685.74
GR     1446   4692.07      1446    4738.32     1448    4747.74      1450    4752.28      1452    4756.82
GR     1454   4761.36      1456    4765.91  1456.34    4766.74   1456.31     4782.2      1456    4783.11
GR     1454   4790.58      1452    4801.13     1450    4811.94      1448    4852.07      1446    4882.26
GR     1444    4895.5      1442    4901.64     1440    4907.78      1440    4909.75      1440       5000
GR     1442   5025.23      1444    5039.36     1446    5045.88      1448    5065.33      1448    5141.49
GR     1446   5151.73      1446    5160.63     1448       5249      1450    5259.77      1452    5267.62
GR     1454   5275.29    1455.1    5279.54  1458.23       5290   1458.23       5291    1455.6    5291.01
GR   1455.6   5301.19      1454    5303.86     1452    5307.17      1450    5311.25      1448    5317.12
GR     1446   5322.99      1446    5329.64
```

CONFLUENCE WITH BUCHANAN WASH

```
ET                5.1                          4581.43    5120.83
X1    11.03        59    4598.63    5120.83      506        504       525
GR     1454      4082      1454     4316.5     1454    4398.81      1454    4405.76      1454    4444.05
GR     1454   4463.63      1452    4472.52     1452    4546.98      1452    4556.11   1451.02    4559.09
GR     1452   4561.67      1454    4566.38     1456    4571.08      1458    4575.79      1460    4580.49
GR   1460.3   4581.43   1460.24    4597.21     1460    4598.63      1458    4606.22      1456    4613.78
GR     1454   4621.09      1452    4629.76     1450    4642.89      1449    4647.63      1448    4693.69
GR     1448   4736.54      1450    4814.76     1450    4864.18      1448    4942.71      1446    4949.67
GR     1444   4956.46      1442    4984.22     1442       5000      1442    5002.45      1444    5021.76
GR     1446   5026.06      1448     5043.9     1448    5055.01      1446    5062.54      1444    5069.86
GR     1442    5077.4      1442    5100.06     1444    5110.31      1446    5120.83      1448    5131.74
GR     1448   5143.33      1448    5159.14     1450    5172.98      1452    5186.65      1454       5200
GR     1456   5213.08      1458    5227.34     1460    5242.36   1460.78    5249.29    1460.5    5289.31
GR     1460   5290.38      1458    5301.57     1456    5314.34      1454    5329.62

NC    0.050     0.035     0.035
ET                5.1                          4762    5149.91
X1    11.14        32      4762    5149.91      606        610       606
GR     1460   4331.11      1460    4359.12     1458    4450.29      1456    4510.13      1454    4516.73
GR     1452   4523.33      1450    4529.82     1450    4653.75      1452    4685.50      1452       4762
GR     1452   4830.94      1450    4913.55     1450    4965.11      1448    4975.89      1448       5000
GR     1448   5056.87      1450    5060.92     1452    5064.99      1452    5097.48      1454    5121.70
GR     1456   5126.41      1458    5131.13     1460    5135.85      1462    5140.57      1464    5145.28
GR     1466   5149.91      1466    5173.09     1464    5177.70      1462    5182.56      1460    5187.75
GR     1458   5192.64      1456    5197.53
```

BEGIN CORPS LEVEES

```
NC    0.035     0.035     0.020
ET                5.1                          4825.06    5165.90
X1    11.19        80    4825.06    5161.07      277        212       225
GR   1466.0   4799.55    1466.00    4823.70   1466.00    4825.06   1465.44    4826.50   1464.00    4830.18
```

GR	1463.6	4831.26	1462.00	4835.30	1461.78	4835.87	1460.47	4839.23	1460.00	4840.18
GR	1459.8	4840.67	1458.00	4844.27	1457.08	4846.17	1456.00	4848.37	1454.68	4851.08
GR	1454.0	4852.47	1452.35	4858.63	1452.00	4861.70	1452.00	4865.26	1452.00	4867.38
GR	1452.0	4906.20	1452.00	4944.98	1452.00	4945.21	1452.00	4948.20	1452.00	4955.59
GR	1452.0	4974.23	1452.00	4983.63	1452.00	5000.00	1452.00	5052.40	1452.00	5075.88

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GR	1452.0	5079.43	1452.00	5080.15	1452.00	5083.16	1452.00	5085.12	1452.21	5091.07
GR	1452.2	5091.41	1452.82	5104.84	1453.40	5118.66	1453.68	5124.97	1454.00	5131.82
GR	1455.9	5136.57	1456.00	5136.91	1456.04	5136.99	1458.00	5141.74	1458.38	5142.66
GR	1460.0	5146.57	1460.56	5147.92	1462.00	5151.40	1462.67	5153.01	1464.00	5156.23
GR	1464.7	5158.02	1466.00	5161.07	1466.79	5162.98	1468.00	5165.90	1468.00	5172.97
GR	1468.0	5198.33	1468.00	5198.71	1468.00	5208.06	1467.82	5208.79	1467.42	5210.39
GR	1466.0	5213.89	1464.59	5217.33	1464.00	5218.79	1462.10	5223.33	1462.00	5223.58
GR	1461.9	5223.73	1460.00	5228.27	1459.05	5230.49	1458.00	5232.96	1456.96	5238.16
GR	1456.5	5239.87	1456.32	5241.27	1456.00	5249.77	1456.00	5262.87	1455.84	5273.99
GR	1456.0	5290.85	1456.15	5294.26	1456.26	5305.86	1456.31	5328.45	1456.18	5342.81

ET		5.1			4827.39	5184.66				
X1	11.29	94	4827.39	5184.66	486	591	536			
GR	1458.6	4498.36	1458.15	4531.48	1458.00	4544.39	1457.54	4552.02	1456.00	4556.76
GR	1455.7	4557.78	1454.54	4561.02	1454.00	4562.59	1454.00	4605.58	1454.95	4629.82
GR	1456.0	4655.24	1456.33	4661.92	1456.76	4672.63	1456.93	4675.47	1457.17	4678.43
GR	1457.5	4684.77	1456.93	4728.58	1456.76	4749.58	1457.01	4757.49	1457.65	4782.78
GR	1458.0	4791.03	1459.18	4795.59	1460.00	4799.16	1461.62	4803.60	1462.00	4804.63
GR	1462.5	4805.93	1464.00	4810.36	1464.90	4812.84	1466.00	4815.95	1466.99	4818.67
GR	1468.0	4821.53	1469.43	4825.50	1469.95	4827.39	1469.68	4829.36	1468.00	4841.57
GR	1466.8	4844.22	1466.00	4846.08	1464.73	4848.95	1464.00	4850.59	1462.59	4853.77
GR	1462.0	4855.10	1460.39	4858.74	1460.00	4859.58	1459.55	4860.64	1458.00	4864.17
GR	1456.8	4866.84	1456.00	4868.69	1454.77	4871.46	1454.00	4873.20	1453.89	4874.55
GR	1454.0	4879.94	1453.00	5000.00	1452.00	5012.73	1452.37	5018.03	1454.00	5112.94
GR	1454.0	5148.06	1456.00	5152.69	1458.00	5157.26	1460.00	5161.76	1462.00	5166.34
GR	1464.0	5170.83	1466.00	5175.45	1467.53	5178.97	1468.00	5180.06	1469.67	5183.89
GR	1470.0	5184.66	1470.00	5197.62	1468.00	5202.94	1466.00	5208.26	1464.00	5213.46
GR	1463.4	5215.12	1462.00	5218.65	1460.33	5224.18	1460.00	5225.24	1459.63	5239.24
GR	1459.4	5247.72	1459.19	5284.15	1459.63	5287.69	1460.00	5297.44	1461.23	5325.09
GR	1462.0	5340.83	1463.27	5373.45	1463.76	5392.61	1463.91	5397.59	1464.00	5403.23
GR	1464.0	5404.95	1463.47	5430.53	1463.48	5446.78	1463.10	5468.14	1463.01	5472.72
GR	1462.8	5480.65	1462.48	5495.44	1462.00	5521.62	1462.00	5562.61		

ET		5.1			4826.47	5170.48				
X1	11.39	88	4826.47	5170.48	520	577	548			
GR	1463.4	4540.53	1462.24	4575.55	1462.00	4587.19	1461.52	4589.31	1460.82	4592.35
GR	1460.0	4595.75	1459.40	4598.25	1458.00	4604.08	1457.77	4611.59	1457.02	4638.45
GR	1456.6	4651.90	1456.25	4664.52	1456.00	4673.48	1456.00	4685.48	1457.34	4692.89
GR	1458.0	4696.00	1458.60	4698.45	1460.00	4704.69	1460.84	4725.05	1461.22	4734.45
GR	1461.5	4742.42	1461.65	4747.02	1462.00	4766.90	1462.17	4770.00	1464.00	4788.85
GR	1465.9	4795.51	1466.00	4795.86	1468.00	4802.87	1469.82	4809.24	1470.00	4809.88
GR	1470.0	4826.47	1469.00	4828.70	1468.00	4830.90	1466.98	4833.16	1466.00	4835.34
GR	1465.0	4837.62	1464.00	4839.77	1462.95	4842.10	1462.00	4844.21	1460.92	4846.60
GR	1460.0	4848.64	1458.80	4851.31	1458.00	4853.08	1456.24	4856.99	1456.00	4857.51
GR	1454.1	4861.74	1454.00	4861.94	1453.77	4869.54	1453.41	4939.48	1453.70	5000.00
GR	1454.0	5052.77	1454.00	5137.60	1454.79	5139.20	1456.00	5141.80	1457.23	5144.29
GR	1458.0	5145.86	1459.52	5148.94	1460.00	5149.91	1461.94	5153.84	1462.00	5153.96
GR	1462.2	5154.43	1464.00	5158.09	1464.41	5158.94	1466.00	5162.22	1466.71	5163.68
GR	1468.0	5166.35	1468.90	5168.21	1470.00	5170.48	1471.01	5177.47	1471.30	5178.73
GR	1471.0	5187.97	1470.52	5189.60	1470.00	5191.33	1469.06	5193.63	1468.00	5196.22

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GR   1466.9    5199.00    1466.00    5201.12    1464.50    5204.79    1464.00    5205.96    1463.56    5227.10
GR   1463.3    5302.27    1463.50    5392.62    1464.00    5459.82    1464.00    5496.38    1464.34    5500.49
1
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GR   1466.0    5520.78    1466.48    5534.57    1467.00    5553.06

ET               5.1                           4831.85    5174.56
X1    11.48       93      4831.85    5174.56       443        532        487
GR   1469.5    4463.12    1470.00    4514.20    1470.67    4526.19    1472.00    4532.14    1472.00    4536.27
GR   1471.2    4545.52    1472.00    4549.52    1471.16    4556.05    1470.89    4562.81    1470.59    4569.92
GR   1470.0    4586.17    1470.00    4654.03    1469.53    4674.85    1469.10    4688.69    1468.83    4699.75
GR   1468.6    4709.20    1468.27    4720.52    1468.00    4733.02    1467.35    4737.19    1467.59    4745.21
GR   1467.3    4752.17    1466.00    4781.13    1465.37    4784.00    1465.14    4788.41    1465.46    4789.08
GR   1465.9    4791.67    1466.00    4791.93    1467.84    4797.88    1468.00    4798.37    1468.75    4800.80
GR   1469.1    4801.97    1469.53    4803.27    1470.00    4804.79    1472.00    4813.30    1472.00    4827.27
GR   1471.5    4828.31    1470.00    4831.85    1469.59    4832.79    1468.00    4836.43    1467.65    4837.23
GR   1466.0    4841.01    1465.73    4841.62    1464.00    4845.59    1463.85    4845.93    1462.31    4849.46
GR   1462.0    4850.16    1461.96    4850.24    1460.00    4854.68    1459.78    4855.19    1458.00    4859.04
GR   1456.8    4861.86    1456.00    4863.63    1454.62    4866.83    1454.00    4868.24    1454.00    4891.27
GR   1454.5    4982.94    1454.00    5000.00    1454.00    5139.53    1455.68    5143.25    1456.00    5143.95
GR   1457.7    5147.78    1458.00    5148.36    1459.81    5152.35    1460.00    5152.78    1461.90    5156.97
GR   1462.0    5157.19    1463.56    5160.62    1464.00    5161.59    1466.00    5165.91    1468.00    5170.24
GR   1468.3    5170.98    1470.00    5174.56    1471.57    5177.96    1472.00    5179.19    1472.00    5194.00
GR   1470.3    5199.62    1470.00    5200.65    1468.88    5204.39    1468.00    5207.39    1467.56    5217.72
GR   1466.9    5233.75    1466.58    5241.08    1466.33    5246.90    1466.40    5250.99    1466.61    5264.73
GR   1467.0    5289.91    1467.20    5306.66    1467.34    5341.05    1467.60    5361.43    1467.94    5383.99
GR   1467.8    5395.19    1467.56    5419.40    1468.00    5430.41

  END CORPS LEVEES; BEGIN BOX CHANNEL UNDER I-17

ET               5.1                           4845.32    5152.45
X1    11.56       87      4845.32    5152.45       386        396        390
GR   1471.8    4676.86    1471.19    4685.14    1470.77    4690.44    1470.54    4693.47    1470.29    4696.28
GR   1470.3    4700.82    1470.50    4703.37    1470.83    4707.69    1471.29    4713.13    1472.00    4721.56
GR   1472.0    4845.32    1470.73    4853.22    1470.34    4856.19    1470.00    4857.83    1469.42    4859.18
GR   1468.0    4862.39    1467.55    4863.42    1466.00    4867.01    1464.74    4869.91    1464.00    4871.63
GR   1462.4    4875.29    1462.00    4876.26    1460.24    4880.32    1460.00    4880.88    1459.55    4891.07
GR   1459.2    4900.27    1459.14    4911.50    1459.18    4917.72    1459.27    4936.45    1459.28    4951.90
GR   1459.3    4956.77    1459.32    4970.56    1459.36    4977.34    1459.35    4986.98    1459.40    5000.00
GR   1459.5    5006.02    1459.50    5012.85    1459.48    5022.30    1459.43    5032.20    1459.31    5049.20
GR   1459.3    5049.41    1459.31    5049.51    1459.31    5049.72    1459.30    5060.17    1459.48    5072.34
GR   1459.5    5084.60    1459.48    5091.51    1459.47    5098.77    1459.30    5109.95    1459.40    5114.80
GR   1459.6    5117.41    1459.59    5117.63    1460.00    5124.33    1461.59    5127.25    1461.65    5127.38
GR   1462.0    5128.28    1462.29    5129.00    1462.54    5129.65    1463.39    5131.68    1464.00    5133.13
GR   1465.0    5135.40    1466.00    5137.90    1466.70    5139.56    1468.00    5142.66    1468.53    5143.93
GR   1470.0    5147.43    1470.90    5149.69    1472.00    5152.45    1472.00    5165.70    1471.55    5168.67
GR   1471.2    5170.75    1470.00    5178.38    1470.00    5225.76    1470.27    5226.00    1472.00    5227.56
GR   1472.5    5228.46    1472.76    5229.77    1472.00    5233.24    1471.71    5234.57    1471.42    5235.87
GR   1471.4    5236.02    1470.93    5237.02    1470.00    5239.41    1470.00    5268.37    1470.59    5293.04
GR   1470.9    5296.51    1471.02    5306.55

  OUTLET OF I-17 CROSSING
1
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ET               5.1                           4880.47    5126.63
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X1    11.57        92    4880.47    5126.63        72        75        73
GR   1470.8   4670.15    1471.04    4676.02   1471.81   4692.20   1472.00   4696.83   1472.63   4707.63
GR   1472.8   4711.11    1473.05    4715.60   1473.66   4746.09   1473.57   4751.49   1473.41   4760.54
GR   1474.0   4769.16    1474.00    4816.39   1473.19   4827.23   1472.71   4833.86   1472.64   4834.85
GR   1472.0   4844.37    1472.00    4861.16   1472.54   4870.52   1472.00   4880.47   1471.79   4880.62
GR   1470.1   4881.77    1470.00    4881.79   1468.35   4882.11   1468.00   4882.18   1466.41   4882.49
GR   1466.0   4882.57    1464.43    4882.88   1464.00   4882.96   1462.45   4883.27   1462.00   4883.35
GR   1461.6   4896.00    1461.53    4899.52   1461.22   4909.97   1461.03   4926.96   1460.86   4934.09
GR   1460.6   4946.27    1460.36    4961.63   1460.29   4993.04   1460.30   5000.00   1460.41   5002.11
GR   1460.5   5010.81    1460.63    5019.07   1461.14   5020.57   1461.34   5048.98   1461.18   5074.02
GR   1460.9   5090.68    1461.37    5103.14   1461.81   5115.32   1461.86   5116.93   1462.00   5120.67
GR   1462.6   5120.78    1464.00    5121.06   1464.40   5121.17   1466.00   5121.48   1466.51   5121.56
GR   1467.1   5121.69    1468.00    5121.86   1469.43   5122.14   1470.00   5122.25   1470.50   5123.25
GR   1471.7   5125.87    1472.00    5126.63   1472.00   5154.31   1471.46   5159.70   1470.38   5170.04
GR   1470.4   5174.42    1470.49    5174.60   1470.77   5175.42   1472.00   5179.41   1472.00   5180.09
GR   1471.6   5182.32    1470.00    5193.35   1470.00   5209.59   1470.38   5210.71   1471.63   5215.00
GR   1472.0   5216.25    1472.00    5216.38   1472.00   5218.35   1471.83   5219.05   1470.00   5223.24
GR   1470.0   5225.98    1470.22    5226.92   1470.00   5227.88   1470.00   5234.90   1470.81   5241.05
GR   1470.8   5241.43    1471.05    5249.44   1470.99   5250.35   1470.90   5250.66   1470.72   5261.88
GR   1471.0   5291.96    1471.60    5306.88
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV=     .100 CEHV=     .300
*SECNO 8.690

3265 DIVIDED FLOW

3280 CROSS SECTION      8.69 EXTENDED       .71 FEET

3470 ENCROACHMENT STATIONS=     3796.6    5556.9  TYPE=      1  TARGET=     1760.280
     8.690     14.00   1378.00   1374.50       .00   1378.47       .47       .00       .00   1381.16
   39000.0        .0   38837.5     162.5        .0    7026.5     198.7        .0        .0   1379.49
       .00       .00      5.53       .82      .000      .035      .045      .000   1364.00   4045.04
   .001290        0.        0.        0.         0        13         0       .00   1389.66   5556.89

*SECNO 8.790

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS=     3855.7    5476.0  TYPE=      1  TARGET=     1620.250
     8.790     12.74   1378.74   1377.37       .00   1379.82      1.08      1.16       .18   1384.00
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   39000.0        .0   39000.0        .0        .0    4669.4        .0      73.6      14.2   1380.00
       .02       .00      8.35       .00      .000      .035      .000      .000   1366.00   4134.92
   .004326      530.      539.      546.         2        14         0       .00    896.21   5031.13

*SECNO 8.930

3470 ENCROACHMENT STATIONS=     4280.0    5437.8  TYPE=      1  TARGET=     1157.800
      8.930     11.24   1381.24   1378.60       .00   1382.40      1.17      2.56       .03   1386.72
   39000.0        .0   39000.0        .0        .0    4495.9        .0     149.6      26.7   1382.80
       .04       .00      8.67       .00      .000      .035      .000      .000   1370.00   4600.57
   .002959      565.      722.      711.         2        19         0       .00    616.60   5217.16
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1


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

*SECNO 9.010

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4519.9    5433.5  TYPE=      1  TARGET=      913.610
      9.010      9.39   1381.58   1381.58       .00   1385.28      3.70      2.09       .76   1386.00
   39000.0        .0   39000.0        .0        .0    2527.1        .0     184.2      31.5   1389.58
       .05       .00     15.43       .00      .000      .035      .000      .000   1372.19   4835.91
   .009403      363.      430.      558.         0        15         0       .00    346.63   5182.54

*SECNO 9.080

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.76

3470 ENCROACHMENT STATIONS=     4515.3    5233.2  TYPE=      1  TARGET=      717.880
      9.080     11.94   1385.41   1382.13       .00   1387.26      1.86      1.80       .18   1388.00
   39000.0        .0   39000.0        .0        .0    3568.1        .0     209.8      34.4   1390.00
       .06       .00     10.93       .00      .000      .035      .000      .000   1373.47   4830.35
   .003031      432.      365.      165.         2        11         0       .00    350.17   5180.53

*SECNO 9.140

3470 ENCROACHMENT STATIONS=     4525.9    5437.5  TYPE=      1  TARGET=      911.700
      9.140     12.28   1386.28   1382.90       .00   1388.32      2.04      1.00       .06   1390.00
   39000.0        .0   39000.0        .0        .0    3401.5        .0     236.4      36.9   1390.00
       .07       .00     11.47       .00      .000      .035      .000      .000   1374.00   4847.10
   .002991      288.      333.      385.         3        15         0       .00    304.69   5151.78
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*SECNO 9.145

3265 DIVIDED FLOW

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


3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .63

3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=  1394.50 MAX ELLC=  1394.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1392.20 ELREA=      1393.10

     9.145      10.57   1385.47   1384.14       .00   1388.72       3.25       .04       .36   1394.50
   39000.0         .0   39000.0        .0        .0    2697.5         .0     237.0      36.9   1394.70
       .07        .00     14.46       .00      .000      .035       .000      .000   1374.90   5024.02
   .007470         8.        8.        8.         3        12          0       .00    276.66   5315.70

*SECNO 9.155

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=  1394.50 MAX ELLC=  1394.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1392.20 ELREA=      1393.10

     9.155      11.49   1386.59   1384.33       .00   1389.29       2.70       .52       .05   1394.50
   39000.0         .0   39000.0        .0        .0    2955.1         .0     242.2      37.5   1394.70
       .07        .00     13.20       .00      .000      .035       .000      .000   1375.10   5021.90
   .005727        80.       80.       80.         3        12          0       .00    280.88   5317.79

*SECNO 9.160

3301 HV CHANGED MORE THAN HVINS

1
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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


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

3470 ENCROACHMENT STATIONS=     4528.7    5445.3  TYPE=      1  TARGET=      916.610
     9.160      13.66   1387.66   1383.28       .00   1389.42       1.76        .03        .09   1390.00
   39000.0         .0   39000.0        .0        .0    3666.3         .0      242.8       37.5   1390.00
       .07        .00     10.64       .00      .000      .035       .000       .000    1374.00   4856.85
   .002323         8.        8.        8.         3        15          0        .00     303.35   5160.20

*SECNO 9.210

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.49

3470 ENCROACHMENT STATIONS=     4074.0    5274.6  TYPE=      1  TARGET=     1200.570
     9.210      12.85   1388.85   1382.82       .00   1389.72        .86        .21        .09   1389.00
   39000.0         .0   39000.0        .0        .0    5225.6         .0      271.3       39.9   1391.00
       .08        .00      7.46       .00      .000      .020       .000       .000    1376.00   4732.37
   .000375       145.      279.      355.         2         8          0        .00     437.36   5169.73

*SECNO 9.220

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4498.0    5314.1  TYPE=      1  TARGET=      816.090
     9.220       5.86   1395.86   1395.86       .00   1398.25       2.39        .04        .46   1395.00
   39000.0     2160.1   36839.9        .0      357.2    2904.6         .0      275.4       40.5   1397.00
       .08       6.05     12.68       .00      .040      .035       .000       .000    1390.00   4498.00
   .009100       122.       39.      104.         0        14          0        .00     688.94   5186.94

*SECNO 9.250
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3470 ENCROACHMENT STATIONS=     4473.0    5304.5  TYPE=      1  TARGET=      831.600
     9.250       5.89   1397.89   1397.89       .00   1400.00       2.11       1.34        .03   1394.00
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   39000.0    5838.3   33161.7        .0     771.9    2712.3        .0     286.5      43.0   1398.64
       .08      7.56     12.23       .00      .040      .035      .000      .000   1392.00   4472.95
   .009783      155.      141.       82.         0         5         0       .00    810.58   5283.53

*SECNO 9.300
3280 CROSS SECTION      9.30 EXTENDED       .28 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.47

3470 ENCROACHMENT STATIONS=     4553.4    5290.2  TYPE=      1  TARGET=      736.780
     9.300      7.28   1400.28   1399.15       .00   1401.74      1.47      1.68       .06   1395.00
   39000.0    5004.0   33987.1       8.9     835.1    3349.0       4.9     309.5      47.7   1399.50
       .09      5.99     10.15      1.83      .040      .035      .035      .000   1393.00   4553.41
   .004552      262.      261.      282.         2         8         0       .00    736.78   5290.19

*SECNO 9.350
3280 CROSS SECTION      9.35 EXTENDED       .52 FEET

3470 ENCROACHMENT STATIONS=     4459.0    5287.8  TYPE=      1  TARGET=      828.720
     9.350      9.52   1401.52   1400.20       .00   1402.86      1.34      1.11       .01   1399.00
   39000.0    3276.4   35693.2      30.5     797.1    3702.8      12.2     337.2      52.7   1400.00
       .10      4.11      9.64      2.51      .040      .035      .035      .000   1392.00   4459.05
   .003594      291.      274.      274.         3         8         0       .00    828.72   5287.77

*SECNO 9.420

3470 ENCROACHMENT STATIONS=     4438.0    5217.0  TYPE=      1  TARGET=      778.990
     9.420      9.94   1402.94   1401.78       .00   1404.47      1.53      1.55       .06   1401.00
   39000.0    2369.8   36630.2        .0     592.5    3595.4        .0     377.0      60.1 100000.00
       .11      4.00     10.19       .00      .040      .035      .000      .000   1393.00   4437.98
   .004193      400.      399.      402.         2        11         0       .00    778.99   5216.97
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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 9.450

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4480.6    5209.0  TYPE=      1  TARGET=      728.360
     9.450     10.42   1403.42   1403.42       .00   1405.80      2.37       .77       .25   1401.70
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   39000.0    2727.1   36272.9        .0     420.6    2857.7        .0     386.9      62.0 100000.00
       .11      6.48     12.69       .00      .040      .040      .000      .000   1393.00   4480.64
   .011804       93.      118.      126.         0         8         0       .00    728.36   5209.00

*SECNO 9.540

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS=     4653.6    5177.0  TYPE=      1  TARGET=      523.440
      9.540     10.85   1407.85   1405.69       .00   1409.43      1.59      3.56       .08   1408.00
   39000.0      17.2   38982.8        .0       6.8    3854.1        .0     427.4      68.8 100000.00
       .13      2.54     10.11       .00      .035      .040      .000      .000   1397.00   4653.56
   .004810      410.      500.      515.         3        15         0       .00    496.00   5177.00

*SECNO 9.650

3470 ENCROACHMENT STATIONS=     4736.4    5231.9  TYPE=      1  TARGET=      495.470
      9.650      8.54   1410.54   1408.58       .00   1412.30      1.76      2.81       .05   1412.00
   39000.0        .0   39000.0        .0        .0    3661.8        .0     475.6      74.9 100000.00
       .14       .00     10.65       .00      .000      .040      .000      .000   1402.00   4760.07
   .005297      475.      558.      503.         3        14         0       .00    466.65   5226.72

*SECNO 9.700
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3470 ENCROACHMENT STATIONS=     4752.7    5283.9  TYPE=      1  TARGET=      531.160
      9.700      7.84   1411.84   1410.09       .00   1413.52      1.68      1.21       .01   1412.00
   39000.0        .0   39000.0        .0        .0    3747.9        .0     497.3      77.8   1412.00
       .15       .00     10.41       .00      .000      .035      .000      .000   1404.00   4757.84
   .004272      253.      256.      259.         0        15         0       .00    514.54   5272.38

*SECNO 9.730

3470 ENCROACHMENT STATIONS=     4762.0    5298.7  TYPE=      1  TARGET=      536.690
      9.730      8.83   1412.83   1410.11       .00   1414.14      1.31       .58       .04   1414.00
   39000.0        .0   38997.0       3.0        .0    4238.3       2.4     512.8      79.8   1412.00
       .15       .00      9.20      1.25      .000      .035      .035      .000   1404.00   4767.98
   .002853      187.      169.      151.         2        15         0       .00    522.66   5290.64

*SECNO 9.800
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3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS=     4698.4    5217.7  TYPE=      1  TARGET=      519.300
     9.800      7.42   1413.42   1412.91       .00   1416.18      2.76      1.61       .43   1416.00
   39000.0        .0   39000.0        .0        .0    2924.4        .0     542.9      83.8   1414.00
       .16       .00     13.34       .00      .000      .035      .000      .000   1406.00   4775.47
   .007653      383.      365.      349.         3        15         0       .00    428.32   5203.79

*SECNO 9.890

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     4678.5    5167.5  TYPE=      1  TARGET=      488.990
     9.890     10.91   1416.91   1415.10       .00   1419.14      2.23      2.90       .05   1420.00
   39000.0        .0   39000.0        .0        .0    3255.3        .0     578.0      88.4   1418.00
       .17       .00     11.98       .00      .000      .035      .000      .000   1406.00   4775.54
   .004621      509.      495.      484.         3        11         0       .00    383.13   5158.67

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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 9.980

3470 ENCROACHMENT STATIONS=     4813.5    5284.1  TYPE=      1  TARGET=      470.600
     9.980      9.25   1419.25   1417.47       .00   1421.32      2.07      2.17       .02   1428.00
   39000.0        .0   39000.0        .0        .0    3377.4        .0     614.1      92.8   1420.00
       .18       .00     11.55       .00      .000      .035      .000      .000   1410.00   4856.10
   .004527      462.      475.      469.         2        14         0       .00    413.94   5270.04

*SECNO 10.080

3470 ENCROACHMENT STATIONS=     4840.6    5275.3  TYPE=      1  TARGET=      434.730
    10.080      9.59   1421.59   1420.21       .00   1423.90      2.31      2.50       .07   1426.00
   39000.0        .0   39000.0        .0        .0    3196.9        .0     652.7      97.6   1424.00
       .20       .00     12.20       .00      .000      .035      .000      .000   1412.00   4855.91
   .005311      508.      511.      514.         0        11         0       .00    406.99   5262.90

*SECNO 10.160

3470 ENCROACHMENT STATIONS=     4784.9    5288.3  TYPE=      1  TARGET=      503.410
    10.160      8.09   1424.09   1422.72       .00   1426.19      2.10      2.27       .02   1426.00
   39000.0        .0   39000.0        .0        .0    3356.2        .0     685.0     101.8   1426.00
       .21       .00     11.62       .00      .000      .035      .000      .000   1416.00   4805.77
   .005236      447.      430.      418.         2        19         0       .00    454.78   5260.56
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*SECNO 10.250

3470 ENCROACHMENT STATIONS=     4772.9    5313.0  TYPE=      1  TARGET=      540.110
    10.250      6.71   1426.71   1426.31       .00   1429.30      2.59      2.96       .15   1429.70
   39000.0        .0   39000.0        .0        .0    3020.7        .0     718.7     106.8 100000.00
       .22       .00     12.91       .00      .000      .035      .000      .000   1420.00   4791.56
   .008124      496.      460.      420.         2        15         0       .00    486.32   5277.88


*SECNO 10.330
3280 CROSS SECTION     10.33 EXTENDED       .13 FEET


3470 ENCROACHMENT STATIONS=     4766.4    5272.0  TYPE=      1  TARGET=      505.590
    10.330      8.13   1430.13   1429.33       .00   1432.58      2.45      3.27       .01   1435.17
   39000.0        .0   39000.0        .0        .0    3105.2        .0     749.9     111.6   1434.00
       .23       .00     12.56       .00      .000      .035      .000      .000   1422.00   4802.19
   .006696      519.      444.      373.         3         8         0       .00    450.35   5252.54


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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 10.340
3280 CROSS SECTION     10.34 EXTENDED       .57 FEET


3470 ENCROACHMENT STATIONS=     4756.9    5252.6  TYPE=      1  TARGET=      495.720
    10.340      8.57   1430.57   1429.81       .00   1433.09      2.53       .49       .02   1435.00
   39000.0        .0   39000.0        .0        .0    3057.7        .0     755.1     112.3   1434.00
       .23       .00     12.75       .00      .000      .035      .000      .000   1422.00   4792.27
   .006771      104.       73.       42.         2         8         0       .00    436.80   5229.07


*SECNO 10.380

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4823.2    5272.0  TYPE=      1  TARGET=      448.790
    10.380      7.33   1431.33   1431.33       .00   1434.50      3.17      1.13       .19   1435.82
   39000.0        .0   39000.0        .0        .0    2728.3        .0     765.9     113.9 100000.00
       .23       .00     14.29       .00      .000      .030      .000      .000   1424.00   4841.32
   .007208      173.      162.      143.         0        11         0       .00    430.68   5272.00


*SECNO 10.410
3280 CROSS SECTION     10.41 EXTENDED      4.66 FEET

7185 MINIMUM SPECIFIC ENERGY
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3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4783.1    5262.7  TYPE=      1  TARGET=      479.660
    10.410      6.66   1434.66   1434.66       .00   1437.76      3.11      1.44       .01   1436.00
   39000.0        .0   39000.0        .0        .0    2756.2       .0     776.6     115.7   1436.00
       .23       .00     14.15       .00      .000      .035      .000      .000   1428.00   4797.50
   .009916      198.      171.      142.         0        11         0       .00    448.93   5246.44

*SECNO 10.420
3280 CROSS SECTION     10.42 EXTENDED      6.39 FEET

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

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.48

3470 ENCROACHMENT STATIONS=     4758.8    5239.4  TYPE=      1  TARGET=      480.630
    10.420     10.40   1436.40   1434.71       .00   1438.30      1.90       .41       .12   1436.00
   39000.0       8.0   38992.0        .0       5.3    3521.5       .0     781.2     116.3   1438.00
       .23      1.51     11.07       .00      .035      .035      .000      .000   1426.00   4758.79
   .004553       70.       64.       58.         4        11         0       .00    474.70   5233.48

*SECNO 10.510

3470 ENCROACHMENT STATIONS=     4717.3    5219.5  TYPE=      1  TARGET=      502.160
    10.510     42.61   1438.61   1437.03       .00   1440.72      2.11      2.36       .06   1440.00
   39000.0        .0   39000.0        .0        .0    3346.3       .0     818.5     121.4   1440.00
       .25       .00     11.65       .00      .000      .035      .000      .000   1396.00   4726.81
   .005501      439.      472.      487.         3        15         0       .00    468.40   5195.21

*SECNO 10.620

3470 ENCROACHMENT STATIONS=     4664.9    5132.6  TYPE=      1  TARGET=      467.660
    10.620     49.81   1441.81   1440.35       .00   1444.20      2.39      3.40       .08   1444.00
   39000.0        .0   39000.0        .0        .0    3143.4       .0     862.9     127.5   1444.00
       .26       .00     12.41       .00      .000      .035      .000      .000   1392.00   4688.49
   .005909      535.      596.      618.         2        17         0       .00    422.02   5110.51

*SECNO 10.700

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     4748.1    5211.3  TYPE=      1  TARGET=      463.190
    10.700     10.16   1444.16   1444.03       .00   1447.38      3.22      2.93       .25   1446.20
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   39000.0        .0   39000.0        .0        .0    2707.8        .0     889.9     131.3   1446.48
      .27       .00     14.40       .00      .000      .035      .000      .000   1434.00   4766.96
  .009224      390.      402.      382.         2        21         0       .00    406.49   5173.45
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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 10.830
 3280 CROSS SECTION     10.83 EXTENDED      6.36 FEET

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=     4782.3    5310.0  TYPE=      1  TARGET=      527.740
    10.830     12.36   1450.36   1448.93       .00   1452.32      1.95      4.81       .13   1452.00
   39000.0        .0   39000.0        .0        .0    3476.2        .0     940.8     138.7   1452.00
      .28       .00     11.22       .00      .000      .035      .000      .000   1438.00   4807.00
  .005100      642.      717.      704.         2         8         0       .00    485.67   5292.67

 *SECNO 10.930
 3280 CROSS SECTION     10.93 EXTENDED      6.96 FEET

 3470 ENCROACHMENT STATIONS=     4766.7    5290.0  TYPE=      1  TARGET=      523.260
    10.930     12.96   1452.96   1451.39       .00   1454.89      1.94      2.57       .00   1454.00
   39000.0        .0   39000.0        .0        .0    3493.4        .0     982.0     144.4   1455.10
      .30       .00     11.16       .00      .000      .035      .000      .000   1440.00   4796.08
  .004871      456.      516.      557.         3        15         0       .00    475.20   5271.29

 *SECNO 11.030
 3280 CROSS SECTION     11.03 EXTENDED      1.58 FEET

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=     4581.4    5120.8  TYPE=      1  TARGET=      539.400
    11.030     13.58   1455.58   1453.00       .00   1456.98      1.40      2.03       .05   1460.00
   39000.0        .0   39000.0        .0        .0    4113.8        .0    1027.9     150.3 100000.00
      .31       .00      9.48       .00      .000      .035      .000      .000   1442.00   4615.31
  .003149      506.      525.      504.         2        15         0       .00    505.52   5120.83

 *SECNO 11.140
 3280 CROSS SECTION     11.14 EXTENDED      1.62 FEET
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4762.0    5149.9  TYPE=      1  TARGET=      387.910
    11.140      9.62   1457.62   1457.62       .00   1461.19      3.57       3.11        .65   1452.00
   39000.0        .0   39000.0        .0        .0    2572.7        .0     1074.4      156.4 100000.00
       .32       .00     15.16       .00      .000      .035      .000       .000    1448.00   4762.00
   .009806      606.      606.      610.         0        19         0        .00     368.24   5130.24


*SECNO 11.190
3280 CROSS SECTION     11.19 EXTENDED      4.38 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4825.1    5165.9  TYPE=      1  TARGET=      340.840
    11.190      8.56   1460.56   1460.56       .00   1464.54      3.99       1.12        .13   1466.00
   39000.0        .0   39000.0        .0        .0    2434.4        .0     1087.3      158.1   1466.00
       .33       .00     16.02       .00      .000      .020      .000       .000    1452.00   4839.01
   .003003      277.      225.      212.         0        11         0        .00     308.90   5147.91


*SECNO 11.290
3280 CROSS SECTION     11.29 EXTENDED       .87 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     4827.4    5184.7  TYPE=      1  TARGET=      357.270
    11.290     10.88   1462.88   1461.79       .00   1465.93      3.05       1.29        .09   1469.95
   39000.0        .0   39000.0        .0        .0    2784.2        .0     1119.4      162.0 100000.00
       .34       .00     14.01       .00      .000      .020      .000       .000    1452.00   4853.13
   .001977      486.      536.      591.         3         8         0        .00     315.16   5168.30


*SECNO 11.390
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS
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3470 ENCROACHMENT STATIONS=     4826.5    5170.5  TYPE=      1  TARGET=      344.010
    11.390     11.17   1464.58   1462.10       .00   1466.85      2.28       .85       .08   1470.00
   39000.0        .0   39000.0        .0        .0    3220.8        .0    1157.2     166.0 100000.00
       .35       .00     12.11       .00      .000      .020      .000      .000   1453.41   4838.52
   .001250      520.      548.      577.         2        15         0       .00    320.78   5159.30

*SECNO 11.480

3470 ENCROACHMENT STATIONS=     4831.9    5174.6  TYPE=      1  TARGET=      342.710
    11.480     11.32   1465.32   1462.48       .00   1467.45      2.13       .58       .01   1470.00
   39000.0        .0   39000.0        .0        .0    3329.2        .0    1193.8     169.6 100000.00
       .36       .00     11.71       .00      .000      .020      .000      .000   1454.00   4842.57
   .001125      443.      487.      532.         2        15         0       .00    321.86   5164.43

*SECNO 11.560

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4845.3    5152.5  TYPE=      1  TARGET=      307.130
    11.560      9.29   1468.43   1468.43       .00   1472.66      4.24       .67       .63   1472.00
   39000.0        .0   39000.0        .0        .0    2361.1        .0    1219.3     172.3 100000.00
       .37       .00     16.52       .00      .000      .020      .000      .000   1459.14   4861.43
   .002959      386.      390.      396.         0        15         0       .00    282.25   5143.68

*SECNO 11.570
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     4880.5    5126.6  TYPE=      1  TARGET=      246.160
    11.570     10.10   1470.39   1470.39       .00   1475.08      4.69       .22       .14   1472.00
   39000.0        .0   39000.0        .0        .0    2243.6        .0    1223.2     172.7 100000.00
       .37       .00     17.38       .00      .000      .020      .000      .000   1460.29   4881.57
   .003014       72.       73.       75.         0         8         0       .00    241.45   5123.02

1
   07OCT03      23:02:19                                                                          PAGE   31


                                                                    THIS RUN EXECUTED 07OCT03     23:02:20
**************************************
 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


IGINAL MODEL SKNKLOMR.IH

SUMMARY PRINTOUT
```

	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
	8.690	39000.00	1378.00	1374.50	5.53	14.00	1389.66	7225.27	.37	4045.04	5556.89
*	8.790	39000.00	1378.74	1377.37	8.35	12.74	896.21	4669.37	.64	4134.92	5031.13
	8.930	39000.00	1381.24	1378.60	8.67	11.24	616.60	4495.85	.57	4600.57	5217.16
*	9.010	39000.00	1381.58	1381.58	15.43	9.39	346.63	2527.06	1.01	4835.91	5182.54
*	9.080	39000.00	1385.41	1382.13	10.93	11.94	350.17	3568.15	.60	4830.35	5180.53
	9.140	39000.00	1386.28	1382.90	11.47	12.28	304.69	3401.51	.60	4847.10	5151.78
*	9.145	39000.00	1385.47	1384.14	14.46	10.57	276.66	2697.49	.84	5024.02	5315.70
	9.155	39000.00	1386.59	1384.33	13.20	11.49	280.88	2955.13	.74	5021.90	5317.79
*	9.160	39000.00	1387.66	1383.28	10.64	13.66	303.35	3666.33	.54	4856.85	5160.20
*	9.210	39000.00	1388.85	1382.82	7.46	12.85	437.36	5225.59	.38	4732.37	5169.73
*	9.220	39000.00	1395.86	1395.86	12.68	5.86	688.94	3261.84	.95	4498.00	5186.94
*	9.250	39000.00	1397.89	1397.89	12.23	5.89	810.58	3484.13	.97	4472.95	5283.53
*	9.300	39000.00	1400.28	1399.15	10.15	7.28	736.78	4188.92	.69	4553.41	5290.19
	9.350	39000.00	1401.52	1400.20	9.64	9.52	828.72	4512.09	.62	4459.05	5287.77
	9.420	39000.00	1402.94	1401.78	10.19	9.94	778.99	4187.89	.67	4437.98	5216.97
*	9.450	39000.00	1403.42	1403.42	12.69	10.42	728.36	3278.30	.94	4480.64	5209.00
*	9.540	39000.00	1407.85	1405.69	10.11	10.85	496.00	3860.88	.64	4653.56	5177.00

1
07OCT03 23:02:19 PAGE 32

	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
	9.650	39000.00	1410.54	1408.58	10.65	8.54	466.65	3661.76	.67	4760.07	5226.72
	9.700	39000.00	1411.84	1410.09	10.41	7.84	514.54	3747.90	.68	4757.84	5272.38
	9.730	39000.00	1412.83	1410.11	9.20	8.83	522.66	4240.72	.57	4767.98	5290.64
*	9.800	39000.00	1413.42	1412.91	13.34	7.42	428.32	2924.35	.90	4775.47	5203.79
	9.890	39000.00	1416.91	1415.10	11.98	10.91	383.13	3255.31	.72	4775.54	5158.67
	9.980	39000.00	1419.25	1417.47	11.55	9.25	413.94	3377.41	.71	4856.10	5270.04
	10.080	39000.00	1421.59	1420.21	12.20	9.59	406.99	3196.85	.77	4855.91	5262.90
	10.160	39000.00	1424.09	1422.72	11.62	8.09	454.78	3356.18	.75	4805.77	5260.56
	10.250	39000.00	1426.71	1426.31	12.91	6.71	486.32	3020.73	.91	4791.56	5277.88

	10.330	39000.00	1430.13	1429.33	12.56	8.13	450.35	3105.15	.84	4802.19	5252.54
	10.340	39000.00	1430.57	1429.81	12.75	8.57	436.80	3057.69	.85	4792.27	5229.07
*	10.380	39000.00	1431.33	1431.33	14.29	7.33	430.68	2728.34	1.00	4841.32	5272.00
*	10.410	39000.00	1434.66	1434.66	14.15	6.66	448.93	2756.23	1.01	4797.50	5246.44
*	10.420	39000.00	1436.40	1434.71	11.07	10.40	474.70	3526.77	.71	4758.79	5233.48
	10.510	39000.00	1438.61	1437.03	11.65	42.61	468.40	3346.32	.77	4726.81	5195.21
	10.620	39000.00	1441.81	1440.35	12.41	49.81	422.02	3143.43	.80	4688.49	5110.51
	10.700	39000.00	1444.16	1444.03	14.40	10.16	406.49	2707.75	.98	4766.96	5173.45
	10.830	39000.00	1450.36	1448.93	11.22	12.36	485.67	3476.25	.74	4807.00	5292.67
	10.930	39000.00	1452.96	1451.39	11.16	12.96	475.20	3493.44	.73	4796.08	5271.29
	11.030	39000.00	1455.58	1453.00	9.48	13.58	505.52	4113.78	.59	4615.31	5120.83
*	11.140	39000.00	1457.62	1457.62	15.16	9.62	368.24	2572.74	1.01	4762.00	5130.24
*	11.190	39000.00	1460.56	1460.56	16.02	8.56	308.90	2434.44	1.01	4839.01	5147.91
	11.290	39000.00	1462.88	1461.79	14.01	10.88	315.16	2784.22	.83	4853.13	5168.30
	11.390	39000.00	1464.58	1462.10	12.11	11.17	320.78	3220.78	.67	4838.52	5159.30
	11.480	39000.00	1465.32	1462.48	11.71	11.32	321.86	3329.18	.64	4842.57	5164.43
*	11.560	39000.00	1468.43	1468.43	16.52	9.29	282.25	2361.09	1.01	4861.43	5143.68

1
07OCT03 23:02:19 PAGE 33

	SECNO	Q	CWSEL	CRIWS	VCH	DEPTH	TOPWID	AREA	FRCH	SSTA	ENDST
*	11.570	39000.00	1470.39	1470.39	17.38	10.10	241.45	2243.58	1.00	4881.57	5123.02

1
07OCT03 23:02:19 PAGE 34

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 8.790 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 9.010 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 9.010 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 9.080 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

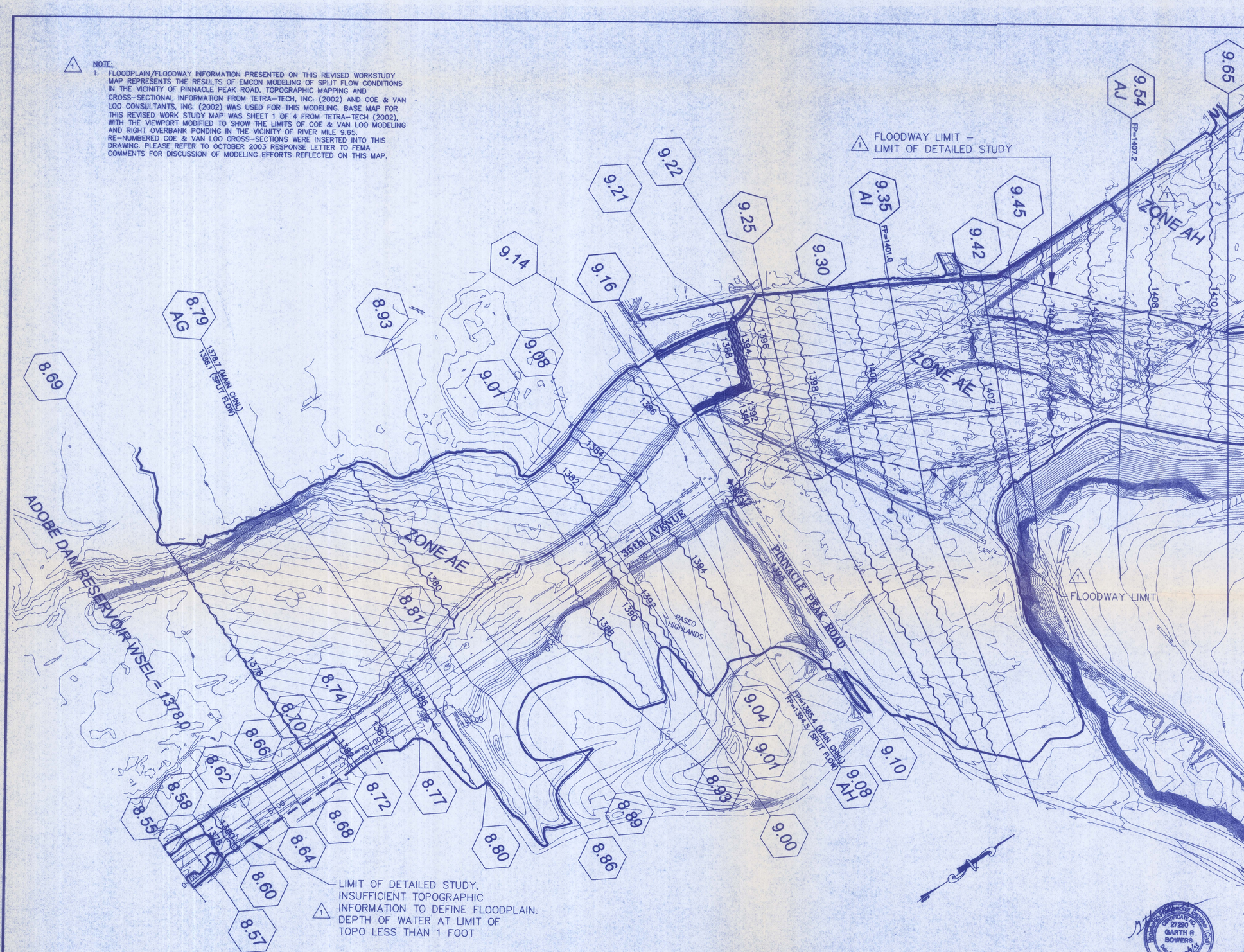
WARNING SECNO= 9.145 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

```
WARNING SECNO=      9.160  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.210  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.220  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.220  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=      9.250  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.250  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.300  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      9.450  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      9.450  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      9.540  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.800  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     10.380  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.380  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     10.410  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.410  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     10.420  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     11.140  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.140  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     11.190  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.190  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     11.560  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.560  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     11.570  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     11.570  PROFILE=  1  MINIMUM SPECIFIC ENERGY
```

ATTACHMENT C

REVISED WORK STUDY MAP

NOTE:
1. FLOODPLAIN/FLOODWAY INFORMATION PRESENTED ON THIS REVISED WORKSTUDY MAP REPRESENTS THE RESULTS OF EMCON MODELING OF SPLIT FLOW CONDITIONS IN THE VICINITY OF PINNACLE PEAK ROAD. TOPOGRAPHIC MAPPING AND CROSS-SECTIONAL INFORMATION FROM TETRA-TECH, INC. (2002) AND COE & VAN LOO CONSULTANTS, INC. (2002) WAS USED FOR THIS MODELING. BASE MAP FOR THIS REVISED WORK STUDY MAP WAS SHEET 1 OF 4 FROM TETRA-TECH (2002), WITH THE VIEWPORT MODIFIED TO SHOW THE LIMITS OF COE & VAN LOO MODELING AND RIGHT OVERBANK PONDING IN THE VICINITY OF RIVER MILE 9.65. RE-NUMBERED COE & VAN LOO CROSS-SECTIONS WERE INSERTED INTO THIS DRAWING. PLEASE REFER TO OCTOBER 2003 RESPONSE LETTER TO FEMA COMMENTS FOR DISCUSSION OF MODELING EFFORTS REFLECTED ON THIS MAP.



TOPOGRAPHY NOTE: PASEO HIGHLANDS PARK TOPOGRAPHY PROVIDED BY EEC. EMCON/OWT, INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE CONTROL SURVEY OR THE BASE TOPOGRAPHIC MAPPING.

THE BASE TOPOGRAPHIC MAPPING USED TO CONDUCT THIS FLOODPLAIN DELINEATION STUDY WAS PREPARED BY M & B AERIAL MAPPING COMPANY, INC. THIS MAPPING IS BASED ON AERIAL PHOTOGRAPHY TAKEN FEB 11, 2000 AND JAN 24, 2001. PROJECT CONTROL WAS PROVIDED BY MORRISON-MAIERLE, INC. TETRA TECH, INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE CONTROL SURVEY OR THE BASE TOPOGRAPHIC MAPPING.

200 0 200 400
SCALE: 1"= 200 FEET
CONTOUR INTERVAL = 2 FEET

LEGEND

100-YR FLOODPLAIN BOUNDARY
HYDRAULIC BASE LINE
CROSS SECTION — 0.10 A — CROSS SECTION UNDER WSE — FS INDEX CROSS SECTION — FP= 1483.6 — FLOODWAY-BFL WATER SURFACE ELEVATION
ELEVATION REFERENCE MARK — ERM XXX
BASE FLOOD ELEVATION — 1462
SFH ZONE DESIGNATION — ZONE AE
FLOODWAY

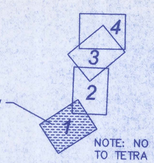
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
ERM #1	1392.12	FOUND BRASS CAP IN HANDHOLE IN INTERSECTION OF 35TH AVENUE AND PINNACLE PEAK ROAD. N: 981,636.31 E: 433,844.66

FOR CONTINUATION SEE SHEET 2

KEY MAP



NOTE: NO CHANGES WERE MADE TO TETRA TECH SHEETS 3 & 4

NO.	REVISION	BY	DATE
2			
1	SEE NOTE 1	DS/GB	10/03

CITY OF PHOENIX
MARICOPA COUNTY, ARIZONA

SKUNK CREEK
REVISED WORK STUDY MAP
LETTER OF MAP REVISION

Shaw™ EMCON/OWT, Inc.

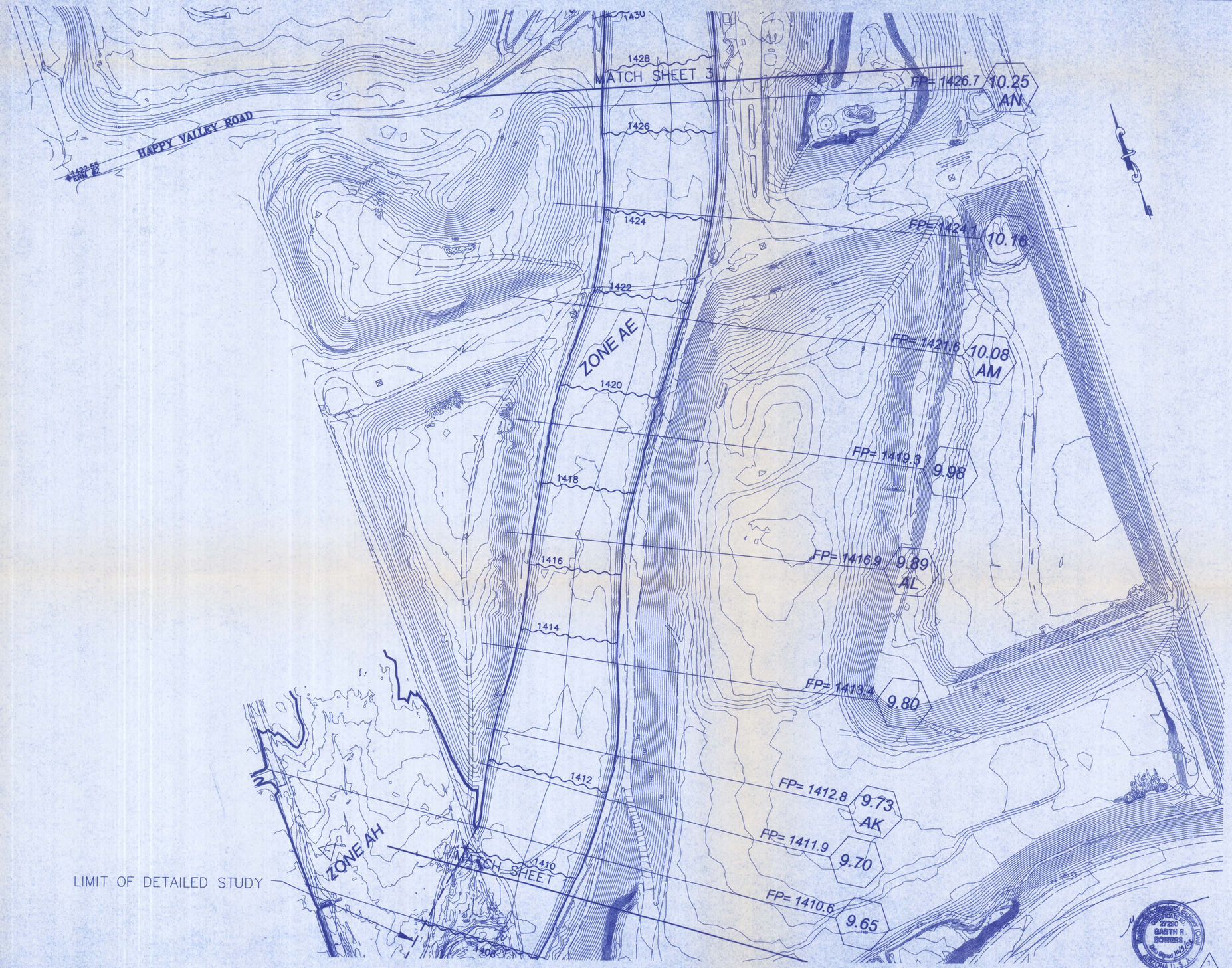
ORIGINAL WORK STUDY MAP SEALED BY PEDRO A. CALZA AZ PE No. 30493 OF TETRA-TECH, INC.

TETRA TECH, INC.
INFRASTRUCTURE SOUTHWEST GROUP
4801 East Washington Street, Suite 260, Phoenix, AZ 85034
(602) 682-2000 FAX (602) 244-1164

	BY	DATE
DESIGN	LML	09/2002
DESIGN CHK.	PAC	09/2002
PLANS	LML	09/2002
PLANS CHK.	PAC	09/2002

SHEET 1 OF 4

XREF Files: XUREG01 SC-XT1 SC-XB1 IMAGE Files:
File: E:\CAD\PROJECTS\CDP\LUMP\PLANSPHO_FLOODPLAIN.dwg Layout: Revised F31 User: mcase Oct 09, 2003 - 12:29pm



1 TOPOGRAPHY NOTE: PASEO HIGHLANDS PARK TOPOGRAPHY PROVIDED BY EEC. EMCON/OWT, INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE CONTROL SURVEY OR THE BASE TOPOGRAPHIC MAPPING.

THE BASE TOPOGRAPHIC MAPPING USED TO CONDUCT THIS FLOODPLAIN DELINEATION STUDY WAS PREPARED BY M & B AERIAL MAPPING COMPANY, INC. THIS MAPPING IS BASED ON AERIAL PHOTOGRAPHY TAKEN FEB 11, 2000 AND JAN 24, 2001. PROJECT CONTROL WAS PROVIDED BY MORRISON-MAIERLE, INC. TETRA TECH, INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE CONTROL SURVEY OR THE BASE TOPOGRAPHIC MAPPING.

2002 Files: XLMREF01: SC-271 SC-281 WADE Files:
File: C:\CAD\PROJECTS\DGN\LOMR\FAMPERSE_FLOODPLAIN.dwg Layout: Revised FP2 User: mcase Oct 09, 2003 - 12:28pm

200 0 200 400
SCALE: 1"= 200 FEET
CONTOUR INTERVAL = 2 FEET

LEGEND

100-YR FLOODPLAIN BOUNDARY

HYDRAULIC BASE LINE

CROSS SECTION — 0.10 A — CROSS SECTION INDEX NUMBER — TS INDEX CROSS SECTION — FP= 1483.6 — CALCULATED WSE ABOVE SURFACE ELEVATION

ELEVATION REFERENCE MARK — ERM XXX

BASE FLOOD ELEVATION — 1462

SFH ZONE DESIGNATION — ZONE AE

FLOODWAY — 1

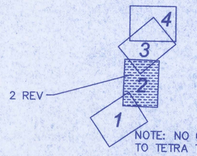
1

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
ERM #2	1422.55	FOUND BRASS CAP IN HANDHOLE IN INTERSECTION OF 35TH AVENUE AND HAPPY VALLEY ROAD. N: 986,915.82 E: 433,818.21

KEY MAP



1 NOTE: NO CHANGES WERE MADE TO TETRA TECH SHEETS 3 & 4

NO.	REVISION	BY	DATE
2			
1	Added Zone AH backwater near River-mile 9.65	DS/GB	10/03

CITY OF PHOENIX
MARICOPA COUNTY, ARIZONA

SKUNK CREEK
REVISED WORK STUDY MAP
LETTER OF MAP REVISION

Shaw™ EMCON/OWT, Inc.

1 ORIGINAL WORK STUDY MAP SEALED BY PEDRO A. CALZA AZ PE No. 30493 OF TETRA-TECH, INC.

TETRA TECH, INC.
INFRASTRUCTURE SOUTHWEST GROUP
4801 East Washington Street, Suite 250, Phoenix, AZ 85034
(602) 682-2000 FAX (602) 244-1164

	BY	DATE
DESIGN	LML	09/2002
DESIGN CHK.	PAC	09/2002
PLANS	LML	09/2002
PLANS CHK.	PAC	09/2002

SHEET 2 OF 4

ATTACHMENT D

PASEO HIGHLANDS PARK AND ADOBE HIGHLANDS SUBDIVISION INFORMATION

. FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this 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, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: Skunk Creek
Note: Fill out one form for each flooding source studied

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization.....complete Section B
Bridge/Culvert.....complete Section C
Dam .....complete Section D
Levee/Floodwall .....complete Section E
Sediment Transport.....complete Section F (if required)

Description Of Structure

1. **Name of Structure: 2-36" CM Pipes**

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: South of Pinnacle Peak Road along 35th Avenue

Downstream Limit/Cross Section: 9.00

Upstream Limit/Cross Section: 9.01

2. **Name of Structure:**

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure:

Downstream Limit/Cross Section:

Upstream Limit/Cross Section:

3. **Name of Structure:**

Type (check one) ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure:

Downstream Limit/Cross Section:

Upstream Limit/Cross Section:

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source:

Name of Structure:

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☐ Other (Describe):
- ☐ Drop structures
- ☐ Transitions in cross sectional geometry
- ☐ Energy dissipator

2. Drawing Checklist

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Hydraulic Considerations

The channel was designed to carry (cfs) and/or the -year flood.

The design elevation in the channel is based on (check one):

☐ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☐ At Transitions
☐ Other locations (specify):

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: Skunk Creek

Name of Structure: 2-36" CM Pipes

1. This revision reflects (check one):

- ☒ New bridge/culvert not modeled in the FIS
- ☐ Modified bridge/culvert previously modeled in the FIS
- ☐ New analysis of bridge/culvert previously modeled in the FIS

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8): HEC-2
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

- ☒ Dimensions (height, width, span, radius, length)
- ☒ Shape (culverts only)
- ☒ Material
- ☒ Beveling or Rounding
- ☒ Wing Wall Angle
- ☒ Skew Angle
- ☒ Distances Between Cross Sections
- ☒ Erosion Protection
- ☒ Low Chord Elevations – Upstream and Downstream
- ☒ Top of Road Elevations – Upstream and Downstream
- ☒ Structure Invert Elevations – Upstream and Downstream
- ☒ Stream Invert Elevations – Upstream and Downstream
- ☒ Cross-Section Locations

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☒ No If yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

D. DAM

Flooding Source:

Name of Structure:

1. This request is for (check one): ☐ Existing dam ☐ New dam ☐ Modification of existing dam
2. The dam was designed by (check one): ☐ Federal agency ☐ State agency ☐ Local government agency

   ☐ Private organization Name of the agency or organization:
3. Does the project involve revised hydrology? ☐ Yes ☐ No

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2).
4. Does the submittal include debris/sediment yield analysis? ☐ Yes ☐ No

   If yes, then fill out Section F (Sediment Transport).
   If No, then attach your explanation for why debris/sediment analysis was not considered.
5. Does the Base Flood Elevation behind the dam or downstream of the dam change?

   ☐ Yes ☐ No If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.

Stillwater Elevation Behind the Dam

FREQUENCY (% annual chance)	FIS	REVISED
10-year (10%)		
50-year (2%)		
100-year (1%)		
500-year (0.2%)		
Normal Pool Elevation		

6. Please attach a copy of the formal Operation and Maintenance Plan

E. LEVEE/FLOODWALL

1. System Elements

a. This Levee/Floodwall analysis is based on (check one):

☐ upgrading of an existing levee/floodwall system
☐ a newly constructed levee/floodwall system
☐ reanalysis of an existing levee/floodwall system

b. Levee elements and locations are (check one):

☐ earthen embankment, dike, berm, etc.	Station	to
☐ structural floodwall	Station	to
☐ Other (describe):	Station	to

c. Structural Type (check one):

☐ monolithic cast-in place reinforced concrete
☐ reinforced concrete masonry block
☐ sheet piling
☐ Other (describe):

d. Has this levee/floodwall system been certified by a Federal agency to provide protection from the base flood?

☐ Yes ☐ No

If Yes, by which agency?

e. Attach certified drawings containing the following information (indicate drawing sheet numbers):

1. Plan of the levee embankment and floodwall structures. Sheet Numbers:
2. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system. Sheet Numbers:
3. A profile of the BFE, closure opening outlet and inlet invert elevations, type and size of opening, and kind of closure. Sheet Numbers:
4. A layout detail for the embankment protection measures. Sheet Numbers:
5. Location, layout, and size and shape of the levee embankment features, foundation treatment, floodwall structure, closure structures, and pump stations. Sheet Numbers:

2. Freeboard

a. The minimum freeboard provided above the BFE is:

Riverine

3.0 feet or more at the downstream end and throughout	☐ Yes	☐ No
3.5 feet or more at the upstream end	☐ Yes	☐ No
4.0 feet within 100 feet upstream of all structures and/or constrictions	☐ Yes	☐ No

Coastal

1.0 foot above the height of the one percent wave associated with the 1%-annual-chance stillwater surge elevation or maximum wave runup (whichever is greater).	☐ Yes	☐ No
2.0 feet above the 1%-annual-chance stillwater surge elevation	☐ Yes	☐ No

2. Freeboard (continued)

Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Paragraph 65.10(b)(1)(ii) of the NFIP Regulations.

If No is answered to any of the above, please attach an explanation.

b. Is there an indication from historical records that ice-jamming can affect the BFE? ☐ Yes ☐ No

If Yes, provide ice-jam analysis profile and evidence that the minimum freeboard discussed above still exists.

3. Closures

a. Openings through the levee system (check one): ☐ exists ☐ does not exist

If opening exists, list all closures:

Channel Station	Left or Right Bank	Opening Type	Highest Elevation for Opening Invert	Type of Closure Device

(Extend table on an added sheet as needed and reference)

Note: Geotechnical and geologic data

In addition to the required detailed analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers [USACE] EM-1110-2-1906 Form 2086.)

4. Embankment Protection

a. The maximum levee slope landside is:

b. The maximum levee slope floodside is:

c. The range of velocities along the levee during the base flood is: (min.) to (max.)

d. Embankment material is protected by (describe what kind):

e. Riprap Design Parameters (check one): ☐ Velocity ☐ Tractive stress
Attach references

Reach		Sideslope	Flow Depth	Velocity	Curve or Straight	Stone Riprap			Depth of Toedown
						D_{100}	D_{50}	Thickness	
Sta	to								
Sta	to								
Sta	to								
Sta	to								
Sta	to								
Sta	to								

(Extend table on an added sheet as needed and reference each entry)

4. Embankment Protection (continued)

f. Is a bedding/filter analysis and design attached? ☐ Yes ☐ No

g. Describe the analysis used for other kinds of protection used (include copies of the design analysis):

Attach engineering analysis to support construction plans.

5. Embankment And Foundation Stability

a. Identify locations and describe the basis for selection of critical location for analysis:

☐ Overall height: Sta. ; height ft.

☐ Limiting foundation soil strength:

Sta. , depth to

strength ϕ = degrees, c = psf

slope: SS = (h) to (v)

(Repeat as needed on an added sheet for additional locations)

b. Specify the embankment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):

c. Summary of stability analysis results:

Case	Loading Conditions	Critical Safety Factor	Criteria (Min.)
I	End of construction		1.3
II	Sudden drawdown		1.0
III	Critical flood stage		1.4
IV	Steady seepage at flood stage		1.4
VI	Earthquake (Case I)		1.0

(Reference: USACE EM-1110-2-1913 Table 6-1)

d. Was a seepage analysis for the embankment performed? ☐ Yes ☐ No

If Yes, describe methodology used:

e. Was a seepage analysis for the foundation performed? ☐ Yes ☐ No

f. Were uplift pressures at the embankment landside toe checked? ☐ Yes ☐ No

g. Were seepage exit gradients checked for piping potential? ☐ Yes ☐ No

h. The duration of the base flood hydrograph against the embankment is hours.

Attach engineering analysis to support construction plans.

6. Floodwall And Foundation Stability

a. Describe analysis submittal based on Code (check one):

☐ UBC (1988) or ☐ Other (specify):

b. Stability analysis submitted provides for:

☐ Overturning ☐ Sliding If not, explain:

c. Loading included in the analyses were:

☐ Lateral earth @ P_A = psf; P_p = psf

☐ Surcharge-Slope @ , ☐ surface psf

☐ Wind @ P_w = psf

☐ Seepage (Uplift); ☐ Earthquake @ P_{eq} = %g

☐ 1%-annual-chance significant wave height: ft.

☐ 1%-annual-chance significant wave period: sec.

d. Summary of Stability Analysis Results: Factors of Safety.

Itemize for each range in site layout dimension and loading condition limitation for each respective reach.

Loading Condition	Criteria (Min)		Sta	To	Sta	To
	Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead & Wind	1.5	1.5				
Dead & Soil	1.5	1.5				
Dead, Soil, Flood, & Impact	1.5	1.5				
Dead, Soil, & Seismic	1.3	1.3				

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)

(Note: Extend table on an added sheet as needed and reference)

e. Foundation bearing strength for each soil type:

Bearing Pressure	Sustained Load (psf)	Short Term Load (psf)
Computed design maximum		
Maximum allowable		

f. Foundation scour protection ☐ is, ☐ is not provided. If provided, attach explanation and supporting documentation:

Attach engineering analysis to support construction plans.

7. Settlement

a. Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin? ☐ Yes ☐ No

b. The computed range of settlement is ft. to ft.

c. Settlement of the levee crest is determined to be primarily from :

☐ Foundation consolidation
☐ Embankment compression
☐ Other (Describe):

d. Differential settlement of floodwalls ☐ has ☐ has not been accommodated in the structural design and construction.

Attach engineering analysis to support construction plans.

8. Interior Drainage

a. Specify size of each interior watershed:

Draining to pressure conduit: acres
Draining to ponding area: acres

b. Relationships Established

Ponding elevation vs. storage	☐ Yes	☐ No
Ponding elevation vs. gravity flow	☐ Yes	☐ No
Differential head vs. gravity flow	☐ Yes	☐ No

c. The river flow duration curve is enclosed: ☐ Yes ☐ No

d. Specify the discharge capacity of the head pressure conduit: cfs

e. Which flooding conditions were analyzed?

• Gravity flow (Interior Watershed)	☐ Yes	☐ No
• Common storm (River Watershed)	☐ Yes	☐ No
• Historical ponding probability	☐ Yes	☐ No
• Coastal wave overtopping	☐ Yes	☐ No

If No for any of the above, attach explanation.

f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection. ☐ Yes ☐ No

If No, attach explanation.

g. The rate of seepage through the levee system for the base flood is cfs

h. The length of levee system used to drive this seepage rate in item g: ft.

8. Interior Drainage (continued)

i. Will pumping plants be used for interior drainage? ☐ Yes ☐ No

If Yes, include the number of pumping plants:
For each pumping plant, list:

	Plant #1	Plant #2
The number of pumps		
The ponding storage capacity		
The maximum pumping rate		
The maximum pumping head		
The pumping starting elevation		
The pumping stopping elevation		
Is the discharge facility protected?		
Is there a flood warning plan?		
How much time is available between warning and flooding?		

Will the operation be automatic? ☐ Yes ☐ No

If the pumps are electric, are there backup power sources? ☐ Yes ☐ No

(Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)

Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.

9. Other Design Criteria

a. The following items have been addressed as stated:

Liquefaction ☐ is ☐ is not a problem
Hydrocompaction ☐ is ☐ is not a problem
Heave differential movement due to soils of high shrink/swell ☐ is ☐ is not a problem

b. For each of these problems, state the basic facts and corrective action taken:

Attach supporting documentation

c. If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure?
☐ Yes ☐ No

Attach supporting documentation

d. Sediment Transport Considerations:

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

E. LEVEE/FLOODWALL (CONTINUED)

10. Operational Plan And Criteria

    a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP Regulations? ☐ Yes ☐ No

    b. Does the operation plan incorporate all the provisions for closure devices as required in Paragraph 65.10(c)(1) of the NFIP regulations? ☐ Yes ☐ No

    c. Does the operation plan incorporate all the provisions for interior drainage as required in Paragraph 65.10(c)(2) of the NFIP regulations? ☐ Yes ☐ No

    If the answer is No to any of the above, please attach supporting documentation.

11. Maintenance Plan

    a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP Regulations? ☐ Yes ☐ No
    If No, please attach supporting documentation.

12. Operations and Maintenance Plan

    Please attach a copy of the formal Operations and Maintenance Plan for the levee/floodwall.

F. SEDIMENT TRANSPORT

Flooding Source:

Name of Structure:

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the Base Flood Elevation (BFE); and/or based on the stream morphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including scour and deposition) to affect the BFEs, then provide the following information along with the supporting documentation:

Sediment load associated with the base flood discharge: Volume acre-feet

Debris load associated with the base flood discharge: Volume acre-feet

Sediment transport rate (percent concentration by volume)

Method used to estimate sediment transport:

Most sediment transport formulas are intended for a range of hydraulic conditions and sediment sizes; attach a detailed explanation for using the selected method.

Method used to estimate scour and/or deposition:

Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport:
Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

If a sediment analysis has not been performed, an explanation as to why sediment transport (including scour and deposition) will not affect the BFEs or structures must be provided.

ATTACHMENT E

LETTER FROM COMMUNITY OFFICIAL

City of Phoenix
STREET TRANSPORTATION DEPARTMENT

September 29, 2003

Andrea L. Ryon, P. E., Director
Engineering Division
Michael Baker Jr., Inc
3601 Eisenhower Avenue
Suite 600
Alexandria, Virginia 22304-6425

Dear Ms. Ryon:

RE: LETTER OF MAP REVISION FOR SKUNK CREEK
CASE NUMBER 03-09-0661P

The City of Phoenix will adopt and enforce the modified regulatory floodway, according to the Phoenix City Code, Article 1, Chapter 32B, Floodplains. A copy of the stated regulation is included with this submittal. The City of Phoenix also understands the responsibility and the liability for the inspections and to ensure flow carrying capacities for the Skunk Creek. Attached is a copy of the City of Phoenix Policy and Procedure for Maintenance of Drainage Facilities. Also attached is a copy of the City of Phoenix Floodplain Ordinance.

If you have any questions, please contact Mr. Hasan Mushtaq, Ph.D., P E., C.F. M., City of Phoenix Floodplain Manager, 200 W. Washington Street, 5th Floor, Phoenix, Arizona 85003, Phone number 602-262-4960, fax number 602-262-7322.

Sincerely,

Hasan Mushtaq Ph.D., P.E., C.F.M.
Floodplain Manager

HM/dw/skunk creek.doc

ATTACHMENT F

STREET MAINTENANCE DIVISION POLICY/PROCEDURE AND FLOODPLAIN ORDINANCE

CITY OF PHOENIX

STREET MAINTENANCE DIVISION POLICY AND PROCEDURE

NUMBER

MAINTENANCE OF DRAINAGE FACILITIES

SUBJECT

12-02-92

ISSUE DATE

PURPOSE:

To insure all drainage facilities are maintained and kept clear from objects that may impede the flow of storm runoff.

POLICY:

All drainage facilities shall be inspected and cleaned on a maintenance schedule.

PROCEDURE:

1. The Street Maintenance Drainage Foreman shall visually inspect each drainage facility in his/her section once a month.

2. The Drainage Foreman shall schedule the cleaning as needed, but no more than the established service levels, unless it is determined that if allowed to exist could become an obstruction to drainage.

3. The following is the established service levels.

   a) Man-made Drainage Easements: Inspected and cleaned, if needed, once a month.

   b) Dedicated Natural Washes: Inspected monthly and cleaned of debris twice annually.

   c) Un-dedicated Natural Washes: Inspect twice annually and notify adjacent property owner to clean as needed. If the property owner does not remove the debris from the wash, the Foreman shall advise the area Street Maintenance Field Inspector who shall follow through by notifying NIH - Zoning Enforcement.

   d) Man-made Detention Basins: Inspect monthly and clean as needed.

   e) Storm Drainage Inlets: Inspect monthly and clean as needed.

The Street Maintenance Section shall respond to any complaints regarding the clogging of drainage facilities and correct the problem within five days of notification. The above service levels shall be followed for routine maintenance. Extenuating circumstances may require deviation.

DTM:ve

Chapter 32B

FLOODPLAINS*

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* **Cross References:** Engineering and Architectural Services Department, § 2-27; Development Advisory Board, § 2-164 et seq.; building regulations, ch. 9; subdivisions, ch. 32; grading and drainage, ch. 32A.

State Law References: Floodplain management, A.R.S. § 48-3601 et seq.; municipal floodplain management programs, A.R.S. § 48-3610.

Article I. General

Sec. 32B-1. Implementation.
Sec. 32B-2. Definitions.

Article II. Regulations

Sec. 32B-3. Maps.
Sec. 32B-4. Classification of floodplains.
Sec. 32B-5. Regulation.
Sec. 32B-6. Interim elevations.
Sec. 32B-7. Coordination in floodplain management.
Sec. 32B-8. Non-prohibited construction.
Sec. 32B-9. Reserved.
Sec. 32B-9.1. Manufactured homes.
Sec. 32B-9.2. Mechanical and utility equipment.
Sec. 32B-9.3. Federal and State permits.
Sec. 32B-9.4. Openings in enclosures below a structure's lowest floor.
Sec. 32B-10. Sand and gravel operations.
Sec. 32B-11. Variance provisions.
Sec. 32B-12. Appeals.
Sec. 32B-13. Structures in violation of regulations.
Sec. 32B-14. Diversion of water flow.
Sec. 32B-15. Violation as separate offense.
Sec. 32B-16. Severability.
Sec. 32B-17. Floodplain plan review fees.

ARTICLE I.

GENERAL

Sec. 32B-1. Implementation.

To implement the regulation of the floodplain areas in the City of Phoenix, the City Council is designated as the Floodplain Board and the City Engineer is designated as the administrative agent for these regulations.
(Ord. No. G-2027, § 2)

Sec. 32B-2. Definitions.

Area of shallow flooding means a designated zone in which the base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and high velocity flow may be evident.

Area of special flood hazard means the land within a floodplain which is subject to inundation by the base flood.

Base flood means the flood having a one percent chance of being equalled or exceeded in any given year, i.e., the one-hundred-year flood.

Development means any manmade change to improved or unimproved real estate, including, but not limited to, buildings and other structures, utilities, pipelines, mining, dredging, filling, grading, paving, or excavation located within the area of special flood hazard.

Dwelling unit means any structure usable for residential purposes and which may be located in a single- or multiple-dwelling building, which includes working, sleeping, eating, cooking, recreation facilities, or a combination thereof, except a structure used only for storage purposes.

Flood or *floodwaters* means a temporary overflow of water on land not normally covered by water.

Flood boundary and floodway maps (FBFM) means the official map for the community on which the Federal Insurance Administration has delineated the area of special flood hazard and the selected floodway.

Flood insurance rate maps (FIRM) means the official maps on which the Federal Insurance Administration has delineated both the areas of special flood hazard and the risk premium insurance rates applicable to the community.

Flood insurance study means the official report provided by the Federal Insurance Administration that includes flood profiles, the flood boundary and floodway maps, and the water surface elevations of the base flood.

Floodplain means the relatively flat area adjoining the channel of a watercourse, or areas where drainage is or may be restricted by natural or manmade structures which may have been or may be covered partially or wholly by floodwater from a base flood.

Floodplain Board or *Board* means the City Council acting as the "Floodplain Board."

Floodway fringe area means that portion of the area of special flood hazard that is not included in the selected floodway.

Lowest floor means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

Manufactured home means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term "manufactured home" also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than one hundred eighty consecutive days. For insurance purposes the term "manufactured home" does not include park trailers, travel trailers, and other similar vehicles.

Manufactured home park or subdivision means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Mean sea level means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD of 1929) or other datum, to which base flood elevations shown on a community's flood insurance rate map are referenced.

Person means any individual or his agent, firm, partnership, association, corporation, or any agent of the aforementioned groups, or a federal, State, County or municipal government agency or political subdivision thereof.

Reasonable alteration or repair means any modification or improvement to existing facilities in which the total cost does not exceed fifty percent of the real cash value assessed at the commencement of construction. A reasonable alteration, however, should not be construed to mean any improvement which would increase the flood hazard to that property or the properties of surrounding homes.

Regulatory flood elevation means the elevation which is one foot above the "base flood" elevation for a "watercourse" for which the "base flood" elevation has been determined and shall be as determined by the criteria developed by the City Engineer for all other watercourses.

Selected floodway means the limits, as determined by the City Engineer, where the permitted encroachment in the floodplain will allow passage of the one-hundred-year flood without increasing the flood heights more than one foot. Additional hydraulic criteria such as maximum flow velocities of five feet per second at the limits of the selected floodway, smooth transitions around developments, and equal conveyance removal from each side will be used in computing the lines of the selected floodway.

Start of construction includes substantial improvement, and means the date the

building permit was issued, provided the actual start of construction, repair, reconstruction, placement, or other improvement was within one hundred eighty days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the state of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

Structure means a walled and roofed building or "manufactured home" that may or may not be habitable, may or may not be constructed on a permanent foundation, and was manmade.

Substantial improvement means any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds fifty percent of the market value of the structure either before the improvement or if the structure was damaged and is being restored, before the damage occurred. A substantial improvement will not be permitted nor should it be construed to mean any modification which will increase flood hazard risk.

Violation means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required by this chapter is presumed to be in violation until such time as that documentation is provided.

Watercourse means any lake, river, creek, stream, wash, arroyo, channel, or other body of water having banks and bed through which waters flow at least periodically. The term may include specifically designated areas in which flood damage may occur. (Ord. No. G-2027, § 2; Ord. No. G-3092, § 2)

Cross References: Definitions and rules of construction generally, § 1-2.

ARTICLE II.

REGULATIONS

Sec. 32B-3. Maps.

The areas of special flood hazard and the selected floodway for designated floodplains are shown on the current maps labeled "FIRM" and "Floodway," or as they may subsequently be amended, on file with the City Engineer, which maps are incorporated herein by reference. The maps are consistent with the criteria established by

the Arizona Department of Water Resources and Federal Emergency Management Agency. New or additional engineering data may be considered for re-evaluation of floodplain and floodway delineations if circumstances indicate such action is in the public interest. Any such scientific or technical data will be submitted to the office of the City Engineer for review and conformance with established policy.
(Ord. No. G-2027, § 2; Ord. No. G-2641, § 1; Ord. No. G-3092, § 3)

Sec. 32B-4. Classification of floodplains.

To encourage the safe and orderly development of floodplain land, the Board recognizes that the floodplains consist of two distinct areas: the floodway fringe area having lower water velocities and shallower depths of flow and, the selected floodway which contains greater flow depths and damaging velocities. The Board also recognizes that encroachment into the floodway fringe area will not substantially increase the flood hazard to adjoining properties. It is also recognized that development and construction within the selected floodway will require higher standards of engineering and construction than development within the floodway fringe area in order to insure that there is no substantial hazard to such development or construction and that it does not create a substantial hazard to other property within the floodplain.
(Ord. No. G-2027, § 2)

Sec. 32B-5. Regulation.

In order to promote the public health, safety and general welfare, the Floodplain Board will enforce the following regulations:

1. No person may either obstruct, divert, or reduce the capacity within the area of special flood hazard by constructing any development or altering the width or course of said floodways except as provided in these regulations.

2. Construction and development may occur within the floodway fringe and the areas of shallow flooding provided that the City Engineer review and approve all such requests for building permits prior to issuance by the Building Official. The City Engineer will ascertain that the proposed construction will incorporate appropriate floodproofing measures to the "regulatory flood elevation," or that the "lowest floor" is above the "regulatory flood elevation." A "dwelling unit" shall be so constructed so as to place the "lowest floor" elevation of the "dwelling unit" above the "regulatory flood elevation." Appropriate floodproofing measures may include, but not be limited to: providing access during flood events, maintaining electrical, water, and sewer services, designing foundations and structures to withstand hydraulic loadings expected during the base flood and designing windows, doorways and other openings located below the level of the base flood to prevent the entrance of floodwaters. Any

applicant for a building permit has the burden of furnishing the Development Services Director satisfactory evidence to enable him to either determine that the applicant's property does not fall within the area of special flood hazard or that there is no substantial hazard, either to the proposed development or to the property.

3. Construction and development may be permitted within the selected floodway subject to review and approval by the City Engineer, on an individual permit basis; however, no development in the selected floodway will be allowed which will increase the water surface elevation of the base flood.

4. These regulations do not affect the existing use of property in the areas of special flood hazard or the right to the continuation of that use, nor do they affect the reasonable repair or alteration of property for the purpose for which such property was lawfully used on February 12, 1974.

5. Any substantial improvements to existing structures must conform to the requirements of this chapter.

6. New developments which provide on-site waste disposal systems must locate them outside the boundary of the base flood.

7. Within one hundred twenty days after completion of any flood control project, the areas of special flood hazard and the selected floodway in the area benefited by such works will be redefined.

8. Any new building or development located or maintained within the area of special flood hazard must have prior written authorization from the City Engineer, except as specified in 32B-8 and 32B-10 of these regulations.

9. The owner must have a registered professional engineer, or registered land surveyor, certify to the Development Services Director the actual elevation of the minimum finished floor of any new or substantially improved structure located within the area of special flood hazard. A record of these certifications shall be maintained with the Development Services Director. In addition, where a nonresidential structure is intended to be made watertight below the base flood level, a registered professional engineer or registered architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this section. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained with the Development Services Director.

10. The City Engineer and the Development Services Director will obtain and maintain for public inspection, all records pertaining to the provisions of this ordinance.

11. No development shall increase the one-hundred-year twenty-four-hour peak or the one-hundred-year two-hour peak whichever is higher. Nor shall the time of the peak change or the total runoff exceed the pre-development total runoff.

12. In areas of special flood hazard without a selected floodway or its flood insurance rate map (FIRM) [or] flood insurance flood boundary and floodway maps (FBFM): No new flood boundary and floodway maps, construction, substantial improvements, or other development (including fill) shall be permitted unless it is demonstrated that the cumulative effect of the proposed developments, when combined with all other existing and proposed developments will not increase the water surface elevation of the base flood more than one foot at a point within the community.

(Ord. No. G-2027, § 2; Ord. No. G-3092, § 4; Ord. No. G-3313, § 1)

Sec. 32B-6. Interim elevations.

When base flood elevations and delineations are not available due to recent annexation or other causes, the City Engineer may obtain, review, and reasonably utilize any base flood elevation data available from a federal, State, County or other political subdivision for the purpose of securing a base flood determination, until such time as the Federal Emergency Management Agency has published the final FIRM (flood insurance rate maps) and FBFW (flood boundary and floodway maps).
(Ord. No. G-2027, § 2; Ord. No. G-3313, § 1)

Sec. 32B-7. Coordination in floodplain management.

The Floodplain Board may adopt other regulations which provide for coordination with all other interested and affected political subdivisions and State agencies and may enter into agreements for cooperative regulations, planning, designs, and construction. The Development Services Director shall advise the Flood Control District of Maricopa County and any other adjacent jurisdiction having responsibility for floodplain management, in writing, and provide a copy of any development plan of all applications for floodplain use permits or variances to develop land in a floodplain or floodway within one mile of the boundary between the City's area of jurisdiction and the area of jurisdiction of the District. The Development Services Director shall also advise the District and any adjacent jurisdiction having responsibility for floodplain management in writing and provide a copy of any development plan of any major development proposed within a floodplain or floodway which could affect floodplains, floodways or watercourses outside the City's area of jurisdiction. Written notice and a copy of the plan of development shall be sent to any adjacent jurisdiction no later than

three working days after having been received.
(Ord. No. G-2027, § 2; Ord. No. G-3092, § 5; Ord. No. G-3313, § 1)

Sec. 32B-8. Non-prohibited construction.

Written authorization shall not be required nor shall the Floodplain Board prohibit:

1. The construction of bridges, culverts, dikes, and other structures necessary to the construction of public highways, roads, and streets intersecting or crossing a watercourse.

2. The construction of storage dams for watering livestock or wildlife structures on banks of a creek, stream, river, wash, arroyo or other watercourses to prevent erosion of or damage to adjoining land, or dams for the conservation of floodwaters as permitted by A.R.S. tit. 45, ch. 3.1 (A.R.S. § 45-801.01 et seq.).

3. Construction of tailing dams and waste disposal areas for use in connection with mining and metallurgical operations.

(Ord. No. G-2027, § 2)

Sec. 32B-9. Reserved.

Editors Note: Section 32B-9 was repealed; see Ord. No. G-3092, § 6.

Sec. 32B-9.1. Manufactured homes.

Any manufactured homes to be placed within the area of special flood hazard shall be installed using methods and practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated so that the bottom of the structural frame or the lowest point of any attached appliances, whichever is lower, is at or above the regulatory flood elevation and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State requirements.
(Ord. No. G-3092, § 6)

Sec. 32B-9.2. Mechanical and utility equipment.

Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
(Ord. No. G-3092, § 6)

Sec. 32B-9.3. Federal and State permits.

All development located within an area of special flood hazard shall obtain all permits required by State and federal law, specifically that required by section 404 of the Federal Water Pollution Control Amendments of 1972.
(Ord. No. G-3092, § 6)

Sec. 32B-9.4. Openings in enclosures below a structure's lowest floor.

For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
(Ord. No. G-3092, § 6)

Sec. 32B-10. Sand and gravel operations.

Sand and gravel operations are allowed within the floodplain subject to the following conditions:

1. Within the selected floodway, sand and gravel operations may be conducted without permit provided that:

   (a) The operations are restricted to [the] extraction of sand and gravel for commercial purposes; and

   (b) Excavations are not so located nor of such depth as to present a hazard to other development, including, but not limited to, roads, bridges, culverts, and utilities.

2. No stockpiling, within the selected floodway, of material or tailings that may obstruct, divert, or retard the flow of floodwaters will be permitted except as reviewed and approved by the City Engineer, on an individual permit basis.

3. Stockpiling of sand and gravel products within the floodway fringe area may be done without permit provided that the operator furnishes the City Engineer satisfactory evidence that such stockpiling is within the floodway fringe area rather than in the selected floodway.

4. Excavations for sand and gravel for commercial purposes within the floodway fringe area which exceed the definitions contained in section 32A-6, paragraph (b)(1) [sic] (Grading and Drainage) of the City Code will be permitted subject to review and approval by the City Engineer, on an individual permit basis.

(Ord. No. G-2027, § 2)

Sec. 32B-11. Variance provisions.

A. The City Engineer may authorize variances from the terms of this chapter when a literal enforcement of any provisions of this ordinance would result in an unnecessary property hardship and when evidence is presented demonstrating to the satisfaction of the City Engineer that all of the following conditions are fulfilled:

1. That special conditions and circumstances exist which are peculiar to the land or structure involved and which are not applicable to other lands or structures within the same general area such as a new structure to be erected on a lot of one-half acre or less, contiguous to and surrounded by lots with existing structures built below the level of the base flood; and

2. That the alleged hardships caused by literal interpretation of the provisions of this chapter are property hardships which include more than personal inconvenience and financial hardships, and do not result from the action of the owner or the applicant; and

3. That the variances will not be detrimental to persons residing or working in the vicinity and to adjacent property, to the neighborhood and to the public welfare in general; and

4. That the variance is the minimum variance that will make possible the reasonable use of the land or structure; and

5. That appropriate and specific conditions have been stipulated by the City Engineer in connection with the variances as may be deemed necessary in order to fully carry out the intent of the Floodplain Ordinance. The stipulation may include, among other things, a requirement that the applicant insert a note on any future deed or other conveyance of the property stating that the property is located in a floodprone area. The notice will include the number of feet that the lowest non-floodproofed floor of the proposed structure is below the base flood level and a statement that the actuarial flood insurance rates increase as the first floor elevation decreases. A violation of any condition shall be considered a violation of the Floodplain Ordinance and such violation shall render the variance null and void; and

6. That the burden of proof in all matters heard by the City Engineer shall rest with the applicant. The granting of a variance is a matter of grace, resting on the discretion of the City Engineer, and a refusal is not a denial of a right, conditional or otherwise.

B. A variance will be issued for the reconstruction, rehabilitation, or restoration of all structures listed on the National or State Register of Historic Places or the State inventory of historic places, without regard to conflicting procedures and provisions set forth in this section.
(Ord. No. G-2027, § 2)

Sec. 32B-12. Appeals.

Appeals from decisions of the City Engineer in application of these regulations may be taken to the Development Advisory Board acting as the Floodplain Appeal Board. Any person aggrieved by a decision of the Floodplain Appeal Board may bring special action in a court of competent jurisdiction. The Floodplain Appeal Board, when reviewing an appeal from a decision of the City Engineer, shall follow the rules and standards set forth in this ordinance.
(Ord. No. G-2027, § 2; Ord. No. G-3313, § 1; Ord. No. G-4176, § 13, passed 5-19-1999, eff. 6-18-1999)

Sec. 32B-13. Structures in violation of regulations.

Except as provided in paragraphs 32B-8 and 32B-10, all new development located or maintained within any area of special flood hazard in violation of the regulations of this chapter and without written authorization from the Floodplain Board or the City Engineer as administrative agent of the Floodplain Board is hereby declared to be a public nuisance per se and may be abated, prevented or restrained by action of the City.
(Ord. No. G-2027, § 2)

Sec. 32B-14. Diversion of water flow.

A. It is unlawful for any person to divert, retard, or obstruct any watercourse in the City of Phoenix whenever such action creates a hazard to life or property without securing the written authorization required by the preceding regulations.

B. Any person violating the provisions of this section shall be guilty of a misdemeanor.
(Ord. No. G-2027, § 2)

Sec. 32B-15. Violation as separate offense.

Each day of violation of these regulations shall constitute a separate offense.

(Ord. No. G-2027, § 2)

Sec. 32B-16. Severability.

If any provision of this ordinance is held invalid, such invalidity shall not affect other provisions which can be given effect without the invalid provision, and to this end the provisions of this ordinance are declared to be severable.
(Ord. No. G-2027, § 2)

Sec. 32B-17. Floodplain plan review fees.

The Development Services Director shall collect the fees set forth in this section before providing floodplain plan review services:

FLOODPLAIN PLAN REVIEW
FEE SCHEDULE
Effective September 1, 1987

1. Generated through grading and drainage review:

   $240.00/plan sheet for office review.

   $170.00/plan sheet for third review and each thereafter.

   $240.00/plan sheet for revisions to approved plans.

   $125.00/plan sheet for updates to approved plans.

2. Generated through building safety check:

   $17.00/form, finished floor requirement. (Form 126-225D Rev.)

   $240.00/plan sheet for office review.

(Ord. No. G-2217, § 1; Ord. No. G-2226, § 2; Ord. No. G-2512, § 1; Ord. No. G-2629, § 1; Ord. No. G-2787, § 1; Ord. No. G-3011, § 1; Ord. No. G-3127, § 3)
Cross References: Development Services Department fee schedule, app. A.2.

U.S. Department of Transportation

Federal Highway Administration

Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges

December 1988

Office of Engineering
Bridge Division

Item 61 - Channel and Channel Protection 1 digit

This item describes the physical conditions associated with the flow of water through the bridge such as stream stability and the condition of the channel, riprap, slope protection, or stream control devices including spur dikes. The inspector should be particularly concerned with visible signs of excessive water velocity which may affect undermining of slope protection or footings, erosion of banks, and realignment of the stream which may result in immediate or potential problems. Accumulation of drift and debris on the superstructure and substructure should be noted on the inspection form but not included in the condition rating.

Rate and code the condition in accordance with the previously described general condition ratings and the following descriptive codes:

Code	Description
N	Not applicable. Use when bridge is not over a waterway.
9	There are no noticeable or noteworthy deficiencies which affect the condition of the channel.
8	Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.
7	Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.
6	Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor stream bed movement evident. Debris is restricting the waterway slightly.
5	Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.
4	Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the waterway.
3	Bank protection has failed. River control devices have been destroyed. Stream bed aggradation, degradation or lateral movement has changed the waterway to now threaten the bridge and/or approach roadway.
2	The waterway has changed to the extent the bridge is near a state of collapse.
1	Bridge closed because of channel failure. Corrective action may put back in light service.
0	Bridge closed because of channel failure. Replacement necessary.

Item 62 - Culverts 1 digit

This item evaluates the alignment, settlement, joints, structural condition, scour, and other items associated with culverts. The rating code is intended to be an overall condition evaluation of the culvert. Integral wingwalls to the first construction or expansion joint shall be included in the evaluation. For a detailed discussion regarding the inspection and rating of culverts, consult Report No. FHWA-IP-86-2, Culvert Inspection Manual, July 1986.

Item 58 - Deck, Item 59 - Superstructure, and Item 60 - Substructure shall be coded N for all culverts.

Rate and code the condition in accordance with the previously described general condition ratings and the following descriptive codes:

Code	Description
N	Not applicable. Use if structure is not a culvert.
9	No deficiencies.
8	No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.
7	Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel. Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, or pipes. Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting.
6	Deterioration or initial disintegration, minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls, or pipes. Metal culverts have a smooth curvature, non-symmetrical shape, significant corrosion or moderate pitting.
5	Moderate to major deterioration or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection in one section, significant corrosion or deep pitting.
4	Large spalls, heavy scaling, wide cracks, considerable efflorescence, or opened construction joint permitting loss of backfill. Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls or pipes. Metal culverts have significant distortion and deflection throughout, extensive corrosion or deep pitting.

(codes continued on the next page)

Item 62 - Culverts (cont'd)

3 Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls or pipes. Metal culverts have extreme distortion and deflection in one section, extensive corrosion, or deep pitting with scattered perforations.

2 Integral wingwalls collapsed, severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic. Metal culverts have extreme distortion and deflection throughout with extensive perforations due to corrosion.

1 Bridge closed. Corrective action may put back in light service.

0 Bridge closed. Replacement necessary.

Item 63 - Estimate Remaining Life

Item no longer used.

Item 64 - Operating Rating 3 digits

This capacity rating, referred to as the operating rating, will result in the absolute maximum permissible load level to which the structure may be subjected for the vehicle type used in the rating. Code the operating rating as a 3-digit code composed of 2 segments.

Segment	Description	Length
64A	Type of loading	1 digit
64B	Gross load in tons	2 digits

It should be emphasized that for HS loading, the total weight in tons of the entire vehicle should be coded; that is, HS20 shall be coded 236 even though the HS20 lane loading controls and is used to determine the rating. Likewise HS10 shall be coded 218.

Even though any of the AASHTO loads or other special State loads may be used to calculate the operating rating, it shall be submitted to the National Bridge Inventory in an equivalent HS loading.

The required reporting of an equivalent HS loading may be phased in over a 5-year period. Therefore, all National Bridge Inventory updates in 1993 shall report the operating and inventory ratings in an equivalent HS loading regardless of the loading used to calculate the ratings. The following types of loadings will be acceptable until 1993.

Appendix C

National Bridge Inspection Standards

CODE OF FEDERAL REGULATIONS

23 HIGHWAYS - PART 650

Subpart C - National Bridge Inspection Standards

§650.301 Application of standards.

The National Bridge Inspection Standards in this part apply to all structures defined as bridges located on all public roads. In accordance with the AASHTO (American Association of State Highway and Transportation Officials) Transportation Glossary, a "bridge" is defined as a structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

§650.303 Inspection procedures.

(a) Each highway department shall include a bridge inspection organization capable of performing inspections, preparing reports, and determining ratings in accordance with the provisions of the AASHTO Manual[1] and the Standards contained herein.

(b) Bridge inspectors shall meet the minimum qualifications stated in §650.307.

(c) Each structure required to be inspected under the Standards shall be rated as to its safe load carrying capacity in accordance with Section 4 of the AASHTO Manual. If it is determined under this rating procedure that the maximum legal load under State law exceeds the load permitted under the Operating Rating, the bridge must be posted in conformity with the AASHTO Manual or in accordance with State law.

(d) Inspection records and bridge inventories shall be prepared and maintained in accordance with the Standards.

(e) The individual in charge of the organizational unit that has been delegated the responsibilities for bridge inspection, reporting and inventory shall determine and designate on the individual inspection and inventory records and maintain a master list of the following:

(1) Those bridges which contain fracture critical members, the location and description of such members on the bridge and the inspection frequency and procedures for inspection of such members. (Fracture critical members are tension members of a bridge whose failure will probably cause a portion of or the entire bridge to collapse.)

(2) Those bridges with underwater members which cannot be visually evaluated during periods of low flow or examined by feel for condition, integrity and safe load capacity due to excessive water depth or turbidity. These members shall be described, the inspection frequency stated, not to exceed five years, and the inspection procedure specified.

(3) Those bridges which contain unique or special features requiring additional attention during inspection to ensure the safety of such bridges and the inspection frequency and procedure for inspection of each such feature.

(4) The date of last inspection of the features designated in paragraphs (e)(1) through (e)(3) of this section and a description of the findings and follow-up actions, if necessary, resulting from the most recent inspection of fracture critical details, underwater members or special features of each so designated bridge.

§650.305 Frequency of inspections.

(a) Each bridge is to be inspected at regular intervals not to exceed 2 years in accordance with Section 2.3 of the AASHTO Manual.

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[1] *The "AASHTO Manual" referred to in this part is the "Manual for Maintenance Inspection of Bridges 1983" together with subsequent interim changes or the most recent version of the AASHTO manual published by the American Association of State Highway and Transportation Officials. A copy of the Manual may be examined during normal business hours at the office of each Division Administrator of the Federal Highway Administration, at the office of each Regional Federal Highway Administrator, and at the Washington Headquarters of the Federal Highway Administration. The addresses of those document inspection facilities are set forth in Appendix D to Part 7 of the regulations of the Office of the Secretary (40 CFR Part 7). In addition, a copy of the Manual may be secured upon payment in advance by writing to the American Association of State Highway and Transportation Officials, 444 N. Capitol Street, N.W., Suite 225, Washington, D.C. 20001.*

(b) Certain types or groups of bridges will require inspection at less than 2-year intervals. The depth and frequency to which bridges are to be inspected will depend on such factors as age, traffic characteristics, state of maintenance, and known deficiencies. The evaluation of these factors will be the responsibility of the individual in charge of the inspection program.

(c) The maximum inspection interval may be increased for certain types or groups of bridges where past inspection reports and favorable experience and analysis justifies the increased interval of inspection. If a State proposes to inspect some bridges at greater than the specified 2-year interval, the State shall submit a detailed proposal and supporting data to the Federal Highway Administrator for approval.

§650.307 Qualifications of personnel.

(a) The individual in charge of the organizational unit that has been delegated the responsibilities for bridge inspection, reporting, and inventory shall possess the following minimum qualifications:

(1) Be a registered professional engineer; or

(2) Be qualified for registration as a professional engineer under the laws of the State; or

(3) Have a minimum of 10 years experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the, "Bridge Inspector's Training Manual"[2], which has been developed by a joint Federal-State task force, and subsequent additions to the manual.[3]

(b) An individual in charge of a bridge inspection team shall possess the following minimum qualifications:

(1) Have the qualifications specified in paragraph (a) of this section; or

(2) Have a minimum of 5 years experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the "Bridge Inspector's Training Manual", which has been developed by a joint Federal-State task force.

(3) Current certification as a Level III or IV Bridge Safety Inspector under the National Society of Professional Engineer's program for National Certification in Engineering Technologies (NICET)[4] is an alternative acceptable means for establishing that a bridge inspection team leader is qualified.

§650.309 Inspection report.

The findings and results of bridge inspections shall be recorded on standard forms. The data required to complete the forms and the functions which must be performed to compile the data are contained in Section 3 of the AASHTO Manual.

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[2]The "Bridge Inspector's Training Manual" may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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[3]The following publications are supplements to the "Bridge Inspector's Training Manual": "Bridge Inspector's Manual for Movable Bridges," 1977, GPO Stock No. 050-002-00103-5; "Culvert Inspector's Training Manual," July 1986, GPO Stock No. 050-001-0030-7; and "Inspection of Fracture Critical Bridge Members," 1986, GPO Stock No. 050-001-00302-3.

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§650.311 Inventory.

(a) Each State shall prepare and maintain an inventory of all bridge structures subject to the Standards. Under these Standards, certain structure inventory and appraisal data must be collected and retained within the various departments of the State organization for collection by the Federal Highway Administration as needed. A tabulation of this data is contained in the structure inventory and appraisal sheet distributed by the Federal Highway Administration as part of the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges (Coding Guide) in January of 1979. Reporting procedures have been developed by the Federal Highway Administration.

(b) Newly completed structures, modification of existing structures which would alter previously recorded data on the inventory forms or placement of load restriction signs on the approaches to or at the structure itself shall be entered in the State's inspection reports and the computer inventory file as promptly as practical, but no later than 90 days after the change in the status of the structure for bridges directly under the State's jurisdiction and no later than 180 days after the change in status of the structure for all other bridges on public roads within the State.

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[4]For information on NICET program certification contact: National Institute for Certification in Engineering Technologies, 1420 King Street, Alexandria, Virginia 22314. Attention: John D. Antrim, P.E., Phone (703) 684-2835.

Effective date October 25, 1988.