

VOLUME 1

DUCK CREEK HYDROLOGIC UNIT

TECHNICAL DATA APPENDIX

CLARK COUNTY, NEVADA

FLOOD INSURANCE STUDY

PREPARED FOR

**OFFICE OF RISK ASSESSMENT
FEDERAL INSURANCE ADMINISTRATION
FEDERAL EMERGENCY MANAGEMENT AGENCY**

PREPARED BY

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OFFICE COPY
Regional Flood Control District

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SEP 1 1992

**REGIONAL
FLOOD CONTROL DISTRICT**

**DUCK CREEK HYDROLOGIC UNIT
TECHNICAL DATA APPENDIX**

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I. BLUE DIAMOND AND UNNAMED FANS

I. BLUE DIAMOND AND UNNAMED FANS

Attachment I-1 shows the locations of the fan apexes. The areas subject to alluvial fan flooding were delineated based on the information shown on the accompanying draft work maps, site investigation, and recent aerial photographs. The recent aerial photographs are shown on maps entitled "Las Vegas," dated April 1991, and prepared by Cooper Aerial of Nevada at a scale of 1 inch = 400 feet.

The flood frequency curves developed at the apexes of the fans are log-normal. Means and standard deviations for the curves were found using 100-year discharge values determined by James M. Montgomery Consulting Engineers, Inc. (JMM), and 2-year discharge values determined using U.S. Army Corps of Engineers (COE) regional relationships. The 100-year discharge values are listed in the Technical Appendix to JMM's report entitled "Las Vegas Valley Flood Insurance Study Hydrology Report," dated September 1991. These values are 14,828 cubic feet per second (cfs) at the apex of Blue Diamond Fan, and 1,134 cfs at the apex of the unnamed fan. The COE's regional relationships are presented in its report entitled "Hydrologic Documentation for Feasibility Study, Las Vegas Wash and Tributaries, Clark County, Nevada," dated April 1988. The 2-year discharge values are 174 cfs at the apex of Blue Diamond Fan, and 10 cfs at the apex of the unnamed fan. The flood frequency curves are shown in Attachment I-2. EXPLAIN DEVIATION FROM FIS Qs FOR 10, 50 & 500 YR.

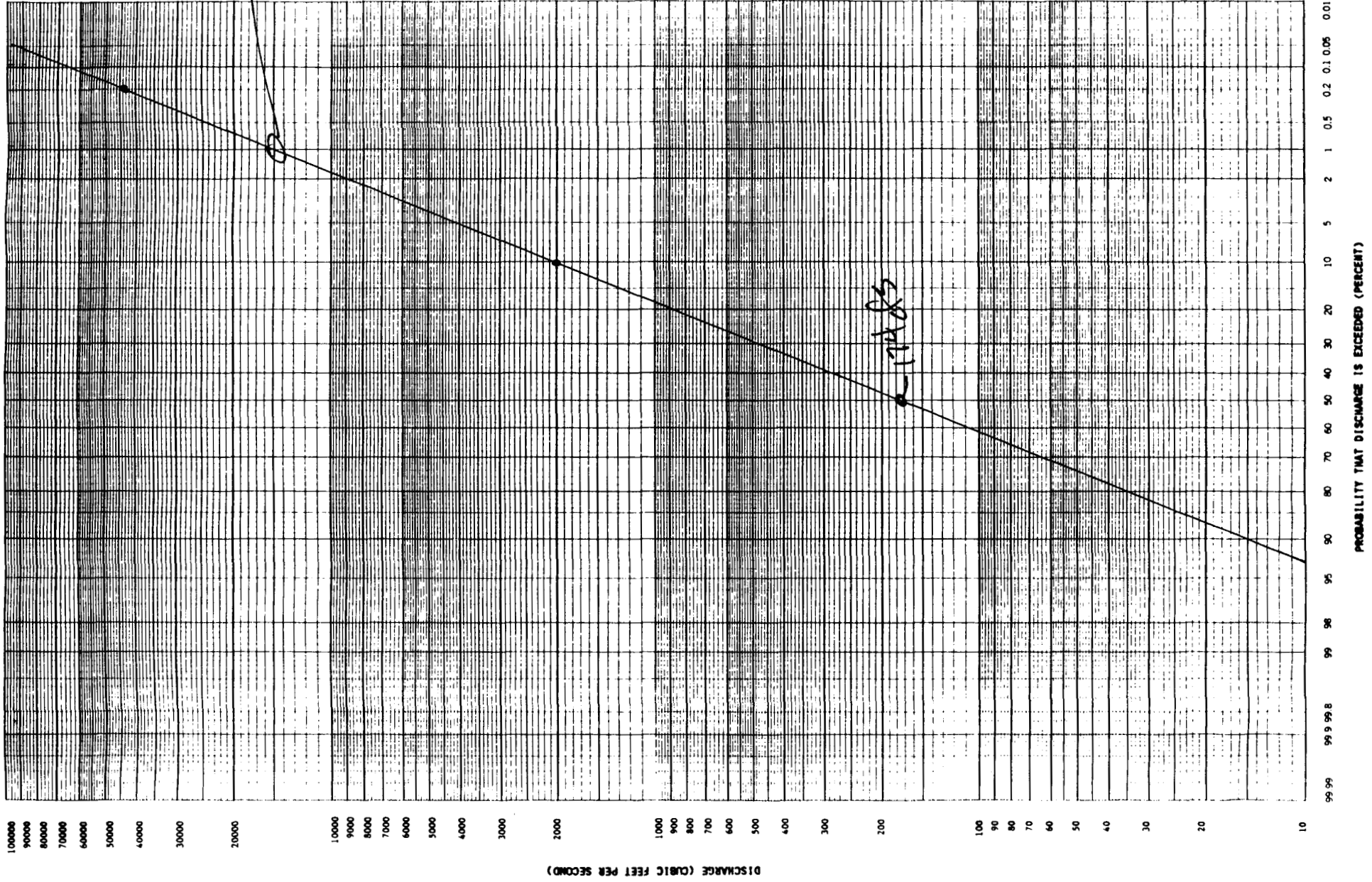
The Federal Emergency Management Agency's FAN program was used to compute the contour widths corresponding to flood insurance zone boundaries. The results are shown on the draft work maps. For Blue Diamond Fan, two boundaries are shown on the northern side of the fan between elevations 2,352 and 2,644 feet National Geodetic Vertical Datum. As indicated by the topographic information shown on the work maps and verified by field inspection, flood flow not exceeding 1.5 feet in energy would be confined to south of the southernmost of those two boundaries. In the multiple channel region of the Blue Diamond alluvial fan, the flow corresponding to 1.5 feet in energy is 6,954 cfs. Therefore, for flows less than 6,954 cfs, contour widths were measured using the southernmost of the two northern boundaries; for flows greater than 6,954 cfs, contour widths were measured using the northernmost boundary. The computations for both fans are given in Attachment I-3.

ATTACHMENT I - 1
LOCATION MAP

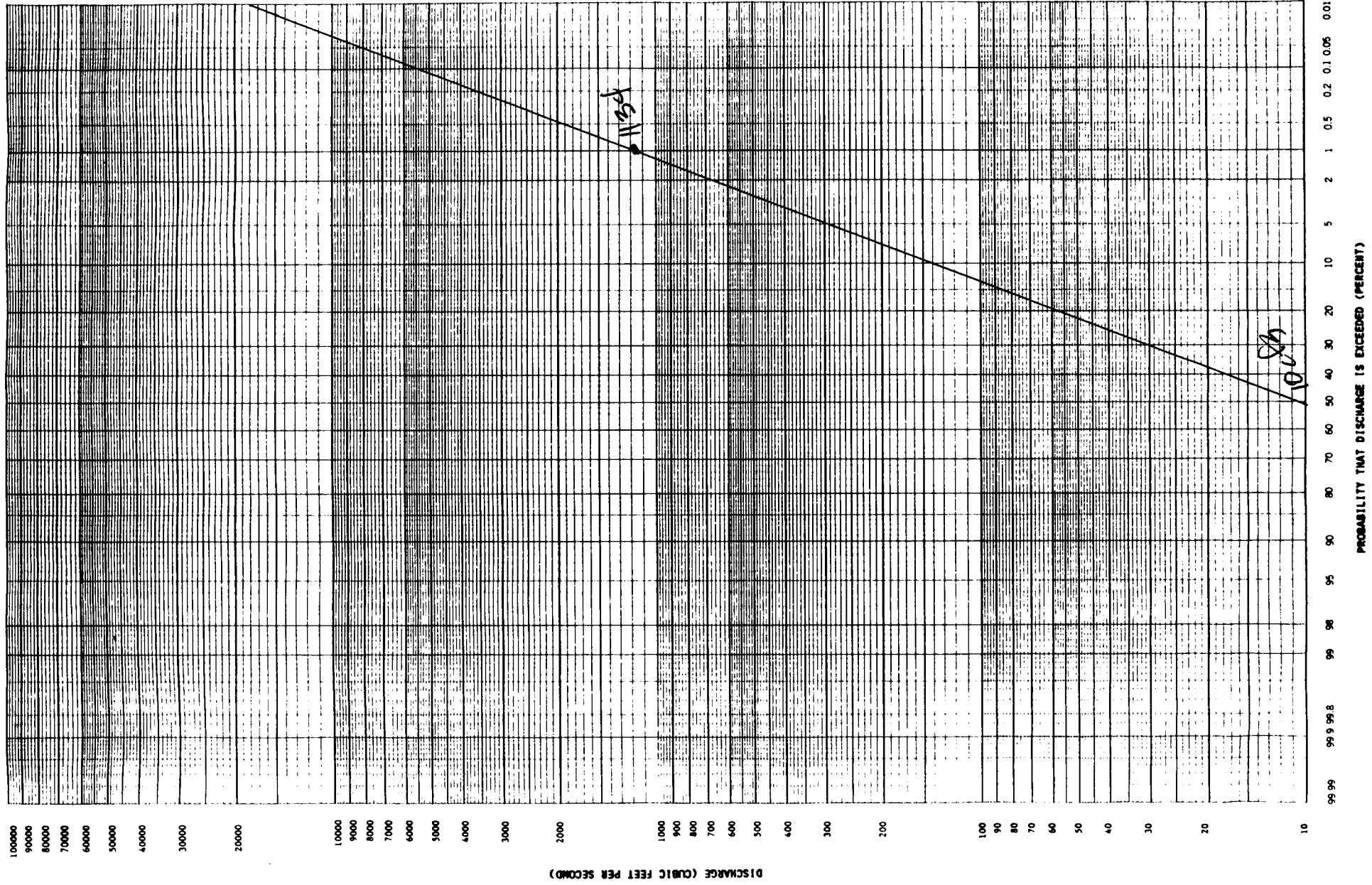


ATTACHMENT I - 2
FLOOD FREQUENCY CURVES AT THE APEXES
OF THE FANS

✓ 14828
AT APEX OF BLUE DIAMOND FAN ($A = 69.5 \text{ mi}^2$)



AT APEX OF UNNAMED FAN ($A = 1.3 \text{ m}^2$)



ATTACHMENT I - 3
COMPUTATIONS PERFORMED TO PLACE THE FLOOD
INSURANCE ZONE BOUNDARIES FOR BOTH FANS

BLUE DIAMOND FAN

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY MEAN, STANDARD DEVIATION, AND SKEW

MEAN = 2.240000
STANDARD DEVIATION = 0.830000
SKEW = 0.0

SUMMARY OF DISCHARGES:

10-YEAR DISCHARGE =	2012	} DO NOT	FIS
50-YEAR DISCHARGE =	8803		
100-YEAR DISCHARGE =	14821	- MATCHES	FIS
500-YEAR DISCHARGE =	42547		

does not

5100
11,800
14,800
26,800

STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=0.6338+\text{LOG}(Q)$

MEAN OF Z = 2.873788
STANDARD DEVIATION = 0.830000
SKEW = 0.000000
TRANSFORMATION CONSTANT = 10.487017

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	4.3032 Q	
0.5	0.3	49	0.74518	0.92061	9083
1.5	1.0	756	0.22277	0.49770	4910
2.5	1.7	2712	0.07852	0.25284	2495
3.5	2.3	6288	0.03089	0.13805	1350
4.5	3.0	11787	0.01440	0.07779	743

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	4.3032 Q	
3.5	0.4	68	0.68851	0.89439	8824
4.5	0.6	238	0.43480	0.72363	7140
5.5	0.9	649	0.24804	0.52952	5224
6.5	1.3	1496	0.13529	0.35966	3549
7.5	1.7	3059	0.06984	0.23296	2298
8.5	2.2	5719	0.03445	0.14933	1465
9.5	2.8	9974	0.01760	0.08982	873

MULTIPLE-CHANNEL REGION

SLOPE = 0.0150000
 N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	4.3032 Q	
0.5	0.4	421	0.32244	0.61722	23141
1.5	1.0	6954	0.02712	0.12609	4721

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	4.3032 Q	
3.5	0.5	1163	0.16516	0.40859	15319
4.5	0.8	3315	0.06404	0.21967	8230
5.5	1.1	7650	0.02391	0.11474	4302

BLUE DIAMOND ALLUVIAL FAN

ELEVATION	WS	WB	P(v>3.5)	P(v>4.5)
2220	23000	23000	0.006660	0.003578
2240	22000	22000	0.006963	0.003741
2260	21000	21000	0.007295	0.003919
2280	20000	20000	0.007660	0.004115
2300	18000	18000	0.008511	0.004572
2320	17800	17800	0.008606	0.004624
2340	16500	16500	0.009284	0.004988
2360	15000	15200	0.010171	0.005445
2380	13500	13900	0.011247	0.005996
2400	12300	13200	0.012193	0.006429
2420	11400	12900	0.012956	0.006738
2440	10500	12300	0.013932	0.007180
2460	9400	11700	0.015310	0.007768
2480	8200	10800	0.017296	0.008651
2500	7200	9800	0.019537	0.009691
2520	6100	8400	0.022994	0.011373
2540	5500	7500	0.025564	0.012675
2560	5000	6600	0.028349	0.014171
2580	4500	5850	0.031621	0.015868
2600	3700	4950	0.038181	0.019021
2620	3500	4000	0.042083	0.021828
2640	2700	2750	0.056419	0.030164
2660	1900	1900	0.080626	0.043316
2680	1100	1100	0.139264	0.074818

UNNAMED FAN

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY MEAN, STANDARD DEVIATION, AND SKEW

MEAN = 1.020000
STANDARD DEVIATION = 0.875000
SKEW = 0.0

SUMMARY OF DISCHARGES:

10-YEAR DISCHARGE = 138
50-YEAR DISCHARGE = 656
100-YEAR DISCHARGE = 1136
500-YEAR DISCHARGE = 3455

STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=0.7044+\text{LOG}(Q)$

MEAN OF Z = 1.724375
STANDARD DEVIATION = 0.875000
SKEW = 0.000000
TRANSFORMATION CONSTANT = 3.525289

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	5.0626 Q	
0.5	0.3	49	0.22544	0.51750	1716
1.5	1.0	756	0.01742	0.09483	309

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	5.0626 Q	
3.5	0.4	68	0.18073	0.45181	1498
4.5	0.6	238	0.06304	0.23043	763
5.5	0.9	649	0.02030	0.10875	358

MULTIPLE-CHANNEL REGION

SLOPE = 0.0170000
N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)	
			1.0000			
			Q	5.0626 Q		
0.5	0.4	432	0.03311	0.15450	1929	

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)	
			1.0000			
			Q	5.0626 Q		
3.5	0.5	995	0.01242	0.07608	908	

**II. BLUE DIAMOND WASH
AND
SOUTH BRANCH BLUE DIAMOND WASH**

**(UNION PACIFIC RAILROAD
TO INTERSTATE 15)**

II. BLUE DIAMOND WASH AND SOUTH BRANCH BLUE DIAMOND WASH (UNION PACIFIC RAILROAD TO INTERSTATE 15)

The flood frequency curves for Blue Diamond Wash and South Branch Blue Diamond Wash at the Union Pacific Railroad were defined by the identification of two points for each wash through which flow would pass to enter the respective culverts. The frequency at which a given discharge is exceeded between those points is a function of the frequency at which it is exceeded at the apex of the Blue Diamond alluvial fan, the width of the opening between the two points, and the width of the area subject to alluvial flooding at the elevation of the two points. The points chosen for each wash are shown on Attachment II-1. The width of the opening and width of the area subject to alluvial fan flooding are 1,350 and 12,300 feet for Blue Diamond Wash and 1,300 and 12,300 feet for South Branch Blue Diamond Wash, respectively. A derivation of the method used is given in Attachment II-2. Within that method, flow values with recurrence intervals of 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 200, and 500 years were computed. The flood frequency curves at the Union Pacific Railroad were defined by fitting a log-Pearson Type III distribution to those pairs of flow values and recurrence intervals.

TABLE SHOWING RESULTS

CULVERT
CAPACITY
APPROX 175

The flood hazard information shown on the draft work maps reflects alluvial fan flooding from flows exceeding the capacity of Blue Diamond Wash. The HEC-2 model prepared by James M. Montgomery Consulting Engineers, Inc. (JMM) was slightly revised in the determination of the channel capacity of Blue Diamond Wash. The revisions were:

- the addition of a cross section at Decatur Boulevard
- the definition of the conveyance area of the main wash through encroachment stations IS DASHED LINE ON WM A FLOODWAY

The analysis showed that just downstream of Cross Section 24 (where the right bank is approximately 2,384 feet National Geodetic Vertical Datum (NGVD)), the capacity of Blue Diamond Wash is approximately 2,000 cubic feet per second (cfs). At Decatur Boulevard it was found that approximately 50 percent of the flow in the wash at the road crossing (1,000 cfs) would continue east, not following the wash. The remaining 50 percent of the flood flow (1,000 cfs) was modeled as if it followed the wash down to Cross Section 20. Those percentages were estimated from the cross-sectional areas to the left and right of the crossing of Decatur Boulevard when it is flowing full. Attachment II-3 is the HEC-2 model for Blue Diamond Wash.

WHAT HAPPENS
TO REMAINING 100%

The alluvial fan flooding for Blue Diamond Wash was modeled the following way. Below elevation 2,384 feet only that part of the flow exceeding 2,000 cfs was modeled as alluvial fan flooding originating at the breakout point on the right bank. Flows of less than 2,000 cfs were modeled as though they proceeded downstream to Decatur Boulevard. Below Decatur Boulevard only 50 percent of the flow was modeled as alluvial fan flooding. The remaining 50 percent (of flows less than 2,000 cfs) was modeled as though it proceeded downstream to Cross Section 20. At that point the wash vanishes. The remaining flow was modeled as alluvial fan flooding. The computations of the 100-year flood depth and velocity zones are given in Attachment II-4.

POOF!!!

The capacity of South Branch Blue Diamond Wash could not be defined as that of Blue Diamond Wash. Some reasons for this are:

- the cross sections used by JMM were not shown on their work maps
- there are many splits in the washes, resulting in several possible candidates for the main wash or washes
- those splits do not follow a clear path between the railroad to Interstate 15 (i.e., a path whose capacity does not vanish)

Because of those reasons, all flows on South Branch Blue Diamond Wash were modeled as alluvial fan flooding. The computations associated with that analysis are given in Attachment II-5.

ATTACHMENT II - 1
MAP SHOWING WIDTHS USED FOR
FLOOD FREQUENCY CURVES DERIVATIONS
AT UNION PACIFIC RAILROAD

ATTACHMENT II - 2
PROBABILITY OF A GIVEN DISCHARGE BEING EXCEEDED
BETWEEN TWO POINTS ON AN ALLUVIAL FAN

PROBABILITY OF A GIVEN DISCHARGE BEING EXCEEDED BETWEEN TWO POINTS ON AN ALLUVIAL FAN

Consider a rectangular channel that has a topwidth, w , which is a function of the discharge it conveys: $w = w(q)$. Assuming that the location of the channel is uniformly distributed within a width W_f and the probability density function describing the occurrence of a discharge Q somewhere within that width is $f_Q(q)$, the probability that a discharge of q_0 passes between two points, a and b , can be determined as follows.

Because the channel is rectangular, the amount of flow in a section of the channel is (roughly) proportional to the topwidth of that section. That is, if q is the discharge of the channel shown in Figure 1, then the discharge, q_r , in the cross-hatched area is

$$q_r = \frac{w_r q}{w(q)} \quad (1)$$

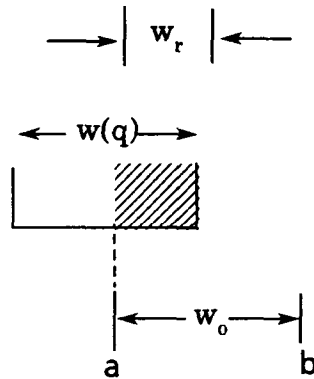


Figure 1

Thus for a discharge, q_0 , to pass between points a and b , given that the total discharge in the channel is q , the right side of the channel must be between the points

$$\frac{q_0 w(q)}{q} \text{ and } W_o + w(q) - \frac{q_0 w(q)}{q}$$

where we have taken a to be at the origin and W_o to be the width of the opening ($b-a$). The probability density function describing the location of the right side of the

channel is $1/W_f$ and, therefore, the probability that the right side of the channel is between the two points given above is

$$\frac{1}{W_f} \left[W_o + w(q) - \frac{2q_0 w(q)}{q} \right]$$

The probability that a discharge exceeding q_0 passes between two points that define an opening of width W_o is

$$P \left[Q \text{ through } W_o > q_0 \right] = \frac{1}{W_f} \int_{q_0}^{\infty} \left[W_o + w(q) - \frac{2q_0 w(q)}{q} \right] f_Q(q) dq \quad (2)$$

Writing P as the sum of three integrals yields

$$P = I_1 + I_2 - I_3 \quad (3)$$

where

$$I_1 = \frac{W_o}{W_f} \int_{q_0}^{\infty} f_Q(q) dq \quad (4)$$

$$I_2 = \frac{1}{W_f} \int_{q_0}^{\infty} w(q) f_Q(q) dq \quad (5)$$

$$I_3 = \frac{2}{W_f} \int_{q_0}^{\infty} \frac{q_0 w(q)}{q} f_Q(q) dq \quad (6)$$

If $f_Q(q)$ is log-normal, then

$$P(Q > q_0) = \frac{1}{\sigma \sqrt{2\pi}} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu}{\sigma} \right)^2} dy \quad (7)$$

where

$$y_0 = \log_{10}(q_0) \quad (8)$$

Also, note that for a power function of q , say

$$w(q) = \alpha q^\beta \quad (9)$$

or, equivalently,

$$w(q) = \alpha e^{\beta y \ln(10)} \quad (10)$$

$$= \alpha e^{2.3026\beta y} \quad (11)$$

where $y = \log_{10}(q)$

$$\int_{q_0}^{\infty} w(q) f_Q(q) dq = \alpha C(\beta) \frac{1}{\sigma \sqrt{2\pi}} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu'}{\sigma} \right)^2} dy \quad (12)$$

where

$$\mu' = \mu + 2.3026\beta\sigma^2 \quad (13)$$

and

$$C(\beta) = e^{2.3026\beta\mu + \frac{1}{2}(2.3026\beta\sigma)^2} \quad (14)$$

In summary, equation (2) can be solved when $w(q)$ is defined. For the single channel region

$$w(q) = 9.408q^{0.4} \quad (15)$$

and

$$\frac{w(q)}{q} = 9.408q^{-0.6} \quad (16)$$

Thus the three integrals in equation (3) are:

$$I_1 = \frac{W_o}{W_f} \frac{1}{\sigma \sqrt{2\pi}} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu}{\sigma} \right)^2} dy \quad (17)$$

$$I_2 = \frac{9.408}{W_f \sigma \sqrt{2\pi}} e^{.92\mu + .42\sigma^2} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu - .92\sigma^2}{\sigma} \right)^2} dy \quad (18)$$

$$I_3 = \frac{18.816y_0}{W_f \sigma \sqrt{2\pi}} e^{-1.38\mu + .95\sigma^2} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu + 1.38\sigma^2}{\sigma} \right)^2} dy \quad (19)$$

On an alluvial fan I_1 is the probability that q_0 is exceeded at the apex times the ratio of the width of the opening to the width of the fan. I_2 is the probability that a point on the fan at the elevation where the width of the area subject to flooding is W_f is inundated. I_3 is similar to I_2 . The integrands in both I_2 and I_3 are the same as that in I_1 with a change in the mean, μ , to $\mu + .92\sigma^2$ and $\mu - 1.38\sigma^2$, respectively.

ATTACHMENT II - 3
HEC - 2 RUNS USED TO DETERMINE THE CAPACITY OF
BLUE DIAMOND WASH

```

*****
* WATER SURFACE PROFILES          *
* VERSION OF SEPTEMBER 1988      *
* ERROR: 01,02,03                *
* UPDATED: SEPTEMBER 1989        *
* RUN DATE   8/14/92   TIME 13:41:22
*****

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

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NB

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      X   X  XXXXXXX  XXXXX      XXXXX
      X   X  X      X   X      X   X
      X   X  X      X           X
      XXXXXX XXXX  X           XXXXX XXXXX
      X   X  X      X           X
      X   X  X      X   X      X
      X   X  XXXXXXX  XXXXX      XXXXXXX

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END OF BANNER

8/14/92 13:41:22

PAGE 1

THIS RUN EXECUTED 8/14/92 13:41:22

HEC2 RELEASE DATED SEP 88 UPDATED SEPT 1989

ERROR CORR - 01,02,03

MODIFICATION -

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			.005				2275	
J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1	0	-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	38	43	1	50	3	2	23	24	4
QT	2	1000	2900						
NC	.035	.035	.035	0.3	0.5				
ET		9.1	7.1				2639	3069	2639 3069
X1	16	38	2639	3069	650	550	600		
GR	2278.8	2000	2276.4	2069	2276.4	2145	2274.5	2220	2274.2 2308
GR	2273.1	2317	2273.0	2361	2273.5	2408	2275.0	2460	2279.7 2504
GR	2279.7	2525	2276.9	2559	2276.8	2610	2276.8	2625	2276.8 2639

GR	2276.1	2667	2275.8	2699	2274.6	2724	2272.4	2748	2272.4	2758
GR	2272.4	2768	2272.4	2817	2271.3	2837	2268.6	2859	2268.6	2872
GR	2268.6	2899	2270.8	2910	2272.7	2940	2274.6	3011	2275.6	3059
GR	2276.7	3069	2276.7	3091	2276.0	3230	2276.0	3980	2272.0	4020.
GR	2275.0	4080	2276.0	4340	2280.0	4520				

ET		9.1	7.1				2639	2960	2639	2960
X1	16.1	10	2639	2960	160	160	160			
GR	2279	1980	2278.3	2280	2278.6	2550	2277.9	2639	2276.3	2850
GR	2278.2	2960	2278.9	3000	2278.6	3220	2279.9	3500	2279.2	3750

NC	.060	.055	.035	.1	.3					
ET		9.1	7.1				2316	2470	2316	2470
X1	17	18	2316	2470	750	680	720			
X4	2	2283.9	2000	2283.9	2054					
GR	2288.5	1700	2288.0	1970	2282.2	2076	2282.2	2151	2283.2	2180
GR	2283.3	2221	2284.6	2261	2282.9	2280	2284.6	2307	2284.6	2316
GR	2280.0	2327	2280.0	2361	2280.0	2399	2283.6	2410	2285.3	2470
GR	2285.3	2539	2283.2	2800	2284.0	3050				

NC	.060	.060	.035							
ET		9.1	7.1				2321	2503	2321	2503

1

8/14/92 13:41:22

PAGE 2

X1	18	12	2321	2503	700	800	840			
X4	2	2293.1	2000	2293.1	2141					
GR	2295.0	1600	2293.2	1700	2292.1	2265	2291.3	2321	2288.6	2340
GR	2288.6	2367	2290.9	2378	2291.9	2420	2293.4	2503	2293.9	2536
GR	2294.0	2710	2294.0	2907						

ET		9.1	7.1				2671	2872	2671	2872
X1	19	15	2671	2872	680	670	700			
X4	1	2302.2	2000							
GR	2303.0	1600	2302.2	2178	2302.2	2434	2302.2	2613	2303.2	2671
GR	2299.2	2746	2298.8	2779	2298.8	2802	2298.9	2824	2301.3	2872
GR	2303.1	2995	2302.9	3190	2302.3	3376	2304.0	3518	2304.0	3850.

NC	.040	.040	.040							
ET		9.1	7.1				2250	2500	2250	2500
X1	19.5	10	2250	2500	1090	1100	1090			
GR	2314.0	2000	2312.0	2140	2304.0	2200	2303.5	2250	2303.5	2500.
GR	2303.5	2900	2304.0	2950	2304.7	3050	2304.7	3270	2308.0	3350

NC	.035	.035	.035							
ET		9.1	9.1	9.1	9.1				2392	2463
X1	20	18	2392	2541	500	660	500			
GR	2321.7	2000	2321.5	2057	2321.9	2137	2321.4	2213	2320.0	2230
GR	2321.5	2237	2322.2	2296	2321.8	2392	2313.6	2401	2313.6	2419
GR	2316.9	2434	2319.3	2451	2320.3	2463	2319.4	2487	2315.9	2498
GR	2320.1	2505	2321.3	2541	2321.3	3000				

NC	.040	.035	.035	0.1	0.3					
ET		9.1	9.1	9.1	9.1				2049	2164
X1	21	30	2049	2164	1400	1450	1510			
GR	2340.0	1100	2340.0	1300	2340.0	1550	2340.0	1650	2340.0	1900
GR	2339.5	2000	2339.9	2049	2336.2	2069	2336.2	2084	2339.1	2092
GR	2339.3	2130	2337.0	2149	2336.0	2158	2340.6	2164	2338.8	2251
GR	2339.3	2375	2339.3	2511	2339.3	2590	2338.3	2614	2339.3	2624

IR	2339.3	2664	2339.3	2808	2339.5	3008	2340.0	3071	2340.2	3122
GR	2340.0	3230	2338.0	3320	2339.5	3380	2340.0	3425	2341.0	3500.
IC	.055	.035	.035							
ET		9.1	7.1	9.1	9.1		2593	2697	2234	2966
X1	22	31	2593	2697	1250	1000	1090			
IR	2356.5	1550	2356.0	1750	2355.0	1850	2355.0	2068	2354.9	2118
IR	2354.0	2136	2354.0	2168	2354.2	2199	2355.9	2234	2355.7	2334
GR	2355.3	2389	2354.5	2458	2353.6	2508	2353.7	2565	2354.0	2593
IR	2352.7	2600	2352.7	2611	2354.0	2615	2354.0	2624	2352.5	2630
IR	2351.5	2648	2351.5	2659	2353.5	2666	2354.5	2697	2354.5	2755
GR	2354.2	2839	2353.5	2896	2354.5	2966	2355.0	3150	2353.0	3250.
GR	2355.0	3400								

NC	.045	.035	.035							
ET		9.1	9.1	9.1	9.1				2601	2740

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CI	23	18	2601	2740	1200	1200	1230			
X4	2	2367.4	2000	2368.6	2062					
GR	2369.5	1650	2368.0	1900	2366.2	2146	2366.2	2177	2367.8	2228
IR	2368.3	2318	2367.3	2348	2368.6	2433	2367.5	2528	2368.0	2601
GR	2366.5	2681	2365.1	2686	2365.1	2706	2367.0	2709	2367.8	2740
GR	2367.0	2817	2368.0	2901	2368.5	2950				

IT	2	2000	2900							
ET		9.1	7.1	9.1	9.1		2925	3075	2740	3320
X1	23.1	6	2740	3320	180	210	200			
GR	2369.6	2740	2368.8	3000	2369.5	3320	2369.0	3580	2368.2	3810
GR	2370.6	4000								

ET		9.1	7.1	9.1	9.1		2635	2800	2380	2800
NC	.035	.035	.035							
X1	24	16	2693	2750	1020	960	960			
GR	2387.8	2000	2385.9	2178	2384.9	2319	2382.6	2355	2385.8	2380
IR	2385.4	2504	2385.4	2635	2384.9	2693	2381.4	2711	2379.2	2718
GR	2379.2	2739	2384.2	2750	2384.5	2800	2384.5	3050	2386.0	3200.
GR	2388.0	3370								

X1	25.1	6	2213	2251	1370	1320	1440		3.0	
GR	2407.9	2153	2405.6	2193	2400.4	2213	2400.0	2237	2401.7	2251.
GR	2408.3	2268								

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

*PROF 1

CCHV= .300 CEHV= .500

*SECNO 16.000

7230 SLOPE-AREA TRIALS EXCEED 100

3470 ENCROACHMENT STATIONS=	2639.0	3069.0	TYPE=	1	TARGET=	430.000			
16.000	3.82	2272.42	.00	.00	2272.63	.21	.00	.00	2276.80
1000.	0.	1000.	0.	0.	270.	0.	0.	0.	100000.00
.00	.00	3.70	.00	.000	.035	.000	.000	2268.60	2747.81
.004703	650.	600.	550.	0	0	101	.00	187.72	2935.53

0

*SECNO 16.100

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2639.0	2960.0	TYPE=	1	TARGET=	321.000			
16.100	1.46	2277.76	2277.76	.00	2278.14	.37	1.37	.08	2277.90
1000.	0.	1000.	0.	0.	204.	0.	1.	1.	100000.00
.01	.00	4.91	.00	.000	.035	.000	.000	2276.30	2656.84
.020287	160.	160.	160.	20	18	0	.00	277.96	2934.80

)

CCHV= .100 CEHV= .300

*SECNO 17.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.44

3470 ENCROACHMENT STATIONS=	2316.0	2470.0	TYPE=	1	TARGET=	154.000			
17.000	2.76	2282.76	.00	.00	2283.08	.32	4.94	.01	2284.60
1000.	0.	1000.	0.	0.	219.	0.	4.	4.	100000.00
.05	.00	4.56	.00	.000	.035	.000	.000	2280.00	2320.40
.003409	750.	720.	680.	6	0	0	.00	87.03	2407.43

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*SECNO 18.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2321.0	2503.0	TYPE=	1	TARGET=	182.000			
18.000	2.92	2291.52	2291.52	.00	2292.36	.83	5.31	.15	2291.30
1000.	0.	1000.	0.	0.	136.	0.	8.	6.	100000.00
.08	.00	7.33	.00	.000	.035	.000	.000	2288.60	2321.00
.015553	700.	840.	800.	20	8	0	.00	83.18	2404.18

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*SECNO 19.000

3470 ENCROACHMENT STATIONS=	2671.0	2872.0	TYPE=	1	TARGET=	201.000			
19.000	1.88	2300.68	.00	.00	2301.11	.43	8.71	.04	2303.20
1000.	0.	1000.	0.	0.	191.	0.	10.	7.	100000.00
.12	.00	5.23	.00	.000	.035	.000	.000	2298.80	2718.26
.010176	680.	700.	670.	5	0	0	.00	141.32	2859.58

*SECNO 19.500

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

3470 ENCROACHMENT STATIONS=	2250.0	2500.0	TYPE=	1	TARGET=	250.000			
19.500	1.71	2305.21	.00	.00	2305.29	.09	4.15	.03	2303.50
1000.	0.	1000.	0.	0.	427.	0.	18.	12.	100000.00
.25	.00	2.34	.00	.000	.040	.000	.000	2303.50	2250.00
.001977	1090.	1090.	1100.	7	0	0	.00	250.00	2500.00

0

*SECNO 20.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2392.0	2463.0	TYPE=	1	TARGET=	71.000			
20.000	3.74	2317.34	2317.34	.00	2318.70	1.35	2.08	.38	2321.80
1000.	0.	1000.	0.	0.	107.	0.	21.	14.	100000.00
.27	.00	9.33	.00	.000	.035	.000	.000	2313.60	2396.89
.013884	500.	500.	660.	20	17	0	.00	40.25	2437.15

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

CCHV= .100 CEHV= .300

*SECNO 21.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	2049.0	2164.0	TYPE=	1	TARGET=	115.000			
21.000	3.42	2339.42	.00	.00	2340.05	.62	21.28	.07	2339.90
1000.	0.	1000.	0.	0.	158.	0.	26.	16.	100000.00
.33	.00	6.34	.00	.000	.035	.000	.000	2336.00	2051.55
.014306	1400.	1510.	1450.	9	0	0	.00	110.92	2162.47

*SECNO 22.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2234.0	2966.0	TYPE=	1	TARGET=	732.000			
22.000	2.88	2354.38	2354.38	.00	2354.69	.31	12.61	.03	2354.00
1000.	137.	714.	149.	73.	139.	61.	31.	23.	2354.50
.40	1.88	5.12	2.43	.055	.035	.035	.000	2351.50	2464.82
.009474	1250.	1090.	1000.	5	10	0	.00	396.39	2957.40

*SECNO 23.000

3470 ENCROACHMENT STATIONS=	2601.0	2740.0	TYPE=	1	TARGET=	139.000
23.000	3.05	2368.15	2368.04	.00	2368.66	.52 13.91 .06 2368.00
1000.	0.	1000.	0.	0.	174.	0. 38. 30. 100000.00
.46	.00	5.76	.00	.000	.035	.000 .000 2365.10 2601.00
.013841	1200.	1230.	1200.	13	8	0 .00 139.00 2740.00

0

*SECNO 23.100

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.87

3470 ENCROACHMENT STATIONS=	2740.0	3320.0	TYPE=	1	TARGET=	580.000
23.100	1.97	2370.17	.00	.00	2370.36	.19 1.67 .03 2419.60
2000.	0.	2000.	0.	0.	577.	0. 39. 32. 100000.00
.48	.00	3.47	.00	.000	.035	.000 .000 2368.20 2740.00
.006735	180.	200.	210.	4	0	0 .00 580.00 3320.00

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

*SECNO 24.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2380.0	2800.0	TYPE=	1	TARGET=	420.000
24.000	5.54	2384.74	2384.74	.00	2386.07	1.33 7.32 .34 2384.90
2000.	0.	1959.	41.	0.	210.	20. 48. 40. 2384.20
.51	.00	9.34	2.12	.000	.035	.035 .000 2379.20 2693.81
.008709	1020.	960.	960.	20	24	0 .00 106.19 2800.00

*SECNO 25.100

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.100	4.55	2407.55	2407.55	.00	2409.26	1.71 13.52 .12 2403.40
2000.	226.	1719.	54.	33.	156.	10. 55. 42. 2404.70
.55	6.84	11.01	5.19	.035	.035	.035 .000 2403.00 2197.04
.010255	1370.	1440.	1320.	10	15	0 .00 61.29 2258.34

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T1 TOTAL FLOW IN VICINITY OF WASH
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3			.005				2275	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

*PROF 2

CCHV= .300 CEHV= .500

*SECNO 16.000

3470 ENCROACHMENT STATIONS=	2639.0	3069.0	TYPE=	1	TARGET=	430.000
16.000	5.17	2273.77	.00	2272.42	2274.18	.42 .00 .00 2276.80
2900.	0.	2900.	0.	0.	560.	0. 0. 0. 100000.00
.00	.00	5.18	.00	.000	.035	.000 .000 2268.60 2733.09
.005004	650.	600.	550.	0	0	5 .00 246.78 2979.86

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*SECNO 16.100

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2639.0	2960.0	TYPE=	1	TARGET=	321.000
16.100	2.20	2278.50	2278.50	2277.76	2279.20	.70 1.34 .14 2277.90
2900.	0.	2900.	0.	0.	433.	0. 2. 1. 100000.00
.01	.00	6.70	.00	.000	.035	.000 .000 2276.30 2639.00
.016802	160.	160.	160.	20	18	0 .00 321.00 2960.00

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CCHV= .100 CEHV= .300

*SECNO 17.000

3280 CROSS SECTION 17.00 EXTENDED .83 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.77

3470 ENCROACHMENT STATIONS=	2316.0	2470.0	TYPE=	1	TARGET=	154.000
17.000	4.82	2284.82	.00	2282.76	2285.51	.69 6.32 .00 2284.60
2900.	0.	2900.	0.	0.	435.	0. 9. 5. 100000.00
.04	.00	6.66	.00	.000	.035	.000 .000 2280.00 2316.00
.005375	750.	720.	680.	4	0	0 .00 137.35 2453.35

*SECNO 18.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

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3470 ENCROACHMENT STATIONS=      2321.0    2503.0 TYPE=      1 TARGET=      182.000
  18.000    4.66  2293.26  2293.26  2291.52  2294.29    1.02    6.94    .10  2291.30
  2900.      0.   2900.      0.      0.   357.      0.    17.      8. 100000.00
    .07      .00    8.11      .00    .000    .035    .000    .000  2288.60  2321.00
 .014295    700.   840.   800.      4      8      0    .00  174.53  2495.53

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*SECNO 19.000

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3470 ENCROACHMENT STATIONS=      2671.0    2872.0 TYPE=      1 TARGET=      201.000
  19.000    3.13  2301.93      .00  2300.68  2302.77    .84    8.47    .02  2303.20
  2900.      0.   2900.      0.      0.   395.      0.    23.     11. 100000.00
    .09      .00    7.35      .00    .000    .035    .000    .000  2298.80  2694.77
 .010367    680.   700.   670.      4      0      0    .00  177.23  2872.00

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*SECNO 19.500

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.31

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3470 ENCROACHMENT STATIONS=      2250.0    2500.0 TYPE=      1 TARGET=      250.000
  19.500    3.27  2306.77      .00  2305.21  2306.97    .20    4.13    .06  2303.50
  2900.      0.   2900.      0.      0.   817.      0.    38.     16. 100000.00
    .18      .00    3.55      .00    .000    .040    .000    .000  2303.50  2250.00
 .001948   1090.  1090.  1100.      5      0      0    .00  250.00  2500.00

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*SECNO 20.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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3470 ENCROACHMENT STATIONS=      2392.0    2463.0 TYPE=      1 TARGET=      71.000
  20.000    6.64  2320.24  2320.24  2317.34  2322.17    1.93    2.00    .52  2321.80
  2900.      0.   2900.      0.      0.   260.      0.    44.     18. 100000.00
    .19      .00   11.15      .00    .000    .035    .000    .000  2313.60  2393.71
 .012363    500.   500.   660.     20     17      0    .00  68.54  2462.26

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

:CHV= .100 CEHV= .300

*SECNO 21.000

J301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

I693 PROBABLE MINIMUM SPECIFIC ENERGY

I720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2049.0	2164.0	TYPE=	1	TARGET=	115.000			
21.000	4.74	2340.74	2340.74	2339.42	2342.12	1.39	19.80	.05	2339.90
2900.	0.	2900.	0.	0.	307.	0.	54.	21.	100000.00
.23	.00	9.45	.00	.000	.035	.000	.000	2336.00	2049.00
.013931	1400.	1510.	1450.	20	19	0	.00	115.00	2164.00

*SECNO 22.000

I280 CROSS SECTION 22.00 EXTENDED .90 FEET

7185 MINIMUM SPECIFIC ENERGY

I720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2593.0	2697.0	TYPE=	1	TARGET=	104.000			
22.000	4.40	2355.90	2355.90	2354.38	2357.38	1.47	15.03	.03	2354.00
2900.	0.	2900.	0.	0.	298.	0.	61.	24.	100000.00
.27	.00	9.74	.00	.000	.035	.000	.000	2351.50	2593.00
.013652	1250.	1090.	1000.	4	11	0	.00	104.00	2697.00

*SECNO 23.000

3280 CROSS SECTION 23.00 EXTENDED 1.15 FEET

J301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	2601.0	2740.0	TYPE=	1	TARGET=	139.000			
23.000	4.55	2369.65	.00	2368.15	2370.54	.89	13.11	.06	2368.00
2900.	0.	2900.	0.	0.	383.	0.	71.	27.	100000.00
.31	.00	7.57	.00	.000	.035	.000	.000	2365.10	2601.00
.008548	1200.	1230.	1200.	6	0	0	.00	139.00	2740.00

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

*SECNO 23.100

I280 CROSS SECTION 23.10 EXTENDED .85 FEET

470 ENCROACHMENT STATIONS=	2925.0	3075.0	TYPE=	1	TARGET=	150.000			
23.100	3.25	2371.45	.00	2370.17	2372.34	.89	1.80	.00100000	0.00
2900.	0.	2900.	0.	0.	383.	0.	73.	28.	100000.00

.32	.00	7.57	.00	.000	.035	.000	.000	2368.20	2925.00
.009512	180.	200.	210.	2	0	0	.00	150.00	3075.00

*SECNO 24.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2635.0	2800.0	TYPE=	1	TARGET=	165.000			
24.000	6.55	2385.75	2385.75	2384.74	2386.98	1.23	7.53	.10	2384.90
2900.	84.	2520.	296.	35.	267.	70.	81.	31.	2384.20
.35	2.43	9.44	4.23	.035	.035	.035	.000	2379.20	2635.00
.006575	1020.	960.	960.	12	17	0	.00	165.00	2800.00

*SECNO 25.100

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.100	5.69	2408.69	2408.69	2407.55	2410.64	1.94	10.69	.21	2403.40
2900.	402.	2375.	123.	54.	200.	21.	92.	35.	2404.70
.38	7.46	11.90	5.97	.035	.035	.035	.000	2403.00	2191.40
.008633	1370.	1440.	1320.	20	11	0	.00	69.89	2261.28

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THIS RUN EXECUTED 8/14/92 13:41:37

HEC2 RELEASE DATED SEP 88 UPDATED SEPT 1989

ERROR CORR - 01,02,03

MODIFICATION -

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

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DIFWSP	EG	CRIS	XLBEL	RBEL	TOPWID
	16.000	1000.00	2272.42	.00	2272.63	.00	2276.80	100000.00	187.72
	16.000	2900.00	2273.77	1.35	2274.18	.00	2276.80	100000.00	246.78
*	16.100	1000.00	2277.76	.00	2278.14	2277.76	2277.90	100000.00	277.96
*	16.100	2900.00	2278.50	.73	2279.20	2278.50	2277.90	100000.00	321.00
*	17.000	1000.00	2282.76	.00	2283.08	.00	2284.60	100000.00	87.03
*	17.000	2900.00	2284.82	2.06	2285.51	.00	2284.60	100000.00	137.35

*	18.000	1000.00	2291.52	.00	2292.36	2291.52	2291.30	100000.00	83.18
*	18.000	2900.00	2293.26	1.74	2294.29	2293.26	2291.30	100000.00	174.53
	19.000	1000.00	2300.68	.00	2301.11	.00	2303.20	100000.00	141.32
	19.000	2900.00	2301.93	1.25	2302.77	.00	2303.20	100000.00	177.23
*	19.500	1000.00	2305.21	.00	2305.29	.00	2303.50	100000.00	250.00
*	19.500	2900.00	2306.77	1.57	2306.97	.00	2303.50	100000.00	250.00
*	20.000	1000.00	2317.34	.00	2318.70	2317.34	2321.80	100000.00	40.25
*	20.000	2900.00	2320.24	2.89	2322.17	2320.24	2321.80	100000.00	68.54
	21.000	1000.00	2339.42	.00	2340.05	.00	2339.90	100000.00	110.92
*	21.000	2900.00	2340.74	1.31	2342.12	2340.74	2339.90	100000.00	115.00
*	22.000	1000.00	2354.38	.00	2354.69	2354.38	2354.00	2354.50	396.39
•	22.000	2900.00	2355.90	1.52	2357.38	2355.90	2354.00	100000.00	104.00
	23.000	1000.00	2368.15	.00	2368.66	2368.04	2368.00	100000.00	139.00
	23.000	2900.00	2369.65	1.51	2370.54	.00	2368.00	100000.00	139.00
*	23.100	2000.00	2370.17	.00	2370.36	.00	2419.60	100000.00	580.00
	23.100	2900.00	2371.45	1.28	2372.34	.00	100000.00	100000.00	150.00

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	SECNO	Q	CWSEL	DIFWSP	EG	CRIWS	XLBEL	RBEL	TOPWID
•	24.000	2000.00	2384.74	.00	2386.07	2384.74	2384.90	2384.20	106.19
*	24.000	2900.00	2385.75	1.00	2386.98	2385.75	2384.90	2384.20	165.00
•	25.100	2000.00	2407.55	.00	2409.26	2407.55	2403.40	2404.70	61.29
*	25.100	2900.00	2408.69	1.14	2410.64	2408.69	2403.40	2404.70	69.89

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SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	16.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	16.100	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	16.100	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	16.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	16.100	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	16.100	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	17.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	17.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	18.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	18.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	18.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	18.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	18.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY

WARNING SECNO=	19.500	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	19.500	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	20.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	20.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	20.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	20.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	20.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	20.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	21.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	21.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	21.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	22.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	22.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	22.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	22.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	23.100	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	24.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	24.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	24.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	24.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	24.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.100	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.100	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.100	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL

ATTACHMENT II - 4
COMPUTATIONS PERFORMED TO PLACE
THE FLOOD INSURANCE ZONE BOUNDARIES
FOR BLUE DIAMOND WASH

D.S. OF RR

BLUE DIAMOND WASH

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY LEAST-SQUARES FIT OF DATA

RETURN INTERVAL (YEARS)	INPUT DISCHARGE (CFS)	BEST FIT DISCHARGE (CFS)
10	25	29
20	276	215
30	590	530
40	911	869
50	1280	1243
60	1609	1679
70	1893	2082
80	2217	2446
90	2578	2772
100	2908	3065
200	5695	5964
500	12717	11210

*FIS says
3400
3500*

MEAN = -4.616825
STANDARD DEVIATION = 5.590676
SKEW = -1.2

SUMMARY OF DISCHARGES:

10-YEAR DISCHARGE = 29
50-YEAR DISCHARGE = 1243
100-YEAR DISCHARGE = 3065
500-YEAR DISCHARGE = 11210

STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=3.5505+0.2447 \text{ LOG}(Q)$

MEAN OF Z = 2.420578
STANDARD DEVIATION = 1.368234
SKEW = -1.200000
TRANSFORMATION CONSTANT = 1.514291

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.2447		
			Q	%3552.0313 Q	
0.5	0.3	49	0.08686	0.74919	1067
1.5	1.0	756	0.02734	0.43801	622
2.5	1.7	2712	0.01136	0.24835	320

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.2447		
			Q	%3552.0313 Q	
3.5	0.4	68	0.07862	0.72169	1028
4.5	0.6	238	0.04802	0.59209	844
5.5	0.9	649	0.02992	0.45961	655
6.5	1.3	1496	0.01795	0.33697	478
7.5	1.7	3059	0.01002	0.23049	271

MULTIPLE-CHANNEL REGION

SLOPE = 0.0130000
N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%3552.0313 Q	
0.5	0.4	406	0.03780	0.52376	2835

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%3552.0313 Q	
3.5	0.6	1391	0.01875	0.34781	1874

BLUE DIAMOND WASH

MEAN=-4.61683

STANDARD DEVIATION= 5.59068

SKEW=-1.2

QOVER	W*P(QOVER)	Q
3000	8.131666	5000
2900	8.264173	4900
2800	8.397544	4800
2700	8.531812	4700
2600	8.666949	4600
2500	8.802938	4500
2400	8.939776	4400
2300	9.077448	4300
2200	9.215934	4200
2100	9.355196	4100
2000	9.495196	4000
1900	9.635910	3900
1800	9.777266	3800
1700	9.919188	3700
1600	10.061630	3600
1500	10.204450	3500
1400	10.347530	3400
1300	10.490740	3300
1200	10.633880	3200
1100	10.776700	3100
1000	10.963010	3000
900	11.171400	2900
800	11.377700	2800
700	11.581020	2700
600	11.780250	2600
500	11.973870	2500
400	12.159740	2400
300	12.334830	2300
200	12.494280	2200
100	12.629090	2100
0	12.629090	2000
0	12.629090	1900
0	12.629090	1800
0	12.629090	1700
0	12.629090	1600
0	12.629090	1500
0	12.629090	1400
0	12.629090	1300
0	12.629090	1200
0	12.629090	1100
0	12.629090	1000
0	12.629090	900
0	12.629090	800

$$W * P(QOVER) = \int_Q^{\infty} 35.7504 (q - 2000)^{-4} \frac{1}{Q} dq$$

Energy = 0.5

Contour width = 1216

For area subject to flooding
from both breakouts:

$$\text{Contour width} = 1216 + 1376 = 2592$$

BLUE DIAMOND WASH

MEAN=-4.61683

STANDARD DEVIATION= 5.59068

SKEW=-1.2

QOVER	W*P(QOVER)	Q
2500	6.802554	5000
2450	6.926077	4900
2400	7.051109	4800
2350	7.177733	4700
2300	7.305983	4600
2250	7.435908	4500
2200	7.567578	4400
2150	7.701059	4300
2100	7.836420	4200
2050	7.973725	4100
2000	8.113046	4000
1950	8.254488	3900
1900	8.398118	3800
1850	8.544022	3700
1800	8.692335	3600
1750	8.843126	3500
1700	8.996522	3400
1650	9.152659	3300
1600	9.311656	3200
1550	9.473658	3100
1500	9.690014	3000
1450	9.938581	2900
1400	10.192330	2800
1350	10.451570	2700
1300	10.716650	2600
1250	10.987930	2500
1200	11.265780	2400
1150	11.550670	2300
1100	11.843100	2200
1050	12.143630	2100
1000	12.452850	2000
950	12.771520	1900
900	13.100410	1800
850	13.440440	1700
800	13.792730	1600
750	14.158470	1500
700	14.539170	1400
650	14.936550	1300
600	15.400480	1200
550	15.953200	1100
500	16.536960	1000
450	17.156920	900
400	17.914160	800

$$W*P(QOVER) = \int_Q^{\infty} 35.7504 \left(\frac{Q}{2}\right)^4 f_Q(Q) dQ$$

$$W(Q=1000) = 35.7504 (1000)^4 = 566.6$$

$$P(Q > capacity) = 0.014728$$

$$W(Q=1000)P(Q > 2000) = 8.3449$$

Capacity

$$35.7504 \int_{800}^{2000} \left(\frac{Q}{2}\right)^4 f_Q(Q) dQ + 35.7504 (1000)^4 \int_{2000}^{\infty} f_Q(Q) dQ$$



$$Energy = 0.5 : 17.91 - 12.45 + 8.3 = 13.76$$

$$Contour width = \boxed{1376}$$

BLUE DIAMOND WASH

MEAN=-4.61683

STANDARD DEVIATION= 5.59068

SKEW=-1.2

q	P(Q>q)
5000	0.006324
4900	0.006476
4800	0.006631
4700	0.006789
4600	0.006951
4500	0.007116
4400	0.007284
4300	0.007457
4200	0.007634
4100	0.007815
4000	0.008000
3900	0.008190
3800	0.008385
3700	0.008586
3600	0.008791
3500	0.009003
3400	0.009221
3300	0.009445
3200	0.009676
3100	0.009914
3000	0.010237
2900	0.010613
2800	0.011001
2700	0.011404
2600	0.011822
2500	0.012257
2400	0.012709
2300	0.013180
2200	0.013673
2100	0.014188
2000	0.014728
1900	0.015296
1800	0.015895
1700	0.016528
1600	0.017200
1500	0.017915
1400	0.018679
1300	0.019500
1200	0.020488
1100	0.021706
1000	0.023039
900	0.024513
800	0.026396

$$P(Q > z) = \int_z^{\infty} f_Q(z) dz$$

Capacity

ATTACHMENT II - 5
COMPUTATIONS PERFORMED TO PLACE
THE FLOOD INSURANCE ZONE BOUNDARIES
FOR SOUTH BRANCH BLUE DIAMOND WASH

SOUTH BRANCH BLUE DIAMOND

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY LEAST-SQUARES FIT OF DATA

RETURN INTERVAL (YEARS)	INPUT DISCHARGE (CFS)	BEST FIT DISCHARGE (CFS)
10	19	22
20	256	194
30	558	501
40	863	840
50	1225	1213
60	1551	1641
70	1836	2037
80	2125	2395
90	2483	2717
100	2812	3005
200	5533	5737
500	12458	10326

MEAN = -5.827590
STANDARD DEVIATION = 6.730085
SKEW = -1.3

SUMMARY OF DISCHARGES:

10-YEAR DISCHARGE = 22
50-YEAR DISCHARGE = 1213
100-YEAR DISCHARGE = 3005
500-YEAR DISCHARGE = 10326

STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=3.6255+0.1990 \text{ LOG}(Q)$

MEAN OF Z = 2.465726
STANDARD DEVIATION = 1.339429
SKEW = -1.300000
TRANSFORMATION CONSTANT = 1.409653

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.1990		
			Q	%4222.2144 Q	
0.5	0.3	49	0.08155	0.76478	1014
1.5	1.0	756	0.02670	0.45579	604
2.5	1.7	2712	0.01113	0.25679	304

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.1990		
			Q	%4222.2144 Q	
3.5	0.4	68	0.07396	0.73696	977
4.5	0.6	238	0.04617	0.61056	810
5.5	0.9	649	0.02916	0.47823	634
6.5	1.3	1496	0.01769	0.35102	464

MULTIPLE-CHANNEL REGION

SLOPE = 0.0137000
N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%4222.2144 Q	
0.5	0.4	412	0.03647	0.54117	2727

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%4222.2144 Q	
3.5	0.6	1303	0.01921	0.37281	1879

**III. BLUE DIAMOND WASH
AND
SOUTH BRANCH BLUE DIAMOND WASH
(DUCK CREEK TO INTERSTATE 15)**

III. BLUE DIAMOND WASH AND SOUTH BRANCH BLUE DIAMOND WASH (DUCK CREEK TO INTERSTATE-15)

This study covers Blue Diamond Wash from its confluence with Duck Creek to Interstate-15, and South Branch Blue Diamond Wash from its confluence with Duck Creek to Interstate-15 (refer to Attachment III - 1). For the downstream portion of Blue Diamond Wash (from the confluence with Duck Creek to Amigo Street) shallow flooding methods were used to determine the flooding not contained by the channel. For the reach upstream of Amigo Street to Interstate-15, normal backwater computations utilizing the HEC-2 computer program were developed for the 100-year flood and floodway. For the downstream reach of South Branch Blue Diamond Wash (from the confluence with Duck Creek to Bermuda Road), shallow flooding along Windmill Lane was determined based on the discharge exceeding the Windmill channel capacity. For the reach upstream of the Bermuda Road to Interstate-15, normal depth backwater computations utilizing the HEC-2 computer program were developed for the 100-year flood and floodway. The areas subject to flooding from the 100-year flood were delineated on the accompanying work maps based on analyses and information described herein.

Peak discharge values for the 100-year flood were determined as described in Section II (Blue Diamond Wash and South Branch Blue Diamond Wash-Union Pacific Railroad to Interstate-15). The following table summarizes the 100-year flows used in this study for Blue Diamond Wash and South Branch Blue Diamond Wash:

Location	Drainage Area	Discharge (cfs)	FIS	SEC II
Blue Diamond Wash at Interstate 15	72.7*	2900	3400	3065
South Branch-Blue Diamond Wash at Interstate 15	72.6*	2900	3400	3005

* Drainage area taken from JMM 1991 FIS Hydrology Report

Cross-sectional information for these flooding sources were obtained from the HEC-2 computer analyses prepared by James M. Montgomery, Inc., in 1986 for the draft Flood Insurance Study for the Unincorporated Areas of Clark County, Nevada, dated August, 1986. Additional information utilized to update and/or revise this data was obtained from CLOMR and LOMR data listed in Attachment III - 2, from recent aerial photographic maps entitled 'Las Vegas', dated April, 1991, from plans and mapping obtained from the Clark County Public Works Department, and from field investigations conducted in February, 1992.

The hydraulic analysis for Blue Diamond Wash included a HEC-2 computer model for the 100-year flood and floodway from Amigo Street upstream to I-15. For areas downstream from Amigo Street, HEC-2 computations were utilized to determine channel capacities. For flows exiting the channel, shallow flooding methods and available topographic mapping were utilized to determine areas subject to shallow flooding. Computations in this area were based on development plans for Buckingham Estates, Unit #1 and #2. The channel area from Amigo Street to Duck Creek was designated Zone A because final channel banks and linings have not been completed.

Put this
in Sec II

The hydraulic analysis for South Branch Blue Diamond Wash included a HEC-2 computer model that used the split flow option to calculate the amount of flow that leaves the main channel between Giles pie Street and Cienega Street. The ground to the north of the wash is lower than the water surface elevation between these streets, resulting in flow splits toward the north. Between Cross Sections 480 (Giles pie Street) and 440, approximately 580 cfs overflows the main channel to the north; between cross section 440 and 410 (Cienega Street), an additional 360 cfs overflows the main channel. The 360 cfs is confined by high ground to south of Windmill Lane, and re-enters South Branch Blue Diamond Wash near Bermuda Road. The 580 cfs that escapes between cross sections 480 and 440 continues to the northeast toward the Buckingham Estates development. At Buckingham Estates, the flow is partially contained by a ditch parallel to Amigo Street with the remaining flow continuing along Amigo Street to the north ultimately and entering Blue Diamond Wash. These flow splits were evaluated by shallow flooding methods utilizing the existing topographic mapping and development plans.

Floodways for the split flow area on South Branch Blue Diamond Wash between Bermuda Road and Giles pie Street were analyzed assuming that the flow split of 940 cfs would not be confined in the wash for the floodway run. Therefore, the total flow used in this reach for the equal conveyance floodway was 1860 cfs. For the remaining portions of South Branch Blue Diamond Wash upstream of Giles pie Street an equal conveyance floodway with the entire 100-year flow was completed. For the area downstream of Bermuda Road, no floodways were computed since flow is primarily contained in the Windmill Channel and within the street right-of-way on Windmill Lane.

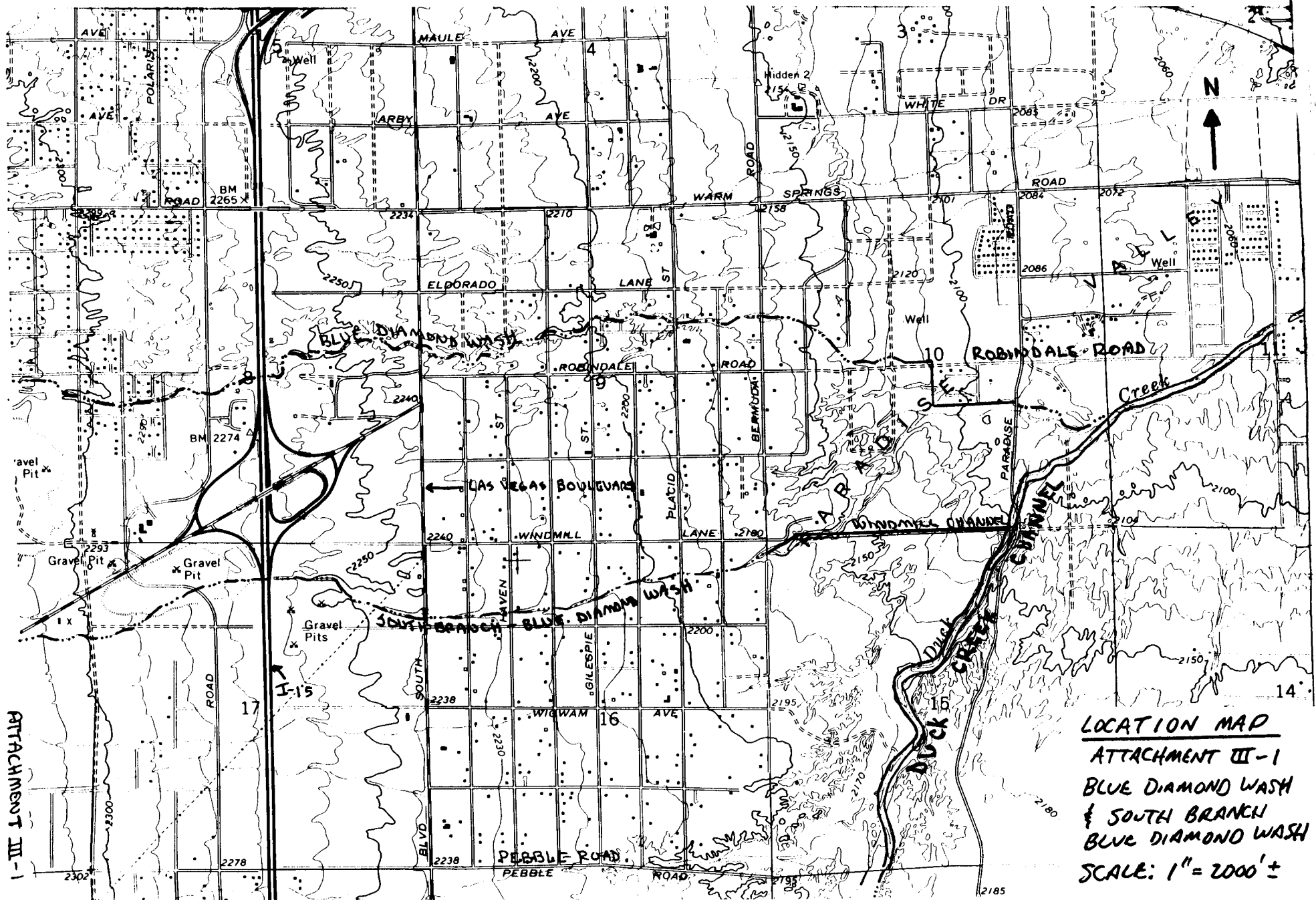
$$1860 + 940 = 2800$$

$$Q = 2900 \text{ PER TBL}$$

$$\text{PREVIOUS SHIT}$$

$$360 + 480 = 840$$

ATTACHMENT III - 1
LOCATION MAP - BLUE DIAMOND WASH
AND SOUTH BRANCH BLUE DIAMOND WASH



LOCATION MAP
 ATTACHMENT III-1
 BLUE DIAMOND WASH
 & SOUTH BRANCH
 BLUE DIAMOND WASH
 SCALE: 1" = 2000' ±

ATTACHMENT III - 2
CALCULATIONS / BACKUP DATA



S.O. No. _____

Subject Clark Co., NVBlue Diamond Wash andSheet No. 1 of 4South Branch - Blue Diamond Wash

Drawing No. _____

Computed by MERChecked By RLWDate 8/31/92

8/31/92

Schematic of Split Flows

LOCATION	SOUTH BRANCH BLUE DIAMOND WASH	BLUE DIAMOND WASH
Between Gillespie St. and Cienega St.	(20%) 580 cfs flows north-east, crosses Buckingham Estates and finally reaches Duck Creek	

Due to lag in hydrograph peaks between Blue Diamond Wash and South Branch Blue Diamond Wash - this diverted flow is not assumed to contribute to Blue Diamond Wash Peak.

(13%) 360 cfs flows east, south of Windmill Lane to Windmill channel and Windmill Lane

At Amigo St.

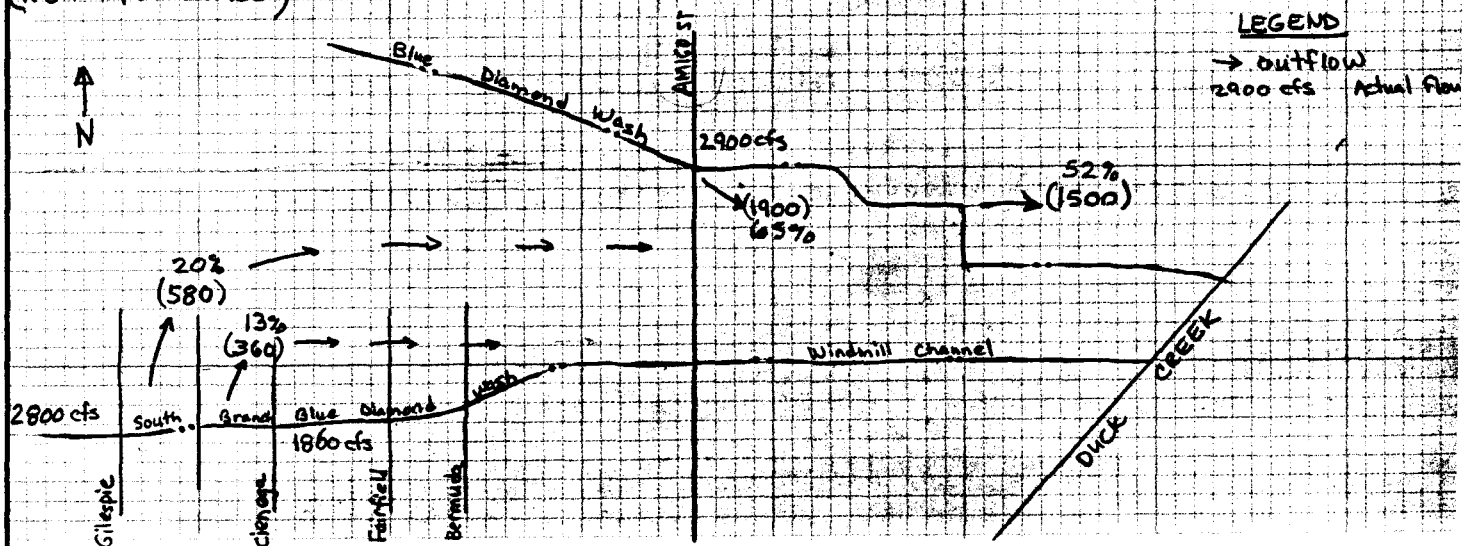
(65%) 1900 cfs exceeds channel capacity

At Pollock Dr.

(52%) 1500 cfs exceeds channel capacity and continues to Duck Creek

Assume that the 1900 cfs that escapes at Amigo returns to channel along Pollock Dr. therefore, resulting in 1500 cfs exceeding channel capacity.

NOTE: These values based on topographic data, and flow split estimate (NOT TO SCALE)



Subject Clark Co., NVBlue Diamond WashSheet No. 2 of 4

Drawing No. _____

Computed by MERChecked By RLW
1/1/92Date 8-31-92Blue Diamond Wash AO zonesNOTES:

1. Assumed future 3-4x7' culverts at Amigo St. in place and channel north of Robindale in place.
Information based on Rough Grading Plans for Lewis Homes - Paradise No. 4.
2. Assumed the flow escaping downstream of Amigo Street will reenter along Pollock Dr.
3. Because the present channel does not contain the 100 year flood and detailed survey information was not available for the present conditions, the channel downstream of Amigo Street was designated Zone A.
4. The shallow flooding downstream of Amigo Street was calculated based on available topographic information, and plans for Buckingham Estates.
5. Blue Diamond and South Branch Blue Diamond peak at different times, therefore no diversion from South Branch Blue Diamond was added to Blue Diamond Wash.

100-YR FLOOD BASIS

1. Capacities of Blue Diamond Wash run in HEC-2
2. Flows in excess of capacity used to calculate AO depth
3. Channel designated as Zone A.

Subject Clark Co., NVSouth Branch Blue Diamond Wash Sheet No. 3 of 4

Drawing No. _____

Computed by MER

Checked By

RLW

Date

8-31-922/3/92South Branch Blue Diamond WashNOTES:

1. Assume flow that escapes between Gillespie St. and Cienega St. does not return to channel.
580 cfs flows to Buckingham Estates,
360 cfs flows to Windmill channel and
Windmill lane.
2. The shallow flooding north of South Branch Blue Diamond Wash was determined from available topographic information.
3. The shallow flooding in Buckingham Estates was determined from plans for Buckingham Estates.
4. South Branch Blue Diamond and Blue Diamond Wash peak at different times; therefore, the shallow flooding discharges were not added to calculate the depth of flooding.

100 Year BASIS

1. Split Flow analysis run in HEC-2
2. Total diversion $\approx$ 940 cfs
3. 100 year flood elevations downstream of Gillespie St. based on 1860 cfs.

Subject: Clark Co., NVSouth Branch Blue Diamond Wash Sheet No. 4 of 4

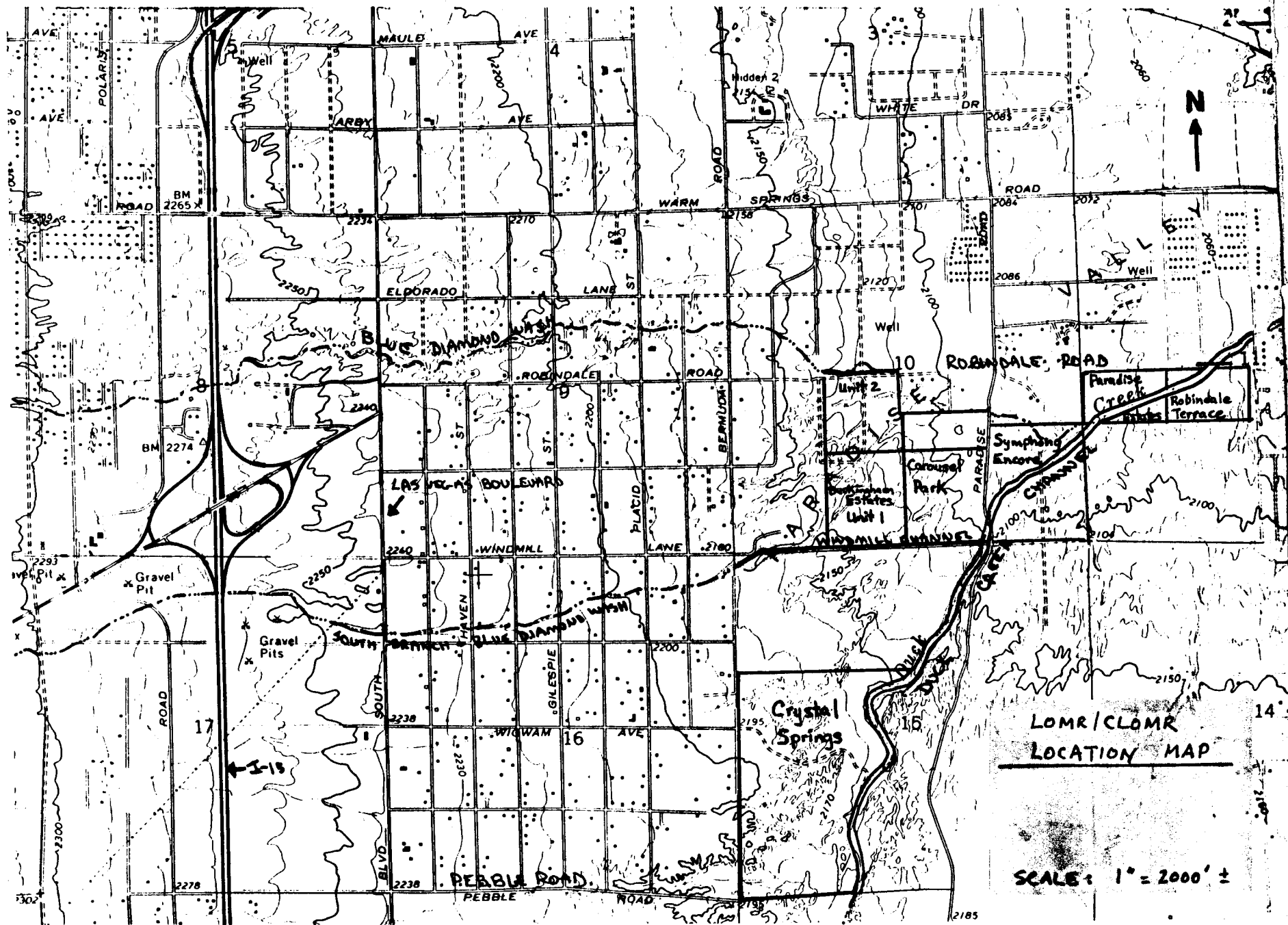
Drawing No. _____

Computed by MBRChecked By 2011/2
8/1/12

Date

8-31-92South Branch - Blue Diamond Wash
Windmill Channel CapacityNOTE

1. The capacity was calculated for the windmill channel and Windmill Lane.
2. The total flow of 2220 cfs results in an average depth of one foot depth in Windmill Lane.
3. The Windmill Channel was designated as Zone A
4. Windmill Lane was designated as shallow flooding 1 foot depth.



DUCK CREEK HYDROLOGIC UNIT

List of CLOMRs and LOMRs

<u>Property</u>	<u>Stream</u>	<u>Type of Request</u>	<u>Date Issued</u>
Buckingham Estates Unit 1	South Branch Blue Diamond Wash	LOMR	8/1/90

Buckingham Estates Unit 2	Blue Diamond wash	CLOMR	3/12/91
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Carousel Park	South Branch Blue Diamond Wash	LOMR	4/1/91
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Symphony Encore	Duck Creek	LOMR	10/4/91
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Paradise Estates	Duck Creek	dropped CLOMR	
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Robindale Terrace	Duck Creek	LOMR	6/5/91
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Crystal Springs

Units 5-6	Duck Creek	LOMR	10/26/89
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Units 6-7	"	"	7/17/89
-----------	---	---	---------

Units 8-9	"	"	10/16/90
-----------	---	---	----------

Units 11-12	"	"	6/23/92
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ATTACHMENT III - 3
HEC - 2 RUNS

BLUE DIAMOND WASH
(DUCK CREEK TO INTERSTATE-15)

5BDMCAP: Capacity of Blue Diamond Wash
Downstream of Amigo Street, 62pp

5BDMFW: Floodway Run on Blue Diamond Wash, 67pp

* HEC-2 WATER SURFACE PROFILES *
*
* Version 4.6.0; February 1991 *
*
* RUN DATE 28AUG92 TIME 15:02:48 *

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

```

X   X  XXXXXXX  XXXX      XXXX
X   X  X      X   X      X   X
X   X  X      X          X
XXXXXX XXXX  X      XXXX  XXXX
X   X  X      X          X
X   X  X      X   X      X
X   X  XXXXXXX  XXXX      XXXXXXX

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::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::
:::
:::  FULL MICRO-COMPUTER IMPLEMENTATION  :::
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H A E S T A D M E T H O D S

=====

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 28AUG92 15:02:48

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 CLARK COUNTY FLOOD INSURANCE STUDY - REVISED BY MBJ
 T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS INC.
 T3 BLUE DIAMOND WASH - 100 YEAR FLOOD

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			.0067				2075	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1	0	-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

QT 4 1000 1500 2000 2500
 NC .035 .035 .035 .1 .3

CROSS SECTION 1 ESTIMATE JUST UPSTREAM OF CONFLUENCE

X1	1	4	10	60	0	0	0
GR	2079	0	2072	10	2072	60	2078 80

NC .040 .040 .040 0.1 0.3

CROSS SECTION 2 FROM ORIGINAL JMM

X1	2.0	23	2578	2756	1350	1350	1350
GR	2092.0	1950	2089.2	2000	2088.0	2150	2088.0 2400 2088.5 2450.
GR	2092.3	2530	2089.6	2578	2088.2	2625	2086.4 2658 2086.4 2666.
GR	2087.7	2678	2087.7	2696	2085.7	2709	2086.3 2749 2087.1 2756.
GR	2086.9	2812	2086.8	2896	2087.0	2966	2086.8 3069 2086.5 3149.
GR	2086.5	3266	2087.4	3406	2092.0	3600	

CROSS SECTION 3 ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL

X1	3	4	20	50	750	750	750
GR	2099	0	2094	20	2094	40	2099 50

NC .03 .03 .03

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR
 ROBINDALE CHANNEL
 several cross section deleted

X1	1600	4	0	40	340	340	340
GR	2104.8	0	2095.5	10	2095.5	30	2104.8 40

2900 2065 22.

NC	.044	.044	.044						
	1560	4	0	40	40	40	40		
	2105	0	2095.7	10	2095.7	30	2105	40	
	.03	.03	.03						
	1384	4	0	35	166	179	176		
GR	2105.7	0	2096.6	13.7	2096.6	25.7	2106	35	
	1000	4	0	25	364	390	384		
GR	2106.6	0	2098.7	13	2098.7	24.9	2108.6	25	
	600	4	0	25	420	377	400		
	2110	0	2103.8	13	2103.8	24.9	2114.1	25	
	300	4	0	25	300	300	300		
	2114.5	0	2108.3	13	2108.3	24.9	2119.3	25	

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

X1	0	8	127	150	300	300	300		
	2121	0	2118.5	65	2119.6	126	2111.6	127	2111.6
	2121	170	2122	210	2125.4	265			
				.3	.5				
	1.1				10	10	10		
X3	10							2117.6	2117.6
	3.013	.4	3	0	7	4	100	1.1	2112.6
	1.2				110	110	110		2111.6
X2			2	2116.6	2118.5				
	10						2118.5	2118.5	
	-7	0	2121		65	2118.5	126	2120	
BT		127	2120		170	2121	210	2122	
		265	2125.4						
NC				.1	.3				
X1	1.3				50	50	50		

CROSS SECTIONS 415-0 ROBINDALE CHANNEL
 North of Robindale Road, East of Amigo Street
 Subcritical run taken from Lewis Homes Paradise submittal
 Not an official CLOMR request - best available data

X1	415	8	10	28.1	10	10	10		
	2125	0	2122.3	10	2115.44	10.1	2115.44	19	2115.44
	2122.3	28.1	2123.25	70	2124.49	180			
X1	185	10	10	28.1	229	229	229		
	2132	0	2128.9	10	2121.3	10.1	2121.3	10.9	2121.3
	2128.9	28.1	2129.22	30	2129.42	70	2129.12	105	2133.5

X1	20	6	0	20.1	157.5	172.5	165			
GR	2134.7	0	2126.9	.1	2126.9	10	2126.9	20	2131	20.1
GR	2131.9	105								

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

X1	0	10	270	295	20	20	20			
GR	2140	0	2134	40	2133.5	120	2132.9	240	2132	270
GR	2126.7	271	2126.7	294	2132	295	2133.5	415	2141	416

X1	.11	11	270	295	40	40	40			
X3	10							2134.5	2134.5	
GR	2140	0	2136.5	50	2136.18	140	2135.8	230	2132	270
GR	2126.7	271	2126.7	294	2132	295	2134.37	495	2134.93	520
GR	2141	521								

NC				.3	.5					
SC	3.013	.5	3	0	7	4	45	1.1	2126.7	2122.8
X1	.22	13	270	295	45	45	45			
X2			2	2133.5	2135.5					
X3	10							2135.5	2135.5	
BT	-9	10	2136.8		65	2136.63		145	2136.3	
BT		270	2135.6		294	2135.8		310	2135.56	
BT		401	2135.12		520	2135.1		521	2141	
GR	2140	0	2136.82	10	2136.63	65	2136.3	145	2135	250
GR	2132	270	2126.7	271	2126.7	294	2132	295	2135.56	310
GR	2135.1	401	2135.1	520	2141	521				

NC	.035	.035	.035	.1	.3					
X1	5	30	2608	2894	80	80	80			
GR	2141	2000	2139.3	2183	2138.9	2293	2138.9	2363	2139.9	2425
GR	2138.8	2465	2138.8	2522	2138.9	2562	2139.1	2608	2137.3	2634
GR	2137.1	2668	2137	2678	2135.7	2683	2135.9	2699	2135.1	2727
GR	2134.9	2732	2135.7	2734	2135.2	2752	2136.8	2789	2137.6	2851
GR	2137.7	2879	2138.8	2894	2138.8	2912	2138.8	2925	2138.8	2934
GR	2138.8	2969	2140.3	2996	2141.3	3031	2141.3	3092	2142.6	3125

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 1.000

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	2.73	2074.73	.00	2075.00	2075.42	.68	.00	.00	2072.00
1000.0	20.0	928.3	51.8	5.3	136.6	12.4	.0	.0	2072.00
.00	3.75	6.79	4.16	.035	.035	.035	.000	2072.00	6.10
.006704	0.	0.	0.	0	0	5	.00	63.01	69.11

CCHV= .100 CEHV= .300

*SECNO 2.000

5265 DIVIDED FLOW

501 HV CHANGED MORE THAN HVINS

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	1.53	2087.23	.00	.00	2087.37	.13	11.89	.05	2089.60
1000.0	.0	287.8	712.2	.0	77.1	278.2	7.9	12.0	2087.10
.13	.00	3.73	2.56	.000	.040	.040	.000	2085.70	2642.69
.012094	1350.	1350.	1350.	3	0	0	.00	712.32	3380.32

SECNO 3.000

3301 HV CHANGED MORE THAN HVINS

185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	3.58	2097.58	2097.58	.00	2098.93	1.35	10.34	.36	2094.00
1000.0	173.9	826.1	.0	25.7	84.5	.0	11.9	18.5	2099.00
.15	6.77	9.77	.00	.040	.040	.000	.000	2094.00	5.66
.015871	750.	750.	750.	12	17	0	.00	41.51	47.17

*SECNO 1600.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.92

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR
ROBINDALE CHANNEL
several cross section deleted

1600.000	5.07	2100.57	.00	.00	2101.50	.93	2.53	.04	2104.80
1000.0	.0	1000.0	.0	.0	128.9	.0	12.8	18.8	2104.80
.16	.00	7.76	.00	.000	.030	.000	.000	2095.50	4.55
.004290	340.	340.	340.	4	0	0	.00	30.89	35.45

*SECNO 1560.000

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

1560.000	5.14	2100.84	.00	.00	2101.74	.90	.24	.00	2105.00
1000.0	.0	1000.0	.0	.0	131.3	.0	13.0	18.8	2105.00
.17	.00	7.62	.00	.000	.044	.000	.000	2095.70	4.47
.008766	40.	40.	40.	2	0	0	.00	31.06	35.53

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

1384.000	5.24	2101.84	.00	.00	2103.49	1.64	1.52	.22	2105.70
1000.0	.0	1000.0	.0	.0	97.2	.0	13.4	18.9	2106.00
.17	.00	10.28	.00	.000	.030	.000	.000	2096.60	5.80
.008532	166.	176.	179.	2	0	0	.00	25.08	30.89

*SECNO 1000.000

1000.000	6.31	2105.01	.00	.00	2106.34	1.33	2.82	.03	2106.60
1000.0	.0	1000.0	.0	.0	108.2	.0	14.3	19.1	2108.60
.18	.00	9.25	.00	.000	.030	.000	.000	2098.70	2.61
.006408	364.	384.	390.	2	0	0	.00	22.35	24.96

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	5.12	2108.92	2108.92	.00	2110.90	1.98	3.38	.20	2110.00
1000.0	.0	1000.0	.0	.0	88.6	.0	15.2	19.3	2114.10
.19	.00	11.29	.00	.000	.030	.000	.000	2103.80	2.26
.011681	420.	400.	377.	2	15	0	.00	22.69	24.95

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 300.000

7185 MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

300.000	5.13	2113.43	2113.43	.00	2115.40	1.97	3.50	.00	2114.50
1000.0	.0	1000.0	.0	.0	88.7	.0	15.8	19.5	2119.30
.20	.00	11.27	.00	.000	.030	.000	.000	2108.30	2.25
.011629	300.	300.	300.	2	5	0	.00	22.70	24.95

SECNO .000

3301 HV CHANGED MORE THAN HVINS

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

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

.000	4.69	2116.29	.00	.00	2117.26	.97	1.76	.10	2111.60
1000.0	1.8	885.3	112.9	1.4	107.6	23.3	16.6	19.7	2111.60
.21	1.29	8.23	4.85	.030	.030	.030	.000	2111.60	126.42
.003523	300.	300.	300.	2	0	0	.00	33.54	159.96

CCHV= .300 CEHV= .500

SECNO 1.100

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2117.60 ELREA= 2117.60

1.100	4.49	2116.09	.00	.00	2117.54	1.45	.04	.24	2111.60
1000.0	.0	1000.0	.0	.0	103.3	.0	16.6	19.7	2111.60
.21	.00	9.68	.00	.000	.030	.000	.000	2111.60	127.00
.005146	10.	10.	10.	2	0	0	.00	23.00	150.00

SPECIAL CULVERT

SECNO	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3	.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60	

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO 1.200

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

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.24

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2120.28	2120.45	2.24	131.	870.	4.360	115.5	2118.50	85.	
1.200	7.93	2119.53	.00	.00	2119.78	.25	2.24	.00	2111.60
1000.0	33.0	795.1	171.9	47.0	182.4	66.9	17.1	19.9	2111.60
.22	.70	4.36	2.57	.030	.030	.030	.000	2111.60	38.25
.000490	110.	110.	110.	2	0	0	.00	124.66	166.87

CCHV= .100 CEHV= .300

*SECNO 1.300

3265 DIVIDED FLOW

1.300	7.96	2119.56	.00	.00	2119.81	.25	.02	.00	2111.60
1000.0	35.0	793.0	172.0	49.4	183.0	67.4	17.5	20.0	2111.60
.22	.71	4.33	2.55	.030	.030	.030	.000	2111.60	37.52
.000482	50.	50.	50.	2	0	0	.00	127.01	166.93

*SECNO 415.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

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

415.000	4.58	2120.02	2120.02	.00	2122.31	2.29	.01	.61	2122.30
1000.0	.0	1000.0	.0	.0	82.4	.0	17.5	20.0	2122.30
.22	.00	12.14	.00	.000	.030	.000	.000	2115.44	10.03
.013623	10.	10.	10.	20	11	0	.00	18.03	28.07

SECNO 185.000

585 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

185.000	4.57	2125.87	2125.87	.00	2128.18	2.30	3.13	.00	2128.90
1000.0	.0	1000.0	.0	.0	82.1	.0	17.9	20.1	2128.90
.23	.00	12.17	.00	.000	.030	.000	.000	2121.30	10.04
.013733	229.	229.	229.	20	5	0	.00	18.02	28.06

SECNO 20.000

280 CROSS SECTION 20.00 EXTENDED .31 FEET

301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

693 PROBABLE MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

20.000	5.31	2132.21	2132.21	.00	2133.00	.79	1.19	.15	2134.70
1000.0	.0	823.3	176.7	.0	106.2	64.6	18.4	20.4	2131.00
.23	.00	7.75	2.73	.000	.030	.030	.000	2126.90	.03
.004401	158.	165.	173.	20	9	0	.00	104.97	105.00

*SECNO .000

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	5.53	2132.23	.00	.00	2133.11	.87	.08	.02	2132.00
1000.0	.7	997.8	1.6	.9	133.0	2.2	18.5	20.4	2132.00
.23	.72	7.50	.72	.030	.030	.030	.000	2126.70	262.22
.003687	20.	20.	20.	2	0	0	.00	51.45	313.67

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 .110

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2134.50 ELREA= 2134.50

.110	5.74	2132.44	.00	.00	2133.25	.81	.14	.01	2132.00
1000.0	.0	1000.0	.0	.0	138.1	.0	18.6	20.5	2132.00
.24	.00	7.24	.00	.000	.030	.000	.000	2126.70	270.00
.003272	40.	40.	40.	2	0	0	.00	25.00	295.00

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO .220

SPECIAL CULVERT OUTLET CONTROL

EGIC = 2134.111 EGOC = 2134.305 PCWSE= 2132.436 ELTRD= 2135.500

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2134.11	2134.31	1.06	0.	1000.	5.821	115.5	2135.50	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2135.50 ELREA= 2135.50

.220	7.08	2133.78	.00	.00	2134.31	.53	1.06	.00	2132.00
1000.0	.0	1000.0	.0	.0	171.8	.0	18.8	20.5	2132.00
.24	.00	5.82	.00	.000	.030	.000	.000	2126.70	270.00
.001580	45.	45.	45.	2	0	0	.00	25.00	295.00

CCHV= .100 CEHV= .300

*SECNO 5.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
5.000	2.31	2137.21	2137.21	.00	2137.72	.51	.30	.00	2139.10
1000.0	.0	1000.0	.0	.0	175.1	.0	19.1	20.7	2138.80
.24	.00	5.71	.00	.000	.035	.000	.000	2134.90	2649.44
.017630	80.	80.	80.	20	17	0	.00	171.27	2820.71

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH - Q=1500 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2075	
J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

PROF 2

CCHV= .100 CEHV= .300

*SECNO 1.000

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	3.00	2075.00	.00	2075.00	2076.25	1.25	.00	.00	2072.00
1500.0	32.7	1382.7	84.6	6.4	150.0	15.0	.0	.0	2072.00
.00	5.08	9.22	5.64	.035	.035	.035	.000	2072.00	5.71
.010893	0.	0.	0.	0	0	0	.00	64.29	70.00

CHV= .100 CEHV= .300

*SECNO 2.000

265 DIVIDED FLOW

301 HV CHANGED MORE THAN HVINS

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	1.83	2087.53	.00	.00	2087.64	.11	11.27	.11	2089.60
1500.0	.0	328.8	1171.2	.0	104.6	468.4	11.5	12.7	2087.10
.14	.00	3.14	2.50	.000	.040	.040	.000	2085.70	2637.28
.006601	1350.	1350.	1350.	6	0	0	.00	753.55	3411.50

*SECNO 3.000

301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

593 PROBABLE MINIMUM SPECIFIC ENERGY

.720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	4.50	2098.50	2098.50	.00	2100.12	1.62	7.13	.45	2094.00
1500.0	309.7	1190.3	.0	40.6	110.4	.0	17.8	19.6	2099.00
.16	7.63	10.78	.00	.040	.040	.000	.000	2094.00	1.98
.014876	750.	750.	750.	20	17	0	.00	47.03	49.01

*SECNO 1600.000

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.70

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	6.07	2101.57	.00	.00	2102.92	1.35	2.77	.03	2104.80
1500.0	.0	1500.0	.0	.0	161.1	.0	19.0	19.9	2104.80
.17	.00	9.31	.00	.000	.030	.000	.000	2095.50	3.47
.005119	340.	340.	340.	3	0	0	.00	33.06	36.53

*SECNO 1560.000

1560.000	6.26	2101.96	.00	.00	2103.20	1.24	.28	.01	2105.00
1500.0	.0	1500.0	.0	.0	167.7	.0	19.1	19.9	2105.00
.17	.00	8.94	.00	.000	.044	.000	.000	2095.70	3.26
.009831	40.	40.	40.	0	0	0	.00	33.49	36.74

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

1384.000	6.39	2102.99	.00	.00	2105.13	2.14	1.66	.27	2105.70
1500.0	.0	1500.0	.0	.0	127.9	.0	19.7	20.0	2106.00
.18	.00	11.73	.00	.000	.030	.000	.000	2096.60	4.07
.009056	166.	176.	179.	2	0	0	.00	27.96	32.03

*SECNO 1000.000

1000.000	7.76	2106.46	.00	.00	2108.19	1.73	3.02	.04	2106.60
1500.0	.0	1500.0	.0	.0	142.3	.0	20.9	20.3	2108.60
.19	.00	10.54	.00	.000	.030	.000	.000	2098.70	.22
.006877	364.	384.	390.	2	0	0	.00	24.75	24.98

*SECNO 600.000

3280 CROSS SECTION 600.00 EXTENDED .21 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

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

720 CRITICAL DEPTH ASSUMED

600.000	6.41	2110.21	2110.21	.00	2112.66	2.44	3.50	.22	2110.00
1500.0	.0	1500.0	.0	.0	119.6	.0	22.1	20.5	2114.10
.20	.00	12.54	.00	.000	.030	.000	.000	2103.80	.00
.011488	420.	400.	377.	2	15	0	.00	24.96	24.96

SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED .22 FEET

185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	6.42	2114.72	2114.72	.00	2117.16	2.43	3.44	.00	2114.50
1500.0	.0	1500.0	.0	.0	119.8	.0	23.0	20.7	2119.30
.20	.00	12.52	.00	.000	.030	.000	.000	2108.30	.00
.011417	300.	300.	300.	2	5	0	.00	24.96	24.96

*SECNO .000

301 HV CHANGED MORE THAN HVINS

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.93

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

.000	6.10	2117.70	.00	.00	2118.88	1.18	1.59	.13	2111.60
1500.0	3.3	1283.3	213.4	2.3	140.3	39.6	24.0	20.9	2111.60
.21	1.43	9.15	5.39	.030	.030	.030	.000	2111.60	126.24
.003060	300.	300.	300.	2	0	0	.00	36.74	162.98

_CHV= .300 CEHV= .500

*SECNO 1.100

1.100	6.17	2117.77	.00	.00	2118.92	1.14	.03	.01	2111.60
1500.0	3.4	1281.1	215.6	2.4	142.0	40.5	24.0	20.9	2111.60
.21	1.41	9.02	5.32	.030	.030	.030	.000	2111.60	126.23
.002931	10.	10.	10.	0	0	0	.00	36.90	163.13

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO 1.200

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.03

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2123.97	2123.01	1.65	459.	1049.	5.537	115.5	2118.50	140.	
1.200	8.59	2120.19	.00	.00	2120.57	.38	1.65	.00	2111.60
1500.0	149.0	1094.5	256.4	111.7	197.7	78.6	24.8	21.1	2111.60
.22	1.33	5.54	3.26	.030	.030	.030	.000	2111.60	20.95
.000710	110.	110.	110.	2	0	0	.00	147.34	168.29

CCHV= .100 CEHV= .300

*SECNO 1.300

1.300	8.63	2120.23	.00	.00	2120.60	.37	.04	.00	2111.60
1500.0	155.7	1088.2	256.1	116.0	198.6	79.3	25.2	21.3	2111.60
.22	1.34	5.48	3.23	.030	.030	.030	.000	2111.60	19.91
.000691	50.	50.	50.	2	0	0	.00	148.46	168.37

*SECNO 415.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	8.01	2123.45	2123.45	.00	2124.86	1.42	.01	.31	2122.30
1500.0	5.9	1415.5	78.6	2.4	144.3	30.0	25.3	21.3	2122.30
.22	2.41	9.81	2.62	.030	.030	.030	.000	2115.44	5.75

.005184	10.	10.	10.	20	8	0	.00	81.86	87.61
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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XLN	XLCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 185.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	5.99	2127.29	2127.29	.00	2130.30	3.01	1.85	.48	2128.90
1500.0	.0	1500.0	.0	.0	107.8	.0	26.0	21.6	2128.90
.23	.00	13.92	.00	.000	.030	.000	.000	2121.30	10.02
.014284	229.	229.	229.	20	15	0	.00	18.06	28.08

*SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED .91 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	5.91	2132.81	2132.81	.00	2133.68	.86	1.28	.21	2134.70
1500.0	.0	1015.6	484.4	.0	118.3	115.6	26.7	21.8	2131.00
.23	.00	8.59	4.19	.000	.030	.030	.000	2126.90	.02
.004810	158.	165.	173.	20	6	0	.00	104.98	105.00

*SECNO .000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	6.81	2133.51	2133.51	.00	2134.16	.64	.07	.02	2132.00
1500.0	125.6	1184.2	190.2	69.3	165.0	91.4	26.8	21.9	2132.00
.24	1.81	7.18	2.08	.030	.030	.030	.000	2126.70	118.09
.002534	20.	20.	20.	4	9	0	.00	296.92	415.00

*SECNO .110

SECNO	DEPTH	CWSEL	CRWS	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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2134.50 ELREA= 2134.50

.110	6.37	2133.07	.00	.00	2134.54	1.47	.14	.25	2132.00
1500.0	.0	1500.0	.0	.0	154.0	.0	27.0	22.1	2132.00
.24	.00	9.74	.00	.000	.030	.000	.000	2126.70	270.00
.005117	40.	40.	40.	3	0	0	.00	25.00	295.00

CHV= .300 CEHV= .500

SPECIAL CULVERT

C	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

HART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

CALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO .220

J301 HV CHANGED MORE THAN HVINS

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2137.80	2137.28	1.20	251.	1249.	7.554	115.5	2135.50	264.

495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2135.50 ELREA= 2135.50

.220	8.15	2134.85	.00	.00	2135.74	.89	1.20	.00	2132.00
1500.0	.0	1500.0	.0	.0	198.6	.0	27.2	22.1	2132.00
.24	.00	7.55	.00	.000	.030	.000	.000	2126.70	270.00
.002193	45.	45.	45.	5	0	0	.00	25.00	295.00

CHV= .100 CEHV= .300

*SECNO 5.000

685 20 TRIALS ATTEMPTED WSEL,CWSEL

693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

5.000	2.68	2137.58	2137.58	.00	2138.14	.56	.38	.03	2139.10
1500.0	.0	1500.0	.0	.0	248.9	.0	27.6	22.3	2138.80
.24	.00	6.03	.00	.000	.035	.000	.000	2134.90	2629.99
.017050	80.	80.	80.	20	17	0	.00	219.25	2849.24

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE

T2 MICHAEL BAKER JR. INC.

3 BLUE DIAMOND WASH - Q=2000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		4							2075	
'2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	3		-1							

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

*PROF 3

CCHV= .100 CEHV= .300

*SECNO 1.000

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	3.51	2075.51	2075.51	2075.00	2077.08	1.57	.00	.00	2072.00
2000.0	50.3	1819.3	130.3	8.8	175.6	20.6	.0	.0	2072.00
.00	5.72	10.36	6.34	.035	.035	.035	.000	2072.00	4.98
.011159	0.	0.	0.	0	7	0	.00	66.72	71.70

CCHV= .100 CEHV= .300

*SECNO 2.000

3301 HV CHANGED MORE THAN HVINS

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	2.03	2087.73	.00	.00	2087.85	.12	10.62	.15	2089.60
2000.0	.0	361.1	1638.9	.0	125.4	600.2	14.4	13.2	2087.10
.14	.00	2.88	2.73	.000	.040	.040	.000	2085.70	2633.62
.005842	1350.	1350.	1350.	7	0	0	.00	786.30	3419.92

*SECNO 3.000

3280 CROSS SECTION 3.00 EXTENDED .27 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	5.27	2099.27	2099.27	.00	2101.11	1.83	6.47	.51	2094.00
2000.0	467.5	1532.5	.0	55.5	133.2	.0	22.3	20.4	2099.00
.16	8.43	11.50	.00	.040	.040	.000	.000	2094.00	.00
.013997	750.	750.	750.	20	17	0	.00	50.00	50.00

*SECNO 1600.000

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.52

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR
ROBINDALE CHANNEL
several cross section deleted

1600.000	6.82	2102.32	.00	.00	2104.11	1.80	3.00	.00	2104.80
2000.0	.0	2000.0	.0	.0	185.9	.0	23.8	20.7	2104.80
.16	.00	10.76	.00	.000	.030	.000	.000	2095.50	2.68
.006076	340.	340.	340.	2	0	0	.00	34.64	37.32

*SECNO 1560.000

1560.000	7.19	2102.89	.00	.00	2104.45	1.56	.32	.02	2105.00
2000.0	.0	2000.0	.0	.0	199.7	.0	23.9	20.8	2105.00
.17	.00	10.02	.00	.000	.044	.000	.000	2095.70	2.26
.010704	40.	40.	40.	2	0	0	.00	35.48	37.74

SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

1384.000	7.36	2103.96	2103.95	.00	2106.51	2.55	1.76	.30	2105.70
2000.0	.0	2000.0	.0	.0	156.1	.0	24.6	20.9	2106.00
.17	.00	12.81	.00	.000	.030	.000	.000	2096.60	2.61
.009342	166.	176.	179.	4	5	0	.00	30.38	32.99

SECNO 1000.000

280 CROSS SECTION 1000.00 EXTENDED .97 FEET

1000.000	8.87	2107.57	.00	.00	2109.72	2.15	3.18	.04	2106.60
2000.0	.0	2000.0	.0	.0	170.0	.0	26.1	21.2	2108.60
.18	.00	11.76	.00	.000	.030	.000	.000	2098.70	.00
.007370	364.	384.	390.	2	0	0	.00	24.99	24.99

*SECNO 600.000

280 CROSS SECTION 600.00 EXTENDED 1.23 FEET

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

600.000	7.43	2111.23	2111.23	.00	2114.19	2.95	3.66	.24	2110.00
2000.0	.0	2000.0	.0	.0	145.0	.0	27.5	21.4	2114.10
.19	.00	13.79	.00	.000	.030	.000	.000	2103.80	.00
.011639	420.	400.	377.	2	15	0	.00	24.97	24.97

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED 1.24 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	7.44	2115.74	2115.74	.00	2118.69	2.94	3.48	.00	2114.50
2000.0	.0	2000.0	.0	.0	145.3	.0	28.5	21.6	2119.30
.19	.00	13.77	.00	.000	.030	.000	.000	2108.30	.00
.011570	300.	300.	300.	2	5	0	.00	24.97	24.97

*SECNO .000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.10

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

.000	7.42	2119.02	.00	.00	2120.30	1.28	1.45	.17	2111.60
2000.0	16.5	1649.9	333.6	14.4	170.6	58.5	29.9	21.9	2111.60
.20	1.15	9.67	5.70	.030	.030	.030	.000	2111.60	51.54
.002634	300.	300.	300.	2	0	0	.00	81.89	165.78

CCHV= .300 CEHV= .500

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

SECNO 1.100

7265 DIVIDED FLOW

1.100	7.49	2119.09	.00	.00	2120.34	1.24	.03	.01	2111.60
2000.0	20.8	1643.6	335.6	17.7	172.3	59.7	29.9	21.9	2111.60
.20	1.18	9.54	5.62	.030	.030	.030	.000	2111.60	49.68
.002532	10.	10.	10.	0	0	0	.00	87.87	165.93

SPECIAL CULVERT

C	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

HART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

CALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

130, EGIC= 2129.20..MAY BE TOO LARGE IF INLET CONTROLS.

SECNO 1.200

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.68

PECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2129.20	2126.71	.84	898.	1120.	6.459	115.5	2118.50	177.

1.200	9.09	2120.69	.00	.00	2121.18	.48	.84	.00	2111.60
2000.0	313.0	1351.7	335.3	168.6	209.3	88.1	30.8	22.3	2111.60
.21	1.86	6.46	3.81	.030	.030	.030	.000	2111.60	7.81
.000895	110.	110.	110.	2	0	0	.00	161.55	169.36

CHV= .100 CEHV= .300

SECNO 1.300

1.300	9.16	2120.76	.00	.00	2121.22	.47	.04	.00	2111.60
2000.0	325.7	1339.9	334.4	175.4	210.6	89.2	31.4	22.4	2111.60
.21	1.86	6.36	3.75	.030	.030	.030	.000	2111.60	6.35
.000861	50.	50.	50.	2	0	0	.00	163.13	169.48

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 415.000

3280 CROSS SECTION 415.00 EXTENDED .05 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.10	2124.54	2124.54	.00	2125.51	.97	.02	.15	2122.30
2000.0	29.4	1476.8	493.8	9.3	164.0	147.6	31.5	22.5	2122.30
.21	3.17	9.00	3.35	.030	.030	.030	.000	2115.44	1.70
.003679	10.	10.	10.	20	5	0	.00	178.30	180.00

*SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	9.23	2130.53	2130.53	.00	2131.76	1.23	.93	.08	2128.90
2000.0	12.0	1617.3	370.7	4.3	166.3	97.6	33.0	23.2	2128.90
.22	2.81	9.72	3.80	.030	.030	.030	.000	2121.30	4.74
.004478	229.	229.	229.	20	5	0	.00	103.48	108.22

*SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED 1.32 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	6.32	2133.22	2133.22	.00	2134.24	1.02	.83	.02	2134.70
2000.0	.0	1203.2	796.8	.0	126.4	149.9	34.1	23.6	2131.00
.22	.00	9.52	5.32	.000	.030	.030	.000	2126.90	.02
.005508	158.	165.	173.	20	18	0	.00	104.98	105.00

*SECNO .000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

SECNO	DEPTH	CWSEL	CRWS	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

693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	7.10	2133.80	2133.80	.00	2134.51	.71	.08	.03	2132.00
2000.0	277.9	1370.7	351.4	120.4	172.3	126.4	34.2	23.7	2132.00
.22	2.31	7.96	2.78	.030	.030	.030	.000	2126.70	71.45
.002939	20.	20.	20.	20	15	0	.00	343.60	415.04

*SECNO .110

5301 HV CHANGED MORE THAN HVINS

685 20 TRIALS ATTEMPTED WSEL,CWSEL

693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=

2134.50 ELREA=

2134.50

.110	6.03	2132.73	2132.73	.00	2135.67	2.94	.20	.67	2132.00
2000.0	.0	2000.0	.0	.0	145.4	.0	34.5	23.9	2132.00
.23	.00	13.75	.00	.000	.030	.000	.000	2126.70	270.00
.011006	40.	40.	40.	20	9	0	.00	25.00	295.00

CCHV= .300 CEHV= .500

PECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

CALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2143.03..MAY BE TOO LARGE IF INLET CONTROLS.

*SECNO .220

5301 HV CHANGED MORE THAN HVINS

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2143.03	2140.21	.52	707.	1307.	17.330	115.5	2135.50	355.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2135.50 ELREA= 2135.50

.220	4.83	2131.53	.00	.00	2136.19	4.66	.52	.00	2132.00
2000.0	.0	2000.0	.0	.0	115.4	.0	34.6	23.9	2132.00
.23	.00	17.33	.00	.000	.030	.000	.000	2126.70	270.09
.022892	45.	45.	45.	13	0	0	.00	24.82	294.91

CCHV= .100 CEHV= .300
 *SECNO 5.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5.000	2.93	2137.83	2137.83	.00	2138.48	.65	1.61	.40	2139.10
2000.0	.0	2000.0	.0	.0	309.6	.0	35.0	24.2	2138.80
.23	.00	6.46	.00	.000	.035	.000	.000	2134.90	2626.39
.017848	80.	80.	80.	13	14	0	.00	254.35	2880.73

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 MICHAEL BAKER JR. INC.
3 BLUE DIAMOND WASH - Q=2500 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		5							2075	
'2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	4		-1							

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

*PROF 4

CCHV= .100 CEHV= .300

*SECNO 1.000

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	4.03	2076.03	2076.03	2075.00	2077.83	1.80	.00	.00	2072.00
2500.0	71.3	2244.2	184.6	11.6	201.5	27.1	.0	.0	2072.00
.00	6.14	11.14	6.82	.035	.035	.035	.000	2072.00	4.24
.010722	0.	0.	0.	0	10	0	.00	69.19	73.44

CCHV= .100 CEHV= .300

*SECNO 2.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	2.19	2087.89	.00	.00	2088.02	.13	10.02	.17	2089.60
2500.0	.0	438.6	2061.4	.0	145.3	707.4	16.9	13.4	2087.10
.13	.00	3.02	2.91	.000	.040	.040	.000	2085.70	2630.67
.005445	1350.	1350.	1350.	6	0	0	.00	796.02	3426.70

*SECNO 3.000

3280 CROSS SECTION 3.00 EXTENDED .83 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	5.83	2099.83	2099.83	.00	2101.99	2.15	6.26	.61	2094.00
2500.0	631.5	1868.5	.0	66.6	150.0	.0	26.1	20.7	2099.00
.15	9.48	12.46	.00	.040	.040	.000	.000	2094.00	.00
.014352	750.	750.	750.	20	20	0	.00	50.00	50.00

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

SECNO 1600.000

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

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR
ROBINDALE CHANNEL

several cross section deleted

1600.000	7.52	2103.02	.00	.00	2105.19	2.17	3.20	.01	2104.80
2500.0	.0	2500.0	.0	.0	211.3	.0	27.8	21.0	2104.80
.15	.00	11.83	.00	.000	.030	.000	.000	2095.50	1.91
.006633	340.	340.	340.	2	0	0	.00	36.18	38.09

SECNO 1560.000

1560.000	8.02	2103.72	.00	.00	2105.56	1.84	.34	.03	2105.00
2500.0	.0	2500.0	.0	.0	229.5	.0	28.0	21.1	2105.00
.15	.00	10.89	.00	.000	.044	.000	.000	2095.70	1.38
.011338	40.	40.	40.	3	0	0	.00	37.25	38.62

SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

.185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1384.000	8.25	2104.85	2104.85	.00	2107.72	2.87	1.81	.31	2105.70
2500.0	.0	2500.0	.0	.0	183.9	.0	28.8	21.2	2106.00
.16	.00	13.59	.00	.000	.030	.000	.000	2096.60	1.28
.009368	166.	176.	179.	3	8	0	.00	32.58	33.86

*SECNO 1000.000

280 CROSS SECTION 1000.00 EXTENDED 1.87 FEET

1000.000	9.77	2108.47	.00	.00	2111.09	2.62	3.35	.02	2106.60
2500.0	.0	2500.0	.0	.0	192.4	.0	30.5	21.5	2108.60
.17	.00	13.00	.00	.000	.030	.000	.000	2098.70	.00
.008127	364.	384.	390.	2	0	0	.00	25.00	25.00

*SECNO 600.000

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

3280 CROSS SECTION 600.00 EXTENDED 2.16 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	8.36	2112.16	2112.16	.00	2115.59	3.43	3.89	.24	2110.00
2500.0	.0	2500.0	.0	.0	168.2	.0	32.2	21.7	2114.10
.17	.00	14.86	.00	.000	.030	.000	.000	2103.80	.00
.011872	420.	400.	377.	2	15	0	.00	24.98	24.98

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED 2.18 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	8.38	2116.68	2116.68	.00	2120.09	3.41	3.55	.00	2114.50
2500.0	.0	2500.0	.0	.0	168.6	.0	33.3	21.9	2119.30
.18	.00	14.82	.00	.000	.030	.000	.000	2108.30	.00
.011791	300.	300.	300.	2	5	0	.00	24.98	24.98

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

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

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

.000	8.91	2120.51	.00	.00	2121.36	.85	1.02	.26	2111.60
2500.0	339.7	1737.8	422.5	147.4	205.1	84.6	35.4	22.5	2111.60
.19	2.30	8.47	4.99	.030	.030	.030	.000	2111.60	12.53
.001582	300.	300.	300.	2	0	0	.00	156.44	168.97

CCHV= .300 CEHV= .500

*SECNO 1.100

1.100	8.97	2120.57	.00	.00	2121.39	.82	.02	.01	2111.60
2500.0	357.0	1721.6	421.4	154.4	206.5	85.8	35.5	22.5	2111.60
.19	2.31	8.34	4.91	.030	.030	.030	.000	2111.60	10.94
.001517	10.	10.	10.	0	0	0	.00	158.16	169.10

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

SPECIAL CULVERT

IC	CUNO	CUNV	ENTLC	COFQ	ROLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

1130, EGIC= 2135.92..MAY BE TOO LARGE IF INLET CONTROLS.

1135, EGOE= 2132.47 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 1.200

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2135.92	2132.47	.20	1303.	1186.	7.565	115.5	2118.50	193.	
1.200	9.34	2120.94	.00	.00	2121.59	.64	.20	.00	2111.60
2500.0	459.9	1625.9	414.2	198.6	214.9	92.9	36.7	22.9	2111.60
.20	2.32	7.57	4.46	.030	.030	.030	.000	2111.60	1.45
.001185	110.	110.	110.	3	0	0	.00	168.43	169.88

CHV= .100 CEHV= .300

*SECNO 1.300

280 CROSS SECTION 1.30 EXTENDED .05 FEET

1.300	9.45	2121.05	.00	.00	2121.65	.60	.06	.00	2111.60
2500.0	489.7	1597.5	412.8	211.6	217.3	95.0	37.3	23.1	2111.60
.20	2.31	7.35	4.35	.030	.030	.030	.000	2111.60	.00
.001103	50.	50.	50.	2	0	0	.00	171.90	171.90

SECNO 415.000

3280 CROSS SECTION 415.00 EXTENDED .43 FEET

685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.48	2124.92	2124.92	.00	2125.92	1.00	.02	.12	2122.30
2500.0	46.0	1623.7	830.4	12.7	171.0	205.8	37.4	23.2	2122.30
.20	3.61	9.50	4.03	.030	.030	.030	.000	2115.44	.29
.003874	10.	10.	10.	20	5	0	.00	179.71	180.00

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

SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

593 PROBABLE MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

185.000	9.62	2130.92	2130.92	.00	2132.32	1.40	1.01	.12	2128.90
2500.0	22.8	1850.7	626.5	6.6	173.4	129.1	39.2	23.9	2128.90
.21	3.46	10.67	4.85	.030	.030	.030	.000	2121.30	3.48
.005104	229.	229.	229.	20	8	0	.00	105.63	109.11

SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED 1.66 FEET

585 20 TRIALS ATTEMPTED WSEL,CWSEL

5693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	6.66	2133.56	2133.56	.00	2134.74	1.18	.93	.02	2134.70
2500.0	.0	1373.1	1126.9	.0	133.3	179.4	40.4	24.3	2131.00
.21	.00	10.30	6.28	.000	.030	.030	.000	2126.90	.01
.006089	158.	165.	173.	20	18	0	.00	104.99	105.00

*SECNO .000

J301 HV CHANGED MORE THAN HVINS

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.99

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	7.85	2134.55	2134.08	.00	2134.88	.33	.05	.08	2132.00
2500.0	698.4	1177.3	624.3	291.7	191.1	217.0	40.7	24.4	2132.00
.21	2.39	6.16	2.88	.030	.030	.030	.000	2126.70	36.28
.001534	20.	20.	20.	10	8	0	.00	378.86	415.14

*SECNO .110

585 20 TRIALS ATTEMPTED WSEL,CWSEL

5693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

.110	7.82	2134.52	2134.52	.00	2135.23	.71	.08	.11	2132.00
2500.0	100.8	1559.2	840.0	33.5	190.2	267.8	41.2	24.7	2132.00
.22	3.01	8.20	3.14	.030	.030	.030	.000	2126.70	243.46
.002733	40.	40.	40.	20	7	0	.00	258.30	501.76

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE
 SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2149.75..MAY BE TOO LARGE IF INLET CONTROLS.
 5135, EGOE= 2146.21 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO .220

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2149.75	2146.21	1.26	1147.	1345.	9.538	115.5	2135.50	420.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3693 PROBABLE MINIMUM SPECIFIC ENERGY

.220	8.88	2135.58	2133.66	.00	2136.77	1.19	.13	-.13	2132.00
2500.0	202.5	2067.0	230.5	55.2	216.7	107.1	41.7	25.0	2132.00
.22	3.67	9.54	2.15	.030	.030	.030	.000	2126.70	203.09
.003110	45.	45.	45.	20	11	0	.00	316.99	520.08

CCHV= .100 CEHV= .300

*SECNO 5.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5.000	3.18	2138.08	2138.08	.00	2138.77	.69	.47	.05	2139.10
2500.0	.0	2500.0	.0	.0	374.6	.0	42.4	25.6	2138.80
.22	.00	6.67	.00	.000	.035	.000	.000	2134.90	2622.75
.015329	80.	80.	80.	20	17	0	.00	261.42	2884.17

THIS RUN EXECUTED 28AUG92 15:03:13

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1.000	.00	.00	.00	2072.00	1000.00	2074.73	.00	2075.42	67.04	6.79	154.40	122.14
	1.000	.00	.00	.00	2072.00	1500.00	2075.00	.00	2076.25	108.93	9.22	171.43	143.72
	1.000	.00	.00	.00	2072.00	2000.00	2075.51	2075.51	2077.08	111.59	10.36	204.93	189.33
	1.000	.00	.00	.00	2072.00	2500.00	2076.03	2076.03	2077.83	107.22	11.14	240.22	241.44
	2.000	1350.00	.00	.00	2085.70	1000.00	2087.23	.00	2087.37	120.94	3.73	355.27	90.93
	2.000	1350.00	.00	.00	2085.70	1500.00	2087.53	.00	2087.64	66.01	3.14	573.00	184.62
	2.000	1350.00	.00	.00	2085.70	2000.00	2087.73	.00	2087.85	58.42	2.88	725.54	261.67
*	2.000	1350.00	.00	.00	2085.70	2500.00	2087.89	.00	2088.02	54.45	3.02	852.64	338.79
	3.000	750.00	.00	.00	2094.00	1000.00	2097.58	2097.58	2098.93	158.71	9.77	110.22	79.38
*	3.000	750.00	.00	.00	2094.00	1500.00	2098.50	2098.50	2100.12	148.76	10.78	150.98	122.98
	3.000	750.00	.00	.00	2094.00	2000.00	2099.27	2099.27	2101.11	139.97	11.50	188.67	169.05
	3.000	750.00	.00	.00	2094.00	2500.00	2099.83	2099.83	2101.99	143.52	12.46	216.59	208.68
	1600.000	340.00	.00	.00	2095.50	1000.00	2100.57	.00	2101.50	42.90	7.76	128.92	152.67
	1600.000	340.00	.00	.00	2095.50	1500.00	2101.57	.00	2102.92	51.19	9.31	161.10	209.65
*	1600.000	340.00	.00	.00	2095.50	2000.00	2102.32	.00	2104.11	60.76	10.76	185.93	256.58
*	1600.000	340.00	.00	.00	2095.50	2500.00	2103.02	.00	2105.19	66.33	11.83	211.35	306.97
	1560.000	40.00	.00	.00	2095.70	1000.00	2100.84	.00	2101.74	87.66	7.62	131.26	106.80
	1560.000	40.00	.00	.00	2095.70	1500.00	2101.96	.00	2103.20	98.31	8.94	167.70	151.28
	1560.000	40.00	.00	.00	2095.70	2000.00	2102.89	.00	2104.45	107.04	10.02	199.66	193.31
	1560.000	40.00	.00	.00	2095.70	2500.00	2103.72	.00	2105.56	113.38	10.89	229.53	234.79
	1384.000	176.00	.00	.00	2096.60	1000.00	2101.84	.00	2103.49	85.32	10.28	97.24	108.26
	1384.000	176.00	.00	.00	2096.60	1500.00	2102.99	.00	2105.13	90.56	11.73	127.86	157.62
	1384.000	176.00	.00	.00	2096.60	2000.00	2103.96	2103.95	2106.51	93.42	12.81	156.14	206.93
*	1384.000	176.00	.00	.00	2096.60	2500.00	2104.85	2104.85	2107.72	93.68	13.59	183.90	258.30
	1000.000	384.00	.00	.00	2098.70	1000.00	2105.01	.00	2106.34	64.08	9.25	108.15	124.93
	1000.000	384.00	.00	.00	2098.70	1500.00	2106.46	.00	2108.19	68.77	10.54	142.30	180.88
	1000.000	384.00	.00	.00	2098.70	2000.00	2107.57	.00	2109.72	73.70	11.76	170.03	232.96
	1000.000	384.00	.00	.00	2098.70	2500.00	2108.47	.00	2111.09	81.27	13.00	192.37	277.31

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	600.000	400.00	.00	.00	2103.80	1000.00	2108.92	2108.92	2110.90	116.81	11.29	88.57	92.53
*	600.000	400.00	.00	.00	2103.80	1500.00	2110.21	2110.21	2112.66	114.88	12.54	119.58	139.95
*	600.000	400.00	.00	.00	2103.80	2000.00	2111.23	2111.23	2114.19	116.39	13.79	144.99	185.38
*	600.000	400.00	.00	.00	2103.80	2500.00	2112.16	2112.16	2115.59	118.72	14.86	168.24	229.45
*	300.000	300.00	.00	.00	2108.30	1000.00	2113.43	2113.43	2115.40	116.29	11.27	88.72	92.73
*	300.000	300.00	.00	.00	2108.30	1500.00	2114.72	2114.72	2117.16	114.17	12.52	119.84	140.38
*	300.000	300.00	.00	.00	2108.30	2000.00	2115.74	2115.74	2118.69	115.70	13.77	145.29	185.93
*	300.000	300.00	.00	.00	2108.30	2500.00	2116.68	2116.68	2120.09	117.91	14.82	168.64	230.23
*	.000	300.00	.00	.00	2111.60	1000.00	2116.29	.00	2117.26	35.23	8.23	132.29	168.48
*	.000	300.00	.00	.00	2111.60	1500.00	2117.70	.00	2118.88	30.60	9.15	182.19	271.16
*	.000	300.00	.00	.00	2111.60	2000.00	2119.02	.00	2120.30	26.34	9.67	243.50	389.66
*	.000	300.00	.00	.00	2111.60	2500.00	2120.51	.00	2121.36	15.82	8.47	437.13	628.60
	1.100	10.00	.00	.00	2111.60	1000.00	2116.09	.00	2117.54	51.46	9.68	103.35	139.40
	1.100	10.00	.00	.00	2111.60	1500.00	2117.77	.00	2118.92	29.31	9.02	184.88	277.07
	1.100	10.00	.00	.00	2111.60	2000.00	2119.09	.00	2120.34	25.32	9.54	249.57	397.46
	1.100	10.00	.00	.00	2111.60	2500.00	2120.57	.00	2121.39	15.17	8.34	446.73	641.78
*	1.200	110.00	2118.50	2116.60	2111.60	1000.00	2119.53	.00	2119.78	4.90	4.36	296.27	451.75
*	1.200	110.00	2118.50	2116.60	2111.60	1500.00	2120.19	.00	2120.57	7.10	5.54	387.96	563.02
*	1.200	110.00	2118.50	2116.60	2111.60	2000.00	2120.69	.00	2121.18	8.95	6.46	466.01	668.62
	1.200	110.00	2118.50	2116.60	2111.60	2500.00	2120.94	.00	2121.59	11.85	7.57	506.37	726.22
	1.300	50.00	.00	.00	2111.60	1000.00	2119.56	.00	2119.81	4.82	4.33	299.81	455.64
	1.300	50.00	.00	.00	2111.60	1500.00	2120.23	.00	2120.60	6.91	5.48	393.85	570.69
	1.300	50.00	.00	.00	2111.60	2000.00	2120.76	.00	2121.22	8.61	6.36	475.13	681.46
	1.300	50.00	.00	.00	2111.60	2500.00	2121.05	.00	2121.65	11.03	7.35	523.93	752.81
*	415.000	10.00	.00	.00	2115.44	1000.00	2120.02	2120.02	2122.31	136.23	12.14	82.37	85.68
*	415.000	10.00	.00	.00	2115.44	1500.00	2123.45	2123.45	2124.86	51.84	9.81	176.68	208.32
*	415.000	10.00	.00	.00	2115.44	2000.00	2124.54	2124.54	2125.51	36.79	9.00	320.93	329.72
*	415.000	10.00	.00	.00	2115.44	2500.00	2124.92	2124.92	2125.92	38.74	9.50	389.50	401.65
*	185.000	229.00	.00	.00	2121.30	1000.00	2125.87	2125.87	2128.18	137.33	12.17	82.15	85.33
*	185.000	229.00	.00	.00	2121.30	1500.00	2127.29	2127.29	2130.30	142.84	13.92	107.76	125.51
*	185.000	229.00	.00	.00	2121.30	2000.00	2130.53	2130.53	2131.76	44.78	9.72	268.26	298.89
*	185.000	229.00	.00	.00	2121.30	2500.00	2130.92	2130.92	2132.32	51.04	10.67	309.10	349.94
*	20.000	165.00	.00	.00	2126.90	1000.00	2132.21	2132.21	2133.00	44.01	7.75	170.86	150.74
*	20.000	165.00	.00	.00	2126.90	1500.00	2132.81	2132.81	2133.68	48.10	8.59	233.85	216.29
*	20.000	165.00	.00	.00	2126.90	2000.00	2133.22	2133.22	2134.24	55.08	9.52	276.27	269.48
*	20.000	165.00	.00	.00	2126.90	2500.00	2133.56	2133.56	2134.74	60.89	10.30	312.71	320.37
	.000	20.00	.00	.00	2126.70	1000.00	2132.23	.00	2133.11	36.87	7.50	136.12	164.69
*	.000	20.00	.00	.00	2126.70	1500.00	2133.51	2133.51	2134.16	25.34	7.18	325.75	298.00
*	.000	20.00	.00	.00	2126.70	2000.00	2133.80	2133.80	2134.51	29.39	7.96	419.10	368.93
*	.000	20.00	.00	.00	2126.70	2500.00	2134.55	2134.08	2134.88	15.34	6.16	699.83	638.33

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	.110	40.00	.00	.00	2126.70	1000.00	2132.44	.00	2133.25	32.72	7.24	138.08	174.83
	.110	40.00	.00	.00	2126.70	1500.00	2133.07	.00	2134.54	51.17	9.74	154.00	209.70
*	.110	40.00	.00	.00	2126.70	2000.00	2132.73	2132.73	2135.67	110.06	13.75	145.44	190.64
	.110	40.00	.00	.00	2126.70	2500.00	2134.52	2134.52	2135.23	27.33	8.20	491.50	478.21
•	.220	45.00	2135.50	2133.50	2126.70	1000.00	2133.78	.00	2134.31	15.80	5.82	171.79	251.62
+	.220	45.00	2135.50	2133.50	2126.70	1500.00	2134.85	.00	2135.74	21.93	7.55	198.56	320.32
	.220	45.00	2135.50	2133.50	2126.70	2000.00	2131.53	.00	2136.19	228.92	17.33	115.41	132.19
×	.220	45.00	2135.50	2133.50	2126.70	2500.00	2135.58	2133.66	2136.77	31.10	9.54	379.01	448.26
	5.000	80.00	.00	.00	2134.90	1000.00	2137.21	2137.21	2137.72	176.30	5.71	175.07	75.31
	5.000	80.00	.00	.00	2134.90	1500.00	2137.58	2137.58	2138.14	170.50	6.03	248.91	114.88
•	5.000	80.00	.00	.00	2134.90	2000.00	2137.83	2137.83	2138.48	178.48	6.46	309.61	149.70
	5.000	80.00	.00	.00	2134.90	2500.00	2138.08	2138.08	2138.77	153.29	6.67	374.59	201.92

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
A	1.000	1000.00	2074.73	.00	.00	-.27	63.01	.00
	1.000	1500.00	2075.00	.27	.00	.00	64.29	.00
*	1.000	2000.00	2075.51	.51	.00	.51	66.72	.00
*	1.000	2500.00	2076.03	.52	.00	1.03	69.19	.00
B	2.000	1000.00	2087.23	.00	12.50	.00	712.32	1350.00
	2.000	1500.00	2087.53	.30	12.53	.00	753.55	1350.00
	2.000	2000.00	2087.73	.20	12.22	.00	786.30	1350.00
*	2.000	2500.00	2087.89	.16	11.86	.00	796.02	1350.00
* C	3.000	1000.00	2097.58	.00	10.35	.00	41.51	750.00
*	3.000	1500.00	2098.50	.92	10.98	.00	47.03	750.00
*	3.000	2000.00	2099.27	.77	11.55	.00	50.00	750.00
*	3.000	2500.00	2099.83	.56	11.95	.00	50.00	750.00
* D	1600.000	1000.00	2100.57	.00	2.98	.00	30.89	340.00
*	1600.000	1500.00	2101.57	1.00	3.07	.00	33.06	340.00
*	1600.000	2000.00	2102.32	.75	3.04	.00	34.64	340.00
*	1600.000	2500.00	2103.02	.70	3.18	.00	36.18	340.00
*	1560.000	1000.00	2100.84	.00	.27	.00	31.06	40.00
	1560.000	1500.00	2101.96	1.12	.39	.00	33.49	40.00
	1560.000	2000.00	2102.89	.93	.58	.00	35.48	40.00
	1560.000	2500.00	2103.72	.83	.70	.00	37.25	40.00
E	1384.000	1000.00	2101.84	.00	1.00	.00	25.08	176.00
	1384.000	1500.00	2102.99	1.15	1.03	.00	27.96	176.00
	1384.000	2000.00	2103.96	.96	1.07	.00	30.38	176.00
*	1384.000	2500.00	2104.85	.89	1.13	.00	32.58	176.00
F	1000.000	1000.00	2105.01	.00	3.17	.00	22.35	384.00
	1000.000	1500.00	2106.46	1.45	3.47	.00	24.75	384.00
	1000.000	2000.00	2107.57	1.11	3.61	.00	24.99	384.00
	1000.000	2500.00	2108.47	.89	3.62	.00	25.00	384.00
* G	600.000	1000.00	2108.92	.00	3.91	.00	22.69	400.00
*	600.000	1500.00	2110.21	1.29	3.75	.00	24.96	400.00
*	600.000	2000.00	2111.23	1.02	3.66	.00	24.97	400.00
*	600.000	2500.00	2112.16	.93	3.69	.00	24.98	400.00
* H	300.000	1000.00	2113.43	.00	4.51	.00	22.70	300.00
*	300.000	1500.00	2114.72	1.30	4.51	.00	24.96	300.00
*	300.000	2000.00	2115.74	1.02	4.51	.00	24.97	300.00
*	300.000	2500.00	2116.68	.94	4.52	.00	24.98	300.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	.000	1000.00	2116.29	.00	2.86	.00	33.54	300.00
	.000	1500.00	2117.70	1.41	2.98	.00	36.74	300.00
*	.000	2000.00	2119.02	1.32	3.27	.00	81.89	300.00
	.000	2500.00	2120.51	1.49	3.83	.00	156.44	300.00
I	1.100	1000.00	2116.09	.00	-.20	.00	23.00	10.00
	1.100	1500.00	2117.77	1.68	.07	.00	36.90	10.00
	1.100	2000.00	2119.09	1.32	.07	.00	87.87	10.00
	1.100	2500.00	2120.57	1.48	.06	.00	158.16	10.00
J	1.200	1000.00	2119.53	.00	3.44	.00	124.66	110.00
	1.200	1500.00	2120.19	.66	2.42	.00	147.34	110.00
*	1.200	2000.00	2120.69	.50	1.60	.00	161.55	110.00
	1.200	2500.00	2120.94	.25	.37	.00	168.43	110.00
	1.300	1000.00	2119.56	.00	.03	.00	127.01	50.00
	1.300	1500.00	2120.23	.68	.05	.00	148.46	50.00
	1.300	2000.00	2120.76	.52	.06	.00	163.13	50.00
	1.300	2500.00	2121.05	.29	.10	.00	171.90	50.00
	415.000	1000.00	2120.02	.00	.47	.00	18.03	10.00
	415.000	1500.00	2123.45	3.42	3.21	.00	81.86	10.00
*	415.000	2000.00	2124.54	1.09	3.78	.00	178.30	10.00
	415.000	2500.00	2124.92	.38	3.88	.00	179.71	10.00
* K	185.000	1000.00	2125.87	.00	5.85	.00	18.02	229.00
*	185.000	1500.00	2127.29	1.42	3.85	.00	18.06	229.00
	185.000	2000.00	2130.53	3.24	5.99	.00	103.48	229.00
	185.000	2500.00	2130.92	.39	6.00	.00	105.63	229.00
	20.000	1000.00	2132.21	.00	6.34	.00	104.97	165.00
	20.000	1500.00	2132.81	.60	5.52	.00	104.98	165.00
*	20.000	2000.00	2133.22	.40	2.68	.00	104.98	165.00
-	20.000	2500.00	2133.56	.35	2.64	.00	104.99	165.00
	.000	1000.00	2132.23	.00	.02	.00	51.45	20.00
*	.000	1500.00	2133.51	1.28	.70	.00	296.92	20.00
	.000	2000.00	2133.80	.29	.59	.00	343.60	20.00
	.000	2500.00	2134.55	.74	.99	.00	378.86	20.00
L	.110	1000.00	2132.44	.00	.20	.00	25.00	40.00
	.110	1500.00	2133.07	.64	-.44	.00	25.00	40.00
*	.110	2000.00	2132.73	-.34	-1.07	.00	25.00	40.00
*	.110	2500.00	2134.52	1.79	-.03	.00	258.30	40.00
* M	.220	1000.00	2133.78	.00	1.34	.00	25.00	45.00
*	.220	1500.00	2134.85	1.07	1.78	.00	25.00	45.00
	.220	2000.00	2131.53	-3.33	-1.20	.00	24.82	45.00
	.220	2500.00	2135.58	4.05	1.06	.00	316.99	45.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
* N	5.000	1000.00	2137.21	.00	3.43	.00	171.27	80.00
•	5.000	1500.00	2137.58	.37	2.72	.00	219.25	80.00
*	5.000	2000.00	2137.83	.25	6.30	.00	254.35	80.00
•	5.000	2500.00	2138.08	.25	2.50	.00	261.42	80.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	1.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
WARNING SECNO=	2.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	3.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	4	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	4	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	1600.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	3	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1560.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	1384.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1384.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=	600.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	3	MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=	600.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=	300.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=	300.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=	300.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	3	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=	415.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=	415.000	PROFILE=	4	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	415.000	PROFILE=	4	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	185.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	185.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	185.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	185.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	185.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	185.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	185.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	185.000	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	185.000	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	185.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	185.000	PROFILE=	4	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	185.000	PROFILE=	4	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	20.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	20.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=	20.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	20.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	20.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	20.000	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	20.000	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	20.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	20.000	PROFILE=	4	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	20.000	PROFILE=	4	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	.000	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	.000	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=	.110	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	.110	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	.110	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	.110	PROFILE=	4	PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= .110 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

ARNING SECNO= .220 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

ARNING SECNO= .220 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= .220 PROFILE= 3 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

AUTION SECNO= .220 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY

AUTION SECNO= .220 PROFILE= 4 WSEL ASSUMED BASED ON MIN DIFF

CAUTION SECNO= .220 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

AUTION SECNO= 5.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 5.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 5.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

AUTION SECNO= 5.000 PROFILE= 2 CRITICAL DEPTH ASSUMED

AUTION SECNO= 5.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 5.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

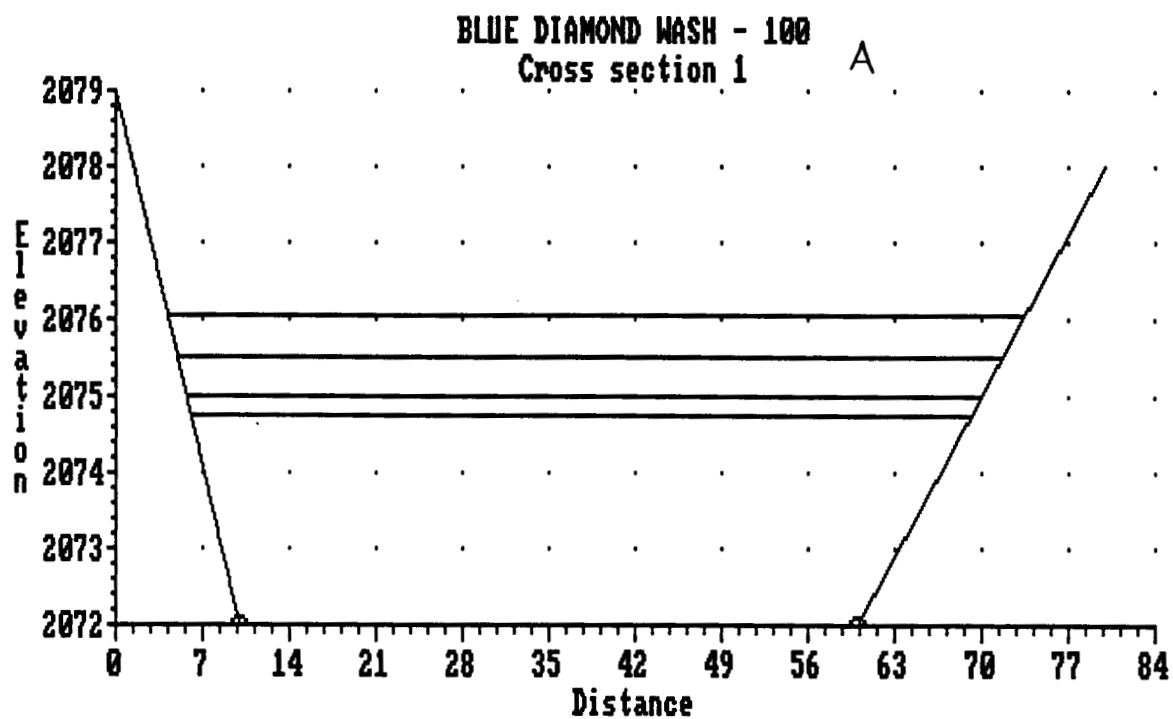
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AUTION SECNO= 5.000 PROFILE= 3 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 5.000 PROFILE= 4 CRITICAL DEPTH ASSUMED

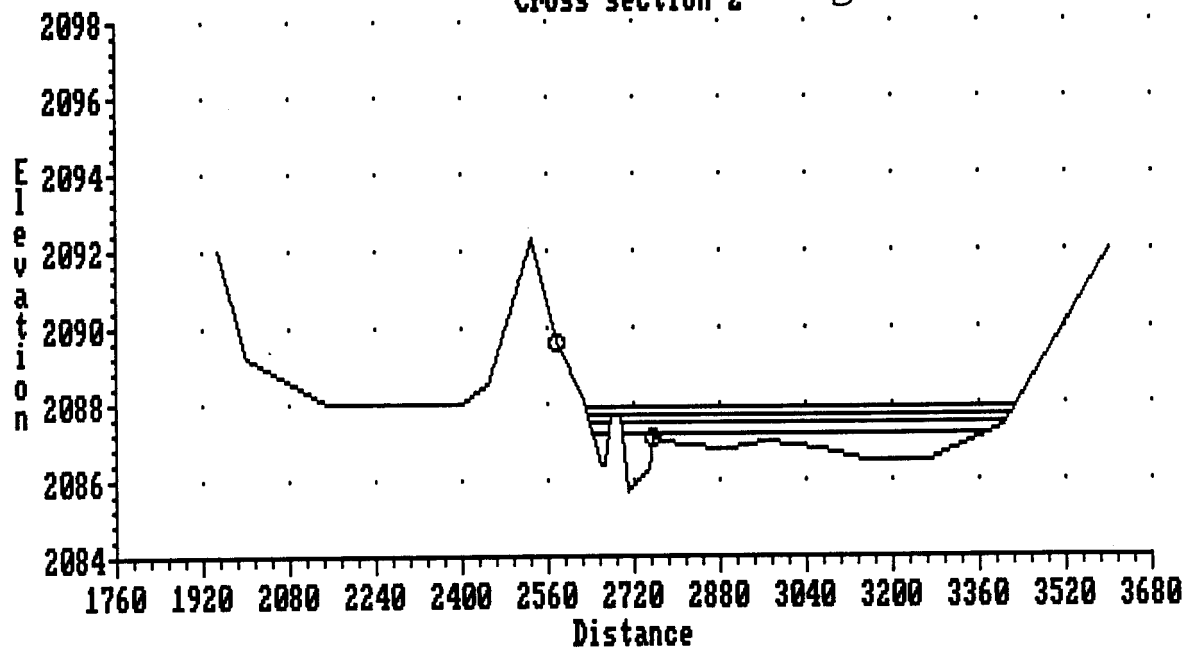
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AUTION SECNO= 5.000 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

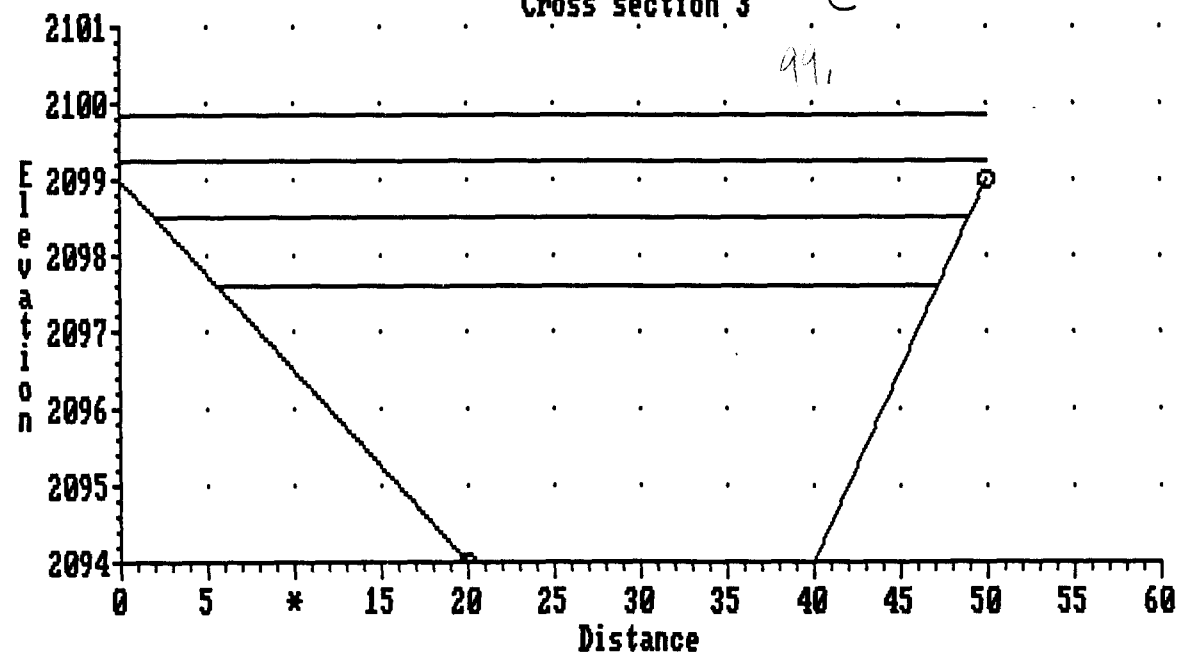


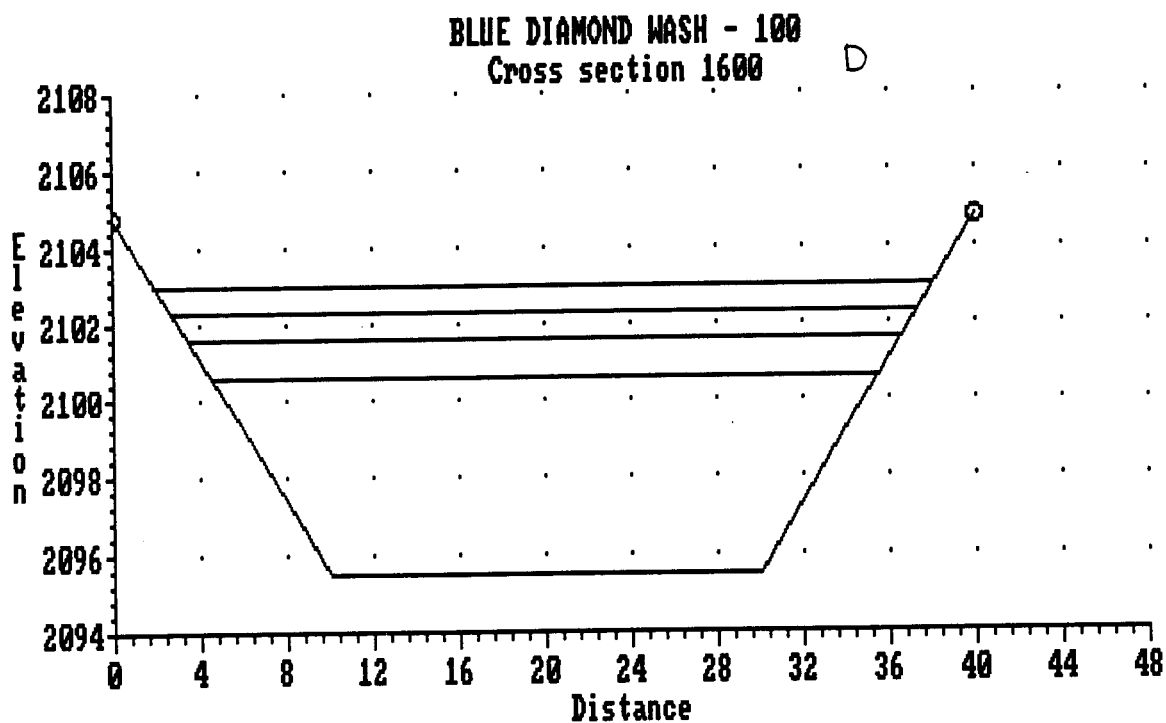
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Cross section 2

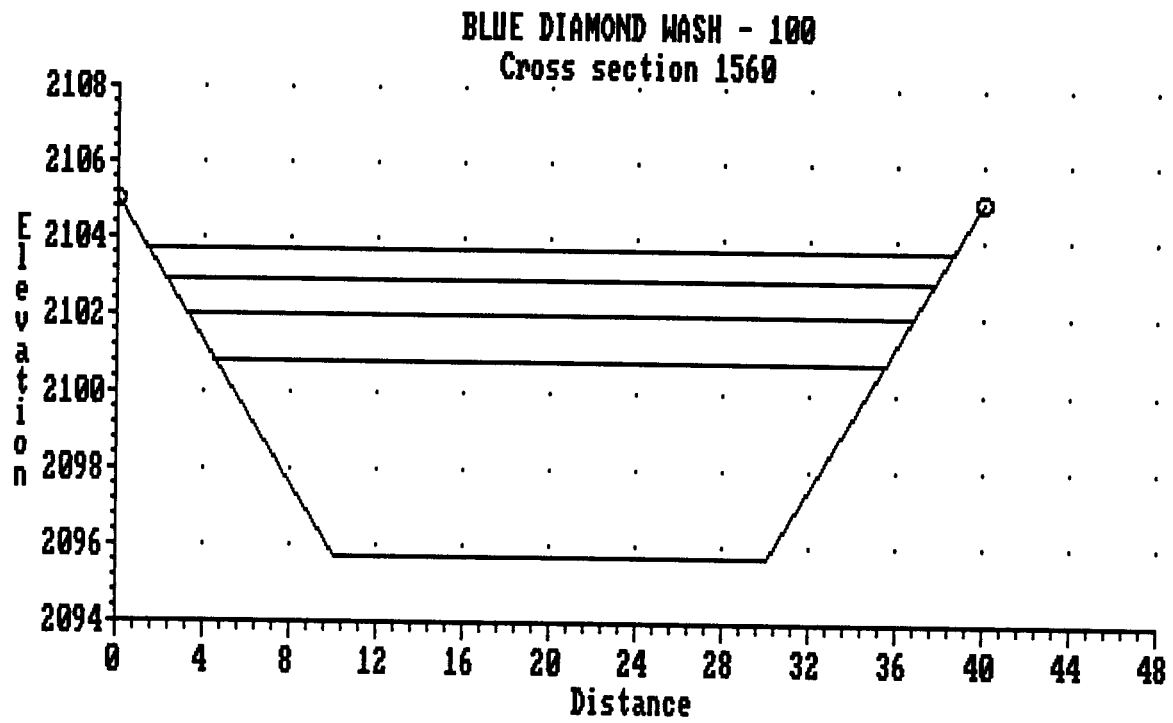
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BLUE DIAMOND WASH - 100
Cross section 3 C

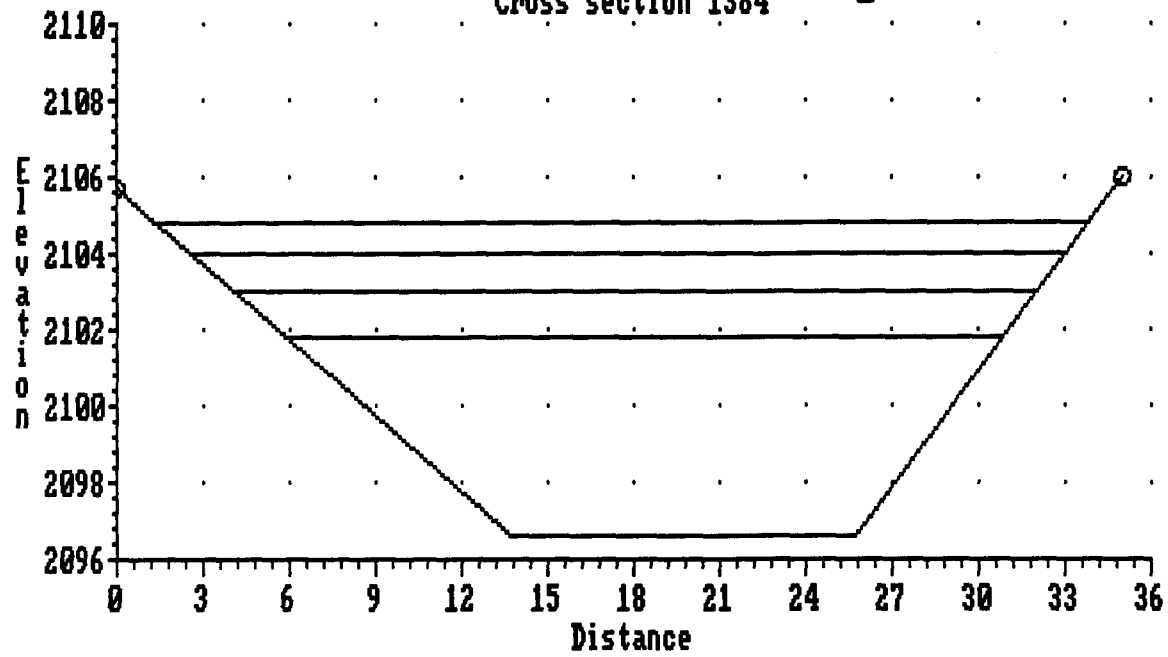






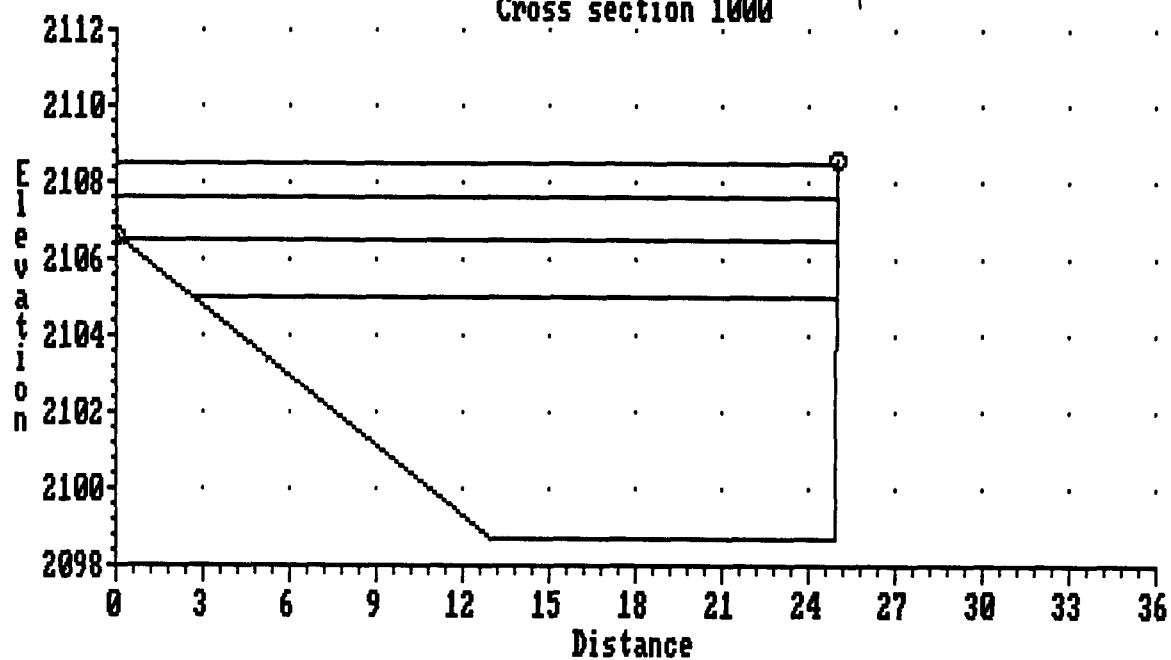
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Cross section 1384

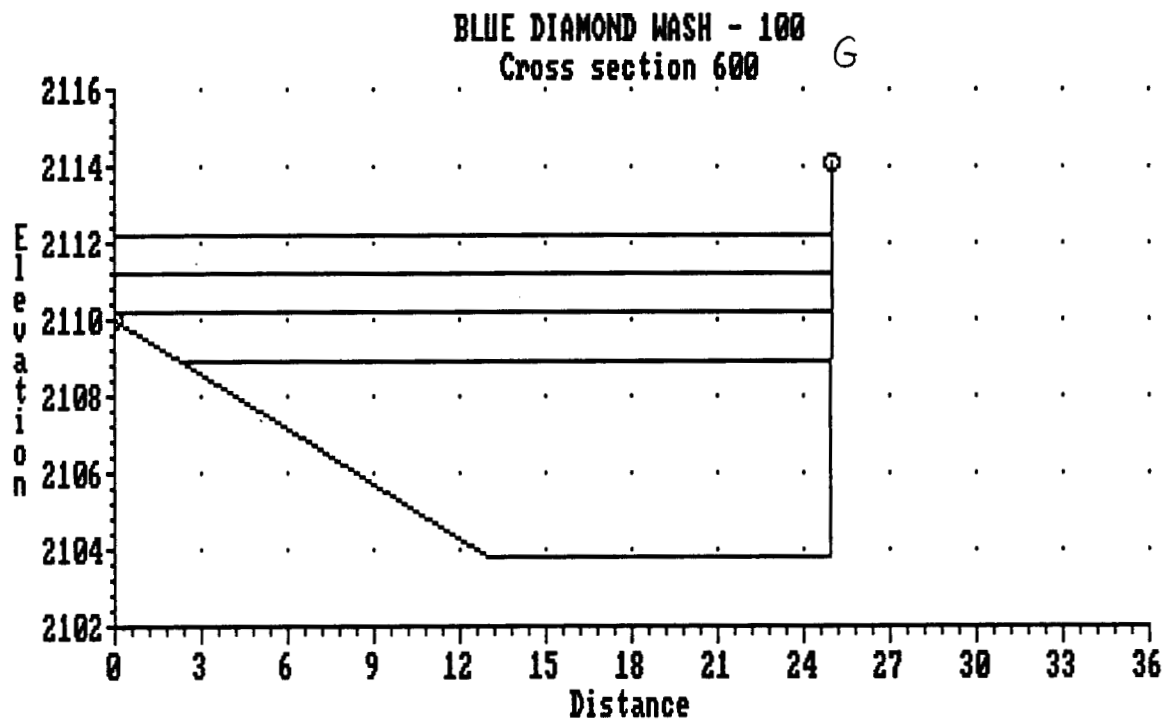
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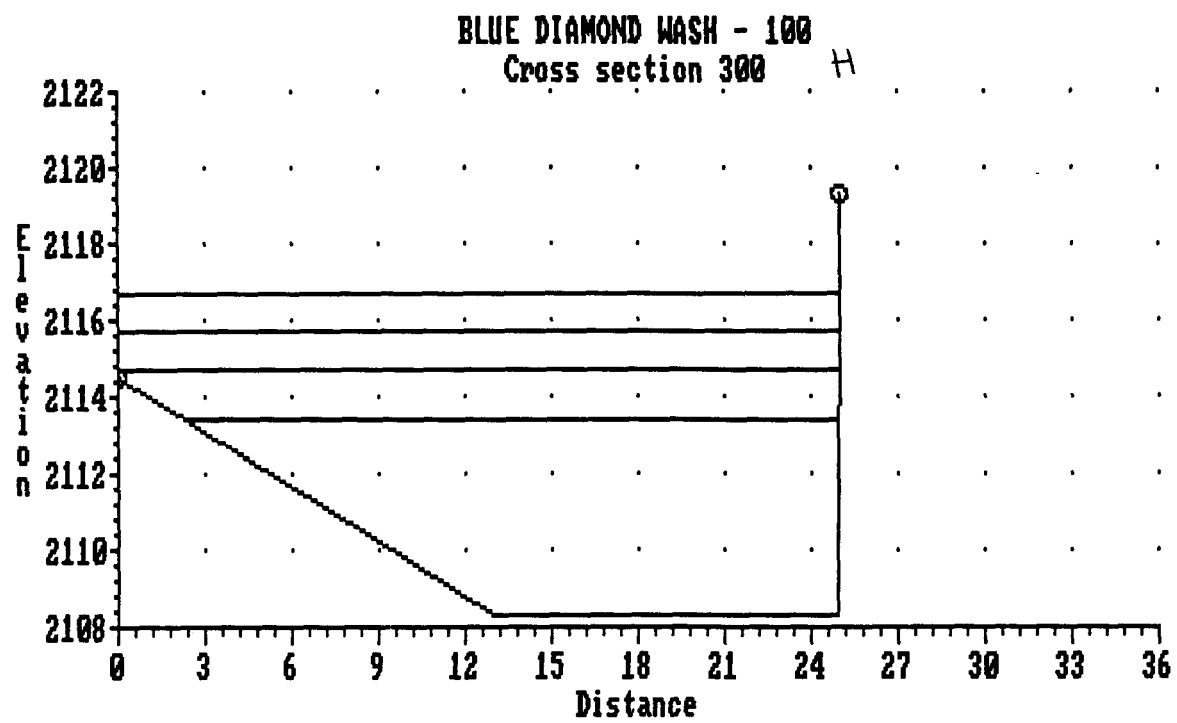


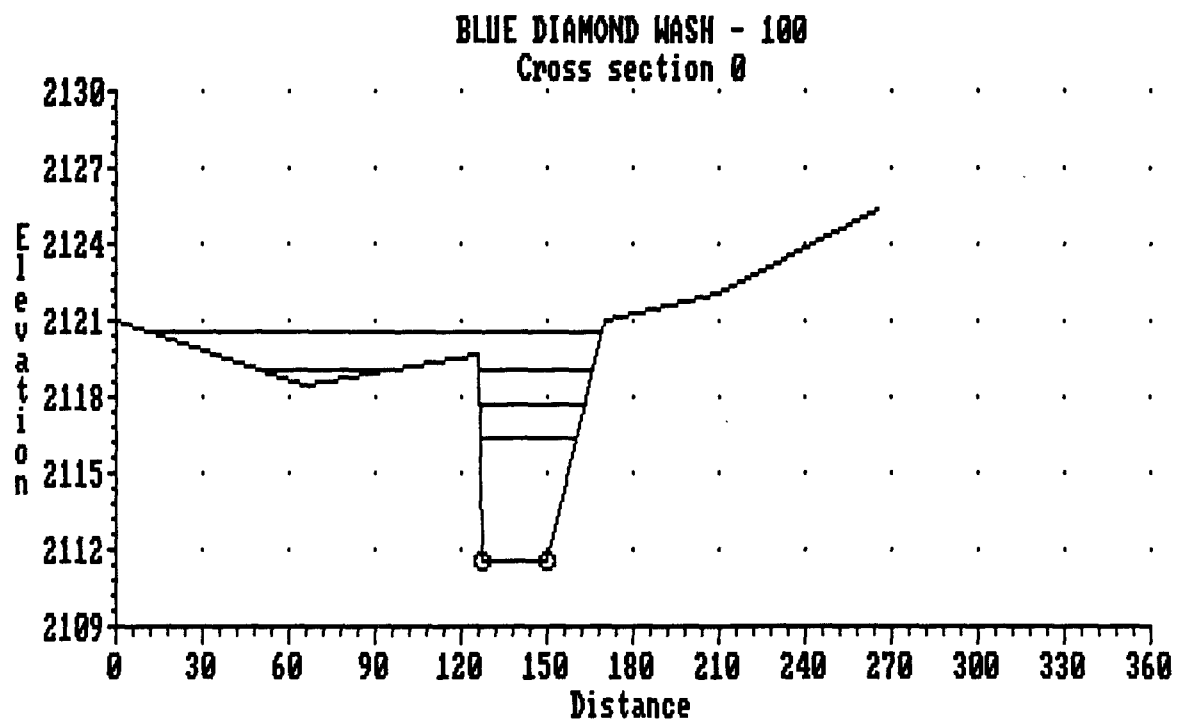
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Cross section 1000

F

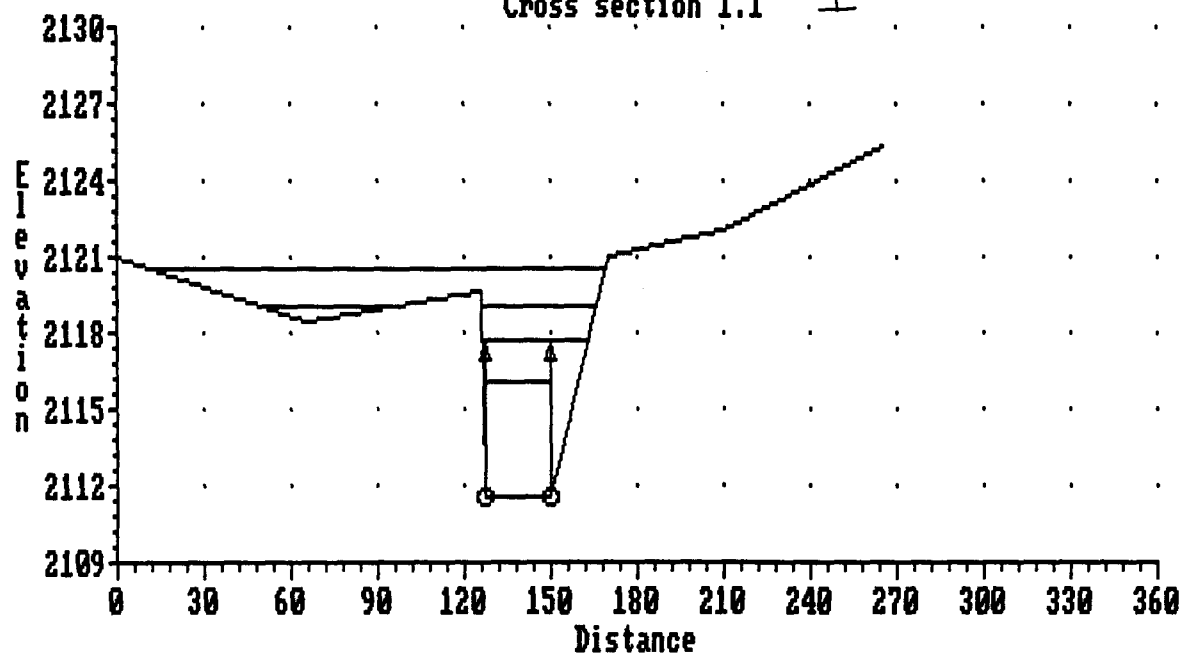




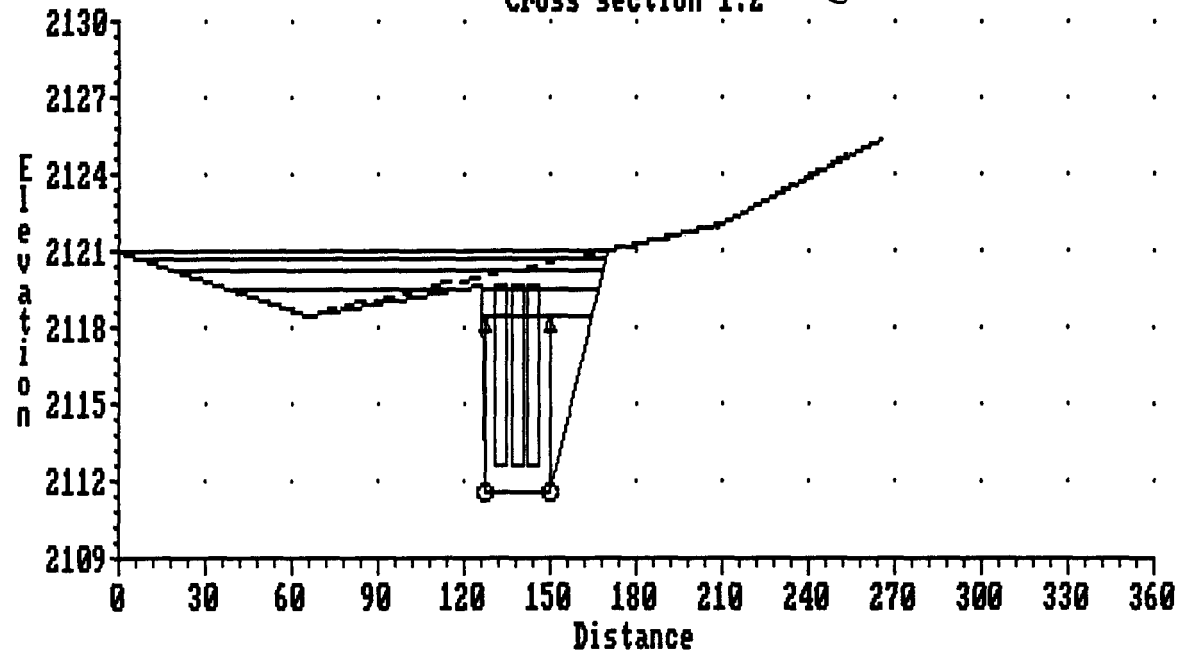




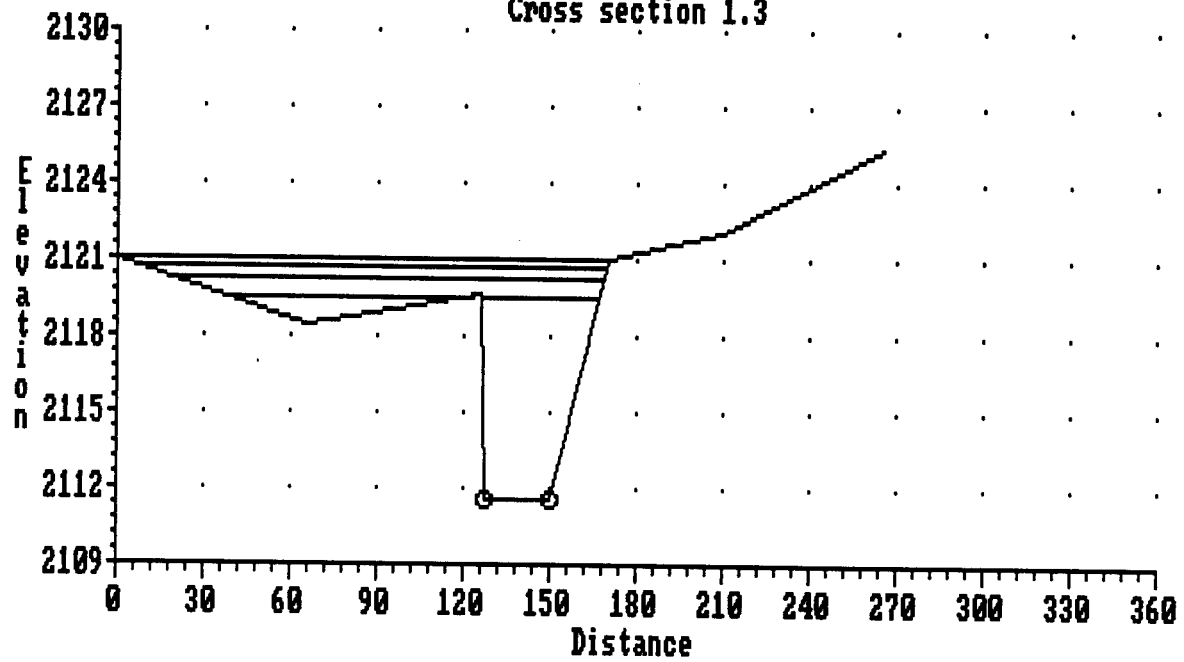
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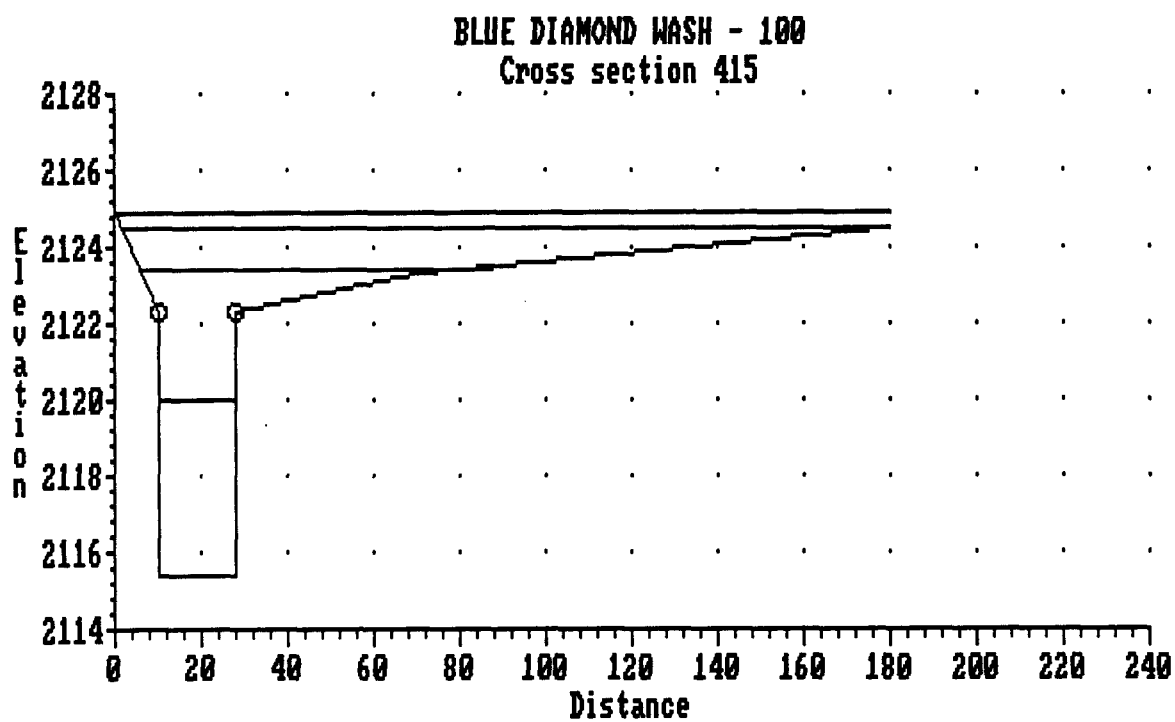


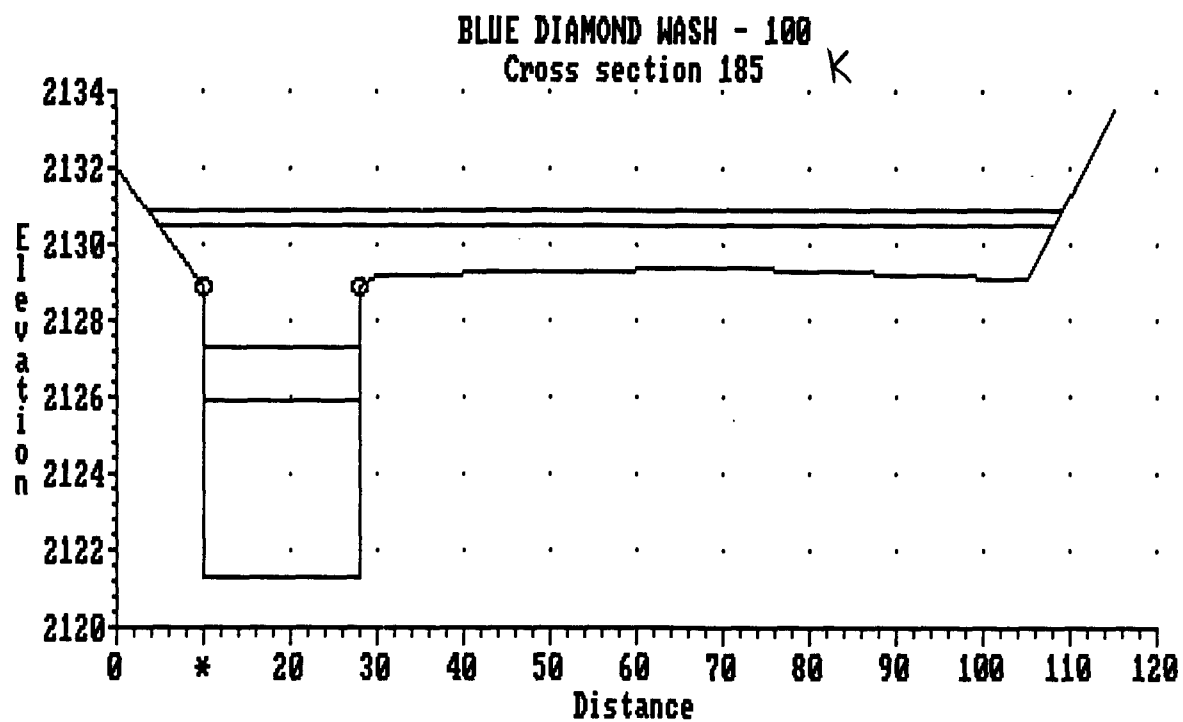
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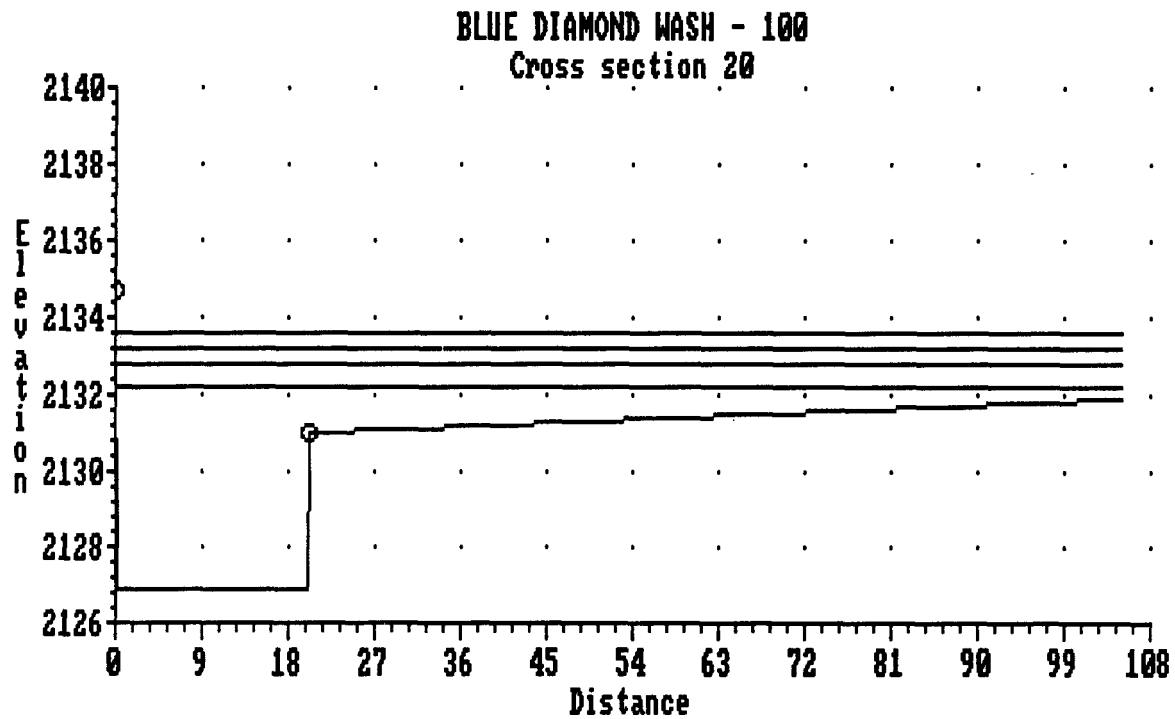


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Cross section 1.3

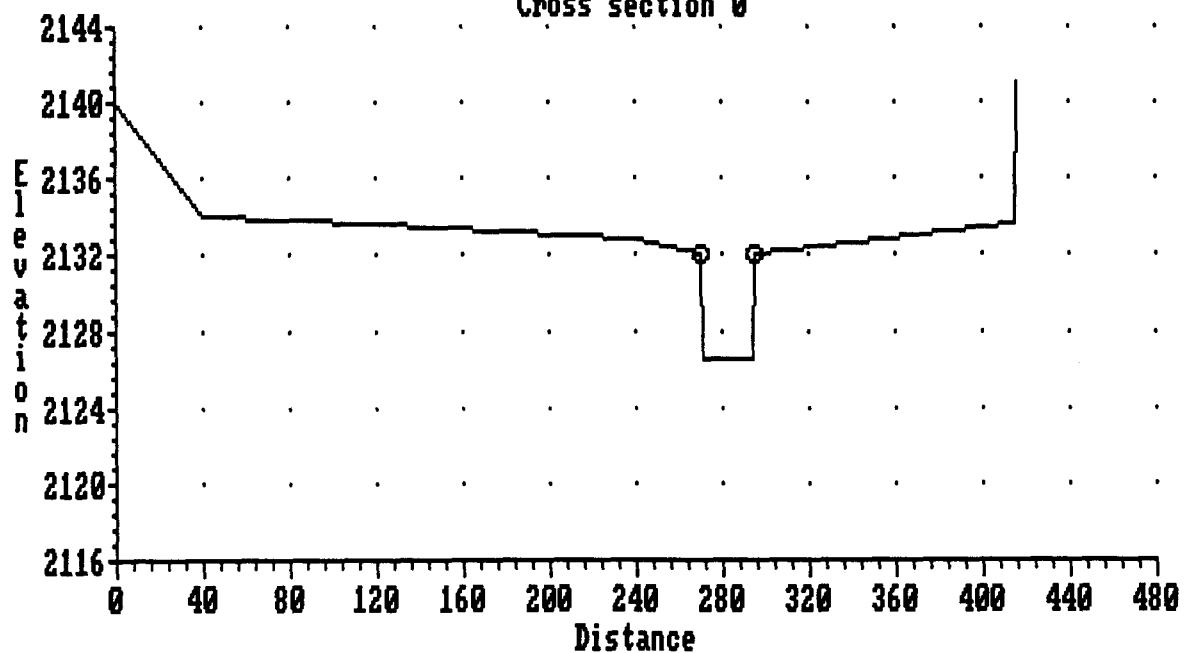


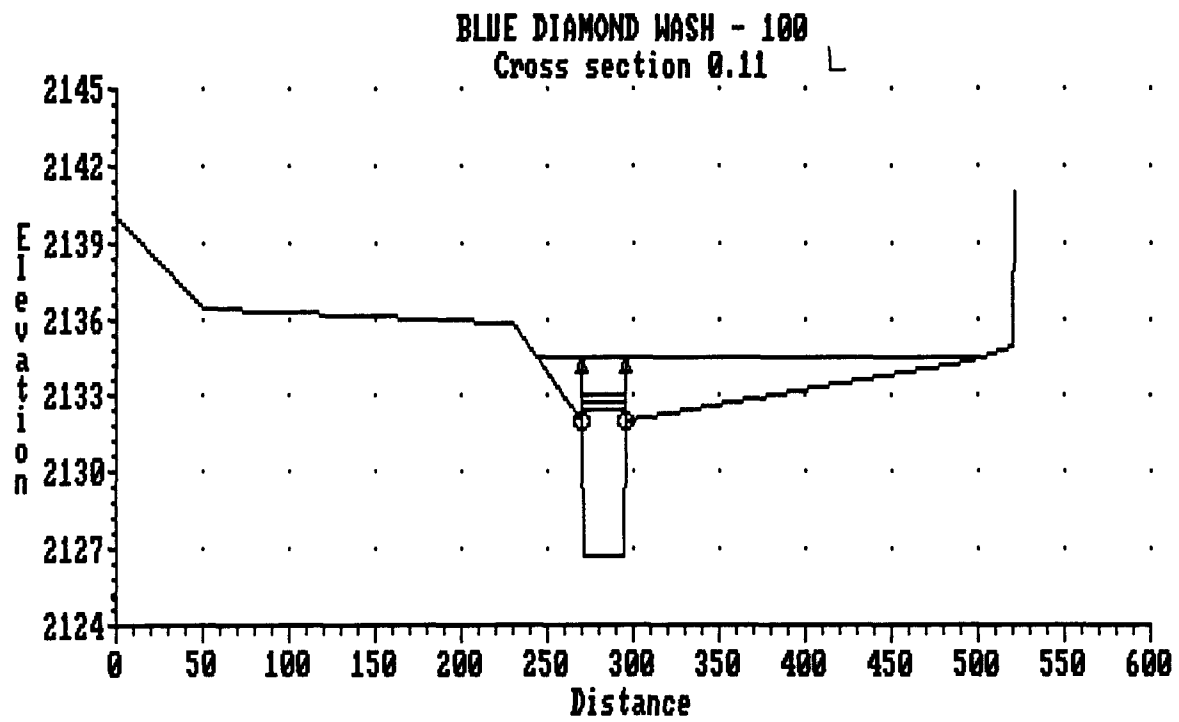


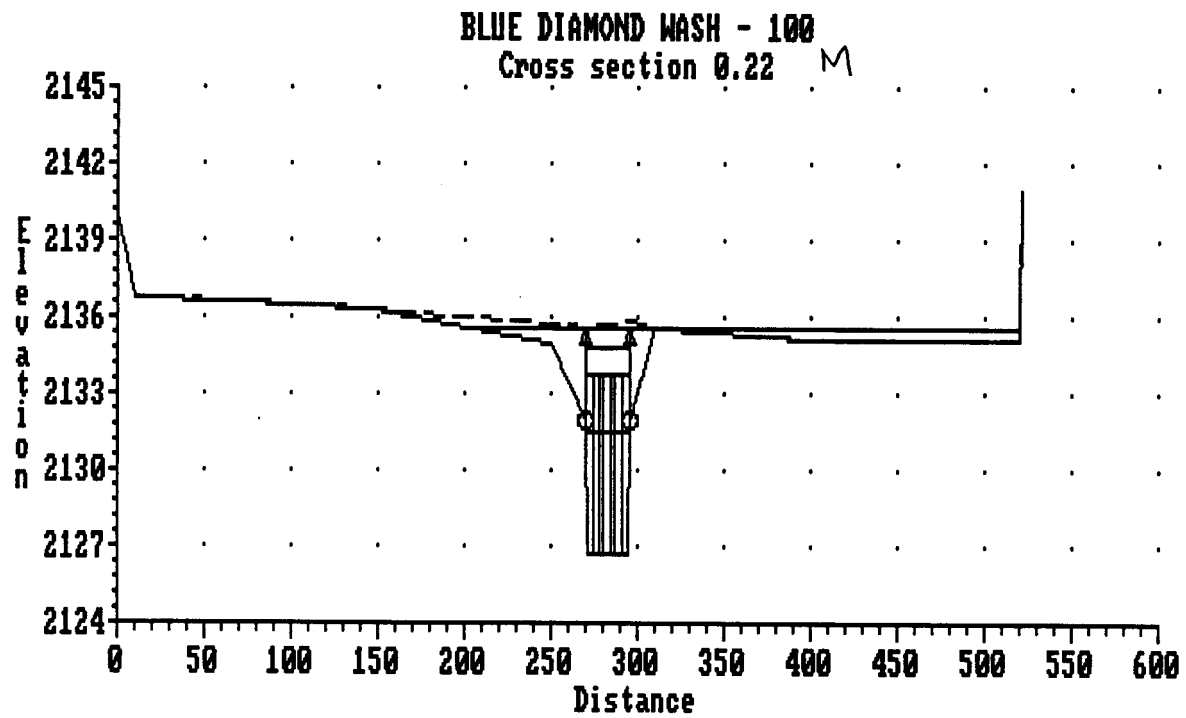


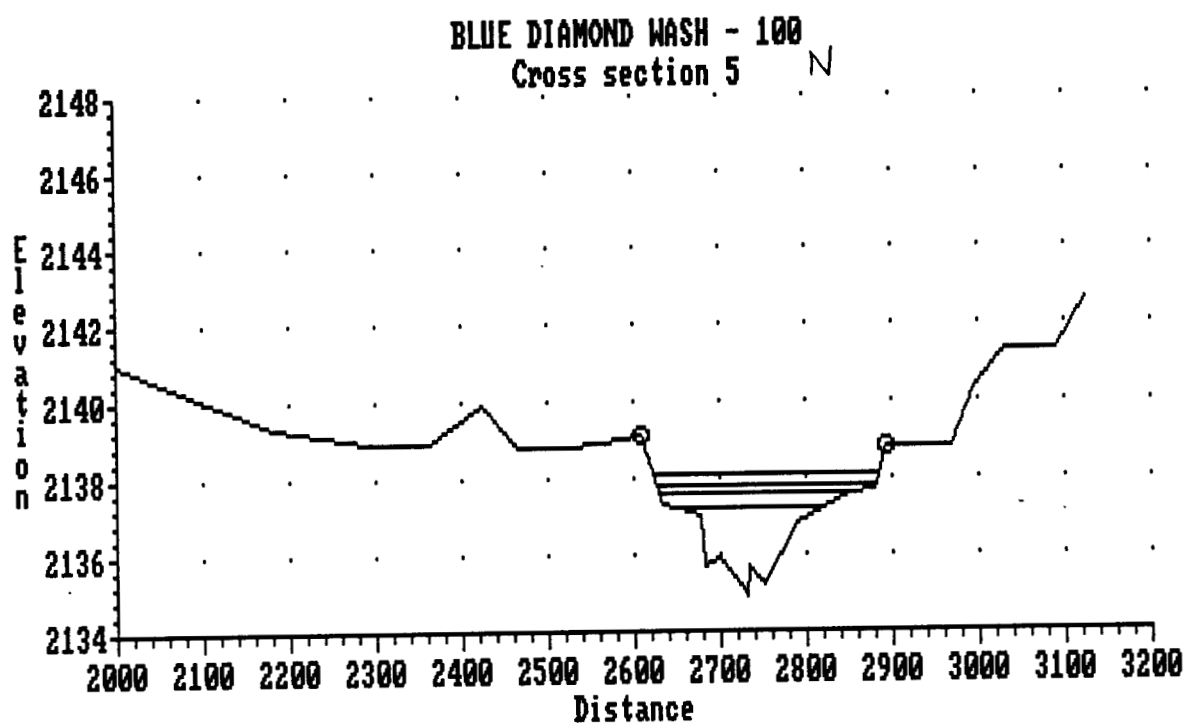


BLUE DIAMOND WASH - 100
Cross section 0









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*****
• HEC-2 WATER SURFACE PROFILES      *
*                                     *
  Version  4.6.0;  February 1991    *
*                                     *
• RUN DATE   26AUG92   TIME   17:38:26 •
*****
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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
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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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::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::
:::
:::  FULL MICRO-COMPUTER IMPLEMENTATION  :::
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H A E S T A D   M E T H O D S
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37 Brookside Road • Waterbury, Connecticut 06708 • (203) 755-1666

THIS RUN EXECUTED 26AUG92 17:38:27

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 CLARK COUNTY FLOOD INSURANCE STUDY - REVISED BY MBJ
 T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS INC.
 T3 BLUE DIAMOND WASH - 100 YEAR FLOOD

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			.0067				2075	

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

QT	2	2900	2900							
ET			5.4							
NC	.035	.035	.035	.1	.3					
CROSS SECTION 1				ESTIMATE JUST UPSTREAM OF CONFLUENCE						
X1	1	4	10	60	0	0	0			
GR	2079	0	2072	10	2072	60	2078	80		
NC	.040	.040	.040	0.1	0.3					
CROSS SECTION 2				FROM ORIGINAL JMM						
X1	2.0	23	2578	2756	1350	1350	1350			
GR	2092.0	1950	2089.2	2000	2088.0	2150	2088.0	2400	2088.5	2450.
GR	2092.3	2530	2089.6	2578	2088.2	2625	2086.4	2658	2086.4	2666.
GR	2087.7	2678	2087.7	2696	2085.7	2709	2086.3	2749	2087.1	2756.
GR	2086.9	2812	2086.8	2896	2087.0	2966	2086.8	3069	2086.5	3149.
GR	2086.5	3266	2087.4	3406	2092.0	3600				
CROSS SECTION 3				ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
X1	3	4	20	50	750	750	750			
GR	2099	0	2094	20	2094	40	2099	50		
NC	.03	.03	.03							
ET			2.4							
CROSS SECTIONS 1600-0				FROM BUCKINGHAM ESTATES CLOMR						
				ROBINDALE CHANNEL						
				several cross section deleted						
X1	1600	4	0	40	340	340	340			
GR	2104.8	0	2095.5	10	2095.5	30	2104.8	40		

NC	.044	.044	.044					
K1	1560	4	0	40	40	40	40	
GR	2105	0	2095.7	10	2095.7	30	2105	40

NC	.03	.03	.03					
K1	1384	4	0	35	166	179	176	
GR	2105.7	0	2096.6	13.7	2096.6	25.7	2106	35

K1	1000	4	0	25	364	390	384	
GR	2106.6	0	2098.7	13	2098.7	24.9	2108.6	25

K1	600	4	0	25	420	377	400	
GR	2110	0	2103.8	13	2103.8	24.9	2114.1	25

K1	300	4	0	25	300	300	300	
GR	2114.5	0	2108.3	13	2108.3	24.9	2119.3	25

ET 4.4

CROSS SECTIONS 0-1.3

ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

K1	0	8	127	150	300	300	300		
GR	2121	0	2118.5	65	2119.6	126	2111.6	127	2111.6
GR	2121	170	2122	210	2125.4	265			150

NC				.3	.5			
X1	1.1				10	10	10	
X3	10							2117.6

SC	3.013	.4	3	0	7	4	100	1.1	2112.6	2111.6
X1	1.2				110	110	110			
X2			2	2116.6	2118.5					
X3	10							2118.5	2118.5	
BT	-7	0	2121		65	2118.5		126	2120	
BT		127	2120		170	2121		210	2122	
BT		265	2125.4							

NC				.1	.3			
X1	1.3				50	50	50	

ET 10.4

CROSS SECTIONS 415-0

ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

X1	415	8	10	28.1	10	10	10		
GR	2125	0	2122.3	10	2115.44	10.1	2115.44	19	2115.44
GR	2122.3	28.1	2123.25	70	2124.49	180			28

X1	185	10	10	28.1	229	229	229			
GR	2132	0	2128.9	10	2121.3	10.1	2121.3	10.9	2121.3	28
GR	2128.9	28.1	2129.22	30	2129.42	70	2129.12	105	2133.5	115
ET			4.4							
X1	20	6	0	20.1	157.5	172.5	165			
GR	2134.7	0	2126.9	.1	2126.9	10	2126.9	20	2131	20.1
GR	2131.9	105								

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

USED

X1	0	10	270	295	20	20	20			
GR	2140	0	2134	40	2133.5	120	2132.9	240	2132	270
GR	2126.7	271	2126.7	294	2132	295	2133.5	415	2141	416

X1	.11	11	270	295	40	40	40			
X3	10							2134.5	2134.5	
GR	2140	0	2136.5	50	2136.18	140	2135.8	230	2132	270
GR	2126.7	271	2126.7	294	2132	295	2134.37	495	2134.93	520
GR	2141	521								

NC				.3	.5					
SC	3.013	.5	3	0	7	4	45	1.1	2126.7	2122.8
X1	.22	13	270	295	45	45	45			
X2			2	2133.5	2135.5					
X3	10							2135.5	2135.5	
BT	-9	10	2136.8		65	2136.63		145	2136.3	
BT		270	2135.6		294	2135.8		310	2135.56	
BT		401	2135.12		520	2135.1		521	2141	
GR	2140	0	2136.82	10	2136.63	65	2136.3	145	2135	250
GR	2132	270	2126.7	271	2126.7	294	2132	295	2135.56	310
GR	2135.1	401	2135.1	520	2141	521				

NC	.035	.035	.035	.1	.3					
X1	5	30	2608	2894	80	80	80			
GR	2141	2000	2139.3	2183	2138.9	2293	2138.9	2363	2139.9	2425
GR	2138.8	2465	2138.8	2522	2138.9	2562	2139.1	2608	2137.3	2634
GR	2137.1	2668	2137	2678	2135.7	2683	2135.9	2699	2135.1	2727
GR	2134.9	2732	2135.7	2734	2135.2	2752	2136.8	2789	2137.6	2851
GR	2137.7	2879	2138.8	2894	2138.8	2912	2138.8	2925	2138.8	2934
GR	2138.8	2969	2140.3	2996	2141.3	3031	2141.3	3092	2142.6	3125

CROSS SECTION 7

FROM ORIGINAL JMM

X3 card used to confine flow

X1	7	39	2641	2837	1400	1400	1400			
X3						2837	2163.2			
GR	2163.0	2327	2160.6	2367	2160.0	2368	2160.6	2369	2160.6	2370.
GR	2160.0	2406	2160.0	2437	2160.0	2512	2159.9	2579	2159.2	2641
GR	2153.8	2677	2153.8	2688	2155.4	2702	2157.7	2710	2155.0	2730
GR	2157.6	2734	2159.6	2770	2162.6	2813	2163.2	2837	2162.6	2876
GR	2158.9	2918	2158.6	2944	2158.8	2959	2162.4	2989	2162.4	3009

GR	2161.4	3062	2161.4	3105	2161.4	3126	2161.4	3169	2161.4	3207
GR	2161.4	3228	2161.4	3252	2161.4	3274	2161.4	3339	2161.6	3440
R	2161.6	3500	2163.8	3552	2163.8	3630	2165.2	3686		

CROSS SECTIONS 7.1 BERMUDA ROAD

Culvert not modeled(1- 2.5 ft CMP)- ineffective

Top of road modeled in GR cards

X1	7.1	8	2641	2837	80	80	80			
R	2163.9	2400	2161.7	2470	2160.7	2641	2160.1	2680	2160.9	2837
R	2163.4	3170	2164.3	3350	2165.2	3600				

FT			10.4							
IC	.060	.060	.035	.1	.3					

CROSS SECTIONS 8-9

FROM ORIGINAL JMM

CROSS SECTION 8

FAIRFIELD STREET - NO CULVERTS

11	08	25	2522	2905	585	585	595			
GR	2169.9	2000	2168.5	2102	2168.4	2160	2168.3	2194	2169.6	2298
GR	2168.5	2435	2170.1	2522	2166.4	2530	2167.1	2599	2164.3	2636
GR	2166.4	2649	2166.4	2690	2164.6	2705	2163.8	2734	2163.8	2782
GR	2163.8	2789	2167.9	2795	2168.8	2843	2172.3	2905	2172.3	3013
GR	2174.2	3155	2173.7	3202	2173.7	3287	2175.3	3423	2175.7	3513

11	8.5	8	2400	2710	120	120	120			
GR	2173.1	2000	2172.7	2300	2171.0	2400	2165.7	2540	2169.8	2640.
GR	2172.4	2710	2174.9	2830	2176.0	2890				

11	09	24	2694	2726	680	680	680			
GR	2182.5	2078	2177.8	2098	2180.3	2200	2180.3	2346	2179.6	2417
GR	2179.7	2480	2179.8	2558	2178.6	2652	2171.6	2681	2171.4	2694
GR	2167.8	2706	2167.8	2717	2176.4	2726	2178.1	2780	2180.7	2852
GR	2181.6	2924	2182.5	3046	2182.0	3145	2181.2	3286	2181.6	3403
GR	2183.0	3480	2183.0	3520	2183.0	3618	2186.2	3680		

CROSS SECTIONS 9.1 PLACID STREET

Culvert not modeled (2- 2.5 ft CMP) - ineffective

Top of road modeled in GR cards

11	9.1	10	2700	2800	80	80	80			
GR	2184.0	2050	2180.6	2250	2180.6	2420	2181	2600	2178	2700
GR	2175.9	2760	2177	2800	2182.9	3010	2182.9	3150	2184.2	3390

CROSS SECTIONS 10-11

FROM ORIGINAL JMM

CROSS SECTION 10

GILESPIE STREET - NO CULVERTS

11	10	15	2710	2862	1295	1275	1295			
GR	2196.6	2496	2196.6	2529	2194.4	2618	2193.0	2665	2193.0	2710
GR	2189.1	2761	2188.4	2775	2186.8	2790	2185.2	2806	2185.2	2811
GR	2189.0	2818	2191.0	2862	2190.8	2913	2192.9	3107	2194.5	3121

X1	10.5	9	2345	2490	90	90	110			
GR	2198.0	2000	2195.0	2140	2192.1	2270	2189.9	2345	2187.8	2420
GR	2190.1	2490	2192.5	2560	2196.6	2720	2197.9	2900		

CROSS SECTION 11 Adjusted to reflect actual flow path

X1	11	32	2579	2912	670	670	670			
GR	2202.7	2270	2200.5	2324	2200.5	2426	2200.5	2457	2200.5	2486
GR	2200.5	2535	2205.1	2579	2199.7	2606	2199.0	2637	2197.1	2660
GR	2200.0	2681	2203.7	2694	2201.7	2709	2199.8	2736	2196.0	2761
GR	2194.7	2773	2193.0	2796	2194.7	2804	2192.5	2809	2192.4	2820
GR	2196.0	2848	2200.3	2878	2210.1	2912	2207.4	2939	2205.1	3020
GR	2203.1	3204	2203.2	3431	2202.4	3475	2202.1	3526	2204.1	3613
GR	2204.1	3719	2205.2	3773						

CROSS SECTIONS 11.1 RANCHO DESTINO

Culvert not modeled(1- 4 ft CMP) - ineffective

Top of road modeled in GR cards

X1	11.1	10	2600	2870	120	120	120			
GR	2204.2	2300	2203	2480	2202.9	2600	2201.7	2750	2202.7	2870
GR	2207.2	3020	2207	3200	2205.6	3380	2204.3	3580	2206.5	3700

NC .038 .045 .035 .1 .3

CROSS SECTION 12

FROM ORIGINAL JMM

CROSS SECTION 12

Added x3 to reflect actual flow path

X1	12	50	2784	2916	1095	995	1065			
X3						2942	2215.4			
GR	2220.0	2000	2220.0	2049	2220.0	2077	2219.3	2094	2215.0	2125
GR	2215.0	2181	2216.0	2241	2216.5	2295	2217.4	2322	2215.7	2358
GR	2218.2	2376	2218.7	2394	2215.5	2423	2218.4	2477	2222.6	2564
GR	2215.2	2593	2213.1	2621	2209.5	2661	2214.8	2699	2219.2	2714
GR	2214.1	2751	2211.2	2784	2207.5	2816	2207.5	2848	2210.6	2876
GR	2211.8	2916	2215.4	2942	2212.0	2970	2211.1	2993	2211.0	3028
GR	2212.8	3041	2210.7	3067	2210.7	3079	2214.6	3089	2214.6	3112
GR	2217.6	3150	2220.6	3168	2220.0	3187	2219.1	3243	2218.8	3346
GR	2218.6	3424	2219.4	3472	2220.7	3502	2221.3	3525	2221.3	3571
GR	2221.1	3603	2221.1	3663	2221.1	3729	2221.1	3793	2221.7	3799

CROSS SECTIONS 13-13.5 LAS VEGAS BLVD.

MODELED SC, 2 CULVERTS

LEFT (5x5 RCB), RIGHT (4 ft diam. culvert)

Approximated by modeling 2- 4x5 RBC

X3 used to confine flow

X1	13	42	2728	2990	800	950	1080			
X3						3190	2228			
GR	2231.7	2000	2230.1	2062	2230.1	2086	2230.1	2111	2230.1	2161
GR	2230.1	2227	2230.1	2243	2230.1	2326	2230.1	2394	2232.7	2441
GR	2233.0	2479	2228.3	2520	2232.0	2577	2235.4	2618	2229.5	2656
GR	2230.9	2690	2234.6	2728	2227.8	2758	2224.4	2787	2221.8	2829
GR	2218.9	2848	2222.7	2864	2223.1	2883	2223.5	2926	2227.8	2962
GR	2231.3	2990	2227.3	3010	2223.7	3023	2223.7	3040	2223.7	3064
GR	2224.2	3079	2225.7	3102	2226.3	3132	2226.3	3155	2226.3	3180
GR	2228.0	3190	2224.4	3234	2224.3	3299	2229.6	3326	2229.6	3363
GR	2230.5	3441	2237.1	3770						

MC				.3	.5					
1	13.1	11	2870	2930	120	120	120			
A3	10							2230	2230	
GR	2235	1950	2234.4	2000	2234	2220	2233.7	2450	2232.4	2700
R	2224	2870	2224	2930	2232.9	3270	2234	3460	2237.5	3700
R	2235	3900								
C	2.013	.5	3	0	5	4	50	1.1	2224.2	2224
1	13.2				50	50	50			
X2			2	2229	2231.1					
X3	10							2231.1	2231.1	
T	-4	2700	2232.4		2870	2231.1		2930	2231.4	
JT		3270	2232.9							

C				.1	.3					
CROSS SECTIONS 13.5-15 FROM ORIGINAL JMM										
X3 used to confine flow										
1	13.5	35	2597	2724	150	150	150			
3						2931	2238			
GR	2239.0	1700	2237	1750	2234.1	2156	2236.2	2266	2236.8	2329
GR	2234.3	2394	2233.7	2437	2230.8	2509	2230.7	2531	2237.8	2577
R	2236.9	2597	2230.5	2637	2230.3	2660	2227.1	2667	2226.9	2704
R	2228.3	2718	2232	2724	2230.9	2757	2229.4	2791	2230.3	2850
GR	2233.6	2875	2233.9	2897	2238	2931	2232	3005	2235.4	3072
R	2238.8	3093	2237.8	3120	2233.2	3147	2233.2	3174	2231.1	3202
R	2232.5	3229	2232.5	3267	2233.6	3324	2236.0	3540	2240	3550

MC	.035	.035	.035							
1	14	38	2602	3052	800	750	810			
GR	2251.8	2000	2250.2	2051	2249.1	2072	2249.1	2099	2247.2	2125
GR	2247.2	2192	2247.2	2233	2247.7	2275	2247.7	2345	2246.6	2387
R	2246.6	2401	2246.6	2423	2243.7	2448	2242.9	2492	2243.6	2519
R	2243.8	2542	2243.8	2561	2245.2	2579	2245.2	2602	2244.1	2622
GR	2244.1	2663	2242.4	2696	2240.5	2720	2239.8	2748	2237.4	2756
R	2237.4	2768	2240.0	2771	2238.7	2808	2237.2	2813	2237.1	2830
R	2239.8	2836	2240.5	2852	2238.4	2871	2238.7	2894	2242.1	2927
GR	2245.3	2992	2252.1	3035	2253.9	3052				

CROSS SECTIONS 15-16 I-15 MODELED BY ORIGINAL JMM
Adjusted Top of Road from JMM workmap
Modified X-sections 15.1, 15.2 for ineffective flow areas

1	15.0	8	2370	2770	750	810	820			
R	2263.0	2000	2260.0	2070	2252.0	2200	2252.0	2370	2248.0	2550.
GR	2245.0	2640	2245.0	2660	2260.0	2770				
IC				0.3	0.5					
X1	15.1	35	2569	2682	750	800	950		4	
X3	10							2268	2268	
R	2267.4	2000	2266.8	2021	2263.0	2053	2261.8	2103	2261.8	2149
GR	2261.8	2160	2261.8	2180	2261.4	2211	2260	2233	2260	2260
GR	2260	2281	2260	2311	2260	2328	2259.2	2357	2259.2	2411
R	2259.2	2435	2259.2	2465	2259.6	2478	2259.6	2497	2259.6	2512
R	2260.7	2523	2259.9	2569	2254.9	2584	2254.9	2601	2259.4	2603

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	XLN	XLCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

PROF 1

CHV= .100 CEHV= .300

*SECNO 1.000

CROSS SECTION 1				ESTIMATE JUST UPSTREAM OF CONFLUENCE					
1.000	5.00	2077.00	.00	2075.00	2078.48	1.48	.00	.00	2072.00
2900.0	100.1	2540.7	259.2	17.9	250.0	41.7	.0	.0	2072.00
.00	5.61	10.16	6.22	.035	.035	.035	.000	2072.00	2.86
.006701	0.	0.	0.	0	0	2	.00	73.81	76.67

CCHV= .100 CEHV= .300

*SECNO 2.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

CROSS SECTION 2				FROM ORIGINAL JMM					
2.000	2.19	2087.89	2087.56	.00	2088.07	.18	9.46	.13	2089.60
2900.0	.0	508.8	2391.2	.0	145.2	707.1	18.0	13.5	2087.10
.11	.00	3.50	3.38	.000	.040	.040	.000	2085.70	2630.68
.007338	1350.	1350.	1350.	21	17	0	.00	795.99	3426.67

*SECNO 3.000

3280 CROSS SECTION 3.00 EXTENDED 1.27 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3				ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL					
3.000	6.27	2100.27	2100.27	.00	2102.65	2.38	7.49	.66	2094.00
2900.0	766.8	2133.2	.0	75.4	163.2	.0	27.4	20.8	2099.00
.13	10.17	13.07	.00	.040	.040	.000	.000	2094.00	.00
.014381	750.	750.	750.	20	20	0	.00	50.00	50.00

*SECNO 1600.000

SECNO	DEPTH	CWSEL	CRWS	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 = 1.43

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	8.03	2103.53	.00	.00	2105.99	2.47	3.32	.03	2104.80
2900.0	.0	2900.0	.0	.0	230.0	.0	29.2	21.1	2104.80
.13	.00	12.61	.00	.000	.030	.000	.000	2095.50	1.36
.007053	340.	340.	340.	2	0	0	.00	37.27	38.64

*SECNO 1560.000

1560.000	8.67	2104.37	.00	.00	2106.39	2.02	.36	.04	2105.00
2900.0	.0	2900.0	.0	.0	254.1	.0	29.4	21.1	2105.00
.14	.00	11.41	.00	.000	.044	.000	.000	2095.70	.68
.011510	40.	40.	40.	3	0	0	.00	38.64	39.32

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1384.000	8.94	2105.54	2105.54	.00	2108.59	3.05	1.80	.31	2105.70
2900.0	.0	2900.0	.0	.0	207.0	.0	30.4	21.3	2106.00
.14	.00	14.01	.00	.000	.030	.000	.000	2096.60	.24
.009159	166.	176.	179.	3	8	0	.00	34.30	34.54

*SECNO 1000.000

3280 CROSS SECTION 1000.00 EXTENDED 2.41 FEET

1000.000	10.31	2109.01	.00	.00	2112.09	3.08	3.49	.01	2106.60
2900.0	.0	2900.0	.0	.0	206.0	.0	32.2	21.5	2108.60
.15	.00	14.08	.00	.000	.030	.000	.000	2098.70	.00
.009032	364.	384.	390.	0	0	0	.00	25.00	25.00

*SECNO 600.000

3280 CROSS SECTION 600.00 EXTENDED 2.88 FEET

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

'185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	9.08	2112.88	2112.88	.00	2116.65	3.77	4.14	.21	2110.00
2900.0	.0	2900.0	.0	.0	186.2	.0	34.0	21.8	2114.10
.15	.00	15.57	.00	.000	.030	.000	.000	2103.80	.00
.011983	420.	400.	377.	2	11	0	.00	24.99	24.99

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED 2.88 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	9.08	2117.38	2117.38	.00	2121.15	3.77	3.60	.00	2114.50
2900.0	.0	2900.0	.0	.0	186.1	.0	35.3	21.9	2119.30
.16	.00	15.59	.00	.000	.030	.000	.000	2108.30	.00
.012012	300.	300.	300.	2	5	0	.00	24.98	24.98

*SECNO .000

3280 CROSS SECTION .00 EXTENDED .65 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.51

CROSS SECTIONS 0-1.3

ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

.000	10.05	2121.65	.00	.00	2122.18	.53	.71	.32	2111.60
2900.0	759.3	1662.1	478.6	287.6	231.1	115.3	38.1	22.7	2111.60
.17	2.64	7.19	4.15	.030	.030	.030	.000	2111.60	.00
.000973	300.	300.	300.	3	0	0	.00	195.83	195.83

CCHV= .300 CEHV= .500

*SECNO 1.100

SECNO	DEPTH	CWSEL	CRIS	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

3280 CROSS SECTION 1.10 EXTENDED .67 FEET

1.100	10.06	2121.67	.00	.00	2122.19	.53	.01	.00	2111.60
2900.0	765.1	1656.2	478.8	290.1	231.5	116.2	38.2	22.8	2111.60
.17	2.64	7.15	4.12	.030	.030	.030	.000	2111.60	.00
.000960	10.	10.	10.	2	0	0	.00	196.63	196.63

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3	.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60	

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2142.37..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2137.67 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 1.200

3280 CROSS SECTION 1.20 EXTENDED .26 FEET

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2142.37	2137.67	-.24	1645.	1254.	8.029	115.5	2118.50	208.

1.200	9.65	2121.25	.00	.00	2121.95	.70	-.24	.00	2111.60
2900.0	638.9	1783.2	478.0	238.2	222.1	100.4	39.8	23.2	2111.60
.18	2.68	8.03	4.76	.030	.030	.030	.000	2111.60	.00
.001277	110.	110.	110.	3	0	0	.00	180.26	180.26

CCHV= .100 CEHV= .300

*SECNO 1.300

3280 CROSS SECTION 1.30 EXTENDED .37 FEET

1.300	9.77	2121.37	.00	.00	2122.02	.64	.06	.01	2111.60
2900.0	677.1	1745.2	477.7	253.2	224.8	104.3	40.4	23.4	2111.60
.18	2.67	7.76	4.58	.030	.030	.030	.000	2111.60	.00
.001175	50.	50.	50.	2	0	0	.00	184.99	184.99

*SECNO 415.000

3280 CROSS SECTION 415.00 EXTENDED .68 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

5693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.73	2125.17	2125.17	.00	2126.21	1.04	.02	.12	2122.30
2900.0	61.3	1736.0	1102.7	15.2	175.4	243.3	40.5	23.5	2122.30
.18	4.03	9.90	4.53	.030	.030	.030	.000	2115.44	.00
.004064	10.	10.	10.	20	6	0	.00	180.00	180.00

*SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	9.91	2131.21	2131.21	.00	2132.73	1.51	1.07	.14	2128.90
2900.0	33.8	2011.9	854.3	8.6	178.7	152.8	42.6	24.2	2128.90
.19	3.91	11.26	5.59	.030	.030	.030	.000	2121.30	2.54
.005457	229.	229.	229.	20	8	0	.00	107.24	109.78

*SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED 1.91 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	6.91	2133.81	2133.81	.00	2135.12	1.31	1.00	.02	2134.70
2900.0	.0	1499.5	1400.5	.0	138.4	200.8	43.9	24.7	2131.00
.19	.00	10.84	6.98	.000	.030	.030	.000	2126.90	.01
.006485	158.	165.	173.	20	18	0	.00	104.99	105.00

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.37

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans
proposed culverts

.000	8.32	2135.02	2134.24	.00	2135.27	.25	.05	.11	2132.00
2900.0	988.1	1124.6	787.2	398.7	202.5	271.6	44.2	24.8	2132.00
.20	2.48	5.55	2.90	.030	.030	.030	.000	2126.70	33.25
.001155	20.	20.	20.	8	8	0	.00	381.95	415.20

*SECNO .110

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .65

.110	8.08	2134.78	.00	.00	2135.47	.69	.07	.13	2132.00
2900.0	130.6	1639.3	1130.1	40.8	196.8	324.0	44.8	25.1	2132.00
.20	3.20	8.33	3.49	.030	.030	.030	.000	2126.70	240.68
.002696	40.	40.	40.	3	0	0	.00	272.88	513.56

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2156.20..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2150.51 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO .220

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2156.20	2150.51	1.21	1507.	1369.	8.974	115.5	2135.50	472.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3693 PROBABLE MINIMUM SPECIFIC ENERGY

.220	9.34	2136.04	2134.35	.00	2136.96	.92	.12	-.12	2132.00
2900.0	307.3	2048.4	544.3	94.7	228.3	210.9	45.4	25.4	2132.00
.20	3.25	8.97	2.58	.030	.030	.030	.000	2126.70	165.84
.002570	45.	45.	45.	20	10	0	.00	354.32	520.16

CCHV= .100 CEHV= .300

*SECNO 5.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5.000	3.31	2138.21	2138.21	.00	2138.99	.78	.42	.01	2139.10
2900.0	.0	2900.0	.0	.0	410.0	.0	46.3	26.0	2138.80
.20	.00	7.07	.00	.000	.035	.000	.000	2134.90	2620.80
.015558	80.	80.	80.	20	19	0	.00	265.20	2886.00

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

*SECNO 7.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 2837.0 TYPE= 1 TARGET= 2836.999

CROSS SECTION 7

FROM ORIGINAL JMM

X3 card used to confine flow

7.000	5.18	2158.98	2158.98	.00	2160.36	1.38	20.43	.18	2159.20
2900.0	.0	2900.0	.0	.0	308.0	.0	57.8	32.1	2163.20
.24	.00	9.41	.00	.000	.035	.000	.000	2153.80	2642.44
.013717	1400.	1400.	1400.	5	14	0	.00	116.46	2758.90

*SECNO 7.100

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 7.1

BERMUDA ROAD

Culvert not modeled(1- 2.5 ft CMP)- ineffective

Top of road modeled in GR cards

7.100	1.96	2162.06	2162.06	.00	2162.57	.51	1.05	.09	2160.70
2900.0	627.4	1980.4	292.2	148.3	308.7	88.9	58.6	32.7	2160.90
.25	4.23	6.42	3.29	.035	.035	.035	.000	2160.10	2458.70
.012458	80.	80.	80.	20	22	0	.00	532.19	2990.88

CCHV= .100 CEHV= .300

*SECNO 8.000

CROSS SECTIONS 8-9

FROM ORIGINAL JMM

CROSS SECTION 8

FAIRFIELD STREET - NO CULVERTS

8.000	3.67	2167.47	.00	.00	2167.94	.47	5.37	.00	2170.10
2900.0	.0	2900.0	.0	.0	526.3	.0	65.9	38.1	2172.30
.28	.00	5.51	.00	.000	.035	.000	.000	2163.80	2527.67
.006867	585.	595.	585.	5	0	0	.00	266.72	2794.38

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

*SECNO 8.500

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8.500	3.79	2169.49	2169.49	.00	2170.47	.98	1.17	.15	2171.00
2900.0	.0	2900.0	.0	.0	365.7	.0	67.1	38.7	2172.40
.28	.00	7.93	.00	.000	.035	.000	.000	2165.70	2439.77
.014865	120.	120.	120.	20	8	0	.00	192.77	2632.54

*SECNO 9.000

3301 HV CHANGED MORE THAN HVINS

9.000	8.18	2175.98	.00	.00	2177.89	1.91	7.14	.28	2171.40
2900.0	489.6	2410.4	.0	97.9	201.5	.0	72.3	40.7	2176.40
.30	5.00	11.96	.00	.060	.035	.000	.000	2167.80	2662.87
.007804	680.	680.	680.	3	0	0	.00	62.69	2725.56

*SECNO 9.100

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 9.1 PLACID STREET

Culvert not modeled (2- 2.5 ft CMP) - ineffective

Top of road modeled in GR cards

9.100	3.63	2179.53	2179.53	.00	2180.59	1.05	.74	.09	2178.00
2900.0	85.8	2465.0	349.2	39.2	278.4	114.3	73.0	41.0	2177.00
.30	2.19	8.85	3.06	.060	.035	.060	.000	2175.90	2648.87
.011112	80.	80.	80.	20	18	0	.00	241.32	2890.19

*SECNO 10.000

CROSS SECTIONS 10-11 FROM ORIGINAL JMM

CROSS SECTION 10 GILESPIE STREET - NO CULVERTS

10.000	6.50	2191.70	2191.41	.00	2192.51	.81	11.89	.02	2193.00
2900.0	.0	2776.8	123.2	.0	377.1	77.6	86.1	48.5	2191.00
.35	.00	7.36	1.59	.000	.035	.060	.000	2185.20	2727.06
.007737	1295.	1295.	1275.	7	14	0	.00	268.70	2995.76

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

SECNO 10.500

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.90

10.500	4.84	2192.64	.00	.00	2192.96	.31	.40	.05	2189.90
2900.0	199.7	2569.2	131.1	129.9	543.1	94.5	87.6	49.2	2190.10
.36	1.54	4.73	1.39	.060	.035	.060	.000	2187.80	2245.63
.002135	90.	110.	90.	2	0	0	.00	319.99	2565.61

SECNO 11.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 11			Adjusted to reflect actual flow path						
11.000	4.95	2197.35	2197.35	.00	2198.74	1.39	2.89	.32	2205.10
2900.0	.0	2900.0	.0	.0	306.5	.0	95.8	52.5	2210.10
.38	.00	9.46	.00	.000	.035	.000	.000	2192.40	2656.95
.012884	670.	670.	670.	20	5	0	.00	110.19	2857.43

SECNO 11.100

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 11.1			RANCHO DESTINO						
Culvert not modeled(1- 4 ft CMP) - ineffective									
Top of road modeled in GR cards									
11.100	2.03	2203.73	2203.73	.00	2204.32	.58	1.59	.08	2202.90
2900.0	292.1	2574.6	33.3	134.6	399.3	17.8	97.0	53.4	2202.70
.38	2.17	6.45	1.87	.060	.035	.060	.000	2201.70	2369.84
.013689	120.	120.	120.	20	18	0	.00	534.64	2904.48

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

CCHV= .100 CEHV= .300

*SECNO 12.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.59

3470 ENCROACHMENT STATIONS= .0 2942.0 TYPE= 1 TARGET= 2941.999

CROSS SECTION 12 FROM ORIGINAL JMM

CROSS SECTION 12 Added x3 to reflect actual flow path

12.000	4.92	2212.42	.00	.00	2213.03	.61	8.71	.01	2211.20
2900.0	304.1	2594.4	1.5	86.3	398.6	1.4	109.8	62.5	2211.80
.43	3.53	6.51	1.10	.038	.035	.045	.000	2207.50	2628.58
.005407	1095.	1065.	995.	5	0	0	.00	203.66	2920.46

*SECNO 13.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 3190.0 TYPE= 1 TARGET= 3189.999

CROSS SECTIONS 13-13.5 LAS VEGAS BLVD.

MODELED SC, 2 CULVERTS

LEFT (5x5 RCB), RIGHT (4 ft diam. culvert)

Approximated by modeling 2- 4x5 RBC

X3 used to confine flow

13.000	5.89	2224.79	2224.79	.00	2225.76	.97	8.61	.11	2234.60
2900.0	.0	2665.5	234.5	.0	326.6	62.0	120.2	67.5	2231.30
.47	.00	8.16	3.78	.000	.035	.045	.000	2218.90	2783.69
.013561	800.	1080.	950.	11	11	0	.00	222.06	3088.03

CCHV= .300 CEHV= .500

*SECNO 13.100

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

13.100	6.16	2230.16	2230.16	.00	2230.24	.08	.16	.27	2224.00
2900.0	681.5	1131.6	1086.9	383.8	369.5	724.6	122.8	68.3	2224.00
.49	1.78	3.06	1.50	.038	.035	.045	.000	2224.00	2745.35
.000461	120.	120.	120.	20	11	0	.00	419.93	3165.29

PECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
2		.013	.50	3.00	.00	5.00	4.00	50.00	1	1	2224.20	2224.00

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

.130, EGIC= 2444.59..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOE= 2372.68 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

SECNO 13.200

840	SECTION NOT HIGH ENOUGH	2444.590	2285.000	2224.000	2285.000	2225.036	6
3840	SECTION NOT HIGH ENOUGH	2444.590	2335.000	2224.000	2335.000	2225.036	6
7840	SECTION NOT HIGH ENOUGH	2444.590	2385.000	2224.000	2385.000	2225.036	6
840	SECTION NOT HIGH ENOUGH	2444.590	2435.000	2224.000	2435.000	2225.036	6

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.58

PECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2444.59	2372.68	2.94	2424.	468.	1.546	39.3	2231.10	570.

13.200	9.16	2233.16	.00	.00	2233.18	.02	2.94	.00	2224.00
2900.0	809.3	850.7	1240.0	902.5	550.3	1611.8	125.4	69.0	2224.00
.50	.90	1.55	.77	.038	.035	.045	.000	2224.00	2551.55
.000069	50.	50.	50.	1	0	0	.00	765.42	3316.97

CHV= .100 CEHV= .300

SECNO 13.500

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .22

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= .0 2931.0 TYPE= 1 TARGET= 2930.999

CROSS SECTIONS 13.5-15 FROM ORIGINAL JMM

X3 used to confine flow

13.500	6.17	2233.07	.00	.00	2233.26	.19	.03	.05	2236.90
2900.0	261.2	1745.8	893.0	133.6	431.7	372.3	132.3	70.9	2232.00
.51	1.96	4.04	2.40	.038	.035	.045	.000	2226.90	2452.55
.001379	150.	150.	150.	2	0	0	.00	343.93	2871.01

*SECNO 14.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

14.000	3.87	2240.97	2240.97	.00	2241.92	.95	2.62	.23	2245.20
2900.0	.0	2900.0	.0	.0	369.9	.0	144.2	75.9	2253.90
.54	.00	7.84	.00	.000	.035	.000	.000	2237.10	2714.11
.015446	800.	810.	750.	20	14	0	.00	201.88	2915.99

*SECNO 15.000

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

CROSS SECTIONS 15-16 I-15 MODELED BY ORIGINAL JMM

Adjusted Top of Road from JMM workmap

Modified X-sections 15.1, 15.2 for ineffective flow areas

15.000	4.46	2249.46	.00	.00	2250.04	.57	8.08	.04	2252.00
2900.0	.0	2900.0	.0	.0	476.8	.0	152.2	79.8	2260.00
.58	.00	6.08	.00	.000	.035	.000	.000	2245.00	2484.22
.006825	750.	820.	810.	5	0	0	.00	208.49	2692.72

CCHV= .300 CEHV= .500

*SECNO 15.100

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2268.00 ELREA= 2268.00

15.100	5.54	2264.44	2264.44	.00	2265.85	1.41	9.02	.42	2263.90
2900.0	.0	2900.0	.0	.0	304.3	.0	160.7	83.3	2264.30
.60	.00	9.53	.00	.000	.035	.000	.000	2258.90	2569.00
.014093	750.	950.	800.	13	11	0	.00	113.00	2682.00

SPECIAL BRIDGE

B	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.00	1.76	3.00	.00	12.00	.01	60.00	.00	2261.00	2259.70

*SECNO 15.200

.301 HV CHANGED MORE THAN HVINS

.302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 6.04

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2328.28	2322.07	.01	1992.	914.	60.	60.	2266.00	2268.90	981.
15.200	8.91	2270.71	.00	.00	2270.78	.07	4.93	.00	2261.80
2900.0	506.5	575.2	1818.3	361.9	160.4	1148.1	165.7	85.7	2261.80
.64	1.40	3.59	1.58	.035	.035	.035	.000	2261.80	2309.49
.000386	220.	220.	220.	2	0	8	.00	858.14	3167.63

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH - 100 YEAR FLOODWAY

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2076	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

PROF 2

CCHV= .100 CEHV= .300

*SECNO 1.000

2800 NAT Q1= 354.27 WSEL= 2077.00 ENC Q1= 363.82 WSEL= 2077.50 RATIO= -.0269
 NAT Q1= 420. RATIOS LOB, CH, ROB= .0375 .8654 .0971 WSEL= 2077.50

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10.0 60.0 TYPE= 4 TARGET= .135

CROSS SECTION 1 ESTIMATE JUST UPSTREAM OF CONFLUENCE

1.000	4.71	2076.71	2076.71	2077.00	2079.06	2.36	.00	.00	2072.00
2900.0	.0	2900.0	.0	.0	235.5	.0	.0	.0	2072.00
.00	.00	12.32	.00	.000	.035	.000	.000	2072.00	10.00
.013416	0.	0.	0.	0	7	0	.00	50.00	60.00

CCHV= .100 CEHV= .300

*SECNO 2.000

2800 NAT Q1= 338.54 WSEL= 2087.89 ENC Q1= 338.54 WSEL= 2088.39 RATIO= .0000
 NAT Q1= 648. RATIOS LOB, CH, ROB= .0326 .1594 .8080 WSEL= 2088.39

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS= 2578.0 3082.9 TYPE= 4 TARGET= .478

CROSS SECTION 2 FROM ORIGINAL JMM

2.000	2.95	2088.65	.00	2087.89	2088.85	.19	9.57	.22	2089.60
2900.0	.0	861.9	2038.1	.0	247.4	572.9	16.4	8.1	2087.10
.11	.00	3.48	3.56	.000	.040	.040	.000	2085.70	2609.85
.004371	1350.	1350.	1350.	6	0	0	.00	473.09	3082.95

*SECNO 3.000

2800 NAT Q1= 241.83 WSEL= 2100.27 ENC Q1= 241.83 WSEL= 2100.77 RATIO= .0000
 NAT Q1= 281. RATIOS LOB, CH, ROB= .2755 .7245 .0000 WSEL= 2100.77

3280 CROSS SECTION 3.00 EXTENDED 1.59 FEET

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

3470 ENCROACHMENT STATIONS= 12.8 50.0 TYPE= 4 TARGET= .141

CROSS SECTION 3 ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL

3.000	6.59	2100.59	2100.59	2100.27	2103.55	2.96	5.68	.83	2094.00
2900.0	430.9	2469.1	.0	40.8	172.6	.0	25.3	12.5	2099.00
.12	10.57	14.30	.00	.040	.040	.000	.000	2094.00	12.84
.016170	750.	750.	750.	20	17	0	.00	37.16	50.00

*SECNO 1600.000

2800 NAT Q1= 345.32 WSEL= 2103.53 ENC Q1= 360.52 WSEL= 2103.73 RATIO= -.0440

NAT Q1= 361. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2103.73

3301 HV CHANGED MORE THAN HVINS

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

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	9.01	2104.51	.00	2103.53	2106.34	1.82	2.67	.11	2154.80
2900.0	.0	2900.0	.0	.0	267.7	.0	27.1	12.8	2104.80
.13	.00	10.83	.00	.000	.030	.000	.000	2095.50	.31
.004633	340.	340.	340.	2	0	0	.00	39.39	39.69

*SECNO 1560.000

2800 NAT Q1= 270.30 WSEL= 2104.37 ENC Q1= 282.05 WSEL= 2104.57 RATIO= -.0435

NAT Q1= 282. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2104.57

1560.000	9.15	2104.85	.00	2104.37	2106.60	1.75	.26	.01	2155.00
2900.0	.0	2900.0	.0	.0	272.9	.0	27.4	12.8	2105.00
.13	.00	10.63	.00	.000	.044	.000	.000	2095.70	.16
.009446	40.	40.	40.	2	0	0	.00	39.67	39.84

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 1384.000

2800 NAT Q1= 303.02 WSEL= 2105.54 ENC Q1= 316.90 WSEL= 2105.74 RATIO= -.0458

NAT Q1= 317. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2105.74

3301 HV CHANGED MORE THAN HVINS

1384.000	9.00	2105.60	2105.55	2105.54	2108.59	2.99	1.62	.37	2155.70
2900.0	.0	2900.0	.0	.0	209.0	.0	28.4	13.0	2106.00
.13	.00	13.88	.00	.000	.030	.000	.000	2096.60	.15
.008927	166.	176.	179.	6	8	0	.00	34.45	34.60

*SECNO 1000.000

2800 NAT Q1= 305.14 WSEL= 2109.01 ENC Q1= 315.39 WSEL= 2109.21 RATIO= -.0336

NAT Q1= 315. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2109.21

3280 CROSS SECTION 1000.00 EXTENDED 2.52 FEET

1000.000	10.42	2109.12	.00	2109.01	2112.12	3.00	3.53	.00	2156.60
2900.0	.0	2900.0	.0	.0	208.6	.0	30.2	13.2	2108.60
.14	.00	13.90	.00	.000	.030	.000	.000	2098.70	.00
.009458	364.	384.	390.	2	0	0	.00	25.00	25.00

*SECNO 600.000

2800 NAT Q1= 264.92 WSEL= 2112.88 ENC Q1= 274.96 WSEL= 2113.08 RATIO= -.0379

NAT Q1= 275. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2113.08

3280 CROSS SECTION 600.00 EXTENDED 3.02 FEET

3301 HV CHANGED MORE THAN HVINS

600.000	9.22	2113.02	2112.89	2112.88	2116.65	3.63	4.34	.19	2160.00
2900.0	.0	2900.0	.0	.0	189.7	.0	32.0	13.5	2114.10
.15	.00	15.29	.00	.000	.030	.000	.000	2103.80	.00
.012584	420.	400.	377.	4	11	0	.00	24.99	24.99

*SECNO 300.000

2800 NAT Q1= 264.60 WSEL= 2117.38 ENC Q1= 274.64 WSEL= 2117.58 RATIO= -.0379

NAT Q1= 275. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2117.58

3280 CROSS SECTION 300.00 EXTENDED 2.84 FEET

7185 MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

300.000	9.04	2117.34	2117.34	2117.38	2121.15	3.81	3.90	.05	2164.50
2900.0	.0	2900.0	.0	.0	185.1	.0	33.3	13.6	2119.30
.15	.00	15.67	.00	.000	.030	.000	.000	2108.30	.00
.013417	300.	300.	300.	2	5	0	.00	24.98	24.98

*SECNO .000

2800 NAT Q1= 929.74 WSEL= 2121.65 ENC Q1= 929.74 WSEL= 2122.05 RATIO= .0000

NAT Q1= 1065. RATIOS LOB, CH, ROB= .2987 .5340 .1672 WSEL= 2122.05

3280 CROSS SECTION .00 EXTENDED .59 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.28

3470 ENCROACHMENT STATIONS= 46.3 159.5 TYPE= 4 TARGET= .127

CROSS SECTIONS 0-1.3

ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

.000	9.99	2121.59	.00	2121.65	2122.34	.74	.88	.31	2111.60
2900.0	675.9	1866.1	358.0	212.3	229.9	73.9	35.7	14.1	2111.60
.17	3.18	8.12	4.84	.030	.030	.030	.000	2111.60	46.32
.001248	300.	300.	300.	4	0	0	.00	113.21	159.53

CCHV= .300 CEHV= .500

*SECNO 1.100

2800 NAT Q1= 936.17 WSEL= 2121.67 ENC Q1= 936.17 WSEL= 2122.06 RATIO= .0000

NAT Q1= 1072. RATIOS LOB, CH, ROB= .3003 .5323 .1674 WSEL= 2122.06

3280 CROSS SECTION 1.10 EXTENDED .61 FEET

3470 ENCROACHMENT STATIONS= 46.0 159.6 TYPE= 4 TARGET= .126

1.100	10.02	2121.62	.00	2121.67	2122.35	.73	.01	.00	2111.60
2900.0	681.3	1858.7	360.0	214.5	230.3	74.6	35.9	14.1	2111.60
.17	3.18	8.07	4.83	.030	.030	.030	.000	2111.60	45.96
.001231	10.	10.	10.	1	0	0	.00	113.67	159.63

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

SPECIAL CULVERT

IC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

1130, EGIC= 2142.37..MAY BE TOO LARGE IF INLET CONTROLS.

1135, EGOE= 2137.63 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 1.200

2800 NAT Q1= 811.40 WSEL= 2121.25 ENC Q1= 811.40 WSEL= 2121.65 RATIO= .0000
 NAT Q1= 932. RATIOS LOB, CH, ROB= .2624 .5725 .1651 WSEL= 2121.65

3301 HV CHANGED MORE THAN HVINS

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2142.37	2137.63	-.42	1646.	1252.	10.395	115.5	2118.50	207.

3470 ENCROACHMENT STATIONS=	52.9	158.3	TYPE=	4	TARGET=	.129
1.200	8.99	2120.59	.00	2121.25	2121.93	1.34
2900.0	387.7	2151.1	361.1	122.0	206.9	58.6
.17	3.18	10.40	6.16	.030	.030	.030
.002353	110.	110.	110.	4	0	0

CCHV= .100 CEHV= .300

*SECNO 1.300

2800 NAT Q1= 846.03 WSEL= 2121.37 ENC Q1= 846.03 WSEL= 2121.77 RATIO= .0000
 NAT Q1= 971. RATIOS LOB, CH, ROB= .2743 .5602 .1655 WSEL= 2121.77

3280 CROSS SECTION 1.30 EXTENDED .00 FEET

3470 ENCROACHMENT STATIONS=	50.9	158.6	TYPE=	4	TARGET=	.129
1.300	9.41	2121.01	.00	2121.37	2122.06	1.06
2900.0	507.3	2038.4	354.3	156.2	216.3	63.6
.17	3.25	9.42	5.57	.030	.030	.030
.001824	50.	50.	50.	3	0	0

*SECNO 415.000

2800 NAT Q1= 454.92 WSEL= 2125.17 ENC Q1= 454.92 WSEL= 2126.17 RATIO= .0000
 NAT Q1= 717. RATIOS LOB, CH, ROB= .0293 .4473 .5234 WSEL= 2126.17

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

3280 CROSS SECTION 415.00 EXTENDED .61 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10.0 64.5 TYPE= 4 TARGET= .366

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.66	2125.10	2125.10	2125.17	2127.30	2.20	.03	.34	2122.30
2900.0	.0	2245.2	654.8	.0	174.1	86.8	37.5	14.6	2122.30
.17	.00	12.89	7.54	.000	.030	.030	.000	2115.44	10.00
.007798	10.	10.	10.	20	8	0	.00	54.48	64.48

*SECNO 185.000

2800 NAT Q1= 392.56 WSEL= 2131.21 ENC Q1= 392.56 WSEL= 2132.21 RATIO= .0000

NAT Q1= 566. RATIOS LOB, CH, ROB= .0215 .5647 .4138 WSEL= 2132.21

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10.0 54.2 TYPE= 4 TARGET= .307

185.000	10.16	2131.46	2131.46	2131.21	2134.02	2.56	1.86	.11	2128.90
2900.0	.0	2482.5	417.5	.0	183.1	57.2	38.9	14.8	2128.90
.18	.00	13.56	7.30	.000	.030	.030	.000	2121.30	10.00
.008459	229.	229.	229.	20	8	0	.00	44.17	54.17

*SECNO 20.000

2800 NAT Q1= 360.12 WSEL= 2133.81 ENC Q1= 360.12 WSEL= 2134.21 RATIO= .0000

NAT Q1= 428. RATIOS LOB, CH, ROB= .0000 .4741 .5259 WSEL= 2134.21

3280 CROSS SECTION 20.00 EXTENDED 2.06 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

_693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

470 ENCROACHMENT STATIONS=	.0	75.1	TYPE=	4	TARGET=	.158
20.000	7.06	2133.96	2133.96	2133.81	2135.70	1.75
2900.0	.0	1699.1	1200.9	.0	141.3	146.6
.18	.00	12.03	8.19	.000	.030	.030
.007826	158.	165.	173.	20	19	0

SECNO .000

2800 NAT Q1= 853.48 WSEL= 2135.02 ENC Q1= 853.48 WSEL= 2135.42 RATIO= .0000

NAT Q1= 1076. RATIOS LOB, CH, ROB= .3823 .3339 .2838 WSEL= 2135.42

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.86

470 ENCROACHMENT STATIONS=	128.7	358.8	TYPE=	4	TARGET=	.207
CROSS SECTIONS 0-5						
AMIGO STREET						
MODELED AS SC, 3- 4x7 RCB						
From Lewis Homes Paradise Plans						
proposed culverts						
.000	8.93	2135.63	2134.22	2135.02	2135.90	.26
2900.0	1069.5	1158.0	672.5	369.0	218.1	206.6
.18	2.90	5.31	3.26	.030	.030	.030
.000956	20.	20.	20.	11	8	0

*SECNO .110

2800 NAT Q1= 558.49 WSEL= 2134.78 ENC Q1= 558.49 WSEL= 2135.18 RATIO= .0000

NAT Q1= 696. RATIOS LOB, CH, ROB= .0515 .4920 .4565 WSEL= 2135.18

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

3470 ENCROACHMENT STATIONS=	270.0	381.4	TYPE=	4	TARGET=	.198
.110	8.67	2135.37	.00	2134.78	2136.09	.73
2900.0	.0	1680.7	1219.3	.0	211.5	247.1
.19	.00	7.95	4.93	.000	.030	.030
.002532	40.	40.	40.	2	0	0

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

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2156.20..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOE= 2151.09 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO .220

2800 NAT Q1= 572.05 WSEL= 2136.04 ENC Q1= 572.05 WSEL= 2136.44 RATIO= .0000

NAT Q1= 716. RATIOS LOB, CH, ROB= .1324 .6060 .2616 WSEL= 2136.44

3301 HV CHANGED MORE THAN HVINS

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2156.20	2151.09	.61	1556.	1372.	10.049	115.5	2135.50	480.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	264.3	431.5	TYPE=	4	TARGET=	.201
.220	9.48	2136.18	2136.18	2136.04	2137.48	1.30
2900.0	105.1	2329.1	465.8	21.4	231.8	146.7
.19	4.92	10.05	3.18	.030	.030	.030
.003157	45.	45.	45.	20	8	0
						.00
						167.15
						431.46

CCHV= .100 CEHV= .300

*SECNO 5.000

2800 NAT Q1= 232.50 WSEL= 2138.21 ENC Q1= 334.25 WSEL= 2138.61 RATIO= -.4376

NAT Q1= 334. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2138.61

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2608.0	2894.0	TYPE=	4	TARGET=	.000
5.000	3.29	2138.19	2138.19	2138.21	2138.99	.80
2900.0	.0	2900.0	.0	.0	404.2	.0
.19	.00	7.17	.00	.000	.035	.000
.016267	80.	80.	80.	20	22	0
						.00
						264.58
						2885.70

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

SECNO 7.000

301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5470 ENCROACHMENT STATIONS= .0 2837.0 TYPE= 1 TARGET= 2836.999

CROSS SECTION 7 FROM ORIGINAL JMM

X3 card used to confine flow

7.000	5.19	2158.99	2158.99	2158.98	2160.36	1.37	20.85	.17	2159.20
2900.0	.0	2900.0	.0	.0	308.3	.0	53.3	21.9	2163.20
.23	.00	9.41	.00	.000	.035	.000	.000	2153.80	2642.43
.013691	1400.	1400.	1400.	5	14	0	.00	116.50	2758.93

SECNO 7.100

2800 NAT Q1= 259.82 WSEL= 2162.06 ENC Q1= 259.82 WSEL= 2162.46 RATIO= .0000

NAT Q1= 425. RATIOS LOB, CH, ROB= .2545 .6093 .1362 WSEL= 2162.46

685 20 TRIALS ATTEMPTED WSEL,CWSEL

693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5470 ENCROACHMENT STATIONS= 2639.9 2837.0 TYPE= 4 TARGET= .388

CROSS SECTIONS 7.1 BERMUDA ROAD

Culvert not modeled(1- 2.5 ft CMP)- ineffective

Top of road modeled in GR cards

7.100	2.27	2162.37	2162.37	2162.06	2163.32	.95	1.13	.04	2160.70
2900.0	6.9	2893.1	.0	1.8	369.8	.0	54.0	22.2	2160.90
.23	3.87	7.82	.00	.035	.035	.000	.000	2160.10	2639.93
.014707	80.	80.	80.	20	14	0	.00	197.07	2837.00

CHV= .100 CEHV= .300

*SECNO 8.000

2800 NAT Q1= 349.95 WSEL= 2167.47 ENC Q1= 651.51 WSEL= 2168.47 RATIO= -.8617

NAT Q1= 652. RATIOS LOB, CH, ROB= .0005 .9995 .0000 WSEL= 2168.47

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.73

SECNO	DEPTH	CWSEL	CRWS	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= 2522.0 2905.0 TYPE= 4 TARGET= .001

CROSS SECTIONS 8-9 FROM ORIGINAL JMM

CROSS SECTION 8 FAIRFIELD STREET - NO CULVERTS

8.000	3.89	2167.69	.00	2167.47	2168.07	.39	4.70	.06	2170.10
2900.0	.0	2900.0	.0	.0	582.3	.0	60.5	25.4	2172.30
.27	.00	4.98	.00	.000	.035	.000	.000	2163.80	2527.21
.004921	585.	595.	585.	5	0	0	.00	267.48	2794.69

*SECNO 8.500

2800 NAT Q1= 237.86 WSEL= 2169.49 ENC Q1= 442.49 WSEL= 2170.49 RATIO= -.8603
 NAT Q1= 442. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2170.49

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2400.0 2710.0 TYPE= 4 TARGET= .000

8.500	3.81	2169.51	2169.51	2169.49	2170.47	.96	.94	.17	2171.00
2900.0	.0	2900.0	.0	.0	369.1	.0	61.8	26.0	2172.40
.27	.00	7.86	.00	.000	.035	.000	.000	2165.70	2439.31
.014508	120.	120.	120.	20	8	0	.00	193.66	2632.97

*SECNO 9.000

2800 NAT Q1= 328.27 WSEL= 2175.98 ENC Q1= 344.54 WSEL= 2176.98 RATIO= -.0495
 NAT Q1= 428. RATIOS LOB, CH, ROB= .1937 .8050 .0013 WSEL= 2176.98

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 2694.0 2726.0 TYPE= 4 TARGET= .195

9.000	8.76	2176.56	.00	2175.98	2179.26	2.69	8.26	.52	2171.40
2900.0	.0	2900.0	.0	.0	220.2	.0	66.4	27.8	2176.40
.29	.00	13.17	.00	.000	.035	.000	.000	2167.80	2694.00
.010329	680.	680.	680.	2	0	0	.00	32.00	2726.00

*SECNO 9.100

SECNO	DEPTH	CWSEL	CRWS	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

2800 NAT Q1= 275.11 WSEL= 2179.53 ENC Q1= 390.00 WSEL= 2180.53 RATIO= -.4176
 NAT Q1= 501. RATIOS LOB, CH, ROB= .0619 .7777 .1604 WSEL= 2180.53

301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 593 PROBABLE MINIMUM SPECIFIC ENERGY
 720 CRITICAL DEPTH ASSUMED

470 ENCROACHMENT STATIONS= 2700.0 2800.0 TYPE= 4 TARGET= .222

CROSS SECTIONS 9.1 PLACID STREET

Culvert not modeled (2- 2.5 ft CMP) - ineffective

Top of road modeled in GR cards

9.100	3.80	2179.70	2179.70	2179.53	2181.20	1.50	.94	.12	2178.00
2900.0	.0	2900.0	.0	.0	294.9	.0	66.9	27.9	2177.00
.29	.00	9.83	.00	.000	.035	.000	.000	2175.90	2700.00
.013443	80.	80.	80.	20	18	0	.00	100.00	2800.00

SECNO 10.000

2800 NAT Q1= 329.69 WSEL= 2191.70 ENC Q1= 505.86 WSEL= 2192.70 RATIO= -.5343
 NAT Q1= 579. RATIOS LOB, CH, ROB= .0000 .8730 .1270 WSEL= 2192.70

301 HV CHANGED MORE THAN HVINS

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

470 ENCROACHMENT STATIONS= 2710.0 2862.0 TYPE= 4 TARGET= .127

CROSS SECTIONS 10-11 FROM ORIGINAL JMM

CROSS SECTION 10 GILESPIE STREET - NO CULVERTS

10.000	6.79	2191.99	.00	2191.70	2192.74	.75	11.46	.08	2193.00
2900.0	.0	2900.0	.0	.0	418.2	.0	77.5	31.5	2191.00
.34	.00	6.93	.00	.000	.035	.000	.000	2185.20	2723.13
.006267	1295.	1295.	1275.	4	0	0	.00	138.87	2862.00

*SECNO 10.500

2800 NAT Q1= 627.55 WSEL= 2192.64 ENC Q1= 824.79 WSEL= 2193.64 RATIO= -.3143
 NAT Q1= 1006. RATIOS LOB, CH, ROB= .1044 .8200 .0756 WSEL= 2193.64

CROSS SECTIONS 11.1 RANCHO DESTINO

Culvert not modeled(1- 4 ft CMP) - ineffective

Top of road modeled in GR cards

11.100	2.08	2203.78	2203.78	2203.73	2204.55	.77	1.73	.06	2202.90
2900.0	.0	2900.0	.0	.0	410.6	.0	86.4	34.3	2202.70
.37	.00	7.06	.00	.000	.035	.000	.000	2201.70	2600.00
.015981	120.	120.	120.	20	18	0	.00	270.00	2870.00

CHV= .100 CEHV= .300

*SECNO 12.000

265 DIVIDED FLOW

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.83

*470 ENCROACHMENT STATIONS= .0 2942.0 TYPE= 1 TARGET= 2941.999

CROSS SECTION 12

FROM ORIGINAL JMM

CROSS SECTION 12

Added x3 to reflect actual flow path

12.000	5.03	2212.53	.00	2212.42	2213.09	.56	8.52	.02	2211.20
2900.0	316.4	2581.4	2.2	93.5	412.4	1.9	97.6	40.2	2211.80
.42	3.39	6.26	1.15	.038	.035	.045	.000	2207.50	2627.42
.004778	1095.	1065.	995.	5	0	0	.00	207.53	2921.22

*SECNO 13.000

265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 3190.0 TYPE= 1 TARGET= 3189.999

CROSS SECTIONS 13-13.5 LAS VEGAS BLVD.

MODELED SC, 2 CULVERTS

LEFT (5x5 RCB), RIGHT (4 ft diam. culvert)

Approximated by modeling 2- 4x5 RCB

X3 used to confine flow

13.000	5.88	2224.78	2224.78	2224.79	2225.76	.97	8.00	.12	2234.60
2900.0	.0	2666.6	233.4	.0	325.7	61.6	108.3	45.2	2231.30
.46	.00	8.19	3.79	.000	.035	.045	.000	2218.90	2783.73
.013676	800.	1080.	950.	11	11	0	.00	221.87	3087.94

:CHV= .300 CEHV= .500

*SECNO 13.100

SECNO	DEPTH	CWSEL	CRWS	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

2800 NAT Q1= 1351.01 WSEL= 2230.16 ENC Q1= 1351.01 WSEL= 2231.16 RATIO= .0000
 NAT Q1= 1908. RATIOS LOB, CH, ROB= .2485 .3551 .3964 WSEL= 2231.16

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2846.2	3003.0	TYPE=	4	TARGET=	.292				
13.100	6.14	2230.14	2230.14	2230.16	2230.33	.19	.25	.24	2224.00	
2900.0	403.0	1479.5	1017.4	132.4	368.7	378.9	110.1	45.7	2224.00	
.47	3.04	4.01	2.69	.038	.035	.045	.000	2224.00	2846.17	
.000794	120.	120.	120.	20	11	0	.00	156.85	3003.03	

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	2	.013	.50	3.00	.00	5.00	4.00	50.00	1	1	2224.20	2224.00

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2444.59..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2372.67 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 13.200

2800 NAT Q1= 3490.29 WSEL= 2233.16 ENC Q1= 3490.29 WSEL= 2234.16 RATIO= .0000
 NAT Q1= 4733. RATIOS LOB, CH, ROB= .3028 .2567 .4406 WSEL= 2234.16

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.79

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2444.59	2372.67	2.86	2441.	468.	1.876	39.3	2231.10	570.

3470 ENCROACHMENT STATIONS=	2809.4	3061.2	TYPE=	4	TARGET=	.263				
13.200	9.15	2233.15	.00	2233.16	2233.19	.04	2.86	.00	2224.00	
2900.0	666.1	1030.0	1204.0	463.6	549.1	975.4	111.7	45.9	2224.00	
.48	1.44	1.88	1.23	.038	.035	.045	.000	2224.00	2809.44	
.000102	50.	50.	50.	2	0	0	.00	251.77	3061.21	

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

:CHV= .100 CEHV= .300

*SECNO 13.500

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .27

3470 ENCROACHMENT STATIONS= .0 2931.0 TYPE= 1 TARGET= 2930.999

CROSS SECTIONS 13.5-15 FROM ORIGINAL JMM

X3 used to confine flow

13.500	6.19	2233.08	.00	2233.07	2233.27	.18	.04	.04	2236.90
2900.0	262.5	1743.3	894.2	134.6	432.9	374.0	116.7	46.9	2232.00
.49	1.95	4.03	2.39	.038	.035	.045	.000	2226.90	2452.27
.001364	150.	150.	150.	2	0	0	.00	344.44	2871.10

*SECNO 14.000

2800 NAT Q1= 233.34 WSEL= 2240.97 ENC Q1= 464.58 WSEL= 2241.97 RATIO= -.9910

NAT Q1= 465. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2241.97

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2602.0 3052.0 TYPE= 4 TARGET= .000

14.000	3.86	2240.96	2240.96	2240.97	2241.92	.96	2.60	.23	2245.20
2900.0	.0	2900.0	.0	.0	369.5	.0	128.7	51.9	2253.90
.52	.00	7.85	.00	.000	.035	.000	.000	2237.10	2714.14
.015502	800.	810.	750.	20	14	0	.00	201.83	2915.97

*SECNO 15.000

2800 NAT Q1= 351.04 WSEL= 2249.46 ENC Q1= 589.04 WSEL= 2250.46 RATIO= -.6780

NAT Q1= 589. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2250.46

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.51

3470 ENCROACHMENT STATIONS= 2370.0 2770.0 TYPE= 4 TARGET= .000

CROSS SECTIONS 15-16 1-15 MODELED BY ORIGINAL JMM

Adjusted Top of Road from JMM workmap

Modified X-sections 15.1, 15.2 for ineffective flow areas

15.000	4.47	2249.47	.00	2249.46	2250.04	.57	8.09	.04	2252.00
2900.0	.0	2900.0	.0	.0	477.0	.0	136.6	55.8	2260.00
.56	.00	6.08	.00	.000	.035	.000	.000	2245.00	2484.19
.006819	750.	820.	810.	3	0	0	.00	208.53	2692.72

CCHV= .300 CEHV= .500

*SECNO 15.100

2800 NAT Q1= 244.28 WSEL= 2264.44 ENC Q1= 413.53 WSEL= 2265.44 RATIO= -.6928

NAT Q1= 414. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2265.44

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2569.0 2682.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2268.00 ELREA= 2268.00

15.100	5.54	2264.44	2264.44	2264.44	2265.85	1.41	9.02	.42	2263.90
2900.0	.0	2900.0	.0	.0	304.3	.0	145.1	59.3	2264.30
.58	.00	9.53	.00	.000	.035	.000	.000	2258.90	2569.00
.014107	750.	950.	800.	13	11	0	.00	113.00	2682.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.00	1.76	3.00	.00	12.00	.01	60.00	.00	2261.00	2259.70

*SECNO 15.200

2800 NAT Q1= 1476.16 WSEL= 2270.71 ENC Q1= 1476.16 WSEL= 2271.71 RATIO= .0000

NAT Q1= 2546. RATIOS LOB, CH, ROB= .2145 .1373 .6482 WSEL= 2271.71

WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.09

3470 ENCROACHMENT STATIONS= 2588.0 2894.1 TYPE= 4 TARGET= .420

15.200	8.91	2270.71	.00	2270.71	2270.92	.21	.48	.36	2261.80
2900.0	26.5	850.4	2023.0	15.7	160.4	748.0	148.3	60.3	2261.80
.60	1.69	5.30	2.70	.035	.035	.035	.000	2261.80	2588.05
.000843	220.	220.	220.	0	0	8	.00	306.01	2894.06

THIS RUN EXECUTED 26AUG92 17:39:01

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1.000	.00	.00	.00	2072.00	2900.00	2077.00	.00	2078.48	67.01	10.16	309.52	354.27
*	1.000	.00	.00	.00	2072.00	2900.00	2076.71	2076.71	2079.06	134.16	12.32	235.47	250.38
*	2.000	1350.00	.00	.00	2085.70	2900.00	2087.89	2087.56	2088.07	73.38	3.50	852.25	338.54
*	2.000	1350.00	.00	.00	2085.70	2900.00	2088.65	.00	2088.85	43.71	3.48	820.30	438.66
*	3.000	750.00	.00	.00	2094.00	2900.00	2100.27	2100.27	2102.65	143.81	13.07	238.59	241.83
*	3.000	750.00	.00	.00	2094.00	2900.00	2100.59	2100.59	2103.55	161.70	14.30	213.39	228.06
*	1600.000	340.00	.00	.00	2095.50	2900.00	2103.53	.00	2105.99	70.53	12.61	230.00	345.32
*	1600.000	340.00	.00	.00	2095.50	2900.00	2104.51	.00	2106.34	46.33	10.83	267.67	426.05
	1560.000	40.00	.00	.00	2095.70	2900.00	2104.37	.00	2106.39	115.10	11.41	254.08	270.30
	1560.000	40.00	.00	.00	2095.70	2900.00	2104.85	.00	2106.60	94.46	10.63	272.92	298.38
*	1384.000	176.00	.00	.00	2096.60	2900.00	2105.54	2105.54	2108.59	91.59	14.01	206.97	303.02
	1384.000	176.00	.00	.00	2096.60	2900.00	2105.60	2105.55	2108.59	89.27	13.88	208.95	306.94
	1000.000	384.00	.00	.00	2098.70	2900.00	2109.01	.00	2112.09	90.32	14.08	206.00	305.14
	1000.000	384.00	.00	.00	2098.70	2900.00	2109.12	.00	2112.12	94.58	13.90	208.64	298.20
*	600.000	400.00	.00	.00	2103.80	2900.00	2112.88	2112.88	2116.65	119.83	15.57	186.22	264.92
	600.000	400.00	.00	.00	2103.80	2900.00	2113.02	2112.89	2116.65	125.84	15.29	189.68	258.51
*	300.000	300.00	.00	.00	2108.30	2900.00	2117.38	2117.38	2121.15	120.12	15.59	186.07	264.60
*	300.000	300.00	.00	.00	2108.30	2900.00	2117.34	2117.34	2121.15	134.17	15.67	185.08	250.36
*	.000	300.00	.00	.00	2111.60	2900.00	2121.65	.00	2122.18	9.73	7.19	633.91	929.74
*	.000	300.00	.00	.00	2111.60	2900.00	2121.59	.00	2122.34	12.48	8.12	516.85	821.04
	1.100	10.00	.00	.00	2111.60	2900.00	2121.67	.00	2122.19	9.60	7.15	637.84	938.17
	1.100	10.00	.00	.00	2111.60	2900.00	2121.62	.00	2122.35	12.31	8.07	519.39	826.67

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
	1.200	110.00	2118.50	2116.60	2111.60	2900.00	2121.25	.00	2121.95	12.77	8.03	560.73	811.40
	1.200	110.00	2118.50	2116.60	2111.60	2900.00	2120.59	.00	2121.93	23.53	10.40	387.56	597.83
	1.300	50.00	.00	.00	2111.60	2900.00	2121.37	.00	2122.02	11.75	7.76	582.31	846.03
	1.300	50.00	.00	.00	2111.60	2900.00	2121.01	.00	2122.06	18.24	9.42	436.04	679.10
*	415.000	10.00	.00	.00	2115.44	2900.00	2125.17	2125.17	2126.21	40.64	9.90	433.96	454.92
*	415.000	10.00	.00	.00	2115.44	2900.00	2125.10	2125.10	2127.30	77.98	12.89	260.99	328.39
*	185.000	229.00	.00	.00	2121.30	2900.00	2131.21	2131.21	2132.75	54.57	11.26	340.15	392.56
*	185.000	229.00	.00	.00	2121.30	2900.00	2131.46	2131.46	2134.02	84.59	13.56	240.25	315.32
*	20.000	165.00	.00	.00	2126.90	2900.00	2133.81	2133.81	2135.12	64.85	10.84	339.16	360.12
*	20.000	165.00	.00	.00	2126.90	2900.00	2133.96	2133.96	2135.70	78.26	12.03	287.90	327.82
*	.000	20.00	.00	.00	2126.70	2900.00	2135.02	2134.24	2135.27	11.55	5.55	872.76	853.48
*	.000	20.00	.00	.00	2126.70	2900.00	2135.63	2134.22	2135.90	9.56	5.31	793.66	937.85
*	.110	40.00	.00	.00	2126.70	2900.00	2134.78	.00	2135.47	26.96	8.33	561.66	558.49
*	.110	40.00	.00	.00	2126.70	2900.00	2135.37	.00	2136.09	25.32	7.95	458.65	576.28
*	.220	45.00	2135.50	2133.50	2126.70	2900.00	2136.04	2134.35	2136.96	25.70	8.97	533.81	572.05
*	.220	45.00	2135.50	2133.50	2126.70	2900.00	2136.18	2136.18	2137.48	31.57	10.05	399.83	516.15
* N	5.000	80.00	.00	.00	2134.90	2900.00	2138.21	2138.21	2138.99	155.58	7.07	410.01	232.50
* N	5.000	80.00	.00	.00	2134.90	2900.00	2138.19	2138.19	2138.99	162.67	7.17	404.19	227.38
* O	7.000	1400.00	.00	.00	2153.80	2900.00	2158.98	2158.98	2160.36	137.17	9.41	308.04	247.61
* O	7.000	1400.00	.00	.00	2153.80	2900.00	2158.99	2158.99	2160.36	136.91	9.41	308.26	247.85
* P	7.100	80.00	.00	.00	2160.10	2900.00	2162.06	2162.06	2162.57	124.58	6.42	545.85	259.82
* P	7.100	80.00	.00	.00	2160.10	2900.00	2162.37	2162.37	2163.32	147.07	7.82	371.60	239.13
*	8.000	595.00	.00	.00	2163.80	2900.00	2167.47	.00	2167.94	68.67	5.51	526.26	349.95
*	8.000	595.00	.00	.00	2163.80	2900.00	2167.69	.00	2168.07	49.21	4.98	582.34	413.39
*	8.500	120.00	.00	.00	2165.70	2900.00	2169.49	2169.49	2170.47	148.65	7.93	365.73	237.86
*	8.500	120.00	.00	.00	2165.70	2900.00	2169.51	2169.51	2170.47	145.08	7.86	369.08	240.76
	9.000	680.00	.00	.00	2167.80	2900.00	2175.98	.00	2177.89	78.04	11.96	299.36	328.27
	9.000	680.00	.00	.00	2167.80	2900.00	2176.56	.00	2179.26	103.29	13.17	220.22	285.34
*	9.100	80.00	.00	.00	2175.90	2900.00	2179.53	2179.53	2180.59	111.12	8.85	431.89	275.11
*	9.100	80.00	.00	.00	2175.90	2900.00	2179.70	2179.70	2181.20	134.43	9.83	294.90	250.13
	10.000	1295.00	.00	.00	2185.20	2900.00	2191.70	2191.41	2192.51	77.37	7.36	454.78	329.69
*	10.000	1295.00	.00	.00	2185.20	2900.00	2191.99	.00	2192.74	62.67	6.93	418.24	366.31
*	10.500	110.00	.00	.00	2187.80	2900.00	2192.64	.00	2192.96	21.35	4.73	767.47	627.55
*	10.500	110.00	.00	.00	2187.80	2900.00	2192.78	.00	2193.19	25.33	5.15	563.28	576.18

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
r	11.000	670.00	.00	.00	2192.40	2900.00	2197.35	2197.35	2198.74	128.84	9.46	306.51	255.49
r	11.000	670.00	.00	.00	2192.40	2900.00	2197.33	2197.33	2198.74	131.38	9.54	303.83	253.01
r	11.100	120.00	.00	.00	2201.70	2900.00	2203.73	2203.73	2204.32	136.89	6.45	551.71	247.87
r	11.100	120.00	.00	.00	2201.70	2900.00	2203.78	2203.78	2204.55	159.81	7.06	410.57	229.40
r	12.000	1065.00	.00	.00	2207.50	2900.00	2212.42	.00	2213.03	54.07	6.51	486.21	394.37
r	12.000	1065.00	.00	.00	2207.50	2900.00	2212.53	.00	2213.09	47.78	6.26	507.75	419.54
*	13.000	1080.00	.00	.00	2218.90	2900.00	2224.79	2224.79	2225.76	135.61	8.16	388.57	249.03
r	13.000	1080.00	.00	.00	2218.90	2900.00	2224.78	2224.78	2225.76	136.76	8.19	387.37	247.98
*	13.100	120.00	.00	.00	2224.00	2900.00	2230.16	2230.16	2230.24	4.61	3.06	1477.94	1351.01
r	13.100	120.00	.00	.00	2224.00	2900.00	2230.14	2230.14	2230.33	7.94	4.01	879.97	1029.32
*	13.200	50.00	2231.10	2229.00	2224.00	2900.00	2233.16	.00	2233.18	.69	1.55	3064.68	3490.29
r	13.200	50.00	2231.10	2229.00	2224.00	2900.00	2233.15	.00	2233.19	1.02	1.88	1988.03	2871.90
*	13.500	150.00	.00	.00	2226.90	2900.00	2233.07	.00	2233.26	13.79	4.04	937.60	780.93
*	13.500	150.00	.00	.00	2226.90	2900.00	2233.08	.00	2233.27	13.64	4.03	941.47	785.21
*	14.000	810.00	.00	.00	2237.10	2900.00	2240.97	2240.97	2241.92	154.46	7.84	369.94	233.34
*	14.000	810.00	.00	.00	2237.10	2900.00	2240.96	2240.96	2241.92	155.02	7.85	369.50	232.92
*	15.000	820.00	.00	.00	2245.00	2900.00	2249.46	.00	2250.04	68.25	6.08	476.85	351.04
*	15.000	820.00	.00	.00	2245.00	2900.00	2249.47	.00	2250.04	68.19	6.08	477.00	351.18
*	15.100	950.00	.00	.00	2258.90	2900.00	2264.44	2264.44	2265.85	140.93	9.53	304.25	244.28
*	15.100	950.00	.00	.00	2258.90	2900.00	2264.44	2264.44	2265.85	141.07	9.53	304.31	244.17
*	15.200	220.00	2268.90	2266.00	2261.80	2900.00	2270.71	.00	2270.78	3.86	3.59	1670.44	1476.16
*	15.200	220.00	999999.00	.00	2261.80	2900.00	2270.71	.00	2270.92	8.43	5.30	924.14	998.56

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.000	2900.00	2077.00	.00	.00	2.00	73.81	.00
*	1.000	2900.00	2076.71	-.29	.00	-.29	50.00	.00
*	2.000	2900.00	2087.89	.00	10.89	.00	795.99	1350.00
*	2.000	2900.00	2088.65	.77	11.94	.77	473.09	1350.00
*	3.000	2900.00	2100.27	.00	12.39	.00	50.00	750.00
*	3.000	2900.00	2100.59	.32	11.94	.32	37.16	750.00
*	1600.000	2900.00	2103.53	.00	3.25	.00	37.27	340.00
*	1600.000	2900.00	2104.51	.99	3.93	.99	39.39	340.00
	1560.000	2900.00	2104.37	.00	.85	.00	38.64	40.00
	1560.000	2900.00	2104.85	.48	.33	.48	39.67	40.00
*	1384.000	2900.00	2105.54	.00	1.17	.00	34.30	176.00
	1384.000	2900.00	2105.60	.06	.75	.06	34.45	176.00
	1000.000	2900.00	2109.01	.00	3.47	.00	25.00	384.00
	1000.000	2900.00	2109.12	.11	3.52	.11	25.00	384.00
*	600.000	2900.00	2112.88	.00	3.87	.00	24.99	400.00
	600.000	2900.00	2113.02	.14	3.90	.14	24.99	400.00
*	300.000	2900.00	2117.38	.00	4.49	.00	24.98	300.00
*	300.000	2900.00	2117.34	-.04	4.32	-.04	24.98	300.00
*	.000	2900.00	2121.65	.00	4.27	.00	195.83	300.00
*	.000	2900.00	2121.59	-.05	4.26	-.05	113.21	300.00
	1.100	2900.00	2121.67	.00	.02	.00	196.63	10.00
	1.100	2900.00	2121.62	-.04	.03	-.04	113.67	10.00
	1.200	2900.00	2121.25	.00	-.41	.00	180.26	110.00
	1.200	2900.00	2120.59	-.66	-1.03	-.66	105.46	110.00
	1.300	2900.00	2121.37	.00	.12	.00	184.99	50.00
	1.300	2900.00	2121.01	-.37	.41	-.37	107.77	50.00
*	415.000	2900.00	2125.17	.00	3.80	.00	180.00	10.00
*	415.000	2900.00	2125.10	-.07	4.09	-.07	54.48	10.00
*	185.000	2900.00	2131.21	.00	6.04	.00	107.24	229.00
*	185.000	2900.00	2131.46	.24	6.36	.24	44.17	229.00
*	20.000	2900.00	2133.81	.00	2.60	.00	104.99	165.00
*	20.000	2900.00	2133.96	.14	2.50	.14	75.11	165.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
r	.000	2900.00	2135.02	.00	1.20	.00	381.95	20.00
r	.000	2900.00	2135.63	.61	1.68	.61	230.14	20.00
r	.110	2900.00	2134.78	.00	-.24	.00	272.88	40.00
r	.110	2900.00	2135.37	.58	-.27	.58	111.42	40.00
r	.220	2900.00	2136.04	.00	1.26	.00	354.32	45.00
r	.220	2900.00	2136.18	.14	.82	.14	167.15	45.00
*	5.000	2900.00	2138.21	.00	2.17	.00	265.20	80.00
r	5.000	2900.00	2138.19	-.02	2.01	-.02	264.58	80.00
*	7.000	2900.00	2158.98	.00	20.77	.00	116.46	1400.00
r	7.000	2900.00	2158.99	.00	20.79	.00	116.50	1400.00
*	7.100	2900.00	2162.06	.00	3.07	.00	532.19	80.00
*	7.100	2900.00	2162.37	.31	3.38	.31	197.07	80.00
	8.000	2900.00	2167.47	.00	5.42	.00	266.72	595.00
*	8.000	2900.00	2167.69	.22	5.32	.22	267.48	595.00
r	8.500	2900.00	2169.49	.00	2.02	.00	192.77	120.00
*	8.500	2900.00	2169.51	.02	1.82	.02	193.66	120.00
	9.000	2900.00	2175.98	.00	6.48	.00	62.69	680.00
	9.000	2900.00	2176.56	.59	7.05	.59	32.00	680.00
r	9.100	2900.00	2179.53	.00	3.56	.00	241.32	80.00
*	9.100	2900.00	2179.70	.17	3.14	.17	100.00	80.00
	10.000	2900.00	2191.70	.00	12.17	.00	268.70	1295.00
r	10.000	2900.00	2191.99	.29	12.29	.29	138.87	1295.00
*	10.500	2900.00	2192.64	.00	.94	.00	319.99	110.00
*	10.500	2900.00	2192.78	.14	.78	.14	145.00	110.00
*	11.000	2900.00	2197.35	.00	4.71	.00	110.19	670.00
*	11.000	2900.00	2197.33	-.02	4.55	-.02	109.39	670.00
*	11.100	2900.00	2203.73	.00	6.38	.00	534.64	120.00
*	11.100	2900.00	2203.78	.04	6.45	.04	270.00	120.00
*	12.000	2900.00	2212.42	.00	8.69	.00	203.66	1065.00
*	12.000	2900.00	2212.53	.11	8.76	.11	207.53	1065.00
*	13.000	2900.00	2224.79	.00	12.37	.00	222.06	1080.00
*	13.000	2900.00	2224.78	-.01	12.25	-.01	221.87	1080.00
*	13.100	2900.00	2230.16	.00	5.37	.00	419.93	120.00
*	13.100	2900.00	2230.14	-.01	5.36	-.01	156.85	120.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	13.200	2900.00	2233.16	.00	3.00	.00	765.42	50.00
*	13.200	2900.00	2233.15	-.01	3.01	-.01	251.77	50.00
•	13.500	2900.00	2233.07	.00	-.09	.00	343.93	150.00
•	13.500	2900.00	2233.08	.01	-.07	.01	344.44	150.00
*	14.000	2900.00	2240.97	.00	7.89	.00	201.88	810.00
*	14.000	2900.00	2240.96	.00	7.88	.00	201.83	810.00
*	15.000	2900.00	2249.46	.00	8.50	.00	208.49	820.00
*	15.000	2900.00	2249.47	.01	8.51	.01	208.53	820.00
*	15.100	2900.00	2264.44	.00	14.98	.00	113.00	950.00
•	15.100	2900.00	2264.44	.00	14.97	.00	113.00	950.00
*	15.200	2900.00	2270.71	.00	6.28	.00	858.14	220.00
*	15.200	2900.00	2270.71	.00	6.28	.00	306.01	220.00

SUMMARY OF ERRORS AND SPECIAL NOTES

AUTION SECNO=	1.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	2.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	3.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	1600.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	1384.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1384.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	415.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	415.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	415.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	415.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	415.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	415.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	185.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	185.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	185.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	185.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	185.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	185.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	20.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	20.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	20.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	20.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	20.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	20.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

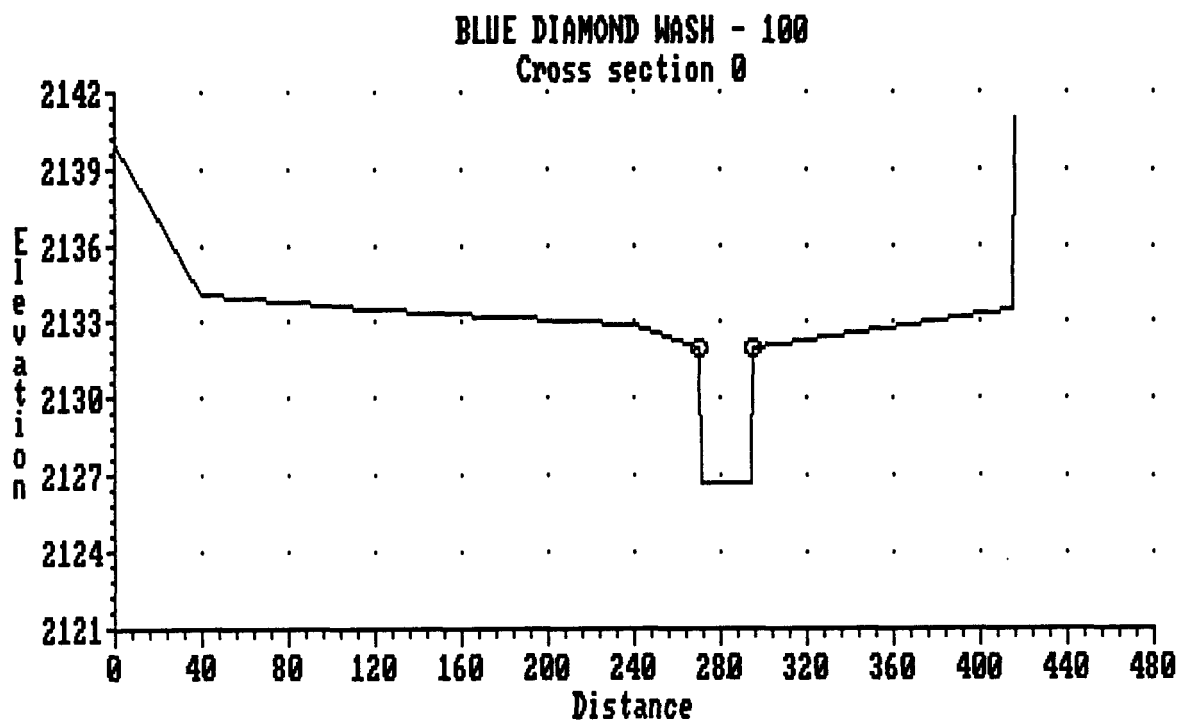
WARNING SECNO=	.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.110	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.110	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	.220	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	.220	PROFILE=	1	WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=	.220	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	.220	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	.220	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	5.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	5.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	5.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	5.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	5.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	5.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	7.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	7.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	7.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	7.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	7.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	7.100	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	7.100	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=	7.100	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=	8.500	PROFILE=	2	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	9.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
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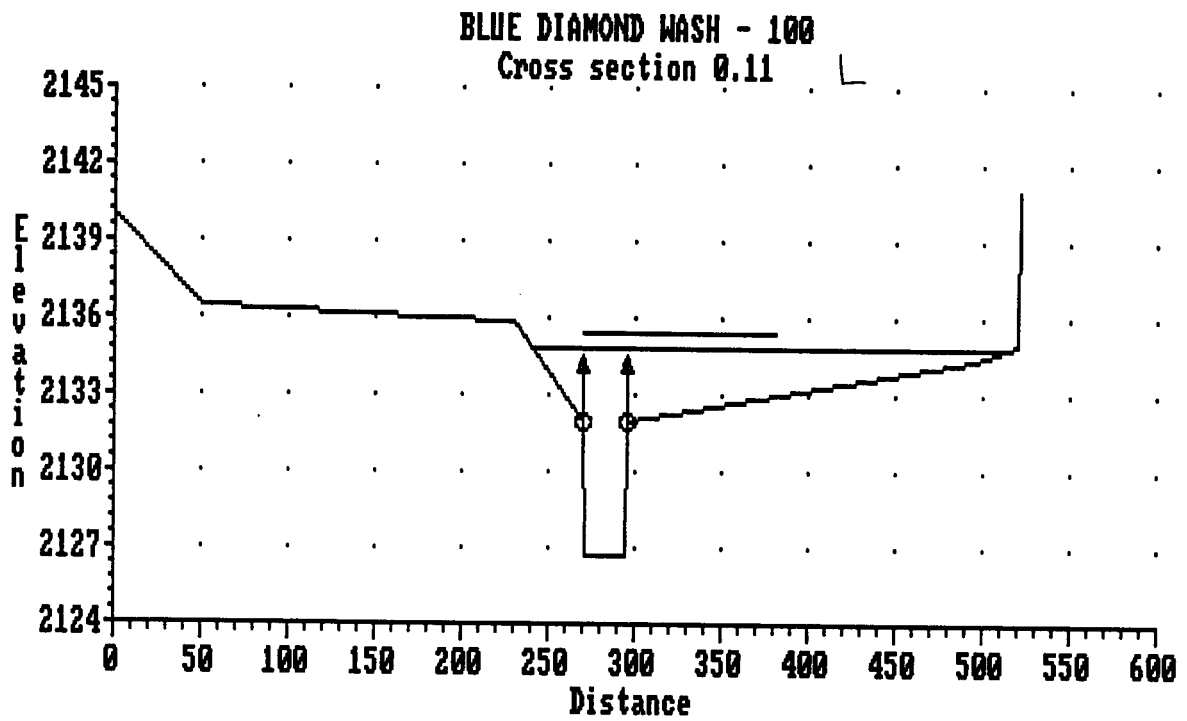
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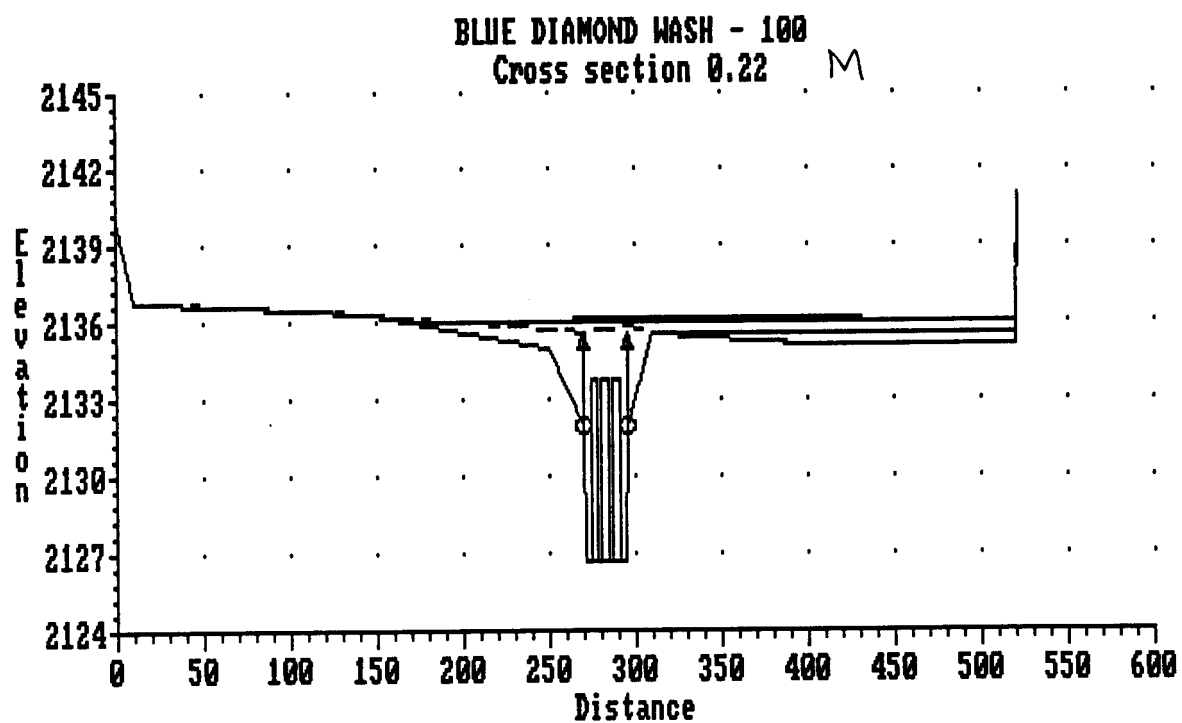
FLOODWAY DATA, BLUE DIAMOND WASH - 100
PROFILE NO. 2

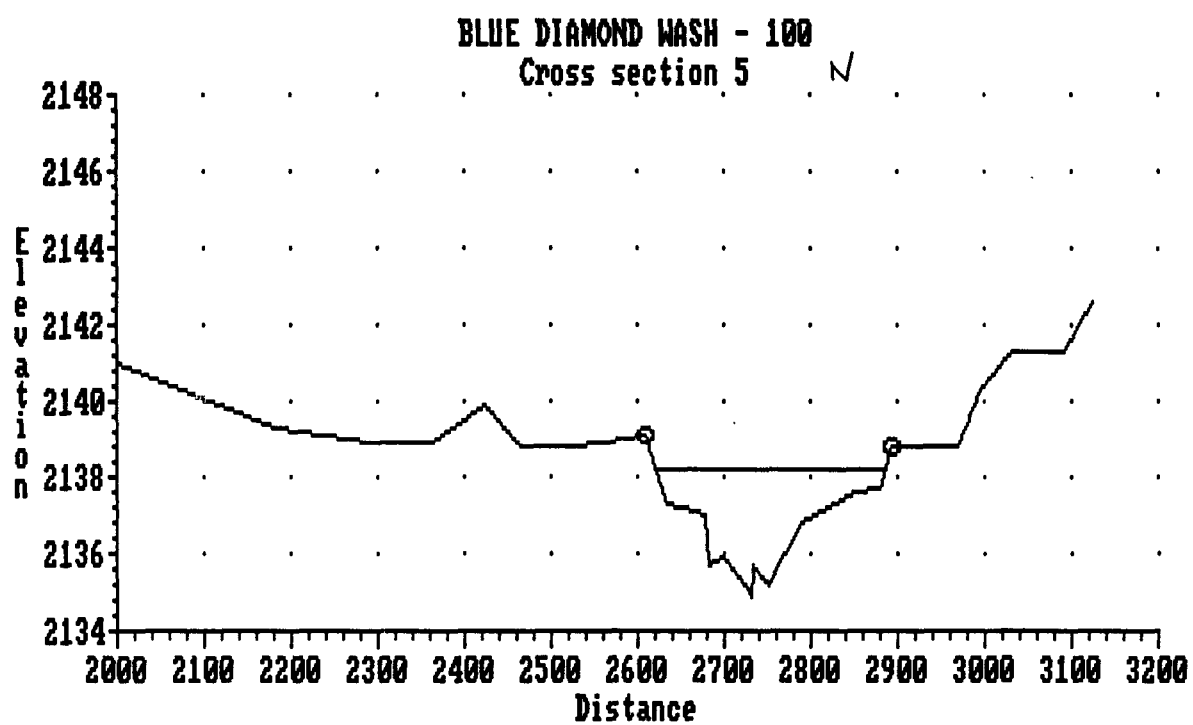
STATION	----- FLOODWAY -----			WATER SURFACE ELEVATION		
	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
1.000	50.	235.	12.3	2076.7	2077.0	-.3
2.000	473.	820.	3.5	2088.7	2087.9	.8
3.000	37.	213.	13.6	2100.6	2100.3	.3
1600.000	39.	268.	10.8	2104.5	2103.5	1.0
1560.000	40.	273.	10.6	2104.9	2104.4	.5
1384.000	34.	209.	13.9	2105.6	2105.5	.1
1000.000	25.	209.	13.9	2109.1	2109.0	.1
600.000	25.	190.	15.3	2113.0	2112.9	.1
300.000	25.	185.	15.7	2117.4	2117.4	.0
.000	113.	516.	5.6	2121.5	2121.6	-.1
1.100	114.	519.	5.6	2121.7	2121.7	.0
1.200	105.	388.	7.5	2120.6	2121.3	-.7
1.300	108.	436.	6.7	2121.0	2121.4	-.4
415.000	54.	261.	11.1	2125.1	2125.2	-.1
185.000	44.	240.	12.1	2131.4	2131.2	.2
20.000	75.	288.	10.1	2133.9	2133.8	.1
.000	230.	794.	3.7	2135.6	2135.0	.6
.110	111.	459.	6.3	2135.4	2134.8	.6
.220	167.	400.	7.3	2136.1	2136.0	.1
5.000	265.	404.	7.2	2138.2	2138.2	.0
7.000	117.	308.	9.4	2159.0	2159.0	.0
7.100	197.	372.	7.8	2162.4	2162.1	.3
8.000	267.	582.	5.0	2167.7	2167.5	.2
8.500	194.	369.	7.9	2169.5	2169.5	.0
9.000	32.	220.	13.2	2176.6	2176.0	.6
9.100	100.	295.	9.8	2179.7	2179.5	.2
10.000	139.	418.	6.9	2192.0	2191.7	.3
10.500	145.	563.	5.1	2192.7	2192.6	.1
11.000	200.	304.	9.5	2197.4	2197.4	.0
11.100	270.	411.	7.1	2203.7	2203.7	.0
12.000	294.	508.	5.7	2212.5	2212.4	.1
13.000	304.	387.	7.5	2224.8	2224.8	.0
13.100	157.	880.	3.3	2230.2	2230.2	.0
13.200	252.	1988.	1.5	2233.2	2233.2	.0
13.500	419.	941.	3.1	2233.1	2233.1	.0
14.000	202.	369.	7.8	2241.0	2241.0	.0
15.000	209.	477.	6.1	2249.5	2249.5	.0
15.100	113.	304.	9.5	2264.4	2264.4	.0
15.200	306.	924.	3.1	2270.7	2270.7	.0

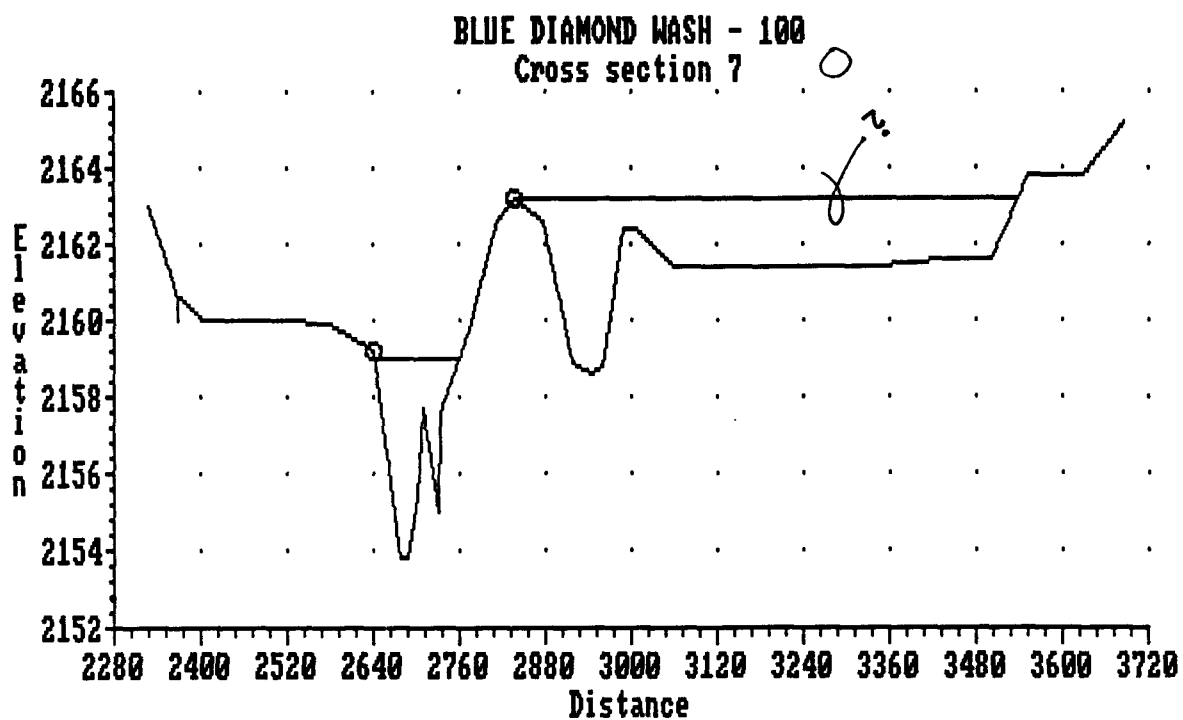
Normal program termination

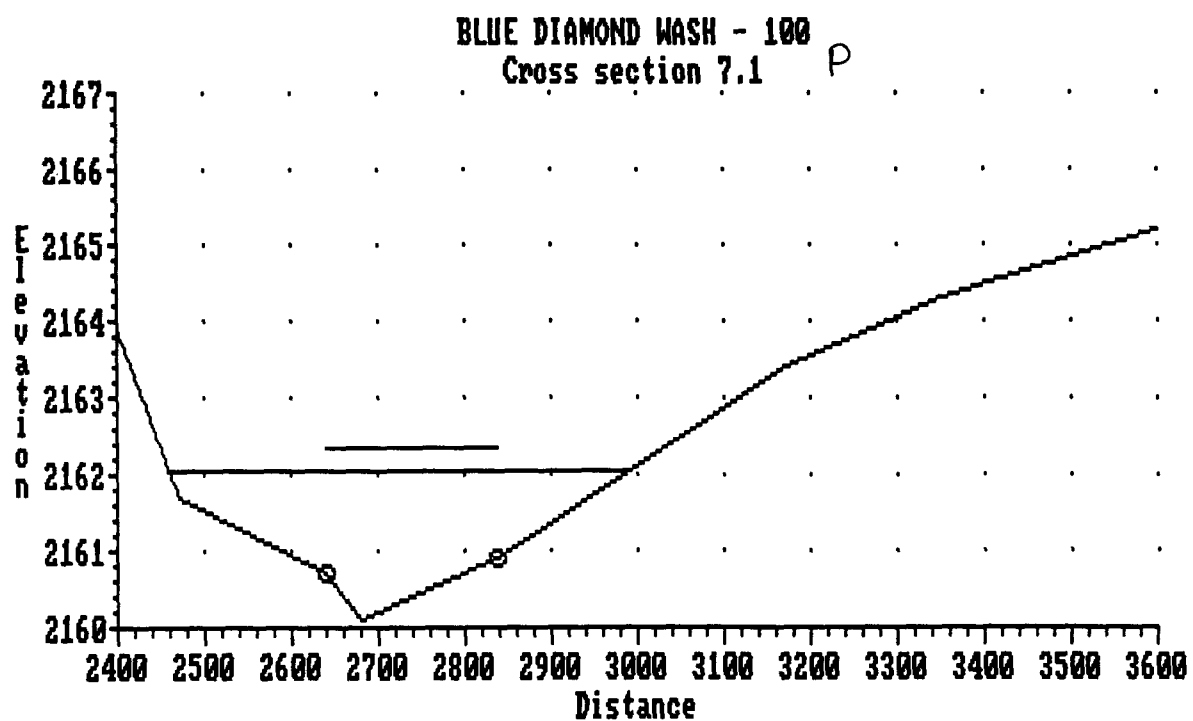


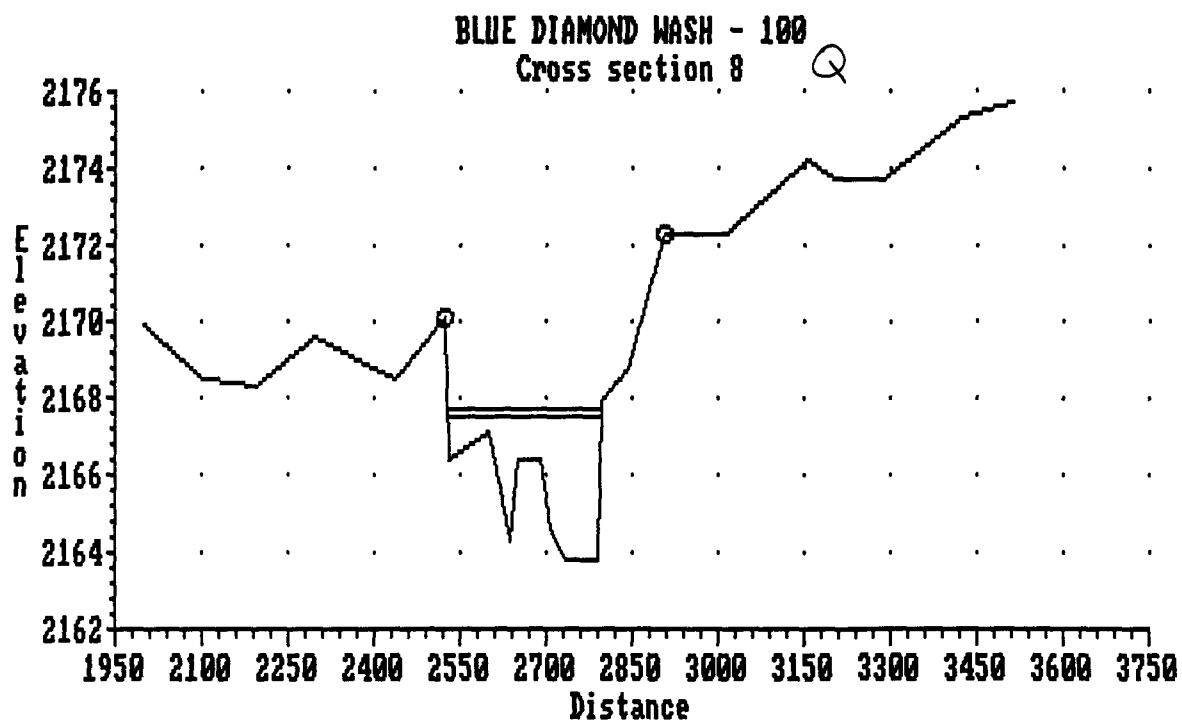


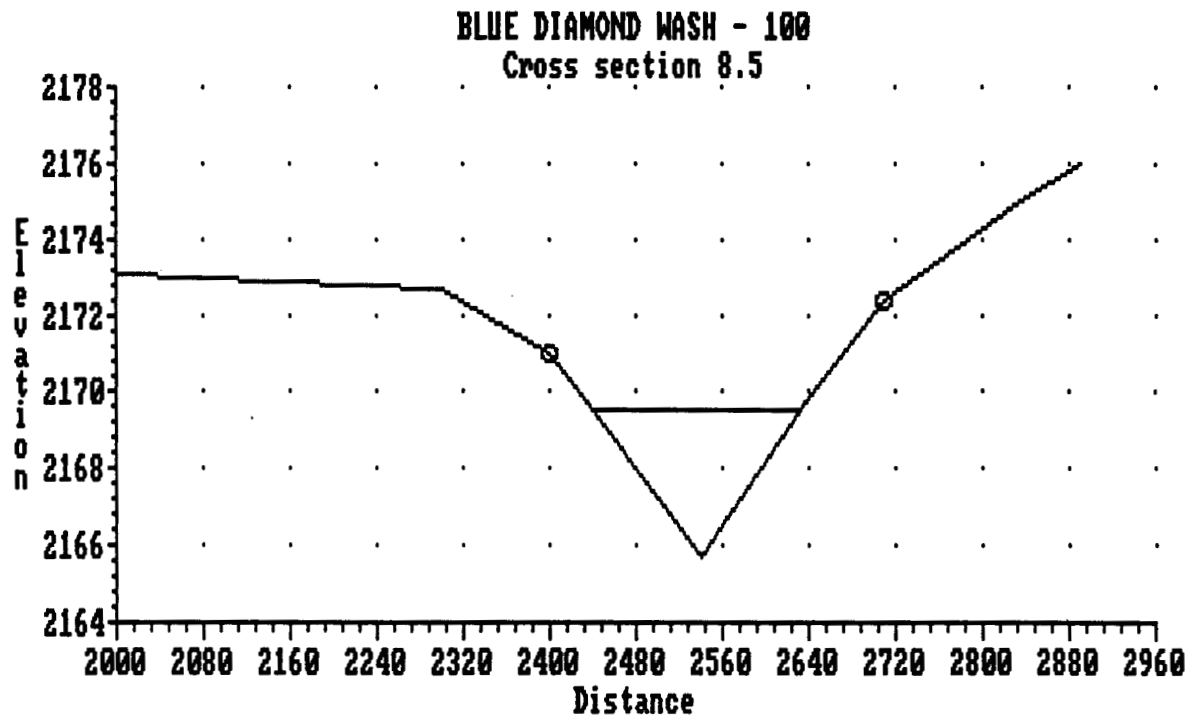


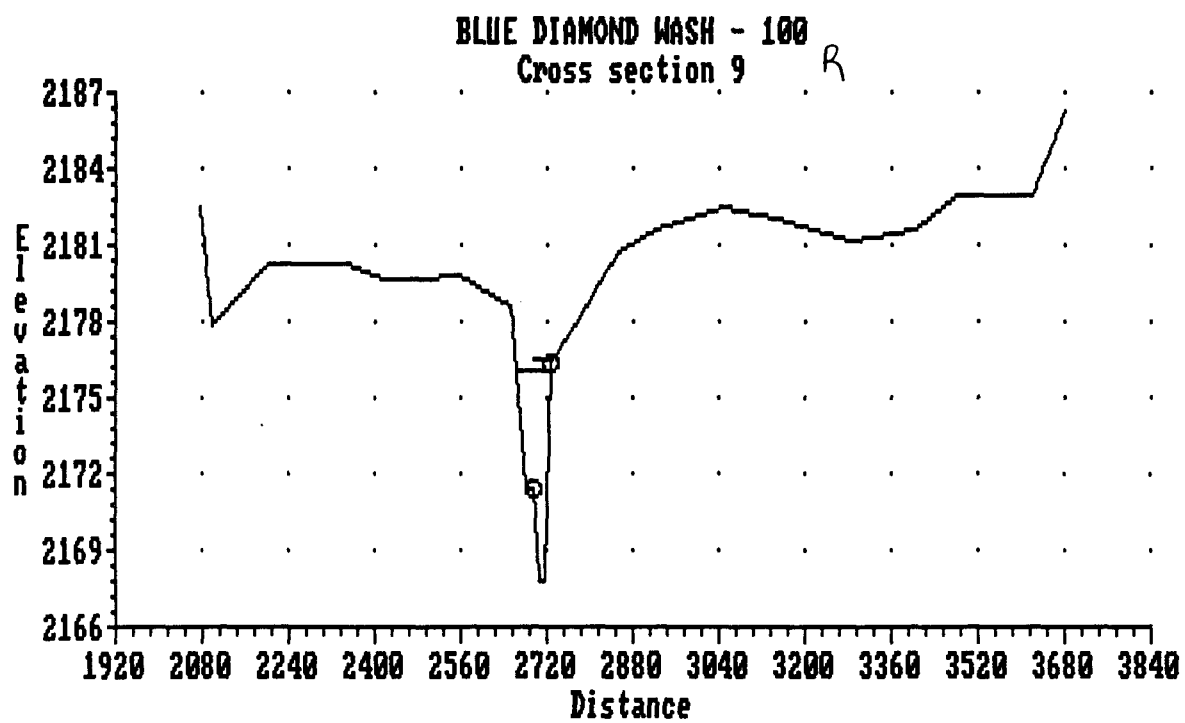


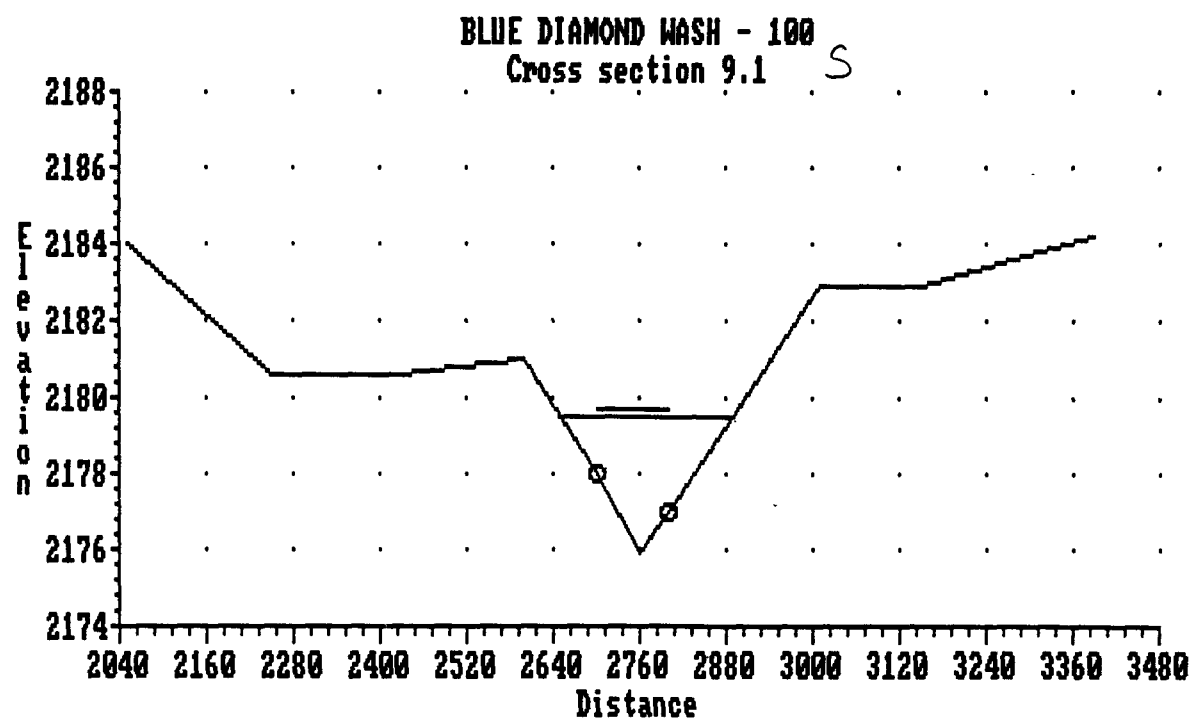


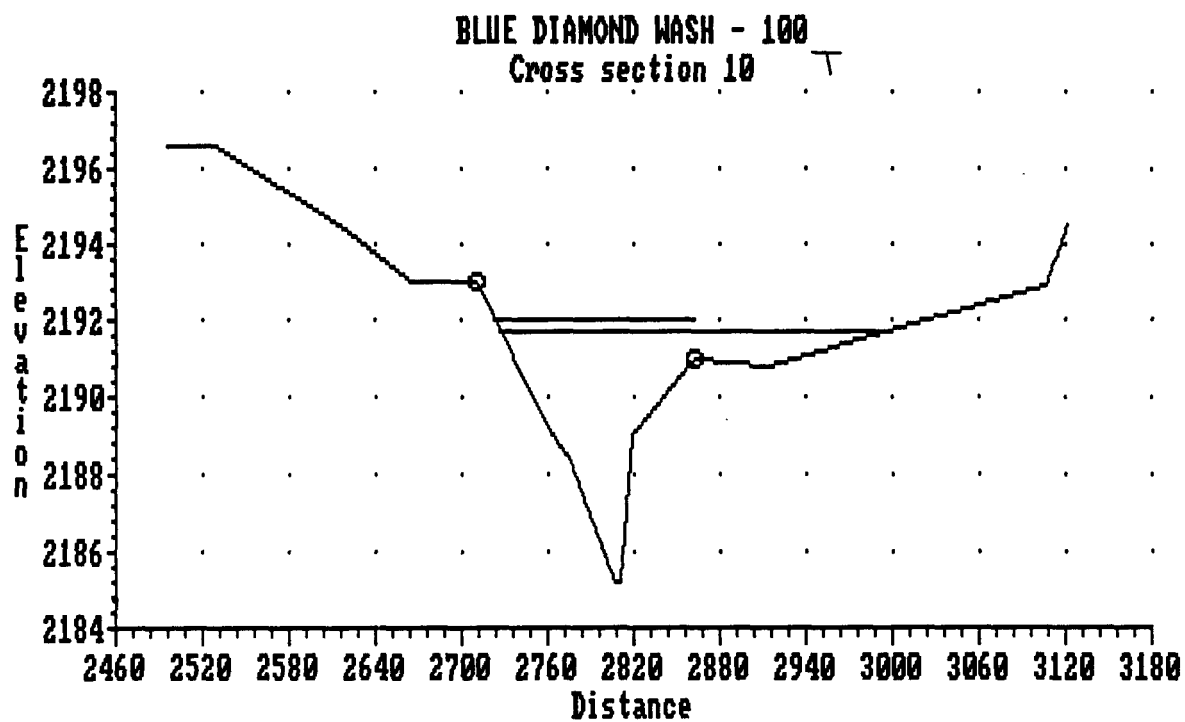


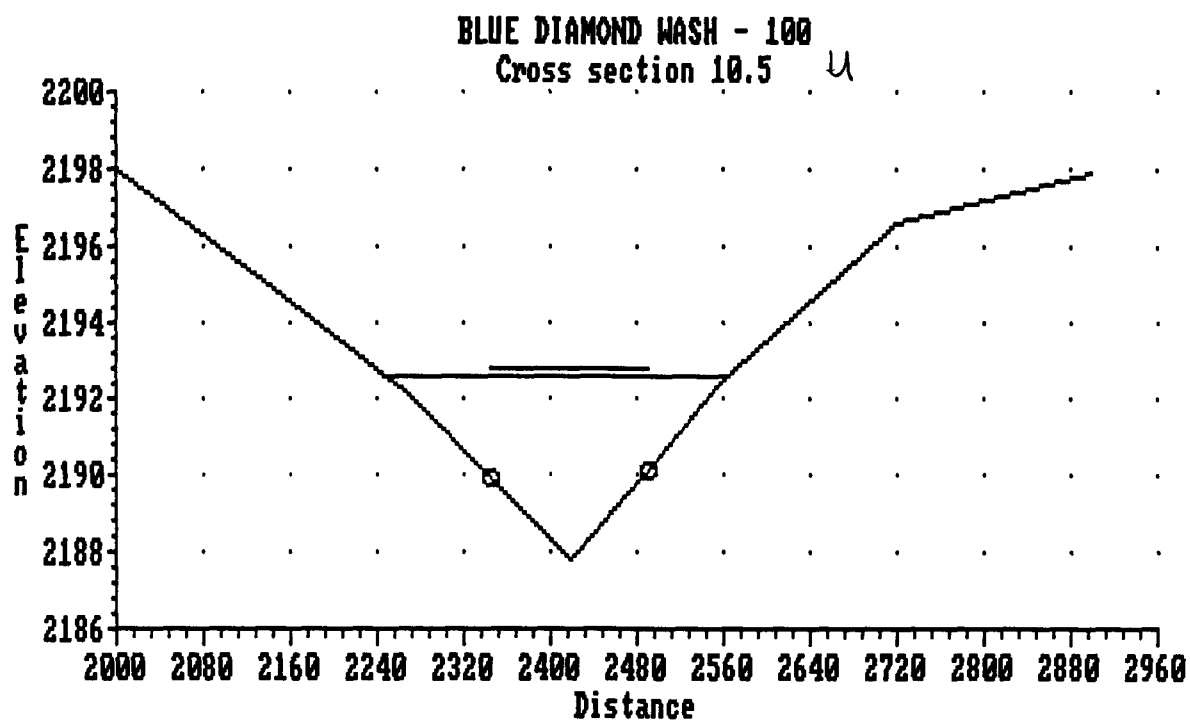


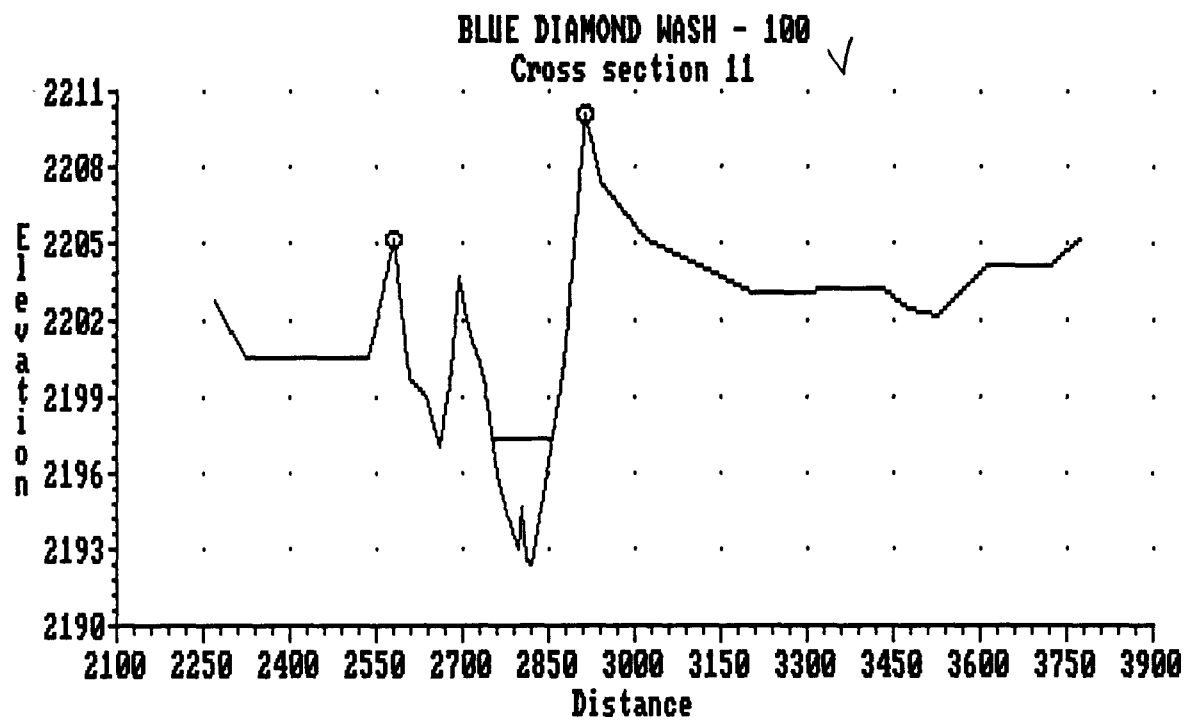


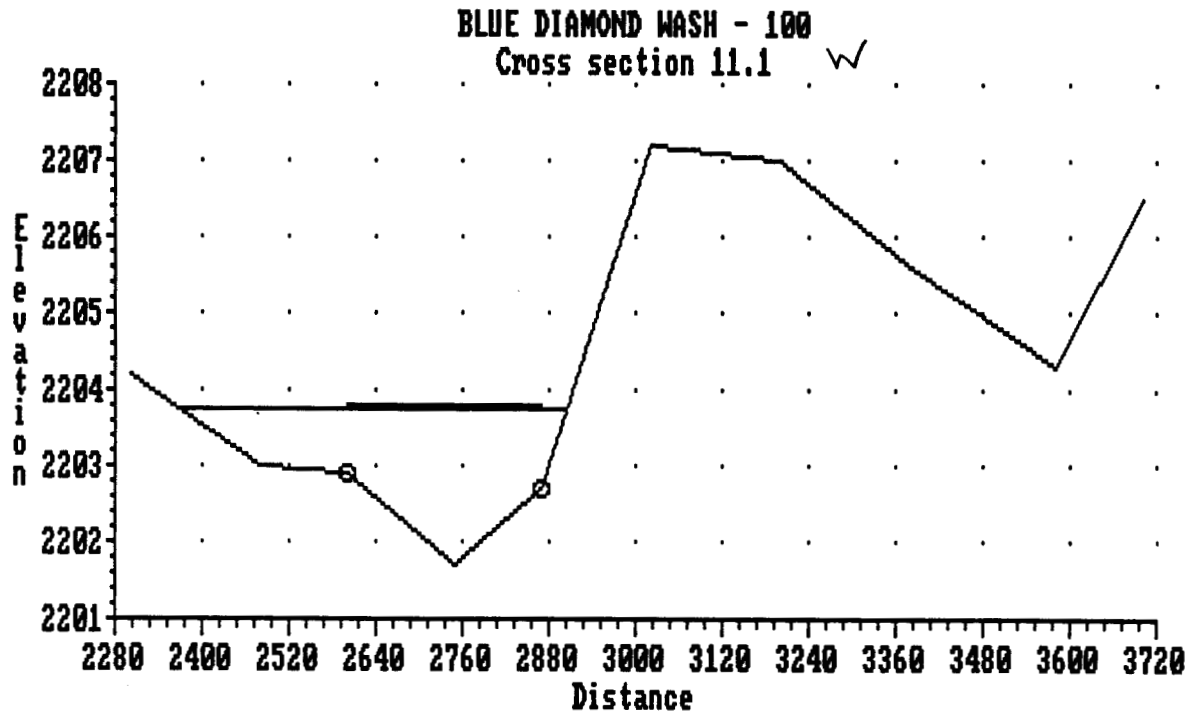


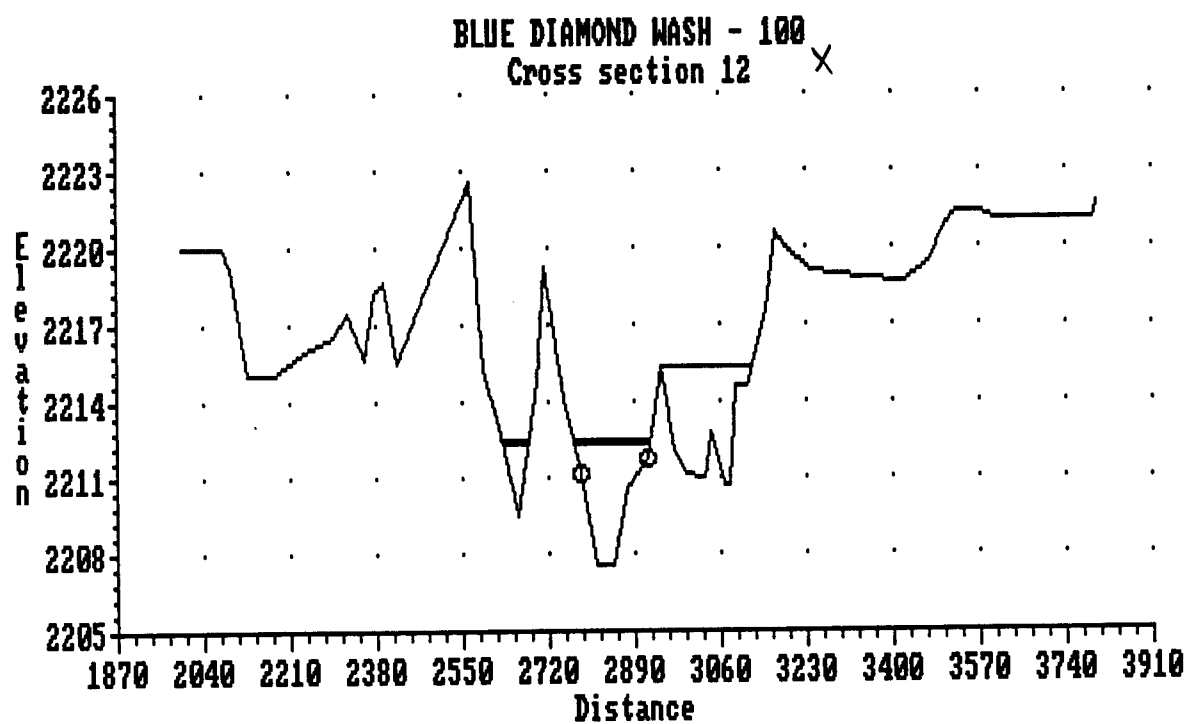


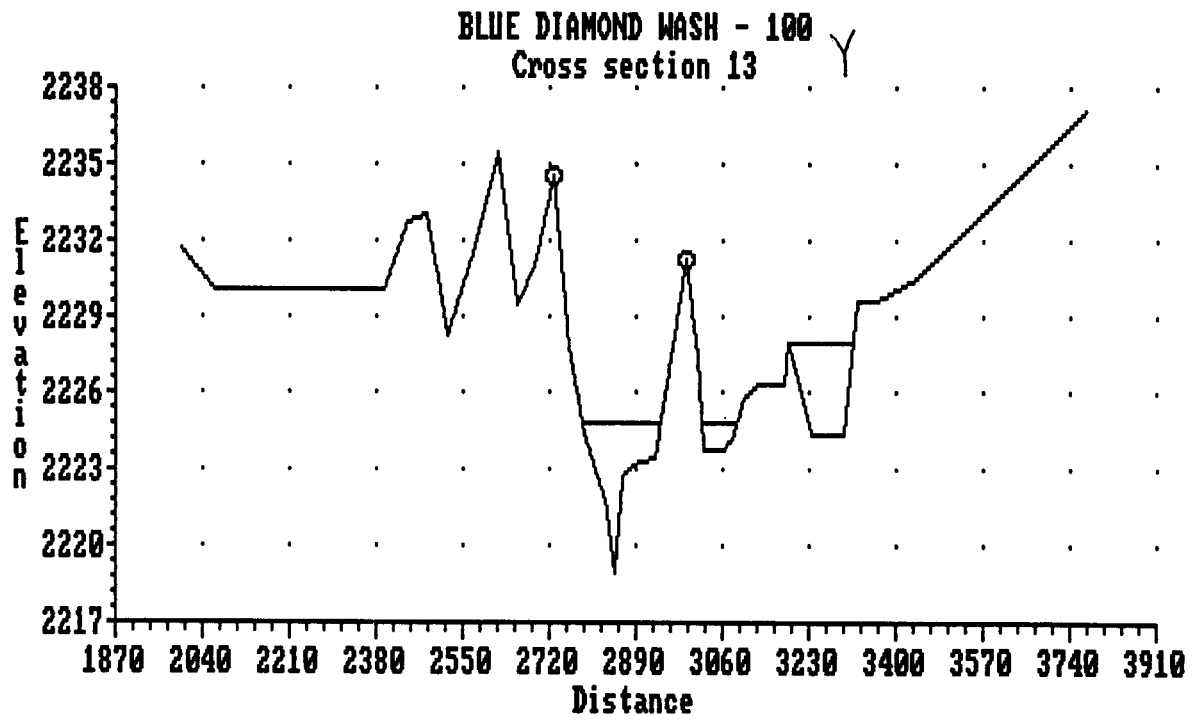


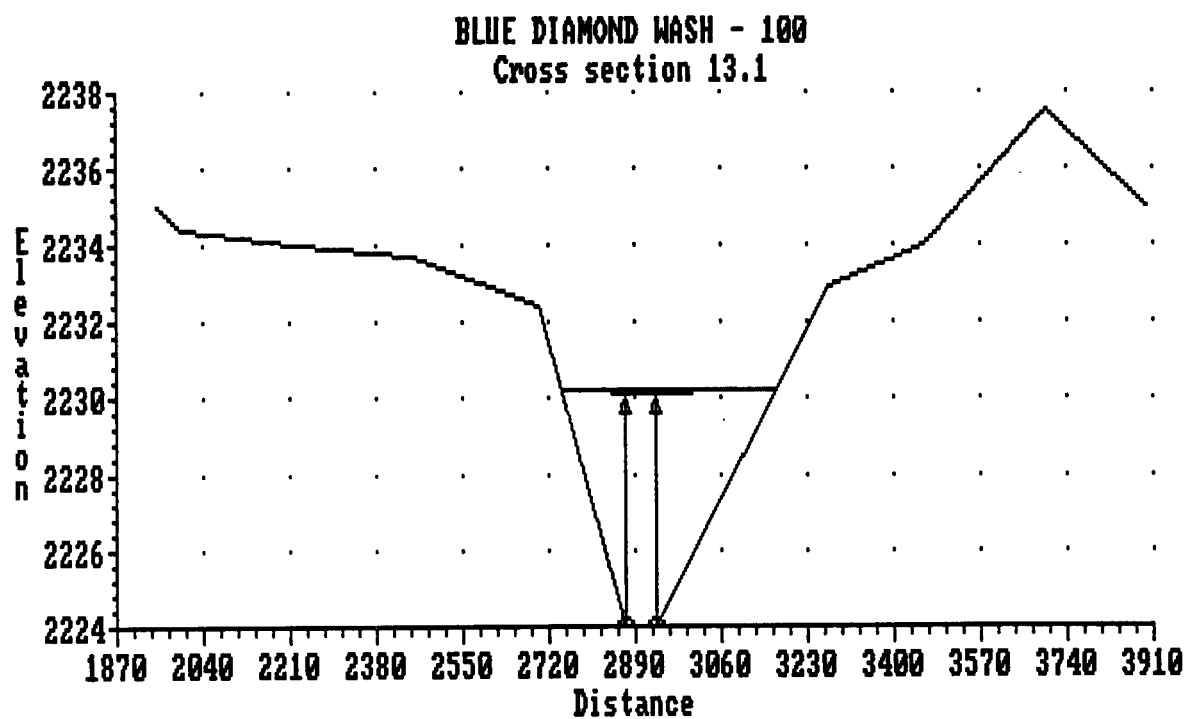


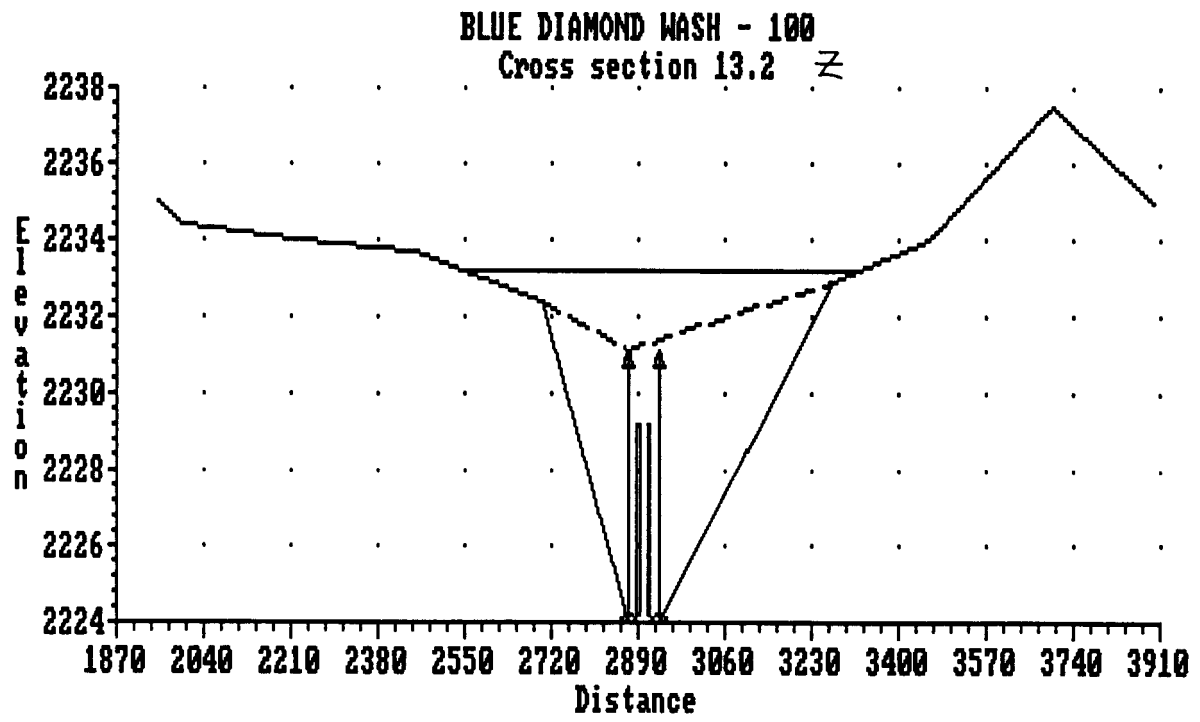


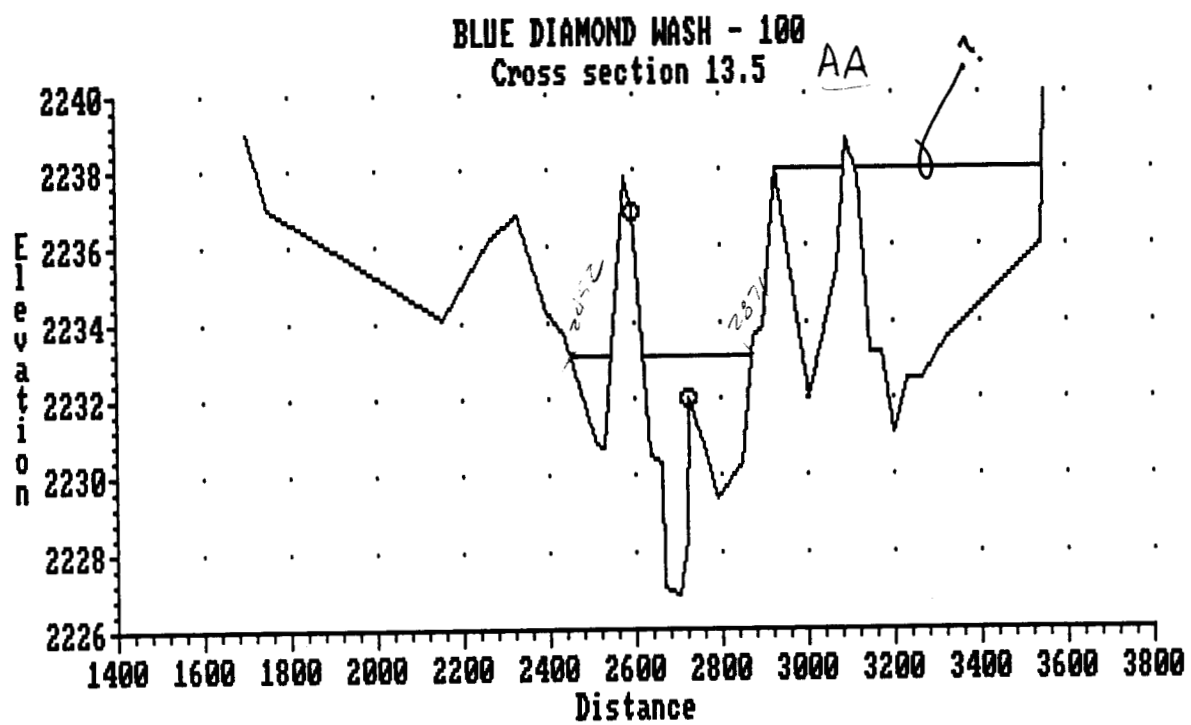


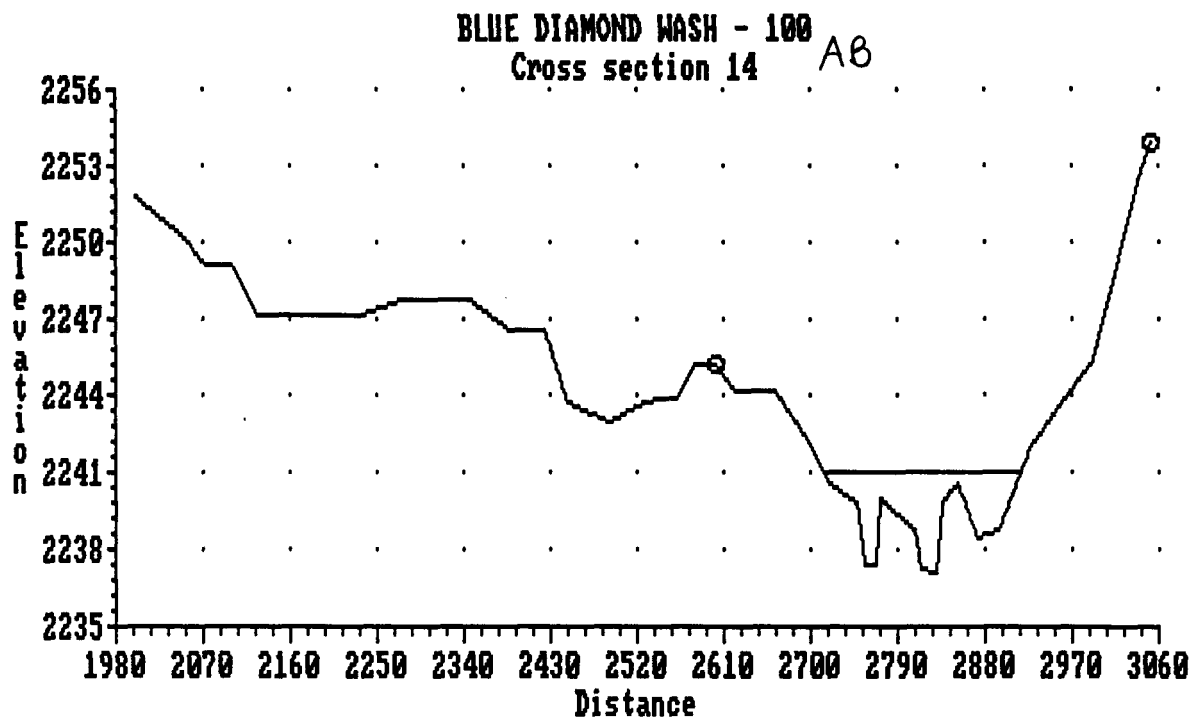


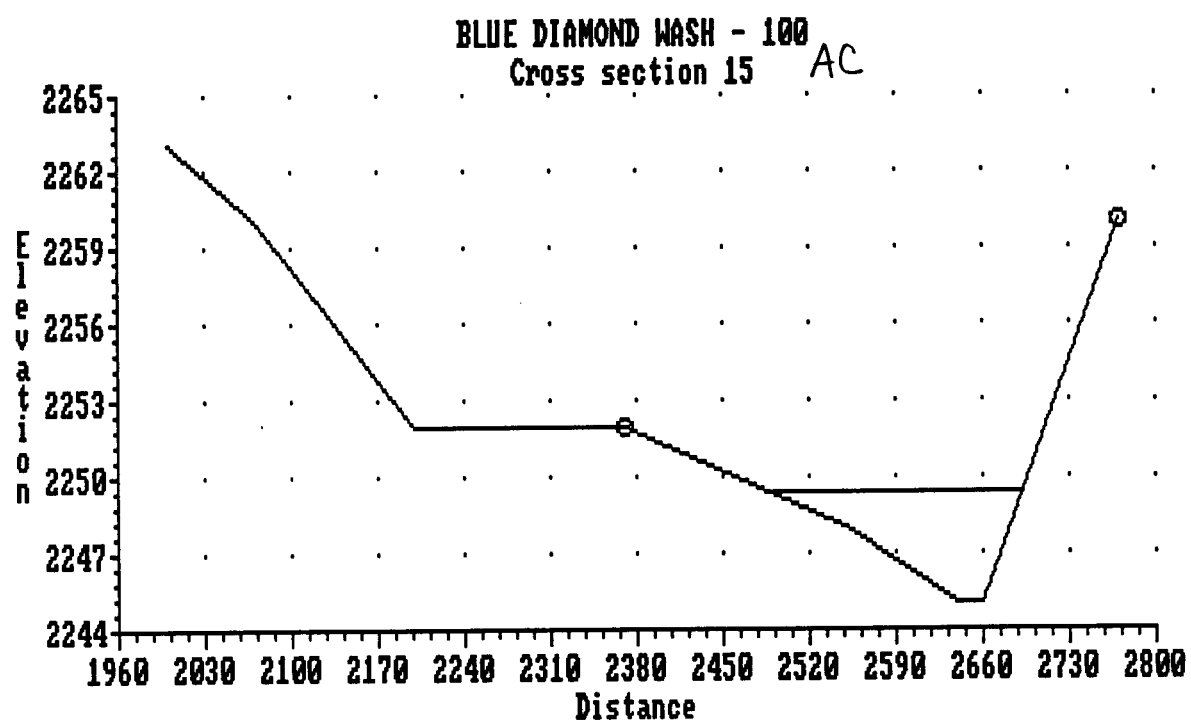


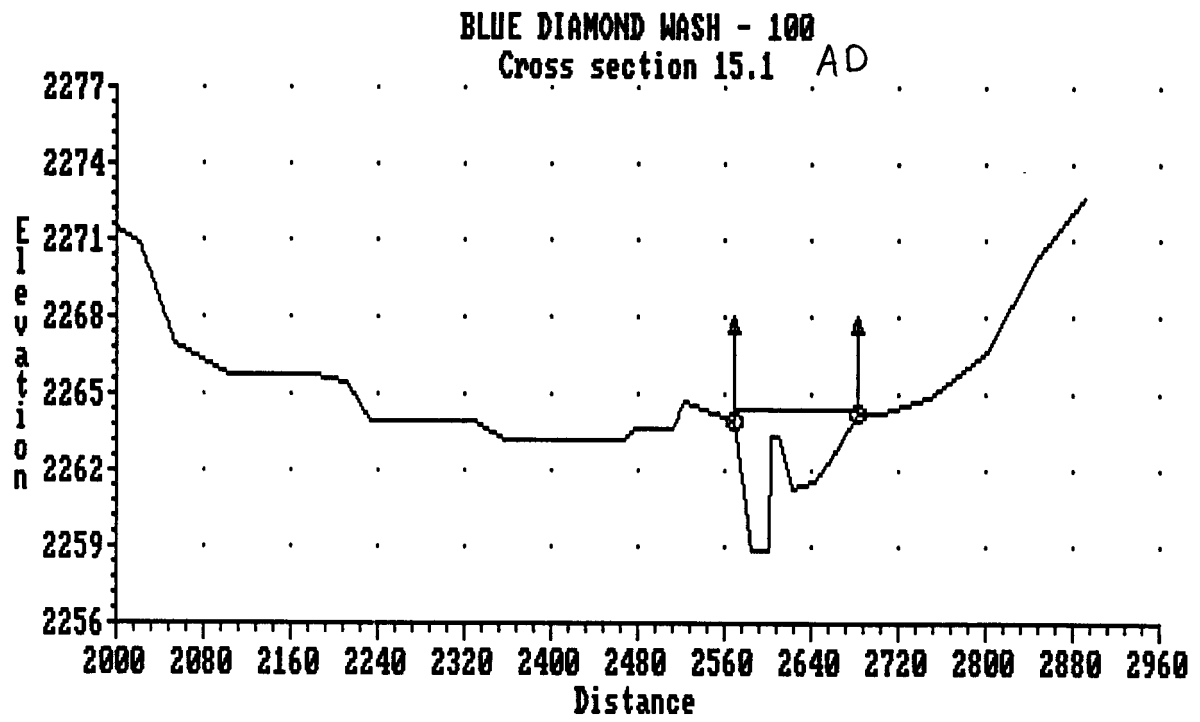


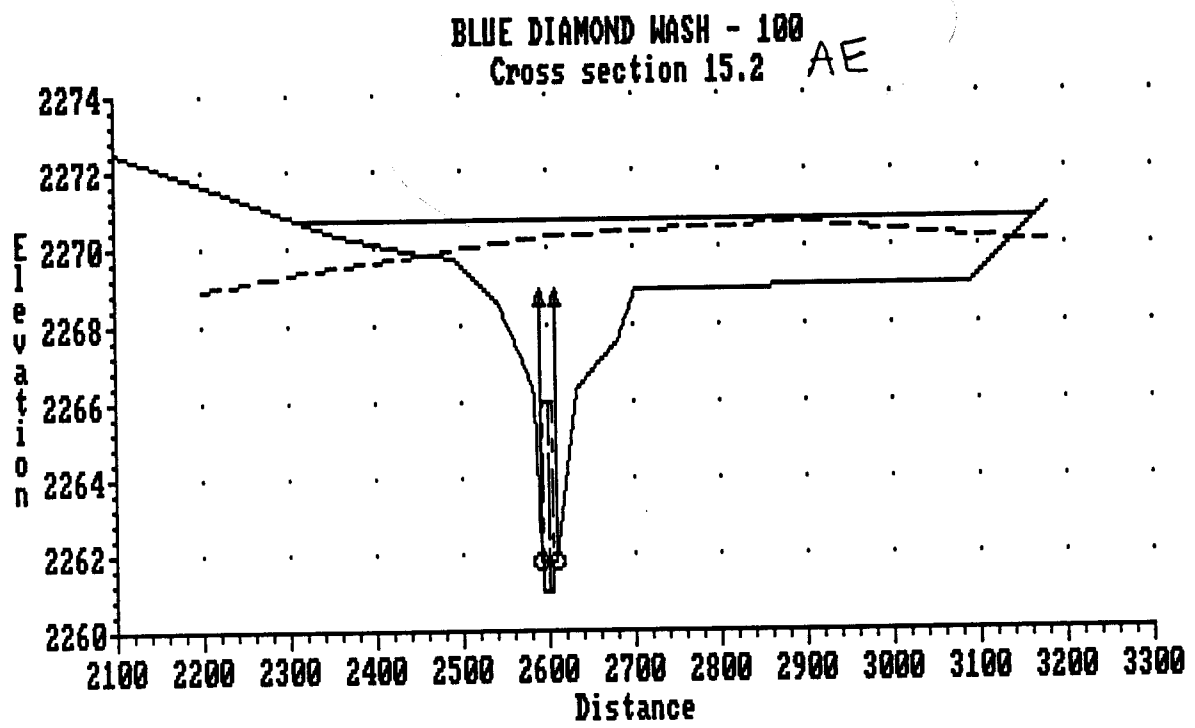












SOUTH BRANCH - BLUE DIAMOND WASH

(DUCK CREEK TO INTERSTATE-15)

2SBDSPLT: Split Flow Run on South Branch Blue Diamond Wash, 52pp

2SBDFW: Floodway Run on South Branch Blue Diamond Wash, 16pp


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*****
* HEC-2 WATER SURFACE PROFILES *
*                               *
* Version  4.6.0; February 1991 *
*                               *
* RUN DATE  26AUG92   TIME  18:37:01 *
*****
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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      X      X
XXXXXXX  XXXX  X      XXXXX  XXXXX
X      X  X      X      X      X
X      X  X      X      X      X
X      X  XXXXXXX  XXXXX      XXXXXXX

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::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
:::                                     :::
:::  FULL MICRO-COMPUTER IMPLEMENTATION  :::
:::                                     :::
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H A E S T A D   M E T H O D S
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 26AUG92 18:37:01

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

SPLIT FLOW BEING PERFORMED

SF Split Flow between Giles pie Street and Cienega Street

TN Split Flow between cross sections 410 and 440

NS 2 410 440 -1 .05 .0047

NG 0 2202.7 350 2204

TN Split Flow between cross sections 440 and 480

NS 2 440 480 -1 .05 .0047

NG 0 2204 250 2206.7

T1 CLARK COUNTY FLOOD INSURANCE STUDY
 T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. - Revised by MBI Inc.
 T3 SOUTH BRANCH - BLUE DIAMOND WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			-1				2145	

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

QT	1	2800								
VC	.025	.025	.025							
K1	18.46	12	270	308	46	46	46			
GR	2150.1	0	2150.01	100	2150.24	140	2150.5	190	2150.68	240
GR	2147.2	270	2139.2	284	2139.5	294	2147.2	308	2150.45	350
GR	2155	390	2155	420						
X1	24	15	110	177	128	128	128			
GR	2165	0	2164	50	2163	100	2162	110	2161	113
GR	2160	116	2155	124	2150	133	2146	140	2145	152
GR	2145	159	2150	166	2160	177	2164	187	2168	300

CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans

Extends from Windmill channel to Bermuda Road

X1	25.40	20	199	211	140	140	140			
GR	2166	0	2165	20	2164	110	2163	160	2162	173
GR	2161	177	2160	181	2155	187	2150	193	2146	199
GR	2146	211	2150	215	2155	221	2158	225	2160	228
GR	2165	233	2166	235	2167	238	2168	241	2168	350
NC				.3	.5					
X1	25.41				10	10	10			
X3	10							2173	2173	
SC	1.013	.5	2.6	0	10	12	650	8.3	2160.01	2146.05
K1	25.42	17	189	201	650	650	650			
K2			2	2170	2175					
X3	10							2176	2176	
BT	-8	0	2178		159	2177		163	2176	
BT		167	2175		189	2175		220	2175	
BT		220	2178		400	2178				
GR	2178	0	2178	150	2177	159	2176	163	2175	167
GR	2174	171	2169	177	2164	183	2160	189	2160	201
GR	2164	205	2169	211	2172	215	2174	218	2175	220
GR	2178	230	2178	400						

NC	.04	.04	.04	.1	.3				
X1	25.43				50	50	50		

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP
 Modeled from Kachina Homes Plans
 Clark County project

X1	100	6	0	26	350	350	350		
GR	2181.8	0	2181.8	25	2173.2	26	2173	41	2181.8
GR	2184.8	51.5							51

NC			.3	.5					
			Extended cross section to intersect water surface						
X1	110	7	1000	1041	200	200	200		
X3	10							2182.7	2182.7
GR	2188.4	995	2183.4	1000	2177	1001	2177	1034	2183.6
GR	2184	1125	2186	1150					1041
SC	4.013	.5	2.6	0	4	0	70	1.3	2178.2
X1	120	9	1000	1041	70	70	70		2177
X2			2	2182.2	2183.3				
X3	10							2183.3	2183.3
BT	-9	0	2190		10	2184		800	2183.3
BT		1000	2183.4		1001	2183.5		1034	2183.6
BT		1041	2184		1241	2185		1441	2190
GR	2250	0	2184	10	2183.3	800	2183.4	1000	2178.2
GR	2178.2	1034	2184	1041	2185	1241	2250	1441	1001

NC			.1	.3					
X1	130			100	100	100			

CROSS SECTION 200 PLACID ST.
 Modeled top of Road from JMM Workmap

X1	200	6	560	850	550	550			
GR	2194	0	2191.8	250	2191	560	2190.5	750	2192
GR	2196.1	1150							850

CROSS SECTION 400 ORIGINAL JMM

X1	400	15	2469	2571	600	600	600		
GR	2202.0	2415	2202.0	2416	2202.0	2419	2200.8	2435	2199.5
GR	2197.3	2521	2193.4	2549	2193.4	2563	2198.7	2571	2200.1
GR	2200.1	2731	2200.6	2888	2201.8	2988	2201.5	3027	2201.8

CROSS SECTION 410 CIENEGA ST.
 Modeled Top of Road from JMM Workmap

X1	410	7	380	900	140	140	140		
GR	2204	0	2203.5	190	2202.7	380	2200.6	560	2202.0
GR	2205.1	900	2205.3	1060					730

Y1	440	9	345	365	350	350	350			
IR	2204	0	2204	200	2204	300	2204	345	2201	350
GR	2201	360	2204	365	2204	400	2208	550		

CROSS SECTION 480 GILESPIE ST.
Modeled Top of Road from JMM Workmap

X1	480	9	720	1000	400	400	400			
IR	2208.2	0	2206.7	200	2205.7	390	2205.9	560	2206.7	720
IR	2205.7	860	2211.4	1000	2210.2	1200	2209.9	1370		

CROSS SECTION 500 ORIGINAL JMM

(1	500	13	2822	2907	220	220	220			
GR	2211.7	2599	2206.9	2649	2209.8	2772	2207.2	2822	2205.9	2858.
GR	2202.9	2874	2203.1	2886	2206.6	2907	2211.4	2938	2212.3	2965.
IR	2210.6	3023	2210.0	3086	2209.9	3467				

CROSS SECTION 510 RANCHO DESTINO
Modeled Top of Road from JMM Workmap

(1	510	9	680	980	500	500	500			
GR	2215.3	0	2213.1	130	2212.3	320	2213.8	500	2213.2	680
GR	2209.3	850	2215.8	980	2218	1130	2216.4	1250		

CROSS SECTION 580 HAVEN ROAD
Modeled Top of Road from JMM Workmap

(1	580	8	580	900	670	670	670			
IR	2225.2	0	2220.3	220	2220.2	410	2223	580	2217.8	710
GR	2224.1	900	2223.0	1000	2224.5	1150				

CROSS SECTION 600 ORIGINAL JMM

X1	600	20	2670	2805	130	130	130			
GR	2225.9	2270	2225.9	2272	2225.9	2272	2225.9	2274	2224.9	2304
IR	2223.3	2336	2223.2	2462	2223.5	2509	2224.0	2550	2224.2	2649
IR	2222.0	2670	2220.5	2691	2220.1	2726	2219.8	2731	2219.8	2760
GR	2219.3	2776	2224.4	2805	2224.5	2836	2224.4	2955	2226.4	3287

CROSS SECTION 610 GILES ROAD
Modeled Top of Road from JMM Workmap

Y1	610	8	500	1030	550	550	550			
IR	2229.7	0	2227.6	200	2229.1	330	2230.2	500	2228.8	700
GR	2226.4	860	2230.2	1030	2230.9	1200				

IC

.3 .5

CROSS SECTIONS 710-730 LAS VEGAS BLVD
From plans and picture 3 - 10x8.5 RCB
Ground points from JMM HEC-2 Adjusted

(1	710	15	2572	2827	600	600	600			
X3	10							2237.2	2237.2	
GR	2241	2200	2239	2369	2237.7	2464	2238.5	2525	2231.7	2572
IR	2228.1	2616	2228.1	2698	2228.8	2760	2226.0	2786	2226.0	2820
GR	2229.5	2827	2231.8	2858	2236.4	2911	2239.0	3033	2240.5	3079

SC	3.015	.5	2.6	0	8.5	10	50	8.1	2228.2	2228.2
X1	720				50	50	50			
X2			2	2236.7	2237.7					
X3	10							2237.7	2237.7	
BT	-7	2200	2238.4		2464	2237.6		2525	2238.5	
BT		2616	2239.3		2760	2239.3		2827	2238.7	
BT		3033	2239							

NC			.1	.3						
X1	730			100	100	100				

		CROSS SECTIONS 800-900			ORIGINAL JMM					
X1	800	11	2549	2593	1650	1650	1650			
GR	2253.3	2454	2253.7	2470	2248.4	2497	2248.3	2549	2242.4	2560
GR	2242.4	2586	2247.7	2593	2248.7	2643	2249.9	2782	2238.7	3000
GR	2251	3200								

		CROSS SECTIONS 900-930			1-15					
		From plans and picture			4 - 12x4 RCB					
		Top of road from JMM workmap								
X1	900	22	2339	2428	700	700	700			
GR	2261.6	2000	2259.8	2116	2259.9	2172	2258.1	2206	2258.5	2245
GR	2259.8	2281	2257.0	2293	2257.0	2339	2253.7	2354	2253.7	2363
GR	2257.2	2367	2257.2	2371	2253.5	2379	2252.2	2419	2257.7	2428
GR	2257.7	2438	2255.8	2443	2255.9	2470	2256.3	2515	2256.3	2579
GR	2256.3	2679	2259.4	2731						

NC			.3	.5						
X1	910	10	2870	2930	300	300	300			
X3	10							2264	2264	
GR	2267	1800	2264	2000	2260	2700	2259.2	2870	2259.2	2930
GR	2260	3100	2262	3200	2260	3300	2260	3400	2267	3600

SC	4.016	.5	2.6	0	4	12	150	8.1	2259.3	2259.3
X1	920				150	150	150			
X2			2	2263.3	2264.7					
X3	10							2264.7	2264.7	
BT	-8	1800	2267		2000	2267		2700	2265.5	
BT		2870	2265.2		2930	2265.2		3100	2265	
BT		3300	2264.7		3600	2267				

X1	930				100	100	100			
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NC	.040	.040	.040	0.1	0.3					
X1	960	28	2282	3147	1000	1000	975			
GR	2277.3	2265	2275.6	2282	2272.2	2315	2272.2	2365	2272.2	2425
GR	2272.3	2477	2272.3	2533	2272.5	2574	2273.4	2609	2273.4	2661
GR	2273.4	2708	2274.0	2721	2273.9	2734	2272.7	2740	2272.7	2780
GR	2274.0	2788	2274.0	2820	2273.8	2843	2272.3	2851	2273.9	2856
GR	2273.9	2915	2273.9	2977	2273.9	3095	2275.4	3147	2278.5	3155
GR	2278.2	3274	2278.2	3351	2279.3	3430				

SECNO	DEPTH	CWSEL	CRIS	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

*SECNO 18.460

3720 CRITICAL DEPTH ASSUMED

18.460	7.06	2146.26	2146.26	2145.00	2148.53	2.27	.00	.00	2147.20
1863.5	.0	1863.5	.0	.0	154.2	.0	.0	.0	2147.20
.00	.00	12.09	.00	.000	.025	.000	.000	2139.20	271.65
.006446	46.	46.	46.	0	10	0	.00	34.64	306.29

*SECNO 24.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

24.000	6.04	2151.04	2151.04	.00	2153.24	2.20	.82	.00	2162.00
1863.5	.0	1863.5	.0	.0	156.5	.0	.5	.1	2160.00
.00	.00	11.91	.00	.000	.025	.000	.000	2145.00	131.12
.006385	128.	128.	128.	20	15	0	.00	36.02	167.15

*SECNO 25.400

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans

Extends from Windmill channel to Bermuda Road

25.400	7.29	2153.29	2153.29	.00	2155.95	2.66	.72	.00	2146.00
1863.5	360.1	1276.1	227.2	38.2	87.5	27.6	1.0	.2	2146.00
.01	9.42	14.59	8.22	.025	.025	.025	.000	2146.00	189.05
.004264	140.	140.	140.	20	11	0	.00	29.89	218.95

CCHV= .300 CEHV= .500

*SECNO 25.410

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2173.00 ELREA= 2173.00

25.410	9.05	2155.05	2155.05	.00	2159.62	4.57	.04	.96	2146.00
1863.5	.0	1863.5	.0	.0	108.6	.0	1.0	.2	2146.00
.01	.00	17.16	.00	.000	.025	.000	.000	2146.00	199.00
.004418	10.	10.	10.	20	11	0	.00	12.00	211.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
1		.013	.50	2.60	.00	10.00	12.00	650.00	8	3	2160.01	2146.05

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 3 - WINGWALLS FLARED 0 DEGREES (SIDES EXTENDED STRAIGHT)

5130, EGIC= 2178.30..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOE= 2175.90 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 25.420

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.17

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2178.30	2175.90	16.60	192.	1662.	10.773	120.0	2175.00	58.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2176.00 ELREA= 2176.00

25.420	14.42	2174.42	.00	.00	2176.22	1.80	16.60	.00	2160.00
1863.5	.0	1863.5	.0	.0	173.0	.0	3.1	.4	2160.00
.02	.00	10.77	.00	.000	.025	.000	.000	2160.00	189.00
.000936	650.	650.	650.	19	0	0	.00	12.00	201.00

CCHV= .100 CEHV= .300

*SECNO 25.430

3301 HV CHANGED MORE THAN HVINS

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.56

25.430	16.17	2176.17	.00	.00	2176.40	.23	.03	.16	2160.00
1863.5	539.6	906.8	417.1	180.6	194.1	152.6	3.5	.4	2160.00
.03	2.99	4.67	2.73	.040	.040	.040	.000	2160.00	162.31
.000387	50.	50.	50.	3	0	0	.00	61.60	223.91

*SECNO 100.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP

Modeled from Kachina Homes Plans

Clark County project

100.000	7.15	2180.15	2180.15	.00	2183.09	2.94	.39	.81	2181.80
1863.5	.0	6.4	1857.1	.0	2.8	134.7	6.2	.8	2173.20
.03	.00	2.27	13.78	.000	.040	.040	.000	2173.00	25.19
.012645	350.	350.	350.	20	14	0	.00	23.93	49.12

CCHV= .300 CEHV= .500

*SECNO 110.000

3301 HV CHANGED MORE THAN HVINS

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

Extended cross section to intersect water surface

110.000	7.25	2184.25	.00	.00	2184.93	.68	1.16	.68	2183.40
1863.5	.3	1815.2	47.9	.4	271.0	38.2	7.2	1.1	2183.60
.04	.96	6.70	1.25	.040	.040	.040	.000	2177.00	999.15
.003334	200.	200.	200.	2	0	0	.00	128.98	1128.13

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4		.013	.50	2.60	.00	4.00	.00	70.00	1	3	2178.20	2177.00

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE
 SCALE 3 - GROOVE END ENTRANCE, PIPE PROJECTING FROM FILL

5130, EGIC= 2224.49..MAY BE TOO LARGE IF INLET CONTROLS.
 5135, EGOE= 2223.63 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
 *SECNO 120.000

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2224.49	2223.63	-.63	1341.	518.	4.814	50.3	2183.30	1091.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3710 WSEL ASSUMED BASED ON MIN DIFF

120.000	6.01	2184.21	.00	.00	2184.43	.22	.00	.00	2183.40
1863.5	785.3	1076.4	1.7	616.8	223.6	4.5	8.1	2.1	2184.00
.05	1.27	4.81	.38	.040	.040	.040	.000	2178.20	9.97
.002121	70.	70.	70.	20	0	0	.00	1073.51	1083.48

CCHV= .100 CEHV= .300
 *SECNO 130.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

130.000	6.29	2184.49	.00	.00	2184.59	.10	.15	.01	2183.40
1863.5	1019.1	833.0	11.3	888.9	234.9	23.7	10.4	4.6	2184.00
.06	1.15	3.55	.48	.040	.040	.040	.000	2178.20	9.93
.001078	100.	100.	100.	3	0	0	.00	1128.53	1138.46

*SECNO 200.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 200				PLACID ST.					
Modeled top of Road from JMM Workmap									
200.000	1.39	2191.89	2191.89	.00	2192.21	.33	1.53	.07	2191.00
1863.5	467.7	1395.8	.0	151.1	279.9	.0	20.4	15.6	2192.00
.09	3.09	4.99	.00	.040	.040	.000	.000	2190.50	240.21
.018227	550.	550.	550.	20	18	0	.00	602.21	842.42

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

*SECNO 400.000

	CROSS SECTION 400				ORIGINAL JMM					
400.000	5.89	2199.29	2198.59	.00	2200.05	.76	7.71	.13	2199.50	
1863.5	.0	1854.9	8.6	.0	264.9	5.4	25.2	20.5	2198.70	
.12	.00	7.00	1.60	.000	.040	.040	.000	2193.40	2474.10	
.009534	600.	600.	600.	12	23	0	.00	115.26	2589.36	

*SECNO 410.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

	CROSS SECTION 410				CIENEGA ST.					
	Modeled Top of Road from JMM Workmap									
410.000	1.80	2202.40	2202.40	.00	2202.89	.49	2.02	.03	2202.70	
1863.5	.0	1863.5	.0	.0	331.7	.0	26.2	21.2	2205.10	
.13	.00	5.62	.00	.000	.040	.000	.000	2200.60	405.34	
.024266	140.	140.	140.	4	17	0	.00	346.83	752.17	

*SECNO 440.000

3280 CROSS SECTION 440.00 EXTENDED 1.46 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.85

440.000	4.47	2205.47	2205.06	.00	2205.67	.20	2.75	.03	2204.00	
2216.5	1569.8	408.1	238.6	505.4	74.3	91.5	30.2	24.5	2204.00	
.15	3.11	5.49	2.61	.040	.040	.040	.000	2201.00	.00	
.004226	350.	350.	350.	19	17	0	.00	454.93	454.93	

*SECNO 480.000

	CROSS SECTION 480				GILESPIE ST.					
	Modeled Top of Road from JMM Workmap									
480.000	1.70	2207.40	.00	.00	2207.55	.15	1.87	.01	2206.70	
2800.0	2216.4	583.6	.0	709.8	203.8	.0	37.5	30.2	2211.40	
.19	3.12	2.86	.00	.040	.040	.000	.000	2205.70	106.41	
.005100	400.	400.	400.	5	0	0	.00	795.39	901.80	

*SECNO 500.000

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

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

*185 MINIMUM SPECIFIC ENERGY

J720 CRITICAL DEPTH ASSUMED

CROSS SECTION 500				ORIGINAL JMM					
500.000	5.68	2208.58	2208.58	.00	2209.60	1.02	1.57	.26	2207.20
2800.0	308.7	2443.5	47.8	92.6	285.1	12.6	40.8	32.7	2206.60
.20	3.33	8.57	3.78	.040	.040	.040	.000	2202.90	2631.52
.010705	220.	220.	220.	13	20	0	.00	212.90	2919.77

*SECNO 510.000

J265 DIVIDED FLOW

J301 HV CHANGED MORE THAN HVINS

CROSS SECTION 510				RANCHO DESTINO					
Modeled Top of Road from JMM Workmap									
510.000	4.03	2213.33	.00	.00	2213.63	.31	3.97	.07	2213.20
2800.0	375.9	2424.1	.0	187.2	515.8	.0	47.0	37.5	2215.80
.23	2.01	4.70	.00	.040	.040	.000	.000	2209.30	116.45
.006115	500.	500.	500.	5	0	0	.00	616.46	930.59

*SECNO 580.000

J265 DIVIDED FLOW

*185 MINIMUM SPECIFIC ENERGY

J720 CRITICAL DEPTH ASSUMED

CROSS SECTION 580				HAVEN ROAD					
Modeled Top of Road from JMM Workmap									
580.000	3.38	2221.18	2221.18	.00	2221.66	.48	5.91	.05	2223.00
2800.0	853.1	1946.9	.0	222.3	314.5	.0	56.6	45.9	2224.10
.26	3.84	6.19	.00	.040	.040	.000	.000	2217.80	180.64
.013826	670.	670.	670.	3	10	0	.00	474.92	811.84

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 600.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

	CROSS SECTION 600				ORIGINAL JMM					
600.000	3.54	2222.84	2222.84	.00	2224.07	1.23	2.00	.22	2222.00	
2800.0	9.1	2790.9	.0	3.4	313.0	.0	57.8	46.8	2224.40	
.27	2.72	8.92	.00	.040	.040	.000	.000	2219.30	2661.99	
.017215	130.	130.	130.	2	8	0	.00	134.13	2796.12	

*SECNO 610.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

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

	CROSS SECTION 610				GILES ROAD					
	Modeled Top of Road from JMM Workmap									
610.000	3.02	2229.42	.00	.00	2229.61	.18	5.43	.10	2230.20	
2800.0	884.7	1915.3	.0	306.1	524.1	.0	65.1	52.3	2230.20	
.31	2.89	3.65	.00	.040	.040	.000	.000	2226.40	26.30	
.006399	550.	550.	550.	5	0	0	.00	738.14	995.28	

CCHV= .300 CEHV= .500

*SECNO 710.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.86

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2237.20 ELREA= 2237.20

	CROSS SECTIONS 710-730				LAS VEGAS BLVD					
	From plans and picture				3 - 10x8.5 RCB					
	Ground points from JMM HEC-2				Adjusted					
710.000	5.30	2231.30	.00	.00	2231.49	.19	1.88	.00	2231.70	
2800.0	.0	2800.0	.0	.0	806.0	.0	76.4	59.1	2229.50	
.36	.00	3.47	.00	.000	.040	.000	.000	2226.00	2576.99	
.001846	600.	600.	600.	4	0	0	.00	250.01	2827.00	

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.015	.50	2.60	.00	8.50	10.00	50.00	8	1	2228.20	2228.20

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 720.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 8.08

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2239.55	2239.31	6.86	177.	2619.	.927	255.0	2237.70	298.

720.000	12.34	2238.34	.00	.00	2238.35	.01	6.86	.00	2231.70
2800.0	69.5	2413.8	316.7	183.3	2603.0	551.9	78.7	59.6	2229.50
.38	.38	.93	.57	.040	.040	.040	.000	2226.00	2417.03
.000028	50.	50.	50.	1	0	0	.00	572.06	3002.16

CCHV= .100 CEHV= .300

*SECNO 730.000

3265 DIVIDED FLOW

730.000	12.34	2238.34	.00	.00	2238.35	.01	.00	.00	2231.70
2800.0	69.3	2414.3	316.4	182.5	2601.5	550.8	86.4	60.9	2229.50
.41	.38	.93	.57	.040	.040	.040	.000	2226.00	2417.47
.000028	100.	100.	100.	0	0	0	.00	570.82	3001.88

*SECNO 800.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 800-900				ORIGINAL JMM					
800.000	4.35	2243.05	2243.05	.00	2244.05	1.00	.17	.30	2248.30
2800.0	.0	61.7	2738.3	.0	17.6	338.2	156.3	75.2	2247.70
.46	.00	3.51	8.10	.000	.040	.040	.000	2238.70	2558.79
.016883	1650.	1650.	1650.	20	22	0	.00	183.52	3070.75

*SECNO 900.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 900-930				I-15					
From plans and picture				4 - 12x4 RCB					
Top of road from JMM workmap									
900.000	5.00	2257.20	2257.20	.00	2257.81	.60	8.13	.04	2257.00
2800.0	11.1	1960.5	828.5	9.4	275.8	243.8	163.4	79.8	2257.70
.50	1.17	7.11	3.40	.040	.040	.040	.000	2252.20	2292.13
.008482	700.	700.	700.	2	13	0	.00	389.91	2694.15

CCHV= .300 CEHV= .500

*SECNO 910.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

910.000	4.94	2264.14	2264.14	.00	2264.14	.01	.05	.18	2259.20
2800.0	1240.1	231.8	1328.1	2266.7	296.1	2056.2	181.1	86.4	2259.20
.63	.55	.78	.65	.040	.040	.040	.000	2259.20	1990.95
.000053	300.	300.	300.	20	8	0	.00	1527.21	3518.16

SPECIAL CULVERT

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

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4	.016	.50	2.60	.00	4.00	12.00	150.00	8	1	2259.30	2259.30	

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 920.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.07

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2270.73	2271.24	1.77	1425.	1402.	.463	192.0	2264.70	953.

920.000	6.71	2265.91	.00	.00	2265.92	.00	1.77	.00	2259.20
2800.0	1379.7	186.7	1233.6	3937.8	403.0	3148.8	202.0	91.9	2259.20
.74	.35	.46	.39	.040	.040	.040	.000	2259.20	1872.23
.000012	150.	150.	150.	0	0	0	.00	1696.81	3569.04

*SECNO 930.000

930.000	6.72	2265.92	.00	.00	2265.92	.00	.00	.00	2259.20
2800.0	1379.6	186.8	1233.7	3935.6	402.9	3147.4	219.2	95.8	2259.20
.82	.35	.46	.39	.040	.040	.040	.000	2259.20	1872.38
.000012	100.	100.	100.	0	0	0	.00	1696.60	3568.98

CHV= .100 CEHV= .300

*SECNO 960.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

960.000	1.48	2273.68	2273.68	.00	2274.20	.51	.05	.15	2275.60
2800.0	.0	2800.0	.0	.0	486.4	.0	310.4	120.6	2275.40
.87	.00	5.76	.00	.000	.040	.000	.000	2272.20	2300.59
.023393	1000.	975.	1000.	20	17	0	.00	476.26	2855.33

TN Split Flow between cross sections 410 and 440

TOTAL AREA	AVG VELOCITY	MAX DEPTH	AVG DEPTH	TOF WIDTH	TOP WIDTH
213.4	1.66	1.47	.73	350.0	291.2

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
353.04	353.44	.11	353.04	353.44	.11	7	2202.404	2205.466	410.000	440.000

TN Split Flow between cross sections 440 and 480

TOTAL AREA	AVG VELOCITY	MAX DEPTH	AVG DEPTH	TOF WIDTH	TOP WIDTH
270.9	2.15	1.47	1.08	250.0	250.0

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
583.49	582.41	.19	936.54	935.85	.07	7	2205.466	2207.402	440.000	480.000

THIS RUN EXECUTED 26AUG92 18:38:00

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

SOUTH BRANCH - BLUE DIAM

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
•	18.460	.00	.00	.00	2139.20	1863.46	2146.26	2146.26	2148.53	64.46	12.09	154.17	232.10
•	24.000	128.00	.00	.00	2145.00	1863.46	2151.04	2151.04	2153.24	63.85	11.91	156.45	233.20
*	25.400	140.00	.00	.00	2146.00	1863.46	2153.29	2153.29	2155.95	42.64	14.59	153.31	285.37
•	25.410	10.00	.00	.00	2146.00	1863.46	2155.05	2155.05	2159.62	44.18	17.16	108.60	280.37
*	25.420	650.00	2175.00	2170.00	2160.00	1863.46	2174.42	.00	2176.22	9.36	10.77	172.97	609.02
*	25.430	50.00	.00	.00	2160.00	1863.46	2176.17	.00	2176.40	3.87	4.67	527.22	947.65
•	100.000	350.00	.00	.00	2173.00	1863.46	2180.15	2180.15	2183.09	126.45	2.27	137.53	165.72
•	110.000	200.00	.00	.00	2177.00	1863.46	2184.25	.00	2184.93	33.34	6.70	309.56	322.75
•	120.000	70.00	2183.30	2182.20	2178.20	1863.46	2184.21	.00	2184.43	21.21	4.81	844.89	404.61
*	130.000	100.00	.00	.00	2178.20	1863.46	2184.49	.00	2184.59	10.78	3.55	1147.56	567.49
•	200.000	550.00	.00	.00	2190.50	1863.46	2191.89	2191.89	2192.21	182.27	4.99	431.08	138.03
•	400.000	600.00	.00	.00	2193.40	1863.46	2199.29	2198.59	2200.05	95.34	7.00	270.30	190.85
•	410.000	140.00	.00	.00	2200.60	1863.46	2202.40	2202.40	2202.89	242.66	5.62	331.72	119.62
•	440.000	350.00	.00	.00	2201.00	2216.51	2205.47	2205.06	2205.67	42.26	5.49	671.17	340.96
•	480.000	400.00	.00	.00	2205.70	2800.00	2207.40	.00	2207.55	51.00	2.86	913.68	392.08
•	500.000	220.00	.00	.00	2202.90	2800.00	2208.58	2208.58	2209.60	107.05	8.57	390.28	270.62
•	510.000	500.00	.00	.00	2209.30	2800.00	2213.33	.00	2213.63	61.15	4.70	703.03	358.06

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	580.000	670.00	.00	.00	2217.80	2800.00	2221.18	2221.18	2221.66	138.26	6.19	536.77	238.12
*	600.000	130.00	.00	.00	2219.30	2800.00	2222.84	2222.84	2224.07	172.15	8.92	316.35	213.41
•	610.000	550.00	.00	.00	2226.40	2800.00	2229.42	.00	2229.61	63.99	3.65	830.22	350.02
*	710.000	600.00	.00	.00	2226.00	2800.00	2231.30	.00	2231.49	18.46	3.47	806.05	651.61
*	720.000	50.00	2237.70	2236.70	2226.00	2800.00	2238.34	.00	2238.35	.28	.93	3338.29	5263.50
	730.000	100.00	.00	.00	2226.00	2800.00	2238.34	.00	2238.35	.28	.93	3334.80	5257.29
*	800.000	1650.00	.00	.00	2238.70	2800.00	2243.05	2243.05	2244.05	168.83	3.51	355.81	215.49
*	900.000	700.00	.00	.00	2252.20	2800.00	2257.20	2257.20	2257.81	84.82	7.11	529.02	304.03
•	910.000	300.00	.00	.00	2259.20	2800.00	2264.14	2264.14	2264.14	.53	.78	4619.01	3852.27
•	920.000	150.00	2264.70	2263.30	2259.20	2800.00	2265.91	.00	2265.92	.12	.46	7489.62	7992.15
	930.000	100.00	.00	.00	2259.20	2800.00	2265.92	.00	2265.92	.12	.46	7485.89	7986.17
•	960.000	975.00	.00	.00	2272.20	2800.00	2273.68	2273.68	2274.20	233.93	5.76	486.35	183.07

SOUTH BRANCH - BLUE DIAM

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	18.460	1863.46	2146.26	.00	.00	1.26	34.64	.00
*	24.000	1863.46	2151.04	.00	4.78	.00	36.02	128.00
*	25.400	1863.46	2153.29	.00	2.25	.00	29.89	140.00
*	25.410	1863.46	2155.05	.00	1.76	.00	12.00	10.00
*	25.420	1863.46	2174.42	.00	19.37	.00	12.00	650.00
•	25.430	1863.46	2176.17	.00	1.76	.00	61.60	50.00
*	100.000	1863.46	2180.15	.00	3.97	.00	23.93	350.00
•	110.000	1863.46	2184.25	.00	4.10	.00	128.98	200.00
*	120.000	1863.46	2184.21	.00	-.04	.00	1073.51	70.00
*	130.000	1863.46	2184.49	.00	.28	.00	1128.53	100.00
•	200.000	1863.46	2191.89	.00	7.39	.00	602.21	550.00
	400.000	1863.46	2199.29	.00	7.40	.00	115.26	600.00
*	410.000	1863.46	2202.40	.00	3.11	.00	346.83	140.00
*	440.000	2216.51	2205.47	.00	3.06	.00	454.93	350.00
	480.000	2800.00	2207.40	.00	1.94	.00	795.39	400.00
•	500.000	2800.00	2208.58	.00	1.18	.00	212.90	220.00
	510.000	2800.00	2213.33	.00	4.75	.00	616.46	500.00
*	580.000	2800.00	2221.18	.00	7.85	.00	474.92	670.00
*	600.000	2800.00	2222.84	.00	1.66	.00	134.13	130.00
*	610.000	2800.00	2229.42	.00	6.59	.00	738.14	550.00
*	710.000	2800.00	2231.30	.00	1.87	.00	250.01	600.00
*	720.000	2800.00	2238.34	.00	7.04	.00	572.06	50.00
	730.000	2800.00	2238.34	.00	.00	.00	570.82	100.00
*	800.000	2800.00	2243.05	.00	4.71	.00	183.52	1650.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	900.000	2800.00	2257.20	.00	14.15	.00	389.91	700.00
*	910.000	2800.00	2264.14	.00	6.93	.00	1527.21	300.00
*	920.000	2800.00	2265.91	.00	1.78	.00	1696.81	150.00
	930.000	2800.00	2265.92	.00	.00	.00	1696.60	100.00
*	960.000	2800.00	2273.68	.00	7.77	.00	476.26	975.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 18.460 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 24.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 24.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 24.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 25.400 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 25.400 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 25.400 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 25.410 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 25.410 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 25.410 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 25.420 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 25.430 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 100.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 100.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 100.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 110.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 120.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 120.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 130.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 200.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 200.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 200.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 410.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 410.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 440.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 500.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 500.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 580.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 580.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 600.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 600.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 610.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 710.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 720.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 800.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 800.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 800.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 900.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 900.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 910.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 910.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 910.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

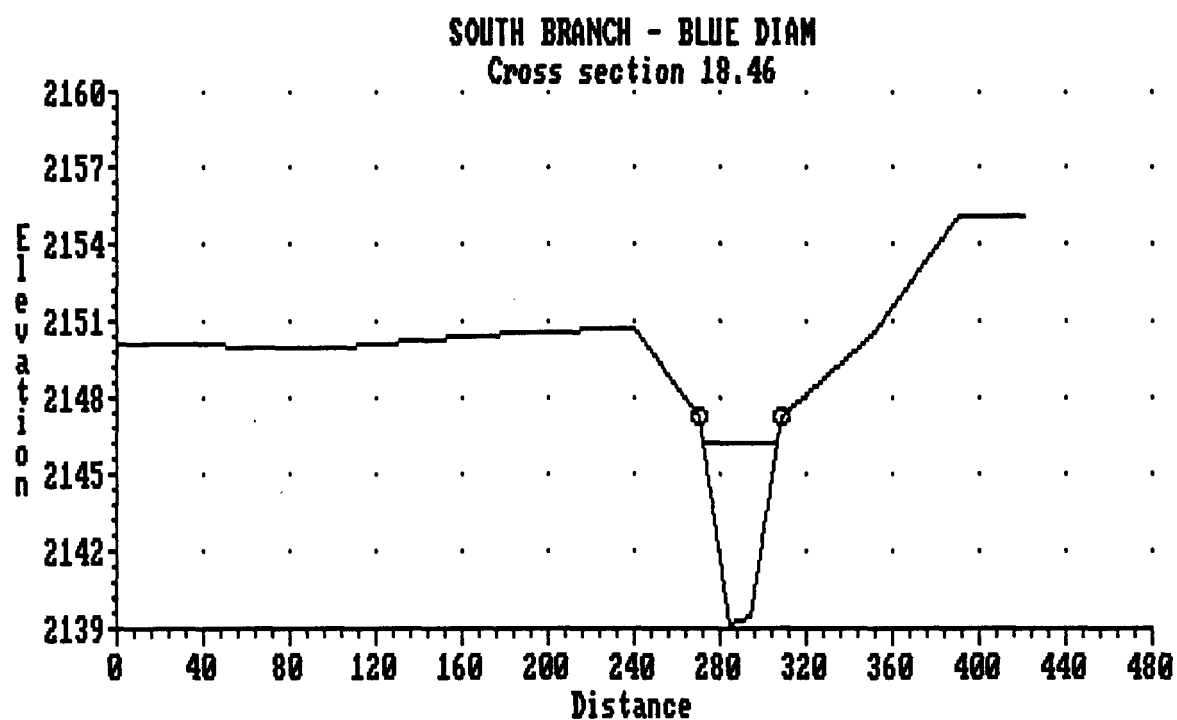
WARNING SECNO= 920.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

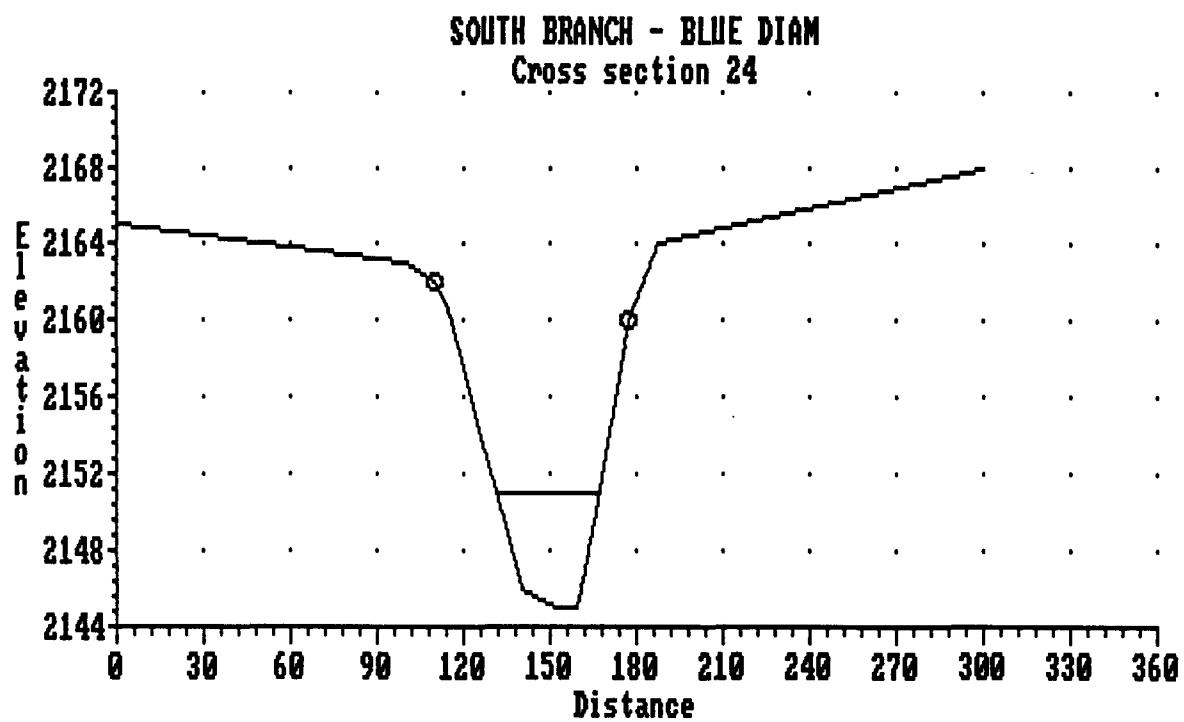
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CAUTION SECNO= 960.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

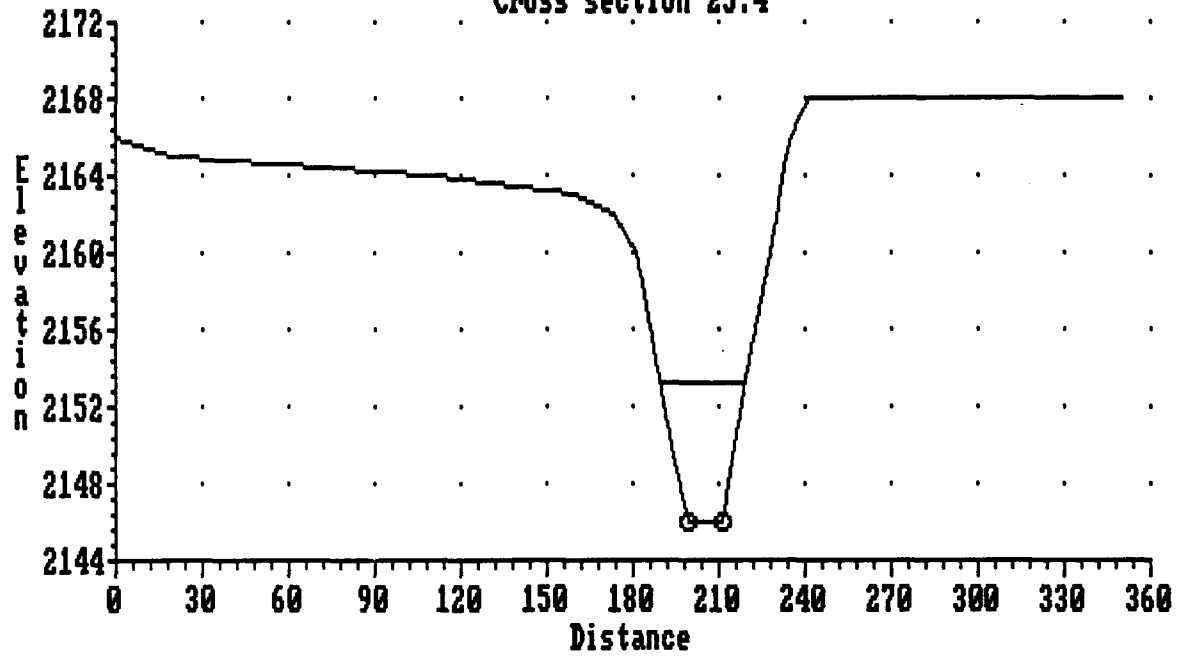
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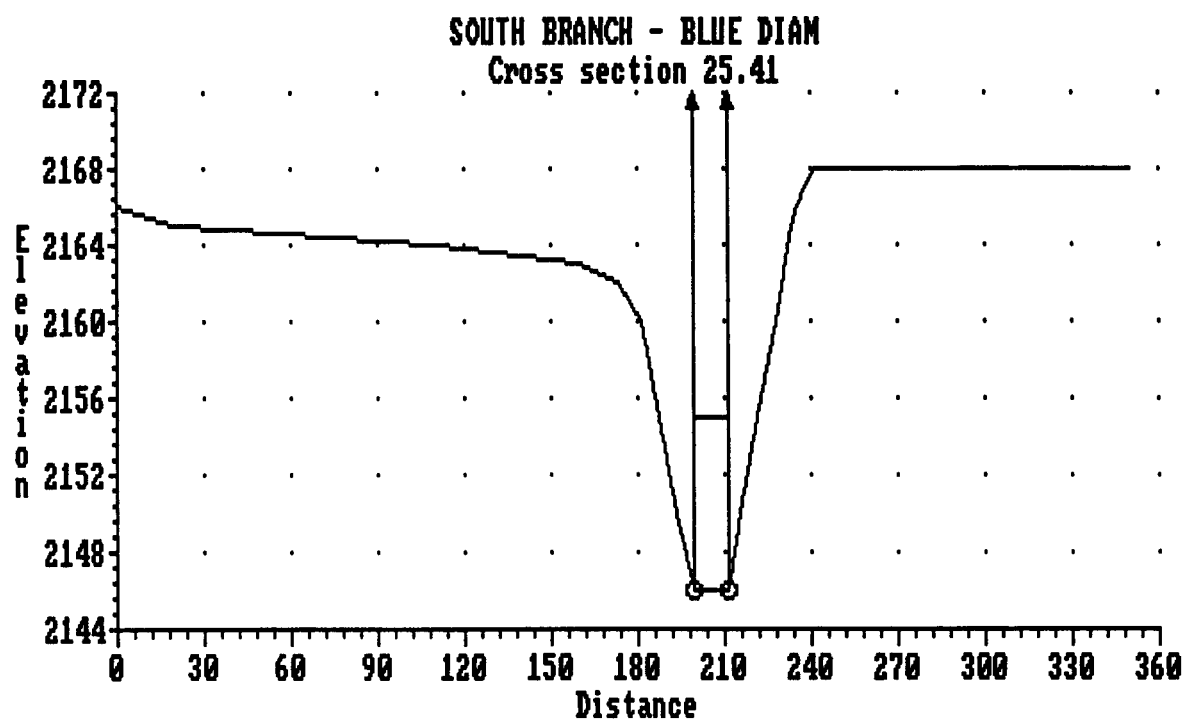
Normal program termination



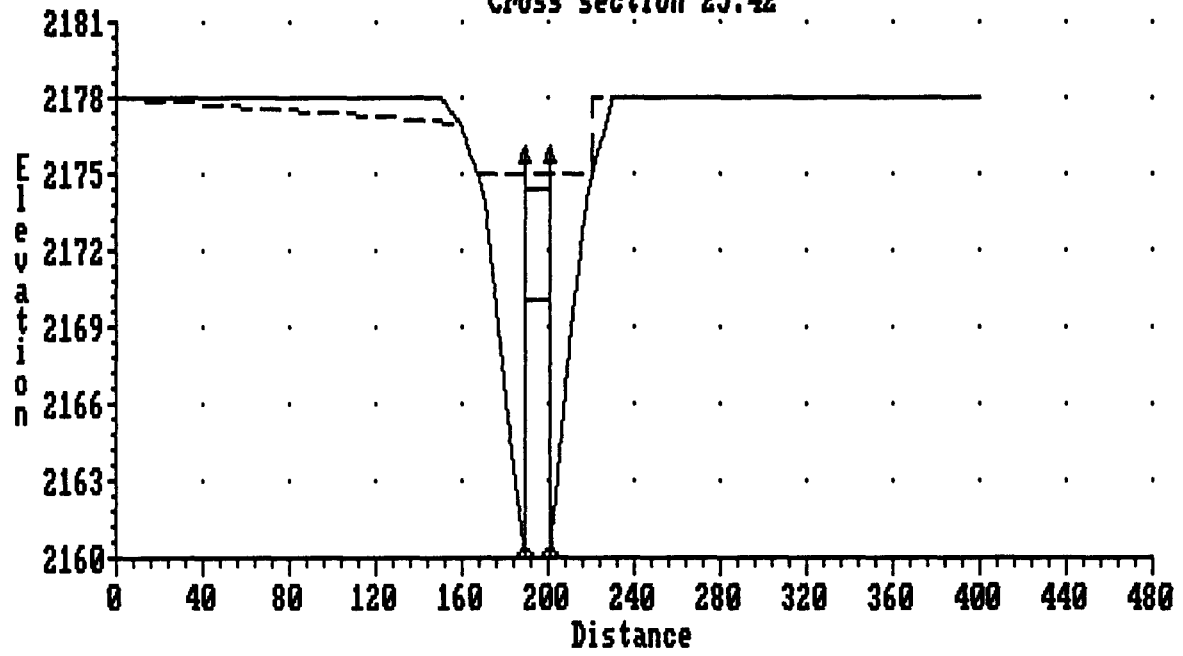


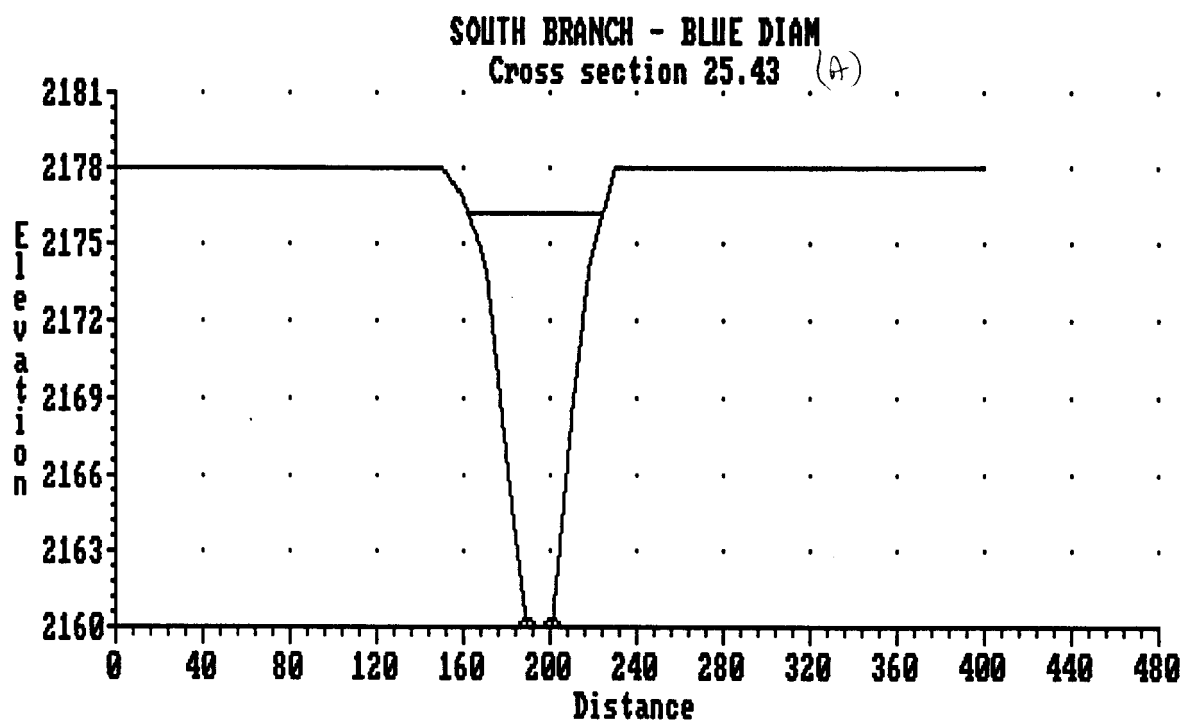
SOUTH BRANCH - BLUE DIAM
Cross section 25.4



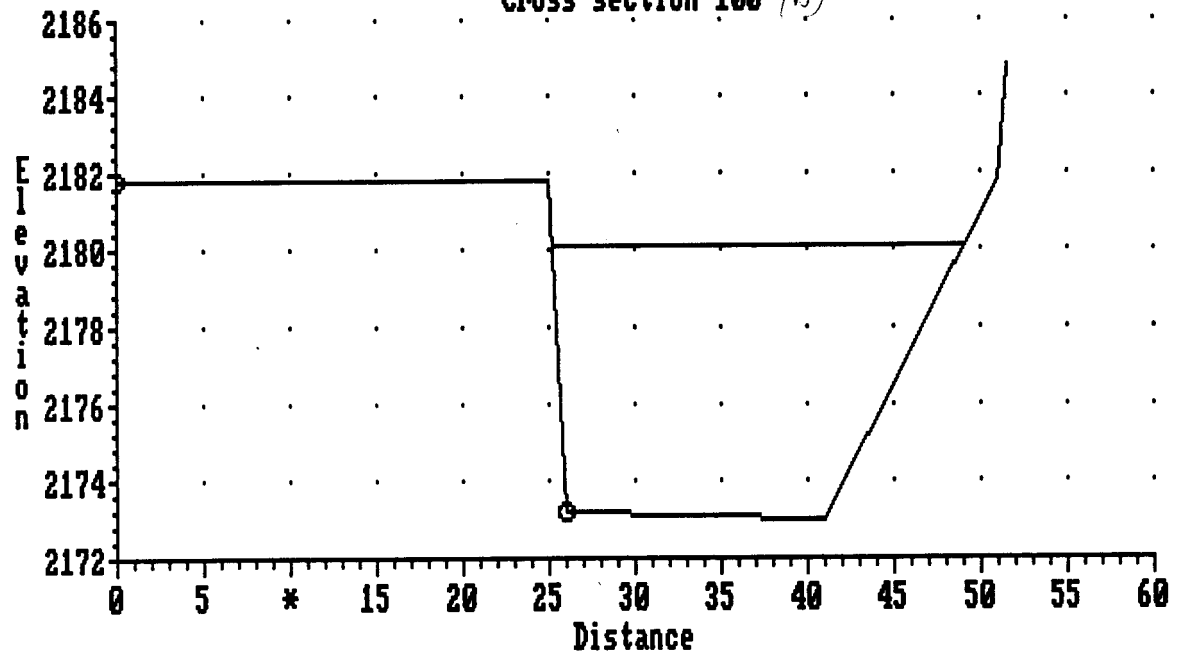


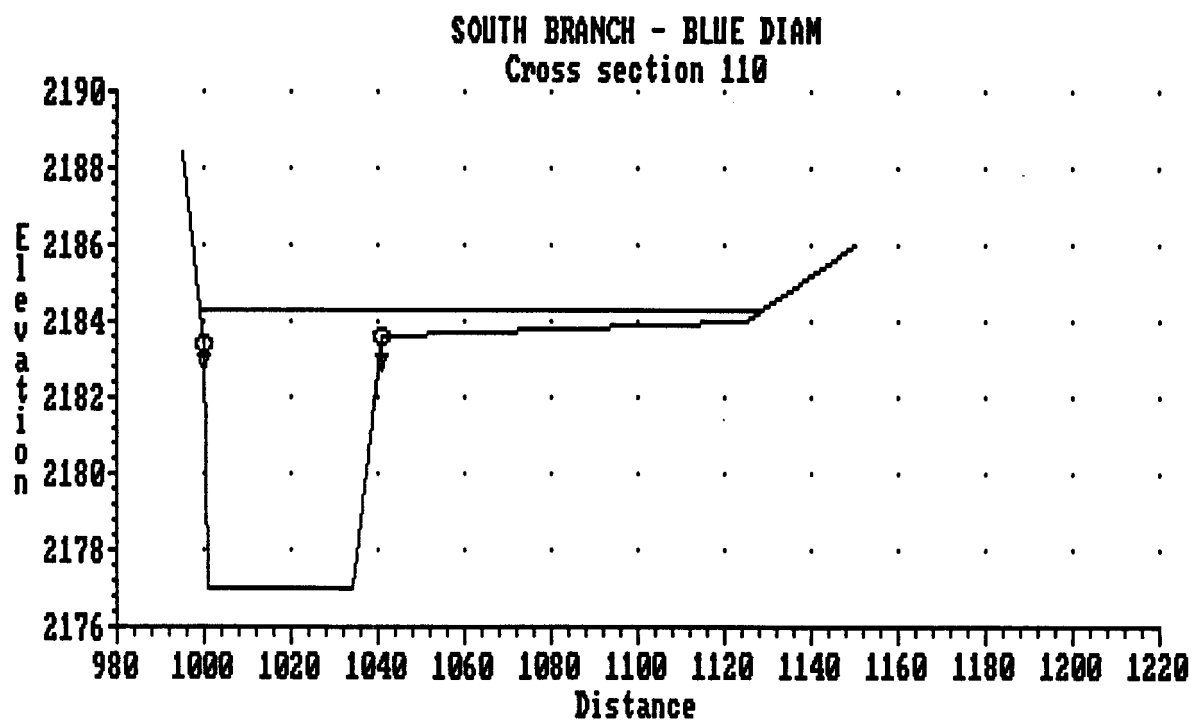
SOUTH BRANCH - BLUE DIAM
Cross section 25.42

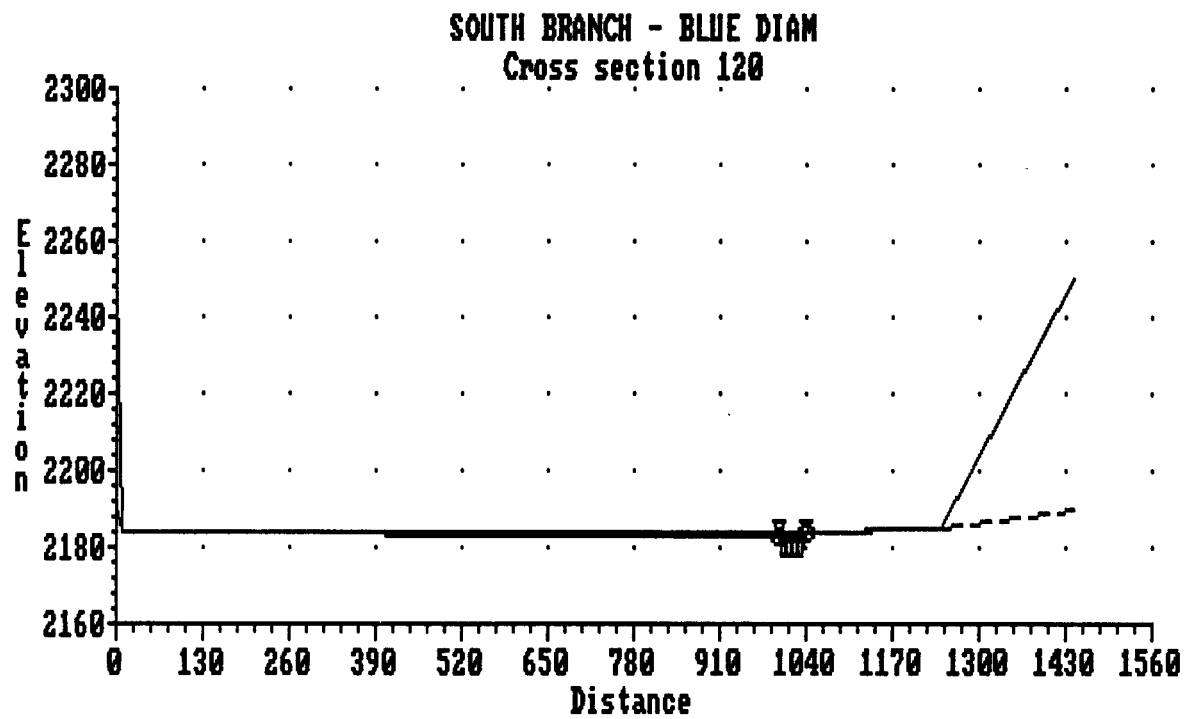


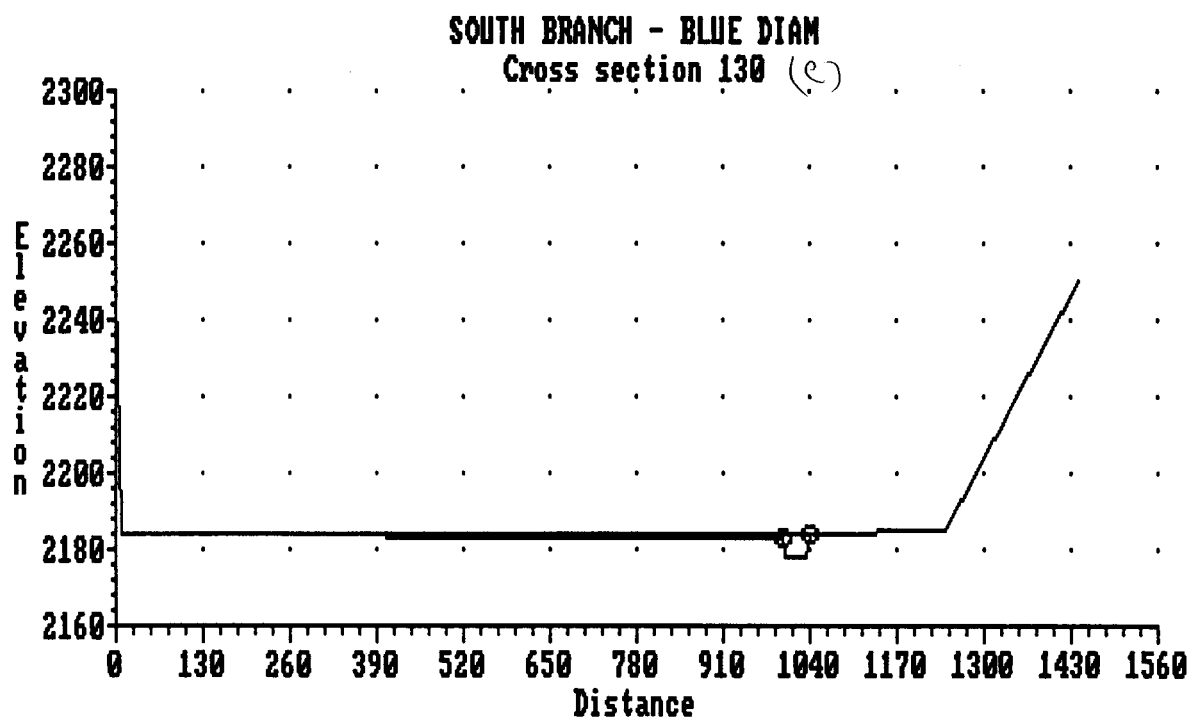


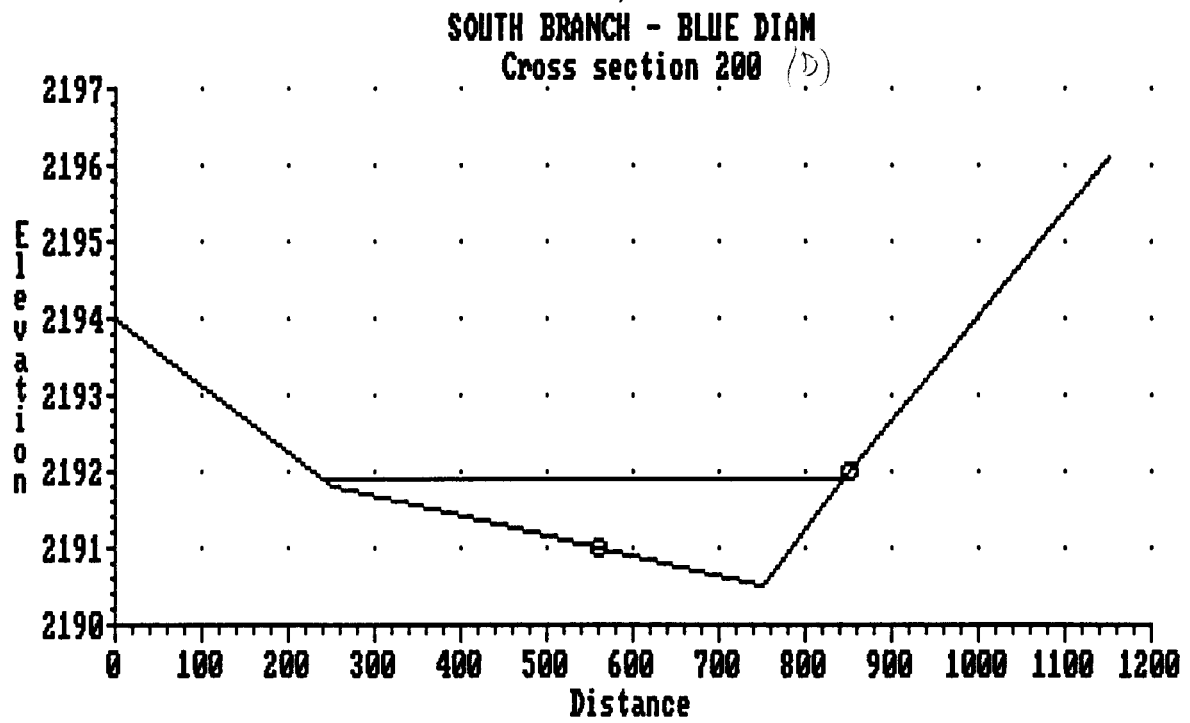
SOUTH BRANCH - BLUE DIAM
Cross section 100 (B)

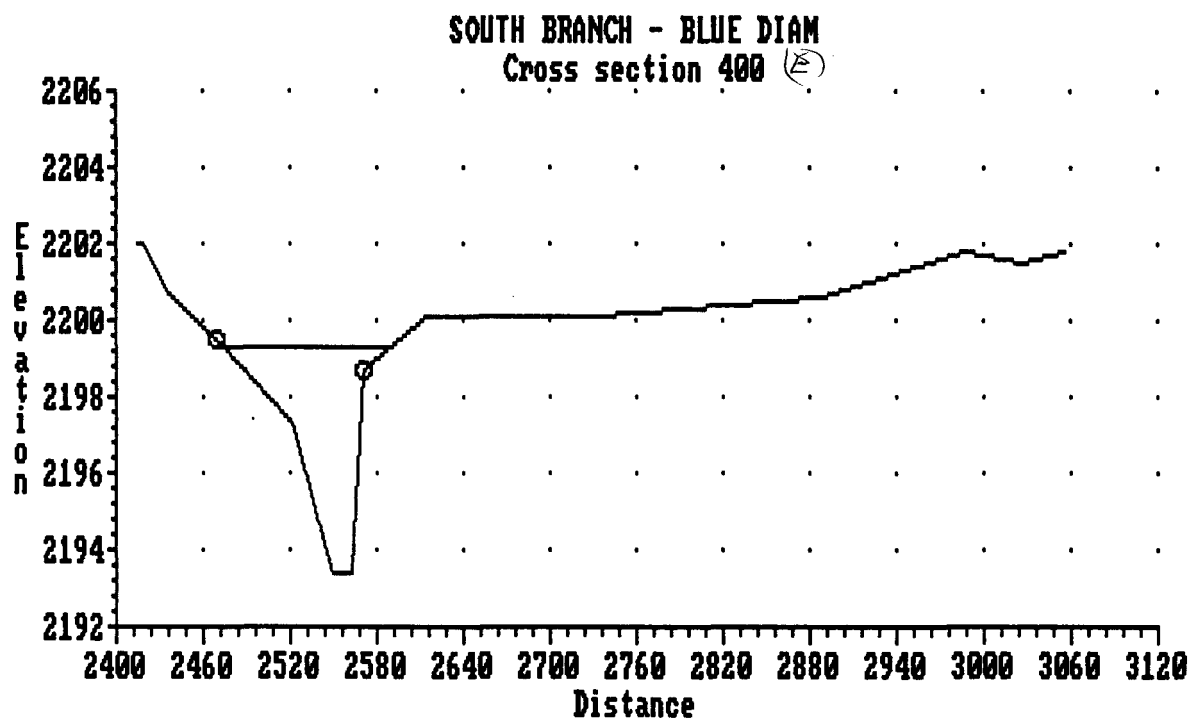


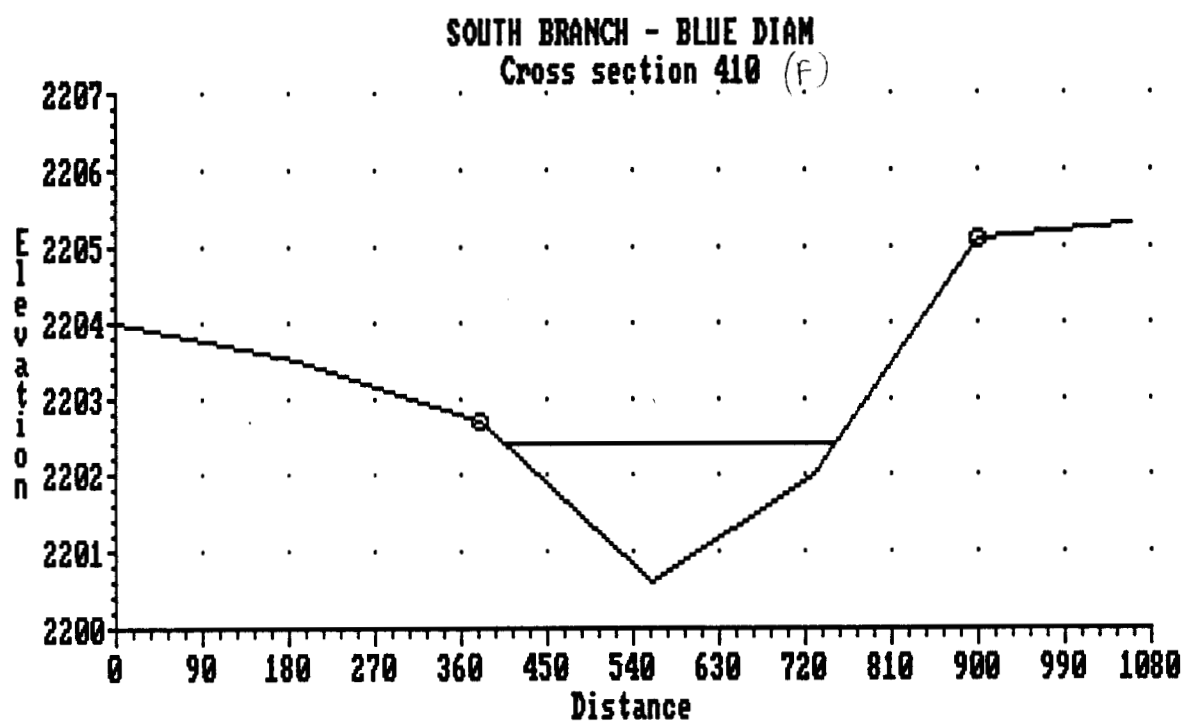


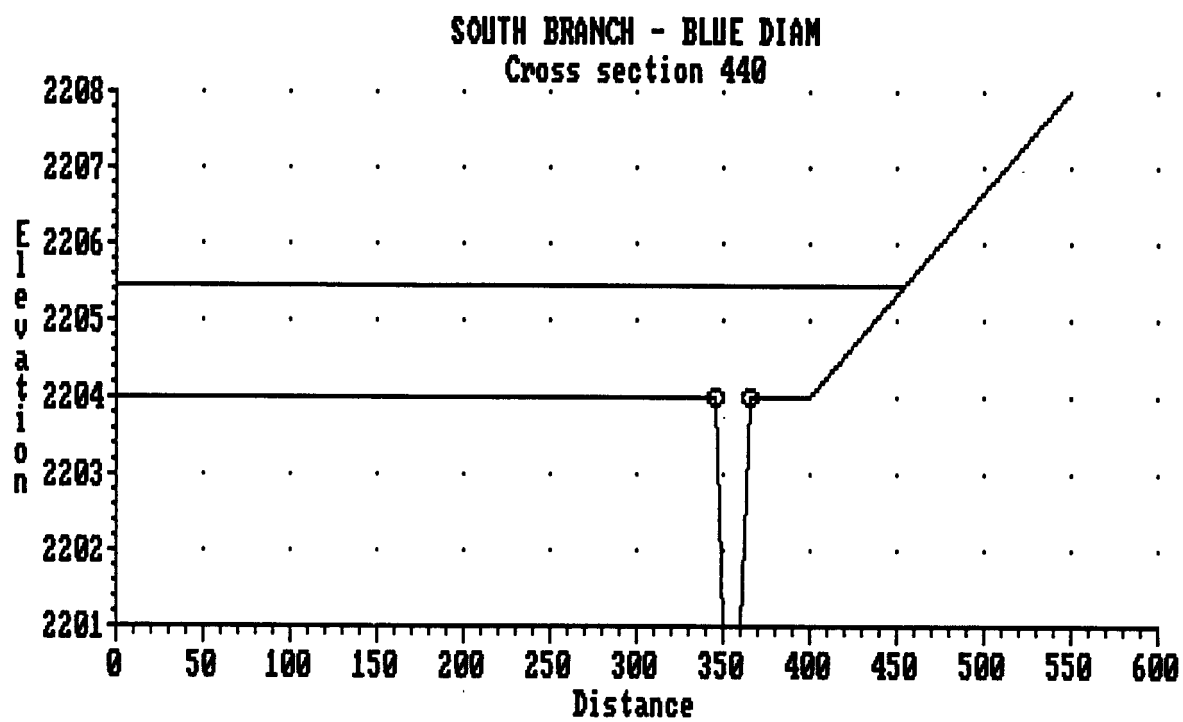


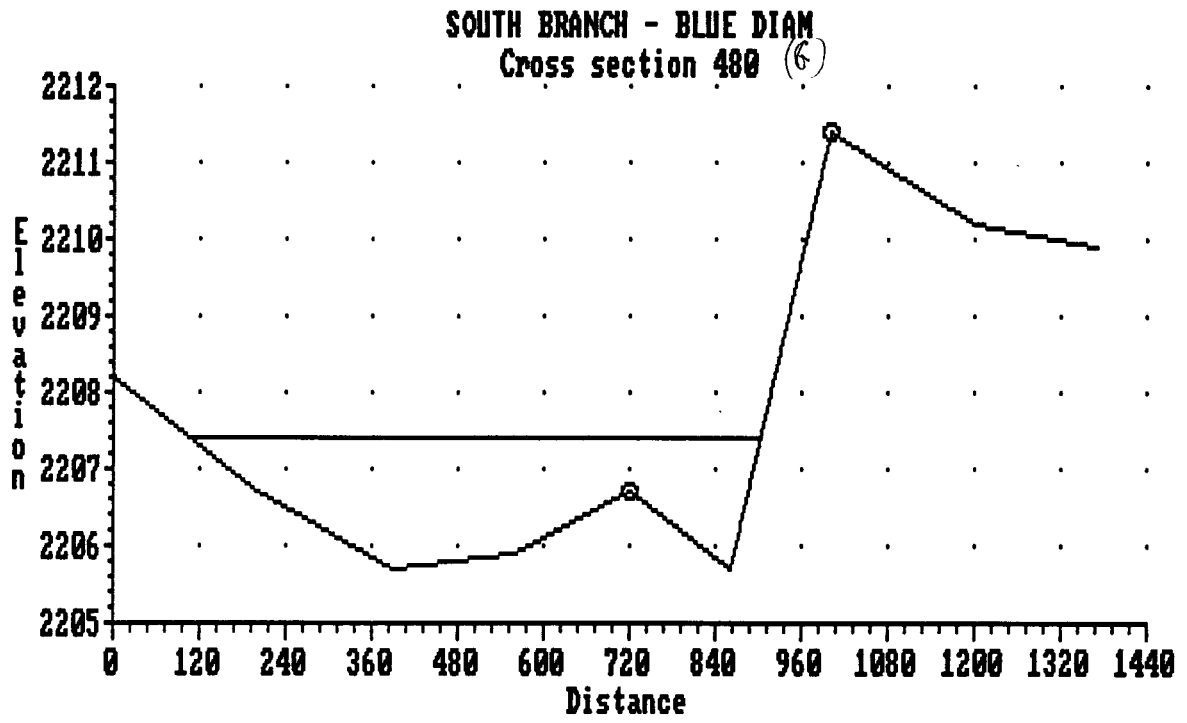


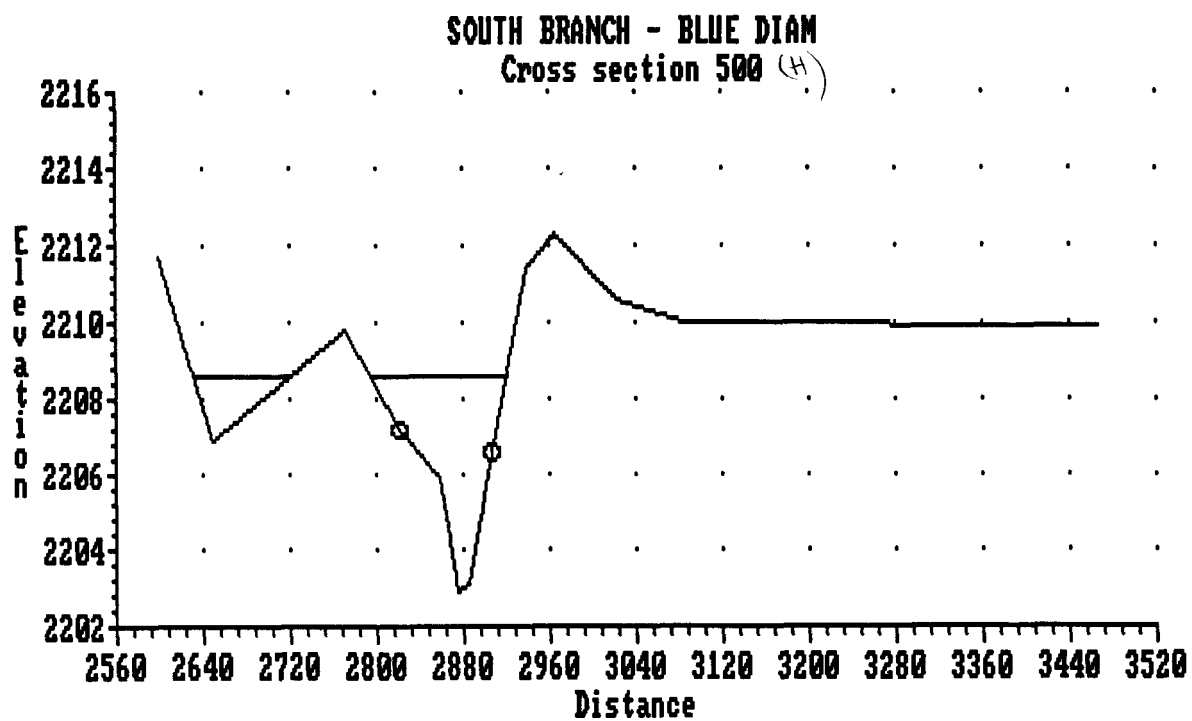


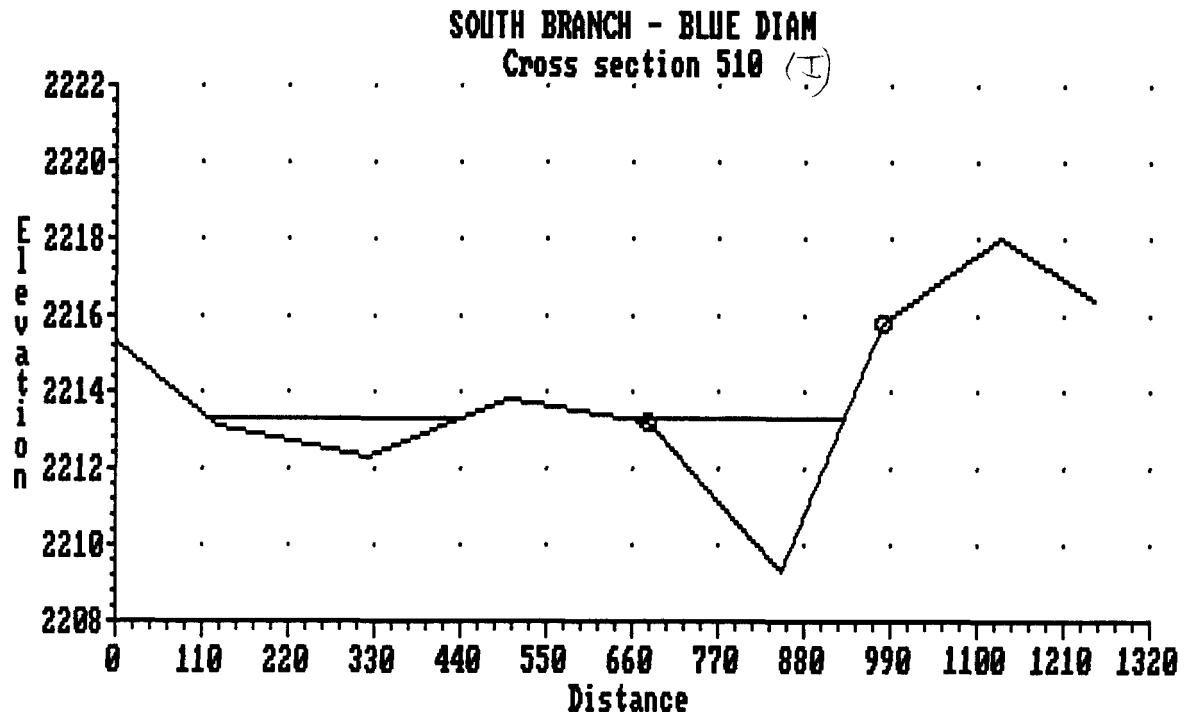


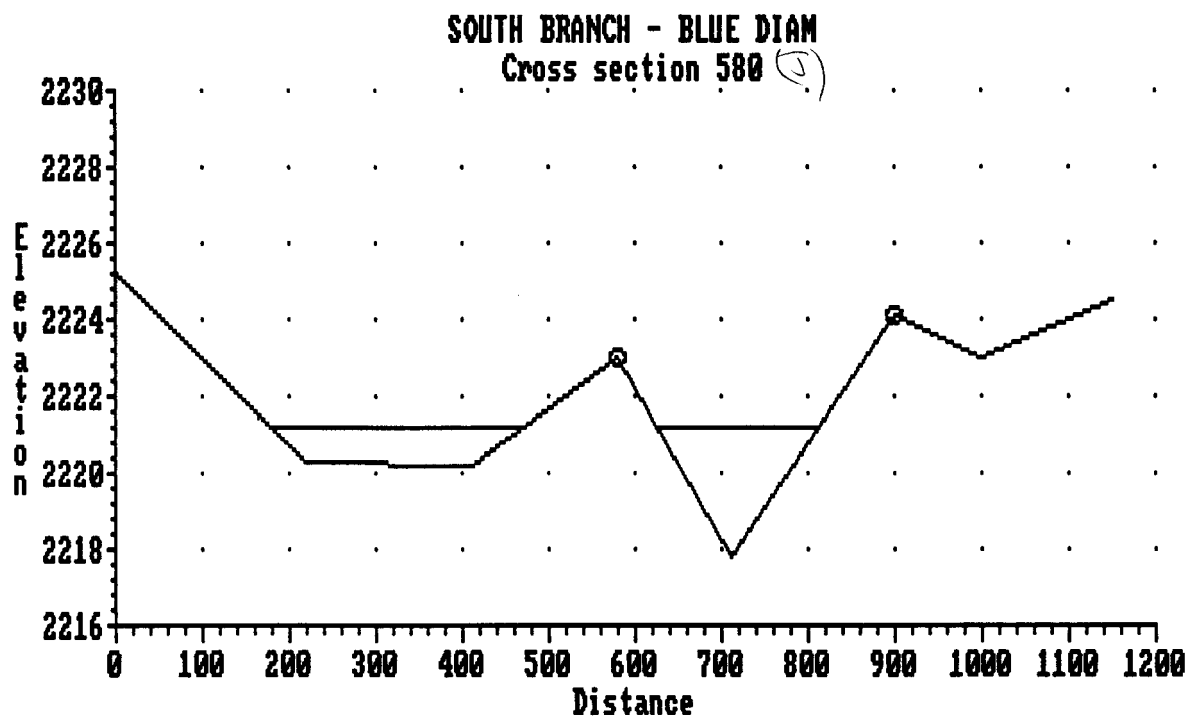


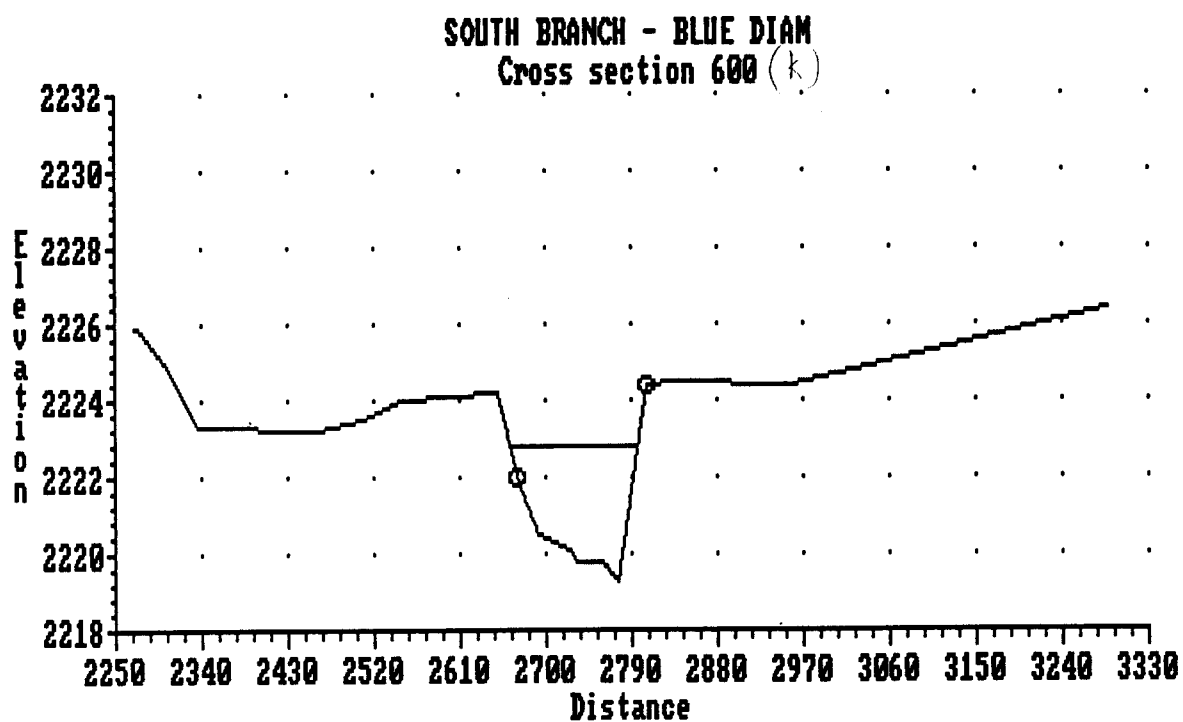


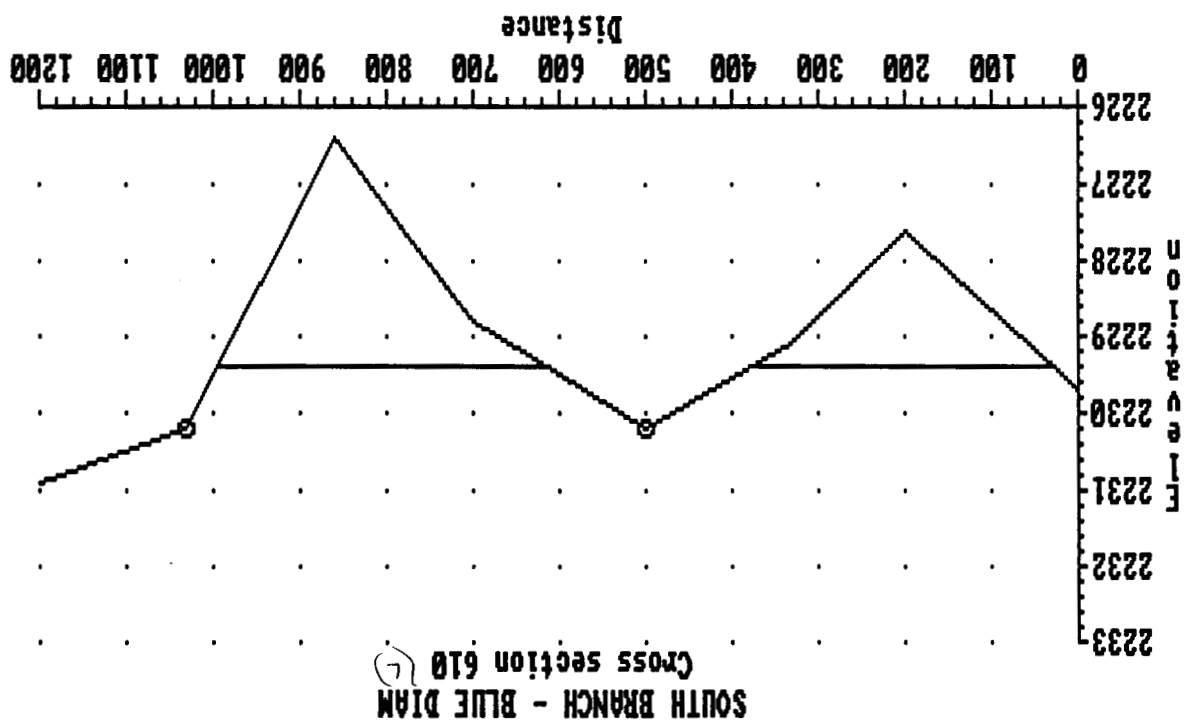


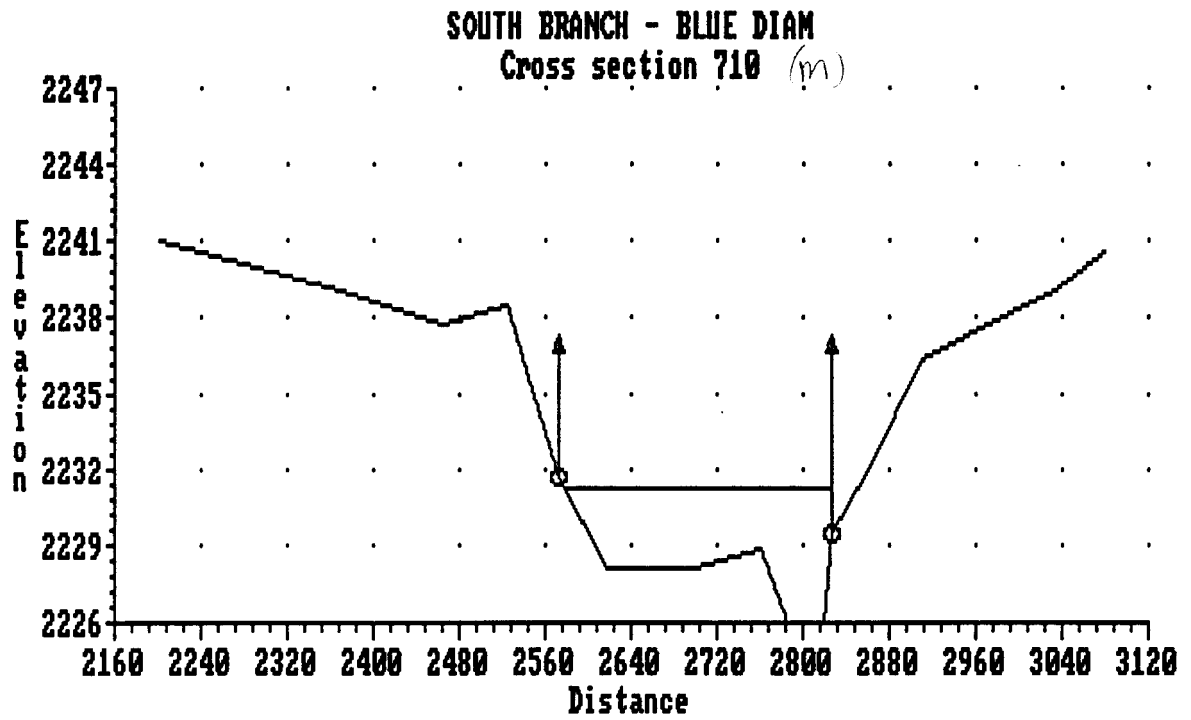


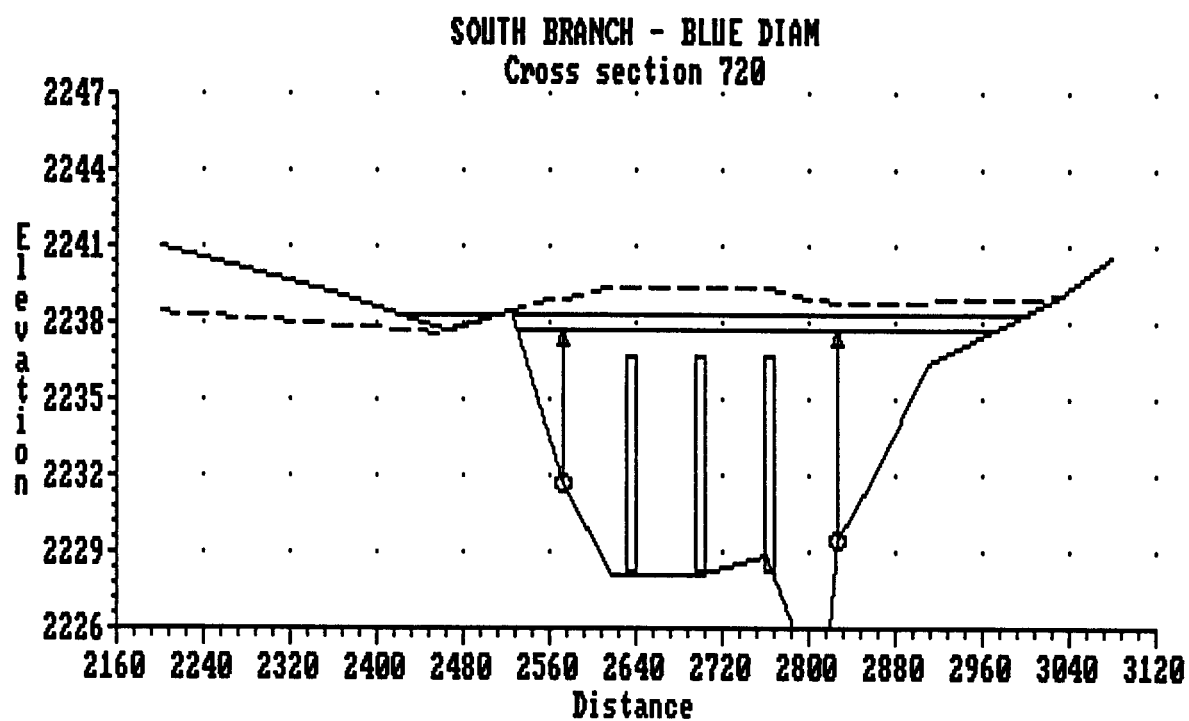


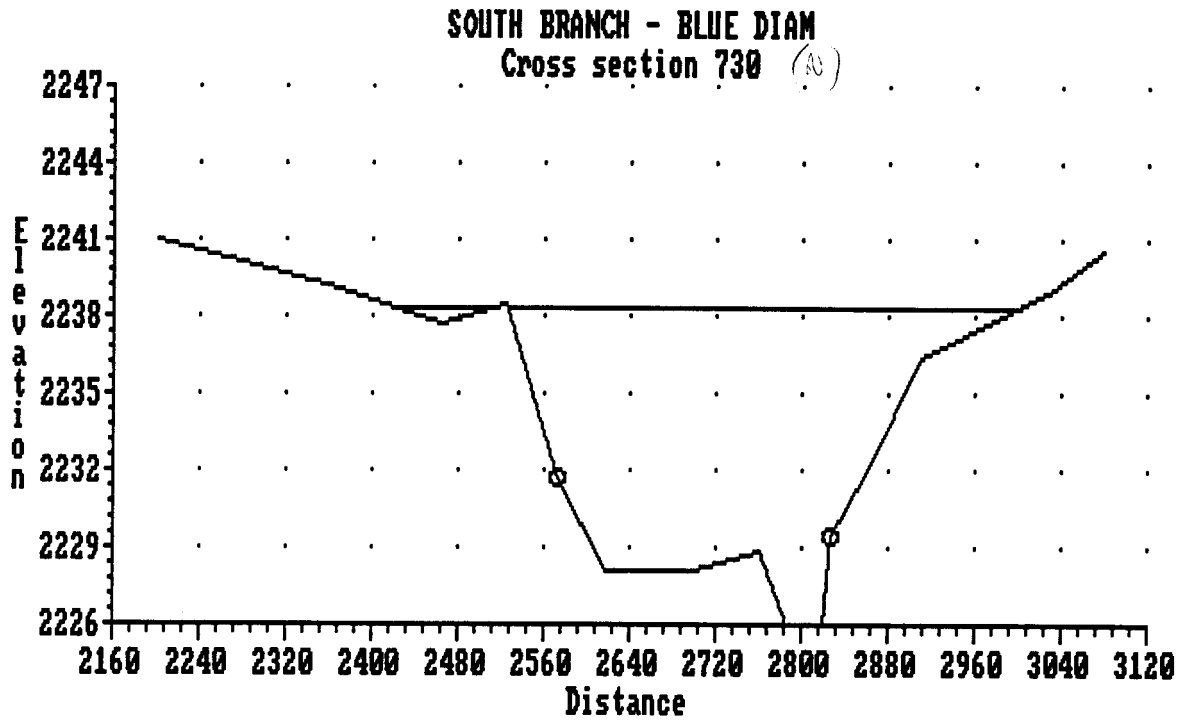


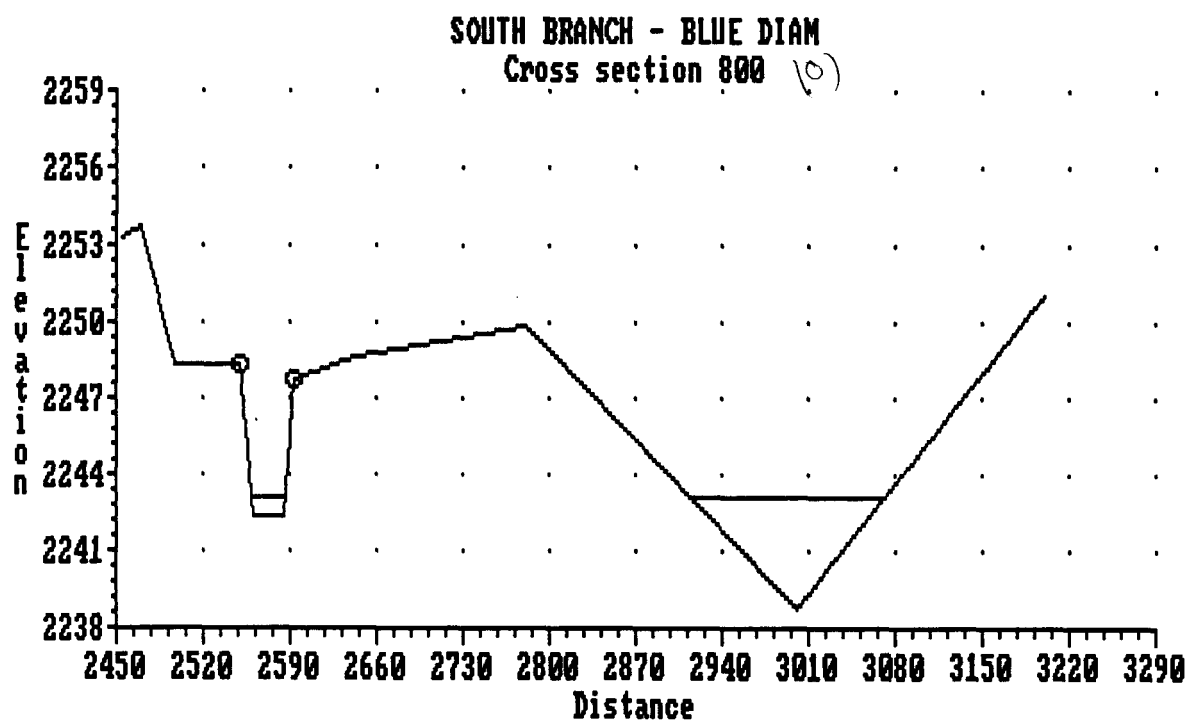


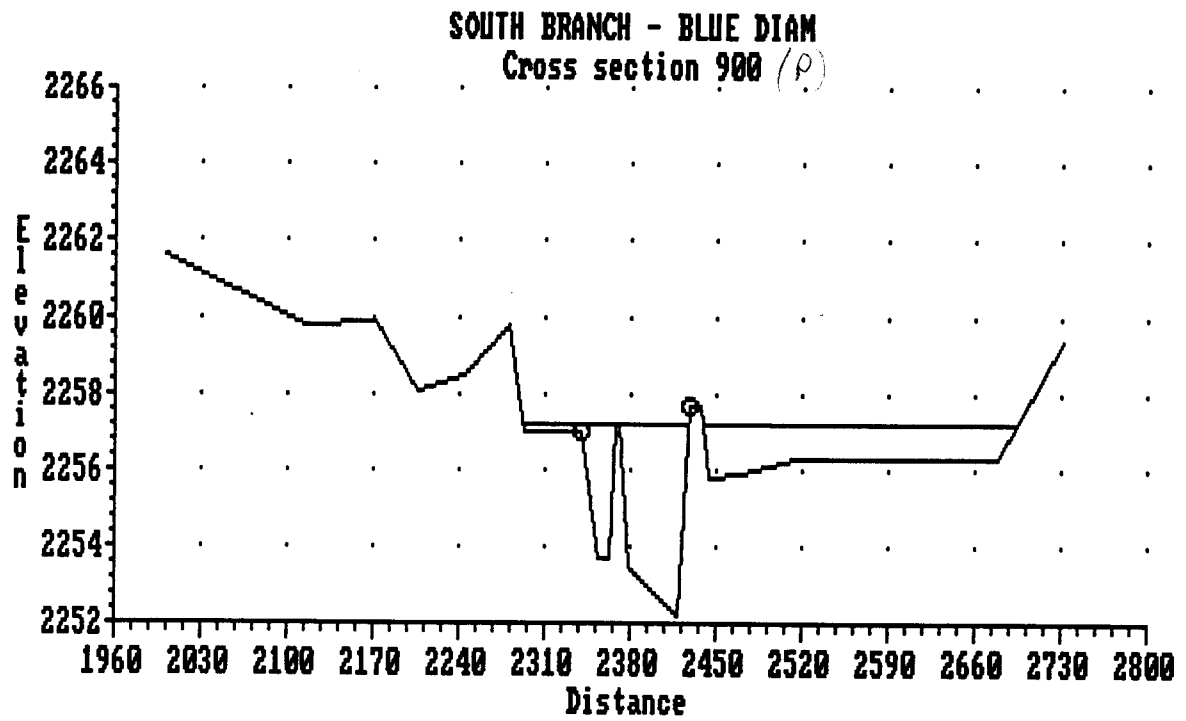


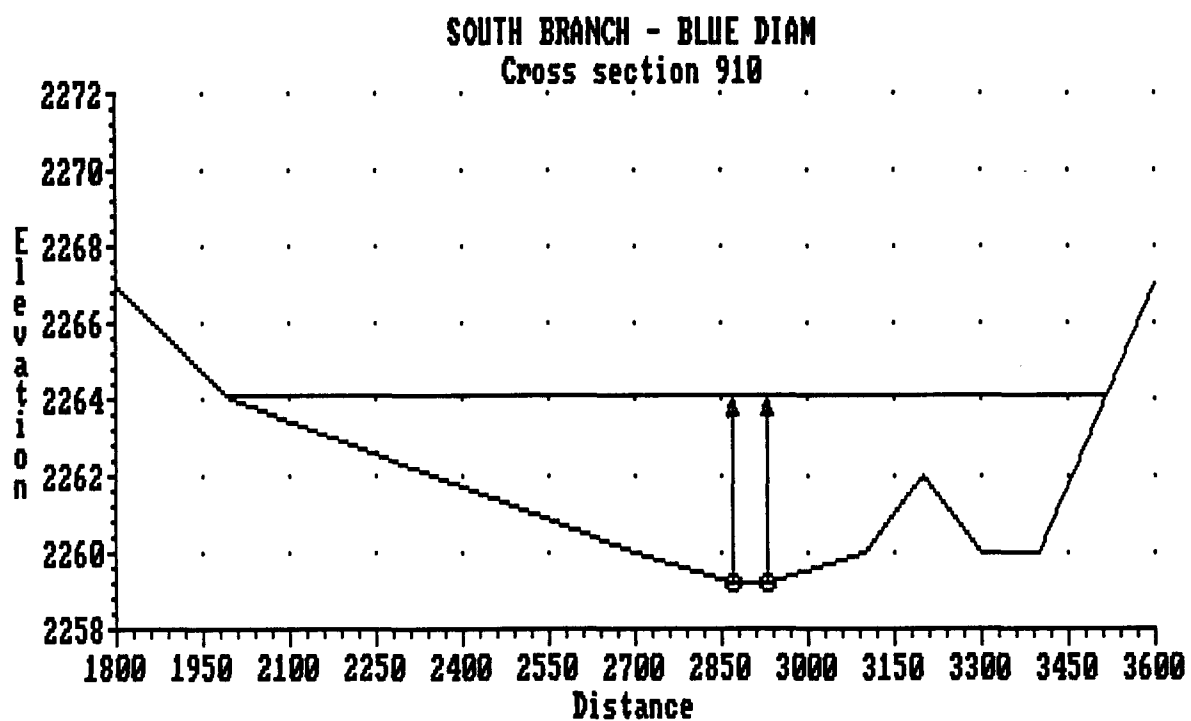


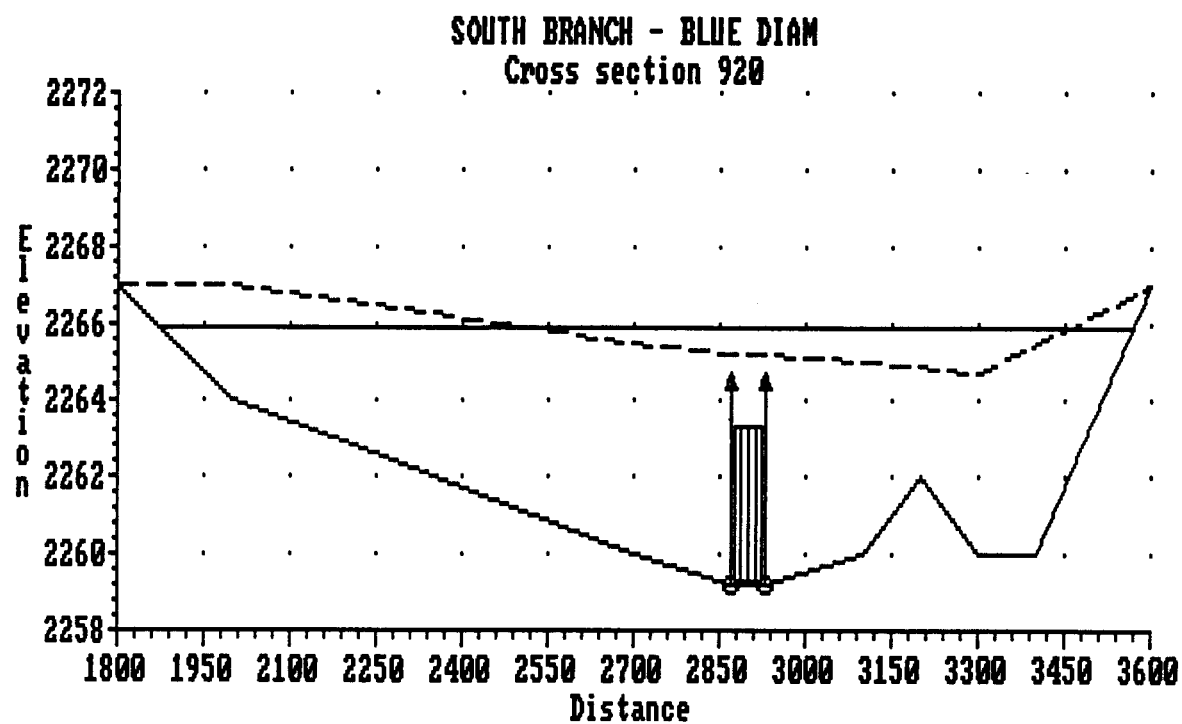


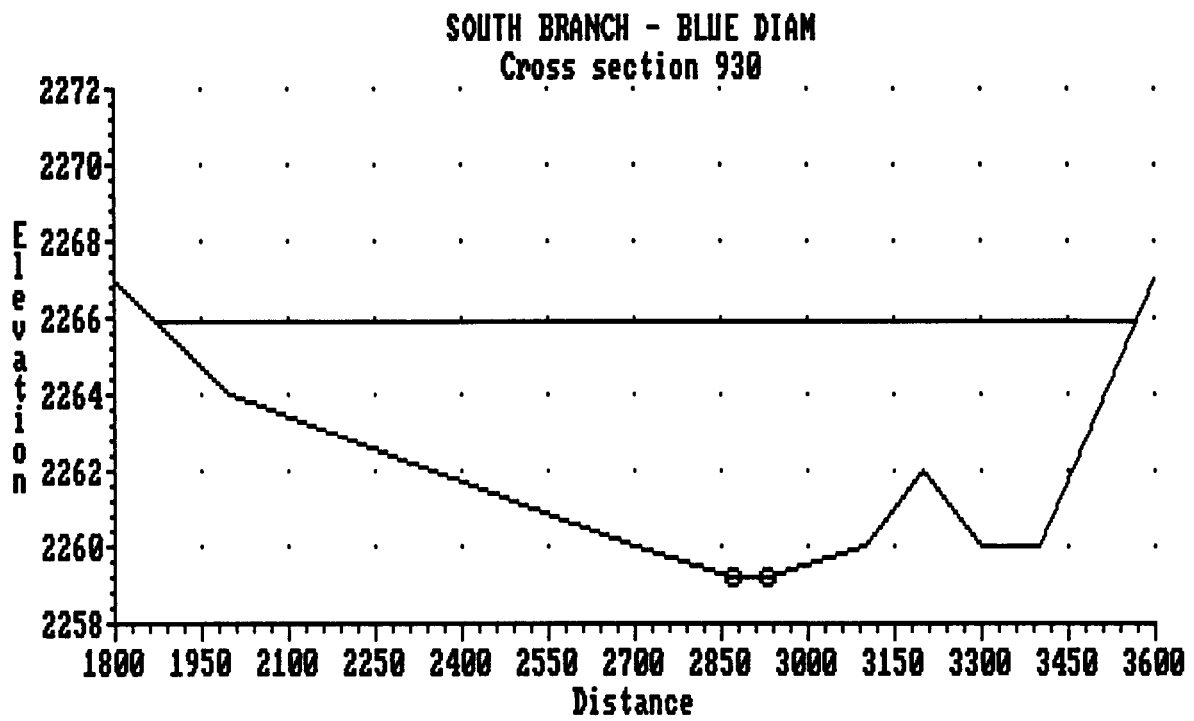


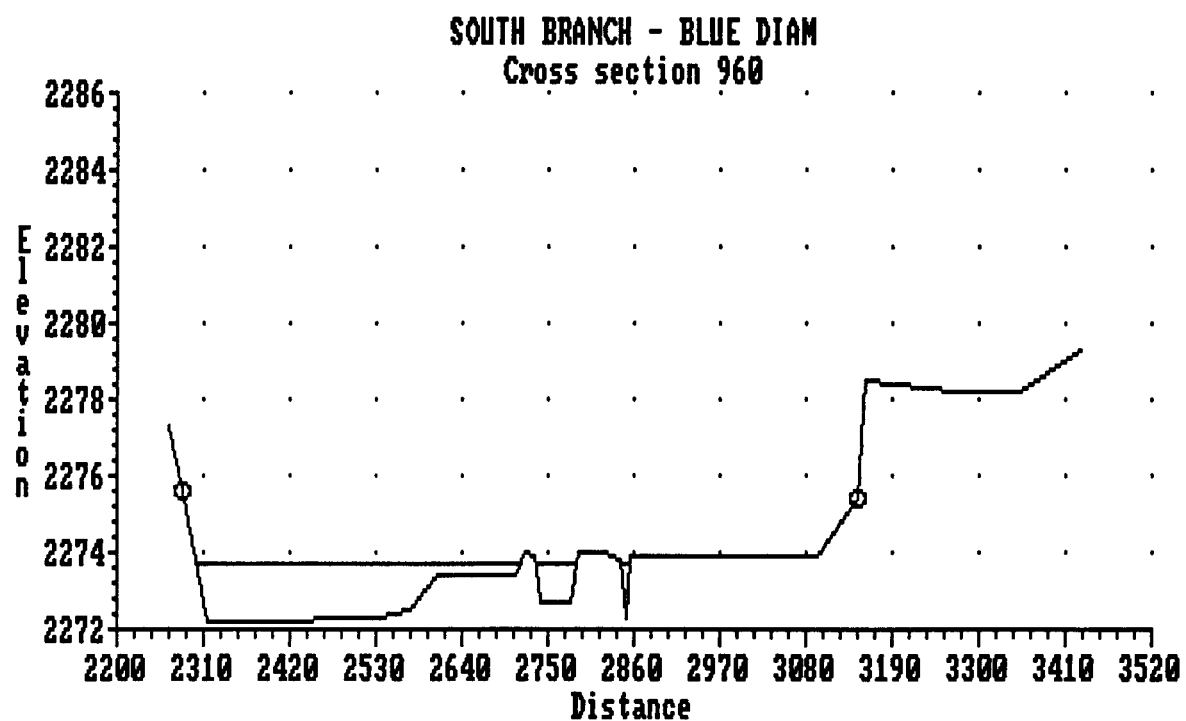












* HEC-2 WATER SURFACE PROFILES *
•
* Version 4.6.0; February 1991 •
•
* RUN DATE 26AUG92 TIME 17:52:30 •

* 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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:::                                     :::
:::  FULL MICRO-COMPUTER IMPLEMENTATION  :::
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HAESTAD METHODS

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THIS RUN EXECUTED 26AUG92 17:52:30

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 CLARK COUNTY FLOOD INSURANCE STUDY
 T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. - Revised by MBJ Inc.
 T3 SOUTH BRANCH - BLUE DIAMOND WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			-1				2145	

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

QT	2	1860	1860							
ET			10.4							
NC	.025	.025	.025							
X1	18.46	12	270	308	46	46	46			
GR	2150.1	0	2150.01	100	2150.24	140	2150.5	190	2150.68	240
GR	2147.2	270	2139.2	284	2139.5	294	2147.2	308	2150.45	350
GR	2155	390	2155	420						
X1	24	15	110	177	128	128	128			
GR	2165	0	2164	50	2163	100	2162	110	2161	113
GR	2160	116	2155	124	2150	133	2146	140	2145	152
GR	2145	159	2150	166	2160	177	2164	187	2168	300

CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans
 Extends from Windmill channel to Bermuda Road

X1	25.40	20	199	211	140	140	140			
GR	2166	0	2165	20	2164	110	2163	160	2162	173
GR	2161	177	2160	181	2155	187	2150	193	2146	199
GR	2146	211	2150	215	2155	221	2158	225	2160	228
GR	2165	233	2166	235	2167	238	2168	241	2168	350
NC				.3	.5					
X1	25.41			10	10	10				
X3	10							2173	2173	

		CROSS SECTION 400		ORIGINAL JMM						
X1	400	15	2469	2571	600	600	600			
GR	2202.0	2415	2202.0	2416	2202.0	2419	2200.8	2435	2199.5	2469
GR	2197.3	2521	2193.4	2549	2193.4	2563	2198.7	2571	2200.1	2615
GR	2200.1	2731	2200.6	2888	2201.8	2988	2201.5	3027	2201.8	3056

		CROSS SECTION 410		CIENEGA ST.						
		Modeled Top of Road from JMM Workmap								
X1	410	7	380	900	140	140	140			
GR	2204	0	2203.5	190	2202.7	380	2200.6	560	2202.0	730
GR	2205.1	900	2205.3	1060						

QT	2	2220	2220							
X1	440	9	345	365	350	350	350			
GR	2204	0	2204	200	2204	300	2204	345	2201	350
GR	2201	360	2204	365	2204	400	2208	550		

QT	2	2800	2800							
ET			9.4							

		CROSS SECTION 480		GILESPIE ST.						
		Modeled Top of Road from JMM Workmap								
X1	480	9	720	1000	400	400	400			
GR	2208.2	0	2206.7	200	2205.7	390	2205.9	560	2206.7	720
GR	2205.7	860	2211.4	1000	2210.2	1200	2209.9	1370		

		CROSS SECTION 500		ORIGINAL JMM						
X1	500	13	2822	2907	220	220	220			
GR	2211.7	2599	2206.9	2649	2209.8	2772	2207.2	2822	2205.9	2858.
GR	2202.9	2874	2203.1	2886	2206.6	2907	2211.4	2938	2212.3	2965.
GR	2210.6	3023	2210.0	3086	2209.9	3467				

		CROSS SECTION 510		RANCHO DESTINO						
		Modeled Top of Road from JMM Workmap								
X1	510	9	680	980	500	500	500			
GR	2215.3	0	2213.1	130	2212.3	320	2213.8	500	2213.2	680
GR	2209.3	850	2215.8	980	2218	1130	2216.4	1250		

		CROSS SECTION 580		HAVEN ROAD						
		Modeled Top of Road from JMM Workmap								
X1	580	8	580	900	670	670	670			
GR	2225.2	0	2220.3	220	2220.2	410	2223	580	2217.8	710
GR	2224.1	900	2223.0	1000	2224.5	1150				

		CROSS SECTION 600		ORIGINAL JMM						
X1	600	20	2670	2805	130	130	130			
GR	2225.9	2270	2225.9	2272	2225.9	2272	2225.9	2274	2224.9	2304
GR	2223.3	2336	2223.2	2462	2223.5	2509	2224.0	2550	2224.2	2649
GR	2222.0	2670	2220.5	2691	2220.1	2726	2219.8	2731	2219.8	2760
GR	2219.3	2776	2224.4	2805	2224.5	2836	2224.4	2955	2226.4	3287

CROSS SECTION 610 GILES ROAD
Modeled Top of Road from JMM Workmap

X1	610	8	500	1030	550	550	550			
GR	2229.7	0	2227.6	200	2229.1	330	2230.2	500	2228.8	700
3R	2226.4	860	2230.2	1030	2230.9	1200				

NC .3 .5
CROSS SECTIONS 710-730 LAS VEGAS BLVD
From plans and picture 3 - 10x8.5 RCB
Ground points from JMM HEC-2 Adjusted

X1	710	15	2572	2827	600	600	600			
X3	10							2237.2	2237.2	
GR	2241	2200	2239	2369	2237.7	2464	2238.5	2525	2231.7	2572
GR	2228.1	2616	2228.1	2698	2228.8	2760	2226.0	2786	2226.0	2820
3R	2229.5	2827	2231.8	2858	2236.4	2911	2239.0	3033	2240.5	3079

SC	3.015	.5	2.6	0	8.5	10	50	8.1	2228.2	2228.2
X1	720				50	50	50			
X2			2	2236.7	2237.7					
X3	10							2237.7	2237.7	
BT	-7	2200	2238.4		2464	2237.6		2525	2238.5	
BT		2616	2239.3		2760	2239.3		2827	2238.7	
BT		3033	2239							

NC .1 .3
X1 730 100 100 100

CROSS SECTIONS 800-900 ORIGINAL JMM

X1	800	9	2549	2593	1650	1650	1650			
GR	2253.3	2454	2253.7	2470	2248.4	2497	2248.3	2549	2242.4	2560
GR	2242.4	2586	2247.7	2593	2248.7	2643	2249.9	2782		

CROSS SECTIONS 900-930 1-15
From plans and picture 4 - 12x4 RCB
Top of road from JMM workmap

X1	900	22	2339	2428	700	700	700			
GR	2261.6	2000	2259.8	2116	2259.9	2172	2258.1	2206	2258.5	2245
GR	2259.8	2281	2257.0	2293	2257.0	2339	2253.7	2354	2253.7	2363
GR	2257.2	2367	2257.2	2371	2253.5	2379	2252.2	2419	2257.7	2428
GR	2257.7	2438	2255.8	2443	2255.9	2470	2256.3	2515	2256.3	2579
GR	2256.3	2679	2259.4	2731						

NC .3 .5
X1 910 10 2870 2930 300 300 300
X3 10 2264 2264
GR 2267 1800 2264 2000 2260 2700 2259.2 2870 2259.2 2930
GR 2260 3100 2262 3200 2260 3300 2260 3400 2267 3600

SC	4.016	.5	2.6	0	4	12	150	8.1	2259.3	2259.3
X1	920				150	150	150			
X2			2	2263.3	2264.7					
X3	10							2264.7	2264.7	
BT	-8	1800	2267		2000	2267		2700	2265.5	
BT		2870	2265.2		2930	2265.2		3100	2265	
BT		3300	2264.7		3600	2267				
X1	930				100	100	100			
NC	.040	.040	.040	0.1	0.3					
X1	960	28	2282	3147	1000	1000	975			
GR	2277.3	2265	2275.6	2282	2272.2	2315	2272.2	2365	2272.2	2425
GR	2272.3	2477	2272.3	2533	2272.5	2574	2273.4	2609	2273.4	2661
GR	2273.4	2708	2274.0	2721	2273.9	2734	2272.7	2740	2272.7	2780
GR	2274.0	2788	2274.0	2820	2273.8	2843	2272.3	2851	2273.9	2856
GR	2273.9	2915	2273.9	2977	2273.9	3095	2275.4	3147	2278.5	3155
GR	2278.2	3274	2278.2	3351	2279.3	3430				

SECNO	DEPTH	CWSEL	CRIS	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

*SECNO 18.460

3720 CRITICAL DEPTH ASSUMED

18.460	7.05	2146.25	2146.25	2145.00	2148.52	2.27	.00	.00	2147.20
1860.0	.0	1860.0	.0	.0	154.0	.0	.0	.0	2147.20
.00	.00	12.08	.00	.000	.025	.000	.000	2139.20	271.66
.006447	46.	46.	46.	0	10	0	.00	34.61	306.28

*SECNO 24.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

24.000	6.03	2151.03	2151.03	.00	2153.24	2.21	.82	.00	2162.00
1860.0	.0	1860.0	.0	.0	156.1	.0	.5	.1	2160.00
.00	.00	11.92	.00	.000	.025	.000	.000	2145.00	131.14
.006406	128.	128.	128.	20	15	0	.00	35.99	167.13

*SECNO 25.400

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans

Extends from Windmill channel to Bermuda Road

25.400	7.28	2153.28	2153.28	.00	2155.94	2.66	.72	.00	2146.00
1860.0	359.2	1274.1	226.6	38.1	87.4	27.6	1.0	.2	2146.00
.01	9.42	14.58	8.22	.025	.025	.025	.000	2146.00	189.06
.004265	140.	140.	140.	20	11	0	.00	29.87	218.94

CCHV= .300 CEHV= .500

*SECNO 25.410

*301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2173.00 ELREA= 2173.00

25.410	9.04	2155.04	2155.04	.00	2159.60	4.57	.04	.96	2146.00
1860.0	.0	1860.0	.0	.0	108.5	.0	1.0	.2	2146.00
.01	.00	17.15	.00	.000	.025	.000	.000	2146.00	199.00
.004421	10.	10.	10.	20	11	0	.00	12.00	211.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
1		.013	.50	2.60	.00	10.00	12.00	650.00	8	3	2160.01	2146.05

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 3 - WINGWALLS FLARED 0 DEGREES (SIDES EXTENDED STRAIGHT)

5130, EGIC= 2178.27..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2175.88 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 25.420

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.18

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2178.27	2175.88	16.60	189.	1661.	10.751	120.0	2175.00	58.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2176.00 ELREA= 2176.00

25.420	14.41	2174.41	.00	.00	2176.21	1.79	16.60	.00	2160.00
1860.0	.0	1860.0	.0	.0	173.0	.0	3.1	.4	2160.00
.02	.00	10.75	.00	.000	.025	.000	.000	2160.00	189.00
.000932	650.	650.	650.	19	0	0	.00	12.00	201.00

CCHV= .100 CEHV= .300

*SECNO 25.430

3301 HV CHANGED MORE THAN HVINS

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.55

25.430	16.16	2176.16	.00	.00	2176.39	.23	.03	.16	2160.00
1860.0	538.4	905.5	416.1	180.3	194.0	152.3	3.5	.4	2160.00
.03	2.99	4.67	2.73	.040	.040	.040	.000	2160.00	162.35
.000386	50.	50.	50.	3	0	0	.00	61.53	223.88

SECNO 100.000

3301 HV CHANGED MORE THAN HVINS

685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP

Modeled from Kachina Homes Plans

Clark County project

100.000	7.14	2180.14	2180.14	.00	2183.08	2.94	.39	.81	2181.80
1860.0	.0	6.4	1853.6	.0	2.8	134.6	6.2	.8	2173.20
.03	.00	2.27	13.77	.000	.040	.040	.000	2173.00	25.19
.012640	350.	350.	350.	20	14	0	.00	23.92	49.11

CCHV= .300 CEHV= .500

SECNO 110.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.94

Extended cross section to intersect water surface

110.000	7.24	2184.24	.00	.00	2184.92	.68	1.17	.68	2183.40
1860.0	.3	1813.5	46.1	.4	270.5	37.3	7.2	1.1	2183.60
.04	.96	6.70	1.24	.040	.040	.040	.000	2177.00	999.16
.003345	200.	200.	200.	3	0	0	.00	128.84	1128.00

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4		.013	.50	2.60	.00	4.00	.00	70.00	1	3	2178.20	2177.00

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 3 - GROOVE END ENTRANCE, PIPE PROJECTING FROM FILL

5130, EGIC= 2224.33..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2223.47 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 120.000

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2224.33	2223.47	-.63	1338.	518.	5.935	50.3	2183.30	1089.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3693 PROBABLE MINIMUM SPECIFIC ENERGY

120.000	5.83	2184.03	2182.66	.00	2184.42	.39	.24	-.24	2183.40
1860.0	576.0	1284.0	.0	440.8	216.3	.1	7.9	2.1	2184.00
.05	1.31	5.94	.14	.040	.040	.040	.000	2178.20	9.99
.003370	70.	70.	70.	20	14	0	.00	1037.94	1047.93

CCHV= .100 CEHV= .300

*SECNO 130.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.86

130.000	6.33	2184.53	.00	.00	2184.61	.09	.16	.03	2183.40
1860.0	1046.4	800.1	13.5	932.9	236.7	28.3	10.1	4.6	2184.00
.06	1.12	3.38	.48	.040	.040	.040	.000	2178.20	9.92
.000969	100.	100.	100.	2	0	0	.00	1137.43	1147.35

*SECNO 200.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 200

PLACID ST.

Modeled top of Road from JMM Workmap

200.000	1.38	2191.88	2191.88	.00	2192.21	.34	1.42	.07	2191.00
1860.0	459.7	1400.3	.0	147.8	277.0	.0	20.3	15.5	2192.00
.09	3.11	5.06	.00	.040	.040	.000	.000	2190.50	241.40
.018945	550.	550.	550.	20	21	0	.00	600.32	841.72

SECNO	DEPTH	CWSEL	CRWS	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 400.000

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

	CROSS SECTION 400				ORIGINAL JMM					
400.000	5.90	2199.30	.00	.00	2200.05	.74	7.71	.12	2199.50	
1860.0	.0	1850.6	9.4	.0	267.2	5.8	25.1	20.5	2198.70	
.12	.00	6.92	1.62	.000	.040	.040	.000	2193.40	2473.54	
.009290	600.	600.	600.	4	0	0	.00	116.56	2590.10	

*SECNO 410.000

7185 MINIMUM SPECIFIC ENERGY

5720 CRITICAL DEPTH ASSUMED

	CROSS SECTION 410				CIENEGA ST.					
	Modeled Top of Road from JMM Workmap									
410.000	1.80	2202.40	2202.40	.00	2202.89	.49	1.99	.02	2202.70	
1860.0	.0	1860.0	.0	.0	329.9	.0	26.1	21.2	2205.10	
.12	.00	5.64	.00	.000	.040	.000	.000	2200.60	405.78	
.024545	140.	140.	140.	13	17	0	.00	346.11	751.89	

*SECNO 440.000

5280 CROSS SECTION 440.00 EXTENDED 1.47 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.88

440.000	4.47	2205.47	2205.06	.00	2205.67	.20	2.75	.03	2204.00
2220.0	1572.6	408.3	239.2	506.0	74.3	91.7	30.1	24.4	2204.00
.15	3.11	5.49	2.61	.040	.040	.040	.000	2201.00	.00
.004222	350.	350.	350.	13	17	0	.00	455.00	455.00

*SECNO 480.000

	CROSS SECTION 480				GILESPIE ST.					
	Modeled Top of Road from JMM Workmap									
480.000	1.71	2207.41	.00	.00	2207.55	.15	1.88	.01	2206.70	
2800.0	2216.5	583.5	.0	708.5	203.4	.0	37.4	30.2	2211.40	
.19	3.13	2.87	.00	.040	.040	.000	.000	2205.70	106.71	
.005130	400.	400.	400.	5	0	0	.00	795.04	901.75	

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 500.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

	CROSS SECTION 500				ORIGINAL JMM					
500.000	5.68	2208.57	2208.57	.00	2209.60	1.02	1.58	.26	2207.20	
2800.0	307.8	2444.5	47.7	92.3	284.8	12.6	40.7	32.7	2206.60	
.20	3.34	8.58	3.79	.040	.040	.040	.000	2202.90	2631.55	
.010742	220.	220.	220.	2	20	0	.00	212.69	2919.75	

*SECNO 510.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

	CROSS SECTION 510				RANCHO DESTINO					
	Modeled Top of Road from JMM Workmap									
510.000	4.02	2213.32	.00	.00	2213.63	.30	3.96	.07	2213.20	
2800.0	377.9	2422.1	.0	188.4	516.6	.0	47.0	37.5	2215.80	
.23	2.01	4.69	.00	.040	.040	.000	.000	2209.30	116.27	
.006076	500.	500.	500.	3	0	0	.00	618.04	930.65	

*SECNO 580.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

	CROSS SECTION 580				HAVEN ROAD					
	Modeled Top of Road from JMM Workmap									
580.000	3.37	2221.17	2221.17	.00	2221.66	.49	5.91	.05	2223.00	
2800.0	850.9	1949.1	.0	221.4	313.9	.0	56.5	45.9	2224.10	
.26	3.84	6.21	.00	.040	.040	.000	.000	2217.80	180.78	
.013927	670.	670.	670.	12	10	0	.00	474.41	811.74	

SECNO	DEPTH	CWSEL	CRWS	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 600.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

	CROSS SECTION 600				ORIGINAL JMM					
600.000	3.54	2222.84	2222.84	.00	2224.07	1.23	2.01	.22	2222.00	
2800.0	9.1	2790.9	.0	3.4	313.0	.0	57.8	46.8	2224.40	
.27	2.72	8.92	.00	.040	.040	.000	.000	2219.30	2662.00	
.017220	130.	130.	130.	2	8	0	.00	134.12	2796.12	

SECNO 610.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

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

	CROSS SECTION 610				GILES ROAD					
	Modeled Top of Road from JMM Workmap									
610.000	3.03	2229.43	.00	.00	2229.61	.18	5.44	.10	2230.20	
2800.0	884.6	1915.4	.0	306.0	524.1	.0	65.0	52.3	2230.20	
.31	2.89	3.65	.00	.040	.040	.000	.000	2226.40	26.32	
.006403	550.	550.	550.	4	0	0	.00	738.03	995.27	

CCHV= .300 CEHV= .500

*SECNO 710.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.86

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2237.20 ELREA= 2237.20

	CROSS SECTIONS 710-730				LAS VEGAS BLVD					
	From plans and picture 3 - 10x8.5 RCB									
	Ground points from JMM HEC-2 Adjusted									
710.000	5.30	2231.30	.00	.00	2231.49	.19	1.88	.00	2231.70	
2800.0	.0	2800.0	.0	.0	806.2	.0	76.3	59.1	2229.50	
.36	.00	3.47	.00	.000	.040	.000	.000	2226.00	2576.98	
.001846	600.	600.	600.	5	0	0	.00	250.02	2827.00	

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.015	.50	2.60	.00	8.50	10.00	50.00	8	1	2228.20	2228.20

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 720.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 8.07

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2239.55	2239.31	6.86	176.	2619.	.928	255.0	2237.70	297.
720.000	12.33	2238.33	.00	.00	2238.35	.01	6.86	.00 2231.70
2800.0	69.4	2414.0	316.6	183.1	2602.6	551.6	78.7	59.6 2229.50
.37	.38	.93	.57	.040	.040	.040	.000	2226.00 2417.15
.000028	50.	50.	50.	1	0	0	.00	571.71 3002.08

CCHV= .100 CEHV= .300

*SECNO 730.000

3265 DIVIDED FLOW

730.000	12.34	2238.34	.00	.00	2238.35	.01	.00	.00 2231.70
2800.0	69.4	2414.2	316.5	182.7	2601.9	551.1	86.3	60.9 2229.50
.41	.38	.93	.57	.040	.040	.040	.000	2226.00 2417.37
.000028	100.	100.	100.	2	0	0	.00	571.12 3001.94

*SECNO 800.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 800-900				ORIGINAL JMM			
800.000	7.09	2249.49	2249.49	.00	2250.55	1.06	.16 .31 2248.30
2800.0	190.7	2335.1	274.2	62.2	260.9	100.5	157.5 76.3 2247.70
.46	3.06	8.95	2.73	.040	.040	.040	.000 2242.40 2491.45

.005948	1650.	1650.	1650.	20	14	0	.00	242.92	2734.38
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SECNO	DEPTH	CWSEL	CRIS	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 900.000

(P)

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 900-930 1-15

From plans and picture 4 - 12x4 RCB

Top of road from JMM workmap

900.000	5.02	2257.22	2257.22	.00	2257.81	.59	4.86	.05	2257.00
2800.0	12.6	1947.6	839.8	10.3	277.4	248.3	165.2	81.4	2257.70
.50	1.23	7.02	3.38	.040	.040	.040	.000	2252.20	2292.05
.008220	700.	700.	700.	13	14	0	.00	390.35	2694.45

CCHV= .300 CEHV= .500

*SECNO 910.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

910.000	4.95	2264.15	2264.15	.00	2264.16	.01	.05	.17	2259.20
2800.0	1242.0	231.2	1326.8	2282.0	297.2	2066.4	183.1	88.0	2259.20
.63	.54	.78	.64	.040	.040	.040	.000	2259.20	1989.79
.000052	300.	300.	300.	20	8	0	.00	1528.86	3518.66

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4		.016	.50	2.60	.00	4.00	12.00	150.00	8	1	2259.30	2259.30

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 920.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.05

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2270.73	2271.26	1.75	1408.	1392.	.464	192.0	2264.70	949.

SECNO	DEPTH	CWSEL	CRWS	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

920.000	6.71	2265.91	.00	.00	2265.91	.00	1.75	.00	2259.20
2800.0	1379.3	186.8	1233.8	3931.5	402.6	3144.8	203.9	93.6	2259.20
.74	.35	.46	.39	.040	.040	.040	.000	2259.20	1872.66
.000012	150.	150.	150.	0	0	0	.00	1696.21	3568.86

*SECNO 930.000

930.000	6.71	2265.91	.00	.00	2265.91	.00	.00	.00	2259.20
2800.0	1379.4	186.8	1233.8	3932.4	402.7	3145.4	221.1	97.5	2259.20
.82	.35	.46	.39	.040	.040	.040	.000	2259.20	1872.59
.000012	100.	100.	100.	0	0	0	.00	1696.30	3568.89

CCHV= .100 CEHV= .300

*SECNO 960.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

960.000	1.48	2273.68	2273.68	.00	2274.20	.52	.05	.16	2275.60
2800.0	.0	2800.0	.0	.0	482.9	.0	312.3	122.2	2275.40
.87	.00	5.80	.00	.000	.040	.000	.000	2272.20	2300.66
.023936	1000.	975.	1000.	20	14	0	.00	475.88	2855.30

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 BASED ON REDUCED FLOW DOWNSTREAM OF FLOW SPLIT
T3 SOUTH BRANCH BLUE DIAMOND WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2146	
J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

*PROF 2

*SECNO 18.460

2800 NAT Q1= 231.66 WSEL= 2146.25 ENC Q1= 309.35 WSEL= 2147.25 RATIO= -.3354

NAT Q1= 309. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2147.25

J720 CRITICAL DEPTH ASSUMED

J470 ENCROACHMENT STATIONS=		270.0	308.0	TYPE=	4	TARGET=	.000		
18.460	7.05	2146.25	2146.25	2146.25	2148.52	2.27	.00	.00	2147.20
1860.0	.0	1860.0	.0	.0	154.0	.0	.0	.0	2147.20
.00	.00	12.08	.00	.000	.025	.000	.000	2139.20	271.66
.006443	46.	46.	46.	0	7	0	.00	34.62	306.28

*SECNO 24.000

2800 NAT Q1= 232.39 WSEL= 2151.03 ENC Q1= 313.98 WSEL= 2152.03 RATIO= -.3511

NAT Q1= 314. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2152.03

J685 20 TRIALS ATTEMPTED WSEL,CWSEL

J693 PROBABLE MINIMUM SPECIFIC ENERGY

J720 CRITICAL DEPTH ASSUMED

J470 ENCROACHMENT STATIONS=		110.0	177.0	TYPE=	4	TARGET=	.000		
24.000	6.03	2151.03	2151.03	2151.03	2153.24	2.20	.82	.00	2162.00
1860.0	.0	1860.0	.0	.0	156.1	.0	.5	.1	2160.00
.00	.00	11.92	.00	.000	.025	.000	.000	2145.00	131.14
.006403	128.	128.	128.	20	15	0	.00	35.99	167.13

*SECNO 25.400

2800 NAT Q1= 284.82 WSEL= 2153.28 ENC Q1= 284.82 WSEL= 2154.28 RATIO= .0000

NAT Q1= 368. RATIOS LOB, CH, ROB= .2082 .6574 .1345 WSEL= 2154.28

J301 HV CHANGED MORE THAN HVINS

J685 20 TRIALS ATTEMPTED WSEL,CWSEL

J693 PROBABLE MINIMUM SPECIFIC ENERGY

J720 CRITICAL DEPTH ASSUMED

J470 ENCROACHMENT STATIONS=		194.5	212.4	TYPE=	4	TARGET=	.226		
CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans									
Extends from Windmill channel to Bermuda Road									
25.400	7.68	2153.68	2153.68	2153.28	2157.65	3.97	.82	.00	2146.00
1860.0	239.6	1571.8	48.6	27.8	92.2	9.9	.9	.2	2146.00
.01	8.61	17.05	4.93	.025	.025	.025	.000	2146.00	194.50
.005422	140.	140.	140.	20	11	0	.00	17.92	212.42

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

CCHV= .300 CEHV= .500

*SECNO 25.410

2800 NAT Q1= 279.73 WSEL= 2155.04 ENC Q1= 333.19 WSEL= 2156.04 RATIO= -.1911
 NAT Q1= 333. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2156.04

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 199.0 211.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2173.00 ELREA= 2173.00

25.410	9.07	2155.07	2155.07	2155.04	2159.60	4.53	.07	.28	2146.00
1860.0	.0	1860.0	.0	.0	108.9	.0	.9	.2	2146.00
.01	.00	17.09	.00	.000	.025	.000	.000	2146.00	199.00
.009251	10.	10.	10.	20	8	0	.00	12.00	211.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
1		.013	.50	2.60	.00	10.00	12.00	650.00	8	3	2160.01	2146.05

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 3 - WINGWALLS FLARED 0 DEGREES (SIDES EXTENDED STRAIGHT)

5130, EGIC= 2178.27..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2175.88 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 25.420

2800 NAT Q1= 609.21 WSEL= 2174.41 ENC Q1= 681.02 WSEL= 2175.41 RATIO= -.1179
 NAT Q1= 681. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2175.41

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.86

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2178.27	2175.88	16.60	187.	1660.	10.762	120.0	2175.00	58.

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= 189.0 201.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2176.00 ELREA= 2176.00

25.420	14.40	2174.40	.00	2174.41	2176.20	1.80	16.60	.00	2160.00
1860.0	.0	1860.0	.0	.0	172.8	.0	3.0	.4	2160.00
.02	.00	10.76	.00	.000	.025	.000	.000	2160.00	189.00
.002677	650.	650.	650.	3	0	0	.00	12.00	201.00

CCHV= .100 CEHV= .300

*SECNO 25.430

2800 NAT Q1= 946.27 WSEL= 2176.16 ENC Q1= 946.27 WSEL= 2177.16 RATIO= .0000

NAT Q1= 1088. RATIOS LOB, CH, ROB= .2988 .4681 .2331 WSEL= 2177.16

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.46

3470 ENCROACHMENT STATIONS= 176.2 211.9 TYPE= 4 TARGET= .130

25.430	16.11	2176.11	.00	2176.16	2176.40	.28	.04	.15	2160.00
1860.0	516.2	964.1	379.7	147.6	193.3	120.3	3.4	.4	2160.00
.03	3.50	4.99	3.16	.040	.040	.040	.000	2160.00	176.22
.000443	50.	50.	50.	3	0	0	.00	35.70	211.92

*SECNO 100.000

2800 NAT Q1= 165.44 WSEL= 2180.14 ENC Q1= 165.44 WSEL= 2181.14 RATIO= .0000

NAT Q1= 210. RATIOS LOB, CH, ROB= .0000 .0039 .9961 WSEL= 2181.14

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 43.3 TYPE= 4 TARGET= .212

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP

Modeled from Kachina Homes Plans

Clark County project

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

100.000	7.30	2180.30	2180.30	2180.14	2183.83	3.53	.45	.97	2181.80
1860.0	.0	7.1	1852.9	.0	2.9	122.7	5.8	.6	2173.20
.03	.00	2.41	15.11	.000	.040	.040	.000	2173.00	25.17
.013823	350.	350.	350.	20	11	0	.00	18.15	43.33

CCHV= .300 CEHV= .500

*SECNO 110.000

2800 NAT Q1= 321.59 WSEL= 2184.24 ENC Q1= 396.64 WSEL= 2185.24 RATIO= -.2333
 NAT Q1= 457. RATIOS LOB, CH, ROB= .0010 .8680 .1309 WSEL= 2185.24

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.35

3470 ENCROACHMENT STATIONS= 1000.0 1041.0 TYPE= 4 TARGET= .132

Extended cross section to intersect water surface

110.000	8.14	2185.14	.00	2184.24	2185.71	.57	.99	.89	2183.40
1860.0	.0	1860.0	.0	.0	307.4	.0	6.8	.8	2183.60
.04	.00	6.05	.00	.000	.040	.000	.000	2177.00	1000.00
.002504	200.	200.	200.	3	0	0	.00	41.00	1041.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4		.013	.50	2.60	.00	4.00	.00	70.00	1	3	2178.20	2177.00

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 3 - GROOVE END ENTRANCE, PIPE PROJECTING FROM FILL

5130, EGIC= 2224.33..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2224.37 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 120.000

5155, 20 TRIALS OF QWEIR NOT ENOUGH; POSSIBLY INVALID

FINAL QWEIR + QCULV = 1841. DOES NOT EQUAL ACTUAL Q = 1860.

2800 NAT Q1= 320.39 WSEL= 2184.03 ENC Q1= 320.39 WSEL= 2185.03 RATIO= .0000
 NAT Q1= 1004. RATIOS LOB, CH, ROB= .6796 .2943 .0261 WSEL= 2185.03

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

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2224.33	2224.37	-.56	1815.	26.	8.184	50.3	2183.30	1239.

3470 ENCROACHMENT STATIONS=	970.1	1041.0	TYPE=	4	TARGET=	.681
120.000	5.93	2184.13	.00	2184.03	2185.15	1.01
1860.0	53.6	1806.4	.0	22.4	220.7	.0
.04	2.39	8.18	.00	.040	.040	.000
.006262	70.	70.	70.	3	0	0

CCHV= .100 CEHV= .300

*SECNO 130.000

2800 NAT Q1=	597.40	WSEL=	2184.53	ENC Q1=	597.40	WSEL=	2185.53	RATIO=	.0000
NAT Q1=	1523.	RATIOS LOB, CH, ROB=	.7290	.2200	.0511	WSEL=	2185.53		

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.24

3470 ENCROACHMENT STATIONS=	805.2	1041.0	TYPE=	4	TARGET=	.608
130.000	7.09	2185.29	.00	2184.53	2185.47	.18
1860.0	764.3	1095.7	.0	377.1	267.7	.0
.05	2.03	4.09	.00	.040	.040	.000
.001251	100.	100.	100.	3	0	0

*SECNO 200.000

2800 NAT Q1=	135.14	WSEL=	2191.88	ENC Q1=	328.83	WSEL=	2192.88	RATIO=	-1.4334
NAT Q1=	571.	RATIOS LOB, CH, ROB=	.4139	.5756	.0105	WSEL=	2192.88		

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	560.0	850.0	TYPE=	4	TARGET=	.424
CROSS SECTION 200 PLACID ST.						
Modeled top of Road from JMM Workmap						
200.000	1.50	2192.00	2192.00	2191.88	2192.55	.55
1860.0	.0	1860.0	.0	.0	311.9	.0
.08	.00	5.96	.00	.000	.040	.000
.023470	550.	550.	550.	20	21	0

SECNO	DEPTH	CWSEL	CRWS	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 400.000

2800 NAT Q1= 192.98 WSEL= 2199.30 ENC Q1= 318.34 WSEL= 2200.30 RATIO= -.6496
 NAT Q1= 337. RATIOS LOB, CH, ROB= .0051 .9433 .0516 WSEL= 2200.30

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

3470 ENCROACHMENT STATIONS= 2469.0 2571.0 TYPE= 4 TARGET= .057
 CROSS SECTION 400 ORIGINAL JMM

400.000	6.12	2199.52	.00	2199.30	2200.17	.65	7.59	.03	2199.50
1860.0	.0	1860.0	.0	.0	287.5	.0	18.4	7.2	2198.70
.10	.00	6.47	.00	.000	.040	.000	.000	2193.40	2469.00
.007892	600.	600.	600.	3	0	0	.00	102.00	2571.00

*SECNO 410.000

2800 NAT Q1= 118.72 WSEL= 2202.40 ENC Q1= 383.81 WSEL= 2203.40 RATIO= -2.2328
 NAT Q1= 395. RATIOS LOB, CH, ROB= .0271 .9729 .0000 WSEL= 2203.40

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
 3693 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 380.0 900.0 TYPE= 4 TARGET= .027
 CROSS SECTION 410 CIENEGA ST.
 Modeled Top of Road from JMM Workmap

410.000	1.80	2202.40	2202.40	2202.40	2202.89	.49	1.80	.02	2202.70
1860.0	.0	1860.0	.0	.0	330.0	.0	19.4	7.9	2205.10
.11	.00	5.64	.00	.000	.040	.000	.000	2200.60	405.76
.024527	140.	140.	140.	20	17	0	.00	346.14	751.90

*SECNO 440.000

2800 NAT Q1= 341.65 WSEL= 2205.47 ENC Q1= 341.65 WSEL= 2206.47 RATIO= .0000
 NAT Q1= 775. RATIOS LOB, CH, ROB= .7410 .1206 .1384 WSEL= 2206.47

3280 CROSS SECTION 440.00 EXTENDED 2.15 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.31

3470 ENCROACHMENT STATIONS= 196.5 365.0 TYPE= 4 TARGET= .559

440.000	5.16	2206.16	.00	2205.47	2206.66	.50	3.77	.00	2204.00
2220.0	1588.0	632.0	.0	319.3	88.0	.0	22.3	10.0	2204.00
.13	4.97	7.18	.00	.040	.040	.000	.000	2201.00	196.55
.006536	350.	350.	350.	4	0	0	.00	168.45	365.00

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

*SECNO 480.000

2800 NAT Q1= 390.94 WSEL= 2207.41 ENC Q1= 390.94 WSEL= 2208.31 RATIO= .0000
 NAT Q1= 996. RATIOS LOB, CH, ROB= .7870 .2130 .0000 WSEL= 2208.31
 3280 CROSS SECTION 480.00 EXTENDED .25 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.59

3470 ENCROACHMENT STATIONS= 566.0 1000.0 TYPE= 4 TARGET= .608
 CROSS SECTION 480 GILESPIE ST.
 Modeled Top of Road from JMM Workmap

480.000	2.75	2208.45	.00	2207.41	2208.68	.23	1.99	.03	2206.70
2800.0	1280.8	1519.2	.0	328.5	407.4	.0	27.6	12.4	2211.40
.16	3.90	3.73	.00	.040	.040	.000	.000	2205.70	565.98
.004099	400.	400.	400.	3	0	0	.00	361.51	927.49

*SECNO 500.000

2800 NAT Q1= 270.16 WSEL= 2208.57 ENC Q1= 350.61 WSEL= 2209.47 RATIO= -.2978
 NAT Q1= 460. RATIOS LOB, CH, ROB= .2109 .7619 .0272 WSEL= 2209.47

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .67

3470 ENCROACHMENT STATIONS= 2822.0 2907.0 TYPE= 4 TARGET= .238
 CROSS SECTION 500 ORIGINAL JMM

500.000	6.23	2209.13	.00	2208.57	2210.23	1.11	1.29	.26	2207.20
2800.0	.0	2800.0	.0	.0	331.7	.0	30.3	13.6	2206.60
.16	.00	8.44	.00	.000	.040	.000	.000	2202.90	2822.00
.009078	220.	220.	220.	2	0	0	.00	85.00	2907.00

*SECNO 510.000

2800 NAT Q1= 359.22 WSEL= 2213.32 ENC Q1= 549.63 WSEL= 2214.22 RATIO= -.5300
 NAT Q1= 827. RATIOS LOB, CH, ROB= .3357 .6643 .0000 WSEL= 2214.22

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRISW	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= 680.0 980.0 TYPE= 4 TARGET= .336

CROSS SECTION 510 RANCHO DESTINO

Modeled Top of Road from JMM Workmap

510.000	4.26	2213.56	.00	2213.32	2213.93	.37	3.62	.07	2213.20
2800.0	.0	2800.0	.0	.0	572.3	.0	35.5	15.5	2215.80
.19	.00	4.89	.00	.000	.040	.000	.000	2209.30	680.00
.005919	500.	500.	500.	3	0	0	.00	255.05	935.05

*SECNO 580.000

2800 NAT Q1= 237.26 WSEL= 2221.17 ENC Q1= 310.28 WSEL= 2222.07 RATIO= -.3077

NAT Q1= 564. RATIOS LOB, CH, ROB= .4503 .5497 .0000 WSEL= 2222.07

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 580.0 900.0 TYPE= 4 TARGET= .450

CROSS SECTION 580 HAVEN ROAD

Modeled Top of Road from JMM Workmap

580.000	3.62	2221.42	2221.42	2221.17	2222.35	.93	6.62	.17	2223.00
2800.0	.0	2800.0	.0	.0	361.3	.0	42.7	19.0	2224.10
.22	.00	7.75	.00	.000	.040	.000	.000	2217.80	619.51
.019744	670.	670.	670.	13	15	0	.00	199.65	819.16

*SECNO 600.000

2800 NAT Q1= 213.37 WSEL= 2222.84 ENC Q1= 349.90 WSEL= 2223.74 RATIO= -.6399

NAT Q1= 373. RATIOS LOB, CH, ROB= .0620 .9380 .0000 WSEL= 2223.74

3470 ENCROACHMENT STATIONS= 2670.0 2805.0 TYPE= 4 TARGET= .062

CROSS SECTION 600 ORIGINAL JMM

600.000	3.98	2223.28	.00	2222.84	2224.18	.90	1.82	.00	2222.00
2800.0	.0	2800.0	.0	.0	368.4	.0	43.7	19.5	2224.40
.22	.00	7.60	.00	.000	.040	.000	.000	2219.30	2670.00
.010465	130.	130.	130.	2	0	0	.00	128.60	2798.60

*SECNO 610.000

2800 NAT Q1= 349.92 WSEL= 2229.43 ENC Q1= 517.58 WSEL= 2230.33 RATIO= -.4791

NAT Q1= 877. RATIOS LOB, CH, ROB= .4095 .5904 .0001 WSEL= 2230.33

SECNO	DEPTH	CWSEL	CRIS	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

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 500.0 1030.0 TYPE= 4 TARGET= .410
CROSS SECTION 610 GILES ROAD
Modeled Top of Road from JMM Workmap

610.000	2.76	2229.16	2229.16	2229.43	2229.82	.66	8.07	.02	2230.20
2800.0	.0	2800.0	.0	.0	430.1	.0	48.8	22.4	2230.20
.25	.00	6.51	.00	.000	.040	.000	.000	2226.40	648.24
.022049	550.	550.	550.	20	19	0	.00	335.34	983.58

CCHV= .300 CEHV= .500

*SECNO 710.000

2800 NAT Q1= 651.77 WSEL= 2231.30 ENC Q1= 978.28 WSEL= 2232.20 RATIO= -.5010
NAT Q1= 978. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2232.20

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.25

3470 ENCROACHMENT STATIONS= 2572.0 2827.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2237.20 ELREA= 2237.20

CROSS SECTIONS 710-730 LAS VEGAS BLVD
From plans and picture 3 - 10x8.5 RCB
Ground points from JMM HEC-2 Adjusted

710.000	5.76	2231.76	.00	2231.30	2231.90	.14	1.92	.15	2231.70
2800.0	.0	2800.0	.0	.0	922.4	.0	58.1	26.5	2229.50
.30	.00	3.04	.00	.000	.040	.000	.000	2226.00	2572.00
.001223	600.	600.	600.	5	0	0	.00	255.00	2827.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3	.015	.50	2.60	.00	8.50	10.00	50.00	8	1	2228.20	2228.20	

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

*SECNO 720.000

2800 NAT Q1= 5261.76 WSEL= 2238.33 ENC Q1= 5261.76 WSEL= 2239.23 RATIO= .0000
NAT Q1= 6266. RATIOS LOB, CH, ROB= .0386 .8327 .1287 WSEL= 2239.23

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 = 5.59

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2239.55	2239.31	6.45	176.	2619.	1.071	255.0	2237.70	297.

3470 ENCROACHMENT STATIONS=	2572.0	2831.1	TYPE=	4	TARGET=	.160
720.000	12.33	2238.33	.00	2238.33	2238.35	.02
2800.0	.0	2783.4	16.6	.0	2599.5	35.7
.31	.00	1.07	.46	.000	.040	.040
.000039	50.	50.	50.	2	0	0
						.00
						259.11
						2831.11

CCHV= .100 CEHV= .300

*SECNO 730.000

2800 NAT Q1=	5258.78	WSEL=	2238.34	ENC Q1=	5258.78	WSEL=	2239.24	RATIO=	.0000
NAT Q1=	6269.	RATIOS LOB, CH, ROB=	.0386	.8326	.1288	WSEL=	2239.24		

3470 ENCROACHMENT STATIONS=	2572.0	2830.6	TYPE=	4	TARGET=	.161
730.000	12.33	2238.33	.00	2238.34	2238.35	.02
2800.0	.0	2786.2	13.8	.0	2600.2	31.5
.34	.00	1.07	.44	.000	.040	.040
.000039	100.	100.	100.	0	0	0
						.00
						258.63
						2830.63

*SECNO 800.000

2800 NAT Q1=	363.05	WSEL=	2249.49	ENC Q1=	383.17	WSEL=	2250.39	RATIO=	-.0554
NAT Q1=	578.	RATIOS LOB, CH, ROB=	.1159	.6629	.2212	WSEL=	2250.39		

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2549.0	2593.0	TYPE=	4	TARGET=	.337
	CROSS SECTIONS 800-900		ORIGINAL JMM			
800.000	6.14	2248.54	2248.54	2249.49	2251.07	2.53
2800.0	.0	2800.0	.0	.0	219.3	.0
.37	.00	12.77	.00	.000	.040	.000
.015722	1650.	1650.	1650.	20	8	0
						.00
						44.00
						2593.00

SECNO	DEPTH	CWSEL	CRWS	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 900.000

2800 NAT Q1= 308.83 WSEL= 2257.22 ENC Q1= 325.43 WSEL= 2258.12 RATIO= -.0537
 NAT Q1= 619. RATIOS LOB, CH, ROB= .0345 .5256 .4399 WSEL= 2258.12

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 2339.0 2428.0 TYPE= 4 TARGET= .474

CROSS SECTIONS 900-930

I-15

From plans and picture 4 - 12x4 RCB

Top of road from JMM workmap

900.000	5.81	2258.01	.00	2257.22	2259.02	1.01	7.79	.15	2257.00
2800.0	.0	2800.0	.0	.0	347.2	.0	124.7	34.2	2257.70
.40	.00	8.06	.00	.000	.040	.000	.000	2252.20	2339.00
.008293	700.	700.	700.	4	0	0	.00	89.00	2428.00

CCHV= .300 CEHV= .500

*SECNO 910.000

2800 NAT Q1= 3885.69 WSEL= 2264.15 ENC Q1= 3885.69 WSEL= 2265.05 RATIO= .0000
 NAT Q1= 5807. RATIOS LOB, CH, ROB= .4730 .0730 .4540 WSEL= 2265.05

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2543.3 3270.0 TYPE= 4 TARGET= .331

910.000	4.87	2264.07	2264.07	2264.15	2264.09	.01	.10	.30	2259.20
2800.0	1297.0	321.9	1181.1	1327.8	292.3	1261.2	135.9	37.0	2259.20
.48	.98	1.10	.94	.040	.040	.040	.000	2259.20	2543.33
.000106	300.	300.	300.	20	12	0	.00	726.65	3269.97

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4		.016	.50	2.60	.00	4.00	12.00	150.00	8	1	2259.30	2259.30

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 920.000

2800 NAT Q1= 7974.87 WSEL= 2265.91 ENC Q1= 7974.87 WSEL= 2266.81 RATIO= .0000
 NAT Q1= 10597. RATIOS LOB, CH, ROB= .5080 .0619 .4301 WSEL= 2266.81

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.28

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2270.73	2271.18	1.81	1379.	1420.	.597	192.0	2264.70	943.

3470 ENCROACHMENT STATIONS=	2358.7	3319.0	TYPE=	4	TARGET=	.247			
920.000	6.70	2265.90	.00	2265.91	2265.90	.00	1.81	.00	2259.20
2800.0	1422.4	239.7	1137.9	2749.5	401.7	2161.1	150.0	39.9	2259.20
.56	.52	.60	.53	.040	.040	.040	.000	2259.20	2358.71
.000020	150.	150.	150.	2	0	0	.00	960.25	3318.96

*SECNO 930.000

2800 NAT Q1=	7977.53	WSEL=	2265.91	ENC Q1=	7977.53	WSEL=	2266.81	RATIO=	.0000
NAT Q1=	10600.	RATIOS LOB, CH, ROB=	.5080	.0619	.4301	WSEL=	2266.81		

3470 ENCROACHMENT STATIONS=	2358.7	3318.9	TYPE=	4	TARGET=	.247			
930.000	6.70	2265.90	.00	2265.91	2265.90	.00	.00	.00	2259.20
2800.0	1422.5	239.7	1137.9	2750.3	401.8	2161.5	162.2	42.1	2259.20
.62	.52	.60	.53	.040	.040	.040	.000	2259.20	2358.66
.000020	100.	100.	100.	0	0	0	.00	960.28	3318.95

CCHV= .100 CEHV= .300

*SECNO 960.000

2800 NAT Q1=	180.98	WSEL=	2273.68	ENC Q1=	521.06	WSEL=	2274.58	RATIO=	-1.8791
NAT Q1=	521.	RATIOS LOB, CH, ROB=	.0000	1.0000	.0000	WSEL=	2274.58		

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2282.0	3147.0	TYPE=	4	TARGET=	.000
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
960.000	1.49	2273.69	2273.69	2273.68	2274.20	.51	.08	.15	2275.60
2800.0	.0	2800.0	.0	.0	487.2	.0	228.5	58.4	2275.40
.66	.00	5.75	.00	.000	.040	.000	.000	2272.20	2300.58
.023269	1000.	975.	1000.	20	14	0	.00	476.34	2855.33

THIS RUN EXECUTED 26AUG92 17:52:58

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

SOUTH BRANCH - BLUE DIAM

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
*	18.460	.00	.00	.00	2139.20	1860.00	2146.25	2146.25	2148.52	64.47	12.08	153.95	231.66
*	18.460	.00	.00	.00	2139.20	1860.00	2146.25	2146.25	2148.52	64.43	12.08	153.99	231.72
*	24.000	128.00	.00	.00	2145.00	1860.00	2151.03	2151.03	2153.24	64.06	11.92	156.06	232.39
*	24.000	128.00	.00	.00	2145.00	1860.00	2151.03	2151.03	2153.24	64.03	11.92	156.09	232.45
*	25.400	140.00	.00	.00	2146.00	1860.00	2153.28	2153.28	2155.94	42.65	14.58	153.10	284.82
*	25.400	140.00	.00	.00	2146.00	1860.00	2153.68	2153.68	2157.65	54.22	17.05	129.92	252.60
*	25.410	10.00	.00	.00	2146.00	1860.00	2155.04	2155.04	2159.60	44.21	17.15	108.45	279.73
*	25.410	10.00	.00	.00	2146.00	1860.00	2155.07	2155.07	2159.60	92.51	17.09	108.86	193.39
*	25.420	650.00	2175.00	2170.00	2160.00	1860.00	2174.41	.00	2176.21	9.32	10.75	173.01	609.21
*	25.420	650.00	2175.00	2170.00	2160.00	1860.00	2174.40	.00	2176.20	26.77	10.76	172.83	359.50
*	25.430	50.00	.00	.00	2160.00	1860.00	2176.16	.00	2176.39	3.86	4.67	526.59	946.27
*	25.430	50.00	.00	.00	2160.00	1860.00	2176.11	.00	2176.40	4.43	4.99	461.32	884.07
*	100.000	350.00	.00	.00	2173.00	1860.00	2180.14	2180.14	2183.08	126.40	2.27	137.37	165.44
*	100.000	350.00	.00	.00	2173.00	1860.00	2180.30	2180.30	2183.83	138.23	2.41	125.60	158.20
*	110.000	200.00	.00	.00	2177.00	1860.00	2184.24	.00	2184.92	33.45	6.70	308.21	321.59
*	110.000	200.00	.00	.00	2177.00	1860.00	2185.14	.00	2185.71	25.04	6.05	307.45	371.67
*	120.000	70.00	2183.30	2182.20	2178.20	1860.00	2184.03	2182.66	2184.42	33.70	5.94	657.25	320.39
*	120.000	70.00	2183.30	2182.20	2178.20	1860.00	2184.13	.00	2185.15	62.62	8.18	243.18	235.05
*	130.000	100.00	.00	.00	2178.20	1860.00	2184.53	.00	2184.61	9.69	3.38	1197.91	597.40
*	130.000	100.00	.00	.00	2178.20	1860.00	2185.29	.00	2185.47	12.51	4.09	644.79	525.95
*	200.000	550.00	.00	.00	2190.50	1860.00	2191.88	2191.88	2192.21	189.45	5.06	424.77	135.14
*	200.000	550.00	.00	.00	2190.50	1860.00	2192.00	2192.00	2192.55	234.70	5.96	311.93	121.41

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
†	400.000	600.00	.00	.00	2193.40	1860.00	2199.30	.00	2200.05	92.90	6.92	273.05	192.98
*	400.000	600.00	.00	.00	2193.40	1860.00	2199.52	.00	2200.17	78.92	6.47	287.47	209.37
†	410.000	140.00	.00	.00	2200.60	1860.00	2202.40	2202.40	2202.89	245.45	5.64	329.94	118.72
†	410.000	140.00	.00	.00	2200.60	1860.00	2202.40	2202.40	2202.89	245.27	5.64	330.03	118.77
†	440.000	350.00	.00	.00	2201.00	2220.00	2205.47	2205.06	2205.67	42.22	5.49	672.06	341.65
†	440.000	350.00	.00	.00	2201.00	2220.00	2206.16	.00	2206.66	65.36	7.18	407.36	274.60
	480.000	400.00	.00	.00	2205.70	2800.00	2207.41	.00	2207.55	51.30	2.87	911.93	390.94
†	480.000	400.00	.00	.00	2205.70	2800.00	2208.45	.00	2208.68	40.99	3.73	735.94	437.35
*	500.000	220.00	.00	.00	2202.90	2800.00	2208.57	2208.57	2209.60	107.42	8.58	389.71	270.16
†	500.000	220.00	.00	.00	2202.90	2800.00	2209.13	.00	2210.23	90.78	8.44	331.66	293.87
	510.000	500.00	.00	.00	2209.30	2800.00	2213.32	.00	2213.63	60.76	4.69	704.99	359.22
	510.000	500.00	.00	.00	2209.30	2800.00	2213.56	.00	2213.93	59.19	4.89	572.32	363.95
*	580.000	670.00	.00	.00	2217.80	2800.00	2221.17	2221.17	2221.66	139.27	6.21	535.26	237.26
*	580.000	670.00	.00	.00	2217.80	2800.00	2221.42	2221.42	2222.35	197.44	7.75	361.34	199.27
†	600.000	130.00	.00	.00	2219.30	2800.00	2222.84	2222.84	2224.07	172.20	8.92	316.32	213.37
	600.000	130.00	.00	.00	2219.30	2800.00	2223.28	.00	2224.18	104.65	7.60	368.43	273.71
†	610.000	550.00	.00	.00	2226.40	2800.00	2229.43	.00	2229.61	64.03	3.65	830.04	349.92
•	610.000	550.00	.00	.00	2226.40	2800.00	2229.16	2229.16	2229.82	220.49	6.51	430.05	188.56
†	710.000	600.00	.00	.00	2226.00	2800.00	2231.30	.00	2231.49	18.46	3.47	806.17	651.77
*	710.000	600.00	.00	.00	2226.00	2800.00	2231.76	.00	2231.90	12.23	3.04	922.45	800.52
†	720.000	50.00	2237.70	2236.70	2226.00	2800.00	2238.33	.00	2238.35	.28	.93	3337.31	5261.76
†	720.000	50.00	2237.70	2236.70	2226.00	2800.00	2238.33	.00	2238.35	.39	1.07	2635.19	4477.28
	730.000	100.00	.00	.00	2226.00	2800.00	2238.34	.00	2238.35	.28	.93	3335.64	5258.78
	730.000	100.00	.00	.00	2226.00	2800.00	2238.33	.00	2238.35	.39	1.07	2631.78	4474.97
*	800.000	1650.00	.00	.00	2242.40	2800.00	2249.49	2249.49	2250.55	59.48	8.95	423.63	363.05
*	800.000	1650.00	.00	.00	2242.40	2800.00	2248.54	2248.54	2251.07	157.22	12.77	219.34	223.31
*	900.000	700.00	.00	.00	2252.20	2800.00	2257.22	2257.22	2257.81	82.20	7.02	535.88	308.83
	900.000	700.00	.00	.00	2252.20	2800.00	2258.01	.00	2259.02	82.93	8.06	347.24	307.47
*	910.000	300.00	.00	.00	2259.20	2800.00	2264.15	2264.15	2264.16	.52	.78	4645.50	3885.69
*	910.000	300.00	.00	.00	2259.20	2800.00	2264.07	2264.07	2264.09	1.06	1.10	2881.28	2714.56
•	920.000	150.00	2264.70	2263.30	2259.20	2800.00	2265.91	.00	2265.91	.12	.46	7478.85	7974.87
*	920.000	150.00	2264.70	2263.30	2259.20	2800.00	2265.90	.00	2265.90	.20	.60	5312.36	6194.33
	930.000	100.00	.00	.00	2259.20	2800.00	2265.91	.00	2265.91	.12	.46	7480.51	7977.53
	930.000	100.00	.00	.00	2259.20	2800.00	2265.90	.00	2265.90	.20	.60	5313.67	6196.68

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	960.000	975.00	.00	.00	2272.20	2800.00	2273.68	2273.68	2274.20	239.36	5.80	482.87	180.98
*	960.000	975.00	.00	.00	2272.20	2800.00	2273.69	2273.69	2274.20	232.69	5.75	487.17	183.56

SOUTH BRANCH - BLUE DIAM

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	18.460	1860.00	2146.25	.00	.00	1.25	34.61	.00
*	18.460	1860.00	2146.25	.00	.00	.00	34.62	.00
*	24.000	1860.00	2151.03	.00	4.78	.00	35.99	128.00
*	24.000	1860.00	2151.03	.00	4.78	.00	35.99	128.00
*	25.400	1860.00	2153.28	.00	2.25	.00	29.87	140.00
*	25.400	1860.00	2153.68	.40	2.65	.40	17.92	140.00
*	25.410	1860.00	2155.04	.00	1.76	.00	12.00	10.00
*	25.410	1860.00	2155.07	.03	1.39	.03	12.00	10.00
*	25.420	1860.00	2174.41	.00	19.38	.00	12.00	650.00
*	25.420	1860.00	2174.40	-.01	19.33	-.01	12.00	650.00
*	25.430	1860.00	2176.16	.00	1.75	.00	61.53	50.00
*	25.430	1860.00	2176.11	-.05	1.71	-.05	35.70	50.00
*	100.000	1860.00	2180.14	.00	3.98	.00	23.92	350.00
*	100.000	1860.00	2180.30	.16	4.19	.16	18.15	350.00
*	110.000	1860.00	2184.24	.00	4.10	.00	128.84	200.00
*	110.000	1860.00	2185.14	.90	4.84	.90	41.00	200.00
*	120.000	1860.00	2184.03	.00	-.20	.00	1037.94	70.00
*	120.000	1860.00	2184.13	.10	-1.00	.10	70.93	70.00
*	130.000	1860.00	2184.53	.00	.49	.00	1137.43	100.00
*	130.000	1860.00	2185.29	.76	1.16	.76	235.84	100.00
*	200.000	1860.00	2191.88	.00	7.35	.00	600.32	550.00
*	200.000	1860.00	2192.00	.12	6.71	.12	289.87	550.00
*	400.000	1860.00	2199.30	.00	7.43	.00	116.56	600.00
*	400.000	1860.00	2199.52	.21	7.52	.21	102.00	600.00
*	410.000	1860.00	2202.40	.00	3.09	.00	346.11	140.00
*	410.000	1860.00	2202.40	.00	2.88	.00	346.14	140.00
*	440.000	2220.00	2205.47	.00	3.07	.00	455.00	350.00
*	440.000	2220.00	2206.16	.69	3.76	.69	168.45	350.00
	480.000	2800.00	2207.41	.00	1.94	.00	795.04	400.00
*	480.000	2800.00	2208.45	1.04	2.29	1.04	361.51	400.00
*	500.000	2800.00	2208.57	.00	1.17	.00	212.69	220.00
*	500.000	2800.00	2209.13	.55	.67	.55	85.00	220.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	510.000	2800.00	2213.32	.00	4.75	.00	618.04	500.00
	510.000	2800.00	2213.56	.23	4.43	.23	255.05	500.00
•	580.000	2800.00	2221.17	.00	7.85	.00	474.41	670.00
•	580.000	2800.00	2221.42	.25	7.86	.25	199.65	670.00
*	600.000	2800.00	2222.84	.00	1.66	.00	134.12	130.00
	600.000	2800.00	2223.28	.44	1.86	.44	128.60	130.00
•	610.000	2800.00	2229.43	.00	6.59	.00	738.03	550.00
*	610.000	2800.00	2229.16	-.27	5.88	-.27	335.34	550.00
•	710.000	2800.00	2231.30	.00	1.87	.00	250.02	600.00
•	710.000	2800.00	2231.76	.45	2.59	.45	255.00	600.00
*	720.000	2800.00	2238.33	.00	7.03	.00	571.71	50.00
*	720.000	2800.00	2238.33	-.01	6.57	-.01	259.11	50.00
	730.000	2800.00	2238.34	.00	.00	.00	571.12	100.00
	730.000	2800.00	2238.33	-.01	.00	-.01	258.63	100.00
*	800.000	2800.00	2249.49	.00	11.15	.00	242.92	1650.00
*	800.000	2800.00	2248.54	-.94	10.21	-.94	44.00	1650.00
*	900.000	2800.00	2257.22	.00	7.73	.00	390.35	700.00
	900.000	2800.00	2258.01	.79	9.47	.79	89.00	700.00
*	910.000	2800.00	2264.15	.00	6.93	.00	1528.86	300.00
*	910.000	2800.00	2264.07	-.08	6.06	-.08	726.65	300.00
*	920.000	2800.00	2265.91	.00	1.75	.00	1696.21	150.00
•	920.000	2800.00	2265.90	-.01	1.82	-.01	960.25	150.00
	930.000	2800.00	2265.91	.00	.00	.00	1696.30	100.00
	930.000	2800.00	2265.90	-.01	.00	-.01	960.28	100.00
*	960.000	2800.00	2273.68	.00	7.77	.00	475.88	975.00
*	960.000	2800.00	2273.69	.01	7.79	.01	476.34	975.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	18.460	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	18.460	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	24.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	24.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	24.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	24.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	24.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	24.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	25.400	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.400	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.400	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	25.400	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.400	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.400	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	25.410	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.410	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.410	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	25.410	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.410	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.410	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
JARNING SECNO=	25.420	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
JARNING SECNO=	25.420	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
JARNING SECNO=	25.430	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
JARNING SECNO=	25.430	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	100.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	100.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	100.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	100.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	100.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	100.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
JARNING SECNO=	110.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
JARNING SECNO=	110.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	120.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	120.000	PROFILE=	1	WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=	120.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	120.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
JARNING SECNO=	130.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	130.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	200.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	200.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	200.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=	200.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	200.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	200.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	400.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	400.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	410.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	410.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	410.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	410.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	410.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	440.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	440.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	480.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	500.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	500.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	500.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	580.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	580.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=	610.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=	800.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	800.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	800.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=	900.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	910.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	910.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	910.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	910.000	PROFILE=	2	CRITICAL DEPTH ASSUMED

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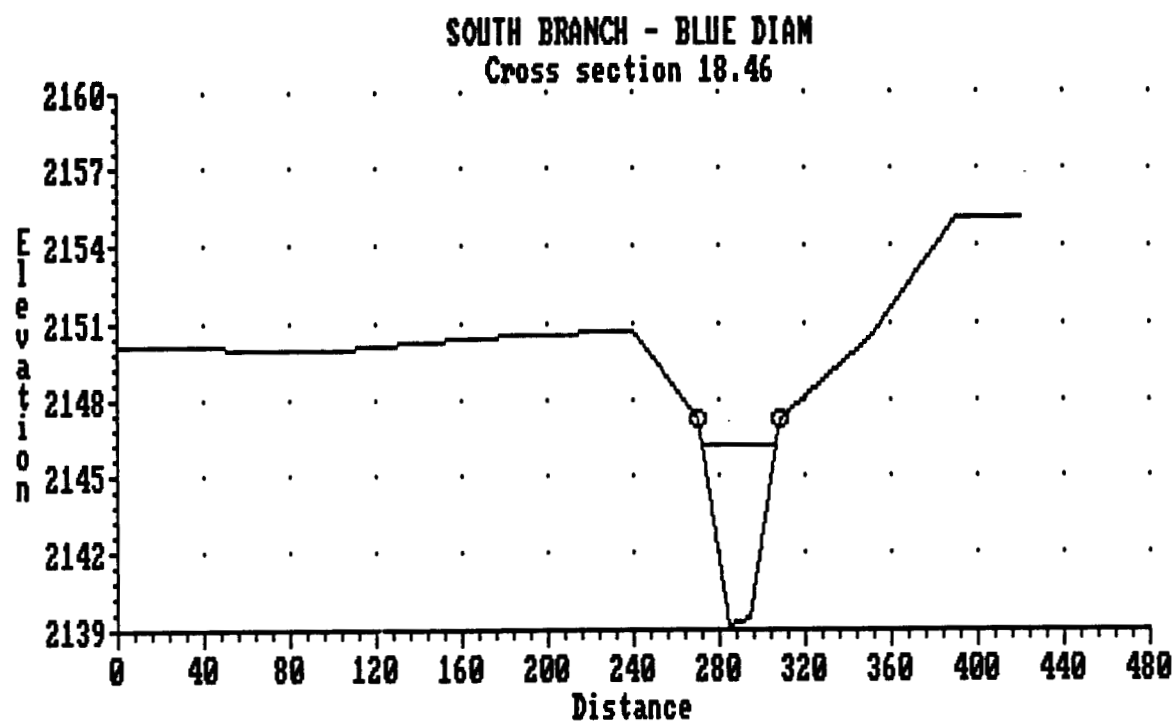
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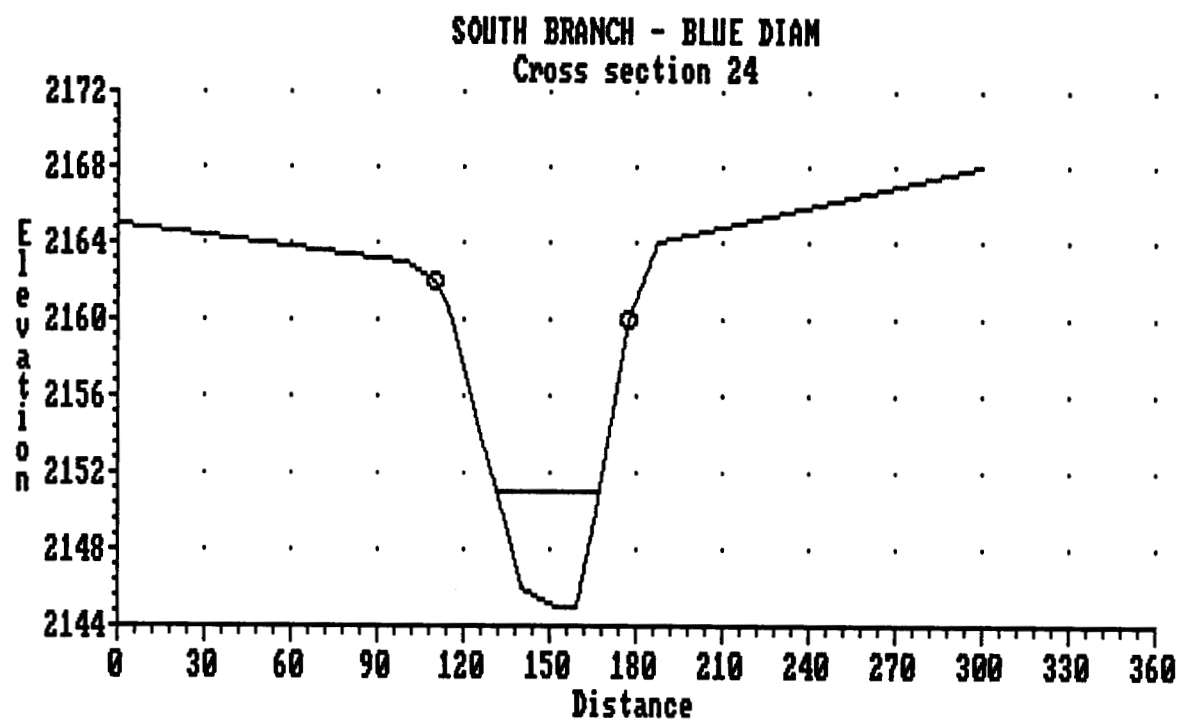
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CAUTION SECNO= 960.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 960.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 960.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

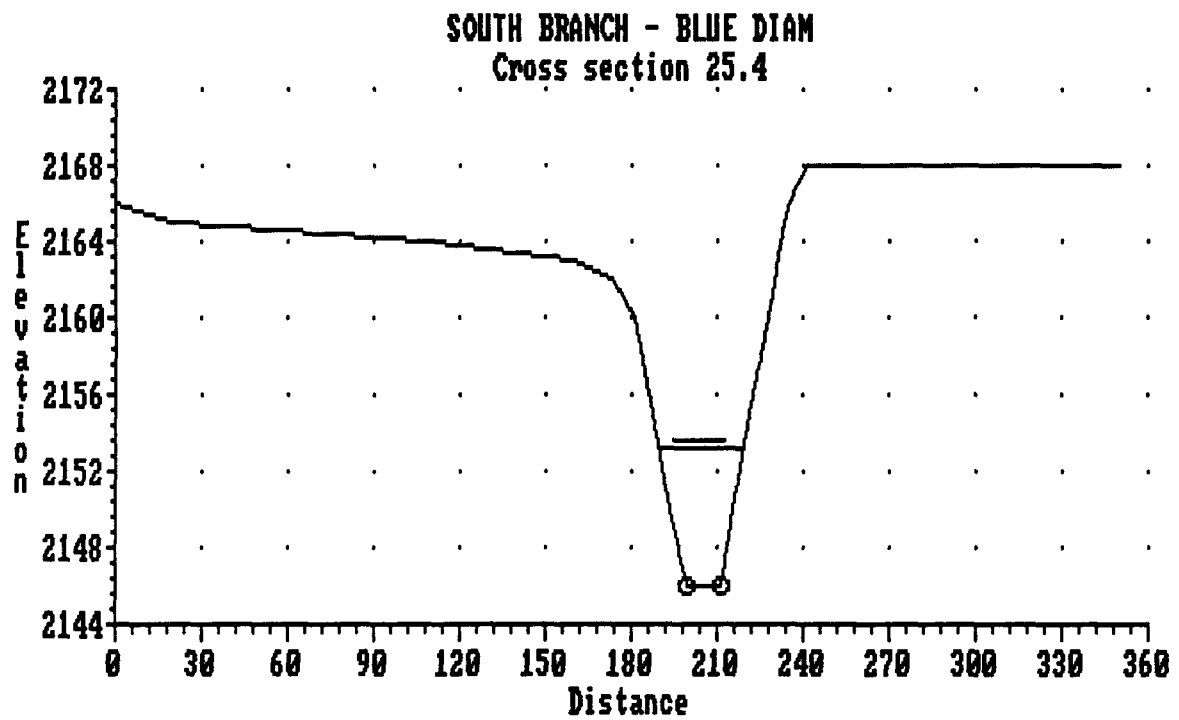
FLOODWAY DATA, SOUTH BRANCH - BLUE DIAM
PROFILE NO. 2

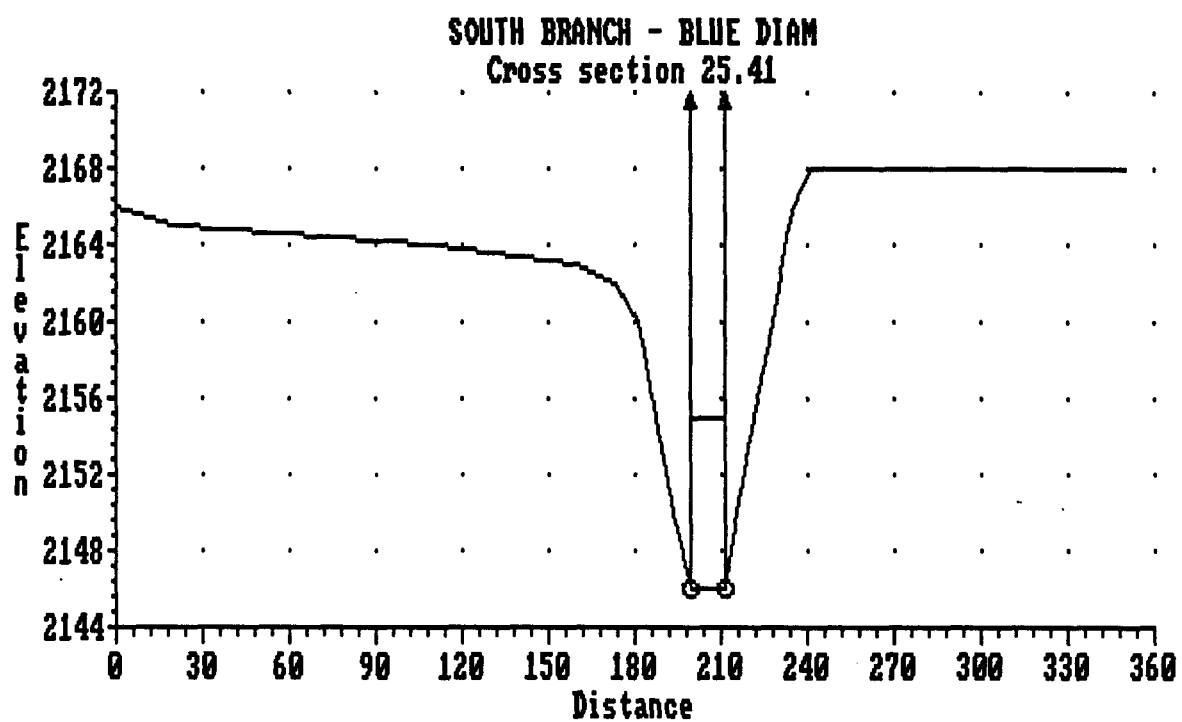
STATION	----- FLOODWAY -----			WATER SURFACE ELEVATION		
	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
18.460	35.	154.	12.1	2146.3	2146.3	.0
24.000	36.	156.	11.9	2151.0	2151.0	.0
25.400	18.	130.	14.3	2153.7	2153.3	.4
25.410	12.	109.	17.1	2155.0	2155.0	.0
25.420	12.	173.	10.8	2174.4	2174.4	.0
25.430	36.	461.	4.0	2176.1	2176.2	-.1
100.000	18.	126.	14.8	2180.3	2180.1	.2
110.000	41.	307.	6.0	2185.1	2184.2	.9
120.000	71.	243.	7.6	2184.1	2184.0	.1
130.000	236.	645.	2.9	2185.3	2184.5	.8
200.000	290.	312.	6.0	2192.0	2191.9	.1
400.000	102.	287.	6.5	2199.5	2199.3	.2
410.000	346.	330.	5.6	2202.4	2202.4	.0
440.000	168.	407.	5.4	2206.2	2205.5	.7
480.000	362.	736.	3.8	2208.4	2207.4	1.0
500.000	85.	332.	8.4	2209.2	2208.6	.6
510.000	255.	572.	4.9	2213.5	2213.3	.2
580.000	200.	361.	7.7	2221.4	2221.2	.2
600.000	129.	368.	7.6	2223.2	2222.8	.4
610.000	335.	430.	6.5	2229.1	2229.4	-.3
710.000	255.	922.	3.0	2231.8	2231.3	.5
720.000	259.	2635.	1.1	2238.3	2238.3	.0
730.000	259.	2632.	1.1	2238.3	2238.3	.0
800.000	44.	219.	12.8	2248.6	2249.5	-.9
900.000	89.	347.	8.1	2258.0	2257.2	.8
910.000	727.	2881.	1.0	2264.1	2264.2	-.1
920.000	960.	5312.	.5	2265.9	2265.9	.0
930.000	960.	5314.	.5	2265.9	2265.9	.0
960.000	555.	487.	5.7	2273.7	2273.7	.0

Normal program termination

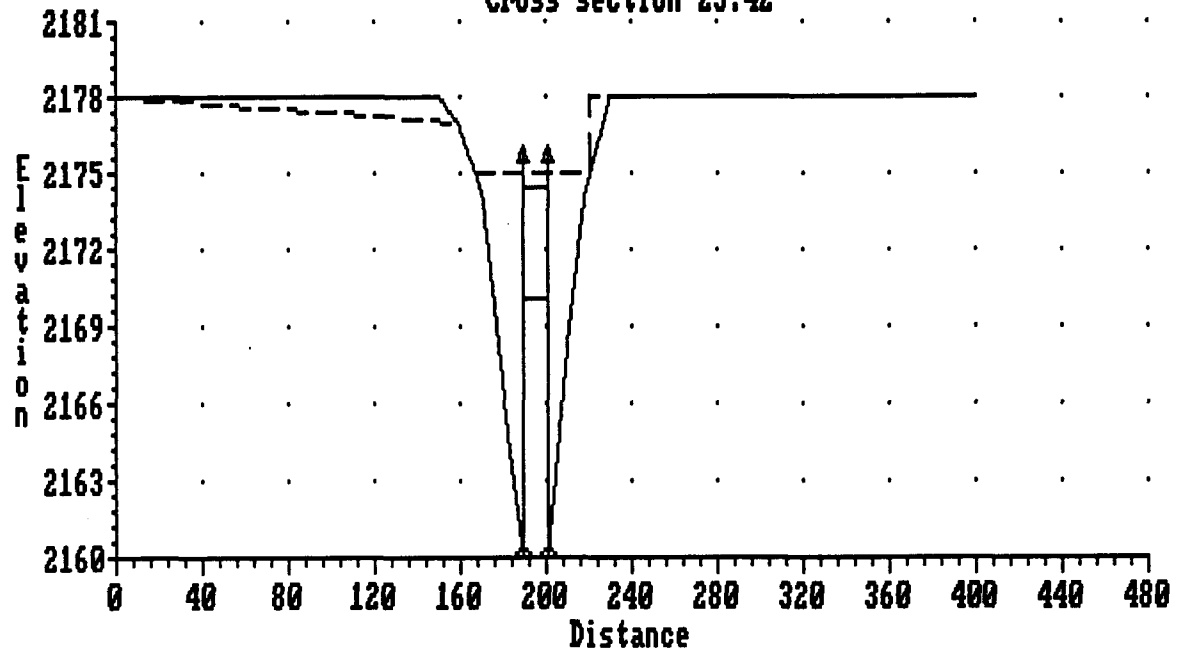




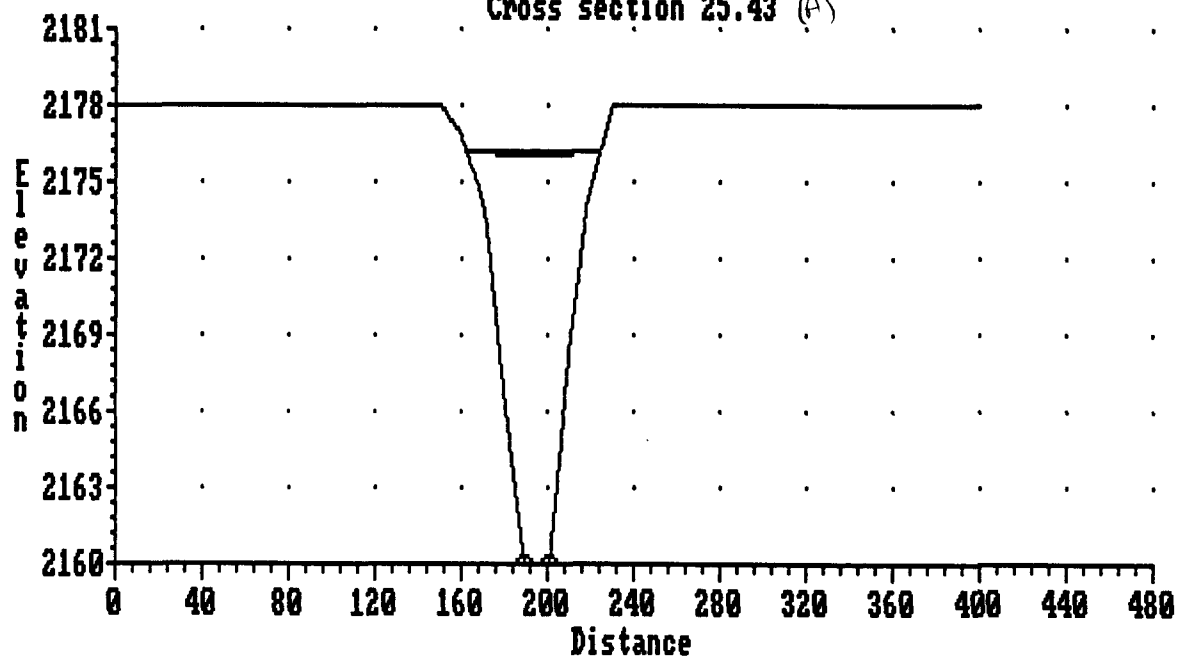


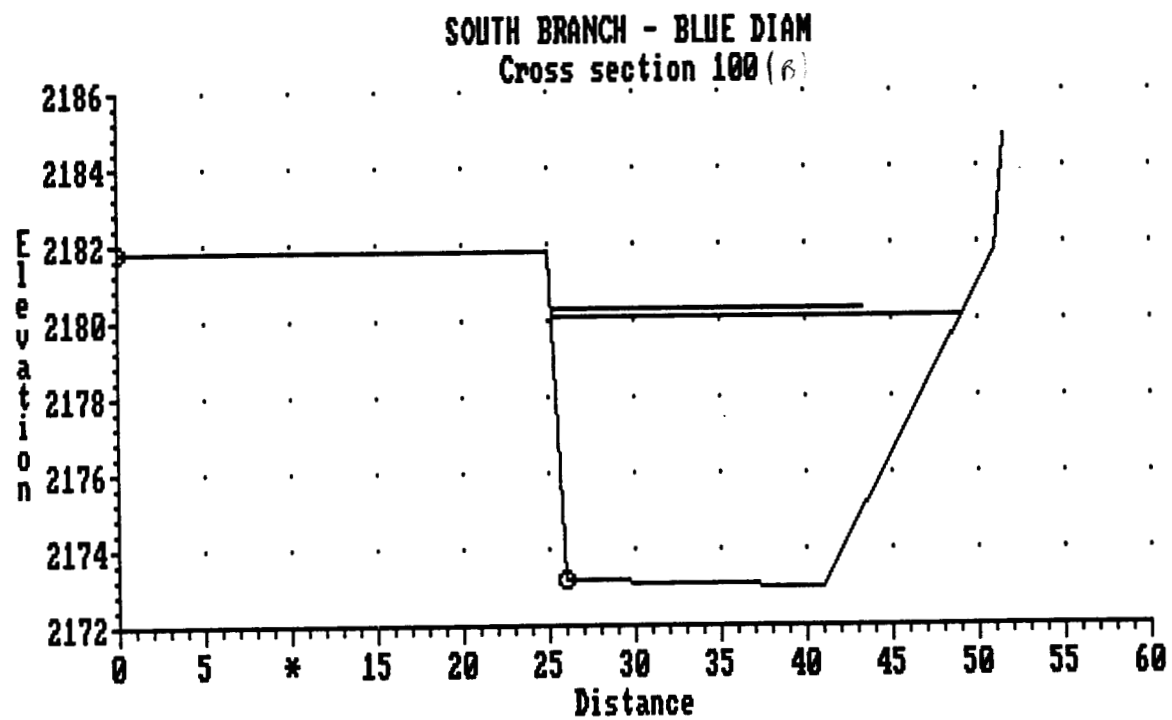


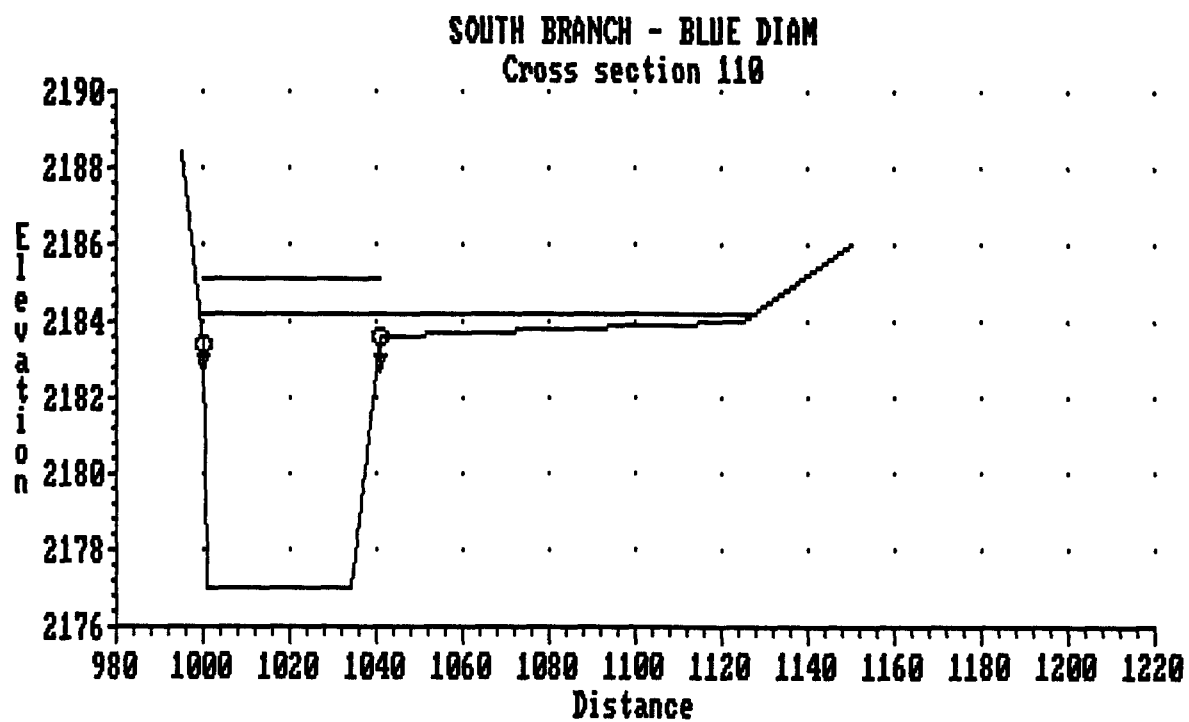
SOUTH BRANCH - BLUE DIAM
Cross section 25.42

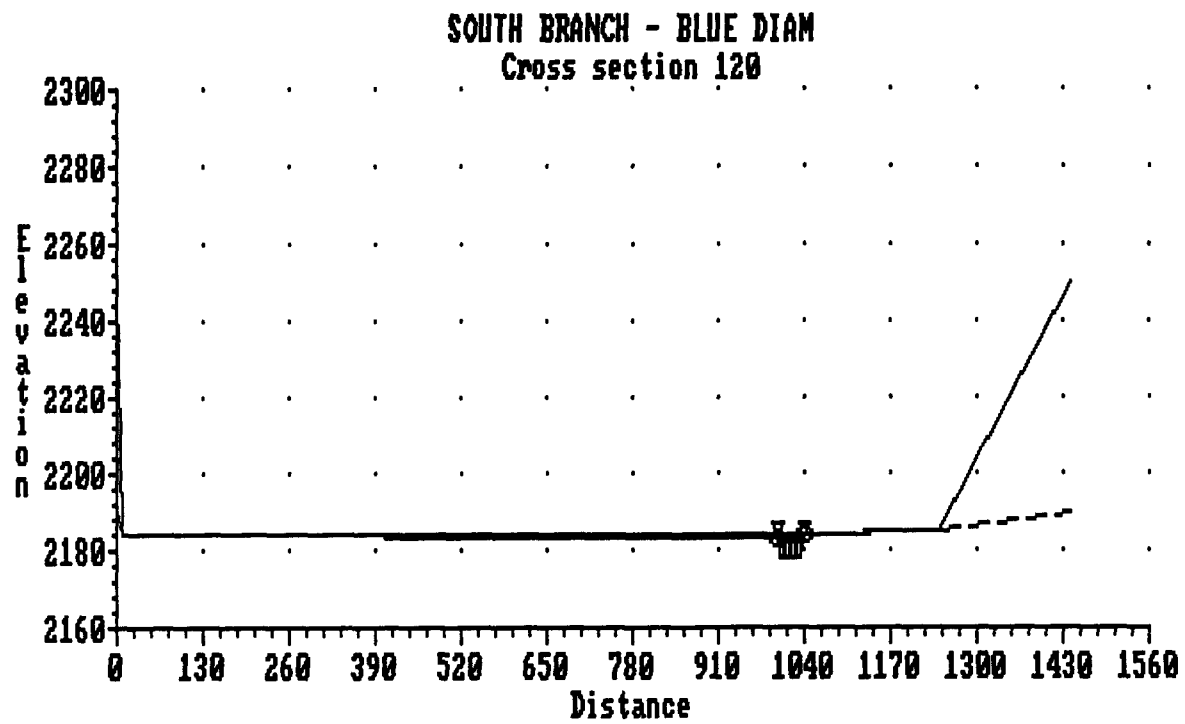


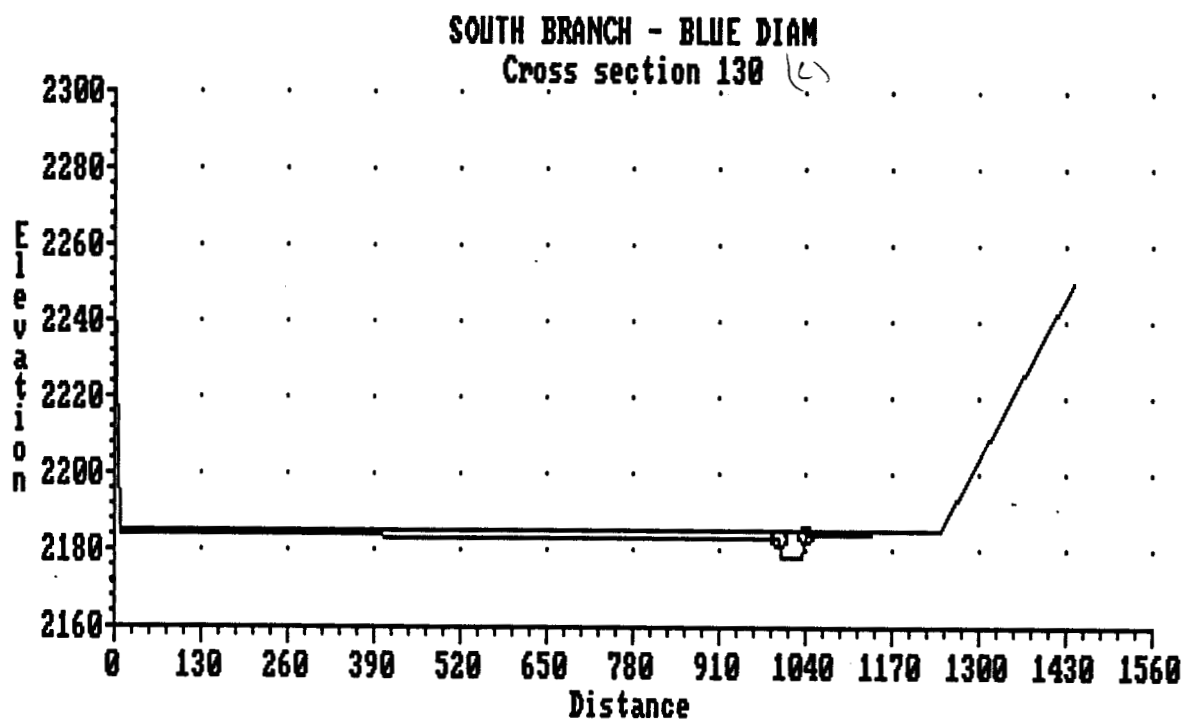
SOUTH BRANCH - BLUE DIAM
Cross section 25.43 (A)

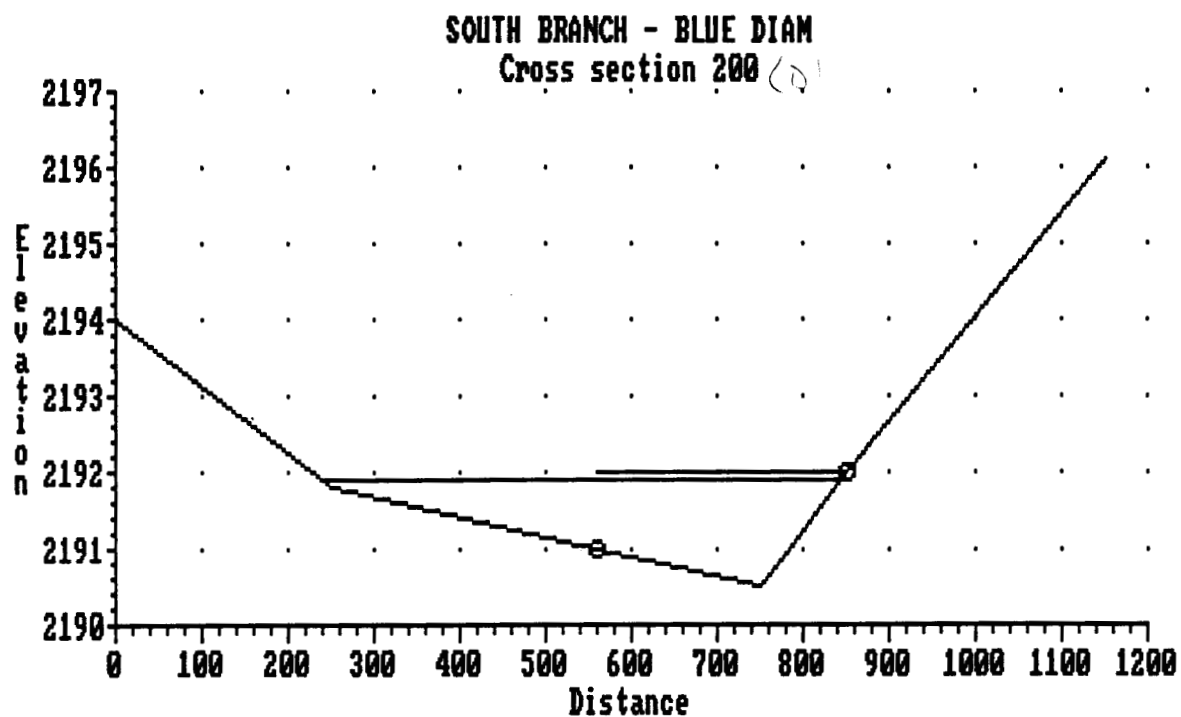


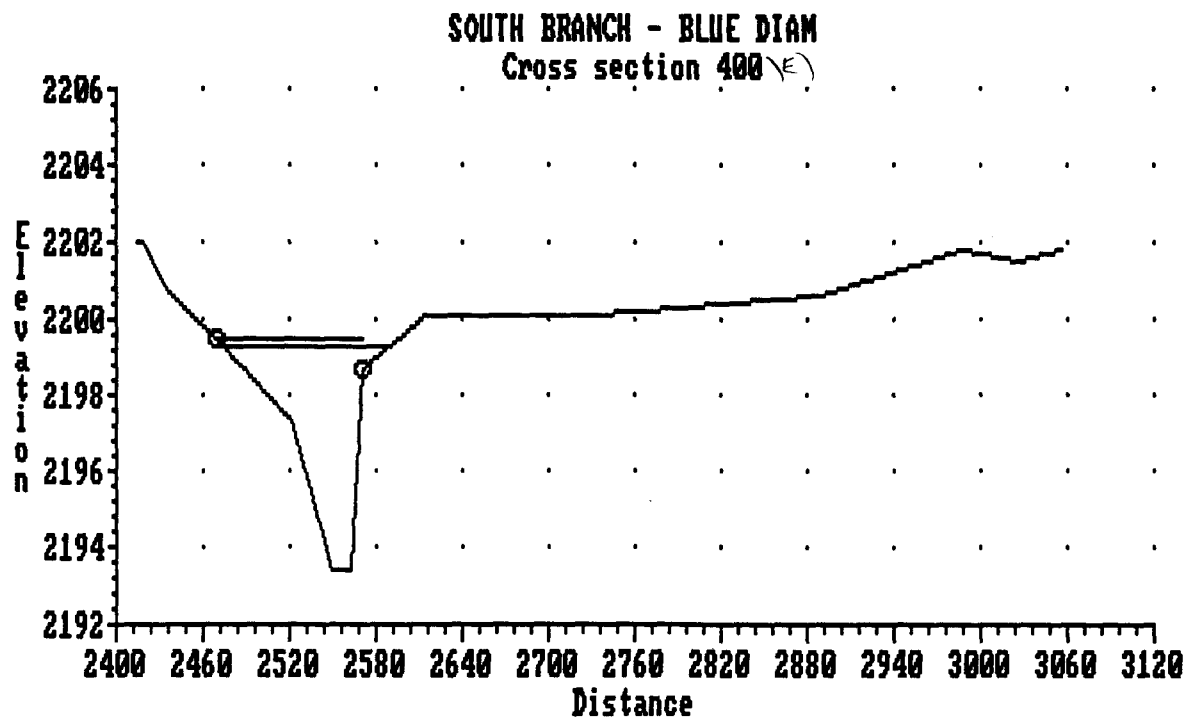


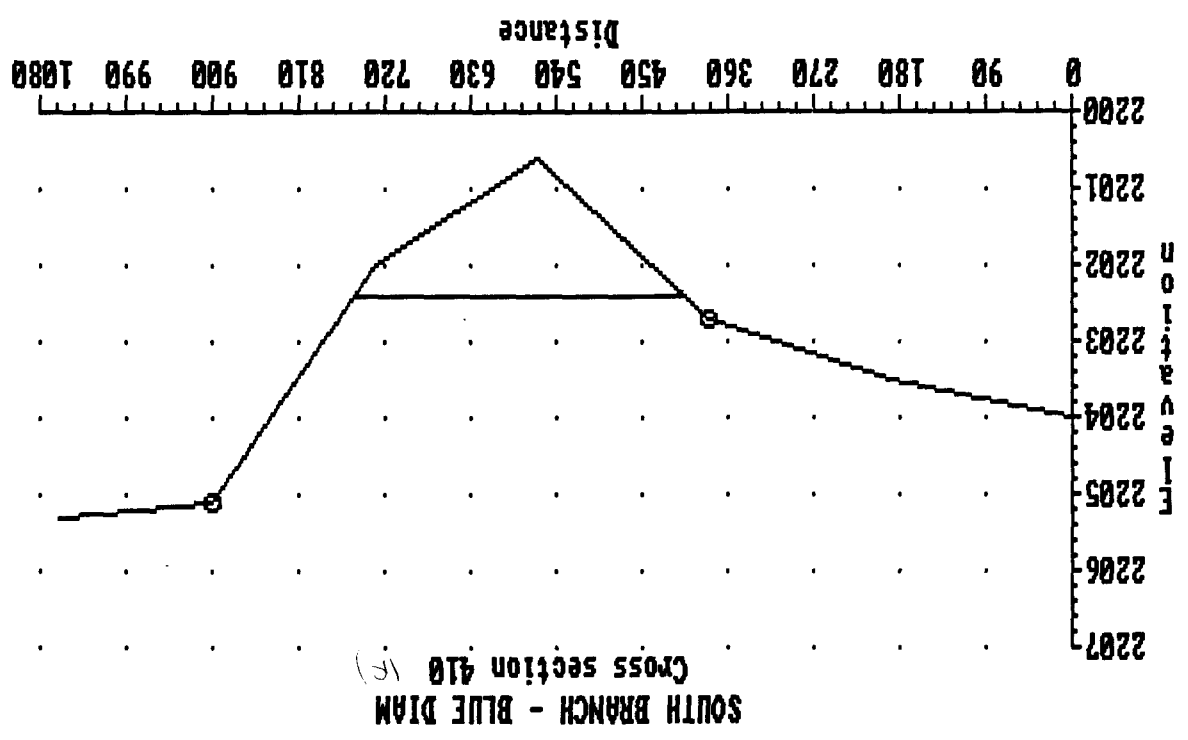


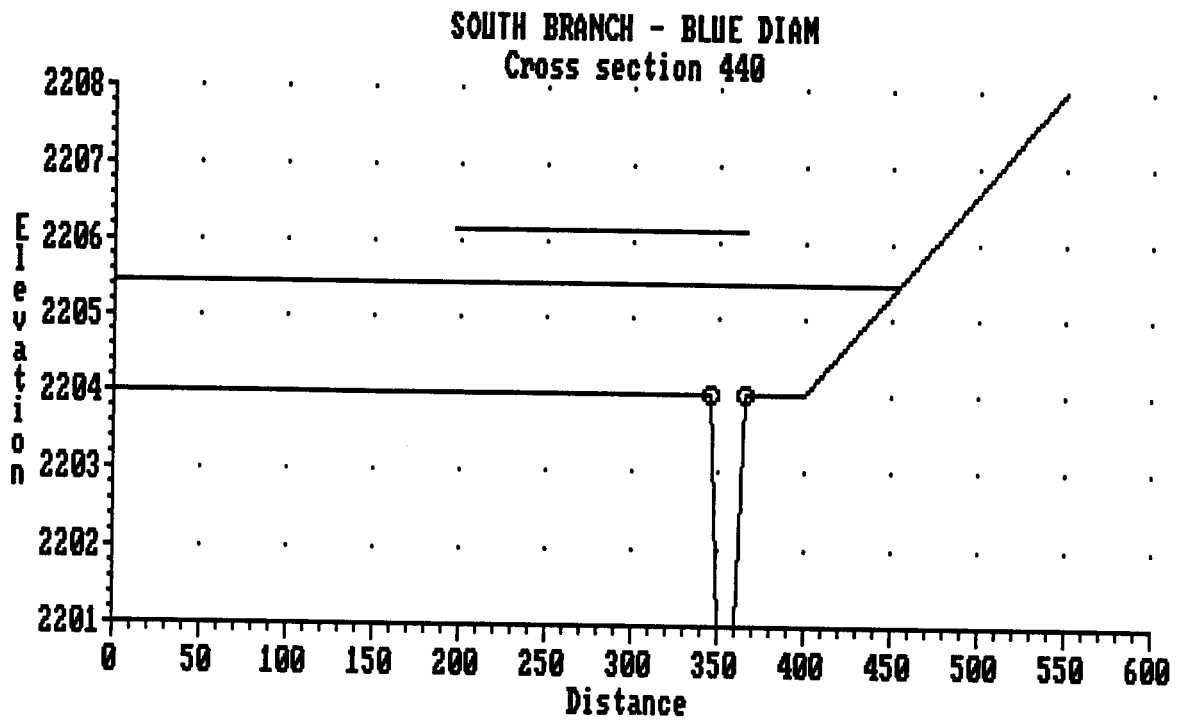


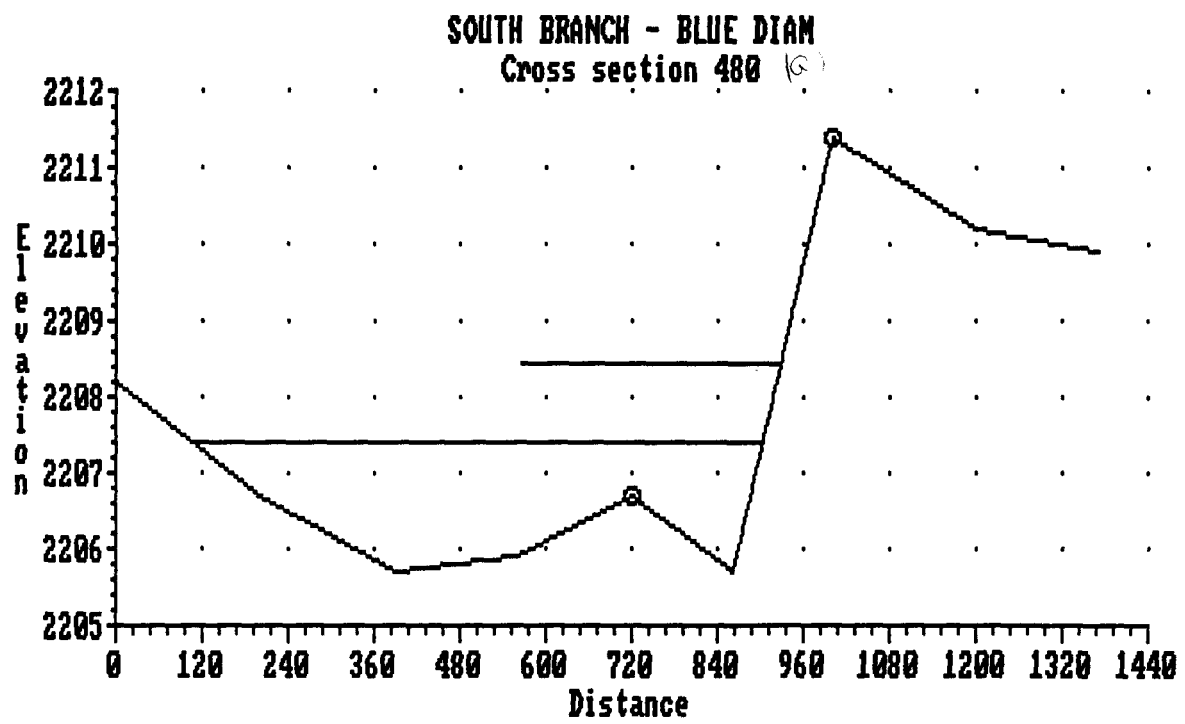


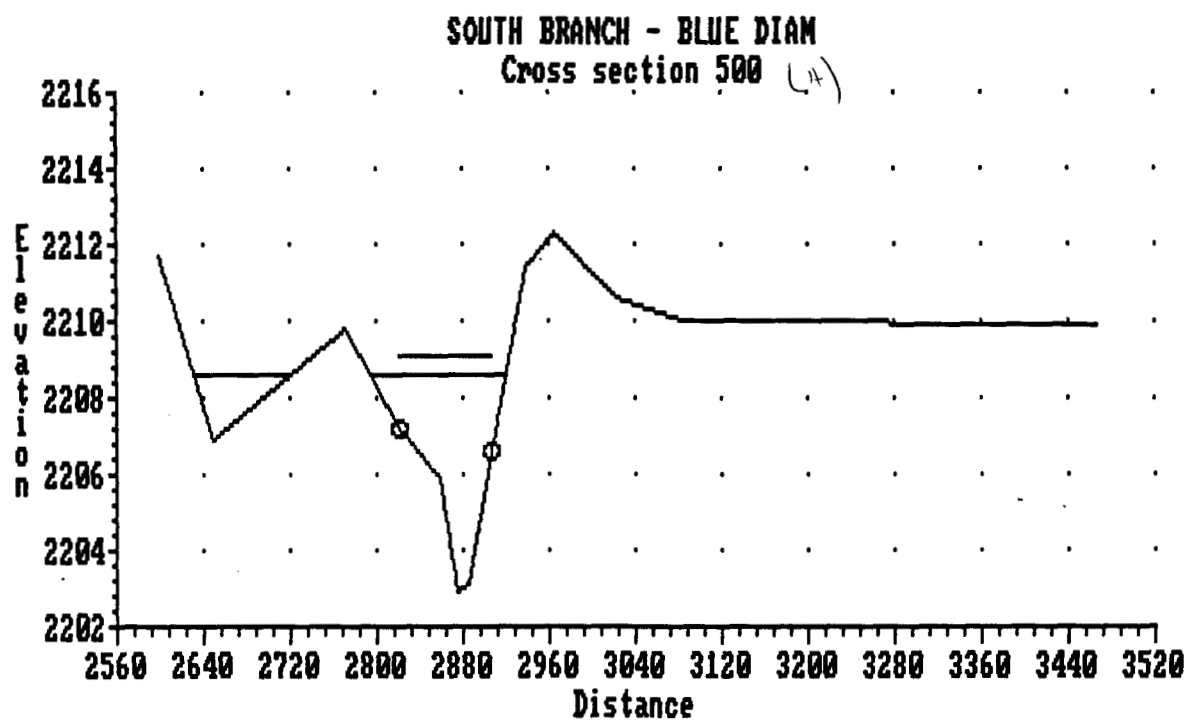


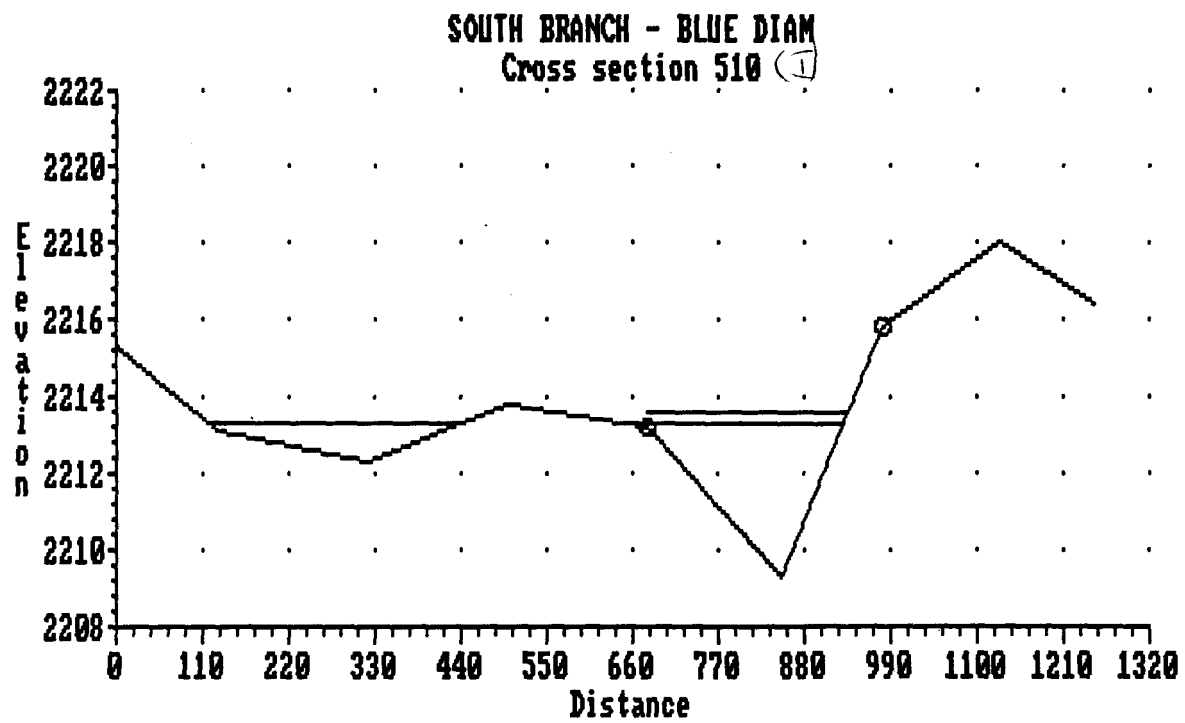


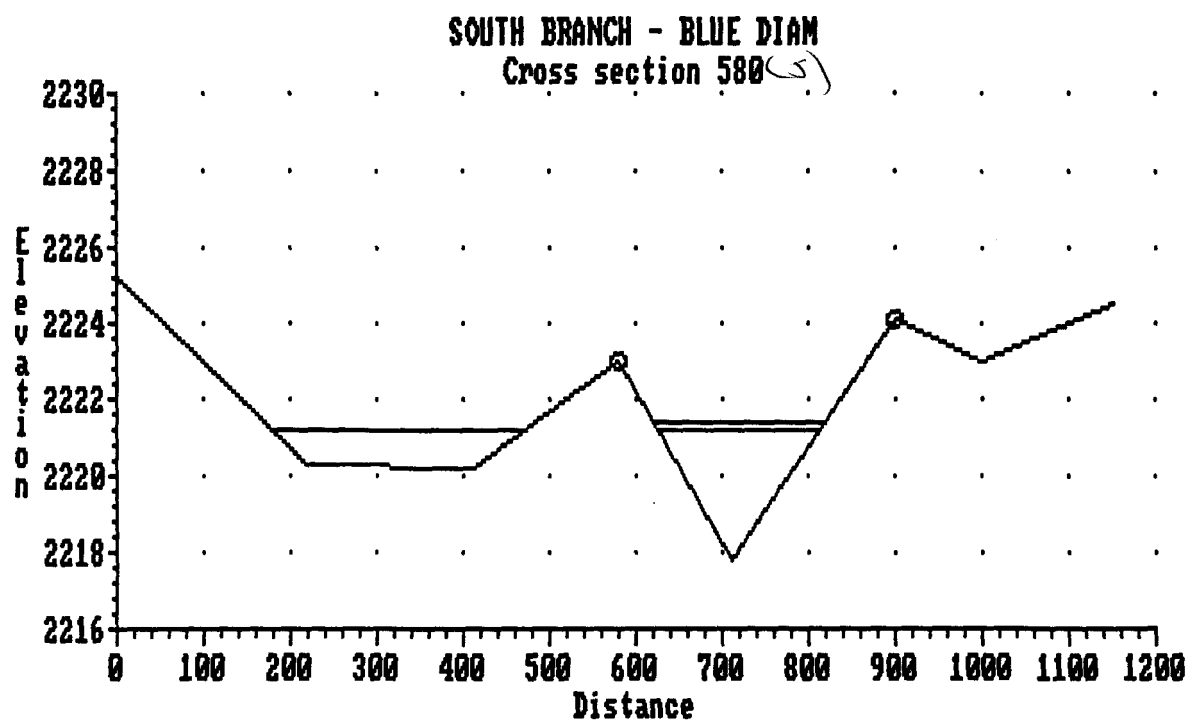


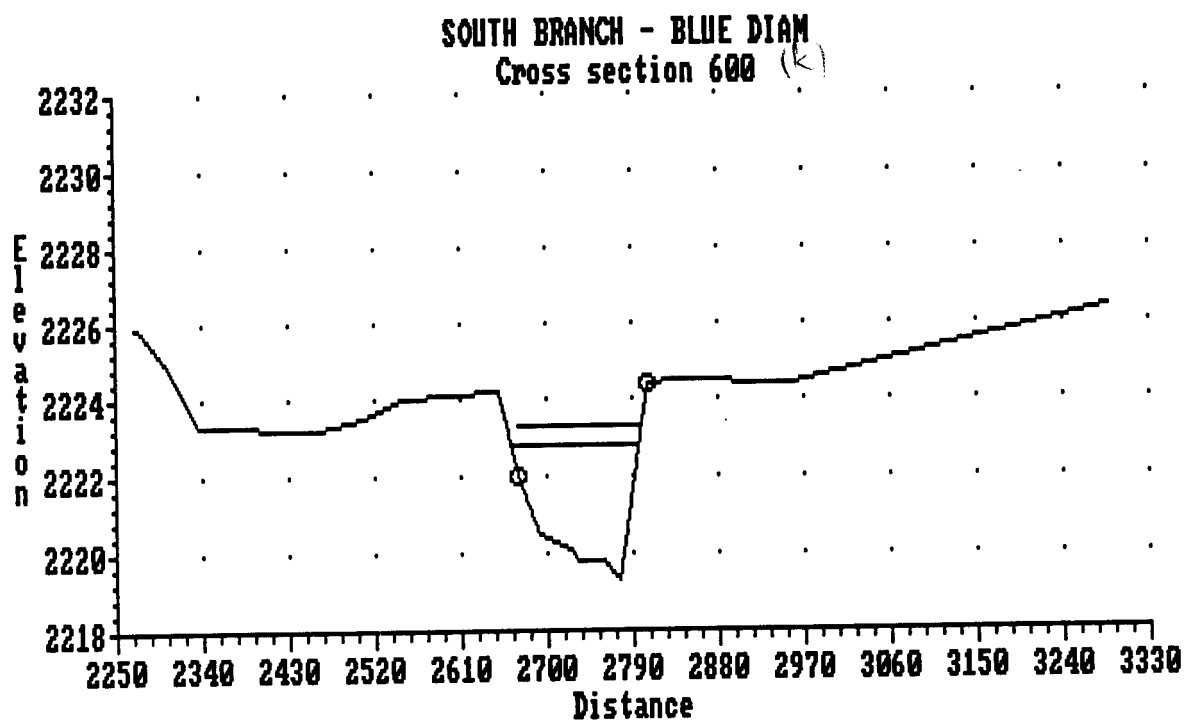


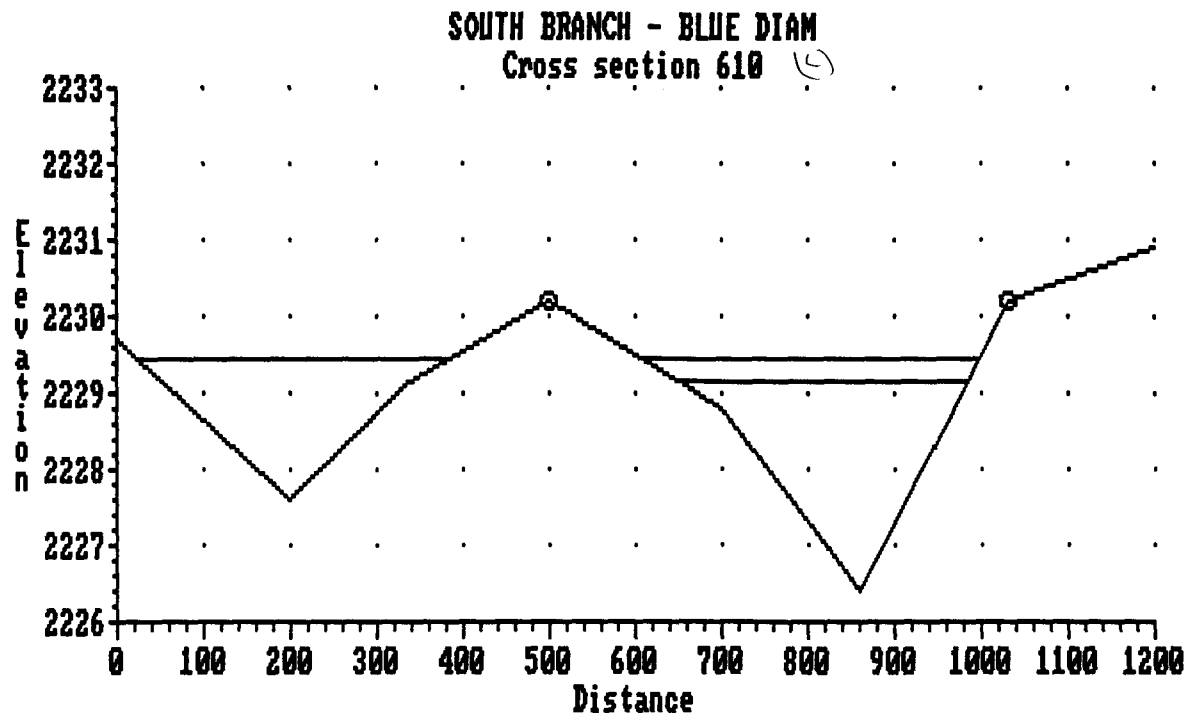


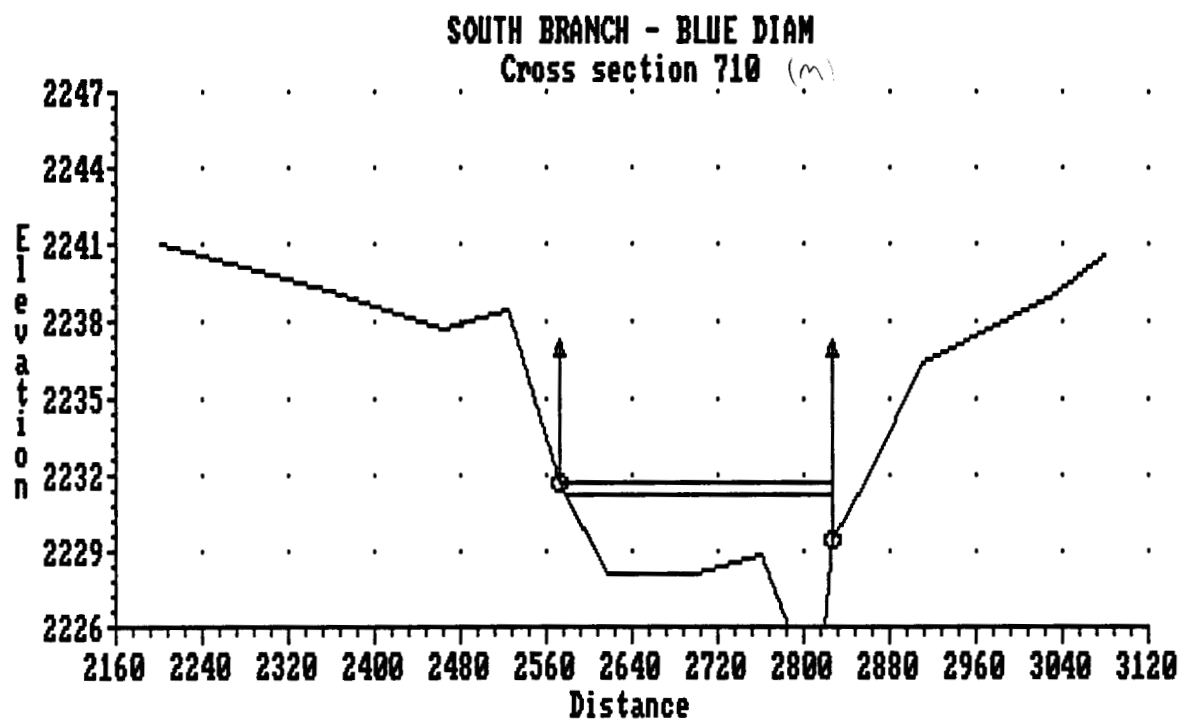


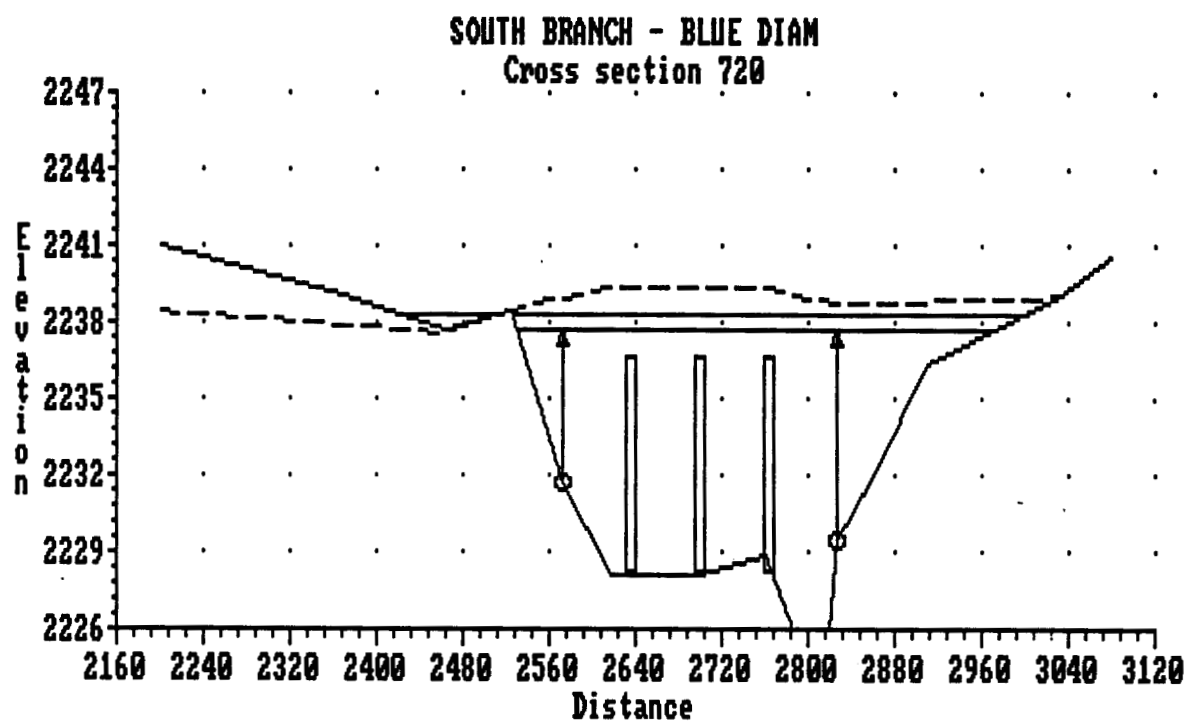


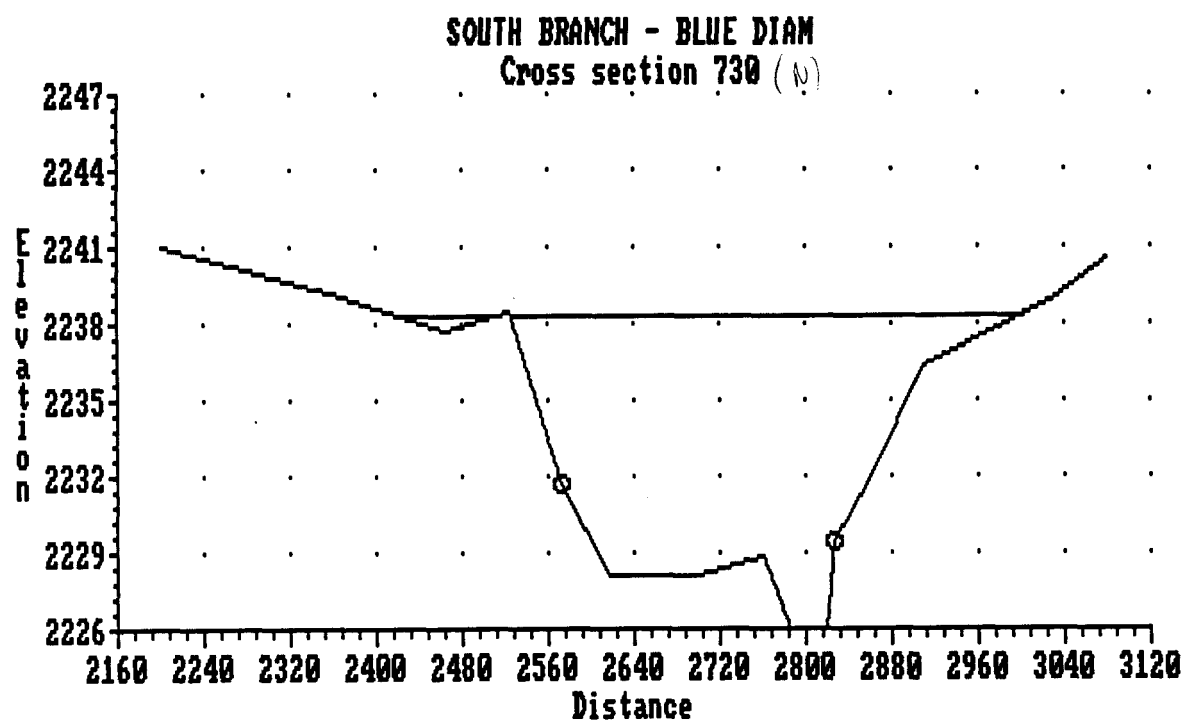


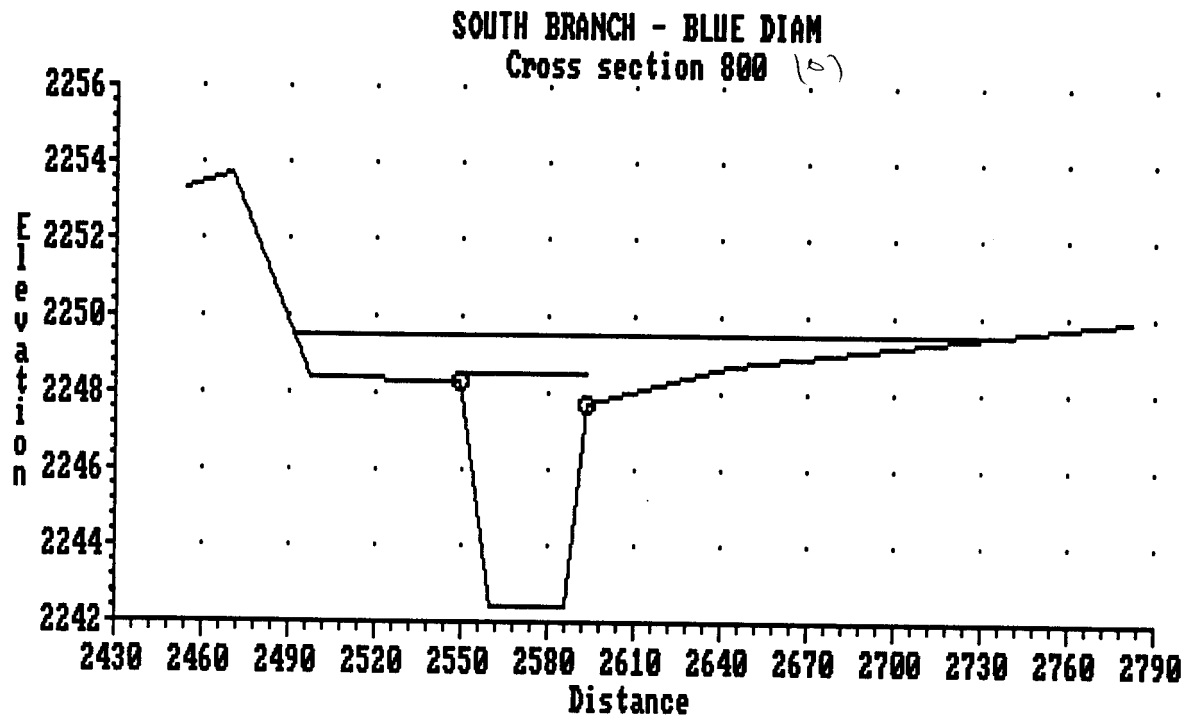


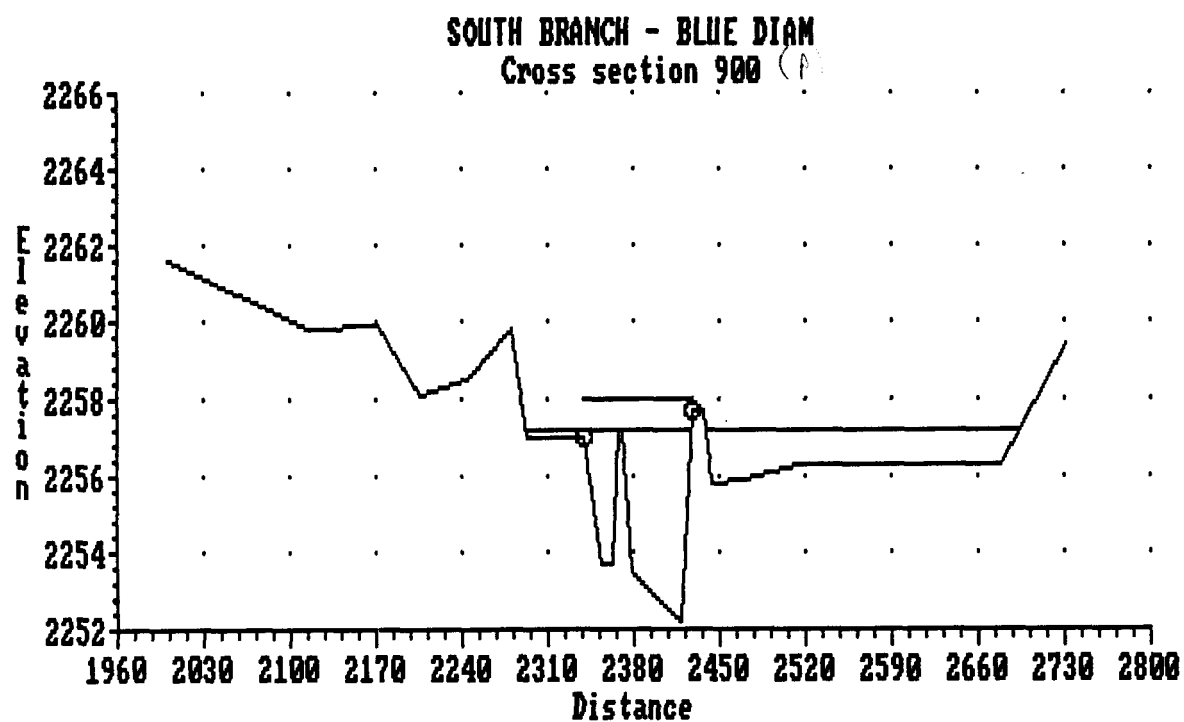


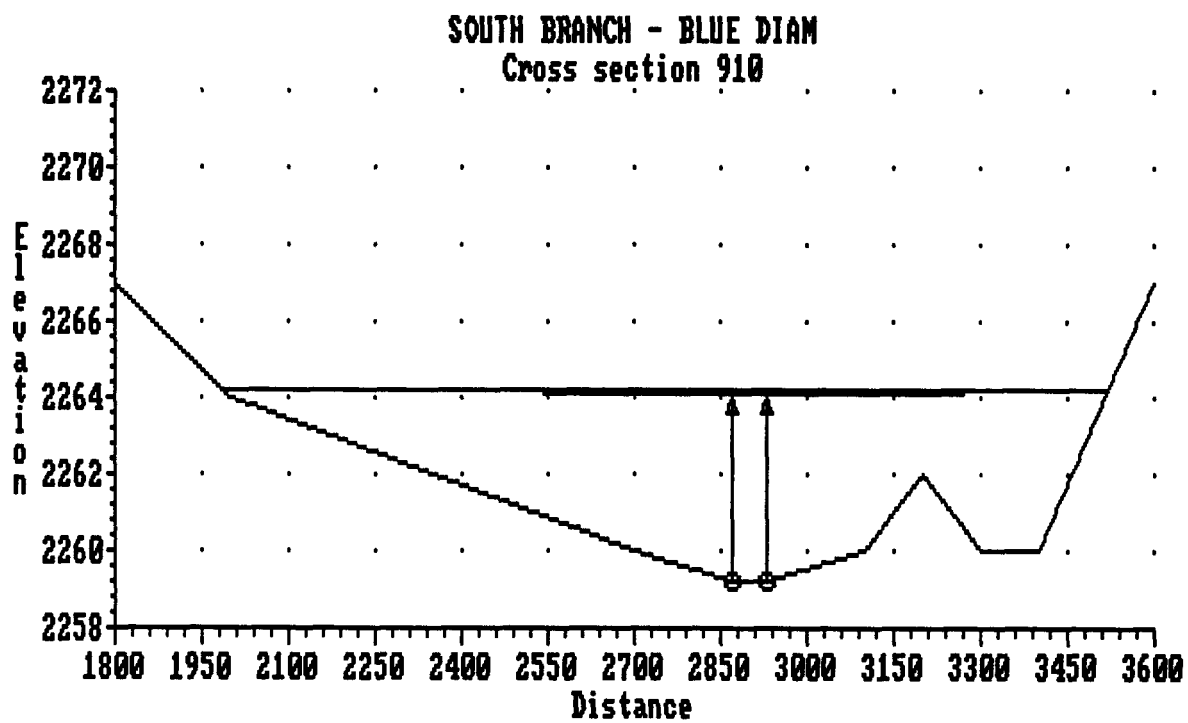


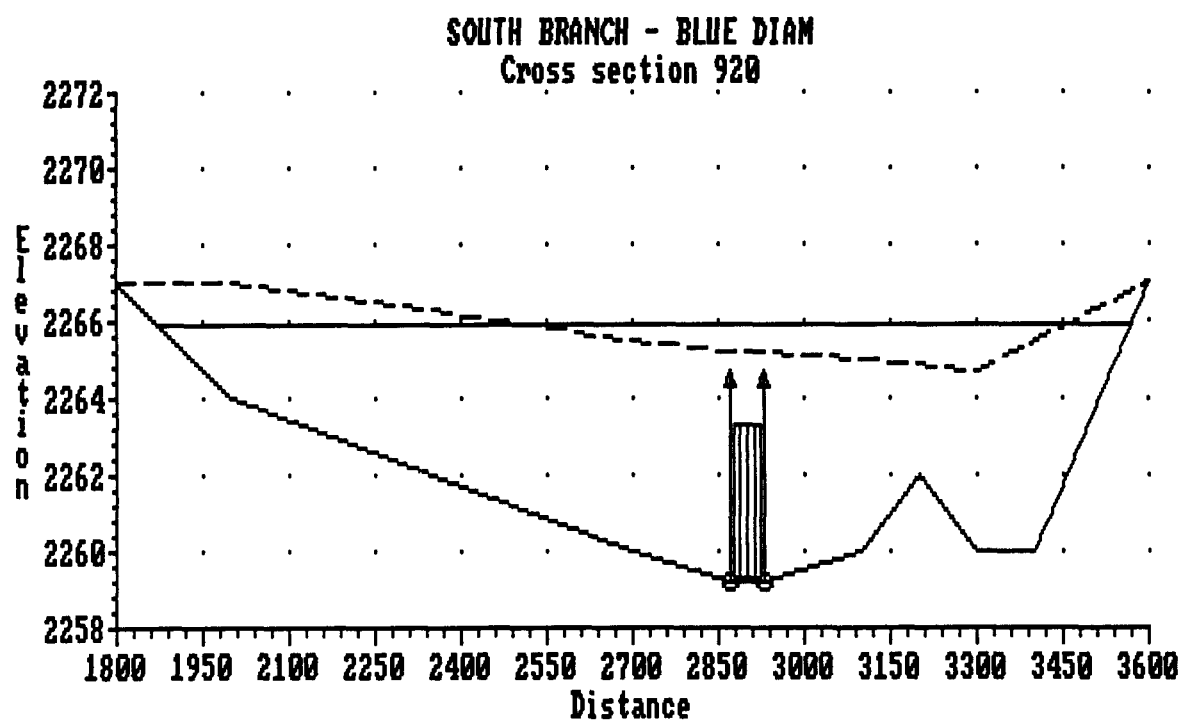


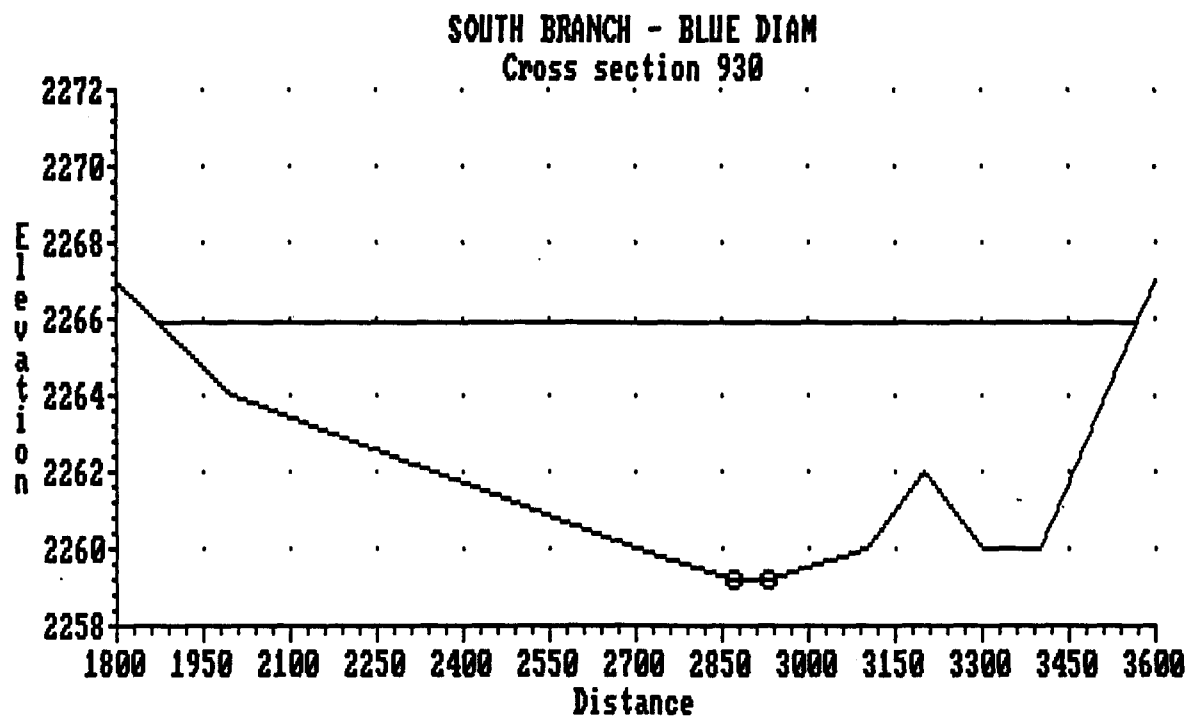


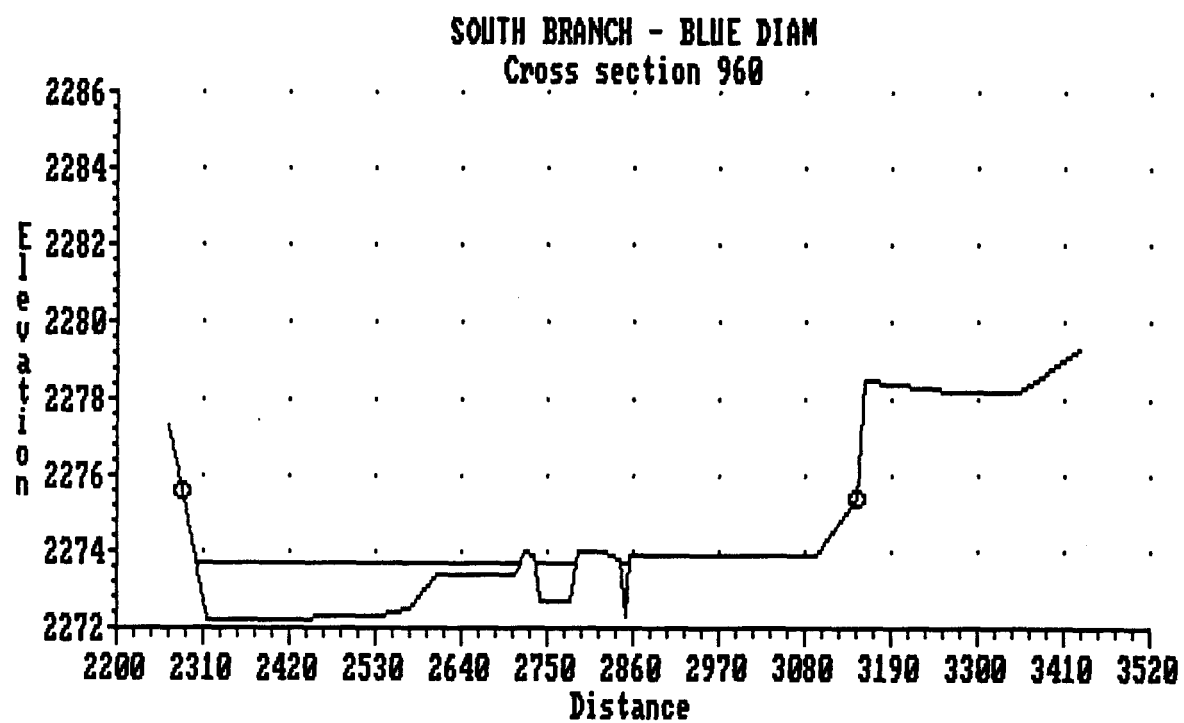












VOLUME 1

OFFICE COPY
Regional Flood Control District

DUCK CREEK HYDROLOGIC UNIT

TECHNICAL DATA APPENDIX

CLARK COUNTY, NEVADA

FLOOD INSURANCE STUDY

PREPARED FOR

**OFFICE OF RISK ASSESSMENT
FEDERAL INSURANCE ADMINISTRATION
FEDERAL EMERGENCY MANAGEMENT AGENCY**

PREPARED BY

**MICHAEL BAKER JR., INC.
CONSULTING ENGINEERS
ALEXANDRIA, VIRGINIA**

Revised MAY 1993

DUCK CREEK HYDROLOGIC UNIT
TECHNICAL DATA APPENDIX

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(UNION PACIFIC RAILROAD TO INTERSTATE 15)

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- IV-2 Calculations/Backup Data
- IV-3 HEC-2 Runs

I. BLUE DIAMOND AND UNNAMED FANS

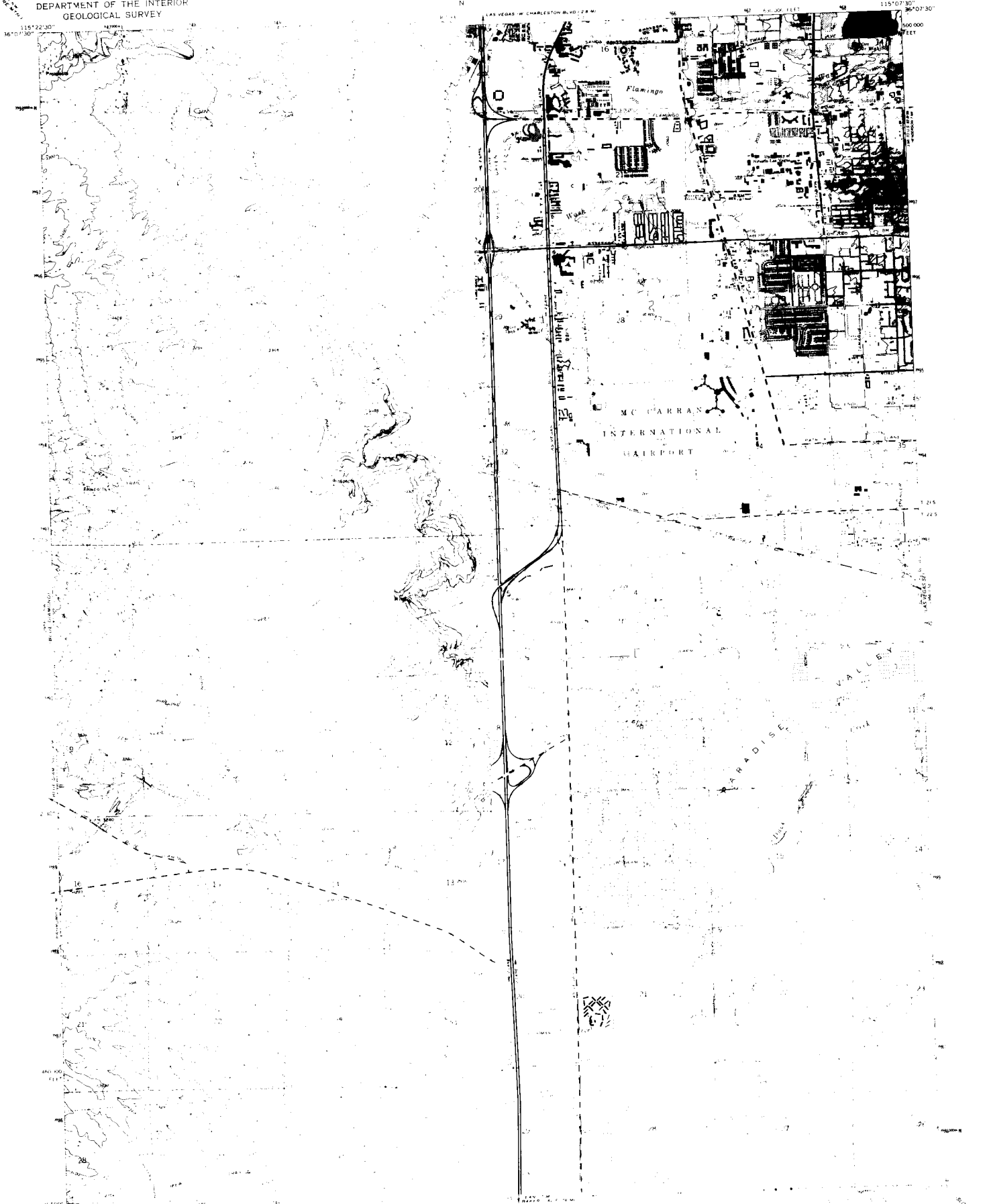
I. BLUE DIAMOND AND UNNAMED FANS

Attachment I-1 shows the locations of the fan apexes. The areas subject to alluvial fan flooding were delineated based on the information shown on the accompanying draft work maps, site investigation, and recent aerial photographs. The recent aerial photographs are shown on maps entitled "Las Vegas," dated April 1991, and prepared by Cooper Aerial of Nevada at a scale of 1 inch = 400 feet.

The flood frequency curves developed at the apexes of the fans are log-normal. Standard deviations for the curves were found using 100-year discharge values determined by James M. Montgomery Consulting Engineers, Inc. (JMM). The 100-year discharge values are listed in the Technical Appendix to JMM's report entitled "Las Vegas Valley Flood Insurance Study Hydrology Report," dated September 1991. These values are 14,828 cubic feet per second (cfs) at the apex of Blue Diamond Fan, and 1,134 cfs at the apex of the unnamed fan. Because JMM's report overestimates the more frequent flood flows, 2-year discharge values were determined using U.S. Army Corps of Engineers (COE) regional relationships. The COE's regional relationships are presented in its report entitled "Hydrologic Documentation for Feasibility Study, Las Vegas Wash and Tributaries, Clark County Nevada," dated April 1988. The 2-year discharge values are 174 cfs at the apex of Blue Diamond Fan, and 10 cfs at the apex of the unnamed fan. The flood frequency curves are shown in Attachment I-2.

The Federal Emergency Management Agency's FAN program was used to compute the contour widths corresponding to flood insurance zone boundaries. The results are shown on the draft work maps. For Blue Diamond Fan, two boundaries are shown on the northern side of the fan between elevations 2,352 and 2,644 feet National Geodetic Vertical Datum. As indicated by the topographic information shown on the work maps and verified by field inspection, flood flow not exceeding 1.5 feet in energy would be confined to south of the southernmost of those two boundaries. In the multiple channel region of the Blue Diamond alluvial fan, the flow corresponding to 1.5 feet in energy is 6,954 cfs. Therefore, for flows less than 6,954 cfs, contour widths were measured using the southernmost of the two northern boundaries; for flows greater than 6,954 cfs, contour widths were measured using the northernmost boundary. The computations for both fans are given in Attachment I-3.

ATTACHMENT I - 1
LOCATION MAP



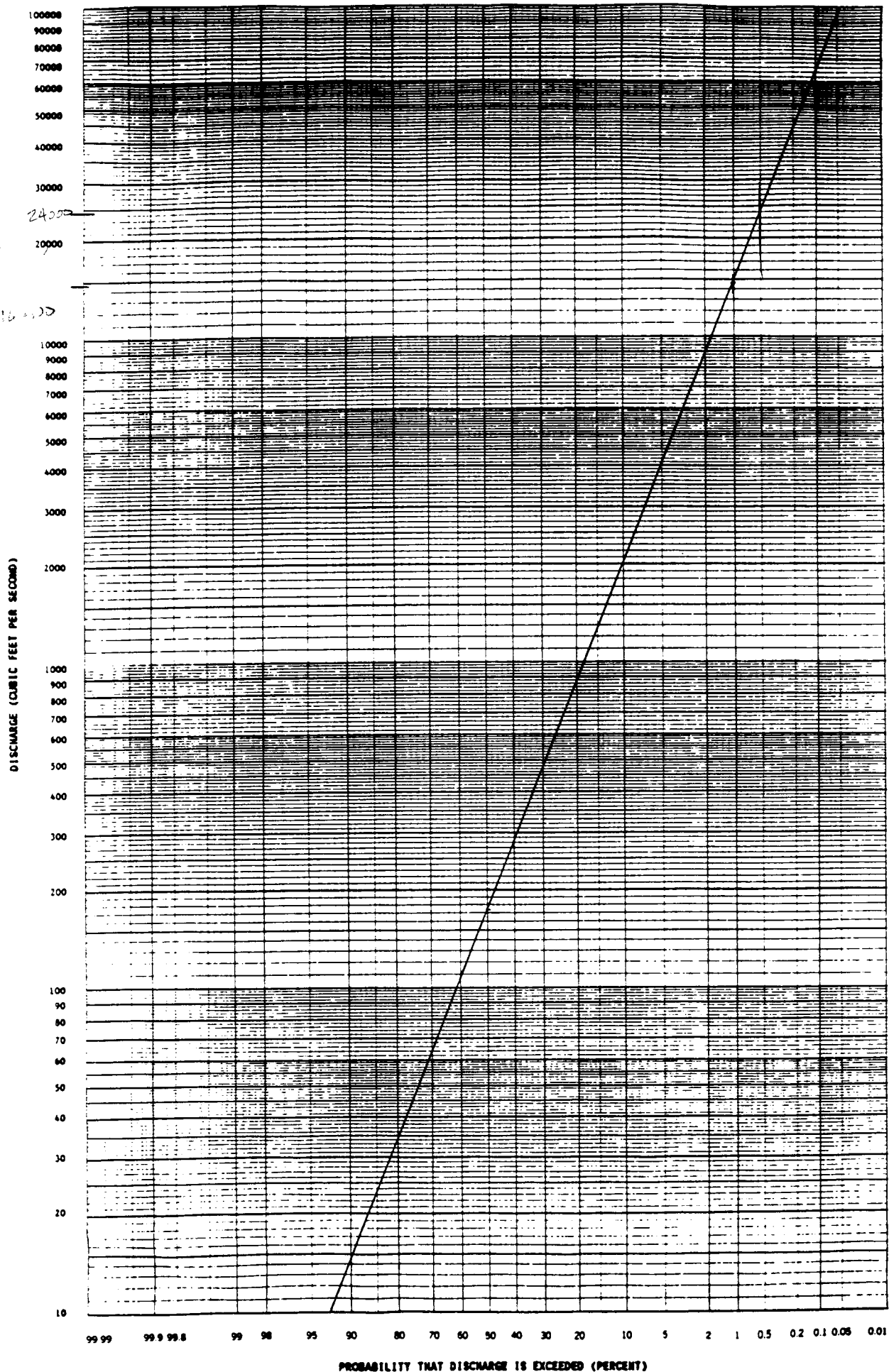
Mapped, edited, and published by the Geological Survey

Control by USGS and NGS
Topography by photogrammetric methods from aerial
photographs taken 1970. Field checked 1972.
Projection and 10,000 foot grid to NAD 83. Nevada county rate
system, east zone transverse Mercator.
1:62,500 scale. Contour interval 100 feet.
1:62,500 scale. Contour interval 100 feet.
1:62,500 scale. Contour interval 100 feet.

Attachment 1-1
LAS VEGAS SW, NEV.

ATTACHMENT I - 2
FLOOD FREQUENCY CURVES AT THE APEXES
OF THE FANS

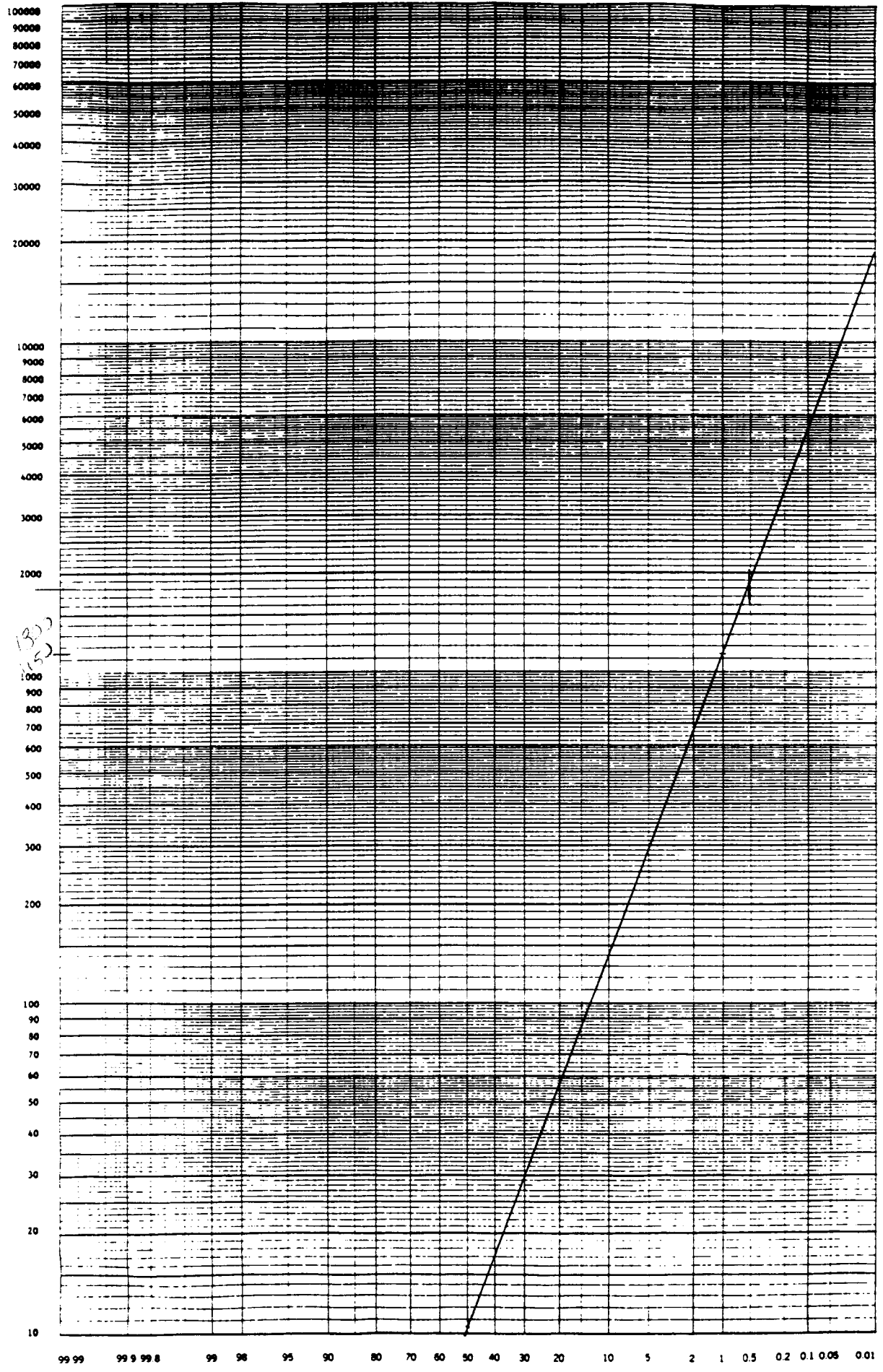
AT APEX OF BLUE DIAMOND FAN ($A = 69.5 \text{ mi}^2$)



AT APEX OF UNNAMED FAN ($A = 1.3 \text{ m}^2$)

F4

DISCHARGE (CUBIC FEET PER SECOND)



PROBABILITY THAT DISCHARGE IS EXCEEDED (PERCENT)

ATTACHMENT I - 3
COMPUTATIONS PERFORMED TO PLACE THE FLOOD
INSURANCE ZONE BOUNDARIES FOR BOTH FANS

BLUE DIAMOND FAN

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY MEAN, STANDARD DEVIATION, AND SKEW

MEAN = 2.240000
STANDARD DEVIATION = 0.830000
SKEW = 0.0

SUMMARY OF DISCHARGES:

10-YEAR DISCHARGE = 2012
50-YEAR DISCHARGE = 8803
100-YEAR DISCHARGE = 14821
500-YEAR DISCHARGE = 42547

STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=0.6338+\text{LOG}(Q)$

MEAN OF Z = 2.873788
STANDARD DEVIATION = 0.830000
SKEW = 0.000000
TRANSFORMATION CONSTANT = 10.487017

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	5.0626 Q	
0.5	0.3	49	0.22544	0.51750	1716
1.5	1.0	756	0.01742	0.09483	309

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	5.0626 Q	
3.5	0.4	68	0.18073	0.45181	1498
4.5	0.6	238	0.06304	0.23043	763
5.5	0.9	649	0.02030	0.10875	358

MULTIPLE-CHANNEL REGION

SLOPE = 0.0170000
N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	5.0626 Q	
0.5	0.4	432	0.03311	0.15450	1929

ELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	5.0626 Q	
3.5	0.5	995	0.01242	0.07608	908

BLUE DIAMOND ALLUVIAL FAN

ELEVATION	WS	WB	P(v>3.5)	P(v>4.5)
2220	23000	23000	0.006660	0.003578
2240	22000	22000	0.006963	0.003741
2260	21000	21000	0.007295	0.003919
2280	20000	20000	0.007660	0.004115
2300	18000	18000	0.008511	0.004572
2320	17800	17800	0.008606	0.004624
2340	16500	16500	0.009284	0.004988
2360	15000	15200	0.010171	0.005445
2380	13500	13900	0.011247	0.005996
2400	12300	13200	0.012193	0.006429
2420	11400	12900	0.012956	0.006738
2440	10500	12300	0.013932	0.007180
2460	9400	11700	0.015310	0.007768
2480	8200	10800	0.017296	0.008651
2500	7200	9800	0.019537	0.009691
2520	6100	8400	0.022994	0.011373
2540	5500	7500	0.025564	0.012675
2560	5000	6600	0.028349	0.014171
2580	4500	5850	0.031621	0.015868
2600	3700	4950	0.038181	0.019021
2620	3500	4000	0.042083	0.021828
2640	2700	2750	0.056419	0.030164
2660	1900	1900	0.080626	0.043316
2680	1100	1100	0.139264	0.074818

UNNAMED FAN

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY MEAN, STANDARD DEVIATION, AND SKEW

MEAN =	1.020000
STANDARD DEVIATION =	0.875000
SKEW =	0.0

SUMMARY OF DISCHARGES:

10-YEAR DISCHARGE =	138
50-YEAR DISCHARGE =	656
100-YEAR DISCHARGE =	1136
500-YEAR DISCHARGE =	3455

STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=0.7044+\text{LOG}(Q)$

MEAN OF Z =	1.724375
STANDARD DEVIATION =	0.875000
SKEW =	0.000000
TRANSFORMATION CONSTANT =	3.525289

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	4.3032 Q	
0.5	0.3	49	0.74518	0.92061	9083
1.5	1.0	756	0.22277	0.49770	4910
2.5	1.7	2712	0.07852	0.25284	2495
3.5	2.3	6288	0.03089	0.13805	1350
4.5	3.0	11787	0.01440	0.07779	743

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	4.3032 Q	
3.5	0.4	68	0.68851	0.89439	8824
4.5	0.6	238	0.43480	0.72363	7140
5.5	0.9	649	0.24804	0.52952	5224
6.5	1.3	1496	0.13529	0.35966	3549
7.5	1.7	3059	0.06984	0.23296	2298
8.5	2.2	5719	0.03445	0.14933	1465
9.5	2.8	9974	0.01760	0.08982	873

MULTIPLE-CHANNEL REGION

SLOPE = 0.0150000

N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	4.3032 Q	
0.5	0.4	421	0.32244	0.61722	23141
1.5	1.0	6954	0.02712	0.12609	4721

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			1.0000		
			Q	4.3032 Q	
3.5	0.5	1163	0.16516	0.40859	15319
4.5	0.8	3315	0.06404	0.21967	8230
5.5	1.1	7650	0.02391	0.11474	4302

**II. NORTH BRANCH AND MIDDLE BRANCH
BLUE DIAMOND WASH**

**(UNION PACIFIC RAILROAD
TO INTERSTATE 15)**

II. NORTH BRANCH AND MIDDLE BRANCH BLUE DIAMOND WASH (UNION PACIFIC RAILROAD TO INTERSTATE 15)

The flood frequency curves for North Branch Blue Diamond Wash and Middle Branch Blue Diamond Wash at the Union Pacific Railroad were defined by the identification of two points for each wash through which flow would pass to enter the respective culverts. The frequency at which a given discharge is exceeded between those points is a function of the frequency at which it is exceeded at the apex of the Blue Diamond alluvial fan, the width of the opening between the two points, and the width of the area subject to alluvial flooding at the elevation of the two points. The points chosen for each wash are shown on Attachment II-1. The width of the opening and width of the area subject to alluvial fan flooding are 1,350 and 12,300 feet for North Branch Blue Diamond Wash, and 1,300 and 12,300 feet for Middle Branch Blue Diamond Wash. A derivation of the method used is given in Attachment II-2. Within that method, flow values with recurrence intervals of 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 200, and 500 years were computed. The flood frequency curves at the Union Pacific Railroad were defined by fitting a log-Pearson Type III distribution to those pairs of flow values and recurrence intervals.

The flood hazard information shown on the draft work maps reflects alluvial fan flooding from flows exceeding the capacity of North Branch Blue Diamond Wash. The HEC-2 model prepared by James M. Montgomery Consulting Engineers, Inc. (JMM) was slightly revised in the determination of the channel capacity of North Branch Blue Diamond Wash. The revisions were:

- the addition of a cross section at Decatur Boulevard, and
- the definition of the conveyance area of the main wash through encroachment stations.

The analysis showed that just downstream of Cross Section 24 (where the right bank is approximately 2,384 feet National Geodetic Vertical Datum (NGVD)), the capacity of North Branch Blue Diamond Wash is approximately 2,000 cfs. At Decatur Boulevard it was found that approximately 50 percent of the flow in the wash at the road crossing (1,000 cfs) would continue east, not following the wash. The remaining 50 percent of the flood flow (1,000 cfs) was modeled as if it followed the wash down to Cross Section 20. These percentages were estimated from the cross-sectional areas to the left and right of the crossing of Decatur Boulevard when it is flowing full. Attachment II-3 is the HEC-2 model for North Branch Blue Diamond Wash.

The alluvial fan flooding for North Branch Blue Diamond Wash was modeled in the following way. Below elevation 2,384 feet, only that part of the flow exceeding 2,000 cfs was modeled as alluvial fan flooding originating at the breakout point on the right bank. Flows of less than 2,000 cfs were modeled as though they proceeded downstream to Decatur Boulevard. Below Decatur Boulevard, only 50 percent of the flow was modeled as alluvial fan flooding. The remaining 50 percent (of flows less than 2,000 cfs) was modeled as though it proceeded downstream to Cross Section 20.

At that point, the wash vanishes. The remaining flow was modeled as alluvial fan flooding. The amount of flow in each channel reach and the areas subject to alluvial fan flooding below the breakout points are shown on Figure 1.

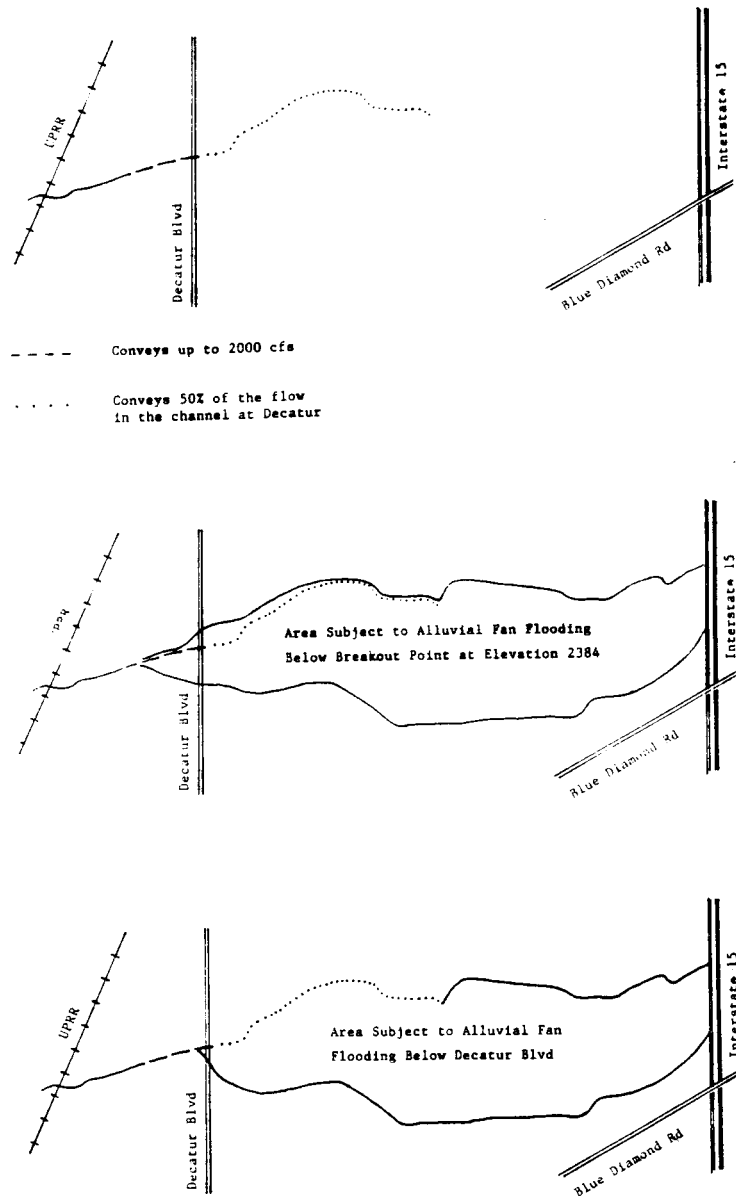


Figure 1. Channel Conveyance and Areas Subject to Alluvial Fan Flooding

The computations of the 100-year flood depth and velocity zones are given in Attachment II-4.

The capacity of Middle Branch Blue Diamond Wash could not be defined in the same way as that of North Branch Blue Diamond Wash. Some reasons for this are:

- **the cross sections used by JMM were not shown on their work maps,**
- **there are many splits in the washes, resulting in several possible candidates for the main wash or washes, and**
- **those splits do not follow a clear path between the railroad to Interstate-15 (i.e. a path whose capacity does not vanish).**

Because of these reasons, all flows on Middle Branch Blue Diamond Wash were modeled as alluvial fan flooding. The computations associated with that analysis are given in Attachment II-5.

ATTACHMENT II - 1
MAP SHOWING WIDTHS USED FOR
FLOOD FREQUENCY CURVES DERIVATIONS
AT UNION PACIFIC RAILROAD







ATTACHMENT II - 2
PROBABILITY OF A GIVEN DISCHARGE BEING EXCEEDED
BETWEEN TWO POINTS ON AN ALLUVIAL FAN

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PROBABILITY OF A GIVEN DISCHARGE BEING EXCEEDED BETWEEN TWO POINTS ON AN ALLUVIAL FAN

Consider a rectangular channel that has a topwidth, w , which is a function of the discharge it conveys: $w = w(q)$. Assuming that the location of the channel is uniformly distributed within a width W_f and the probability density function describing the occurrence of a discharge Q somewhere within that width is $f_Q(q)$, the probability that a discharge of q_0 passes between two points, a and b , can be determined as follows.

Because the channel is rectangular, the amount of flow in a section of the channel is (roughly) proportional to the topwidth of that section. That is, if q is the discharge of the channel shown in Figure 1, then the discharge, q_r , in the cross-hatched area is

$$q_r = \frac{w_r q}{w(q)} \quad (1)$$

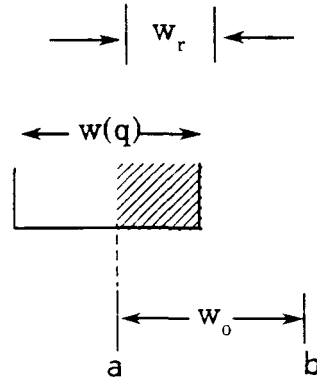


Figure 1

Thus for a discharge, q_0 , to pass between points a and b , given that the total discharge in the channel is q , the right side of the channel must be between the points

$$\frac{q_0 w(q)}{q} \text{ and } W_o + w(q) - \frac{q_0 w(q)}{q}$$

where we have taken a to be at the origin and W_o to be the width of the opening ($b-a$). The probability density function describing the location of the right side of the

PROBABILITY OF A GIVEN DISCHARGE BEING EXCEEDED BETWEEN TWO POINTS ON AN ALLUVIAL FAN

Consider a rectangular channel that has a topwidth, w , which is a function of the discharge it conveys: $w = w(q)$. Assuming that the location of the channel is uniformly distributed within a width W_f and the probability density function describing the occurrence of a discharge Q somewhere within that width is $f_Q(q)$, the probability that a discharge of q_0 passes between two points, a and b , can be determined as follows.

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$$q_r = \frac{w_r q}{w(q)} \quad (1)$$

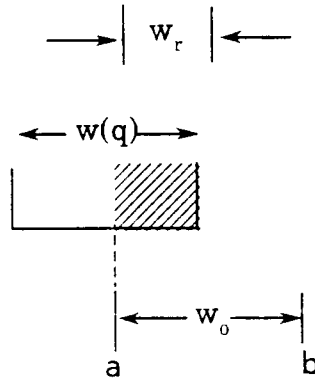


Figure 1

Thus for a discharge, q_0 , to pass between points a and b , given that the total discharge in the channel is q , the right side of the channel must be between the points

$$\frac{q_0 w(q)}{q} \text{ and } W_o + w(q) - \frac{q_0 w(q)}{q}$$

where we have taken a to be at the origin and W_o to be the width of the opening ($b-a$). The probability density function describing the location of the right side of the

channel is $1/W_f$ and, therefore, the probability that the right side of the channel is between the two points given above is

$$\frac{1}{W_f} \left[W_o + w(q) - \frac{2q_0 w(q)}{q} \right]$$

The probability that a discharge exceeding q_0 passes between two points that define an opening of width W_o is

$$P \left[Q \text{ through } W_o > q_0 \right] = \frac{1}{W_f} \int_{q_0}^{\infty} \left[W_o + w(q) - \frac{2q_0 w(q)}{q} \right] f_Q(q) dq \quad (2)$$

Writing P as the sum of three integrals yields

$$P = I_1 + I_2 - I_3 \quad (3)$$

where

$$I_1 = \frac{W_o}{W_f} \int_{q_0}^{\infty} f_Q(q) dq \quad (4)$$

$$I_2 = \frac{1}{W_f} \int_{q_0}^{\infty} w(q) f_Q(q) dq \quad (5)$$

$$I_3 = \frac{2}{W_f} \int_{q_0}^{\infty} \frac{q_0 w(q)}{q} f_Q(q) dq \quad (6)$$

If $f_Q(q)$ is log-normal, then

$$P(Q > q_0) = \frac{1}{\sigma \sqrt{2\pi}} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu}{\sigma} \right)^2} dy \quad (7)$$

where

$$y_0 = \log_{10}(q_0) \quad (8)$$

Also, note that for a power function of q , say

$$w(q) = \alpha q^\beta \quad (9)$$

channel is $1/W_f$ and, therefore, the probability that the right side of the channel is between the two points given above is

$$\frac{1}{W_f} \left[W_o + w(q) - \frac{2q_0 w(q)}{q} \right]$$

The probability that a discharge exceeding q_0 passes between two points that define an opening of width W_o is

$$P \left[Q \text{ through } W_o > q_0 \right] = \frac{1}{W_f} \int_{q_0}^{\infty} \left[W_o + w(q) - \frac{2q_0 w(q)}{q} \right] f_Q(q) dq \quad (2)$$

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where

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$$I_2 = \frac{1}{W_f} \int_{q_0}^{\infty} w(q) f_Q(q) dq \quad (5)$$

$$I_3 = \frac{2}{W_f} \int_{q_0}^{\infty} \frac{q_0 w(q)}{q} f_Q(q) dq \quad (6)$$

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where

$$y_0 = \log_{10}(q_0) \quad (8)$$

Also, note that for a power function of q , say

$$w(q) = \alpha q^\beta \quad (9)$$

or, equivalently,

$$w(q) = \alpha e^{\beta y \ln(10)} \quad (10)$$

$$= \alpha e^{2.3026\beta y} \quad (11)$$

where $y = \log_{10}(q)$

$$\int_{q_0}^{\infty} w(q) f_Q(q) dq = \alpha C(\beta) \frac{1}{\sigma \sqrt{2\pi}} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu'}{\sigma} \right)^2} dy \quad (12)$$

where

$$\mu' = \mu + 2.3026\beta\sigma^2 \quad (13)$$

and

$$C(\beta) = e^{2.3026\beta\mu + \frac{1}{2}(2.3026\beta\sigma)^2} \quad (14)$$

In summary, equation (2) can be solved when $w(q)$ is defined. For the single channel region

$$w(q) = 9.408q^{0.4} \quad (15)$$

and

$$\frac{w(q)}{q} = 9.408q^{-0.6} \quad (16)$$

Thus the three integrals in equation (3) are:

$$I_1 = \frac{W_0}{W_f} \frac{1}{\sigma \sqrt{2\pi}} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu}{\sigma} \right)^2} dy \quad (17)$$

$$I_2 = \frac{9.408}{W_f \sigma \sqrt{2\pi}} e^{.92\mu + .42\sigma^2} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu-.92\sigma^2}{\sigma} \right)^2} dy \quad (18)$$

$$I_3 = \frac{18.816y_0}{W_f \sigma \sqrt{2\pi}} e^{-1.38\mu + .95\sigma^2} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu+1.38\sigma^2}{\sigma} \right)^2} dy \quad (19)$$

or, equivalently,

$$w(q) = \alpha e^{\beta y \ln(10)} \quad (10)$$

$$= \alpha e^{2.3026\beta y} \quad (11)$$

where $y = \log_{10}(q)$

$$\int_{q_0}^{\infty} w(q) f_Q(q) dq = \alpha C(\beta) \frac{1}{\sigma \sqrt{2\pi}} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu'}{\sigma} \right)^2} dy \quad (12)$$

where

$$\mu' = \mu + 2.3026\beta\sigma^2 \quad (13)$$

and

$$C(\beta) = e^{2.3026\beta\mu + \frac{1}{2}(2.3026\beta\sigma)^2} \quad (14)$$

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$$I_1 = \frac{W_0}{W_f} \frac{1}{\sigma \sqrt{2\pi}} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu}{\sigma} \right)^2} dy \quad (17)$$

$$I_2 = \frac{9.408}{W_f \sigma \sqrt{2\pi}} e^{.92\mu + .42\sigma^2} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu-.92\sigma^2}{\sigma} \right)^2} dy \quad (18)$$

$$I_3 = \frac{18.816y_0}{W_f \sigma \sqrt{2\pi}} e^{-1.38\mu + .95\sigma^2} \int_{y_0}^{\infty} e^{-\frac{1}{2} \left(\frac{y-\mu+1.38\sigma^2}{\sigma} \right)^2} dy \quad (19)$$

On an alluvial fan I_1 is the probability that q_0 is exceeded at the apex times the ratio of the width of the opening to the width of the fan. I_2 is the probability that a point on the fan at the elevation where the width of the area subject to flooding is W_f is inundated. I_3 is similar to I_2 . The integrands in both I_2 and I_3 are the same as that in I_1 with a change in the mean, μ , to $\mu + .92\sigma^2$ and $\mu - 1.38\sigma^2$, respectively.

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ATTACHMENT II - 3
HEC - 2 RUNS USED TO DETERMINE THE CAPACITY OF
NORTH BRANCH BLUE DIAMOND WASH

ATTACHMENT II - 3
HEC - 2 RUNS USED TO DETERMINE THE CAPACITY OF
NORTH BRANCH BLUE DIAMOND WASH


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*****
* WATER SURFACE PROFILES *
* VERSION OF SEPTEMBER 1988 *
* ERROR: 01,02,03 *
* UPDATED: SEPTEMBER 1989 *
* RUN DATE 8/14/92 TIME 13:41:22 *
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*****
* U.S. ARMY CORPS OF ENGINEERS *
* THE HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET, SUITE D *
* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104 *
*****

```

NB

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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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END OF BANNER

8/14/92 13:41:22

PAGE 1

THIS RUN EXECUTED 8/14/92 13:41:22

HEC2 RELEASE DATED SEP 88 UPDATED SEPT 1989

ERROR CORR - 01,02,03

MODIFICATION -

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			.005				2275	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1	0	-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

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NC	.035	.035	.035	0.3	0.5				
ET		9.1	7.1				2639	3069	2639 3069
X1	16	38	2639	3069	650	550	600		
GR	2278.8	2000	2276.4	2069	2276.4	2145	2274.5	2220	2274.2 2308
GR	2273.1	2317	2273.0	2361	2273.5	2408	2275.0	2460	2279.7 2504
GR	2279.7	2525	2276.9	2559	2276.8	2610	2276.8	2625	2276.8 2639

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*****
* WATER SURFACE PROFILES *
* VERSION OF SEPTEMBER 1988 *
* ERROR: 01,02,03 *
* UPDATED: SEPTEMBER 1989 *
* RUN DATE 8/14/92 TIME 13:41:22 *
*****

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*****
* U.S. ARMY CORPS OF ENGINEERS *
* THE HYDROLOGIC ENGINEERING CENTER *
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* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104 *
*****

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NB

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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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END OF BANNER

8/14/92 13:41:22

PAGE 1

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*****
HEC2 RELEASE DATED SEP 88 UPDATED SEPT 1989

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ERROR CORR - 01,02,03
MODIFICATION -
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J1 ICHECK  INQ      NINV      IDIR      STRT      METRIC  HVINS      Q        WSEL      FQ
      2                      .005                      2275

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

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J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	38	43	1	50	3	2	23	24	4
QT	2	1000	2900						
NC	.035	.035	.035	0.3	0.5				
ET		9.1	7.1				2639	3069	2639 3069
X1	16	38	2639	3069	650	550	600		
GR	2278.8	2000	2276.4	2069	2276.4	2145	2274.5	2220	2274.2 2308
GR	2273.1	2317	2273.0	2361	2273.5	2408	2275.0	2460	2279.7 2504
GR	2279.7	2525	2276.9	2559	2276.8	2610	2276.8	2625	2276.8 2639

R	2276.1	2667	2275.8	2699	2274.6	2724	2272.4	2748	2272.4	2758
GR	2272.4	2768	2272.4	2817	2271.3	2837	2268.6	2859	2268.6	2872
GR	2268.6	2899	2270.8	2910	2272.7	2940	2274.6	3011	2275.6	3059
R	2276.7	3069	2276.7	3091	2276.0	3230	2276.0	3980	2272.0	4020.
JR	2275.0	4080	2276.0	4340	2280.0	4520				

T		9.1	7.1				2639	2960	2639	2960
1	16.1	10	2639	2960	160	160	160			
GR	2279	1980	2278.3	2280	2278.6	2550	2277.9	2639	2276.3	2850
TR	2278.2	2960	2278.9	3000	2278.6	3220	2279.9	3500	2279.2	3750

NC	.060	.055	.035	.1	.3					
ET		9.1	7.1				2316	2470	2316	2470
1	17	18	2316	2470	750	680	720			
14	2	2283.9	2000	2283.9	2054					
GR	2288.5	1700	2288.0	1970	2282.2	2076	2282.2	2151	2283.2	2180
JR	2283.3	2221	2284.6	2261	2282.9	2280	2284.6	2307	2284.6	2316
JR	2280.0	2327	2280.0	2361	2280.0	2399	2283.6	2410	2285.3	2470
GR	2285.3	2539	2283.2	2800	2284.0	3050				

IC	.060	.060	.035							
ET		9.1	7.1				2321	2503	2321	2503

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1	18	12	2321	2503	700	800	840			
14	2	2293.1	2000	2293.1	2141					
GR	2295.0	1600	2293.2	1700	2292.1	2265	2291.3	2321	2288.6	2340
GR	2288.6	2367	2290.9	2378	2291.9	2420	2293.4	2503	2293.9	2536
JR	2294.0	2710	2294.0	2907						

ET		9.1	7.1				2671	2872	2671	2872
1	19	15	2671	2872	680	670	700			
14	1	2302.2	2000							
GR	2303.0	1600	2302.2	2178	2302.2	2434	2302.2	2613	2303.2	2671
JR	2299.2	2746	2298.8	2779	2298.8	2802	2298.9	2824	2301.3	2872
JR	2303.1	2995	2302.9	3190	2302.3	3376	2304.0	3518	2304.0	3850.

IC	.040	.040	.040							
ET		9.1	7.1				2250	2500	2250	2500
1	19.5	10	2250	2500	1090	1100	1090			
GR	2314.0	2000	2312.0	2140	2304.0	2200	2303.5	2250	2303.5	2500.
JR	2303.5	2900	2304.0	2950	2304.7	3050	2304.7	3270	2308.0	3350

NC	.035	.035	.035							
ET		9.1	9.1	9.1	9.1				2392	2463
1	20	18	2392	2541	500	660	500			
GR	2321.7	2000	2321.5	2057	2321.9	2137	2321.4	2213	2320.0	2230
GR	2321.5	2237	2322.2	2296	2321.8	2392	2313.6	2401	2313.6	2419
JR	2316.9	2434	2319.3	2451	2320.3	2463	2319.4	2487	2315.9	2498
JR	2320.1	2505	2321.3	2541	2321.3	3000				

IC	.040	.035	.035	0.1	0.3					
T		9.1	9.1	9.1	9.1				2049	2164
1	21	30	2049	2164	1400	1450	1510			
TR	2340.0	1100	2340.0	1300	2340.0	1550	2340.0	1650	2340.0	1900
JR	2339.5	2000	2339.9	2049	2336.2	2069	2336.2	2084	2339.1	2092
GR	2339.3	2130	2337.0	2149	2336.0	2158	2340.6	2164	2338.8	2251
JR	2339.3	2375	2339.3	2511	2339.3	2590	2338.3	2614	2339.3	2624

R	2276.1	2667	2275.8	2699	2274.6	2724	2272.4	2748	2272.4	2758
GR	2272.4	2768	2272.4	2817	2271.3	2837	2268.6	2859	2268.6	2872
GR	2268.6	2899	2270.8	2910	2272.7	2940	2274.6	3011	2275.6	3059
R	2276.7	3069	2276.7	3091	2276.0	3230	2276.0	3980	2272.0	4020.
GR	2275.0	4080	2276.0	4340	2280.0	4520				

T		9.1	7.1				2639	2960	2639	2960
1	16.1	10	2639	2960	160	160	160			
GR	2279	1980	2278.3	2280	2278.6	2550	2277.9	2639	2276.3	2850
GR	2278.2	2960	2278.9	3000	2278.6	3220	2279.9	3500	2279.2	3750

NC	.060	.055	.035	.1	.3					
ET		9.1	7.1				2316	2470	2316	2470
1	17	18	2316	2470	750	680	720			
4	2	2283.9	2000	2283.9	2054					
GR	2288.5	1700	2288.0	1970	2282.2	2076	2282.2	2151	2283.2	2180
GR	2283.3	2221	2284.6	2261	2282.9	2280	2284.6	2307	2284.6	2316
GR	2280.0	2327	2280.0	2361	2280.0	2399	2283.6	2410	2285.3	2470
GR	2285.3	2539	2283.2	2800	2284.0	3050				

IC	.060	.060	.035							
ET		9.1	7.1				2321	2503	2321	2503

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1	18	12	2321	2503	700	800	840			
4	2	2293.1	2000	2293.1	2141					
GR	2295.0	1600	2293.2	1700	2292.1	2265	2291.3	2321	2288.6	2340
GR	2288.6	2367	2290.9	2378	2291.9	2420	2293.4	2503	2293.9	2536
GR	2294.0	2710	2294.0	2907						

ET		9.1	7.1				2671	2872	2671	2872
1	19	15	2671	2872	680	670	700			
4	1	2302.2	2000							
GR	2303.0	1600	2302.2	2178	2302.2	2434	2302.2	2613	2303.2	2671
GR	2299.2	2746	2298.8	2779	2298.8	2802	2298.9	2824	2301.3	2872
GR	2303.1	2995	2302.9	3190	2302.3	3376	2304.0	3518	2304.0	3850.

IC	.040	.040	.040							
ET		9.1	7.1				2250	2500	2250	2500
X1	19.5	10	2250	2500	1090	1100	1090			
GR	2314.0	2000	2312.0	2140	2304.0	2200	2303.5	2250	2303.5	2500.
GR	2303.5	2900	2304.0	2950	2304.7	3050	2304.7	3270	2308.0	3350

NC	.035	.035	.035							
ET		9.1	9.1	9.1	9.1				2392	2463
1	20	18	2392	2541	500	660	500			
GR	2321.7	2000	2321.5	2057	2321.9	2137	2321.4	2213	2320.0	2230
GR	2321.5	2237	2322.2	2296	2321.8	2392	2313.6	2401	2313.6	2419
GR	2316.9	2434	2319.3	2451	2320.3	2463	2319.4	2487	2315.9	2498
GR	2320.1	2505	2321.3	2541	2321.3	3000				

IC	.040	.035	.035	0.1	0.3					
T		9.1	9.1	9.1	9.1				2049	2164
X1	21	30	2049	2164	1400	1450	1510			
GR	2340.0	1100	2340.0	1300	2340.0	1550	2340.0	1650	2340.0	1900
GR	2339.5	2000	2339.9	2049	2336.2	2069	2336.2	2084	2339.1	2092
GR	2339.3	2130	2337.0	2149	2336.0	2158	2340.6	2164	2338.8	2251
GR	2339.3	2375	2339.3	2511	2339.3	2590	2338.3	2614	2339.3	2624

GR	2339.3	2664	2339.3	2808	2339.5	3008	2340.0	3071	2340.2	3122
GR	2340.0	3230	2338.0	3320	2339.5	3380	2340.0	3425	2341.0	3500.
NC	.055	.035	.035							
ET		9.1	7.1	9.1	9.1		2593	2697	2234	2966
X1	22	31	2593	2697	1250	1000	1090			
GR	2356.5	1550	2356.0	1750	2355.0	1850	2355.0	2068	2354.9	2118
GR	2354.0	2136	2354.0	2168	2354.2	2199	2355.9	2234	2355.7	2334
GR	2355.3	2389	2354.5	2458	2353.6	2508	2353.7	2565	2354.0	2593
GR	2352.7	2600	2352.7	2611	2354.0	2615	2354.0	2624	2352.5	2630
GR	2351.5	2648	2351.5	2659	2353.5	2666	2354.5	2697	2354.5	2755
GR	2354.2	2839	2353.5	2896	2354.5	2966	2355.0	3150	2353.0	3250.
GR	2355.0	3400								

NC	.045	.035	.035							
ET		9.1	9.1	9.1	9.1				2601	2740

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X1	23	18	2601	2740	1200	1200	1230			
X4	2	2367.4	2000	2368.6	2062					
GR	2369.5	1650	2368.0	1900	2366.2	2146	2366.2	2177	2367.8	2228
GR	2368.3	2318	2367.3	2348	2368.6	2433	2367.5	2528	2368.0	2601
GR	2366.5	2681	2365.1	2686	2365.1	2706	2367.0	2709	2367.8	2740
GR	2367.0	2817	2368.0	2901	2368.5	2950				

QT	2	2000	2900							
ET		9.1	7.1	9.1	9.1		2925	3075	2740	3320
X1	23.1	6	2740	3320	180	210	200			
GR	2369.6	2740	2368.8	3000	2369.5	3320	2369.0	3580	2368.2	3810
GR	2370.6	4000								

ET		9.1	7.1	9.1	9.1		2635	2800	2380	2800
NC	.035	.035	.035							
X1	24	16	2693	2750	1020	960	960			
GR	2387.8	2000	2385.9	2178	2384.9	2319	2382.6	2355	2385.8	2380
GR	2385.4	2504	2385.4	2635	2384.9	2693	2381.4	2711	2379.2	2718
GR	2379.2	2739	2384.2	2750	2384.5	2800	2384.5	3050	2386.0	3200.
GR	2388.0	3370								

X1	25.1	6	2213	2251	1370	1320	1440		3.0	
GR	2407.9	2153	2405.6	2193	2400.4	2213	2400.0	2237	2401.7	2251.
GR	2408.3	2268								

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK	ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT	
TIME	VLOB	VCH	VROB	XLN	XLNCH	XLNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	

*PROF 1

CCHV= .300 CEHV= .500

*SECNO 16.000

7230 SLOPE-AREA TRIALS EXCEED 100

GR	2339.3	2664	2339.3	2808	2339.5	3008	2340.0	3071	2340.2	3122
GR	2340.0	3230	2338.0	3320	2339.5	3380	2340.0	3425	2341.0	3500.
NC	.055	.035	.035							
ET		9.1	7.1	9.1	9.1		2593	2697	2234	2966
X1	22	31	2593	2697	1250	1000	1090			
GR	2356.5	1550	2356.0	1750	2355.0	1850	2355.0	2068	2354.9	2118
GR	2354.0	2136	2354.0	2168	2354.2	2199	2355.9	2234	2355.7	2334
GR	2355.3	2389	2354.5	2458	2353.6	2508	2353.7	2565	2354.0	2593
GR	2352.7	2600	2352.7	2611	2354.0	2615	2354.0	2624	2352.5	2630
GR	2351.5	2648	2351.5	2659	2353.5	2666	2354.5	2697	2354.5	2755
GR	2354.2	2839	2353.5	2896	2354.5	2966	2355.0	3150	2353.0	3250.
GR	2355.0	3400								
NC	.045	.035	.035							
ET		9.1	9.1	9.1	9.1				2601	2740

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X1	23	18	2601	2740	1200	1200	1230			
X4	2	2367.4	2000	2368.6	2062					
GR	2369.5	1650	2368.0	1900	2366.2	2146	2366.2	2177	2367.8	2228
GR	2368.3	2318	2367.3	2348	2368.6	2433	2367.5	2528	2368.0	2601
GR	2366.5	2681	2365.1	2686	2365.1	2706	2367.0	2709	2367.8	2740
GR	2367.0	2817	2368.0	2901	2368.5	2950				
QT	2	2000	2900							
ET		9.1	7.1	9.1	9.1		2925	3075	2740	3320
X1	23.1	6	2740	3320	180	210	200			
GR	2369.6	2740	2368.8	3000	2369.5	3320	2369.0	3580	2368.2	3810
GR	2370.6	4000								
ET		9.1	7.1	9.1	9.1		2635	2800	2380	2800
NC	.035	.035	.035							
X1	24	16	2693	2750	1020	960	960			
GR	2387.8	2000	2385.9	2178	2384.9	2319	2382.6	2355	2385.8	2380
GR	2385.4	2504	2385.4	2635	2384.9	2693	2381.4	2711	2379.2	2718
GR	2379.2	2739	2384.2	2750	2384.5	2800	2384.5	3050	2386.0	3200.
GR	2388.0	3370								
X1	25.1	6	2213	2251	1370	1320	1440		3.0	
GR	2407.9	2153	2405.6	2193	2400.4	2213	2400.0	2237	2401.7	2251.
GR	2408.3	2268								

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

*PROF 1

CCHV= .300 CEHV= .500

*SECNO 16.000

7230 SLOPE-AREA TRIALS EXCEED 100

3470 ENCROACHMENT STATIONS= 2639.0 3069.0 TYPE= 1 TARGET= 430.000
 16.000 3.82 2272.42 .00 .00 2272.63 .21 .00 .00 2276.80
 1000. 0. 1000. 0. 0. 270. 0. 0. 0. 100000.00
 .00 .00 3.70 .00 .000 .035 .000 .000 2268.60 2747.81
 .004703 650. 600. 550. 0 0 101 .00 187.72 2935.53

*SECNO 16.100

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2639.0 2960.0 TYPE= 1 TARGET= 321.000
 16.100 1.46 2277.76 2277.76 .00 2278.14 .37 1.37 .08 2277.90
 1000. 0. 1000. 0. 0. 204. 0. 1. 1. 100000.00
 .01 .00 4.91 .00 .000 .035 .000 .000 2276.30 2656.84
 .020287 160. 160. 160. 20 18 0 .00 277.96 2934.80

CCHV= .100 CEHV= .300

*SECNO 17.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, K RATIO = 2.44

3470 ENCROACHMENT STATIONS= 2316.0 2470.0 TYPE= 1 TARGET= 154.000
 17.000 2.76 2282.76 .00 .00 2283.08 .32 4.94 .01 2284.60
 1000. 0. 1000. 0. 0. 219. 0. 4. 4. 100000.00
 .05 .00 4.56 .00 .000 .035 .000 .000 2280.00 2320.40
 .003409 750. 720. 680. 6 0 0 .00 87.03 2407.43

*SECNO 18.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2321.0 2503.0 TYPE= 1 TARGET= 182.000
 18.000 2.92 2291.52 2291.52 .00 2292.36 .83 5.31 .15 2291.30
 1000. 0. 1000. 0. 0. 136. 0. 8. 6. 100000.00
 .08 .00 7.33 .00 .000 .035 .000 .000 2288.60 2321.00
 .015553 700. 840. 800. 20 8 0 .00 83.18 2404.18

*SECNO 19.000

3470 ENCROACHMENT STATIONS= 2671.0 2872.0 TYPE= 1 TARGET= 201.000
 19.000 1.88 2300.68 .00 .00 2301.11 .43 8.71 .04 2303.20
 1000. 0. 1000. 0. 0. 191. 0. 10. 7. 100000.00
 .12 .00 5.23 .00 .000 .035 .000 .000 2298.80 2718.26
 .010176 680. 700. 670. 5 0 0 .00 141.32 2859.58

3470 ENCROACHMENT STATIONS= 2639.0 3069.0 TYPE= 1 TARGET= 430.000
 16.000 3.82 2272.42 .00 .00 2272.63 .21 .00 .00 2276.80
 1000. 0. 1000. 0. 0. 270. 0. 0. 0. 100000.00
 .00 .00 3.70 .00 .000 .035 .000 .000 2268.60 2747.81
 .004703 650. 600. 550. 0 0 101 .00 187.72 2935.53

0

*SECNO 16.100

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2639.0 2960.0 TYPE= 1 TARGET= 321.000
 16.100 1.46 2277.76 2277.76 .00 2278.14 .37 1.37 .08 2277.90
 1000. 0. 1000. 0. 0. 204. 0. 1. 1. 100000.00
 .01 .00 4.91 .00 .000 .035 .000 .000 2276.30 2656.84
 .020287 160. 160. 160. 20 18 0 .00 277.96 2934.80

3

CCHV= .100 CEHV= .300

*SECNO 17.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.44

3470 ENCROACHMENT STATIONS= 2316.0 2470.0 TYPE= 1 TARGET= 154.000
 17.000 2.76 2282.76 .00 .00 2283.08 .32 4.94 .01 2284.60
 1000. 0. 1000. 0. 0. 219. 0. 4. 4. 100000.00
 .05 .00 4.56 .00 .000 .035 .000 .000 2280.00 2320.40
 .003409 750. 720. 680. 6 0 0 .00 87.03 2407.43

0

*SECNO 18.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2321.0 2503.0 TYPE= 1 TARGET= 182.000
 18.000 2.92 2291.52 2291.52 .00 2292.36 .83 5.31 .15 2291.30
 1000. 0. 1000. 0. 0. 136. 0. 8. 6. 100000.00
 .08 .00 7.33 .00 .000 .035 .000 .000 2288.60 2321.00
 .015553 700. 840. 800. 20 8 0 .00 83.18 2404.18

0

*SECNO 19.000

3470 ENCROACHMENT STATIONS= 2671.0 2872.0 TYPE= 1 TARGET= 201.000
 19.000 1.88 2300.68 .00 .00 2301.11 .43 8.71 .04 2303.20
 1000. 0. 1000. 0. 0. 191. 0. 10. 7. 100000.00
 .12 .00 5.23 .00 .000 .035 .000 .000 2298.80 2718.26
 .010176 680. 700. 670. 5 0 0 .00 141.32 2859.58

3

*SECNO 19.500

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

3470 ENCROACHMENT STATIONS=	2250.0	2500.0	TYPE=	1	TARGET=	250.000			
19.500	1.71	2305.21	.00	.00	2305.29	.09	4.15	.03	2303.50
1000.	0.	1000.	0.	0.	427.	0.	18.	12.	100000.00
.25	.00	2.34	.00	.000	.040	.000	.000	2303.50	2250.00
.001977	1090.	1090.	1100.	7	0	0	.00	250.00	2500.00

0

*SECNO 20.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2392.0	2463.0	TYPE=	1	TARGET=	71.000			
20.000	3.74	2317.34	2317.34	.00	2318.70	1.35	2.08	.38	2321.80
1000.	0.	1000.	0.	0.	107.	0.	21.	14.	100000.00
.27	.00	9.33	.00	.000	.035	.000	.000	2313.60	2396.89
.013884	500.	500.	660.	20	17	0	.00	40.25	2437.15

0

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

CCHV= .100 CEHV= .300

*SECNO 21.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	2049.0	2164.0	TYPE=	1	TARGET=	115.000			
21.000	3.42	2339.42	.00	.00	2340.05	.62	21.28	.07	2339.90
1000.	0.	1000.	0.	0.	158.	0.	26.	16.	100000.00
.33	.00	6.34	.00	.000	.035	.000	.000	2336.00	2051.55
.014306	1400.	1510.	1450.	9	0	0	.00	110.92	2162.47

0

*SECNO 22.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2234.0	2966.0	TYPE=	1	TARGET=	732.000			
22.000	2.88	2354.38	2354.38	.00	2354.69	.31	12.61	.03	2354.00
1000.	137.	714.	149.	73.	139.	61.	31.	23.	2354.50
.40	1.88	5.12	2.43	.055	.035	.035	.000	2351.50	2464.82
.009474	1250.	1090.	1000.	5	10	0	.00	396.39	2957.40

3

*SECNO 19.500

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

3470 ENCROACHMENT STATIONS= 2250.0 2500.0 TYPE= 1 TARGET= 250.000
 19.500 1.71 2305.21 .00 .00 2305.29 .09 4.15 .03 2303.50
 1000. 0. 1000. 0. 0. 427. 0. 18. 12. 100000.00
 .25 .00 2.34 .00 .000 .040 .000 .000 2303.50 2250.00
 .001977 1090. 1090. 1100. 7 0 0 .00 250.00 2500.00

0

*SECNO 20.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2392.0 2463.0 TYPE= 1 TARGET= 71.000
 20.000 3.74 2317.34 2317.34 .00 2318.70 1.35 2.08 .38 2321.80
 1000. 0. 1000. 0. 0. 107. 0. 21. 14. 100000.00
 .27 .00 9.33 .00 .000 .035 .000 .000 2313.60 2396.89
 .013884 500. 500. 660. 20 17 0 .00 40.25 2437.15

0

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

CCHV= .100 CEHV= .300

*SECNO 21.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 2049.0 2164.0 TYPE= 1 TARGET= 115.000
 21.000 3.42 2339.42 .00 .00 2340.05 .62 21.28 .07 2339.90
 1000. 0. 1000. 0. 0. 158. 0. 26. 16. 100000.00
 .33 .00 6.34 .00 .000 .035 .000 .000 2336.00 2051.55
 .014306 1400. 1510. 1450. 9 0 0 .00 110.92 2162.47

0

*SECNO 22.000

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2234.0 2966.0 TYPE= 1 TARGET= 732.000
 22.000 2.88 2354.38 2354.38 .00 2354.69 .31 12.61 .03 2354.00
 1000. 137. 714. 149. 73. 139. 61. 31. 23. 2354.50
 .40 1.88 5.12 2.43 .055 .035 .035 .000 2351.50 2464.82
 .009474 1250. 1090. 1000. 5 10 0 .00 396.39 2957.40

*SECNO 23.000

3470 ENCROACHMENT STATIONS= 2601.0 2740.0 TYPE= 1 TARGET= 139.000
 23.000 3.05 2368.15 2368.04 .00 2368.66 .52 13.91 .06 2368.00
 1000. 0. 1000. 0. 0. 174. 0. 38. 30. 100000.00
 .46 .00 5.76 .00 .000 .035 .000 .000 2365.10 2601.00
 .013841 1200. 1230. 1200. 13 8 0 .00 139.00 2740.00

*SECNO 23.100

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.87

3470 ENCROACHMENT STATIONS= 2740.0 3320.0 TYPE= 1 TARGET= 580.000
 23.100 1.97 2370.17 .00 .00 2370.36 .19 1.67 .03 2419.60
 2000. 0. 2000. 0. 0. 577. 0. 39. 32. 100000.00
 .48 .00 3.47 .00 .000 .035 .000 .000 2368.20 2740.00
 .006735 180. 200. 210. 4 0 0 .00 580.00 3320.00

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

*SECNO 24.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2380.0 2800.0 TYPE= 1 TARGET= 420.000
 24.000 5.54 2384.74 2384.74 .00 2386.07 1.33 7.32 .34 2384.90
 2000. 0. 1959. 41. 0. 210. 20. 48. 40. 2384.20
 .51 .00 9.34 2.12 .000 .035 .035 .000 2379.20 2693.81
 .008709 1020. 960. 960. 20 24 0 .00 106.19 2800.00

*SECNO 25.100

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.100 4.55 2407.55 2407.55 .00 2409.26 1.71 13.52 .12 2403.40
 2000. 226. 1719. 54. 33. 156. 10. 55. 42. 2404.70
 .55 6.84 11.01 5.19 .035 .035 .035 .000 2403.00 2197.04
 .010255 1370. 1440. 1320. 10 15 0 .00 61.29 2258.34

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PAGE 8

T1 TOTAL FLOW IN VICINITY OF WASH
 T2 MICHAEL BAKER JR. INC.
 T3 BLUE DIAMOND WASH

*SECNO 23.000

3470 ENCROACHMENT STATIONS=	2601.0	2740.0	TYPE=	1	TARGET=	139.000			
23.000	3.05	2368.15	2368.04	.00	2368.66	.52	13.91	.06	2368.00
1000.	0.	1000.	0.	0.	174.	0.	38.	30.	100000.00
.46	.00	5.76	.00	.000	.035	.000	.000	2365.10	2601.00
.013841	1200.	1230.	1200.	13	8	0	.00	139.00	2740.00

*SECNO 23.100

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.87

3470 ENCROACHMENT STATIONS=	2740.0	3320.0	TYPE=	1	TARGET=	580.000			
23.100	1.97	2370.17	.00	.00	2370.36	.19	1.67	.03	2419.60
2000.	0.	2000.	0.	0.	577.	0.	39.	32.	100000.00
.48	.00	3.47	.00	.000	.035	.000	.000	2368.20	2740.00
.006735	180.	200.	210.	4	0	0	.00	580.00	3320.00

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PAGE 7

SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XLN	XLCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 24.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2380.0	2800.0	TYPE=	1	TARGET=	420.000			
24.000	5.54	2384.74	2384.74	.00	2386.07	1.33	7.32	.34	2384.90
2000.	0.	1959.	41.	0.	210.	20.	48.	40.	2384.20
.51	.00	9.34	2.12	.000	.035	.035	.000	2379.20	2693.81
.008709	1020.	960.	960.	20	24	0	.00	106.19	2800.00

*SECNO 25.100

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

25.100	4.55	2407.55	2407.55	.00	2409.26	1.71	13.52	.12	2403.40
2000.	226.	1719.	54.	33.	156.	10.	55.	42.	2404.70
.55	6.84	11.01	5.19	.035	.035	.035	.000	2403.00	2197.04
.010255	1370.	1440.	1320.	10	15	0	.00	61.29	2258.34

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PAGE 8

T1 TOTAL FLOW IN VICINITY OF WASH
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3			.005				2275	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

1

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PAGE 9

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

*PROF 2

CCHV= .300 CEHV= .500

*SECNO 16.000

3470 ENCROACHMENT STATIONS=	2639.0	3069.0	TYPE=	1	TARGET=	430.000
16.000	5.17	2273.77	.00	2272.42	2274.18	.42 .00 .00 2276.80
2900.	0.	2900.	0.	0.	560.	0. 0. 0. 100000.00
.00	.00	5.18	.00	.000	.035	.000 .000 2268.60 2733.09
.005004	650.	600.	550.	0	0	5 .00 246.78 2979.86

0

*SECNO 16.100

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2639.0	2960.0	TYPE=	1	TARGET=	321.000
16.100	2.20	2278.50	2278.50	2277.76	2279.20	.70 1.34 .14 2277.90
2900.	0.	2900.	0.	0.	433.	0. 2. 1. 100000.00
.01	.00	6.70	.00	.000	.035	.000 .000 2276.30 2639.00
.016802	160.	160.	160.	20	18	0 .00 321.00 2960.00

0

CCHV= .100 CEHV= .300

*SECNO 17.000

3280 CROSS SECTION 17.00 EXTENDED .83 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.77

3470 ENCROACHMENT STATIONS=	2316.0	2470.0	TYPE=	1	TARGET=	154.000
17.000	4.82	2284.82	.00	2282.76	2285.51	.69 6.32 .00 2284.60
2900.	0.	2900.	0.	0.	435.	0. 9. 5. 100000.00
.04	.00	6.66	.00	.000	.035	.000 .000 2280.00 2316.00
.005375	750.	720.	680.	4	0	0 .00 137.35 2453.35

)

*SECNO 18.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3			.005				2275	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

1

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PAGE 9

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

*PROF 2

CCHV= .300 CEHV= .500

*SECNO 16.000

3470 ENCROACHMENT STATIONS=	2639.0	3069.0	TYPE=	1	TARGET=	430.000
16.000	5.17	2273.77	.00	2272.42	2274.18	.42 .00 .00 2276.80
2900.	0.	2900.	0.	0.	560.	0. 0. 0. 100000.00
.00	.00	5.18	.00	.000	.035	.000 .000 2268.60 2733.09
.005004	650.	600.	550.	0	0	5 .00 246.78 2979.86

0

*SECNO 16.100

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2639.0	2960.0	TYPE=	1	TARGET=	321.000
16.100	2.20	2278.50	2278.50	2277.76	2279.20	.70 1.34 .14 2277.90
2900.	0.	2900.	0.	0.	433.	0. 2. 1. 100000.00
.01	.00	6.70	.00	.000	.035	.000 .000 2276.30 2639.00
.016802	160.	160.	160.	20	18	0 .00 321.00 2960.00

0

CCHV= .100 CEHV= .300

*SECNO 17.000

3280 CROSS SECTION 17.00 EXTENDED .83 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.77

3470 ENCROACHMENT STATIONS=	2316.0	2470.0	TYPE=	1	TARGET=	154.000
17.000	4.82	2284.82	.00	2282.76	2285.51	.69 6.32 .00 2284.60
2900.	0.	2900.	0.	0.	435.	0. 9. 5. 100000.00
.04	.00	6.66	.00	.000	.035	.000 .000 2280.00 2316.00
.005375	750.	720.	680.	4	0	0 .00 137.35 2453.35

)

*SECNO 18.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XLN	XLNCH	XLNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 2321.0 2503.0 TYPE= 1 TARGET= 182.000
 18.000 4.66 2293.26 2293.26 2291.52 2294.29 1.02 6.94 .10 2291.30
 2900. 0. 2900. 0. 0. 357. 0. 17. 8. 100000.00
 .07 .00 8.11 .00 .000 .035 .000 .000 2288.60 2321.00
 .014295 700. 840. 800. 4 8 0 .00 174.53 2495.53

J

*SECNO 19.000

3470 ENCROACHMENT STATIONS= 2671.0 2872.0 TYPE= 1 TARGET= 201.000
 19.000 3.13 2301.93 .00 2300.68 2302.77 .84 8.47 .02 2303.20
 2900. 0. 2900. 0. 0. 395. 0. 23. 11. 100000.00
 .09 .00 7.35 .00 .000 .035 .000 .000 2298.80 2694.77
 .010367 680. 700. 670. 4 0 0 .00 177.23 2872.00

0

*SECNO 19.500

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.31

3470 ENCROACHMENT STATIONS= 2250.0 2500.0 TYPE= 1 TARGET= 250.000
 19.500 3.27 2306.77 .00 2305.21 2306.97 .20 4.13 .06 2303.50
 2900. 0. 2900. 0. 0. 817. 0. 38. 16. 100000.00
 .18 .00 3.55 .00 .000 .040 .000 .000 2303.50 2250.00
 .001948 1090. 1090. 1100. 5 0 0 .00 250.00 2500.00

0

*SECNO 20.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2392.0 2463.0 TYPE= 1 TARGET= 71.000
 20.000 6.64 2320.24 2320.24 2317.34 2322.17 1.93 2.00 .52 2321.80
 2900. 0. 2900. 0. 0. 260. 0. 44. 18. 100000.00
 .19 .00 11.15 .00 .000 .035 .000 .000 2313.60 2393.71
 .012363 500. 500. 660. 20 17 0 .00 68.54 2462.26

J

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XLN	XLNCH	XLNR	WTN	ELMIN	SSTA

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XLN	XLNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 2321.0 2503.0 TYPE= 1 TARGET= 182.000
 18.000 4.66 2293.26 2293.26 2291.52 2294.29 1.02 6.94 .10 2291.30
 2900. 0. 2900. 0. 0. 357. 0. 17. 8. 100000.00
 .07 .00 8.11 .00 .000 .035 .000 .000 2288.60 2321.00
 .014295 700. 840. 800. 4 8 0 .00 174.53 2495.53

*SECNO 19.000

3470 ENCROACHMENT STATIONS= 2671.0 2372.0 TYPE= 1 TARGET= 201.000
 19.000 3.13 2301.93 .00 2300.68 2302.77 .84 8.47 .02 2303.20
 2900. 0. 2900. 0. 0. 395. 0. 23. 11. 100000.00
 .09 .00 7.35 .00 .000 .035 .000 .000 2298.80 2694.77
 .010367 680. 700. 670. 4 0 0 .00 177.23 2872.00

*SECNO 19.500

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.31

3470 ENCROACHMENT STATIONS= 2250.0 2500.0 TYPE= 1 TARGET= 250.000
 19.500 3.27 2306.77 .00 2305.21 2306.97 .20 4.13 .06 2303.50
 2900. 0. 2900. 0. 0. 817. 0. 38. 16. 100000.00
 .18 .00 3.55 .00 .000 .040 .000 .000 2303.50 2250.00
 .001948 1090. 1090. 1100. 5 0 0 .00 250.00 2500.00

*SECNO 20.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2392.0 2463.0 TYPE= 1 TARGET= 71.000
 20.000 6.64 2320.24 2320.24 2317.34 2322.17 1.93 2.00 .52 2321.80
 2900. 0. 2900. 0. 0. 260. 0. 44. 18. 100000.00
 .19 .00 11.15 .00 .000 .035 .000 .000 2313.60 2393.71
 .012363 500. 500. 660. 20 17 0 .00 68.54 2462.26

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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XLN	XLNCH	XNR	WTN	ELMIN	SSTA

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
-------	-------	------	-------	--------	-----	-------	-------	--------	-------

CCHV= .100 CEHV= .300

*SECNO 21.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2049.0	2164.0	TYPE=	1	TARGET=	115.000
21.000	4.74	2340.74	2340.74	2339.42	2342.12	1.39 19.80 .05 2339.90
2900.	0.	2900.	0.	0.	307.	0. 54. 21. 100000.00
.23	.00	9.45	.00	.000	.035	.000 .000 2336.00 2049.00
.013931	1400.	1510.	1450.	20	19	0 .00 115.00 2164.00

*SECNO 22.000

3280 CROSS SECTION 22.00 EXTENDED .90 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2593.0	2697.0	TYPE=	1	TARGET=	104.000
22.000	4.40	2355.90	2355.90	2354.38	2357.38	1.47 15.03 .03 2354.00
2900.	0.	2900.	0.	0.	298.	0. 61. 24. 100000.00
.27	.00	9.74	.00	.000	.035	.000 .000 2351.50 2593.00
.013652	1250.	1090.	1000.	4	11	0 .00 104.00 2697.00

*SECNO 23.000

3280 CROSS SECTION 23.00 EXTENDED 1.15 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	2601.0	2740.0	TYPE=	1	TARGET=	139.000
23.000	4.55	2369.65	.00	2368.15	2370.54	.89 13.11 .06 2368.00
2900.	0.	2900.	0.	0.	383.	0. 71. 27. 100000.00
.31	.00	7.57	.00	.000	.035	.000 .000 2365.10 2601.00
.008548	1200.	1230.	1200.	6	0	0 .00 139.00 2740.00

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

*SECNO 23.100

3280 CROSS SECTION 23.10 EXTENDED .85 FEET

3470 ENCROACHMENT STATIONS=	2925.0	3075.0	TYPE=	1	TARGET=	150.000
23.100	3.25	2371.45	.00	2370.17	2372.34	.89 1.80 .00100000.00
2900.	0.	2900.	0.	0.	383.	0. 73. 28. 100000.00

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
-------	-------	------	-------	--------	-----	-------	-------	--------	-------

CCHV= .100 CEHV= .300

*SECNO 21.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2049.0	2164.0	TYPE=	1	TARGET=	115.000
21.000	4.74	2340.74	2340.74	2339.42	2342.12	1.39 19.80 .05 2339.90
2900.	0.	2900.	0.	0.	307.	0. 54. 21. 100000.00
.23	.00	9.45	.00	.000	.035	.000 .000 2336.00 2049.00
.013931	1400.	1510.	1450.	20	19	0 .00 115.00 2164.00

*SECNO 22.000

3280 CROSS SECTION 22.00 EXTENDED .90 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2593.0	2697.0	TYPE=	1	TARGET=	104.000
22.000	4.40	2355.90	2355.90	2354.38	2357.38	1.47 15.03 .03 2354.00
2900.	0.	2900.	0.	0.	298.	0. 61. 24. 100000.00
.27	.00	9.74	.00	.000	.035	.000 .000 2351.50 2593.00
.013652	1250.	1090.	1000.	4	11	0 .00 104.00 2697.00

*SECNO 23.000

3280 CROSS SECTION 23.00 EXTENDED 1.15 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	2601.0	2740.0	TYPE=	1	TARGET=	139.000
23.000	4.55	2369.65	.00	2368.15	2370.54	.89 13.11 .06 2368.00
2900.	0.	2900.	0.	0.	383.	0. 71. 27. 100000.00
.31	.00	7.57	.00	.000	.035	.000 .000 2365.10 2601.00
.008548	1200.	1230.	1200.	6	0	0 .00 139.00 2740.00

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

*SECNO 23.100

3280 CROSS SECTION 23.10 EXTENDED .85 FEET

3470 ENCROACHMENT STATIONS=	2925.0	3075.0	TYPE=	1	TARGET=	150.000
23.100	3.25	2371.45	.00	2370.17	2372.34	.89 1.80 .00100000.00
2900.	0.	2900.	0.	0.	383.	0. 73. 28. 100000.00

.32	.00	7.57	.00	.000	.035	.000	.000	2368.20	2925.00
.009512	180.	200.	210.	2	0	0	.00	150.00	3075.00

0

*SECNO 24.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2635.0	2800.0	TYPE=	1	TARGET=	165.000			
24.000	6.55	2385.75	2385.75	2384.74	2386.98	1.23	7.53	.10	2384.90
2900.	84.	2520.	296.	35.	267.	70.	81.	31.	2384.20
.35	2.43	9.44	4.23	.035	.035	.035	.000	2379.20	2635.00
.006575	1020.	960.	960.	12	17	0	.00	165.00	2800.00

0

*SECNO 25.100

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.100	5.69	2408.69	2408.69	2407.55	2410.64	1.94	10.69	.21	2403.40
2900.	402.	2375.	123.	54.	200.	21.	92.	35.	2404.70
.38	7.46	11.90	5.97	.035	.035	.035	.000	2403.00	2191.40
.008633	1370.	1440.	1320.	20	11	0	.00	69.89	2261.28

0

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THIS RUN EXECUTED 8/14/92 13:41:37

HEC2 RELEASE DATED SEP 88 UPDATED SEPT 1989

ERROR CORR - 01,02,03

MODIFICATION -

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

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DIFWSP	EG	CRIS	XLBEL	RBEL	TOPWID
	16.000	1000.00	2272.42	.00	2272.63	.00	2276.80	100000.00	187.72
	16.000	2900.00	2273.77	1.35	2274.18	.00	2276.80	100000.00	246.78
*	16.100	1000.00	2277.76	.00	2278.14	2277.76	2277.90	100000.00	277.96
*	16.100	2900.00	2278.50	.73	2279.20	2278.50	2277.90	100000.00	321.00
*	17.000	1000.00	2282.76	.00	2283.08	.00	2284.60	100000.00	87.03
*	17.000	2900.00	2284.82	2.06	2285.51	.00	2284.60	100000.00	137.35

.32	.00	7.57	.00	.000	.035	.000	.000	2368.20	2925.00
.009512	180.	200.	210.	2	0	0	.00	150.00	3075.00

0

*SECNO 24.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2635.0	2800.0	TYPE=	1	TARGET=	165.000			
24.000	6.55	2385.75	2385.75	2384.74	2386.98	1.23	7.53	.10	2384.90
2900.	84.	2520.	296.	35.	267.	70.	81.	31.	2384.20
.35	2.43	9.44	4.23	.035	.035	.035	.000	2379.20	2635.00
.006575	1020.	960.	960.	12	17	0	.00	165.00	2800.00

0

*SECNO 25.100

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

25.100	5.69	2408.69	2408.69	2407.55	2410.64	1.94	10.69	.21	2403.40
2900.	402.	2375.	123.	54.	200.	21.	92.	35.	2404.70
.38	7.46	11.90	5.97	.035	.035	.035	.000	2403.00	2191.40
.008633	1370.	1440.	1320.	20	11	0	.00	69.89	2261.28

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THIS RUN EXECUTED 8/14/92 13:41:37

HEC2 RELEASE DATED SEP 88 UPDATED SEPT 1989

ERROR CORR - 01,02,03

MODIFICATION -

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

SUMMARY PRINTOUT

SECNO	Q	CWSEL	DIFWSP	EG	CRWS	XLBEL	RBEL	TOPWID
16.000	1000.00	2272.42	.00	2272.63	.00	2276.80	100000.00	187.72
16.000	2900.00	2273.77	1.35	2274.18	.00	2276.80	100000.00	246.78
* 16.100	1000.00	2277.76	.00	2278.14	2277.76	2277.90	100000.00	277.96
• 16.100	2900.00	2278.50	.73	2279.20	2278.50	2277.90	100000.00	321.00
• 17.000	1000.00	2282.76	.00	2283.08	.00	2284.60	100000.00	87.03
• 17.000	2900.00	2284.82	2.06	2285.51	.00	2284.60	100000.00	137.35

*	18.000	1000.00	2291.52	.00	2292.36	2291.52	2291.30	100000.00	83.18
*	18.000	2900.00	2293.26	1.74	2294.29	2293.26	2291.30	100000.00	174.53
	19.000	1000.00	2300.68	.00	2301.11	.00	2303.20	100000.00	141.32
	19.000	2900.00	2301.93	1.25	2302.77	.00	2303.20	100000.00	177.23
*	19.500	1000.00	2305.21	.00	2305.29	.00	2303.50	100000.00	250.00
*	19.500	2900.00	2306.77	1.57	2306.97	.00	2303.50	100000.00	250.00
*	20.000	1000.00	2317.34	.00	2318.70	2317.34	2321.80	100000.00	40.25
*	20.000	2900.00	2320.24	2.89	2322.17	2320.24	2321.80	100000.00	68.54
	21.000	1000.00	2339.42	.00	2340.05	.00	2339.90	100000.00	110.92
*	21.000	2900.00	2340.74	1.31	2342.12	2340.74	2339.90	100000.00	115.00
*	22.000	1000.00	2354.38	.00	2354.69	2354.38	2354.00	2354.50	396.39
*	22.000	2900.00	2355.90	1.52	2357.38	2355.90	2354.00	100000.00	104.00
	23.000	1000.00	2368.15	.00	2368.66	2368.04	2368.00	100000.00	139.00
	23.000	2900.00	2369.65	1.51	2370.54	.00	2368.00	100000.00	139.00
*	23.100	2000.00	2370.17	.00	2370.36	.00	2419.60	100000.00	580.00
	23.100	2900.00	2371.45	1.28	2372.34	.00	100000.00	100000.00	150.00

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	SECNO	Q	CWSEL	DIFWSP	EG	CRWS	XLBEL	RBEL	TOPWID
*	24.000	2000.00	2384.74	.00	2386.07	2384.74	2384.90	2384.20	106.19
*	24.000	2900.00	2385.75	1.00	2386.98	2385.75	2384.90	2384.20	165.00
*	25.100	2000.00	2407.55	.00	2409.26	2407.55	2403.40	2404.70	61.29
*	25.100	2900.00	2408.69	1.14	2410.64	2408.69	2403.40	2404.70	69.89

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SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	16.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	16.100	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	16.100	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	16.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	16.100	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	16.100	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	17.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	17.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	18.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	18.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	18.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	18.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	18.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY

*	18.000	1000.00	2291.52	.00	2292.36	2291.52	2291.30	100000.00	83.18
*	18.000	2900.00	2293.26	1.74	2294.29	2293.26	2291.30	100000.00	174.53
	19.000	1000.00	2300.68	.00	2301.11	.00	2303.20	100000.00	141.32
	19.000	2900.00	2301.93	1.25	2302.77	.00	2303.20	100000.00	177.23
*	19.500	1000.00	2305.21	.00	2305.29	.00	2303.50	100000.00	250.00
*	19.500	2900.00	2306.77	1.57	2306.97	.00	2303.50	100000.00	250.00
*	20.000	1000.00	2317.34	.00	2318.70	2317.34	2321.80	100000.00	40.25
*	20.000	2900.00	2320.24	2.89	2322.17	2320.24	2321.80	100000.00	68.54
	21.000	1000.00	2339.42	.00	2340.05	.00	2339.90	100000.00	110.92
*	21.000	2900.00	2340.74	1.31	2342.12	2340.74	2339.90	100000.00	115.00
*	22.000	1000.00	2354.38	.00	2354.69	2354.38	2354.00	2354.50	396.39
*	22.000	2900.00	2355.90	1.52	2357.38	2355.90	2354.00	100000.00	104.00
	23.000	1000.00	2368.15	.00	2368.66	2368.04	2368.00	100000.00	139.00
	23.000	2900.00	2369.65	1.51	2370.54	.00	2368.00	100000.00	139.00
*	23.100	2000.00	2370.17	.00	2370.36	.00	2419.60	100000.00	580.00
	23.100	2900.00	2371.45	1.28	2372.34	.00	100000.00	100000.00	150.00

1

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PAGE 14

	SECNO	Q	CWSEL	DIFWSP	EG	CRWS	XLBEL	RBEL	TOPWID
*	24.000	2000.00	2384.74	.00	2386.07	2384.74	2384.90	2384.20	106.19
*	24.000	2900.00	2385.75	1.00	2386.98	2385.75	2384.90	2384.20	165.00
*	25.100	2000.00	2407.55	.00	2409.26	2407.55	2403.40	2404.70	61.29
*	25.100	2900.00	2408.69	1.14	2410.64	2408.69	2403.40	2404.70	69.89

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PAGE 15

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	16.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	18.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	18.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	18.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	18.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY

WARNING SECNO=	19.500	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=	20.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	24.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.100	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	25.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.100	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.100	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL

ATTACHMENT II - 4
COMPUTATIONS PERFORMED TO PLACE
THE FLOOD INSURANCE ZONE BOUNDARIES
FOR NORTH BRANCH BLUE DIAMOND WASH

ATTACHMENT II - 4
COMPUTATIONS PERFORMED TO PLACE
THE FLOOD INSURANCE ZONE BOUNDARIES
FOR NORTH BRANCH BLUE DIAMOND WASH

~~NORTH BRANCH~~ BLUE DIAMOND WASH

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY LEAST-SQUARES FIT OF DATA

RETURN INTERVAL (YEARS)	INPUT DISCHARGE (CFS)	BEST FIT DISCHARGE (CFS)
10	25	29
20	276	215
30	590	530
40	911	869
50	1280	1243
60	1609	1679
70	1893	2082
80	2217	2446
90	2578	2772
100	2908	3065
200	5695	5964
500	12717	11210

MEAN = -4.616825
STANDARD DEVIATION = 5.590676
SKEW = -1.2

SUMMARY OF DISCHARGES:

10-YEAR DISCHARGE = 29
50-YEAR DISCHARGE = 1243
100-YEAR DISCHARGE = 3065
500-YEAR DISCHARGE = 11210

STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=3.5505+0.2447 \text{ LOG}(Q)$

MEAN OF Z = 2.420578
STANDARD DEVIATION = 1.368234
SKEW = -1.200000
TRANSFORMATION CONSTANT = 1.514291

~~NORTH BRANCH~~ BLUE DIAMOND WASH

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY LEAST-SQUARES FIT OF DATA

RETURN INTERVAL (YEARS)	INPUT DISCHARGE (CFS)	BEST FIT DISCHARGE (CFS)
10	25	29
20	276	215
30	590	530
40	911	869
50	1280	1243
60	1609	1679
70	1893	2082
80	2217	2446
90	2578	2772
100	2908	3065
200	5695	5964
500	12717	11210

MEAN = -4.616825
STANDARD DEVIATION = 5.590676
SKEW = -1.2

SUMMARY OF DISCHARGES:

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50-YEAR DISCHARGE = 1243
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STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=3.5505+0.2447 \text{ LOG}(Q)$

MEAN OF Z = 2.420578
STANDARD DEVIATION = 1.368234
SKEW = -1.200000
TRANSFORMATION CONSTANT = 1.514291

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.2447		
			Q	%3552.0313 Q	
0.5	0.3	49	0.08686	0.74919	1067
1.5	1.0	756	0.02734	0.43801	622
2.5	1.7	2712	0.01136	0.24835	320

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.2447		
			Q	%3552.0313 Q	
3.5	0.4	68	0.07862	0.72169	1028
4.5	0.6	238	0.04802	0.59209	844
5.5	0.9	649	0.02992	0.45961	655
6.5	1.3	1496	0.01795	0.33697	478
7.5	1.7	3059	0.01002	0.23049	271

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.2447		
			Q	%3552.0313 Q	
0.5	0.3	49	0.08686	0.74919	1067
1.5	1.0	756	0.02734	0.43801	622
2.5	1.7	2712	0.01136	0.24835	320

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.2447		
			Q	%3552.0313 Q	
3.5	0.4	68	0.07862	0.72169	1028
4.5	0.6	238	0.04802	0.59209	844
5.5	0.9	649	0.02992	0.45961	655
6.5	1.3	1496	0.01795	0.33697	478
7.5	1.7	3059	0.01002	0.23049	271

MULTIPLE-CHANNEL REGION

SLOPE = 0.0130000
N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%3552.0313 Q	
0.5	0.4	406	0.03780	0.52376	2835

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%3552.0313 Q	
3.5	0.6	1391	0.01875	0.34781	1874

MULTIPLE-CHANNEL REGION

SLOPE = 0.0130000
N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%3552.0313 Q	
0.5	0.4	406	0.03780	0.52376	2835

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%3552.0313 Q	
3.5	0.6	1391	0.01875	0.34781	1874

BLUE DIAMOND WASH

MEAN=-4.61683

STANDARD DEVIATION= 5.59068

SKEW=-1.2

QOVER	W*P(QOVER)	Q
3000	8.131666	5000
2900	8.264173	4900
2800	8.397544	4800
2700	8.531812	4700
2600	8.666949	4600
2500	8.802938	4500
2400	8.939776	4400
2300	9.077448	4300
2200	9.215934	4200
2100	9.355196	4100
2000	9.495196	4000
1900	9.635910	3900
1800	9.777266	3800
1700	9.919188	3700
1600	10.061630	3600
1500	10.204450	3500
1400	10.347530	3400
1300	10.490740	3300
1200	10.633880	3200
1100	10.776700	3100
1000	10.963010	3000
900	11.171400	2900
800	11.377700	2800
700	11.581020	2700
600	11.780250	2600
500	11.973870	2500
400	12.159740	2400
300	12.334830	2300
200	12.494280	2200
100	12.629090	2100
0	12.629090	2000
0	12.629090	1900
0	12.629090	1800
0	12.629090	1700
0	12.629090	1600
0	12.629090	1500
0	12.629090	1400
0	12.629090	1300
0	12.629090	1200
0	12.629090	1100
0	12.629090	1000
0	12.629090	900
0	12.629090	800

$$W * P(QOVER) = \int_Q^{\infty} 25.7504 (q - 2000)^{-4} \frac{1}{q} dq$$

Energy = 0.5

Contour width = 1216

For area subject to flooding
from both breakouts:

Contour width = 1216 + 1376
= 2592

BLUE DIAMOND WASH

MEAN=-4.61683

STANDARD DEVIATION= 5.59068

SKEW=-1.2

QOVER	W*P(QOVER)	Q
3000	8.131666	5000
2900	8.264173	4900
2800	8.397544	4800
2700	8.531812	4700
2600	8.666949	4600
2500	8.802938	4500
2400	8.939776	4400
2300	9.077448	4300
2200	9.215934	4200
2100	9.355196	4100
2000	9.495196	4000
1900	9.635910	3900
1800	9.777266	3800
1700	9.919188	3700
1600	10.061630	3600
1500	10.204450	3500
1400	10.347530	3400
1300	10.490740	3300
1200	10.633880	3200
1100	10.776700	3100
1000	10.963010	3000
900	11.171400	2900
800	11.377700	2800
700	11.581020	2700
600	11.780250	2600
500	11.973870	2500
400	12.159740	2400
300	12.334830	2300
200	12.494280	2200
100	12.629090	2100
0	12.629090	2000
0	12.629090	1900
0	12.629090	1800
0	12.629090	1700
0	12.629090	1600
0	12.629090	1500
0	12.629090	1400
0	12.629090	1300
0	12.629090	1200
0	12.629090	1100
0	12.629090	1000
0	12.629090	900
0	12.629090	800

$$W * P(QOVER) = \int_{Q}^{\infty} 35.7504 (q - 2000)^{-4} \frac{1}{Q^2} dq$$

Energy = 0.5

Contour width = 1216

For area subject to flooding from both breakouts;

$$\text{Contour width} = 1216 + 1376 = 2592$$

BLUE DIAMOND WASH

MEAN=-4.61683

STANDARD DEVIATION= 5.59068

SKEW=-1.2

QOVER	W*P(QOVER)	Q
2500	6.802554	5000
2450	6.926077	4900
2400	7.051109	4800
2350	7.177733	4700
2300	7.305983	4600
2250	7.435908	4500
2200	7.567578	4400
2150	7.701059	4300
2100	7.836420	4200
2050	7.973725	4100
2000	8.113046	4000
1950	8.254488	3900
1900	8.398118	3800
1850	8.544022	3700
1800	8.692335	3600
1750	8.843126	3500
1700	8.996522	3400
1650	9.152659	3300
1600	9.311656	3200
1550	9.473658	3100
1500	9.690014	3000
1450	9.938581	2900
1400	10.192330	2800
1350	10.451570	2700
1300	10.716650	2600
1250	10.987930	2500
1200	11.265780	2400
1150	11.550670	2300
1100	11.843100	2200
1050	12.143630	2100
1000	12.452850	2000
950	12.771520	1900
900	13.100410	1800
850	13.440440	1700
800	13.792730	1600
750	14.158470	1500
700	14.539170	1400
650	14.936550	1300
600	15.400480	1200
550	15.953200	1100
500	16.536960	1000
450	17.156920	900
400	17.914160	800

$$W * P(QOVER) = \int_Q^{\infty} 35.7504 \left(\frac{Q}{2}\right)^{-4} \frac{1}{Q} dQ$$

$$W(Q=1000) = 35.7504 (1000)^{-4} = 566.6$$

$$P(Q > capacity) = 0.014728$$

$$W(Q=1000)P(Q > 2000) = 8.3449$$

Capacity

$$35.7504 \int_{800}^{2000} \left(\frac{Q}{2}\right)^{-4} \frac{1}{Q} dQ + 35.7504 (1000)^{-4} \int_{2000}^{\infty} \frac{1}{Q} dQ$$

$$Energy = 0.5 : 17.91 - 12.45 + 8.3 = 13.76$$

$$Contour width L = 1376$$

BLUE DIAMOND WASH

MEAN=-4.61683

STANDARD DEVIATION= 5.59068

SKEW=-1.2

QOVER	W*P(QOVER)	Q
2500	6.802554	5000
2450	6.926077	4900
2400	7.051109	4800
2350	7.177733	4700
2300	7.305983	4600
2250	7.435908	4500
2200	7.567578	4400
2150	7.701059	4300
2100	7.836420	4200
2050	7.973725	4100
2000	8.113046	4000
1950	8.254488	3900
1900	8.398118	3800
1850	8.544022	3700
1800	8.692335	3600
1750	8.843126	3500
1700	8.996522	3400
1650	9.152659	3300
1600	9.311656	3200
1550	9.473658	3100
1500	9.690014	3000
1450	9.938581	2900
1400	10.192330	2800
1350	10.451570	2700
1300	10.716650	2600
1250	10.987930	2500
1200	11.265780	2400
1150	11.550670	2300
1100	11.843100	2200
1050	12.143630	2100
1000	12.452850	2000
950	12.771520	1900
900	13.100410	1800
850	13.440440	1700
800	13.792730	1600
750	14.158470	1500
700	14.539170	1400
650	14.936550	1300
600	15.400480	1200
550	15.953200	1100
500	16.536960	1000
450	17.156920	900
400	17.914160	800

$$W*P(QOVER) = \int_Q^{\infty} 35.7504 \left(\frac{Q}{2}\right)^{-4} \frac{1}{Q} dQ$$

$$W(Q=1000) = 35.7504 (1000)^{-4} = 566.6$$

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$$W(Q=1000)P(Q > 2000) = 8.3449$$

Capacity

$$35.7504 \int_{800}^{2000} \left(\frac{Q}{2}\right)^{-4} \frac{1}{Q} dQ + 35.7504 (1000)^{-4} \int_{2000}^{\infty} \frac{1}{Q} dQ$$

$$Energy = 0.5 : 17.91 - 12.45 + 8.3 = 13.76$$

$$Contour width = 1376$$

BLUE DIAMOND WASH

MEAN=-4.61683 STANDARD DEVIATION= 5.59068 SKEW=-1.2

q	P(Q>q)
5000	0.006324
4900	0.006476
4800	0.006631
4700	0.006789
4600	0.006951
4500	0.007116
4400	0.007284
4300	0.007457
4200	0.007634
4100	0.007815
4000	0.008000
3900	0.008190
3800	0.008385
3700	0.008586
3600	0.008791
3500	0.009003
3400	0.009221
3300	0.009445
3200	0.009676
3100	0.009914
3000	0.010237
2900	0.010613
2800	0.011001
2700	0.011404
2600	0.011822
2500	0.012257
2400	0.012709
2300	0.013180
2200	0.013673
2100	0.014188
2000	0.014728
1900	0.015296
1800	0.015895
1700	0.016528
1600	0.017200
1500	0.017915
1400	0.018679
1300	0.019500
1200	0.020488
1100	0.021706
1000	0.023039
900	0.024513
800	0.026396

$$P(Q > q) = \int_q^{\infty} f_Q(q) dq$$

Capacity

BLUE DIAMOND WASH

MEAN=-4.61683

STANDARD DEVIATION= 5.59068

SKEW=-1.2

q	P(Q>q)
5000	0.006324
4900	0.006476
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3900	0.008190
3800	0.008385
3700	0.008586
3600	0.008791
3500	0.009003
3400	0.009221
3300	0.009445
3200	0.009676
3100	0.009914
3000	0.010237
2900	0.010613
2800	0.011001
2700	0.011404
2600	0.011822
2500	0.012257
2400	0.012709
2300	0.013180
2200	0.013673
2100	0.014188
2000	0.014728
1900	0.015296
1800	0.015895
1700	0.016528
1600	0.017200
1500	0.017915
1400	0.018679
1300	0.019500
1200	0.020488
1100	0.021706
1000	0.023039
900	0.024513
800	0.026396

$$P(Q > q) = \int_q^{\infty} f_Q(q) dq$$

Capacity

ATTACHMENT II - 5
COMPUTATIONS PERFORMED TO PLACE
THE FLOOD INSURANCE ZONE BOUNDARIES
FOR MIDDLE BRANCH BLUE DIAMOND WASH

ATTACHMENT II - 5
COMPUTATIONS PERFORMED TO PLACE
THE FLOOD INSURANCE ZONE BOUNDARIES
FOR MIDDLE BRANCH BLUE DIAMOND WASH

~~MIDDLE~~
~~9504~~ BRANCH BLUE DIAMOND

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY LEAST-SQUARES FIT OF DATA

RETURN INTERVAL (YEARS)	INPUT DISCHARGE (CFS)	BEST FIT DISCHARGE (CFS)
10	19	22
20	256	194
30	558	501
40	863	840
50	1225	1213
60	1551	1641
70	1836	2037
80	2125	2395
90	2483	2717
100	2812	3005
200	5533	5737
500	12458	10326

MEAN = -5.827590
STANDARD DEVIATION = 6.730085
SKEW = -1.3

SUMMARY OF DISCHARGES:

10-YEAR DISCHARGE = 22
50-YEAR DISCHARGE = 1213
100-YEAR DISCHARGE = 3005
500-YEAR DISCHARGE = 10326

STATISTICS AFTER TRANSFORMATION OF $Y=\text{LOG}(Q)$ TO $Z=3.6255+0.1990 \text{ LOG}(Q)$

MEAN OF Z = 2.465726
STANDARD DEVIATION = 1.339429
SKEW = -1.300000
TRANSFORMATION CONSTANT = 1.409653

~~MIDDLE~~
~~SECT~~ BRANCH BLUE DIAMOND

AVULSION FACTOR = 1.0000

FLOOD FREQUENCY CURVE DEFINED BY LEAST-SQUARES FIT OF DATA

RETURN INTERVAL (YEARS)	INPUT DISCHARGE (CFS)	BEST FIT DISCHARGE (CFS)
10	19	22
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SKEW = -1.3

SUMMARY OF DISCHARGES:

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MEAN OF Z = 2.465726
STANDARD DEVIATION = 1.339429
SKEW = -1.300000
TRANSFORMATION CONSTANT = 1.409653

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.1990		
			Q	%4222.2144 Q	
0.5	0.3	49	0.08155	0.76478	1014
1.5	1.0	756	0.02670	0.45579	604
2.5	1.7	2712	0.01113	0.25679	304

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.1990		
			Q	%4222.2144 Q	
3.5	0.4	68	0.07396	0.73696	977
4.5	0.6	238	0.04617	0.61056	810
5.5	0.9	649	0.02916	0.47823	634
6.5	1.3	1496	0.01769	0.35102	464

SINGLE-CHANNEL REGION

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			0.1990		
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5.5	0.9	649	0.02916	0.47823	634
6.5	1.3	1496	0.01769	0.35102	464

MULTIPLE-CHANNEL REGION

SLOPE = 0.0137000
N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%4222.2144 Q	
0.5	0.4	412	0.03647	0.54117	2727

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%4222.2144 Q	
3.5	0.6	1303	0.01921	0.37281	1879

MULTIPLE-CHANNEL REGION

SLOPE = 0.0137000

N-VALUE = 0.0350000

ENERGY (FT)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%4222.2144 Q	
0.5	0.4	412	0.03647	0.54117	2727

VELOCITY (FT/SEC)	DEPTH (FT)	DISCHARGE (CFS)	PROBABILITY OF DISCHARGE BEING EXCEEDED AT THE APEX BY:		WIDTH (FT)
			Q	%4222.2144 Q	
3.5	0.6	1303	0.01921	0.37281	1879

**III. NORTH BRANCH AND MIDDLE BRANCH
BLUE DIAMOND WASH**

(DUCK CREEK TO INTERSTATE 15)

**III. NORTH BRANCH AND MIDDLE BRANCH
BLUE DIAMOND WASH**

(DUCK CREEK TO INTERSTATE 15)

III. NORTH BRANCH AND MIDDLE BRANCH BLUE DIAMOND WASH (DUCK CREEK TO INTERSTATE-15)

This study covers North Branch Blue Diamond Wash from its confluence with Duck Creek to Interstate-15, and Middle Branch Blue Diamond Wash from its confluence with Duck Creek to Interstate-15 (refer to Attachment III - 1). For the downstream portion of North Branch Blue Diamond Wash (from the confluence with Duck Creek to Amigo Street) shallow flooding methods were used to determine the flooding not contained by the channel. For the reach upstream of Amigo Street to Interstate-15, backwater computations utilizing the HEC-2 hydraulic computer program were developed for the 100-year flood and floodway. For the downstream reach of Middle Branch Blue Diamond Wash (from the confluence with Duck Creek to Bermuda Road), shallow flooding along Windmill Lane was determined based on the discharge exceeding the Windmill channel capacity. For the reach upstream of Bermuda Road to Interstate-15, backwater computations utilizing HEC-2 were developed for the 100-year flood and floodway. The areas subject to flooding from the 100-year flood were delineated on the accompanying work maps based on analyses and information described herein.

Peak discharge values for the 100-year flood were determined as described in Section II (North Branch and Middle Branch Blue Diamond Wash - Union Pacific Railroad to Interstate-15). The following table summarizes the 100-year flows used in this study for North Branch and Middle Branch Blue Diamond Wash:

<u>Location</u>	<u>Drainage Area</u>	<u>Discharge (cfs)</u>
North Branch Blue Diamond Wash at Interstate 15	72.7*	2,900
Middle Branch Blue Diamond Wash at Interstate 15	72.6*	2,800

* Drainage area taken from JMM 1991 FIS Hydrology Report

The corresponding peak flows listed in the "Las Vegas Valley Flood Insurance Study Hydrology Report," dated September 1991, for the 100-year event for North Branch and Middle Branch Blue Diamond Wash are both 3,400 cfs. The flows in this study reflect the effects of the Blue Diamond Fan analyses (see Section II) and therefore supercede the previous flows for these washes.

Cross-sectional information for these flooding sources were obtained from the HEC-2 computer analyses prepared by James M. Montgomery Consulting Engineers, Inc. (JMM) in 1986 for the draft Flood Insurance Study for the Unincorporated Areas of Clark County, Nevada, dated August, 1986. Additional information utilized to update and/or revise this data was obtained from: CLOMR and LOMR data listed in Attachment III - 2; recent aerial photographic maps entitled 'Las Vegas', dated April, 1991; plans and mapping obtained from the Clark County Public Works Department (CCPWD); field investigations conducted in February, 1992; and recent topographic maps entitled 'Duck Creek Wash' dated October 15, 1992, prepared by CH2MHill.

The hydraulic analysis for North Branch Blue Diamond Wash included a HEC-2 computer model for the 100-year flood and floodway from Amigo Street upstream

III. NORTH BRANCH AND MIDDLE BRANCH BLUE DIAMOND WASH (DUCK CREEK TO INTERSTATE-15)

This study covers North Branch Blue Diamond Wash from its confluence with Duck Creek to Interstate-15, and Middle Branch Blue Diamond Wash from its confluence with Duck Creek to Interstate-15 (refer to Attachment III - 1). For the downstream portion of North Branch Blue Diamond Wash (from the confluence with Duck Creek to Amigo Street) shallow flooding methods were used to determine the flooding not contained by the channel. For the reach upstream of Amigo Street to Interstate-15, backwater computations utilizing the HEC-2 hydraulic computer program were developed for the 100-year flood and floodway. For the downstream reach of Middle Branch Blue Diamond Wash (from the confluence with Duck Creek to Bermuda Road), shallow flooding along Windmill Lane was determined based on the discharge exceeding the Windmill channel capacity. For the reach upstream of Bermuda Road to Interstate-15, backwater computations utilizing HEC-2 were developed for the 100-year flood and floodway. The areas subject to flooding from the 100-year flood were delineated on the accompanying work maps based on analyses and information described herein.

Peak discharge values for the 100-year flood were determined as described in Section II (North Branch and Middle Branch Blue Diamond Wash - Union Pacific Railroad to Interstate-15). The following table summarizes the 100-year flows used in this study for North Branch and Middle Branch Blue Diamond Wash:

<u>Location</u>	<u>Drainage Area</u>	<u>Discharge (cfs)</u>
North Branch Blue Diamond Wash at Interstate 15	72.7*	2,900
Middle Branch Blue Diamond Wash at Interstate 15	72.6*	2,800

* Drainage area taken from JMM 1991 FIS Hydrology Report

The corresponding peak flows listed in the "Las Vegas Valley Flood Insurance Study Hydrology Report," dated September 1991, for the 100-year event for North Branch and Middle Branch Blue Diamond Wash are both 3,400 cfs. The flows in this study reflect the effects of the Blue Diamond Fan analyses (see Section II) and therefore supercede the previous flows for these washes.

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The hydraulic analysis for North Branch Blue Diamond Wash included a HEC-2 computer model for the 100-year flood and floodway from Amigo Street upstream

to Interstate-15. For areas downstream from Amigo Street, HEC-2 computations were utilized to determine channel capacities. For flows exiting the channel, shallow flooding methods and available topographic mapping were utilized to determine areas subject to shallow flooding. Computations in this area were based on development plans for Buckingham Estates, Unit #1 and #2. The channel area from Amigo Street to Duck Creek was designated Zone A because final channel banks and linings have not been completed.

The hydraulic analysis for Middle Branch Blue Diamond Wash included a HEC-2 computer model that used the split flow option to calculate the amount of flow that leaves the main channel at Giles pie Street. The ground to the north of the wash is lower than the water surface elevation, resulting in a flow split toward the north. At Giles pie Street, approximately 80 cubic feet per second (cfs) overflows the main channel to the north. This flow continues to flow south of and parallel to Windmill Lane, and the resulting flooding has average depths of less than 1 foot. The flow combines with the flow in the main channel east of Bermuda Road and flows in Windmill Lane and Windmill Channel to the confluence with Duck Creek.

The floodway for the reach of Middle Branch Blue Diamond Wash downstream of the split flow area at Giles pie Street was analyzed assuming that the flow splits would be confined in the main wash for the floodway run. The encroached 100-year flood elevations (with no flow splits allowed) were compared to the un-encroached 100-year flood elevation (with the flow splits allowed) to make certain that the one-foot surcharge was not exceeded.

to Interstate-15. For areas downstream from Amigo Street, HEC-2 computations were utilized to determine channel capacities. For flows exiting the channel, shallow flooding methods and available topographic mapping were utilized to determine areas subject to shallow flooding. Computations in this area were based on development plans for Buckingham Estates, Unit #1 and #2. The channel area from Amigo Street to Duck Creek was designated Zone A because final channel banks and linings have not been completed.

The hydraulic analysis for Middle Branch Blue Diamond Wash included a HEC-2 computer model that used the split flow option to calculate the amount of flow that leaves the main channel at Giles pie Street. The ground to the north of the wash is lower than the water surface elevation, resulting in a flow split toward the north. At Giles pie Street, approximately 80 cubic feet per second (cfs) overflows the main channel to the north. This flow continues to flow south of and parallel to Windmill Lane, and the resulting flooding has average depths of less than 1 foot. The flow combines with the flow in the main channel east of Bermuda Road and flows in Windmill Lane and Windmill Channel to the confluence with Duck Creek.

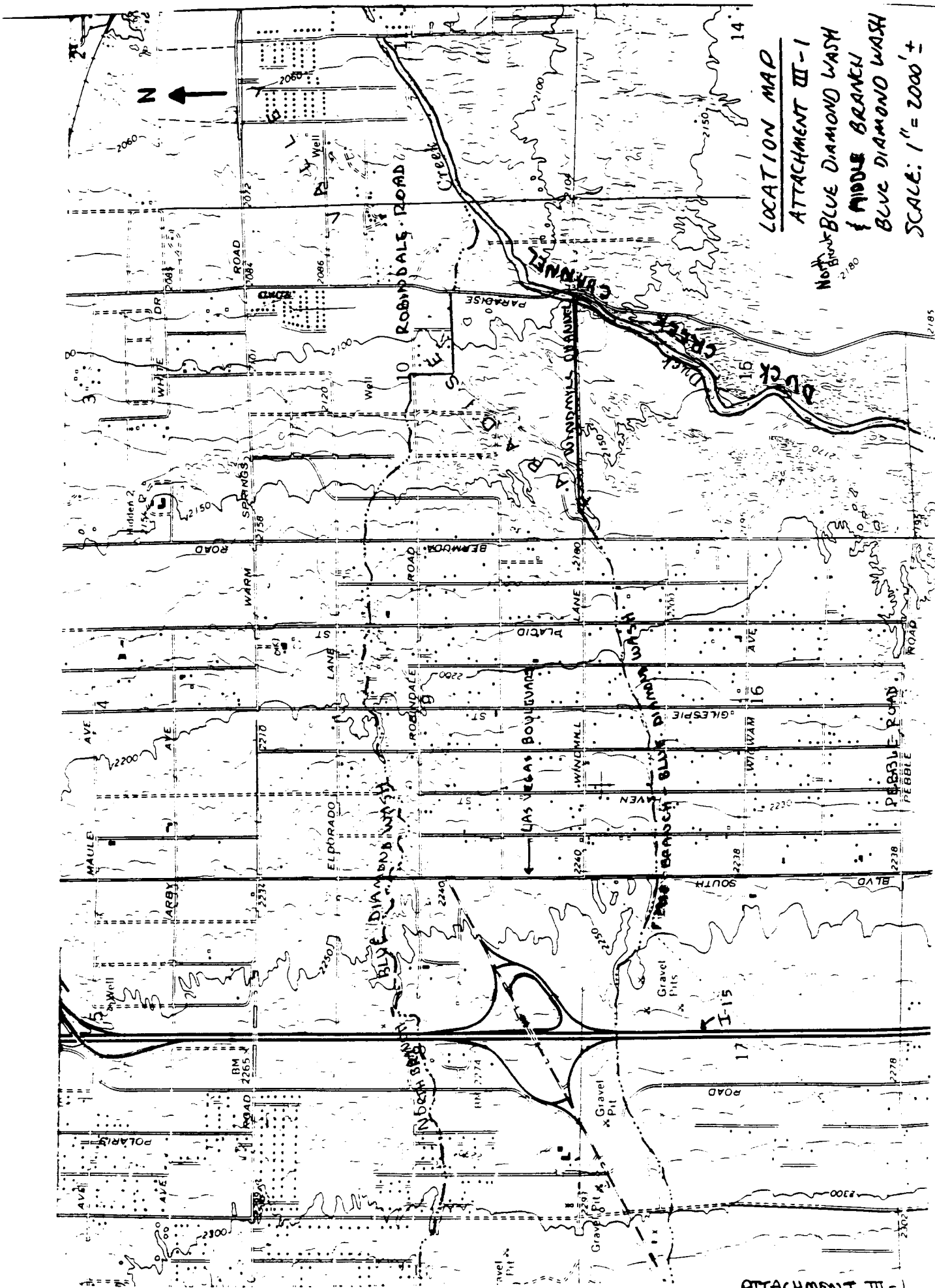
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ATTACHMENT III - 1

**LOCATION MAP - NORTH BRANCH AND MIDDLE
BRANCH BLUE DIAMOND WASH**

ATTACHMENT III - 1

**LOCATION MAP - NORTH BRANCH AND MIDDLE
BRANCH BLUE DIAMOND WASH**



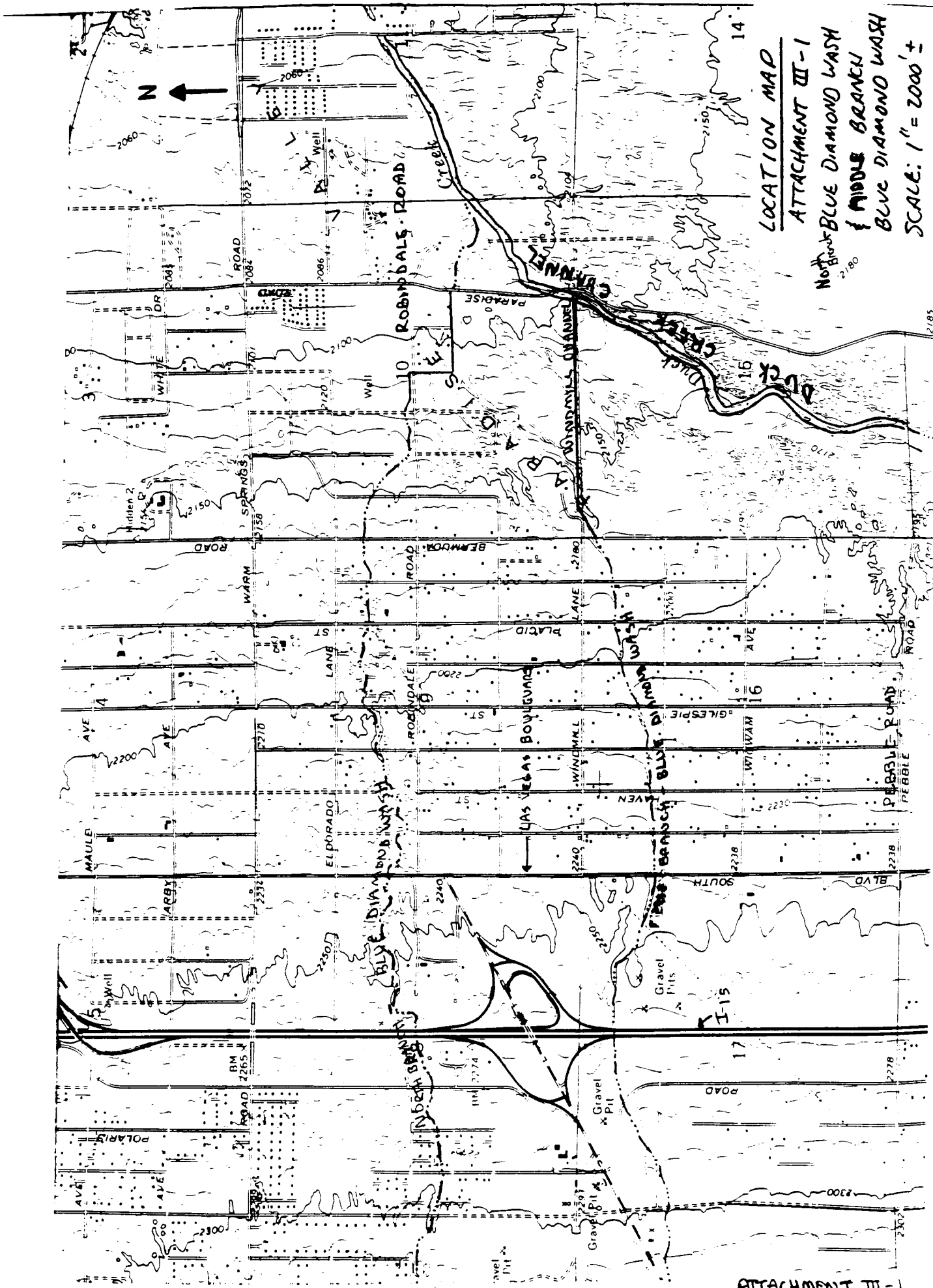
LOCATION MAP

ATTACHMENT III-1

NOT BLUE DIAMOND WASH
BLUE BRANCH
BLUE DIAMOND WASH

SCALE: 1" = 2000' ±

ATTACHMENT III-1



ATTACHMENT III - 2
CALCULATIONS / BACKUP DATA

ATTACHMENT III - 2
CALCULATIONS / BACKUP DATA

CLARK COUNTY, NEVADA

North Branch Blue Diamond Wash and Middle Branch Blue Diamond Wash

5/19/93 computed by: MER

checked by: RLW

Comments incorporated

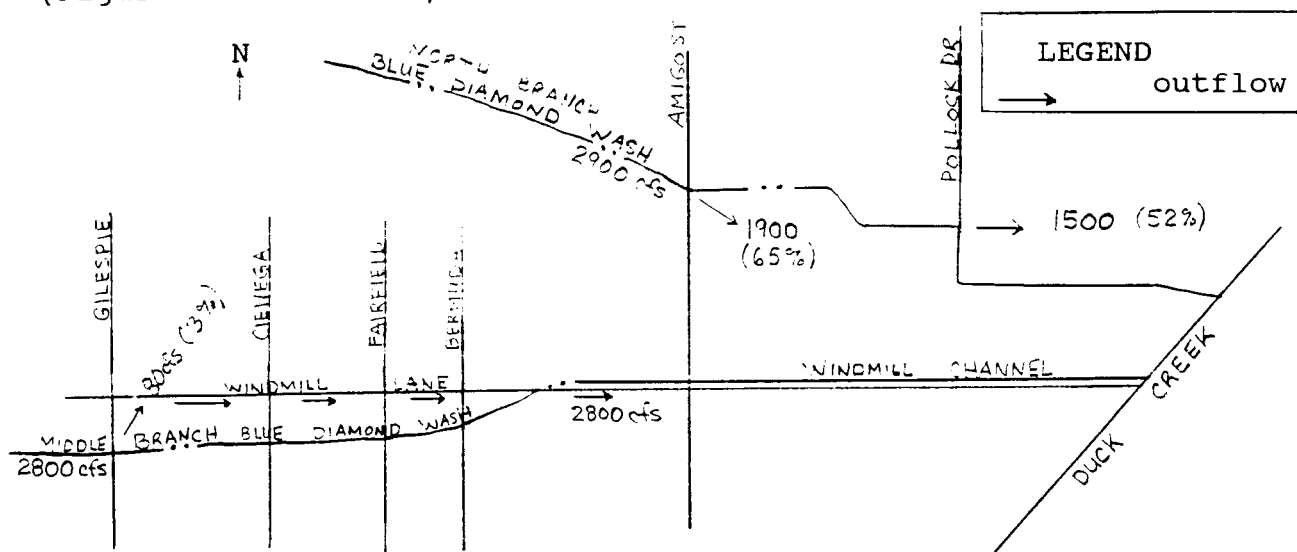
Discussion and Schematic of Split Flows

<u>Location</u>	<u>Middle Branch Blue Diamond Wash</u>	<u>North Branch Blue Diamond Wash</u>
Gillespie St.	80 cfs flows north-east parallel to and south of Windmill Lane. The resulting flooding from this split is less than 1 foot in depth. The flow combines with the flow in the main channel east of Bermuda Road and flows in Windmill Lane and Windmill Channel to the confluence with Duck Creek.	
Amigo St.		1900 cfs exceeds channel capacity and flows southeast
Pollock Dr.		1500 cfs exceeds channel capacity and continues east to Duck Creek

Assume that the 1900 cfs that escapes at Amigo returns to channel along Pollock Dr. therefore, resulting in 1500 cfs exceeding channel capacity.

NOTE: These values are based on recent topographic data (1992), and flow split estimates.

(Figure not to scale)



CLARK COUNTY, NEVADA

North Branch Blue Diamond Wash and Middle Branch Blue Diamond Wash

5/19/93 computed by: MER

checked by: RLW

Comments Incorporated

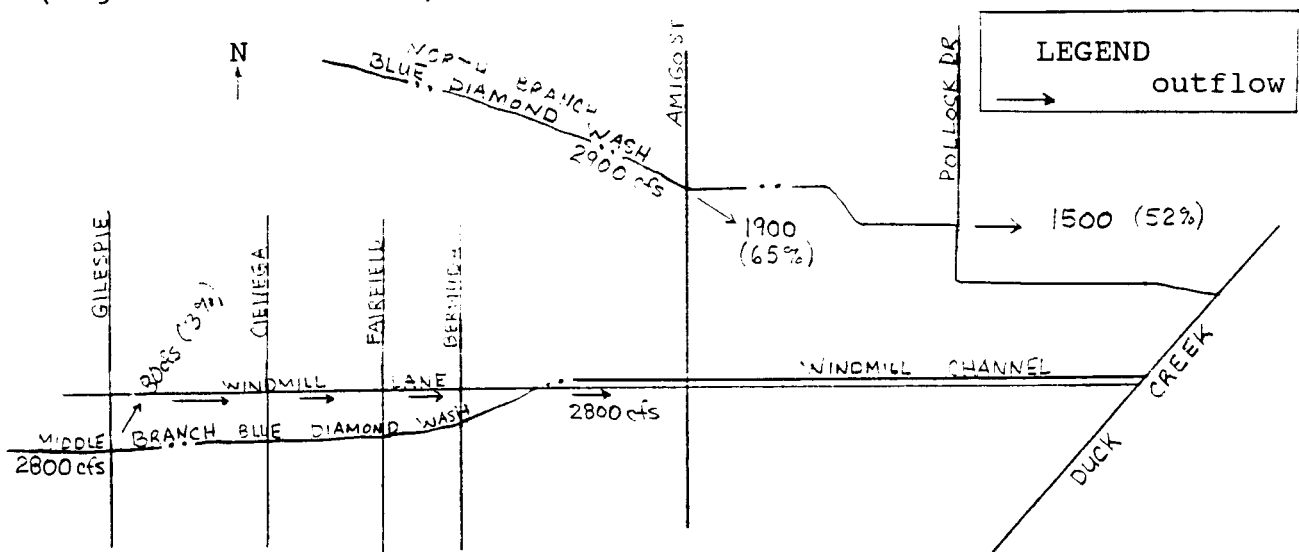
Discussion and Schematic of Split Flows

<u>Location</u>	<u>Middle Branch Blue Diamond Wash</u>	<u>North Branch Blue Diamond Wash</u>
Gillespie St.	80 cfs flows north-east parallel to and south of Windmill Lane. The resulting flooding from this split is less than 1 foot in depth. The flow combines with the flow in the main channel east of Bermuda Road and flows in Windmill Lane and Windmill Channel to the confluence with Duck Creek.	
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Assume that the 1900 cfs that escapes at Amigo returns to channel along Pollock Dr. therefore, resulting in 1500 cfs exceeding channel capacity.

NOTE: These values are based on recent topographic data (1992), and flow split estimates.

(Figure not to scale)



List of CLOMRs and LOMRs

<u>Stream</u>		<u>Property</u>	<u>Request Type</u>	<u>Date Issued</u>
Duck Creek	*	Symphony Encore	LOMR	10/4/91
Duck Creek		Paradise Estates	CLOMR	dropped
Duck Creek		Robindale Terrace	LOMR	6/5/91
Duck Creek		Crystal Springs Unit 5-6	LOMR	10/26/89
Duck Creek		Crystal Springs Unit 6-7	LOMR	7/17/89
Duck Creek		Crystal Springs Unit 8-9	LOMR	10/16/90
Duck Creek		Crystal Springs Unit 11-12	LOMR	6/23/92
Duck Creek		Windmill Village	CLOMR	11/24/92
Middle Branch Blue Diamond Wash		Buckingham Estates Unit 1	LOMR	8/1/90
Middle Branch Blue Diamond Wash	*	Carousel Park	LOMR	4/1/91
North Branch Blue Diamond Wash	*	Buckingham Estates Unit 2	CLOMR	3/12/91

* Floodplain revised. Flooding is not contained in channel.

List of CLOMRs and LOMRs

<u>Stream</u>		<u>Property</u>	<u>Request Type</u>	<u>Date Issued</u>
Duck Creek	*	Symphony Encore	LOMR	10/4/91
Duck Creek		Paradise Estates	CLOMR	dropped
Duck Creek		Robindale Terrace	LOMR	6/5/91
Duck Creek		Crystal Springs Unit 5-6	LOMR	10/26/89
Duck Creek		Crystal Springs Unit 6-7	LOMR	7/17/89
Duck Creek		Crystal Springs Unit 8-9	LOMR	10/16/90
Duck Creek		Crystal Springs Unit 11-12	LOMR	6/23/92
Duck Creek		Windmill Village	CLOMR	11/24/92
Middle Branch Blue Diamond Wash		Buckingham Estates Unit 1	LOMR	8/1/90
Middle Branch Blue Diamond Wash	*	Carousel Park	LOMR	4/1/91
North Branch Blue Diamond Wash	*	Buckingham Estates Unit 2	CLOMR	3/12/91

* Floodplain revised. Flooding is not contained in channel.

North Branch Blue Diamond Wash - AO Zones

NOTES:

1. The future 3-4'x7' culverts at Amigo St. were not modeled. Did include cross sections in model for the channel north of Robindale Road. Information based on Rough Grading Plans for Lewis Homes-Paradise No. 4.
2. Assumed the flow escaping downstream of Amigo Street will reenter along Pollock Drive.
3. Because the present channel does not contain the 100 year flood and detailed survey information was not available for the present conditions, the channel downstream of Amigo Street was designed Zone A.
4. Shallow flooding downstream of Amigo Street was calculated based on available topographic information and plans for Buckingham Estates.

100-Year Flood Basis:

1. Capacities of North Branch Blue Diamond Wash run in HEC-2
2. Flows in excess of capacity used to calculate AO depth
3. Channel designated as Zone A

Middle Branch Blue Diamond Wash

NOTES:

1. Assumed the 80 cfs that escapes at Giles pie St. combines with main channel flows downstream of Bermuda St. 80 cfs flows parallel to Windmill Lane until it combines with the main channel flows.
2. The shallow flooding north of Middle Branch Blue Diamond Wash was determined from available topographic information. The depth was less than 1 foot.

100 Year Flood Basis:

1. Split flow analysis run in HEC-2
2. Total diversion flow = 80 cfs
3. 100-year flood elevations downstream of Giles pie St. based on 2720 cfs.
4. Floodway based on total flow of 2800 cfs. Surcharges (difference in encroached model elevations and split flow model elevations) were less than 1 foot.

North Branch Blue Diamond Wash - AO Zones

NOTES:

1. The future 3-4'x7' culverts at Amigo St. were not modeled. Did include cross sections in model for the channel north of Robindale Road. Information based on Rough Grading Plans for Lewis Homes-Paradise No. 4.
2. Assumed the flow escaping downstream of Amigo Street will reenter along Pollock Drive.
3. Because the present channel does not contain the 100 year flood and detailed survey information was not available for the present conditions, the channel downstream of Amigo Street was designed Zone A.
4. Shallow flooding downstream of Amigo Street was calculated based on available topographic information and plans for Buckingham Estates.

100-Year Flood Basis:

1. Capacities of North Branch Blue Diamond Wash run in HEC-2
2. Flows in excess of capacity used to calculate AO depth
3. Channel designated as Zone A

Middle Branch Blue Diamond Wash

NOTES:

1. Assumed the 80 cfs that escapes at Giles pie St. combines with main channel flows downstream of Bermuda St. 80 cfs flows parallel to Windmill Lane until it combines with the main channel flows.
2. The shallow flooding north of Middle Branch Blue Diamond Wash was determined from available topographic information. The depth was less than 1 foot.

100 Year Flood Basis:

1. Split flow analysis run in HEC-2
2. Total diversion flow = 80 cfs
3. 100-year flood elevations downstream of Giles pie St. based on 2720 cfs.
4. Floodway based on total flow of 2800 cfs. Surcharges (difference in encroached model elevations and split flow model elevations) were less than 1 foot.

Windmill Channel Capacity

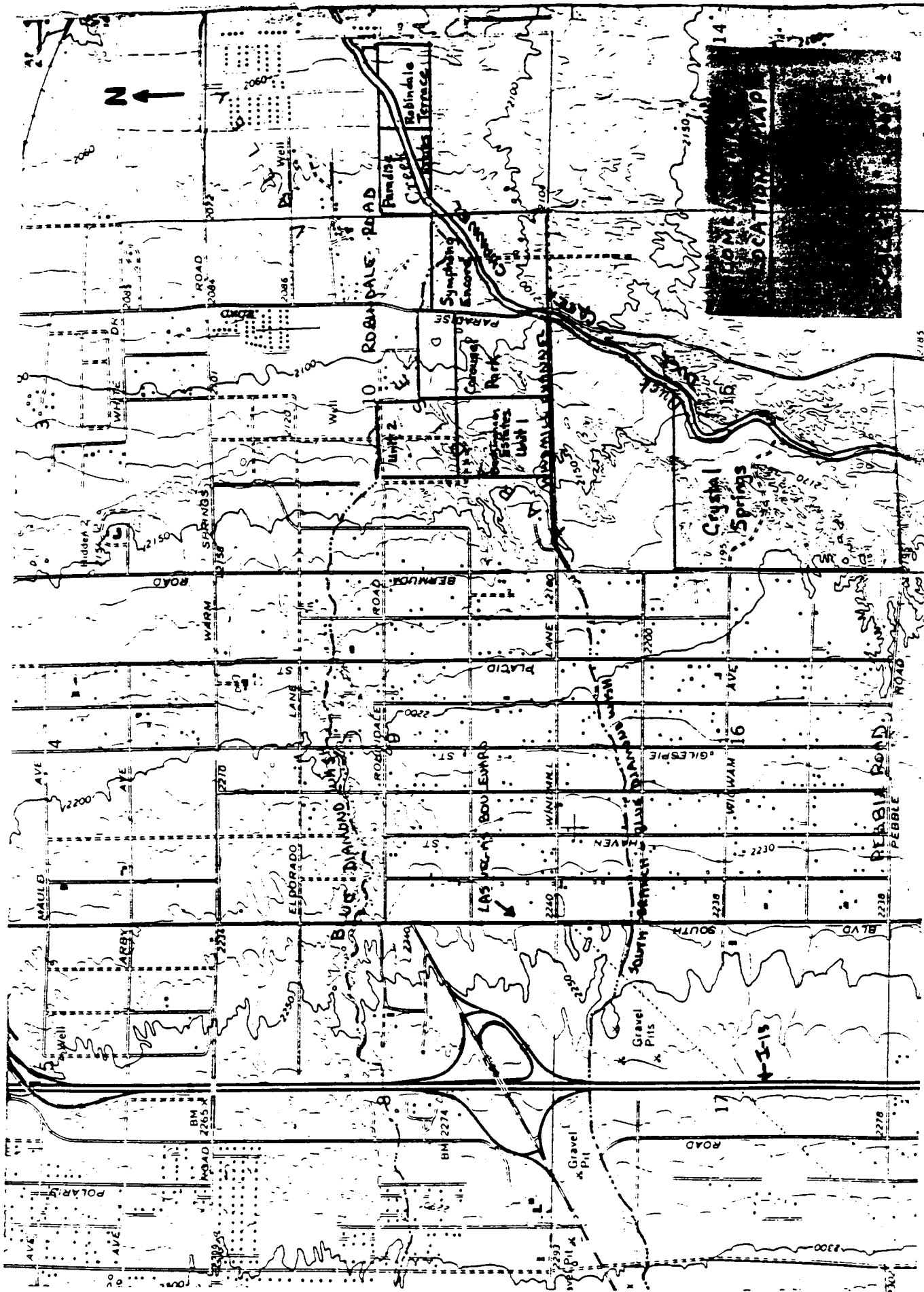
NOTES:

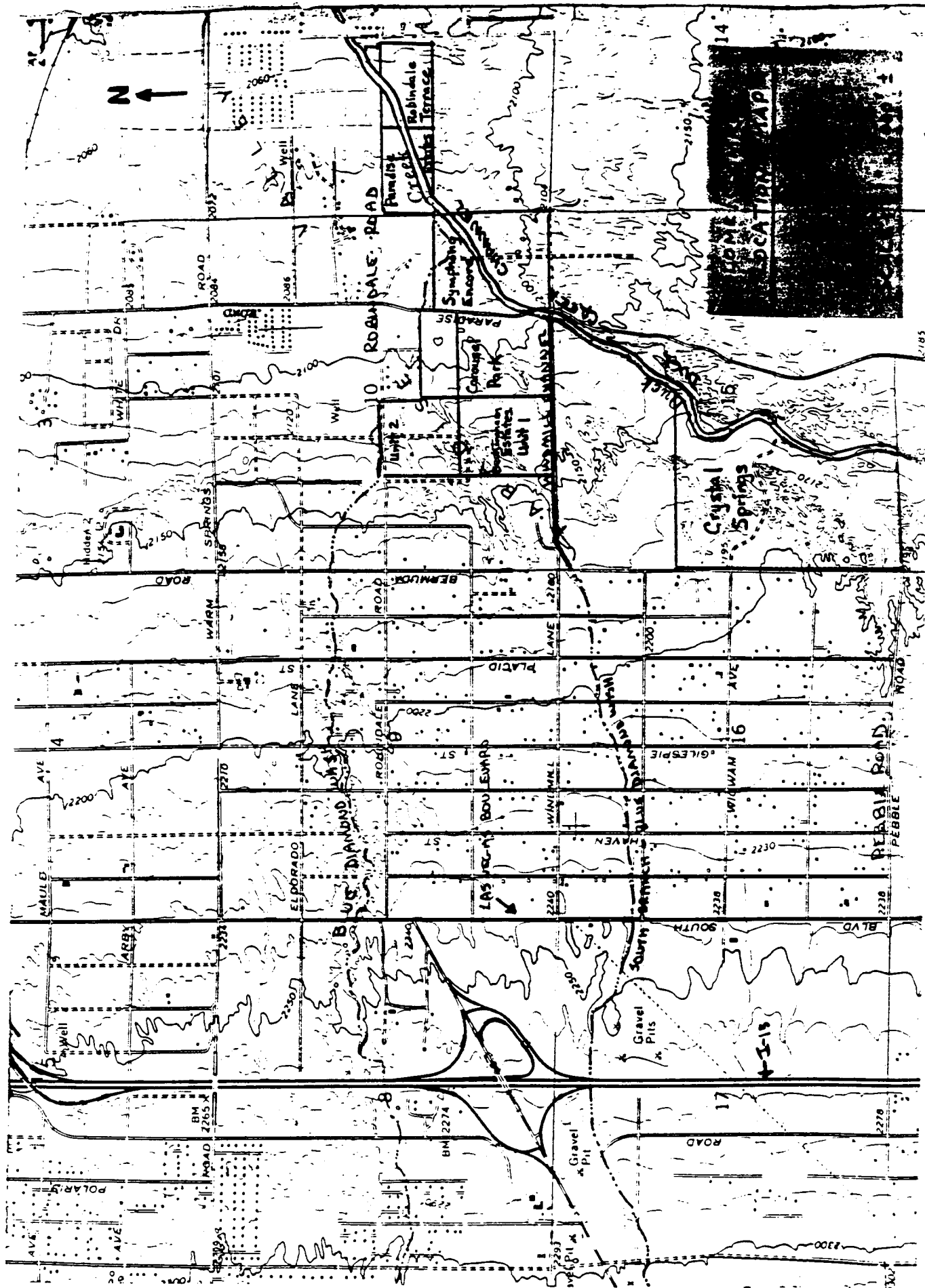
1. The capacity was calculated for the Windmill Channel and Windmill Lane.
2. The total flow of 2800 cfs results in an average depth of one foot depth in Windmill Lane.
3. The Windmill Channel was designated as Zone A
4. Windmill Lane was designated as shallow flooding 1 foot depth.

Windmill Channel Capacity

NOTES:

1. The capacity was calculated for the Windmill Channel and Windmill Lane.
2. The total flow of 2800 cfs results in an average depth of one foot depth in Windmill Lane.
3. The Windmill Channel was designated as Zone A
4. Windmill Lane was designated as shallow flooding 1 foot depth.





ATTACHMENT III - 3
HEC - 2 RUNS

ATTACHMENT III - 3
HEC - 2 RUNS

Cross Section Correlation

11/24/92

Middle Branch		North Branch Blue Diamond		Duck		Duck Creek	
Blue Diam. Wash		Wash		Creek		Trib	
18.46		0		4500	A	7300	M
24		.11	L A	4600		7400	
25.4		22	M	4650		7410	
25.41		5	H E	4750		7420	
25.42	A	7	O C	4850		7500	A
25.43	A	7.1	P D	4950	B	7600	B
100	B	8	Q E	5050		7700	C
110		8.5		5150	C	7800	D
120		9	R F	5250		7810	
130	C	9.1	S G	5350		7820	
200	D	10	T H	5450		7840	
400	E	10.5	U I	5550			
410	F	11	V J	6400	D		
440		11.1	W K	6500	E		
480	G	12	X L	6600	F		
500	H	13	Y M	6700	G		
510	I	13.1		6800	H		
580	J	13.2	Z	6900	I		
600	K	13.5	AA N	7000	J		
610	L	14	AB O	7050			
710	M	15	AC P	7100	K		
720		15.1	AD Q	7200	L		
730	N	15.2	AE	7300	M		
800	O			7900	N		
900	P			8000	O		
910				8100	P		

Cross Section Correlation

11/24/92

Blue Diam. Wash	Blue Diamond Wash	Duck Creek	Duck Creek Trib
18.46	0	4500 A	7300 M
24	.11 L A	4600	7400
25.4	.22 M	4650	7410
25.41	5 H E	4750	7420
25.42 A	7 O C	4850	7500 A
25.43 A	7.1 P E	4950 B	7600 B
100 B	8 Q E	5050	7700 C
110	8.5	5150 C	7800 D
120	9 R F	5250	7810
130 C	9.1 S E	5350	7820
200 D	10 T E	5450	7840
400 E	10.5 U E	5550	
410 F	11 V E	6400 D	
440	11.1 W E	6500 E	
480 G	12 X E	6600 F	
500 H	13 Y M	6700 G	
510 I	13.1 H	6800 H	
580 J	13.2 Z	6900 I	
600 K	13.5 AA E	7000 J	
610 L	14 AB E	7050	
710 M	15 AC E	7100 K	
720	15.1 AD E	7200 L	
730 N	15.2 AE	7300 M	
800 O		7900 N	
900 P		8000 O	
910		8100 P	

NORTH BRANCH BLUE DIAMOND WASH (DUCK CREEK TO INTERSTATE-15)

**5BDMCAP: Capacity of North Branch Blue Diamond Wash
Downstream of Amigo Street, 65pp**

**NT3BD: Floodway Run on North Branch Blue Diamond Wash
Using 1992 Topography, 66pp**

NORTH BRANCH BLUE DIAMOND WASH (DUCK CREEK TO INTERSTATE-15)

**5BDMCAP: Capacity of North Branch Blue Diamond Wash
Downstream of Amigo Street, 65pp**

**NT3BD: Floodway Run on North Branch Blue Diamond Wash
Using 1992 Topography, 66pp**

THIS RUN EXECUTED 14MAY93 13:14:11

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 CLARK COUNTY FLOOD INSURANCE STUDY - REVISED BY MBJ
 T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS INC.
 T3 BLUE DIAMOND WASH - 100 YEAR FLOOD

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			.0067				2075	

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

JT	4	1000	1500	2000	2500					
NC	.035	.035	.035	.1	.3					
CROSS SECTION 1						ESTIMATE JUST UPSTREAM OF CONFLUENCE				
X1	1	4	10	60	0	0	0			
GR	2079	0	2072	10	2072	60	2078	80		
VC	.040	.040	.040	0.1	0.3					
CROSS SECTION 2						FROM ORIGINAL JMM				
X1	2.0	23	2578	2756	1350	1350	1350			
GR	2092.0	1950	2089.2	2000	2088.0	2150	2088.0	2400	2088.5	2450.
GR	2092.3	2530	2089.6	2578	2088.2	2625	2086.4	2658	2086.4	2666.
GR	2087.7	2678	2087.7	2696	2085.7	2709	2086.3	2749	2087.1	2756.
GR	2086.9	2812	2086.8	2896	2087.0	2966	2086.8	3069	2086.5	3149.
GR	2086.5	3266	2087.4	3406	2092.0	3600				

CROSS SECTION 3				ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
X1	3	4	20	50	750	750	750			
GR	2099	0	2094	20	2094	40	2099	50		
VC	.03	.03	.03							
CROSS SECTIONS 1600-0				FROM BUCKINGHAM ESTATES CLOMR ROBINDALE CHANNEL several cross section deleted						
X1	1600	4	0	40	340	340	340			
GR	2104.8	0	2095.5	10	2095.5	30	2104.8	40		

THIS RUN EXECUTED 14MAY93 13:14:11

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 CLARK COUNTY FLOOD INSURANCE STUDY - REVISED BY MBJ
 T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS INC.
 T3 BLUE DIAMOND WASH - 100 YEAR FLOOD

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			.0067				2075	

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

JT	4	1000	1500	2000	2500					
NC	.035	.035	.035	.1	.3					
CROSS SECTION 1 ESTIMATE JUST UPSTREAM OF CONFLUENCE										
K1	1	4	10	60	0	0	0			
GR	2079	0	2072	10	2072	60	2078	80		
NC	.040	.040	.040	0.1	0.3					
CROSS SECTION 2 FROM ORIGINAL JMM										
X1	2.0	23	2578	2756	1350	1350	1350			
JR	2092.0	1950	2089.2	2000	2088.0	2150	2088.0	2400	2088.5	2450.
JR	2092.3	2530	2089.6	2578	2088.2	2625	2086.4	2658	2086.4	2666.
GR	2087.7	2678	2087.7	2696	2085.7	2709	2086.3	2749	2087.1	2756.
JR	2086.9	2812	2086.8	2896	2087.0	2966	2086.8	3069	2086.5	3149.
JR	2086.5	3266	2087.4	3406	2092.0	3600				

K1	3	4	20	50	750	750	750			
GR	2099	0	2094	20	2094	40	2099	50		
NC	.03	.03	.03							
CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR ROBINDALE CHANNEL several cross section deleted										
K1	1600	4	0	40	340	340	340			
GR	2104.8	0	2095.5	10	2095.5	30	2104.8	40		

NC	.044	.044	.044						
X1	1560	4	0	40	40	40	40		
GR	2105	0	2095.7	10	2095.7	30	2105	40	
NC	.03	.03	.03						
X1	1384	4	0	35	166	179	176		
GR	2105.7	0	2096.6	13.7	2096.6	25.7	2106	35	
X1	1000	4	0	25	364	390	384		
GR	2106.6	0	2098.7	13	2098.7	24.9	2108.6	25	
X1	600	4	0	25	420	377	400		
GR	2110	0	2103.8	13	2103.8	24.9	2114.1	25	
X1	300	4	0	25	300	300	300		
GR	2114.5	0	2108.3	13	2108.3	24.9	2119.3	25	

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

X1	0	8	127	150	300	300	300		
GR	2121	0	2118.5	65	2119.6	126	2111.6	127	2111.6
GR	2121	170	2122	210	2125.4	265			150
NC				.3	.5				
X1	1.1				10	10	10		
X3	10							2117.6	2117.6
SC	3.013	.4	3	0	7	4	100	1.1	2112.6
X1	1.2				110	110	110		2111.6
X2			2	2116.6	2118.5				
X3	10							2118.5	2118.5
BT	-7	0	2121		65	2118.5		126	2120
BT		127	2120		170	2121		210	2122
BT		265	2125.4						
NC				.1	.3				
X1	1.3				50	50	50		

CROSS SECTIONS 415-0 ROBINDALE CHANNEL
 North of Robindale Road, East of Amigo Street
 Subcritical run taken from Lewis Homes Paradise submittal
 Not an official CLOMR request - best available data

X1	415	8	10	28.1	10	10	10		
GR	2125	0	2122.3	10	2115.44	10.1	2115.44	19	2115.44
GR	2122.3	28.1	2123.25	70	2124.49	180			28
X1	185	10	10	28.1	229	229	229		
GR	2132	0	2128.9	10	2121.3	10.1	2121.3	10.9	2121.3
GR	2128.9	28.1	2129.22	30	2129.42	70	2129.12	105	2133.5

(A)

X1	20	6	0	20.1	157.5	172.5	165			
GR	2134.7	0	2126.9	.1	2126.9	10	2126.9	20	2131	20.1
GR	2131.9	105								

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

(B)

K1	0	10	270	295	20	20	20			
GR	2140	0	2134	40	2133.5	120	2132.9	240	2132	270
GR	2126.7	271	2126.7	294	2132	295	2133.5	415	2141	416

K1	.11	11	270	295	40	40	40			
X3	10							2134.5	2134.5	
GR	2140	0	2136.5	50	2136.18	140	2135.8	230	2132	270
GR	2126.7	271	2126.7	294	2132	295	2134.37	495	2134.93	520
GR	2141	521								

NC				.3	.5					
SC	3.013	.5	3	0	7	4	45	1.1	2126.7	2122.8
X1	.22	13	270	295	45	45	45			
K2			2	2133.5	2135.5					
K3	10							2135.5	2135.5	
BT	-9	10	2136.8		65	2136.63		145	2136.3	
BT		270	2135.6		294	2135.8		310	2135.56	
BT		401	2135.12		520	2135.1		521	2141	
GR	2140	0	2136.82	10	2136.63	65	2136.3	145	2135	250
GR	2132	270	2126.7	271	2126.7	294	2132	295	2135.56	310
GR	2135.1	401	2135.1	520	2141	521				

(C)

NC	.035	.035	.035	.1	.3					
X1	5	30	2608	2894	80	80	80			
GR	2141	2000	2139.3	2183	2138.9	2293	2138.9	2363	2139.9	2425
GR	2138.8	2465	2138.8	2522	2138.9	2562	2139.1	2608	2137.3	2634
GR	2137.1	2668	2137	2678	2135.7	2683	2135.9	2699	2135.1	2727
GR	2134.9	2732	2135.7	2734	2135.2	2752	2136.8	2789	2137.6	2851
GR	2137.7	2879	2138.8	2894	2138.8	2912	2138.8	2925	2138.8	2934
GR	2138.8	2969	2140.3	2996	2141.3	3031	2141.3	3092	2142.6	3125

(A)

X1	20	6	0	20.1	157.5	172.5	165			
GR	2134.7	0	2126.9	.1	2126.9	10	2126.9	20	2131	20.1
GR	2131.9	105								

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

(B)

K1	0	10	270	295	20	20	20			
GR	2140	0	2134	40	2133.5	120	2132.9	240	2132	270
GR	2126.7	271	2126.7	294	2132	295	2133.5	415	2141	416

K1	.11	11	270	295	40	40	40			
X3	10							2134.5	2134.5	
GR	2140	0	2136.5	50	2136.18	140	2135.8	230	2132	270
GR	2126.7	271	2126.7	294	2132	295	2134.37	495	2134.93	520
GR	2141	521								

VC				.3	.5					
SC	3.013	.5	3	0	7	4	45	1.1	2126.7	2122.8
X1	.22	13	270	295	45	45	45			
C2			2	2133.5	2135.5					
C3	10							2135.5	2135.5	
BT	-9	10	2136.8		65	2136.63		145	2136.3	
BT		270	2135.6		294	2135.8		310	2135.56	
BT		401	2135.12		520	2135.1		521	2141	
GR	2140	0	2136.82	10	2136.63	65	2136.3	145	2135	250
GR	2132	270	2126.7	271	2126.7	294	2132	295	2135.56	310
GR	2135.1	401	2135.1	520	2141	521				

(C)

NC	.035	.035	.035	.1	.3					
X1	5	30	2608	2894	80	80	80			
GR	2141	2000	2139.3	2183	2138.9	2293	2138.9	2363	2139.9	2425
GR	2138.8	2465	2138.8	2522	2138.9	2562	2139.1	2608	2137.3	2634
GR	2137.1	2668	2137	2678	2135.7	2683	2135.9	2699	2135.1	2727
GR	2134.9	2732	2135.7	2734	2135.2	2752	2136.8	2789	2137.6	2851
GR	2137.7	2879	2138.8	2894	2138.8	2912	2138.8	2925	2138.8	2934
GR	2138.8	2969	2140.3	2996	2141.3	3031	2141.3	3092	2142.6	3125

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 1.000

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	2.73	2074.73	.00	2075.00	2075.42	.68	.00	.00	2072.00
1000.0	20.0	928.3	51.8	5.3	136.6	12.4	.0	.0	2072.00
.00	3.75	6.79	4.16	.035	.035	.035	.000	2072.00	6.10
.006704	0.	0.	0.	0	0	5	.00	63.01	69.11

CCHV= .100 CEHV= .300

*SECNO 2.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	1.53	2087.23	.00	.00	2087.37	.13	11.89	.05	2089.60
1000.0	.0	287.8	712.2	.0	77.1	278.2	7.9	12.0	2087.10
.13	.00	3.73	2.56	.000	.040	.040	.000	2085.70	2642.69
.012094	1350.	1350.	1350.	3	0	0	.00	712.32	3380.32

*SECNO 3.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	3.58	2097.58	2097.58	.00	2098.93	1.35	10.34	.36	2094.00
1000.0	173.9	826.1	.0	25.7	84.5	.0	11.9	18.5	2099.00
.15	6.77	9.77	.00	.040	.040	.000	.000	2094.00	5.66
.015871	750.	750.	750.	12	17	0	.00	41.51	47.17

*SECNO 1600.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.92

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	5.07	2100.57	.00	.00	2101.50	.93	2.53	.04	2104.80
1000.0	.0	1000.0	.0	.0	128.9	.0	12.8	18.8	2104.80
.16	.00	7.76	.00	.000	.030	.000	.000	2095.50	4.55
.004290	340.	340.	340.	4	0	0	.00	30.89	35.45

*SECNO 1560.000

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

1560.000	5.14	2100.84	.00	.00	2101.74	.90	.24	.00	2105.00
1000.0	.0	1000.0	.0	.0	131.3	.0	13.0	18.8	2105.00
.17	.00	7.62	.00	.000	.044	.000	.000	2095.70	4.47
.008766	40.	40.	40.	2	0	0	.00	31.06	35.53

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

1384.000	5.24	2101.84	.00	.00	2103.49	1.64	1.52	.22	2105.70
1000.0	.0	1000.0	.0	.0	97.2	.0	13.4	18.9	2106.00
.17	.00	10.28	.00	.000	.030	.000	.000	2096.60	5.80
.008532	166.	176.	179.	2	0	0	.00	25.08	30.89

*SECNO 1000.000

1000.000	6.31	2105.01	.00	.00	2106.34	1.33	2.82	.03	2106.60
1000.0	.0	1000.0	.0	.0	108.2	.0	14.3	19.1	2108.60
.18	.00	9.25	.00	.000	.030	.000	.000	2098.70	2.61
.006408	364.	384.	390.	2	0	0	.00	22.35	24.96

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	5.12	2108.92	2108.92	.00	2110.90	1.98	3.38	.20	2110.00
1000.0	.0	1000.0	.0	.0	88.6	.0	15.2	19.3	2114.10
.19	.00	11.29	.00	.000	.030	.000	.000	2103.80	2.26
.011681	420.	400.	377.	2	15	0	.00	22.69	24.95

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	5.07	2100.57	.00	.00	2101.50	.93	2.53	.04	2104.80
1000.0	.0	1000.0	.0	.0	128.9	.0	12.8	18.8	2104.80
.16	.00	7.76	.00	.000	.030	.000	.000	2095.50	4.55
.004290	340.	340.	340.	4	0	0	.00	30.89	35.45

*SECNO 1560.000

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

1560.000	5.14	2100.84	.00	.00	2101.74	.90	.24	.00	2105.00
1000.0	.0	1000.0	.0	.0	131.3	.0	13.0	18.8	2105.00
.17	.00	7.62	.00	.000	.044	.000	.000	2095.70	4.47
.008766	40.	40.	40.	2	0	0	.00	31.06	35.53

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

1384.000	5.24	2101.84	.00	.00	2103.49	1.64	1.52	.22	2105.70
1000.0	.0	1000.0	.0	.0	97.2	.0	13.4	18.9	2106.00
.17	.00	10.28	.00	.000	.030	.000	.000	2096.60	5.80
.008532	166.	176.	179.	2	0	0	.00	25.08	30.89

*SECNO 1000.000

1000.000	6.31	2105.01	.00	.00	2106.34	1.33	2.82	.03	2106.60
1000.0	.0	1000.0	.0	.0	108.2	.0	14.3	19.1	2108.60
.18	.00	9.25	.00	.000	.030	.000	.000	2098.70	2.61
.006408	364.	384.	390.	2	0	0	.00	22.35	24.96

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	5.12	2108.92	2108.92	.00	2110.90	1.98	3.38	.20	2110.00
1000.0	.0	1000.0	.0	.0	88.6	.0	15.2	19.3	2114.10
.19	.00	11.29	.00	.000	.030	.000	.000	2103.80	2.26
.011681	420.	400.	377.	2	15	0	.00	22.69	24.95

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 300.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	5.13	2113.43	2113.43	.00	2115.40	1.97	3.50	.00	2114.50
1000.0	.0	1000.0	.0	.0	88.7	.0	15.8	19.5	2119.30
.20	.00	11.27	.00	.000	.030	.000	.000	2108.30	2.25
.011629	300.	300.	300.	2	5	0	.00	22.70	24.95

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

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

CROSS SECTIONS 0-1.3 ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

.000	4.69	2116.29	.00	.00	2117.26	.97	1.76	.10	2111.60
1000.0	1.8	885.3	112.9	1.4	107.6	23.3	16.6	19.7	2111.60
.21	1.29	8.23	4.85	.030	.030	.030	.000	2111.60	126.42
.003523	300.	300.	300.	2	0	0	.00	33.54	159.96

CCHV= .300 CEHV= .500

*SECNO 1.100

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2117.60 ELREA= 2117.60

1.100	4.49	2116.09	.00	.00	2117.54	1.45	.04	.24	2111.60
1000.0	.0	1000.0	.0	.0	103.3	.0	16.6	19.7	2111.60
.21	.00	9.68	.00	.000	.030	.000	.000	2111.60	127.00
.005146	10.	10.	10.	2	0	0	.00	23.00	150.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO 1.200

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

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.24

3SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2120.28	2120.45	2.24	131.	870.	4.360	115.5	2118.50	85.	
1.200	7.93	2119.53	.00	.00	2119.78	.25	2.24	.00	2111.60
1000.0	33.0	795.1	171.9	47.0	182.4	66.9	17.1	19.9	2111.60
.22	.70	4.36	2.57	.030	.030	.030	.000	2111.60	38.25
.000490	110.	110.	110.	2	0	0	.00	124.66	166.87

SCHV= .100 CEHV= .300

*SECNO 1.300

265 DIVIDED FLOW

1.300	7.96	2119.56	.00	.00	2119.81	.25	.02	.00	2111.60
1000.0	35.0	793.0	172.0	49.4	183.0	67.4	17.5	20.0	2111.60
.22	.71	4.33	2.55	.030	.030	.030	.000	2111.60	37.52
.000482	50.	50.	50.	2	0	0	.00	127.01	166.93

*SECNO 415.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

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

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.24

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2120.28	2120.45	2.24	131.	870.	4.360	115.5	2118.50	85.	
1.200	7.93	2119.53	.00	.00	2119.78	.25	2.24	.00	2111.60
1000.0	33.0	795.1	171.9	47.0	182.4	66.9	17.1	19.9	2111.60
.22	.70	4.36	2.57	.030	.030	.030	.000	2111.60	38.25
.000490	110.	110.	110.	2	0	0	.00	124.66	166.87

SCHV= .100 CEHV= .300

*SECNO 1.300

3265 DIVIDED FLOW

1.300	7.96	2119.56	.00	.00	2119.81	.25	.02	.00	2111.60
1000.0	35.0	793.0	172.0	49.4	183.0	67.4	17.5	20.0	2111.60
.22	.71	4.33	2.55	.030	.030	.030	.000	2111.60	37.52
.000482	50.	50.	50.	2	0	0	.00	127.01	166.93

*SECNO 415.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

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

415.000	4.58	2120.02	2120.02	.00	2122.31	2.29	.01	.61	2122.30
1000.0	.0	1000.0	.0	.0	82.4	.0	17.5	20.0	2122.30
.22	.00	12.14	.00	.000	.030	.000	.000	2115.44	10.03
.013623	10.	10.	10.	20	11	0	.00	18.03	28.07

*SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	4.57	2125.87	2125.87	.00	2128.18	2.30	3.13	.00	2128.90
1000.0	.0	1000.0	.0	.0	82.1	.0	17.9	20.1	2128.90
.23	.00	12.17	.00	.000	.030	.000	.000	2121.30	10.04
.013733	229.	229.	229.	20	5	0	.00	18.02	28.06

*SECNO 20.000 (A)

3280 CROSS SECTION 20.00 EXTENDED .31 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	5.31	2132.21	2132.21	.00	2133.00	.79	1.19	.15	2134.70
1000.0	.0	823.3	176.7	.0	106.2	64.6	18.4	20.4	2131.00
.23	.00	7.75	2.73	.000	.030	.030	.000	2126.90	.03
.004401	158.	165.	173.	20	9	0	.00	104.97	105.00

*SECNO .000 (B)

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	5.53	2132.23	.00	.00	2133.11	.87	.08	.02	2132.00
1000.0	.7	997.8	1.6	.9	133.0	2.2	18.5	20.4	2132.00
.23	.72	7.50	.72	.030	.030	.030	.000	2126.70	262.22
.003687	20.	20.	20.	2	0	0	.00	51.45	313.67

SECNO	DEPTH	CWSEL	CRWS	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 .110

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2134.50 ELREA= 2134.50

.110	5.74	2132.44	.00	.00	2133.25	.81	.14	.01	2132.00
1000.0	.0	1000.0	.0	.0	138.1	.0	18.6	20.5	2132.00
.24	.00	7.24	.00	.000	.030	.000	.000	2126.70	270.00
.003272	40.	40.	40.	2	0	0	.00	25.00	295.00

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO .220

SPECIAL CULVERT OUTLET CONTROL

EGIC = 2134.111 EGOC = 2134.305 PCWSE= 2132.436 ELTRD= 2135.500

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2134.11	2134.31	1.06	0.	1000.	5.821	115.5	2135.50	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2135.50 ELREA= 2135.50

.220	7.08	2133.78	.00	.00	2134.31	.53	1.06	.00	2132.00
1000.0	.0	1000.0	.0	.0	171.8	.0	18.8	20.5	2132.00
.24	.00	5.82	.00	.000	.030	.000	.000	2126.70	270.00
.001580	45.	45.	45.	2	0	0	.00	25.00	295.00

CCHV= .100 CEHV= .300

*SECNO 5.000 (C)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

*SECNO .110

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2134.50 ELREA= 2134.50

.110	5.74	2132.44	.00	.00	2133.25	.81	.14	.01	2132.00
1000.0	.0	1000.0	.0	.0	138.1	.0	18.6	20.5	2132.00
.24	.00	7.24	.00	.000	.030	.000	.000	2126.70	270.00
.003272	40.	40.	40.	2	0	0	.00	25.00	295.00

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3	.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80	

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO .220

SPECIAL CULVERT OUTLET CONTROL

EGIC = 2134.111 EGOE = 2134.305 PCWSE= 2132.436 ELTRD= 2135.500

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2134.11	2134.31	1.06	0.	1000.	5.821	115.5	2135.50	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2135.50 ELREA= 2135.50

.220	7.08	2133.78	.00	.00	2134.31	.53	1.06	.00	2132.00
1000.0	.0	1000.0	.0	.0	171.8	.0	18.8	20.5	2132.00
.24	.00	5.82	.00	.000	.030	.000	.000	2126.70	270.00
.001580	45.	45.	45.	2	0	0	.00	25.00	295.00

CCHV= .100 CEHV= .300

*SECNO 5.000 (C)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
5.000	2.31	2137.21	2137.21	.00	2137.72	.51	.30	.00	2139.10
1000.0	.0	1000.0	.0	.0	175.1	.0	19.1	20.7	2138.80
.24	.00	5.71	.00	.000	.035	.000	.000	2134.90	2649.44
.017630	80.	80.	80.	20	17	0	.00	171.27	2820.71

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH - Q=1500 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2075	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH - Q=1500 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2075	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

*PROF 2

CCHV= .100 CEHV= .300

*SECNO 1.000

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	3.00	2075.00	.00	2075.00	2076.25	1.25	.00	.00	2072.00
1500.0	32.7	1382.7	84.6	6.4	150.0	15.0	.0	.0	2072.00
.00	5.08	9.22	5.64	.035	.035	.035	.000	2072.00	5.71
.010893	0.	0.	0.	0	0	0	.00	64.29	70.00

CCHV= .100 CEHV= .300

*SECNO 2.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	1.83	2087.53	.00	.00	2087.64	.11	11.27	.11	2089.60
1500.0	.0	328.8	1171.2	.0	104.6	468.4	11.5	12.7	2087.10
.14	.00	3.14	2.50	.000	.040	.040	.000	2085.70	2637.28
.006601	1350.	1350.	1350.	6	0	0	.00	753.55	3411.50

*SECNO 3.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	4.50	2098.50	2098.50	.00	2100.12	1.62	7.13	.45	2094.00
1500.0	309.7	1190.3	.0	40.6	110.4	.0	17.8	19.6	2099.00
.16	7.63	10.78	.00	.040	.040	.000	.000	2094.00	1.98
.014876	750.	750.	750.	20	17	0	.00	47.03	49.01

*SECNO 1600.000

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.70

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR
ROBINDALE CHANNEL

several cross section deleted

1600.000	6.07	2101.57	.00	.00	2102.92	1.35	2.77	.03	2104.80
1500.0	.0	1500.0	.0	.0	161.1	.0	19.0	19.9	2104.80
.17	.00	9.31	.00	.000	.030	.000	.000	2095.50	3.47
.005119	340.	340.	340.	3	0	0	.00	33.06	36.53

*SECNO 1560.000

1560.000	6.26	2101.96	.00	.00	2103.20	1.24	.28	.01	2105.00
1500.0	.0	1500.0	.0	.0	167.7	.0	19.1	19.9	2105.00
.17	.00	8.94	.00	.000	.044	.000	.000	2095.70	3.26
.009831	40.	40.	40.	0	0	0	.00	33.49	36.74

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

1384.000	6.39	2102.99	.00	.00	2105.13	2.14	1.66	.27	2105.70
1500.0	.0	1500.0	.0	.0	127.9	.0	19.7	20.0	2106.00
.18	.00	11.73	.00	.000	.030	.000	.000	2096.60	4.07
.009056	166.	176.	179.	2	0	0	.00	27.96	32.03

*SECNO 1000.000

1000.000	7.76	2106.46	.00	.00	2108.19	1.73	3.02	.04	2106.60
1500.0	.0	1500.0	.0	.0	142.3	.0	20.9	20.3	2108.60
.19	.00	10.54	.00	.000	.030	.000	.000	2098.70	.22
.006877	364.	384.	390.	2	0	0	.00	24.75	24.98

*SECNO 600.000

3280 CROSS SECTION 600.00 EXTENDED .21 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.70

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	6.07	2101.57	.00	.00	2102.92	1.35	2.77	.03	2104.80
1500.0	.0	1500.0	.0	.0	161.1	.0	19.0	19.9	2104.80
.17	.00	9.31	.00	.000	.030	.000	.000	2095.50	3.47
.005119	340.	340.	340.	3	0	0	.00	33.06	36.53

*SECNO 1560.000

1560.000	6.26	2101.96	.00	.00	2103.20	1.24	.28	.01	2105.00
1500.0	.0	1500.0	.0	.0	167.7	.0	19.1	19.9	2105.00
.17	.00	8.94	.00	.000	.044	.000	.000	2095.70	3.26
.009831	40.	40.	40.	0	0	0	.00	33.49	36.74

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

1384.000	6.39	2102.99	.00	.00	2105.13	2.14	1.66	.27	2105.70
1500.0	.0	1500.0	.0	.0	127.9	.0	19.7	20.0	2106.00
.18	.00	11.73	.00	.000	.030	.000	.000	2096.60	4.07
.009056	166.	176.	179.	2	0	0	.00	27.96	32.03

*SECNO 1000.000

1000.000	7.76	2106.46	.00	.00	2108.19	1.73	3.02	.04	2106.60
1500.0	.0	1500.0	.0	.0	142.3	.0	20.9	20.3	2108.60
.19	.00	10.54	.00	.000	.030	.000	.000	2098.70	.22
.006877	364.	384.	390.	2	0	0	.00	24.75	24.98

*SECNO 600.000

3280 CROSS SECTION 600.00 EXTENDED .21 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

600.000	6.41	2110.21	2110.21	.00	2112.66	2.44	3.50	.22	2110.00
1500.0	.0	1500.0	.0	.0	119.6	.0	22.1	20.5	2114.10
.20	.00	12.54	.00	.000	.030	.000	.000	2103.80	.00
.011488	420.	400.	377.	2	15	0	.00	24.96	24.96

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED .22 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	6.42	2114.72	2114.72	.00	2117.16	2.43	3.44	.00	2114.50
1500.0	.0	1500.0	.0	.0	119.8	.0	23.0	20.7	2119.30
.20	.00	12.52	.00	.000	.030	.000	.000	2108.30	.00
.011417	300.	300.	300.	2	5	0	.00	24.96	24.96

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.93

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

.000	6.10	2117.70	.00	.00	2118.88	1.18	1.59	.13	2111.60
1500.0	3.3	1283.3	213.4	2.3	140.3	39.6	24.0	20.9	2111.60
.21	1.43	9.15	5.39	.030	.030	.030	.000	2111.60	126.24
.003060	300.	300.	300.	2	0	0	.00	36.74	162.98

CCHV= .300 CEHV= .500

*SECNO 1.100

1.100	6.17	2117.77	.00	.00	2118.92	1.14	.03	.01	2111.60
1500.0	3.4	1281.1	215.6	2.4	142.0	40.5	24.0	20.9	2111.60
.21	1.41	9.02	5.32	.030	.030	.030	.000	2111.60	126.23
.002931	10.	10.	10.	0	0	0	.00	36.90	163.13

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO 1.200

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.03

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2123.97	2123.01	1.65	459.	1049.	5.537	115.5	2118.50	140.	
1.200	8.59	2120.19	.00	.00	2120.57	.38	1.65	.00	2111.60
1500.0	149.0	1094.5	256.4	111.7	197.7	78.6	24.8	21.1	2111.60
.22	1.33	5.54	3.26	.030	.030	.030	.000	2111.60	20.95
.000710	110.	110.	110.	2	0	0	.00	147.34	168.29

CCHV= .100 CEHV= .300

*SECNO 1.300

1.300	8.63	2120.23	.00	.00	2120.60	.37	.04	.00	2111.60
1500.0	155.7	1088.2	256.1	116.0	198.6	79.3	25.2	21.3	2111.60
.22	1.34	5.48	3.23	.030	.030	.030	.000	2111.60	19.91
.000691	50.	50.	50.	2	0	0	.00	148.46	168.37

*SECNO 415.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	8.01	2123.45	2123.45	.00	2124.86	1.42	.01	.31	2122.30
1500.0	5.9	1415.5	78.6	2.4	144.3	30.0	25.3	21.3	2122.30
.22	2.41	9.81	2.62	.030	.030	.030	.000	2115.44	5.75

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO 1.200

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.03

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2123.97	2123.01	1.65	459.	1049.	5.537	115.5	2118.50	140.	
1.200	8.59	2120.19	.00	.00	2120.57	.38	1.65	.00	2111.60
1500.0	149.0	1094.5	256.4	111.7	197.7	78.6	24.8	21.1	2111.60
.22	1.33	5.54	3.26	.030	.030	.030	.000	2111.60	20.95
.000710	110.	110.	110.	2	0	0	.00	147.34	168.29

CCHV= .100 CEHV= .300

*SECNO 1.300

1.300	8.63	2120.23	.00	.00	2120.60	.37	.04	.00	2111.60
1500.0	155.7	1088.2	256.1	116.0	198.6	79.3	25.2	21.3	2111.60
.22	1.34	5.48	3.23	.030	.030	.030	.000	2111.60	19.91
.000691	50.	50.	50.	2	0	0	.00	148.46	168.37

*SECNO 415.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	8.01	2123.45	2123.45	.00	2124.86	1.42	.01	.31	2122.30
1500.0	5.9	1415.5	78.6	2.4	144.3	30.0	25.3	21.3	2122.30
.22	2.41	9.81	2.62	.030	.030	.030	.000	2115.44	5.75

.005184	10.	10.	10.	20	8	0	.00	81.86	87.61
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 185.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	5.99	2127.29	2127.29	.00	2130.30	3.01	1.85	.48	2128.90
1500.0	.0	1500.0	.0	.0	107.8	.0	26.0	21.6	2128.90
.23	.00	13.92	.00	.000	.030	.000	.000	2121.30	10.02
.014284	229.	229.	229.	20	15	0	.00	18.06	28.08

*SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED .91 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	5.91	2132.81	2132.81	.00	2133.68	.86	1.28	.21	2134.70
1500.0	.0	1015.6	484.4	.0	118.3	115.6	26.7	21.8	2131.00
.23	.00	8.59	4.19	.000	.030	.030	.000	2126.90	.02
.004810	158.	165.	173.	20	6	0	.00	104.98	105.00

*SECNO .000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	6.81	2133.51	2133.51	.00	2134.16	.64	.07	.02	2132.00
1500.0	125.6	1184.2	190.2	69.3	165.0	91.4	26.8	21.9	2132.00
.24	1.81	7.18	2.08	.030	.030	.030	.000	2126.70	118.09
.002534	20.	20.	20.	4	9	0	.00	296.92	415.00

*SECNO .110

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 185.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	5.99	2127.29	2127.29	.00	2130.30	3.01	1.85	.48	2128.90
1500.0	.0	1500.0	.0	.0	107.8	.0	26.0	21.6	2128.90
.23	.00	13.92	.00	.000	.030	.000	.000	2121.30	10.02
.014284	229.	229.	229.	20	15	0	.00	18.06	28.08

*SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED .91 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	5.91	2132.81	2132.81	.00	2133.68	.86	1.28	.21	2134.70
1500.0	.0	1015.6	484.4	.0	118.3	115.6	26.7	21.8	2131.00
.23	.00	8.59	4.19	.000	.030	.030	.000	2126.90	.02
.004810	158.	165.	173.	20	6	0	.00	104.98	105.00

*SECNO .000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	6.81	2133.51	2133.51	.00	2134.16	.64	.07	.02	2132.00
1500.0	125.6	1184.2	190.2	69.3	165.0	91.4	26.8	21.9	2132.00
.24	1.81	7.18	2.08	.030	.030	.030	.000	2126.70	118.09
.002534	20.	20.	20.	4	9	0	.00	296.92	415.00

*SECNO .110

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2134.50 ELREA= 2134.50

.110	6.37	2133.07	.00	.00	2134.54	1.47	.14	.25	2132.00
1500.0	.0	1500.0	.0	.0	154.0	.0	27.0	22.1	2132.00
.24	.00	9.74	.00	.000	.030	.000	.000	2126.70	270.00
.005117	40.	40.	40.	3	0	0	.00	25.00	295.00

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

*SECNO .220

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2137.80	2137.28	1.20	251.	1249.	7.554	115.5	2135.50	264.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2135.50 ELREA= 2135.50

.220	8.15	2134.85	.00	.00	2135.74	.89	1.20	.00	2132.00
1500.0	.0	1500.0	.0	.0	198.6	.0	27.2	22.1	2132.00
.24	.00	7.55	.00	.000	.030	.000	.000	2126.70	270.00
.002193	45.	45.	45.	5	0	0	.00	25.00	295.00

CCHV= .100 CEHV= .300

*SECNO 5.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

5.000	2.68	2137.58	2137.58	.00	2138.14	.56	.38	.03	2139.10
1500.0	.0	1500.0	.0	.0	248.9	.0	27.6	22.3	2138.80
.24	.00	6.03	.00	.000	.035	.000	.000	2134.90	2629.99
.017050	80.	80.	80.	20	17	0	.00	219.25	2849.24

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

3720 CRITICAL DEPTH ASSUMED

5.000	2.68	2137.58	2137.58	.00	2138.14	.56	.38	.03	2139.10
1500.0	.0	1500.0	.0	.0	248.9	.0	27.6	22.3	2138.80
.24	.00	6.03	.00	.000	.035	.000	.000	2134.90	2629.99
.017050	80.	80.	80.	20	17	0	.00	219.25	2849.24

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH - Q=2000 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		4							2075	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	3		-1							

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

*PROF 3

CCHV= .100 CEHV= .300

*SECNO 1.000

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	3.51	2075.51	2075.51	2075.00	2077.08	1.57	.00	.00	2072.00
2000.0	50.3	1819.3	130.3	8.8	175.6	20.6	.0	.0	2072.00
.00	5.72	10.36	6.34	.035	.035	.035	.000	2072.00	4.98
.011159	0.	0.	0.	0	7	0	.00	66.72	71.70

CCHV= .100 CEHV= .300

*SECNO 2.000

3301 HV CHANGED MORE THAN HVINS

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	2.03	2087.73	.00	.00	2087.85	.12	10.62	.15	2089.60
2000.0	.0	361.1	1638.9	.0	125.4	600.2	14.4	13.2	2087.10
.14	.00	2.88	2.73	.000	.040	.040	.000	2085.70	2633.62
.005842	1350.	1350.	1350.	7	0	0	.00	786.30	3419.92

*SECNO 3.000

3280 CROSS SECTION 3.00 EXTENDED .27 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	5.27	2099.27	2099.27	.00	2101.11	1.83	6.47	.51	2094.00
2000.0	467.5	1532.5	.0	55.5	133.2	.0	22.3	20.4	2099.00
.16	8.43	11.50	.00	.040	.040	.000	.000	2094.00	.00
.013997	750.	750.	750.	20	17	0	.00	50.00	50.00

*SECNO 1600.000

SECNO	DEPTH	CWSEL	CRWS	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 3

CCHV= .100 CEHV= .300

*SECNO 1.000

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	3.51	2075.51	2075.51	2075.00	2077.08	1.57	.00	.00	2072.00
2000.0	50.3	1819.3	130.3	8.8	175.6	20.6	.0	.0	2072.00
.00	5.72	10.36	6.34	.035	.035	.035	.000	2072.00	4.98
.011159	0.	0.	0.	0	7	0	.00	66.72	71.70

CCHV= .100 CEHV= .300

*SECNO 2.000

3301 HV CHANGED MORE THAN HVINS

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	2.03	2087.73	.00	.00	2087.85	.12	10.62	.15	2089.60
2000.0	.0	361.1	1638.9	.0	125.4	600.2	14.4	13.2	2087.10
.14	.00	2.88	2.73	.000	.040	.040	.000	2085.70	2633.62
.005842	1350.	1350.	1350.	7	0	0	.00	786.30	3419.92

*SECNO 3.000

3280 CROSS SECTION 3.00 EXTENDED .27 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	5.27	2099.27	2099.27	.00	2101.11	1.83	6.47	.51	2094.00
2000.0	467.5	1532.5	.0	55.5	133.2	.0	22.3	20.4	2099.00
.16	8.43	11.50	.00	.040	.040	.000	.000	2094.00	.00
.013997	750.	750.	750.	20	17	0	.00	50.00	50.00

*SECNO 1600.000

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.52

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	6.82	2102.32	.00	.00	2104.11	1.80	3.00	.00	2104.80
2000.0	.0	2000.0	.0	.0	185.9	.0	23.8	20.7	2104.80
.16	.00	10.76	.00	.000	.030	.000	.000	2095.50	2.68
.006076	340.	340.	340.	2	0	0	.00	34.64	37.32

*SECNO 1560.000

1560.000	7.19	2102.89	.00	.00	2104.45	1.56	.32	.02	2105.00
2000.0	.0	2000.0	.0	.0	199.7	.0	23.9	20.8	2105.00
.17	.00	10.02	.00	.000	.044	.000	.000	2095.70	2.26
.010704	40.	40.	40.	2	0	0	.00	35.48	37.74

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

1384.000	7.36	2103.96	2103.95	.00	2106.51	2.55	1.76	.30	2105.70
2000.0	.0	2000.0	.0	.0	156.1	.0	24.6	20.9	2106.00
.17	.00	12.81	.00	.000	.030	.000	.000	2096.60	2.61
.009342	166.	176.	179.	4	5	0	.00	30.38	32.99

*SECNO 1000.000

3280 CROSS SECTION 1000.00 EXTENDED .97 FEET

1000.000	8.87	2107.57	.00	.00	2109.72	2.15	3.18	.04	2106.60
2000.0	.0	2000.0	.0	.0	170.0	.0	26.1	21.2	2108.60
.18	.00	11.76	.00	.000	.030	.000	.000	2098.70	.00
.007370	364.	384.	390.	2	0	0	.00	24.99	24.99

*SECNO 600.000

3280 CROSS SECTION 600.00 EXTENDED 1.23 FEET

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

600.000	7.43	2111.23	2111.23	.00	2114.19	2.95	3.66	.24	2110.00
2000.0	.0	2000.0	.0	.0	145.0	.0	27.5	21.4	2114.10
.19	.00	13.79	.00	.000	.030	.000	.000	2103.80	.00
.011639	420.	400.	377.	2	15	0	.00	24.97	24.97

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED 1.24 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	7.44	2115.74	2115.74	.00	2118.69	2.94	3.48	.00	2114.50
2000.0	.0	2000.0	.0	.0	145.3	.0	28.5	21.6	2119.30
.19	.00	13.77	.00	.000	.030	.000	.000	2108.30	.00
.011570	300.	300.	300.	2	5	0	.00	24.97	24.97

*SECNO .000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.10

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

.000	7.42	2119.02	.00	.00	2120.30	1.28	1.45	.17	2111.60
2000.0	16.5	1649.9	333.6	14.4	170.6	58.5	29.9	21.9	2111.60
.20	1.15	9.67	5.70	.030	.030	.030	.000	2111.60	51.54
.002634	300.	300.	300.	2	0	0	.00	81.89	165.78

CCHV= .300 CEHV= .500

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

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	7.43	2111.23	2111.23	.00	2114.19	2.95	3.66	.24	2110.00
2000.0	.0	2000.0	.0	.0	145.0	.0	27.5	21.4	2114.10
.19	.00	13.79	.00	.000	.030	.000	.000	2103.80	.00
.011639	420.	400.	377.	2	15	0	.00	24.97	24.97

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED 1.24 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	7.44	2115.74	2115.74	.00	2118.69	2.94	3.48	.00	2114.50
2000.0	.0	2000.0	.0	.0	145.3	.0	28.5	21.6	2119.30
.19	.00	13.77	.00	.000	.030	.000	.000	2108.30	.00
.011570	300.	300.	300.	2	5	0	.00	24.97	24.97

*SECNO .000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.10

CROSS SECTIONS 0-1.3

ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

.000	7.42	2119.02	.00	.00	2120.30	1.28	1.45	.17	2111.60
2000.0	16.5	1649.9	333.6	14.4	170.6	58.5	29.9	21.9	2111.60
.20	1.15	9.67	5.70	.030	.030	.030	.000	2111.60	51.54
.002634	300.	300.	300.	2	0	0	.00	81.89	165.78

CCHV= .300 CEHV= .500

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

*SECNO 1.100

3265 DIVIDED FLOW

1.100	7.49	2119.09	.00	.00	2120.34	1.24	.03	.01	2111.60
2000.0	20.8	1643.6	335.6	17.7	172.3	59.7	29.9	21.9	2111.60
.20	1.18	9.54	5.62	.030	.030	.030	.000	2111.60	49.68
.002532	10.	10.	10.	0	0	0	.00	87.87	165.93

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3	.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60	

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2129.20..MAY BE TOO LARGE IF INLET CONTROLS.

*SECNO 1.200

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.68

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2129.20	2126.71	.84	898.	1120.	6.459	115.5	2118.50	177.

1.200	9.09	2120.69	.00	.00	2121.18	.48	.84	.00	2111.60
2000.0	313.0	1351.7	335.3	168.6	209.3	88.1	30.8	22.3	2111.60
.21	1.86	6.46	3.81	.030	.030	.030	.000	2111.60	7.81
.000895	110.	110.	110.	2	0	0	.00	161.55	169.36

CCHV= .100 CEHV= .300

*SECNO 1.300

1.300	9.16	2120.76	.00	.00	2121.22	.47	.04	.00	2111.60
2000.0	325.7	1339.9	334.4	175.4	210.6	89.2	31.4	22.4	2111.60
.21	1.86	6.36	3.75	.030	.030	.030	.000	2111.60	6.35
.000861	50.	50.	50.	2	0	0	.00	163.13	169.48

SECNO	DEPTH	CWSEL	CRWS	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 415.000

3280 CROSS SECTION 415.00 EXTENDED .05 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.10	2124.54	2124.54	.00	2125.51	.97	.02	.15	2122.30
2000.0	29.4	1476.8	493.8	9.3	164.0	147.6	31.5	22.5	2122.30
.21	3.17	9.00	3.35	.030	.030	.030	.000	2115.44	1.70
.003679	10.	10.	10.	20	5	0	.00	178.30	180.00

*SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	9.23	2130.53	2130.53	.00	2131.76	1.23	.93	.08	2128.90
2000.0	12.0	1617.3	370.7	4.3	166.3	97.6	33.0	23.2	2128.90
.22	2.81	9.72	3.80	.030	.030	.030	.000	2121.30	4.74
.004478	229.	229.	229.	20	5	0	.00	103.48	108.22

*SECNO 20.000 (A)

3280 CROSS SECTION 20.00 EXTENDED 1.32 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	6.32	2133.22	2133.22	.00	2134.24	1.02	.83	.02	2134.70
2000.0	.0	1203.2	796.8	.0	126.4	149.9	34.1	23.6	2131.00
.22	.00	9.52	5.32	.000	.030	.030	.000	2126.90	.02
.005508	158.	165.	173.	20	18	0	.00	104.98	105.00

*SECNO .000 (B)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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 415.000

3280 CROSS SECTION 415.00 EXTENDED .05 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.10	2124.54	2124.54	.00	2125.51	.97	.02	.15	2122.30
2000.0	29.4	1476.8	493.8	9.3	164.0	147.6	31.5	22.5	2122.30
.21	3.17	9.00	3.35	.030	.030	.030	.000	2115.44	1.70
.003679	10.	10.	10.	20	5	0	.00	178.30	180.00

*SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	9.23	2130.53	2130.53	.00	2131.76	1.23	.93	.08	2128.90
2000.0	12.0	1617.3	370.7	4.3	166.3	97.6	33.0	23.2	2128.90
.22	2.81	9.72	3.80	.030	.030	.030	.000	2121.30	4.74
.004478	229.	229.	229.	20	5	0	.00	103.48	108.22

*SECNO 20.000 (A)

3280 CROSS SECTION 20.00 EXTENDED 1.32 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	6.32	2133.22	2133.22	.00	2134.24	1.02	.83	.02	2134.70
2000.0	.0	1203.2	796.8	.0	126.4	149.9	34.1	23.6	2131.00
.22	.00	9.52	5.32	.000	.030	.030	.000	2126.90	.02
.005508	158.	165.	173.	20	18	0	.00	104.98	105.00

*SECNO .000 (B)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	7.10	2133.80	2133.80	.00	2134.51	.71	.08	.03	2132.00
2000.0	277.9	1370.7	351.4	120.4	172.3	126.4	34.2	23.7	2132.00
.22	2.31	7.96	2.78	.030	.030	.030	.000	2126.70	71.45
.002939	20.	20.	20.	20	15	0	.00	343.60	415.04

*SECNO .110

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2134.50 ELREA= 2134.50

.110	6.03	2132.73	2132.73	.00	2135.67	2.94	.20	.67	2132.00
2000.0	.0	2000.0	.0	.0	145.4	.0	34.5	23.9	2132.00
.23	.00	13.75	.00	.000	.030	.000	.000	2126.70	270.00
.011006	40.	40.	40.	20	9	0	.00	25.00	295.00

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2143.03..MAY BE TOO LARGE IF INLET CONTROLS.

*SECNO .220

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2143.03	2140.21	.52	707.	1307.	17.330	115.5	2135.50	355.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2135.50 ELREA= 2135.50

.220	4.83	2131.53	.00	.00	2136.19	4.66	.52	.00	2132.00
2000.0	.0	2000.0	.0	.0	115.4	.0	34.6	23.9	2132.00
.23	.00	17.33	.00	.000	.030	.000	.000	2126.70	270.09
.022892	45.	45.	45.	13	0	0	.00	24.82	294.91

CCHV= .100 CEHV= .300

*SECNO 5.000 (C)

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5.000	2.93	2137.83	2137.83	.00	2138.48	.65	1.61	.40	2139.10
2000.0	.0	2000.0	.0	.0	309.6	.0	35.0	24.2	2138.80
.23	.00	6.46	.00	.000	.035	.000	.000	2134.90	2626.39
.017848	80.	80.	80.	13	14	0	.00	254.35	2880.73

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2143.03	2140.21	.52	707.	1307.	17.330	115.5	2135.50	355.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2135.50 ELREA= 2135.50

.220	4.83	2131.53	.00	.00	2136.19	4.66	.52	.00	2132.00
2000.0	.0	2000.0	.0	.0	115.4	.0	34.6	23.9	2132.00
.23	.00	17.33	.00	.000	.030	.000	.000	2126.70	270.09
.022892	45.	45.	45.	13	0	0	.00	24.82	294.91

CCHV= .100 CEHV= .300

*SECNO 5.000 (C)

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5.000	2.93	2137.83	2137.83	.00	2138.48	.65	1.61	.40	2139.10
2000.0	.0	2000.0	.0	.0	309.6	.0	35.0	24.2	2138.80
.23	.00	6.46	.00	.000	.035	.000	.000	2134.90	2626.39
.017848	80.	80.	80.	13	14	0	.00	254.35	2880.73

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH - Q=2500 CFS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		5							2075	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	4		-1							

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

*PROF 4

CCHV= .100 CEHV= .300

*SECNO 1.000

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	4.03	2076.03	2076.03	2075.00	2077.83	1.80	.00	.00	2072.00
2500.0	71.3	2244.2	184.6	11.6	201.5	27.1	.0	.0	2072.00
.00	6.14	11.14	6.82	.035	.035	.035	.000	2072.00	4.24
.010722	0.	0.	0.	0	10	0	.00	69.19	73.44

CCHV= .100 CEHV= .300

*SECNO 2.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	2.19	2087.89	.00	.00	2088.02	.13	10.02	.17	2089.60
2500.0	.0	438.6	2061.4	.0	145.3	707.4	16.9	13.4	2087.10
.13	.00	3.02	2.91	.000	.040	.040	.000	2085.70	2630.67
.005445	1350.	1350.	1350.	6	0	0	.00	796.02	3426.70

*SECNO 3.000

3280 CROSS SECTION 3.00 EXTENDED .83 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	5.83	2099.83	2099.83	.00	2101.99	2.15	6.26	.61	2094.00
2500.0	631.5	1868.5	.0	66.6	150.0	.0	26.1	20.7	2099.00
.15	9.48	12.46	.00	.040	.040	.000	.000	2094.00	.00
.014352	750.	750.	750.	20	20	0	.00	50.00	50.00

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

*PROF 4

CCHV= .100 CEHV= .300

*SECNO 1.000

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	4.03	2076.03	2076.03	2075.00	2077.83	1.80	.00	.00	2072.00
2500.0	71.3	2244.2	184.6	11.6	201.5	27.1	.0	.0	2072.00
.00	6.14	11.14	6.82	.035	.035	.035	.000	2072.00	4.24
.010722	0.	0.	0.	0	10	0	.00	69.19	73.44

CCHV= .100 CEHV= .300

*SECNO 2.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	2.19	2087.89	.00	.00	2088.02	.13	10.02	.17	2089.60
2500.0	.0	438.6	2061.4	.0	145.3	707.4	16.9	13.4	2087.10
.13	.00	3.02	2.91	.000	.040	.040	.000	2085.70	2630.67
.005445	1350.	1350.	1350.	6	0	0	.00	796.02	3426.70

*SECNO 3.000

3280 CROSS SECTION 3.00 EXTENDED .83 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	5.83	2099.83	2099.83	.00	2101.99	2.15	6.26	.61	2094.00
2500.0	631.5	1868.5	.0	66.6	150.0	.0	26.1	20.7	2099.00
.15	9.48	12.46	.00	.040	.040	.000	.000	2094.00	.00
.014352	750.	750.	750.	20	20	0	.00	50.00	50.00

SECNO	DEPTH	CWSEL	CRWS	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 1600.000

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

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	7.52	2103.02	.00	.00	2105.19	2.17	3.20	.01	2104.80
2500.0	.0	2500.0	.0	.0	211.3	.0	27.8	21.0	2104.80
.15	.00	11.83	.00	.000	.030	.000	.000	2095.50	1.91
.006633	340.	340.	340.	2	0	0	.00	36.18	38.09

*SECNO 1560.000

1560.000	8.02	2103.72	.00	.00	2105.56	1.84	.34	.03	2105.00
2500.0	.0	2500.0	.0	.0	229.5	.0	28.0	21.1	2105.00
.15	.00	10.89	.00	.000	.044	.000	.000	2095.70	1.38
.011338	40.	40.	40.	3	0	0	.00	37.25	38.62

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1384.000	8.25	2104.85	2104.85	.00	2107.72	2.87	1.81	.31	2105.70
2500.0	.0	2500.0	.0	.0	183.9	.0	28.8	21.2	2106.00
.16	.00	13.59	.00	.000	.030	.000	.000	2096.60	1.28
.009368	166.	176.	179.	3	8	0	.00	32.58	33.86

*SECNO 1000.000

3280 CROSS SECTION 1000.00 EXTENDED 1.87 FEET

1000.000	9.77	2108.47	.00	.00	2111.09	2.62	3.35	.02	2106.60
2500.0	.0	2500.0	.0	.0	192.4	.0	30.5	21.5	2108.60
.17	.00	13.00	.00	.000	.030	.000	.000	2098.70	.00
.008127	364.	384.	390.	2	0	0	.00	25.00	25.00

*SECNO 600.000

SECNO	DEPTH	CWSEL	CRWS	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

3280 CROSS SECTION 600.00 EXTENDED 2.16 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	8.36	2112.16	2112.16	.00	2115.59	3.43	3.89	.24	2110.00
2500.0	.0	2500.0	.0	.0	168.2	.0	32.2	21.7	2114.10
.17	.00	14.86	.00	.000	.030	.000	.000	2103.80	.00
.011872	420.	400.	377.	2	15	0	.00	24.98	24.98

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED 2.18 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	8.38	2116.68	2116.68	.00	2120.09	3.41	3.55	.00	2114.50
2500.0	.0	2500.0	.0	.0	168.6	.0	33.3	21.9	2119.30
.18	.00	14.82	.00	.000	.030	.000	.000	2108.30	.00
.011791	300.	300.	300.	2	5	0	.00	24.98	24.98

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

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

CROSS SECTIONS 0-1.3 ROBINDALE ROAD
 MODELED AS SC, 3- 4x7 RCB
 From Buckingham Estates Plans

.000	8.91	2120.51	.00	.00	2121.36	.85	1.02	.26	2111.60
2500.0	339.7	1737.8	422.5	147.4	205.1	84.6	35.4	22.5	2111.60
.19	2.30	8.47	4.99	.030	.030	.030	.000	2111.60	12.53
.001582	300.	300.	300.	2	0	0	.00	156.44	168.97

CCHV= .300 CEHV= .500

*SECNO 1.100

1.100	8.97	2120.57	.00	.00	2121.39	.82	.02	.01	2111.60
2500.0	357.0	1721.6	421.4	154.4	206.5	85.8	35.5	22.5	2111.60
.19	2.31	8.34	4.91	.030	.030	.030	.000	2111.60	10.94
.001517	10.	10.	10.	0	0	0	.00	158.16	169.10

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

3280 CROSS SECTION 600.00 EXTENDED 2.16 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	8.36	2112.16	2112.16	.00	2115.59	3.43	3.89	.24	2110.00
2500.0	.0	2500.0	.0	.0	168.2	.0	32.2	21.7	2114.10
.17	.00	14.86	.00	.000	.030	.000	.000	2103.80	.00
.011872	420.	400.	377.	2	15	0	.00	24.98	24.98

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED 2.18 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	8.38	2116.68	2116.68	.00	2120.09	3.41	3.55	.00	2114.50
2500.0	.0	2500.0	.0	.0	168.6	.0	33.3	21.9	2119.30
.18	.00	14.82	.00	.000	.030	.000	.000	2108.30	.00
.011791	300.	300.	300.	2	5	0	.00	24.98	24.98

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

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

CROSS SECTIONS 0-1.3

ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

.000	8.91	2120.51	.00	.00	2121.36	.85	1.02	.26	2111.60
2500.0	339.7	1737.8	422.5	147.4	205.1	84.6	35.4	22.5	2111.60
.19	2.30	8.47	4.99	.030	.030	.030	.000	2111.60	12.53
.001582	300.	300.	300.	2	0	0	.00	156.44	168.97

3CHV= .300 CEHV= .500

*SECNO 1.100

1.100	8.97	2120.57	.00	.00	2121.39	.82	.02	.01	2111.60
2500.0	357.0	1721.6	421.4	154.4	206.5	85.8	35.5	22.5	2111.60
.19	2.31	8.34	4.91	.030	.030	.030	.000	2111.60	10.94
.001517	10.	10.	10.	0	0	0	.00	158.16	169.10

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2135.92..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOE= 2132.47 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 1.200

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2135.92	2132.47	.20	1303.	1186.	7.565	115.5	2118.50	193.	
1.200	9.34	2120.94	.00	.00	2121.59	.64	.20	.00	2111.60
2500.0	459.9	1625.9	414.2	198.6	214.9	92.9	36.7	22.9	2111.60
.20	2.32	7.57	4.46	.030	.030	.030	.000	2111.60	1.45
.001185	110.	110.	110.	3	0	0	.00	168.43	169.88

CCHV= .100 CEHV= .300

*SECNO 1.300

3280 CROSS SECTION 1.30 EXTENDED .05 FEET

1.300	9.45	2121.05	.00	.00	2121.65	.60	.06	.00	2111.60
2500.0	489.7	1597.5	412.8	211.6	217.3	95.0	37.3	23.1	2111.60
.20	2.31	7.35	4.35	.030	.030	.030	.000	2111.60	.00
.001103	50.	50.	50.	2	0	0	.00	171.90	171.90

*SECNO 415.000

3280 CROSS SECTION 415.00 EXTENDED .43 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.48	2124.92	2124.92	.00	2125.92	1.00	.02	.12	2122.30
2500.0	46.0	1623.7	830.4	12.7	171.0	205.8	37.4	23.2	2122.30
.20	3.61	9.50	4.03	.030	.030	.030	.000	2115.44	.29
.003874	10.	10.	10.	20	5	0	.00	179.71	180.00

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

*SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	9.62	2130.92	2130.92	.00	2132.32	1.40	1.01	.12	2128.90
2500.0	22.8	1850.7	626.5	6.6	173.4	129.1	39.2	23.9	2128.90
.21	3.46	10.67	4.85	.030	.030	.030	.000	2121.30	3.48
.005104	229.	229.	229.	20	8	0	.00	105.63	109.11

*SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED 1.66 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	6.66	2133.56	2133.56	.00	2134.74	1.18	.93	.02	2134.70
2500.0	.0	1373.1	1126.9	.0	133.3	179.4	40.4	24.3	2131.00
.21	.00	10.30	6.28	.000	.030	.030	.000	2126.90	.01
.006089	158.	165.	173.	20	18	0	.00	104.99	105.00

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.99

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	7.85	2134.55	2134.08	.00	2134.88	.33	.05	.08	2132.00
2500.0	698.4	1177.3	624.3	291.7	191.1	217.0	40.7	24.4	2132.00
.21	2.39	6.16	2.88	.030	.030	.030	.000	2126.70	36.28
.001534	20.	20.	20.	10	8	0	.00	378.86	415.14

*SECNO .110

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

*SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	9.62	2130.92	2130.92	.00	2132.32	1.40	1.01	.12	2128.90
2500.0	22.8	1850.7	626.5	6.6	173.4	129.1	39.2	23.9	2128.90
.21	3.46	10.67	4.85	.030	.030	.030	.000	2121.30	3.48
.005104	229.	229.	229.	20	8	0	.00	105.63	109.11

*SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED 1.66 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	6.66	2133.56	2133.56	.00	2134.74	1.18	.93	.02	2134.70
2500.0	.0	1373.1	1126.9	.0	133.3	179.4	40.4	24.3	2131.00
.21	.00	10.30	6.28	.000	.030	.030	.000	2126.90	.01
.006089	158.	165.	173.	20	18	0	.00	104.99	105.00

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.99

CROSS SECTIONS 0-5

AMIGO STREET

MODELED AS SC, 3- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

.000	7.85	2134.55	2134.08	.00	2134.88	.33	.05	.08	2132.00
2500.0	698.4	1177.3	624.3	291.7	191.1	217.0	40.7	24.4	2132.00
.21	2.39	6.16	2.88	.030	.030	.030	.000	2126.70	36.28
.001534	20.	20.	20.	10	8	0	.00	378.86	415.14

*SECNO .110

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

.110	7.82	2134.52	2134.52	.00	2135.23	.71	.08	.11	2132.00
2500.0	100.8	1559.2	840.0	33.5	190.2	267.8	41.2	24.7	2132.00
.22	3.01	8.20	3.14	.030	.030	.030	.000	2126.70	243.46
.002733	40.	40.	40.	20	7	0	.00	258.30	501.76

CCHV= .300 CEHV= .500

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.50	3.00	.00	7.00	4.00	45.00	1	1	2126.70	2122.80

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2149.75..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2146.21 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO .220

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2149.75	2146.21	1.26	1147.	1345.	9.538	115.5	2135.50	420.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3693 PROBABLE MINIMUM SPECIFIC ENERGY

.220	8.88	2135.58	2133.66	.00	2136.77	1.19	.13	-.13	2132.00
2500.0	202.5	2067.0	230.5	55.2	216.7	107.1	41.7	25.0	2132.00
.22	3.67	9.54	2.15	.030	.030	.030	.000	2126.70	203.09
.003110	45.	45.	45.	20	11	0	.00	316.99	520.08

CCHV= .100 CEHV= .300

*SECNO 5.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5.000	3.18	2138.08	2138.08	.00	2138.77	.69	.47	.05	2139.10
2500.0	.0	2500.0	.0	.0	374.6	.0	42.4	25.6	2138.80
.22	.00	6.67	.00	.000	.035	.000	.000	2134.90	2622.75
.015329	80.	80.	80.	20	17	0	.00	261.42	2884.17

THIS RUN EXECUTED 14MAY93 13:14:18

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECTNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
	1.000	.00	.00	.00	2072.00	1000.00	2074.73	.00	2075.42	67.04	6.79	154.40	122.14
	1.000	.00	.00	.00	2072.00	1500.00	2075.00	.00	2076.25	108.93	9.22	171.43	143.72
*	1.000	.00	.00	.00	2072.00	2000.00	2075.51	2075.51	2077.08	111.59	10.36	204.93	189.33
*	1.000	.00	.00	.00	2072.00	2500.00	2076.03	2076.03	2077.83	107.22	11.14	240.22	241.44
	2.000	1350.00	.00	.00	2085.70	1000.00	2087.23	.00	2087.37	120.94	3.73	355.27	90.93
	2.000	1350.00	.00	.00	2085.70	1500.00	2087.53	.00	2087.64	66.01	3.14	573.00	184.62
	2.000	1350.00	.00	.00	2085.70	2000.00	2087.73	.00	2087.85	58.42	2.88	725.54	261.67
*	2.000	1350.00	.00	.00	2085.70	2500.00	2087.89	.00	2088.02	54.45	3.02	852.64	338.79
*	3.000	750.00	.00	.00	2094.00	1000.00	2097.58	2097.58	2098.93	158.71	9.77	110.22	79.38
*	3.000	750.00	.00	.00	2094.00	1500.00	2098.50	2098.50	2100.12	148.76	10.78	150.98	122.98
*	3.000	750.00	.00	.00	2094.00	2000.00	2099.27	2099.27	2101.11	139.97	11.50	188.67	169.05
*	3.000	750.00	.00	.00	2094.00	2500.00	2099.83	2099.83	2101.99	143.52	12.46	216.59	208.68
*	1600.000	340.00	.00	.00	2095.50	1000.00	2100.57	.00	2101.50	42.90	7.76	128.92	152.67
*	1600.000	340.00	.00	.00	2095.50	1500.00	2101.57	.00	2102.92	51.19	9.31	161.10	209.65
*	1600.000	340.00	.00	.00	2095.50	2000.00	2102.32	.00	2104.11	60.76	10.76	185.93	256.58
*	1600.000	340.00	.00	.00	2095.50	2500.00	2103.02	.00	2105.19	66.33	11.83	211.35	306.97
*	1560.000	40.00	.00	.00	2095.70	1000.00	2100.84	.00	2101.74	87.66	7.62	131.26	106.80
	1560.000	40.00	.00	.00	2095.70	1500.00	2101.96	.00	2103.20	98.31	8.94	167.70	151.28
	1560.000	40.00	.00	.00	2095.70	2000.00	2102.89	.00	2104.45	107.04	10.02	199.66	193.31
	1560.000	40.00	.00	.00	2095.70	2500.00	2103.72	.00	2105.56	113.38	10.89	229.53	234.79
	1384.000	176.00	.00	.00	2096.60	1000.00	2101.84	.00	2103.49	85.32	10.28	97.24	108.26
	1384.000	176.00	.00	.00	2096.60	1500.00	2102.99	.00	2105.13	90.56	11.73	127.86	157.62
	1384.000	176.00	.00	.00	2096.60	2000.00	2103.96	2103.95	2106.51	93.42	12.81	156.14	206.93
*	1384.000	176.00	.00	.00	2096.60	2500.00	2104.85	2104.85	2107.72	93.68	13.59	183.90	258.30
	1000.000	384.00	.00	.00	2098.70	1000.00	2105.01	.00	2106.34	64.08	9.25	108.15	124.93
	1000.000	384.00	.00	.00	2098.70	1500.00	2106.46	.00	2108.19	68.77	10.54	142.30	180.88
	1000.000	384.00	.00	.00	2098.70	2000.00	2107.57	.00	2109.72	73.70	11.76	170.03	232.96
	1000.000	384.00	.00	.00	2098.70	2500.00	2108.47	.00	2111.09	81.27	13.00	192.37	277.31

THIS RUN EXECUTED 14MAY93 13:14:18

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECN0	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
	1.000	.00	.00	.00	2072.00	1000.00	2074.73	.00	2075.42	67.04	6.79	154.40	122.14
	1.000	.00	.00	.00	2072.00	1500.00	2075.00	.00	2076.25	108.93	9.22	171.43	143.72
*	1.000	.00	.00	.00	2072.00	2000.00	2075.51	2075.51	2077.08	111.59	10.36	204.93	189.33
*	1.000	.00	.00	.00	2072.00	2500.00	2076.03	2076.03	2077.83	107.22	11.14	240.22	241.44
	2.000	1350.00	.00	.00	2085.70	1000.00	2087.23	.00	2087.37	120.94	3.73	355.27	90.93
	2.000	1350.00	.00	.00	2085.70	1500.00	2087.53	.00	2087.64	66.01	3.14	573.00	184.62
	2.000	1350.00	.00	.00	2085.70	2000.00	2087.73	.00	2087.85	58.42	2.88	725.54	261.67
*	2.000	1350.00	.00	.00	2085.70	2500.00	2087.89	.00	2088.02	54.45	3.02	852.64	338.79
*	3.000	750.00	.00	.00	2094.00	1000.00	2097.58	2097.58	2098.93	158.71	9.77	110.22	79.38
*	3.000	750.00	.00	.00	2094.00	1500.00	2098.50	2098.50	2100.12	148.76	10.78	150.98	122.98
*	3.000	750.00	.00	.00	2094.00	2000.00	2099.27	2099.27	2101.11	139.97	11.50	188.67	169.05
*	3.000	750.00	.00	.00	2094.00	2500.00	2099.83	2099.83	2101.99	143.52	12.46	216.59	208.68
*	1600.000	340.00	.00	.00	2095.50	1000.00	2100.57	.00	2101.50	42.90	7.76	128.92	152.67
*	1600.000	340.00	.00	.00	2095.50	1500.00	2101.57	.00	2102.92	51.19	9.31	161.10	209.65
*	1600.000	340.00	.00	.00	2095.50	2000.00	2102.32	.00	2104.11	60.76	10.76	185.93	256.58
*	1600.000	340.00	.00	.00	2095.50	2500.00	2103.02	.00	2105.19	66.33	11.83	211.35	306.97
*	1560.000	40.00	.00	.00	2095.70	1000.00	2100.84	.00	2101.74	87.66	7.62	131.26	106.80
	1560.000	40.00	.00	.00	2095.70	1500.00	2101.96	.00	2103.20	98.31	8.94	167.70	151.28
	1560.000	40.00	.00	.00	2095.70	2000.00	2102.89	.00	2104.45	107.04	10.02	199.66	193.31
	1560.000	40.00	.00	.00	2095.70	2500.00	2103.72	.00	2105.56	113.38	10.89	229.53	234.79
	1384.000	176.00	.00	.00	2096.60	1000.00	2101.84	.00	2103.49	85.32	10.28	97.24	108.26
	1384.000	176.00	.00	.00	2096.60	1500.00	2102.99	.00	2105.13	90.56	11.73	127.86	157.62
	1384.000	176.00	.00	.00	2096.60	2000.00	2103.96	2103.95	2106.51	93.42	12.81	156.14	206.93
*	1384.000	176.00	.00	.00	2096.60	2500.00	2104.85	2104.85	2107.72	93.68	13.59	183.90	258.30
	1000.000	384.00	.00	.00	2098.70	1000.00	2105.01	.00	2106.34	64.08	9.25	108.15	124.93
	1000.000	384.00	.00	.00	2098.70	1500.00	2106.46	.00	2108.19	68.77	10.54	142.30	180.88
	1000.000	384.00	.00	.00	2098.70	2000.00	2107.57	.00	2109.72	73.70	11.76	170.03	232.96
	1000.000	384.00	.00	.00	2098.70	2500.00	2108.47	.00	2111.09	81.27	13.00	192.37	277.31

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	600.000	400.00	.00	.00	2103.80	1000.00	2108.92	2108.92	2110.90	116.81	11.29	88.57	92.53
*	600.000	400.00	.00	.00	2103.80	1500.00	2110.21	2110.21	2112.66	114.88	12.54	119.58	139.95
*	600.000	400.00	.00	.00	2103.80	2000.00	2111.23	2111.23	2114.19	116.39	13.79	144.99	185.38
*	600.000	400.00	.00	.00	2103.80	2500.00	2112.16	2112.16	2115.59	118.72	14.86	168.24	229.45
*	300.000	300.00	.00	.00	2108.30	1000.00	2113.43	2113.43	2115.40	116.29	11.27	88.72	92.73
•	300.000	300.00	.00	.00	2108.30	1500.00	2114.72	2114.72	2117.16	114.17	12.52	119.84	140.38
*	300.000	300.00	.00	.00	2108.30	2000.00	2115.74	2115.74	2118.69	115.70	13.77	145.29	185.93
*	300.000	300.00	.00	.00	2108.30	2500.00	2116.68	2116.68	2120.09	117.91	14.82	168.64	230.23
*	.000	300.00	.00	.00	2111.60	1000.00	2116.29	.00	2117.26	35.23	8.23	132.29	168.48
*	.000	300.00	.00	.00	2111.60	1500.00	2117.70	.00	2118.88	30.60	9.15	182.19	271.16
•	.000	300.00	.00	.00	2111.60	2000.00	2119.02	.00	2120.30	26.34	9.67	243.50	389.66
*	.000	300.00	.00	.00	2111.60	2500.00	2120.51	.00	2121.36	15.82	8.47	437.13	628.60
	1.100	10.00	.00	.00	2111.60	1000.00	2116.09	.00	2117.54	51.46	9.68	103.35	139.40
	1.100	10.00	.00	.00	2111.60	1500.00	2117.77	.00	2118.92	29.31	9.02	184.88	277.07
	1.100	10.00	.00	.00	2111.60	2000.00	2119.09	.00	2120.34	25.32	9.54	249.57	397.46
	1.100	10.00	.00	.00	2111.60	2500.00	2120.57	.00	2121.39	15.17	8.34	446.73	641.78
*	1.200	110.00	2118.50	2116.60	2111.60	1000.00	2119.53	.00	2119.78	4.90	4.36	296.27	451.75
*	1.200	110.00	2118.50	2116.60	2111.60	1500.00	2120.19	.00	2120.57	7.10	5.54	387.96	563.02
*	1.200	110.00	2118.50	2116.60	2111.60	2000.00	2120.69	.00	2121.18	8.95	6.46	466.01	668.62
	1.200	110.00	2118.50	2116.60	2111.60	2500.00	2120.94	.00	2121.59	11.85	7.57	506.37	726.22
	1.300	50.00	.00	.00	2111.60	1000.00	2119.56	.00	2119.81	4.82	4.33	299.81	455.64
	1.300	50.00	.00	.00	2111.60	1500.00	2120.23	.00	2120.60	6.91	5.48	393.85	570.69
	1.300	50.00	.00	.00	2111.60	2000.00	2120.76	.00	2121.22	8.61	6.36	475.13	681.46
	1.300	50.00	.00	.00	2111.60	2500.00	2121.05	.00	2121.65	11.03	7.35	523.93	752.81
*	415.000	10.00	.00	.00	2115.44	1000.00	2120.02	2120.02	2122.31	136.23	12.14	82.37	85.68
*	415.000	10.00	.00	.00	2115.44	1500.00	2123.45	2123.45	2124.86	51.84	9.81	176.68	208.32
*	415.000	10.00	.00	.00	2115.44	2000.00	2124.54	2124.54	2125.51	36.79	9.00	320.93	329.72
*	415.000	10.00	.00	.00	2115.44	2500.00	2124.92	2124.92	2125.92	38.74	9.50	389.50	401.65
*	185.000	229.00	.00	.00	2121.30	1000.00	2125.87	2125.87	2128.18	137.33	12.17	82.15	85.33
*	185.000	229.00	.00	.00	2121.30	1500.00	2127.29	2127.29	2130.30	142.84	13.92	107.76	125.51
*	185.000	229.00	.00	.00	2121.30	2000.00	2130.53	2130.53	2131.76	44.78	9.72	268.26	298.89
*	185.000	229.00	.00	.00	2121.30	2500.00	2130.92	2130.92	2132.32	51.04	10.67	309.10	349.94
*	20.000	165.00	.00	.00	2126.90	1000.00	2132.21	2132.21	2133.00	44.01	7.75	170.86	150.74
*	20.000 (A)	165.00	.00	.00	2126.90	1500.00	2132.81	2132.81	2133.68	48.10	8.59	233.85	216.29
*	20.000	165.00	.00	.00	2126.90	2000.00	2133.22	2133.22	2134.24	55.08	9.52	276.27	269.48
*	20.000	165.00	.00	.00	2126.90	2500.00	2133.56	2133.56	2134.74	60.89	10.30	312.71	320.37
	.000	20.00	.00	.00	2126.70	1000.00	2132.23	.00	2133.11	36.87	7.50	136.12	164.69
*	.000 (B)	20.00	.00	.00	2126.70	1500.00	2133.51	2133.51	2134.16	25.34	7.18	325.75	298.00
*	.000	20.00	.00	.00	2126.70	2000.00	2133.80	2133.80	2134.51	29.39	7.96	419.10	368.93
*	.000	20.00	.00	.00	2126.70	2500.00	2134.55	2134.08	2134.88	15.34	6.16	699.83	638.33

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	.110	40.00	.00	.00	2126.70	1000.00	2132.44	.00	2133.25	32.72	7.24	138.08	174.83
	.110	40.00	.00	.00	2126.70	1500.00	2133.07	.00	2134.54	51.17	9.74	154.00	209.70
*	.110	40.00	.00	.00	2126.70	2000.00	2132.73	2132.73	2135.67	110.06	13.75	145.44	190.64
*	.110	40.00	.00	.00	2126.70	2500.00	2134.52	2134.52	2135.23	27.33	8.20	491.50	478.21
*	.220	45.00	2135.50	2133.50	2126.70	1000.00	2133.78	.00	2134.31	15.80	5.82	171.79	251.62
*	.220	45.00	2135.50	2133.50	2126.70	1500.00	2134.85	.00	2135.74	21.93	7.55	198.56	320.32
*	.220	45.00	2135.50	2133.50	2126.70	2000.00	2131.53	.00	2136.19	228.92	17.33	115.41	132.19
*	.220	45.00	2135.50	2133.50	2126.70	2500.00	2135.58	2133.66	2136.77	31.10	9.54	379.01	448.26
*	5.000	80.00	.00	.00	2134.90	1000.00	2137.21	2137.21	2137.72	176.30	5.71	175.07	75.31
*	5.000	80.00	.00	.00	2134.90	1500.00	2137.58	2137.58	2138.14	170.50	6.03	248.91	114.88
*	5.000	80.00	.00	.00	2134.90	2000.00	2137.83	2137.83	2138.48	178.48	6.46	309.61	149.70
*	5.000	80.00	.00	.00	2134.90	2500.00	2138.08	2138.08	2138.77	153.29	6.67	374.59	201.92

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	.110	40.00	.00	.00	2126.70	1000.00	2132.44	.00	2133.25	32.72	7.24	138.08	174.83
	.110	40.00	.00	.00	2126.70	1500.00	2133.07	.00	2134.54	51.17	9.74	154.00	209.70
*	.110	40.00	.00	.00	2126.70	2000.00	2132.73	2132.73	2135.67	110.06	13.75	145.44	190.64
*	.110	40.00	.00	.00	2126.70	2500.00	2134.52	2134.52	2135.23	27.33	8.20	491.50	478.21
*	.220	45.00	2135.50	2133.50	2126.70	1000.00	2133.78	.00	2134.31	15.80	5.82	171.79	251.62
*	.220	45.00	2135.50	2133.50	2126.70	1500.00	2134.85	.00	2135.74	21.93	7.55	198.56	320.32
*	.220	45.00	2135.50	2133.50	2126.70	2000.00	2131.53	.00	2136.19	228.92	17.33	115.41	132.19
*	.220	45.00	2135.50	2133.50	2126.70	2500.00	2135.58	2133.66	2136.77	31.10	9.54	379.01	448.26
*	5.000	80.00	.00	.00	2134.90	1000.00	2137.21	2137.21	2137.72	176.30	5.71	175.07	75.31
*	5.000	(C) 80.00	.00	.00	2134.90	1500.00	2137.58	2137.58	2138.14	170.50	6.03	248.91	114.88
*	5.000	80.00	.00	.00	2134.90	2000.00	2137.83	2137.83	2138.48	178.48	6.46	309.61	149.70
*	5.000	80.00	.00	.00	2134.90	2500.00	2138.08	2138.08	2138.77	153.29	6.67	374.59	201.92

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.000	1000.00	2074.73	.00	.00	-.27	63.01	.00
	1.000	1500.00	2075.00	.27	.00	.00	64.29	.00
*	1.000	2000.00	2075.51	.51	.00	.51	66.72	.00
*	1.000	2500.00	2076.03	.52	.00	1.03	69.19	.00
	2.000	1000.00	2087.23	.00	12.50	.00	712.32	1350.00
	2.000	1500.00	2087.53	.30	12.53	.00	753.55	1350.00
	2.000	2000.00	2087.73	.20	12.22	.00	786.30	1350.00
*	2.000	2500.00	2087.89	.16	11.86	.00	796.02	1350.00
*	3.000	1000.00	2097.58	.00	10.35	.00	41.51	750.00
*	3.000	1500.00	2098.50	.92	10.98	.00	47.03	750.00
*	3.000	2000.00	2099.27	.77	11.55	.00	50.00	750.00
*	3.000	2500.00	2099.83	.56	11.95	.00	50.00	750.00
*	1600.000	1000.00	2100.57	.00	2.98	.00	30.89	340.00
*	1600.000	1500.00	2101.57	1.00	3.07	.00	33.06	340.00
*	1600.000	2000.00	2102.32	.75	3.04	.00	34.64	340.00
*	1600.000	2500.00	2103.02	.70	3.18	.00	36.18	340.00
*	1560.000	1000.00	2100.84	.00	.27	.00	31.06	40.00
	1560.000	1500.00	2101.96	1.12	.39	.00	33.49	40.00
	1560.000	2000.00	2102.89	.93	.58	.00	35.48	40.00
	1560.000	2500.00	2103.72	.83	.70	.00	37.25	40.00
	1384.000	1000.00	2101.84	.00	1.00	.00	25.08	176.00
	1384.000	1500.00	2102.99	1.15	1.03	.00	27.96	176.00
	1384.000	2000.00	2103.96	.96	1.07	.00	30.38	176.00
*	1384.000	2500.00	2104.85	.89	1.13	.00	32.58	176.00
	1000.000	1000.00	2105.01	.00	3.17	.00	22.35	384.00
	1000.000	1500.00	2106.46	1.45	3.47	.00	24.75	384.00
	1000.000	2000.00	2107.57	1.11	3.61	.00	24.99	384.00
	1000.000	2500.00	2108.47	.89	3.62	.00	25.00	384.00
*	600.000	1000.00	2108.92	.00	3.91	.00	22.69	400.00
*	600.000	1500.00	2110.21	1.29	3.75	.00	24.96	400.00
*	600.000	2000.00	2111.23	1.02	3.66	.00	24.97	400.00
*	600.000	2500.00	2112.16	.93	3.69	.00	24.98	400.00
*	300.000	1000.00	2113.43	.00	4.51	.00	22.70	300.00
*	300.000	1500.00	2114.72	1.30	4.51	.00	24.96	300.00
*	300.000	2000.00	2115.74	1.02	4.51	.00	24.97	300.00
*	300.000	2500.00	2116.68	.94	4.52	.00	24.98	300.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.000	1000.00	2116.29	.00	2.86	.00	33.54	300.00
*	.000	1500.00	2117.70	1.41	2.98	.00	36.74	300.00
*	.000	2000.00	2119.02	1.32	3.27	.00	81.89	300.00
*	.000	2500.00	2120.51	1.49	3.83	.00	156.44	300.00
	1.100	1000.00	2116.09	.00	-.20	.00	23.00	10.00
	1.100	1500.00	2117.77	1.68	.07	.00	36.90	10.00
	1.100	2000.00	2119.09	1.32	.07	.00	87.87	10.00
	1.100	2500.00	2120.57	1.48	.06	.00	158.16	10.00
*	1.200	1000.00	2119.53	.00	3.44	.00	124.66	110.00
*	1.200	1500.00	2120.19	.66	2.42	.00	147.34	110.00
*	1.200	2000.00	2120.69	.50	1.60	.00	161.55	110.00
	1.200	2500.00	2120.94	.25	.37	.00	168.43	110.00
	1.300	1000.00	2119.56	.00	.03	.00	127.01	50.00
	1.300	1500.00	2120.23	.68	.05	.00	148.46	50.00
	1.300	2000.00	2120.76	.52	.06	.00	163.13	50.00
	1.300	2500.00	2121.05	.29	.10	.00	171.90	50.00
*	415.000	1000.00	2120.02	.00	.47	.00	18.03	10.00
*	415.000	1500.00	2123.45	3.42	3.21	.00	81.86	10.00
*	415.000	2000.00	2124.54	1.09	3.78	.00	178.30	10.00
*	415.000	2500.00	2124.92	.38	3.88	.00	179.71	10.00
*	185.000	1000.00	2125.87	.00	5.85	.00	18.02	229.00
*	185.000	1500.00	2127.29	1.42	3.85	.00	18.06	229.00
*	185.000	2000.00	2130.53	3.24	5.99	.00	103.48	229.00
*	185.000	2500.00	2130.92	.39	6.00	.00	105.63	229.00
*	20.000	1000.00	2132.21	.00	6.34	.00	104.97	165.00
*	20.000	1500.00	2132.81	.60	5.52	.00	104.98	165.00
*	20.000	2000.00	2133.22	.40	2.68	.00	104.98	165.00
*	20.000	2500.00	2133.56	.35	2.64	.00	104.99	165.00
	.000	1000.00	2132.23	.00	.02	.00	51.45	20.00
*	.000	1500.00	2133.51	1.28	.70	.00	296.92	20.00
*	.000	2000.00	2133.80	.29	.59	.00	343.60	20.00
*	.000	2500.00	2134.55	.74	.99	.00	378.86	20.00
	.110	1000.00	2132.44	.00	.20	.00	25.00	40.00
	.110	1500.00	2133.07	.64	-.44	.00	25.00	40.00
*	.110	2000.00	2132.73	-.34	-1.07	.00	25.00	40.00
*	.110	2500.00	2134.52	1.79	-.03	.00	258.30	40.00
*	.220	1000.00	2133.78	.00	1.34	.00	25.00	45.00
*	.220	1500.00	2134.85	1.07	1.78	.00	25.00	45.00
*	.220	2000.00	2131.53	-3.33	-1.20	.00	24.82	45.00
*	.220	2500.00	2135.58	4.05	1.06	.00	316.99	45.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.000	1000.00	2116.29	.00	2.86	.00	33.54	300.00
*	.000	1500.00	2117.70	1.41	2.98	.00	36.74	300.00
*	.000	2000.00	2119.02	1.32	3.27	.00	81.89	300.00
*	.000	2500.00	2120.51	1.49	3.83	.00	156.44	300.00
	1.100	1000.00	2116.09	.00	-.20	.00	23.00	10.00
	1.100	1500.00	2117.77	1.68	.07	.00	36.90	10.00
	1.100	2000.00	2119.09	1.32	.07	.00	87.87	10.00
	1.100	2500.00	2120.57	1.48	.06	.00	158.16	10.00
*	1.200	1000.00	2119.53	.00	3.44	.00	124.66	110.00
*	1.200	1500.00	2120.19	.66	2.42	.00	147.34	110.00
*	1.200	2000.00	2120.69	.50	1.60	.00	161.55	110.00
	1.200	2500.00	2120.94	.25	.37	.00	168.43	110.00
	1.300	1000.00	2119.56	.00	.03	.00	127.01	50.00
	1.300	1500.00	2120.23	.68	.05	.00	148.46	50.00
	1.300	2000.00	2120.76	.52	.06	.00	163.13	50.00
	1.300	2500.00	2121.05	.29	.10	.00	171.90	50.00
*	415.000	1000.00	2120.02	.00	.47	.00	18.03	10.00
*	415.000	1500.00	2123.45	3.42	3.21	.00	81.86	10.00
*	415.000	2000.00	2124.54	1.09	3.78	.00	178.30	10.00
*	415.000	2500.00	2124.92	.38	3.88	.00	179.71	10.00
*	185.000	1000.00	2125.87	.00	5.85	.00	18.02	229.00
*	185.000	1500.00	2127.29	1.42	3.85	.00	18.06	229.00
*	185.000	2000.00	2130.53	3.24	5.99	.00	103.48	229.00
*	185.000	2500.00	2130.92	.39	6.00	.00	105.63	229.00
*	20.000	1000.00	2132.21	.00	6.34	.00	104.97	165.00
*	20.000	1500.00	2132.81	.60	5.52	.00	104.98	165.00
*	20.000	2000.00	2133.22	.40	2.68	.00	104.98	165.00
*	20.000	2500.00	2133.56	.35	2.64	.00	104.99	165.00
	.000	1000.00	2132.23	.00	.02	.00	51.45	20.00
*	.000	1500.00	2133.51	1.28	.70	.00	296.92	20.00
*	.000	2000.00	2133.80	.29	.59	.00	343.60	20.00
*	.000	2500.00	2134.55	.74	.99	.00	378.86	20.00
	.110	1000.00	2132.44	.00	.20	.00	25.00	40.00
	.110	1500.00	2133.07	.64	-.44	.00	25.00	40.00
*	.110	2000.00	2132.73	-.34	-1.07	.00	25.00	40.00
*	.110	2500.00	2134.52	1.79	-.03	.00	258.30	40.00
*	.220	1000.00	2133.78	.00	1.34	.00	25.00	45.00
*	.220	1500.00	2134.85	1.07	1.78	.00	25.00	45.00
*	.220	2000.00	2131.53	-3.33	-1.20	.00	24.82	45.00
*	.220	2500.00	2135.58	4.05	1.06	.00	316.99	45.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	5.000	1000.00	2137.21	.00	3.43	.00	171.27	80.00
*	5.000	1500.00	2137.58	.37	2.72	.00	219.25	80.00
*	5.000	2000.00	2137.83	.25	6.30	.00	254.35	80.00
*	5.000	2500.00	2138.08	.25	2.50	.00	261.42	80.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	1.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
WARNING SECNO=	2.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	3.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	4	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	4	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	1600.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	3	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1560.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	1384.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1384.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	3	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	3	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	3	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1.200	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	1.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
WARNING SECNO=	2.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	3.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	3	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	3	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	4	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	4	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	1600.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	3	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1560.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	1384.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1384.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	3	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	3	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	3	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	300.000	PROFILE=	4	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	4	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	3	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	4	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1.200	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1.200 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 1.200 PROFILE= 3 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 415.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 415.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 415.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 415.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 415.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 415.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 415.000 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 415.000 PROFILE= 3 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 415.000 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 415.000 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 415.000 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 415.000 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 185.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 185.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 185.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 185.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 185.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 185.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 185.000 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 185.000 PROFILE= 3 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 185.000 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 185.000 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 185.000 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 185.000 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 20.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 20.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 20.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 20.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 20.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 20.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 20.000 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 20.000 PROFILE= 3 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 20.000 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 20.000 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 20.000 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 20.000 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= .000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .000 PROFILE= 2 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .000 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .000 PROFILE= 3 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .000 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO= .000 PROFILE= 4 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= .110 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .110 PROFILE= 3 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .110 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= .110 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= .110 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= .110 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= .220 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= .220 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= .220 PROFILE= 3 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO= .220 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .220 PROFILE= 4 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= .220 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 5.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 5.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 5.000 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5.000 PROFILE= 3 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5.000 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5.000 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5.000 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= .110 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= .220 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= .220 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= .220 PROFILE= 3 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO= .220 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= .220 PROFILE= 4 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= .220 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 5.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 5.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 5.000 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5.000 PROFILE= 3 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5.000 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5.000 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5.000 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

FLOODWAY DATA, BLUE DIAMOND WASH - 100
PROFILE NO. 2

STATION	FLOODWAY			WATER SURFACE ELEVATION		
	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
1.000	64.	171.	8.8	2075.0	2074.7	.3
2.000	774.	573.	2.6	2087.5	2087.2	.3
3.000	47.	151.	9.9	2098.5	2097.6	.9
1600.000	33.	161.	9.3	2101.6	2100.6	1.0
1560.000	33.	168.	8.9	2101.9	2100.8	1.1
1384.000	28.	128.	11.7	2103.0	2101.8	1.2
1000.000	25.	142.	10.5	2106.4	2105.0	1.4
600.000	25.	120.	12.5	2110.2	2108.9	1.3
300.000	25.	120.	12.5	2114.7	2113.4	1.3
.000	37.	182.	8.2	2117.7	2116.3	1.4
1.100	37.	185.	8.1	2117.8	2116.1	1.7
1.200	147.	388.	3.9	2120.2	2119.5	.7
1.300	148.	394.	3.8	2120.3	2119.6	.7
415.000	82.	177.	8.5	2123.4	2120.0	3.4
185.000	18.	108.	13.9	2127.3	2125.9	1.4
20.000 (A)	105.	234.	6.4	2132.8	2132.2	.6
.000 (B)	297.	326.	4.6	2133.5	2132.2	1.3
.110	25.	154.	9.7	2133.0	2132.4	.6
.220	25.	199.	7.6	2134.9	2133.8	1.1
5.000 (C)	219.	249.	6.0	2137.6	2137.2	.4

FLOODWAY DATA, BLUE DIAMOND WASH - 100
PROFILE NO. 3

STATION	WIDTH	FLOODWAY		WATER SURFACE ELEVATION		
		SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
1.000	67.	205.	9.8	2075.5	2074.7	.8
2.000	786.	726.	2.8	2087.7	2087.2	.5
3.000	50.	189.	10.6	2099.3	2097.6	1.7
1600.000	35.	186.	10.8	2102.3	2100.6	1.7
1560.000	35.	200.	10.0	2102.9	2100.8	2.1
1384.000	30.	156.	12.8	2104.0	2101.8	2.2
1000.000	25.	170.	11.8	2107.6	2105.0	2.6
600.000	25.	145.	13.8	2111.2	2108.9	2.3
300.000	25.	145.	13.8	2115.7	2113.4	2.3
.000	114.	244.	8.2	2119.0	2116.3	2.7
1.100	116.	250.	8.0	2119.1	2116.1	3.0
1.200	162.	466.	4.3	2120.7	2119.5	1.2
1.300	163.	475.	4.2	2120.8	2119.6	1.2
415.000	178.	321.	6.2	2124.5	2120.0	4.5
185.000	103.	268.	7.5	2130.5	2125.9	4.6
20.000 (A)	105.	276.	7.2	2133.2	2132.2	1.0
.000 (B)	344.	419.	4.8	2133.8	2132.2	1.6
.110	25.	145.	13.8	2132.7	2132.4	.3
.220	25.	115.	17.3	2131.5	2133.8	-2.3
5.000 (C)	254.	310.	6.5	2137.8	2137.2	.6

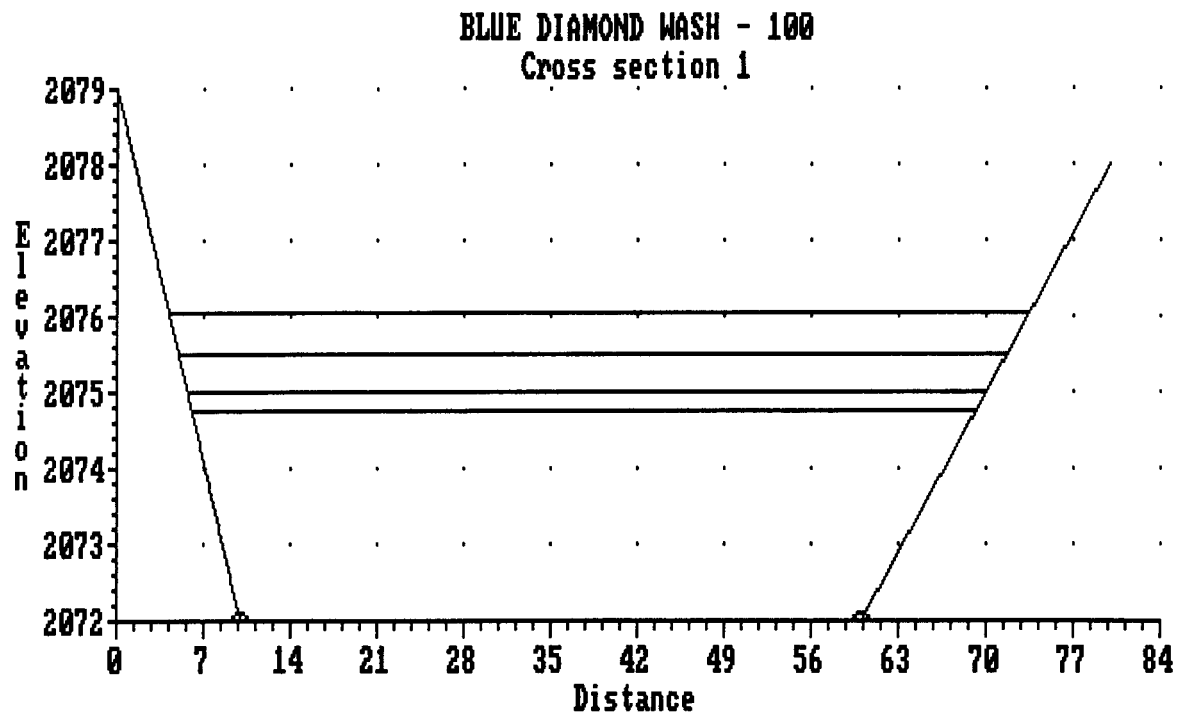
FLOODWAY DATA, BLUE DIAMOND WASH - 100
PROFILE NO. 3

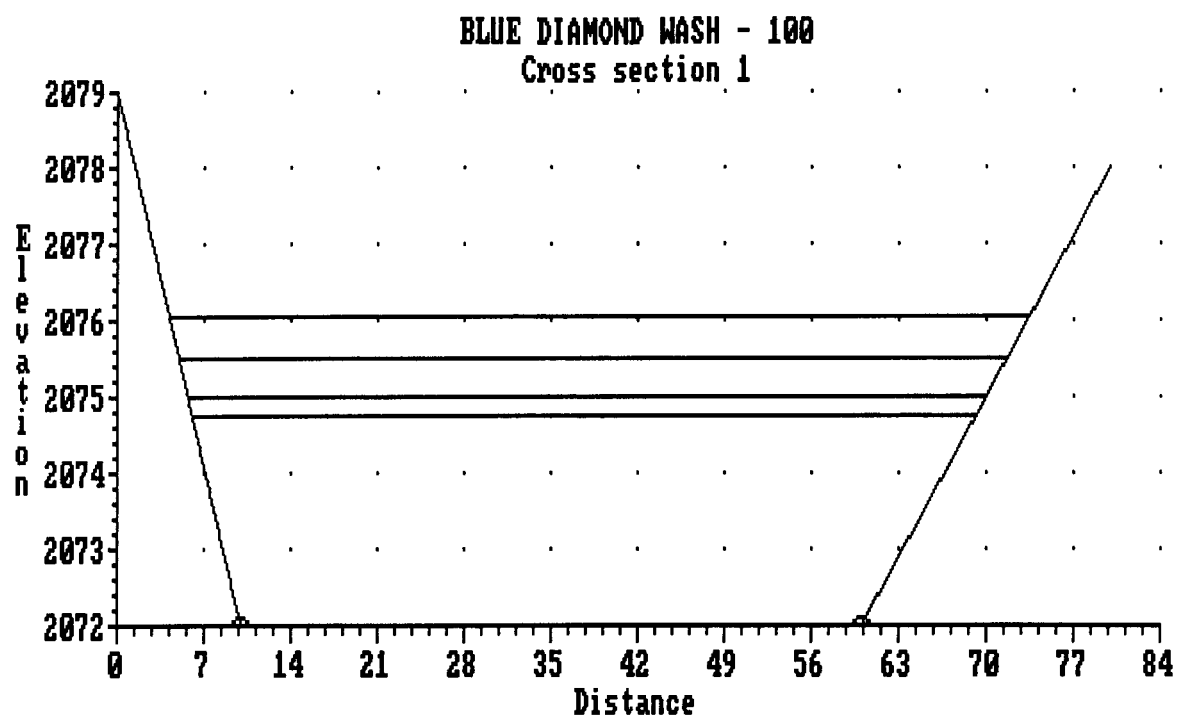
STATION	----- FLOODWAY -----			WATER SURFACE ELEVATION		
	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
1.000	67.	205.	9.8	2075.5	2074.7	.8
2.000	786.	726.	2.8	2087.7	2087.2	.5
3.000	50.	189.	10.6	2099.3	2097.6	1.7
1600.000	35.	186.	10.8	2102.3	2100.6	1.7
1560.000	35.	200.	10.0	2102.9	2100.8	2.1
1384.000	30.	156.	12.8	2104.0	2101.8	2.2
1000.000	25.	170.	11.8	2107.6	2105.0	2.6
600.000	25.	145.	13.8	2111.2	2108.9	2.3
300.000	25.	145.	13.8	2115.7	2113.4	2.3
.000	114.	244.	8.2	2119.0	2116.3	2.7
1.100	116.	250.	8.0	2119.1	2116.1	3.0
1.200	162.	466.	4.3	2120.7	2119.5	1.2
1.300	163.	475.	4.2	2120.8	2119.6	1.2
415.000	178.	321.	6.2	2124.5	2120.0	4.5
185.000	103.	268.	7.5	2130.5	2125.9	4.6
20.000 (A)	105.	276.	7.2	2133.2	2132.2	1.0
.000 (B)	344.	419.	4.8	2133.8	2132.2	1.6
.110	25.	145.	13.8	2132.7	2132.4	.3
.220	25.	115.	17.3	2131.5	2133.8	-2.3
5.000 (C)	254.	310.	6.5	2137.8	2137.2	.6

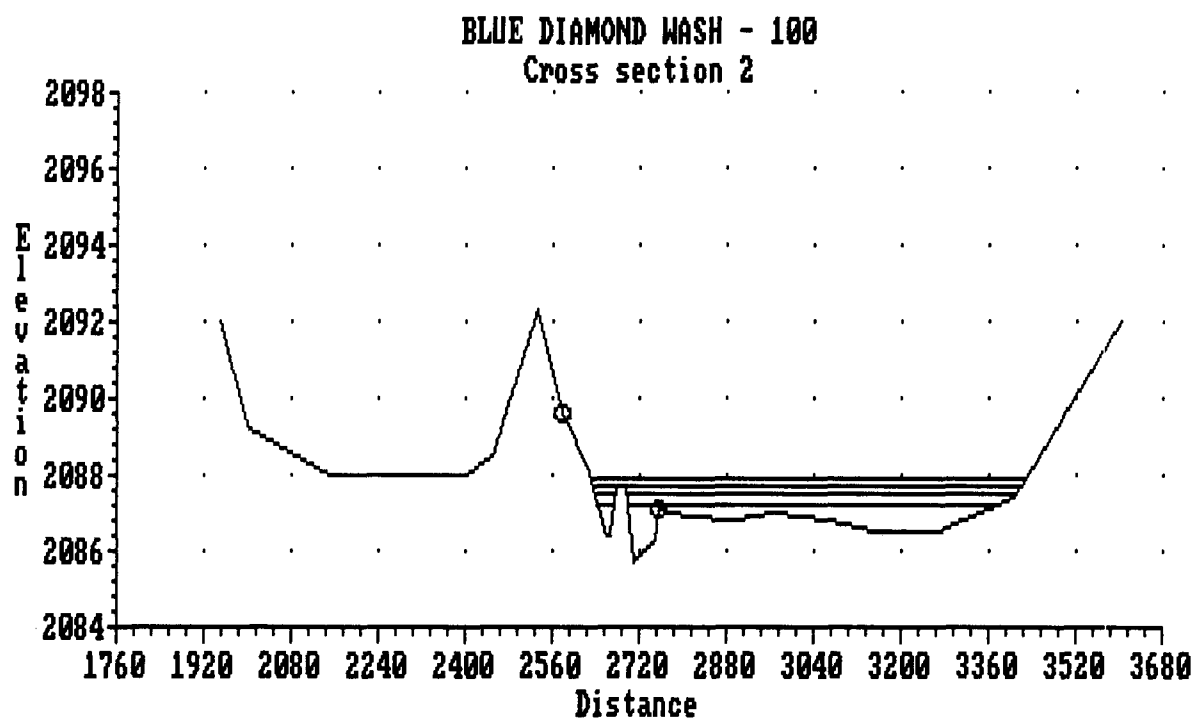
FLOODWAY DATA, BLUE DIAMOND WASH - 100
 PROFILE NO. 4

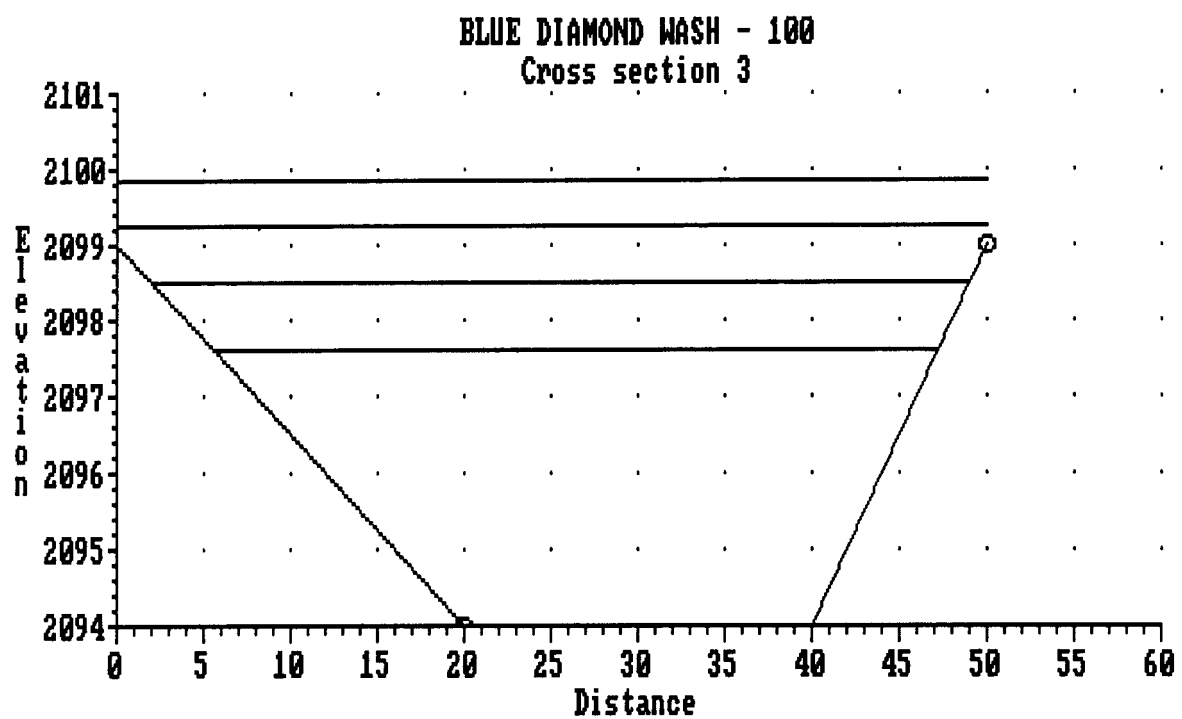
STATION	----- FLOODWAY -----			WATER SURFACE ELEVATION		
	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
1.000	69.	240.	10.4	2076.0	2074.7	1.3
2.000	796.	853.	2.9	2087.9	2087.2	.7
3.000	50.	217.	11.5	2099.8	2097.6	2.2
1600.000	36.	211.	11.8	2103.0	2100.6	2.4
1560.000	37.	230.	10.9	2103.7	2100.8	2.9
1384.000	33.	184.	13.6	2104.8	2101.8	3.0
1000.000	25.	192.	13.0	2108.5	2105.0	3.5
600.000	25.	168.	14.9	2112.2	2108.9	3.3
300.000	25.	169.	14.8	2116.7	2113.4	3.3
.000	156.	437.	5.7	2120.5	2116.3	4.2
1.100	158.	447.	5.6	2120.6	2116.1	4.5
1.200	168.	506.	4.9	2120.9	2119.5	1.4
1.300	172.	524.	4.8	2121.0	2119.6	1.4
415.000	180.	390.	6.4	2124.9	2120.0	4.9
185.000	106.	309.	8.1	2130.9	2125.9	5.0
20.000(a)	105.	313.	8.0	2133.6	2132.2	1.4
.000(b)	379.	700.	3.6	2134.5	2132.2	2.3
.110	258.	491.	5.1	2134.5	2132.4	2.1
.220	317.	379.	6.6	2135.6	2133.8	1.8
5.000(c)	261.	375.	6.7	2138.1	2137.2	.9

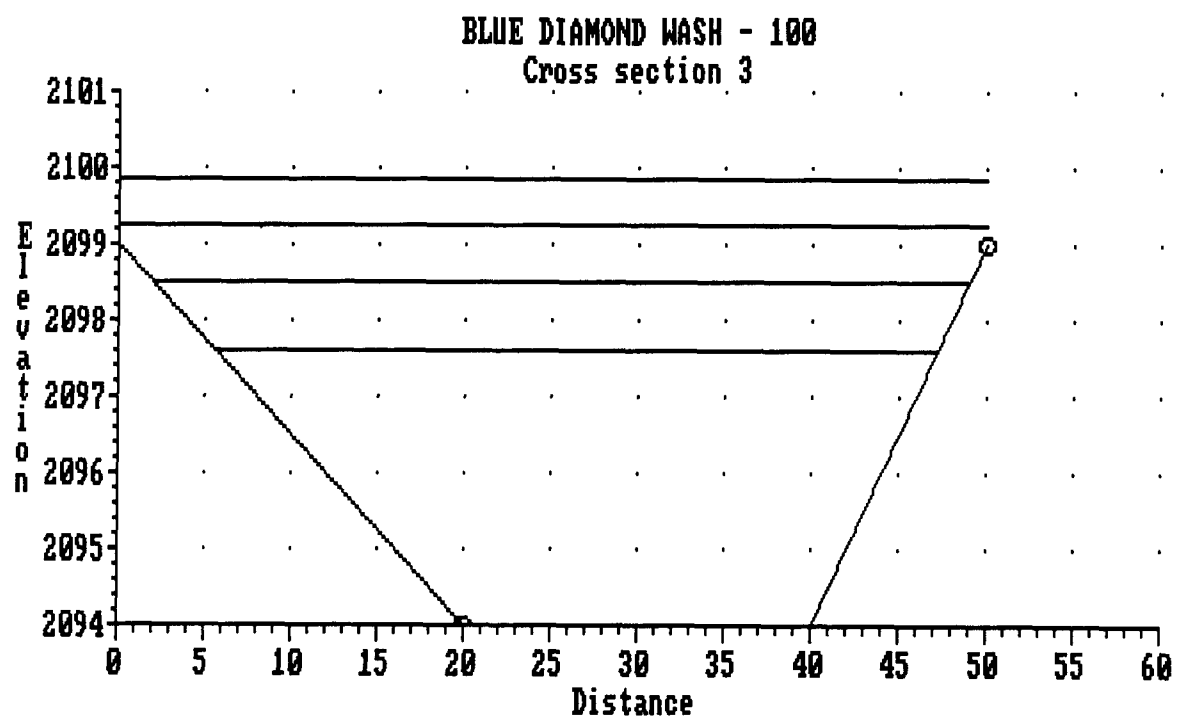
Normal program termination

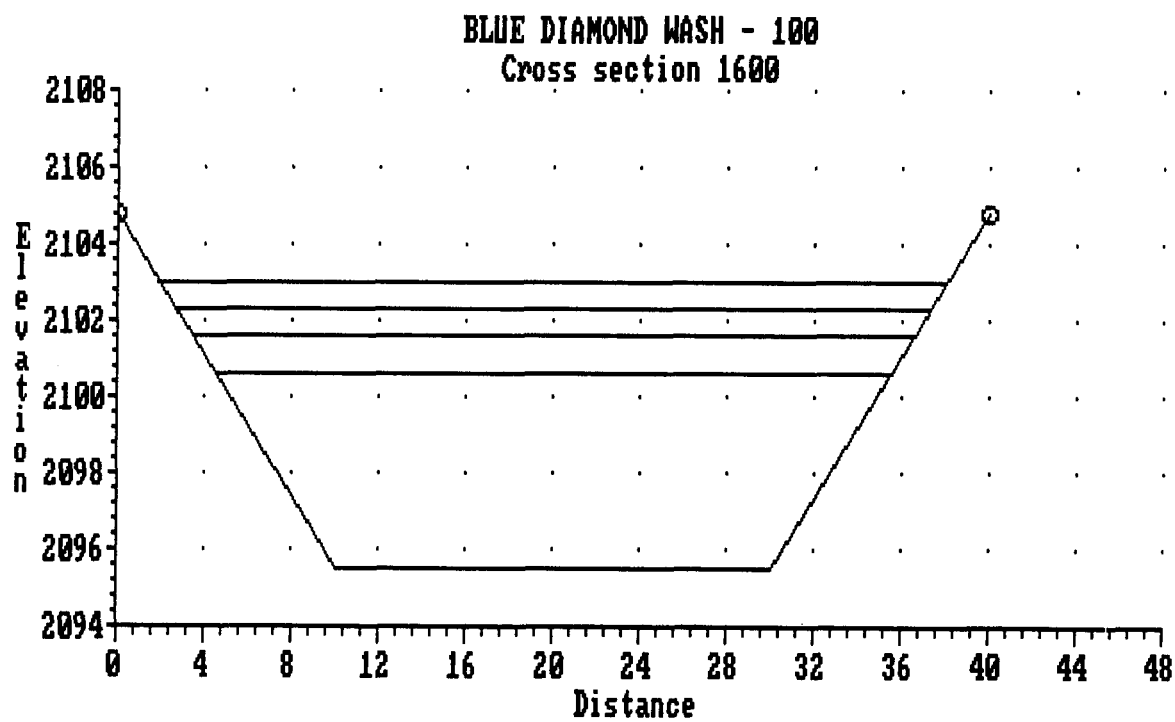


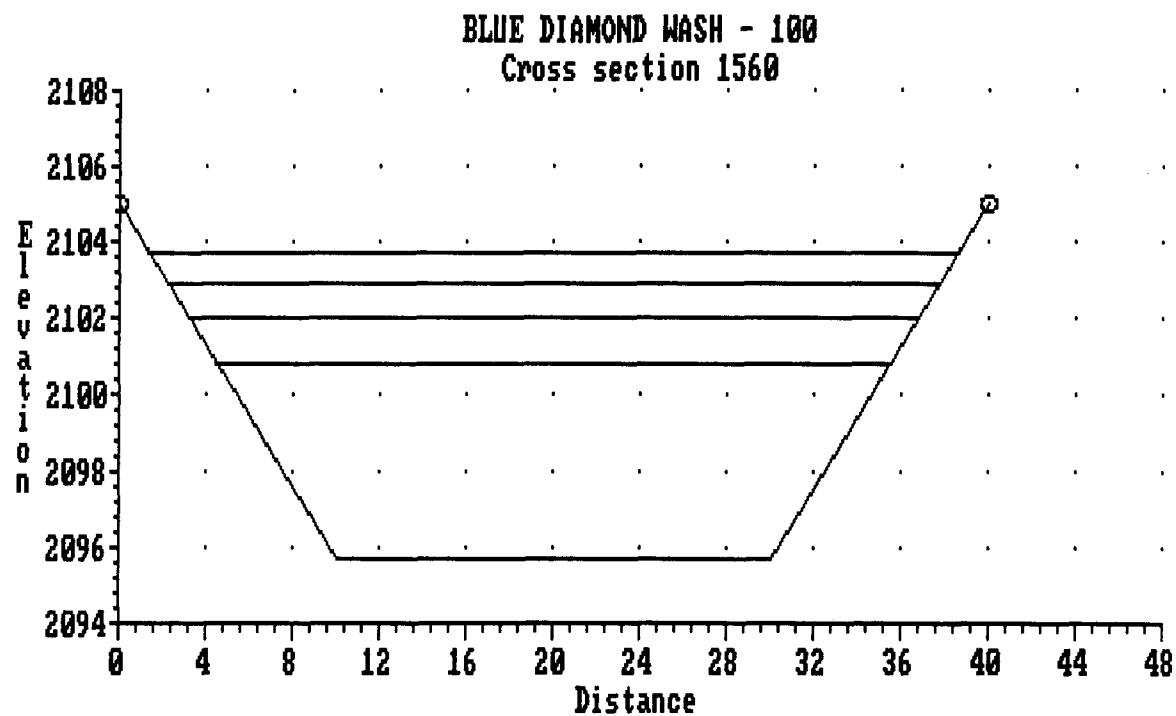


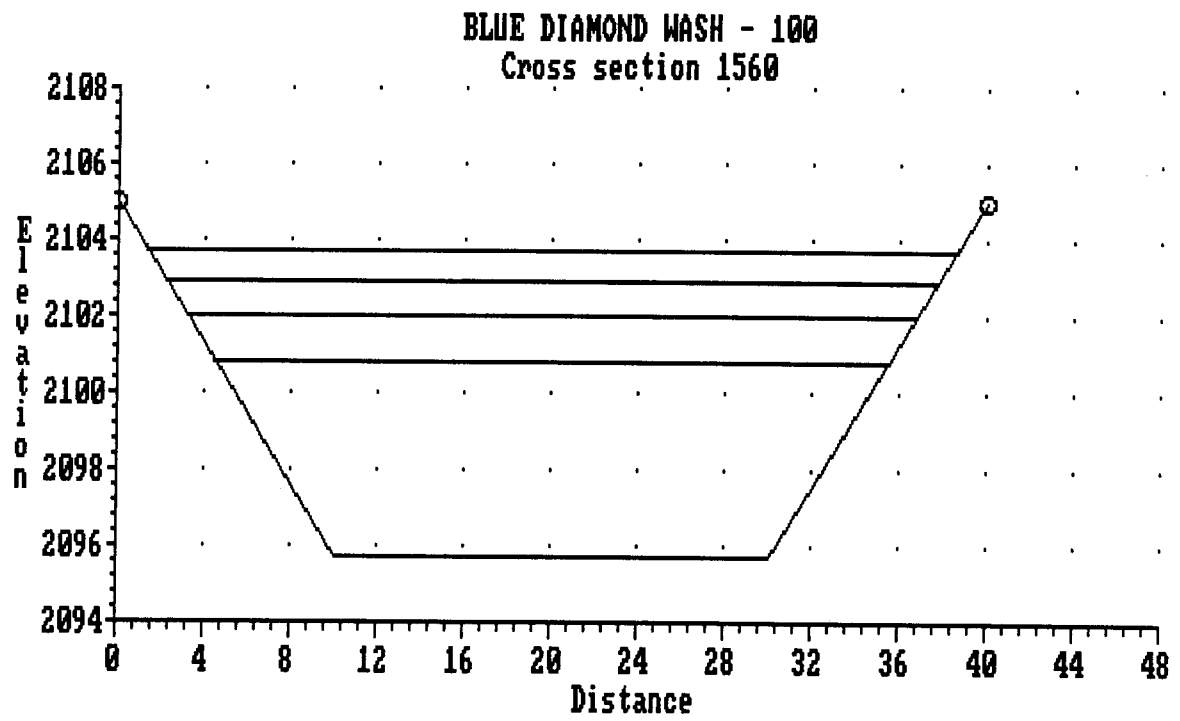


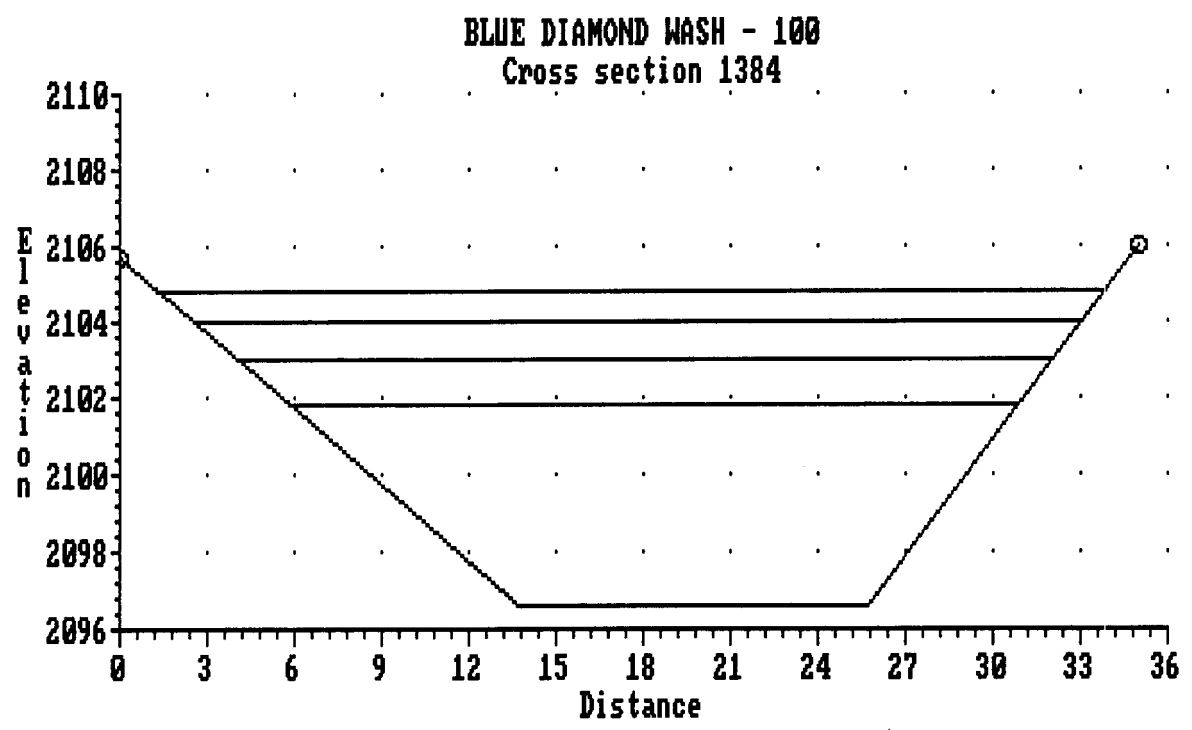


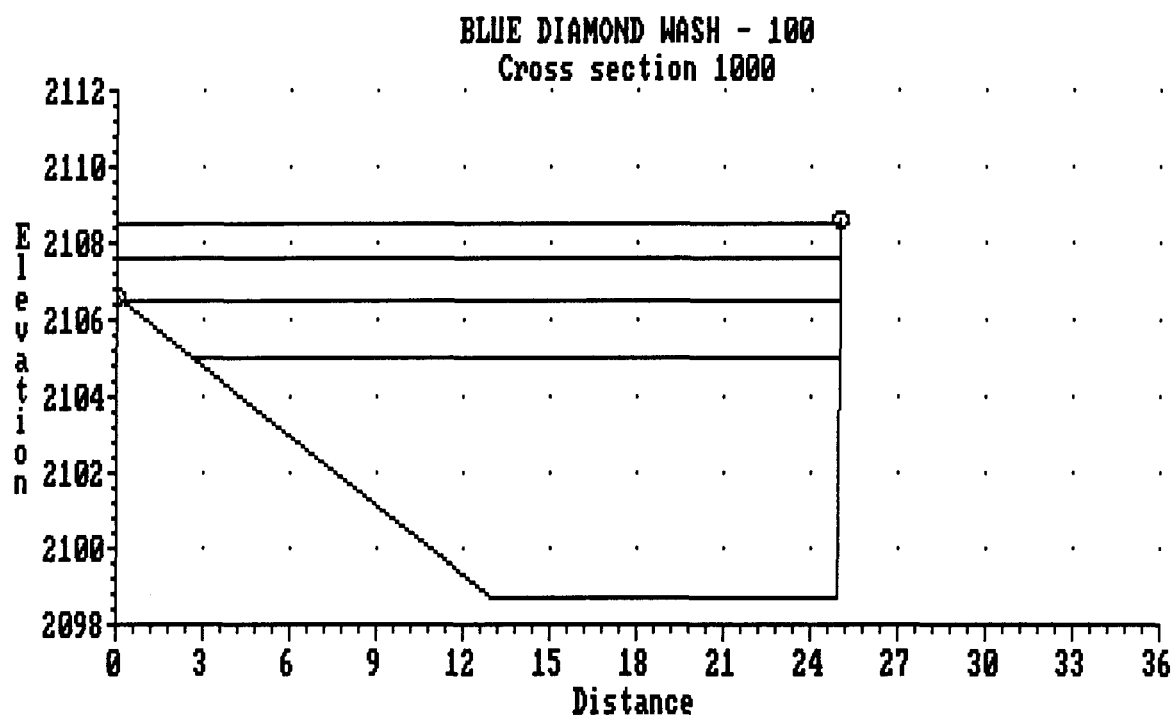


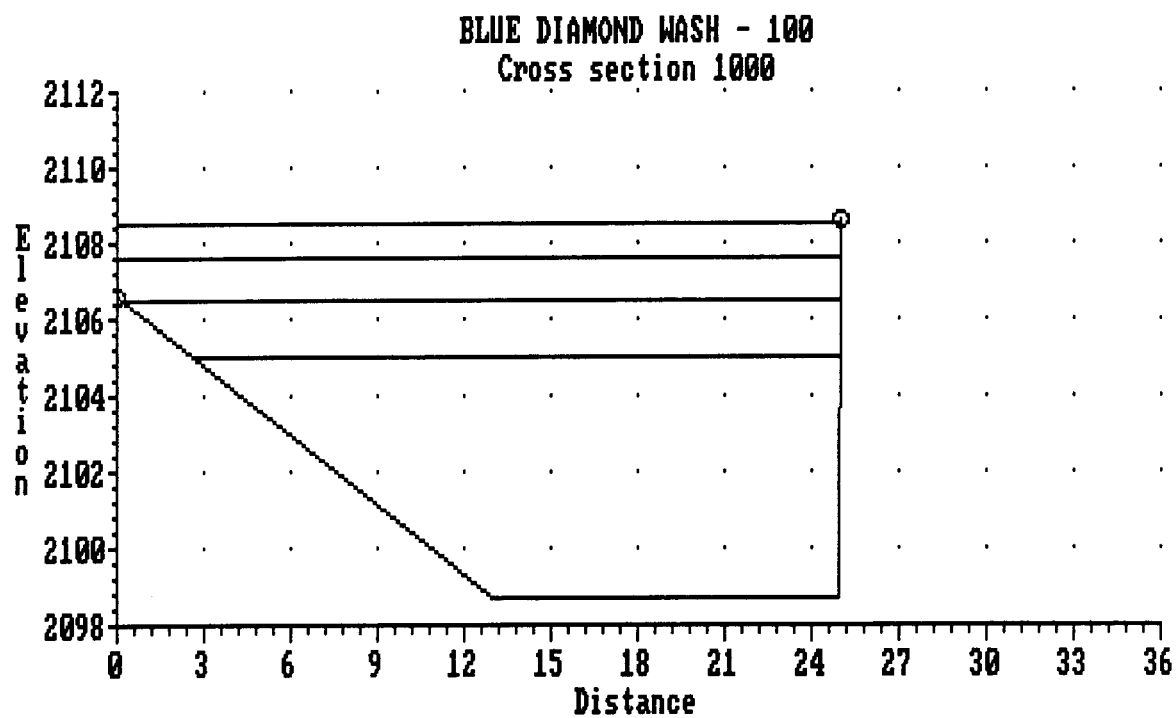


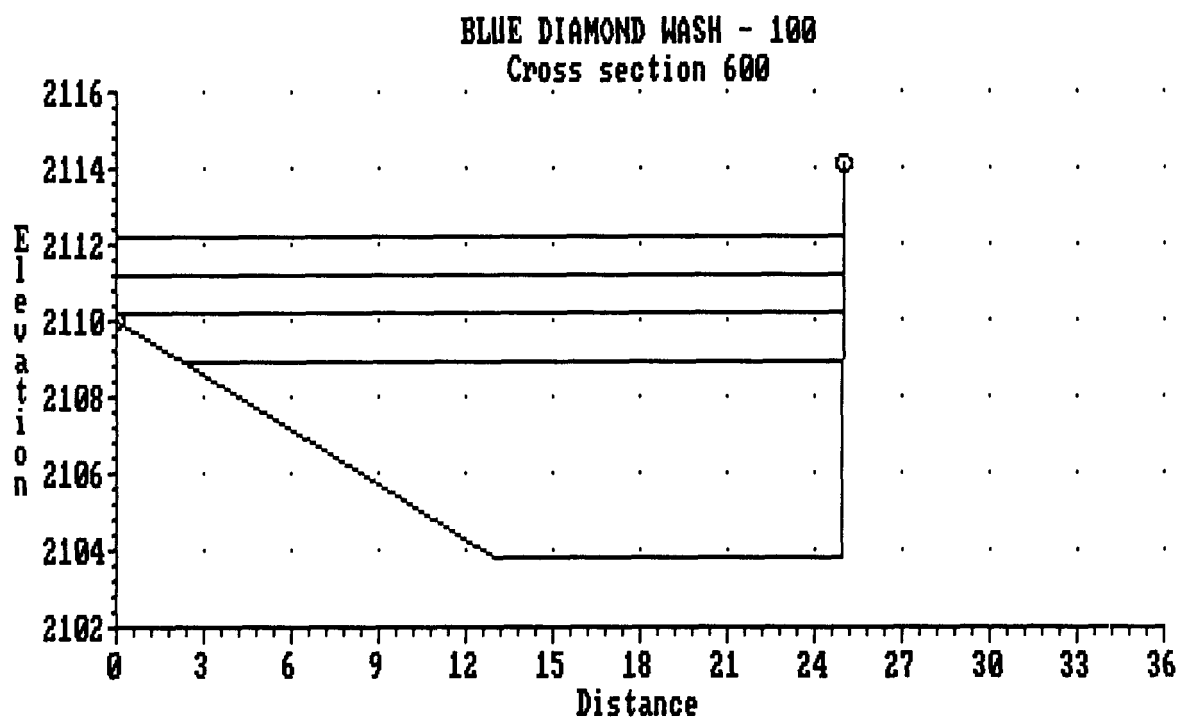


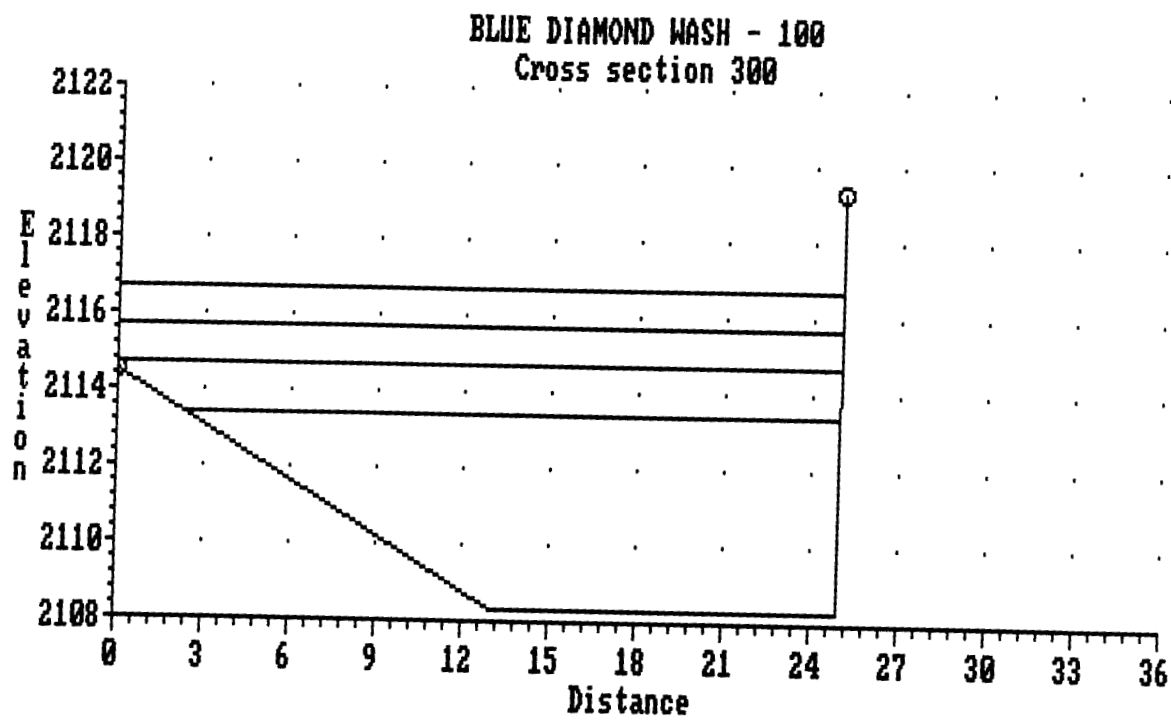


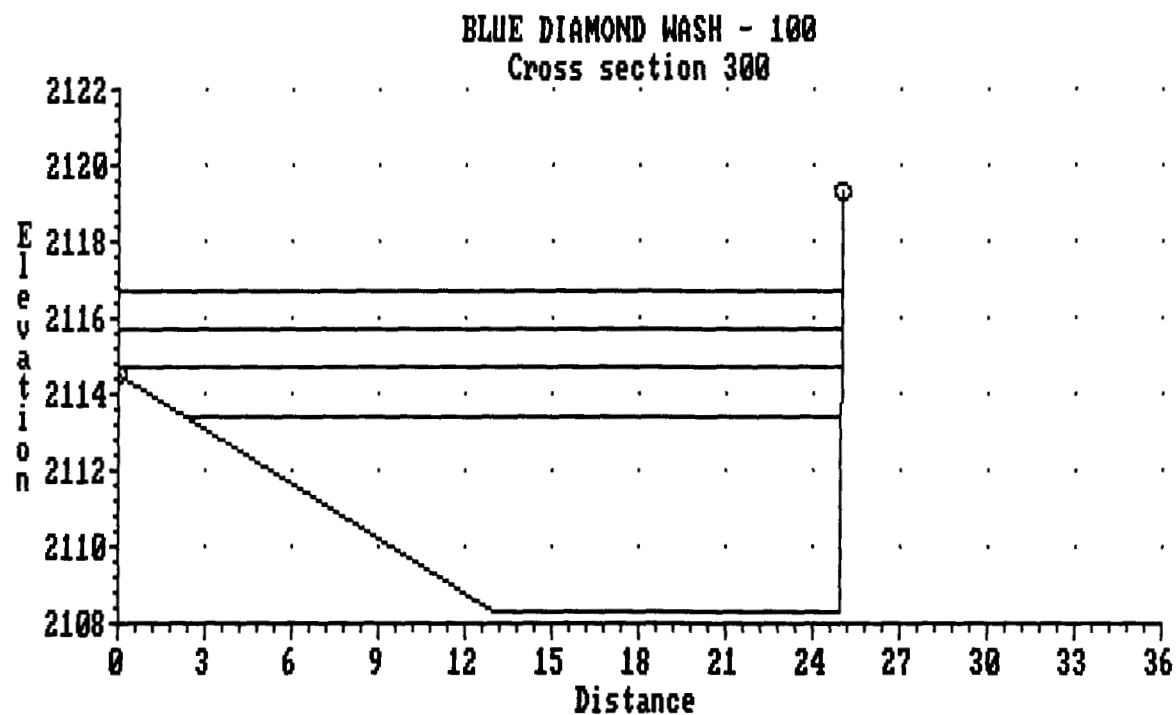


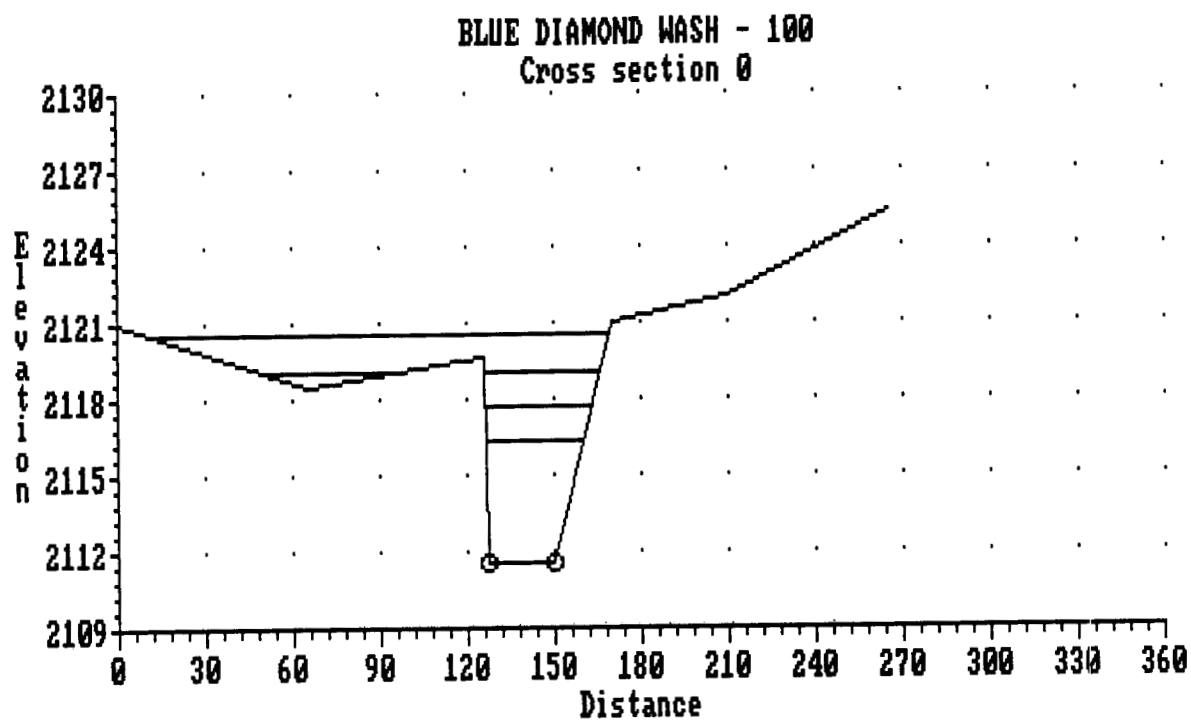




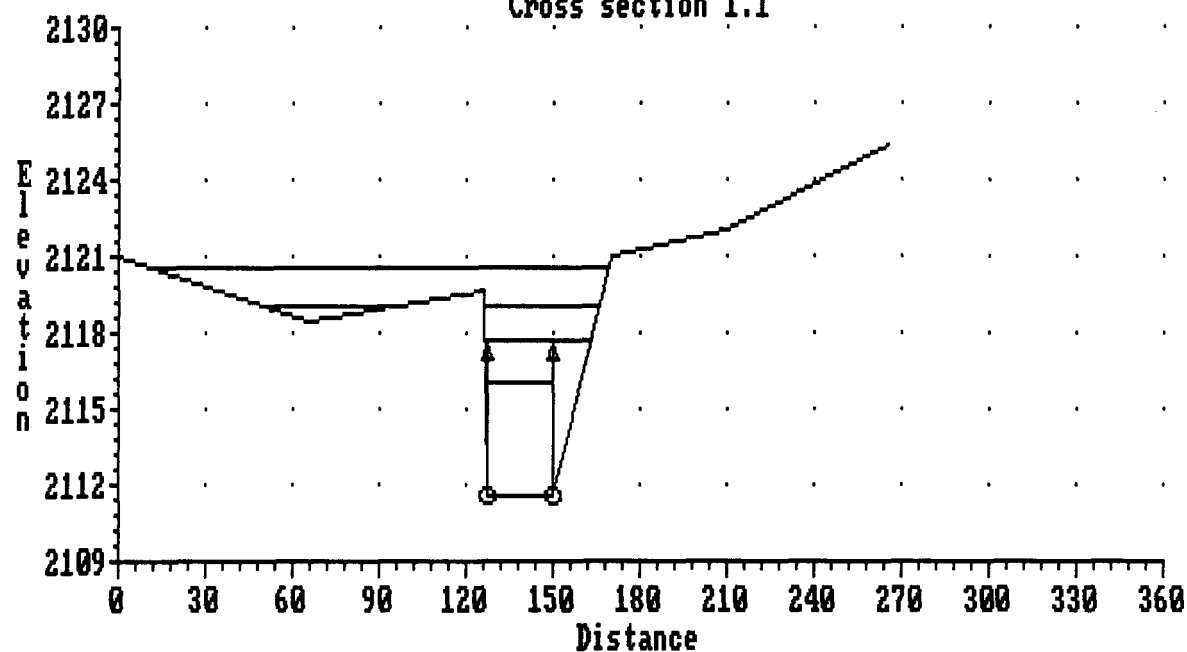


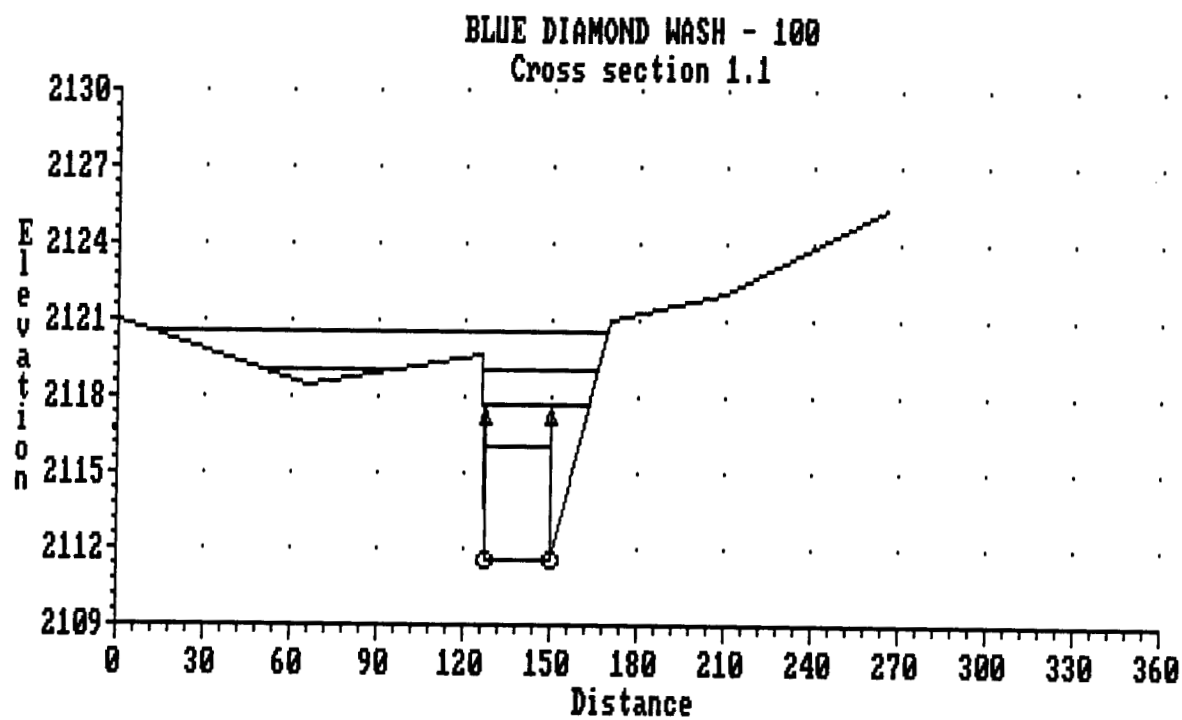


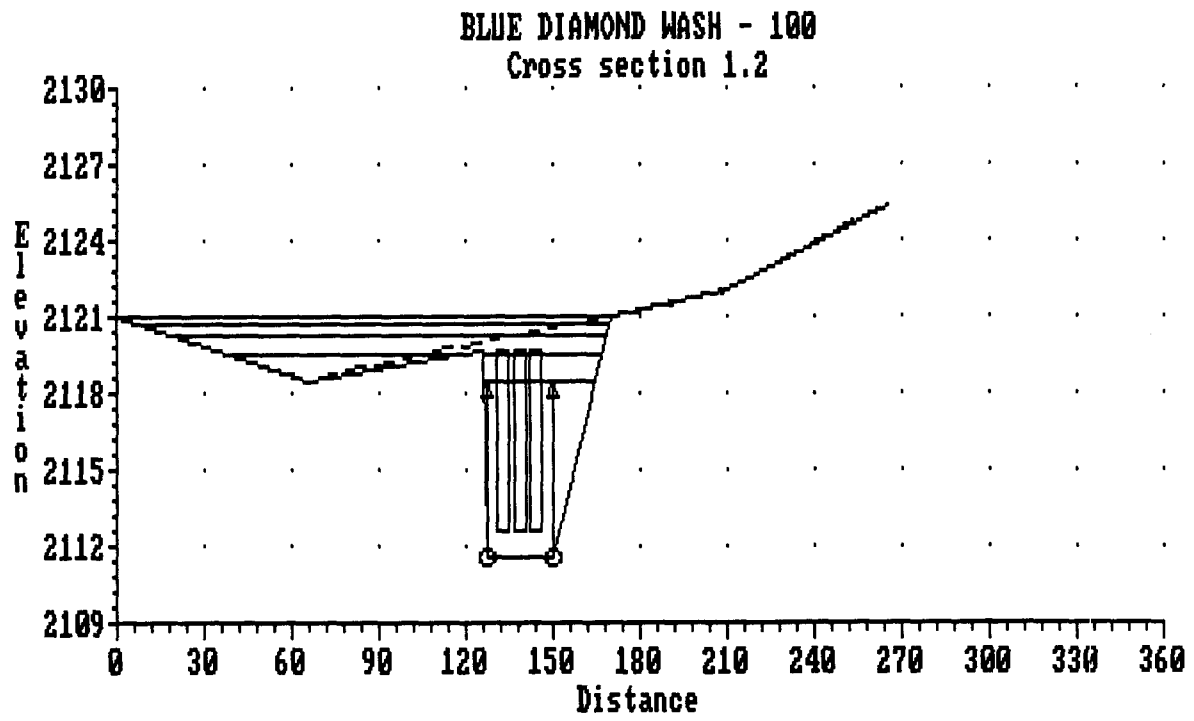


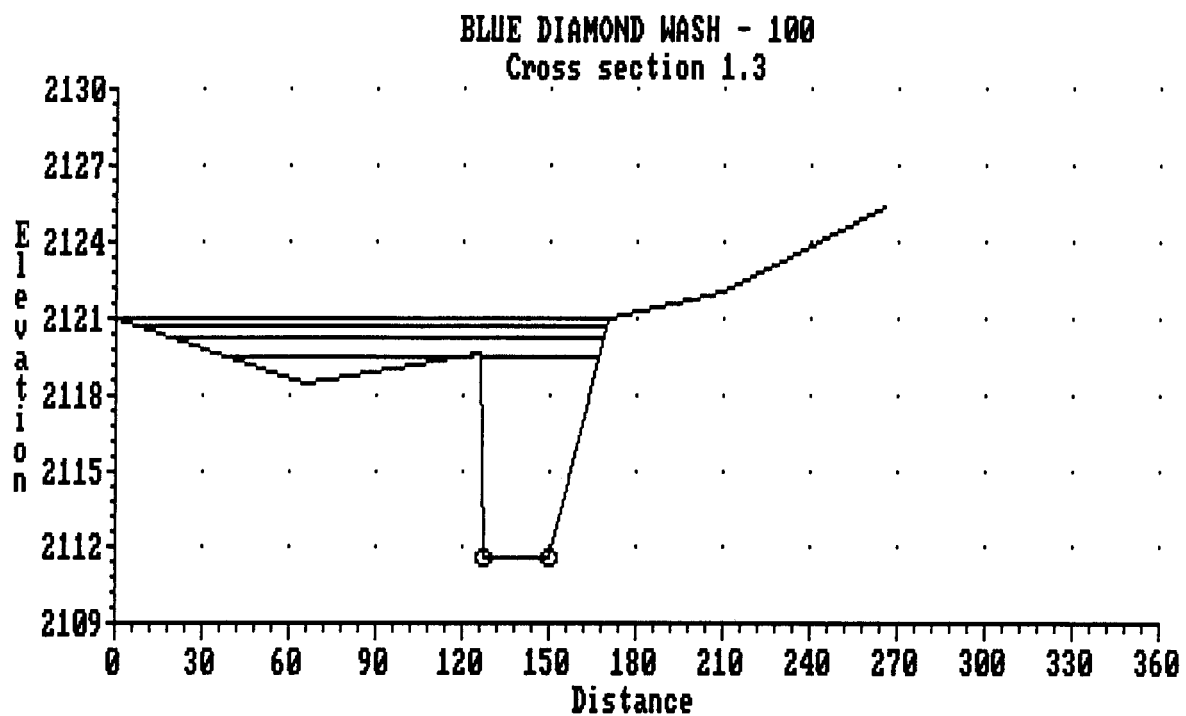


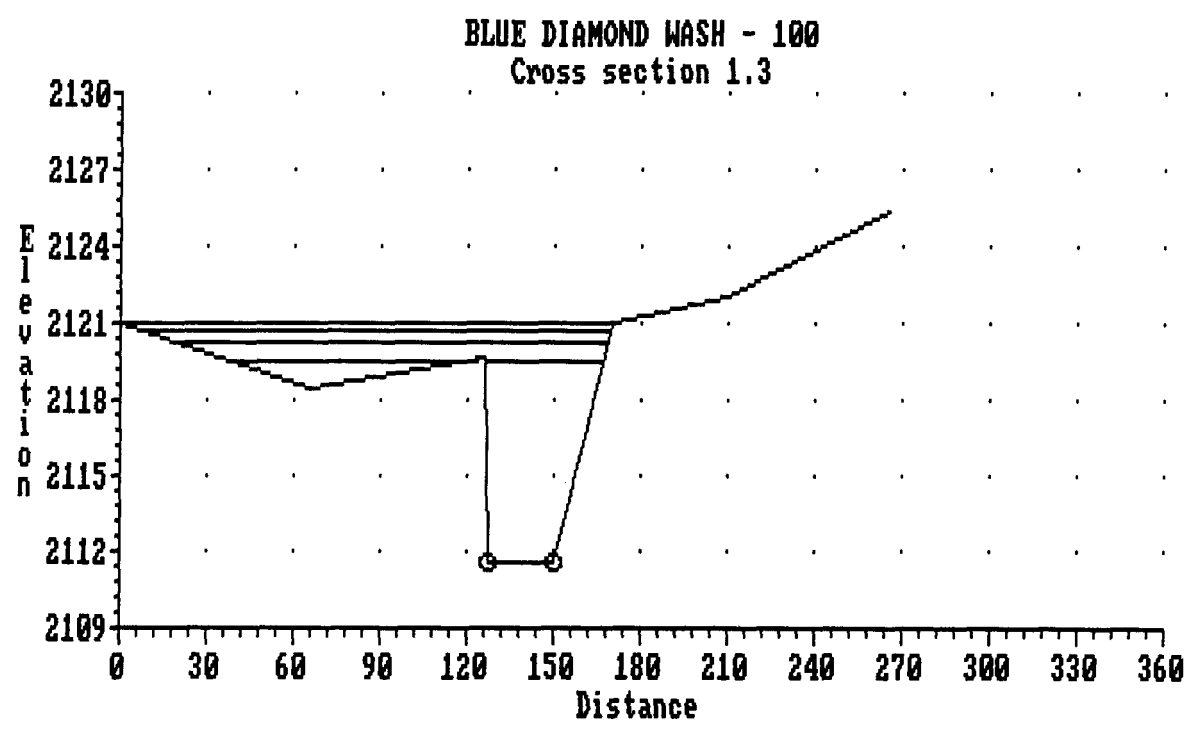
BLUE DIAMOND WASH - 100 Cross section 1.1

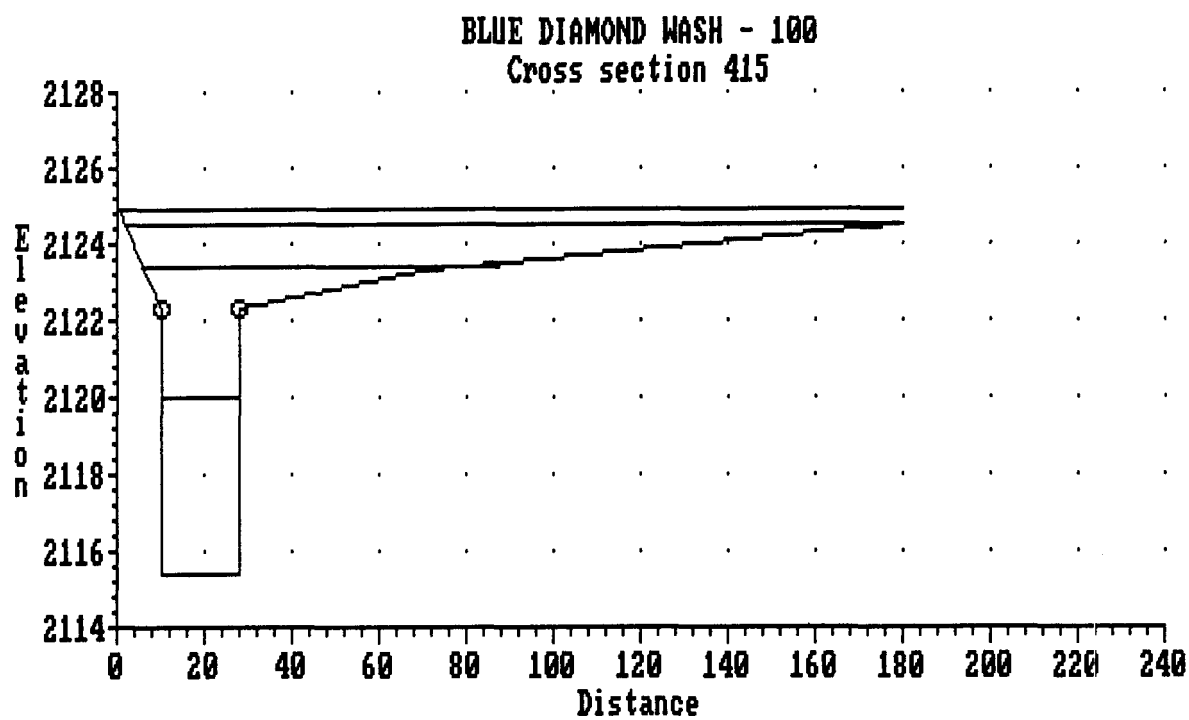


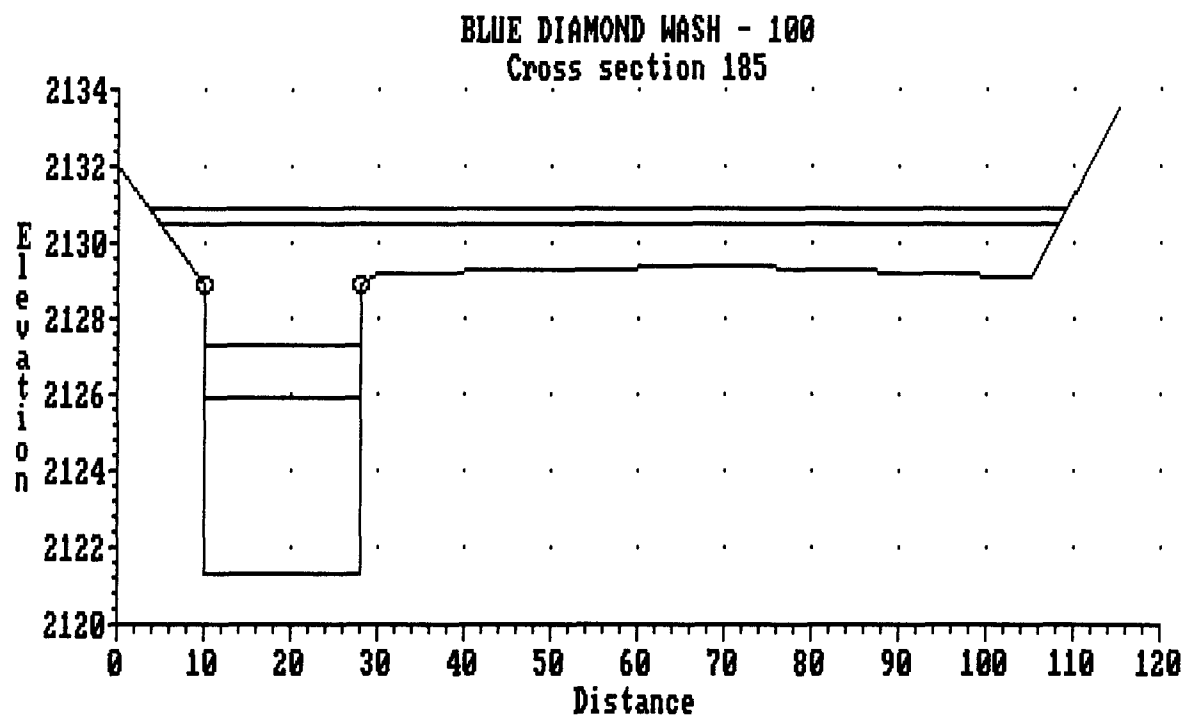


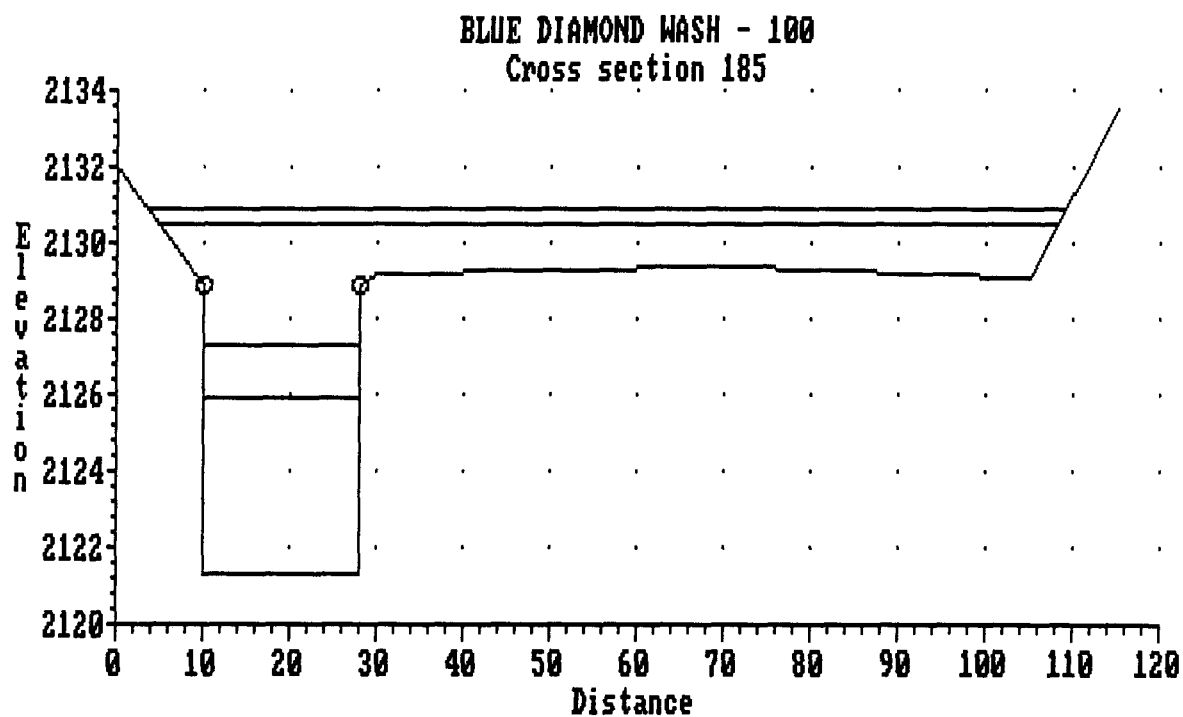




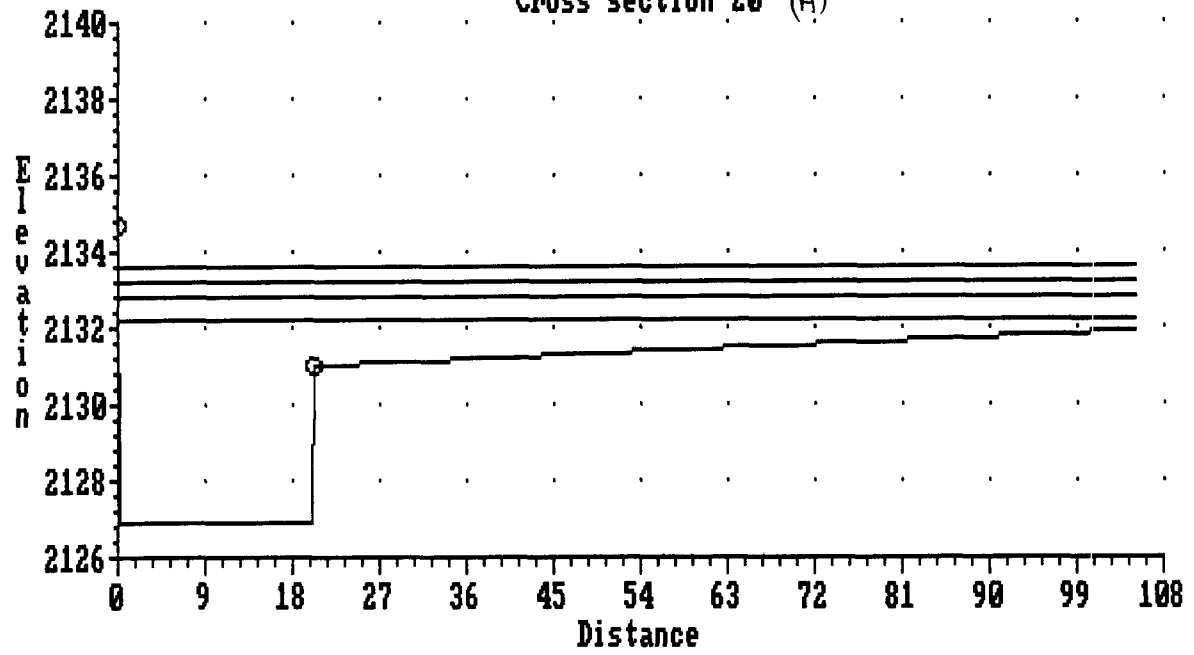


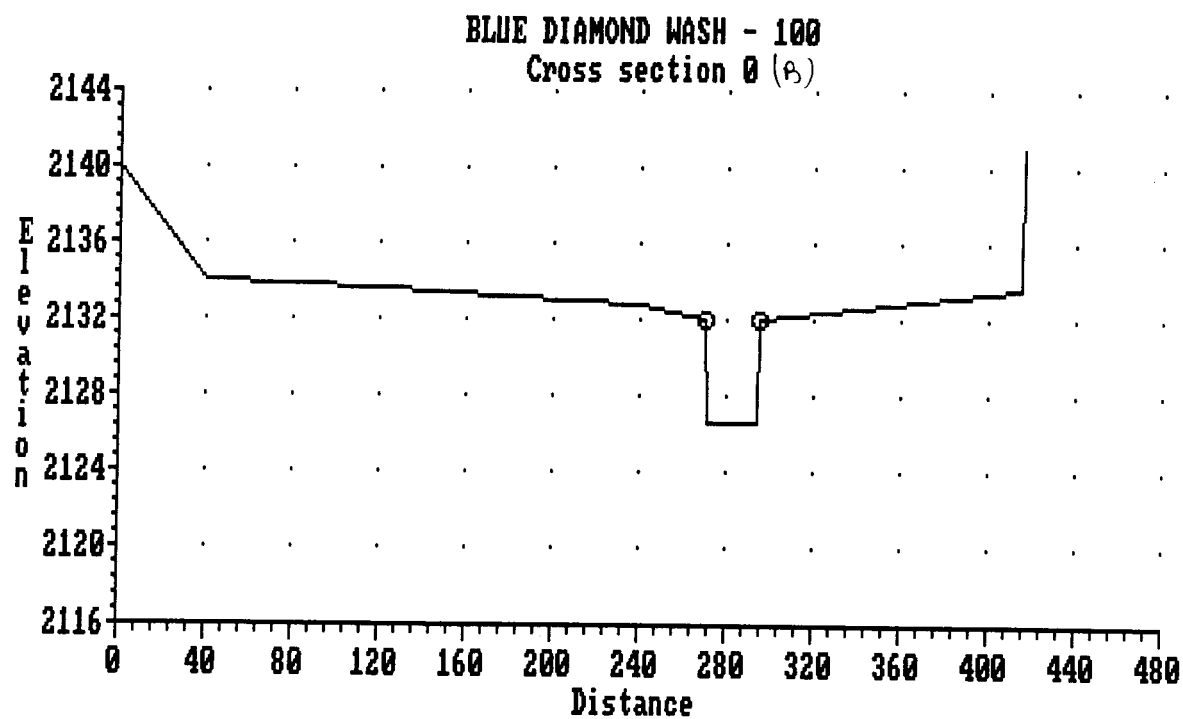


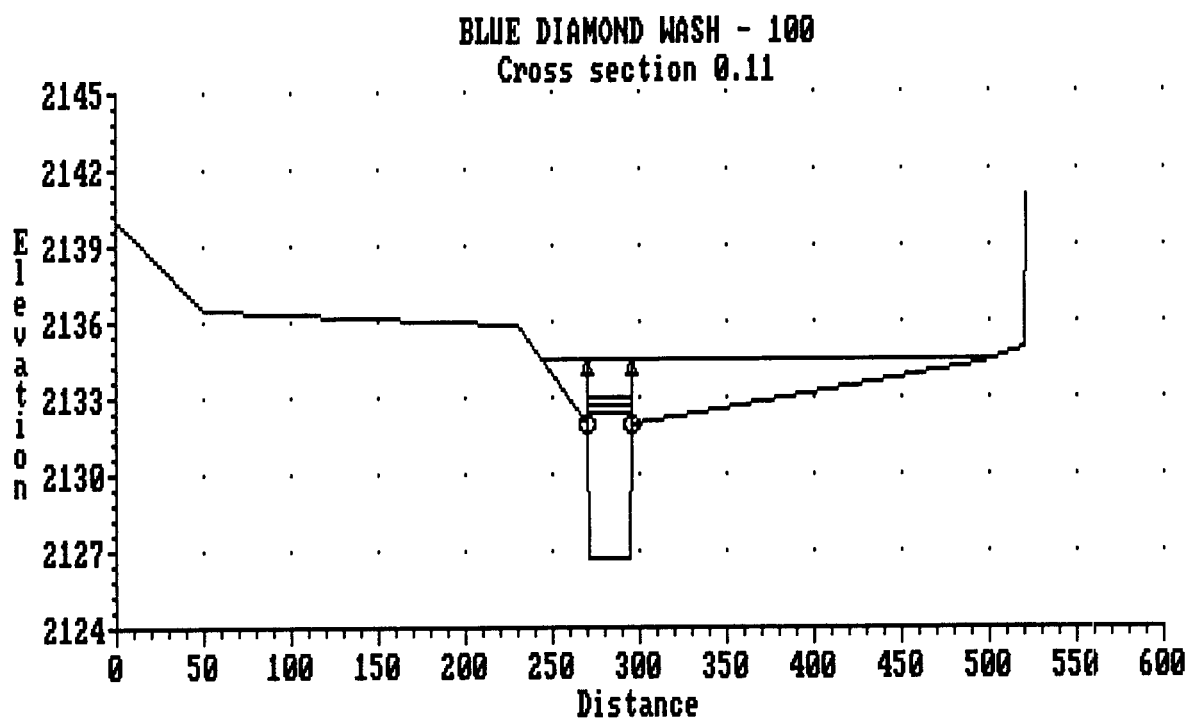


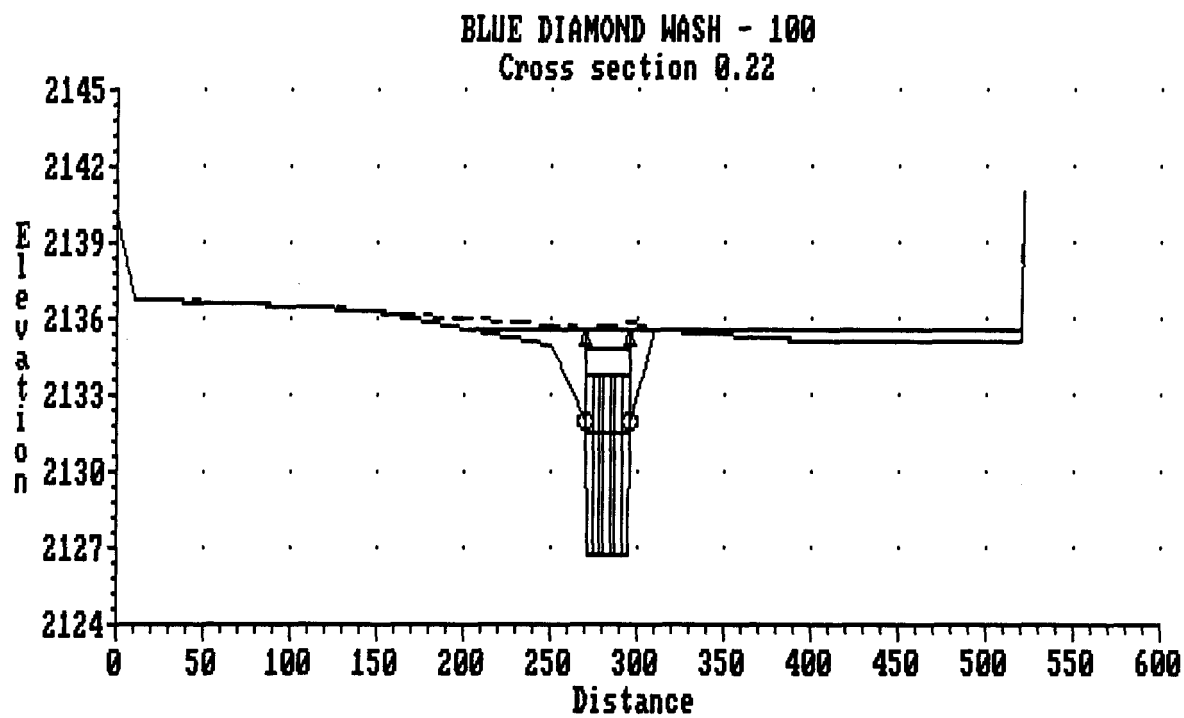


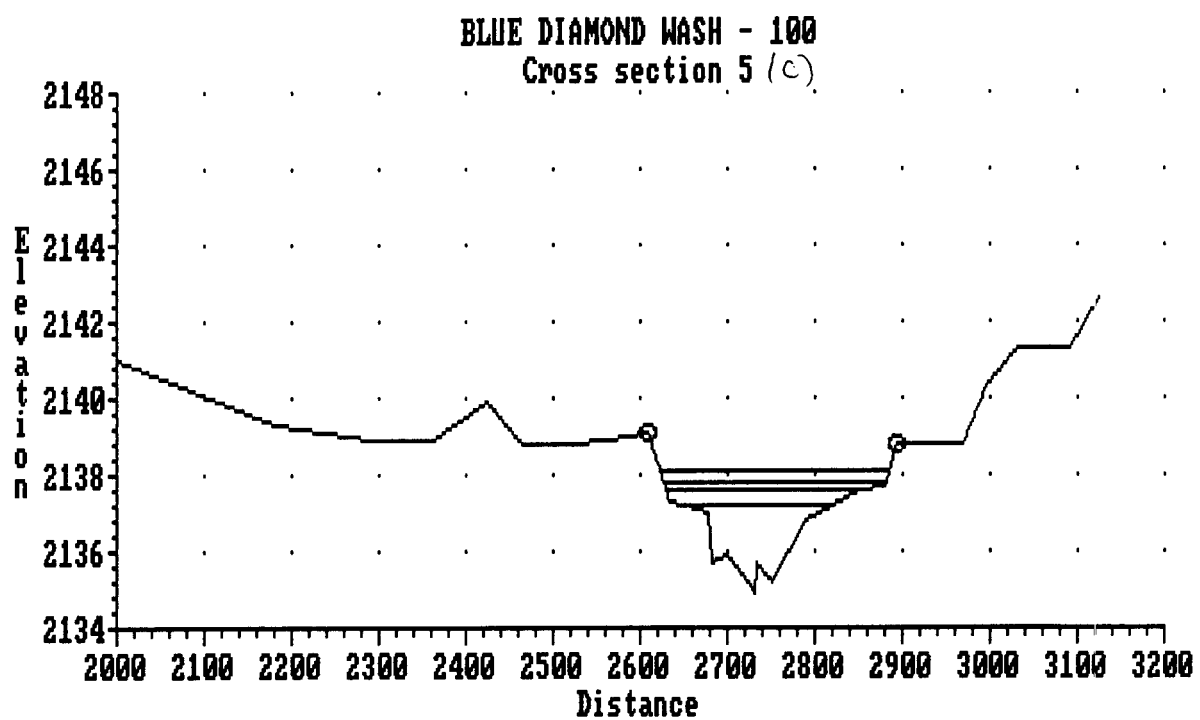
BLUE DIAMOND WASH - 100
Cross section 20 (A)

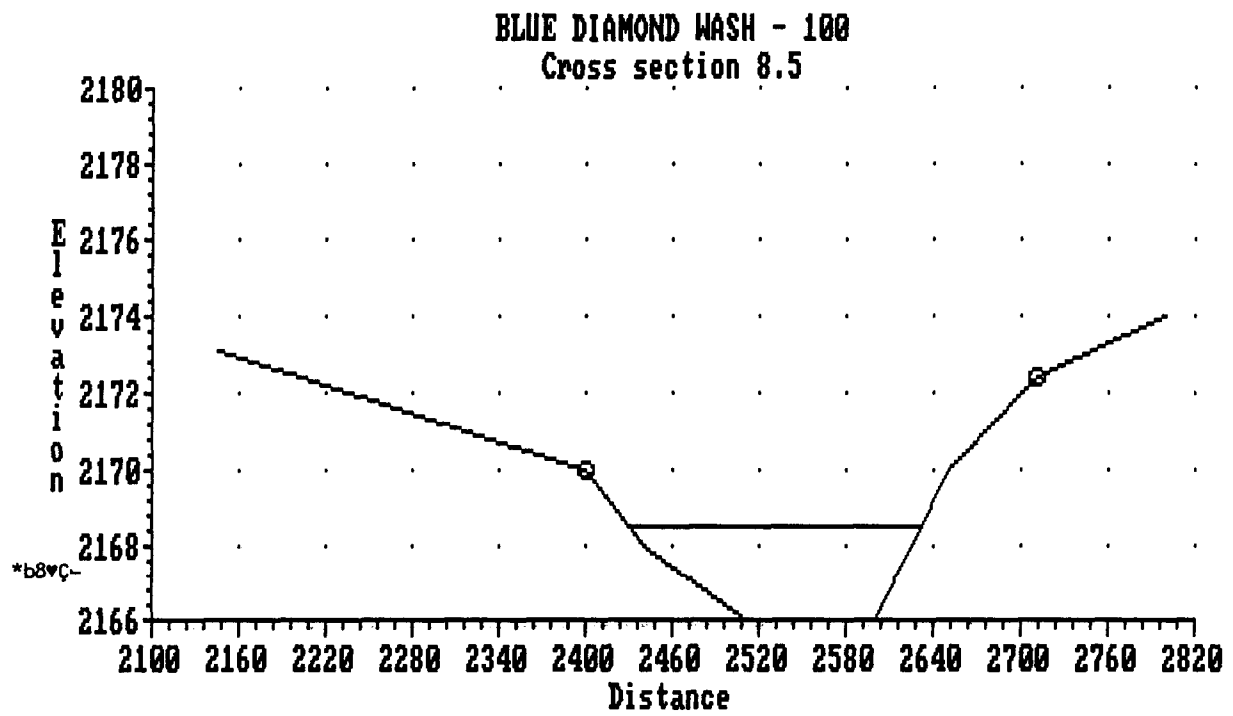


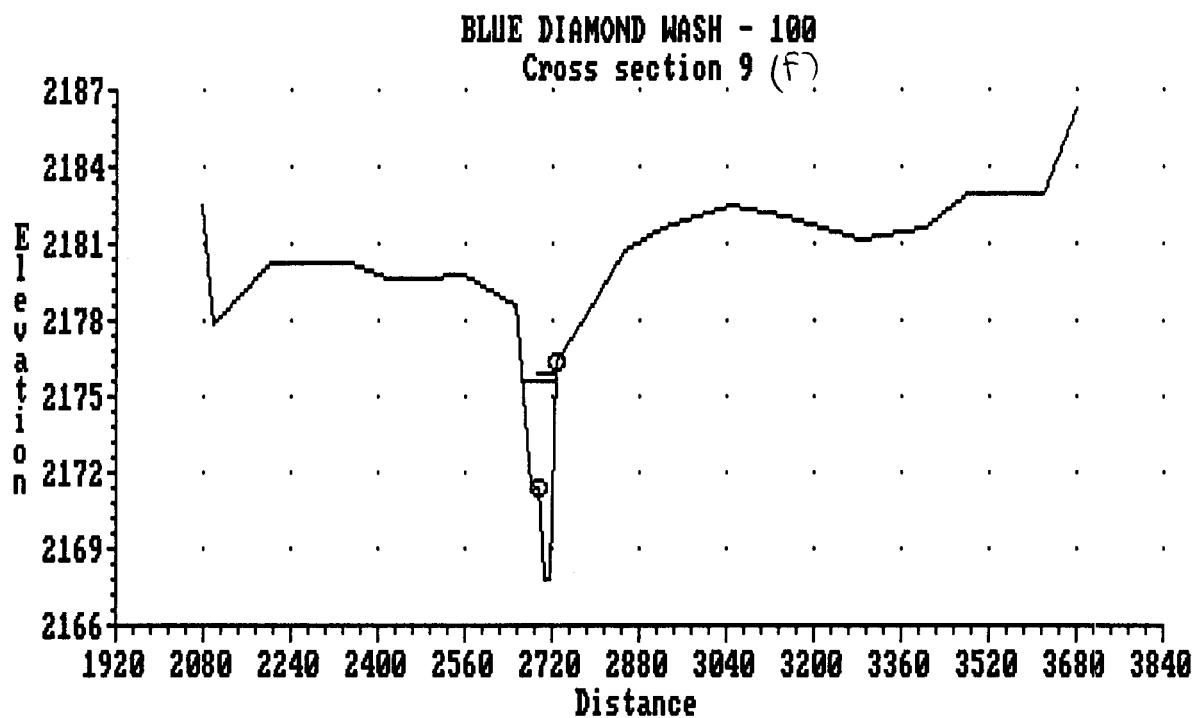


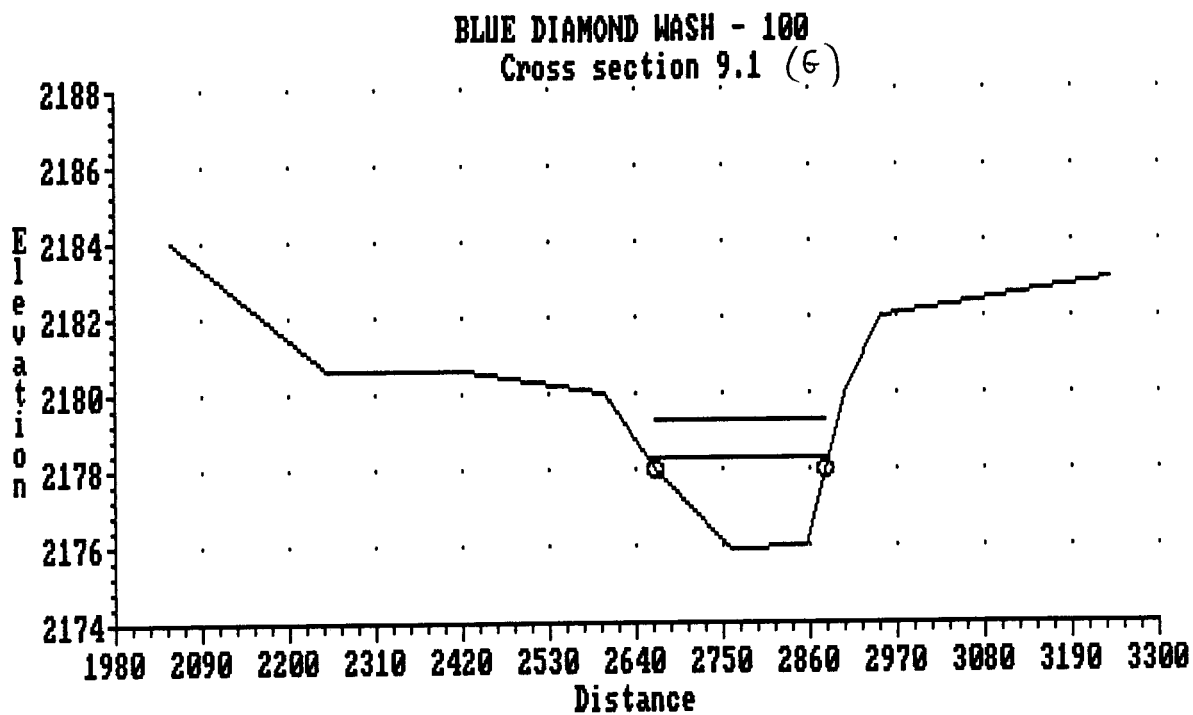


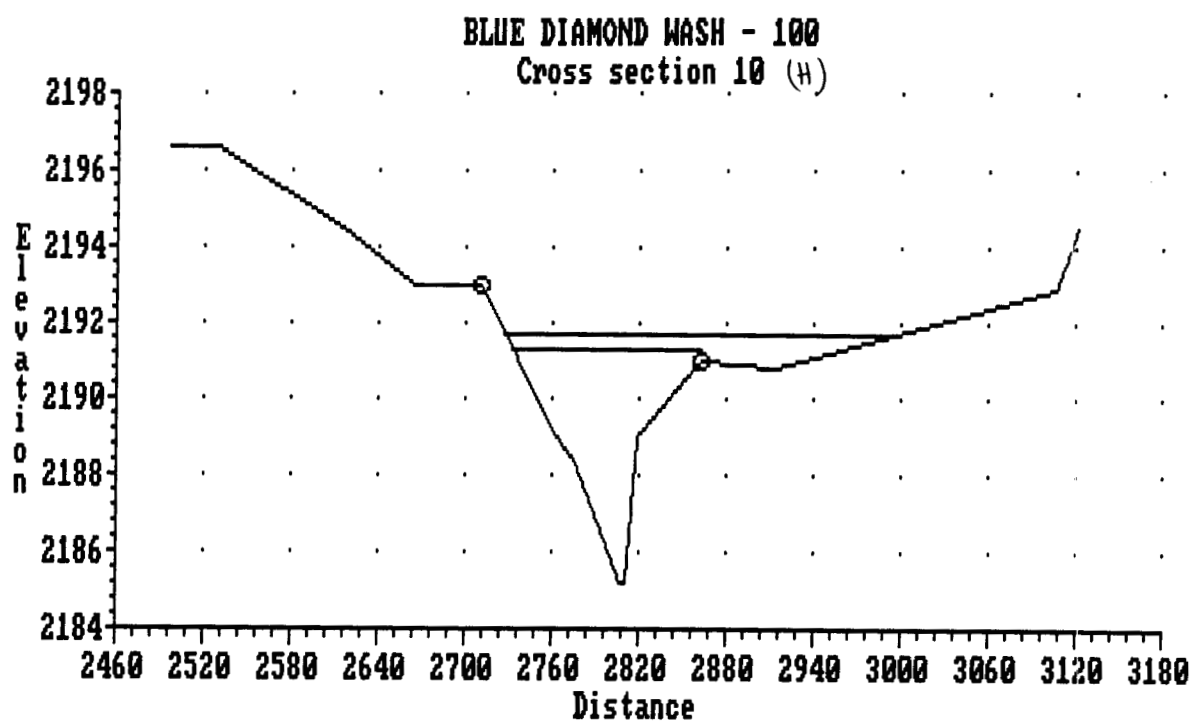


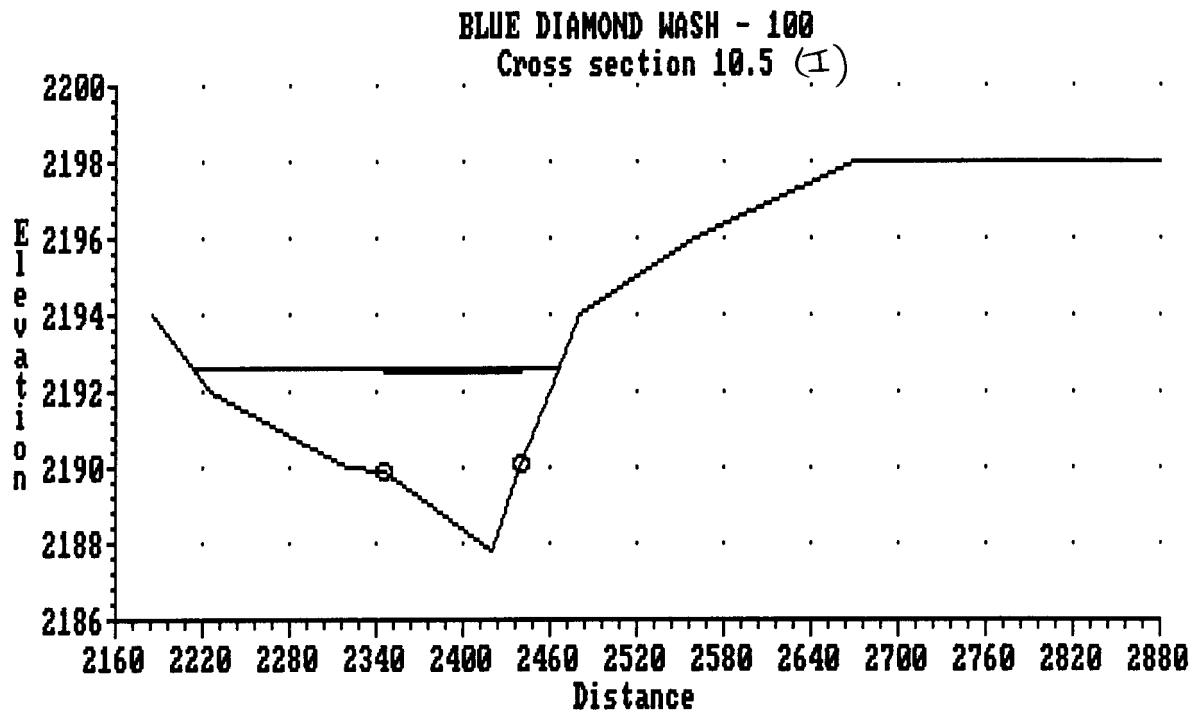


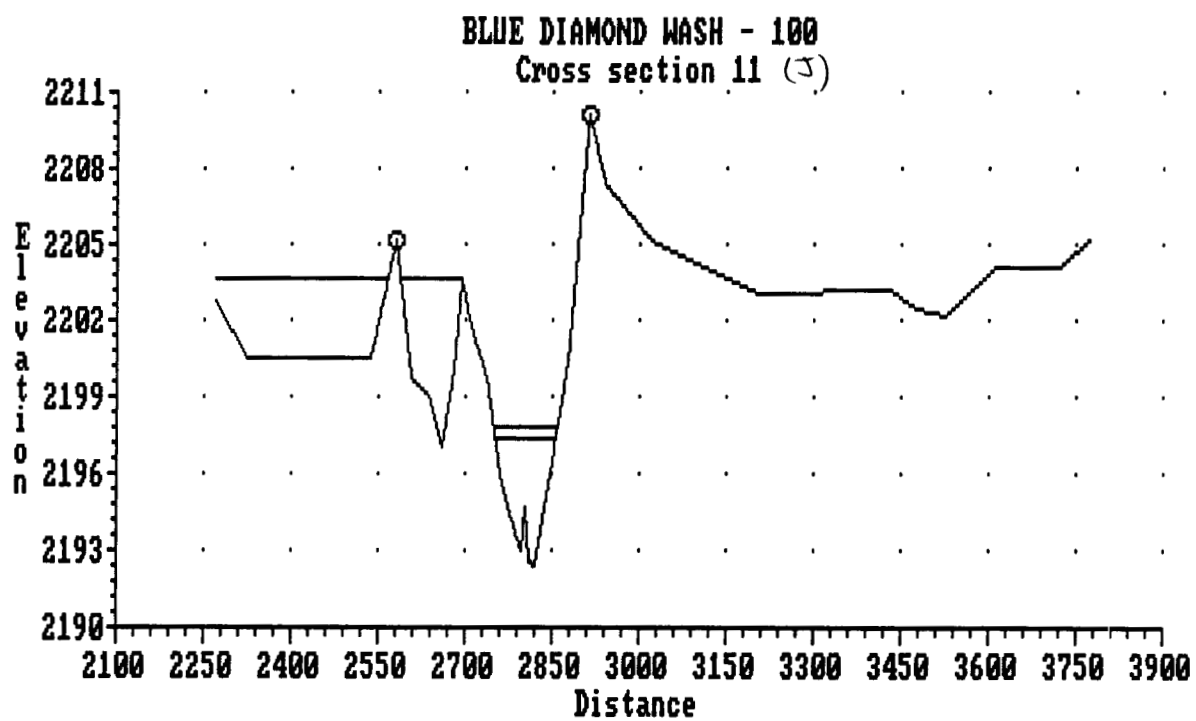


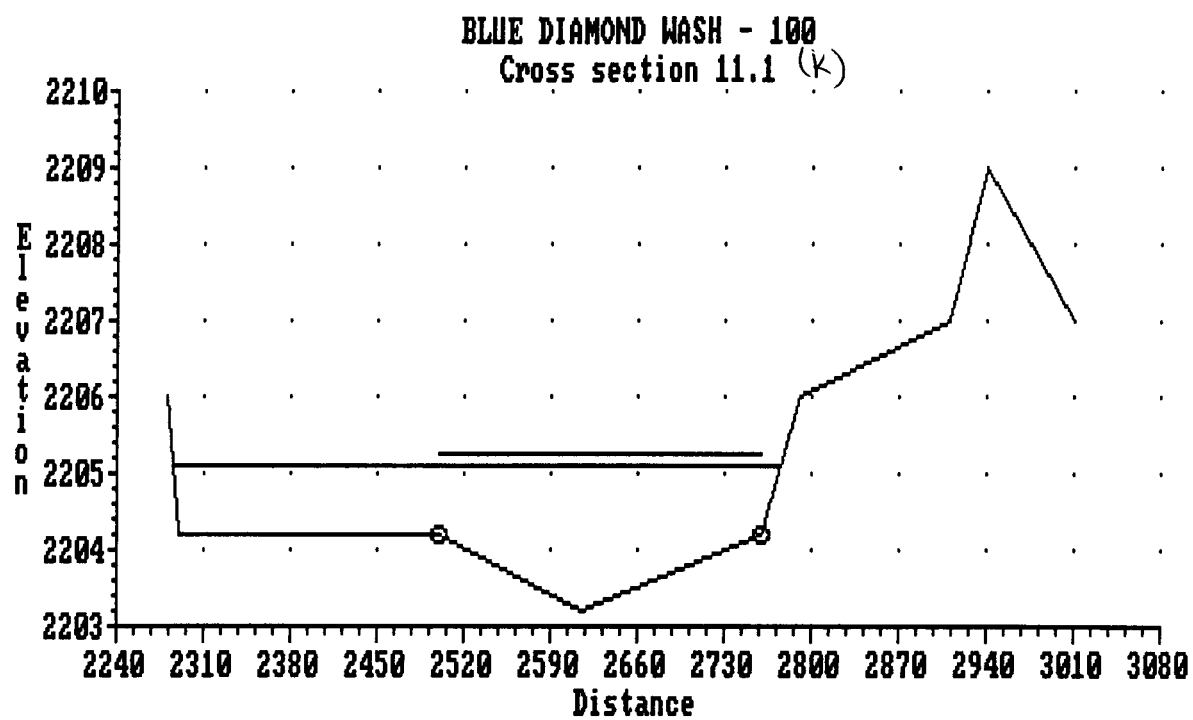


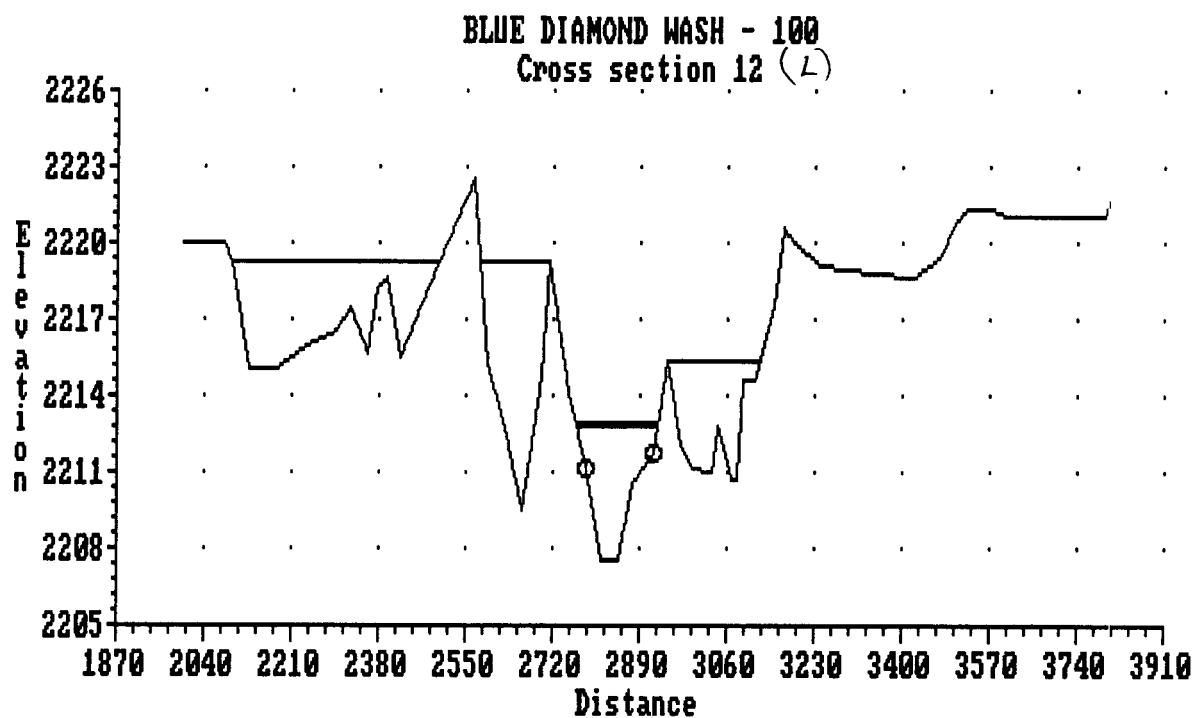


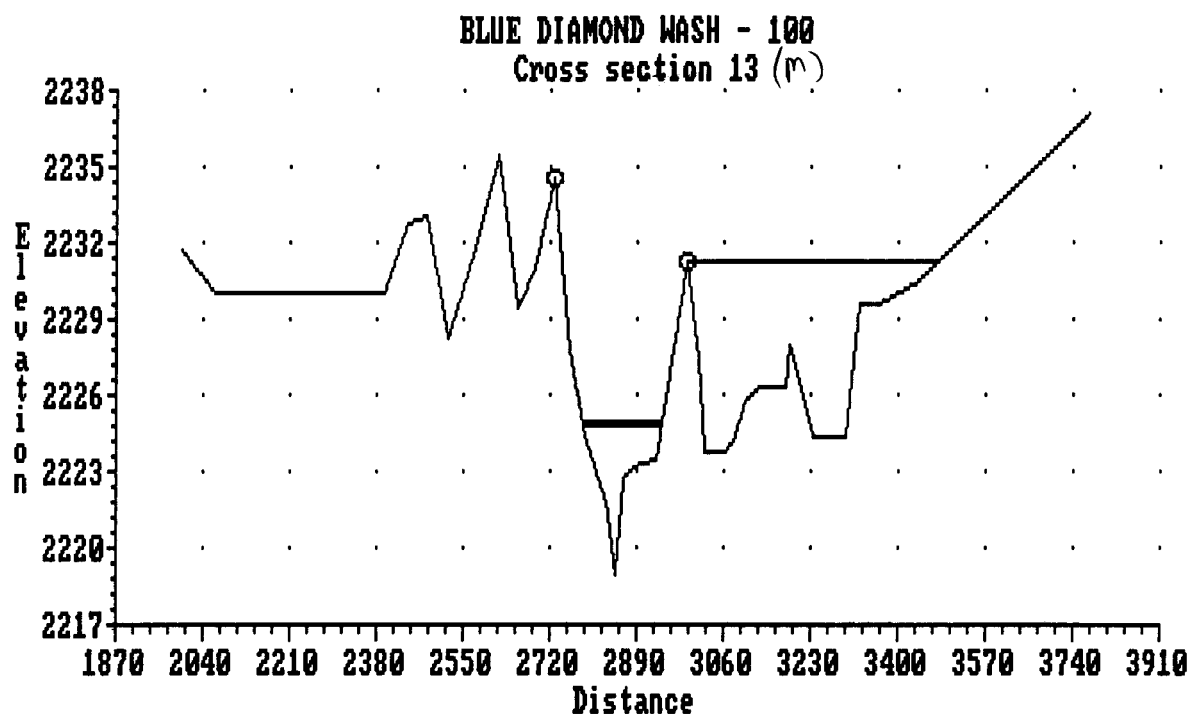


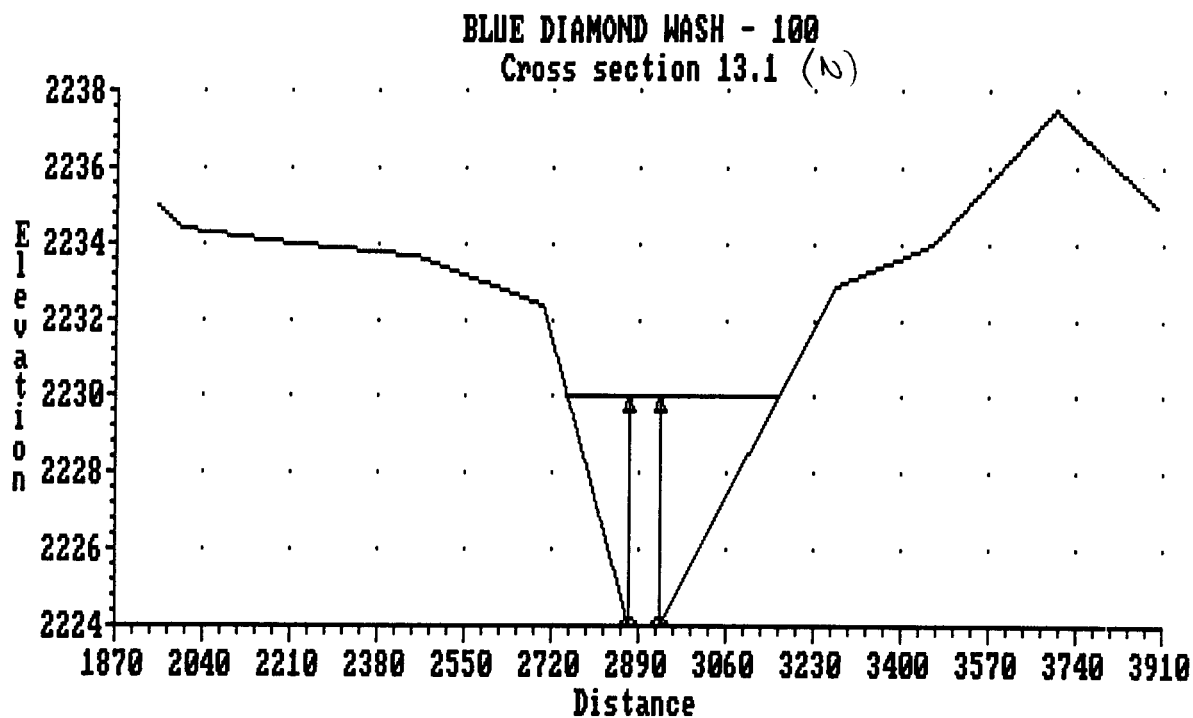


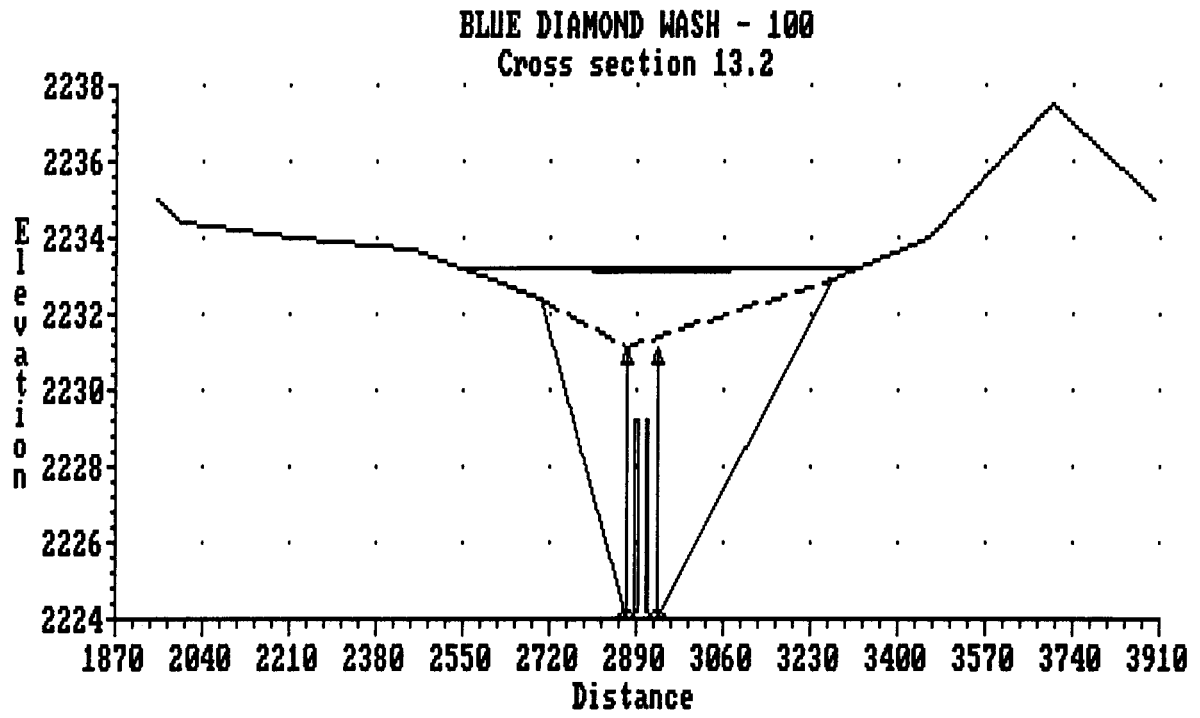


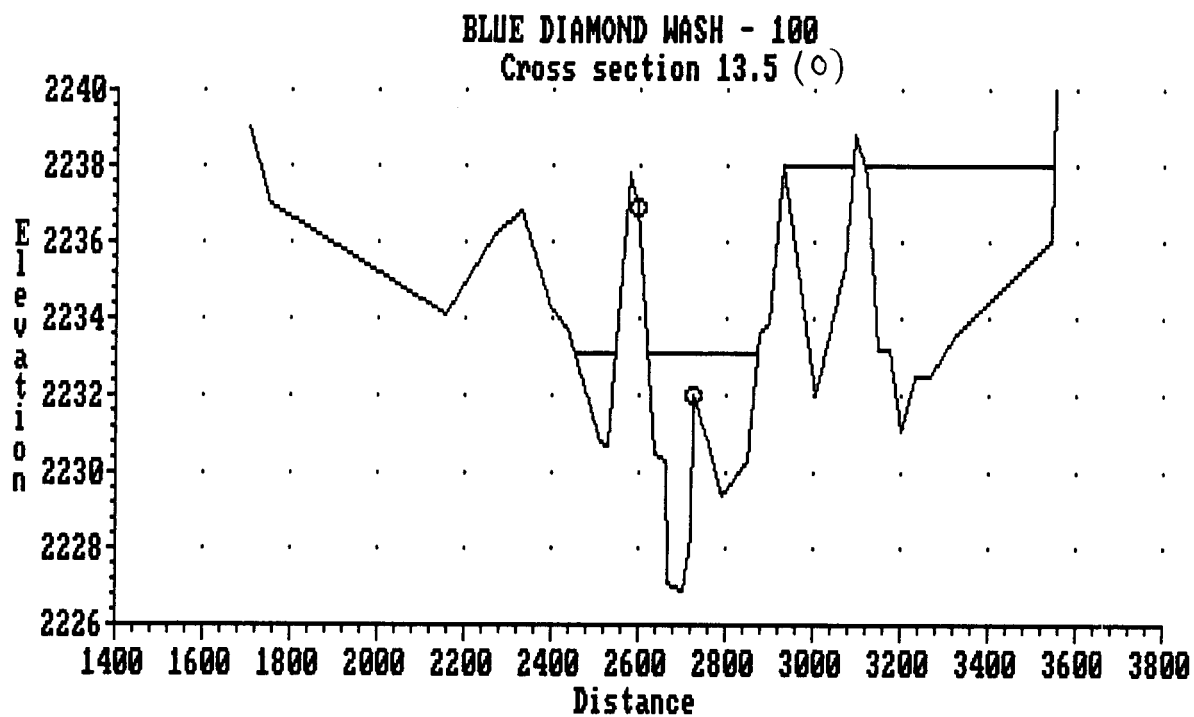


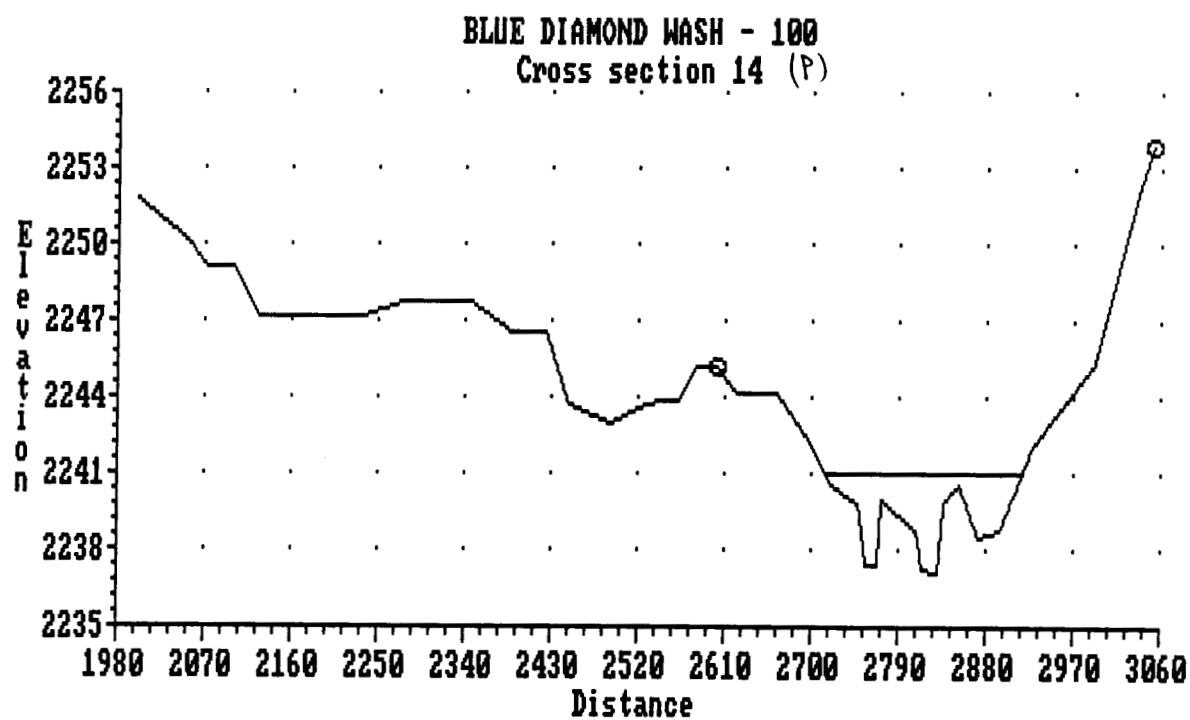


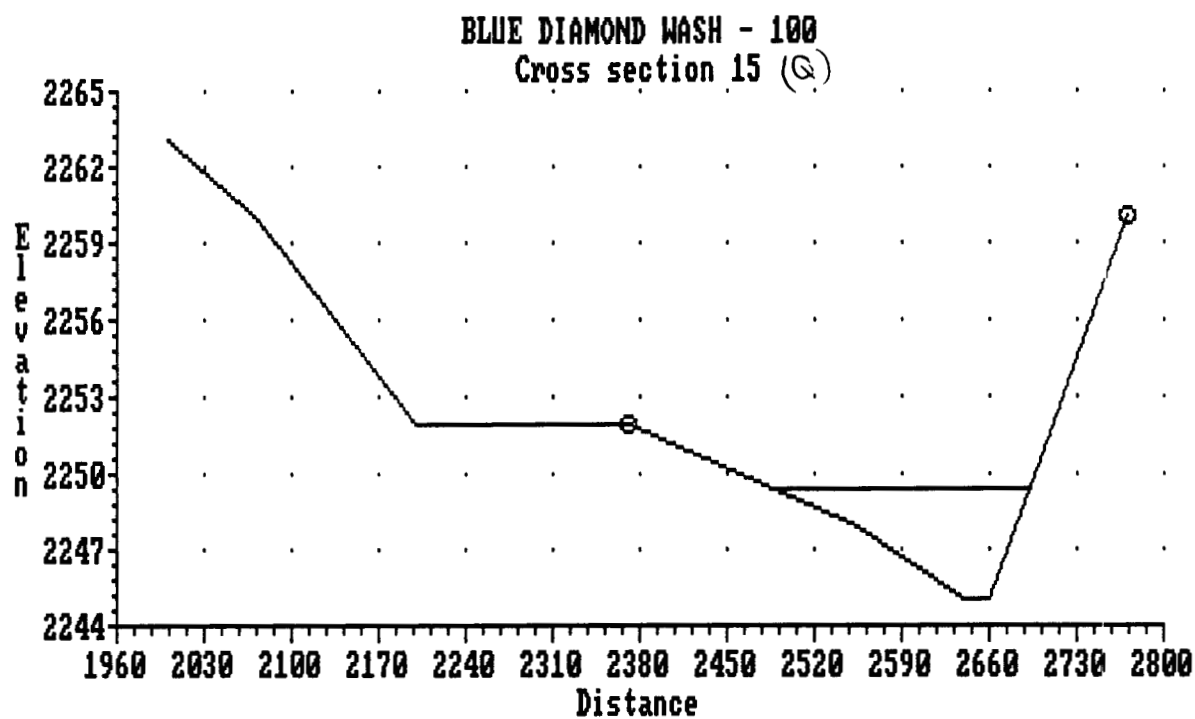




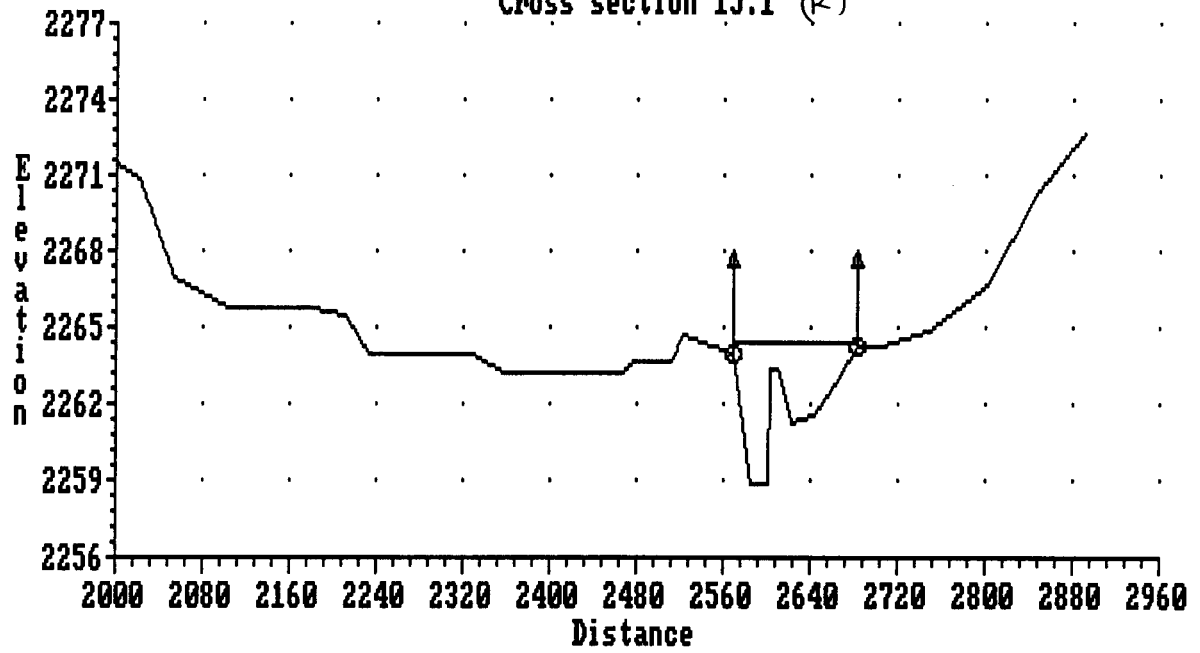


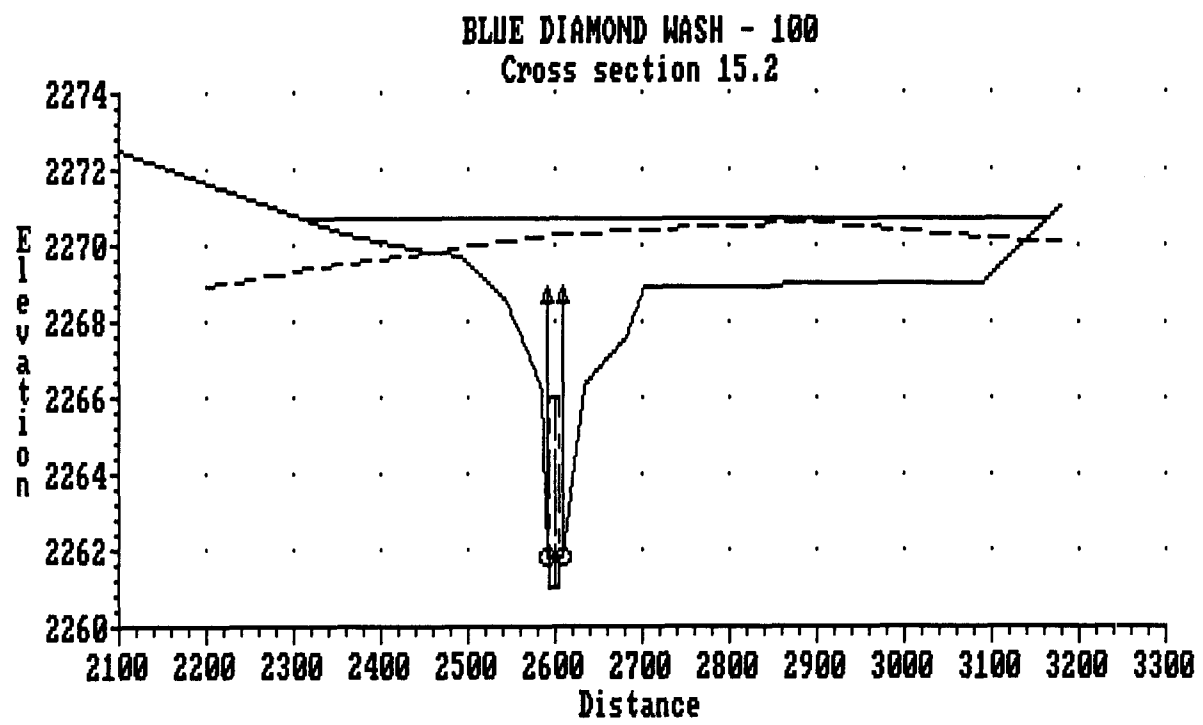






BLUE DIAMOND WASH - 100
Cross section 15.1 (R)





MIDDLE BRANCH BLUE DIAMOND WASH

(DUCK CREEK TO INTERSTATE-15)

**NTSBDFUL: Split Flow Run on Middle Branch Blue Diamond Wash
Using 1992 Topography, 50pp**

**NTSBDFW: Floodway Run on Middle Branch Blue Diamond Wash
Using 1992 Topography, 64pp**

THIS RUN EXECUTED 14MAY93 12:41:48

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

SPLIT FLOW BEING PERFORMED

SF22 Split Flow between ⁴⁸⁰~~440~~ and ⁵⁰⁰~~480~~, downstream of Giles pie

TN	Split flow between ⁴⁸⁰ 440 and ⁵⁰⁰ 480					
NS	2	480	500	-1	.05	.005
NG	0	2210	50	2210		

T1 CLARK COUNTY FLOOD INSURANCE STUDY
 T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. - Revised by MJB Inc.
 T3 SOUTH BRANCH - BLUE DIAMOND WASH WITH NEW TOPO 4/7/93

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			-1				2145	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1		-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150

QT	1	2800								
NC	.025	.025	.025							
X1	18.46	12	270	308	46	46	46			
GR	2150.1	0	2150.01	100	2150.24	140	2150.5	190	2150.68	240
GR	2147.2	270	2139.2	284	2139.5	294	2147.2	308	2150.45	350
GR	2155	390	2155	420						
X1	24	15	110	177	128	128	128			
GR	2165	0	2164	50	2163	100	2162	110	2161	113
GR	2160	116	2155	124	2150	133	2146	140	2145	152
GR	2145	159	2150	166	2160	177	2164	187	2168	300

CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans

Extends from Windmill channel to Bermuda Road

X1	25.40	20	199	211	140	140	140			
GR	2166	0	2165	20	2164	110	2163	160	2162	173
GR	2161	177	2160	181	2155	187	2150	193	2146	199
GR	2146	211	2150	215	2155	221	2158	225	2160	228
GR	2165	233	2166	235	2167	238	2168	241	2168	350
NC				.3	.5					
X1	25.41				10	10	10			
X3	10							2173	2173	
SC	1.013	.5	2.6	0	10	12	650	8.3	2160.01	2146.05
X1	25.42	17	189	201	650	650	650			
X2			2	2170	2175					
X3	10							2176	2176	
BT	-8	0	2178		159	2177		163	2176	
BT		167	2175		189	2175		220	2175	
BT		220	2178		400	2178				
GR	2178	0	2178	150	2177	159	2176	163	2175	167
GR	2174	171	2169	177	2164	183	2160	189	2160	201
GR	2164	205	2169	211	2172	215	2174	218	2175	220
GR	2178	230	2178	400						

NC .04 .04 .04 .1 .3
 X1(A) 25.43 50 50 50

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP

Modeled from Kachina Homes Plans

Clark County project

X1 (B)	100	11	176	202	350	350	350			
GR	2184	0	2185	100	2184	175	2181.8	176	2173.2	177
GR	2173	192	2181.8	202	2184	300	2184	360	2186	365
GR	2186	510								

NC .3 .5
 Extended cross section to intersect water surface

X1	110	12	1000	1041	200	200	200			
X3	10							2182.7	2182.7	
GR	2187	800	2187	800	2186	900	2188.4	995	2183.4	1000
GR	2177	1001	2177	1034	2183.6	1041	2184	1125	2186	1150
GR	2186	1200	2188	1400						

SC	4.013	.5	2.6	0	4	0	70	1.3	2178.2	2177
X1	120	9	1000	1041	70	70	70			
X2			2	2182.2	2183.3					
X3	10							2183.3	2183.3	
BT	-9	0	2190		600	2184		800	2183.3	
BT		1000	2183.4		1001	2183.5		1034	2183.6	
BT		1041	2184		1241	2185		1441	2190	
GR	2200	500	2186	600	2186	800	2183.4	1000	2178.2	1001
GR	2178.2	1034	2184	1041	2185	1241	2200	1441		

NC .1 .3
 X1 (C) 130 100 100 100

NEW TOPOGRAPHY MODIFIES SECTIONS 200 TO 580

CROSS SECTION 200 PLACID ST.

Modeled top of Road from JMM Workmap

X1 (D)	200	10	720	770	550	550	550			
X3	10			600	2196					
GR	2191.9	250	2194	500	2196	600	2194	690	2192	720
GR	2191.5	750	2192	770	2194	810	2195	860	2196	1200

CROSS SECTION 400 ORIGINAL JMM

X1 (E)	400	10	2530	2610	600	600	600			
GR	2201	2300	2201	2300	2200	2415	2200	2505	2198	2530
GR	2196	2535	2195	2560	2196	2570	2200	2610	2202	2750

CROSS SECTION 410 CIENEGA ST.

Modeled Top of Road from JMM Workmap

X1 (F)	410	7	360	760	140	140	140			
X3	10							2203		
GR	2202	180	2202	310	2203	360	2200.2	560	2202.0	720
GR	2204	760	2205	1060						

CROSS SECTION 480 GILESPIE ST.
Modeled Top of Road from JMM Workmap

X1 (G) 480	8	685	970	750	750	750			
X3 10							2210		
GR 2208	180	2208	380	2210	585	2210	685	2208	865
GR 2212	970	2213	1080	2212	1190				

CROSS SECTION 500 ORIGINAL JMM

X1 (H) 500	9	2820	2920	220	220	220			
GR 2214	2630	2212	2640	2210	2820	2208	2870	2206	2880
GR 2208	2890	2212	2920	2214	3040	2216	3100		

CROSS SECTION 510 RANCHO DESTINO
Modeled Top of Road from JMM Workmap

X1 (I) 510	6	660	960	500	500	500			
GR 2216	100	2215	480	2214.5	660	2214	860	2216	960
GR 2218	1120								

CROSS SECTION 580 HAVEN ROAD
Modeled Top of Road from JMM Workmap

X1 (J) 580	11	600	760	670	670	670			
X3 10			550	2225					
GR 2226.2	50	2224	60	2224	450	2225	550	2224	600
GR 2221	660	2221	720	2224	760	2224	800	2226	860
GR 2226	1100								

CROSS SECTION 600 ORIGINAL JMM

X1 (K) 600	12	2655	2790	130	130	130			
GR 2226	2270	2226	2380	2226	2475	2226.5	2565	2226	2625
GR 2224	2655	2221	2755	2224	2790	2226.0	2800	2226	2990
GR 2227	3100	2227.7	3260						

CROSS SECTION 610 GILES ROAD
Modeled Top of Road from JMM Workmap

X1 (L) 610	6	540	950	550	550	550			
GR 2232	0	2232	540	2230	725	2228	840	2231.8	950
GR 2231.8	1150								

NC

.3 .5

CROSS SECTIONS 710-730 LAS VEGAS BLVD
From plans and picture 3 - 10x8.5 RCB
Ground points from JMM HEC-2 Adjusted

X1 (M) 710	15	2572	2827	600	600	600			
X3 10							2237.2	2237.2	
GR 2241	2200	2239	2369	2237.7	2464	2238.5	2525	2231.7	2572
GR 2228.1	2616	2228.1	2698	2228.8	2760	2226.0	2786	2226.0	2820
GR 2229.5	2827	2231.8	2858	2236.4	2911	2239.0	3033	2240.5	3079

SC	3.015	.5	2.6	0	8.5	10	50	8.1	2228.2	2228.2
X1	720				50	50	50			
X2			2	2236.7	2237.7					
X3	10							2237.7	2237.7	
BT	-7	2200	2238.4		2464	2237.6		2525	2238.5	
BT		2616	2239.3		2760	2239.3		2827	2238.7	
BT		3033	2239							

NC			.1	.3						
X1 (N)	730			100	100	100				

		CROSS SECTIONS 800-900			ORIGINAL JMM					
X1 (0)	800	9	2549	2593	1650	1650	1650			
GR	2253.3	2454	2253.7	2470	2248.4	2497	2248.3	2549	2242.4	2560
GR	2242.4	2586	2247.7	2593	2248.7	2643	2249.9	2782		

		CROSS SECTIONS 900-930			I-15					
		From plans and picture			4 - 12x4 RCB					
		Top of road from JMM workmap								
X1 (P)	900	22	2339	2428	700	700	700			
GR	2261.6	2000	2259.8	2116	2259.9	2172	2258.1	2206	2258.5	2245
GR	2259.8	2281	2257.0	2293	2257.0	2339	2253.7	2354	2253.7	2363
GR	2257.2	2367	2257.2	2371	2253.5	2379	2252.2	2419	2257.7	2428
GR	2257.7	2438	2255.8	2443	2255.9	2470	2256.3	2515	2256.3	2579
GR	2256.3	2679	2259.4	2731						

NC			.3	.5						
X1	910	10	2870	2930	300	300	300			
X3	10							2264	2264	
GR	2267	1800	2264	2000	2260	2700	2259.2	2870	2259.2	2930
GR	2260	3100	2262	3200	2260	3300	2260	3400	2267	3600

SC	4.016	.5	2.6	0	4	12	150	8.1	2259.3	2259.3
X1	920				150	150	150			
X2			2	2263.3	2264.7					
X3	10							2264.7	2264.7	
BT	-8	1800	2267		2000	2267		2700	2265.5	
BT		2870	2265.2		2930	2265.2		3100	2265	
BT		3300	2264.7		3600	2267				

X1	930				100	100	100			
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NC	.040	.040	.040	0.1	0.3					
X1	960	28	2282	3147	1000	1000	975			
GR	2277.3	2265	2275.6	2282	2272.2	2315	2272.2	2365	2272.2	2425
GR	2272.3	2477	2272.3	2533	2272.5	2574	2273.4	2609	2273.4	2661
GR	2273.4	2708	2274.0	2721	2273.9	2734	2272.7	2740	2272.7	2780
GR	2274.0	2788	2274.0	2820	2273.8	2843	2272.3	2851	2273.9	2856
GR	2273.9	2915	2273.9	2977	2273.9	3095	2275.4	3147	2278.5	3155
GR	2278.2	3274	2278.2	3351	2279.3	3430				

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

*SECNO 18.460

3720 CRITICAL DEPTH ASSUMED

18.460	8.59	2147.79	2147.79	2145.00	2150.35	2.57	.00	.00	2147.20
2718.5	2.9	2711.4	4.3	1.5	210.7	2.2	.0	.0	2147.20
.00	1.93	12.87	1.94	.025	.025	.025	.000	2139.20	264.94
.005477	46.	46.	46.	0	13	0	.00	50.63	315.58

*SECNO 24.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

24.000	7.43	2152.43	2152.43	.00	2155.05	2.62	.74	.00	2162.00
2718.5	.0	2718.5	.0	.0	209.1	.0	.6	.1	2160.00
.00	.00	13.00	.00	.000	.025	.000	.000	2145.00	128.63
.006042	128.	128.	128.	20	11	0	.00	40.04	168.67

*SECNO 25.400

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans

Extends from Windmill channel to Bermuda Road

25.400	9.05	2155.05	2155.05	.00	2158.12	3.07	.66	.00	2146.00
2718.5	593.8	1734.2	390.6	57.6	108.6	43.5	1.3	.3	2146.00
.01	10.31	15.97	8.98	.025	.025	.025	.000	2146.00	186.94
.003829	140.	140.	140.	20	11	0	.00	34.12	221.06

CCHV= .300 CEHV= .500

*SECNO 25.410

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

*SECNO 100.000 (B)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP

Modeled from Kachina Homes Plans

Clark County project

100.000	10.31	2183.31	2183.31	.00	2185.35	2.04	.50	.50	2181.30
2718.5	.9	2565.7	151.9	.5	218.1	50.8	11.3	1.7	2181.80
.06	1.66	11.77	2.99	.040	.040	.040	.000	2173.00	175.31
.009412	350.	350.	350.	20	12	0	.00	93.98	269.30

CCHV= .300 CEHV= .500

*SECNO 110.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.18

Extended cross section to intersect water surface

110.000	9.09	2186.09	.00	.00	2186.56	.47	.75	.47	2183.40
2718.5	5.9	2109.7	603.0	4.2	346.4	224.7	13.3	2.4	2183.60
.07	1.41	6.09	2.68	.040	.040	.040	.000	2177.00	890.89
.001985	200.	200.	200.	3	0	0	.00	224.51	1209.11

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4		.013	.50	2.60	.00	4.00	.00	70.00	1	3	2178.20	2177.00

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 3 - GROOVE END ENTRANCE, PIPE PROJECTING FROM FILL

5130, EGIC= 2273.65..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2269.89 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 120.000

3840 SECTION NOT HIGH ENOUGH 2273.649 2250.000 2178.200 2250.000 2176.114 8

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2173.00 ELREA= 2173.00

25.410	11.64	2157.64	2157.64	.00	2163.52	5.88	.04	1.41	2146.00
2718.5	.0	2718.5	.0	.0	139.7	.0	1.3	.3	2146.00
.01	.00	19.47	.00	.000	.025	.000	.000	2146.00	199.00
.004066	10.	10.	10.	20	11	0	.00	12.00	211.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
1		.013	.50	2.60	.00	10.00	12.00	650.00	8	3	2160.01	2146.05

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 3 - WINGWALLS FLARED 0 DEGREES (SIDES EXTENDED STRAIGHT)

5130, EGIC= 2189.81..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2176.29 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 25.420

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.33

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2189.81	2176.29	14.43	885.	1831.	5.923	120.0	2175.00	212.	
25.420	17.59	2177.59	.00	.00	2177.95	.36	14.43	.00	2160.00
2718.5	823.9	1250.4	644.2	223.4	211.1	188.5	7.0	.9	2160.00
.04	3.69	5.92	3.42	.025	.025	.025	.000	2160.00	153.66
.000217	650.	650.	650.	2	0	0	.00	74.98	228.64

CCHV= .100 CEHV= .300

*SECNO 25.430 (A)

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

25.430	17.61	2177.61	.00	.00	2177.97	.36	.02	.00	2160.00
2718.5	824.1	1250.0	644.4	223.7	211.2	188.7	7.7	1.0	2160.00
.05	3.68	5.92	3.42	.040	.040	.040	.000	2160.00	153.59
.000554	50.	50.	50.	1	0	0	.00	75.08	228.67

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2273.65	2269.89	-.46	2080.	642.	6.368	50.3	2183.30	895.

120.000	7.46	2185.66	.00	.00	2186.10	.44	-.46	.00	2183.40
2718.5	414.3	1803.0	501.2	197.2	283.1	235.9	14.3	2.9	2184.00
.07	2.10	6.37	2.13	.040	.040	.040	.000	2178.20	825.80
.002709	70.	70.	70.	3	0	0	.00	424.06	1249.86

CCHV= .100 CEHV= .300

*SECNO 130.000 (C)

130.000	7.86	2186.06	.00	.00	2186.33	.27	.21	.02	2183.40
2718.5	512.3	1558.6	647.6	284.6	299.4	319.8	16.2	4.2	2184.00
.08	1.80	5.21	2.02	.040	.040	.040	.000	2178.20	599.56
.001680	100.	100.	100.	3	0	0	.00	655.59	1255.15

*SECNO 200.000 (D)

.85 20 TRIALS ATTEMPTED WSEL,CWSEL

.93 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

70 ENCROACHMENT STATIONS= 600.0 1200.0 TYPE= 1 TARGET= -600.000

ELENCL= 2196.00 ELENCR= 100000.00

NEW TOPOGRAPHY MODIFIES SECTIONS 200 TO 580

CROSS SECTION 200 PLACID ST.

Modeled top of Road from JMM Workmap

200.000	3.81	2195.31	2195.31	.00	2196.05	.74	1.81	.14	2192.00
2718.5	532.2	1472.6	713.7	107.8	178.0	149.1	24.6	10.4	2192.00
.10	4.94	8.28	4.79	.040	.040	.040	.000	2191.50	631.09
.009133	550.	550.	550.	20	11	0	.00	334.00	965.09

*SECNO 400.000 (E)

7.85 MINIMUM SPECIFIC ENERGY

370 CRITICAL DEPTH ASSUMED

CROSS SECTION 400

ORIGINAL JMM

400.000	5.58	2200.58	2200.58	.00	2201.45	.88	5.13	.04	2198.00
2718.5	324.1	2377.6	16.8	110.3	298.6	11.6	30.5	14.8	2200.00
.12	2.94	7.96	1.45	.040	.040	.040	.000	2195.00	2348.80
.008024	600.	600.	600.	3	11	0	.00	301.50	2650.30

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 410.000 (F)

3280 CROSS SECTION 410.00 EXTENDED .57 FEET

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2203.00 ELREA= 2204.00

CROSS SECTION 410				CIENEGA ST.					
Modeled Top of Road from JMM Workmap									
410.000	2.36	2202.56	.00	.00	2203.16	.59	1.68	.03	2203.00
2718.5	.0	2718.5	.0	.0	439.7	.0	31.9	15.8	2204.00
.13	.00	6.18	.00	.000	.040	.000	.000	2200.20	390.59
.019731	140.	140.	140.	4	0	0	.00	340.85	731.44

*SECNO 480.000 (G)

3280 CROSS SECTION 480.00 EXTENDED 2.00 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2210.00 ELREA= 2212.00

CROSS SECTION 480				GILESPIE ST.					
Modeled Top of Road from JMM Workmap									
480.000	2.00	2210.00	2210.00	.00	2210.17	.17	6.35	.04	2210.00
2718.5	2126.7	591.8	.0	605.4	232.7	.0	42.9	25.1	2212.00
.19	3.51	2.54	.00	.040	.040	.000	.000	2208.00	180.00
.004685	750.	750.	750.	20	13	0	.00	737.52	917.52

*SECNO 500.000 (H)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 500				ORIGINAL JMM					
500.000	5.72	2211.72	2211.72	.00	2212.62	.90	1.57	.22	2210.00
2800.0	487.1	2312.9	.0	132.5	281.9	.0	46.1	27.6	2212.00
.20	3.68	8.20	.00	.040	.040	.000	.000	2206.00	2665.55
.012010	220.	220.	220.	20	23	0	.00	252.32	2917.87

SECNO	DEPTH	CWSEL	CRWS	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 510.000 (I)

3280 CROSS SECTION 510.00 EXTENDED .09 FEET

3301 HV CHANGED MORE THAN HVINS

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

CROSS SECTION 510				RANCHO DESTINO					
Modeled Top of Road from JMM Workmap									
510.000	2.09	2216.09	.00	.00	2216.24	.15	3.55	.08	2214.50
2800.0	1147.0	1652.9	.1	465.4	477.0	.3	53.8	34.0	2216.00
.25	2.46	3.47	.32	.040	.040	.040	.000	2214.00	100.00
.004688	500.	500.	500.	5	0	0	.00	867.21	967.21

SECNO 580.000 (J)

3301 HV CHANGED MORE THAN HVINS

585 20 TRIALS ATTEMPTED WSEL,CWSEL
 3093 PROBABLE MINIMUM SPECIFIC ENERGY
 3720 CRITICAL DEPTH ASSUMED

,70 ENCROACHMENT STATIONS= 550.0 1100.0 TYPE= 1 TARGET= -550.000

ELENCL= 2225.00 ELENCR= 100000.00

CROSS SECTION 580				HAVEN ROAD					
Modeled Top of Road from JMM Workmap									
580.000	3.11	2224.11	2224.11	.00	2225.11	1.00	5.36	.26	2224.00
2800.0	.2	2794.8	5.0	.3	347.7	4.6	63.8	42.3	2224.00
.27	.69	8.04	1.09	.040	.040	.040	.000	2221.00	594.48
.016663	670.	670.	670.	20	14	0	.00	208.83	803.31

SECNO 600.000 (K)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.70

CROSS SECTION 600				ORIGINAL JMM					
600.000	4.76	2225.76	.00	.00	2226.34	.58	1.19	.04	2224.00
2800.0	59.9	2720.4	19.7	23.2	439.9	7.7	65.0	42.9	2224.00
.28	2.58	6.18	2.55	.040	.040	.040	.000	2221.00	2628.62
.005744	130.	130.	130.	3	0	0	.00	170.18	2798.79

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 610.000 (L)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .53

CROSS SECTION 610		GILES ROAD							
Modeled Top of Road from JMM Workmap									
610.000	3.06	2231.06	2231.02	.00	2231.74	.68	5.37	.03	2232.00
2800.0	.0	2800.0	.0	.0	423.7	.0	70.7	45.8	2231.80
.30	.00	6.61	.00	.000	.040	.000	.000	2228.00	627.17
.020099	550.	550.	550.	6	14	0	.00	301.34	928.51

CCHV= .300 CEHV= .500

*SECNO 710.000 (M)

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 6.16

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2237.20 ELREA= 2237.20

CROSS SECTIONS 710-730		LAS VEGAS BLVD							
From plans and picture 3 - 10x8.5 RCB									
Ground points from JMM HEC-2 Adjusted									
710.000	6.77	2232.77	.00	.00	2232.85	.09	.94	.18	2231.70
2800.0	.0	2800.0	.0	.0	1181.2	.0	81.7	49.7	2229.50
.37	.00	2.37	.00	.000	.040	.000	.000	2226.00	2572.00
.000530	600.	600.	600.	6	0	0	.00	255.00	2827.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.015	.50	2.60	.00	8.50	10.00	50.00	8	1	2228.20	2228.20

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

*SECNO 720.000

265 DIVIDED FLOW

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.33

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2239.55	2239.31	5.50	179.	2620.	.927	255.0	2237.70	299.	
720.000	12.34	2238.34	.00	.00	2238.35	.01	5.50	.00	2231.70
2800.0	69.6	2413.7	316.8	183.7	2603.7	552.3	84.3	50.2	2229.50
.38	.38	.93	.57	.040	.040	.040	.000	2226.00	2416.85
.000028	50.	50.	50.	1	0	0	.00	572.56	3002.28

CCHV= .100 CEHV= .300
 *SECNO 730.000 (N)

3265 DIVIDED FLOW

730.000	12.34	2238.34	.00	.00	2238.35	.01	.00	.00	2231.70
2800.0	69.4	2414.1	316.5	182.8	2602.1	551.3	92.0	51.5	2229.50
.42	.38	.93	.57	.040	.040	.040	.000	2226.00	2417.29
.000028	100.	100.	100.	0	0	0	.00	571.32	3001.99

*SECNO 800.000 (6)

JJ01 HV CHANGED MORE THAN HVINS

.85 20 TRIALS ATTEMPTED WSEL,CWSEL

.93 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 800-900				ORIGINAL JMM					
800.000	7.09	2249.49	2249.49	.00	2250.55	1.06	.16	.31	2248.30
2800.0	190.9	2334.6	274.5	62.3	261.0	100.6	163.2	66.9	2247.70
.47	3.06	8.95	2.73	.040	.040	.040	.000	2242.40	2491.45
.005942	1650.	1650.	1650.	20	14	0	.00	243.04	2734.49

ECNO 900.000 (P)

3265 DIVIDED FLOW

.85 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 900-930 I-15

From plans and picture 4 - 12x4 RCB

Top of road from JMM workmap

900.000	5.02	2257.22	2257.22	.00	2257.81	.59	4.86	.05	2257.00
2800.0	12.6	1947.8	839.6	10.3	277.3	248.2	170.9	72.0	2257.70
.51	1.23	7.02	3.38	.040	.040	.040	.000	2252.20	2292.05
.008223	700.	700.	700.	5	14	0	.00	390.34	2694.44

CCHV= .300 CEHV= .500

*SECNO 910.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

910.000	4.95	2264.15	2264.15	.00	2264.16	.01	.05	.17	2259.20
2800.0	1242.0	231.2	1326.8	2281.7	297.2	2066.2	188.8	78.6	2259.20
.64	.54	.78	.64	.040	.040	.040	.000	2259.20	1989.81
.000052	300.	300.	300.	20	8	0	.00	1528.84	3518.65

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4		.016	.50	2.60	.00	4.00	12.00	150.00	8	1	2259.30	2259.30

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 920.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.05

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2270.73	2271.26	1.75	1408.	1392.	.464	192.0	2264.70	949.

920.000	6.71	2265.91	.00	.00	2265.91	.00	1.75	.00	2259.20
2800.0	1379.3	186.8	1233.8	3931.7	402.6	3144.9	209.6	84.1	2259.20
.75	.35	.46	.39	.040	.040	.040	.000	2259.20	1872.64
.000012	150.	150.	150.	0	0	0	.00	1696.23	3568.87

*SECNO 930.000

930.000	6.71	2265.91	.00	.00	2265.91	.00	.00	.00	2259.20
2800.0	1379.2	186.9	1233.9	3929.5	402.5	3143.5	226.8	88.0	2259.20
.83	.35	.46	.39	.040	.040	.040	.000	2259.20	1872.79
.000012	100.	100.	100.	0	0	0	.00	1696.02	3568.81

SECNO	DEPTH	CWSEL	CRIS	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

CHV= .100 CEHV= .300
 SECNO 960.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

960.000	1.48	2273.68	2273.68	.00	2274.20	.52	.05	.16	2275.60
2800.0	.0	2800.0	.0	.0	482.9	.0	317.9	112.8	2275.40
.88	.00	5.80	.00	.000	.040	.000	.000	2272.20	2300.66
.023936	1000.	975.	1000.	20	14	0	.00	475.88	2855.30

TN Split flow between ⁴⁸⁰~~440~~ and ⁵⁰⁰~~480~~

TOTAL	AVG	MAX	AVG	TOF	TOP
AREA	VELOCITY	DEPTH	DEPTH	WIDTH	WIDTH
42.9	1.90	1.72	.86	50.0	50.0

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
81.47	81.47	.00	81.47	81.47	.00	7	2210.001	2211.716	480.000	500.000

THIS RUN EXECUTED 14MAY93 12:41:57

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

SOUTH BRANCH - BLUE DIAM

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
	18.460	.00	.00	.00	2139.20	2718.53	2147.79	2147.79	2150.35	54.77	12.87	214.39	367.34
*	24.000	128.00	.00	.00	2145.00	2718.53	2152.43	2152.43	2155.05	60.42	13.00	209.11	349.73
	25.400	140.00	.00	.00	2146.00	2718.53	2155.05	2155.05	2158.12	38.29	15.97	209.64	439.34
	25.410	10.00	.00	.00	2146.00	2718.53	2157.64	2157.64	2163.52	40.66	19.47	139.66	426.35
*	25.420	650.00	2175.00	2170.00	2160.00	2718.53	2177.59	.00	2177.95	2.17	5.92	622.98	1845.70
(A)	25.430	50.00	.00	.00	2160.00	2718.53	2177.61	.00	2177.97	5.54	5.92	623.57	1154.79
* (B)	100.000	350.00	.00	.00	2173.00	2718.53	2183.31	2183.31	2185.35	94.12	11.77	269.43	280.21
	110.000	200.00	.00	.00	2177.00	2718.53	2186.09	.00	2186.56	19.85	6.09	575.32	610.14
	120.000	70.00	2183.30	2182.20	2178.20	2718.53	2185.66	.00	2186.10	27.09	6.37	716.25	522.30
(C)	130.000	100.00	.00	.00	2178.20	2718.53	2186.06	.00	2186.33	16.80	5.21	903.87	663.19
(D)	200.000	550.00	.00	.00	2191.50	2718.53	2195.31	2195.31	2196.05	91.33	8.28	434.84	284.46
* (E)	400.000	600.00	.00	.00	2195.00	2718.53	2200.58	2200.58	2201.45	80.24	7.96	420.41	303.48
(F)	110.000	140.00	.00	.00	2200.20	2718.53	2202.56	.00	2203.16	197.31	6.18	439.67	193.54
* (G)	480.000	750.00	.00	.00	2208.00	2718.53	2210.00	2210.00	2210.17	46.85	2.54	838.04	397.19
* (H)	500.000	220.00	.00	.00	2206.00	2800.00	2211.72	2211.72	2212.62	120.10	8.20	414.43	255.50
(I)	510.000	500.00	.00	.00	2214.00	2800.00	2216.09	.00	2216.24	46.88	3.47	942.80	408.95
* (J)	580.000	670.00	.00	.00	2221.00	2800.00	2224.11	2224.11	2225.11	166.63	8.04	352.56	216.91

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
* (K)	800.000	130.00	.00	.00	2221.00	2800.00	2225.76	.00	2226.34	57.44	6.18	470.87	369.45
* (L)	610.000	550.00	.00	.00	2228.00	2800.00	2231.06	2231.02	2231.74	200.99	6.61	423.67	197.50
* (M)	710.000	600.00	.00	.00	2226.00	2800.00	2232.77	.00	2232.85	5.30	2.37	1181.18	1215.83
*	720.000	50.00	2237.70	2236.70	2226.00	2800.00	2238.34	.00	2238.35	.28	.93	3339.69	5265.99
(N)	730.000	100.00	.00	.00	2226.00	2800.00	2238.34	.00	2238.35	.28	.93	3336.20	5259.78
* (O)	800.000	1650.00	.00	.00	2242.40	2800.00	2249.49	2249.49	2250.55	59.42	8.95	423.86	363.23
* (P)	900.000	700.00	.00	.00	2252.20	2800.00	2257.22	2257.22	2257.81	82.23	7.02	535.78	308.77
*	910.000	300.00	.00	.00	2259.20	2800.00	2264.15	2264.15	2264.16	.52	.78	4645.13	3885.21
*	920.000	150.00	2264.70	2263.30	2259.20	2800.00	2265.91	.00	2265.91	.12	.46	7479.27	7975.54
	930.000	100.00	.00	.00	2259.20	2800.00	2265.91	.00	2265.91	.12	.46	7475.54	7969.56
*	960.000	975.00	.00	.00	2272.20	2800.00	2273.68	2273.68	2274.20	239.36	5.80	482.87	180.98

SOUTH BRANCH - BLUE DIAM

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	18.460	2718.53	2147.79	.00	.00	2.79	50.63	.00
*	24.000	2718.53	2152.43	.00	4.64	.00	40.04	128.00
*	25.400	2718.53	2155.05	.00	2.62	.00	34.12	140.00
*	25.410	2718.53	2157.64	.00	2.59	.00	12.00	10.00
*	25.420	2718.53	2177.59	.00	19.95	.00	74.98	650.00
* (A)	25.430	2718.53	2177.61	.00	.02	.00	75.08	50.00
* (B)	100.000	2718.53	2183.31	.00	5.70	.00	93.98	350.00
*	110.000	2718.53	2186.09	.00	2.78	.00	224.51	200.00
	120.000	2718.53	2185.66	.00	-.43	.00	424.06	70.00
(C)	130.000	2718.53	2186.06	.00	.40	.00	655.59	100.00
(D)	200.000	2718.53	2195.31	.00	9.25	.00	334.00	550.00
* (E)	400.000	2718.53	2200.58	.00	5.27	.00	301.50	600.00
(F)	410.000	2718.53	2202.56	.00	1.99	.00	340.85	140.00
(G)	480.000	2718.53	2210.00	.00	7.44	.00	737.52	750.00
* (H)	500.000	2800.00	2211.72	.00	1.72	.00	252.32	220.00
(I)	510.000	2800.00	2216.09	.00	4.38	.00	867.21	500.00
* (J)	580.000	2800.00	2224.11	.00	8.02	.00	208.83	670.00
(K)	600.000	2800.00	2225.76	.00	1.65	.00	170.18	130.00
(L)	610.000	2800.00	2231.06	.00	5.30	.00	301.34	550.00
* (M)	710.000	2800.00	2232.77	.00	1.71	.00	255.00	600.00
	720.000	2800.00	2238.34	.00	5.57	.00	572.56	50.00
(N)	730.000	2800.00	2238.34	.00	.00	.00	571.32	100.00
(O)	800.000	2800.00	2249.49	.00	11.15	.00	243.04	1650.00
(P)	900.000	2800.00	2257.22	.00	7.73	.00	390.34	700.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	910.000	2800.00	2264.15	.00	6.93	.00	1528.84	300.00
*	920.000	2800.00	2265.91	.00	1.76	.00	1696.23	150.00
	930.000	2800.00	2265.91	.00	.00	.00	1696.02	100.00
*	960.000	2800.00	2273.68	.00	7.77	.00	475.88	975.00

THIS RUN EXECUTED 14MAY93 12:20:13

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS INC.

T3 BLUE DIAMOND WASH - 100 YEAR FLOOD

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			.0067				2075	

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

QT	2	2900	2900							
ET			5.4							
NC	.035	.035	.035	.1	.3					
CROSS SECTION 1				ESTIMATE JUST UPSTREAM OF CONFLUENCE						
X1	1	4	10	60	0	0	0			
GR	2079	0	2072	10	2072	60	2078	80		
NC	.040	.040	.040	0.1	0.3					
CROSS SECTION 2				FROM ORIGINAL JMM						
X1	2.0	23	2578	2756	1350	1350	1350			
GR	2092.0	1950	2089.2	2000	2088.0	2150	2088.0	2400	2088.5	2450.
GR	2092.3	2530	2089.6	2578	2088.2	2625	2086.4	2658	2086.4	2666.
GR	2087.7	2678	2087.7	2696	2085.7	2709	2086.3	2749	2087.1	2756.
GR	2086.9	2812	2086.8	2896	2087.0	2966	2086.8	3069	2086.5	3149.
GR	2086.5	3266	2087.4	3406	2092.0	3600				
CROSS SECTION 3				ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
X1	3	4	20	50	750	750	750			
GR	2099	0	2094	20	2094	40	2099	50		
NC	.03	.03	.03							
ET			2.4							
CROSS SECTIONS 1600-0				FROM BUCKINGHAM ESTATES CLOMR ROBINDALE CHANNEL several cross section deleted						
X1	1600	4	0	40	340	340	340			
GR	2104.8	0	2095.5	10	2095.5	30	2104.8	40		

NC	.044	.044	.044					
X1	1560	4	0	40	40	40	40	
GR	2105	0	2095.7	10	2095.7	30	2105	40

NC	.03	.03	.03					
X1	1384	4	0	35	166	179	176	
GR	2105.7	0	2096.6	13.7	2096.6	25.7	2106	35

X1	1000	4	0	25	364	390	384	
GR	2106.6	0	2098.7	13	2098.7	24.9	2108.6	25

X1	600	4	0	25	420	377	400	
GR	2110	0	2103.8	13	2103.8	24.9	2114.1	25

X1	300	4	0	25	300	300	300	
GR	2114.5	0	2108.3	13	2108.3	24.9	2119.3	25

ET 10.4

CROSS SECTIONS 0-1.3

ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

X1	0	8	127	150	300	300	300		
GR	2121	0	2118.5	65	2119.6	126	2111.6	127	2111.6
GR	2121	170	2122	210	2125.4	265			150

NC				.3	.5				
X1	1.1				10	10	10		
X3	10							2117.6	2117.6

SC	3.013	.4	3	0	7	4	100	1.1	2112.6	2111.6
X1	1.2				110	110	110			
X2			2	2116.6	2118.5					
X3	10							2118.5	2118.5	
BT	-7	0	2121		65	2118.5		126	2120	
BT		127	2120		170	2121		210	2122	
BT		265	2125.4							

NC				.1	.3					
X1	1.3				50	50	50			

ET 10.4

CROSS SECTIONS 415-0

ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

X1	415	8	10	28.1	10	10	10			
GR	2125	0	2122.3	10	2115.44	10.1	2115.44	19	2115.44	28
GR	2122.3	28.1	2123.25	70	2124.49	180				

X1	185	10	10	28.1	229	229	229			
GR	2132	0	2128.9	10	2121.3	10.1	2121.3	10.9	2121.3	28
GR	2128.9	28.1	2129.22	30	2129.42	70	2129.12	105	2133.5	115

ET			4.4							
X1	20	6	0	20.1	157.5	172.5	165			
GR	2134.7	0	2126.9	.1	2126.9	10	2126.9	20	2131	20.1
GR	2131.9	105								

CROSS SECTIONS 0-5

AMIGO STREET

REMOVED CULVERT 1- 4x7 RCB

From Lewis Homes Paradise Plans

proposed culverts

X1	0	10	270	295	20	20	20			
GR	2140	0	2134	40	2133.5	120	2132.9	240	2132	270
GR	2126.7	271	2126.7	294	2132	295	2133.5	415	2141	416

X1 (A)	.11	11	270	295	40	40	40			
X3	10							2134.5	2134.5	
GR	2140	0	2136.5	50	2136.18	140	2135.8	230	2132	270
GR	2126.7	271	2126.7	294	2132	295	2134.37	495	2134.93	520
GR	2141	521								

NC	.035	.035	.035	.1	.3					
ET			6.4							
X1 (B)	5	30	2608	2894	125	125	125			
GR	2141	2000	2139.3	2183	2138.9	2293	2138.9	2363	2139.9	2425
GR	2138.8	2465	2138.8	2522	2138.9	2562	2139.1	2608	2137.3	2634
GR	2137.1	2668	2137	2678	2135.7	2683	2135.9	2699	2135.1	2727
3R	2134.9	2732	2135.7	2734	2135.2	2752	2136.8	2789	2137.6	2851
GR	2137.7	2879	2138.8	2894	2138.8	2912	2138.8	2925	2138.8	2934
3R	2138.8	2969	2140.3	2996	2141.3	3031	2141.3	3092	2142.6	3125

CROSS SECTION 7

FROM ORIGINAL JMM - adjusted from new topo

X3 card used to confine flow

X1 (C)	7	34	2545	2734	1400	1400	1400			
X3								2837	2163.2	
GR	2163.0	2327	2160	2367	2158	2425	2158	2450	2158.5	2545
3R	2153.8	2677	2153.8	2688	2155.4	2702	2157.7	2710	2155.0	2730
3R	2157.6	2734	2159.6	2770	2162.6	2813	2163.2	2837	2162.6	2876
GR	2158.9	2918	2158.6	2944	2158.8	2959	2162.4	2989	2162.4	3009
3R	2161.4	3062	2161.4	3105	2161.4	3126	2161.4	3169	2161.4	3207
3R	2161.4	3228	2161.4	3252	2161.4	3274	2161.4	3339	2161.6	3440
GR	2161.6	3500	2163.8	3552	2163.8	3630	2165.2	3686		

CROSS SECTIONS 7.1

BERMUDA ROAD

Culvert not modeled(1- 2.5 ft CMP)- ineffective

Top of road modeled in GR cards-used new topo

X1 (D)	7.1	9	2600	2820	80	80	80			
3R	2163.9	2300	2162	2400	2160	2450	2160	2600	2158	2680
GR	2160	2820	2162	2850	2162.3	2900	2162	2950		

NC	.060	.060	.035	.1	.3					
	CROSS SECTIONS 8-9			FROM ORIGINAL JMM						
	CROSS SECTION 8			FAIRFIELD STREET - NO CULVERTS						
X1 (E) 08	25	2522	2905	585	585	595				
GR 2169.9	2000	2168.5	2102	2168.4	2160	2168.3	2194	2169.6	2298	
GR 2168.5	2435	2170.1	2522	2166.4	2530	2167.1	2599	2164.3	2636	
GR 2166.4	2649	2166.4	2690	2164.6	2705	2163.8	2734	2163.8	2782	
GR 2163.8	2789	2167.9	2795	2168.8	2843	2172.3	2905	2172.3	3013	
GR 2174.2	3155	2173.7	3202	2173.7	3287	2175.3	3423	2175.7	3513	

	CROSS SECTION 8.5			FROM ORIGINAL JMM - used new topo						
X1 8.5	9	2400	2710	120	120	120				
GR 2173.1	2145	2170	2400	2168	2440	2166	2510	2166	2600.	
GR 2168	2625	2170	2650	2172.4	2710	2174	2800			
X1 (F) 09	24	2694	2726	680	680	680				
GR 2182.5	2078	2177.8	2098	2180.3	2200	2180.3	2346	2179.6	2417	
GR 2179.7	2480	2179.8	2558	2178.6	2652	2171.6	2681	2171.4	2694	
GR 2167.8	2706	2167.8	2717	2176.4	2726	2178.1	2780	2180.7	2852	
GR 2181.6	2924	2182.5	3046	2182.0	3145	2181.2	3286	2181.6	3403	
GR 2183.0	3480	2183.0	3520	2183.0	3618	2186.2	3680			

CROSS SECTIONS 9.1			PLACID STREET							
Culvert not modeled (2- 2.5 ft CMP) - ineffective										
Top of road modeled in GR cards- used new topo										
X1	(G) 9.1	11	2665	2880	80	80	80			
GR	2184.0	2050	2180.6	2250	2180.6	2420	2180	2600	2178	2665
GR	2175.9	2760	2176	2855	2178	2880	2180	2905	2182	2950
GR	2183	3240								

ET	10.4			FROM ORIGINAL JMM						
	CROSS SECTIONS 10-11			GILESPIE STREET - NO CULVERTS						
	CROSS SECTION 10									
X1 (H) 10	15	2710	2862	1295	1275	1295				
GR 2196.6	2496	2196.6	2529	2194.4	2618	2193.0	2665	2193.0	2710	
GR 2189.1	2761	2188.4	2775	2186.8	2790	2185.2	2806	2185.2	2811	
GR 2189.0	2818	2191.0	2862	2190.8	2913	2192.9	3107	2194.5	3121	

	CROSS SECTION 10.5			used new topo						
X1 (I) 10.5	11	2345	2440	90	90	110				
GR 2194	2185	2192	2225	2190	2320	2189.9	2345	2187.8	2420	
GR 2190.1	2440	2192	2460	2194	2480	2196	2560	2198	2670	
GR 2198	2880									

ET	8.4			Adjusted to reflect actual flow path						
	CROSS SECTION 11									
X1 (J) 11	32	2579	2912	670	670	670				
X3			2694	2203.7						
GR 2202.7	2270	2200.5	2324	2200.5	2426	2200.5	2457	2200.5	2486	
GR 2200.5	2535	2205.1	2579	2199.7	2606	2199.0	2637	2197.1	2660	
GR 2200.0	2681	2203.7	2694	2201.7	2709	2199.8	2736	2196.0	2761	
GR 2194.7	2773	2193.0	2796	2194.7	2804	2192.5	2809	2192.4	2820	
GR 2196.0	2848	2200.3	2878	2210.1	2912	2207.4	2939	2205.1	3020	

GR	2203.1	3204	2203.2	3431	2202.4	3475	2202.1	3526	2204.1	3613
GR	2204.1	3719	2205.2	3773						

CROSS SECTIONS 11.1 RANCHO DESTINO

Culvert not modeled(1- 4 ft CMP) - ineffective

Top of road modeled in GR cards - used new topo

X1 (K)	11.1	9	2500	2760	120	120	120			
GR	2206	2280	2204.2	2290	2204.2	2500	2203.2	2615	2204.2	2760
GR	2206	2790	2207	2910	2209	2940	2207	3010		

NC	.038	.045	.035	.1	.3
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CROSS SECTION 12

FROM ORIGINAL JMM

CROSS SECTION 12

Added x3 to reflect actual flow path

X1 (L)	12	50	2784	2916	1095	995	1065			
X3				2714	2219.2	2942	2215.4			
GR	2220.0	2000	2220.0	2049	2220.0	2077	2219.3	2094	2215.0	2125
GR	2215.0	2181	2216.0	2241	2216.5	2295	2217.4	2322	2215.7	2358
GR	2218.2	2376	2218.7	2394	2215.5	2423	2218.4	2477	2222.6	2564
GR	2215.2	2593	2213.1	2621	2209.5	2661	2214.8	2699	2219.2	2714
GR	2214.1	2751	2211.2	2784	2207.5	2816	2207.5	2848	2210.6	2876
GR	2211.8	2916	2215.4	2942	2212.0	2970	2211.1	2993	2211.0	3028
GR	2212.8	3041	2210.7	3067	2210.7	3079	2214.6	3089	2214.6	3112
GR	2217.6	3150	2220.6	3168	2220.0	3187	2219.1	3243	2218.8	3346
GR	2218.6	3424	2219.4	3472	2220.7	3502	2221.3	3525	2221.3	3571
GR	2221.1	3603	2221.1	3663	2221.1	3729	2221.1	3793	2221.7	3799

CROSS SECTIONS 13-13.5 LAS VEGAS BLVD.

MODELED SC, 2 CULVERTS

LEFT (5x5 RCB), RIGHT (4 ft diam. culvert)

Approximated by modeling 2- 4x5 RCB

X3 used to confine flow

X1 (M)	13	42	2728	2990	800	950	1080			
X3				2990		2231.3				
GR	2231.7	2000	2230.1	2062	2230.1	2086	2230.1	2111	2230.1	2161
GR	2230.1	2227	2230.1	2243	2230.1	2326	2230.1	2394	2232.7	2441
GR	2233.0	2479	2228.3	2520	2232.0	2577	2235.4	2618	2229.5	2656
GR	2230.9	2690	2234.6	2728	2227.8	2758	2224.4	2787	2221.8	2829
GR	2218.9	2848	2222.7	2864	2223.1	2883	2223.5	2926	2227.8	2962
GR	2231.3	2990	2227.3	3010	2223.7	3023	2223.7	3040	2223.7	3064
GR	2224.2	3079	2225.7	3102	2226.3	3132	2226.3	3155	2226.3	3180
GR	2228.0	3190	2224.4	3234	2224.3	3299	2229.6	3326	2229.6	3363
GR	2230.5	3441	2237.1	3770						

IC				.3	.5
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X1 (N)	13.1	11	2870	2930	120	120	120			
X3	10							2230	2230	
GR	2235	1950	2234.4	2000	2234	2220	2233.7	2450	2232.4	2700
GR	2224	2870	2224	2930	2232.9	3270	2234	3460	2237.5	3700
GR	2235	3900								

SC	2.013	.5	3	0	5	4	50	1.1	2224.2	2224
X1	13.2				50	50	50			
X2			2	2229	2231.1					
X3	10							2231.1	2231.1	
BT	-4	2700	2232.4		2870	2231.1		2930	2231.4	
BT		3270	2232.9							

NC .1 .3
CROSS SECTIONS 13.5-15 FROM ORIGINAL JMM
X3 used to confine flow

X1 (b)	13.5	35	2597	2724	150	150	150			
X3						2931	2238			
GR	2239.0	1700	2237	1750	2234.1	2156	2236.2	2266	2236.8	2329
GR	2234.3	2394	2233.7	2437	2230.8	2509	2230.7	2531	2237.8	2577
GR	2236.9	2597	2230.5	2637	2230.3	2660	2227.1	2667	2226.9	2704
GR	2228.3	2718	2232	2724	2230.9	2757	2229.4	2791	2230.3	2850
GR	2233.6	2875	2233.9	2897	2238	2931	2232	3005	2235.4	3072
GR	2238.8	3093	2237.8	3120	2233.2	3147	2233.2	3174	2231.1	3202
GR	2232.5	3229	2232.5	3267	2233.6	3324	2236.0	3540	2240	3550

NC	.035	.035	.035							
X1 (P)	14	38	2602	3052	800	750	810			
GR	2251.8	2000	2250.2	2051	2249.1	2072	2249.1	2099	2247.2	2125
GR	2247.2	2192	2247.2	2233	2247.7	2275	2247.7	2345	2246.6	2387
GR	2246.6	2401	2246.6	2423	2243.7	2448	2242.9	2492	2243.6	2519
GR	2243.8	2542	2243.8	2561	2245.2	2579	2245.2	2602	2244.1	2622
GR	2244.1	2663	2242.4	2696	2240.5	2720	2239.8	2748	2237.4	2756
GR	2237.4	2768	2240.0	2771	2238.7	2808	2237.2	2813	2237.1	2830
GR	2239.8	2836	2240.5	2852	2238.4	2871	2238.7	2894	2242.1	2927
GR	2245.3	2992	2252.1	3035	2253.9	3052				

CROSS SECTIONS 15-16 I-15 MODELED BY ORIGINAL JMM
Adjusted Top of Road from JMM workmap
Modified X-sections 15.1, 15.2 for ineffective flow areas

X1 (Q)	15.0	8	2370	2770	750	810	820			
GR	2263.0	2000	2260.0	2070	2252.0	2200	2252.0	2370	2248.0	2550.
GR	2245.0	2640	2245.0	2660	2260.0	2770				

NC			0.3	0.5						
X1 (R)	15.1	35	2569	2682	750	800	950		4	
X3	10							2268	2268	
GR	2267.4	2000	2266.8	2021	2263.0	2053	2261.8	2103	2261.8	2149
GR	2261.8	2160	2261.8	2180	2261.4	2211	2260	2233	2260	2260
GR	2260	2281	2260	2311	2260	2328	2259.2	2357	2259.2	2411
GR	2259.2	2435	2259.2	2465	2259.6	2478	2259.6	2497	2259.6	2512
GR	2260.7	2523	2259.9	2569	2254.9	2584	2254.9	2601	2259.4	2603
GR	2259.3	2610	2257.3	2622	2257.6	2644	2259.1	2667	2260.3	2682
GR	2260.3	2705	2260.8	2748	2262.6	2802	2266.2	2847	2268.6	2891

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 1.000

CROSS SECTION 1			ESTIMATE JUST UPSTREAM OF CONFLUENCE						
1.000	5.00	2077.00	.00	2075.00	2078.48	1.48	.00	.00	2072.00
2900.0	100.1	2540.7	259.2	17.9	250.0	41.7	.0	.0	2072.00
.00	5.61	10.16	6.22	.035	.035	.035	.000	2072.00	2.86
.006701	0.	0.	0.	0	0	2	.00	73.81	76.67

CCHV= .100 CEHV= .300

*SECNO 2.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

CROSS SECTION 2			FROM ORIGINAL JMM						
2.000	2.19	2087.89	2087.56	.00	2088.07	.18	9.46	.13	2089.60
2900.0	.0	508.8	2391.2	.0	145.2	707.1	18.0	13.5	2087.10
.11	.00	3.50	3.38	.000	.040	.040	.000	2085.70	2630.68
.007338	1350.	1350.	1350.	21	17	0	.00	795.99	3426.67

*SECNO 3.000

3280 CROSS SECTION 3.00 EXTENDED 1.27 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 3			ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL						
3.000	6.27	2100.27	2100.27	.00	2102.65	2.38	7.49	.66	2094.00
2900.0	766.8	2133.2	.0	75.4	163.2	.0	27.4	20.8	2099.00
.13	10.17	13.07	.00	.040	.040	.000	.000	2094.00	.00
.014381	750.	750.	750.	20	20	0	.00	50.00	50.00

*SECNO 1600.000

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

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

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	8.03	2103.53	.00	.00	2105.99	2.47	3.32	.03	2104.80
2900.0	.0	2900.0	.0	.0	230.0	.0	29.2	21.1	2104.80
.13	.00	12.61	.00	.000	.030	.000	.000	2095.50	1.36
.007053	340.	340.	340.	2	0	0	.00	37.27	38.64

*SECNO 1560.000

1560.000	8.67	2104.37	.00	.00	2106.39	2.02	.36	.04	2105.00
2900.0	.0	2900.0	.0	.0	254.1	.0	29.4	21.1	2105.00
.14	.00	11.41	.00	.000	.044	.000	.000	2095.70	.68
.011510	40.	40.	40.	3	0	0	.00	38.64	39.32

*SECNO 1384.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1384.000	8.94	2105.54	2105.54	.00	2108.59	3.05	1.80	.31	2105.70
2900.0	.0	2900.0	.0	.0	207.0	.0	30.4	21.3	2106.00
.14	.00	14.01	.00	.000	.030	.000	.000	2096.60	.24
.009159	166.	176.	179.	3	8	0	.00	34.30	34.54

*SECNO 1000.000

3280 CROSS SECTION 1000.00 EXTENDED 2.41 FEET

1000.000	10.31	2109.01	.00	.00	2112.09	3.08	3.49	.01	2106.60
2900.0	.0	2900.0	.0	.0	206.0	.0	32.2	21.5	2108.60
.15	.00	14.08	.00	.000	.030	.000	.000	2098.70	.00
.009032	364.	384.	390.	0	0	0	.00	25.00	25.00

*SECNO 600.000

3280 CROSS SECTION 600.00 EXTENDED 2.88 FEET

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

600.000	9.08	2112.88	2112.88	.00	2116.65	3.77	4.14	.21	2110.00
2900.0	.0	2900.0	.0	.0	186.2	.0	34.0	21.8	2114.10
.15	.00	15.57	.00	.000	.030	.000	.000	2103.80	.00
.011983	420.	400.	377.	2	11	0	.00	24.99	24.99

*SECNO 300.000

3280 CROSS SECTION 300.00 EXTENDED 2.88 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

300.000	9.08	2117.38	2117.38	.00	2121.15	3.77	3.60	.00	2114.50
2900.0	.0	2900.0	.0	.0	186.1	.0	35.3	21.9	2119.30
.16	.00	15.59	.00	.000	.030	.000	.000	2108.30	.00
.012012	300.	300.	300.	2	5	0	.00	24.98	24.98

*SECNO .000

3280 CROSS SECTION .00 EXTENDED .65 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.51

CROSS SECTIONS 0-1.3 ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

.000	10.05	2121.65	.00	.00	2122.18	.53	.71	.32	2111.60
2900.0	759.3	1662.1	478.6	287.6	231.1	115.3	38.1	22.7	2111.60
.17	2.64	7.19	4.15	.030	.030	.030	.000	2111.60	.00
.000973	300.	300.	300.	3	0	0	.00	195.83	195.83

CCHV= .300 CEHV= .500

*SECNO 1.100

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

3280 CROSS SECTION 1.10 EXTENDED .67 FEET

1.100	10.06	2121.67	.00	.00	2122.19	.53	.01	.00	2111.60
2900.0	765.1	1656.2	478.8	290.1	231.5	116.2	38.2	22.8	2111.60
.17	2.64	7.15	4.12	.030	.030	.030	.000	2111.60	.00
.000960	10.	10.	10.	2	0	0	.00	196.63	196.63

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3	.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60	

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2142.37..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2137.67 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 1.200

3280 CROSS SECTION 1.20 EXTENDED .26 FEET

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2142.37	2137.67	-.24	1645.	1254.	8.029	115.5	2118.50	208.

1.200	9.65	2121.25	.00	.00	2121.95	.70	-.24	.00	2111.60
2900.0	638.9	1783.2	478.0	238.2	222.1	100.4	39.8	23.2	2111.60
.18	2.68	8.03	4.76	.030	.030	.030	.000	2111.60	.00
.001277	110.	110.	110.	3	0	0	.00	180.26	180.26

CCHV= .100 CEHV= .300

*SECNO 1.300

3280 CROSS SECTION 1.30 EXTENDED .37 FEET

1.300	9.77	2121.37	.00	.00	2122.02	.64	.06	.01	2111.60
2900.0	677.1	1745.2	477.7	253.2	224.8	104.3	40.4	23.4	2111.60
.18	2.67	7.76	4.58	.030	.030	.030	.000	2111.60	.00
.001175	50.	50.	50.	2	0	0	.00	184.99	184.99

*SECNO 415.000

3280 CROSS SECTION 415.00 EXTENDED .68 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.73	2125.17	2125.17	.00	2126.21	1.04	.02	.12	2122.30
2900.0	61.3	1736.0	1102.7	15.2	175.4	243.3	40.5	23.5	2122.30
.18	4.03	9.90	4.53	.030	.030	.030	.000	2115.44	.00
.004064	10.	10.	10.	20	6	0	.00	180.00	180.00

*SECNO 185.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

185.000	9.91	2131.21	2131.21	.00	2132.73	1.51	1.07	.14	2128.90
2900.0	33.8	2011.9	854.3	8.6	178.7	152.8	42.6	24.2	2128.90
.19	3.91	11.26	5.59	.030	.030	.030	.000	2121.30	2.54
.005457	229.	229.	229.	20	8	0	.00	107.24	109.78

*SECNO 20.000

3280 CROSS SECTION 20.00 EXTENDED 1.91 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

20.000	6.91	2133.81	2133.81	.00	2135.12	1.31	1.00	.02	2134.70
2900.0	.0	1499.5	1400.5	.0	138.4	200.8	43.9	24.7	2131.00
.19	.00	10.84	6.98	.000	.030	.030	.000	2126.90	.01
.006485	158.	165.	173.	20	18	0	.00	104.99	105.00

*SECNO .000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.37

CROSS SECTIONS 0-5

AMIGO STREET

REMOVED CULVERT 1- 4x7 RCB

From Lewis Homes Paradise Plans
proposed culverts

.000	8.32	2135.02	2134.24	.00	2135.27	.25	.05	.11	2132.00
2900.0	988.1	1124.6	787.2	398.7	202.5	271.6	44.2	24.8	2132.00
.20	2.48	5.55	2.90	.030	.030	.030	.000	2126.70	33.25
.001155	20.	20.	20.	8	8	0	.00	381.95	415.20

*SECNO .110 (A)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .65

.110	8.08	2134.78	.00	.00	2135.47	.69	.07	.13	2132.00
2900.0	130.6	1639.3	1130.1	40.8	196.8	324.0	44.8	25.1	2132.00
.20	3.20	8.33	3.49	.030	.030	.030	.000	2126.70	240.68
.002696	40.	40.	40.	3	0	0	.00	272.88	513.56

CCHV= .100 CEHV= .300

*SECNO 5.000 (B)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5.000	3.29	2138.19	2138.19	.00	2138.99	.80	.68	.03	2139.10
2900.0	.0	2900.0	.0	.0	403.2	.0	46.2	25.8	2138.80
.20	.00	7.19	.00	.000	.035	.000	.000	2134.90	2621.17
.016389	125.	125.	125.	20	18	0	.00	264.48	2885.65

*SECNO 7.000 (C)

3470 ENCROACHMENT STATIONS=.0 2837.0 TYPE= 1 TARGET= 2836.999

CROSS SECTION 7

FROM ORIGINAL JMM - adjusted from new topo

X3 card used to confine flow

7.000	4.07	2157.87	.00	.00	2158.82	.95	19.78	.04	2158.50
2900.0	.0	2899.2	.8	.0	370.2	.7	58.6	32.9	2157.60
.25	.00	7.83	1.23	.000	.035	.035	.000	2153.80	2562.72
.012309	1400.	1400.	1400.	5	0	0	.00	176.11	2738.84

*SECNO 7.100 (D)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 7.1

BERMUDA ROAD

Culvert not modeled(1- 2.5 ft CMP)- ineffective

Top of road modeled in GR cards-used new topo

7.100	2.70	2160.70	2160.70	.00	2161.32	.62	.98	.03	2160.00
2900.0	401.4	2490.0	8.5	111.2	374.1	3.7	59.4	33.4	2160.00
.26	3.61	6.66	2.32	.035	.035	.035	.000	2158.00	2432.49
.012112	80.	80.	80.	20	23	0	.00	398.02	2830.51

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

CCHV= .100 CEHV= .300

*SECNO 8.000 (E)

CROSS SECTIONS 8-9

FROM ORIGINAL JMM

CROSS SECTION 8

FAIRFIELD STREET - NO CULVERTS

8.000	3.46	2167.26	.00	.00	2167.86	.59	6.53	.00	2170.10
2900.0	.0	2900.0	.0	.0	469.2	.0	66.0	38.0	2172.30
.28	.00	6.18	.00	.000	.035	.000	.000	2163.80	2528.13
.010025	585.	595.	585.	4	0	0	.00	265.94	2794.07

*SECNO 8.500

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION 8.5

FROM ORIGINAL JMM - used new topo

8.500	2.51	2168.51	2168.51	.00	2169.45	.94	1.44	.10	2170.00
2900.0	.0	2900.0	.0	.0	373.4	.0	67.1	38.6	2172.40
.29	.00	7.77	.00	.000	.035	.000	.000	2166.00	2429.82
.014721	120.	120.	120.	2	19	0	.00	201.54	2631.36

*SECNO 9.000 (F)

3301 HV CHANGED MORE THAN HVINS

9.000	7.80	2175.60	2175.51	.00	2177.84	2.24	8.00	.39	2171.40
2900.0	456.6	2443.4	.0	86.4	189.6	.0	72.2	40.6	2176.40
.30	5.29	12.89	.00	.060	.035	.000	.000	2167.80	2664.44
.009621	680.	680.	680.	7	20	0	.00	60.72	2725.16

*SECNO 9.100 (G)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 9.1

PLACID STREET

Culvert not modeled (2- 2.5 ft CMP) - ineffective

Top of road modeled in GR cards- used new topo

9.100	2.39	2178.29	2178.29	.00	2179.18	.89	.94	.13	2178.00
2900.0	1.2	2898.4	.4	1.4	382.2	.5	72.8	40.9	2178.00
.31	.84	7.58	.83	.060	.035	.060	.000	2175.90	2655.52
.014819	80.	80.	80.	20	17	0	.00	228.13	2883.65

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

*SECNO 10.000 (H)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

CROSS SECTIONS 10-11		FROM ORIGINAL JMM							
CROSS SECTION 10		GILESPIE STREET - NO CULVERTS							
10.000	6.51	2191.71	.00	.00	2192.50	.79	13.31	.01	2193.00
2900.0	.0	2772.2	127.8	.0	379.9	80.4	85.3	48.3	2191.00
.36	.00	7.30	1.59	.000	.035	.060	.000	2185.20	2726.79
.007545	1295.	1295.	1275.	5	0	0	.00	270.86	2997.65

*SECNO 10.500 (I)

CROSS SECTION 10.5		used new topo							
10.500	4.76	2192.56	.00	.00	2193.12	.55	.59	.02	2189.90
2900.0	524.9	2309.8	65.3	217.7	351.2	32.0	86.6	48.9	2190.10
.36	2.41	6.58	2.04	.060	.035	.060	.000	2187.80	2213.64
.004206	90.	110.	90.	2	0	0	.00	252.04	2465.68

*SECNO 11.000 (J)

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2694.0 3773.0 TYPE= 1 TARGET= -2694.000

ELENCL= 2203.70 ELENCR= 100000.00

CROSS SECTION 11		Adjusted to reflect actual flow path							
11.000	4.88	2197.28	2197.28	.00	2198.75	1.47	4.59	.27	2205.10
2900.0	.0	2900.0	.0	.0	298.5	.0	93.5	51.6	2210.10
.38	.00	9.71	.00	.000	.035	.000	.000	2192.40	2752.57
.013091	670.	670.	670.	3	8	0	.00	104.37	2856.94

*SECNO 11.100 (K)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 11.1 RANCHO DESTINO

Culvert not modeled(1- 4 ft CMP) - ineffective

Top of road modeled in GR cards - used new topo

11.100	1.88	2205.08	2205.08	.00	2205.65	.57	1.72	.09	2204.20
2900.0	528.2	2360.3	11.5	186.3	358.1	6.4	94.7	52.4	2204.20
.39	2.83	6.59	1.79	.060	.035	.060	.000	2203.20	2285.13
.015732	120.	120.	120.	20	22	0	.00	489.49	2774.62

CCHV= .100 CEHV= .300

*SECNO 12.000 (L)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.94

3470 ENCROACHMENT STATIONS= 2714.0 2942.0 TYPE= 1 TARGET= 228.000

ELENCL= 2219.20 ELENCR= 2215.40

CROSS SECTION 12

FROM ORIGINAL JMM

CROSS SECTION 12

Added x3 to reflect actual flow path

12.000	5.35	2212.85	.00	.00	2213.46	.60	7.80	.01	2211.20
2900.0	34.5	2859.9	5.5	15.5	455.8	4.0	107.3	60.4	2211.80
.43	2.23	6.27	1.39	.038	.035	.045	.000	2207.50	2765.20
.004200	1095.	1065.	995.	5	0	0	.00	158.39	2923.60

*SECNO 13.000 (M)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 2990.0 TYPE= 1 TARGET= 2989.999

CROSS SECTIONS 13-13.5 LAS VEGAS BLVD.

MODELED SC, 2 CULVERTS

LEFT (5x5 RCB), RIGHT (4 ft diam. culvert)

Approximated by modeling 2- 4x5 RBC

X3 used to confine flow

13.000	5.99	2224.89	2224.89	.00	2226.01	1.12	7.56	.15	2234.60
2900.0	.0	2900.0	.0	.0	341.8	.0	117.4	64.2	2231.30
.47	.00	8.49	.00	.000	.035	.000	.000	2218.90	2782.84
.013992	800.	1080.	950.	20	8	0	.00	154.77	2937.62

CCHV= .300 CEHV= .500

*SECNO 13.100 (N)

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

13.100	6.03	2230.03	2230.03	.00	2230.12	.09	.17	.31	2224.00
2900.0	676.0	1145.9	1078.1	368.4	362.0	695.3	119.8	65.0	2224.00
.48	1.84	3.17	1.55	.038	.035	.045	.000	2224.00	2747.89
.000506	120.	120.	120.	20	17	0	.00	412.60	3160.49

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
2		.013	.50	3.00	.00	5.00	4.00	50.00	1	1	2224.20	2224.00

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2444.59..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2372.55 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 13.200

3840	SECTION NOT HIGH ENOUGH	2444.590	2285.000	2224.000	2285.000	2227.144	6
3840	SECTION NOT HIGH ENOUGH	2444.590	2335.000	2224.000	2335.000	2227.144	6
3840	SECTION NOT HIGH ENOUGH	2444.590	2385.000	2224.000	2385.000	2227.144	6
3840	SECTION NOT HIGH ENOUGH	2444.590	2435.000	2224.000	2435.000	2227.144	6

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.71

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2444.59	2372.55	3.07	2439.	468.	1.544	39.3	2231.10	570.

13.200	9.17	2233.17	.00	.00	2233.19	.02	3.07	.00	2224.00
2900.0	809.5	850.1	1240.4	904.2	550.6	1613.9	122.4	65.7	2224.00
.50	.90	1.54	.77	.038	.035	.045	.000	2224.00	2550.52
.000069	50.	50.	50.	1	0	0	.00	767.38	3317.90

CCHV= .100 CEHV= .300

*SECNO 13.500 (0)

3265 DIVIDED FLOW

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .22

3470 ENCROACHMENT STATIONS= .0 2931.0 TYPE= 1 TARGET= 2930.999

CROSS SECTIONS 13.5-15 FROM ORIGINAL JMM

X3 used to confine flow

13.500	6.18	2233.08	.00	.00	2233.26	.18	.03	.05	2236.90
2900.0	261.9	1744.5	893.6	134.1	432.3	373.2	129.3	67.6	2232.00
.51	1.95	4.04	2.39	.038	.035	.045	.000	2226.90	2452.41
.001372	150.	150.	150.	2	0	0	.00	344.18	2871.05

*SECNO 14.000 (P)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

14.000	3.86	2240.96	2240.96	.00	2241.92	.96	2.61	.23	2245.20
2900.0	.0	2900.0	.0	.0	369.5	.0	141.2	72.6	2253.90
.54	.00	7.85	.00	.000	.035	.000	.000	2237.10	2714.14
.015502	800.	810.	750.	20	14	0	.00	201.83	2915.97

*SECNO 15.000 (Q)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.51

CROSS SECTIONS 15-16 I-15 MODELED BY ORIGINAL JMM

Adjusted Top of Road from JMM workmap

Modified X-sections 15.1, 15.2 for ineffective flow areas

15.000	4.46	2249.46	.00	.00	2250.04	.57	8.08	.04	2252.00
2900.0	.0	2900.0	.0	.0	477.3	.0	149.1	76.4	2260.00
.58	.00	6.08	.00	.000	.035	.000	.000	2245.00	2484.14
.006810	750.	820.	810.	5	0	0	.00	208.60	2692.73

CCHV= .300 CEHV= .500

*SECNO 15.100 (R)

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2268.00 ELREA= 2268.00

15.100	5.54	2264.44	2264.44	.00	2265.85	1.41	9.00	.42	2263.90
2900.0	.0	2900.0	.0	.0	304.4	.0	157.7	79.9	2264.30
.60	.00	9.53	.00	.000	.035	.000	.000	2258.90	2569.00
.014072	750.	950.	800.	13	11	0	.00	113.00	2682.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.00	1.76	3.00	.00	12.00	.01	60.00	.00	2261.00	2259.70	

*SECNO 15.200

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 6.04

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2328.28	2322.02	.01	1992.	914.	60.	60.	2266.00	2268.90	981.
15.200	8.91	2270.71	.00	.00	2270.78	.07	4.93	.00	2261.80
2900.0	506.5	575.2	1818.3	361.9	160.4	1148.1	162.7	82.4	2261.80
.64	1.40	3.59	1.58	.035	.035	.035	.000	2261.80	2309.49
.000386	220.	220.	220.	2	0	8	.00	858.14	3167.63

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 MICHAEL BAKER JR. INC.
T3 BLUE DIAMOND WASH - 100 YEAR FLOODWAY

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2076	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

*PROF 2

CCHV= .100 CEHV= .300

*SECNO 1.000

2800 NAT Q1= 354.27 WSEL= 2077.00 ENC Q1= 363.82 WSEL= 2077.50 RATIO= -.0269

NAT Q1= 420. RATIOS LOB, CH, ROB= .0375 .8654 .0971 WSEL= 2077.50

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10.0 60.0 TYPE= 4 TARGET= .135

CROSS SECTION 1 ESTIMATE JUST UPSTREAM OF CONFLUENCE

1.000	4.71	2076.71	2076.71	2077.00	2079.06	2.36	.00	.00	2072.00
2900.0	.0	2900.0	.0	.0	235.5	.0	.0	.0	2072.00
.00	.00	12.32	.00	.000	.035	.000	.000	2072.00	10.00
.013416	0.	0.	0.	0	7	0	.00	50.00	60.00

CCHV= .100 CEHV= .300

*SECNO 2.000

2800 NAT Q1= 338.54 WSEL= 2087.89 ENC Q1= 338.54 WSEL= 2088.39 RATIO= .0000

NAT Q1= 648. RATIOS LOB, CH, ROB= .0326 .1594 .8080 WSEL= 2088.39

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS= 2578.0 3082.9 TYPE= 4 TARGET= .478

CROSS SECTION 2 FROM ORIGINAL JMM

2.000	2.95	2088.65	.00	2087.89	2088.85	.19	9.57	.22	2089.60
2900.0	.0	861.9	2038.1	.0	247.4	572.9	16.4	8.1	2087.10
.11	.00	3.48	3.56	.000	.040	.040	.000	2085.70	2609.85
.004371	1350.	1350.	1350.	6	0	0	.00	473.09	3082.95

*SECNO 3.000

2800 NAT Q1= 241.83 WSEL= 2100.27 ENC Q1= 241.83 WSEL= 2100.77 RATIO= .0000

NAT Q1= 281. RATIOS LOB, CH, ROB= .2755 .7245 .0000 WSEL= 2100.77

3280 CROSS SECTION 3.00 EXTENDED 1.59 FEET

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

3470 ENCROACHMENT STATIONS= 12.8 50.0 TYPE= 4 TARGET= .141

CROSS SECTION 3 ESTIMATE DOWNSTREAM OF ROBINDALE CHANNEL

3.000	6.59	2100.59	2100.59	2100.27	2103.55	2.96	5.68	.83	2094.00
2900.0	430.9	2469.1	.0	40.8	172.6	.0	25.3	12.5	2099.00
.12	10.57	14.30	.00	.040	.040	.000	.000	2094.00	12.84
.016170	750.	750.	750.	20	17	0	.00	37.16	50.00

*SECNO 1600.000

2800 NAT Q1= 345.32 WSEL= 2103.53 ENC Q1= 360.52 WSEL= 2103.73 RATIO= -.0440

NAT Q1= 361. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2103.73

3301 HV CHANGED MORE THAN HVINS

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

CROSS SECTIONS 1600-0 FROM BUCKINGHAM ESTATES CLOMR

ROBINDALE CHANNEL

several cross section deleted

1600.000	9.01	2104.51	.00	2103.53	2106.34	1.82	2.67	.11	2154.80
2900.0	.0	2900.0	.0	.0	267.7	.0	27.1	12.8	2104.80
.13	.00	10.83	.00	.000	.030	.000	.000	2095.50	.31
.004633	340.	340.	340.	2	0	0	.00	39.39	39.69

*SECNO 1560.000

2800 NAT Q1= 270.30 WSEL= 2104.37 ENC Q1= 282.05 WSEL= 2104.57 RATIO= -.0435

NAT Q1= 282. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2104.57

1560.000	9.15	2104.85	.00	2104.37	2106.60	1.75	.26	.01	2155.00
2900.0	.0	2900.0	.0	.0	272.9	.0	27.4	12.8	2105.00
.13	.00	10.63	.00	.000	.044	.000	.000	2095.70	.16
.009446	40.	40.	40.	2	0	0	.00	39.67	39.84

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 1384.000

2800 NAT Q1= 303.02 WSEL= 2105.54 ENC Q1= 316.90 WSEL= 2105.74 RATIO= -.0458
 NAT Q1= 317. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2105.74

3301 HV CHANGED MORE THAN HVINS

1384.000	9.00	2105.60	2105.55	2105.54	2108.59	2.99	1.62	.37	2155.70
2900.0	.0	2900.0	.0	.0	209.0	.0	28.4	13.0	2106.00
.13	.00	13.88	.00	.000	.030	.000	.000	2096.60	.15
.008927	166.	176.	179.	6	8	0	.00	34.45	34.60

*SECNO 1000.000

2800 NAT Q1= 305.14 WSEL= 2109.01 ENC Q1= 315.39 WSEL= 2109.21 RATIO= -.0336
 NAT Q1= 315. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2109.21

3280 CROSS SECTION 1000.00 EXTENDED 2.52 FEET

1000.000	10.42	2109.12	.00	2109.01	2112.12	3.00	3.53	.00	2156.60
2900.0	.0	2900.0	.0	.0	208.6	.0	30.2	13.2	2108.60
.14	.00	13.90	.00	.000	.030	.000	.000	2098.70	.00
.009458	364.	384.	390.	2	0	0	.00	25.00	25.00

*SECNO 600.000

2800 NAT Q1= 264.92 WSEL= 2112.88 ENC Q1= 274.96 WSEL= 2113.08 RATIO= -.0379
 NAT Q1= 275. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2113.08

3280 CROSS SECTION 600.00 EXTENDED 3.02 FEET

3301 HV CHANGED MORE THAN HVINS

600.000	9.22	2113.02	2112.89	2112.88	2116.65	3.63	4.34	.19	2160.00
2900.0	.0	2900.0	.0	.0	189.7	.0	32.0	13.5	2114.10
.15	.00	15.29	.00	.000	.030	.000	.000	2103.80	.00
.012584	420.	400.	377.	4	11	0	.00	24.99	24.99

*SECNO 300.000

2800 NAT Q1= 264.60 WSEL= 2117.38 ENC Q1= 274.64 WSEL= 2117.58 RATIO= -.0379
 NAT Q1= 275. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2117.58

3280 CROSS SECTION 300.00 EXTENDED 2.84 FEET

7185 MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

300.000	9.04	2117.34	2117.34	2117.38	2121.15	3.81	3.90	.05	2164.50
2900.0	.0	2900.0	.0	.0	185.1	.0	33.3	13.6	2119.30
.15	.00	15.67	.00	.000	.030	.000	.000	2108.30	.00
.013417	300.	300.	300.	2	5	0	.00	24.98	24.98

*SECNO .000

2800 NAT Q1= 929.74 WSEL= 2121.65 ENC Q1= 929.74 WSEL= 2122.65 RATIO= .0000

NAT Q1= 1296. RATIOS LOB, CH, ROB= .3430 .4817 .1754 WSEL= 2122.65

3280 CROSS SECTION .00 EXTENDED .39 FEET

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS= 64.3 153.0 TYPE= 4 TARGET= .283

CROSS SECTIONS 0-1.3 ROBINDALE ROAD

MODELED AS SC, 3- 4x7 RCB

From Buckingham Estates Plans

.000	9.79	2121.39	.00	2121.65	2122.62	1.23	1.21	.26	2111.60
2900.0	558.7	2237.0	104.4	150.4	225.2	27.3	35.3	14.0	2111.60
.16	3.72	9.94	3.82	.030	.030	.030	.000	2111.60	64.34
.001921	300.	300.	300.	5	0	0	.00	88.67	153.01

CCHV= .300 CEHV= .500

*SECNO 1.100

2800 NAT Q1= 936.17 WSEL= 2121.67 ENC Q1= 936.17 WSEL= 2122.67 RATIO= .0000

NAT Q1= 1304. RATIOS LOB, CH, ROB= .3442 .4802 .1757 WSEL= 2122.67

3280 CROSS SECTION 1.10 EXTENDED .50 FEET

3470 ENCROACHMENT STATIONS= 64.1 153.1 TYPE= 4 TARGET= .282

1.100	9.89	2121.49	.00	2121.67	2122.66	1.17	.02	.02	2111.60
2900.0	584.8	2209.1	106.1	157.8	227.6	28.2	35.4	14.1	2111.60
.16	3.71	9.71	3.76	.030	.030	.030	.000	2111.60	64.07
.001807	10.	10.	10.	2	0	0	.00	89.01	153.08

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.013	.40	3.00	.00	7.00	4.00	100.00	1	1	2112.60	2111.60

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2142.37..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2137.50 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 1.200

2800 NAT Q1= 811.40 WSEL= 2121.25 ENC Q1= 811.40 WSEL= 2122.25 RATIO= .0000

NAT Q1= 1141. RATIOS LOB, CH, ROB= .3152 .5151 .1697 WSEL= 2122.25

3301 HV CHANGED MORE THAN HVINS

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2142.37	2137.50	-.76	1640.	1247.	11.997	115.5	2118.50	206.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=	67.3	152.0	TYPE=	4	TARGET=	.289
1.200	9.03	2120.63	2120.55	2121.25	2122.57	1.95
2900.0	341.8	2490.7	67.5	96.4	207.6	17.3
.17	3.55	12.00	3.90	.030	.030	.030
.003121	110.	110.	110.	20	11	0
						.00
						84.73
						152.02

CCHV= .100 CEHV= .300

*SECNO 1.300

2800 NAT Q1= 846.03 WSEL= 2121.37 ENC Q1= 846.03 WSEL= 2122.37 RATIO= .0000

NAT Q1= 1187. RATIOS LOB, CH, ROB= .3243 .5043 .1713 WSEL= 2122.37

3280 CROSS SECTION 1.30 EXTENDED .55 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	65.7	152.3	TYPE=	4	TARGET=	.287
1.300	9.95	2121.55	.00	2121.37	2122.77	1.21
2900.0	580.1	2250.8	69.1	156.5	228.9	21.4
.17	3.71	9.83	3.23	.030	.030	.030
.001840	50.	50.	50.	6	0	0
						.00
						86.57
						152.27

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

*SECNO 415.000

2800 NAT Q1= 454.92 WSEL= 2125.17 ENC Q1= 454.92 WSEL= 2126.17 RATIO= .0000
 NAT Q1= 717. RATIOS LOB, CH, ROB= .0293 .4473 .5234 WSEL= 2126.17
 3280 CROSS SECTION 415.00 EXTENDED .68 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10.0 64.5 TYPE= 4 TARGET= .366

CROSS SECTIONS 415-0 ROBINDALE CHANNEL

North of Robindale Road, East of Amigo Street

Subcritical run taken from Lewis Homes Paradise submittal

Not an official CLOMR request - best available data

415.000	9.73	2125.17	2125.17	2125.17	2127.29	2.12	.03	.27	2122.30
2900.0	.0	2225.4	674.6	.0	175.5	89.5	36.9	14.4	2122.30
.17	.00	12.68	7.53	.000	.030	.030	.000	2115.44	10.00
.007489	10.	10.	10.	20	8	0	.00	54.48	64.48

*SECNO 185.000

2800 NAT Q1= 392.56 WSEL= 2131.21 ENC Q1= 392.56 WSEL= 2132.21 RATIO= .0000
 NAT Q1= 566. RATIOS LOB, CH, ROB= .0215 .5647 .4138 WSEL= 2132.21

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 10.0 54.2 TYPE= 4 TARGET= .307

185.000	10.16	2131.46	2131.46	2131.21	2134.02	2.56	1.82	.13	2128.90
2900.0	.0	2482.4	417.6	.0	183.1	57.2	38.2	14.7	2128.90
.17	.00	13.56	7.30	.000	.030	.030	.000	2121.30	10.00
.008457	229.	229.	229.	20	8	0	.00	44.17	54.17

*SECNO 20.000

2800 NAT Q1= 360.12 WSEL= 2133.81 ENC Q1= 360.12 WSEL= 2134.21 RATIO= .0000
 NAT Q1= 428. RATIOS LOB, CH, ROB= .0000 .4741 .5259 WSEL= 2134.21

3280 CROSS SECTION 20.00 EXTENDED 2.06 FEET

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

3470 ENCROACHMENT STATIONS=	.0	75.1	TYPE=	4	TARGET=	.158
20.000	7.06	2133.96	2133.96	2133.81	2135.70	1.75
2900.0	.0	1698.7	1201.3	.0	141.3	146.7
.18	.00	12.02	8.19	.000	.030	.030
.007818	158.	165.	173.	20	19	0

*SECNO .000

2800 NAT Q1= 853.48 WSEL= 2135.02 ENC Q1= 853.48 WSEL= 2135.42 RATIO= .0000
 NAT Q1= 1076. RATIOS LOB, CH, ROB= .3823 .3339 .2838 WSEL= 2135.42

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.86

3470 ENCROACHMENT STATIONS=	128.7	358.8	TYPE=	4	TARGET=	.207
CROSS SECTIONS 0-5	AMIGO STREET					
	REMOVED CULVERT 1- 4x7 RCB					
	From Lewis Homes Paradise Plans					
	proposed culverts					
.000	8.93	2135.63	2134.22	2135.02	2135.89	.26
2900.0	1069.6	1157.9	672.5	369.0	218.1	206.6
.18	2.90	5.31	3.25	.030	.030	.030
.000956	20.	20.	20.	11	8	0

*SECNO .110 (A)

2800 NAT Q1= 558.49 WSEL= 2134.78 ENC Q1= 558.49 WSEL= 2135.18 RATIO= .0000
 NAT Q1= 696. RATIOS LOB, CH, ROB= .0515 .4920 .4565 WSEL= 2135.18

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

3470 ENCROACHMENT STATIONS=	270.0	381.4	TYPE=	4	TARGET=	.198
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SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
.110	8.67	2135.37	.00	2134.78	2136.09	.73	.06	.14	2132.00
2900.0	.0	1680.6	1219.4	.0	211.5	247.2	40.0	15.1	2132.00
.18	.00	7.95	4.93	.000	.030	.030	.000	2126.70	270.00
.002531	40.	40.	40.	2	0	0	.00	111.42	381.42

CCHV= .100 CEHV= .300

*SECNO 5.000 (B)

2800 NAT Q1= 226.53 WSEL= 2138.19 ENC Q1= 383.66 WSEL= 2138.79 RATIO= -.6937

NAT Q1= 384. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2138.79

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2608.0	2894.0	TYPE=	4	TARGET=	.000
5.000	3.29	2138.19	2138.19	2138.19	2138.99	.80
2900.0	.0	2900.0	.0	.0	403.7	.0
.19	.00	7.18	.00	.000	.035	.000
.016324	125.	125.	125.	20	22	0

*SECNO 7.000 (C)

3470 ENCROACHMENT STATIONS=	.0	2837.0	TYPE=	1	TARGET=	2836.999
CROSS SECTION 7	FROM ORIGINAL JMM - adjusted from new topo					
X3 card used to confine flow						
7.000	4.06	2157.86	.00	2157.87	2158.82	.95
2900.0	.0	2899.2	.8	.0	369.8	.6
.24	.00	7.84	1.23	.000	.035	.035
.012349	1400.	1400.	1400.	5	0	0

*SECNO 7.100 (D)

2800 NAT Q1= 263.51 WSEL= 2160.70 ENC Q1= 374.44 WSEL= 2161.30 RATIO= -.4210

NAT Q1= 484. RATIOS LOB, CH, ROB= .2179 .7738 .0083 WSEL= 2161.30

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2600.0	2820.0	TYPE=	4	TARGET=	.226
CROSS SECTIONS 7.1	BERMUDA ROAD					
Culvert not modeled(1- 2.5 ft CMP)- ineffective						
Top of road modeled in GR cards-used new topo						

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

7.100	2.74	2160.74	2160.74	2160.70	2161.63	.89	1.10	.01	2160.00
2900.0	.0	2900.0	.0	.0	382.3	.0	54.4	23.1	2160.00
.24	.00	7.59	.00	.000	.035	.000	.000	2158.00	2600.00
.015425	80.	80.	80.	20	19	0	.00	220.00	2820.00

CCHV= .100 CEHV= .300

*SECNO 8.000 (E)

2800 NAT Q1= 289.64 WSEL= 2167.26 ENC Q1= 469.17 WSEL= 2167.86 RATIO= -.6199
 NAT Q1= 469. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2167.86

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

3470 ENCROACHMENT STATIONS= 2522.0 2905.0 TYPE= 4 TARGET= .000

CROSS SECTIONS 8-9

FROM ORIGINAL JMM

CROSS SECTION 8

FAIRFIELD STREET - NO CULVERTS

8.000	3.61	2167.41	.00	2167.26	2167.92	.50	6.25	.04	2170.10
2900.0	.0	2900.0	.0	.0	510.2	.0	60.5	26.4	2172.30
.27	.00	5.68	.00	.000	.035	.000	.000	2163.80	2527.80
.007603	585.	595.	585.	3	0	0	.00	266.50	2794.30

*SECNO 8.500

2800 NAT Q1= 239.02 WSEL= 2168.51 ENC Q1= 365.83 WSEL= 2169.11 RATIO= -.5305
 NAT Q1= 366. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2169.11

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2400.0 2710.0 TYPE= 4 TARGET= .000

CROSS SECTION 8.5

FROM ORIGINAL JMM - used new topo

8.500	2.51	2168.51	2168.51	2168.51	2169.45	.94	1.24	.13	2170.00
2900.0	.0	2900.0	.0	.0	372.7	.0	61.7	27.1	2172.40
.27	.00	7.78	.00	.000	.035	.000	.000	2166.00	2429.89
.014801	120.	120.	120.	2	19	0	.00	201.43	2631.32

*SECNO 9.000

(F)

2800 NAT Q1= 295.65 WSEL= 2175.60 ENC Q1= 295.65 WSEL= 2176.20 RATIO= .0000
 NAT Q1= 348. RATIOS LOB, CH, ROB= .1752 .8248 .0000 WSEL= 2176.20

3301 HV CHANGED MORE THAN HVINS

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

10.000	6.08	2191.28	2191.28	2191.71	2192.54	1.26	7.68	.27	2193.00
2900.0	.0	2900.0	.0	.0	322.4	.0	80.8	34.3	2191.00
.33	.00	8.99	.00	.000	.035	.000	.000	2185.20	2732.47
.013519	1295.	1295.	1275.	20	14	0	.00	129.53	2862.00

*SECNO 10.500 (I)

2800 NAT Q1= 447.16 WSEL= 2192.56 ENC Q1= 530.19 WSEL= 2193.56 RATIO= -.1857
 NAT Q1= 727. RATIOS LOB, CH, ROB= .2352 .7296 .0351 WSEL= 2193.56

3470 ENCROACHMENT STATIONS= 2345.0 2440.0 TYPE= 4 TARGET= .270

CROSS SECTION 10.5 used new topo

10.500	4.75	2192.55	.00	2192.56	2193.62	1.07	1.06	.02	2189.90
2900.0	.0	2900.0	.0	.0	349.6	.0	81.6	34.5	2190.10
.33	.00	8.30	.00	.000	.035	.000	.000	2187.80	2345.00
.007219	90.	110.	90.	3	0	0	.00	95.00	2440.00

*SECNO 11.000 (J)

3470 ENCROACHMENT STATIONS= 2694.0 3773.0 TYPE= 1 TARGET= -2694.000

ELENCL= 2203.70 ELENCR= 100000.00

CROSS SECTION 11 Adjusted to reflect actual flow path

11.000	5.35	2197.75	.00	2197.28	2198.82	1.07	5.20	.00	2205.10
2900.0	.0	2900.0	.0	.0	349.8	.0	87.0	36.1	2210.10
.36	.00	8.29	.00	.000	.035	.000	.000	2192.40	2749.44
.008362	670.	670.	670.	3	0	0	.00	110.83	2860.26

*SECNO 11.100 (K)

2800 NAT Q1= 231.21 WSEL= 2205.08 ENC Q1= 403.74 WSEL= 2205.88 RATIO= -.7462

NAT Q1= 534. RATIOS LOB, CH, ROB= .2339 .7564 .0097 WSEL= 2205.88

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2500.0 2760.0 TYPE= 4 TARGET= .244

CROSS SECTIONS 11.1 RANCHO DESTINO

Culvert not modeled(1- 4 ft CMP) - ineffective

Top of road modeled in GR cards - used new topo

11.100	2.06	2205.26	2205.26	2205.08	2206.05	.79	1.35	.03	2204.20
2900.0	.0	2900.0	.0	.0	405.4	.0	88.1	36.6	2204.20
.36	.00	7.15	.00	.000	.035	.000	.000	2203.20	2500.00
.015876	120.	120.	120.	20	18	0	.00	260.00	2760.00

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

CCHV= .100 CEHV= .300

*SECNO 12.000 (L)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.02

3470 ENCROACHMENT STATIONS= 2714.0 2942.0 TYPE= 1 TARGET= 228.000

ELENCL= 2219.20 ELENCR= 2215.40

CROSS SECTION 12

FROM ORIGINAL JMM

CROSS SECTION 12

Added x3 to reflect actual flow path

12.000	5.43	2212.93	.00	2212.85	2213.50	.58	7.43	.02	2211.20
2900.0	37.5	2856.1	6.4	17.0	465.7	4.6	99.0	41.8	2211.80
.41	2.21	6.13	1.40	.038	.035	.045	.000	2207.50	2764.35
.003900	1095.	1065.	995.	5	0	0	.00	159.79	2924.14

*SECNO 13.000 (M)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 2990.0 TYPE= 1 TARGET= 2989.999

CROSS SECTIONS 13-13.5 LAS VEGAS BLVD.

MODELED SC, 2 CULVERTS

LEFT (5x5 RCB), RIGHT (4 ft diam. culvert)

Approximated by modeling 2- 4x5 RBC

X3 used to confine flow

13.000	5.97	2224.87	2224.87	2224.89	2226.01	1.13	7.26	.17	2234.60
2900.0	.0	2900.0	.0	.0	339.3	.0	109.2	45.6	2231.30
.45	.00	8.55	.00	.000	.035	.000	.000	2218.90	2782.98
.014299	800.	1080.	950.	20	8	0	.00	154.51	2937.48

CCHV= .300 CEHV= .500

*SECNO 13.100 (N)

2800 NAT Q1= 1289.23 WSEL= 2230.03 ENC Q1= 1289.23 WSEL= 2230.83 RATIO= .0000

NAT Q1= 1714. RATIOS LOB, CH, ROB= .2444 .3658 .3898 WSEL= 2230.83

3301 HV CHANGED MORE THAN HVINS

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

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2842.1	3006.9	TYPE=	4	TARGET=	.248
13.100	6.01	2230.01	2230.01	2230.03	2230.19	.18
2900.0	451.9	1431.5	1016.7	148.6	360.6	385.0
.46	3.04	3.97	2.64	.038	.035	.045
.000800	120.	120.	120.	20	17	0

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
2	.013	.50	3.00	.00	5.00	4.00	50.00	1	1	2224.20	2224.00	

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2444.59..MAY BE TOO LARGE IF INLET CONTROLS.

5135; EGOC= 2372.53 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 13.200

2800 NAT Q1=	3496.11	WSEL=	2233.17	ENC Q1=	3496.11	WSEL=	2233.97	RATIO=	.0000
NAT Q1=	4452.	RATIOS LOB, CH, ROB=	.2965	.2642	.4393	WSEL=	2233.97		

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.90

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2444.59	2372.53	2.98	2409.	467.	1.812	39.3	2231.10	570.

3470 ENCROACHMENT STATIONS=	2803.1	3070.7	TYPE=	4	TARGET=	.215
13.200	9.14	2233.14	.00	2233.17	2233.18	.03
2900.0	691.9	993.8	1214.3	501.1	548.6	1027.2
.47	1.38	1.81	1.18	.038	.035	.045
.000095	50.	50.	50.	2	0	0

CCHV= .100 CEHV= .300

*SECNO 13.500 (0)

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRISW	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 = .26

3470 ENCROACHMENT STATIONS= .0 2931.0 TYPE= 1 TARGET= 2930.999

CROSS SECTIONS 13.5-15 FROM ORIGINAL JMM

X3 used to confine flow

13.500	6.17	2233.07	.00	2233.08	2233.26	.19	.04	.05	2236.90
2900.0	261.0	1746.2	892.8	133.4	431.5	372.1	117.7	47.3	2232.00
.48	1.96	4.05	2.40	.038	.035	.045	.000	2226.90	2452.59
.001381	150.	150.	150.	2	0	0	.00	343.85	2871.00

*SECNO 14.000

(P)

2800 NAT Q1= 232.92 WSEL= 2240.96 ENC Q1= 412.04 WSEL= 2241.76 RATIO= -.7690

NAT Q1= 412. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2241.76

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2602.0 3052.0 TYPE= 4 TARGET= .000

14.000	3.87	2240.97	2240.97	2240.96	2241.92	.95	2.62	.23	2245.20
2900.0	.0	2900.0	.0	.0	369.9	.0	129.6	52.3	2253.90
.51	.00	7.84	.00	.000	.035	.000	.000	2237.10	2714.11
.015446	800.	810.	750.	20	14	0	.00	201.88	2915.99

*SECNO 15.000

(Q)

2800 NAT Q1= 351.42 WSEL= 2249.46 ENC Q1= 535.39 WSEL= 2250.26 RATIO= -.5235

NAT Q1= 535. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2250.26

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

3470 ENCROACHMENT STATIONS= 2370.0 2770.0 TYPE= 4 TARGET= .000

CROSS SECTIONS 15-16 I-15 MODELED BY ORIGINAL JMM

Adjusted Top of Road from JMM workmap

Modified X-sections 15.1, 15.2 for ineffective flow areas

15.000	4.46	2249.46	.00	2249.46	2250.03	.57	8.08	.04	2252.00
2900.0	.0	2900.0	.0	.0	476.9	.0	137.6	56.2	2260.00
.54	.00	6.08	.00	.000	.035	.000	.000	2245.00	2484.21
.006823	750.	820.	810.	4	0	0	.00	208.51	2692.72

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

CCHV= .300 CEHV= .500

*SECNO 15.100 (R)

2800 NAT Q1= 244.47 WSEL= 2264.44 ENC Q1= 377.11 WSEL= 2265.24 RATIO= -.5426

NAT Q1= 377. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2265.24

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2569.0 2682.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2268.00 ELREA= 2268.00

15.100	5.54	2264.44	2264.44	2264.44	2265.85	1.41	9.02	.42	2263.90
2900.0	.0	2900.0	.0	.0	304.3	.0	146.1	59.7	2264.30
.57	.00	9.53	.00	.000	.035	.000	.000	2258.90	2569.00
.014115	750.	950.	800.	13	11	0	.00	113.00	2682.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.00	1.76	3.00	.00	12.00	.01	60.00	.00	2261.00	2259.70

*SECNO 15.200

2800 NAT Q1= 1476.16 WSEL= 2270.71 ENC Q1= 1476.16 WSEL= 2271.51 RATIO= .0000

NAT Q1= 2302. RATIOS LOB, CH, ROB= .2066 .1468 .6466 WSEL= 2271.51

WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.36

3470 ENCROACHMENT STATIONS=	2582.3	2919.7	TYPE=	4	TARGET=	.359
15.200	8.91	2270.71	.00	2270.71	2270.89	.18
2900.0	133.7	797.5	1968.8	45.5	160.4	791.4
.59	2.94	4.97	2.49	.035	.035	.035
.000742	220.	220.	220.	0	0	8
						.00
						.43
						.37
						2261.80
						149.4
						60.8
						2261.80
						2582.30
						337.40
						2919.70

THIS RUN EXECUTED 14MAY93 12:20:21

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1.000	.00	.00	.00	2072.00	2900.00	2077.00	.00	2078.48	67.01	10.16	309.52	354.27
*	1.000	.00	.00	.00	2072.00	2900.00	2076.71	2076.71	2079.06	134.16	12.32	235.47	250.38
	2.000	1350.00	.00	.00	2085.70	2900.00	2087.89	2087.56	2088.07	73.38	3.50	852.25	338.54
*	2.000	1350.00	.00	.00	2085.70	2900.00	2088.65	.00	2088.85	43.71	3.48	820.30	438.66
	3.000	750.00	.00	.00	2094.00	2900.00	2100.27	2100.27	2102.65	143.81	13.07	238.59	241.83
*	3.000	750.00	.00	.00	2094.00	2900.00	2100.59	2100.59	2103.55	161.70	14.30	213.39	228.06
	1600.000	340.00	.00	.00	2095.50	2900.00	2103.53	.00	2105.99	70.53	12.61	230.00	345.32
*	1600.000	340.00	.00	.00	2095.50	2900.00	2104.51	.00	2106.34	46.33	10.83	267.67	426.05
	1560.000	40.00	.00	.00	2095.70	2900.00	2104.37	.00	2106.39	115.10	11.41	254.08	270.30
	1560.000	40.00	.00	.00	2095.70	2900.00	2104.85	.00	2106.60	94.46	10.63	272.92	298.38
	1384.000	176.00	.00	.00	2096.60	2900.00	2105.54	2105.54	2108.59	91.59	14.01	206.97	303.02
*	1384.000	176.00	.00	.00	2096.60	2900.00	2105.60	2105.55	2108.59	89.27	13.88	208.95	306.94
	1000.000	384.00	.00	.00	2098.70	2900.00	2109.01	.00	2112.09	90.32	14.08	206.00	305.14
	1000.000	384.00	.00	.00	2098.70	2900.00	2109.12	.00	2112.12	94.58	13.90	208.64	298.20
	600.000	400.00	.00	.00	2103.80	2900.00	2112.88	2112.88	2116.65	119.83	15.57	186.22	264.92
*	600.000	400.00	.00	.00	2103.80	2900.00	2113.02	2112.89	2116.65	125.84	15.29	189.68	258.51
	300.000	300.00	.00	.00	2108.30	2900.00	2117.38	2117.38	2121.15	120.12	15.59	186.07	264.60
*	300.000	300.00	.00	.00	2108.30	2900.00	2117.34	2117.34	2121.15	134.17	15.67	185.08	250.36
	.000	300.00	.00	.00	2111.60	2900.00	2121.65	.00	2122.18	9.73	7.19	633.91	929.74
*	.000	300.00	.00	.00	2111.60	2900.00	2121.39	.00	2122.62	19.21	9.94	402.85	661.69
	1.100	10.00	.00	.00	2111.60	2900.00	2121.67	.00	2122.19	9.60	7.15	637.84	936.17
	1.100	10.00	.00	.00	2111.60	2900.00	2121.49	.00	2122.66	18.07	9.71	413.65	682.12

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
*	1.200	110.00	2118.50	2116.60	2111.60	2900.00	2121.25	.00	2121.95	12.77	8.03	560.73	811.40
	1.200	110.00	2118.50	2116.60	2111.60	2900.00	2120.63	2120.55	2122.57	31.21	12.00	321.28	519.12
	1.300	50.00	.00	.00	2111.60	2900.00	2121.37	.00	2122.02	11.75	7.76	582.31	846.03
	1.300	50.00	.00	.00	2111.60	2900.00	2121.55	.00	2122.77	18.40	9.83	406.81	676.05
*	415.000	10.00	.00	.00	2115.44	2900.00	2125.17	2125.17	2126.21	40.64	9.90	433.96	454.92
*	415.000	10.00	.00	.00	2115.44	2900.00	2125.17	2125.17	2127.29	74.89	12.68	265.04	335.10
*	185.000	229.00	.00	.00	2121.30	2900.00	2131.21	2131.21	2132.73	54.57	11.26	340.15	392.56
	185.000	229.00	.00	.00	2121.30	2900.00	2131.46	2131.46	2134.02	84.57	13.56	240.27	315.35
*	20.000	165.00	.00	.00	2126.90	2900.00	2133.81	2133.81	2135.12	64.85	10.84	339.16	360.12
	20.000	165.00	.00	.00	2126.90	2900.00	2133.96	2133.96	2135.70	78.18	12.02	287.99	327.97
*	.000	20.00	.00	.00	2126.70	2900.00	2135.02	2134.24	2135.27	11.55	5.55	872.76	853.48
	.000	20.00	.00	.00	2126.70	2900.00	2135.63	2134.22	2135.89	9.56	5.31	793.72	937.95
*	A .110	40.00	.00	.00	2126.70	2900.00	2134.78	.00	2135.47	26.96	8.33	561.66	558.49
	.110	40.00	.00	.00	2126.70	2900.00	2135.37	.00	2136.09	25.31	7.95	458.71	576.38
*	B 5.000	125.00	.00	.00	2134.90	2900.00	2138.19	2138.19	2138.99	163.89	7.19	403.22	226.53
	5.000	125.00	.00	.00	2134.90	2900.00	2138.19	2138.19	2138.99	163.24	7.18	403.74	226.98
	C 7.000	1400.00	.00	.00	2153.80	2900.00	2157.87	.00	2158.82	123.09	7.83	370.86	261.38
	7.000	1400.00	.00	.00	2153.80	2900.00	2157.86	.00	2158.82	123.49	7.84	370.43	260.96
*	D 7.100	80.00	.00	.00	2158.00	2900.00	2160.70	2160.70	2161.32	121.12	6.66	488.97	263.51
	7.100	80.00	.00	.00	2158.00	2900.00	2160.74	2160.74	2161.63	154.25	7.59	382.26	233.50
*	E 8.000	595.00	.00	.00	2163.80	2900.00	2167.26	.00	2167.86	100.25	6.18	469.17	289.64
	8.000	595.00	.00	.00	2163.80	2900.00	2167.41	.00	2167.92	76.03	5.68	510.24	332.59
*	8.500	120.00	.00	.00	2166.00	2900.00	2168.51	2168.51	2169.45	147.21	7.77	373.38	239.02
	8.500	120.00	.00	.00	2166.00	2900.00	2168.51	2168.51	2169.45	148.01	7.78	372.69	238.37
*	F 9.000	680.00	.00	.00	2167.80	2900.00	2175.60	2175.51	2177.84	96.21	12.89	275.93	295.65
	9.000	680.00	.00	.00	2167.80	2900.00	2175.84	2175.84	2178.95	114.10	14.32	214.73	271.49
*	G 9.100	80.00	.00	.00	2175.90	2900.00	2178.29	2178.29	2179.18	148.19	7.58	384.15	238.22
	9.100	80.00	.00	.00	2175.90	2900.00	2179.31	2178.28	2179.67	33.17	4.82	602.01	503.53
*	H 10.000	1295.00	.00	.00	2185.20	2900.00	2191.71	.00	2192.50	75.45	7.30	460.31	333.86
	10.000	1295.00	.00	.00	2185.20	2900.00	2191.28	2191.28	2192.54	135.19	8.99	322.41	249.42
	I 10.500	110.00	.00	.00	2187.80	2900.00	2192.56	.00	2193.12	42.06	6.58	600.85	447.16
	10.500	110.00	.00	.00	2187.80	2900.00	2192.55	.00	2193.62	72.19	8.30	349.60	341.32
*	J 11.000	670.00	.00	.00	2192.40	2900.00	2197.28	2197.28	2198.75	130.91	9.71	298.52	253.47
	11.000	670.00	.00	.00	2192.40	2900.00	2197.75	.00	2198.82	83.62	8.29	349.78	317.13

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K	
*	K	11.100	120.00	.00	.00	2203.20	2900.00	2205.08	2205.08	2205.65	157.32	6.59	550.83	231.21
*		11.100	120.00	.00	.00	2203.20	2900.00	2205.26	2205.26	2206.05	158.76	7.15	405.36	230.16
*	L	12.000	1065.00	.00	.00	2207.50	2900.00	2212.85	.00	2213.46	42.00	6.27	475.35	447.47
*		12.000	1065.00	.00	.00	2207.50	2900.00	2212.93	.00	2213.50	39.00	6.13	487.28	464.39
*	M	13.000	1080.00	.00	.00	2218.90	2900.00	2224.89	2224.89	2226.01	139.92	8.49	341.78	245.17
*		13.000	1080.00	.00	.00	2218.90	2900.00	2224.87	2224.87	2226.01	142.99	8.55	339.32	242.52
*	N	13.100	120.00	.00	.00	2224.00	2900.00	2230.03	2230.03	2230.12	5.06	3.17	1425.71	1289.23
*		13.100	120.00	.00	.00	2224.00	2900.00	2230.01	2230.01	2230.19	8.00	3.97	894.16	1025.34
*		13.200	50.00	2231.10	2229.00	2224.00	2900.00	2233.17	.00	2233.19	.69	1.54	3068.80	3496.11
*		13.200	50.00	2231.10	2229.00	2224.00	2900.00	2233.14	.00	2233.18	.95	1.81	2076.83	2971.75
*	O	13.500	150.00	.00	.00	2226.90	2900.00	2233.08	.00	2233.26	13.72	4.04	939.54	783.07
*		13.500	150.00	.00	.00	2226.90	2900.00	2233.07	.00	2233.26	13.81	4.05	937.02	780.28
*	P	14.000	810.00	.00	.00	2237.10	2900.00	2240.96	2240.96	2241.92	155.02	7.85	369.50	232.92
*		14.000	810.00	.00	.00	2237.10	2900.00	2240.97	2240.97	2241.92	154.46	7.84	369.94	233.34
*	Q	15.000	820.00	.00	.00	2245.00	2900.00	2249.46	.00	2250.04	68.10	6.08	477.25	351.42
*		15.000	820.00	.00	.00	2245.00	2900.00	2249.46	.00	2250.03	68.23	6.08	476.90	351.08
*	R	15.100	950.00	.00	.00	2258.90	2900.00	2264.44	2264.44	2265.85	140.72	9.53	304.39	244.47
*		15.100	950.00	.00	.00	2258.90	2900.00	2264.44	2264.44	2265.85	141.15	9.53	304.25	244.09
*		15.200	220.00	2268.90	2266.00	2261.80	2900.00	2270.71	.00	2270.78	3.86	3.59	1670.44	1476.16
*		15.200	220.00	999999.00	.00	2261.80	2900.00	2270.71	.00	2270.89	7.42	4.97	997.30	1064.55

BLUE DIAMOND WASH - 100

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.000	2900.00	2077.00	.00	.00	2.00	73.81	.00
*	1.000	2900.00	2076.71	-.29	.00	-.29	50.00	.00
	2.000	2900.00	2087.89	.00	10.89	.00	795.99	1350.00
*	2.000	2900.00	2088.65	.77	11.94	.77	473.09	1350.00
	3.000	2900.00	2100.27	.00	12.39	.00	50.00	750.00
*	3.000	2900.00	2100.59	.32	11.94	.32	37.16	750.00
	1600.000	2900.00	2103.53	.00	3.25	.00	37.27	340.00
*	1600.000	2900.00	2104.51	.99	3.93	.99	39.39	340.00
	1560.000	2900.00	2104.37	.00	.85	.00	38.64	40.00
	1560.000	2900.00	2104.85	.48	.33	.48	39.67	40.00
	1384.000	2900.00	2105.54	.00	1.17	.00	34.30	176.00
*	1384.000	2900.00	2105.60	.06	.75	.06	34.45	176.00
	1000.000	2900.00	2109.01	.00	3.47	.00	25.00	384.00
	1000.000	2900.00	2109.12	.11	3.52	.11	25.00	384.00
	600.000	2900.00	2112.88	.00	3.87	.00	24.99	400.00
*	600.000	2900.00	2113.02	.14	3.90	.14	24.99	400.00
	300.000	2900.00	2117.38	.00	4.49	.00	24.98	300.00
*	300.000	2900.00	2117.34	-.04	4.32	-.04	24.98	300.00
	.000	2900.00	2121.65	.00	4.27	.00	195.83	300.00
*	.000	2900.00	2121.39	-.26	4.05	-.26	88.67	300.00
	1.100	2900.00	2121.67	.00	.02	.00	196.63	10.00
	1.100	2900.00	2121.49	-.17	.10	-.17	89.01	10.00
	1.200	2900.00	2121.25	.00	-.41	.00	180.26	110.00
*	1.200	2900.00	2120.63	-.63	-.87	-.63	84.73	110.00
	1.300	2900.00	2121.37	.00	.12	.00	184.99	50.00
	1.300	2900.00	2121.55	.18	.93	.18	86.57	50.00
	415.000	2900.00	2125.17	.00	3.80	.00	180.00	10.00
*	415.000	2900.00	2125.17	.00	3.62	.00	54.48	10.00
	185.000	2900.00	2131.21	.00	6.04	.00	107.24	229.00
*	185.000	2900.00	2131.46	.24	6.28	.24	44.17	229.00
	20.000	2900.00	2133.81	.00	2.60	.00	104.99	165.00
*	20.000	2900.00	2133.96	.14	2.50	.14	75.11	165.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.000	2900.00	2135.02	.00	1.20	.00	381.95	20.00
*	.000	2900.00	2135.63	.61	1.68	.61	230.14	20.00
* A	.110	2900.00	2134.78	.00	-.24	.00	272.88	40.00
*	.110	2900.00	2135.37	.58	-.27	.58	111.42	40.00
* B	5.000	2900.00	2138.19	.00	3.41	.00	264.48	125.00
*	5.000	2900.00	2138.19	.00	2.82	.00	264.53	125.00
C	7.000	2900.00	2157.87	.00	19.68	.00	176.11	1400.00
	7.000	2900.00	2157.86	.00	19.67	.00	176.00	1400.00
* D	7.100	2900.00	2160.70	.00	2.83	.00	398.02	80.00
*	7.100	2900.00	2160.74	.04	2.87	.04	220.00	80.00
E	8.000	2900.00	2167.26	.00	6.56	.00	265.94	595.00
*	8.000	2900.00	2167.41	.15	6.68	.15	266.50	595.00
*	8.500	2900.00	2168.51	.00	1.25	.00	201.54	120.00
*	8.500	2900.00	2168.51	.00	1.09	.00	201.43	120.00
F	9.000	2900.00	2175.60	.00	7.09	.00	60.72	680.00
*	9.000	2900.00	2175.84	.25	7.34	.25	35.37	680.00
* G	9.100	2900.00	2178.29	.00	2.69	.00	228.13	80.00
*	9.100	2900.00	2179.31	1.02	3.47	1.02	215.00	80.00
* H	10.000	2900.00	2191.71	.00	13.42	.00	270.86	1295.00
*	10.000	2900.00	2191.28	-.43	11.97	-.43	129.53	1295.00
I	10.500	2900.00	2192.56	.00	.86	.00	252.04	110.00
	10.500	2900.00	2192.55	-.02	1.27	-.02	95.00	110.00
* J	11.000	2900.00	2197.28	.00	4.72	.00	104.37	670.00
	11.000	2900.00	2197.75	.47	5.20	.47	110.83	670.00
* K	11.100	2900.00	2205.08	.00	7.80	.00	489.49	120.00
*	11.100	2900.00	2205.26	.18	7.51	.18	260.00	120.00
* L	12.000	2900.00	2212.85	.00	7.78	.00	158.39	1065.00
*	12.000	2900.00	2212.93	.07	7.67	.07	159.79	1065.00
* M	13.000	2900.00	2224.89	.00	12.03	.00	154.77	1080.00
*	13.000	2900.00	2224.87	-.02	11.94	-.02	154.51	1080.00
* N	13.100	2900.00	2230.03	.00	5.15	.00	412.60	120.00
*	13.100	2900.00	2230.01	-.02	5.14	-.02	164.88	120.00
*	13.200	2900.00	2233.17	.00	3.13	.00	767.38	50.00
*	13.200	2900.00	2233.14	-.03	3.13	-.03	267.59	50.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	13.500	2900.00	2233.08	.00	-.09	.00	344.18	150.00
*	13.500	2900.00	2233.07	-.01	-.07	-.01	343.85	150.00
*	14.000	2900.00	2240.96	.00	7.88	.00	201.83	810.00
*	14.000	2900.00	2240.97	.00	7.89	.00	201.88	810.00
*	15.000	2900.00	2249.46	.00	8.50	.00	208.60	820.00
*	15.000	2900.00	2249.46	.00	8.49	.00	208.51	820.00
*	15.100	2900.00	2264.44	.00	14.97	.00	113.00	950.00
*	15.100	2900.00	2264.44	.00	14.98	.00	113.00	950.00
*	15.200	2900.00	2270.71	.00	6.27	.00	858.14	220.00
*	15.200	2900.00	2270.71	.00	6.27	.00	337.40	220.00

SUMMARY OF ERRORS AND SPECIAL NOTES

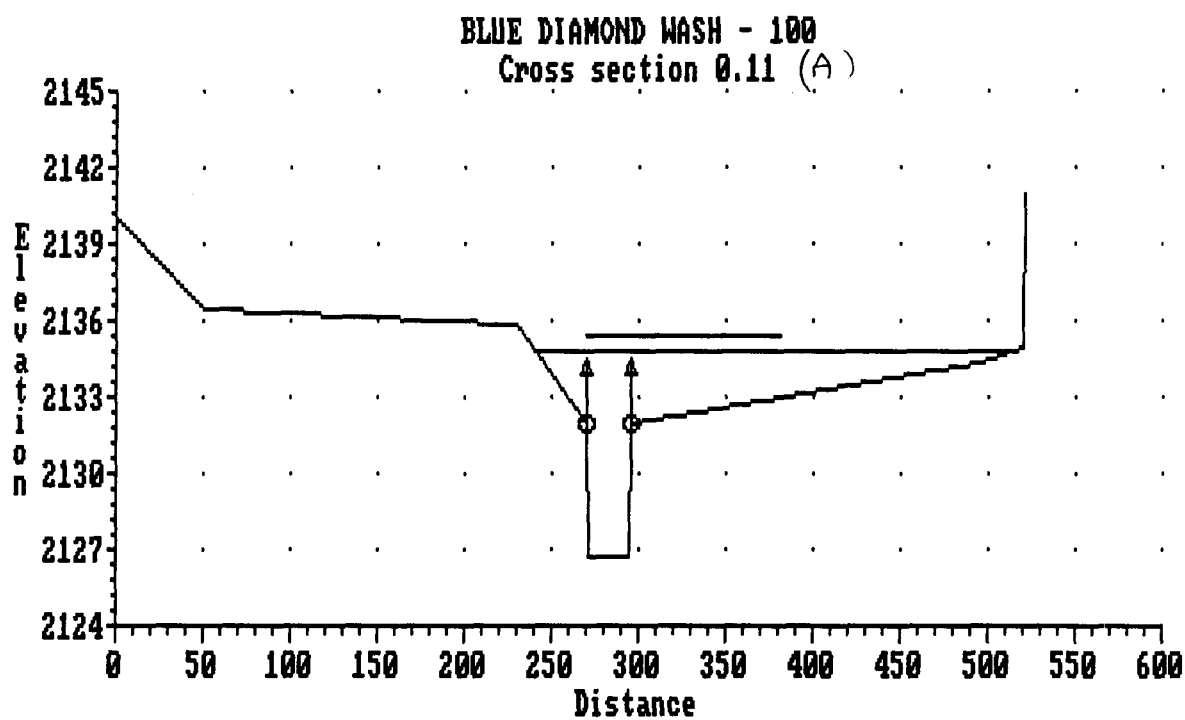
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CAUTION SECNO=	2.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	2.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	3.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	1600.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	1600.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	1384.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	300.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	300.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	300.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	1.200	PROFILE=	2	WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=	1.200	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	415.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	415.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	415.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	415.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	415.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	415.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	185.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	185.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	185.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	185.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	185.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	185.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	20.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	20.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	20.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
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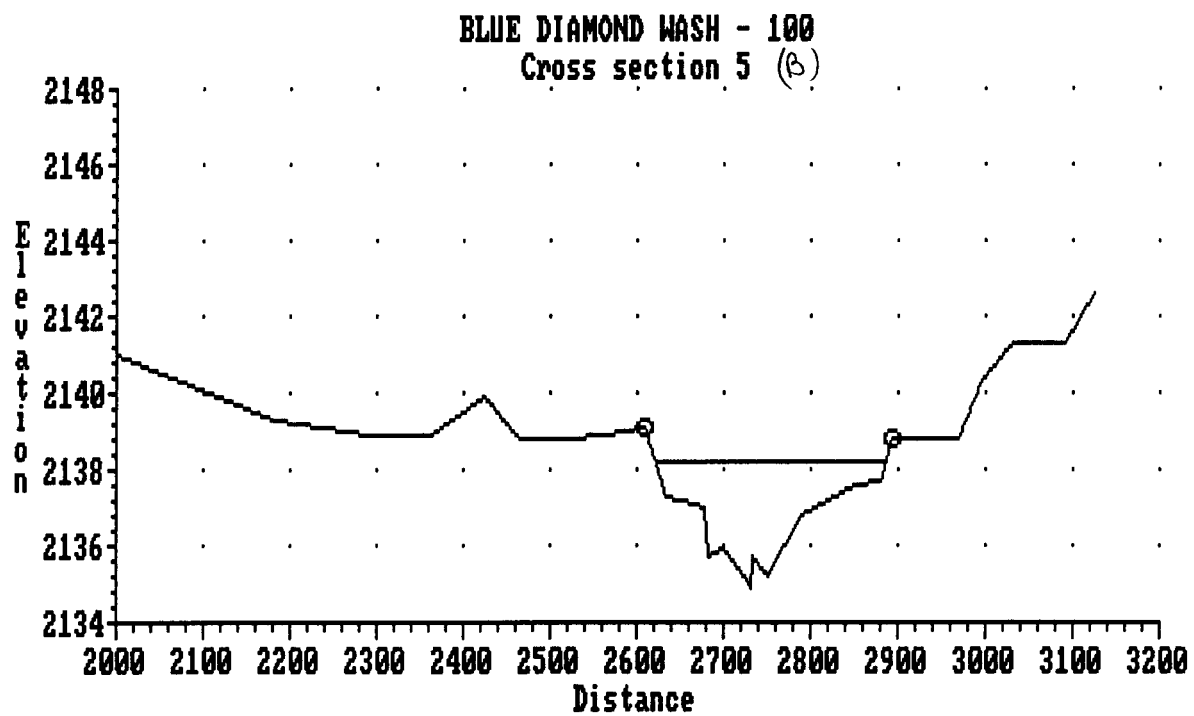
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WARNING SECNO=	.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=	5.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	5.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	5.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	5.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=	7.100	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	7.100	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=	8.500	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	8.500	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	9.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	9.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
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=	9.100	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	10.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	10.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	10.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	10.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	11.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	11.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	11.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	11.100	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	11.100	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	11.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	11.100	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	11.100	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	12.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	12.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

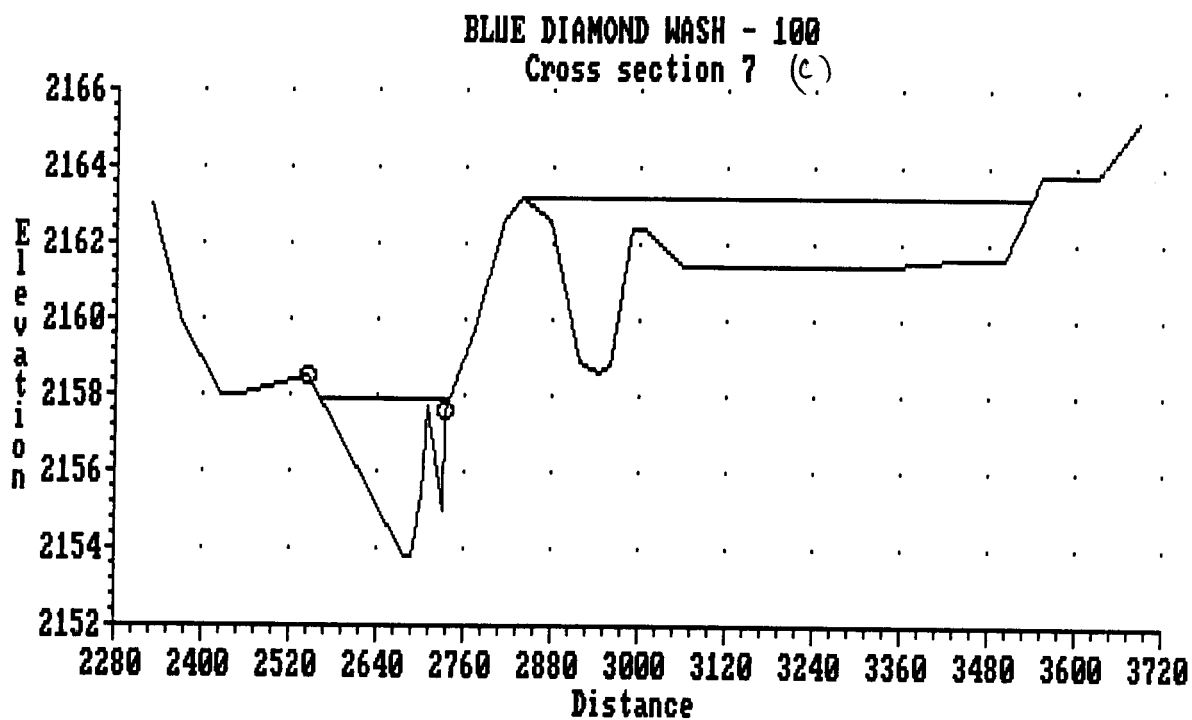
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CAUTION SECNO=	13.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=	13.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	13.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	13.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	13.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	13.100	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	13.100	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	13.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	13.100	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	13.100	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	13.200	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	13.200	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	13.500	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	13.500	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	14.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	14.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	14.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	14.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	14.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	14.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	15.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	15.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	15.100	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	15.100	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	15.100	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	15.100	PROFILE=	2	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	15.200	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	15.200	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

FLOODWAY DATA, BLUE DIAMOND WASH - 100
PROFILE NO. 2

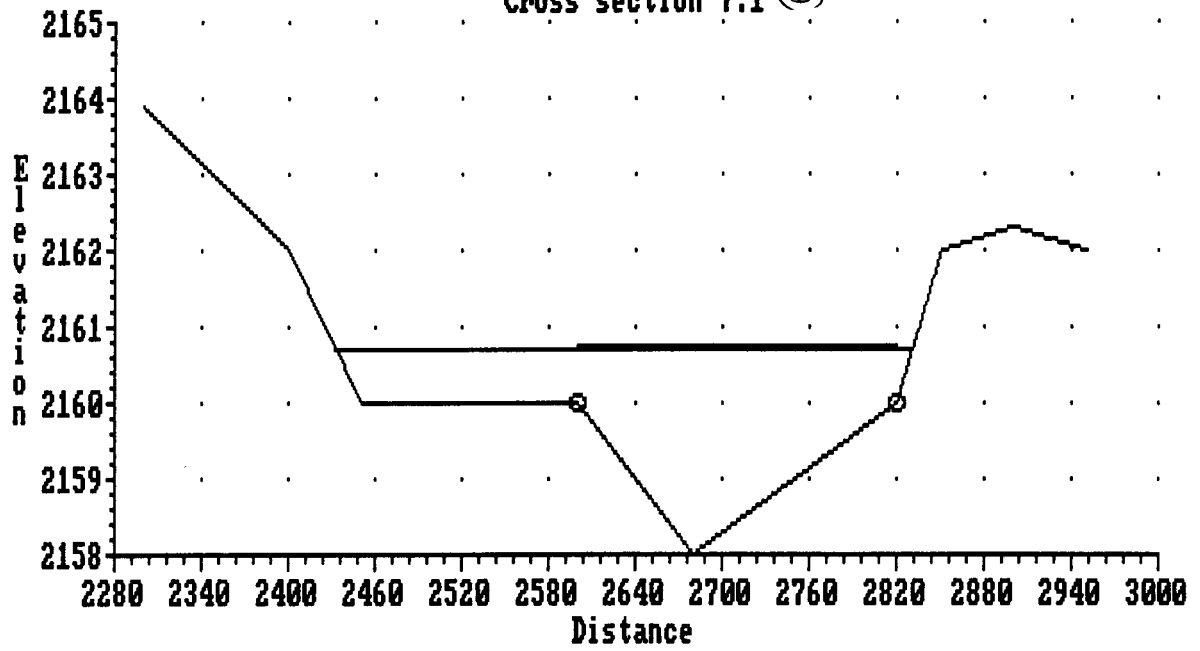
STATION	FLOODWAY		MEAN VELOCITY	WATER SURFACE ELEVATION		
	WIDTH	SECTION AREA		WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
1.000	50.	235.	12.3	2076.7	2077.0	-.3
2.000	473.	820.	3.5	2088.7	2087.9	.8
3.000	37.	213.	13.6	2100.6	2100.3	.3
1600.000	39.	268.	10.8	2104.5	2103.5	1.0
1560.000	40.	273.	10.6	2104.9	2104.4	.5
1384.000	34.	209.	13.9	2105.6	2105.5	.1
1000.000	25.	209.	13.9	2109.1	2109.0	.1
600.000	25.	190.	15.3	2113.0	2112.9	.1
300.000	25.	185.	15.7	2117.4	2117.4	.0
.000	89.	403.	7.2	2121.3	2121.6	-.3
1.100	89.	414.	7.0	2121.5	2121.7	-.2
1.200	85.	321.	9.0	2120.7	2121.3	-.6
1.300	87.	407.	7.1	2121.6	2121.4	.2
415.000	54.	265.	10.9	2125.2	2125.2	.0
185.000	44.	240.	12.1	2131.4	2131.2	.2
20.000	75.	288.	10.1	2133.9	2133.8	.1
.000	230.	794.	3.7	2135.6	2135.0	.6
A .110	111.	459.	6.3	2135.4	2134.8	.6
B 5.000	265.	404.	7.2	2138.2	2138.2	.0
C 7.000	176.	370.	7.8	2157.9	2157.9	.0
D 7.100	220.	382.	7.6	2160.7	2160.7	.0
E 8.000	266.	510.	5.7	2167.5	2167.3	.2
8.500	201.	373.	7.8	2168.5	2168.5	.0
F 9.000	35.	215.	13.5	2175.8	2175.6	.2
G 9.100	215.	602.	4.8	2179.3	2178.3	1.0
H 10.000	130.	322.	9.0	2191.3	2191.7	-.4
I 10.500	95.	350.	8.3	2192.6	2192.6	.0
J 11.000	111.	350.	8.3	2197.8	2197.3	.5
K 11.100	260.	405.	7.2	2205.3	2205.1	.2
L 12.000	160.	487.	6.0	2213.0	2212.9	.1
M 13.000	155.	339.	8.5	2224.9	2224.9	.0
N 13.100	165.	894.	3.2	2230.0	2230.0	.0
13.200	268.	2077.	1.4	2233.2	2233.2	.0
O 13.500	418.	937.	3.1	2233.1	2233.1	.0
P 14.000	202.	370.	7.8	2241.0	2241.0	.0
Q 15.000	209.	477.	6.1	2249.5	2249.5	.0
R 15.100	113.	304.	9.5	2264.4	2264.4	.0
15.200	337.	997.	2.9	2270.7	2270.7	.0

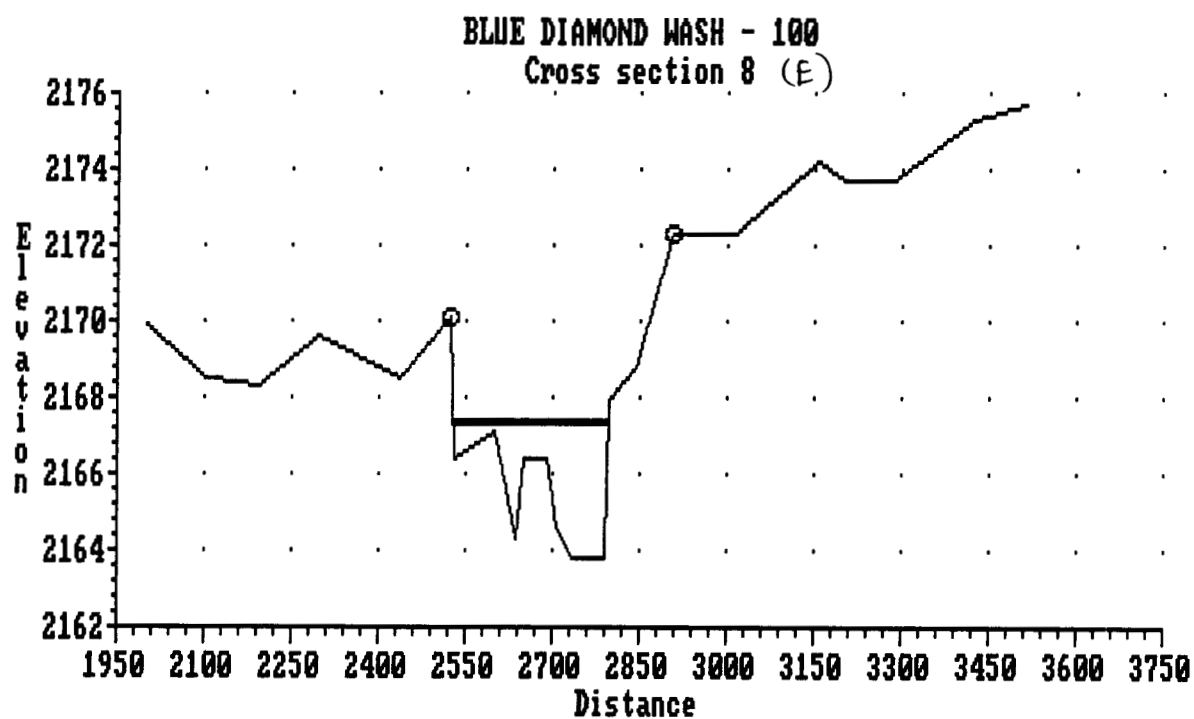






BLUE DIAMOND WASH - 100
Cross section 7.1 (D)





SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	18.460	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	24.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	24.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	24.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	25.400	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.400	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	25.400	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	25.410	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	25.410	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
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WARNING SECNO=	25.420	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	25.430	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=	100.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	100.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	110.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	200.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	200.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	200.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	400.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	400.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	410.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	480.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	480.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	480.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	500.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	500.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	500.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	510.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	580.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	580.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	580.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	600.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	610.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 710.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 720.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 800.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 800.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 800.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 900.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 900.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 910.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 910.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 910.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

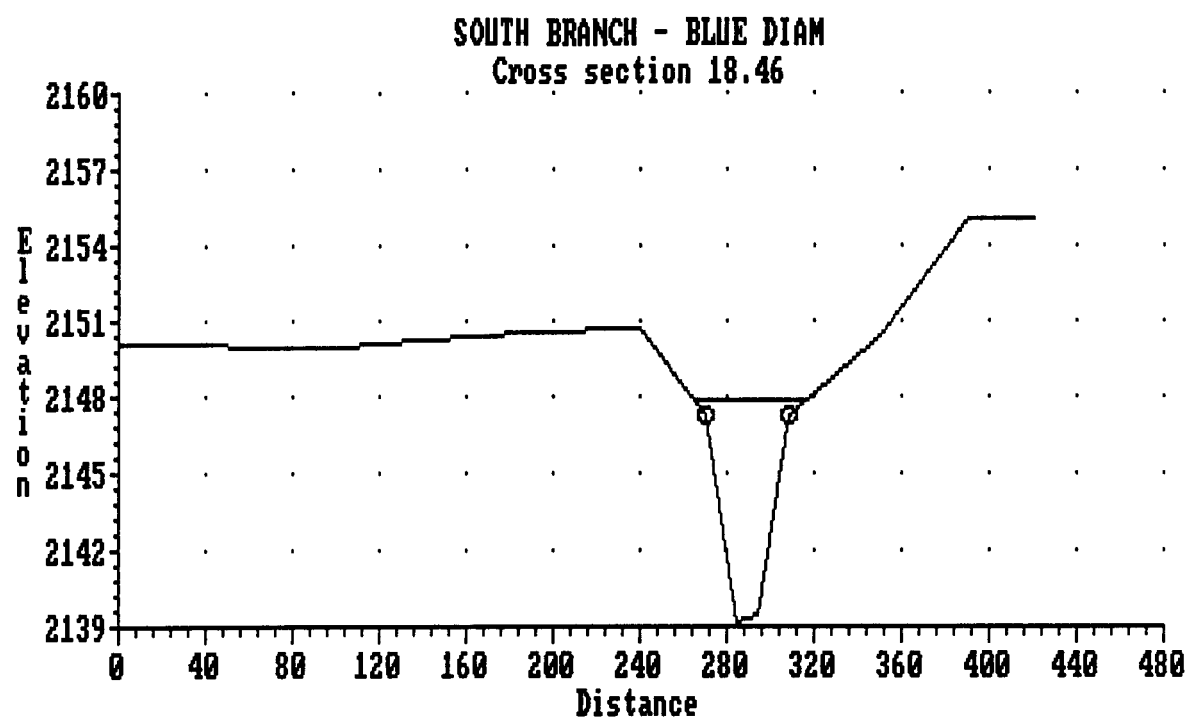
WARNING SECNO= 920.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

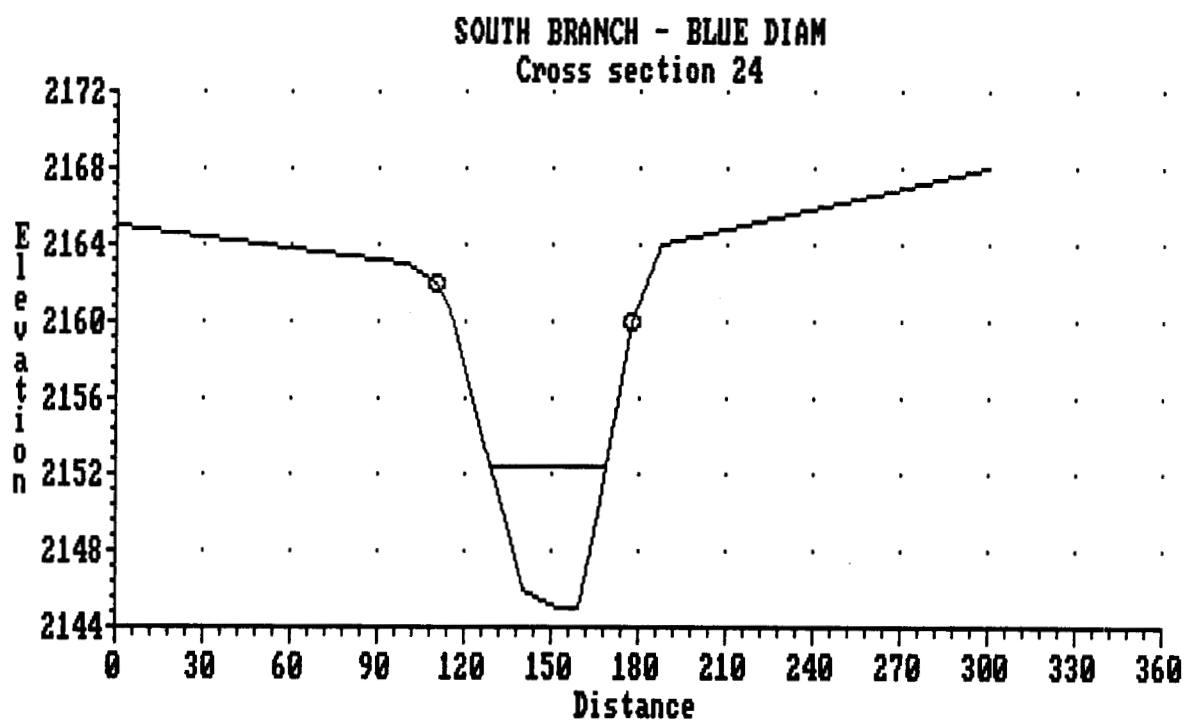
CAUTION SECNO= 960.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

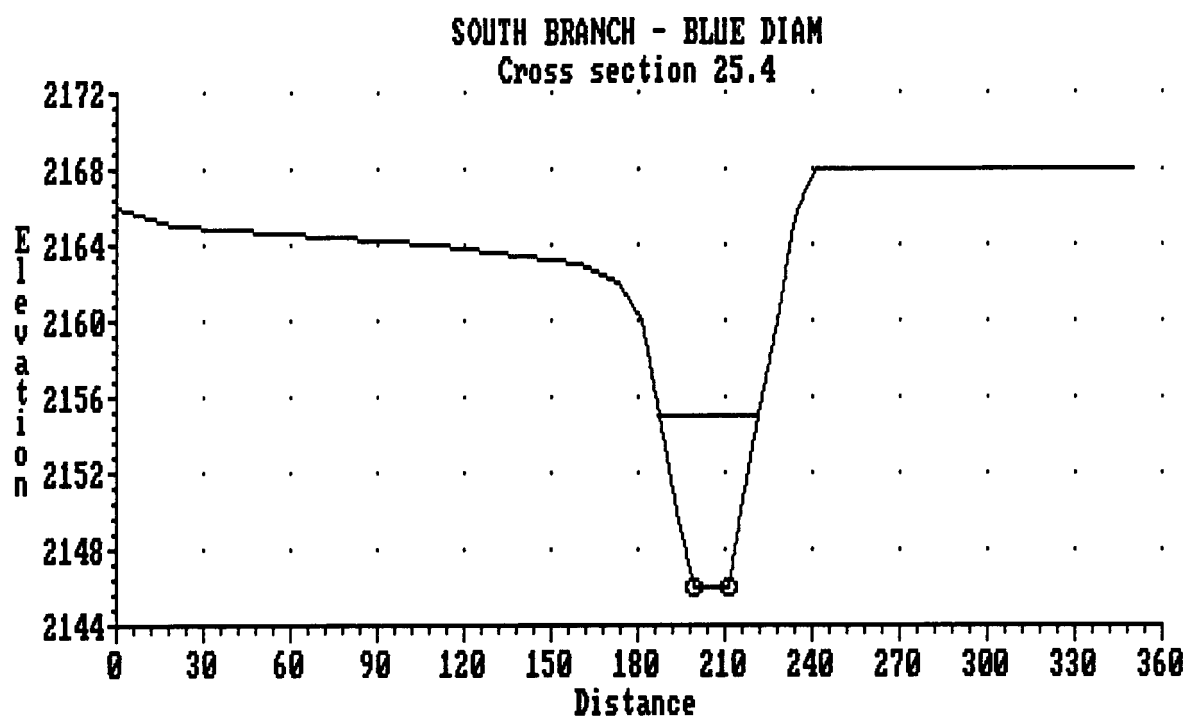
CAUTION SECNO= 960.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

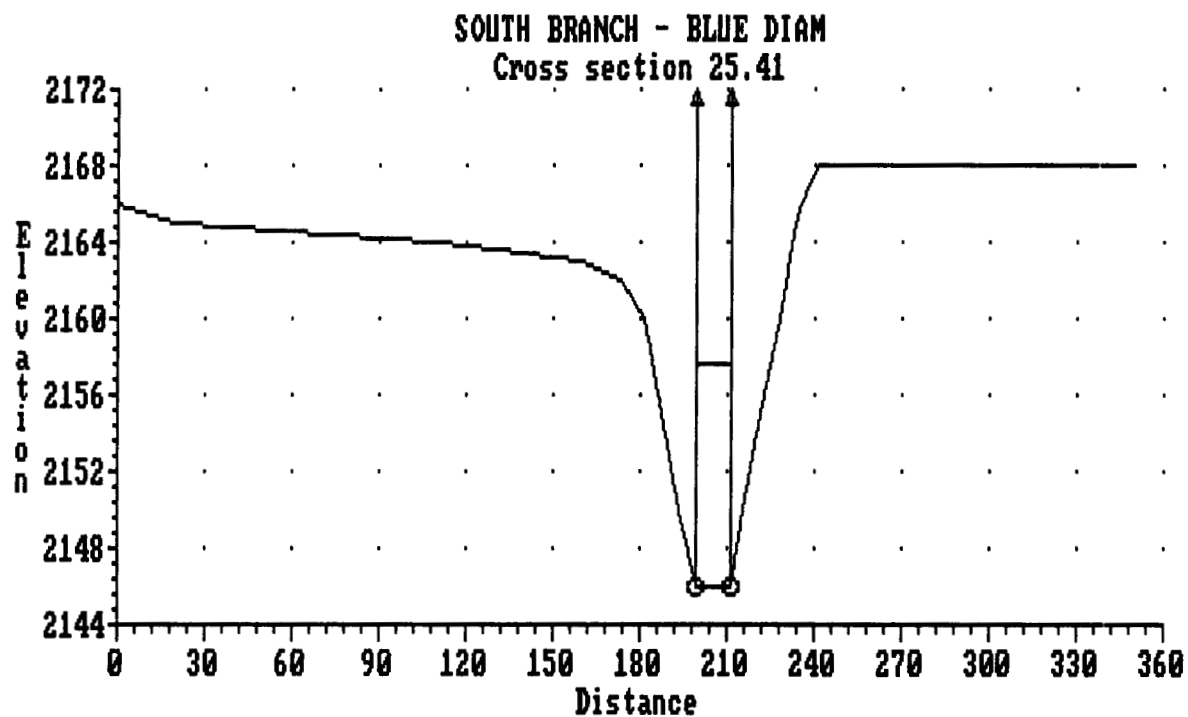
CAUTION SECNO= 960.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

Normal program termination

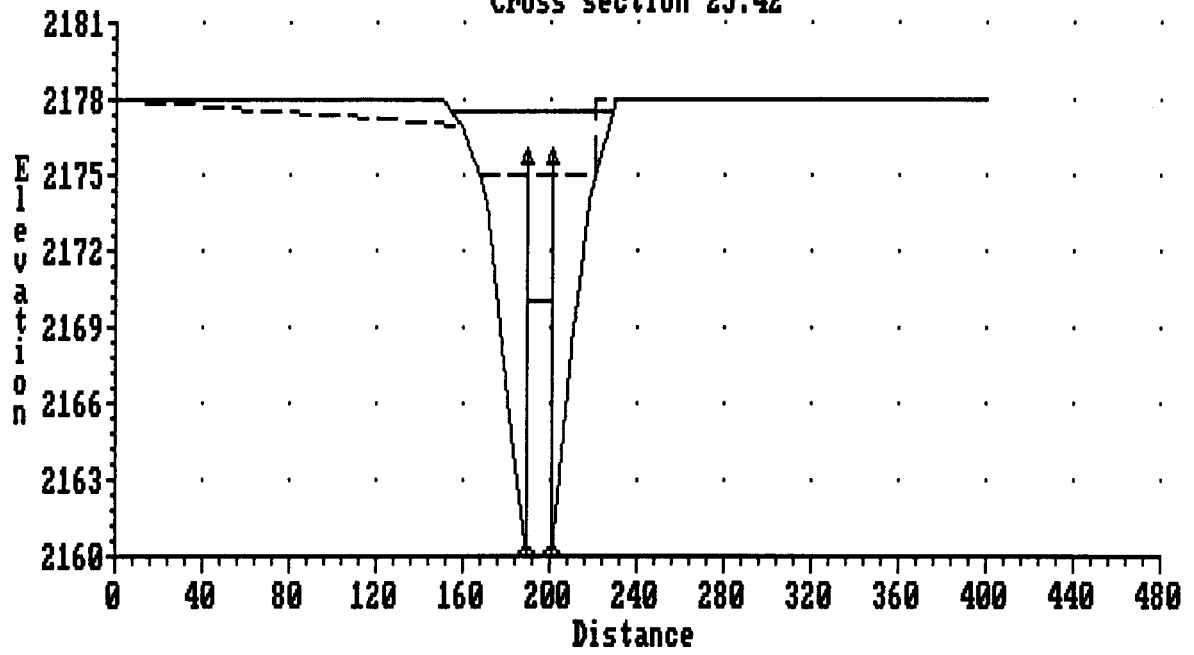


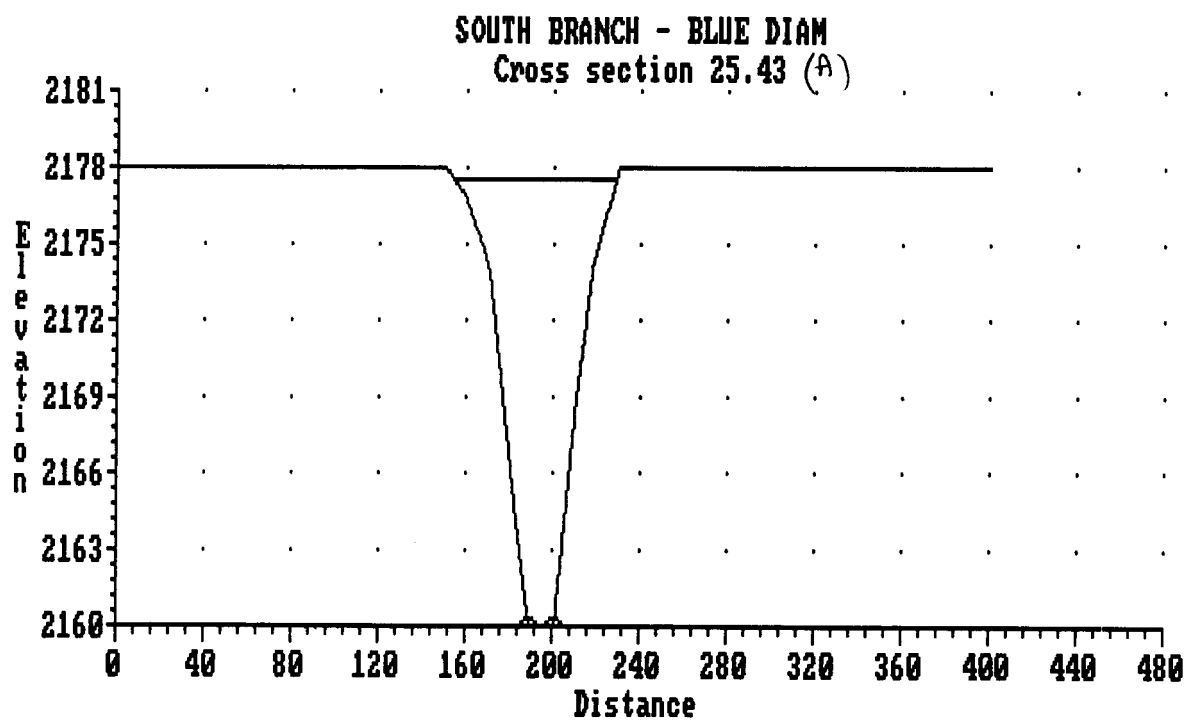


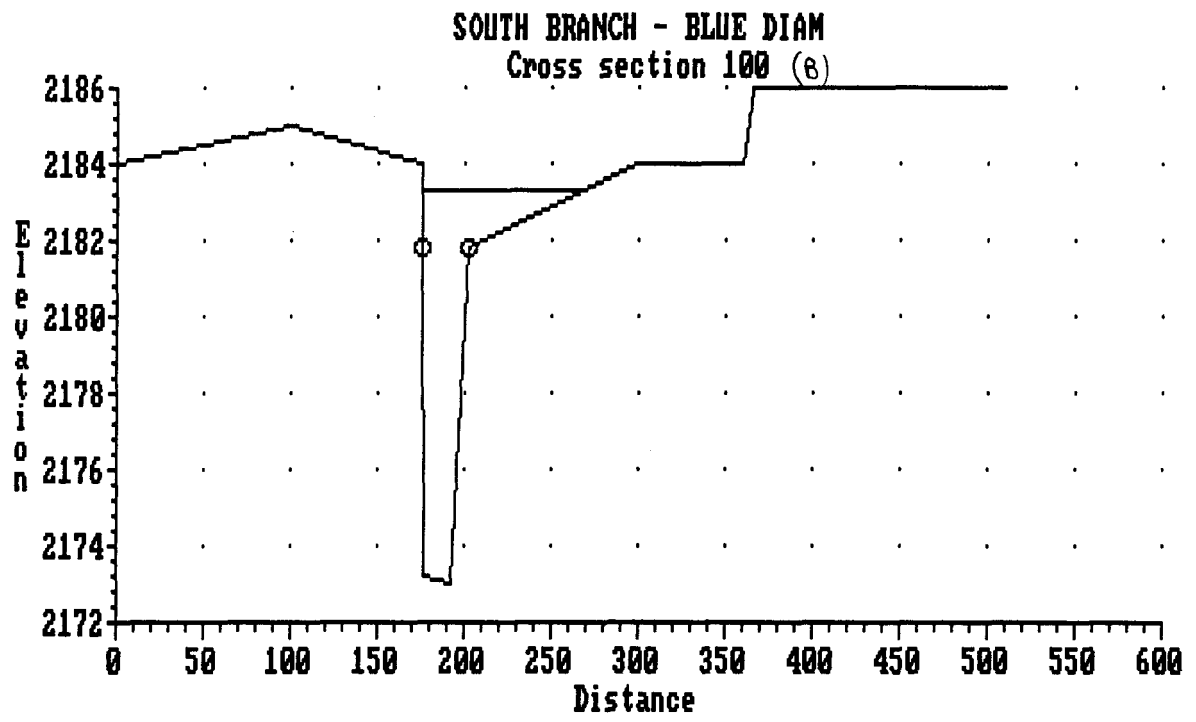


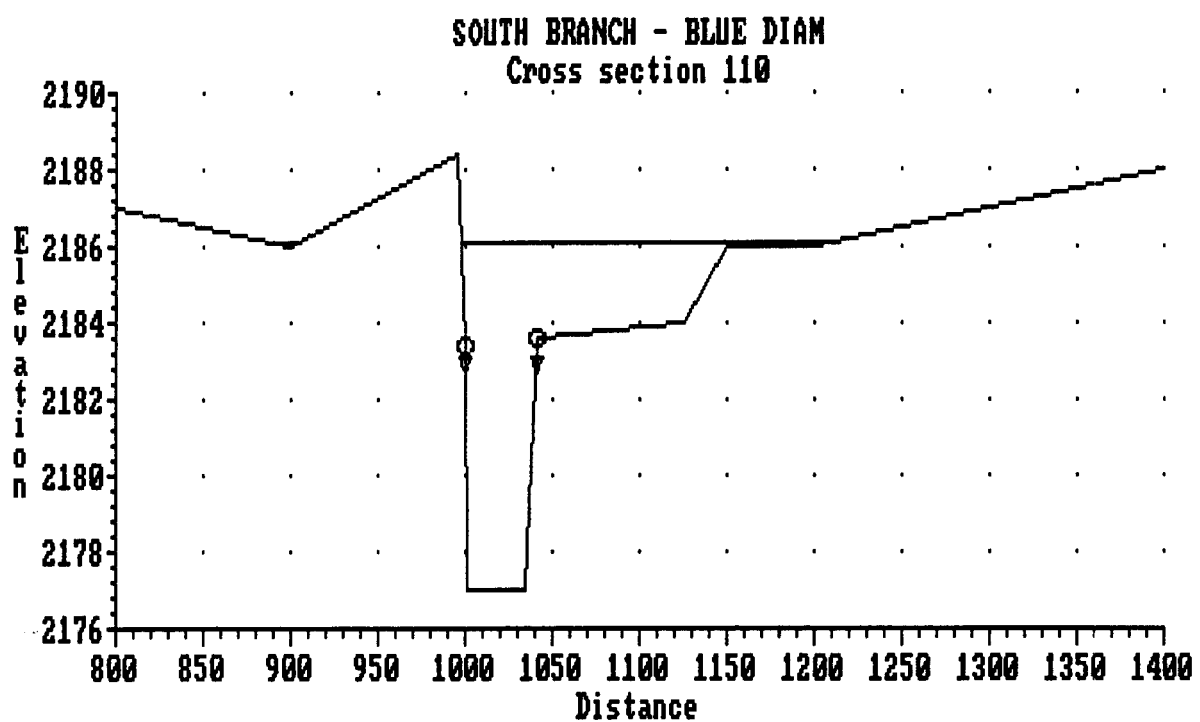


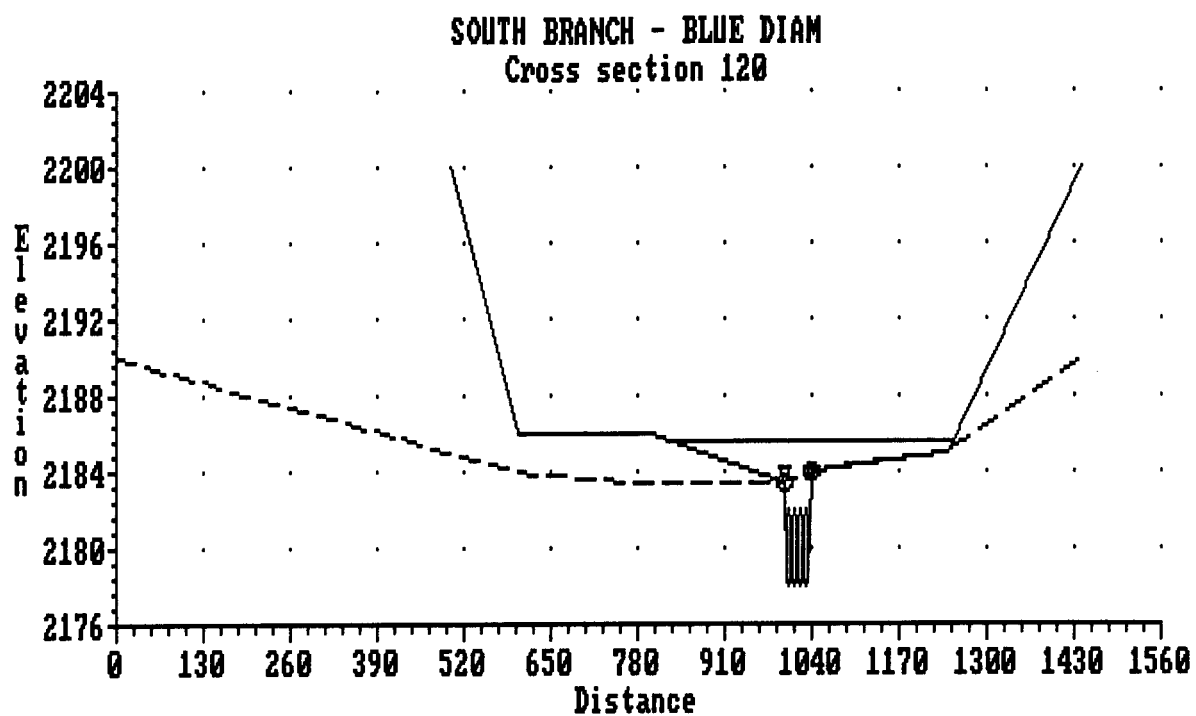
SOUTH BRANCH - BLUE DIAM
Cross section 25.42

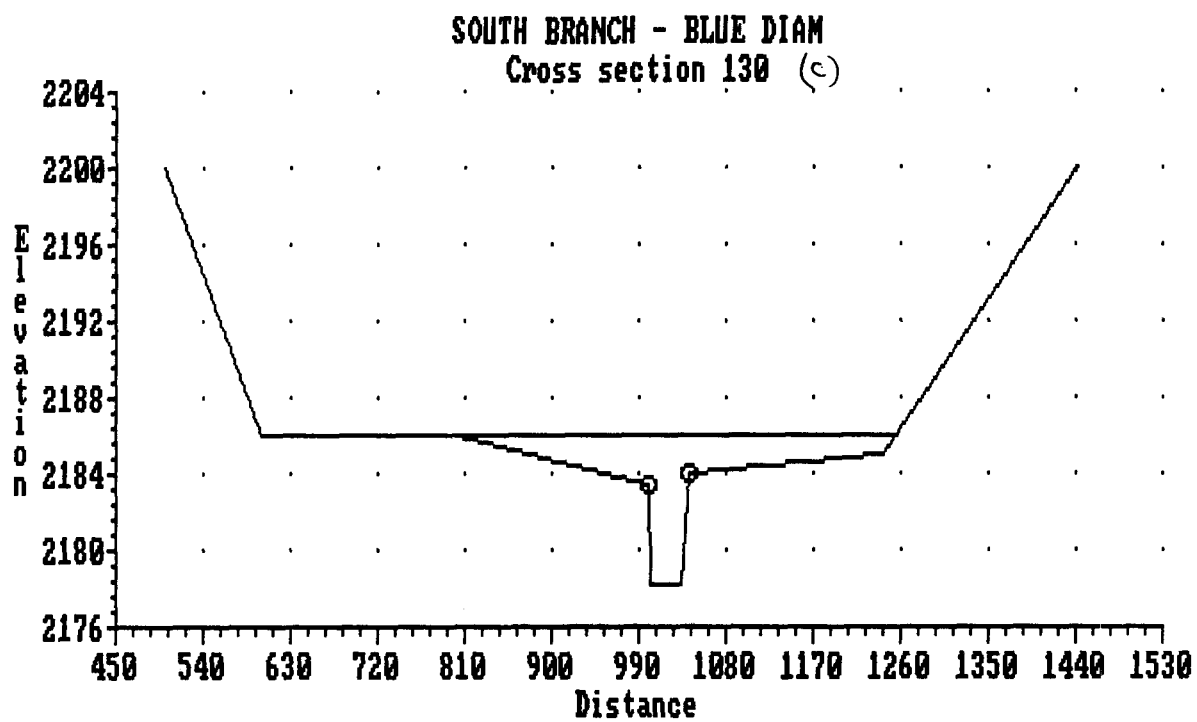


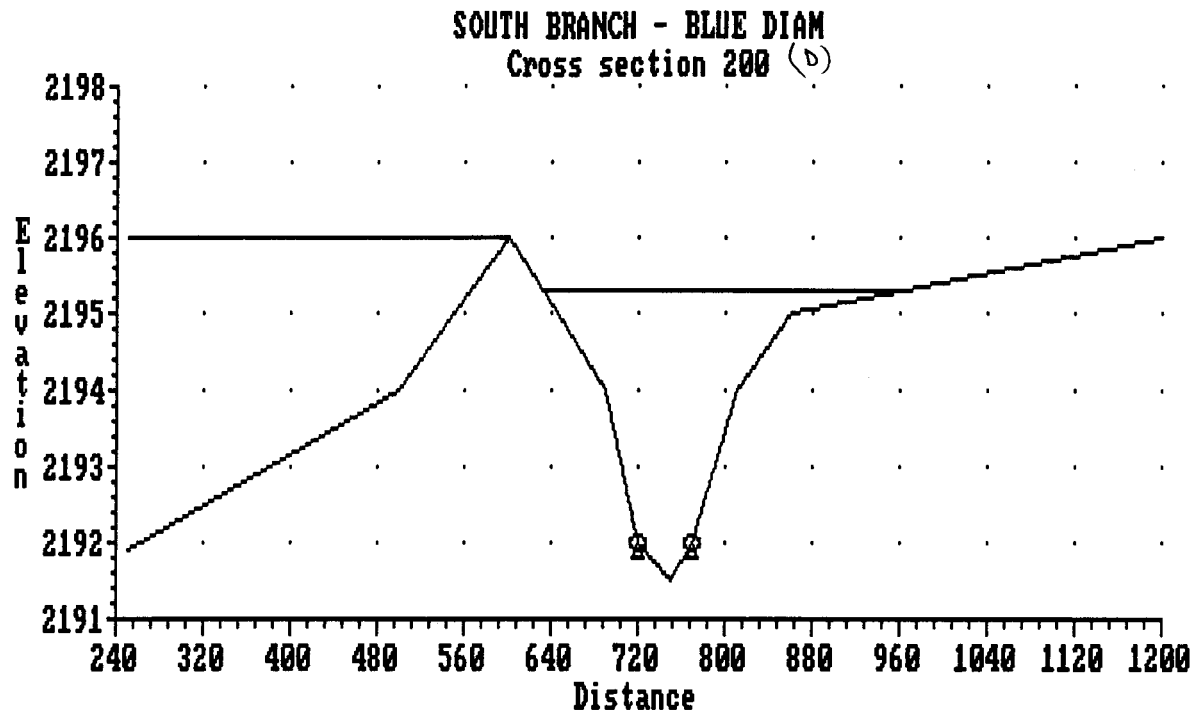


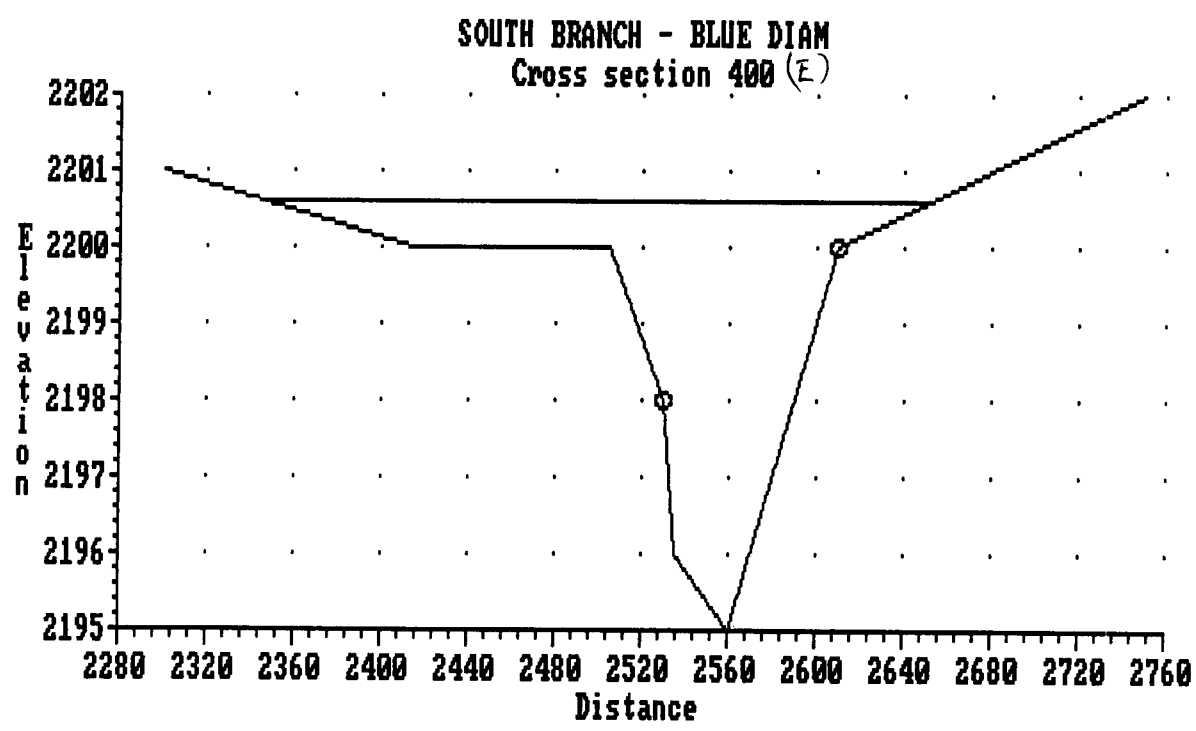


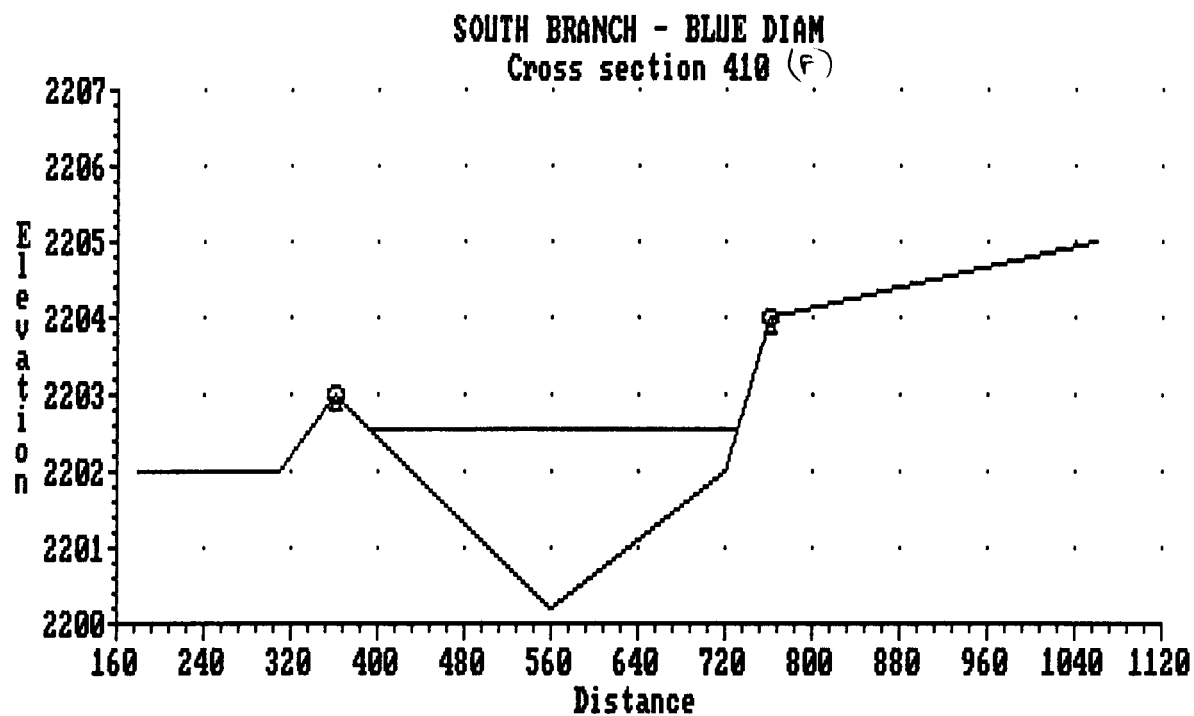


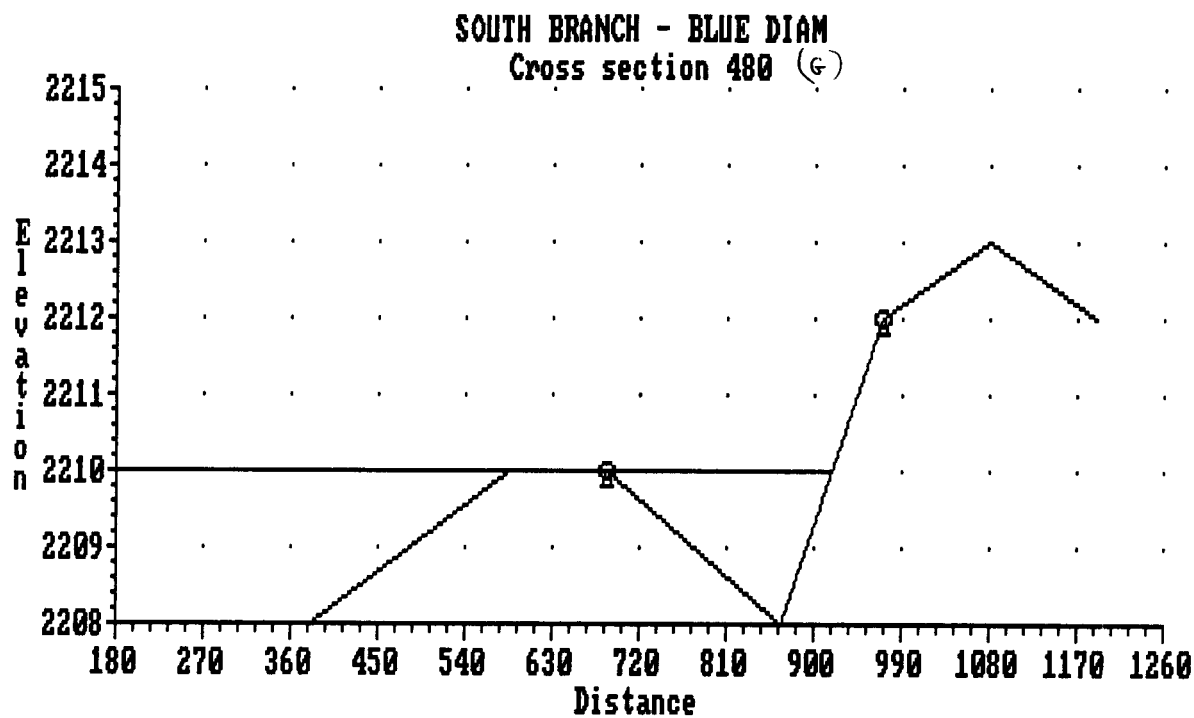


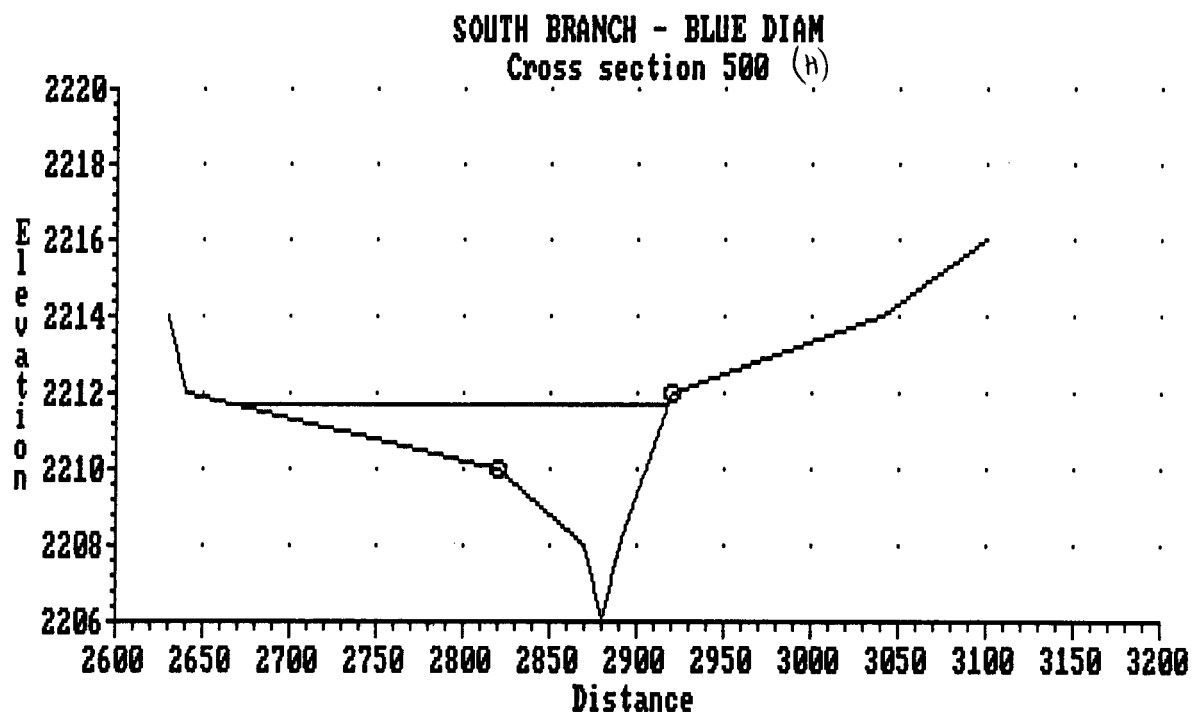


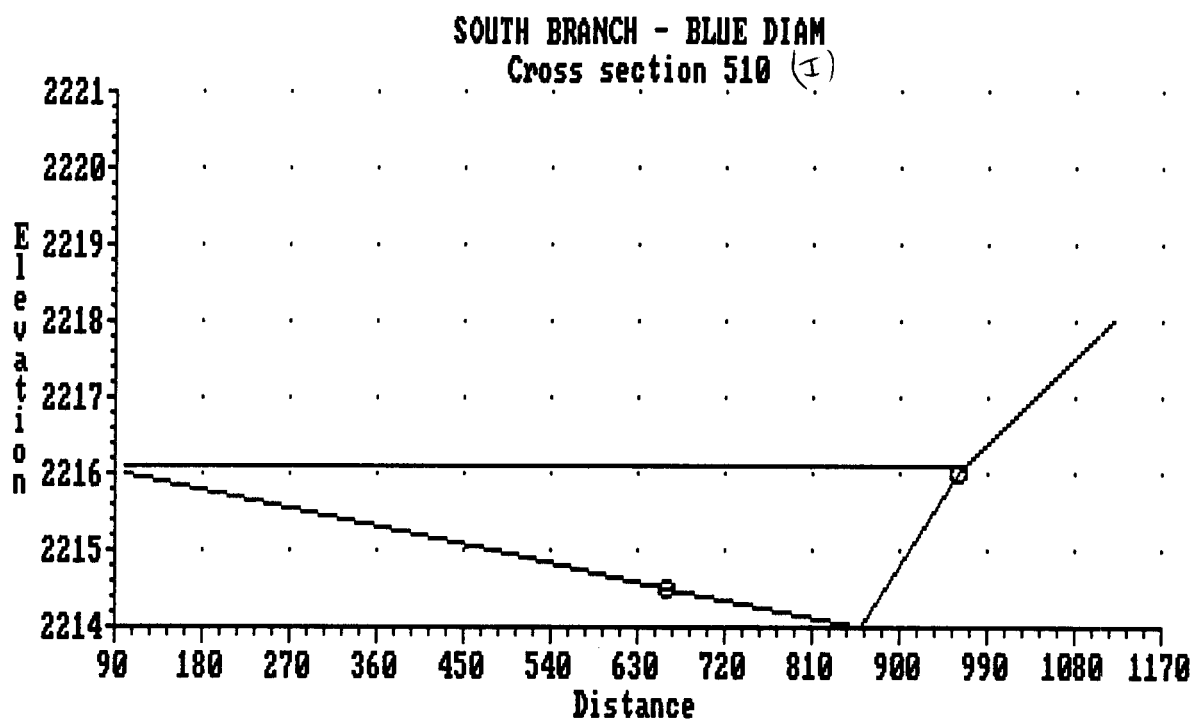




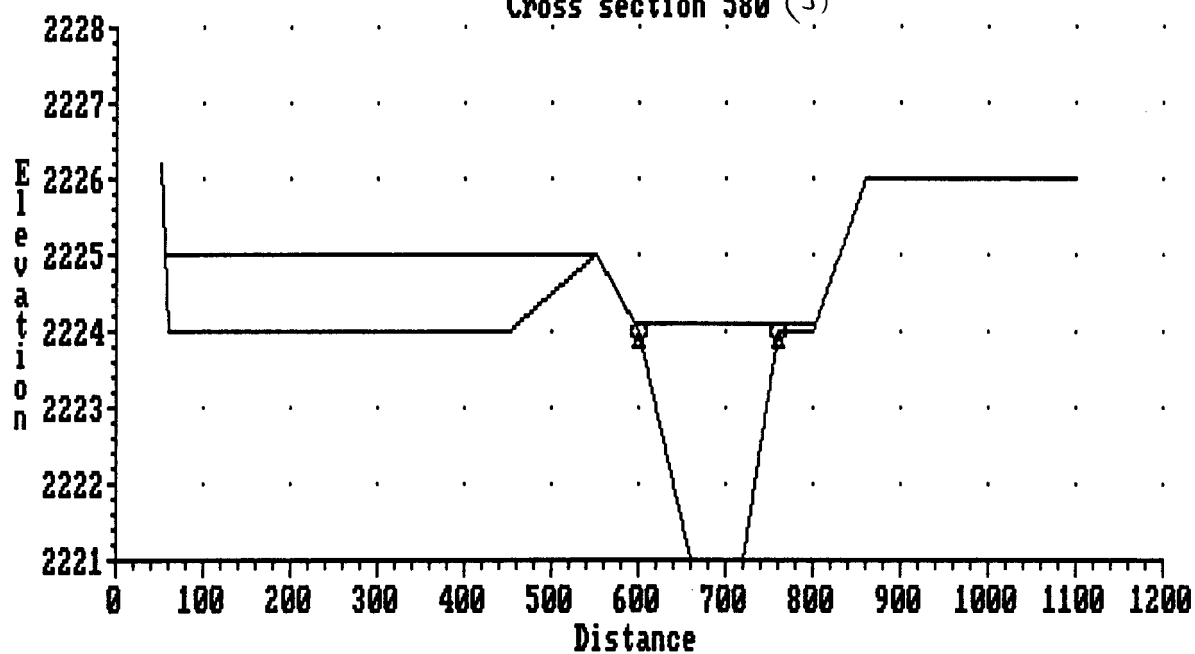


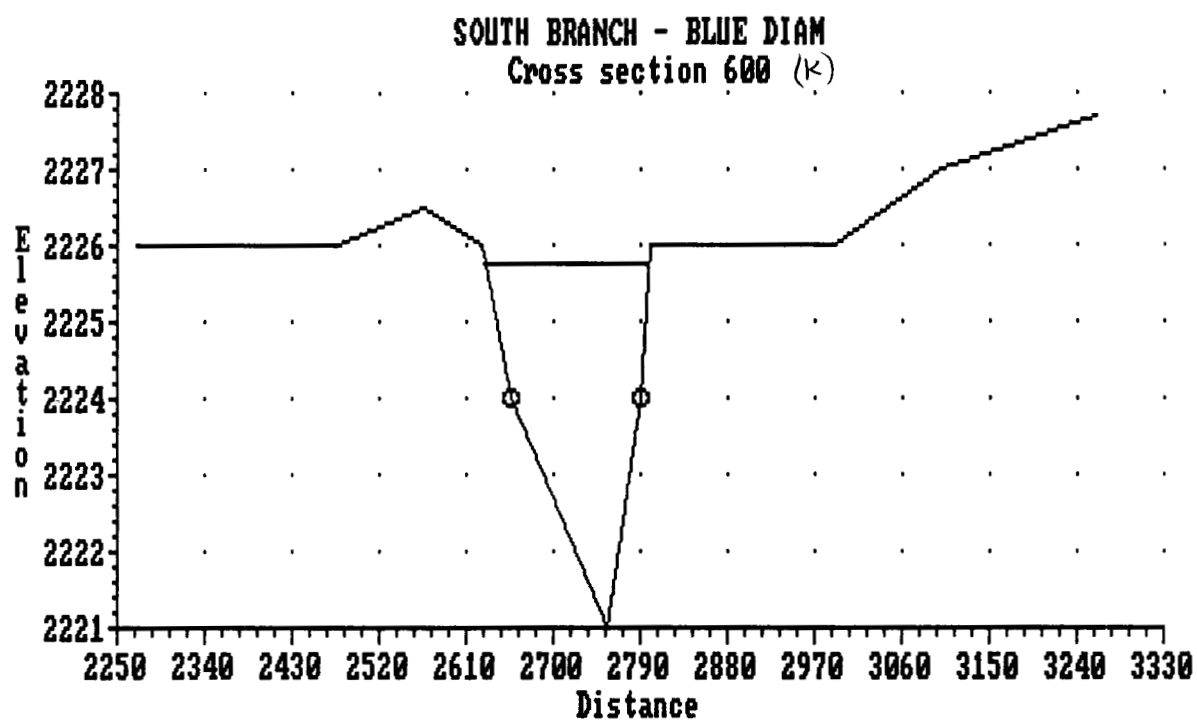




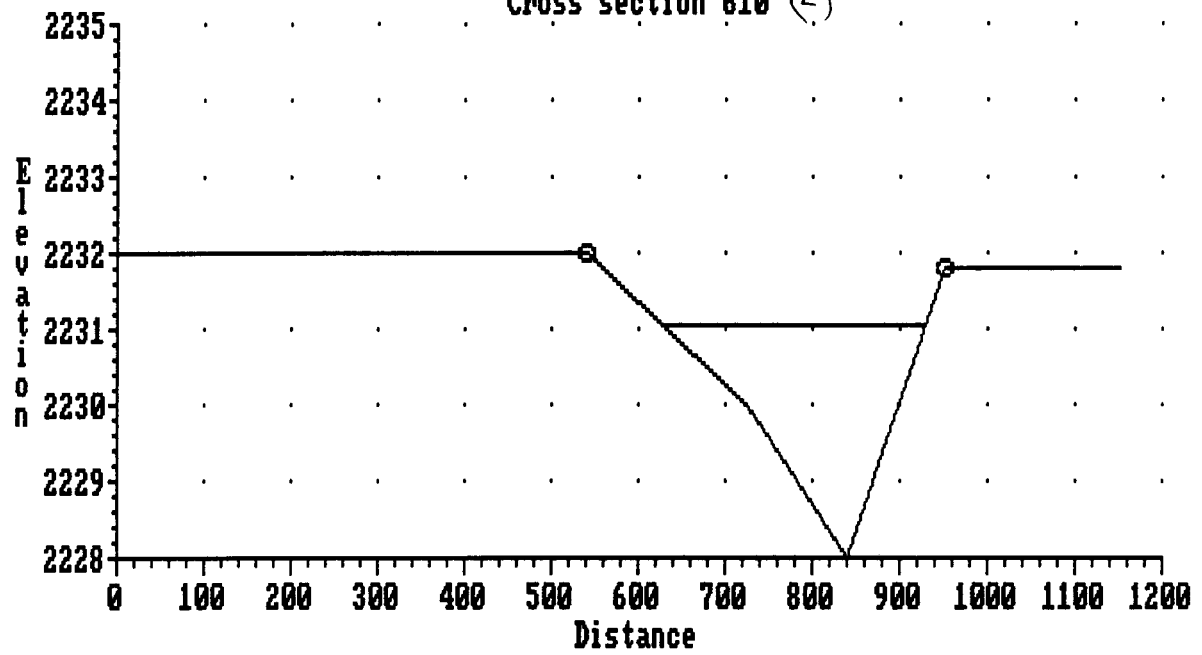


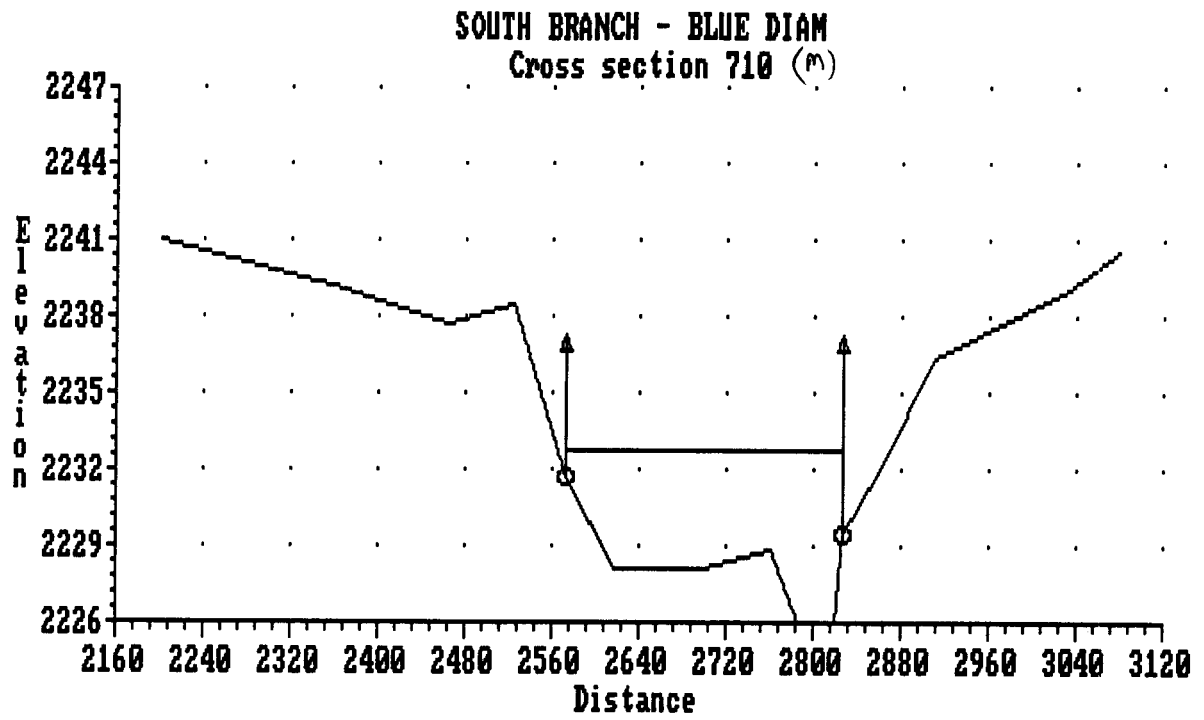
SOUTH BRANCH - BLUE DIAM
Cross section 580 (J)



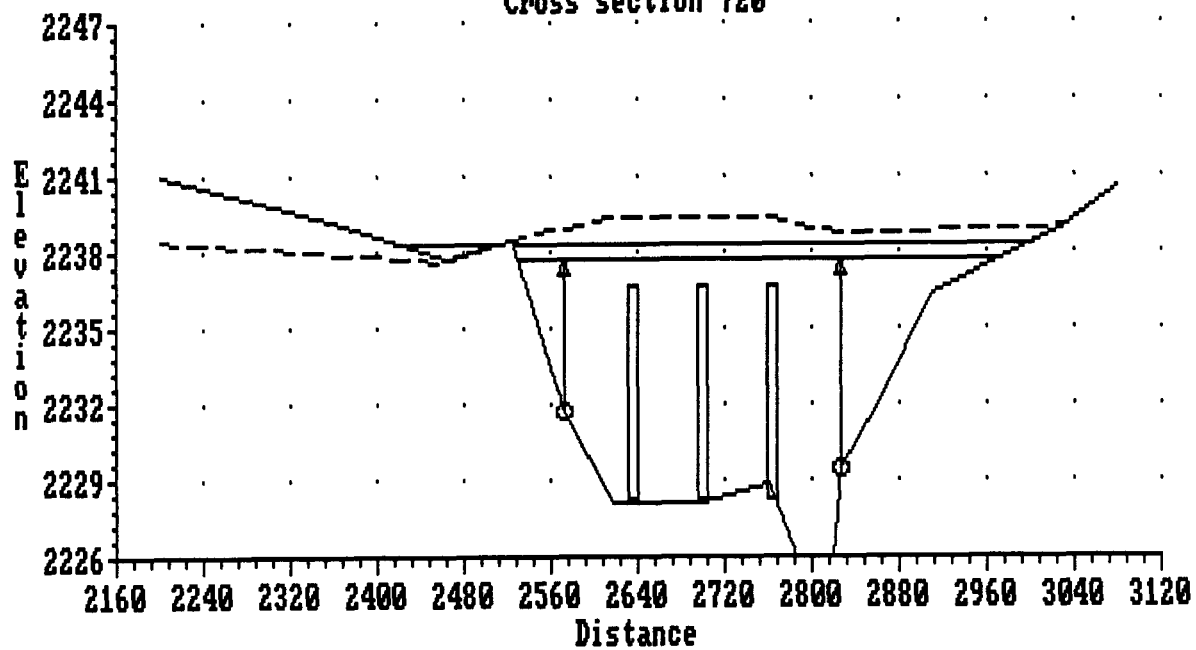


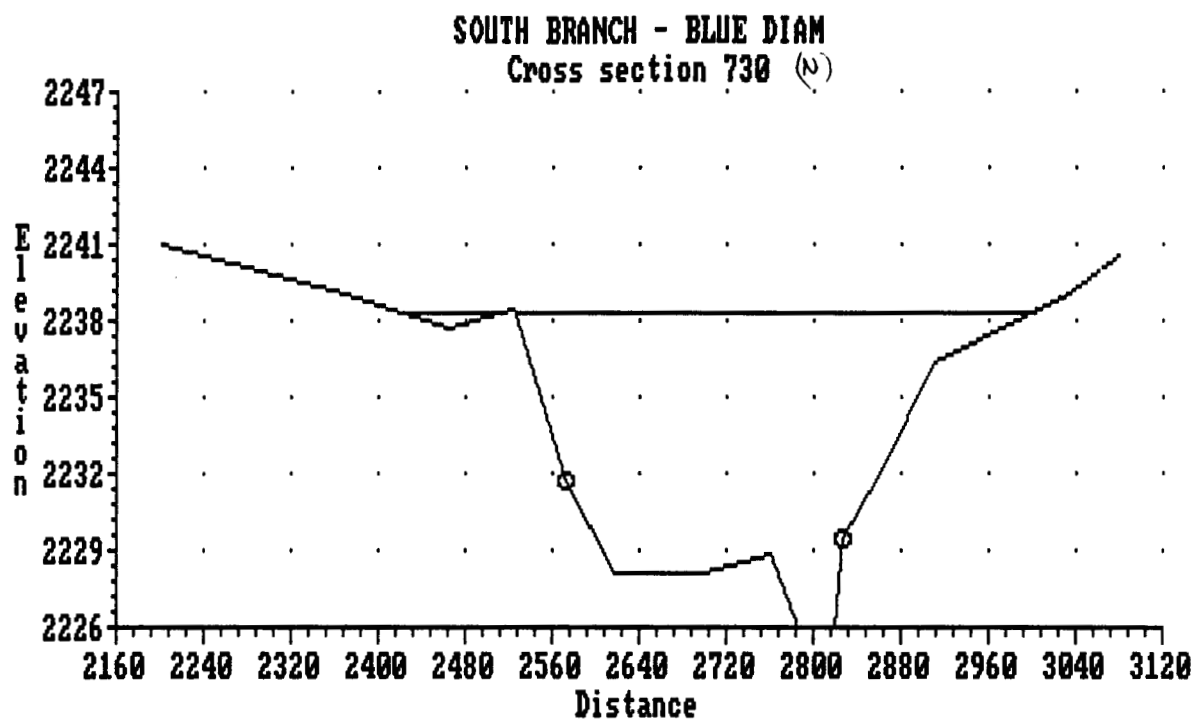
SOUTH BRANCH - BLUE DIAM
Cross section 610 (L)

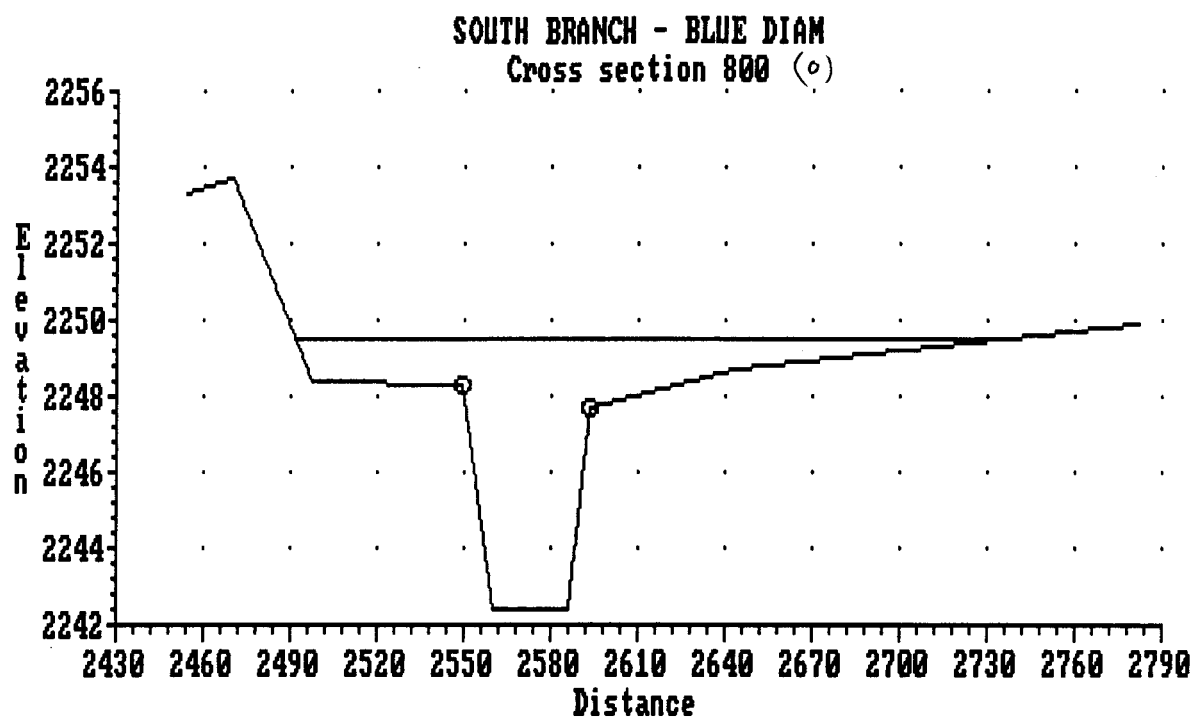


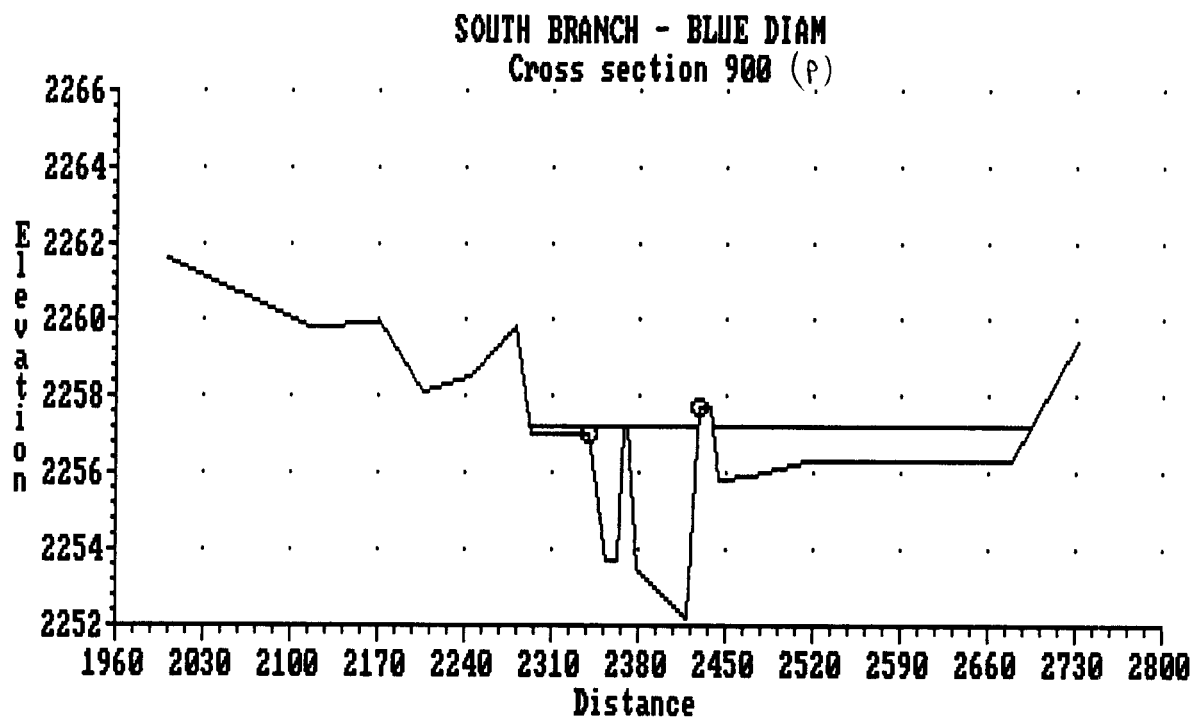


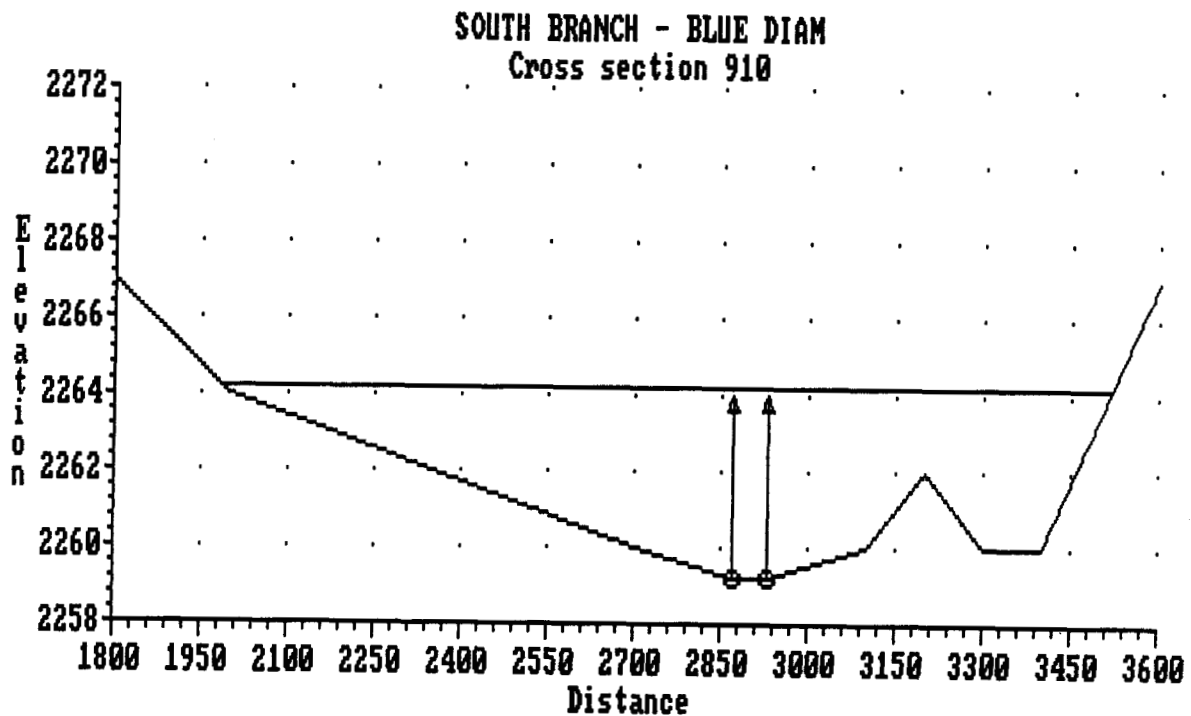
SOUTH BRANCH - BLUE DIAM Cross section 720

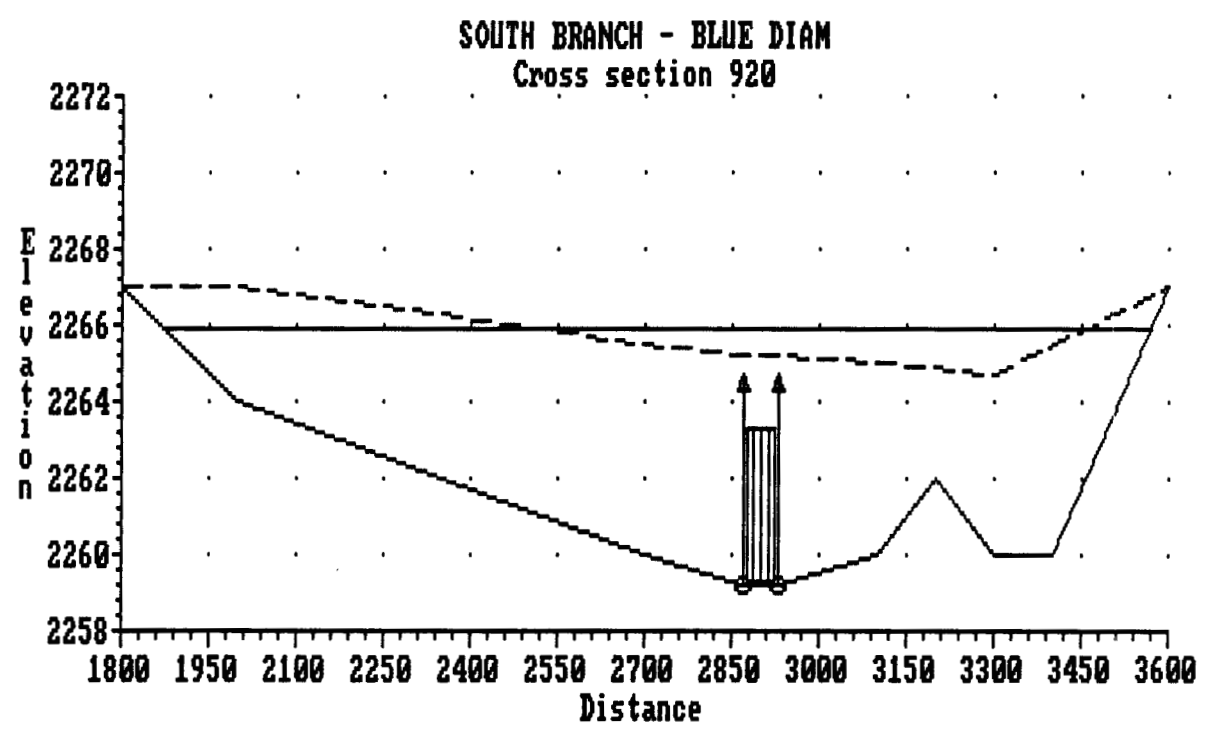




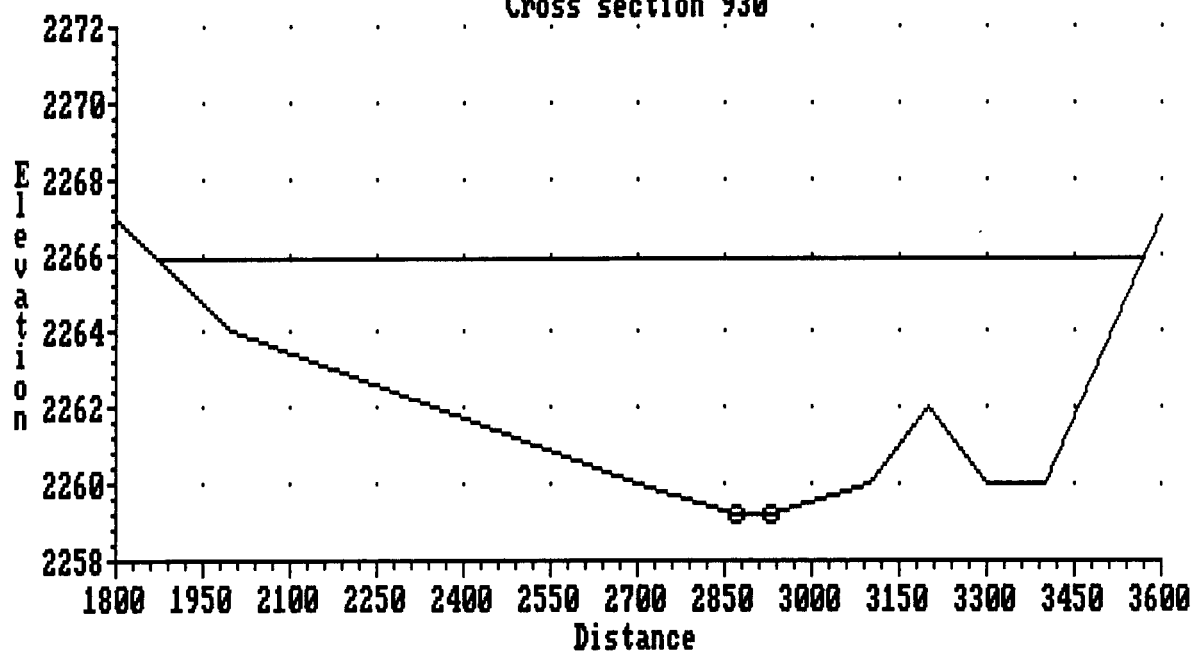


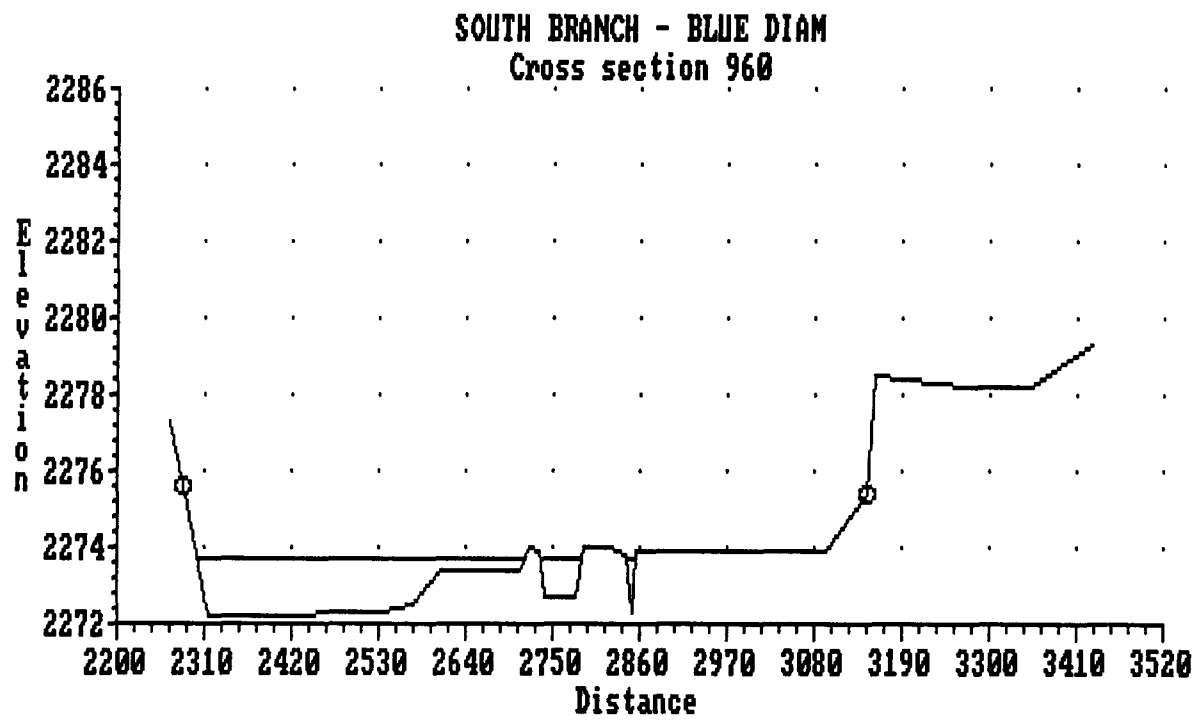






SOUTH BRANCH - BLUE DIAM
Cross section 930





THIS RUN EXECUTED 14MAY93 12:52:58

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 CLARK COUNTY FLOOD INSURANCE STUDY
 T2 JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC. - Revised by MBJ Inc.
 T3 SOUTH BRANCH - BLUE DIAMOND WASH WITH NEW TOPO 4/7/93

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			-1				2145	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1		-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	150	200								
QT	2	2800	2800							
ET			10.4							
NC	.025	.025	.025							
X1	18.46	12	270	308	46	46	46			
GR	2150.1	0	2150.01	100	2150.24	140	2150.5	190	2150.68	240
3R	2147.2	270	2139.2	284	2139.5	294	2147.2	308	2150.45	350
GR	2155	390	2155	420						
X1	24	15	110	177	128	128	128			
GR	2165	0	2164	50	2163	100	2162	110	2161	113
3R	2160	116	2155	124	2150	133	2146	140	2145	152
GR	2145	159	2150	166	2160	177	2164	187	2168	300

CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans

Extends from Windmill channel to Bermuda Road

	25.40	20	199	211	140	140	140			
Y1	25.40	20	199	211	140	140	140			
GR	2166	0	2165	20	2164	110	2163	160	2162	173
GR	2161	177	2160	181	2155	187	2150	193	2146	199
GR	2146	211	2150	215	2155	221	2158	225	2160	228
GR	2165	233	2166	235	2167	238	2168	241	2168	350
NC				.3	.5					
ET			10.4							
X1	25.41				10	10	10			
X3	10							2173	2173	

SC	1.013	.5	2.6	0	10	12	650	8.3	2160.01	2146.05
ET			10.4							
X1	25.42	17	189	201	650	650	650			
X2			2	2170	2175					
X3	10							2176	2176	
BT	-8	0	2178		159	2177		163	2176	
BT		167	2175		189	2175		220	2175	
BT		220	2178		400	2178				
GR	2178	0	2178	150	2177	159	2176	163	2175	167
GR	2174	171	2169	177	2164	183	2160	189	2160	201
GR	2164	205	2169	211	2172	215	2174	218	2175	220
GR	2178	230	2178	400						

NC	.04	.04	.04	.1	.3					
X1 (A)	25.43				50	50	50			

ET 10.4

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP

Modeled from Kachina Homes Plans

Clark County project

X1 (B)	100	11	176	202	350	350	350			
GR	2184	0	2185	100	2184	175	2181.8	176	2173.2	177
GR	2173	192	2181.8	202	2184	300	2184	360	2186	365
GR	2186	510								

NC			.3	.5						
			Extended cross section to intersect water surface							
X1	110	12	1000	1041	200	200	200			
X3	10							2182.7	2182.7	
GR	2187	800	2187	800	2186	900	2188.4	995	2183.4	1000
GR	2177	1001	2177	1034	2183.6	1041	2184	1125	2186	1150
GR	2186	1200	2188	1400						

SC	4.013	.5	2.6	0	4	0	70	1.3	2178.2	2177
X1	120	9	1000	1041	70	70	70			
X2			2	2182.2	2183.3					
X3	10							2183.3	2183.3	
BT	-9	0	2190		600	2184		800	2183.3	
BT		1000	2183.4		1001	2183.5		1034	2183.6	
BT		1041	2184		1241	2185		1441	2190	
GR	2200	500	2186	600	2186	800	2183.4	1000	2178.2	1001
GR	2178.2	1034	2184	1041	2185	1241	2200	1441		

NC			.1	.3						
X1 (C)	130				100	100	100			

ET 10.4

NEW TOPOGRAPHY MODIFIES SECTIONS 200 TO 580

		CROSS SECTION 200			PLACID ST.					
		Modeled top of Road from JMM Workmap								
X1 (D)	200	10	720	770	550	550	550			
X3	10			600	2196					
GR	2191.9	250	2194	500	2196	600	2194	690	2192	720
GR	2191.5	750	2192	770	2194	810	2195	860	2196	1200
		CROSS SECTION 400			ORIGINAL JMM					
X1 (E)	400	10	2530	2610	600	600	600			
GR	2201	2300	2201	2300	2200	2415	2200	2505	2198	2530
GR	2196	2535	2195	2560	2196	2570	2200	2610	2202	2750
		CROSS SECTION 410			CIENEGA ST.					
		Modeled Top of Road from JMM Workmap								
X1 (F)	410	7	360	760	140	140	140			
X3	10							2203		
GR	2202	180	2202	310	2203	360	2200.2	560	2202.0	720
GR	2204	760	2205	1060						
IT	2	2800	2800							
ET			10.4							
		CROSS SECTION 480			GILESPIE ST.					
		Modeled Top of Road from JMM Workmap								
X1 (G)	480	8	685	970	750	750	750			
X3	10							2211		
GR	2208	180	2208	380	2210	585	2210	685	2208	865
GR	2212	970	2213	1080	2212	1190				
		CROSS SECTION 500			ORIGINAL JMM					
X1 (H)	500	9	2820	2920	220	220	220			
GR	2214	2630	2212	2640	2210	2820	2208	2870	2206	2880
GR	2208	2890	2212	2920	2214	3040	2216	3100		
		CROSS SECTION 510			RANCHO DESTINO					
		Modeled Top of Road from JMM Workmap								
X1 (I)	510	6	660	960	500	500	500			
GR	2216	100	2215	480	2214.5	660	2214	860	2216	960
GR	2218	1120								
		CROSS SECTION 580			HAVEN ROAD					
		Modeled Top of Road from JMM Workmap								
X1 (J)	580	11	600	760	670	670	670			
X3	10			550	2225					
GR	2226.2	50	2224	60	2224	450	2225	550	2224	600
GR	2221	660	2221	720	2224	760	2224	800	2226	860
GR	2226	1100								
		CROSS SECTION 600			ORIGINAL JMM					
X1 (K)	600	12	2655	2790	130	130	130			
GR	2226	2270	2226	2380	2226	2475	2226.5	2565	2226	2625
GR	2224	2655	2221	2755	2224	2790	2226.0	2800	2226	2990
GR	2227	3100	2227.7	3260						

CROSS SECTION 610 GILES ROAD
Modeled Top of Road from JMM Workmap

X1 (L) 610	6	540	950	550	550	550			
GR 2232	0	2232	540	2230	725	2228	840	2231.8	950
GR 2231.8	1150								

NC .3 .5
CROSS SECTIONS 710-730 LAS VEGAS BLVD
From plans and picture 3 - 10x8.5 RCB
Ground points from JMM HEC-2 Adjusted

X1 (M) 710	15	2572	2827	600	600	600			
X3 10							2237.2	2237.2	
GR 2241	2200	2239	2369	2237.7	2464	2238.5	2525	2231.7	2572
GR 2228.1	2616	2228.1	2698	2228.8	2760	2226.0	2786	2226.0	2820
GR 2229.5	2827	2231.8	2858	2236.4	2911	2239.0	3033	2240.5	3079
SC 3.015	.5	2.6	0	8.5	10	50	8.1	2228.2	2228.2
X1 720				50	50	50			
X2		2	2236.7	2237.7					
X3 10							2237.7	2237.7	
BT -7	2200	2238.4		2464	2237.6		2525	2238.5	
BT	2616	2239.3		2760	2239.3		2827	2238.7	
BT	3033	2239							

NC .1 .3
X1 (N) 730 100 100 100

CROSS SECTIONS 800-900 ORIGINAL JMM

X1 (D) 800	9	2549	2593	1650	1650	1650			
GR 2253.3	2454	2253.7	2470	2248.4	2497	2248.3	2549	2242.4	2560
GR 2242.4	2586	2247.7	2593	2248.7	2643	2249.9	2782		

CROSS SECTIONS 900-930 I-15
From plans and picture 4 - 12x4 RCB
Top of road from JMM workmap

X1 (P) 900	22	2339	2428	700	700	700			
GR 2261.6	2000	2259.8	2116	2259.9	2172	2258.1	2206	2258.5	2245
GR 2259.8	2281	2257.0	2293	2257.0	2339	2253.7	2354	2253.7	2363
GR 2257.2	2367	2257.2	2371	2253.5	2379	2252.2	2419	2257.7	2428
GR 2257.7	2438	2255.8	2443	2255.9	2470	2256.3	2515	2256.3	2579
GR 2256.3	2679	2259.4	2731						

NC			.3	.5					
X1 910	10	2870	2930	300	300	300			
X3 10							2264	2264	
GR 2267	1800	2264	2000	2260	2700	2259.2	2870	2259.2	2930
GR 2260	3100	2262	3200	2260	3300	2260	3400	2267	3600

SC	4.016	.5	2.6	0	4	12	150	8.1	2259.3	2259.3
X1	920				150	150	150			
X2			2	2263.3	2264.7					
X3	10							2264.7	2264.7	
BT	-8	1800	2267		2000	2267		2700	2265.5	
BT		2870	2265.2		2930	2265.2		3100	2265	
BT		3300	2264.7		3600	2267				
X1	930				100	100	100			
NC	.040	.040	.040	0.1	0.3					
X1	960	28	2282	3147	1000	1000	975			
GR	2277.3	2265	2275.6	2282	2272.2	2315	2272.2	2365	2272.2	2425
GR	2272.3	2477	2272.3	2533	2272.5	2574	2273.4	2609	2273.4	2661
GR	2273.4	2708	2274.0	2721	2273.9	2734	2272.7	2740	2272.7	2780
GR	2274.0	2788	2274.0	2820	2273.8	2843	2272.3	2851	2273.9	2856
GR	2273.9	2915	2273.9	2977	2273.9	3095	2275.4	3147	2278.5	3155
GR	2278.2	3274	2278.2	3351	2279.3	3430				

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

*SECNO 18.460

3720 CRITICAL DEPTH ASSUMED

18.460	8.77	2147.97	2147.97	2145.00	2150.50	2.53	.00	.00	2147.20
2800.0	5.7	2785.7	8.6	2.5	217.5	3.8	.0	.0	2147.20
.00	2.25	12.81	2.26	.025	.025	.025	.000	2139.20	263.39
.005197	46.	46.	46.	0	13	0	.00	54.52	317.91

*SECNO 24.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

24.000	7.52	2152.52	2152.52	.00	2155.21	2.69	.72	.00	2162.00
2800.0	.0	2800.0	.0	.0	212.9	.0	.6	.1	2160.00
.00	.00	13.15	.00	.000	.025	.000	.000	2145.00	128.46
.006096	128.	128.	128.	20	15	0	.00	40.31	168.77

*SECNO 25.400

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans

Extends from Windmill channel to Bermuda Road

25.400	9.18	2155.18	2155.18	.00	2158.30	3.12	.67	.00	2146.00
2800.0	617.1	1775.4	407.5	59.2	110.2	44.8	1.3	.3	2146.00
.01	10.43	16.12	9.09	.025	.025	.025	.000	2146.00	186.78
.003824	140.	140.	140.	20	11	0	.00	34.46	221.24

CCHV= .300 CEHV= .500

*SECNO 25.410

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2173.00 ELREA= 2173.00

25.410	11.87	2157.87	2157.87	.00	2163.87	6.00	.04	1.44	2146.00
2800.0	.0	2800.0	.0	.0	142.4	.0	1.4	.3	2146.00
.01	.00	19.66	.00	.000	.025	.000	.000	2146.00	199.00
.004042	10.	10.	10.	20	11	0	.00	12.00	211.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
1	.013	.50	2.60	.00	10.00	12.00	650.00	8	3	2160.01	2146.05	

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
 SCALE 3 - WINGWALLS FLARED 0 DEGREES (SIDES EXTENDED STRAIGHT)

5130, EGIC= 2191.13..MAY BE TOO LARGE IF INLET CONTROLS.
 5135, EGOC= 2177.66 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
 *SECNO 25.420

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.23

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2191.13	2177.66	14.16	954.	1839.	6.064	120.0	2175.00	400.
25.420	17.66	2177.66	.00	.00	2178.03	.37	14.16	.00
2800.0	850.3	1284.6	665.1	225.6	211.9	190.2	7.1	.9
.04	3.77	6.06	3.50	.025	.025	.025	.000	2160.00
.000226	650.	650.	650.	2	0	0	.00	75.74

CCHV= .100 CEHV= .300
 *SECNO 25.430 (A)

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

25.430	17.68	2177.68	.00	.00	2178.05	.37	.02	.00
2800.0	851.1	1283.3	665.7	226.5	212.2	190.9	7.8	1.0
.05	3.76	6.05	3.49	.040	.040	.040	.000	2160.00
.000575	50.	50.	50.	2	0	0	.00	76.05

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 100.000 (6)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP
 Modeled from Kachina Homes Plans
 Clark County project

100.000	10.77	2183.77	2183.77	.00	2185.47	1.70	.50	.40	2181.80
2800.0	1.6	2521.1	277.3	.9	230.0	86.5	11.6	1.8	2181.80
.06	1.78	10.96	3.21	.040	.040	.040	.000	2173.00	175.10
.007607	350.	350.	350.	20	16	0	.00	114.66	289.77

CCHV= .300 CEHV= .500

*SECNO 110.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

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

Extended cross section to intersect water surface

110.000	9.04	2186.04	.00	.00	2186.56	.52	.74	.35	2183.40
2800.0	5.8	2188.2	606.0	3.6	344.4	216.6	13.7	2.5	2183.60
.07	1.60	6.35	2.80	.040	.040	.040	.000	2177.00	895.80
.002178	200.	200.	200.	3	0	0	.00	212.70	1204.20

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4	.013	.50	2.60	.00	4.00	.00	70.00	1	3	2178.20	2177.00	

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 3 - GROOVE END ENTRANCE, PIPE PROJECTING FROM FILL

5130, EGIC= 2279.29..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2274.94 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 120.000

3840 SECTION NOT HIGH ENOUGH 2279.290 2250.000 2178.200 2250.000 2186.085 8

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN	
2279.29	2274.94	- .50	2136.	639.	7.518	50.3	2183.30	889.	
120.000	7.19	2185.39	.00	.00	2186.05	.66	-.50	.00	2183.40
2800.0	360.0	2046.7	393.3	153.7	272.3	180.8	14.6	3.0	2184.00
.07	2.34	7.52	2.17	.040	.040	.040	.000	2178.20	846.23
.003979	70.	70.	70.	4	0	0	.00	400.08	1246.32

CCHV= .100 CEHV= .300

*SECNO 130.000 (C)

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

130.000	7.87	2186.07	.00	.00	2186.35	.28	.25	.04	2183.40
2800.0	529.4	1602.3	668.3	286.4	299.6	320.8	16.3	4.2	2184.00
.08	1.85	5.35	2.08	.040	.040	.040	.000	2178.20	599.53
.001772	100.	100.	100.	3	0	0	.00	655.68	1255.21

*SECNO 200.000 (D)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 600.0 1200.0 TYPE= 1 TARGET= -600.000

ELENCL= 2196.00 ELENCR= 100000.00

NEW TOPOGRAPHY MODIFIES SECTIONS 200 TO 580

CROSS SECTION 200 PLACID ST.

Modeled top of Road from JMM Workmap

200.000	3.84	2195.34	2195.34	.00	2196.10	.75	1.89	.14	2192.00
2800.0	552.3	1503.0	744.7	110.8	179.6	155.6	24.9	10.6	2192.00
.10	4.99	8.37	4.79	.040	.040	.040	.000	2191.50	629.62
.009228	550.	550.	550.	20	8	0	.00	346.59	976.21

*SECNO 400.000 (E)

7185 MINIMUM SPECIFIC ENERGY

5720 CRITICAL DEPTH ASSUMED

CROSS SECTION 400

ORIGINAL JMM

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

400.000	5.61	2200.61	2200.61	.00	2201.50	.89	5.18	.04	2198.00
2800.0	351.3	2428.7	20.0	117.2	301.6	13.2	30.9	15.1	2200.00
.12	3.00	8.05	1.52	.040	.040	.040	.000	2195.00	2344.44
.008096	600.	600.	600.	3	15	0	.00	308.50	2652.95

*SECNO 410.000 (F)

3280 CROSS SECTION 410.00 EXTENDED .61 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .65

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2203.00 ELREA= 2204.00

CROSS SECTION 410		CIENEGA ST.							
Modeled Top of Road from JMM Workmap									
410.000	2.41	2202.61	2202.56	.00	2203.20	.59	1.67	.03	2203.00
2800.0	.0	2800.0	.0	.0	452.5	.0	32.4	16.1	2204.00
.13	.00	6.19	.00	.000	.040	.000	.000	2200.20	387.90
.019267	140.	140.	140.	8	15	0	.00	344.29	732.19

*SECNO 480.000 (G)

3280 CROSS SECTION 480.00 EXTENDED 2.96 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2211.00 ELREA= 2212.00

CROSS SECTION 480		GILESPIE ST.							
Modeled Top of Road from JMM Workmap									
480.000	2.96	2210.96	2210.66	.00	2211.52	.56	11.09	3.85	2210.00
2800.0	.0	2800.0	.0	.0	468.1	.0	40.3	21.3	2212.00
.16	.00	5.98	.00	.000	.040	.000	.000	2208.00	685.00
.011703	750.	750.	750.	20	8	0	.00	257.73	942.73

*SECNO 500.000 (H)

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

CROSS SECTION 500				ORIGINAL JMM					
500.000	6.53	2212.53	.00	.00	2212.89	.36	1.35	.02	2210.00
2800.0	839.7	1952.2	8.1	277.0	363.5	8.6	43.1	22.7	2212.00
.18	3.03	5.37	.95	.040	.040	.040	.000	2206.00	2637.33
.003774	220.	220.	220.	3	0	0	.00	314.77	2952.09

*SECNO 510.000 (I)

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

CROSS SECTION 510				RANCHO DESTINO					
Modeled Top of Road from JMM Workmap									
510.000	1.73	2215.73	.00	.00	2216.05	.31	3.15	.00	2214.50
2800.0	951.9	1848.1	.0	279.9	372.2	.0	50.6	28.8	2216.00
.21	3.40	4.97	.00	.040	.040	.000	.000	2214.00	200.75
.012616	500.	500.	500.	3	0	0	.00	745.99	946.74

*SECNO 580.000 (J)

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 550.0 1100.0 TYPE= 1 TARGET= -550.000

ELENCL= 2225.00 ELENCR= 100000.00

CROSS SECTION 580				HAVEN ROAD					
Modeled Top of Road from JMM Workmap									
580.000	3.23	2224.23	2224.11	.00	2225.12	.90	8.90	.17	2224.00
2800.0	1.2	2783.8	15.0	1.2	365.4	9.6	58.5	36.2	2224.00
.23	1.01	7.62	1.56	.040	.040	.040	.000	2221.00	588.94
.014006	670.	670.	670.	16	14	0	.00	217.70	806.64

*SECNO 600.000 (K)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.51

CROSS SECTION 600				ORIGINAL JMM					
600.000	4.70	2225.70	.00	.00	2226.30	.60	1.15	.03	2224.00
2800.0	56.4	2725.0	18.6	21.7	431.9	7.2	59.7	36.8	2224.00
.24	2.61	6.31	2.58	.040	.040	.040	.000	2221.00	2629.51
.006129	130.	130.	130.	2	0	0	.00	168.98	2798.50

*SECNO 610.000 (L)

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

CROSS SECTION 610 GILES ROAD

Modeled Top of Road from JMM Workmap

610.000	3.11	2231.11	.00	.00	2231.74	.63	5.43	.01	2232.00
2800.0	.0	2800.0	.0	.0	438.0	.0	65.4	39.8	2231.80
.26	.00	6.39	.00	.000	.040	.000	.000	2228.00	622.81
.018446	550.	550.	550.	3	0	0	.00	307.06	929.87

CCHV= .300 CEHV= .500

*SECNO 710.000 (M)

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 5.87

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2237.20 ELREA= 2237.20

CROSS SECTIONS 710-730 LAS VEGAS BLVD
From plans and picture 3 - 10x8.5 RCB
Ground points from JMM HEC-2 Adjusted

710.000	6.75	2232.75	.00	.00	2232.84	.09	.94	.16	2231.70
2800.0	.0	2800.0	.0	.0	1177.9	.0	76.5	43.7	2229.50
.33	.00	2.38	.00	.000	.040	.000	.000	2226.00	2572.00
.000535	600.	600.	600.	5	0	0	.00	255.00	2827.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.015	.50	2.60	.00	8.50	10.00	50.00	8	1	2228.20	2228.20

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 720.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.36

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2239.55	2239.31	5.52	186.	2621.	.926	255.0	2237.70	304.

720.000	12.35	2238.35	.00	.00	2238.36	.01	5.52	.00	2231.70
2800.0	69.9	2412.8	317.4	185.4	2606.8	554.5	79.1	44.2	2229.50
.35	.38	.93	.57	.040	.040	.040	.000	2226.00	2415.96
.000028	50.	50.	50.	1	0	0	.00	575.04	3002.85

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

CCHV= .100 CEHV= .300

*SECNO 730.000 (N)

3265 DIVIDED FLOW

730.000	12.35	2238.35	.00	.00	2238.37	.01	.00	.00	2231.70
2800.0	69.8	2413.0	317.2	185.0	2606.0	554.0	86.8	45.5	2229.50
.38	.38	.93	.57	.040	.040	.040	.000	2226.00	2416.17
.000028	100.	100.	100.	2	0	0	.00	574.44	3002.71

*SECNO 800.000 (O)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

5720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 800-900				ORIGINAL JMM					
800.000	7.09	2249.49	2249.49	.00	2250.55	1.06	.16	.31	2248.30
2800.0	190.3	2336.3	273.4	62.1	260.8	100.2	158.2	61.0	2247.70
.44	3.06	8.96	2.73	.040	.040	.040	.000	2242.40	2491.46
.005961	1650.	1650.	1650.	20	14	0	.00	242.66	2734.12

*SECNO 900.000 (P)

5265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY

5720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 900-930				I-15					
From plans and picture				4 - 12x4 RCB					
Top of road from JMM workmap									
900.000	5.02	2257.22	2257.22	.00	2257.81	.59	4.88	.05	2257.00
2800.0	12.4	1949.1	838.5	10.2	277.2	247.8	165.9	66.1	2257.70
.47	1.22	7.03	3.38	.040	.040	.040	.000	2252.20	2292.06
.008248	700.	700.	700.	13	14	0	.00	390.30	2694.42

CCHV= .300 CEHV= .500

*SECNO 910.000

SECNO	DEPTH	CWSEL	CRWS	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

910.000	4.95	2264.15	2264.15	.00	2264.16	.01	.05	.17	2259.20
2800.0	1241.8	231.3	1326.9	2280.2	297.1	2065.2	183.7	72.7	2259.20
.61	.54	.78	.64	.040	.040	.040	.000	2259.20	1989.93
.000052	300.	300.	300.	20	8	0	.00	1528.68	3518.60

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
4		.016	.50	2.60	.00	4.00	12.00	150.00	8	1	2259.30	2259.30

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 920.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.05

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2270.73	2271.26	1.75	1410.	1393.	.464	192.0	2264.70	950.

920.000	6.71	2265.91	.00	.00	2265.91	.00	1.75	.00	2259.20
2800.0	1379.4	186.8	1233.8	3932.2	402.7	3145.2	204.6	78.2	2259.20
.72	.35	.46	.39	.040	.040	.040	.000	2259.20	1872.61
.000012	150.	150.	150.	0	0	0	.00	1696.28	3568.88

*SECNO 930.000

930.000	6.71	2265.91	.00	.00	2265.91	.00	.00	.00	2259.20
2800.0	1379.4	186.8	1233.8	3933.2	402.7	3145.9	221.7	82.1	2259.20
.79	.35	.46	.39	.040	.040	.040	.000	2259.20	1872.54
.000012	100.	100.	100.	0	0	0	.00	1696.37	3568.91

CCHV= .100 CEHV= .300

*SECNO 960.000

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

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

960.000	1.48	2273.68	2273.68	.00	2274.20	.52	.05	.16	2275.60
2800.0	.0	2800.0	.0	.0	482.9	.0	312.9	106.9	2275.40
.84	.00	5.80	.00	.000	.040	.000	.000	2272.20	2300.66
.023936	1000.	975.	1000.	20	14	0	.00	475.88	2855.30

T1 METHOD 4 FLOODWAY PROFILE - EQUAL CONVEYANCE
T2 BASED ON REDUCED FLOW DOWNSTREAM OF FLOW SPLIT
T3 SOUTH BRANCH BLUE DIAMOND WASH

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2146	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

*PROF 2

*SECNO 18.460

2800 NAT Q1= 388.41 WSEL= 2147.97 ENC Q1= 505.37 WSEL= 2148.97 RATIO= -.3011

NAT Q1= 524. RATIOS LOB, CH, ROB= .0140 .9650 .0210 WSEL= 2148.97

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	270.0	308.0	TYPE=	4	TARGET=	.035			
18.460	8.52	2147.72	2147.72	2147.97	2150.53	2.81	.00	.00	2147.20
2800.0	.0	2800.0	.0	.0	208.1	.0	.0	.0	2147.20
.00	.00	13.46	.00	.000	.025	.000	.000	2139.20	270.00
.006291	46.	46.	46.	0	10	0	.00	38.00	308.00

*SECNO 24.000

2800 NAT Q1= 358.62 WSEL= 2152.52 ENC Q1= 459.34 WSEL= 2153.52 RATIO= -.2809

NAT Q1= 459. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2153.52

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	110.0	177.0	TYPE=	4	TARGET=	.000			
24.000	7.53	2152.53	2152.53	2152.52	2155.21	2.68	.79	.00	2162.00
2800.0	.0	2800.0	.0	.0	213.3	.0	.6	.1	2160.00
.00	.00	13.13	.00	.000	.025	.000	.000	2145.00	128.44
.006067	128.	128.	128.	20	11	0	.00	40.34	168.78

*SECNO 25.400

2800 NAT Q1= 452.80 WSEL= 2155.18 ENC Q1= 452.80 WSEL= 2156.18 RATIO= .0000

NAT Q1= 562. RATIOS LOB, CH, ROB= .2338 .6073 .1589 WSEL= 2156.18

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	192.5	214.7	TYPE=	4	TARGET=	.194			
CROSS SECTIONS 25.40-25.43 12x10 RBC - Modeled from Plans									
Extends from Windmill channel to Bermuda Road									
25.400	9.18	2155.18	2155.18	2155.18	2159.45	4.27	.76	.00	2146.00
2800.0	592.1	1997.4	210.5	45.4	110.1	27.3	1.3	.2	2146.00
.01	13.03	18.14	7.71	.025	.025	.025	.000	2146.00	192.52
.004849	140.	140.	140.	20	11	0	.00	22.21	214.73

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

CCHV= .300 CEHV= .500

*SECNO 25.410

2800 NAT Q1= 440.43 WSEL= 2157.87 ENC Q1= 504.01 WSEL= 2158.87 RATIO= -.1444
 NAT Q1= 504. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2158.87

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 199.0 211.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2173.00 ELREA= 2173.00

25.410	11.87	2157.87	2157.87	2157.87	2163.87	6.00	.07	.86	2146.00
2800.0	.0	2800.0	.0	.0	142.4	.0	1.3	.2	2146.00
.01	.00	19.66	.00	.000	.025	.000	.000	2146.00	199.00
.010106	10.	10.	10.	20	11	0	.00	12.00	211.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLM	CHRT	SCL	ELCHU	ELCHD
1		.013	.50	2.60	.00	10.00	12.00	650.00	8	3	2160.01	2146.05

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 3 - WINGWALLS FLARED 0 DEGREES (SIDES EXTENDED STRAIGHT)

5130, EGIC= 2191.13..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2177.66 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 25.420

2800 NAT Q1= 1861.17 WSEL= 2177.66 ENC Q1= 1861.17 WSEL= 2178.66 RATIO= .0000
 NAT Q1= 2229. RATIOS LOB, CH, ROB= .3210 .4202 .2588 WSEL= 2178.66

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 6.10

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2191.13	2177.66	14.16	954.	1839.	6.622	120.0	2175.00	400.

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= 174.5 213.5 TYPE= 4 TARGET= .165

25.420	17.55	2177.55	.00	2177.66	2178.03	.48	14.16	.00	2160.00
2800.0	803.9	1394.9	601.3	178.6	210.6	147.5	6.4	.6	2160.00
.04	4.50	6.62	4.08	.025	.025	.025	.000	2160.00	174.48
.000272	650.	650.	650.	2	0	0	.00	39.02	213.50

CCHV= .100 CEHV= .300

*SECNO 25.430 (A)

2800 NAT Q1= 1167.18 WSEL= 2177.68 ENC Q1= 1167.18 WSEL= 2178.68 RATIO= .0000

NAT Q1= 1399. RATIOS LOB, CH, ROB= .3215 .4190 .2595 WSEL= 2178.68

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

3470 ENCROACHMENT STATIONS= 174.4 213.5 TYPE= 4 TARGET= .166

25.430	17.57	2177.57	.00	2177.68	2178.05	.48	.02	.00	2160.00
2800.0	804.2	1393.9	601.8	179.0	210.8	148.0	7.0	.6	2160.00
.04	4.49	6.61	4.07	.040	.040	.040	.000	2160.00	174.44
.000694	50.	50.	50.	0	0	0	.00	39.10	213.54

*SECNO 100.000 (b)

2800 NAT Q1= 321.02 WSEL= 2183.77 ENC Q1= 345.53 WSEL= 2184.77 RATIO= -.0763

NAT Q1= 474. RATIOS LOB, CH, ROB= .0227 .7287 .2487 WSEL= 2184.77

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 176.0 202.0 TYPE= 4 TARGET= .271

CROSS SECTIONS 100-130 FAIRFIELD ST. - 4-48inch RCP

Modeled from Kachina Homes Plans

Clark County project

100.000	9.00	2182.00	2182.00	2183.77	2185.60	3.60	.69	.93	2181.80
2800.0	.0	2800.0	.0	.0	183.9	.0	9.9	.9	2181.80
.05	.00	15.22	.00	.000	.040	.000	.000	2173.00	176.00
.020057	350.	350.	350.	20	11	0	.00	26.00	202.00

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

CCHV= .300 CEHV= .500

*SECNO 110.000

2800 NAT Q1= 600.02 WSEL= 2186.04 ENC Q1= 600.02 WSEL= 2187.04 RATIO= .0000
 NAT Q1= 872. RATIOS LOB, CH, ROB= .0246 .6485 .3269 WSEL= 2187.04

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.78

3470 ENCROACHMENT STATIONS= 1000.0 1053.8 TYPE= 4 TARGET= .312

Extended cross section to intersect water surface

110.000	9.84	2186.84	.00	2186.04	2187.58	.74	1.12	.86	2183.40
2800.0	.0	2654.4	145.6	.0	377.0	41.0	11.3	1.1	2183.60
.06	.00	7.04	3.55	.000	.040	.040	.000	2177.00	1000.00
.002595	200.	200.	200.	3	0	0	.00	53.80	1053.80

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLM	CHRT	SCL	ELCHU	ELCHD
	4	.013	.50	2.60	.00	4.00	.00	70.00	1	3	2178.20	2177.00

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE

SCALE 3 - GROOVE END ENTRANCE, PIPE PROJECTING FROM FILL

5130, EGIC= 2279.29..MAY BE TOO LARGE IF INLET CONTROLS.

5135, EGOC= 2275.73 ..MAY BE TOO LARGE IF OUTLET CONTROLS.

*SECNO 120.000

2800 NAT Q1= 443.90 WSEL= 2185.39 ENC Q1= 443.90 WSEL= 2186.39 RATIO= .0000
 NAT Q1= 822. RATIOS LOB, CH, ROB= .2360 .4979 .2660 WSEL= 2186.39

3301 HV CHANGED MORE THAN HVINS

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2279.29	2275.73	-.73	2107.	687.	9.945	50.3	2183.30	999.

3470 ENCROACHMENT STATIONS= 997.7 1060.8 TYPE= 4 TARGET= .460

120.000	7.16	2185.36	.00	2185.39	2186.84	1.48	-.73	.00	2183.40
2800.0	14.8	2692.1	93.1	4.6	270.7	26.0	11.8	1.2	2184.00
.06	3.25	9.95	3.58	.040	.040	.040	.000	2178.20	997.66

.007017	70.	70.	70.	4	0	0	.00	63.18	1060.84
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300

*SECNO 130.000 (C)

2800 NAT Q1= 665.08 WSEL= 2186.07 ENC Q1= 665.08 WSEL= 2187.07 RATIO= .0000
 NAT Q1= 1236. RATIOS LOB, CH, ROB= .3205 .3814 .2981 WSEL= 2187.07

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS= 959.8 1078.3 TYPE= 4 TARGET= .462

130.000	8.61	2186.81	.00	2186.07	2187.29	.48	.35	.10	2183.40
2800.0	440.4	2040.5	319.1	126.7	330.1	101.2	12.8	1.4	2184.00
.06	3.48	6.18	3.15	.040	.040	.040	.000	2178.20	959.76
.002081	100.	100.	100.	3	0	0	.00	118.50	1078.26

*SECNO 200.000 (D)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 600.0 1200.0 TYPE= 1 TARGET= -600.000
 ELENC1= 2196.00 ELENC2= 100000.00

NEW TOPOGRAPHY MODIFIES SECTIONS 200 TO 580

CROSS SECTION 200 PLACID ST.

Modeled top of Road from JMM Workmap

200.000	3.85	2195.35	2195.35	2195.34	2196.10	.74	2.09	.08	2192.00
2800.0	553.8	1497.5	748.6	111.9	180.2	158.3	19.2	4.4	2192.00
.09	4.95	8.31	4.73	.040	.040	.040	.000	2191.50	629.04
.009052	550.	550.	550.	20	15	0	.00	351.57	980.61

*SECNO 400.000 (E)

2800 NAT Q1= 311.19 WSEL= 2200.61 ENC Q1= 399.52 WSEL= 2201.61 RATIO= -.2839

NAT Q1= 600. RATIOS LOB, CH, ROB= .2852 .6659 .0489 WSEL= 2201.61

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 2530.0 2610.0 TYPE= 4 TARGET= .334
 CROSS SECTION 400 ORIGINAL JMM

SECNO	DEPTH	CWSEL	CRWS	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
400.000	5.75	2200.75	.00	2200.61	2201.99	1.25	5.75	.15	2198.00
2800.0	.0	2800.0	.0	.0	312.2	.0	24.4	7.3	2200.00
.10	.00	8.97	.00	.000	.040	.000	.000	2195.00	2530.00
.010150	600.	600.	600.	3	0	0	.00	80.00	2610.00

*SECNO 410.000 (F)

2800 NAT Q1= 201.72 WSEL= 2202.61 ENC Q1= 507.30 WSEL= 2203.61 RATIO= -1.5149
 NAT Q1= 635. RATIOS LOB, CH, ROB= .2013 .7987 .0000 WSEL= 2203.61
 3280 CROSS SECTION 410.00 EXTENDED 1.04 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 360.0 760.0 TYPE= 4 TARGET= .201

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2203.00 ELREA= 2204.00

CROSS SECTION 410 CIENEGA ST.
 Modeled Top of Road from JMM Workmap

410.000	2.83	2203.03	2202.54	2202.61	2203.36	.33	1.28	.09	2203.00
2800.0	.0	2800.0	.0	.0	608.3	.0	25.9	8.1	2204.00
.11	.00	4.60	.00	.000	.040	.000	.000	2200.20	360.00
.008222	140.	140.	140.	10	18	0	.00	380.75	740.75

*SECNO 480.000 (G)

2800 NAT Q1= 258.83 WSEL= 2210.96 ENC Q1= 519.27 WSEL= 2211.96 RATIO= -1.0062
 NAT Q1= 1826. RATIOS LOB, CH, ROB= .7156 .2844 .0000 WSEL= 2211.96
 3280 CROSS SECTION 480.00 EXTENDED 2.84 FEET

3470 ENCROACHMENT STATIONS= 685.0 970.0 TYPE= 4 TARGET= .716

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2211.00 ELREA= 2212.00

CROSS SECTION 480 GILESPIE ST.
 Modeled Top of Road from JMM Workmap

480.000	2.84	2210.84	2210.65	2210.96	2211.48	.64	8.02	.09	2210.00
2800.0	.0	2800.0	.0	.0	436.9	.0	34.9	13.5	2212.00
.14	.00	6.41	.00	.000	.040	.000	.000	2208.00	685.00
.014485	750.	750.	750.	13	11	0	.00	254.53	939.53

SECNO	DEPTH	CWSEL	CRWS	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 500.000 (H)

2800 NAT Q1= 455.77 WSEL= 2212.53 ENC Q1= 476.13 WSEL= 2213.53 RATIO= -.0447
 NAT Q1= 815. RATIOS LOB, CH, ROB= .3886 .5845 .0269 WSEL= 2213.53

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.49

3470 ENCROACHMENT STATIONS= 2820.0 2920.0 TYPE= 4 TARGET= .416
 CROSS SECTION 500 ORIGINAL JMM

500.000	6.78	2212.78	.00	2212.53	2213.59	.81	2.06	.05	2210.00
2800.0	.0	2800.0	.0	.0	387.9	.0	37.0	14.4	2212.00
.15	.00	7.22	.00	.000	.040	.000	.000	2206.00	2820.00
.006548	220.	220.	220.	2	0	0	.00	100.00	2920.00

*SECNO 510.000 (I)

2800 NAT Q1= 249.29 WSEL= 2215.73 ENC Q1= 425.05 WSEL= 2216.73 RATIO= -.7051
 NAT Q1= 838. RATIOS LOB, CH, ROB= .4880 .5071 .0049 WSEL= 2216.73

3280 CROSS SECTION 510.00 EXTENDED .51 FEET

3470 ENCROACHMENT STATIONS= 660.0 960.0 TYPE= 4 TARGET= .493
 CROSS SECTION 510 RANCHO DESTINO
 Modeled Top of Road from JMM Workmap

510.000	2.51	2216.51	2215.88	2215.73	2216.84	.34	3.21	.05	2214.50
2800.0	.0	2800.0	.0	.0	601.5	.0	42.7	16.7	2216.00
.18	.00	4.65	.00	.000	.040	.000	.000	2214.00	660.00
.006279	500.	500.	500.	13	14	0	.00	300.00	960.00

*SECNO 580.000 (J)

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 550.0 1100.0 TYPE= 1 TARGET= -550.000

ELENCL= 2225.00 ELENCR= 100000.00

CROSS SECTION 580 HAVEN ROAD
 Modeled Top of Road from JMM Workmap

580.000	3.11	2224.11	2224.11	2224.23	2225.11	1.00	6.46	.20	2224.00
2800.0	.2	2794.8	4.9	.3	347.5	4.6	50.0	20.6	2224.00
.21	.69	8.04	1.08	.040	.040	.040	.000	2221.00	594.52
.016683	670.	670.	670.	9	11	0	.00	208.77	803.29

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

*SECNO 600.000 (K)

2800 NAT Q1= 357.66 WSEL= 2225.70 ENC Q1= 547.98 WSEL= 2226.70 RATIO= -.5321
 NAT Q1= 685. RATIOS LOB, CH, ROB= .1223 .8005 .0772 WSEL= 2226.70

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

3470 ENCROACHMENT STATIONS= 2655.0 2790.0 TYPE= 4 TARGET= .199
 CROSS SECTION 600 ORIGINAL JMM

600.000	4.77	2225.77	.00	2225.70	2226.40	.63	1.25	.04	2224.00
2800.0	.0	2800.0	.0	.0	441.2	.0	51.2	21.2	2224.00
.21	.00	6.35	.00	.000	.040	.000	.000	2221.00	2655.00
.006239	130.	130.	130.	2	0	0	.00	135.00	2790.00

*SECNO 610.000 (L)

2800 NAT Q1= 206.16 WSEL= 2231.11 ENC Q1= 468.02 WSEL= 2232.11 RATIO= -1.2702
 NAT Q1= 483. RATIOS LOB, CH, ROB= .0097 .9690 .0213 WSEL= 2232.11

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

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3470 ENCROACHMENT STATIONS= 540.0 950.0 TYPE= 4 TARGET= .031
 CROSS SECTION 610 GILES ROAD
 Modeled Top of Road from JMM Workmap

610.000	3.14	2231.14	2231.02	2231.11	2231.74	.60	5.34	.00	2232.00
2800.0	.0	2800.0	.0	.0	450.5	.0	56.8	24.0	2231.80
.24	.00	6.21	.00	.000	.040	.000	.000	2228.00	619.06
.017149	550.	550.	550.	20	14	0	.00	311.98	931.05

CCHV= .300 CEHV= .500

*SECNO 710.000 (M)

2800 NAT Q1= 1210.17 WSEL= 2232.75 ENC Q1= 1677.75 WSEL= 2233.75 RATIO= -.3864
 NAT Q1= 1678. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2233.75

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 5.61

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= 2572.0 2827.0 TYPE= 4 TARGET= .000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2237.20 ELREA= 2237.20

CROSS SECTIONS 710-730 LAS VEGAS BLVD
 From plans and picture 3 - 10x8.5 RCB
 Ground points from JMM HEC-2 Adjusted

710.000	6.75	2232.75	.00	2232.75	2232.84	.09	.94	.15	2231.70
2800.0	.0	2800.0	.0	.0	1177.5	.0	68.0	27.9	2229.50
.31	.00	2.38	.00	.000	.040	.000	.000	2226.00	2572.00
.000545	600.	600.	600.	4	0	0	.00	255.00	2827.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
3		.015	.50	2.60	.00	8.50	10.00	50.00	8	1	2228.20	2228.20

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

*SECNO 720.000

2800 NAT Q1= 5278.44 WSEL= 2238.35 ENC Q1= 5309.12 WSEL= 2239.35 RATIO= -.0058
 NAT Q1= 6411. RATIOS LOB, CH, ROB= .0409 .8281 .1310 WSEL= 2239.35

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.64

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2239.55	2239.31	5.53	189.	2622.	1.075	255.0	2237.70	306.

3470 ENCROACHMENT STATIONS= 2572.0 2827.0 TYPE= 4 TARGET= .172

720.000	12.35	2238.35	.00	2238.35	2238.37	.02	5.53	.00	2231.70
2800.0	.0	2800.0	.0	.0	2604.8	.0	70.2	28.2	2229.50
.32	.00	1.07	.00	.000	.040	.000	.000	2226.00	2572.00
.000041	50.	50.	50.	2	0	0	.00	255.00	2827.00

CCHV= .100 CEHV= .300

*SECNO 730.000 (N)

2800 NAT Q1= 5275.45 WSEL= 2238.35 ENC Q1= 5311.43 WSEL= 2239.35 RATIO= -.0068
 NAT Q1= 6415. RATIOS LOB, CH, ROB= .0410 .8280 .1310 WSEL= 2239.35

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= 2572.0 2827.0 TYPE= 4 TARGET= .172

730.000	12.35	2238.35	.00	2238.35	2238.37	.02	.00	.00	2231.70
2800.0	.0	2800.0	.0	.0	2605.6	.0	76.2	28.8	2229.50
.35	.00	1.07	.00	.000	.040	.000	.000	2226.00	2572.00
.000041	100.	100.	100.	0	0	0	.00	255.00	2827.00

*SECNO 800.000 (6)

2800 NAT Q1= 362.65 WSEL= 2249.49 ENC Q1= 392.37 WSEL= 2250.49 RATIO= -.0819
 NAT Q1= 607. RATIOS LOB, CH, ROB= .1197 .6462 .2342 WSEL= 2250.49

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2549.0 2593.0 TYPE= 4 TARGET= .354

CROSS SECTIONS 800-900				ORIGINAL JMM					
800.000	6.14	2248.54	2248.54	2249.49	2251.07	2.53	.25	.75	2248.30
2800.0	.0	2800.0	.0	.0	219.3	.0	129.7	34.4	2247.70
.38	.00	12.77	.00	.000	.040	.000	.000	2242.40	2549.00
.015734	1650.	1650.	1650.	20	8	0	.00	44.00	2593.00

*SECNO 900.000 (P)

2800 NAT Q1= 308.30 WSEL= 2257.22 ENC Q1= 338.79 WSEL= 2258.22 RATIO= -.0989
 NAT Q1= 660. RATIOS LOB, CH, ROB= .0373 .5130 .4497 WSEL= 2258.22

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 2339.0 2428.0 TYPE= 4 TARGET= .487

CROSS SECTIONS 900-930				1-15					
From plans and picture				4 - 12x4 RCB					
Top of road from JMM workmap									
900.000	5.82	2258.02	.00	2257.22	2259.03	1.01	7.80	.15	2257.00
2800.0	.0	2800.0	.0	.0	347.1	.0	134.2	35.5	2257.70
.41	.00	8.07	.00	.000	.040	.000	.000	2252.20	2339.00
.008302	700.	700.	700.	4	0	0	.00	89.00	2428.00

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

CCHV= .300 CEHV= .500

*SECNO 910.000

2800 NAT Q1= 3881.91 WSEL= 2264.15 ENC Q1= 3881.91 WSEL= 2265.15 RATIO= .0000
 NAT Q1= 6039. RATIOS LOB, CH, ROB= .4756 .0721 .4523 WSEL= 2265.15

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2555.6 3250.7 TYPE= 4 TARGET= .357
 910.000 4.88 2264.08 2264.08 2264.15 2264.09 .02 .11 .30 2259.20
 2800.0 1303.3 331.7 1165.0 1290.1 292.6 1199.8 145.0 38.2 2259.20
 .49 1.01 1.13 .97 .040 .040 .040 .000 2259.20 2555.61
 .000113 300. 300. 300. 20 12 0 .00 695.11 3250.72

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	4	.016	.50	2.60	.00	4.00	12.00	150.00	8	1	2259.30	2259.30

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL

SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 920.000

2800 NAT Q1= 7976.86 WSEL= 2265.91 ENC Q1= 7976.86 WSEL= 2266.91 RATIO= .0000
 NAT Q1= 10914. RATIOS LOB, CH, ROB= .5095 .0614 .4291 WSEL= 2266.91

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.29

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2270.73	2271.18	1.81	1374.	1417.	.612	192.0	2264.70	942.

3470 ENCROACHMENT STATIONS= 2375.0 3305.0 TYPE= 4 TARGET= .269
 920.000 6.69 2265.89 .00 2265.91 2265.90 .00 1.81 .00 2259.20
 2800.0 1430.4 245.7 1123.9 2683.5 401.6 2078.2 158.7 41.0 2259.20
 .56 .53 .61 .54 .040 .040 .040 .000 2259.20 2374.98
 .000021 150. 150. 150. 2 0 0 .00 930.05 3305.03

SECNO	DEPTH	CWSEL	CRWS	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 930.000

2800 NAT Q1= 7979.52 WSEL= 2265.91 ENC Q1= 7979.52 WSEL= 2266.91 RATIO= .0000
 NAT Q1= 10917. RATIOS LOB, CH, ROB= .5095 .0614 .4291 WSEL= 2266.91

3470 ENCROACHMENT STATIONS= 2374.9 3305.0 TYPE= 4 TARGET= .269
 930.000 6.70 2265.90 .00 2265.91 2265.90 .00 .00 .00 2259.20
 2800.0 1430.5 245.7 1123.9 2684.4 401.7 2078.7 170.6 43.1 2259.20
 .62 .53 .61 .54 .040 .040 .040 .000 2259.20 2374.93
 .000021 100. 100. 100. 0 0 0 .00 930.10 3305.03

CCHV= .100 CEHV= .300

*SECNO 960.000

2800 NAT Q1= 180.98 WSEL= 2273.68 ENC Q1= 583.94 WSEL= 2274.68 RATIO= -2.2265
 NAT Q1= 584. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2274.68

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2282.0 3147.0 TYPE= 4 TARGET= .000
 960.000 1.49 2273.69 2273.69 2273.68 2274.20 .51 .08 .15 2275.60
 2800.0 .0 2800.0 .0 .0 487.9 .0 235.2 59.1 2275.40
 .66 .00 5.74 .00 .000 .040 .000 .000 2272.20 2300.56
 .023163 1000. 975. 1000. 20 14 0 .00 476.42 2855.34

THIS RUN EXECUTED 14MAY93 12:53:04

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

SOUTH BRANCH - BLUE DIAM

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
*	18.460	.00	.00	.00	2139.20	2800.00	2147.97	2147.97	2150.50	51.97	12.81	223.86	388.41
*	18.460	.00	.00	.00	2139.20	2800.00	2147.72	2147.72	2150.53	62.91	13.46	208.06	353.03
*	24.000	128.00	.00	.00	2145.00	2800.00	2152.52	2152.52	2155.21	60.96	13.15	212.93	358.62
*	24.000	128.00	.00	.00	2145.00	2800.00	2152.53	2152.53	2155.21	60.67	13.13	213.30	359.49
*	25.400	140.00	.00	.00	2146.00	2800.00	2155.18	2155.18	2158.30	38.24	16.12	214.17	452.80
*	25.400	140.00	.00	.00	2146.00	2800.00	2155.18	2155.18	2159.45	48.49	18.14	182.81	402.12
*	25.410	10.00	.00	.00	2146.00	2800.00	2157.87	2157.87	2163.87	40.42	19.66	142.41	440.43
*	25.410	10.00	.00	.00	2146.00	2800.00	2157.87	2157.87	2163.87	101.06	19.66	142.43	278.53
*	25.420	650.00	2175.00	2170.00	2160.00	2800.00	2177.66	.00	2178.03	2.26	6.06	627.60	1861.17
*	25.420	650.00	2175.00	2170.00	2160.00	2800.00	2177.55	.00	2178.03	2.72	6.62	536.75	1697.63
*	(A) 25.430	50.00	.00	.00	2160.00	2800.00	2177.68	.00	2178.05	5.75	6.05	629.49	1167.18
*	25.430	50.00	.00	.00	2160.00	2800.00	2177.57	.00	2178.05	6.94	6.61	537.78	1062.98
*	(B) 100.000	350.00	.00	.00	2173.00	2800.00	2183.77	2183.77	2185.47	76.07	10.96	317.37	321.02
*	100.000	350.00	.00	.00	2173.00	2800.00	2182.00	2182.00	2185.60	200.57	15.22	183.93	197.71
*	110.000	200.00	.00	.00	2177.00	2800.00	2186.04	.00	2186.56	21.78	6.35	564.60	600.02
*	110.000	200.00	.00	.00	2177.00	2800.00	2186.84	.00	2187.58	25.95	7.04	418.01	549.67
*	120.000	70.00	2183.30	2182.20	2178.20	2800.00	2185.39	.00	2186.05	39.79	7.52	606.79	443.90
*	120.000	70.00	2183.30	2182.20	2178.20	2800.00	2185.36	.00	2186.84	70.17	9.95	301.27	334.26
*	(C) 130.000	100.00	.00	.00	2178.20	2800.00	2186.07	.00	2186.35	17.72	5.35	906.76	665.08
*	130.000	100.00	.00	.00	2178.20	2800.00	2186.81	.00	2187.29	20.81	6.18	558.02	613.85
*	(D) 200.000	550.00	.00	.00	2191.50	2800.00	2195.34	2195.34	2196.10	92.28	8.37	445.98	291.48
*	200.000	550.00	.00	.00	2191.50	2800.00	2195.35	2195.35	2196.10	90.52	8.31	450.49	294.30

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
* (E) 400.000	600.00	.00	.00	2195.00	2800.00	2200.61	2200.61	2201.50	80.96	8.05	431.96	311.19
400.000	600.00	.00	.00	2195.00	2800.00	2200.75	.00	2201.99	101.50	8.97	312.17	277.93
* (F) 410.000	140.00	.00	.00	2200.20	2800.00	2202.61	2202.56	2203.20	192.67	6.19	452.55	201.72
410.000	140.00	.00	.00	2200.20	2800.00	2203.03	2202.54	2203.36	82.22	4.60	608.31	308.80
* (G) 480.000	750.00	.00	.00	2208.00	2800.00	2210.96	2210.66	2211.52	117.03	5.98	468.10	258.83
480.000	750.00	.00	.00	2208.00	2800.00	2210.84	2210.65	2211.48	144.85	6.41	436.90	232.65
* (H) 500.000	220.00	.00	.00	2206.00	2800.00	2212.53	.00	2212.89	37.74	5.37	649.07	455.77
* 500.000	220.00	.00	.00	2206.00	2800.00	2212.78	.00	2213.59	65.48	7.22	387.91	346.03
* (I) 510.000	500.00	.00	.00	2214.00	2800.00	2215.73	.00	2216.05	126.16	4.97	652.10	249.29
510.000	500.00	.00	.00	2214.00	2800.00	2216.51	2215.88	2216.84	62.79	4.65	601.54	353.37
* (J) 580.000	670.00	.00	.00	2221.00	2800.00	2224.23	2224.11	2225.12	140.06	7.62	376.20	236.59
* 580.000	670.00	.00	.00	2221.00	2800.00	2224.11	2224.11	2225.11	166.83	8.04	352.40	216.78
* (K) 600.000	130.00	.00	.00	2221.00	2800.00	2225.70	.00	2226.30	61.29	6.31	460.77	357.66
* 600.000	130.00	.00	.00	2221.00	2800.00	2225.77	.00	2226.40	62.39	6.35	441.19	354.50
* (L) 610.000	550.00	.00	.00	2228.00	2800.00	2231.11	.00	2231.74	184.46	6.39	438.01	206.16
* 610.000	550.00	.00	.00	2228.00	2800.00	2231.14	2231.02	2231.74	171.49	6.21	450.55	213.82
* (M) 710.000	600.00	.00	.00	2226.00	2800.00	2232.75	.00	2232.84	5.35	2.38	1177.88	1210.17
* 710.000	600.00	.00	.00	2226.00	2800.00	2232.75	.00	2232.84	5.45	2.38	1177.51	1199.40
* 720.000	50.00	2237.70	2236.70	2226.00	2800.00	2238.35	.00	2238.36	.28	.93	3346.69	5278.44
* 720.000	50.00	2237.70	2236.70	2226.00	2800.00	2238.35	.00	2238.37	.41	1.07	2604.85	4368.31
* (N) 730.000	100.00	.00	.00	2226.00	2800.00	2238.35	.00	2238.37	.28	.93	3345.01	5275.45
730.000	100.00	.00	.00	2226.00	2800.00	2238.35	.00	2238.37	.41	1.07	2605.60	4370.33
* (O) 800.000	1650.00	.00	.00	2242.40	2800.00	2249.49	2249.49	2250.55	59.61	8.96	423.09	362.65
* 800.000	1650.00	.00	.00	2242.40	2800.00	2248.54	2248.54	2251.07	157.34	12.77	219.28	223.22
* (P) 900.000	700.00	.00	.00	2252.20	2800.00	2257.22	2257.22	2257.81	82.48	7.03	535.12	308.30
900.000	700.00	.00	.00	2252.20	2800.00	2258.02	.00	2259.03	83.02	8.07	347.13	307.31
* 910.000	300.00	.00	.00	2259.20	2800.00	2264.15	2264.15	2264.16	.52	.78	4642.51	3881.91
* 910.000	300.00	.00	.00	2259.20	2800.00	2264.08	2264.08	2264.09	1.13	1.13	2782.45	2638.73
* 920.000	150.00	2264.70	2263.30	2259.20	2800.00	2265.91	.00	2265.91	.12	.46	7480.09	7976.86
* 920.000	150.00	2264.70	2263.30	2259.20	2800.00	2265.89	.00	2265.90	.21	.61	5163.29	6039.32
930.000	100.00	.00	.00	2259.20	2800.00	2265.91	.00	2265.91	.12	.46	7481.75	7979.52
930.000	100.00	.00	.00	2259.20	2800.00	2265.90	.00	2265.90	.21	.61	5164.82	6042.09
* 960.000	975.00	.00	.00	2272.20	2800.00	2273.68	2273.68	2274.20	239.36	5.80	482.87	180.98
* 960.000	975.00	.00	.00	2272.20	2800.00	2273.69	2273.69	2274.20	231.63	5.74	487.87	183.98

SOUTH BRANCH - BLUE DIAM

SUMMARY PRINTOUT TABLE 150

	SEENO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	18.460	2800.00	2147.97	.00	.00	2.97	54.52	.00
*	18.460	2800.00	2147.72	-.25	.00	-.25	38.00	.00
*	24.000	2800.00	2152.52	.00	4.55	.00	40.31	128.00
*	24.000	2800.00	2152.53	.01	4.81	.01	40.34	128.00
*	25.400	2800.00	2155.18	.00	2.66	.00	34.46	140.00
*	25.400	2800.00	2155.18	.00	2.64	.00	22.21	140.00
*	25.410	2800.00	2157.87	.00	2.69	.00	12.00	10.00
*	25.410	2800.00	2157.87	.00	2.69	.00	12.00	10.00
*	25.420	2800.00	2177.66	.00	19.79	.00	75.74	650.00
*	25.420	2800.00	2177.55	-.11	19.68	-.11	39.02	650.00
*	(A) 25.430	2800.00	2177.68	.00	.02	.00	76.05	50.00
*	(A) 25.430	2800.00	2177.57	-.11	.02	-.11	39.10	50.00
*	(B) 100.000	2800.00	2183.77	.00	6.09	.00	114.66	350.00
*	(B) 100.000	2800.00	2182.00	-1.77	4.43	-1.77	26.00	350.00
*	110.000	2800.00	2186.04	.00	2.27	.00	212.70	200.00
*	110.000	2800.00	2186.84	.79	4.84	.79	53.80	200.00
	120.000	2800.00	2185.39	.00	-.65	.00	400.08	70.00
*	120.000	2800.00	2185.36	-.03	-1.48	-.03	63.18	70.00
*	(C) 130.000	2800.00	2186.07	.00	.68	.00	655.68	100.00
*	(C) 130.000	2800.00	2186.81	.75	1.45	.75	118.50	100.00
*	(D) 200.000	2800.00	2195.34	.00	9.27	.00	346.59	550.00
*	(D) 200.000	2800.00	2195.35	.01	8.54	.01	351.57	550.00
*	(E) 400.000	2800.00	2200.61	.00	5.27	.00	308.50	600.00
	(E) 400.000	2800.00	2200.75	.13	5.39	.13	80.00	600.00
*	(F) 410.000	2800.00	2202.61	.00	2.00	.00	344.29	140.00
	(F) 410.000	2800.00	2203.03	.42	2.29	.42	380.75	140.00
*	(G) 480.000	2800.00	2210.96	.00	8.35	.00	257.73	750.00
	(G) 480.000	2800.00	2210.84	-.12	7.81	-.12	254.53	750.00
*	(H) 500.000	2800.00	2212.53	.00	1.57	.00	314.77	220.00
*	(H) 500.000	2800.00	2212.78	.25	1.94	.25	100.00	220.00
*	(I) 510.000	2800.00	2215.73	.00	3.20	.00	745.99	500.00
	(I) 510.000	2800.00	2216.51	.77	3.73	.77	300.00	500.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	580.000	2800.00	2224.23	.00	8.49	.00	217.70	670.00
* (S)	580.000	2800.00	2224.11	-.12	7.60	-.12	208.77	670.00
* (K)	600.000	2800.00	2225.70	.00	1.48	.00	168.98	130.00
*	600.000	2800.00	2225.77	.07	1.66	.07	135.00	130.00
* (L)	610.000	2800.00	2231.11	.00	5.40	.00	307.06	550.00
*	610.000	2800.00	2231.14	.04	5.37	.04	311.98	550.00
* (M)	710.000	2800.00	2232.75	.00	1.65	.00	255.00	600.00
*	710.000	2800.00	2232.75	.00	1.61	.00	255.00	600.00
*	720.000	2800.00	2238.35	.00	5.60	.00	575.04	50.00
*	720.000	2800.00	2238.35	.00	5.60	.00	255.00	50.00
(N)	730.000	2800.00	2238.35	.00	.00	.00	574.44	100.00
	730.000	2800.00	2238.35	.00	.00	.00	255.00	100.00
* (O)	800.000	2800.00	2249.49	.00	11.13	.00	242.66	1650.00
*	800.000	2800.00	2248.54	-.94	10.19	-.94	44.00	1650.00
* (P)	900.000	2800.00	2257.22	.00	7.73	.00	390.30	700.00
	900.000	2800.00	2258.02	.80	9.47	.80	89.00	700.00
*	910.000	2800.00	2264.15	.00	6.93	.00	1528.68	300.00
*	910.000	2800.00	2264.08	-.07	6.06	-.07	695.11	300.00
*	920.000	2800.00	2265.91	.00	1.76	.00	1696.28	150.00
*	920.000	2800.00	2265.89	-.02	1.82	-.02	930.05	150.00
	930.000	2800.00	2265.91	.00	.00	.00	1696.37	100.00
	930.000	2800.00	2265.90	-.01	.00	-.01	930.10	100.00
*	960.000	2800.00	2273.68	.00	7.77	.00	475.88	975.00
*	960.000	2800.00	2273.69	.01	7.79	.01	476.42	975.00

SUMMARY OF ERRORS AND SPECIAL NOTES

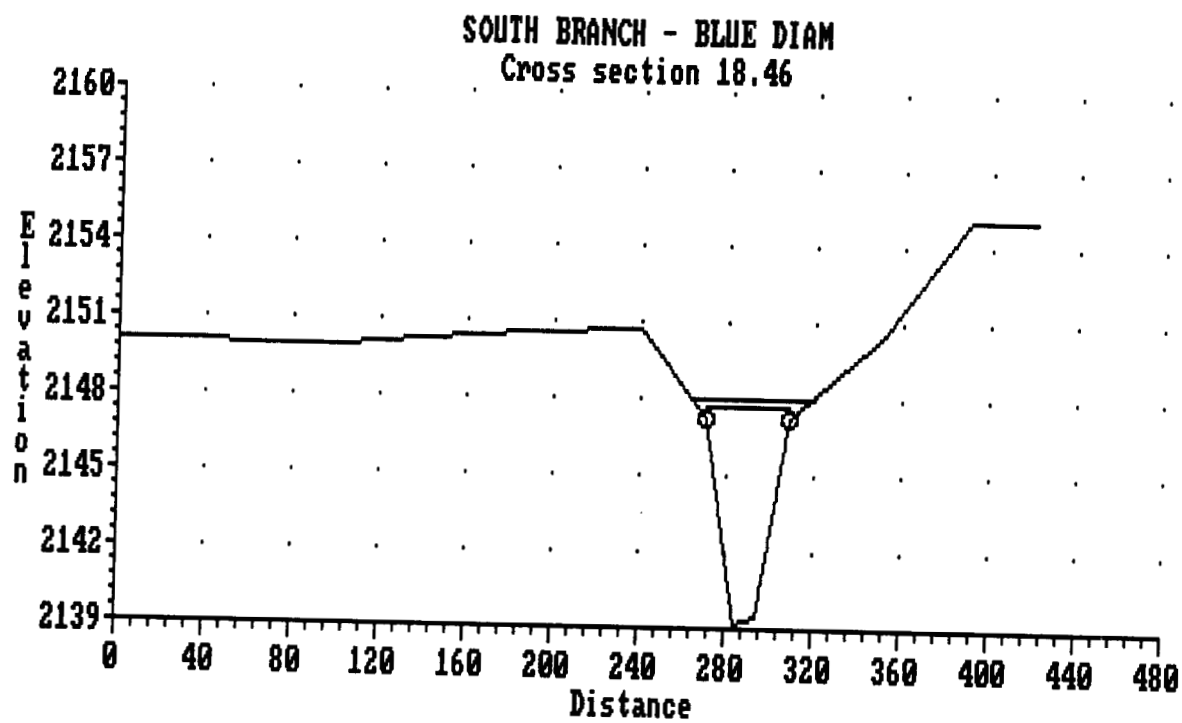
CAUTION SECNO=	18.460	PROFILE= 1	CRITICAL DEPTH ASSUMED
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CAUTION SECNO=	24.000	PROFILE= 1	CRITICAL DEPTH ASSUMED
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WARNING SECNO=	25.420	PROFILE= 2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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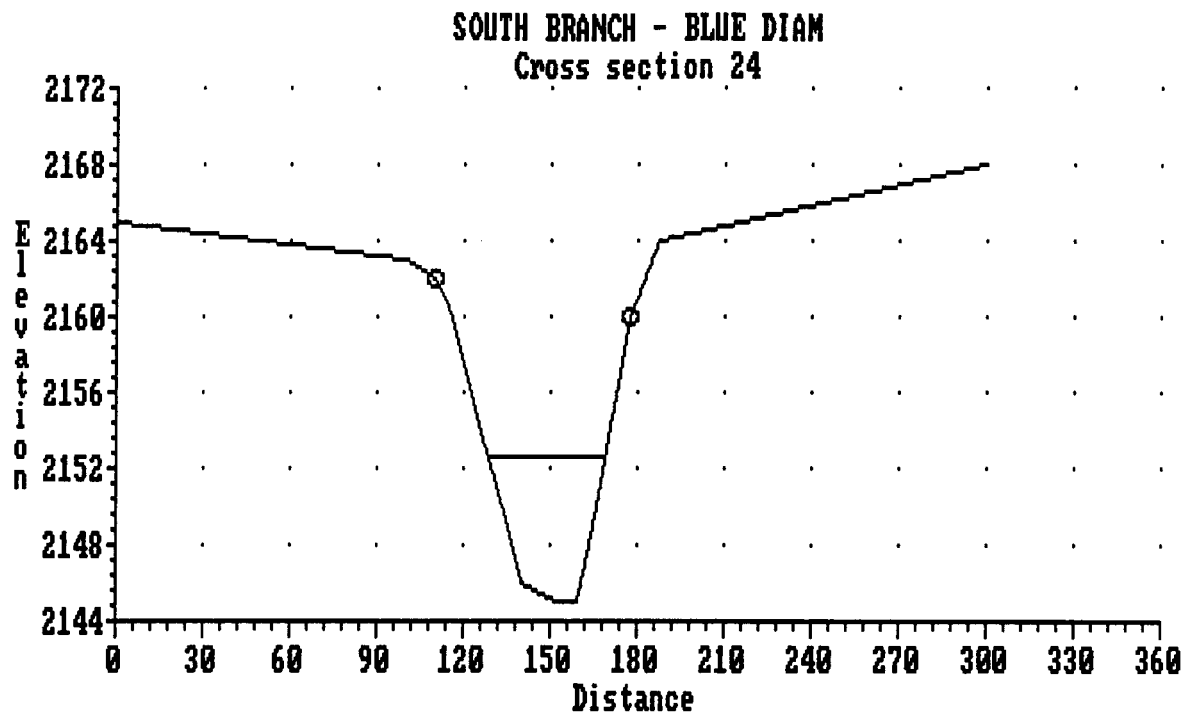
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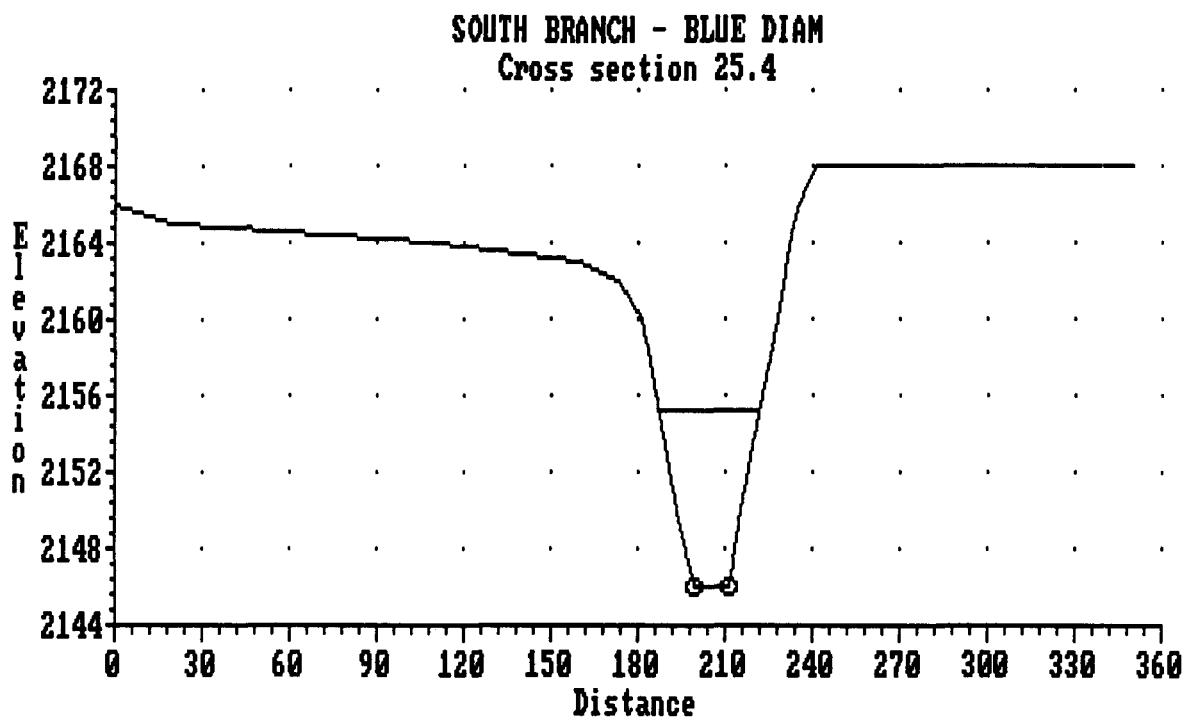
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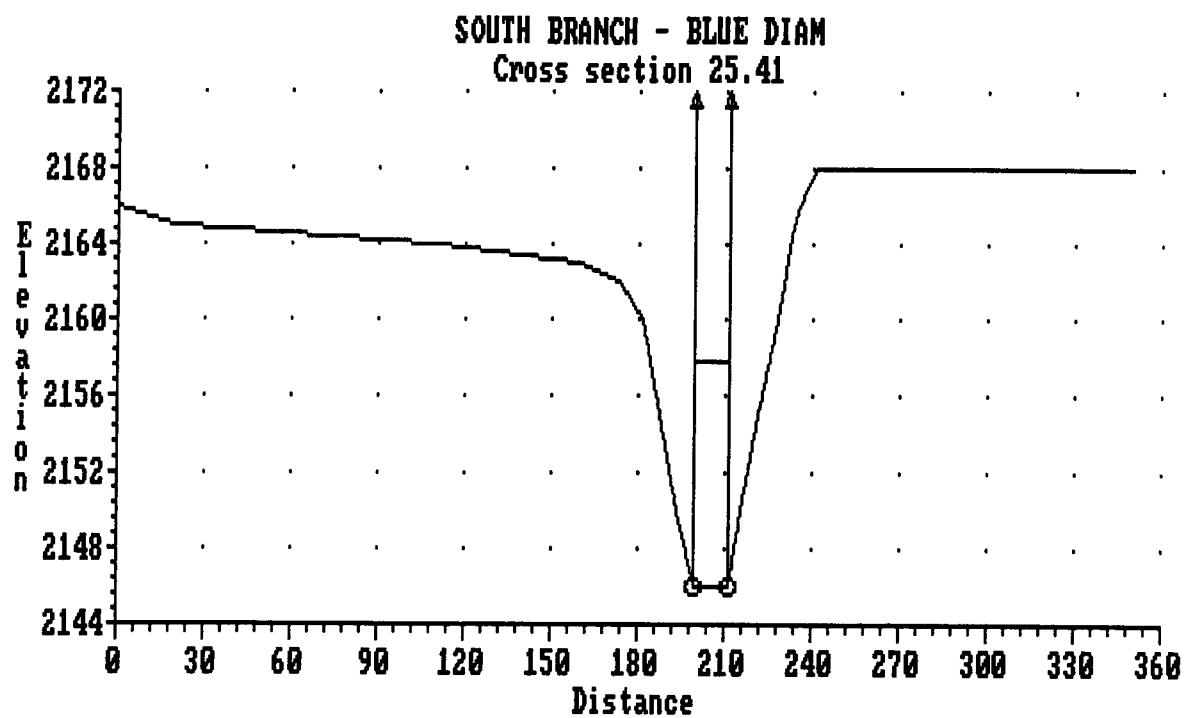
FLOODWAY DATA, SOUTH BRANCH - BLUE DIAM
PROFILE NO. 2

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	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
18.460	38.	208.	13.5	2147.8	2148.0	-.2
24.000	40.	213.	13.1	2152.5	2152.5	.0
25.400	22.	183.	15.3	2155.2	2155.2	.0
25.410	12.	142.	19.7	2157.9	2157.9	.0
25.420	39.	537.	5.2	2177.6	2177.7	-.1
25.430 (A)	39.	538.	5.2	2177.6	2177.7	-.1
300.000 (B)	26.	184.	15.2	2182.0	2183.8	-1.8
110.000	54.	418.	6.7	2186.8	2186.0	.8
120.000	63.	301.	9.3	2185.4	2185.4	.0
130.000 (C)	119.	558.	5.0	2186.8	2186.1	.7
200.000 (D)	352.	450.	6.2	2195.3	2195.3	.0
400.000 (E)	80.	312.	9.0	2200.7	2200.6	.1
410.000 (F)	381.	608.	4.6	2203.0	2202.6	.4
480.000 (G)	255.	437.	6.4	2210.9	2211.0	-.1
500.000 (H)	100.	388.	7.2	2212.7	2212.5	.2
510.000 (I)	300.	602.	4.7	2216.5	2215.7	.8
580.000 (J)	209.	352.	7.9	2224.1	2224.2	-.1
600.000 (K)	135.	441.	6.3	2225.8	2225.7	.1
610.000 (L)	312.	451.	6.2	2231.1	2231.1	.0
710.000 (M)	255.	1178.	2.4	2232.8	2232.8	.0
720.000	255.	2605.	1.1	2238.4	2238.4	.0
730.000 (N)	255.	2606.	1.1	2238.4	2238.4	.0
800.000 (O)	44.	219.	12.8	2248.6	2249.5	-.9
900.000 (P)	89.	347.	8.1	2258.0	2257.2	.8
910.000	695.	2782.	1.0	2264.1	2264.2	-.1
920.000	930.	5163.	.5	2265.9	2265.9	.0
930.000	930.	5165.	.5	2265.9	2265.9	.0
960.000	555.	488.	5.7	2273.7	2273.7	.0

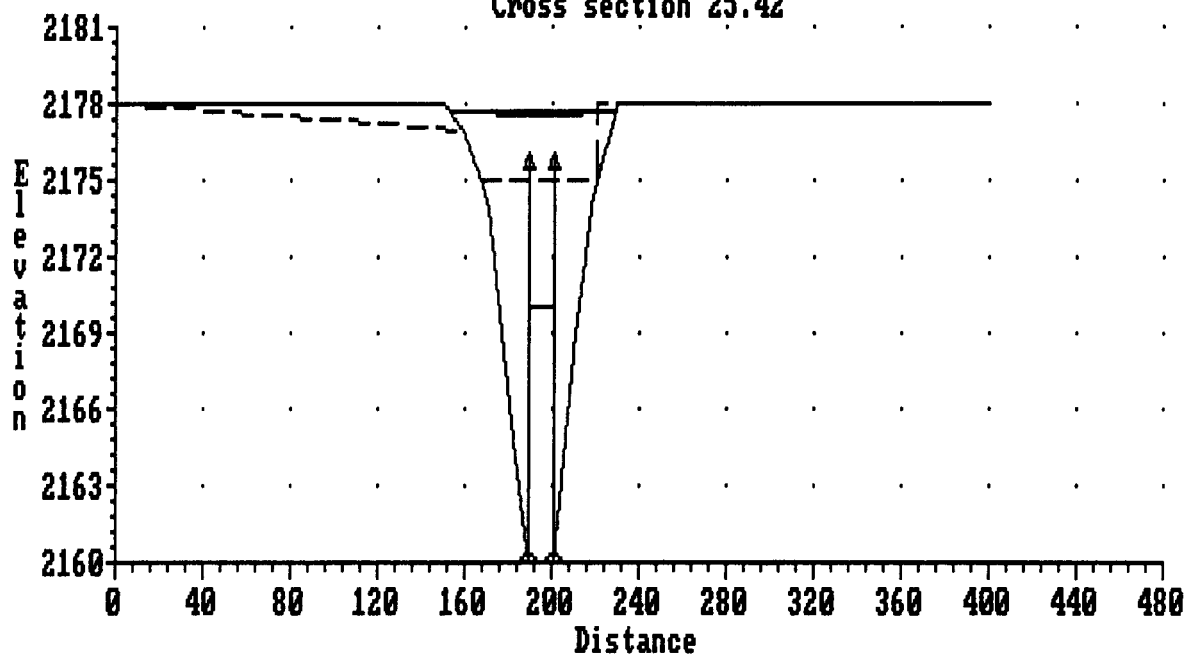




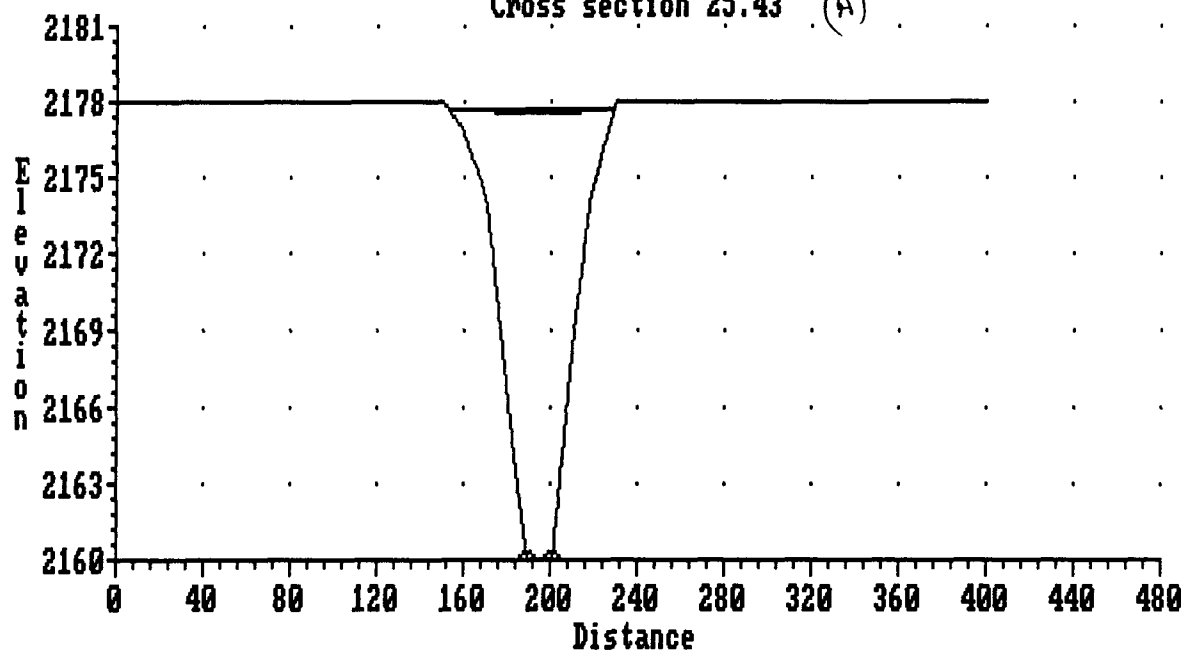


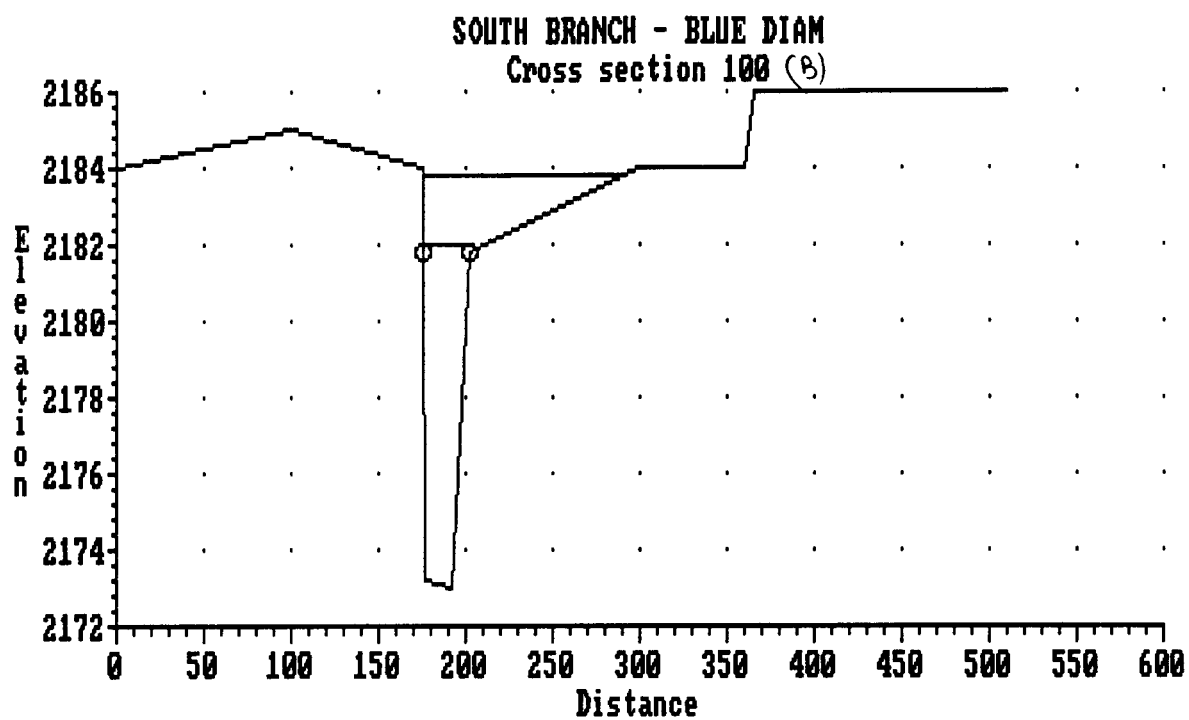


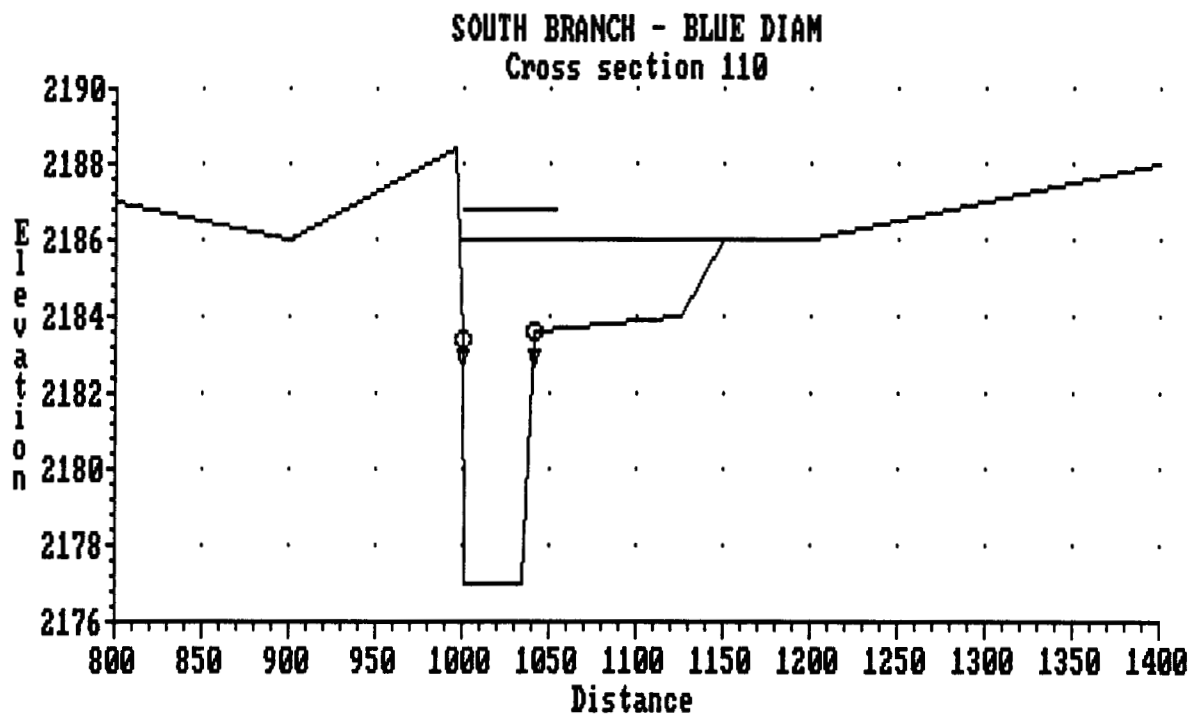
SOUTH BRANCH - BLUE DIAM
Cross section 25.42

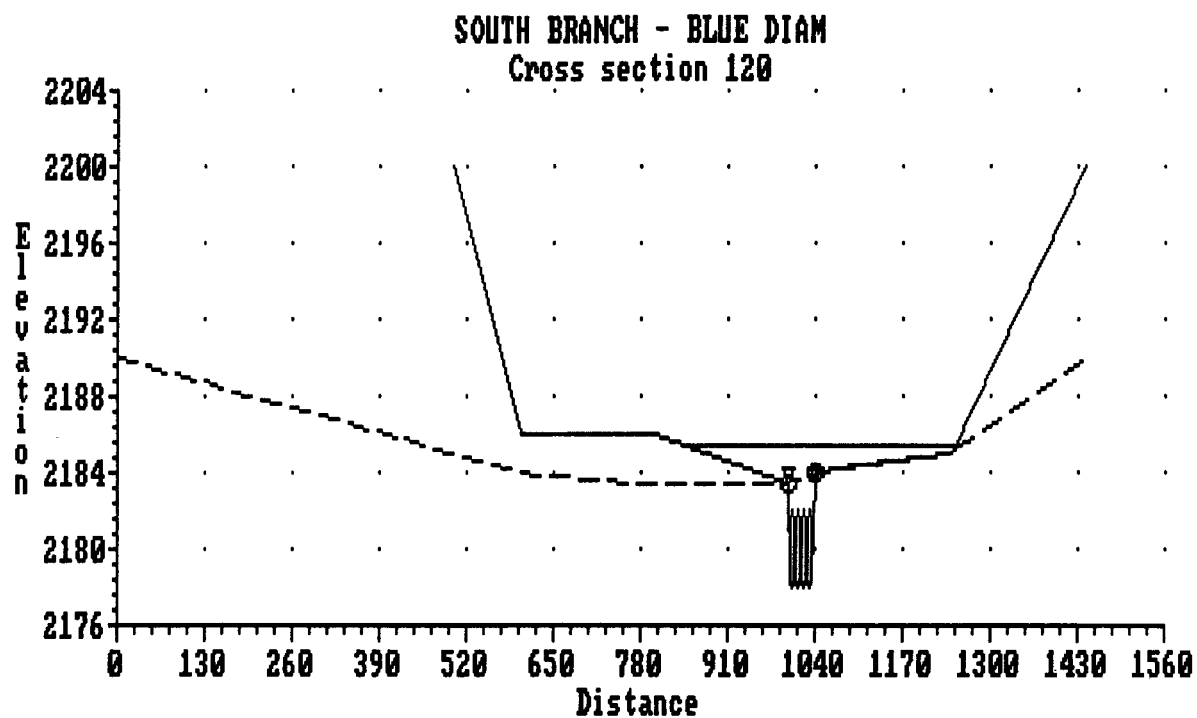


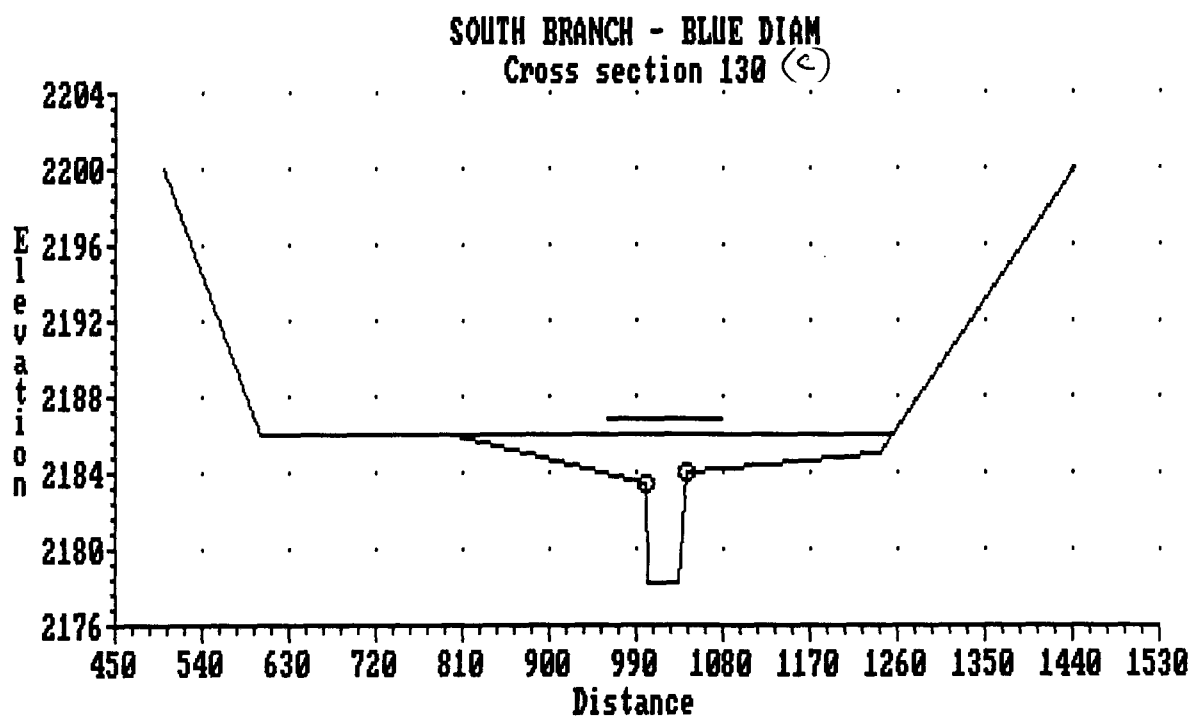
SOUTH BRANCH - BLUE DIAM
Cross section 25.43 (A)

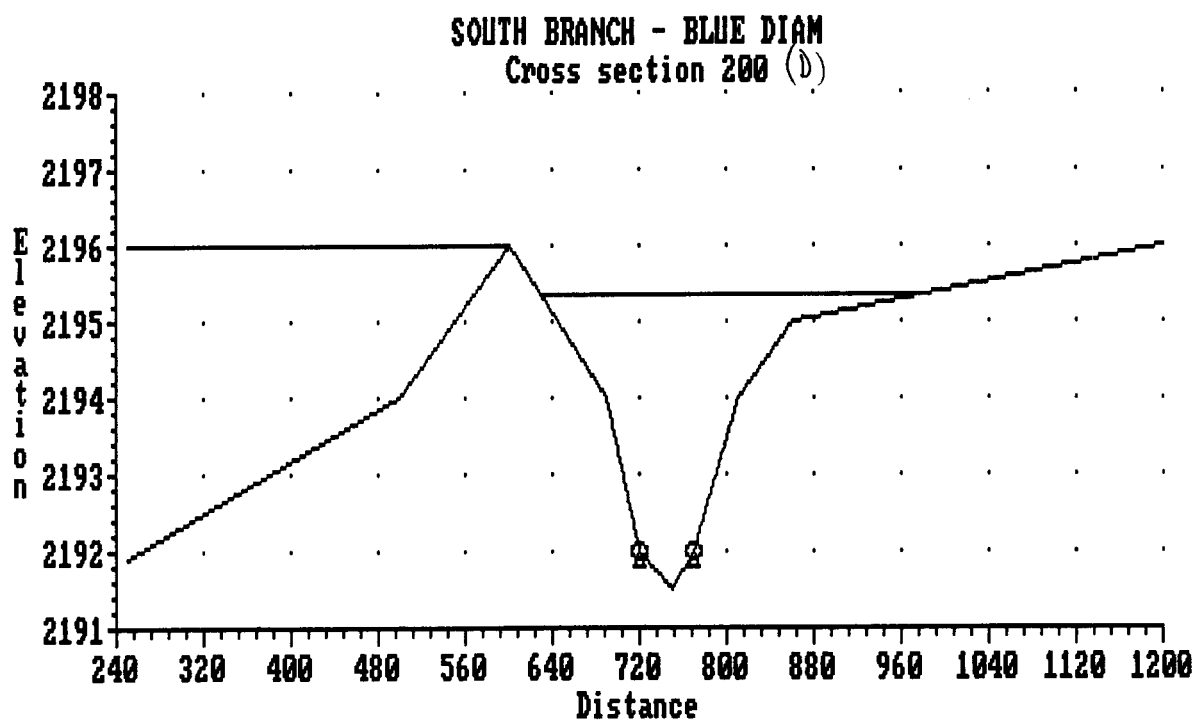


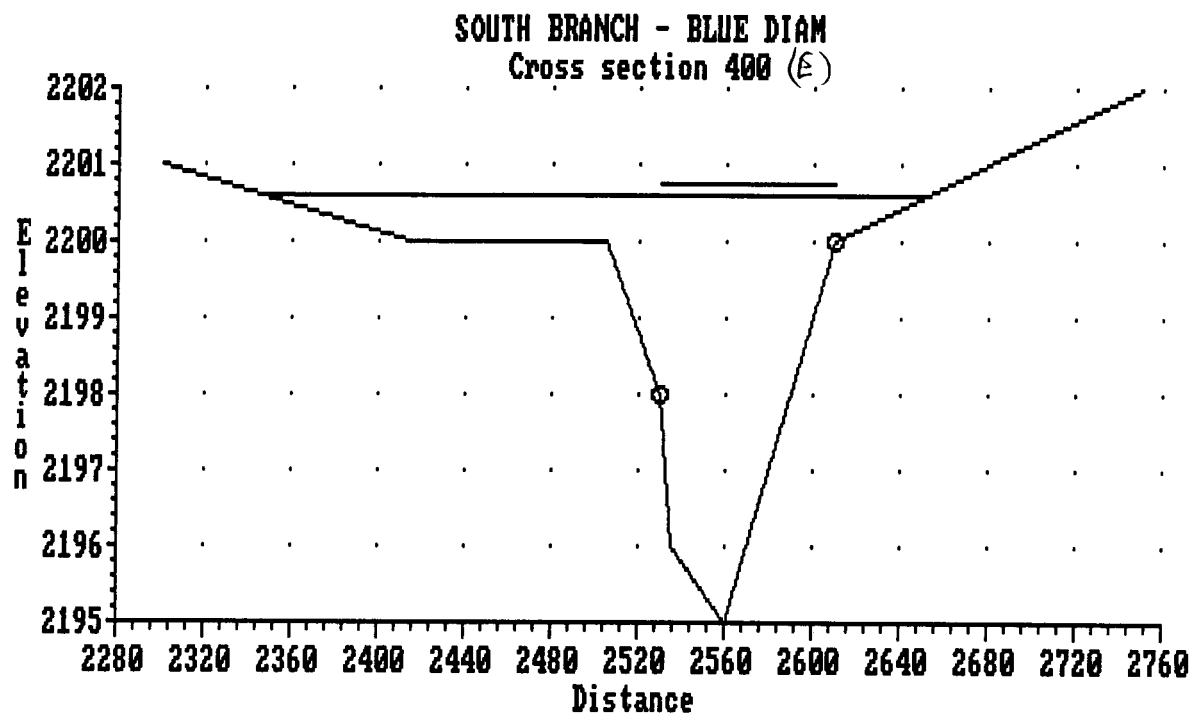


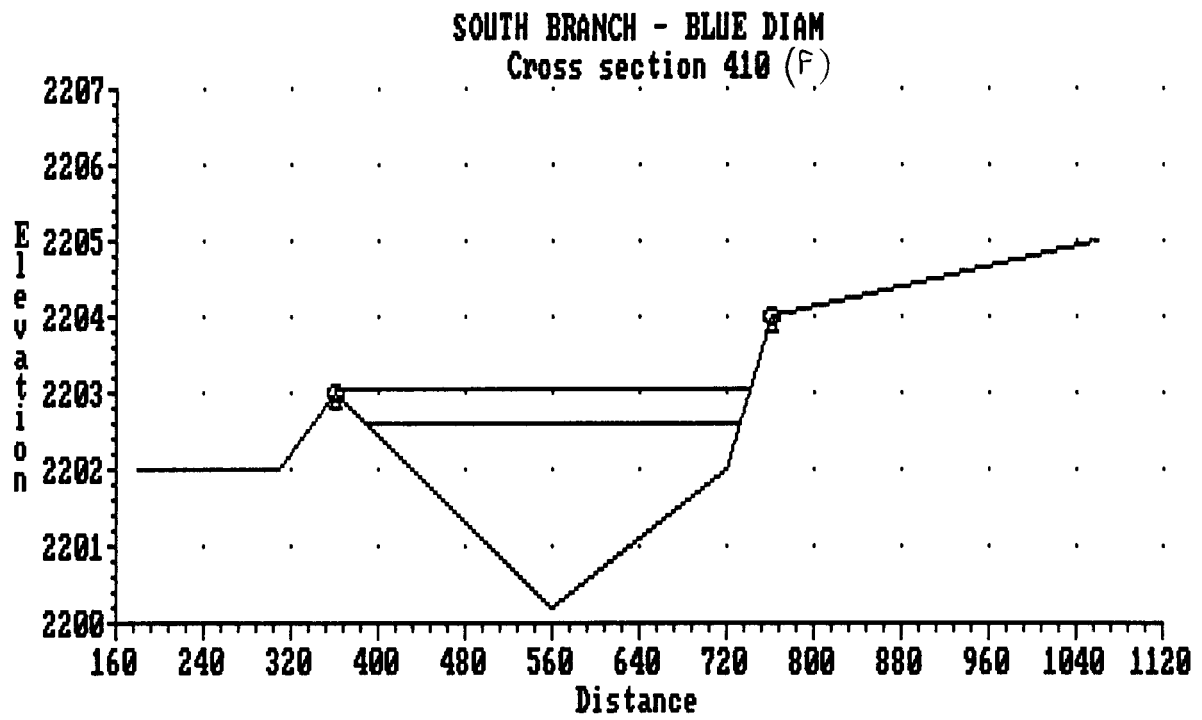


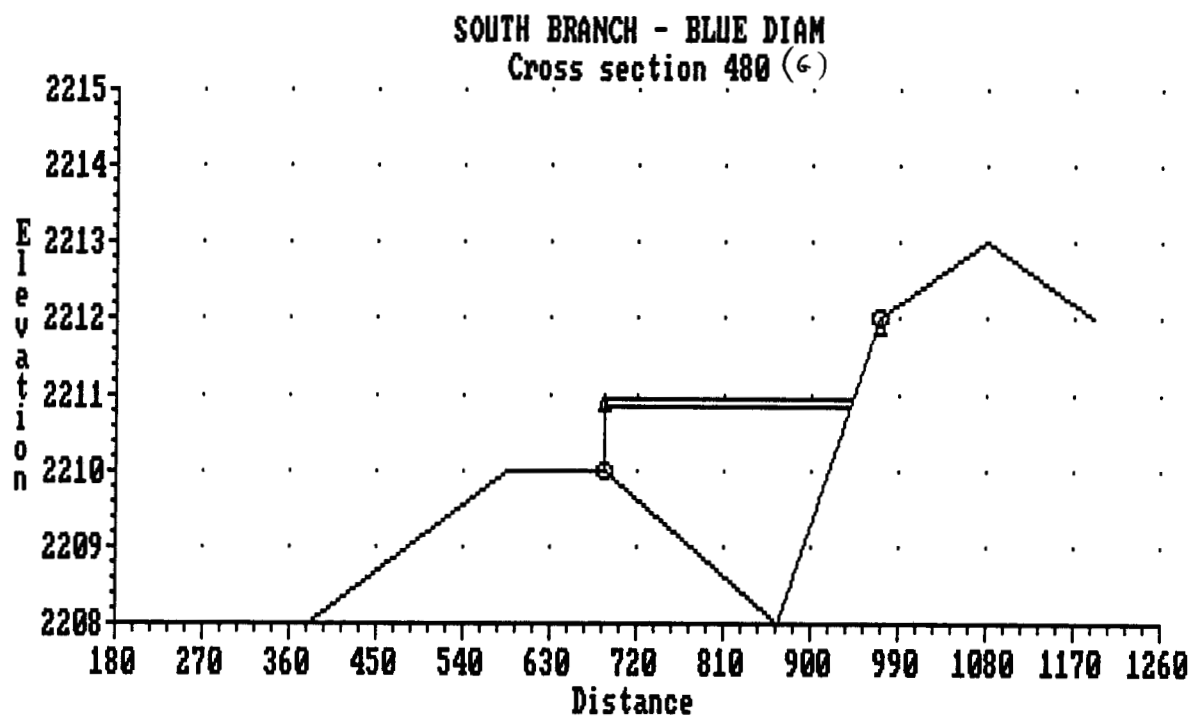


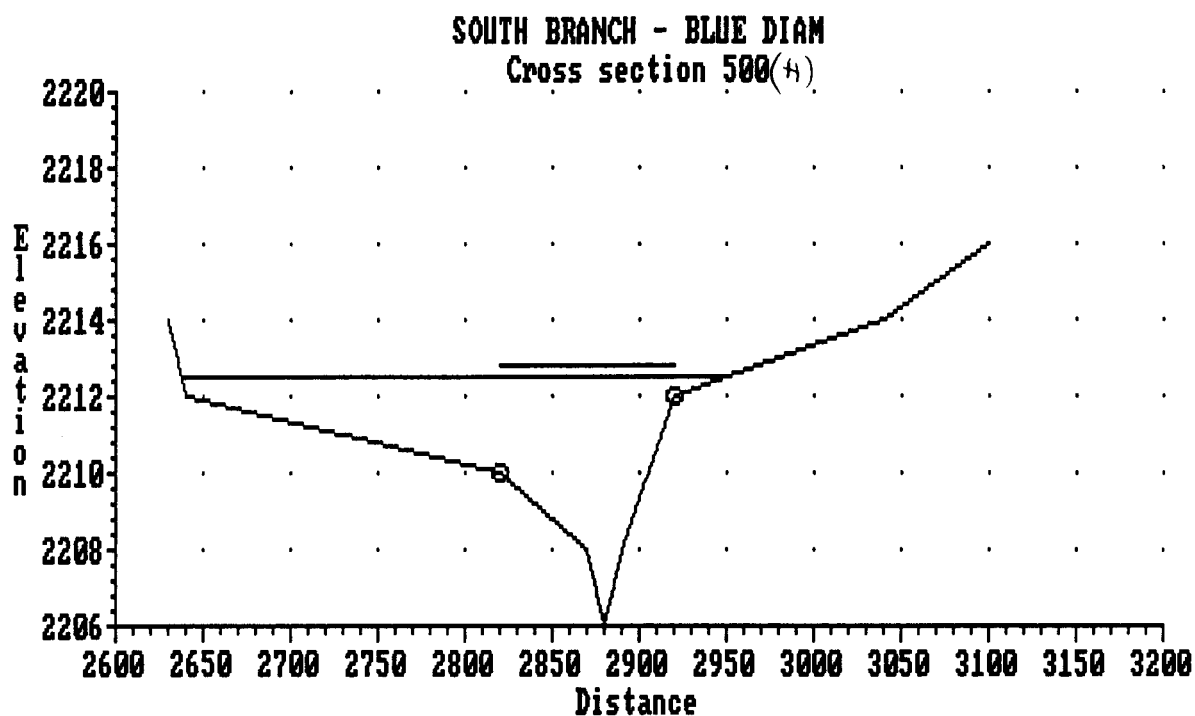




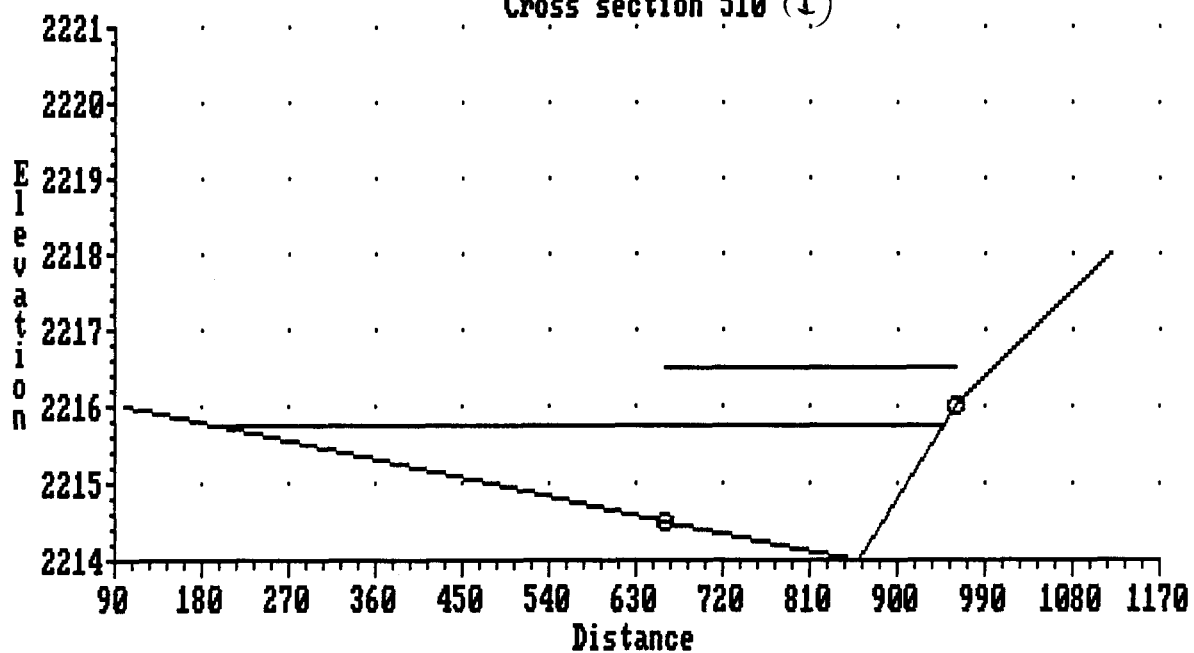


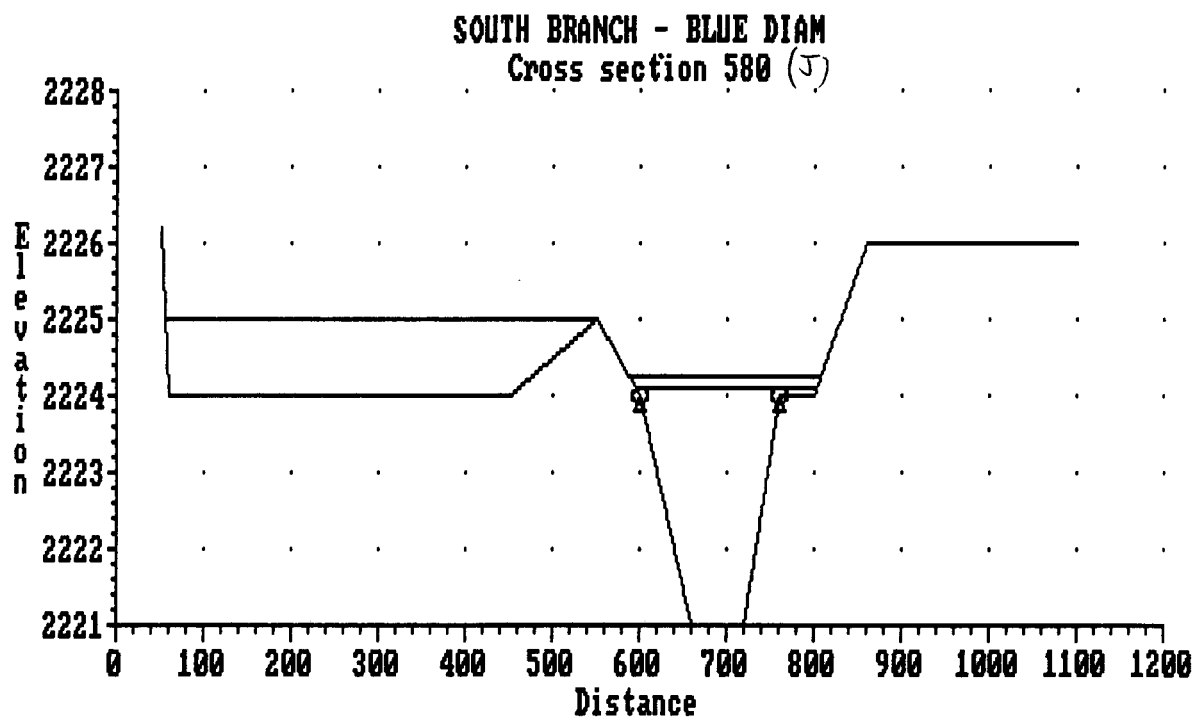


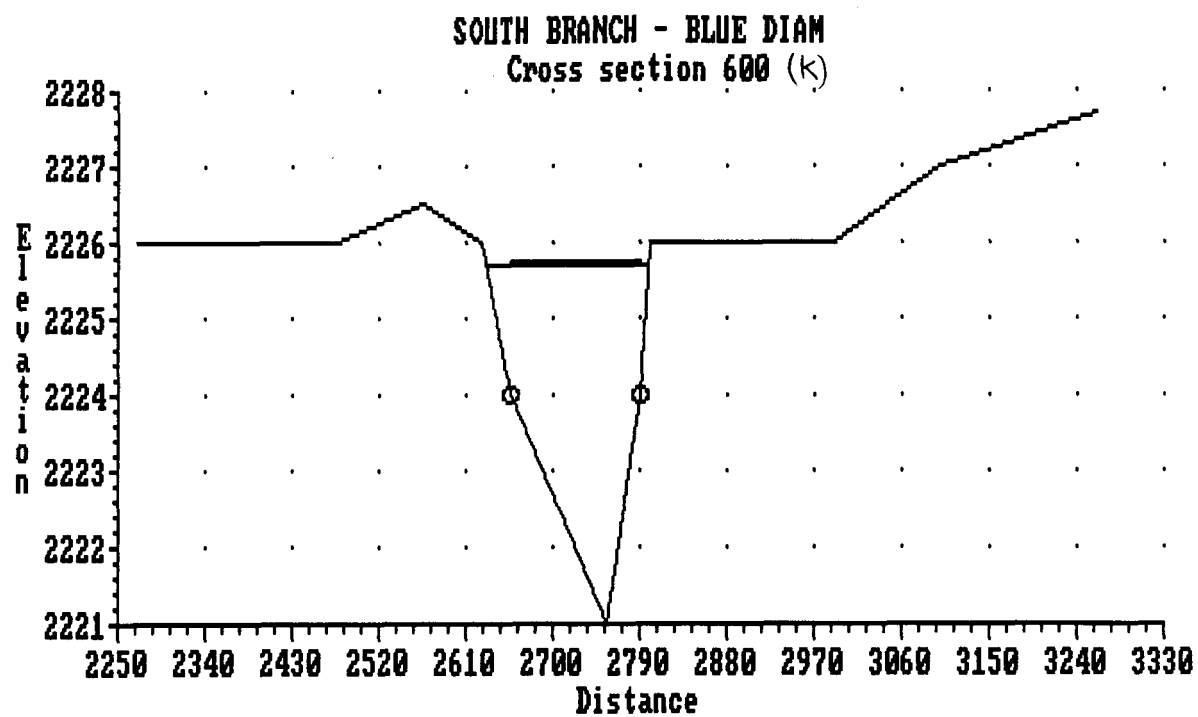


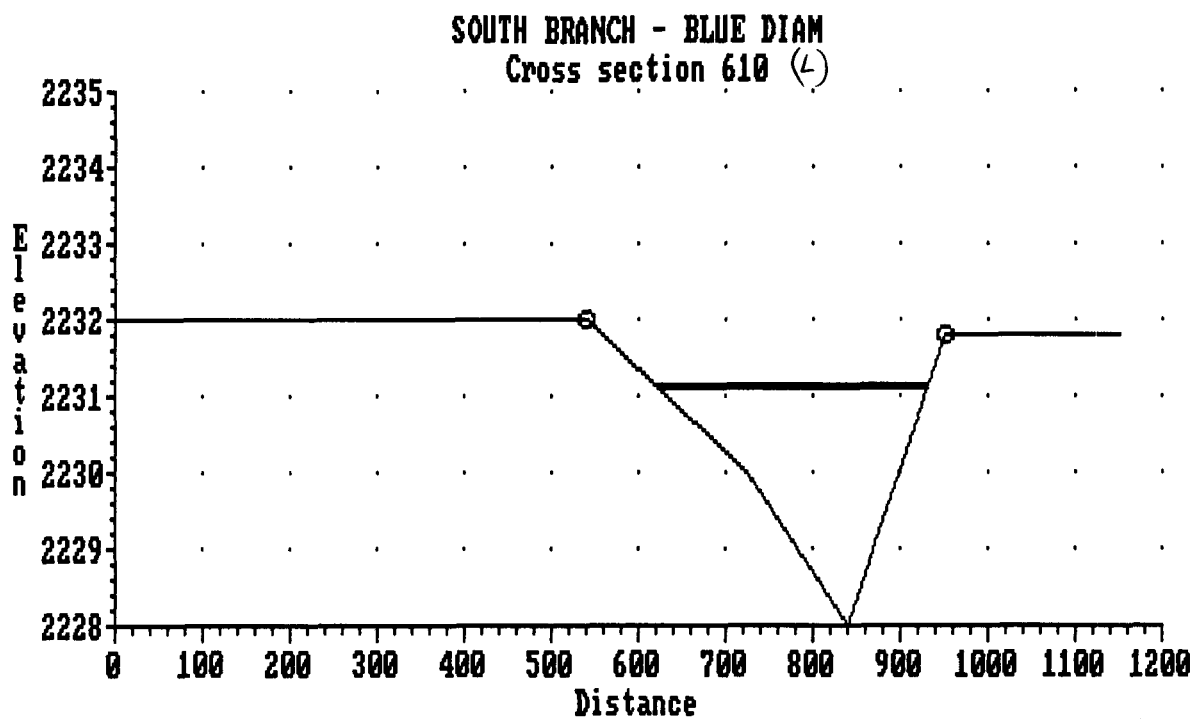


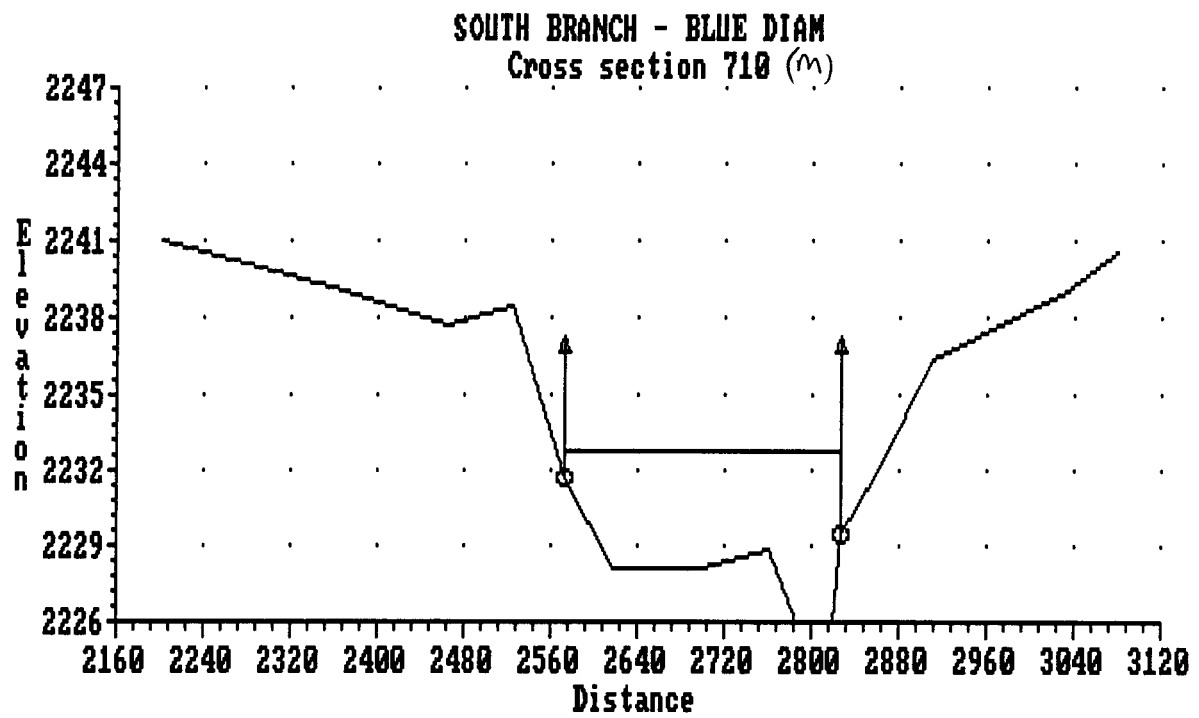
SOUTH BRANCH - BLUE DIAM
Cross section 510 (I)

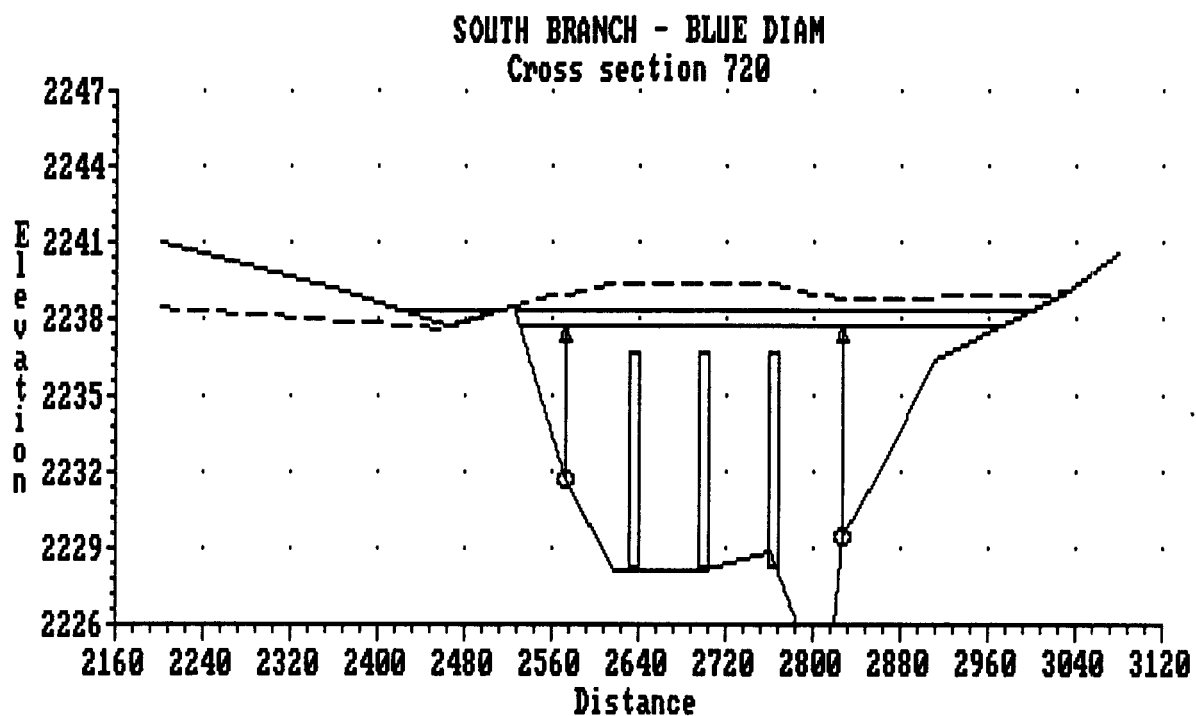


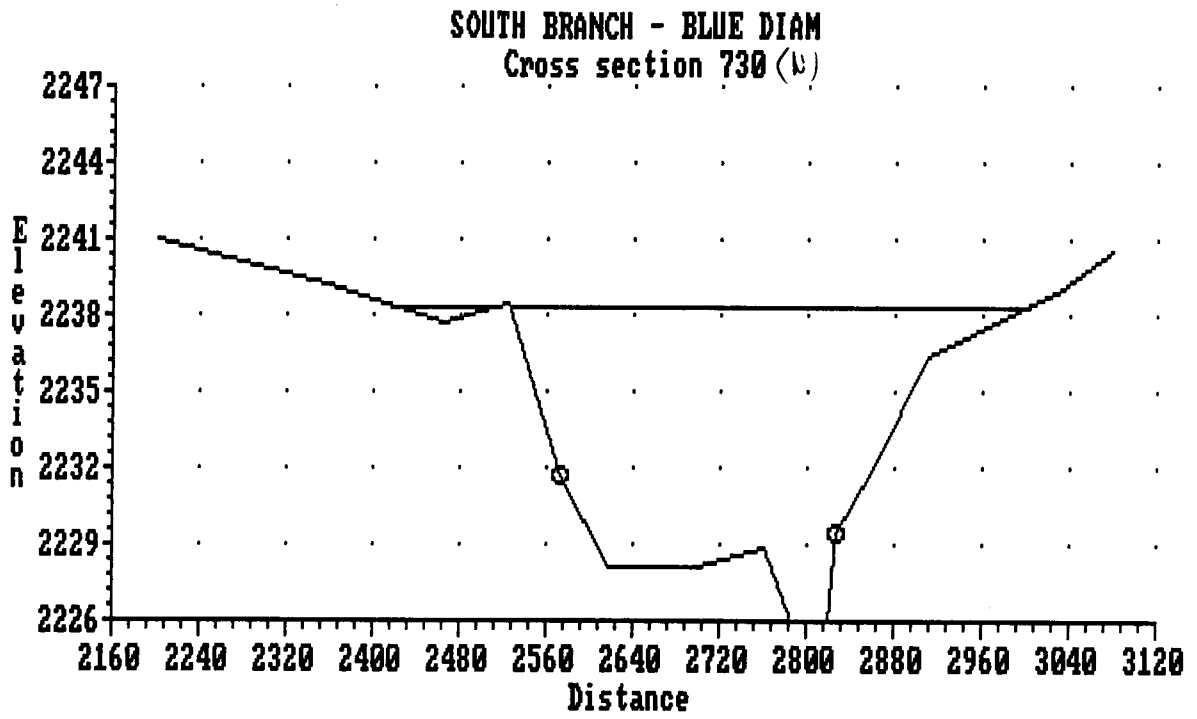


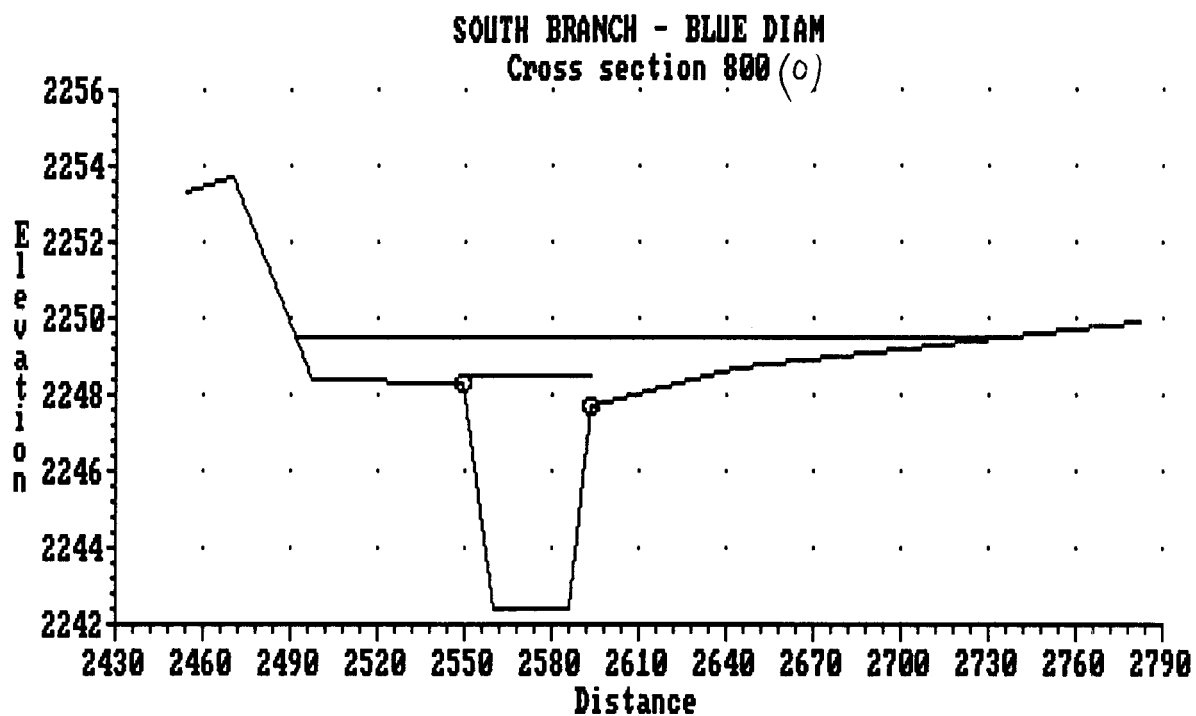


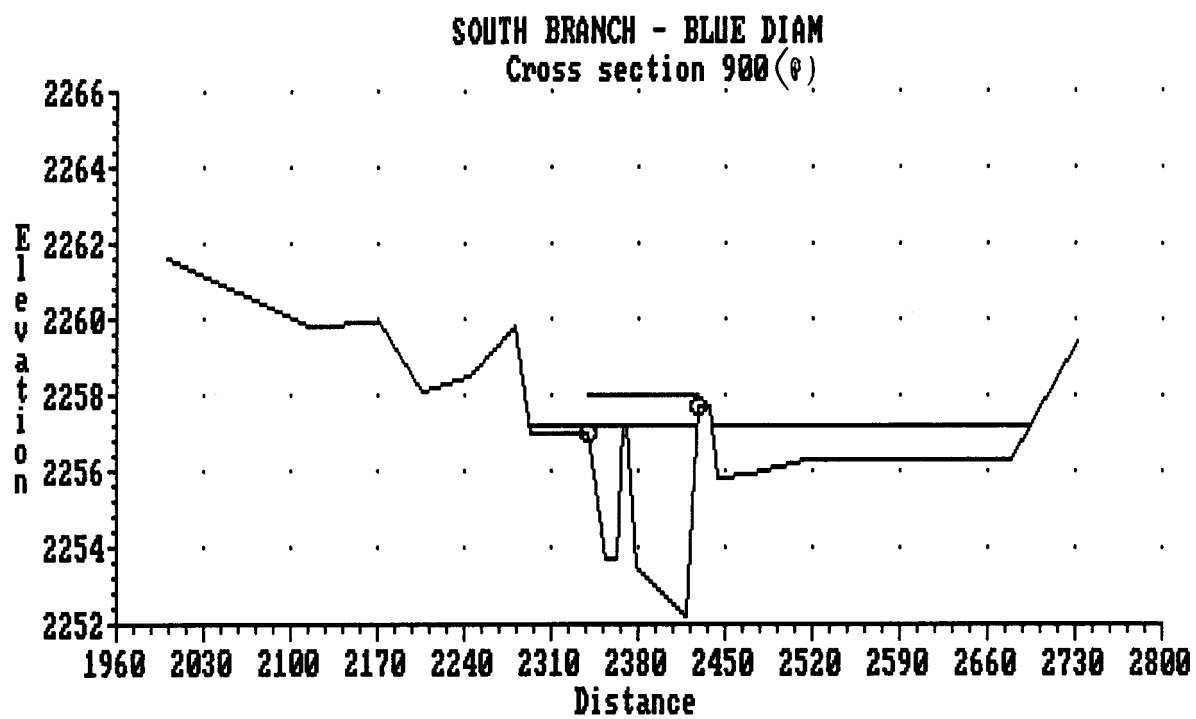


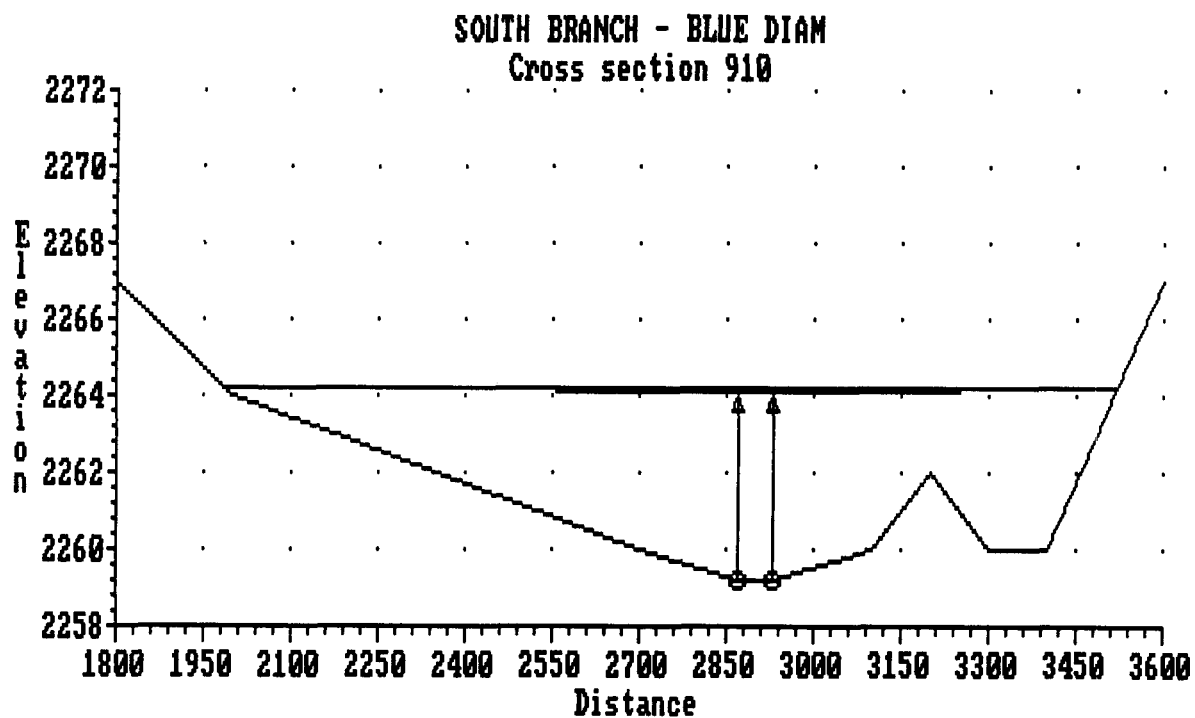




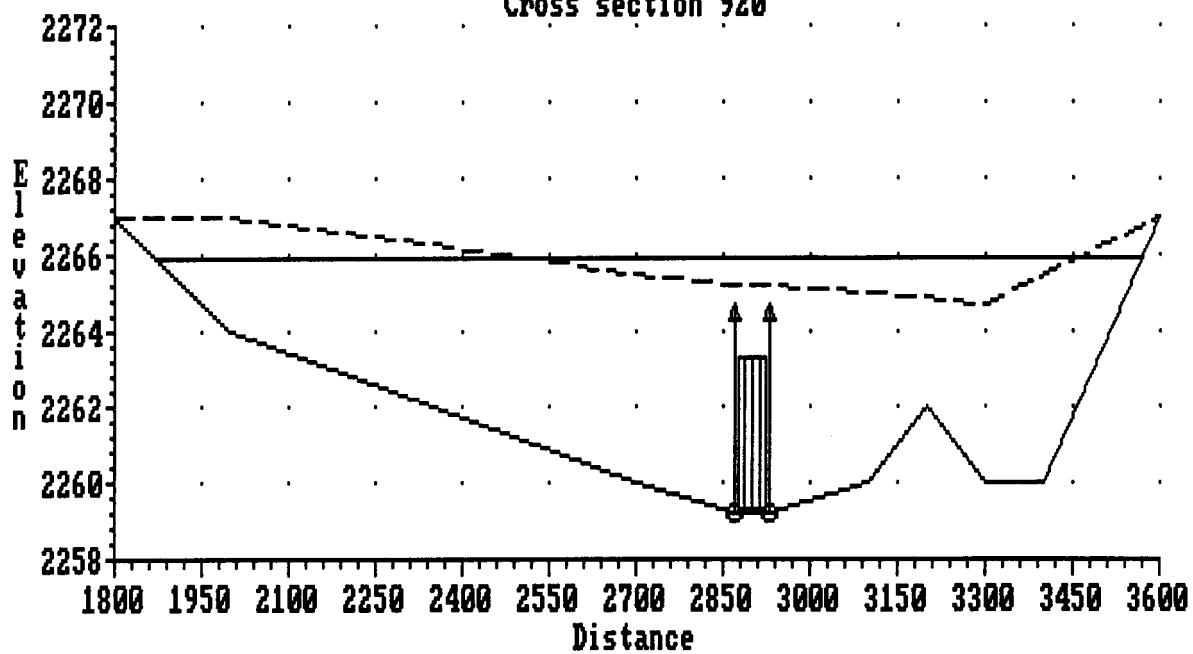


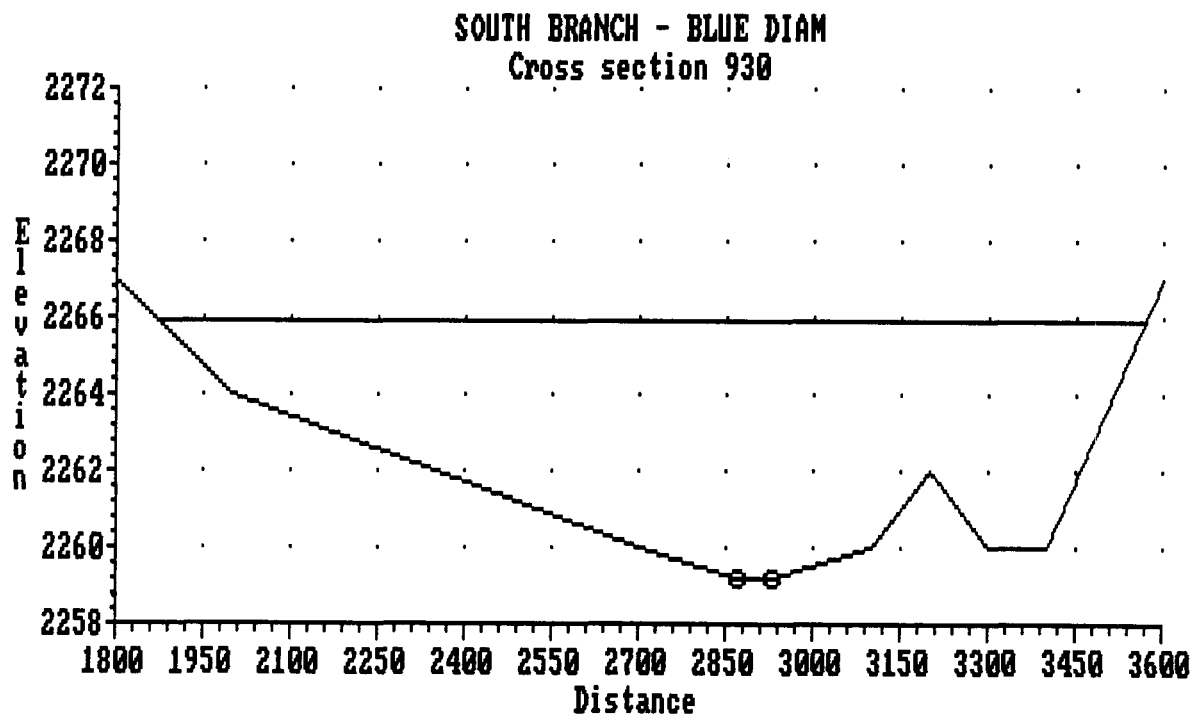


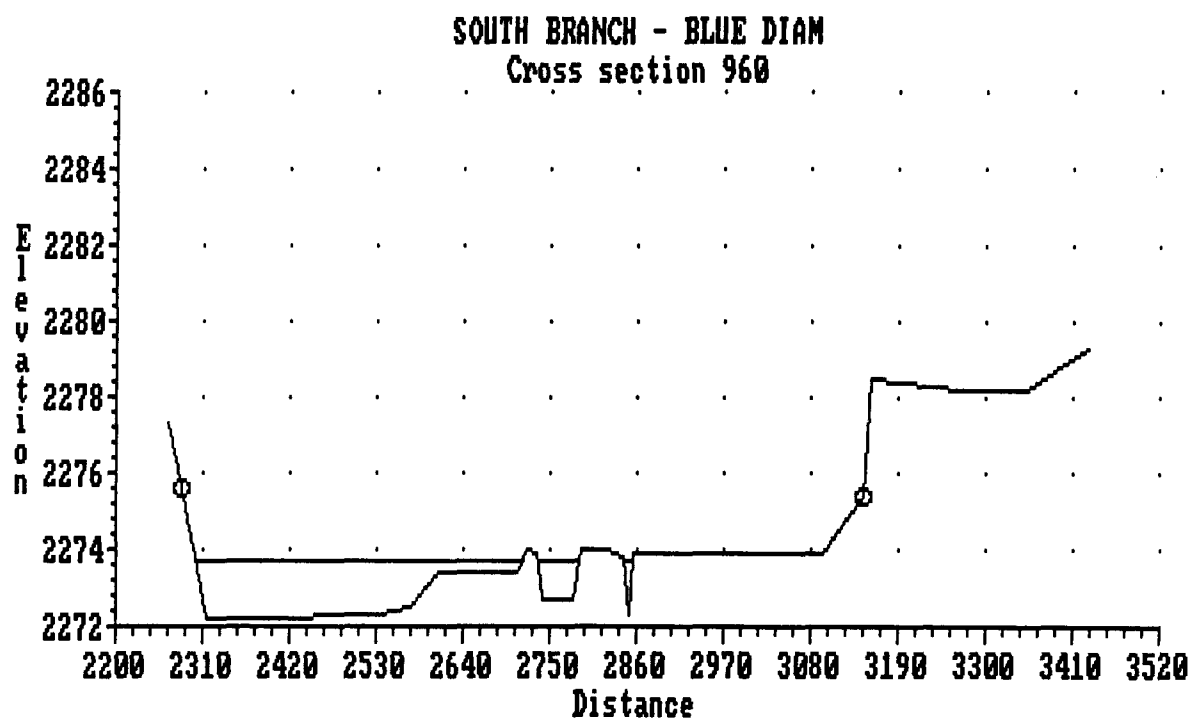




SOUTH BRANCH - BLUE DIAM Cross section 920







VOLUME 2

DUCK CREEK HYDROLOGIC UNIT

TECHNICAL DATA APPENDIX

CLARK COUNTY, NEVADA

FLOOD INSURANCE STUDY

PREPARED FOR

**OFFICE OF RISK ASSESSMENT
FEDERAL INSURANCE ADMINISTRATION
FEDERAL EMERGENCY MANAGEMENT AGENCY**

PREPARED BY

**MICHAEL BAKER JR., INC.
CONSULTING ENGINEERS
ALEXANDRIA, VIRGINIA**

Revised MAY 1993

DUCK CREEK HYDROLOGIC UNIT
TECHNICAL DATA APPENDIX

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Volume 2

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**IV. DUCK CREEK AND DUCK CREEK TRIBUTARY
(ROBINDALE ROAD TO INTERSTATE 15)**

IV. DUCK CREEK AND DUCK CREEK TRIBUTARY

This study covers Duck Creek from Robindale Road to Interstate-15, and Duck Creek Tributary from its confluence with Duck Creek to Interstate-15 (refer to Attachment IV - 1). The section of Duck Creek from Robindale Road to Pebble Road was analyzed to determine if the 100-year flood flows were contained within the channel. For the portion of Duck Creek upstream of Pebble Road and for Duck Creek Tributary, backwater computations utilizing the HEC-2 hydraulic computer program were developed for the 100-year flood and floodway. The areas subject to flooding from the 100-year flood were delineated on the accompanying work maps based on analyses and information described herein.

Peak discharge values for the 100-year flood were obtained from the report entitled "Las Vegas Valley Flood Insurance Study Hydrology Report", prepared by James M. Montgomery, Inc., (JMM) dated September, 1991. The following table summarizes the 100-year flows used in this study for Duck Creek and the Duck Creek Tributary:

<u>Location</u>	<u>Drainage Area</u>	<u>Discharge (cfs)</u>
Duck Creek at Robindale Road	136.5*	11,500
Duck Creek at confluence with Duck Creek Tributary	119.5*	11,000
Duck Creek above I-15	71.5*	9,700
Duck Creek Tributary at confluence with Duck Creek	46.2*	6,300
Duck Creek Tributary above I-15	44.2*	5,700

* Drainage area taken from JMM 1991 FIS Hydrology Report

Cross-sectional information for these flooding sources were obtained from the HEC-2 computer analyses, prepared by JMM in 1986, for the draft Flood Insurance Study for the Unincorporated Areas of Clark County, Nevada, dated August 1986. Additional Information utilized to update and/or revise this data was obtained from the following: CLOMR and LOMR data listed in Attachment IV - 2; recent aerial photographic maps entitled 'Las Vegas', dated April, 1991; plans and mapping obtained from the Clark County Public Works Department (CCPWD); field investigations conducted in February 1992; and topographic maps entitled 'Duck Creek Wash' dated October 15, 1992, prepared by CH2MHill.

The hydraulic analyses included divided flow analyses on the reach of Duck Creek between Pebble Road and its confluence with Duck Creek Tributary. This analysis involved balancing the quantity of flow in Duck Creek and the divided flow reach (Duck Creek-South Channel) so that water surface elevations, energy grades and velocities were balanced at the up- stream cross sections of the reach.

Split flow analyses were conducted on Duck Creek and Duck Creek Tributary from Las Vegas Boulevard to Interstate-15 using the split flow option of HEC-2, and the photographic maps, CCPWD plans, and field investigation results referenced above. The Las Vegas Valley FIS Hydrology Report, also referenced above, provided peak flows of 11,000 cfs on Duck Creek at the confluence of Duck Creek and Duck Creek

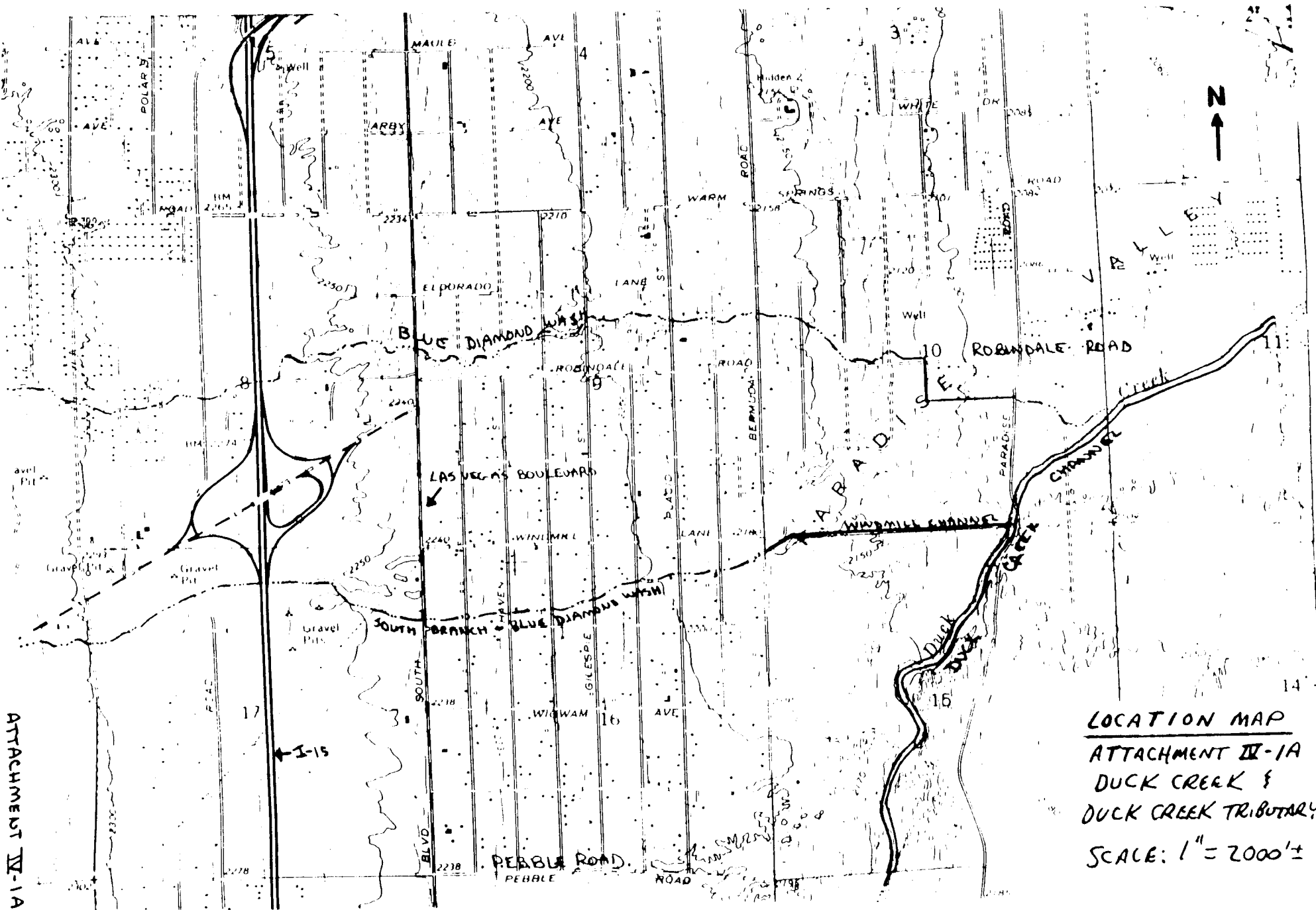
Tributary, 9,700 cubic feet per second (cfs) on Duck Creek above Interstate-15, and 5,700 cfs on Duck Creek Tributary above Interstate-15. The additional contribution of 600 cfs to Duck Creek Tributary just upstream of Las Vegas Boulevard from a tributary to the south was also included. The split flow analyses for Duck Creek and Duck Creek Tributary were balanced to maintain these peak flows as computed in the detailed hydrologic analysis.

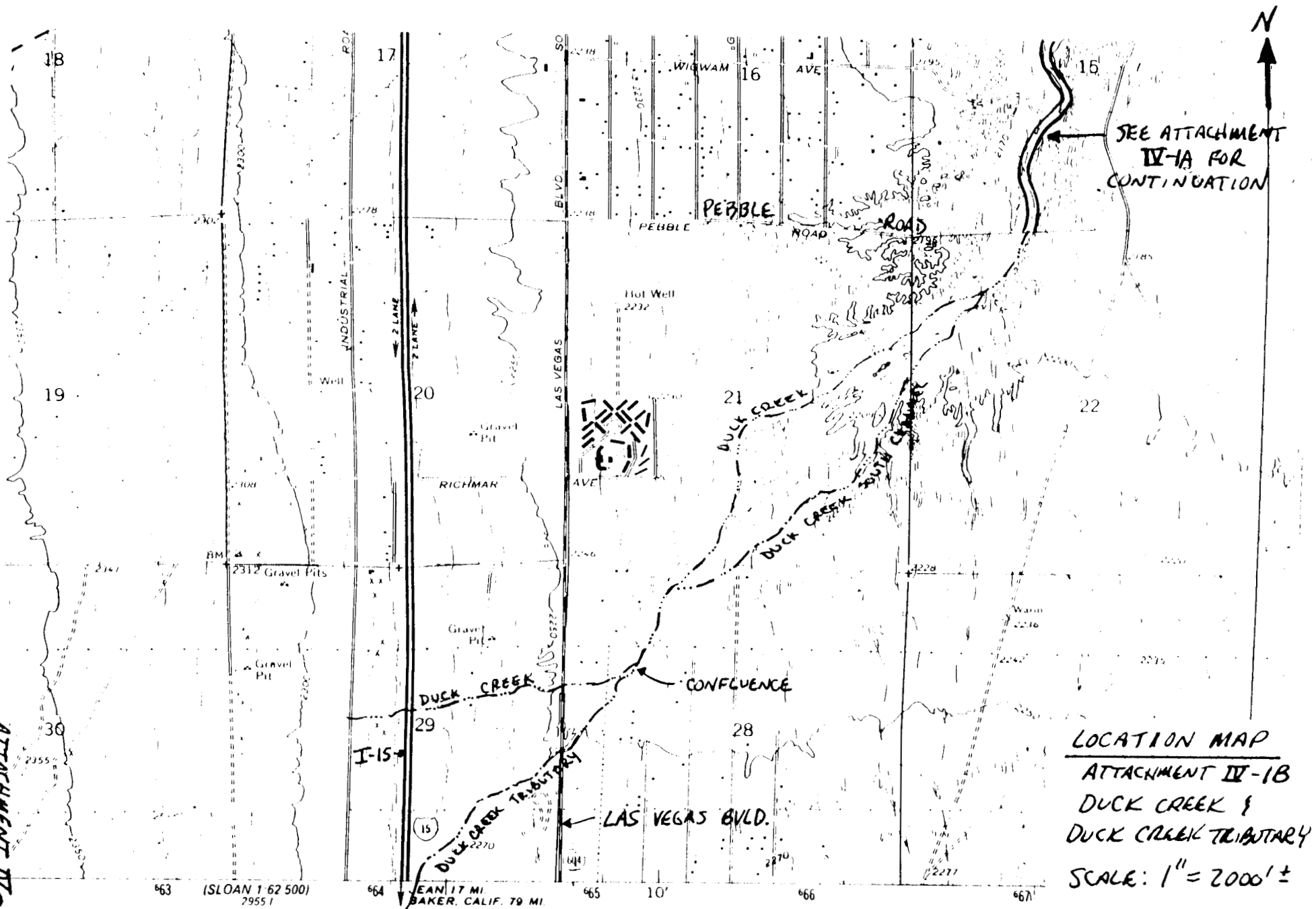
For the split flow analysis on Duck Creek, the flow of 9,700 cfs coming down Duck Creek hits Interstate-15 where approximately 2,100 cfs splits off to the north. It was determined that 50% of this flow would return to Duck Creek downstream of Interstate-15, and the other 30% would continue to flow northwards. At Las Vegas Boulevard, the flow of approximately 8,200 cfs flowing down Duck Creek toward the boulevard is increased by split flows of about 1,750 cfs from Duck Creek Tributary from the south. Of the combined flow, about 1,150 cfs splits off to the north, leaving approximately 8,800 cfs continuing downstream. It was determined that 30% of the split flow at Las Vegas Boulevard would rejoin Duck Creek at its confluence with Duck Creek Tributary, and the remaining 70% would continue northwards.

In the split flow analyses on Duck Creek Tributary, the flow of 5,700 cfs coming down the tributary hits Interstate-15 where approximately 1,450 cfs splits off to the north toward Duck Creek. It was determined that 50% of this flow would return to the tributary downstream of the Interstate, and the other 50% would continue northwards toward Duck Creek. The resulting flow approaching Las Vegas Boulevard (about 5,000 cfs) is increased by 600 cfs from a tributary to the south. Of the combined flow of about 5,600 cfs, approximately 3,500 cfs splits off and flows northwards. Fifty-percent of this split flow (1,750 cfs) continues northwards toward Duck Creek, and the remainder (1,750 cfs) rejoins Duck Creek Tributary downstream of Las Vegas Boulevard.

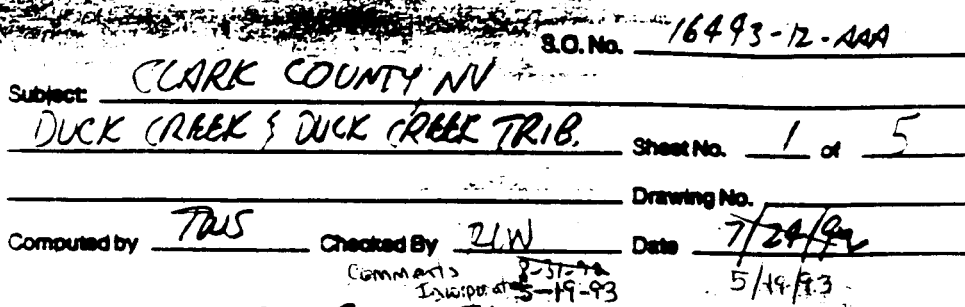
Floodways for the split flow areas on Duck Creek and Duck Creek Tributary at Las Vegas Boulevard and I-15 were analyzed assuming that the flow splits would be confined in the main wash for the floodway run. The encroached 100-year flood elevations (with no flow splits allowed) were compared to the unencroached 100-year flood elevations (with the flow splits allowed) to make certain that the one-foot surcharge was not exceeded.

ATTACHMENT IV - 1
LOCATION MAP - DUCK CREEK
AND DUCK CREEK TRIBUTARY



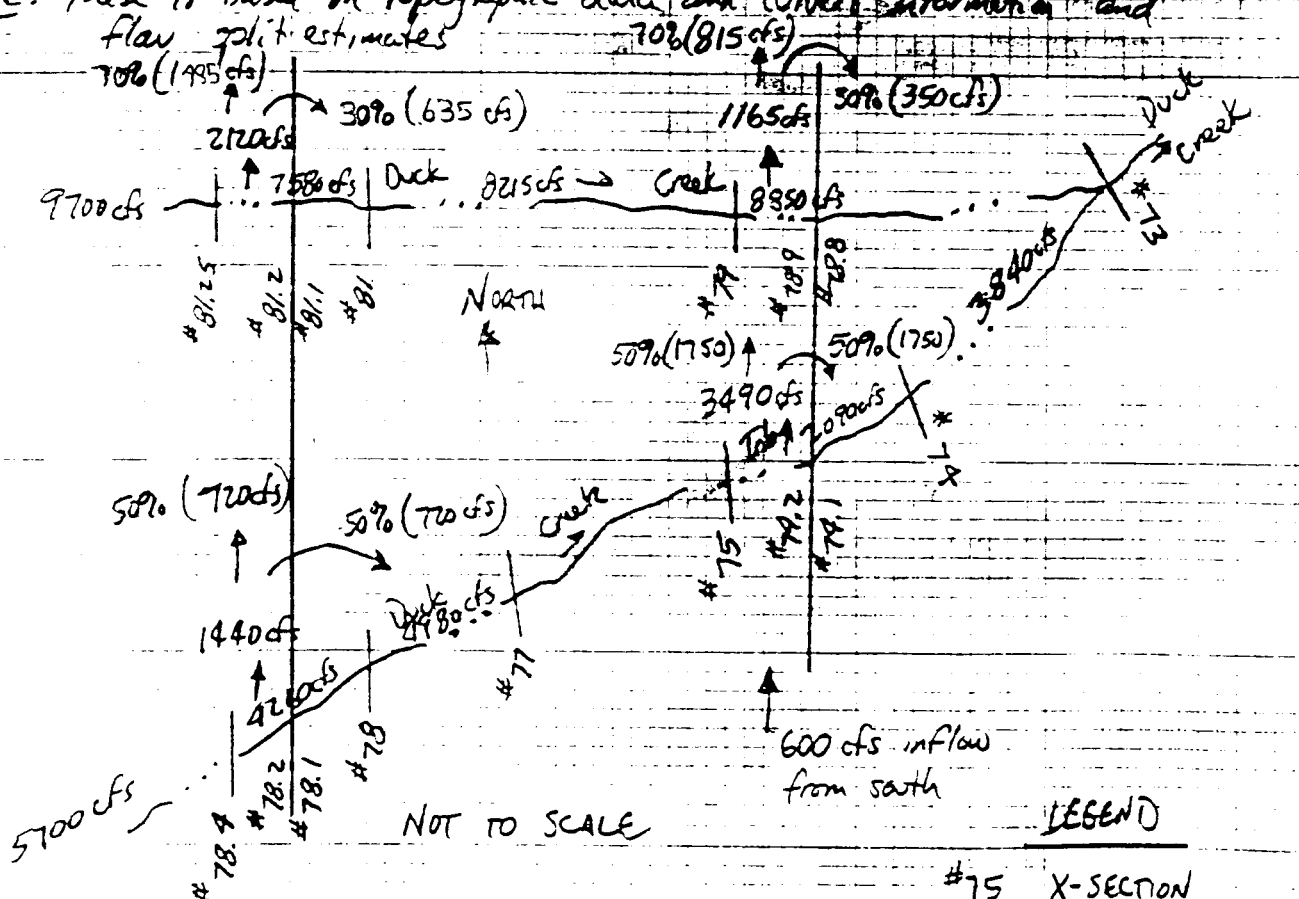


ATTACHMENT IV- 2
CALCULATIONS / BACKUP DATA



LOCATION	DUCK CREEK	DUCK CREEK TRIBUTARY
FLOW SPLIT	70% flows north	50% flows to north
@ I-15	30% returns @ X-sect 81	50% returns @ X-sect 77
' Due to lag in hydrograph peaks between Duck & Trib - this diverted flow is not assumed to contribute to Duck Creek peak		
FLOW SPLIT	70% flows to north	50% contributes to Duck Creek
@ LAS VEGAS BYLD	30% returns @ X-sect 73	@ X-sect 78.9

NOTE: These % based on topographic data and current information and
flav split estimates

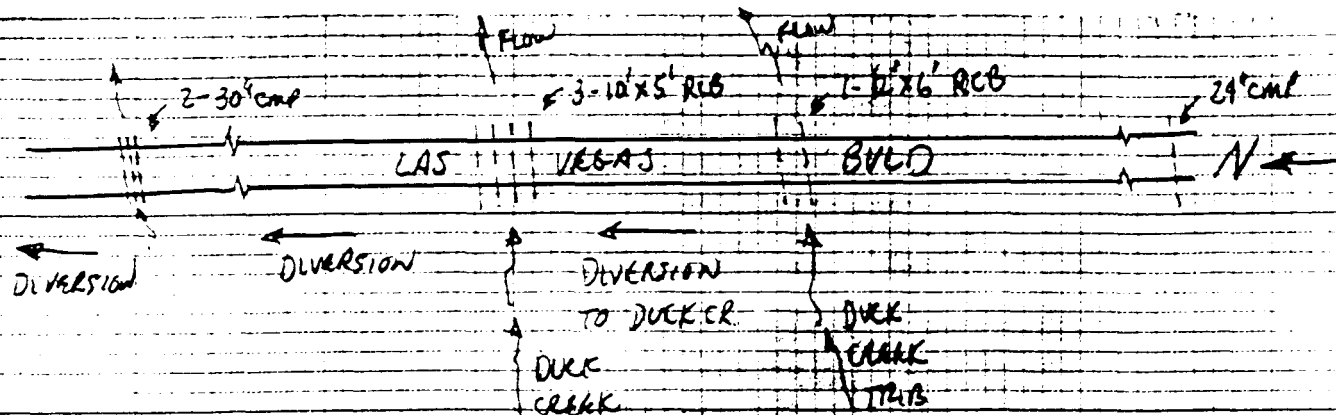


LEGEND

#75 X-SECTION

→ INFLOWS/OUTFLOWS

9700 cfs ACTUAL FLOWS



NOTE:

1. FLOW UPSTREAM OF DUCK CR. TRIB 12'x6' BOX WALL OVER FLOW ROAD, FLOW NORTH TO DUCK CR. AND FLOW THRU CULVERT
2. DIVERSION CAN GO TO DUCK CREEK DIRECTLY FROM TRIBUTARY
3. FLOW UPSTREAM OF DUCK CREEK CAN GO TO DIVERSION TO NORTH THRU CULVERT UNDER LAS VEGAS BLVD (3-10'x5' RCB), OR OVER ROADWAY. BERMES BETWEEN DUCK CR & DUCK CREEK TRIB WILL HAVE SOME AFFECT ON FLOW SPLITS
4. Duck Creek peaks 21 hr after Duck Creek Tributary. For Duck Creek tributary analysis, split flows to Duck Creek from Duck Creek Tributary were considered. For Duck Creek Analyses, no flow split to Duck Creek Tributary (to south) was considered because ground elevations decrease to the north and flows from Duck Creek would be restricted by flows from Duck Creek Tributary.

100-YR FLOOD BASIS

1. SPLIT FLOW ANALYSES FOR BOTH DUCK CR. & DUCK CR. TRIB RUN IN NEC-2.
2. FOR DUCK CR, 30% OF FLOW DIVERSION ABOVE LAS VEGAS BLVD RETURNS @ X-SECT 73, 70% CONTINUES NORTH
3. FOR DUCK CREEK TRIBUTARY, 50% OF FLOW DIVERSION ABOVE LAS VEGAS BLVD RETURNS @ X-SECT 74, 50% FLOW TO DUCK CREEK.

Subject CLARK COUNTY, NV

DUCK CREEK

Sheet No. 3 of 5

@ I-15 CULVERT

Drawing No.

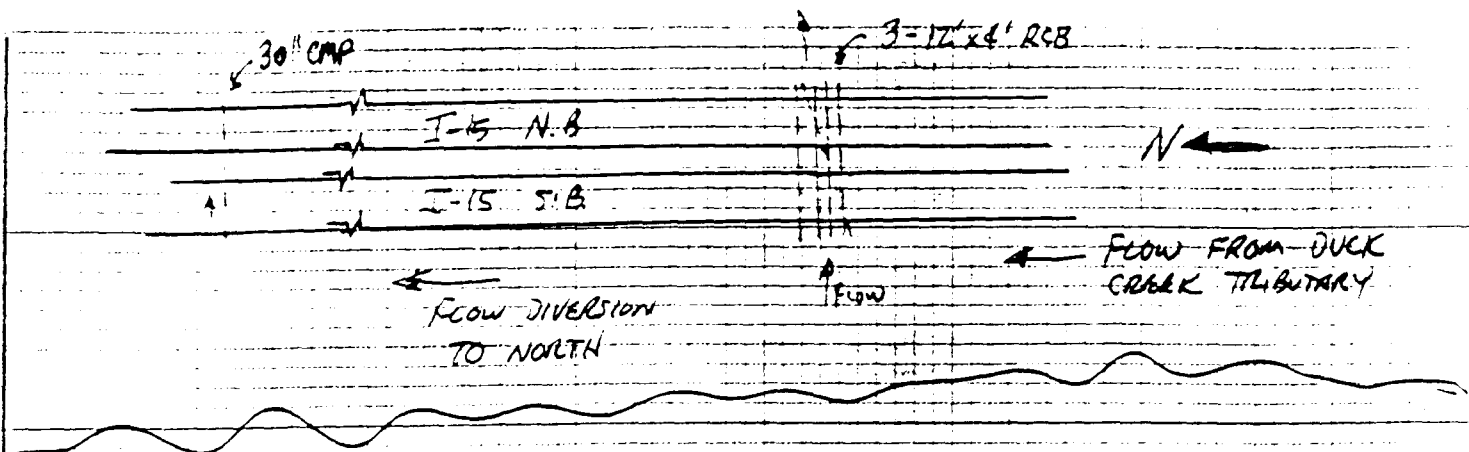
Computed by TWS

Checked By RLW

Date 7/92

5-19-93

5/19/93



NOTE:

1. FLOW UPSTREAM OF I-15 TRIPLEX BOX WILL OVERFLOW THE I-15 ROAD, FLOW THRU CULVERTS (3-12x4' RCB) OR FLOW ALONG THE I-15 EMBANKMENT TO THE NORTH (DIVERSION)
2. DIVERSION CAN FLOW TO A SINGLE 30" CMP OR FURTHER NORTH TO ADDITIONAL CULVERTS IN A 50'-60' DIVERSION CHANNEL
3. DIVERSION CHANNEL MAXIMUM CAPACITY $\approx$ 2000 CFS
 W BOTTOM WIDTH $\approx$ 50-60' SLOPE $\approx$ 0.004
 DEPTH $\approx$ 6' "N" $\approx$ 0.04

100-YEAR FLOOD BASIS

1. SPLIT FLOW ANALYSIS RUN IN NEC. 2
2. TOTAL DIVERSION FROM I-15 $\approx$ 2120 CFS
 WATER FLOWS NORTH ALONG EMBANKMENT TO 30" CMP PIPE
 & ADDITIONAL CULVERTS TO NORTH
3. OF $\approx$ 2120 CFS DIVERTED, 30% RETURNS TO DUCK CREEK
 @ X-SECT 81 AS ROAD OVERFLOW, 1060 CFS CONTINUES NORTH
4. 100-YEAR FLOOD PEAK OCCURS @ I-15 CULVERT $\approx$ 1 HOUR
 AFTER PEAK ON DUCK CREEK TRIB. THEREFORE, NO
 LOSS OR GAIN OF FLOW WAS ASSUMED TO SOUTH TOWARD TRIB.

Subject CLARK COUNTY NV
DUCK CREEK TRIBUTARY
@ I-15 CULVERT

Sheet No. 4 of 5

Drawing No. _____

Computed by TWS Checked By RW

Date 7/92
5/17/93

DUCK CREEK TRIBUTARY @ I-15

I-15 N.B.

N ←

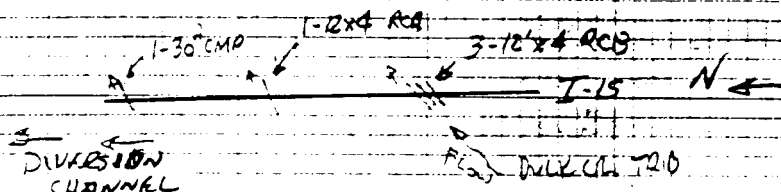
I-15 S.B.

3-12'x4' RCB

FLOW DIVERSION
TO NORTH
TOWARD DUCK CR.

FLOW DUCK CR. TRIB.

TO WIDE FLAT BOTTOM CHANNEL



NOTE:

1. FLOW UPSTREAM OF I-15 TRIPLE BOX WILL OVERFLOW THE I-15 ROAD. FLOW THRU CULVERT (3-12'x4') OR FLOW ALONG I-15 EMBANKMENT TO NORTH (DIVERSION)
2. DIVERSION CAN FLOW TO A SINGLE 12'x4' BOX JUST NORTH OF DUCK CREEK TRIB. CULVERTS OR 30" CMP JUST NORTH OF SINGLE BOX OR CONTINUE TO DUCK CREEK TRIPLE BOX CULVERT VIA DIVERSION CHANNEL
3. DIVERSION CHANNEL MAX CAPACITY ≈ 3000 CFS
w/ BOTTOM WIDTH - 70' SLOPE $\sim 0.004\%$ DEPTH $\sim 6'$ "N" ~ 0.04
RESTRICTIONS - DURING RARE EVENTS WATER WILL ALSO FLOW SOUTH FROM DUCK CREEK

Subject CLARK COUNTY, NV
DUCK CREEK TRIBUTARY
@ I-15

Sheet No. 5 of 5

Drawing No. _____

Computed by TWS

Checked By ELW

Date 7/12

2/19/13

DUCK CREEK TRIB @ I-15

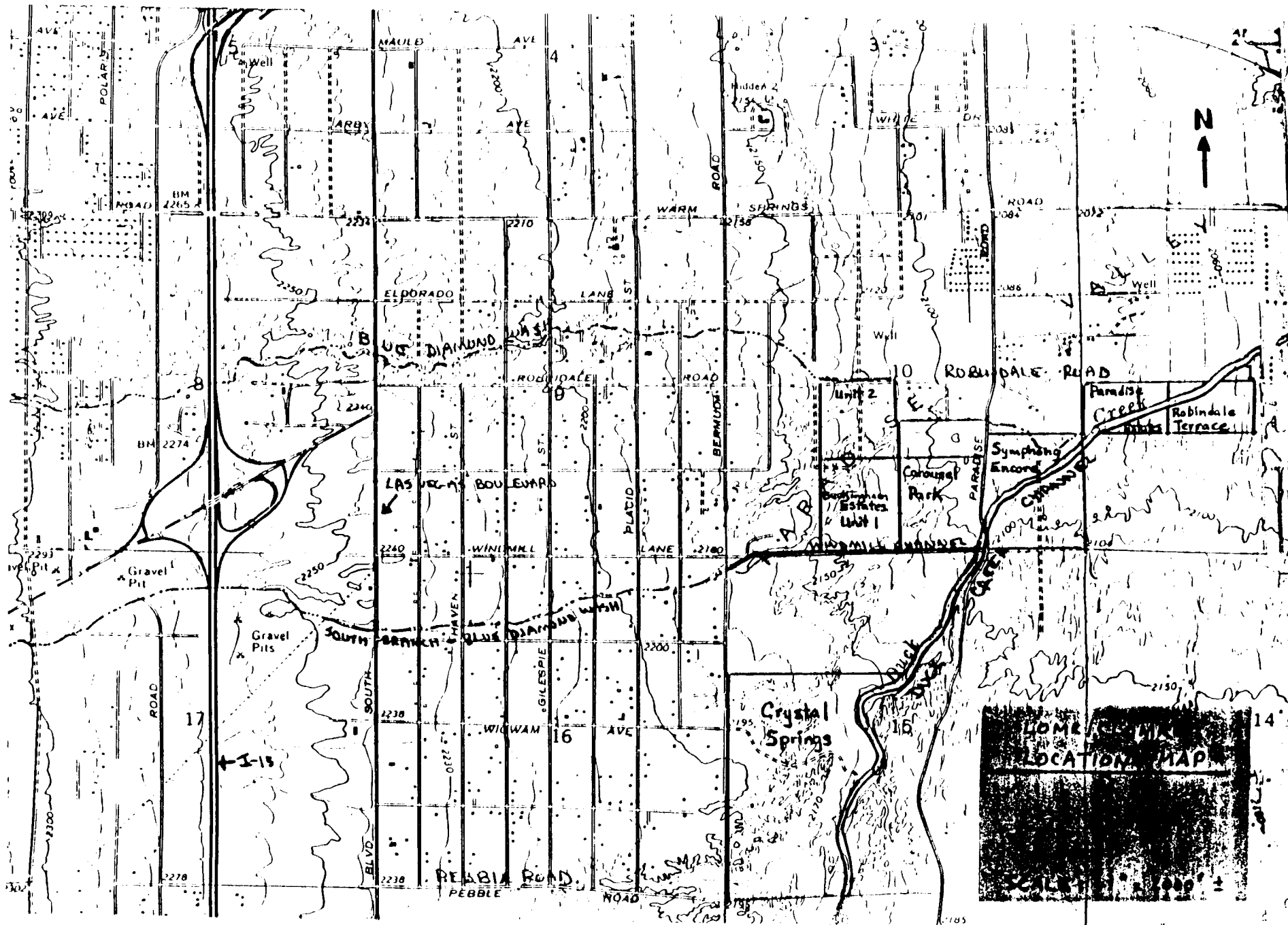
100-YR FLOOD BASIS

1. SPLIT FLOW ANALYSIS RUN IN HEC-2
2. ~~DIVERSION DITCH RESTRICTED DUE TO FLOW FROM DUCK CR~~
- DITCH PARTIALLY FILLED WITH WATER
- ENERGY SLOPE FOR SPLIT FLOW ANALYSIS 0.0008'
3. TOTAL DIVERSION FROM I-15 $\approx$ 1440 CFS
WATER FLOWS NORTH ALONG EMBANKMENT TO
12'x4' BOX & 30" CMP PIPE
4. OF 1440 CFS DIVERTED 50% RETURNS THRU 12'x4' BOX
TO DUCK CREEK TRIB @ X-71, REST CONTINUES
NORTH TO 30" CMP & DUCK CREEK
5. 100-YR PEAK @ I-15 CULVERT OCCURS $\approx$ 1 hour BEFORE
100-YR PEAK @ I-15 CULVERT ON DUCK CREEK

List of CLOMRs and LOMRs

<u>Stream</u>		<u>Property</u>	<u>Request Type</u>	<u>Date Issued</u>
Duck Creek	*	Symphony Encore	LOMR	10/4/91
Duck Creek		Paradise Estates	CLOMR	dropped
Duck Creek		Robindale Terrace	LOMR	6/5/91
Duck Creek		Crystal Springs Unit 5-6	LOMR	10/26/89
Duck Creek		Crystal Springs Unit 6-7	LOMR	7/17/89
Duck Creek		Crystal Springs Unit 8-9	LOMR	10/16/90
Duck Creek		Crystal Springs Unit 11-12	LOMR	6/23/92
Duck Creek		Windmill Village	CLOMR	11/24/92
Middle Branch Blue Diamond Wash		Buckingham Estates Unit 1	LOMR	8/1/90
Middle Branch Blue Diamond Wash	*	Carousel Park	LOMR	4/1/91
North Branch Blue Diamond Wash	*	Buckingham Estates Unit 2	CLOMR	3/12/91

* Floodplain revised. Flooding is not contained in channel.



2 COMBINED AT	<u>DQ12</u>	<u>44.15</u>	1	TIME	5.33	5.33	5.33	5.33	5.42
				FLOW	6011.	5688.	5527.	5368.	4589.
				TIME	6.00	6.00	6.00	6.00	6.08
ROUTED TO	<u>RD012</u>	<u>44.15</u>	1	FLOW	5869.	5552.	5395.	5239.	4477.
				TIME	6.33	6.33	6.33	6.33	6.42
HYDROGRAPH AT	D01	9.57	1	FLOW	2215.	2095.	2035.	1976.	1684.
				TIME	4.50	4.50	4.50	4.50	4.50
ROUTED TO	RD01	9.57	1	FLOW	2057.	1946.	1892.	1837.	1570.
				TIME	5.25	5.25	5.25	5.25	5.25
HYDROGRAPH AT	D005	2.60	1	FLOW	626.	590.	572.	554.	468.
				TIME	4.17	4.17	4.17	4.17	4.25
2 COMBINED AT	D005	12.17	1	FLOW	2549.	2415.	2349.	2282.	1956.
				TIME	5.25	5.25	5.25	5.25	5.25
ROUTED TO	RD005	12.17	1	FLOW	2512.	2379.	2314.	2248.	1929.
				TIME	5.42	5.42	5.42	5.42	5.50
HYDROGRAPH AT	D02	5.90	1	FLOW	1244.	1175.	1141.	1106.	939.
				TIME	4.50	4.50	4.50	4.50	4.58
ROUTED TO	RD02	5.90	1	FLOW	1169.	1105.	1073.	1042.	888.
				TIME	5.25	5.25	5.33	5.33	5.33
HYDROGRAPH AT	D03	10.13	1	FLOW	2227.	2103.	2041.	1980.	1679.
				TIME	4.42	4.42	4.42	4.42	4.42
HYDROGRAPH AT	D04	8.76	1	FLOW	1930.	1827.	1775.	1725.	1474.
				TIME	4.58	4.58	4.58	4.58	4.58
2 COMBINED AT	D04	18.89	1	FLOW	4142.	3916.	3804.	3692.	3144.
				TIME	4.50	4.50	4.50	4.50	4.50
ROUTED TO	RD04	18.89	1	FLOW	3752.	3554.	3456.	3359.	2883.
				TIME	5.58	5.58	5.58	5.58	5.67
HYDROGRAPH AT	D006	8.26	1	FLOW	1972.	1863.	1809.	1755.	1492.
				TIME	4.33	4.33	4.33	4.33	4.33
3 COMBINED AT	D006	33.05	1	FLOW	6477.	6136.	5967.	5800.	4978.
				TIME	5.33	5.33	5.42	5.42	5.42
ROUTED TO	RD006	33.05	1	FLOW	6408.	6073.	5907.	5741.	4926.
				TIME	5.58	5.58	5.58	5.58	5.58
HYDROGRAPH AT	D2A	.97	1	FLOW	301.	283.	275.	266.	224.
				TIME	3.67	3.67	3.67	3.67	3.67
3 COMBINED AT	D2A	46.19	1	FLOW	8959.	8487.	8253.	8020.	6876.
				TIME	5.50	5.50	5.50	5.50	5.58
ROUTED TO	RD2A	46.19	1	FLOW	8454.	8009.	7788.	7569.	6497.
				TIME	6.33	6.33	6.33	6.42	6.42
HYDROGRAPH AT	D2B	7.39	1	FLOW	826.	775.	751.	726.	606.

@ I-15 Duck Creek Trib

@ I-15

@ conf

Duck Creek

Duck Creek Trib

Time to

6.92

6.00

0.92 h

≈ 55 min

@ CONFLUENCE

Duck Creek

Duck Creek Trib

7.17

6.33

0.84 hr

≈ 50 min

					5.35	5.45	5.55	5.65	5.75
2 COMBINED AT	D2B	53.58	1	FLOW	9005.	8524.	8286.	8049.	6892.
				TIME	6.25	6.25	6.25	6.25	6.33
ROUTED TO	RD2B	53.58	1	FLOW	8573.	8116.	7888.	7664.	6563.
				TIME	7.17	7.17	7.17	7.25	7.25
HYDROGRAPH AT	D06	11.68	1	FLOW	2450.	2320.	2255.	2191.	1877.
				TIME	4.75	4.75	4.75	4.75	4.83
ROUTED TO	RD06	11.68	1	FLOW	2332.	2212.	2153.	2094.	1805.
				TIME	5.75	5.83	5.83	5.83	5.83
HYDROGRAPH AT	D3	6.22	1	FLOW	57.	529.	511.	492.	402.
				TIME	5.50	5.50	5.50	5.50	5.50
3 COMBINED AT	D3	71.48	1	FLOW	10211.	9664.	9393.	9123.	7798.
				TIME	6.92	6.92	6.92	6.92	7.00
ROUTED TO	RD3	71.48	1	FLOW	10129.	9585.	9316.	9049.	7738.
				TIME	7.17	7.17	7.25	7.25	7.25
HYDROGRAPH AT	D4	3.83	1	FLOW	713.	671.	650.	629.	528.
				TIME	4.17	4.25	4.25	4.25	4.25
3 COMBINED AT	D4	119.46	1	FLOW	15390.	14564.	14155.	13747.	11746.
				TIME	6.92	6.92	6.92	6.92	6.92
ROUTED TO	RD4	119.46	1	FLOW	15273.	14449.	14040.	13635.	11652.
				TIME	7.08	7.08	7.08	7.17	7.17
HYDROGRAPH AT	B18C	1.19	1	FLOW	148.	134.	128.	122.	101.
				TIME	3.83	3.83	3.83	5.00	5.08
5 COMBINED AT	B18C	136.45	1	FLOW	16477.	15589.	15148.	14710.	12565.
				TIME	7.00	7.00	7.00	7.00	7.08
ROUTED TO	RB18C	136.45	1	FLOW	16472.	15583.	15142.	14703.	12564.
				TIME	7.00	7.00	7.00	7.00	7.08
ROUTED TO	RB18C	136.45	1	FLOW	16471.	15582.	15140.	14703.	12563.
				TIME	7.00	7.00	7.00	7.08	7.08
ROUTED TO	RB18C	136.45	1	FLOW	16470.	15580.	15139.	14703.	12562.
				TIME	7.00	7.00	7.00	7.08	7.08
ROUTED TO	RB18C	136.45	1	FLOW	16222.	15345.	14910.	14477.	12363.
				TIME	7.33	7.33	7.33	7.33	7.42
HYDROGRAPH AT	D5A	1.31	1	FLOW	477.	454.	442.	430.	372.
				TIME	3.75	3.75	3.75	3.75	3.75
ROUTED TO	RD5A	1.31	1	FLOW	420.	399.	389.	378.	327.
				TIME	4.25	4.25	4.25	4.25	4.25
HYDROGRAPH AT	D5B	.58	1	FLOW	104.	97.	94.	91.	75.
				TIME	4.17	4.17	4.17	4.17	4.17
HYDROGRAPH AT	B71	7.99	1	FLOW	2266.	2151.	2094.	2038.	1758.

@ I-15 Duck Creek

@ CONF

SOURCE: JMM 1991 FIS
HYDROLOGY STUDY
PAGE 2 OF 3

PROPOSED DUCK CREEK/BLUE DIAMOND FIS DISCHARGES

Node	Area (sq mi)	10-Year Peak Discharge				50-Year Peak Discharge				100-Year Peak Discharge				500-Year Peak Discharge			
		OCE Reg Q	OCE SFHS Q	Model Output	Adopted Flow	OCE Reg Q	OCE SFHS Q	Model Output	Adopted Flow	OCE Reg Q	OCE SFHS Q	Model Output	Adopted Flow	OCE SFHS Q	Model Extrap	Adopt Extrap	Adopted Flow
Blue Diamond Wash																	
B504	69.5	1500		6150	5100	5500		11830	11800	8700		14830	14800		26800		26800
B11	71.6#			3480	3500			7500	7500			8930	8900		11600		11600
B11DS	71.6#			1550	1550			2970	2950			3470	3500		4350		4400
B11SPL	71.6#			1550	1550			2970	2950			3470	3500		4350		4400
B12	72.7#			1530	1550			2930	2950			3430	3400		4310		4300
B14B	72.6#			1530	1550			2930	2950			3440	3400		4310		4300
B16A	82.5#		1450	2980	3000		5300	5730	5700		8300	6750	6700	20000	8490		8500
Duck Creek																	
D2B	53.8	1400		2830	2800	4900		7080	7100	7800		9010	9000		17200		17200
D3	71.5	1500		2940	2900	5600		7540	7500	8700		9660	9700		18800		19000
D4	119.5	1900	1550	3284	3000	6700	6500	9017	8500	10400	10500	11750	11000	28000	24000		24000
D5B	146*	2100	1700	2970	3000	7100	6600	8510	8500	11000	11000	11190	11000	29000	23600		24000
D7	147*		1750	2980	3000		7000	8490	8500		11500	11170	11500	30000	23500		24000
D10	158*		1700	2820	3000		7000	8220	8500		11500	10850	11500	31000	23100		24000
D11B	164*	2200	1700	2820	3000	7400	7000	8210	8500	11500	11500	10850	11500	33000	23100		24000

D012 44.2

5700 5700

Node Location
 B11 M.B. Blue Diamond w/s UPRR
 B11 M.B. Blue Diamond d/s UPRR
 B11SPL N. B. Blue Diamond d/s UPRR
 B12 N. B. Blue Diamond at I-15
 B14B M.B. Blue Diamond at I-15
 B16A Combined Blue Diamond at Duck Cr
 D2B Main Branch at UPRR (upper)
D3 Main Branch at Interstate 15
 D4 Main+South Branches Below LVB
 D5B Paradise Rd (w/s Blue Diamond)
 D7 Main Channel at UPRR (lower)
 D10 Main Channel at Sunset Rd
 D11B Main Channel at Boulder Highway

COE Reg Q - Corps of Engineers Regional Discharge-Frequency Relationship
 COE SFHS Q - Corps of Engineers Special Flood Hazard Study
 Model Output - Master Plan Update HEC-1 Model Output
 Adopted Flow - Adopted Flow for FIS Purposes
 Model Extrap - Extrapolation of Q10, Q50, and Q100 Flows from HEC-1 Model Output
 Adopt Extrap - Extrapolation of Adopted Flows for Q10, Q50 and Q100

Area - Drainage Area from Master Plan Update

SOURCE: 1991 JAKKI HYDROLOGY REPORT

D012 Trib to Duck Creek @ J15

PAGE 1 OF 3

ATTACHMENT IV - 3
HEC - 2 RUNS

Cross Section Correlation

11/24/92

Blue Diam. Wash	North Branch Blue Diamond Wash	Duck Creek	Duck Creek Trib
18.46	0	4500 A	7300 M
24	.11 L A	4600	7400
25.4	.22 M	4650	7410
25.41	5 H E	4750	7420
25.42 A	7 O C	4850	7500 A
25.43 A	7.1 P C	4950 B	7600 B
100 B	8 Q E	5050	7700 C
110	8.5	5150 C	7800 D
120	9 R E	5250	7810
130 C	9.1 S E	5350	7820
200 D	10 T E	5450	7840
400 E	10.5 U E	5550	
410 F	11 V E	6400 D	
440	11.1 W E	6500 E	
480 G	12 X E	6600 F	
500 H	13 Y M	6700 G	
510 I	13.1	6800 H	
580 J	13.2 Z	6900 I	
600 K	13.5 AA C	7000 J	
610 L	14 AB E	7050	
710 M	15 AC C	7100 K	
720	15.1 AD E	7200 L	
730 N	15.2 AE	7300 M	
800 O		7900 N	
900 P		8000 O	
910		8100 P	

DUCK CREEK

(ROBINDALE ROAD TO PEBBLE ROAD)

DLOMR: Subcritical Run on Duck Creek, 55pp

DLMRSUP: Supercritical Run on Duck Creek, 53pp

THIS RUN EXECUTED 14MAY93 8:19:51

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 Clark County, Nevada FIS - 100-year flood (REVISED BY MBJ)
T2 James M. Montgomery, Consulting Engineers, Inc. (ORIGINAL DECK)
T3 DUCK CREEK FINAL RUN SUB-CRITICAL RUN

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2			.0065				2063.33	

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38	43	1	50	42	39	53	54	4	26
25	8								

QT	1	11500			
NC	.04	.04	.02	.1	.3
		REVISED SUPER-CRITICAL TO SUB-CRITICAL (9048-160, 425-5550)			
		CROSS SECTIONS 9048-7593 - CONCRETE LINED CHANNEL			
					- For Robindale Terrace

X1	9048	25	500	650						
X3	10									
GR	2062.0	0	2062.0	40	2062.4	40	2062.4	102	2061.8	102
GR	2061.8	170	2061.6	170	2061.6	300	2063.1	300	2063.1	317
GR	2062.1	333	2061.6	333	2061.5	362	2061.9	392	2062.4	392
GR	2063.4	417	2063.4	500	2060.4	500	2054.4	512	2054.4	550
GR	2054.4	588	2060.4	600	2062.8	610	2062.3	610	2063.1	650

X1	8948	17	212	312	100	100	100			
X3	10									
GR	2063.1	0	2063.1	81	2062.1	108	2061.6	108	2061.8	134
GR	2061.6	170	2063.4	170	2063.4	212	2060.9	212	2054.9	224
GR	2054.9	300	2060.9	312	2061.3	416	2063.4	423	2063.3	431
GR	2062.8	431	2063.2	482						

X1	8848	21	272	372	100	100	100			
X3	10									
3R	2063.9	0	2063.9	22	2063.4	22	2063.5	50	2062.6	80
4R	2062.1	80	2062.7	105	2062.5	128	2063.0	128	2063.4	159
GR	2063.4	272	2061.5	272	2055.5	284	2055.5	360	2061.5	372
iR	2061.5	470	2061.9	584	2064.8	590	2064.8	600	2064.3	600
iR	2065.2	650								

X1	8648	22	265	365	200	200	200			
X3	10									
GR	2063.9	0	2063.2	24	2062.7	24	2063.4	52	2062.5	82
GR	2063.0	82	2063.7	110	2063.7	212	2063.9	212	2063.9	265
GR	2062.6	265	2056.6	277	2056.6	353	2062.6	365	2062.6	459
GR	2062.5	490	2064.5	505	2064.4	512	2063.9	512	2065.0	566
GR	2064.5	585	2062.9	625						
NC	.04	.04	.02	.6	.8					
X1	8458	19	265	365	195	195	195			
X3	10									
GR	2064	0	2062.7	18	2062.2	18	2062.3	50	2062.0	72
GR	2062.5	72	2062.9	102	2062.9	140	2063.3	140	2063.3	265
GR	2063.6	265	2057.6	277	2057.6	353	2063.6	365	2062.9	378
GR	2063.9	470	2067.0	535	2065.0	680	2067.5	715		
NC	.04	.04	.015	.6	.8					
X1	8453				5	5	5			
X2	0			2061.5	2063.7					
X3	10									

ROBINDALE ROAD - NORMAL BRIDGE MODELED

X1	8317	66	140	409	136	136	136			
X3	10									
BT	-66	0	2064.0	2064.0	18	2062.7	2062.7	18	2062.2	2062.2
BT		50	2062.3	2062.3	72	2062.0	2062.0	72	2062.5	2062.5
BT		102	2062.9	2062.9	139.9	2062.9	2062.9	140	2063.3	2063.3
BT		264.9	2063.3	2063.3	265	2063.6	2063.6	277	2063.7	2060.0
BT		280	2063.7	2061.4	281	2063.7	2061.5	282	2063.7	2061.4
BT		285	2063.7	2060.0	288	2063.7	2060.0	291	2063.7	2061.4
BT		292	2063.7	2061.5	293	2063.7	2061.4	296	2063.7	2060.0
BT		299	2063.7	2060.0	302	2063.7	2061.4	303	2063.7	2061.5
BT		304	2063.7	2061.4	307	2063.7	2060.0	310	2063.7	2060.0
BT		313	2063.7	2061.4	314	2063.7	2061.5	315	2063.7	2061.4
BT		318	2063.7	2060.0	321	2063.7	2060.0	324	2063.7	2061.4
BT		325	2063.7	2061.5	326	2063.7	2061.4	329	2063.7	2060.0
BT		332	2063.7	2060.0	335	2063.7	2061.4	336	2063.7	2061.5
BT		337	2063.7	2061.4	340	2063.7	2060.0	343	2063.7	2060.0
BT		346	2063.7	2061.4	347	2063.7	2061.5	348	2063.7	2061.4
BT		351	2063.7	2060.0	354	2063.7	2060.0	357	2063.7	2061.4
BT		358	2063.7	2061.5	359	2063.7	2061.4	362	2063.7	2060.0
BT		365	2063.7	2060.0	368	2063.7	2061.4	369	2063.7	2061.5
BT		370	2063.7	2061.4	373	2063.7	2060.0	376	2063.7	2060.0
BT		379	2063.7	2061.4	380	2063.7	2061.5	381	2063.7	2061.4
BT		384	2063.7	2060.0	409	2063.3	2063.3	470	2063.9	2063.9
BT		535	2067.0	2067.0	680	2065.0	2065.0	715	2067.5	2067.5
GR	2064.0	0	2062.7	18	2062.2	18	2062.3	50	2062.0	72
GR	2062.5	72	2062.9	102	2062.9	139.9	2063.3	140	2063.3	264.9
GR	2063.6	265	2060.0	277	2058.0	280	2057.9	281	2058.0	282
GR	2060.0	285	2060.0	288	2058.0	291	2057.9	292	2058.0	293
GR	2060.0	296	2060.0	299	2058.0	302	2057.9	303	2058.0	304
GR	2060.0	307	2060.0	310	2058.0	313	2057.9	314	2058.0	315
GR	2060.0	318	2060.0	321	2058.0	324	2057.9	325	2058.0	326

GR	2060.0	329	2060.0	332	2058.0	335	2057.9	336	2058.0	337
GR	2060.0	340	2060.0	343	2058.0	346	2057.9	347	2058.0	348
GR	2060.0	351	2060.0	354	2058.0	357	2057.9	358	2058.0	359
GR	2060.0	362	2060.0	365	2058.0	368	2057.9	369	2058.0	370
GR	2060.0	373	2060.0	376	2058.0	379	2057.9	380	2058.0	381
GR	2060.0	384	2063.3	409	2063.9	470	2067.0	535	2065.0	680
GR	2067.5	715								

NH	6	.04	51	.013	64	.015	69	.025	145	.015
NH	163	.040	184							
NC				.1	.3					
X1	8311	14	51	163	6	6	6			
X3	10			16		163	2073.0			
GR	2064.9	0	2064.1	45	2064.6	45	2064.7	51	2070.7	51
GR	2064.7	52	2064.6	64	2059.7	69	2059.7	114	2059.7	145
GR	2067.0	163	2073.0	163	2068.3	164	2069.5	184		

NH	6	.04	79	.013	92	.015	104	.025	180	.015
NH	192	.040	282							
X1	8193	17	92	212	85	155	118			
X3	10			75		192				
GR	2065.1	0	2065.2	7	2069.4	40	2069.4	60	2068.8	74
GR	2068.8	79	2074.8	79	2068.8	80	2068.7	92	2060.7	104
GR	2060.3	142	2060.7	180	2068.7	192	2074.7	192	2069.6	193
GR	2071.1	212	2071.1	282						

NH	6	.040	146	.013	159	.015	171	.025	247	.015
NH	259	.040	349							
X1	7993	17	159	279	200	200	200			
X3	10			147		259				
GR	2065.5	0	2065.6	5	2069.9	30	2069.9	126	2069.9	142
GR	2069.9	146	2075.9	147	2069.9	147	2069.8	159	2061.8	171
GR	2061.4	209	2061.8	247	2069.8	259	2075.8	259	2070.8	260
GR	2072.2	279	2072.2	349						

NH	6	.040	195	.013	207	.015	219	.025	295	.015
NH	307	.040	397							
X1	7793	19	219	327	200	200	200			
X3	10									
GR	2066.3	0	2066.4	5	2070.4	20	2070.4	110	2071.2	110
GR	2071.2	180	2070.9	190	2070.9	194	2076.9	195	2070.9	195
GR	2070.9	207	2062.9	219	2062.5	257	2062.9	295	2070.9	307
GR	2076.9	307	2072.0	308	2073.1	327	2073.1	397		

NH	6	.040	245	.013	259	.015	271	.025	347	.015
NH	359	.040	454							

CROSS SECTIONS 7593-4400 - UNLINED CHANNEL
- Paradise Estates

X1	7593	17	247	379	200	200	200			
X3	10									
R	2067.2	0	2067.3	5	2070.4	20	2070.4	110	2070.4	110
GR	2072.4	245	2078.1	247	2072.1	247	2072.0	259	2064.0	271
GR	2063.6	309	2064.0	347	2072.0	359	2078.0	359	2072.9	360
R	2074.4	379	2074.4	454						

NC	.025	.025	.025	.6	.8				
X1	7393	8	0	109	200	200	200		
X3	10					359			
GR	2076.1	0	2065.1	21	2064.7	59	2065.1	97	2073.1
GR	2079.1	109	2075.1	110	2077.7	115.2			109

NC				.1	.3				
X1	7293	9	0	103	100	100	100		
X3	10								
GR	2076.6	0	2073.7	3	2065.7	15	2065.3	53	2065.7
GR	2073.7	103	2079.7	103	2075.7	104	2077.5	107.6	91

X1	7000	10	0	103.6	293	293	293		
X3	10								
GR	2078.8	0	2081.4	1	2075.4	1	2067.4	12	2067.0
GR	2067.4	88	2075.4	100	2081.4	100	2077.4	101	2079.5

103.6

X1	6800	10	0	100	200	200	200		
X3	10								
GR	2080.8	0	2082.5	1	2076.5	1	2068.5	12	2068.1
GR	2068.5	88	2076.5	100	2082.5	100	2078.5	101	2080.7

105.4

X1	6600	10	0	100	200	200	200		
X3	10								
GR	2081.4	0	2083.6	1	2077.6	1	2069.6	12	2069.2
GR	2069.6	88	2077.6	100	2083.6	100	2079.6	101	2081.1

103

X1	6400	10	0	100	200	200	200		
X3	10								
GR	2082.2	0	2084.7	1	2078.7	1	2070.7	12	2070.3
GR	2070.7	88	2078.7	100	2080.7	100	2081.3	101	2082.1

105

NC	.015	.015	.015	.3	.5				
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CROSS SECTIONS 4400-560 - CONCRETE LINED CHANNEL

- From Paradise Estates To Windmill Village

X1	4400	4	100	200	200	200	200		
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200	

X1	4268.7				131.3	131.3	131.3		.74
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NC				.1	.3				
X1	4200				68.7	68.7	68.7		.60

X1	4000				200	200	200		1.76
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X1	3800				200	200	200		1.76
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X1	3600				200	200	200		1.76
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NC				.3	.5					
X1	3500				100	100	100			.88
X1	3450				50	50	50			.44
X1	3403	12	100	200	46.66	46.66	46.66			
GR	2088.2	100	2080.17	112	2080.17	125.83	2088.17	125.84	2088.17	127.17
GR	2080.2	127.18	2080.17	172.84	2088.17	172.85	2088.17	174.17	2080.17	174.18
GR	2080.2	188	2088.17	200						
X1	3349				53.5	53.5	53.5			.471
X1	3296				53.5	53.5	53.5			.471
X2				89.11	91.11					
X3	10									
NC				.1	.3					
X1	3250	4	100	200	46.44	46.44	46.44			
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
X1	3200				50	50	50			.44
X1	3000				200	200	200			1.76
X1	2900				100	100	100			.88
X1	2800				100	100	100			1.65
1	2600				200	200	200			3.30
X1	2550				50	50	50			.83
IT	1	11000								
X1	2400				150	150	150			1.32
IC				.3	.5					
X1	2224.9				175.1	175.1	175.1			1.57
IC	.015	.015	.015	.1	.3					
X1	2124.9	4	1414	1474	100	100	100			
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474		
1	2100				24.9	24.9	24.9			.47
X1	2000				100	100	100			1.88
1	1900				100	100	100			1.5

X1	1800				100	100	100		1.5	
X1	1700				100	100	100		1.5	
X1	1600				100	100	100		1.5	
X1	1500				100	100	100		1.5	
X1	1400				100	100	100		1.5	
X1	1300				100	100	100		1.5	
X1	1200				100	100	100		.94	
X1	1100				100	100	100		.94	
X1	1000				100	100	100		.94	
X1	900				100	100	100		.94	
X1	800				100	100	100		.94	
X1	700				100	100	100		.94	
X1	600				100	100	100		.94	
		CROSS SECTIONS 560-425 - NATURAL WASH								
X1	560				40	40	40		.38	
NC	.04	.04	.04	.6	.8					
X1	460	8	1400	1650	100	100	100		2.7	
GR	2140	1400	2125	1430	2115	1460	2113	1500	2115	1525
GR	2120	1575	2125	1590	2135	1650				
X1	360	9	1400	1675	100	100	100		2.7	
GR	2135	1400	2120	1430	2115	1450	2114	1460	2113.8	1500
GR	2115	1520	2120	1575	2125	1590	2135	1675		
X1	260	9	1380	1660	100	100	100		2.7	
GR	2137	1380	2120	1415	2115	1460	2114.2	1490	2115	1510
GR	2120	1545	2125	1580	2130	1615	2135	1660		
X1	160	10	1270	1630	100	100	100		2.7	
GR	2135	1270	2125	1350	2120	1440	2115	1465	2114.7	1480
GR	2115	1495	2120	1525	2125	1570	2130	1600	2135	1630
NC	.015	.015	.015	.6	.8					
		CROSS SECTIONS 425-4465 - CONCRETE LINED CHANNEL								

- For Crystal Springs

X1	425	5	0	120	140	140	140			
GR	2145	0	2118.7	42	2118.5	62	2141	90	2145	120
NC				.1	.3					
X1	502	6	12	120	77	77	77			
GR	2149.7	0	2149.5	12	2121.1	40	2121.1	60	2141.4	88
GR	2145	120								
X1	550	7	12	88	48	48	48			
GR	2141.9	0	2141.7	12	2121.3	43	2121.3	58	2141.7	88
GR	2141.9	100	2150	100						
X1	600	7	12	88	50	50	50			
GR	2142.7	0	2142.5	12	2121.6	43	2121.6	58	2142.5	88
GR	2142.7	100	2151	100						
X1	612	7	12	88	12	12	12			
GR	2143.1	0	2142.9	12	2127.7	43	2127.7	58	2142.9	88
GR	2143.1	100	2151	100						
NC	.015	.015	.015	.3	.5					
X1	700	7	12	88	88	88	88			
GR	2143.6	0	2143.4	12	2128.1	43	2128.1	58	2143.4	88
GR	2143.6	100	2152	100						
IC	.015	.015	.03	.3	.5					
X1	785	7	12	88	85	85	85			
GR	2144	0	2143.8	12	2128.6	43	2128.6	58	2143.8	88
R	2144	100	2152	100						
X1	850	7	12	88	65	65	65			
GR	2144.3	0	2144.1	12	2128.8	43	2128.8	58	2144.1	88
GR	2144.3	100	2152	100						
X1	879	7	12	88	29	29	29			
R	2148.1	0	2147.9	12	2129	43	2129	58	2147.9	88
GR	2148.1	100	2156	100						
X1	883	7	12	88	4	4	4			
GR	2148.6	0	2148.4	12	2133.1	43	2133.1	58	2148.4	88
GR	2148.6	100	2157	100						
X1	925	7	12	88	42	42	42			
GR	2148.8	0	2148.6	12	2133.3	43	2133.3	58	2148.6	88
GR	2148.8	100	2157	100						
X1	975	7	12	88	50	50	50			
GR	2150.1	0	2149.9	12	2133.6	43	2133.6	58	2149.9	88
GR	2150.1	100	2158	100						

X1	1025	7	12	88	50	50	50			
GR	2151.5	0	2151.3	12	2133.8	43	2133.8	58	2151.3	88
GR	2151.5	100	2159	100						
X1	1050	7	12	88	25	25	25			
GR	2154.1	0	2153.9	12	2134	43	2134	58	2153.9	88
GR	2154.1	100	2162	100						
NC	.025	.025	.015	.1	.3					
X1	1062	7	12	88	12	12	12			
GR	2155.4	0	2155.2	12	2140.1	43	2140.1	58	2155.2	88
GR	2155.4	100	2163	100						
X1	1150	7	12	88	88	88	88			
GR	2155.9	0	2155.7	12	2140.5	43	2140.5	58	2155.7	88
GR	2155.9	100	2164	100						
X1	1200	7	12	88	50	50	50			
GR	2158.3	0	2158.1	12	2140.7	43	2140.7	58	2158.1	88
GR	2158.3	100	2166	100						
X1	1286	7	12	88	86	86	86			
GR	2158.7	0	2158.5	12	2141	43	2141	58	2158.5	88
GR	2158.7	100	2166	100						
X1	1350	7	12	88	64	64	64			
GR	2158.9	0	2158.7	12	2141.2	43	2141.2	58	2158.7	88
GR	2158.9	100	2165	100						
X1	1400	7	12	88	50	50	50			
GR	2153.9	0	2153.7	12	2141.4	43	2141.4	58	2156.8	88
GR	2157	100	2166	100						
X1	1455	7	12	88	55	55	55			
GR	2157.2	0	2157.0	12	2141.6	43	2141.6	58	2154.0	88
GR	2154.2	100	2166	100						
X1	1528	9	28.9	129.1	73	73	73			
GR	2160.5	28.9	2157.5	29	2157.3	41	2142.03	71.5	2141.93	79
GR	2142.0	86.5	2157.3	117	2157.5	129	2159.0	129.1		
X1	1631	9	28.9	129.1	103	103	103			
GR	2160.9	28.9	2157.9	29	2157.7	41	2142.44	71.5	2142.34	79
GR	2142.4	86.5	2157.7	117	2157.9	129	2159.7	129.1		
X1	1718	9	28.9	129.1	87	87	87			
GR	2158.5	28.9	2155.5	29	2155.3	41	2142.79	66	2142.69	79
GR	2142.8	86.5	2158.1	117	2158.3	129	2160.3	129.1		

X1	1810	9	28.9	129.1	92	92	92			
GR	2158.4	28.9	2155.4	29	2155.2	41	2143.16	65	2143.06	79
GR	2143.2	86.5	2158.4	117	2158.6	129	2160.7	129.1		
X1	1948	9	28.9	129.1	138	138	138			
JR	2158.9	28.9	2155.9	29	2155.7	41	2143.71	65	2143.61	79
GR	2143.7	86.5	2159.0	117	2159.2	129	2161.3	129.1		
X1	2275	9	28.9	129.1	327	327	327			
JR	2160.2	28.9	2157.2	29	2157.0	41	2145.02	65	2144.92	79
GR	2145.0	86.5	2160.3	117	2160.5	129	2162.1	129.1		
X1	2465	9	28.9	129.1	190	190	190			
GR	2161.0	28.9	2158.0	29	2157.8	41	2145.78	65	2145.68	79
GR	2145.8	86.5	2161.0	117	2161.2	129	2162.6	129.1		
X1	2773	9	29	129.1	308	308	308			
GR	2165.0	0	2159.2	29	2159.0	41	2147.01	65	2146.91	79
JR	2147.0	86.5	2162.3	117	2162.5	129	2164.0	129.1		
X1	2925	9	29	129.1	152	152	152			
JR	2167.0	0	2159.8	29	2159.6	41	2147.62	65	2147.52	79
JR	2147.6	86.5	2162.9	117	2163.1	129	2164.1	129.1		
X1	3040	9	28.9	129.1	115	115	115			
JR	2163.3	28.9	2160.3	29	2160.1	41	2148.08	65	2147.98	79
JR	2148.1	86.5	2163.3	117	2163.5	129	2163.51	129.1		
X1	3100	9	28.9	129.1	60	60	60			
JR	2163.5	28.9	2160.5	29	2160.3	41	2148.32	65.0	2148.22	79
GR	2148.3	88.0	2162.8	117	2163.0	129	2163.3	129.1		
X1	3137	9	28.9	129.1	37	37	37			
GR	2163.0	28.9	2160.05	29	2159.85	41	2148.47	63.7	2148.37	79
GR	2148.5	89.5	2162.2	117	2162.4	129	2163.1	129.1		
X1	3175	9	28.9	129.1	38	38	38			
GR	2162.6	28.9	2159.6	29	2159.4	41	2148.62	62.5	2148.52	79
JR	2148.6	91	2161.6	117	2161.8	129	2163.0	129.1		
X1	3212	9	28.9	129.1	37	37	37			
GR	2162.1	28.9	2159.1	29	2158.9	41	2148.77	61.2	2148.67	79
JR	2148.8	92.5	2161.2	117	2161.4	129	2163.1	129.1		
X1	3250	9	28.9	129.1	38	38	38			
JR	2161.6	28.9	2158.6	29	2158.4	41	2148.92	60	2148.82	79
JR	2148.9	94	2160.4	117	2160.6	129	2163.0	129.1		

X1	3425	9	29	129.1	175	175	175			
GR	2165.0	0	2159.3	29	2159.1	41	2149.62	60	2149.52	79
GR	2149.6	94	2161.1	117	2161.3	129	2163.8	129.1		
X1	3610	9	29	129.1	185	185	185			
GR	2163	0	2160.1	29	2159.9	41	2150.36	60	2150.26	79
GR	2150.4	94	2161.9	117	2162.1	129	2164.8	129.1		
X1	3640	9	28.9	129.1	30	30	30			
GR	2163.1	28.9	2160.06	29	2159.86	41	2150.45	59.84	2150.35	79
GR	2150.4	94.33	2161.86	117	2162.06	129	2165.0	129.1		
X1	3670	9	28.9	129.1	30	30	30			
GR	2163.0	28.9	2160.03	29	2159.83	41	2150.54	59.67	2150.44	79
GR	2150.5	94.67	2161.83	117	2162.03	129	2165.0	129.1		
X1	3700	9	28.9	129.1	30	30	30			
GR	2163.0	28.9	2160.00	29	2159.80	41	2150.63	59.50	2150.53	79
GR	2150.6	95	2161.80	117	2162.00	129	2165.3	129.1		
X1	3730	9	28.9	129.1	30	30	30			
GR	2162.9	28.9	2159.92	29	2159.72	41	2150.72	59.33	2150.62	79
GR	2150.7	95.33	2161.72	117	2161.92	129	2165.5	129.1		
X1	3850	9	28.9	129.1	120	120	120			
GR	2163.4	28.9	2160.42	29	2160.22	41	2151.08	58.67	2150.98	79
GR	2151.1	96.67	2162.34	117	2162.54	129	2166.1	129.1		
X1	3970	9	28.9	129.1	120	120	120			
GR	2163.7	28.9	2160.72	29	2160.52	41	2151.44	58	2151.34	79
GR	2151.4	98	2162.76	117	2162.96	129	2166.5	129.1		
X1	4090	9	28.9	129.1	120	120	120			
GR	2164.5	28.9	2161.49	29	2161.29	41	2151.80	57.33	2151.70	79
GR	2151.8	99.33	2162.71	117	2162.91	129	2166.1	129.1		
X1	4210	9	28.9	129.1	120	120	120			
GR	2165.4	28.9	2162.42	29	2162.22	41	2152.16	56.67	2152.06	79
GR	2152.2	100.67	2162.50	117	2162.70	129	2165.8	129.1		
X1	4330	9	28.9	129.1	120	120	120			
GR	2165.7	28.9	2162.72	29	2162.52	41	2152.52	56	2152.42	79
GR	2152.5	102	2162.52	117	2162.72	129	2165.4	129.1		
X1	4355	12	28.9	129.1	25	25	25	0	0	
GR	2164.9	28.9	2162.70	29	2162.60	41	2152.60	56	2152.50	78.3
GR	2152.5	78.4	2152.50	79.6	2152.50	79.7	2152.60	102	2162.60	117
GR	2162.7	129	2164.88	129.1						

X1	4455	12	28.9	129.1	100	100	100			
GR	2164.0	28.9	2163.00	29	2162.90	41	2152.90	56	2152.80	78.3
GR	2152.8	78.4	2152.80	79.6	2152.80	79.7	2152.90	102	2162.90	117
GR	2163.0	129	2164.00	129.1						
1	4465	11	50	150	10	10	10	0		
GR	2189	0	2163.13	50	2162.93	62	2152.93	77	2152.83	100
GR	2152.9	123	2162.93	138	2163.13	150	2165.6	166	2166.5	332
3R	2170.0	640								
NC	.025	.025	.025							
CROSS SECTIONS 4500-5150 - UNLINED CHANNEL										
1	4500	14	50	150	35	35	35	0		
GR	2189.4	0	2189	16	2188	22	2187	23	2170	28
GR	2165	50	2160	62	2155	72	2154.2	98	2155	124
3R	2160	134	2163	140	2165	144	2168	150		
X1	4600	15	44	150	100	100	100	0		
3R	2188	0	2186	4	2185	12	2180	22	2175	32
3R	2170	44	2165	54	2160	64	2155.4	74	2155.4	126
GR	2160	136	2165	146	2166	147	2167	148	2168	150
1	4650	15	35	170	50	50	50			1
GR	2189	0	2185	11	2180	24	2175	35	2165	55
GR	2160	65	2156	74	2156	100	2156	126	2160	135
3R	2161	140	2162	150	2164	160	2170	170	2177	184
X1	4750	14	56	230	100	100	100			1
3R	2188	0	2189	7	2189	33	2185	44	2188	56
3R	2166	57	2157	75	2157	89	2157	103	2157	111
GR	2157	127	2170	153	2170.2	230	2177	244		
1	4850	14	14	300	100	100	100			1
GR	2179.3	0	2180	10	2181	14	2180	19	2170	26
GR	2167	36	2167	48	2167	56	2158	74	2158	94
R	2158	126	2170	150	2171.8	300	2177	310		
X1	4950	13	11	392	100	100	100			1
3R	2183.2	0	2180	11	2170	13	2169	33	2169	37
3R	2169	61	2159	75	2159	82	2159	105	2159	127
GR	2171	151	2173.1	392	2177	400				
1	5050	11	0	425	100	100	100			1
GR	2177	0	2170	16	2169	21	2169	47	2170	60
GR	2160	80	2160	106	2160	132	2172	156	2173.5	425
3R	2177	432								
X1	5150	14	23	430	100	100	100			1
3R	2178	0	2177	8	2175	23	2170	33	2170	55
3R	2163	69	2163	83	2163	90	2163	94	2163	102
GR	2163	121	2173	141	2174	430	2177	436		

CROSS SECTIONS 5250-5550 - NATURAL WASH

X1	5250	32	11	452	100	100	100			
GR	2185	0	2180	11	2175	23	2171	31	2170	67
GR	2169.6	75	2170	81	2175	93	2174	120	2171	141
GR	2170	142	2169.5	145	2170	153	2172	160	2173	178
GR	2172	195	2171	197	2170	210	2169	223	2170	233
GR	2172	245	2172	320	2171	345	2170	360	2171	370
GR	2172	373	2172	375	2172	403	2173	424	2175	441
GR	2175	448	2177	452						

X1	5350	33	10	452	100	100	100			
GR	2185	0	2180	10	2175	27	2170	37	2170	48
GR	2171	78	2172	83	2173	89	2174	90	2174	112
GR	2173	135	2172	140	2171	141	2170	145	2171	150
GR	2172	155	2172	185	2172	210	2170	212	2169	220
GR	2170	226	2173	229	2174	237	2174	252	2173	263
GR	2173	366	2171	391	2171	407	2172	409	2175	434
GR	2176	445	2176	450	2177	452				

X1	5450	36	0	482	100	100	100			
GR	2180	0	2175	25	2175	35	2177	47	2175	53
GR	2171	57	2170.3	61	2171	73	2172	111	2175	121
GR	2175	140	2174	148	2173	164	2172	177	2171	185
GR	2171	245	2173	250	2173	263	2174	271	2175	280
GR	2174	290	2174	355	2174	400	2173	430	2172	442
GR	2172	450	2175	460	2176	470	2177	482	2177	522
GR	2176	534	2176	555	2176	583	2177	605	2178	615
GR	2180	622								

END OF LOMRS AND CLOMRS

X1	5550	29	0	620	100	100	100			
GR	2185	0	2180	20	2175	40	2171	52	2172	85
GR	2173	91	2174	96	2175	106	2177	120	2175	138
GR	2171	152	2172	172	2173	228	2174	280	2174	310
GR	2175	360	2175	400	2172	404	2172	424	2174	430
GR	2173	443	2175	448	2176	463	2177	475	2177	505
GR	2177	530	2178	562	2179	595	2180	620		

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 9048.000

3280 CROSS SECTION 9048.00 EXTENDED 1.78 FEET

3720 CRITICAL DEPTH ASSUMED

REVISED SUPER-CRITICAL TO SUB-CRITICAL (9048-160, 425-5550)

CROSS SECTIONS 9048-7593 - CONCRETE LINED CHANNEL

- For Robindale Terrace

9048.000	9.38	2063.78	2063.78	2063.33	2065.19	1.42	.00	.00	2063.40
11500.0	1845.7	9654.3	.0	784.5	930.6	.0	.0	.0	2063.10
.00	2.35	10.37	.00	.040	.020	.000	.000	2054.40	.00
.001822	0.	0.	0.	0	9	0	.00	650.00	650.00

*SECNO 8948.000

3280 CROSS SECTION 8948.00 EXTENDED .74 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8948.000	8.94	2063.84	2063.84	.00	2065.89	2.05	.18	.19	2063.40
11500.0	487.7	10060.8	951.4	244.9	822.2	342.4	3.6	1.3	2060.90
.00	1.99	12.24	2.78	.040	.020	.040	.000	2054.90	.00
.001752	100.	100.	100.	20	8	0	.00	482.00	482.00

*SECNO 8848.000

3265 DIVIDED FLOW

3280 CROSS SECTION 8848.00 EXTENDED .89 FEET

3301 HV CHANGED MORE THAN HVINS

8848.000	9.30	2064.80	.00	.00	2066.10	1.30	.14	.07	2063.40
11500.0	752.7	8869.0	1878.3	426.1	857.1	690.3	7.5	2.6	2061.50
.01	1.77	10.35	2.72	.040	.020	.040	.000	2055.50	.00
.001176	100.	100.	100.	9	0	0	.00	617.27	627.29

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

*SECNO 8648.000

3280 CROSS SECTION 8648.00 EXTENDED 2.39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8648.000	8.69	2065.29	2065.29	.00	2066.98	1.70	.27	.12	2063.90
11500.0	1018.5	9243.9	1237.6	464.1	796.7	489.0	16.0	5.4	2062.60
.01	2.19	11.60	2.53	.040	.020	.040	.000	2056.60	.00
.001617	200.	200.	200.	20	11	0	.00	625.00	625.00

CCHV= .600 CEHV= .800

*SECNO 8458.000

3265 DIVIDED FLOW

3280 CROSS SECTION 8458.00 EXTENDED 2.94 FEET

3301 HV CHANGED MORE THAN HVINS

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

8458.000	9.34	2066.95	.00	.00	2067.74	.80	.22	.54	2063.60
11500.0	2785.4	7492.9	1221.7	1056.6	862.3	634.4	25.6	8.4	2063.60
.02	2.64	8.69	1.93	.040	.020	.040	.000	2057.60	.00
.000803	195.	195.	195.	11	0	0	.00	701.89	707.20

CCHV= .600 CEHV= .800

*SECNO 8453.000

3280 CROSS SECTION 8453.00 EXTENDED 3.23 FEET

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

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 2063.70 MAX ELLC= 2061.50

8453.000	9.63	2067.23	.00	.00	2067.85	.62	.01	.10	2063.60
11500.0	3714.2	5602.0	2183.8	934.4	679.7	697.2	25.9	8.5	2063.60
.02	3.97	8.24	3.13	.040	.015	.040	.000	2057.60	.00
.002173	5.	5.	5.	4	0	0	-444.28	711.20	711.20

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

*SECNO 8317.000

3280 CROSS SECTION 8317.00 EXTENDED 3.76 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.61

3370 NORMAL BRIDGE, NRD= 66 MIN ELTRD= 2062.00 MAX ELLC= 2063.60

ROBINDALE ROAD - NORMAL BRIDGE MODELED

8317.000	9.85	2067.75	.00	.00	2068.16	.41	.17	.13	2063.30
11500.0	2242.3	7793.6	1464.1	715.4	1319.4	711.6	33.8	10.7	2063.30
.03	3.13	5.91	2.06	.040	.015	.040	.000	2057.90	.00
.000841	136.	136.	136.	2	0	0	-393.35	715.00	715.00

1490 NH CARD USED

CHV= .100 CEHV= .300

*SECNO 8311.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 16.0 163.0 TYPE= 1 TARGET= 147.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2070.70 ELREA= 2073.00

8311.000	8.14	2067.83	2067.83	.00	2071.33	3.50	.01	.93	2070.70
11500.0	.0	11500.0	.0	.0	766.4	.0	34.1	10.7	2073.00
.03	.00	15.00	.00	.000	.015	.000	.000	2059.70	51.48
.001902	6.	6.	6.	20	15	0	.00	111.52	163.00

1490 NH CARD USED

*SECNO 8193.000

1530 MANNINGS N VALUES FOR CHANNEL COMPOSITED

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 75.0 192.0 TYPE= 1 TARGET= 117.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2068.70 ELREA= 100000.00

8193.000	8.79	2069.09	2069.09	.00	2072.65	3.56	.31	.02	2068.70
11500.0	15.1	11484.9	.0	5.3	758.3	.0	36.1	11.0	100000.00
.03	2.86	15.15	.00	.015	.022	.000	.000	2060.30	75.00
.003764	85.	118.	155.	20	8	0	.00	116.05	192.00

1490 NH CARD USED

*SECNO 7993.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 147.0 259.0 TYPE= 1 TARGET= 112.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2069.80 ELREA= 100000.00

7993.000	8.77	2070.17	2070.17	.00	2073.75	3.58	.76	.01	2069.80
11500.0	12.2	11487.8	.0	3.8	755.7	.0	39.6	11.6	100000.00
.03	3.22	15.20	.00	.013	.022	.000	.000	2061.40	147.00
.003808	200.	200.	200.	3	5	0	.00	112.00	259.00

1490 NH CARD USED

*SECNO 7793.000

3265 DIVIDED FLOW

3280 CROSS SECTION 7793.00 EXTENDED 7.14 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.49

7793.000	10.94	2073.44	.00	.00	2074.49	1.05	.49	.25	2062.90
11500.0	3064.9	8417.0	18.1	686.0	912.3	24.1	45.1	12.7	2073.10
.04	4.47	9.23	.75	.030	.027	.040	.000	2062.50	.00
.001708	200.	200.	200.	11	0	0	.00	395.72	397.00

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

1490 NH CARD USED

*SECNO 7593.000

3280 CROSS SECTION 7593.00 EXTENDED 5.19 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2078.10 ELREA= 2074.40

CROSS SECTIONS 7593-4400 - UNLINED CHANNEL

- Paradise Estates

7593.000	8.79	2072.39	2072.39	.00	2075.92	3.54	.50	.75	2078.10
11500.0	.0	11500.0	.0	.0	762.1	.0	50.6	13.9	2074.40
.04	.00	15.09	.00	.000	.022	.000	.000	2063.60	247.00
.003968	200.	200.	200.	4	14	0	.00	112.00	359.00

CHV= .600 CEHV= .800

*SECNO 7393.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 359.0 TYPE= 1 TARGET= 358.999

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2076.10 ELREA= 2079.10

7393.000	8.58	2073.28	2073.28	.00	2076.92	3.64	.89	.08	2076.10
11500.0	.0	11500.0	.0	.0	751.1	.0	54.0	14.4	2079.10
.05	.00	15.31	.00	.000	.025	.000	.000	2064.70	5.38
.005012	200.	200.	200.	2	8	0	.00	103.62	109.00

CCHV= .100 CEHV= .300

*SECNO 7293.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2076.60 ELREA= 2079.70

7293.000	8.63	2073.93	2073.93	.00	2077.66	3.73	.50	.03	2076.60
11500.0	.0	11500.0	.0	.0	742.1	.0	55.8	14.6	2079.70
.05	.00	15.50	.00	.000	.025	.000	.000	2065.30	2.76
.005037	100.	100.	100.	3	5	0	.00	100.24	103.00

SECNO	DEPTH	CWSEL	CRISW	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 7000.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2078.80 ELREA= 2079.50

7000.000	8.63	2075.63	2075.63	.00	2079.40	3.77	1.48	.01	2078.80
11500.0	.0	11500.0	.0	.0	738.1	.0	60.7	15.3	2079.50
.06	.00	15.58	.00	.000	.025	.000	.000	2067.00	1.00
.005069	293.	293.	293.	2	5	0	.00	99.00	100.00

*SECNO 6800.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2080.80 ELREA= 2082.50

6800.000	8.63	2076.73	2076.73	.00	2080.50	3.77	1.01	.00	2080.80
11500.0	.0	11500.0	.0	.0	737.9	.0	64.1	15.8	2082.50
.06	.00	15.58	.00	.000	.025	.000	.000	2068.10	1.00
.005072	200.	200.	200.	2	5	0	.00	99.00	100.00

*SECNO 6600.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2081.40 ELREA= 2083.60

6600.000	8.63	2077.83	2077.83	.00	2081.60	3.77	1.01	.00	2081.40
11500.0	.0	11500.0	.0	.0	738.2	.0	67.5	16.2	2083.60
.06	.00	15.58	.00	.000	.025	.000	.000	2069.20	1.00
.005067	200.	200.	200.	2	5	0	.00	99.00	100.00

*SECNO 6400.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2082.20 ELREA= 2080.70

6400.000	8.63	2078.93	2078.93	.00	2082.70	3.77	1.01	.00	2082.20
11500.0	.0	11500.0	.0	.0	738.1	.0	70.9	16.7	2080.70
.07	.00	15.58	.00	.000	.025	.000	.000	2070.30	1.00
.005069	200.	200.	200.	2	5	0	.00	99.00	100.00

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

CCHV= .300 CEHV= .500

*SECNO 4400.000

3280 CROSS SECTION 4400.00 EXTENDED .40 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 4400-560 - CONCRETE LINED CHANNEL

- From Paradise Estates To Windmill Village

4400.000	8.38	2080.20	2080.20	.00	2083.93	3.73	.57	.01	2079.80
11500.0	.0	11500.0	.0	.0	742.3	.0	74.3	17.1	2079.82
.07	.00	15.49	.00	.000	.015	.000	.000	2071.82	100.00
.001816	200.	200.	200.	4	8	0	.00	100.00	200.00

*SECNO 4268.700

3280 CROSS SECTION 4268.70 EXTENDED .38 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4268.700	8.36	2080.92	2080.92	.00	2084.67	3.75	.24	.01	2080.54
11500.0	.0	11500.0	.0	.0	740.4	.0	76.5	17.4	2080.56
.07	.00	15.53	.00	.000	.015	.000	.000	2072.56	100.00
.001831	131.	131.	131.	4	5	0	.00	100.00	200.00

CCHV= .100 CEHV= .300

*SECNO 4200.000

3280 CROSS SECTION 4200.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

1693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4200.000	8.37	2081.53	2081.53	.00	2085.27	3.74	.13	.00	2081.14
11500.0	.0	11500.0	.0	.0	740.8	.0	77.7	17.6	2081.16
.07	.00	15.52	.00	.000	.015	.000	.000	2073.16	100.00
.001828	69.	69.	69.	20	5	0	.00	100.00	200.00

*SECNO 4000.000

3280 CROSS SECTION 4000.00 EXTENDED .39 FEET

1685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

4000.000	8.37	2083.29	2083.29	.00	2087.03	3.74	.37	.00	2082.90
11500.0	.0	11500.0	.0	.0	740.6	.0	81.1	18.0	2082.92
.08	.00	15.53	.00	.000	.015	.000	.000	2074.92	100.00
.001829	200.	200.	200.	20	5	0	.00	100.00	200.00

*SECNO 3800.000

3280 CROSS SECTION 3800.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3800.000	8.37	2085.05	2085.05	.00	2088.79	3.74	.37	.00	2084.66
11500.0	.0	11500.0	.0	.0	740.6	.0	84.5	18.5	2084.68
.08	.00	15.53	.00	.000	.015	.000	.000	2076.68	100.00
.001829	200.	200.	200.	20	5	0	.00	100.00	200.00

*SECNO 3600.000

3280 CROSS SECTION 3600.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3600.000	8.37	2086.81	2086.81	.00	2090.55	3.74	.37	.00	2086.42
11500.0	.0	11500.0	.0	.0	740.6	.0	87.9	19.0	2086.44
.08	.00	15.53	.00	.000	.015	.000	.000	2078.44	100.00
.001829	200.	200.	200.	20	5	0	.00	100.00	200.00

CCHV= .300 CEHV= .500

*SECNO 3500.000

3280 CROSS SECTION 3500.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3500.000	8.37	2087.69	2087.69	.00	2091.43	3.74	.18	.00	2087.30
11500.0	.0	11500.0	.0	.0	740.6	.0	89.6	19.2	2087.32
.09	.00	15.53	.00	.000	.015	.000	.000	2079.32	100.00
.001829	100.	100.	100.	20	5	0	.00	100.00	200.00

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

*SECNO 3450.000

3280 CROSS SECTION 3450.00 EXTENDED .39 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3450.000	8.37	2088.13	2088.13	.00	2091.87	3.74	.09	.00	2087.74
11500.0	.0	11500.0	.0	.0	740.6	.0	90.5	19.3	2087.76
.09	.00	15.53	.00	.000	.015	.000	.000	2079.76	100.00
.001829	50.	50.	50.	3	5	0	.00	100.00	200.00

*SECNO 3403.000

3280 CROSS SECTION 3403.00 EXTENDED .58 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3403.000	8.58	2088.75	2088.75	.00	2092.51	3.76	.10	.01	2088.20
11500.0	.0	11500.0	.0	.0	739.4	.0	91.3	19.4	2088.17
.09	.00	15.55	.00	.000	.015	.000	.000	2080.17	100.00
.002626	47.	47.	47.	20	8	0	.00	100.00	200.00

*SECNO 3349.000

3280 CROSS SECTION 3349.00 EXTENDED .59 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3349.000	8.59	2089.24	2089.24	.00	2092.98	3.74	.14	.00	2088.67
11500.0	.0	11500.0	.0	.0	740.9	.0	92.2	19.5	2088.64
.09	.00	15.52	.00	.000	.015	.000	.000	2080.64	100.00
.002610	54.	54.	54.	3	5	0	.00	100.00	200.00

*SECNO 3296.000

3280 CROSS SECTION 3296.00 EXTENDED .58 FEET

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 91.11 MAX ELLC= 89.11

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3296.000	8.58	2089.70	2089.70	.00	2093.45	3.75	.14	.01	2089.14
11500.0	.0	11500.0	.0	.0	739.6	.0	93.1	19.7	2089.11
.09	.00	15.55	.00	.000	.015	.000	.000	2081.11	100.00
.002624	54.	54.	54.	3	18	0	-.18	100.00	200.00

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

CCHV= .100 CEHV= .300

*SECNO 3250.000

3280 CROSS SECTION 3250.00 EXTENDED .40 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3250.000	8.38	2089.90	2089.90	.00	2093.63	3.73	.10	.00	2089.50
11500.0	.0	11500.0	.0	.0	741.9	.0	93.9	19.8	2089.52
.09	.00	15.50	.00	.000	.015	.000	.000	2081.52	100.00
.001819	46.	46.	46.	2	8	0	.00	100.00	200.00

*SECNO 3200.000

3280 CROSS SECTION 3200.00 EXTENDED .38 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3200.000	8.36	2090.32	2090.32	.00	2094.07	3.75	.09	.00	2089.94
11500.0	.0	11500.0	.0	.0	740.5	.0	94.7	19.9	2089.96
.09	.00	15.53	.00	.000	.015	.000	.000	2081.96	100.00
.001830	50.	50.	50.	20	5	0	.00	100.00	200.00

*SECNO 3000.000

3280 CROSS SECTION 3000.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3000.000	8.37	2092.09	2092.09	.00	2095.83	3.74	.37	.00	2091.70
11500.0	.0	11500.0	.0	.0	740.7	.0	98.1	20.3	2091.72
.09	.00	15.53	.00	.000	.015	.000	.000	2083.72	100.00
.001829	200.	200.	200.	20	5	0	.00	100.00	200.00

*SECNO 2900.000

3280 CROSS SECTION 2900.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2900.000	8.37	2092.97	2092.97	.00	2096.71	3.74	.18	.00	2092.58
11500.0	.0	11500.0	.0	.0	740.7	.0	99.8	20.6	2092.60
.10	.00	15.53	.00	.000	.015	.000	.000	2084.60	100.00
.001829	100.	100.	100.	20	5	0	.00	100.00	200.00

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

*SECNO 2800.000

3280 CROSS SECTION 2800.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2800.000	8.37	2094.62	2094.62	.00	2098.36	3.74	.18	.00	2094.23
11500.0	.0	11500.0	.0	.0	740.7	.0	101.5	20.8	2094.25
.10	.00	15.53	.00	.000	.015	.000	.000	2086.25	100.00
.001829	100.	100.	100.	20	5	0	.00	100.00	200.00

*SECNO 2600.000

3280 CROSS SECTION 2600.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2600.000	8.37	2097.92	2097.92	.00	2101.66	3.74	.37	.00	2097.53
11500.0	.0	11500.0	.0	.0	740.7	.0	104.9	21.3	2097.55
.10	.00	15.53	.00	.000	.015	.000	.000	2089.55	100.00
.001829	200.	200.	200.	20	5	0	.00	100.00	200.00

*SECNO 2550.000

3280 CROSS SECTION 2550.00 EXTENDED .39 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2550.000	8.37	2098.75	2098.75	.00	2102.49	3.74	.09	.00	2098.36
11500.0	.0	11500.0	.0	.0	740.7	.0	105.8	21.4	2098.38
.10	.00	15.53	.00	.000	.015	.000	.000	2090.38	100.00
.001829	50.	50.	50.	20	5	0	.00	100.00	200.00

*SECNO 2400.000

3280 CROSS SECTION 2400.00 EXTENDED .18 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2400.000	8.16	2099.86	2099.86	.00	2103.48	3.62	.27	.01	2099.68
11000.0	.0	11000.0	.0	.0	720.3	.0	108.3	21.7	2099.70
.11	.00	15.27	.00	.000	.015	.000	.000	2091.70	100.00
.001827	150.	150.	150.	20	8	0	.00	100.00	200.00

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

CCHV= .300 CEHV= .500

*SECNO 2224.900

3280 CROSS SECTION 2224.90 EXTENDED .17 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2224.900	8.15	2101.42	2101.42	.00	2105.05	3.64	.32	.01	2101.25
11000.0	.0	11000.0	.0	.0	718.7	.0	111.2	22.1	2101.27
.11	.00	15.30	.00	.000	.015	.000	.000	2093.27	100.00
.001840	175.	175.	175.	20	5	0	.00	100.00	200.00

CCHV= .100 CEHV= .300

*SECNO 2124.900

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2124.900	13.65	2106.10	2106.10	.00	2111.36	5.26	.19	.49	2107.40
11000.0	.0	11000.0	.0	.0	597.5	.0	112.7	22.3	2107.25
.11	.00	18.41	.00	.000	.015	.000	.000	2092.45	1415.30
.001933	100.	100.	100.	20	14	0	.00	57.53	1472.84

*SECNO 2100.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2100.000	13.67	2106.59	2106.59	.00	2111.83	5.25	.05	.00	2107.87
11000.0	.0	11000.0	.0	.0	598.4	.0	113.0	22.3	2107.72
.11	.00	18.38	.00	.000	.015	.000	.000	2092.92	1415.29
.001925	25.	25.	25.	20	5	0	.00	57.57	1472.85

*SECNO 2000.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2000.000	13.66	2108.46	2108.46	.00	2113.71	5.25	.19	.00	2109.75
11000.0	.0	11000.0	.0	.0	598.1	.0	114.4	22.5	2109.60
.11	.00	18.39	.00	.000	.015	.000	.000	2094.80	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

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

*SECNO 1900.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1900.000	13.67	2109.97	2109.97	.00	2115.21	5.25	.19	.00	2111.25
11000.0	.0	11000.0	.0	.0	598.3	.0	115.8	22.6	2111.10
.11	.00	18.38	.00	.000	.015	.000	.000	2096.30	1415.29
.001926	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1800.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1800.000	13.66	2111.46	2111.46	.00	2116.71	5.25	.19	.00	2112.75
11000.0	.0	11000.0	.0	.0	598.1	.0	117.1	22.7	2112.60
.11	.00	18.39	.00	.000	.015	.000	.000	2097.80	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1700.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1700.000	13.67	2112.97	2112.97	.00	2118.21	5.25	.19	.00	2114.25
11000.0	.0	11000.0	.0	.0	598.3	.0	118.5	22.9	2114.10
.12	.00	18.38	.00	.000	.015	.000	.000	2099.30	1415.29
.001926	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1600.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1600.000	13.66	2114.46	2114.46	.00	2119.71	5.25	.19	.00	2115.75
11000.0	.0	11000.0	.0	.0	598.1	.0	119.9	23.0	2115.60
.12	.00	18.39	.00	.000	.015	.000	.000	2100.80	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1500.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

1500.000	13.67	2115.97	2115.97	.00	2121.21	5.25	.19	.00	2117.25
11000.0	.0	11000.0	.0	.0	598.3	.0	121.3	23.1	2117.10
.12	.00	18.38	.00	.000	.015	.000	.000	2102.30	1415.29
.001926	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1400.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1400.000	13.66	2117.46	2117.46	.00	2122.71	5.25	.19	.00	2118.75
11000.0	.0	11000.0	.0	.0	598.1	.0	122.6	23.3	2118.60
.12	.00	18.39	.00	.000	.015	.000	.000	2103.80	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1300.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1300.000	13.67	2118.97	2118.97	.00	2124.21	5.25	.19	.00	2120.25
11000.0	.0	11000.0	.0	.0	598.3	.0	124.0	23.4	2120.10
.12	.00	18.38	.00	.000	.015	.000	.000	2105.30	1415.29
.001926	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1200.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1200.000	13.66	2119.90	2119.90	.00	2125.15	5.25	.19	.00	2121.19
11000.0	.0	11000.0	.0	.0	598.1	.0	125.4	23.5	2121.04
.12	.00	18.39	.00	.000	.015	.000	.000	2106.24	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1100.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1100.000	13.67	2120.85	2120.85	.00	2126.09	5.25	.19	.00	2122.13
11000.0	.0	11000.0	.0	.0	598.3	.0	126.8	23.7	2121.98
.13	.00	18.38	.00	.000	.015	.000	.000	2107.18	1415.29
.001926	100.	100.	100.	20	5	0	.00	57.56	1472.85

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

*SECNO 1000.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1000.000	13.66	2121.78	2121.78	.00	2127.03	5.25	.19	.00	2123.07
11000.0	.0	11000.0	.0	.0	598.1	.0	128.1	23.8	2122.92
.13	.00	18.39	.00	.000	.015	.000	.000	2108.12	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 900.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

900.000	13.67	2122.73	2122.73	.00	2127.97	5.25	.19	.00	2124.01
11000.0	.0	11000.0	.0	.0	598.3	.0	129.5	23.9	2123.86
.13	.00	18.38	.00	.000	.015	.000	.000	2109.06	1415.29
.001926	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 800.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

800.000	13.66	2123.66	2123.66	.00	2128.91	5.25	.19	.00	2124.95
11000.0	.0	11000.0	.0	.0	598.1	.0	130.9	24.0	2124.80
.13	.00	18.39	.00	.000	.015	.000	.000	2110.00	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 700.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

700.000	13.67	2124.61	2124.61	.00	2129.85	5.25	.19	.00	2125.89
11000.0	.0	11000.0	.0	.0	598.3	.0	132.3	24.2	2125.74
.13	.00	18.38	.00	.000	.015	.000	.000	2110.94	1415.29
.001926	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 600.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

600.000	13.66	2125.54	2125.54	.00	2130.79	5.25	.19	.00	2126.83
11000.0	.0	11000.0	.0	.0	598.1	.0	133.6	24.3	2126.68
.13	.00	18.39	.00	.000	.015	.000	.000	2111.88	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 560.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 560-425 - NATURAL WASH

560.000	13.67	2125.93	2125.93	.00	2131.17	5.25	.08	.00	2127.21
11000.0	.0	11000.0	.0	.0	598.3	.0	134.2	24.4	2127.06
.13	.00	18.38	.00	.000	.015	.000	.000	2112.26	1415.29
.001926	40.	40.	40.	20	5	0	.00	57.56	1472.85

CCHV= .600 CEHV= .800

*SECNO 460.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.81

460.000	18.21	2133.91	.00	.00	2134.23	.32	.10	2.96	2142.70
11000.0	.0	11000.0	.0	.0	2424.8	.0	137.6	24.7	2137.70
.14	.00	4.54	.00	.000	.040	.000	.000	2115.70	1417.58
.000587	100.	100.	100.	4	0	0	.00	209.66	1627.25

*SECNO 360.000

360.000	17.56	2134.06	.00	.00	2134.32	.26	.05	.03	2137.70
11000.0	.0	11000.0	.0	.0	2678.4	.0	143.5	25.2	2137.70
.15	.00	4.11	.00	.000	.040	.000	.000	2116.50	1407.29
.000494	100.	100.	100.	2	0	0	.00	236.73	1644.02

*SECNO 260.000

260.000	17.20	2134.10	.00	.00	2134.39	.29	.05	.02	2139.70
11000.0	.0	11000.0	.0	.0	2544.8	.0	149.5	25.7	2137.70
.15	.00	4.32	.00	.000	.040	.000	.000	2116.90	1391.51
.000582	100.	100.	100.	0	0	0	.00	236.17	1627.68

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 160.000

160.000	16.84	2134.24	.00	.00	2134.48	.24	.06	.03	2137.70
11000.0	.0	11000.0	.0	.0	2793.3	.0	155.6	26.4	2137.70
.16	.00	3.94	.00	.000	.040	.000	.000	2117.40	1297.66
.000609	100.	100.	100.	2	0	0	.00	311.59	1609.25

CCHV= .600 CEHV= .800

*SECNO 425.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 425-4465 - CONCRETE LINED CHANNEL
- For Crystal Springs

425.000	15.01	2133.51	2133.51	.00	2138.50	4.99	.14	3.80	2145.00
11000.0	.0	11000.0	.0	.0	613.4	.0	161.1	27.0	2145.00
.16	.00	17.93	.00	.000	.015	.000	.000	2118.50	18.35
.001878	140.	140.	140.	3	11	0	.00	62.33	80.68

CCHV= .100 CEHV= .300

*SECNO 502.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

502.000	15.49	2136.59	2136.59	.00	2141.92	5.33	.15	.10	2149.50
11000.0	.0	11000.0	.0	.0	593.8	.0	162.2	27.1	2145.00
.16	.00	18.53	.00	.000	.015	.000	.000	2121.10	24.72
.001950	77.	77.	77.	20	8	0	.00	56.65	81.37

*SECNO 550.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

550.000	15.84	2137.14	2137.14	.00	2142.14	5.00	.09	.03	2141.70
11000.0	.0	11000.0	.0	.0	612.8	.0	162.8	27.1	2141.70
.16	.00	17.95	.00	.000	.015	.000	.000	2121.30	18.93
.001889	48.	48.	48.	20	8	0	.00	62.37	81.30

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 600.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

600.000	15.99	2137.59	2137.59	.00	2142.59	5.00	.09	.00	2142.50
11000.0	.0	11000.0	.0	.0	612.8	.0	163.5	27.2	2142.50
.16	.00	17.95	.00	.000	.015	.000	.000	2121.60	19.29
.001874	50.	50.	50.	20	5	0	.00	61.66	80.95

*SECNO 612.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

612.000	14.63	2142.33	2142.33	.00	2146.79	4.47	.02	.05	2142.90
11000.0	.0	11000.0	.0	.0	648.6	.0	163.7	27.2	2142.90
.16	.00	16.96	.00	.000	.015	.000	.000	2127.70	13.17
.001817	12.	12.	12.	20	8	0	.00	73.69	86.87

CCHV= .300 CEHV= .500

*SECNO 700.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

700.000	14.57	2142.67	2142.67	.00	2147.23	4.56	.16	.05	2143.40
11000.0	.0	11000.0	.0	.0	642.0	.0	165.0	27.4	2143.40
.17	.00	17.14	.00	.000	.015	.000	.000	2128.10	13.47
.001862	88.	88.	88.	2	5	0	.00	73.10	86.57

CCHV= .300 CEHV= .500

*SECNO 785.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

785.000	14.50	2143.10	2143.10	.00	2147.70	4.60	.28	.02	2143.80
11000.0	.0	11000.0	.0	.0	639.1	.0	166.3	27.5	2143.80
.17	.00	17.21	.00	.000	.030	.000	.000	2128.60	13.44
.007559	85.	85.	85.	2	6	0	.00	73.18	86.61

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 850.000

3280 CROSS SECTION 850.00 EXTENDED 2.17 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.71

850.000	17.67	2146.47	.00	.00	2148.68	2.21	.27	.72	2144.10
11000.0	211.8	10576.4	211.8	27.3	876.4	27.3	167.4	27.6	2144.10
.17	7.77	12.07	7.77	.015	.030	.015	.000	2128.80	.00
.002572	65.	65.	65.	7	0	0	.00	100.00	100.00

*SECNO 879.000

3301 HV CHANGED MORE THAN HVINS

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

879.000	16.80	2145.80	.00	.00	2149.55	3.75	.10	.77	2147.90
11000.0	.0	11000.0	.0	.0	707.6	.0	168.0	27.7	2147.90
.17	.00	15.54	.00	.000	.030	.000	.000	2129.00	15.44
.005275	29.	29.	29.	3	0	0	.00	69.23	84.67

*SECNO 883.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

883.000	14.57	2147.67	2147.67	.00	2152.23	4.56	.02	.40	2148.40
11000.0	.0	11000.0	.0	.0	642.0	.0	168.0	27.7	2148.40
.17	.00	17.13	.00	.000	.030	.000	.000	2133.10	13.47
.007446	4.	4.	4.	20	8	0	.00	73.11	86.58

*SECNO 925.000

SECNO	DEPTH	CWSEL	CRWS	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

3280 CROSS SECTION 925.00 EXTENDED 1.97 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.65

925.000	17.47	2150.77	.00	.00	2153.08	2.31	.18	.67	2148.60
11000.0	189.5	10621.0	189.5	24.8	861.1	24.8	168.8	27.8	2148.60
.17	7.63	12.33	7.63	.015	.030	.015	.000	2133.30	.00
.002750	42.	42.	42.	8	0	0	.00	100.00	100.00

*SECNO 975.000

3280 CROSS SECTION 975.00 EXTENDED .54 FEET

3301 HV CHANGED MORE THAN HVINS

975.000	17.04	2150.64	.00	.00	2153.54	2.90	.16	.29	2149.90
11000.0	34.2	10931.5	34.2	7.7	798.2	7.7	169.8	27.9	2149.90
.17	4.43	13.69	4.43	.015	.030	.015	.000	2133.60	.00
.003807	50.	50.	50.	2	0	0	.00	100.00	100.00

*SECNO 1025.000

1025.000	16.81	2150.61	.00	.00	2154.00	3.39	.21	.25	2151.30
11000.0	.0	11000.0	.0	.0	744.4	.0	170.7	28.0	2151.30
.17	.00	14.78	.00	.000	.030	.000	.000	2133.80	13.23
.004741	50.	50.	50.	2	0	0	.00	73.58	86.81

*SECNO 1050.000

3301 HV CHANGED MORE THAN HVINS

1050.000	16.18	2150.18	.00	.00	2154.70	4.52	.14	.57	2153.90
11000.0	.0	11000.0	.0	.0	644.5	.0	171.1	28.0	2153.90
.17	.00	17.07	.00	.000	.030	.000	.000	2134.00	17.78
.006654	25.	25.	25.	2	0	0	.00	64.62	82.41

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

CEHV= .100 CEHV= .300

*SECNO 1062.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1062.000	14.53	2154.64	2154.64	.00	2159.15	4.52	.04	.00	2155.20
11000.0	.0	11000.0	.0	.0	644.8	.0	171.2	28.1	2155.20
.17	.00	17.06	.00	.000	.015	.000	.000	2140.10	13.16
.001851	12.	12.	12.	20	11	0	.00	73.72	86.88

*SECNO 1150.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1150.000	14.62	2155.12	2155.12	.00	2159.59	4.47	.16	.01	2155.70
11000.0	.0	11000.0	.0	.0	648.4	.0	172.6	28.2	2155.70
.17	.00	16.96	.00	.000	.015	.000	.000	2140.50	13.18
.001818	88.	88.	88.	20	5	0	.00	73.68	86.86

*SECNO 1200.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1200.000	15.17	2155.87	2155.87	.00	2160.59	4.72	.09	.08	2158.10
11000.0	.0	11000.0	.0	.0	630.8	.0	173.3	28.3	2158.10
.18	.00	17.44	.00	.000	.015	.000	.000	2140.70	15.98
.001850	50.	50.	50.	20	8	0	.00	68.18	84.15

SECNO 1286.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1286.000	15.23	2156.23	2156.23	.00	2160.92	4.70	.16	.00	2158.50
11000.0	.0	11000.0	.0	.0	632.4	.0	174.5	28.4	2158.50
.18	.00	17.39	.00	.000	.015	.000	.000	2141.00	16.03
.001834	86.	86.	86.	3	5	0	.00	68.07	84.10

*SECNO 1350.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

SECNO	DEPTH	CWSEL	CRIS	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
1350.000	15.21	2156.41	2156.41	.00	2161.12	4.71	.12	.00	2158.70
11000.0	.0	11000.0	.0	.0	631.6	.0	175.5	28.5	2158.70
.18	.00	17.42	.00	.000	.015	.000	.000	2141.20	16.05
.001840	64.	64.	64.	2	5	0	.00	68.03	84.08

*SECNO 1400.000

3280 CROSS SECTION 1400.00 EXTENDED 5.66 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.96

1400.000	18.16	2159.56	.00	.00	2161.45	1.89	.04	.28	2153.70
11000.0	223.5	10706.4	70.1	69.1	958.5	31.9	176.4	28.6	2156.80
.18	3.23	11.17	2.20	.025	.015	.025	.000	2141.40	.00
.000480	50.	50.	50.	5	0	0	.00	100.00	100.00

*SECNO 1455.000

3280 CROSS SECTION 1455.00 EXTENDED 2.32 FEET

1455.000	17.92	2159.52	.00	.00	2161.50	1.99	.03	.03	2157.00
11000.0	62.9	10724.4	212.7	29.0	937.1	65.0	177.8	28.7	2154.00
.18	2.17	11.44	3.27	.025	.015	.025	.000	2141.60	.00
.000519	55.	55.	55.	2	0	0	.00	100.00	100.00

*SECNO 1528.000

3280 CROSS SECTION 1528.00 EXTENDED .32 FEET

1528.000	17.39	2159.32	.00	.00	2161.66	2.34	.05	.11	2160.50
11000.0	.0	11000.0	.0	.0	896.0	.0	179.4	28.9	2159.00
.18	.00	12.28	.00	.000	.015	.000	.000	2141.93	28.94
.000947	73.	73.	73.	2	0	0	.00	100.16	129.10

*SECNO 1631.000

1631.000	16.89	2159.23	.00	.00	2161.85	2.62	.11	.08	2160.90
11000.0	.0	11000.0	.0	.0	846.6	.0	181.4	29.1	2159.70
.18	.00	12.99	.00	.000	.015	.000	.000	2142.34	28.96
.001130	103.	103.	103.	2	0	0	.00	100.12	129.07

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

*SECNO 1718.000

3280 CROSS SECTION 1718.00 EXTENDED 1.67 FEET

3301 HV CHANGED MORE THAN HVINS

1718.000	17.48	2160.17	.00	.00	2162.00	1.83	.07	.08	2158.50
11000.0	.0	11000.0	.0	.0	1013.1	.0	183.3	29.3	2160.30
.19	.00	10.86	.00	.000	.015	.000	.000	2142.69	28.90
.000646	87.	87.	87.	3	0	0	.00	100.19	129.09

*SECNO 1810.000

3280 CROSS SECTION 1810.00 EXTENDED 1.79 FEET

1810.000	17.13	2160.19	.00	.00	2162.08	1.89	.06	.02	2158.40
11000.0	.0	11000.0	.0	.0	997.4	.0	185.4	29.6	2160.70
.19	.00	11.03	.00	.000	.015	.000	.000	2143.06	28.90
.000678	92.	92.	92.	2	0	0	.00	100.18	129.08

*SECNO 1948.000

3280 CROSS SECTION 1948.00 EXTENDED 1.21 FEET

1948.000	16.50	2160.11	.00	.00	2162.26	2.15	.10	.08	2158.90
11000.0	.0	11000.0	.0	.0	935.2	.0	188.5	29.9	2161.30
.19	.00	11.76	.00	.000	.015	.000	.000	2143.61	28.90
.000828	138.	138.	138.	2	0	0	.00	100.14	129.04

*SECNO 2275.000

3301 HV CHANGED MORE THAN HVINS

2275.000	14.86	2159.78	.00	.00	2162.88	3.10	.33	.29	2160.20
11000.0	.0	11000.0	.0	.0	778.4	.0	194.9	30.6	2162.10
.20	.00	14.13	.00	.000	.015	.000	.000	2144.92	28.91
.001246	327.	327.	327.	2	0	0	.00	87.04	115.95

*SECNO 2465.000

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

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2465.000	13.76	2159.44	2159.44	.00	2163.46	4.03	.28	.28	2161.00
11000.0	.0	11000.0	.0	.0	683.2	.0	198.1	31.0	2162.60
.20	.00	16.10	.00	.000	.015	.000	.000	2145.68	28.95
.001832	190.	190.	190.	3	12	0	.00	84.91	113.86

*SECNO 2773.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2773.000	13.74	2160.65	2160.65	.00	2164.68	4.03	.56	.00	2159.20
11000.0	10.5	10989.5	.0	5.2	682.1	.0	202.9	31.6	2164.00
.21	2.01	16.11	.00	.025	.015	.000	.000	2146.91	21.76
.001797	308.	308.	308.	20	5	0	.00	91.95	113.71

*SECNO 2925.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2925.000	13.72	2161.24	2161.24	.00	2165.28	4.04	.27	.00	2159.80
11000.0	8.3	10991.7	.0	4.2	681.3	.0	205.3	31.9	2164.10
.21	1.99	16.13	.00	.025	.015	.000	.000	2147.52	23.19
.001804	152.	152.	152.	20	5	0	.00	90.51	113.70

*SECNO 3040.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3040.000	13.70	2161.68	2161.68	.00	2165.76	4.09	.21	.01	2163.30
11000.0	.0	11000.0	.0	.0	678.1	.0	207.1	32.1	2163.51
.21	.00	16.22	.00	.000	.015	.000	.000	2147.98	28.95
.001873	115.	115.	115.	20	5	0	.00	84.79	113.74

*SECNO 3100.000

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

3301 HV CHANGED MORE THAN HVINS

3100.000	14.78	2163.00	2161.76	.00	2165.97	2.97	.10	.11	2163.50
11000.0	.0	11000.0	.0	.0	795.4	.0	208.1	32.3	2163.30
.21	.00	13.83	.00	.000	.015	.000	.000	2148.22	28.92
.001367	60.	60.	60.	15	6	0	.00	99.75	128.66

*SECNO 3137.000

3280 CROSS SECTION 3137.00 EXTENDED .85 FEET

3301 HV CHANGED MORE THAN HVINS

3137.000	15.48	2163.85	.00	.00	2166.08	2.23	.04	.07	2163.00
11000.0	.0	11000.0	.0	.0	917.6	.0	208.9	32.3	2163.10
.21	.00	11.99	.00	.000	.015	.000	.000	2148.37	28.90
.000878	37.	37.	37.	4	0	0	.00	100.20	129.10

*SECNO 3175.000

3280 CROSS SECTION 3175.00 EXTENDED 1.64 FEET

3175.000	15.72	2164.24	.00	.00	2166.15	1.91	.03	.03	2162.60
11000.0	.0	11000.0	.0	.0	992.6	.0	209.7	32.4	2163.00
.21	.00	11.08	.00	.000	.015	.000	.000	2148.52	28.90
.000688	38.	38.	38.	2	0	0	.00	100.20	129.10

*SECNO 3212.000

3280 CROSS SECTION 3212.00 EXTENDED 2.36 FEET

3212.000	15.79	2164.46	.00	.00	2166.19	1.73	.02	.02	2162.10
11000.0	.0	11000.0	.0	.0	1043.2	.0	210.6	32.5	2163.10
.22	.00	10.54	.00	.000	.015	.000	.000	2148.67	28.90
.000590	37.	37.	37.	2	0	0	.00	100.20	129.10

*SECNO 3250.000

3280 CROSS SECTION 3250.00 EXTENDED 3.08 FEET

3250.000	15.86	2164.68	.00	.00	2166.23	1.54	.02	.02	2161.60
11000.0	.0	11000.0	.0	.0	1103.1	.0	211.5	32.6	2163.00
.22	.00	9.97	.00	.000	.015	.000	.000	2148.82	28.90
.000498	38.	38.	38.	2	0	0	.00	100.20	129.10

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 3425.000

3280 CROSS SECTION 3425.00 EXTENDED .89 FEET

3425.000	15.17	2164.69	.00	.00	2166.36	1.67	.09	.04	2159.30
11000.0	196.8	10803.2	.0	73.8	1032.8	.0	215.9	33.1	2163.80
.22	2.67	10.46	.00	.025	.015	.000	.000	2149.52	1.60
.000551	175.	175.	175.	2	0	0	.00	127.50	129.10

*SECNO 3610.000

3280 CROSS SECTION 3610.00 EXTENDED 1.62 FEET

3610.000	14.36	2164.62	.00	.00	2166.55	1.94	.12	.08	2160.10
11000.0	286.7	10713.3	.0	88.9	948.0	.0	220.5	33.6	2164.80
.23	3.22	11.30	.00	.025	.015	.000	.000	2150.26	.00
.000714	185.	185.	185.	2	0	0	.00	129.09	129.09

*SECNO 3640.000

3280 CROSS SECTION 3640.00 EXTENDED 1.40 FEET

3640.000	14.15	2164.50	.00	.00	2166.63	2.14	.02	.06	2163.10
11000.0	.0	11000.0	.0	.0	937.6	.0	221.2	33.7	2165.00
.23	.00	11.73	.00	.000	.015	.000	.000	2150.35	28.90
.000823	30.	30.	30.	2	0	0	.00	100.18	129.08

*SECNO 3670.000

3280 CROSS SECTION 3670.00 EXTENDED 1.52 FEET

3670.000	14.09	2164.53	.00	.00	2166.66	2.13	.02	.00	2163.00
11000.0	.0	11000.0	.0	.0	938.8	.0	221.8	33.8	2165.00
.23	.00	11.72	.00	.000	.015	.000	.000	2150.44	28.90
.000820	30.	30.	30.	0	0	0	.00	100.18	129.08

*SECNO 3700.000

3280 CROSS SECTION 3700.00 EXTENDED 1.55 FEET

3700.000	14.03	2164.56	.00	.00	2166.68	2.12	.02	.00	2163.00
11000.0	.0	11000.0	.0	.0	940.8	.0	222.5	33.8	2165.30
.23	.00	11.69	.00	.000	.015	.000	.000	2150.53	28.90
.000815	30.	30.	30.	0	0	0	.00	100.18	129.08

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 3730.000

3280 CROSS SECTION 3730.00 EXTENDED 1.73 FEET

3730.000	14.01	2164.63	.00	.00	2166.71	2.08	.02	.00	2162.90
11000.0	.0	11000.0	.0	.0	949.4	.0	223.1	33.9	2165.50
.23	.00	11.59	.00	.000	.015	.000	.000	2150.62	28.90
.000793	30.	30.	30.	2	0	0	.00	100.18	129.08

*SECNO 3850.000

3280 CROSS SECTION 3850.00 EXTENDED 1.21 FEET

3850.000	13.63	2164.61	.00	.00	2166.87	2.26	.10	.05	2163.40
11000.0	.0	11000.0	.0	.0	912.4	.0	225.7	34.2	2166.10
.23	.00	12.06	.00	.000	.015	.000	.000	2150.98	28.90
.000897	120.	120.	120.	2	0	0	.00	100.16	129.06

*SECNO 3970.000

3280 CROSS SECTION 3970.00 EXTENDED .95 FEET

3970.000	13.31	2164.65	.00	.00	2167.01	2.36	.11	.03	2163.70
11000.0	.0	11000.0	.0	.0	891.7	.0	228.2	34.4	2166.50
.23	.00	12.34	.00	.000	.015	.000	.000	2151.34	28.90
.000964	120.	120.	120.	2	0	0	.00	100.15	129.05

*SECNO 4090.000

3280 CROSS SECTION 4090.00 EXTENDED .18 FEET

4090.000	12.98	2164.68	.00	.00	2167.17	2.49	.12	.04	2164.50
11000.0	.0	11000.0	.0	.0	869.2	.0	230.6	34.7	2166.10
.24	.00	12.65	.00	.000	.015	.000	.000	2151.70	28.90
.001044	120.	120.	120.	2	0	0	.00	100.16	129.06

*SECNO 4210.000

3280 CROSS SECTION 4210.00 EXTENDED .18 FEET

4210.000	12.66	2164.72	.00	.00	2167.34	2.62	.13	.04	2165.40
11000.0	.0	11000.0	.0	.0	847.0	.0	233.0	35.0	2165.80
.24	.00	12.99	.00	.000	.015	.000	.000	2152.06	28.92
.001134	120.	120.	120.	2	0	0	.00	100.14	129.07

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

*SECNO 4330.000

4330.000	12.42	2164.84	.00	.00	2167.48	2.64	.14	.01	2165.70
11000.0	.0	11000.0	.0	.0	843.2	.0	235.3	35.3	2165.40
.24	.00	13.05	.00	.000	.015	.000	.000	2152.42	28.93
.001152	120.	120.	120.	0	0	0	.00	100.15	129.08

*SECNO 4355.000

4355.000	12.33	2164.83	.00	.00	2167.53	2.70	.03	.02	2164.90
11000.0	.0	11000.0	.0	.0	833.9	.0	235.8	35.3	2164.88
.24	.00	13.19	.00	.000	.015	.000	.000	2152.50	28.90
.001195	25.	25.	25.	2	0	0	.00	100.19	129.10

*SECNO 4455.000

3280 CROSS SECTION 4455.00 EXTENDED .80 FEET

4455.000	11.99	2164.79	.00	.00	2167.72	2.93	.13	.07	2164.00
11000.0	.0	11000.0	.0	.0	801.0	.0	237.6	35.6	2164.00
.24	.00	13.73	.00	.000	.015	.000	.000	2152.80	28.90
.001355	100.	100.	100.	2	0	0	.00	100.20	129.10

*SECNO 4465.000

4465.000	11.98	2164.81	.00	.00	2167.74	2.93	.01	.00	2163.13
11000.0	4.8	10977.9	17.3	2.7	798.2	9.1	237.8	35.6	2163.13
.25	1.77	13.75	1.90	.025	.015	.025	.000	2152.83	46.76
.001307	10.	10.	10.	0	0	0	.00	114.11	160.87

*SECNO 4500.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 4500-5150 - UNLINED CHANNEL

4500.000	10.29	2164.49	2164.49	.00	2168.34	3.85	.08	.28	2165.00
11000.0	.0	11000.0	.0	.0	698.4	.0	238.4	35.7	2168.00
.25	.00	15.75	.00	.000	.025	.000	.000	2154.20	51.23
.004988	35.	35.	35.	20	15	0	.00	91.75	142.98

SECNO	DEPTH	CWSEL	CRIS	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 4600.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4600.000	9.64	2165.04	2165.04	.00	2168.89	3.84	.50	.00	2170.00
11000.0	.0	11000.0	.0	.0	699.0	.0	240.0	35.9	2168.00
.25	.00	15.74	.00	.000	.025	.000	.000	2155.40	53.92
.005001	100.	100.	100.	2	11	0	.00	92.13	146.04

*SECNO 4650.000

3301 HV CHANGED MORE THAN HVINS

4650.000	10.99	2166.99	2165.39	.00	2169.23	2.24	.18	.16	2175.00
11000.0	.0	11000.0	.0	.0	915.9	.0	241.0	36.0	2170.00
.25	.00	12.01	.00	.000	.025	.000	.000	2156.00	51.04
.002670	50.	50.	50.	13	8	0	.00	113.93	164.97

*SECNO 4750.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4750.000	9.70	2166.70	2166.70	.00	2170.62	3.92	.36	.50	2188.00
11000.0	.0	11000.0	.0	.0	692.4	.0	242.8	36.2	2170.20
.25	.00	15.89	.00	.000	.025	.000	.000	2157.00	56.97
.005020	100.	100.	100.	20	11	0	.00	89.44	146.41

*SECNO 4850.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4850.000	10.07	2168.07	2168.07	.00	2171.42	3.36	.51	.06	2181.00
11000.0	.0	11000.0	.0	.0	748.1	.0	244.5	36.5	2171.80
.25	.00	14.70	.00	.000	.025	.000	.000	2158.00	32.45
.005234	100.	100.	100.	20	8	0	.00	113.68	146.13

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 4950.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4950.000	10.82	2169.82	2169.82	.00	2172.82	3.00	.53	.04	2180.00
11000.0	.0	11000.0	.0	.0	791.0	.0	246.2	36.7	2173.10
.25	.00	13.91	.00	.000	.025	.000	.000	2159.00	16.58
.005327	100.	100.	100.	20	8	0	.00	132.06	148.64

*SECNO 5050.000

3301 HV CHANGED MORE THAN HVINS

5050.000	10.95	2170.95	.00	.00	2173.34	2.39	.45	.06	2177.00
11000.0	.0	11000.0	.0	.0	886.7	.0	248.2	37.1	2173.50
.26	.00	12.41	.00	.000	.025	.000	.000	2160.00	13.82
.003908	100.	100.	100.	5	0	0	.00	140.09	153.91

*SECNO 5150.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5150.000	11.23	2174.23	2174.23	.00	2175.68	1.45	.51	.09	2175.00
11000.0	.0	11000.0	.0	.0	1138.0	.1	250.5	37.7	2174.00
.26	.00	9.67	.05	.000	.025	.025	.000	2163.00	24.54
.006789	100.	100.	100.	20	9	0	.00	405.91	430.46

*SECNO 5250.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

CROSS SECTIONS 5250-5550 - NATURAL WASH

5250.000	6.33	2175.33	.00	.00	2176.16	.84	.42	.06	2180.00
11000.0	.0	11000.0	.0	.0	1496.6	.0	253.5	38.6	2177.00
.26	.00	7.35	.00	.000	.025	.000	.000	2169.00	22.23
.002903	100.	100.	100.	3	0	0	.00	426.42	448.64

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

*SECNO 5350.000

5350.000	6.46	2175.46	.00	.00	2176.64	1.18	.37	.10	2180.00
11000.0	.0	11000.0	.0	.0	1261.8	.0	256.7	39.6	2177.00
.27	.00	8.72	.00	.000	.025	.000	.000	2169.00	25.44
.004948	100.	100.	100.	3	0	0	.00	413.63	439.06

*SECNO 5450.000

3265 DIVIDED FLOW

5450.000	5.67	2175.97	.00	.00	2177.16	1.19	.52	.00	2180.00
11000.0	.0	11000.0	.0	.0	1257.6	.0	259.6	40.6	2177.00
.27	.00	8.75	.00	.000	.025	.000	.000	2170.30	20.14
.005406	100.	100.	100.	2	0	0	.00	440.34	469.73

*SECNO 5550.000

3265 DIVIDED FLOW

END OF LOMRS AND CLOMRS

5550.000	5.49	2176.49	.00	.00	2177.71	1.22	.54	.01	2185.00
11000.0	.0	11000.0	.0	.0	1238.5	.0	262.4	41.6	2180.00
.27	.00	8.88	.00	.000	.025	.000	.000	2171.00	34.05
.005453	100.	100.	100.	0	0	0	.00	426.63	468.86

THIS RUN EXECUTED 14MAY93 8:21:52

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

DUCK CREEK FINAL RUN

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	9048.000	11500.00	2063.78	.00	2054.40	.00	.00	650.00	650.00	10.37	1715.13	9.38
*	8948.000	11500.00	2063.84	.00	2054.90	100.00	.00	482.00	482.00	12.24	1409.48	8.94
	8848.000	11500.00	2064.80	.00	2055.50	100.00	.00	627.29	617.27	10.35	1973.57	9.30
*	8648.000	11500.00	2065.29	.00	2056.60	200.00	.00	625.00	625.00	11.60	1749.79	8.69
*	8458.000	11500.00	2066.95	.00	2057.60	195.00	.00	707.20	701.89	8.69	2553.30	9.34
*	8453.000	11500.00	2067.23	.00	2057.60	5.00	.00	711.20	711.20	8.24	2311.28	9.63
*	8317.000	11500.00	2067.75	.00	2057.90	136.00	.00	715.00	715.00	5.91	2746.40	9.85
*	8311.000	11500.00	2067.83	.00	2059.70	6.00	51.48	163.00	111.52	15.00	766.45	8.14
*	8193.000	11500.00	2069.09	.00	2060.30	118.00	75.00	192.00	116.05	15.15	763.54	8.79
*	7993.000	11500.00	2070.17	.00	2061.40	200.00	147.00	259.00	112.00	15.20	759.51	8.77
*	7793.000	11500.00	2073.44	.00	2062.50	200.00	.00	397.00	395.72	9.23	1622.48	10.94
*	7593.000	11500.00	2072.39	.00	2063.60	200.00	247.00	359.00	112.00	15.09	762.10	8.79
*	7393.000	11500.00	2073.28	.00	2064.70	200.00	5.38	109.00	103.62	15.31	751.11	8.58
*	7293.000	11500.00	2073.93	.00	2065.30	100.00	2.76	103.00	100.24	15.50	742.10	8.63
*	7000.000	11500.00	2075.63	.00	2067.00	293.00	1.00	100.00	99.00	15.58	738.11	8.63
*	6800.000	11500.00	2076.73	.00	2068.10	200.00	1.00	100.00	99.00	15.58	737.94	8.63
*	6600.000	11500.00	2077.83	.00	2069.20	200.00	1.00	100.00	99.00	15.58	738.19	8.63

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	6400.000	11500.00	2078.93	.00	2070.30	200.00	1.00	100.00	99.00	15.58	738.11	8.63
*	4400.000	11500.00	2080.20	.00	2071.82	200.00	100.00	200.00	100.00	15.49	742.33	8.38
*	4268.700	11500.00	2080.92	.00	2072.56	131.30	100.00	200.00	100.00	15.53	740.38	8.36
*	4200.000	11500.00	2081.53	.00	2073.16	68.70	100.00	200.00	100.00	15.52	740.81	8.37
*	4000.000	11500.00	2083.29	.00	2074.92	200.00	100.00	200.00	100.00	15.53	740.64	8.37
*	3800.000	11500.00	2085.05	.00	2076.68	200.00	100.00	200.00	100.00	15.53	740.64	8.37
*	3600.000	11500.00	2086.81	.00	2078.44	200.00	100.00	200.00	100.00	15.53	740.64	8.37
*	3500.000	11500.00	2087.69	.00	2079.32	100.00	100.00	200.00	100.00	15.53	740.64	8.37
*	3450.000	11500.00	2088.13	.00	2079.76	50.00	100.00	200.00	100.00	15.53	740.64	8.37
*	3403.000	11500.00	2088.75	.00	2080.17	46.66	100.00	200.00	100.00	15.55	739.39	8.58
*	3349.000	11500.00	2089.24	.00	2080.64	53.50	100.00	200.00	100.00	15.52	740.86	8.59
*	3296.000	11500.00	2089.70	.00	2081.11	53.50	100.00	200.00	100.00	15.55	739.60	8.58
*	3250.000	11500.00	2089.90	.00	2081.52	46.44	100.00	200.00	100.00	15.50	741.91	8.38
*	3200.000	11500.00	2090.32	.00	2081.96	50.00	100.00	200.00	100.00	15.53	740.50	8.36
*	3000.000	11500.00	2092.09	.00	2083.72	200.00	100.00	200.00	100.00	15.53	740.67	8.37
*	2900.000	11500.00	2092.97	.00	2084.60	100.00	100.00	200.00	100.00	15.53	740.67	8.37
*	2800.000	11500.00	2094.62	.00	2086.25	100.00	100.00	200.00	100.00	15.53	740.67	8.37
*	2600.000	11500.00	2097.92	.00	2089.55	200.00	100.00	200.00	100.00	15.53	740.67	8.37
*	2550.000	11500.00	2098.75	.00	2090.38	50.00	100.00	200.00	100.00	15.53	740.67	8.37
*	2400.000	11000.00	2099.86	.00	2091.70	150.00	100.00	200.00	100.00	15.27	720.31	8.16
*	2224.900	11000.00	2101.42	.00	2093.27	175.10	100.00	200.00	100.00	15.30	718.72	8.15
*	2124.900	11000.00	2106.10	.00	2092.45	100.00	1415.30	1472.84	57.53	18.41	597.53	13.65
*	2100.000	11000.00	2106.59	.00	2092.92	24.90	1415.29	1472.85	57.57	18.38	598.41	13.67
*	2000.000	11000.00	2108.46	.00	2094.80	100.00	1415.29	1472.85	57.56	18.39	598.12	13.66
*	1900.000	11000.00	2109.97	.00	2096.30	100.00	1415.29	1472.85	57.56	18.38	598.31	13.67
*	1800.000	11000.00	2111.46	.00	2097.80	100.00	1415.29	1472.85	57.56	18.39	598.12	13.66

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	1700.000	11000.00	2112.97	.00	2099.30	100.00	1415.29	1472.85	57.56	18.38	598.31	13.67
*	1600.000	11000.00	2114.46	.00	2100.80	100.00	1415.29	1472.85	57.56	18.39	598.12	13.66
*	1500.000	11000.00	2115.97	.00	2102.30	100.00	1415.29	1472.85	57.56	18.38	598.31	13.67
*	1400.000	11000.00	2117.46	.00	2103.80	100.00	1415.29	1472.85	57.56	18.39	598.12	13.66
*	1300.000	11000.00	2118.97	.00	2105.30	100.00	1415.29	1472.85	57.56	18.38	598.31	13.67
*	1200.000	11000.00	2119.90	.00	2106.24	100.00	1415.29	1472.85	57.56	18.39	598.12	13.66
*	1100.000	11000.00	2120.85	.00	2107.18	100.00	1415.29	1472.85	57.56	18.38	598.31	13.67
*	1000.000	11000.00	2121.78	.00	2108.12	100.00	1415.29	1472.85	57.56	18.39	598.12	13.66
*	900.000	11000.00	2122.73	.00	2109.06	100.00	1415.29	1472.85	57.56	18.38	598.31	13.67
*	800.000	11000.00	2123.66	.00	2110.00	100.00	1415.29	1472.85	57.56	18.39	598.12	13.66
*	700.000	11000.00	2124.61	.00	2110.94	100.00	1415.29	1472.85	57.56	18.38	598.31	13.67
*	600.000	11000.00	2125.54	.00	2111.88	100.00	1415.29	1472.85	57.56	18.39	598.12	13.66
*	560.000	11000.00	2125.93	.00	2112.26	40.00	1415.29	1472.85	57.56	18.38	598.31	13.67
*	460.000	11000.00	2133.91	.00	2115.70	100.00	1417.58	1627.25	209.66	4.54	2424.84	18.21
	360.000	11000.00	2134.06	.00	2116.50	100.00	1407.29	1644.02	236.73	4.11	2678.43	17.56
	260.000	11000.00	2134.10	.00	2116.90	100.00	1391.51	1627.68	236.17	4.32	2544.77	17.20
	160.000	11000.00	2134.24	.00	2117.40	100.00	1297.66	1609.25	311.59	3.94	2793.32	16.84
*	425.000	11000.00	2133.51	.00	2118.50	140.00	18.35	80.68	62.33	17.93	613.45	15.01
*	502.000	11000.00	2136.59	.00	2121.10	77.00	24.72	81.37	56.65	18.53	593.78	15.49
*	550.000	11000.00	2137.14	.00	2121.30	48.00	18.93	81.30	62.37	17.95	612.77	15.84
*	600.000	11000.00	2137.59	.00	2121.60	50.00	19.29	80.95	61.66	17.95	612.82	15.99
*	612.000	11000.00	2142.33	.00	2127.70	12.00	13.17	86.87	73.69	16.96	648.60	14.63
*	700.000	11000.00	2142.67	.00	2128.10	88.00	13.47	86.57	73.10	17.14	641.96	14.57
*	785.000	11000.00	2143.10	.00	2128.60	85.00	13.44	86.61	73.18	17.21	639.12	14.50
*	850.000	11000.00	2146.47	.00	2128.80	65.00	.00	100.00	100.00	12.07	930.89	17.67
*	879.000	11000.00	2145.80	.00	2129.00	29.00	15.44	84.67	69.23	15.54	707.64	16.80

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	883.000	11000.00	2147.67	.00	2133.10	4.00	13.47	86.58	73.11	17.13	642.03	14.57
*	925.000	11000.00	2150.77	.00	2133.30	42.00	.00	100.00	100.00	12.33	910.82	17.47
	975.000	11000.00	2150.64	.00	2133.60	50.00	.00	100.00	100.00	13.69	813.70	17.04
	1025.000	11000.00	2150.61	.00	2133.80	50.00	13.23	86.81	73.58	14.78	744.37	16.81
	1050.000	11000.00	2150.18	.00	2134.00	25.00	17.78	82.41	64.62	17.07	644.52	16.18
*	1062.000	11000.00	2154.64	.00	2140.10	12.00	13.16	86.88	73.72	17.06	644.75	14.53
*	1150.000	11000.00	2155.12	.00	2140.50	88.00	13.18	86.86	73.68	16.96	648.42	14.62
*	1200.000	11000.00	2155.87	.00	2140.70	50.00	15.98	84.15	68.18	17.44	630.83	15.17
*	1286.000	11000.00	2156.23	.00	2141.00	86.00	16.03	84.10	68.07	17.39	632.41	15.23
*	1350.000	11000.00	2156.41	.00	2141.20	64.00	16.05	84.08	68.03	17.42	631.60	15.21
*	1400.000	11000.00	2159.56	.00	2141.40	50.00	.00	100.00	100.00	11.17	1059.49	18.16
	1455.000	11000.00	2159.52	.00	2141.60	55.00	.00	100.00	100.00	11.44	1031.08	17.92
	1528.000	11000.00	2159.32	.00	2141.93	73.00	28.94	129.10	100.16	12.28	895.99	17.39
	1631.000	11000.00	2159.23	.00	2142.34	103.00	28.96	129.07	100.12	12.99	846.60	16.89
	1718.000	11000.00	2160.17	.00	2142.69	87.00	28.90	129.09	100.19	10.86	1013.11	17.48
	1810.000	11000.00	2160.19	.00	2143.06	92.00	28.90	129.08	100.18	11.03	997.40	17.13
	1948.000	11000.00	2160.11	.00	2143.61	138.00	28.90	129.04	100.14	11.76	935.22	16.50
	2275.000	11000.00	2159.78	.00	2144.92	327.00	28.91	115.95	87.04	14.13	778.40	14.86
*	2465.000	11000.00	2159.44	.00	2145.68	190.00	28.95	113.86	84.91	16.10	683.19	13.76
*	2773.000	11000.00	2160.65	.00	2146.91	308.00	21.76	113.71	91.95	16.11	687.30	13.74
*	2925.000	11000.00	2161.24	.00	2147.52	152.00	23.19	113.70	90.51	16.13	685.46	13.72
*	3040.000	11000.00	2161.68	.00	2147.98	115.00	28.95	113.74	84.79	16.22	678.14	13.70
	3100.000	11000.00	2163.00	.00	2148.22	60.00	28.92	128.66	99.75	13.83	795.43	14.78
	3137.000	11000.00	2163.85	.00	2148.37	37.00	28.90	129.10	100.20	11.99	917.57	15.48
	3175.000	11000.00	2164.24	.00	2148.52	38.00	28.90	129.10	100.20	11.08	992.64	15.72
	3212.000	11000.00	2164.46	.00	2148.67	37.00	28.90	129.10	100.20	10.54	1043.19	15.79

SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
3250.000	11000.00	2164.68	.00	2148.82	38.00	28.90	129.10	100.20	9.97	1103.14	15.86
3425.000	11000.00	2164.69	.00	2149.52	175.00	1.60	129.10	127.50	10.46	1106.62	15.17
3610.000	11000.00	2164.62	.00	2150.26	185.00	.00	129.09	129.09	11.30	1036.96	14.36
3640.000	11000.00	2164.50	.00	2150.35	30.00	28.90	129.08	100.18	11.73	937.63	14.15
3670.000	11000.00	2164.53	.00	2150.44	30.00	28.90	129.08	100.18	11.72	938.78	14.09
3700.000	11000.00	2164.56	.00	2150.53	30.00	28.90	129.08	100.18	11.69	940.80	14.03
3730.000	11000.00	2164.63	.00	2150.62	30.00	28.90	129.08	100.18	11.59	949.43	14.01
3850.000	11000.00	2164.61	.00	2150.98	120.00	28.90	129.06	100.16	12.06	912.40	13.63
3970.000	11000.00	2164.65	.00	2151.34	120.00	28.90	129.05	100.15	12.34	891.68	13.31
4090.000	11000.00	2164.68	.00	2151.70	120.00	28.90	129.06	100.16	12.65	869.23	12.98
4210.000	11000.00	2164.72	.00	2152.06	120.00	28.92	129.07	100.14	12.99	846.95	12.66
4330.000	11000.00	2164.84	.00	2152.42	120.00	28.93	129.08	100.15	13.05	843.23	12.42
4355.000	11000.00	2164.83	.00	2152.50	25.00	28.90	129.10	100.19	13.19	833.94	12.33
4455.000	11000.00	2164.79	.00	2152.80	100.00	28.90	129.10	100.20	13.73	801.05	11.99
4465.000	11000.00	2164.81	.00	2152.83	10.00	46.76	160.87	114.11	13.75	810.07	11.98
* 4500.000	11000.00	2164.49	.00	2154.20	35.00	51.23	142.98	91.75	15.75	698.37	10.29
* 4600.000	11000.00	2165.04	.00	2155.40	100.00	53.92	146.04	92.13	15.74	699.05	9.64
4650.000	11000.00	2166.99	.00	2156.00	50.00	51.04	164.97	113.93	12.01	915.86	10.99
* 4750.000	11000.00	2166.70	.00	2157.00	100.00	56.97	146.41	89.44	15.89	692.45	9.70
* 4850.000	11000.00	2168.07	.00	2158.00	100.00	32.45	146.13	113.68	14.70	748.15	10.07
* 4950.000	11000.00	2169.82	.00	2159.00	100.00	16.58	148.64	132.06	13.91	791.01	10.82
5050.000	11000.00	2170.95	.00	2160.00	100.00	13.82	153.91	140.09	12.41	886.71	10.95
* 5150.000	11000.00	2174.23	.00	2163.00	100.00	24.54	430.46	405.91	9.67	1138.05	11.23
* 5250.000	11000.00	2175.33	.00	2169.00	100.00	22.23	448.64	426.42	7.35	1496.64	6.33
5350.000	11000.00	2175.46	.00	2169.00	100.00	25.44	439.06	413.63	8.72	1261.83	6.46
5450.000	11000.00	2175.97	.00	2170.30	100.00	20.14	469.73	440.34	8.75	1257.55	5.67

SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
5550.000	11000.00	2176.49	.00	2171.00	100.00	34.05	468.86	426.63	8.88	1238.50	5.49

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 9048.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 8948.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8948.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8948.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 8648.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8648.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8648.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 8458.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8453.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8317.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 8311.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8311.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8311.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 8193.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8193.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8193.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 7993.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7993.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 7793.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 7593.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7593.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 7393.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7393.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 7293.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
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CAUTION SECNO= 6800.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
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CAUTION SECNO= 6400.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 6400.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 4400.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO=	4400.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4268.700	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4268.700	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4200.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4200.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4200.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	4000.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4000.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4000.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3800.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3800.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3800.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3600.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3600.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3500.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3500.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3500.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3450.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3450.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3403.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3403.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3403.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3349.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3349.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3296.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3296.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3250.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3250.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3200.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3200.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3200.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3000.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3000.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3000.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2900.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2900.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2900.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2800.000	PROFILE=	1	CRITICAL DEPTH ASSUMED

CAUTION SECNO=	2800.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2800.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2600.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2600.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2550.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2550.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2550.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2400.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2400.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2400.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2224.900	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2224.900	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2224.900	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2124.900	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2124.900	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2124.900	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2100.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2100.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2100.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2000.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2000.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2000.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1900.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1900.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1900.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1800.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1800.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1800.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1700.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1700.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1700.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1600.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1600.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1500.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1500.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1500.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1400.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1400.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1400.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=	1300.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1300.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1300.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1200.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1200.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1200.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1100.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1100.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1100.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1000.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1000.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1000.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	900.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	900.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	900.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	800.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	800.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	800.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	700.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	700.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	700.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	560.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	560.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	560.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	460.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	425.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	425.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	502.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	502.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	502.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	550.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	550.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	550.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	600.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	600.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=	612.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	612.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	612.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	700.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	700.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	785.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	785.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	850.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	879.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	883.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	883.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	883.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	925.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	1062.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1062.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1062.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1150.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1150.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1150.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1200.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1200.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1200.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1286.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1286.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1350.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1350.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	1400.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	2465.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2465.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2773.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2773.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2773.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	2925.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	2925.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	2925.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3040.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3040.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3040.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 4500.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 4500.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 4500.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 4600.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 4600.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 4750.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 4750.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 4750.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 4850.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 4850.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 4850.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 4950.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 4950.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 4950.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 5150.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5150.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5150.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 5250.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

Normal program termination

THIS RUN EXECUTED 14MAY93 10:36:05

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 Clark County, Nevada FIS - 100-year flood (REVISED BY MBJ)
T2 James M. Montgomery, Consulting Engineers, Inc. (ORIGINAL DECK)
T3 DUCK CREEK FINAL RUN SUPER-CRITICAL RUN

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2		1	-1					

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38	43	1	50	42	39	53	54	4	26
25	8								

QT	1	11000				
NC	.025	.025	.025	.5	.7	

UPSTREAM END OF LOMRS AND CLOMRS

CROSS SECTIONS 5550-5250 - NATURAL WASH

X1	5550	29		620	100	100	100			
GR	2185		2180	20	2175	40	2171	52	2172	85
GR	2173	91	2174	96	2175	106	2177	120	2175	138
GR	2171	152	2172	172	2173	228	2174	280	2174	310
GR	2175	360	2175	400	2172	404	2172	424	2174	430
GR	2173	443	2175	448	2176	463	2177	475	2177	505
GR	2177	530	2178	562	2179	595	2180	620		

NC	.025	.025	.025	.1	.3					
X1	5450	36		482	100	100	100			
GR	2180		2175	25	2175	35	2177	47	2175	53
GR	2171	57	2170.3	61	2171	73	2172	111	2175	121
GR	2175	140	2174	148	2173	164	2172	177	2171	185
GR	2171	245	2173	250	2173	263	2174	271	2175	280
GR	2174	290	2174	355	2174	400	2173	430	2172	442
GR	2172	450	2175	460	2176	470	2177	482	2177	522
GR	2176	534	2176	555	2176	583	2177	605	2178	615
GR	2180	622								

X1	5350	33	10	452	100	100	100			
GR	2185		2180	10	2175	27	2170	37	2170	48
GR	2171	78	2172	83	2173	89	2174	90	2174	112
GR	2173	135	2172	140	2171	141	2170	145	2171	150
GR	2172	155	2172	185	2172	210	2170	212	2169	220
GR	2170	226	2173	229	2174	237	2174	252	2173	263
GR	2173	366	2171	391	2171	407	2172	409	2175	434
GR	2176	445	2176	450	2177	452				

X1	5250	32	11	452	100	100	100			
GR	2185		2180	11	2175	23	2171	31	2170	67
GR	2169.6	75	2170	81	2175	93	2174	120	2171	141
GR	2170	142	2169.5	145	2170	153	2172	160	2173	178
GR	2172	195	2171	197	2170	210	2169	223	2170	233
GR	2172	245	2172	320	2171	345	2170	360	2171	370
GR	2172	373	2172	375	2172	403	2173	424	2175	441
GR	2175	448	2177	452						

CROSS SECTIONS 5150-4500 - UNLINED CHANNEL

X1	5150	14	23	430	100	100	100			1
GR	2178		2177	8	2175	23	2170	33	2170	55
GR	2163	69	2163	83	2163	90	2163	94	2163	102
GR	2163	121	2173	141	2174	430	2177	436		

X1	5050	11		425	100	100	100			1
GR	2177		2170	16	2169	21	2169	47	2170	60
GR	2160	80	2160	106	2160	132	2172	156	2173.5	425
GR	2177	432								

X1	4950	13	11	392	100	100	100			1
GR	2183.2		2180	11	2170	13	2169	33	2169	37
GR	2169	61	2159	75	2159	82	2159	105	2159	127
GR	2171	151	2173.1	392	2177	400				

X1	4850	14	14	300	100	100	100			1
GR	2179.3		2180	10	2181	14	2180	19	2170	26
GR	2167	36	2167	48	2167	56	2158	74	2158	94
GR	2158	126	2170	150	2171.8	300	2177	310		

X1	4750	14	56	230	100	100	100			1
GR	2188		2189	7	2189	33	2185	44	2188	56
GR	2166	57	2157	75	2157	89	2157	103	2157	111
GR	2157	127	2170	153	2170.2	230	2177	244		

X1	4650	15	35	170	50	50	50			1
GR	2189		2185	11	2180	24	2175	35	2165	55
GR	2160	65	2156	74	2156	100	2156	126	2160	135
GR	2161	140	2162	150	2164	160	2170	170	2177	184

X1	4600	15	44	150	100	100	100			
GR	2188		2186	4	2185	12	2180	22	2175	32
GR	2170	44	2165	54	2160	64	2155.4	74	2155.4	126
GR	2160	136	2165	146	2166	147	2167	148	2168	150

X1	4500	14	50	150	35	35	35			
GR	2189.4		2189	16	2188	22	2187	23	2170	28
GR	2165	50	2160	62	2155	72	2154.2	98	2155	124
GR	2160	134	2163	140	2165	144	2168	150		

NC .025 .025 .015
 CROSS SECTIONS 4465-425 - CONCRETE LINED CHANNEL
 - For Crystal Springs

X1	4465	11	50	150	10	10	10			
GR	2189		2163.13	50	2162.93	62	2152.93	77	2152.83	100
GR	2152.9	123	2162.93	138	2163.13	150	2165.6	166	2166.5	332
GR	2170.0	640								

X1	4455	12	28.9	129.1	100	100	100			
GR	2164.0	28.9	2163.00	29	2162.90	41	2152.90	56	2152.80	78.3
GR	2152.8	78.4	2152.80	79.6	2152.80	79.7	2152.90	102	2162.90	117
GR	2163.0	129	2164.00	129.1						

X1	4355	12	28.9	129.1	25	25	25			
GR	2164.9	28.9	2162.70	29	2162.60	41	2152.60	56	2152.50	78.3
GR	2152.5	78.4	2152.50	79.6	2152.50	79.7	2152.60	102	2162.60	117
GR	2162.7	129	2164.88	129.1						

X1	4330	9	28.9	129.1	120	120	120			
GR	2165.7	28.9	2162.72	29	2162.52	41	2152.52	56	2152.42	79
GR	2152.5	102	2162.52	117	2162.72	129	2165.4	129.1		

X1	4210	9	28.9	129.1	120	120	120			
GR	2165.4	28.9	2162.42	29	2162.22	41	2152.16	56.67	2152.06	79
GR	2152.2	100.67	2162.50	117	2162.70	129	2165.8	129.1		

X1	4090	9	28.9	129.1	120	120	120			
GR	2164.5	28.9	2161.49	29	2161.29	41	2151.80	57.33	2151.70	79
GR	2151.8	99.33	2162.71	117	2162.91	129	2166.1	129.1		

X1	3970	9	28.9	129.1	120	120	120			
GR	2163.7	28.9	2160.72	29	2160.52	41	2151.44	58	2151.34	79
GR	2151.4	98	2162.76	117	2162.96	129	2166.5	129.1		

X1	3850	9	28.9	129.1	120	120	120			
GR	2163.4	28.9	2160.42	29	2160.22	41	2151.08	58.67	2150.98	79
GR	2151.1	96.67	2162.34	117	2162.54	129	2166.1	129.1		

X1	3730	9	28.9	129.1	30	30	30			
GR	2162.9	28.9	2159.92	29	2159.72	41	2150.72	59.33	2150.62	79
GR	2150.7	95.33	2161.72	117	2161.92	129	2165.5	129.1		
X1	3700	9	28.9	129.1	30	30	30			
GR	2163.0	28.9	2160.00	29	2159.80	41	2150.63	59.50	2150.53	79
GR	2150.6	95	2161.80	117	2162.00	129	2165.3	129.1		
X1	3670	9	28.9	129.1	30	30	30			
GR	2163.0	28.9	2160.03	29	2159.83	41	2150.54	59.67	2150.44	79
GR	2150.5	94.67	2161.83	117	2162.03	129	2165.0	129.1		
X1	3640	9	28.9	129.1	30	30	30			
GR	2163.1	28.9	2160.06	29	2159.86	41	2150.45	59.84	2150.35	79
GR	2150.4	94.33	2161.86	117	2162.06	129	2165.0	129.1		
X1	3610	9	29	129.1	185	185	185			
GR	2163		2160.1	29	2159.9	41	2150.36	60	2150.26	79
GR	2150.4	94	2161.9	117	2162.1	129	2164.8	129.1		
X1	3425	9	29	129.1	175	175	175			
GR	2165.0		2159.3	29	2159.1	41	2149.62	60	2149.52	79
GR	2149.6	94	2161.1	117	2161.3	129	2163.8	129.1		
X1	3250	9	28.9	129.1	38	38	38			
GR	2161.6	28.9	2158.6	29	2158.4	41	2148.92	60	2148.82	79
GR	2148.9	94	2160.4	117	2160.6	129	2163.0	129.1		
X1	3212	9	28.9	129.1	37	37	37			
GR	2162.1	28.9	2159.1	29	2158.9	41	2148.77	61.2	2148.67	79
GR	2148.8	92.5	2161.2	117	2161.4	129	2163.1	129.1		
X1	3175	9	28.9	129.1	38	38	38			
GR	2162.6	28.9	2159.6	29	2159.4	41	2148.62	62.5	2148.52	79
GR	2148.6	91	2161.6	117	2161.8	129	2163.0	129.1		
X1	3137	9	28.9	129.1	37	37	37			
GR	2163.0	28.9	2160.05	29	2159.85	41	2148.47	63.7	2148.37	79
GR	2148.5	89.5	2162.2	117	2162.4	129	2163.1	129.1		
X1	3100	9	28.9	129.1	60	60	60			
GR	2163.5	28.9	2160.5	29	2160.3	41	2148.32	65.0	2148.22	79
GR	2148.3	88.0	2162.8	117	2163.0	129	2163.3	129.1		
X1	3040	9	28.9	129.1	115	115	115			
GR	2163.3	28.9	2160.3	29	2160.1	41	2148.08	65	2147.98	79
GR	2148.1	86.5	2163.3	117	2163.5	129	2163.51	129.1		

X1	2925	9	29	129.1	152	152	152			
GR	2167.0		2159.8	29	2159.6	41	2147.62	65	2147.52	79
GR	2147.6	86.5	2162.9	117	2163.1	129	2164.1	129.1		
X1	2773	9	29	129.1	308	308	308			
GR	2165.0		2159.2	29	2159.0	41	2147.01	65	2146.91	79
GR	2147.0	86.5	2162.3	117	2162.5	129	2164.0	129.1		
X1	2465	9	28.9	129.1	190	190	190			
GR	2161.0	28.9	2158.0	29	2157.8	41	2145.78	65	2145.68	79
GR	2145.8	86.5	2161.0	117	2161.2	129	2162.6	129.1		
X1	2275	9	28.9	129.1	327	327	327			
GR	2160.2	28.9	2157.2	29	2157.0	41	2145.02	65	2144.92	79
GR	2145.0	86.5	2160.3	117	2160.5	129	2162.1	129.1		
X1	1948	9	28.9	129.1	138	138	138			
GR	2158.9	28.9	2155.9	29	2155.7	41	2143.71	65	2143.61	79
GR	2143.7	86.5	2159.0	117	2159.2	129	2161.3	129.1		
X1	1810	9	28.9	129.1	92	92	92			
GR	2158.4	28.9	2155.4	29	2155.2	41	2143.16	65	2143.06	79
GR	2143.2	86.5	2158.4	117	2158.6	129	2160.7	129.1		
X1	1718	9	28.9	129.1	87	87	87			
GR	2158.5	28.9	2155.5	29	2155.3	41	2142.79	66	2142.69	79
GR	2142.8	86.5	2158.1	117	2158.3	129	2160.3	129.1		
X1	1631	9	28.9	129.1	103	103	103			
GR	2160.9	28.9	2157.9	29	2157.7	41	2142.44	71.5	2142.34	79
GR	2142.4	86.5	2157.7	117	2157.9	129	2159.7	129.1		
X1	1528	9	28.9	129.1	73	73	73			
GR	2160.5	28.9	2157.5	29	2157.3	41	2142.03	71.5	2141.93	79
GR	2142.0	86.5	2157.3	117	2157.5	129	2159.0	129.1		
X1	1455	7	12	88	55	55	55			
GR	2157.2		2157.0	12	2141.6	43	2141.6	58	2154.0	88
GR	2154.2	100	2166	100						
X1	1400	7	12	88	50	50	50			
GR	2153.9		2153.7	12	2141.4	43	2141.4	58	2156.8	88
GR	2157	100	2166	100						
X1	1350	7	12	88	64	64	64			
GR	2158.9		2158.7	12	2141.2	43	2141.2	58	2158.7	88
GR	2158.9	100	2165	100						

X1	1286	7	12	88	86	86	86			
GR	2158.7		2158.5	12	2141	43	2141	58	2158.5	88
GR	2158.7	100	2166	100						
X1	1200	7	12	88	50	50	50			
GR	2158.3		2158.1	12	2140.7	43	2140.7	58	2158.1	88
GR	2158.3	100	2166	100						
X1	1150	7	12	88	88	88	88			
GR	2155.9		2155.7	12	2140.5	43	2140.5	58	2155.7	88
GR	2155.9	100	2164	100						
X1	1062	7	12	88	12	12	12			
GR	2155.4		2155.2	12	2140.1	43	2140.1	58	2155.2	88
GR	2155.4	100	2163	100						
NC			.030	.3	.5					
QT	1	11000								
X1	1050	7	12	88	25	25	25			
GR	2154.1		2153.9	12	2134	43	2134	58	2153.9	88
GR	2154.1	100	2162	100						
X1	1025	7	12	88	50	50	50			
GR	2151.5		2151.3	12	2133.8	43	2133.8	58	2151.3	88
GR	2151.5	100	2159	100						
X1	975	7	12	88	50	50	50			
GR	2150.1		2149.9	12	2133.6	43	2133.6	58	2149.9	88
GR	2150.1	100	2158	100						
X1	925	7	12	88	42	42	42			
GR	2148.8		2148.6	12	2133.3	43	2133.3	58	2148.6	88
GR	2148.8	100	2157	100						
X1	883	7	12	88	4	4	4			
GR	2148.6		2148.4	12	2133.1	43	2133.1	58	2148.4	88
GR	2148.6	100	2157	100						
X1	879	7	12	88	29	29	29			
GR	2148.1		2147.9	12	2129	43	2129	58	2147.9	88
GR	2148.1	100	2156	100						
X1	850	7	12	88	65	65	65			
GR	2144.3		2144.1	12	2128.8	43	2128.8	58	2144.1	88
GR	2144.3	100	2152	100						
X1	785	7	12	88	85	85	85			
GR	2144		2143.8	12	2128.6	43	2128.6	58	2143.8	88
GR	2144	100	2152	100						

NC			.015	.3	.5					
X1	700	7	12	88	88	88	88			
GR	2143.6		2143.4	12	2128.1	43	2128.1	58	2143.4	88
GR	2143.6	100	2152	100						
X1	612	7	12	88	12	12	12			
GR	2143.1		2142.9	12	2127.7	43	2127.7	58	2142.9	88
GR	2143.1	100	2151	100						
X1	600	7	12	88	50	50	50			
GR	2142.7		2142.5	12	2121.6	43	2121.6	58	2142.5	88
GR	2142.7	100	2151	100						
X1	550	7	12	88	48	48	48			
GR	2141.9		2141.7	12	2121.3	43	2121.3	58	2141.7	88
GR	2141.9	100	2150	100						
NC				.1	.3					
X1	502	6	12	120	77	77	77			
GR	2149.7		2149.5	12	2121.1	40	2121.1	60	2141.4	88
GR	2145	120								
NC			.03	.6	.8					
			CROSS SECTIONS 425-560 - NATURAL WASH							
X1	425	5		120	140	140	140			
GR	2145		2118.7	42	2118.5	62	2141	90	2145	120
NC	.04	.04	.04	.6	.8					
X1	160	10	1270	1630	100	100	100		2.7	
GR	2135	1270	2125	1350	2120	1440	2115	1465	2114.7	1480
GR	2115	1495	2120	1525	2125	1570	2130	1600	2135	1630
X1	260	9	1380	1660	100	100	100		2.7	
GR	2137	1380	2120	1415	2115	1460	2114.2	1490	2115	1510
GR	2120	1545	2125	1580	2130	1615	2135	1660		
X1	360	9	1400	1675	100	100	100		2.7	
GR	2135	1400	2120	1430	2115	1450	2114	1460	2113.8	1500
GR	2115	1520	2120	1575	2125	1590	2135	1675		
X1	460	8	1400	1650	100	100	100		2.7	
GR	2140	1400	2125	1430	2115	1460	2113	1500	2115	1525
GR	2120	1575	2125	1590	2135	1650				
NC	.015	.015	.015	.6	.8					
QT	1	11000								
			CROSS SECTIONS 560-4400 - CONCRETE LINED CHANNEL							
			- For Windmill Springs to Paradise Estates							
X1	560	4	1414	1474	40	40	40		.38	
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474		

NC				.1	.3				
X1	600	4	1414	1474	100	100	100		.94
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	700	4	1414	1474	100	100	100		.94
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	800	4	1414	1474	100	100	100		.94
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	900	4	1414	1474	100	100	100		.94
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1000	4	1414	1474	100	100	100		.94
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1100	4	1414	1474	100	100	100		.94
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
NC	.015	.015	.015	.1	.3				
X1	1200	4	1414	1474	100	100	100		.94
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1300	4	1414	1474	100	100	100		1.5
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1400	4	1414	1474	100	100	100		1.5
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1500	4	1414	1474	100	100	100		1.5
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1600	4	1414	1474	100	100	100		1.5
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1700	4	1414	1474	100	100	100		1.5
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1800	4	1414	1474	100	100	100		1.5
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	1900	4	1414	1474	100	100	100		1.5
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	2000	4	1414	1474	100	100	100		1.88
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	
X1	2100	4	1414	1474	24.9	24.9	24.9		.47
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474	

X1	2124.9	4	1414	1474	100	100	100			
GR	2107.4	1414	2092.45	1429	2092.45	1459	2107.25	1474		
NC				.3	.5					
X1	2224.9	4	100	200	175.1	175.1	175.1		1.57	
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
NC				.1	.3					
QT	1	11500								
X1	2400	4	100	200	150	150	150		1.32	
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
X1	2250	4	100	200	50	50	50		.83	
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
X1	2600	4	100	200	200	200	200		3.30	
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
X1	2800	4	100	200	100	100	100		1.65	
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
X1	2900	4	100	200	100	100	100		.88	
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
X1	3000	4	100	200	200	200	200		3.30	
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
X1	3200	4	100	200	50	50	50		.44	
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
X1	3250	4	100	200	46.44	46.44	46.44			
GR	2089.5	100	2081.52	112	2081.52	188	2089.52	200		
NC				.1	.3					
X1	3296	12	100	200	53.5	53.5	53.5		.471	
GR	2088.2	100	2080.17	112	2080.17	125.83	2088.17	125.84	2088.17	127.17
GR	2080.2	127.18	2080.17	172.84	2088.17	172.85	2088.17	174.17	2080.17	174.18
GR	2080.2	188	2088.17	200						
X1	3349	12	100	200	53.5	53.5	53.5		.471	
GR	2088.2	100	2080.17	112	2080.17	125.83	2088.17	125.84	2088.17	127.17
GR	2080.2	127.18	2080.17	172.84	2088.17	172.85	2088.17	174.17	2080.17	174.18
GR	2080.2	188	2088.17	200						
X1	3403	12	100	200	46.66	46.66	46.66			
X2				89.11	91.11					
X3	10									
GR	2088.2	100	2090.17	112	2080.17	125.83	2088.17	125.84	2088.17	127.17
GR	2080.2	127.18	2080.17	172.84	2088.17	172.85	2088.17	174.17	2080.17	174.18
GR	2080.2	188	2088.17	200						

X1	3450	4	100	200	50	50	50			.44
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200		
X1	3500	4	100	200	100	100	100			.88
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200		
X1	3600	4	100	200	200	200	200			1.76
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200		
X1	3800	4	100	200	200	200	200			1.76
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200		
X1	4000	4	100	200	200	200	200			1.76
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200		
X1	4200	4	100	200	68.7	68.7	68.7			.60
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200		
NC				.3	.5					
X1	4268.7	4	100	200	131.3	131.3	131.3			.74
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200		

CROSS SECTIONS 4400-7593 - UNLINED CHANNEL

- For Paradise Estates

X1	4400	4	100	200	200	200	200			
GR	2079.8	100	2071.82	112	2071.82	188	2079.82	200		
NC	.025	.025	.025	.1	.3					
X1	6400	10		100	200	200	200			
X3	10									
GR	2082.2		2084.7	1	2087.7	1	2070.7	12	2070.3	50
GR	2070.7	88	2078.7	100	2080.7	100	2081.3	101	2082.1	105
X1	6400	10		100	200	200	200			
X3	10									
GR	2081.4		2083.6	1	2077.6	2	2069.6	12	2069.2	50
GR	2069.6	88	2077.6	100	2083.6	100	2079.6	101	2081.1	103
X1	6800	10		100	200	200	200			
X3	10									
GR	2080.8		2082.5	1	2076.5	1	2068.5	12	2068.1	50
GR	2068.5	88	2076.5	100	2082.5	100	2078.5	101	2080.7	105.4
X1	7000	10		103.6	293	293	293			
X3	10									
GR	2078.8		2081.4	1	2075.4	1	2067.4	12	2067.0	50
GR	2067.4	88	2075.4	100	2081.4	100	2077.4	101	2079.5	103.6

X1	7293	9		103	100	100	100			
X3	10									
GR	2076.6		2073.7	3	2065.7	15	2065.3	53	2065.7	91
GR	2073.7	103	2079.7	103	2075.7	104	2077.5	107.6		
NC				.6	.8					
X1	7393	8		109	200	200	200			
X3	10									
GR	2076.1		2065.1	21	2064.7	59	2065.1	97	2073.1	109
GR	2079.1	109	2075.1	110	2077.7	115.2				
NH	6	.040	245	.013	259	.015	271	.025	347	.015
NH	359	.040	454							
QT	1	11500								
NC				.1	.3					
CROSS SECTIONS 7593-9048 - CONCRETE LINED CHANNEL										
- For Robindale Terrace										
X1	7593	17	247	379	200	200	200			
X3	10									
GR	2067.2		2067.3	5	2070.4	20	2070.4	110	2070.4	110
GR	2072.4	245	2078.1	247	2072.1	247	2072.0	259	2064.0	271
GR	2063.6	309	2064.0	347	2072.0	359	2078.0	359	2072.9	360
GR	2074.4	379	2074.4	454						
NH	6	.040	195	.013	207	.015	219	.025	295	.015
NH	307	.040	397							
X1	7793	19	219	327	200	200	200			
X3	10									
GR	2066.3		2066.4	5	2070.4	20	2070.4	110	2070.4	110
GR	2071.2	180	2070.9	190	2070.9	194	2076.9	195	2070.9	195
GR	2070.9	207	2062.9	219	2062.5	257	2062.9	295	2070.9	307
GR	2076.9	307	2072.0	308	2073.1	327	2073.1	397		
NH	6	.040	146	.013	159	.015	171	.025	247	.015
NH	259	.040	349							
X1	7993	17	159	279	200	200	200			
X3	10			147		259				
GR	2065.5		2065.6	5	2069.9	30	2069.9	126	2069.9	142
GR	2069.9	146	2075.9	147	2069.9	147	2069.8	159	2061.8	171
GR	2061.4	209	2061.8	247	2069.8	259	2075.8	259	2070.8	260
GR	2072.2	279	2072.2	349						
NH	6	.040	79	.013	92	.015	104	.025	180	.015
NH	192	.040	282							
X1	8193	17	92	212	85	155	118			
X3	10			75		192				
GR	2065.1		2065.2	7	2069.4	40	2069.4	60	2068.8	74
GR	2068.8	79	2074.8	79	2068.8	80	2068.7	92	2060.7	104
GR	2060.3	142	2060.7	180	2068.7	192	2074.7	192	2069.6	193
GR	2071.1	212	2071.1	282						

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

3720 CRITICAL DEPTH ASSUMED

3137.000	13.01	2161.38	2161.38	.00	2165.42	4.05	.07	.32	2163.00
11000.0	.0	11000.0	.0	.0	681.5	.0	39.7	7.8	2163.10
.04	.00	16.14	.00	.000	.015	.000	.000	2148.37	28.96
.001876	38.	38.	38.	20	9	0	.00	86.39	115.35

*SECNO 3100.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3100.000	13.36	2161.58	2161.58	.00	2165.75	4.17	.07	.38	2163.50
11000.0	.0	11000.0	.0	.0	671.5	.0	40.3	7.8	2163.30
.04	.00	16.38	.00	.000	.015	.000	.000	2148.22	28.96
.001948	37.	37.	37.	20	8	0	.00	85.60	114.57

*SECNO 3040.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3040.000	13.68	2161.66	2161.66	.00	2165.76	4.10	.11	.30	2163.30
11000.0	.0	11000.0	.0	.0	676.6	.0	41.2	7.9	2163.51
.04	.00	16.26	.00	.000	.015	.000	.000	2147.98	28.95
.001885	60.	60.	60.	20	8	0	.00	84.75	113.71

*SECNO 2925.000

3301 HV CHANGED MORE THAN HVINS

2925.000	12.89	2160.41	2161.26	.00	2165.42	5.02	.25	.09	2159.80
11000.0	1.0	10999.0	.0	.8	611.9	.0	42.9	8.2	2164.10
.05	1.33	17.97	.00	.025	.015	.000	.000	2147.52	26.52
.002514	115.	115.	115.	6	5	0	.00	85.53	112.05

*SECNO 2773.000

2773.000	12.59	2159.50	2160.63	.00	2164.97	5.47	.41	.05	2159.20
11000.0	.2	10999.8	.0	.2	586.1	.0	45.0	8.5	2164.00
.05	.89	18.77	.00	.025	.015	.000	.000	2146.91	27.50
.002873	152.	152.	152.	13	8	0	.00	83.92	111.42

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	GLOSS	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 2465.000

3301 HV CHANGED MORE THAN HVINS

2465.000	12.22	2157.90	2159.38	.00	2163.99	6.09	.92	.06	2161.00
11000.0	.0	11000.0	.0	.0	555.6	.0	49.0	9.0	2162.60
.05	.00	19.80	.00	.000	.015	.000	.000	2145.68	34.88
.003095	308.	308.	308.	11	8	0	.00	75.91	110.78

*SECNO 2275.000

2275.000	11.96	2156.88	2158.63	.00	2163.37	6.48	.58	.04	2160.20
11000.0	.0	11000.0	.0	.0	538.3	.0	51.4	9.3	2162.10
.06	.00	20.43	.00	.000	.015	.000	.000	2144.92	41.22
.003050	190.	190.	190.	14	8	0	.00	68.98	110.20

*SECNO 1948.000

1948.000	11.70	2155.31	2157.29	.00	2162.27	6.97	1.05	.05	2158.90
11000.0	.0	11000.0	.0	.0	519.4	.0	55.4	9.9	2161.30
.06	.00	21.18	.00	.000	.015	.000	.000	2143.61	41.79
.003361	327.	327.	327.	10	8	0	.00	67.85	109.64

*SECNO 1810.000

1810.000	11.65	2154.71	2156.75	.00	2161.79	7.08	.47	.01	2158.40
11000.0	.0	11000.0	.0	.0	515.1	.0	57.0	10.1	2160.70
.06	.00	21.35	.00	.000	.015	.000	.000	2143.06	41.98
.003436	138.	138.	138.	9	14	0	.00	67.62	109.60

*SECNO 1718.000

3301 HV CHANGED MORE THAN HVINS

1718.000	12.23	2154.92	2156.69	.00	2161.28	6.36	.29	.22	2158.50
11000.0	.0	11000.0	.0	.0	543.4	.0	58.1	10.2	2160.30
.06	.00	20.24	.00	.000	.015	.000	.000	2142.69	41.75
.002960	92.	92.	92.	2	8	0	.00	68.92	110.67

*SECNO 1631.000

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

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1631.000	14.75	2157.09	2157.09	.00	2161.53	4.44	.20	.45	2160.90
11000.0	.0	11000.0	.0	.0	650.3	.0	59.3	10.4	2159.70
.06	.00	16.92	.00	.000	.015	.000	.000	2142.34	42.22
.001799	87.	87.	87.	20	12	0	.00	73.57	115.79

*SECNO 1528.000

3301 HV CHANGED MORE THAN HVINS

1528.000	13.97	2155.90	2156.48	.00	2161.24	5.34	.21	.09	2160.50
11000.0	.0	11000.0	.0	.0	593.2	.0	60.8	10.5	2159.00
.07	.00	18.54	.00	.000	.015	.000	.000	2141.93	43.81
.002301	103.	103.	103.	4	8	0	.00	70.39	114.20

*SECNO 1455.000

3301 HV CHANGED MORE THAN HVINS

1455.000	12.28	2153.88	2155.86	.00	2160.87	6.99	.20	.16	2157.00
11000.0	.0	11000.0	.0	.0	518.6	.0	61.7	10.7	2154.00
.07	.00	21.21	.00	.000	.015	.000	.000	2141.60	18.27
.003465	73.	73.	73.	11	5	0	.00	69.44	87.72

*SECNO 1400.000

1400.000	12.20	2153.60	2155.60	.00	2160.67	7.07	.19	.01	2153.70
11000.0	.0	11000.0	.0	.0	515.5	.0	62.4	10.7	2156.80
.07	.00	21.34	.00	.000	.015	.000	.000	2141.40	12.25
.003536	55.	55.	55.	8	8	0	.00	69.51	81.77

*SECNO 1350.000

3301 HV CHANGED MORE THAN HVINS

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

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1350.000	15.19	2156.39	2156.39	.00	2161.12	4.73	.12	.34	2158.70
11000.0	.0	11000.0	.0	.0	630.2	.0	63.1	10.8	2158.70
.07	.00	17.45	.00	.000	.015	.000	.000	2141.20	16.09
.001851	50.	50.	50.	20	11	0	.00	67.96	84.05

*SECNO 1286.000

1286.000	14.82	2155.82	2156.22	.00	2160.96	5.14	.13	.04	2158.50
11000.0	.0	11000.0	.0	.0	604.8	.0	64.0	10.9	2158.50
.07	.00	18.19	.00	.000	.015	.000	.000	2141.00	16.76
.002067	64.	64.	64.	3	5	0	.00	66.64	83.40

*SECNO 1200.000

3301 HV CHANGED MORE THAN HVINS

1200.000	14.32	2155.02	2155.87	.00	2160.71	5.69	.19	.06	2158.10
11000.0	.0	11000.0	.0	.0	574.5	.0	65.1	11.0	2158.10
.07	.00	19.15	.00	.000	.015	.000	.000	2140.70	17.48
.002378	86.	86.	86.	11	8	0	.00	65.22	82.70

*SECNO 1150.000

3301 HV CHANGED MORE THAN HVINS

1150.000	12.59	2153.09	2155.19	.00	2160.41	7.32	.14	.16	2155.70
11000.0	.0	11000.0	.0	.0	506.7	.0	65.7	11.1	2155.70
.07	.00	21.71	.00	.000	.015	.000	.000	2140.50	17.33
.003523	50.	50.	50.	13	5	0	.00	65.51	82.84

*SECNO 1062.000

1062.000	12.45	2152.55	2154.75	.00	2160.07	7.52	.32	.02	2155.20
11000.0	.0	11000.0	.0	.0	499.9	.0	66.8	11.3	2155.20
.07	.00	22.01	.00	.000	.015	.000	.000	2140.10	17.44
.003665	88.	88.	88.	11	8	0	.00	65.30	82.74

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

CCHV= .300 CEHV= .500

*SECNO 1050.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.70

1050.000	11.68	2145.68	2149.73	.00	2158.41	12.73	.09	1.56	2153.90
11000.0	.0	11000.0	.0	.0	384.1	.0	66.9	11.3	2153.90
.07	.00	28.64	.00	.000	.030	.000	.000	2134.00	24.81
.026711	12.	12.	12.	18	11	0	.00	50.79	75.60

*SECNO 1025.000

1025.000	11.15	2144.95	2149.01	.00	2157.72	12.76	.68	.01	2151.30
11000.0	.0	11000.0	.0	.0	383.7	.0	67.1	11.3	2151.30
.07	.00	28.67	.00	.000	.030	.000	.000	2133.80	23.26
.028095	25.	25.	25.	16	11	0	.00	53.85	77.11

*SECNO 975.000

3301 HV CHANGED MORE THAN HVINS

975.000	12.12	2145.72	2148.52	.00	2154.72	9.00	1.11	1.88	2149.90
11000.0	.0	11000.0	.0	.0	456.8	.0	67.6	11.4	2149.90
.07	.00	24.08	.00	.000	.030	.000	.000	2133.60	19.95
.018076	50.	50.	50.	5	11	0	.00	60.37	80.31

*SECNO 925.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

925.000	12.85	2146.15	2147.94	.00	2153.05	6.90	.76	.81	2148.60
11000.0	.0	11000.0	.0	.0	521.7	.0	68.1	11.4	2148.60
.07	.00	21.09	.00	.000	.030	.000	.000	2133.30	16.97
.012995	50.	50.	50.	20	12	0	.00	66.22	83.19

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 883.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

883.000	13.37	2146.47	2147.75	.00	2152.53	6.06	.50	.64	2148.40
11000.0	.0	11000.0	.0	.0	556.9	.0	68.7	11.5	2148.40
.07	.00	19.75	.00	.000	.030	.000	.000	2133.10	15.91
.010904	42.	42.	42.	20	8	0	.00	68.31	84.22

*SECNO 879.000

3301 HV CHANGED MORE THAN HVINS

879.000	12.44	2141.44	2144.59	.00	2151.32	9.88	.06	1.15	2147.90
11000.0	.0	11000.0	.0	.0	436.0	.0	68.7	11.5	2147.90
.07	.00	25.23	.00	.000	.030	.000	.000	2129.00	22.61
.019343	4.	4.	4.	12	8	0	.00	55.13	77.74

*SECNO 850.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

850.000	14.49	2143.29	2143.43	.00	2147.94	4.65	.33	.57	2144.10
11000.0	.0	11000.0	.0	.0	635.8	.0	69.1	11.6	2144.10
.07	.00	17.30	.00	.000	.030	.000	.000	2128.80	13.64
.007644	29.	29.	29.	20	12	0	.00	72.76	86.41

*SECNO 785.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

785.000	14.60	2143.20	2143.20	.00	2147.69	4.49	.49	1.10	2143.80
11000.0	.0	11000.0	.0	.0	646.6	.0	70.0	11.7	2143.80
.08	.00	17.01	.00	.000	.030	.000	.000	2128.60	13.23
.007328	65.	65.	65.	20	5	0	.00	73.58	86.81

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

CCHV= .300 CEHV= .500

*SECNO 700.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .53

700.000	14.24	2142.34	2142.74	.00	2147.27	4.92	.30	.13	2143.40
11000.0	.0	11000.0	.0	.0	617.9	.0	71.3	11.8	2143.40
.08	.00	17.80	.00	.000	.015	.000	.000	2128.10	14.14
.002063	85.	85.	85.	3	5	0	.00	71.78	85.92

*SECNO 612.000

3301 HV CHANGED MORE THAN HVINS

612.000	13.78	2141.48	2142.25	.00	2146.92	5.43	.19	.15	2142.90
11000.0	.0	11000.0	.0	.0	588.0	.0	72.5	11.9	2142.90
.08	.00	18.71	.00	.000	.015	.000	.000	2127.70	14.89
.002363	88.	88.	88.	7	8	0	.00	70.32	85.21

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

600.000	12.40	2134.00	2137.61	.00	2145.16	11.16	.04	1.72	2142.50
11000.0	.0	11000.0	.0	.0	410.3	.0	72.6	12.0	2142.50
.08	.00	26.81	.00	.000	.015	.000	.000	2121.60	24.61
.005499	12.	12.	12.	9	8	0	.00	51.19	75.80

*SECNO 550.000

550.000	12.25	2133.55	2137.14	.00	2144.84	11.29	.28	.04	2141.70
11000.0	.0	11000.0	.0	.0	408.0	.0	73.1	12.0	2141.70
.08	.00	26.96	.00	.000	.015	.000	.000	2121.30	24.39
.005629	50.	50.	50.	13	11	0	.00	51.62	76.01

CCHV= .100 CEHV= .300

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

*SECNO 502.000

502.000	11.85	2132.95	2136.60	.00	2144.54	11.59	.27	.03	2149.50
11000.0	.0	11000.0	.0	.0	402.6	.0	73.5	12.1	2145.00
.08	.00	27.33	.00	.000	.015	.000	.000	2121.10	28.33
.005587	48.	48.	48.	7	11	0	.00	48.00	76.33

CCHV= .600 CEHV= .800

*SECNO 425.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

CROSS SECTIONS 425-560 - NATURAL WASH

425.000	14.88	2133.38	2133.50	.00	2138.51	5.13	.50	1.68	2145.00
11000.0	.0	11000.0	.0	.0	605.4	.0	74.4	12.2	2145.00
.08	.00	18.17	.00	.000	.030	.000	.000	2118.50	18.56
.007784	77.	77.	77.	20	11	0	.00	61.96	80.52

CCHV= .600 CEHV= .800

*SECNO 160.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

160.000	7.35	2124.75	2126.98	.00	2131.61	6.85	2.31	1.79	2137.70
11000.0	.0	11000.0	.0	.0	523.7	.0	76.2	12.5	2137.70
.08	.00	21.01	.00	.000	.040	.000	.000	2117.40	1403.01
.055878	140.	140.	140.	20	14	0	.00	140.48	1543.49

*SECNO 260.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

260.000	8.34	2125.24	2125.24	.00	2127.97	2.73	2.43	3.20	2139.70
11000.0	.0	11000.0	.0	.0	830.0	.0	77.8	12.8	2137.70
.08	.00	13.25	.00	.000	.040	.000	.000	2116.90	1409.76
.013522	100.	100.	100.	20	8	0	.00	153.04	1562.81

SECNO	DEPTH	CWSEL	CRWS	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 360.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

360.000	7.72	2124.22	2124.22	.00	2126.98	2.76	1.36	1.83	2137.70
11000.0	.0	11000.0	.0	.0	824.9	.0	79.7	13.2	2137.70
.09	.00	13.34	.00	.000	.040	.000	.000	2116.50	1426.96
.013765	100.	100.	100.	20	11	0	.00	152.61	1579.56

*SECNO 460.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

460.000	8.89	2124.59	2124.59	.00	2127.46	2.87	1.35	2.47	2142.70
11000.0	.0	11000.0	.0	.0	809.5	.0	81.6	13.5	2137.70
.09	.00	13.59	.00	.000	.040	.000	.000	2115.70	1439.32
.013282	100.	100.	100.	20	8	0	.00	141.36	1580.68

CCHV= .600 CEHV= .800

*SECNO 560.000

3301 HV CHANGED MORE THAN HVINS

CROSS SECTIONS 560-4400 - CONCRETE LINED CHANNEL

- For Windmill Springs to Paradise Estates

560.000	8.69	2101.52	2106.48	.00	2118.11	16.59	1.12	8.23	2107.78
11000.0	.0	11000.0	.0	.0	336.6	.0	82.9	13.7	2107.63
.09	.00	32.68	.00	.000	.015	.000	.000	2092.83	1420.29
.009644	100.	100.	100.	7	14	0	.00	47.51	1467.80

CCHV= .100 CEHV= .300

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

600.000	9.13	2102.52	2107.04	.00	2117.17	14.65	.35	.58	2108.34
11000.0	.0	11000.0	.0	.0	358.1	.0	83.2	13.8	2108.19
.09	.00	30.72	.00	.000	.015	.000	.000	2093.39	1419.84
.008087	40.	40.	40.	5	14	0	.00	48.42	1468.26

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

*SECNO 700.000

3301 HV CHANGED MORE THAN HVINS

700.000	9.61	2103.00	2107.10	.00	2115.91	12.91	.74	.52	2108.34
11000.0	.0	11000.0	.0	.0	381.5	.0	84.0	13.9	2108.19
.09	.00	28.83	.00	.000	.015	.000	.000	2093.39	1419.36
.006763	100.	100.	100.	4	11	0	.00	49.38	1468.74

*SECNO 800.000

3301 HV CHANGED MORE THAN HVINS

800.000	10.15	2103.54	2107.07	.00	2114.80	11.26	.61	.50	2108.34
11000.0	.0	11000.0	.0	.0	408.5	.0	85.0	14.0	2108.19
.09	.00	26.93	.00	.000	.015	.000	.000	2093.39	1418.81
.005578	100.	100.	100.	3	11	0	.00	50.47	1469.29

*SECNO 900.000

3301 HV CHANGED MORE THAN HVINS

900.000	10.80	2104.19	2107.06	.00	2113.81	9.62	.50	.49	2108.34
11000.0	.0	11000.0	.0	.0	442.0	.0	85.9	14.1	2108.19
.09	.00	24.89	.00	.000	.015	.000	.000	2093.39	1418.16
.004472	100.	100.	100.	2	11	0	.00	51.79	1469.95

*SECNO 1000.000

3301 HV CHANGED MORE THAN HVINS

1000.000	11.89	2105.28	2107.04	.00	2112.81	7.53	.37	.63	2108.34
11000.0	.0	11000.0	.0	.0	499.5	.0	87.0	14.3	2108.19
.09	.00	22.02	.00	.000	.015	.000	.000	2093.39	1417.07
.003177	100.	100.	100.	4	11	0	.00	53.99	1471.06

*SECNO 1100.000

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

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

1100.000	12.73	2106.12	2107.08	.00	2112.44	6.32	.28	.37	2108.34
11000.0	.0	11000.0	.0	.0	545.4	.0	88.2	14.4	2108.19
.10	.00	20.17	.00	.000	.015	.000	.000	2093.39	1416.23
.002489	100.	100.	100.	20	8	0	.00	55.68	1471.90

CCHV= .100 CEHV= .300

*SECNO 1200.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1200.000	13.65	2107.04	2107.04	.00	2112.30	5.26	.22	1.04	2108.34
11000.0	.0	11000.0	.0	.0	597.6	.0	89.5	14.5	2108.19
.10	.00	18.41	.00	.000	.015	.000	.000	2093.39	1415.30
.001933	100.	100.	100.	20	8	0	.00	57.54	1472.84

*SECNO 1300.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1300.000	13.67	2107.62	2107.62	.00	2112.86	5.25	.19	.06	2108.90
11000.0	.0	11000.0	.0	.0	598.3	.0	90.9	14.6	2108.75
.10	.00	18.38	.00	.000	.015	.000	.000	2093.95	1415.29
.001926	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1400.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1400.000	13.66	2107.61	2107.61	.00	2112.86	5.25	.19	.02	2108.90
11000.0	.0	11000.0	.0	.0	598.2	.0	92.3	14.8	2108.75
.10	.00	18.39	.00	.000	.015	.000	.000	2093.95	1415.29
.001927	100.	100.	100.	20	5	0	.00	57.56	1472.85

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

*SECNO 1500.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1500.000	13.66	2107.61	2107.61	.00	2112.86	5.25	.19	.02	2108.90
11000.0	.0	11000.0	.0	.0	598.2	.0	93.6	14.9	2108.75
.10	.00	18.39	.00	.000	.015	.000	.000	2093.95	1415.29
.001927	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1600.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1600.000	13.66	2107.61	2107.61	.00	2112.86	5.25	.19	.02	2108.90
11000.0	.0	11000.0	.0	.0	598.1	.0	95.0	15.0	2108.75
.10	.00	18.39	.00	.000	.015	.000	.000	2093.95	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1700.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1700.000	13.66	2107.61	2107.61	.00	2112.86	5.25	.19	.02	2108.90
11000.0	.0	11000.0	.0	.0	598.1	.0	96.4	15.2	2108.75
.11	.00	18.39	.00	.000	.015	.000	.000	2093.95	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1800.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

1800.000	13.66	2107.61	2107.61	.00	2112.86	5.25	.19	.02	2108.90
11000.0	.0	11000.0	.0	.0	598.1	.0	97.8	15.3	2108.75
.11	.00	18.39	.00	.000	.015	.000	.000	2093.95	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 1900.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

1900.000	13.66	2107.61	2107.61	.00	2112.86	5.25	.19	.02	2108.90
11000.0	.0	11000.0	.0	.0	598.1	.0	99.1	15.4	2108.75
.11	.00	18.39	.00	.000	.015	.000	.000	2093.95	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 2000.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

2000.000	13.66	2107.99	2107.99	.00	2113.24	5.25	.19	.40	2109.28
11000.0	.0	11000.0	.0	.0	598.1	.0	100.5	15.6	2109.13
.11	.00	18.39	.00	.000	.015	.000	.000	2094.33	1415.29
.001928	100.	100.	100.	20	5	0	.00	57.56	1472.85

*SECNO 2100.000

3301 HV CHANGED MORE THAN HVINS

2100.000	11.43	2104.35	2106.58	.00	2112.68	8.33	.26	.31	2107.87
11000.0	.0	11000.0	.0	.0	475.0	.0	101.7	15.7	2107.72
.11	.00	23.16	.00	.000	.015	.000	.000	2092.92	1417.53
.003656	100.	100.	100.	5	5	0	.00	53.06	1470.59

*SECNO 2124.900

3301 HV CHANGED MORE THAN HVINS

2124.900	11.11	2103.56	2106.10	.00	2112.52	8.96	.10	.06	2107.40
11000.0	.0	11000.0	.0	.0	458.0	.0	102.0	15.7	2107.25
.11	.00	24.02	.00	.000	.015	.000	.000	2092.45	1417.85
.004047	25.	25.	25.	7	11	0	.00	52.42	1470.26

CCHV= .300 CEHV= .500

*SECNO 2224.900

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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

3710 WSEL ASSUMED BASED ON MIN DIFF

2224.900	3.34	2086.43	2091.25	.00	2112.02	25.58	.92	3.31	2091.07
11000.0	.0	11000.0	.0	.0	271.0	.0	102.8	15.9	2091.09
.11	.00	40.59	.00	.000	.015	.000	.000	2083.09	106.97
.037506	100.	100.	100.	20	15	0	.00	86.05	193.02

CCHV= .100 CEHV= .300

*SECNO 2400.000

3301 HV CHANGED MORE THAN HVINS

2400.000	4.09	2086.93	2091.21	.00	2105.03	18.10	4.74	2.25	2090.82
11500.0	.0	11500.0	.0	.0	336.8	.0	104.1	16.2	2090.84
.11	.00	34.14	.00	.000	.015	.000	.000	2082.84	105.83
.020679	175.	175.	175.	2	17	0	.00	88.31	194.15

*SECNO 2250.000

3301 HV CHANGED MORE THAN HVINS

2250.000	4.55	2086.90	2090.74	.00	2101.36	14.46	2.58	1.09	2090.33
11500.0	.0	11500.0	.0	.0	376.9	.0	105.3	16.5	2090.35
.11	.00	30.51	.00	.000	.015	.000	.000	2082.35	105.16
.014558	150.	150.	150.	9	14	0	.00	89.67	194.83

*SECNO 2600.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .66

2600.000	5.81	2090.63	2093.19	.00	2099.10	8.47	.46	1.80	2092.80
11500.0	.0	11500.0	.0	.0	492.4	.0	105.8	16.6	2092.82
.12	.00	23.36	.00	.000	.015	.000	.000	2084.82	103.26
.006368	50.	50.	50.	11	14	0	.00	93.46	196.72

*SECNO 2800.000

2800.000	5.69	2088.86	2091.55	.00	2097.74	8.88	1.32	.04	2091.15
11500.0	.0	11500.0	.0	.0	480.9	.0	108.0	17.1	2091.17
.12	.00	23.91	.00	.000	.015	.000	.000	2083.17	103.45
.006846	200.	200.	200.	10	11	0	.00	93.09	196.53

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 2900.000

2900.000	5.66	2088.06	2090.78	.00	2097.04	8.98	.69	.01	2090.38
11500.0	.0	11500.0	.0	.0	478.2	.0	109.1	17.3	2090.40
.12	.00	24.05	.00	.000	.015	.000	.000	2082.40	103.49
.006966	100.	100.	100.	7	11	0	.00	93.00	196.49

*SECNO 3000.000

3280 CROSS SECTION 3000.00 EXTENDED .40 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3000.000	8.38	2093.20	2093.20	.00	2096.93	3.72	.32	1.92	2092.80
11500.0	.0	11500.0	.0	.0	742.6	.0	110.5	17.5	2092.82
.12	.00	15.49	.00	.000	.015	.000	.000	2084.82	100.00
.001814	100.	100.	100.	20	11	0	.00	100.00	200.00

*SECNO 3200.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.79

3200.000	5.97	2087.93	2090.32	.00	2095.91	7.97	.60	.42	2089.94
11500.0	.0	11500.0	.0	.0	507.5	.0	113.4	17.9	2089.96
.12	.00	22.66	.00	.000	.015	.000	.000	2081.96	103.02
.005804	200.	200.	200.	6	5	0	.00	93.94	196.96

*SECNO 3250.000

3250.000	5.91	2087.43	2089.89	.00	2095.59	8.16	.30	.02	2089.50
11500.0	.0	11500.0	.0	.0	501.6	.0	114.0	18.1	2089.52
.12	.00	22.93	.00	.000	.015	.000	.000	2081.52	103.11
.006016	50.	50.	50.	9	11	0	.00	93.75	196.86

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

CCHV= .100 CEHV= .300

*SECNO 3296.000

3265 DIVIDED FLOW

3296.000	5.94	2086.58	2089.24	.00	2095.21	8.63	.33	.05	2088.67
11500.0	.0	11500.0	.0	.0	487.8	.0	114.5	18.2	2088.64
.12	.00	23.58	.00	.000	.015	.000	.000	2080.64	103.12
.008578	46.	46.	46.	6	11	0	.00	91.13	196.91

*SECNO 3349.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3349.000	6.32	2086.97	2089.23	.00	2094.46	7.49	.41	.34	2088.67
11500.0	.0	11500.0	.0	.0	523.4	.0	115.1	18.3	2088.64
.12	.00	21.97	.00	.000	.015	.000	.000	2080.64	102.53
.007007	54.	54.	54.	0	11	0	.00	92.30	197.49

*SECNO 3403.000

3265 DIVIDED FLOW

3280 CROSS SECTION 3403.00 EXTENDED .99 FEET

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 91.11 MAX ELLC= 89.11

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3403.000	8.99	2089.16	2090.06	.00	2093.95	4.79	.27	.27	2088.20
11500.0	.0	11500.0	.0	.0	654.9	.0	115.9	18.4	2088.17
.13	.00	17.56	.00	.000	.015	.000	.000	2080.17	100.00
.003702	54.	54.	54.	20	18	0	-.20	92.46	200.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	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 3450.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.14

3450.000	4.36	2076.62	2080.62	.00	2092.52	15.90	.32	1.11	2080.24
11500.0	.0	11500.0	.0	.0	359.4	.0	116.4	18.5	2080.26
.13	.00	32.00	.00	.000	.015	.000	.000	2072.26	105.45
.016888	47.	47.	47.	15	11	0	.00	89.08	194.53

*SECNO 3500.000

3301 HV CHANGED MORE THAN HVINS

3500.000	4.64	2077.34	2081.08	.00	2091.13	13.79	.75	.63	2080.68
11500.0	.0	11500.0	.0	.0	385.9	.0	116.8	18.6	2080.70
.13	.00	29.80	.00	.000	.015	.000	.000	2072.70	105.01
.013526	50.	50.	50.	4	14	0	.00	89.97	194.98

*SECNO 3600.000

3301 HV CHANGED MORE THAN HVINS

3600.000	5.39	2078.97	2081.94	.00	2088.95	9.98	1.04	1.14	2081.56
11500.0	.0	11500.0	.0	.0	453.7	.0	117.8	18.8	2081.58
.13	.00	25.35	.00	.000	.015	.000	.000	2073.58	103.89
.008194	100.	100.	100.	3	14	0	.00	92.20	196.09

*SECNO 3800.000

3301 HV CHANGED MORE THAN HVINS

3800.000	6.41	2079.99	2081.94	.00	2086.80	6.81	1.20	.95	2081.56
11500.0	.0	11500.0	.0	.0	549.1	.0	120.1	19.2	2081.58
.13	.00	20.94	.00	.000	.015	.000	.000	2073.58	102.36
.004560	200.	200.	200.	7	14	0	.00	95.26	197.62

SECNO	DEPTH	CWSEL	CRWS	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 4000.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

4000.000	7.94	2081.52	2081.94	.00	2085.73	4.21	.61	.66	2081.56
11500.0	.0	11500.0	.0	.0	698.3	.0	123.0	19.7	2081.58
.13	.00	16.47	.00	.000	.015	.000	.000	2073.58	100.06
.002200	200.	200.	200.	20	11	0	.00	99.85	199.91

*SECNO 4200.000

3301 HV CHANGED MORE THAN HVINS

4200.000	6.95	2079.37	2080.78	.00	2085.04	5.67	.54	.15	2080.40
11500.0	.0	11500.0	.0	.0	601.9	.0	125.9	20.1	2080.42
.14	.00	19.11	.00	.000	.015	.000	.000	2072.42	101.53
.003449	200.	200.	200.	9	8	0	.00	96.91	198.44

CCHV= .300 CEHV= .500

*SECNO 4268.700

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

4268.700	7.01	2079.57	2080.92	.00	2085.15	5.58	.23	.79	2080.54
11500.0	.0	11500.0	.0	.0	606.4	.0	126.9	20.3	2080.56
.14	.00	18.96	.00	.000	.015	.000	.000	2072.56	101.46
.003371	69.	69.	69.	20	11	0	.00	97.05	198.51

*SECNO 4400.000

3280 CROSS SECTION 4400.00 EXTENDED .35 FEET

3301 HV CHANGED MORE THAN HVINS

CROSS SECTIONS 4400-7593 - UNLINED CHANNEL

- For Paradise Estates

4400.000	8.33	2080.15	2080.18	.00	2083.93	3.78	.32	.90	2079.80
11500.0	.0	11500.0	.0	.0	737.5	.0	128.9	20.6	2079.82
.14	.00	15.59	.00	.000	.015	.000	.000	2071.82	100.00
.001853	131.	131.	131.	2	11	0	.00	100.00	200.00

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

CCHV= .100 CEHV= .300

*SECNO 6400.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.01

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2082.20 ELREA= 2080.70

6400.000	7.85	2078.15	2079.04	.00	2083.14	5.00	.66	.12	2082.20
11500.0	.0	11500.0	.0	.0	641.1	.0	132.1	21.0	2080.70
.14	.00	17.94	.00	.000	.025	.000	.000	2070.30	7.18
.007473	200.	200.	200.	5	8	0	.00	92.00	99.18

*SECNO 6400.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

1720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2081.40 ELREA= 2083.60

6400.000	8.65	2077.85	2077.85	.00	2081.64	3.80	1.22	.47	2081.40
11500.0	.0	11500.0	.0	.0	735.6	.0	135.2	21.4	2083.60
.15	.00	15.63	.00	.000	.025	.000	.000	2069.20	1.96
.005078	200.	200.	200.	20	8	0	.00	98.04	100.00

*SECNO 6800.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2080.80 ELREA= 2082.50

6800.000	8.32	2076.42	2076.73	.00	2080.53	4.11	1.08	.03	2080.80
11500.0	.0	11500.0	.0	.0	707.0	.0	138.6	21.9	2082.50
.15	.00	16.27	.00	.000	.025	.000	.000	2068.10	1.11
.005794	200.	200.	200.	3	5	0	.00	98.76	99.88

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	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 7000.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2078.80 ELREA= 2079.50

7000.000	8.62	2075.62	2075.62	.00	2079.40	3.78	1.08	.15	2078.80
11500.0	.0	11500.0	.0	.0	737.1	.0	141.9	22.4	2079.50
.15	.00	15.60	.00	.000	.025	.000	.000	2067.00	1.00
.005089	200.	200.	200.	20	8	0	.00	99.00	100.00

*SECNO 7293.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2076.60 ELREA= 2079.70

7293.000	8.16	2073.46	2073.92	.00	2077.72	4.26	1.64	.05	2076.60
11500.0	.0	11500.0	.0	.0	694.6	.0	146.7	23.0	2079.70
.16	.00	16.56	.00	.000	.025	.000	.000	2065.30	3.37
.006165	293.	293.	293.	3	5	0	.00	99.26	102.63

CCHV= .600 CEHV= .800

*SECNO 7393.000

7185 MINIMUM SPECIFIC ENERGY

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2076.10 ELREA= 2079.10

7393.000	8.20	2072.90	2073.26	.00	2076.95	4.05	.60	.16	2076.10
11500.0	.0	11500.0	.0	.0	711.7	.0	148.3	23.3	2079.10
.16	.00	16.16	.00	.000	.025	.000	.000	2064.70	6.11
.005899	100.	100.	100.	2	8	0	.00	102.59	108.70

1490 NH CARD USED

CCHV= .100 CEHV= .300

*SECNO 7593.000

3280 CROSS SECTION 7593.00 EXTENDED 5.17 FEET

3301 HV CHANGED MORE THAN HVINS

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

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2078.10 ELREA= 2074.40

CROSS SECTIONS 7593-9048 - CONCRETE LINED CHANNEL
- For Robindale Terrace

7593.000	8.77	2072.37	2072.37	.00	2075.92	3.55	1.12	.28	2078.10
11500.0	.0	11500.0	.0	.0	760.3	.0	151.7	23.7	2074.40
.16	.00	15.13	.00	.000	.025	.000	.000	2063.60	247.00
.005369	200.	200.	200.	20	8	0	.00	112.00	359.00

1490 NH CARD USED

*SECNO 7793.000

3265 DIVIDED FLOW

3280 CROSS SECTION 7793.00 EXTENDED 3.89 FEET

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2062.90 ELREA= 2073.10

7793.000	7.69	2070.19	2072.36	.00	2074.70	4.51	1.13	.10	2062.90
11500.0	848.2	10651.8	.0	86.0	609.2	.0	155.0	24.3	2073.10
.17	9.86	17.48	.00	.021	.024	.000	.000	2062.50	.00
.005978	200.	200.	200.	13	8	0	.00	117.09	305.94

1490 NH CARD USED

*SECNO 7993.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 147.0 259.0 TYPE= 1 TARGET= 112.000

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2069.80 ELREA= 100000.00

7993.000	8.78	2070.18	2070.18	.00	2073.75	3.57	.94	.22	2069.80
11500.0	12.9	11487.1	.0	3.9	756.9	.0	158.4	24.8	100000.00
.17	3.29	15.18	.00	.013	.022	.000	.000	2061.40	147.00
.003788	200.	200.	200.	20	8	0	.00	112.00	259.00

1490 NH CARD USED

*SECNO 8193.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 75.0 192.0 TYPE= 1 TARGET= 117.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2068.70 ELREA= 100000.00

8193.000	7.99	2068.29	2069.09	.00	2072.76	4.47	.90	.09	2068.70
11500.0	.0	11500.0	.0	.0	677.7	.0	161.7	25.3	100000.00
.17	.00	16.97	.00	.000	.023	.000	.000	2060.30	92.63
.005416	200.	200.	200.	4	5	0	.00	98.75	191.37

1490 NH CARD USED

*SECNO 8311.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 16.0 163.0 TYPE= 1 TARGET= 147.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2070.70 ELREA= 2073.00

8311.000	6.76	2066.46	2067.88	.00	2071.90	5.43	.77	.10	2070.70
11500.0	.0	11500.0	.0	.0	614.8	.0	163.4	25.6	2073.00
.18	.00	18.71	.00	.000	.022	.000	.000	2059.70	51.70
.007959	85.	118.	155.	11	5	0	.00	109.99	161.69

CCHV= .600 CEHV= .800

SECNO	DEPTH	CWSEL	CRISW	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 8317.000

3265 DIVIDED FLOW

3280 CROSS SECTION 8317.00 EXTENDED .70 FEET

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD= 66 MIN ELTRD= 2062.00 MAX ELLC= 2063.60

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

ROBINDALE ROAD				- NORMAL BRIDGE MODELED					
8317.000	6.80	2064.70	2064.76	.00	2066.09	1.39	.06	38.48	2063.30
11500.0	1817.9	5527.7	4154.3	286.6	495.5	517.3	163.5	25.6	2063.30
.18	6.34	11.16	8.03	.040	.015	.040	.000	2057.90	.00
.011077	6.	6.	6.	20	10	0	-393.35	619.24	704.67

CCHV= .600 CEHV= .800

*SECNO 8453.000

3265 DIVIDED FLOW

3280 CROSS SECTION 8453.00 EXTENDED 2.15 FEET

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 2063.70 MAX ELLC= 2061.50

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8453.000	8.55	2066.15	2066.15	.00	2067.45	1.30	1.01	3.95	2063.60
11500.0	3162.4	6554.8	1782.8	648.2	571.7	442.9	168.2	27.6	2063.60
.18	4.88	11.47	4.03	.040	.015	.040	.000	2057.60	.00
.005297	136.	136.	136.	20	12	0	-444.28	642.47	701.48

CCHV= .600 CEHV= .800

*SECNO 8458.000

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

3265 DIVIDED FLOW

3280 CROSS SECTION 8458.00 EXTENDED 1.56 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8458.000	7.96	2065.56	2065.56	.00	2067.24	1.68	.01	.48	2063.60
11500.0	2129.8	8608.7	761.5	690.4	724.1	328.9	168.4	27.7	2063.60
.18	3.08	11.89	2.32	.040	.020	.040	.000	2057.60	.00
.001897	5.	5.	5.	20	11	0	.00	595.91	695.61

CCHV= .100 CEHV= .300

*SECNO 8648.000

3280 CROSS SECTION 8648.00 EXTENDED 2.45 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8648.000	8.75	2065.35	2065.35	.00	2067.04	1.69	.34	.38	2063.90
11500.0	1067.2	9278.9	1153.9	480.2	802.8	472.6	176.2	30.4	2062.60
.19	2.22	11.56	2.44	.040	.020	.040	.000	2056.60	.00
.001589	195.	195.	195.	20	8	0	.00	625.00	625.00

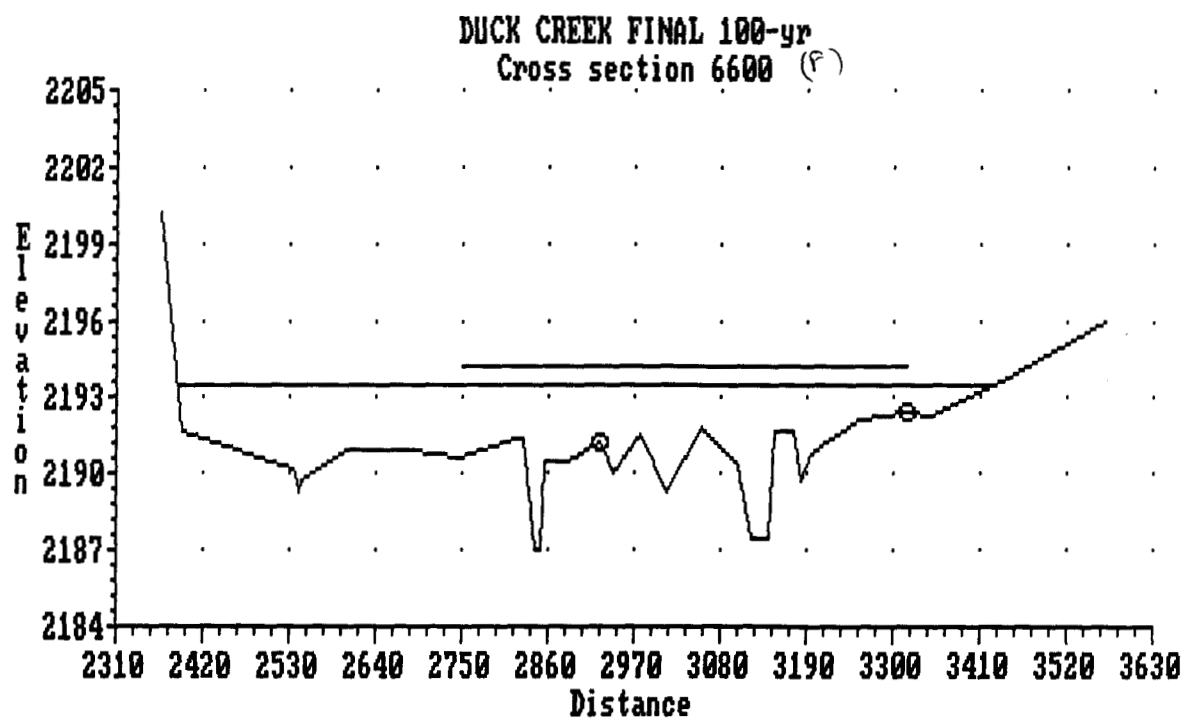
*SECNO 8848.000

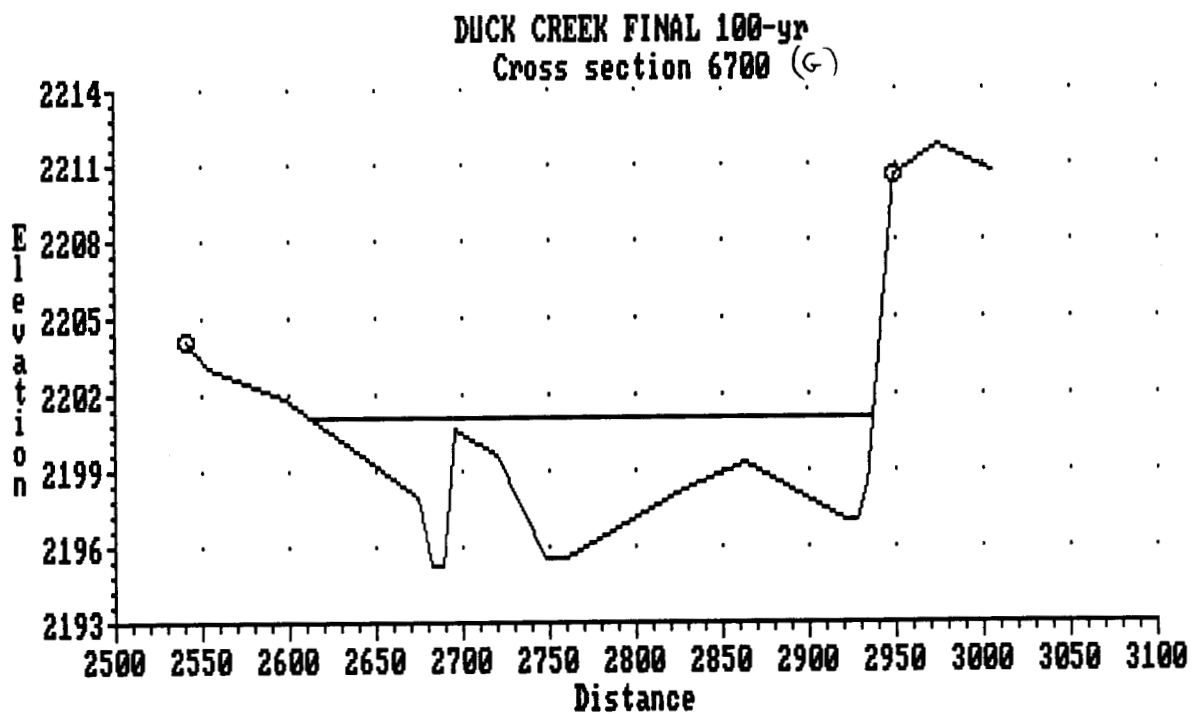
3301 HV CHANGED MORE THAN HVINS

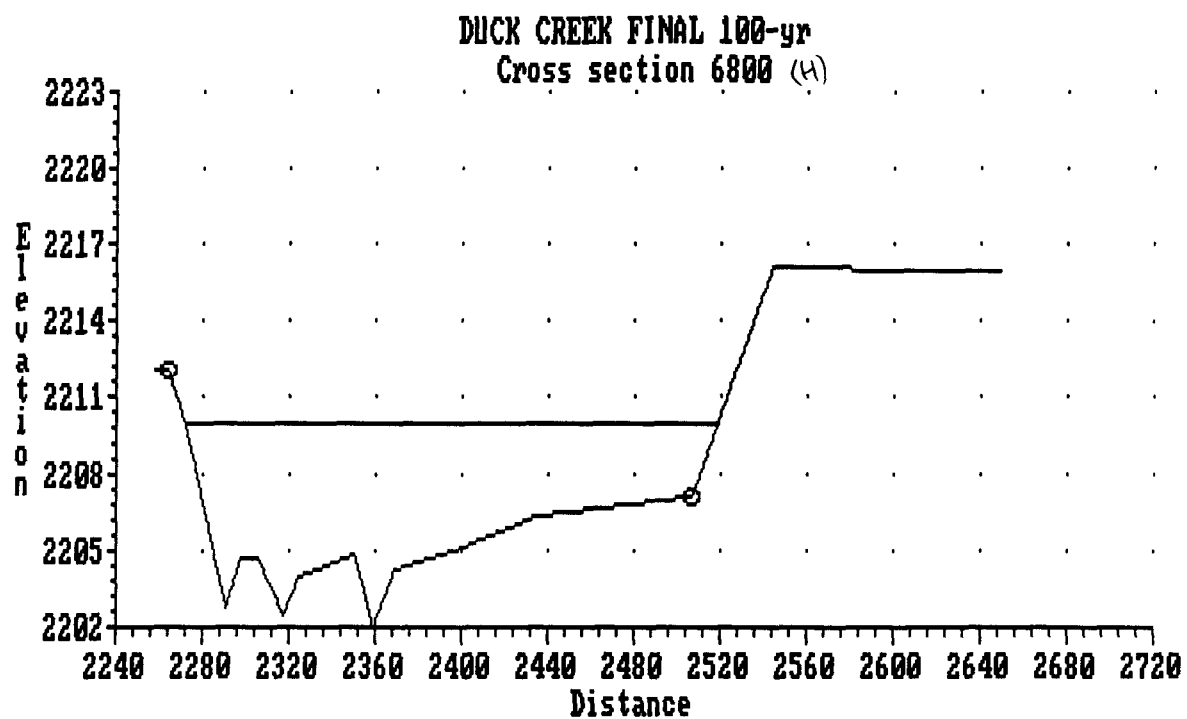
3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.44

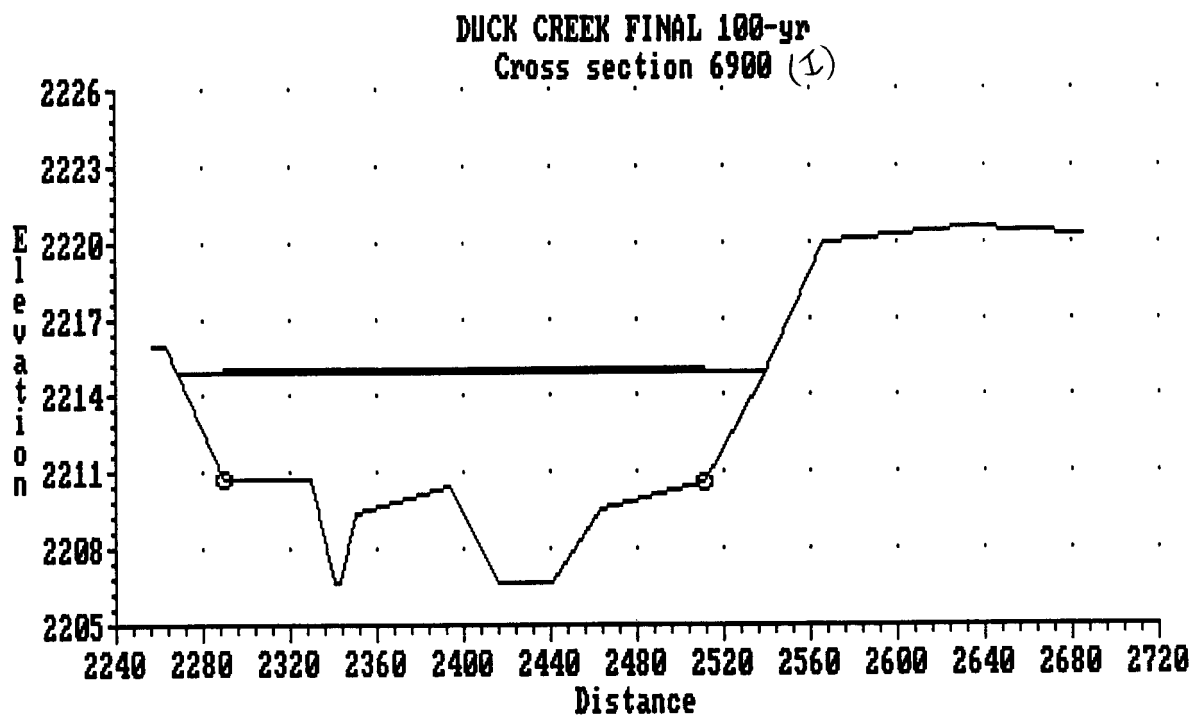
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 2063.40 ELREA= 2061.50

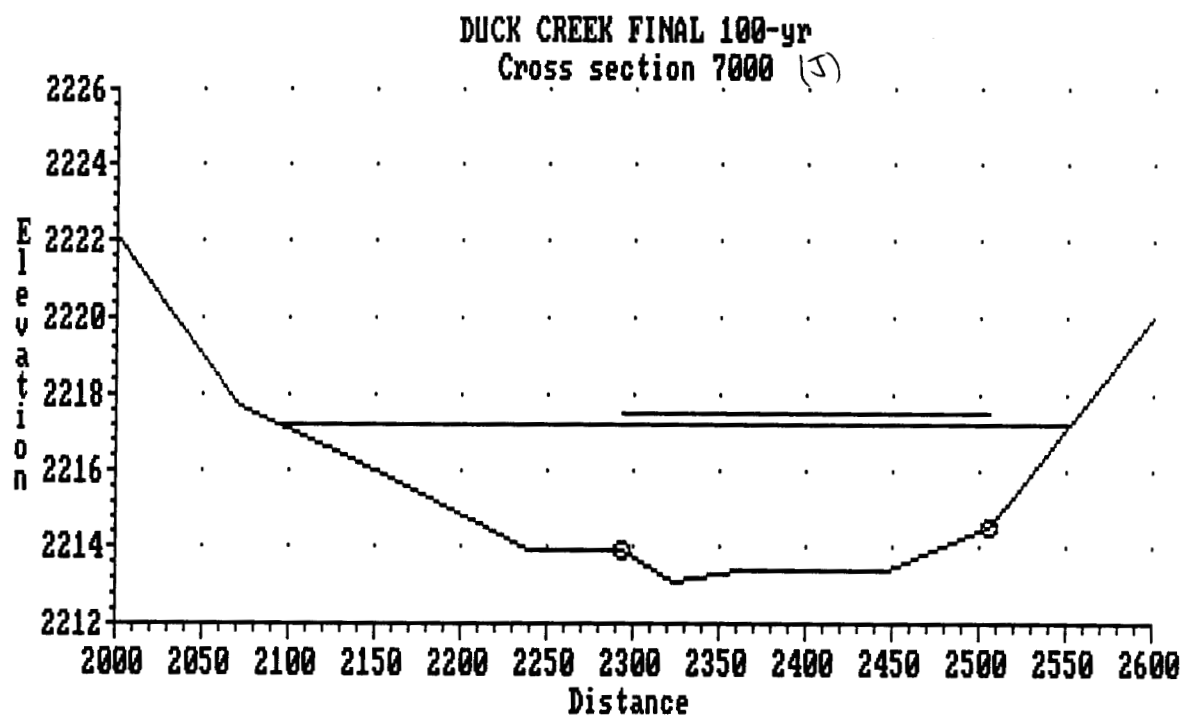
8848.000	7.69	2063.19	2064.23	.00	2066.44	3.25	.44	.16	2063.40
11500.0	.0	10524.2	975.8	.0	697.0	337.3	182.6	32.5	2061.50
.19	.00	15.10	2.89	.000	.020	.040	.000	2055.50	272.00
.003289	200.	200.	200.	6	5	0	.00	314.67	586.67

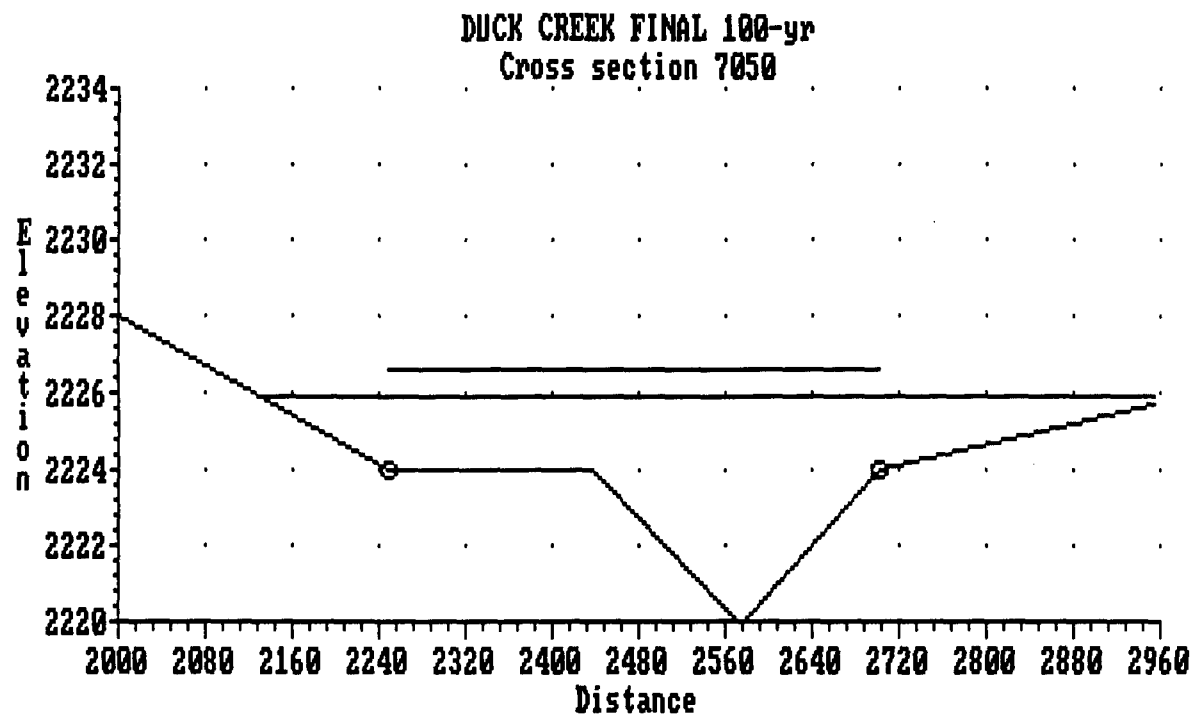


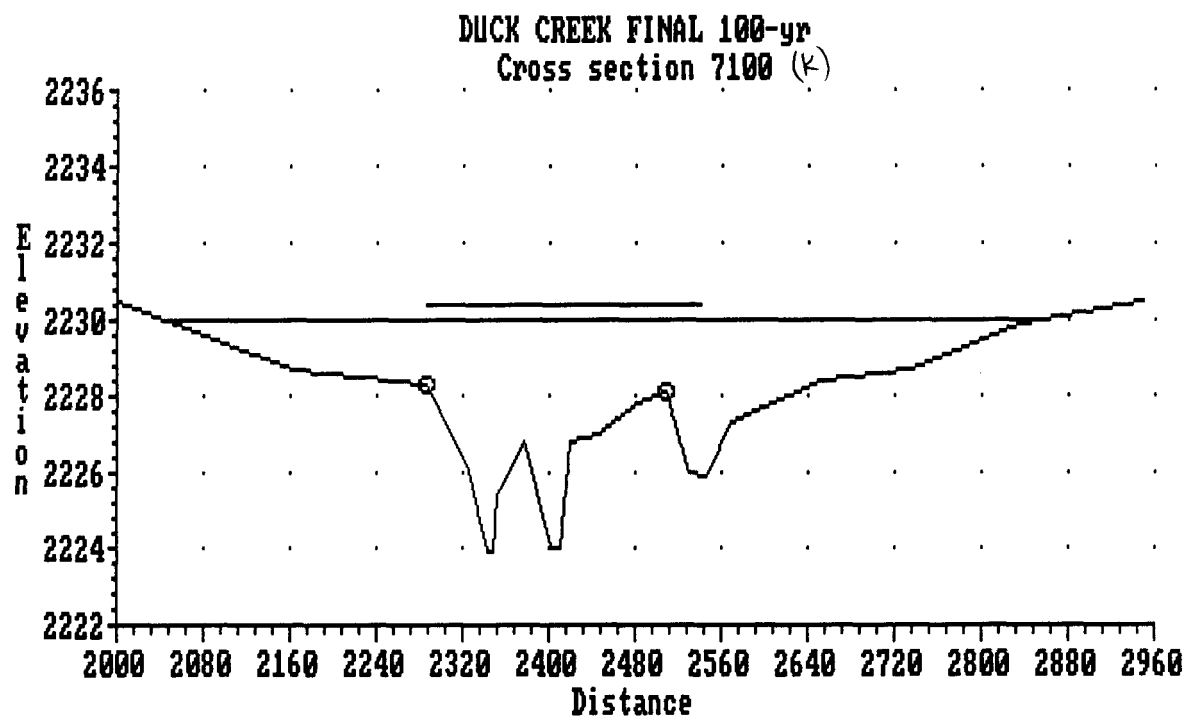


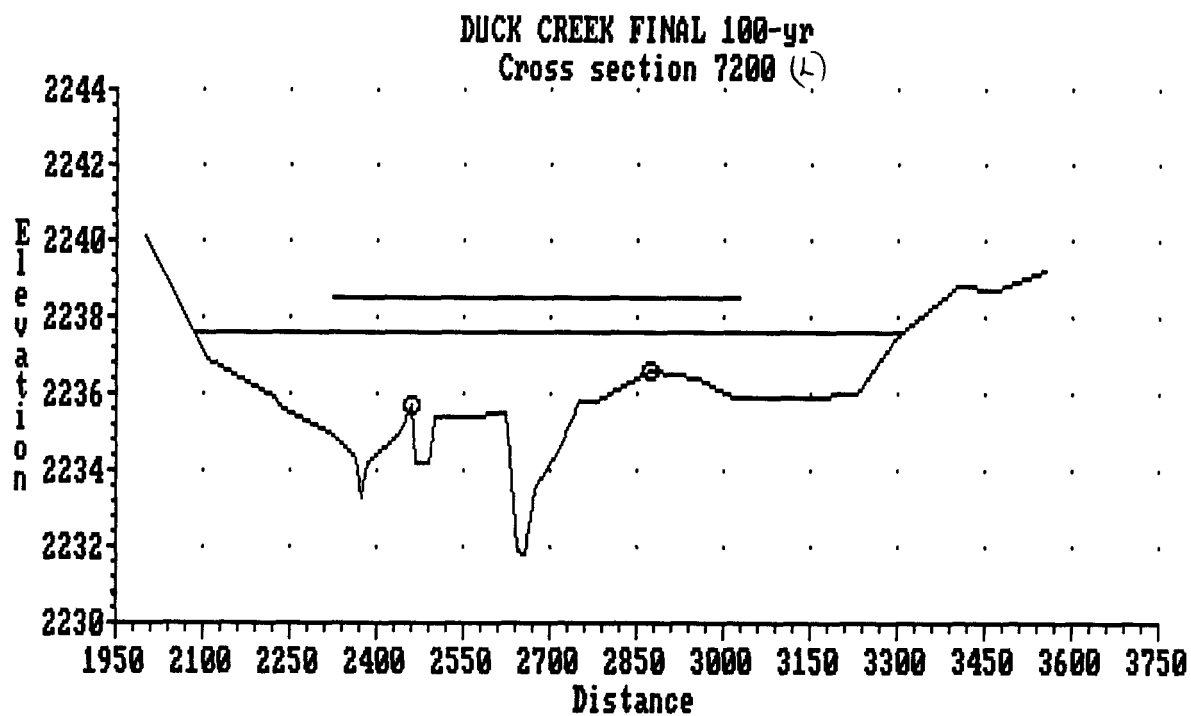


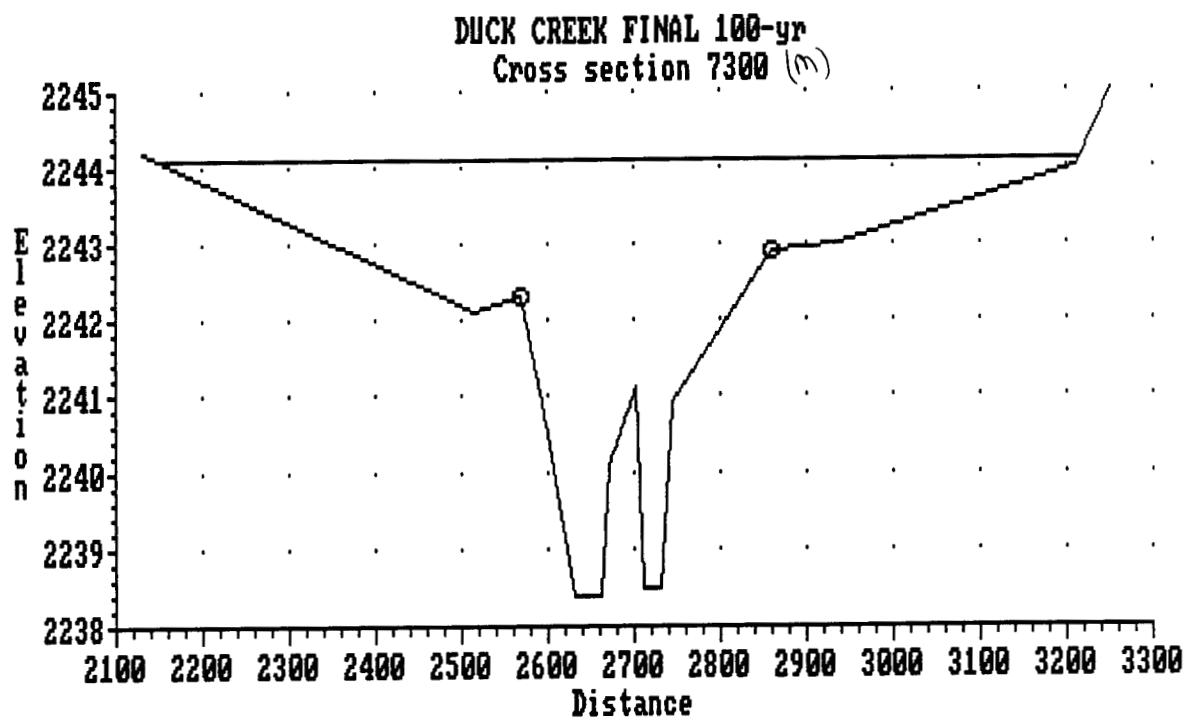












THIS RUN EXECUTED 14MAY93 11:39:50

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 Clark County, Nevada FIS - 100-year flood (REVISED BY MBJ)
 T2 James M. Montgomery, Consulting Engineers, Inc. (ORIGINAL DECK)
 T3 DUCK CREEK FINAL 100-yr SUB-CRITICAL RUN UPSTREAM OF LOMRS AND CLOMRS

J1 ICHECK INQ NINV IDIR STRT METRIC HVINS Q WSEL FQ

2

2178.55

J2 NPROF IPLOT PRFVS XSECV XSECH FN ALLDC IBW CHNIM ITRACE

1

-1

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150

200

QT	2	11000	11000							
ET			10.4							
NC	.04	.04	.04	.1	.3					
X1 (C) 6400	26	2381	2846	200	200	200				
GR 2193.6	2000	2188.8	2049	2184.7	2102	2182.5	2190	2182.7	2212	
GR 2181.6	2225	2188.9	2247	2179.0	2276	2176.9	2344	2176.7	2381	
GR 2173.2	2392	2173.2	2433	2176.4	2440	2174.8	2507	2174.9	2605	
GR 2174.6	2643	2171.2	2661	2171.6	2691	2175.8	2700	2174.9	2744	
GR 2174.7	2784	2172.8	2806	2172.4	2826	2176.6	2846	2181.9	2887	
GR 2191.7	2944									

CROSS SECTION E

X1 (E) 6500	18	2805	3336	1110	1125	1150			
GR 2191.7	2799	2191.7	2799	2191.7	2799	2191.7	2805	2187.9	2824
GR 2185.3	2860	2182.8	2900	2182.0	2937	2178.4	2955	2178.4	2964
GR 2183.2	2979	2183.0	3031	2182.6	3089	2183.0	3164	2184.9	3280
GR 2188.5	3336	2196.5	3377	2201.2	3406				

QT 2 1500 1500

ET 8.4

CROSS SECTIONS 2-6 DIVIDED FLOW REACH

X1 (A) 2	7	50	180	1250	1250	1250			
GR 2200	0	2192	50	2192	70	2193	120	2192	180
GR 2192	190	2200	210						

X1 (b)	3	8	250	400	600	600	600			
GR	2204	0	2200	60	2200	170	2197	250	2197	400
GR	2200	590	2204	660	2208	710				

X1 (c)	4	10	860	920	800	800	800			
GR	2212	650	2212	750	2208	790	2204	860	2203	880
GR	2204	920	2208	1040	2212	1080	2212	1200	2216	1400

X1 (d)	5	9	380	420	600	600	600			
GR	2220	0	2216	40	2212	160	2208	380	2207	400
GR	2208	420	2212	760	2216	900	2220	980		

X1 (E)	6	13	355	570	850	850	850			
GR	2228	0	2224	90	2222	230	2222	350	2218	355
GR	2216	420	2216	450	2216	530	2216	550	2218	560
GR	2220	600	2222	750	2224	950				

QT	2	11000	11000
ET		10.4	

CROSS SECTIONS K

X1 (K)	7100	22	2287	2509	1400	1400	1400			
GR	2230.5	2000	2228.7	2163	2228.3	2287	2226.1	2325	2223.9	2343
GR	2223.9	2348	2225.4	2352	2226.8	2377	2225.4	2389	2224.0	2401
GR	2224.0	2410	2226.8	2420	2227.0	2447	2227.8	2482	2228.1	2509
GR	2226.0	2529	2225.9	2545	2227.3	2568	2228.4	2653	2228.7	2735
GR	2229.9	2835	2230.5	2950						

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 6400.000 (D)

6400.000	7.35	2178.55	.00	2178.55	2179.01	.46	.00	.00	2176.70
11000.0	282.0	10687.4	30.5	108.8	1946.1	14.7	.0	.0	2176.60
.00	2.59	5.49	2.08	.040	.040	.040	.000	2171.20	2290.57
.003268	200.	200.	200.	0	0	0	.00	570.52	2861.09

*SECNO 6500.000 (E)

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION E

6500.000	7.30	2185.70	2185.70	.00	2187.11	1.40	7.39	.28	2191.70
11000.0	.0	11000.0	.0	.0	1156.8	.0	42.5	13.3	2188.50
.03	.00	9.51	.00	.000	.040	.000	.000	2178.40	2854.45
.018014	1110.	1150.	1125.	12	5	0	.00	438.02	3292.46

*SECNO 2.000 (A)

3301 HV CHANGED MORE THAN HVINS

CROSS SECTIONS 2-6 DIVIDED FLOW REACH

2.000	4.57	2196.57	.00	.00	2196.65	.08	9.41	.13	2192.00
1500.0	100.7	1247.8	151.5	65.2	538.9	71.8	68.8	22.1	2192.00
.19	1.54	2.32	2.11	.040	.040	.040	.000	2192.00	21.45
.000583	1250.	1250.	1250.	5	0	0	.00	179.97	201.42

*SECNO 3.000 (B)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3.000	1.30	2198.30	2198.30	.00	2198.82	.52	1.02	.13	2197.00
1500.0	87.6	1204.2	208.2	22.5	195.0	53.5	75.4	25.2	2197.00
.22	3.89	6.17	3.89	.040	.040	.040	.000	2197.00	215.33
.019459	600.	600.	600.	20	14	0	.00	267.03	482.35

SECNO	DEPTH	CWSEL	CRISW	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 4.000 (C)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.79

4.000	3.42	2206.42	.00	.00	2206.85	.43	8.02	.01	2204.00
1500.0	169.3	1040.2	290.5	51.4	175.4	88.1	80.7	29.3	2204.00
.26	3.29	5.93	3.30	.040	.040	.040	.000	2203.00	817.59
.006100	800.	800.	800.	7	0	0	.00	175.12	992.71

*SECNO 5.000 (O)

5.000	3.14	2210.14	.00	.00	2210.39	.25	3.52	.02	2208.00
1500.0	368.1	562.9	569.0	126.1	105.6	194.8	85.8	32.8	2208.00
.30	2.92	5.33	2.92	.040	.040	.040	.000	2207.00	262.24
.005643	600.	600.	600.	5	0	0	.00	339.76	601.99

*SECNO 6.000 (E)

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

6.000	1.60	2217.60	.00	.00	2218.14	.53	7.66	.08	2218.00
1500.0	.0	1500.0	.0	.0	256.6	.0	92.5	38.0	2218.00
.34	.00	5.85	.00	.000	.040	.000	.000	2216.00	367.90
.016626	850.	850.	850.	3	0	0	.00	190.11	558.02

*SECNO 7100.000 (K)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 10.31

CROSS SECTIONS K

7100.000	6.16	2230.06	.00	.00	2230.83	.77	12.63	.07	2228.30
11000.0	1114.2	6393.9	3492.0	278.5	800.8	597.6	123.6	54.3	2228.10
.40	4.00	7.98	5.84	.040	.040	.040	.000	2223.90	2039.35
.008403	1400.	1400.	1400.	8	0	0	.00	827.37	2866.72

T1 Method 4 Floodway Profile - Equal Conveyance
T2 Upstream of reach with LOMRs and CLOMRs
T3 DUCK CREEK FINAL 100-yr 100-Year Floodway

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2178.52	
J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

*PROF 2

CCHV= .100 CEHV= .300

*SECNO 6400.000 (D)

2800 NAT Q1= 1924.25 WSEL= 2178.55 ENC Q1= 2671.93 WSEL= 2179.55 RATIO= -.3886
 NAT Q1= 2818. RATIOS LOB, CH, ROB= .0460 .9483 .0057 WSEL= 2179.55

3470 ENCROACHMENT STATIONS= 2381.0 2846.0 TYPE= 4 TARGET= .052
 6400.000 7.32 2178.52 .00 2178.55 2179.02 .50 .00 .00 2176.70
 11000.0 .0 11000.0 .0 .0 1932.2 .0 .0 .0 2176.60
 .00 .00 5.69 .00 .000 .040 .000 .000 2171.20 2381.00
 .003584 200. 200. 200. 0 0 0 .00 465.00 2846.00

*SECNO 6500.000 (E)

2800 NAT Q1= 819.56 WSEL= 2185.70 ENC Q1= 1360.97 WSEL= 2186.70 RATIO= -.6606
 NAT Q1= 1361. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2186.70

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .45

3470 ENCROACHMENT STATIONS= 2805.0 3336.0 TYPE= 4 TARGET= .000
 CROSS SECTION E
 6500.000 7.33 2185.73 2185.72 2185.70 2187.11 1.38 7.82 .26 2191.70
 11000.0 .0 11000.0 .0 .0 1166.5 .0 40.9 11.9 2188.50
 .03 .00 9.43 .00 .000 .040 .000 .000 2178.40 2854.14
 .017553 1110. 1150. 1125. 3 5 0 .00 438.67 3292.81

*SECNO 2.000 (A)

2800 NAT Q1= 620.98 WSEL= 2196.57 ENC Q1= 693.86 WSEL= 2197.37 RATIO= -.1174
 NAT Q1= 844. RATIOS LOB, CH, ROB= .0760 .8222 .1017 WSEL= 2197.37

3301 HV CHANGED MORE THAN HVINS

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

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= 50.0 180.0 TYPE= 4 TARGET= .178
 CROSS SECTIONS 2-6 DIVIDED FLOW REACH

2.000	4.99	2196.99	.00	2196.57	2197.09	.10	9.85	.13	2192.00
1500.0	.0	1500.0	.0	.0	593.7	.0	66.2	20.1	2192.00
.17	.00	2.53	.00	.000	.040	.000	.000	2192.00	50.00
.000674	1250.	1250.	1250.	2	0	0	.00	130.00	180.00

*SECNO 3.000 (B)
 2800 NAT Q1= 107.53 WSEL= 2198.30 ENC Q1= 191.96 WSEL= 2199.10 RATIO= -.7852
 NAT Q1= 268. RATIOS LOB, CH, ROB= .0842 .7159 .1999 WSEL= 2199.10

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 250.0 400.0 TYPE= 4 TARGET= .284

3.000	1.46	2198.46	2198.46	2198.30	2199.19	.73	1.16	.19	2197.00
1500.0	.0	1500.0	.0	.0	218.7	.0	71.8	22.0	2197.00
.20	.00	6.86	.00	.000	.040	.000	.000	2197.00	250.00
.021152	600.	600.	600.	20	14	0	.00	150.00	400.00

*SECNO 4.000 (C)
 2800 NAT Q1= 192.06 WSEL= 2206.42 ENC Q1= 199.22 WSEL= 2207.22 RATIO= -.0373
 NAT Q1= 325. RATIOS LOB, CH, ROB= .1426 .6129 .2446 WSEL= 2207.22

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.79

3470 ENCROACHMENT STATIONS= 860.0 920.0 TYPE= 4 TARGET= .387

4.000	4.20	2207.20	.00	2206.42	2207.91	.71	8.72	.00	2204.00
1500.0	.0	1500.0	.0	.0	221.9	.0	75.8	23.9	2204.00
.23	.00	6.76	.00	.000	.040	.000	.000	2203.00	860.00
.006633	800.	800.	800.	4	0	0	.00	60.00	920.00

*SECNO 5.000 (D)
 2800 NAT Q1= 199.68 WSEL= 2210.14 ENC Q1= 199.68 WSEL= 2210.94 RATIO= .0000
 NAT Q1= 408. RATIOS LOB, CH, ROB= .2806 .2858 .4336 WSEL= 2210.94

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= 374.8 459.6 TYPE= 4 TARGET= .510

5.000	3.99	2210.99	.00	2210.14	2211.51	.52	3.58	.02	2208.00
1500.0	63.9	874.6	561.5	15.3	139.5	109.1	79.1	24.9	2208.00
.26	4.17	6.27	5.14	.040	.040	.040	.000	2207.00	374.79
.005393	600.	600.	600.	3	0	0	.00	84.82	459.61

*SECNO 6.000 (E)

2800 NAT Q1= 116.33 WSEL= 2217.60 ENC Q1= 249.40 WSEL= 2218.40 RATIO= -1.1439
 NAT Q1= 250. RATIOS LOB, CH, ROB= .0000 .9991 .0008 WSEL= 2218.40

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .66

3470 ENCROACHMENT STATIONS= 355.0 560.0 TYPE= 4 TARGET= .001

6.000	1.74	2217.74	.00	2217.60	2218.18	.44	6.66	.01	2218.00
1500.0	.0	1500.0	.0	.0	283.2	.0	84.5	27.7	2218.00
.30	.00	5.30	.00	.000	.040	.000	.000	2216.00	363.41
.012400	850.	850.	850.	4	0	0	.00	195.30	558.71

*SECNO 7100.000 (K)

2800 NAT Q1= 1199.95 WSEL= 2230.06 ENC Q1= 1199.95 WSEL= 2231.06 RATIO= .0000
 NAT Q1= 2143. RATIOS LOB, CH, ROB= .1564 .4890 .3546 WSEL= 2231.06
 3280 CROSS SECTION 7100.00 EXTENDED .37 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 8.33

3470 ENCROACHMENT STATIONS= 2287.0 2545.4 TYPE= 4 TARGET= .440

CROSS SECTIONS K

7100.000	6.97	2230.87	.00	2230.06	2232.33	1.46	13.85	.31	2228.30
11000.0	.0	9490.2	1509.8	.0	979.4	156.9	107.3	35.0	2228.10
.34	.00	9.69	9.62	.000	.040	.040	.000	2223.90	2287.00
.009607	1400.	1400.	1400.	5	0	0	.00	258.36	2545.36

THIS RUN EXECUTED 14MAY93 11:39:51

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

DUCK CREEK FINAL 100-yr

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	6400.000	(b) .00	.00	.00	2171.20	11000.00	2178.55	.00	2179.01	32.68	5.49	2069.68	1924.25
	6400.000	.00	.00	.00	2171.20	11000.00	2178.52	.00	2179.02	35.84	5.69	1932.17	1837.49
*	6500.000	(E) 1150.00	.00	.00	2178.40	11000.00	2185.70	2185.70	2187.11	180.14	9.51	1156.80	819.56
*	6500.000	1150.00	.00	.00	2178.40	11000.00	2185.73	2185.72	2187.11	175.53	9.43	1166.54	830.27
	2.000	(A) 1250.00	.00	.00	2192.00	1500.00	2196.57	.00	2196.65	5.83	2.32	675.88	620.98
*	2.000	1250.00	.00	.00	2192.00	1500.00	2196.99	.00	2197.09	6.74	2.53	593.70	577.89
*	3.000	(B) 600.00	.00	.00	2197.00	1500.00	2198.30	2198.30	2198.82	194.59	6.17	271.13	107.53
*	3.000	600.00	.00	.00	2197.00	1500.00	2198.46	2198.46	2199.19	211.52	6.86	218.70	103.14
*	4.000	(C) 800.00	.00	.00	2203.00	1500.00	2206.42	.00	2206.85	61.00	5.93	314.92	192.06
*	4.000	800.00	.00	.00	2203.00	1500.00	2207.20	.00	2207.91	66.33	6.76	221.88	184.18
	5.000	(D) 600.00	.00	.00	2207.00	1500.00	2210.14	.00	2210.39	56.43	5.33	426.55	199.68
	5.000	600.00	.00	.00	2207.00	1500.00	2210.99	.00	2211.51	53.93	6.27	263.96	204.26
*	6.000	(F) 850.00	.00	.00	2216.00	1500.00	2217.60	.00	2218.14	166.26	5.85	256.58	116.33
*	6.000	850.00	.00	.00	2216.00	1500.00	2217.74	.00	2218.18	124.00	5.30	283.20	134.70
*	7100.000	(K) 1400.00	.00	.00	2223.90	11000.00	2230.06	.00	2230.83	84.03	7.98	1676.93	1199.95
*	7100.000	1400.00	.00	.00	2223.90	11000.00	2230.87	.00	2232.33	96.07	9.69	1136.33	1122.27

DUCK CREEK FINAL 100-yr

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	6400.000	(D)11000.00	2178.55	.00	.00	.00	570.52	.00
	6400.000	11000.00	2178.52	-.03	.00	-.03	465.00	.00
*	6500.000	(E)11000.00	2185.70	.00	7.15	.00	438.02	1150.00
*	6500.000	11000.00	2185.73	.03	7.21	.03	438.67	1150.00
	2.000	(A)1500.00	2196.57	.00	10.87	.00	179.97	1250.00
*	2.000	1500.00	2196.99	.42	11.26	.42	130.00	1250.00
*	3.000	(B)1500.00	2198.30	.00	1.73	.00	267.03	600.00
*	3.000	1500.00	2198.46	.16	1.47	.16	150.00	600.00
*	4.000	(C)1500.00	2206.42	.00	8.12	.00	175.12	800.00
*	4.000	1500.00	2207.20	.78	8.74	.78	60.00	800.00
	5.000	(D)1500.00	2210.14	.00	3.72	.00	339.76	600.00
	5.000	1500.00	2210.99	.85	3.79	.85	84.82	600.00
*	6.000	(E)1500.00	2217.60	.00	7.46	.00	190.11	850.00
*	6.000	1500.00	2217.74	.14	6.75	.14	195.30	850.00
*	7100.000	(K)1000.00	2230.06	.00	12.46	.00	827.37	1400.00
*	7100.000	11000.00	2230.87	.81	13.13	.81	258.36	1400.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 6500.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 6500.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY
WARNING SECNO= 6500.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 3.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 3.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 3.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 3.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 3.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 3.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 4.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 4.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

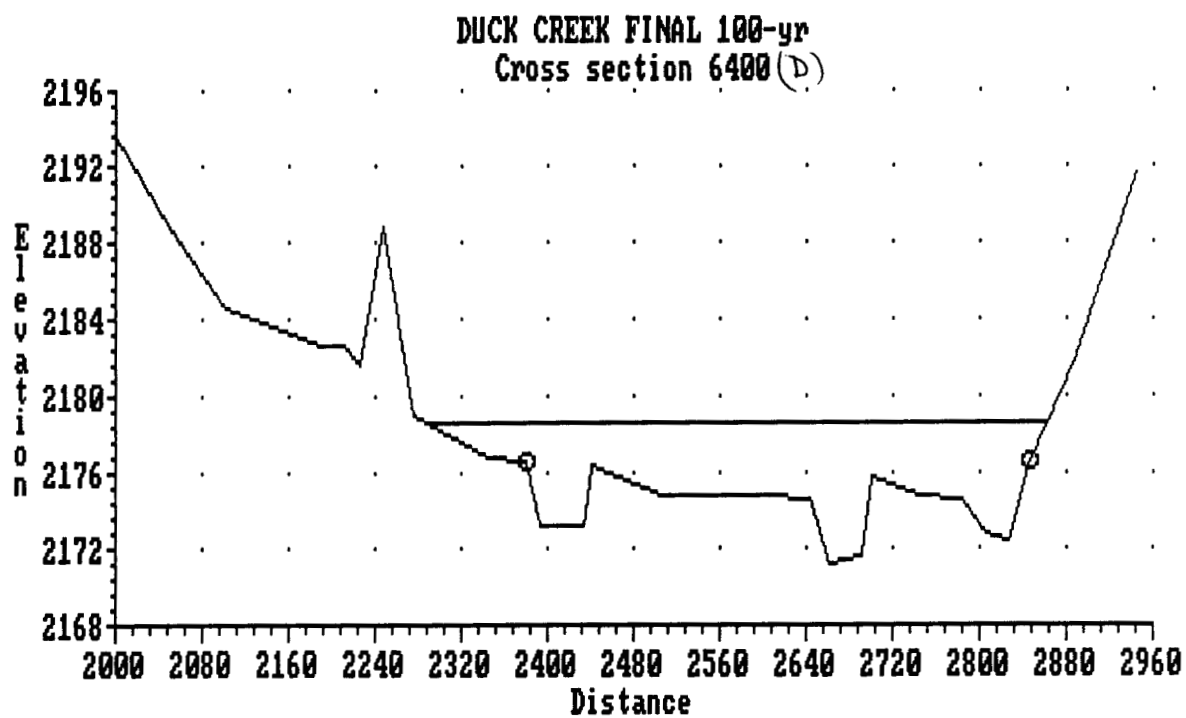
WARNING SECNO= 6.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 6.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

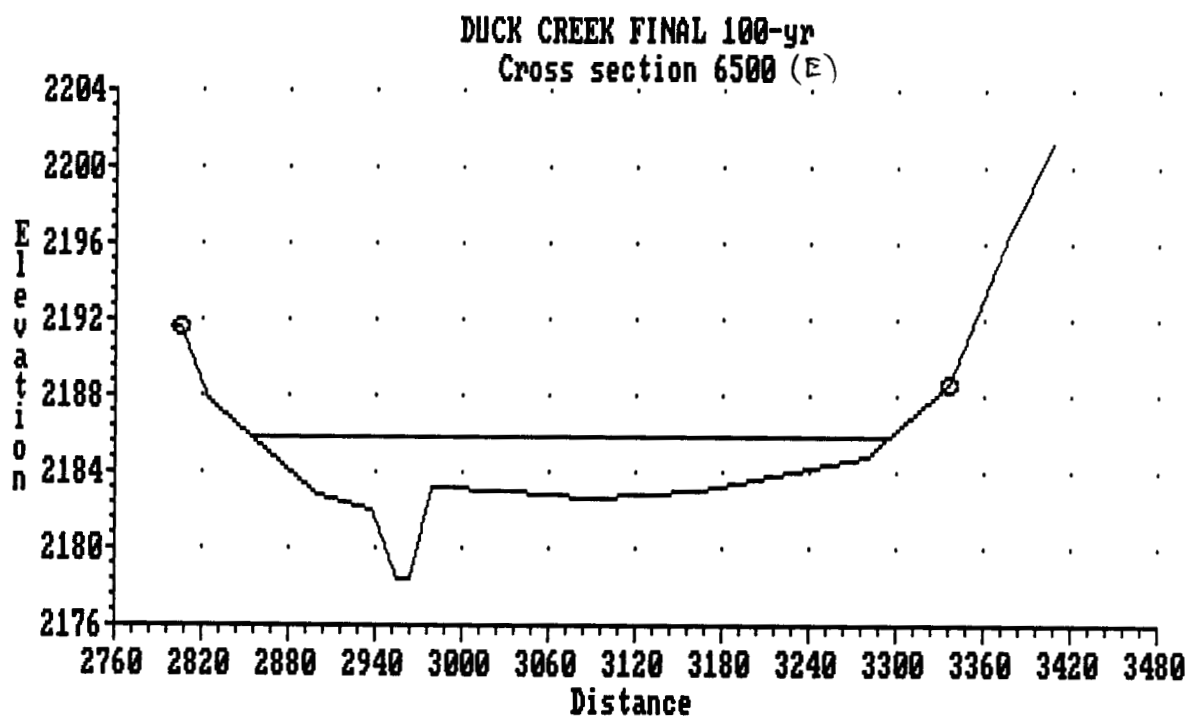
WARNING SECNO= 7100.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 7100.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

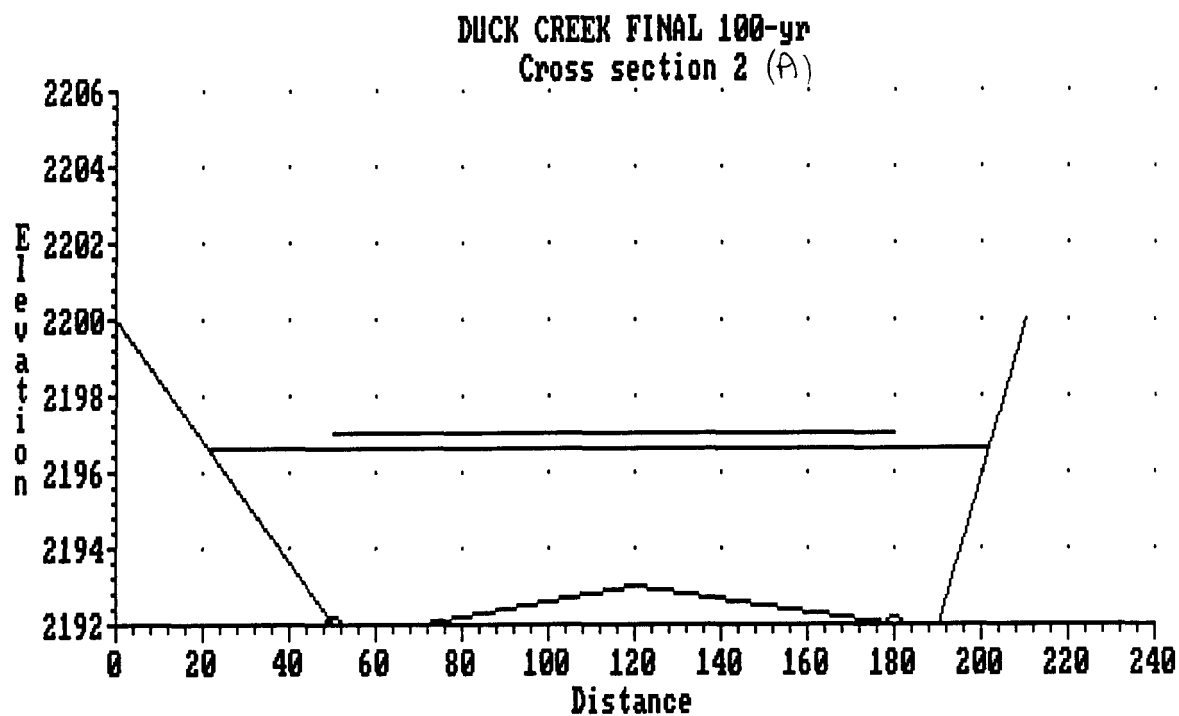
FLOODWAY DATA, DUCK CREEK FINAL 100-yr
PROFILE NO. 2

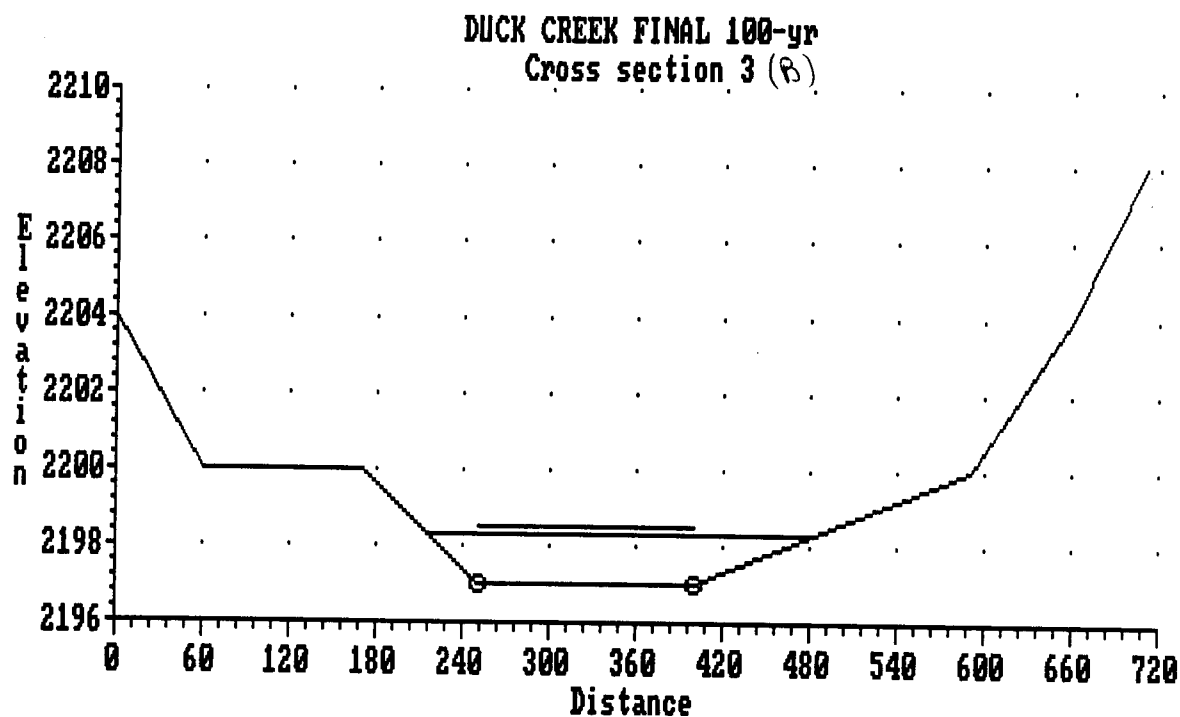
STATION	WIDTH	FLOODWAY		MEAN VELOCITY	WATER SURFACE ELEVATION		
		SECTION AREA			WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
6400.000 (D)	465.	1932.		5.7	2178.6	2178.6	.0
6500.000 (E)	439.	1167.		9.4	2185.7	2185.7	.0
2.000 (A)	130.	594.		2.5	2197.0	2196.6	.4
3.000 (B)	150.	219.		6.9	2198.5	2198.3	.2
4.000 (C)	60.	222.		6.8	2207.2	2206.4	.8
5.000 (D)	85.	264.		5.7	2210.9	2210.1	.8
6.000 (E)	195.	283.		5.3	2217.7	2217.6	.1
7100.000 (K)	258.	1136.		9.7	2230.9	2230.1	.8

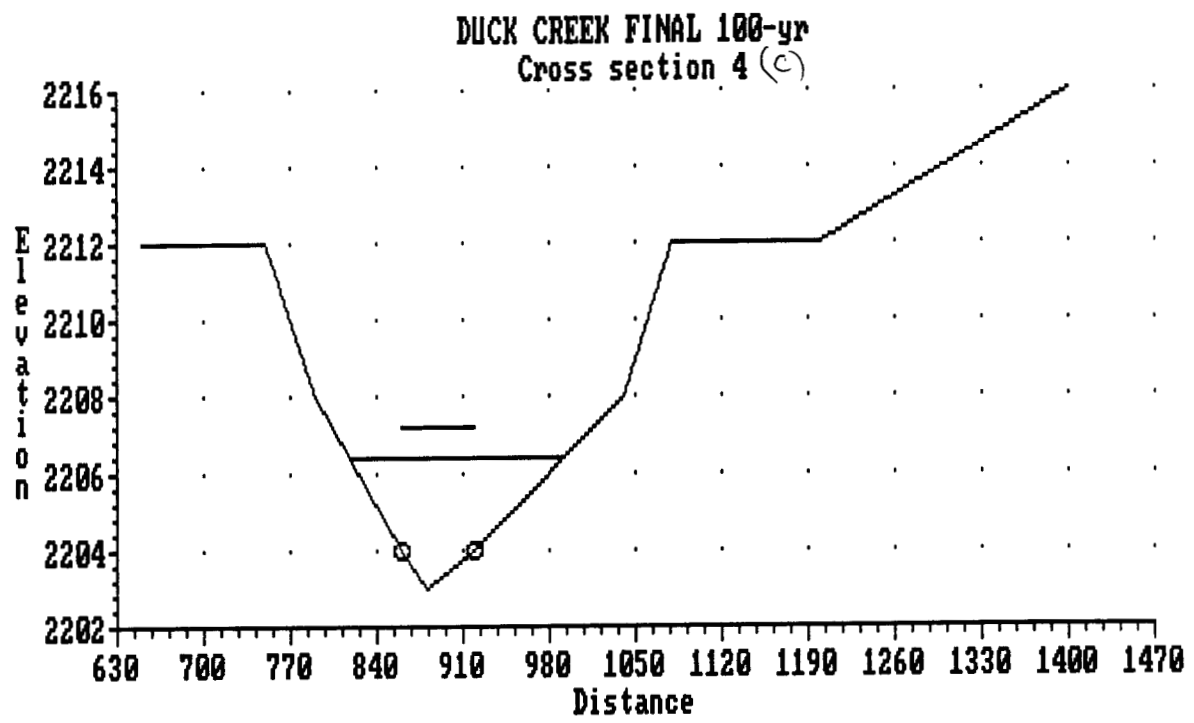
Normal program termination

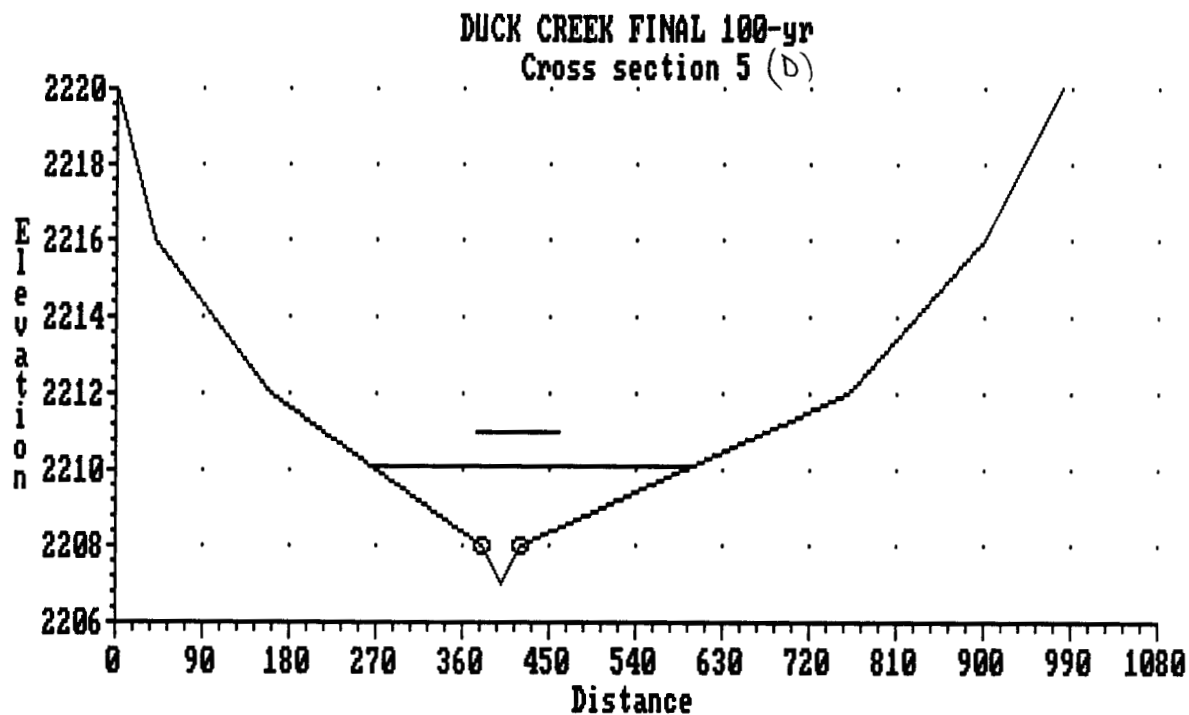


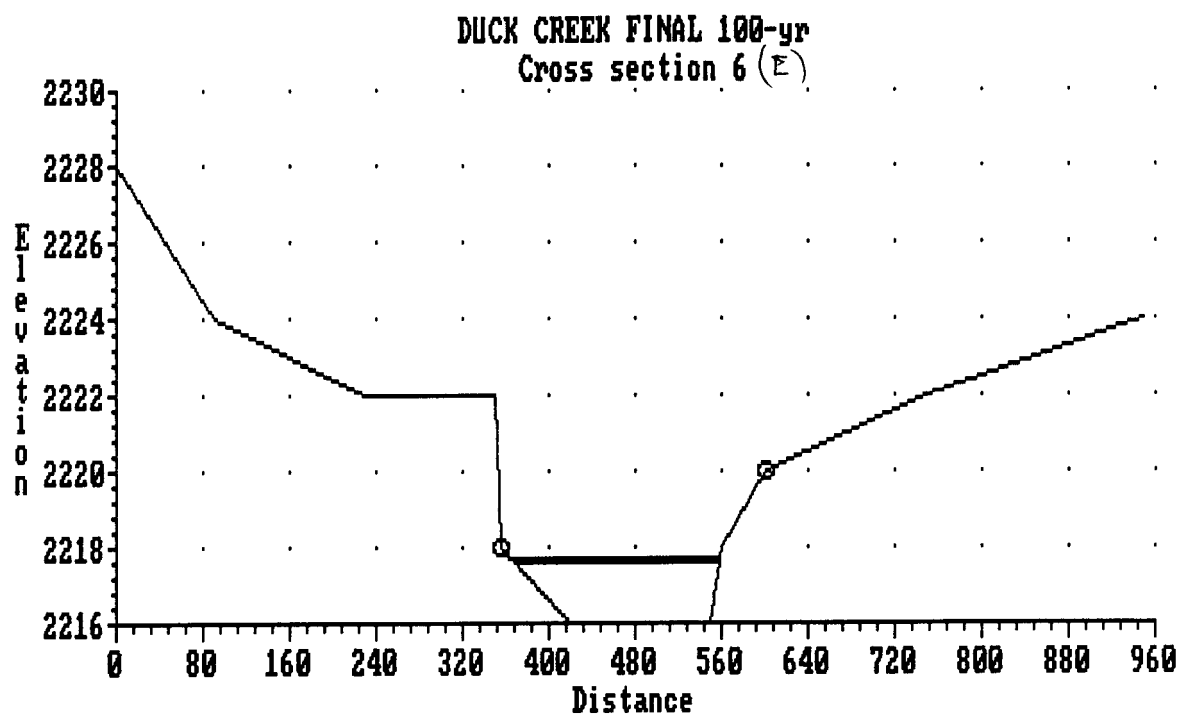


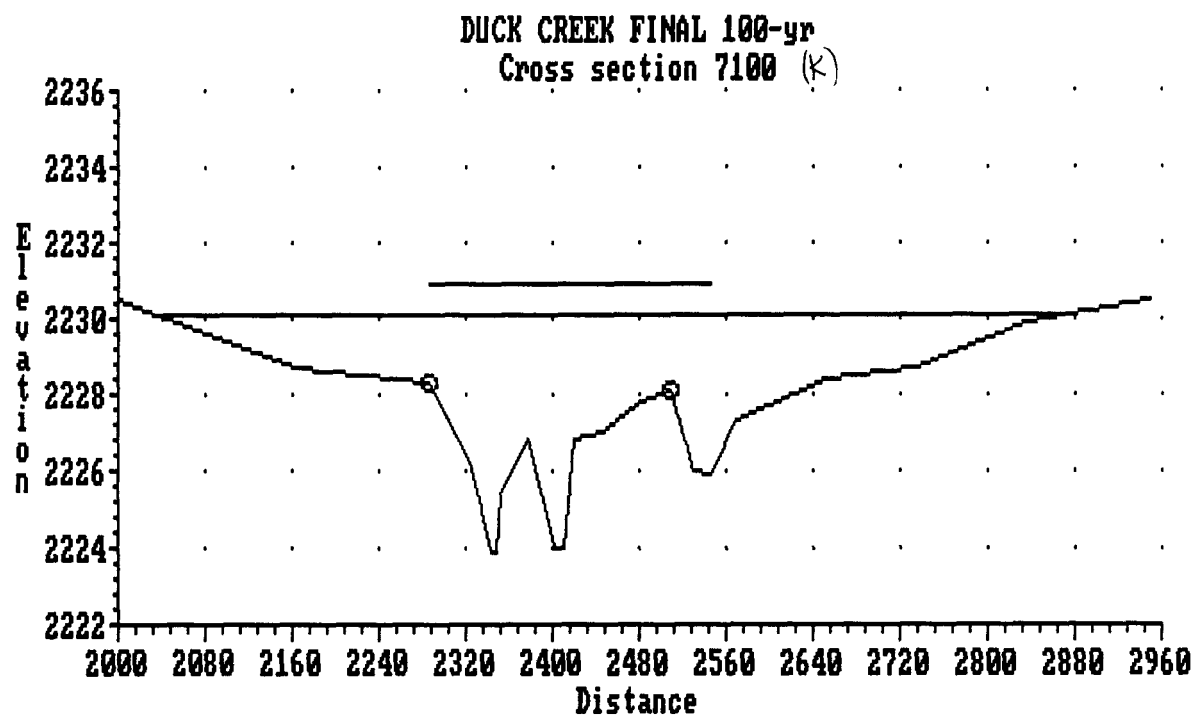












NC	.04	.04	.015	.6	.8				
QT	1	11500							
X1	8453	19	265	365	5	5	5		
X2				2061.5	2063.7				
X3	10								
GR	2064		2062.7	18	2062.2	18	2062.3	50	2062.0 72
GR	2062.5	72	2062.9	102	2062.9	140	2063.3	140	2063.3 265
GR	2063.6	265	2057.6	277	2057.6	353	2063.6	365	2062.9 378
GR	2063.9	470	2067.0	535	2064.0	680	2067.5	715	
NC	.04	.04	.02	.6	.8				
X1	8458	19	265	365	195	195	195		
X3	10								
GR	2064		2062.7	18	2062.2	18	2062.3	50	2062.0 72
GR	2062.5	72	2062.9	102	2062.9	140	2063.3	140	2063.3 265
GR	2063.6	265	2057.6	277	2057.6	353	2063.6	365	2062.9 378
GR	2063.9	470	2067.0	535	2064.0	680	2067.5	715	
NC	.04	.04	.1	.3					
X1	8648	22	265	365	200	200	200		
X3	10								
GR	2063.9		2063.2	24	2062.7	24	2063.4	52	2062.5 82
GR	2063.0	82	2063.7	110	2063.7	212	2063.9	212	2063.9 265
GR	2062.6	265	2056.6	277	2056.6	353	2062.6	365	2062.6 459
GR	2063.9	490	2064.5	505	2064.4	512	2063.9	512	2065.0 566
GR	2064.5	585	2062.9	625					
X1	8848	21	272	372	100	100	100		
X3	10								
GR	2063.9		2063.9	22	2063.4	22	2063.5	50	2062.6 80
GR	2062.1	80	2062.7	105	2062.5	128	2063.0	128	2063.4 159
GR	2063.4	272	2061.5	272	2055.5	284	2055.5	360	2061.5 372
GR	2061.5	470	2061.9	584	2064.8	590	2064.8	600	2064.3 600
GR	2065.2	650							
X1	8948	17	212	312	100	100	100		
X3	10								
GR	2063.1		2063.1	81	2062.1	108	2061.6	108	2061.8 134
GR	2061.6	170	2063.4	170	2063.4	212	2060.9	212	2054.9 224
GR	2054.9	300	2060.9	312	2061.3	416	2063.4	423	2063.3 431
GR	2062.8	431	2063.2	482					
X1	9048	25	500	650					
X3	10								
GR	2062.0		2062.0	40	2062.4	40	2062.4	102	2061.8 102
GR	2061.8	170	2061.6	170	2061.6	300	2063.1	300	2063.1 317
GR	2062.1	333	2061.6	333	2061.5	362	2061.9	392	2062.4 392
GR	2063.4	417	2063.4	500	2060.4	500	2054.4	512	2054.4 550
GR	2054.4	588	2060.0	600	2062.8	610	2062.3	610	2063.1 650

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= .500 CEHV= .700

*SECNO 5550.000

2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

3265 DIVIDED FLOW

3720 CRITICAL DEPTH ASSUMED

UPSTREAM END OF LOMRS AND CLOMRS

CROSS SECTIONS 5550-5250 - NATURAL WASH

5550.000	5.28	2176.28	2176.28	.00	2177.70	1.42	.00	.00	2185.00
11000.0	.0	11000.0	.0	.0	1150.0	.0	.0	.0	2180.00
.00	.00	9.56	.00	.000	.025	.000	.000	2171.00	34.88
.006836	0.	0.	0.	0	10	0	.00	419.94	466.35

CCHV= .100 CEHV= .300

*SECNO 5450.000

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5450.000	5.43	2175.73	2175.73	.00	2177.15	1.42	.70	.16	2180.00
11000.0	.0	11000.0	.0	.0	1150.7	.0	2.6	1.0	2177.00
.00	.00	9.56	.00	.000	.025	.000	.000	2170.30	21.36
.007140	100.	100.	100.	20	8	0	.00	434.48	467.28

*SECNO 5350.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5350.000	6.20	2175.20	2175.20	.00	2176.61	1.41	.68	.61	2180.00
11000.0	.0	11000.0	.0	.0	1156.3	.0	5.3	1.9	2177.00
.01	.00	9.51	.00	.000	.025	.000	.000	2169.00	26.31
.006543	100.	100.	100.	20	8	0	.00	409.94	436.24

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 5250.000

3265 DIVIDED FLOW

5250.000	5.38	2174.38	2174.43	.00	2175.91	1.53	.68	.01	2180.00
11000.0	.0	11000.0	.0	.0	1107.0	.0	7.9	2.9	2177.00
.01	.00	9.94	.00	.000	.025	.000	.000	2169.00	24.25
.007116	100.	100.	100.	0	15	0	.00	393.15	435.71

*SECNO 5150.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTIONS 5150-4500 - UNLINED CHANNEL

5150.000	9.48	2172.48	2172.48	.00	2176.03	3.55	.63	.28	2175.00
11000.0	.0	11000.0	.0	.0	727.1	.0	10.0	3.5	2174.00
.01	.00	15.13	.00	.000	.025	.000	.000	2163.00	28.04
.005630	100.	100.	100.	20	17	0	.00	111.91	139.96

*SECNO 5050.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.49

5050.000	7.56	2167.56	2170.29	.00	2174.85	7.29	.80	.37	2177.00
11000.0	.0	11000.0	.0	.0	507.6	.0	11.4	3.7	2173.50
.01	.00	21.67	.00	.000	.025	.000	.000	2160.00	64.88
.012428	100.	100.	100.	9	8	0	.00	82.25	147.12

*SECNO 4950.000

3301 HV CHANGED MORE THAN HVINS

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

4950.000	10.49	2169.49	2169.83	.00	2172.84	3.35	.83	1.18	2180.00
11000.0	.0	11000.0	.0	.0	748.8	.0	12.9	3.9	2173.10
.01	.00	14.69	.00	.000	.025	.000	.000	2159.00	23.15
.005947	100.	100.	100.	4	11	0	.00	124.83	147.98

*SECNO 4850.000

3301 HV CHANGED MORE THAN HVINS

4850.000	8.53	2166.53	2168.11	.00	2171.95	5.41	.69	.21	2181.00
11000.0	.0	11000.0	.0	.0	589.2	.0	14.4	4.2	2171.80
.02	.00	18.67	.00	.000	.025	.000	.000	2158.00	56.94
.008072	100.	100.	100.	7	8	0	.00	86.13	143.06

*SECNO 4750.000

4750.000	8.33	2165.33	2166.72	.00	2171.07	5.74	.84	.03	2188.00
11000.0	.0	11000.0	.0	.0	572.2	.0	15.7	4.4	2170.20
.02	.00	19.22	.00	.000	.025	.000	.000	2157.00	58.33
.008783	100.	100.	100.	12	8	0	.00	85.33	143.67

*SECNO 4650.000

3301 HV CHANGED MORE THAN HVINS

4650.000	7.46	2163.46	2165.39	.00	2169.94	6.48	1.05	.07	2175.00
11000.0	.0	11000.0	.0	.0	538.5	.0	17.0	4.6	2170.00
.02	.00	20.43	.00	.000	.025	.000	.000	2156.00	58.07
.012858	100.	100.	100.	10	8	0	.00	99.26	157.33

*SECNO 4600.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

4600.000	9.09	2164.49	2165.04	.00	2168.95	4.47	.43	.55	2170.00
11000.0	.0	11000.0	.0	.0	648.6	.0	17.7	4.7	2168.00
.02	.00	16.96	.00	.000	.025	.000	.000	2155.40	55.02
.006204	50.	50.	50.	20	11	0	.00	89.95	144.98

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 4500.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4500.000	10.31	2164.51	2164.51	.00	2168.34	3.83	.55	.70	2165.00
11000.0	.0	11000.0	.0	.0	700.4	.0	19.2	4.9	2168.00
.02	.00	15.71	.00	.000	.025	.000	.000	2154.20	51.17
.004947	100.	100.	100.	20	8	0	.00	91.85	143.02

*SECNO 4465.000

3301 HV CHANGED MORE THAN HVINS

CROSS SECTIONS 4465-425 - CONCRETE LINED CHANNEL

- For Crystal Springs

4465.000	9.71	2162.54	2164.02	.00	2168.05	5.51	.12	.17	2163.13
11000.0	.0	11000.0	.0	.0	583.9	.0	19.7	4.9	2163.13
.02	.00	18.84	.00	.000	.015	.000	.000	2152.83	62.58
.002583	35.	35.	35.	6	8	0	.00	74.85	137.43

*SECNO 4455.000

7185 MINIMUM SPECIFIC ENERGY

4455.000	9.77	2162.57	2163.96	.00	2168.00	5.43	.03	.02	2164.00
11000.0	.0	11000.0	.0	.0	588.1	.0	19.9	5.0	2164.00
.02	.00	18.70	.00	.000	.015	.000	.000	2152.80	41.48
.002530	10.	10.	10.	0	9	0	.00	75.04	116.52

*SECNO 4355.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

4355.000	10.33	2162.83	2163.64	.00	2167.51	4.68	.27	.23	2164.90
11000.0	.0	11000.0	.0	.0	633.8	.0	21.3	5.2	2164.88
.02	.00	17.35	.00	.000	.015	.000	.000	2152.50	28.99
.002838	100.	100.	100.	0	9	0	.00	100.01	129.01

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 4330.000

7185 MINIMUM SPECIFIC ENERGY

4330.000	10.49	2162.91	2163.58	.00	2167.38	4.47	.07	.06	2165.70
11000.0	.0	11000.0	.0	.0	648.2	.0	21.6	5.2	2165.40
.02	.00	16.97	.00	.000	.015	.000	.000	2152.42	28.99
.002638	25.	25.	25.	0	8	0	.00	100.01	129.01

*SECNO 4210.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4210.000	11.35	2163.41	2163.41	.00	2167.07	3.67	.27	.19	2165.40
11000.0	.0	11000.0	.0	.0	716.0	.0	23.5	5.5	2165.80
.03	.00	15.36	.00	.000	.015	.000	.000	2152.06	28.97
.001922	120.	120.	120.	20	8	0	.00	100.06	129.02

*SECNO 4090.000

4090.000	11.29	2162.99	2163.19	.00	2166.82	3.83	.24	.02	2164.50
11000.0	.0	11000.0	.0	.0	700.3	.0	25.5	5.8	2166.10
.03	.00	15.71	.00	.000	.015	.000	.000	2151.70	28.95
.002059	120.	120.	120.	2	5	0	.00	100.05	129.00

*SECNO 3970.000

3970.000	11.12	2162.46	2162.77	.00	2166.55	4.09	.24	.03	2163.70
11000.0	.0	11000.0	.0	.0	677.7	.0	27.4	6.0	2166.50
.03	.00	16.23	.00	.000	.015	.000	.000	2151.34	28.94
.001942	120.	120.	120.	3	5	0	.00	87.56	116.50

*SECNO 3850.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3850.000	11.29	2162.27	2162.67	.00	2166.33	4.06	.23	.01	2163.40
11000.0	.0	11000.0	.0	.0	680.2	.0	29.2	6.3	2166.10
.03	.00	16.17	.00	.000	.015	.000	.000	2150.98	28.94
.001926	120.	120.	120.	20	8	0	.00	87.94	116.87

SECNO	DEPTH	CWSEL	CRWS	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 3730.000

3730.000	11.05	2161.67	2162.28	.00	2166.05	4.38	.25	.03	2162.90
11000.0	.0	11000.0	.0	.0	654.7	.0	31.1	6.5	2165.50
.03	.00	16.80	.00	.000	.015	.000	.000	2150.62	28.94
.002173	120.	120.	120.	5	8	0	.00	87.95	116.90

*SECNO 3700.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3700.000	11.16	2161.69	2162.30	.00	2166.05	4.36	.06	.04	2163.00
11000.0	.0	11000.0	.0	.0	656.8	.0	31.5	6.6	2165.30
.03	.00	16.75	.00	.000	.015	.000	.000	2150.53	28.94
.002148	30.	30.	30.	20	8	0	.00	87.84	116.79

*SECNO 3670.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3670.000	11.26	2161.70	2162.30	.00	2166.02	4.33	.06	.03	2163.00
11000.0	.0	11000.0	.0	.0	658.8	.0	32.0	6.6	2165.00
.03	.00	16.70	.00	.000	.015	.000	.000	2150.44	28.94
.002126	30.	30.	30.	20	8	0	.00	87.79	116.73

*SECNO 3640.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3640.000	11.38	2161.73	2162.29	.00	2166.00	4.27	.06	.00	2163.10
11000.0	.0	11000.0	.0	.0	663.1	.0	32.4	6.7	2165.00
.04	.00	16.59	.00	.000	.015	.000	.000	2150.35	28.95
.002082	30.	30.	30.	20	8	0	.00	87.79	116.74

*SECNO 3610.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

3610.000	11.43	2161.69	2162.39	.00	2165.98	4.29	.06	2.67	2160.10
11000.0	29.2	10970.8	.0	12.6	659.0	.0	32.9	6.8	2164.80
.04	2.31	16.65	.00	.025	.015	.000	.000	2150.26	13.10
.002060	30.	30.	30.	20	8	0	.00	103.48	116.58

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 3425.000

3301 HV CHANGED MORE THAN HVINS

3425.000	10.69	2160.21	2161.57	.00	2165.45	5.23	.44	.09	2159.30
11000.0	4.0	10996.0	.0	2.2	598.9	.0	35.6	7.2	2163.80
.04	1.85	18.36	.00	.025	.015	.000	.000	2149.52	24.30
.002785	185.	185.	185.	9	8	0	.00	90.94	115.25

*SECNO 3250.000

3250.000	10.47	2159.29	2160.88	.00	2164.89	5.61	.52	.04	2161.60
11000.0	.0	11000.0	.0	.0	578.8	.0	38.0	7.5	2163.00
.04	.00	19.00	.00	.000	.015	.000	.000	2148.82	28.98
.003129	175.	175.	175.	17	8	0	.00	85.80	114.78

*SECNO 3212.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3212.000	12.22	2160.89	2160.89	.00	2164.83	3.94	.09	.28	2162.10
11000.0	.0	11000.0	.0	.0	690.4	.0	38.5	7.6	2163.10
.04	.00	15.93	.00	.000	.015	.000	.000	2148.67	28.94
.001823	38.	38.	38.	20	11	0	.00	87.45	116.39

*SECNO 3175.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3175.000	12.47	2160.99	2160.99	.00	2165.11	4.12	.07	.34	2162.60
11000.0	.0	11000.0	.0	.0	675.4	.0	39.1	7.7	2163.00
.04	.00	16.29	.00	.000	.015	.000	.000	2148.52	28.95
.001940	37.	37.	37.	20	8	0	.00	86.82	115.77

*SECNO 3137.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

*SECNO 8948.000

3280 CROSS SECTION 8948.00 EXTENDED .54 FEET

3301 HV CHANGED MORE THAN HVINS

8948.000	8.73	2063.63	2063.82	.00	2065.89	2.26	.25	.30	2063.40
11500.0	402.8	10228.2	869.0	202.4	802.1	308.3	185.3	33.5	2060.90
.19	1.99	12.75	2.82	.040	.020	.040	.000	2054.90	.00
.001966	100.	100.	100.	2	11	0	.00	482.00	482.00

*SECNO 9048.000

3280 CROSS SECTION 9048.00 EXTENDED 1.51 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3710 WSEL ASSUMED BASED ON MIN DIFF

9048.000	9.11	2063.51	2063.60	.00	2065.18	1.68	.21	.17	2063.40
11500.0	1550.2	9949.8	.0	648.4	894.2	.0	188.6	34.8	2063.10
.20	2.39	11.13	.00	.040	.020	.000	.000	2054.40	.00
.002204	100.	100.	100.	20	11	0	.00	650.00	650.00

THIS RUN EXECUTED 14MAY93 10:36:21

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

DUCK CREEK FINAL RUN

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	5550.000	11000.00	2176.28	.00	2171.00	.00	34.88	466.35	419.94	9.56	1150.04	5.28
*	5450.000	11000.00	2175.73	.00	2170.30	100.00	21.36	467.28	434.48	9.56	1150.65	5.43
*	5350.000	11000.00	2175.20	.00	2169.00	100.00	26.31	436.24	409.94	9.51	1156.27	6.20
	5250.000	11000.00	2174.38	.00	2169.00	100.00	24.25	435.71	393.15	9.94	1106.96	5.38
*	5150.000	11000.00	2172.48	.00	2163.00	100.00	28.04	139.96	111.91	15.13	727.07	9.48
*	5050.000	11000.00	2167.56	.00	2160.00	100.00	64.88	147.12	82.25	21.67	507.55	7.56
*	4950.000	11000.00	2169.49	.00	2159.00	100.00	23.15	147.98	124.83	14.69	748.80	10.49
	4850.000	11000.00	2166.53	.00	2158.00	100.00	56.94	143.06	86.13	18.67	589.21	8.53
	4750.000	11000.00	2165.33	.00	2157.00	100.00	58.33	143.67	85.33	19.22	572.22	8.33
	4650.000	11000.00	2163.46	.00	2156.00	100.00	58.07	157.33	99.26	20.43	538.50	7.46
*	4600.000	11000.00	2164.49	.00	2155.40	50.00	55.02	144.98	89.95	16.96	648.61	9.09
*	4500.000	11000.00	2164.51	.00	2154.20	100.00	51.17	143.02	91.85	15.71	700.40	10.31
	4465.000	11000.00	2162.54	.00	2152.83	35.00	62.58	137.43	74.85	18.84	583.94	9.71
*	4455.000	11000.00	2162.57	.00	2152.80	10.00	41.48	116.52	75.04	18.70	588.14	9.77
*	4355.000	11000.00	2162.83	.00	2152.50	100.00	28.99	129.01	100.01	17.35	633.83	10.33
*	4330.000	11000.00	2162.91	.00	2152.42	25.00	28.99	129.01	100.01	16.97	648.17	10.49
*	4210.000	11000.00	2163.41	.00	2152.06	120.00	28.97	129.02	100.06	15.36	715.96	11.35

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
	4090.000	11000.00	2162.99	.00	2151.70	120.00	28.95	129.00	100.05	15.71	700.33	11.29
	3970.000	11000.00	2162.46	.00	2151.34	120.00	28.94	116.50	87.56	16.23	677.72	11.12
*	3850.000	11000.00	2162.27	.00	2150.98	120.00	28.94	116.87	87.94	16.17	680.23	11.29
	3730.000	11000.00	2161.67	.00	2150.62	120.00	28.94	116.90	87.95	16.80	654.70	11.05
*	3700.000	11000.00	2161.69	.00	2150.53	30.00	28.94	116.79	87.84	16.75	656.81	11.16
*	3670.000	11000.00	2161.70	.00	2150.44	30.00	28.94	116.73	87.79	16.70	658.76	11.26
*	3640.000	11000.00	2161.73	.00	2150.35	30.00	28.95	116.74	87.79	16.59	663.06	11.38
*	3610.000	11000.00	2161.69	.00	2150.26	30.00	13.10	116.58	103.48	16.65	671.69	11.43
	3425.000	11000.00	2160.21	.00	2149.52	185.00	24.30	115.25	90.94	18.36	601.05	10.69
	3250.000	11000.00	2159.29	.00	2148.82	175.00	28.98	114.78	85.80	19.00	578.85	10.47
*	3212.000	11000.00	2160.89	.00	2148.67	38.00	28.94	116.39	87.45	15.93	690.40	12.22
*	3175.000	11000.00	2160.99	.00	2148.52	37.00	28.95	115.77	86.82	16.29	675.37	12.47
*	3137.000	11000.00	2161.38	.00	2148.37	38.00	28.96	115.35	86.39	16.14	681.49	13.01
*	3100.000	11000.00	2161.58	.00	2148.22	37.00	28.96	114.57	85.60	16.38	671.49	13.36
*	3040.000	11000.00	2161.66	.00	2147.98	60.00	28.95	113.71	84.75	16.26	676.62	13.68
	2925.000	11000.00	2160.41	.00	2147.52	115.00	26.52	112.05	85.53	17.97	612.69	12.89
	2773.000	11000.00	2159.50	.00	2146.91	152.00	27.50	111.42	83.92	18.77	586.33	12.59
	2465.000	11000.00	2157.90	.00	2145.68	308.00	34.88	110.78	75.91	19.80	555.57	12.22
	2275.000	11000.00	2156.88	.00	2144.92	190.00	41.22	110.20	68.98	20.43	538.34	11.96
	1948.000	11000.00	2155.31	.00	2143.61	327.00	41.79	109.64	67.85	21.18	519.36	11.70
	1810.000	11000.00	2154.71	.00	2143.06	138.00	41.98	109.60	67.62	21.35	515.13	11.65
	1718.000	11000.00	2154.92	.00	2142.69	92.00	41.75	110.67	68.92	20.24	543.36	12.23
*	1631.000	11000.00	2157.09	.00	2142.34	87.00	42.22	115.79	73.57	16.92	650.29	14.75
	1528.000	11000.00	2155.90	.00	2141.93	103.00	43.81	114.20	70.39	18.54	593.20	13.97
	1455.000	11000.00	2153.88	.00	2141.60	73.00	18.27	87.72	69.44	21.21	518.59	12.28
	1400.000	11000.00	2153.60	.00	2141.40	55.00	12.25	81.77	69.51	21.34	515.55	12.20

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	1350.000	11000.00	2156.39	.00	2141.20	50.00	16.09	84.05	67.96	17.45	630.23	15.19
	1286.000	11000.00	2155.82	.00	2141.00	64.00	16.76	83.40	66.64	18.19	604.80	14.82
	1200.000	11000.00	2155.02	.00	2140.70	86.00	17.48	82.70	65.22	19.15	574.50	14.32
	1150.000	11000.00	2153.09	.00	2140.50	50.00	17.33	82.84	65.51	21.71	506.71	12.59
	1062.000	11000.00	2152.55	.00	2140.10	88.00	17.44	82.74	65.30	22.01	499.85	12.45
*	1050.000	11000.00	2145.68	.00	2134.00	12.00	24.81	75.60	50.79	28.64	384.11	11.68
	1025.000	11000.00	2144.95	.00	2133.80	25.00	23.26	77.11	53.85	28.67	383.66	11.15
	975.000	11000.00	2145.72	.00	2133.60	50.00	19.95	80.31	60.37	24.08	456.79	12.12
*	925.000	11000.00	2146.15	.00	2133.30	50.00	16.97	83.19	66.22	21.09	521.68	12.85
*	883.000	11000.00	2146.47	.00	2133.10	42.00	15.91	84.22	68.31	19.75	556.91	13.37
	879.000	11000.00	2141.44	.00	2129.00	4.00	22.61	77.74	55.13	25.23	435.98	12.44
*	850.000	11000.00	2143.29	.00	2128.80	29.00	13.64	86.41	72.76	17.30	635.77	14.49
*	785.000	11000.00	2143.20	.00	2128.60	65.00	13.23	86.81	73.58	17.01	646.57	14.60
*	700.000	11000.00	2142.34	.00	2128.10	85.00	14.14	85.92	71.78	17.80	617.94	14.24
	612.000	11000.00	2141.48	.00	2127.70	88.00	14.89	85.21	70.32	18.71	588.04	13.78
*	600.000	11000.00	2134.00	.00	2121.60	12.00	24.61	75.80	51.19	26.81	410.32	12.40
	550.000	11000.00	2133.55	.00	2121.30	50.00	24.39	76.01	51.62	26.96	408.00	12.25
	502.000	11000.00	2132.95	.00	2121.10	48.00	28.33	76.33	48.00	27.33	402.56	11.85
*	425.000	11000.00	2133.38	.00	2118.50	77.00	18.56	80.52	61.96	18.17	605.39	14.88
*	160.000	11000.00	2124.75	.00	2117.40	140.00	1403.01	1543.49	140.48	21.01	523.68	7.35
*	260.000	11000.00	2125.24	.00	2116.90	100.00	1409.76	1562.81	153.04	13.25	829.99	8.34
*	360.000	11000.00	2124.22	.00	2116.50	100.00	1426.96	1579.56	152.61	13.34	824.86	7.72
*	460.000	11000.00	2124.59	.00	2115.70	100.00	1439.32	1580.68	141.36	13.59	809.49	8.89
	560.000	11000.00	2101.52	.00	2092.83	100.00	1420.29	1467.80	47.51	32.68	336.57	8.69
	600.000	11000.00	2102.52	.00	2093.39	40.00	1419.84	1468.26	48.42	30.72	358.12	9.13
	700.000	11000.00	2103.00	.00	2093.39	100.00	1419.36	1468.74	49.38	28.83	381.48	9.61

SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
800.000	11000.00	2103.54	.00	2093.39	100.00	1418.81	1469.29	50.47	26.93	408.48	10.15
900.000	11000.00	2104.19	.00	2093.39	100.00	1418.16	1469.95	51.79	24.89	441.95	10.80
1000.000	11000.00	2105.28	.00	2093.39	100.00	1417.07	1471.06	53.99	22.02	499.51	11.89
* 1100.000	11000.00	2106.12	.00	2093.39	100.00	1416.23	1471.90	55.68	20.17	545.37	12.73
* 1200.000	11000.00	2107.04	.00	2093.39	100.00	1415.30	1472.84	57.54	18.41	597.58	13.65
* 1300.000	11000.00	2107.62	.00	2093.95	100.00	1415.29	1472.85	57.56	18.38	598.33	13.67
* 1400.000	11000.00	2107.61	.00	2093.95	100.00	1415.29	1472.85	57.56	18.39	598.17	13.66
* 1500.000	11000.00	2107.61	.00	2093.95	100.00	1415.29	1472.85	57.56	18.39	598.23	13.66
* 1600.000	11000.00	2107.61	.00	2093.95	100.00	1415.29	1472.85	57.56	18.39	598.13	13.66
* 1700.000	11000.00	2107.61	.00	2093.95	100.00	1415.29	1472.85	57.56	18.39	598.13	13.66
* 1800.000	11000.00	2107.61	.00	2093.95	100.00	1415.29	1472.85	57.56	18.39	598.13	13.66
* 1900.000	11000.00	2107.61	.00	2093.95	100.00	1415.29	1472.85	57.56	18.39	598.13	13.66
* 2000.000	11000.00	2107.99	.00	2094.33	100.00	1415.29	1472.85	57.56	18.39	598.13	13.66
2100.000	11000.00	2104.35	.00	2092.92	100.00	1417.53	1470.59	53.06	23.16	474.95	11.43
2124.900	11000.00	2103.56	.00	2092.45	24.90	1417.85	1470.26	52.42	24.02	458.01	11.11
* 2224.900	11000.00	2086.43	.00	2083.09	100.00	106.97	193.02	86.05	40.59	271.00	3.34
2400.000	11500.00	2086.93	.00	2082.84	175.10	105.83	194.15	88.31	34.14	336.83	4.09
2250.000	11500.00	2086.90	.00	2082.35	150.00	105.16	194.83	89.67	30.51	376.90	4.55
* 2600.000	11500.00	2090.63	.00	2084.82	50.00	103.26	196.72	93.46	23.36	492.38	5.81
2800.000	11500.00	2088.86	.00	2083.17	200.00	103.45	196.53	93.09	23.91	480.92	5.69
2900.000	11500.00	2088.06	.00	2082.40	100.00	103.49	196.49	93.00	24.05	478.22	5.66
* 3000.000	11500.00	2093.20	.00	2084.82	100.00	100.00	200.00	100.00	15.49	742.57	8.38
* 3200.000	11500.00	2087.93	.00	2081.96	200.00	103.02	196.96	93.94	22.66	507.50	5.97
3250.000	11500.00	2087.43	.00	2081.52	50.00	103.11	196.86	93.75	22.93	501.59	5.91
3296.000	11500.00	2086.58	.00	2080.64	46.44	103.12	196.91	91.13	23.58	487.80	5.94
3349.000	11500.00	2086.97	.00	2080.64	53.50	102.53	197.49	92.30	21.97	523.45	6.32

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	3403.000	11500.00	2089.16	.00	2080.17	53.50	100.00	200.00	92.46	17.56	654.92	8.99
*	3450.000	11500.00	2076.62	.00	2072.26	46.66	105.45	194.53	89.08	32.00	359.38	4.36
	3500.000	11500.00	2077.34	.00	2072.70	50.00	105.01	194.98	89.97	29.80	385.91	4.64
	3600.000	11500.00	2078.97	.00	2073.58	100.00	103.89	196.09	92.20	25.35	453.67	5.39
	3800.000	11500.00	2079.99	.00	2073.58	200.00	102.36	197.62	95.26	20.94	549.12	6.41
*	4000.000	11500.00	2081.52	.00	2073.58	200.00	100.06	199.91	99.85	16.47	698.26	7.94
	4200.000	11500.00	2079.37	.00	2072.42	200.00	101.53	198.44	96.91	19.11	601.85	6.95
*	4268.700	11500.00	2079.57	.00	2072.56	68.70	101.46	198.51	97.05	18.96	606.40	7.01
	4400.000	11500.00	2080.15	.00	2071.82	131.30	100.00	200.00	100.00	15.59	737.54	8.33
*	6400.000	11500.00	2078.15	.00	2070.30	200.00	7.18	99.18	92.00	17.94	641.13	7.85
*	6400.000	11500.00	2077.85	.00	2069.20	200.00	1.96	100.00	98.04	15.63	735.57	8.65
	6800.000	11500.00	2076.42	.00	2068.10	200.00	1.11	99.88	98.76	16.27	707.04	8.32
*	7000.000	11500.00	2075.62	.00	2067.00	200.00	1.00	100.00	99.00	15.60	737.14	8.62
	7293.000	11500.00	2073.46	.00	2065.30	293.00	3.37	102.63	99.26	16.56	694.58	8.16
*	7393.000	11500.00	2072.90	.00	2064.70	100.00	6.11	108.70	102.59	16.16	711.67	8.20
*	7593.000	11500.00	2072.37	.00	2063.60	200.00	247.00	359.00	112.00	15.13	760.29	8.77
	7793.000	11500.00	2070.19	.00	2062.50	200.00	.00	305.94	117.09	17.48	695.29	7.69
*	7993.000	11500.00	2070.18	.00	2061.40	200.00	147.00	259.00	112.00	15.18	760.82	8.78
	8193.000	11500.00	2068.29	.00	2060.30	200.00	92.63	191.37	98.75	16.97	677.71	7.99
	8311.000	11500.00	2066.46	.00	2059.70	118.00	51.70	161.69	109.99	18.71	614.78	6.76
*	8317.000	11500.00	2064.70	.00	2057.90	6.00	.00	704.67	619.24	11.16	1299.44	6.80
*	8453.000	11500.00	2066.15	.00	2057.60	136.00	.00	701.48	642.47	11.47	1662.77	8.55
*	8458.000	11500.00	2065.56	.00	2057.60	5.00	.00	695.61	595.91	11.89	1743.48	7.96
*	8648.000	11500.00	2065.35	.00	2056.60	195.00	.00	625.00	625.00	11.56	1755.59	8.75
*	8848.000	11500.00	2063.19	.00	2055.50	200.00	272.00	586.67	314.67	15.10	1034.34	7.69
	8948.000	11500.00	2063.63	.00	2054.90	100.00	.00	482.00	482.00	12.75	1312.87	8.73

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	9048.000	11500.00	2063.51	.00	2054.40	100.00	.00	650.00	650.00	11.13	1542.59	9.11

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 5550.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 5450.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5450.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5450.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 5350.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5350.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5350.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 5150.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5150.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 5150.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 5050.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 4950.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 4600.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 4600.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 4500.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 4500.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 4500.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 4455.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 4355.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 4330.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 4210.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 4210.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 4210.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 3850.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 3850.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 3700.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 3700.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 3670.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 3670.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 3640.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 3640.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 3610.000 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 3610.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 3212.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO=	3212.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3212.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3175.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3175.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3175.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3137.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3137.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3137.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3100.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3100.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3100.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	3040.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	3040.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	3040.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1631.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1631.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1631.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	1350.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	1350.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	1350.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	1050.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	925.000	PROFILE=	1	WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=	925.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	883.000	PROFILE=	1	WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=	883.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	850.000	PROFILE=	1	WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=	850.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	785.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	785.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	785.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	700.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	600.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	425.000	PROFILE=	1	WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=	425.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	160.000	PROFILE=	1	WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=	160.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	260.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	260.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY

DUCK CREEK

**(PEBBLE ROAD TO CONFLUENCE
WITH DUCK CREEK TRIBUTARY)**

**RMDUCK: Main Channel Reach of Duck Creek
Using 1992 Topography, 49pp**

**DIVDNEW: Divided Flow Reach of Duck Creek
Using 1992 Topography, 20pp**

THIS RUN EXECUTED 14MAY93 11:20:12

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 Clark County, Nevada FIS - 100-year flood (REVISED BY MBJ)
 T2 James M. Montgomery, Consulting Engineers, Inc. (ORIGINAL DECK)
 T3 DUCK CREEK FINAL 100-yr SUB-CRITICAL RUN UPSTREAM OF LOMRS AND CLOMRS

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2							2164.49	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1		-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	150	200								
QT	2	11000	11000							
ET			10.4							
NC	.025	.025	.025	.1	.3					
X1 (A)	4500	14	50	150	35	35	35	0		
GR	2189.4	0	2189	16	2188	22	2187	23	2170	28
GR	2165	50	2160	62	2155	72	2154.2	98	2155	124
GR	2160	134	2163	140	2165	144	2168	150		
X1	4600	15	44	150	100	100	100	0		
GR	2188	0	2186	4	2185	12	2180	22	2175	32
GR	2170	44	2165	54	2160	64	2155.4	74	2155.4	126
GR	2160	136	2165	146	2166	147	2167	148	2168	150
X1	4650	15	35	170	50	50	50			1
GR	2189	0	2185	11	2180	24	2175	35	2165	55
GR	2160	65	2156	74	2156	100	2156	126	2160	135
GR	2161	140	2162	150	2164	160	2170	170	2177	184
X1	4750	14	56	230	100	100	100			1
GR	2188	0	2189	7	2189	33	2185	44	2188	56
GR	2166	57	2157	75	2157	89	2157	103	2157	111
GR	2157	127	2170	153	2170.2	230	2177	244		
X1	4850	14	14	300	100	100	100			1
GR	2179.3	0	2180	10	2181	14	2180	19	2170	26
GR	2167	36	2167	48	2167	56	2158	74	2158	94
GR	2158	126	2170	150	2171.8	300	2177	310		

X1 (B)	4950	13	11	392	100	100	100			1
GR	2183.2	0	2180	11	2170	13	2169	33	2169	37
GR	2169	61	2159	75	2159	82	2159	105	2159	127
GR	2171	151	2173.1	392	2177	400				
X1	5050	11	0	425	100	100	100			1
GR	2177	0	2170	16	2169	21	2169	47	2170	60
GR	2160	80	2160	106	2160	132	2172	156	2173.5	425
GR	2177	432								
X1 (C)	5150	14	23	430	100	100	100			1
GR	2178	0	2177	8	2175	23	2170	33	2170	55
GR	2163	69	2163	83	2163	90	2163	94	2163	102
GR	2163	121	2173	141	2174	430	2177	436		
X1	5250	32	11	452	100	100	100			
GR	2185	0	2180	11	2175	23	2171	31	2170	67
GR	2169.6	75	2170	81	2175	93	2174	120	2171	141
GR	2170	142	2169.5	145	2170	153	2172	160	2173	178
GR	2172	195	2171	197	2170	210	2169	223	2170	233
GR	2172	245	2172	320	2171	345	2170	360	2171	370
GR	2172	373	2172	375	2172	403	2173	424	2175	441
GR	2175	448	2177	452						
X1	5350	33	10	452	100	100	100			
GR	2185	0	2180	10	2175	27	2170	37	2170	48
GR	2171	78	2172	83	2173	89	2174	90	2174	112
GR	2173	135	2172	140	2171	141	2170	145	2171	150
GR	2172	155	2172	185	2172	210	2170	212	2169	220
GR	2170	226	2173	229	2174	237	2174	252	2173	263
GR	2173	366	2171	391	2171	407	2172	409	2175	434
GR	2176	445	2176	450	2177	452				
X1	5450	36	0	482	100	100	100			
GR	2180	0	2175	25	2175	35	2177	47	2175	53
GR	2171	57	2170.3	61	2171	73	2172	111	2175	121
GR	2175	140	2174	148	2173	164	2172	177	2171	185
GR	2171	245	2173	250	2173	263	2174	271	2175	280
GR	2174	290	2174	355	2174	400	2173	430	2172	442
GR	2172	450	2175	460	2176	470	2177	482	2177	522
GR	2176	534	2176	555	2176	583	2177	605	2178	615
GR	2180	622								
X1	5550	29	0	620	100	100	100			
GR	2185	0	2180	20	2175	40	2171	52	2172	85
GR	2173	91	2174	96	2175	106	2177	120	2175	138
GR	2171	152	2172	172	2173	228	2174	280	2174	310
GR	2175	360	2175	400	2172	404	2172	424	2174	430
GR	2173	443	2175	448	2176	463	2177	475	2177	505
GR	2177	530	2178	562	2179	595	2180	620		

ET			10.4							
NC	.04	.04	.04	.6	.8					
CROSS SECTION D										
X1 (D) 6400	26	2381	2846	200	200	200				
GR 2193.6	2000	2188.8	2049	2184.7	2102	2182.5	2190	2182.7	2212	
GR 2181.6	2225	2188.9	2247	2179.0	2276	2176.9	2344	2176.7	2381	
GR 2173.2	2392	2173.2	2433	2176.4	2440	2174.8	2507	2174.9	2605	
GR 2174.6	2643	2171.2	2661	2171.6	2691	2175.8	2700	2174.9	2744	
GR 2174.7	2784	2172.8	2806	2172.4	2826	2176.6	2846	2181.9	2887	
GR 2191.7	2944									

NC		.1	.3							
CROSS SECTION E - DOWNSTREAM TIE IN POINT FOR DIVIDED FLOW										
X1 (E) 6500	18	2805	3336	1110	1125	1150				
GR 2191.7	2799	2191.7	2799	2191.7	2799	2191.7	2805	2187.9	2824	
GR 2185.3	2860	2182.8	2900	2182.0	2937	2178.4	2955	2178.4	2964	
GR 2183.2	2979	2183.0	3031	2182.6	3089	2183.0	3164	2184.9	3280	
GR 2188.5	3336	2196.5	3377	2201.2	3406					

QT 2	9500	9500								
X1 (F) 6600	35	2927	3317	1100	1190	1150				
GR 2200.2	2367	2200.2	2367	2200.2	2367	2200.2	2367	2200.2	2367	
GR 2191.6	2394	2190.1	2535	2189.2	2541	2189.7	2545	2190.9	2603	
GR 2190.9	2683	2190.6	2748	2191.4	2822	2191.4	2828	2187.0	2844	
GR 2187.0	2849	2190.5	2856	2190.5	2885	2191.2	2927	2190.0	2944	
GR 2191.5	2978	2189.3	3012	2191.8	3056	2190.3	3102	2187.5	3120	
GR 2187.5	3141	2191.6	3149	2191.6	3174	2189.7	3183	2190.7	3194	
GR 2192.1	3256	2192.4	3317	2192.2	3350	2193.6	3437	2196	3570	

X1 (G) 6700	22	2541	2949	1030	980	1050				
GR 2204.1	2541	2204.1	2541	2204.1	2541	2204.1	2541	2204.1	2541	
GR 2203.0	2553	2201.9	2598	2198.0	2674	2195.3	2682	2195.3	2689	
GR 2200.6	2696	2199.6	2720	2195.6	2748	2195.6	2760	2198.2	2828	
GR 2199.3	2863	2197.0	2921	2197.0	2928	2198.4	2933	2210.6	2949	
GR 2211.7	2974	2210.7	3006							

X1 (H) 6800	20	2264	2507	820	765	790				
GR 2212.0	2258	2212.0	2258	2212.0	2258	2212.0	2258	2212.0	2264	
GR 2209.4	2274	2202.8	2291	2204.7	2298	2204.7	2306	2202.4	2317	
GR 2204.0	2324	2204.8	2350	2202.0	2359	2204.2	2369	2205.0	2396	
GR 2206.4	2435	2207.1	2507	2216.1	2544	2216.0	2617	2215.9	2649	

X1 (I) 6900	20	2290	2511	945	730	880				
GR 2216.0	2257	2216.0	2257	2216.0	2257	2216.0	2257	2216.0	2257	
GR 2216.0	2263	2210.7	2290	2210.7	2330	2206.6	2340	2206.6	2343	
GR 2209.4	2350	2210.4	2394	2206.7	2416	2206.7	2441	2209.5	2463	
GR 2210.6	2511	2214.4	2537	2220.0	2566	2220.6	2633	2220.3	2685	

X1 (J)	7000	11	2293	2505	430	415	420			
GR	2222.1	2000	2217.7	2071	2215.5	2173	2213.9	2239	2213.9	2293
GR	2213.1	2323	2213.4	2362	2213.4	2419	2213.4	2447	2214.5	2505
GR	2220	2600								

X1	7050	8	2248	2703	990	1145	1110			
GR	2228	2000	2224	2248	2224	2385	2224	2438	2220	2570
GR	2220	2578	2224	2703	2225.7	2955				

QT	2	11000	11000
ET			10.4

CROSS SECTION K - UPSTREAM TIE IN POINT FOR DIVIDED FLOW

X1 (K)	7100	22	2287	2509	545	580	570			
GR	2230.5	2000	2228.7	2163	2228.3	2287	2226.1	2325	2223.9	2343
GR	2223.9	2348	2225.4	2352	2226.8	2377	2225.4	2389	2224.0	2401
GR	2224.0	2410	2226.8	2420	2227.0	2447	2227.8	2482	2228.1	2509
GR	2226.0	2529	2225.9	2545	2227.3	2568	2228.4	2653	2228.7	2735
GR	2229.9	2835	2230.5	2950						

ET			5.4
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X1 (L)	7200	30	2459	2873	970	1040	1065			
GR	2240.1	2000	2236.9	2108	2235.9	2223	2235.6	2235	2235.0	2321
GR	2234.3	2364	2233.3	2372	2234.2	2382	2234.9	2438	2235.7	2459
GR	2234.2	2465	2234.2	2489	2235.4	2499	2235.4	2556	2235.5	2624
GR	2231.9	2643	2231.8	2657	2233.5	2673	2234.6	2717	2235.8	2750
GR	2235.8	2781	2236.6	2873	2236.4	2955	2235.9	3018	2235.9	3140
GR	2236.0	3230	2237.5	3301	2238.8	3402	2238.7	3470	2239.2	3554

QT	2	11000	11000
NC	.04	.04	.038
ET			10.4

CROSS SECTION M

X1 (M)	7300	15	2569	2859	810	785	800			
X4	1	2242.1	2515							
GR	2244.2	2130	2242.1	2515	2242.3	2569	2240.5	2599	2238.4	2631
GR	2238.4	2662	2240.1	2671	2241.1	2703	2238.5	2712	2238.5	2732
GR	2240.9	2744	2242.9	2859	2243.0	2936	2244	3210	2245	3250

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 4500.000 (A)

3720 CRITICAL DEPTH ASSUMED

4500.000	10.30	2164.50	2164.50	2164.49	2168.34	3.84	.00	.00	2165.00
11000.0	.0	11000.0	.0	.0	699.1	.0	.0	.0	2168.00
.00	.00	15.73	.00	.000	.025	.000	.000	2154.20	51.21
.004973	35.	35.	35.	0	4	0	.00	91.79	142.99

*SECNO 4600.000

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4600.000	9.64	2165.04	2165.04	.00	2168.89	3.85	.50	.00	2170.00
11000.0	.0	11000.0	.0	.0	698.8	.0	1.6	.2	2168.00
.00	.00	15.74	.00	.000	.025	.000	.000	2155.40	53.92
.005006	100.	100.	100.	2	11	0	.00	92.12	146.04

*SECNO 4650.000

3301 HV CHANGED MORE THAN HVINS

4650.000	10.99	2166.99	2165.39	.00	2169.23	2.24	.18	.16	2175.00
11000.0	.0	11000.0	.0	.0	916.0	.0	2.5	.3	2170.00
.00	.00	12.01	.00	.000	.025	.000	.000	2156.00	51.04
.002669	50.	50.	50.	13	8	0	.00	113.93	164.97

*SECNO 4750.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4750.000	9.71	2166.71	2166.71	.00	2170.62	3.92	.36	.50	2188.00
11000.0	.0	11000.0	.0	.0	692.6	.0	4.4	.6	2170.20
.00	.00	15.88	.00	.000	.025	.000	.000	2157.00	56.97
.005017	100.	100.	100.	20	11	0	.00	89.44	146.41

SECNO	DEPTH	CWSEL	CRWS	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 4850.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4850.000	10.06	2168.06	2168.06	.00	2171.42	3.36	.51	.06	2181.00
11000.0	.0	11000.0	.0	.0	748.0	.0	6.0	.8	2171.80
.01	.00	14.71	.00	.000	.025	.000	.000	2158.00	32.45
.005236	100.	100.	100.	20	8	0	.00	113.68	146.13

*SECNO 4950.000 (B)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

4950.000	10.82	2169.82	2169.82	.00	2172.82	3.00	.53	.04	2180.00
11000.0	.0	11000.0	.0	.0	790.8	.0	7.8	1.1	2173.10
.01	.00	13.91	.00	.000	.025	.000	.000	2159.00	16.61
.005330	100.	100.	100.	20	8	0	.00	132.03	148.64

*SECNO 5050.000

3301 HV CHANGED MORE THAN HVINS

5050.000	10.95	2170.95	.00	.00	2173.34	2.39	.45	.06	2177.00
11000.0	.0	11000.0	.0	.0	886.8	.0	9.7	1.4	2173.50
.01	.00	12.40	.00	.000	.025	.000	.000	2160.00	13.82
.003907	100.	100.	100.	5	0	0	.00	140.09	153.91

*SECNO 5150.000 (C)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

5150.000	11.23	2174.23	2174.23	.00	2175.68	1.45	.51	.09	2175.00
11000.0	.0	11000.0	.0	.0	1138.0	.1	12.0	2.0	2174.00
.01	.00	9.67	.05	.000	.025	.025	.000	2163.00	24.54
.006789	100.	100.	100.	20	9	0	.00	405.91	430.46

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 5250.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

5250.000	6.33	2175.33	.00	.00	2176.16	.84	.42	.06	2180.00
11000.0	.0	11000.0	.0	.0	1496.6	.0	15.1	3.0	2177.00
.02	.00	7.35	.00	.000	.025	.000	.000	2169.00	22.23
.002903	100.	100.	100.	3	0	0	.00	426.42	448.64

*SECNO 5350.000

5350.000	6.46	2175.46	.00	.00	2176.64	1.18	.37	.10	2180.00
11000.0	.0	11000.0	.0	.0	1261.8	.0	18.2	3.9	2177.00
.02	.00	8.72	.00	.000	.025	.000	.000	2169.00	25.44
.004948	100.	100.	100.	3	0	0	.00	413.63	439.06

*SECNO 5450.000

3265 DIVIDED FLOW

5450.000	5.67	2175.97	.00	.00	2177.16	1.19	.52	.00	2180.00
11000.0	.0	11000.0	.0	.0	1257.6	.0	21.1	4.9	2177.00
.02	.00	8.75	.00	.000	.025	.000	.000	2170.30	20.14
.005406	100.	100.	100.	2	0	0	.00	440.34	469.73

*SECNO 5550.000

3265 DIVIDED FLOW

5550.000	5.49	2176.49	.00	.00	2177.71	1.22	.54	.01	2185.00
11000.0	.0	11000.0	.0	.0	1238.5	.0	24.0	5.9	2180.00
.03	.00	8.88	.00	.000	.025	.000	.000	2171.00	34.05
.005453	100.	100.	100.	0	0	0	.00	426.63	468.86

CCHV= .600 CEHV= .800

*SECNO 6400.000 (D)

SECNO	DEPTH	CWSEL	CRWS	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

CROSS SECTION D

6400.000	7.35	2178.55	.00	.00	2179.01	.46	.83	.46	2176.70
11000.0	280.6	10689.0	30.3	108.2	1943.0	14.6	31.6	8.2	2176.60
.04	2.59	5.50	2.08	.040	.040	.040	.000	2171.20	2290.79
.003287	200.	200.	200.	3	0	0	.00	570.24	2861.03

CCHV= .100 CEHV= .300

*SECNO 6500.000 (E)

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION E - DOWNSTREAM TIE IN POINT FOR DIVIDED FLOW

6500.000	7.30	2185.70	2185.70	.00	2187.11	1.40	7.42	.28	2191.70
11000.0	.0	11000.0	.0	.0	1157.1	.0	74.1	21.5	2188.50
.07	.00	9.51	.00	.000	.040	.000	.000	2178.40	2854.44
.017999	1110.	1150.	1125.	10	5	0	.00	438.04	3292.48

*SECNO 6600.000 (F)

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.32

6600.000	6.47	2193.47	.00	.00	2193.68	.21	6.45	.12	2191.20
9500.0	5667.6	3683.4	149.0	1506.4	1036.1	89.0	123.3	40.7	2192.40
.16	3.76	3.55	1.68	.040	.040	.040	.000	2187.00	2388.12
.002503	1100.	1150.	1190.	8	0	0	.00	1040.93	3429.05

*SECNO 6700.000 (G)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

6700.000	5.75	2201.05	2201.05	.00	2202.59	1.54	5.47	.40	2204.10
9500.0	.0	9500.0	.0	.0	954.8	.0	166.1	56.9	2210.60
.19	.00	9.95	.00	.000	.040	.000	.000	2195.30	2614.47
.017106	1030.	1050.	980.	20	15	0	.00	322.02	2936.48

*SECNO 6800.000 (H)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.52

6800.000	7.94	2209.94	.00	.00	2211.12	1.18	8.49	.04	2212.00
9500.0	.0	9434.5	65.5	.0	1078.8	16.6	184.6	62.1	2207.10
.21	.00	8.75	3.95	.000	.040	.040	.000	2202.00	2271.93
.007376	820.	790.	765.	5	0	0	.00	246.74	2518.67

*SECNO 6900.000 (I)

6900.000	8.30	2214.90	.00	.00	2215.69	.79	4.53	.04	2210.70
9500.0	167.5	9076.0	256.4	45.1	1252.2	63.2	209.4	67.3	2210.60
.25	3.72	7.25	4.06	.040	.040	.040	.000	2206.60	2268.57
.003810	945.	880.	730.	4	0	0	.00	271.05	2539.62

*SECNO 7000.000 (J)

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

7000.000	4.07	2217.17	.00	.00	2218.14	.98	2.40	.06	2213.90
9500.0	2678.0	6554.0	268.0	403.6	769.5	61.4	221.9	70.8	2214.50
.26	6.64	8.52	4.36	.040	.040	.040	.000	2213.10	2095.72
.009423	430.	420.	415.	2	0	0	.00	455.34	2551.06

*SECNO 7050.000

3280 CROSS SECTION 7050.00 EXTENDED .15 FEET

7050.000	5.85	2225.85	.00	.00	2226.38	.53	8.19	.04	2224.00
9500.0	292.8	8474.6	732.6	106.2	1388.3	252.3	259.3	86.8	2224.00
.31	2.76	6.10	2.90	.040	.040	.040	.000	2220.00	2133.22
.006102	990.	1110.	1145.	5	0	0	.00	821.78	2955.00

SECNO	DEPTH	CWSEL	CRWS	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 7100.000 (K)

CROSS SECTION K - UPSTREAM TIE IN POINT FOR DIVIDED FLOW

7100.000	6.08	2229.98	.00	.00	2230.82	.84	4.34	.09	2228.30
11000.0	1053.9	6496.3	3449.8	256.9	781.1	566.7	281.2	97.4	2228.10
.34	4.10	8.32	6.09	.040	.040	.040	.000	2223.90	2047.38
.009425	545.	570.	580.	3	0	0	.00	802.36	2849.74

*SECNO 7200.000 (L)

3301 HV CHANGED MORE THAN HVINS

7200.000	5.80	2237.60	.00	.00	2237.94	.34	7.07	.05	2235.70
11000.0	3753.4	5199.4	2047.2	780.1	1049.7	597.0	329.1	121.2	2236.60
.40	4.81	4.95	3.43	.040	.040	.040	.000	2231.80	2084.47
.005153	970.	1065.	1040.	4	0	0	.00	1224.08	3308.55

CCHV= .100 CEHV= .300

*SECNO 7300.000 (M)

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

CROSS SECTION M

7300.000	5.71	2244.11	2244.11	.00	2244.97	.86	5.18	.16	2242.30
11000.0	1806.7	8445.5	747.8	474.8	1022.4	257.8	367.5	142.2	2242.90
.43	3.81	8.26	2.90	.040	.038	.040	.000	2238.40	2145.94
.008349	810.	800.	785.	3	5	0	.00	1068.59	3214.52

T1 Method 4 Floodway Profile - Equal Conveyance
T2 Upstream of reach with LOMRs and CLOMRs
T3 DUCK CREEK FINAL 100-yr 100-Year Floodway

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2164.49	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

*PROF 2

CCHV= .100 CEHV= .300

*SECNO 4500.000 (A)

2800 NAT Q1= 1559.88 WSEL= 2164.50 ENC Q1= 1877.79 WSEL= 2165.50 RATIO= -.2038

NAT Q1= 1878. RATIOS LOB, CH, ROB= .0001 .9999 .0000 WSEL= 2165.50

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	50.0	150.0	TYPE=	4	TARGET=	.000			
4500.000	10.30	2164.50	2164.50	2164.50	2168.34	3.84	.00	.00	2165.00
11000.0	.0	11000.0	.0	.0	699.3	.0	.0	.0	2168.00
.00	.00	15.73	.00	.000	.025	.000	.000	2154.20	51.20
.004968	35.	35.	35.	0	4	0	.00	91.80	143.00

*SECNO 4600.000

2800 NAT Q1= 1554.77 WSEL= 2165.04 ENC Q1= 1870.33 WSEL= 2166.04 RATIO= -.2030

NAT Q1= 1870. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2166.04

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	44.0	150.0	TYPE=	4	TARGET=	.000			
4600.000	9.64	2165.04	2165.04	2165.04	2168.89	3.85	.50	.00	2170.00
11000.0	.0	11000.0	.0	.0	698.8	.0	1.6	.2	2168.00
.00	.00	15.74	.00	.000	.025	.000	.000	2155.40	53.92
.005006	100.	100.	100.	0	11	0	.00	92.12	146.04

*SECNO 4650.000

2800 NAT Q1= 2129.17 WSEL= 2166.99 ENC Q1= 2538.75 WSEL= 2167.99 RATIO= -.1924

NAT Q1= 2539. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2167.99

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=	35.0	170.0	TYPE=	4	TARGET=	.000			
4650.000	10.99	2166.99	2165.39	2166.99	2169.23	2.24	.18	.16	2175.00
11000.0	.0	11000.0	.0	.0	916.0	.0	2.5	.3	2170.00
.00	.00	12.01	.00	.000	.025	.000	.000	2156.00	51.04
.002669	50.	50.	50.	18	8	0	.00	113.93	164.97

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 4750.000

2800 NAT Q1= 1552.99 WSEL= 2166.71 ENC Q1= 1863.30 WSEL= 2167.71 RATIO= -.1998
 NAT Q1= 1863. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2167.71

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	56.0	230.0	TYPE=	4	TARGET=	.000			
4750.000	9.71	2166.71	2166.71	2166.71	2170.62	3.92	.36	.50	2188.00
11000.0	.0	11000.0	.0	.0	692.6	.0	4.4	.6	2170.20
.00	.00	15.88	.00	.000	.025	.000	.000	2157.00	56.97
.005017	100.	100.	100.	20	11	0	.00	89.44	146.41

*SECNO 4850.000

2800 NAT Q1= 1520.19 WSEL= 2168.06 ENC Q1= 1874.48 WSEL= 2169.06 RATIO= -.2331
 NAT Q1= 1874. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2169.06

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	14.0	300.0	TYPE=	4	TARGET=	.000			
4850.000	10.06	2168.06	2168.06	2168.06	2171.42	3.36	.51	.06	2181.00
11000.0	.0	11000.0	.0	.0	748.0	.0	6.0	.8	2171.80
.01	.00	14.71	.00	.000	.025	.000	.000	2158.00	32.45
.005236	100.	100.	100.	20	8	0	.00	113.68	146.13

*SECNO 4950.000 (B)

2800 NAT Q1= 1506.71 WSEL= 2169.82 ENC Q1= 1903.14 WSEL= 2170.82 RATIO= -.2631
 NAT Q1= 1903. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2170.82

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	11.0	392.0	TYPE=	4	TARGET=	.000			
4950.000	10.82	2169.82	2169.82	2169.82	2172.82	3.00	.53	.04	2180.00
11000.0	.0	11000.0	.0	.0	790.8	.0	7.8	1.1	2173.10
.01	.00	13.91	.00	.000	.025	.000	.000	2159.00	16.61
.005330	100.	100.	100.	20	8	0	.00	132.03	148.64

SECNO	DEPTH	CWSEL	CRWS	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 5050.000

2800 NAT Q1= 1759.82 WSEL= 2170.95 ENC Q1= 2205.07 WSEL= 2171.95 RATIO= -.2530
 NAT Q1= 2205. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2171.95

3301 HV CHANGED MORE THAN HVINS

5050.000	10.94	2170.94	.00	2170.95	2173.34	2.40	.46	.06	2227.00
11000.0	.0	11000.0	.0	.0	884.9	.0	9.7	1.4	2173.50
.01	.00	12.43	.00	.000	.025	.000	.000	2160.00	13.85
.003932	100.	100.	100.	6	0	0	.00	140.03	153.88

*SECNO 5150.000 (C)

2800 NAT Q1= 1334.99 WSEL= 2174.23 ENC Q1= 2214.62 WSEL= 2175.23 RATIO= -.6589
 NAT Q1= 2215. RATIOS LOB, CH, ROB= .0000 .9997 .0003 WSEL= 2175.23

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 23.0 430.0 TYPE= 4 TARGET= .000

5150.000	11.23	2174.23	2174.23	2174.23	2175.68	1.45	.51	.09	2175.00
11000.0	.0	11000.0	.0	.0	1138.0	.0	12.0	2.0	2174.00
.01	.00	9.67	.00	.000	.025	.000	.000	2163.00	24.54
.006794	100.	100.	100.	20	9	0	.00	405.46	430.00

*SECNO 5250.000

2800 NAT Q1= 2041.58 WSEL= 2175.33 ENC Q1= 3087.74 WSEL= 2176.33 RATIO= -.5124
 NAT Q1= 3088. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2176.33

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

3470 ENCROACHMENT STATIONS= 11.0 452.0 TYPE= 4 TARGET= .000

5250.000	6.33	2175.33	.00	2175.33	2176.16	.84	.42	.06	2180.00
11000.0	.0	11000.0	.0	.0	1498.6	.0	15.1	3.0	2177.00
.02	.00	7.34	.00	.000	.025	.000	.000	2169.00	22.22
.002890	100.	100.	100.	4	0	0	.00	426.44	448.65

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

*SECNO 5350.000

2800 NAT Q1= 1563.72 WSEL= 2175.46 ENC Q1= 2468.31 WSEL= 2176.46 RATIO= -.5785
 NAT Q1= 2468. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2176.46

3470 ENCROACHMENT STATIONS= 10.0 452.0 TYPE= 4 TARGET= .000
 5350.000 6.46 2175.46 .00 2175.46 2176.64 1.18 .37 .10 2180.00
 11000.0 .0 11000.0 .0 .0 1261.7 .0 18.2 3.9 2177.00
 .02 .00 8.72 .00 .000 .025 .000 .000 2169.00 25.44
 .004950 100. 100. 100. 2 0 0 .00 413.62 439.06

*SECNO 5450.000

2800 NAT Q1= 1496.03 WSEL= 2175.97 ENC Q1= 2402.83 WSEL= 2176.97 RATIO= -.6061
 NAT Q1= 2436. RATIOS LOB, CH, ROB= .0000 .9862 .0138 WSEL= 2176.97

3265 DIVIDED FLOW

5450.000 5.67 2175.97 .00 2175.97 2177.16 1.19 .52 .00 2230.00
 11000.0 .0 11000.0 .0 .0 1258.7 .0 21.1 4.9 2177.00
 .02 .00 8.74 .00 .000 .025 .000 .000 2170.30 20.12
 .005390 100. 100. 100. 2 0 0 .00 440.41 469.75

*SECNO 5550.000

2800 NAT Q1= 1489.59 WSEL= 2176.49 ENC Q1= 2245.40 WSEL= 2177.49 RATIO= -.5074
 NAT Q1= 2245. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2177.49

3265 DIVIDED FLOW

5550.000 5.49 2176.49 .00 2176.49 2177.71 1.23 .54 .01 2235.00
 11000.0 .0 11000.0 .0 .0 1238.0 .0 24.0 5.9 2180.00
 .03 .00 8.89 .00 .000 .025 .000 .000 2171.00 34.05
 .005460 100. 100. 100. 2 0 0 .00 426.59 468.84

CCHV= .600 CEHV= .800

*SECNO 6400.000 (0)

2800 NAT Q1= 1918.73 WSEL= 2178.55 ENC Q1= 2668.16 WSEL= 2179.55 RATIO= -.3906
 NAT Q1= 2813. RATIOS LOB, CH, ROB= .0459 .9484 .0057 WSEL= 2179.55

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS= 2381.0 2846.0 TYPE= 4 TARGET= .052

CROSS SECTION D

6400.000	7.32	2178.52	.00	2178.55	2179.02	.50	.88	.43	2176.70
11000.0	.0	11000.0	.0	.0	1930.5	.0	31.3	8.0	2176.60
.04	.00	5.70	.00	.000	.040	.000	.000	2171.20	2381.00
.003594	200.	200.	200.	4	0	0	.00	465.00	2846.00

CCHV= .100 CEHV= .300

*SECNO 6500.000 (E)

2800 NAT Q1= 819.92 WSEL= 2185.70 ENC Q1= 1361.41 WSEL= 2186.70 RATIO= -.6604
 NAT Q1= 1361. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2186.70

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .45

3470 ENCROACHMENT STATIONS= 2805.0 3336.0 TYPE= 4 TARGET= .000

CROSS SECTION E - DOWNSTREAM TIE IN POINT FOR DIVIDED FLOW

6500.000	7.33	2185.73	2185.72	2185.70	2187.11	1.38	7.83	.26	2191.70
11000.0	.0	11000.0	.0	.0	1167.6	.0	72.2	19.9	2188.50
.07	.00	9.42	.00	.000	.040	.000	.000	2178.40	2854.10
.017503	1110.	1150.	1125.	3	5	0	.00	438.74	3292.85

*SECNO 6600.000 (F)

2800 NAT Q1= 1898.91 WSEL= 2193.47 ENC Q1= 1898.91 WSEL= 2194.47 RATIO= .0000
 NAT Q1= 3238. RATIOS LOB, CH, ROB= .5764 .3872 .0364 WSEL= 2194.47

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.06

3470 ENCROACHMENT STATIONS= 2751.2 3317.0 TYPE= 4 TARGET= .413

6600.000	7.25	2194.25	.00	2193.47	2194.60	.35	7.39	.10	2191.20
9500.0	3259.3	6240.7	.0	653.6	1340.5	.0	113.5	33.0	2192.40
.14	4.99	4.66	.00	.040	.040	.000	.000	2187.00	2751.19
.003064	1100.	1150.	1190.	6	0	0	.00	565.81	3317.00

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

*SECNO 6700.000 (G)

2800 NAT Q1= 726.36 WSEL= 2201.05 ENC Q1= 1139.10 WSEL= 2202.05 RATIO= -.5682
 NAT Q1= 1139. RATIOS LOB, CH, ROB= .0000 1.0000 .0000 WSEL= 2202.05

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2541.0 2949.0 TYPE= 4 TARGET= .000
 6700.000 5.75 2201.05 2201.05 2201.05 2202.59 1.54 6.34 .36 2254.10
 9500.0 .0 9500.0 .0 .0 954.1 .0 148.9 43.7 2210.60
 .17 .00 9.96 .00 .000 .040 .000 .000 2195.30 2614.51
 .017145 1030. 1050. 980. 4 15 0 .00 321.97 2936.48

*SECNO 6800.000 (H)

2800 NAT Q1= 1106.15 WSEL= 2209.94 ENC Q1= 1512.59 WSEL= 2210.94 RATIO= -.3674
 NAT Q1= 1530. RATIOS LOB, CH, ROB= .0000 .9889 .0111 WSEL= 2210.94

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.52

3470 ENCROACHMENT STATIONS= 2264.0 2507.0 TYPE= 4 TARGET= .011
 6800.000 7.97 2209.97 .00 2209.94 2211.16 1.19 8.53 .04 2212.00
 9500.0 .0 9500.0 .0 .0 1086.8 .0 167.4 48.8 2207.10
 .19 .00 8.74 .00 .000 .040 .000 .000 2202.00 2271.80
 .007421 820. 790. 765. 4 0 0 .00 235.20 2507.00

*SECNO 6900.000 (I)

2800 NAT Q1= 1539.13 WSEL= 2214.90 ENC Q1= 1924.05 WSEL= 2215.90 RATIO= -.2501
 NAT Q1= 2047. RATIOS LOB, CH, ROB= .0233 .9398 .0369 WSEL= 2215.90

3470 ENCROACHMENT STATIONS= 2290.0 2511.0 TYPE= 4 TARGET= .060
 6900.000 8.45 2215.05 .00 2214.90 2215.90 .85 4.71 .03 2210.70
 9500.0 .0 9500.0 .0 .0 1284.2 .0 191.4 53.4 2210.60
 .22 .00 7.40 .00 .000 .040 .000 .000 2206.60 2290.00
 .004041 945. 880. 730. 3 0 0 .00 221.00 2511.00

*SECNO 7000.000 (J)

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

2800 NAT Q1= 978.67 WSEL= 2217.17 ENC Q1= 1012.78 WSEL= 2218.17 RATIO= -.0349
 NAT Q1= 1577. RATIOS LOB, CH, ROB= .3171 .6420 .0409 WSEL= 2218.17

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2293.0	2505.0	TYPE=	4	TARGET=	.358
7000.000	4.38	2217.48	2217.48	2217.17	2219.49	2.00
9500.0	.0	9500.0	.0	.0	836.8	.0
.23	.00	11.35	.00	.000	.040	.000
.015590	430.	420.	415.	4	11	0

*SECNO 7050.000

2800 NAT Q1= 1216.17 WSEL= 2225.85 ENC Q1= 1739.74 WSEL= 2226.85 RATIO= -.4305

NAT Q1= 2155. RATIOS LOB, CH, ROB= .0550 .8074 .1376 WSEL= 2226.85

3280 CROSS SECTION 7050.00 EXTENDED .91 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.05

3470 ENCROACHMENT STATIONS=	2248.0	2703.0	TYPE=	4	TARGET=	.193
7050.000	6.61	2226.61	.00	2225.85	2227.08	.47
9500.0	.0	9500.0	.0	.0	1734.4	.0
.29	.00	5.48	.00	.000	.040	.000
.003708	990.	1110.	1145.	4	0	0

*SECNO 7100.000 (K)

2800 NAT Q1= 1133.06 WSEL= 2229.98 ENC Q1= 1133.06 WSEL= 2230.98 RATIO= .0000

NAT Q1= 2048. RATIOS LOB, CH, ROB= .1523 .4958 .3519 WSEL= 2230.98

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

3470 ENCROACHMENT STATIONS= 2287.0 2539.9 TYPE= 4 TARGET= .447

CROSS SECTION K - UPSTREAM TIE IN POINT FOR DIVIDED FLOW

7100.000	6.47	2230.37	2230.37	2229.98	2232.32	1.95	4.01	.45	2228.30
11000.0	.0	9847.6	1152.4	.0	867.9	114.3	252.1	68.6	2228.10
.31	.00	11.35	10.08	.000	.040	.040	.000	2223.90	2287.00
.015430	545.	570.	580.	4	8	0	.00	252.90	2539.90

*SECNO 7200.000 (L)

2800 NAT Q1= 1532.38 WSEL= 2237.60 ENC Q1= 1532.38 WSEL= 2238.10 RATIO= .0000
 NAT Q1= 2178. RATIOS LOB, CH, ROB= .3327 .4501 .2172 WSEL= 2238.10

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.18

3470 ENCROACHMENT STATIONS= 2324.9 3027.1 TYPE= 4 TARGET= .296

7200.000	6.74	2238.54	.00	2237.60	2238.90	.36	6.42	.16	2235.70
11000.0	2781.1	6996.8	1222.1	530.5	1440.0	341.8	291.7	80.1	2236.60
.37	5.24	4.86	3.58	.040	.040	.040	.000	2231.80	2324.93
.003253	970.	1065.	1040.	5	0	0	.00	702.14	3027.07

CCHV= .100 CEHV= .300

*SECNO 7300.000 (M)

2800 NAT Q1= 1203.84 WSEL= 2244.11 ENC Q1= 1401.33 WSEL= 2245.11 RATIO= -.1640
 NAT Q1= 2296. RATIOS LOB, CH, ROB= .2433 .6104 .1463 WSEL= 2245.11

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2569.0 2859.0 TYPE= 4 TARGET= .390

CROSS SECTION M

7300.000	5.70	2244.10	2244.10	2244.11	2245.91	1.81	4.80	.43	2242.30
11000.0	.0	11000.0	.0	.0	1018.8	.0	322.3	89.2	2242.90
.39	.00	10.80	.00	.000	.038	.000	.000	2238.40	2569.00
.014533	810.	800.	785.	20	15	0	.00	290.00	2859.00

THIS RUN EXECUTED 14MAY93 11:20:22

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

DUCK CREEK FINAL 100-yr

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
*	4500.000	(A)	.00	.00	.00	2154.20	11000.00	2164.50	2164.50	2168.34	49.73	15.73	699.10 1559.88
*	4500.000		.00	.00	.00	2154.20	11000.00	2164.50	2164.50	2168.34	49.68	15.73	699.33 1560.59
*	4600.000	100.00	.00	.00	.00	2155.40	11000.00	2165.04	2165.04	2168.89	50.06	15.74	698.85 1554.77
*	4600.000	100.00	.00	.00	.00	2155.40	11000.00	2165.04	2165.04	2168.89	50.06	15.74	698.85 1554.77
	4650.000	50.00	.00	.00	.00	2156.00	11000.00	2166.99	2165.39	2169.23	26.69	12.01	915.97 2129.17
	4650.000	50.00	.00	.00	.00	2156.00	11000.00	2166.99	2165.39	2169.23	26.69	12.01	915.97 2129.17
*	4750.000	100.00	.00	.00	.00	2157.00	11000.00	2166.71	2166.71	2170.62	50.17	15.88	692.58 1552.99
*	4750.000	100.00	.00	.00	.00	2157.00	11000.00	2166.71	2166.71	2170.62	50.17	15.88	692.58 1552.99
*	4850.000	100.00	.00	.00	.00	2158.00	11000.00	2168.06	2168.06	2171.42	52.36	14.71	748.04 1520.19
*	4850.000	100.00	.00	.00	.00	2158.00	11000.00	2168.06	2168.06	2171.42	52.36	14.71	748.04 1520.19
*	4950.000	(B)	100.00	.00	.00	2159.00	11000.00	2169.82	2169.82	2172.82	53.30	13.91	790.79 1506.71
*	4950.000	100.00	.00	.00	.00	2159.00	11000.00	2169.82	2169.82	2172.82	53.30	13.91	790.79 1506.71
	5050.000	100.00	.00	.00	.00	2160.00	11000.00	2170.95	.00	2173.34	39.07	12.40	886.78 1759.82
	5050.000	100.00	.00	.00	.00	2160.00	11000.00	2170.94	.00	2173.34	39.32	12.43	884.93 1754.22
*	5150.000	(C)	100.00	.00	.00	2163.00	11000.00	2174.23	2174.23	2175.68	67.89	9.67	1138.05 1334.99
*	5150.000	100.00	.00	.00	.00	2163.00	11000.00	2174.23	2174.23	2175.68	67.94	9.67	1138.00 1334.50
*	5250.000	100.00	.00	.00	.00	2169.00	11000.00	2175.33	.00	2176.16	29.03	7.35	1496.64 2041.58
*	5250.000	100.00	.00	.00	.00	2169.00	11000.00	2175.33	.00	2176.16	28.90	7.34	1498.61 2046.01
	5350.000	100.00	.00	.00	.00	2169.00	11000.00	2175.46	.00	2176.64	49.48	8.72	1261.83 1563.72
	5350.000	100.00	.00	.00	.00	2169.00	11000.00	2175.46	.00	2176.64	49.50	8.72	1261.73 1563.52
	5450.000	100.00	.00	.00	.00	2170.30	11000.00	2175.97	.00	2177.16	54.06	8.75	1257.55 1496.03
	5450.000	100.00	.00	.00	.00	2170.30	11000.00	2175.97	.00	2177.16	53.90	8.74	1258.73 1498.23

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
5550.000	100.00	.00	.00	2171.00	11000.00	2176.49	.00	2177.71	54.53	8.88	1238.50	1489.59
5550.000	100.00	.00	.00	2171.00	11000.00	2176.49	.00	2177.71	54.60	8.89	1237.98	1488.64
6400.000(D)	200.00	.00	.00	2171.20	11000.00	2178.55	.00	2179.01	32.87	5.50	2065.78	1918.73
6400.000	200.00	.00	.00	2171.20	11000.00	2178.52	.00	2179.02	35.94	5.70	1930.47	1834.81
* 6500.000(E)	1150.00	.00	.00	2178.40	11000.00	2185.70	2185.70	2187.11	179.99	9.51	1157.12	819.92
* 6500.000	1150.00	.00	.00	2178.40	11000.00	2185.73	2185.72	2187.11	175.03	9.42	1167.61	831.45
* 6600.000(F)	1150.00	.00	.00	2187.00	9500.00	2193.47	.00	2193.68	25.03	3.55	2631.52	1898.91
* 6600.000	1150.00	.00	.00	2187.00	9500.00	2194.25	.00	2194.60	30.64	4.66	1994.13	1716.30
* 6700.000(G)	1050.00	.00	.00	2195.30	9500.00	2201.05	2201.05	2202.59	171.06	9.95	954.77	726.36
* 6700.000	1050.00	.00	.00	2195.30	9500.00	2201.05	2201.05	2202.59	171.45	9.96	954.07	725.54
* 6800.000(H)	790.00	.00	.00	2202.00	9500.00	2209.94	.00	2211.12	73.76	8.75	1095.41	1106.15
* 6800.000	790.00	.00	.00	2202.00	9500.00	2209.97	.00	2211.16	74.21	8.74	1086.82	1102.82
6900.000(I)	880.00	.00	.00	2206.60	9500.00	2214.90	.00	2215.69	38.10	7.25	1360.55	1539.13
6900.000	880.00	.00	.00	2206.60	9500.00	2215.05	.00	2215.90	40.41	7.40	1284.24	1494.49
* 7000.000(J)	420.00	.00	.00	2213.10	9500.00	2217.17	.00	2218.14	94.23	8.52	1234.55	978.67
* 7000.000	420.00	.00	.00	2213.10	9500.00	2217.48	2217.48	2219.49	155.90	11.35	836.85	760.85
7050.000	1110.00	.00	.00	2220.00	9500.00	2225.85	.00	2226.38	61.02	6.10	1746.94	1216.17
* 7050.000	1110.00	.00	.00	2220.00	9500.00	2226.61	.00	2227.08	37.08	5.48	1734.38	1560.12
7100.000(K)	570.00	.00	.00	2223.90	11000.00	2229.98	.00	2230.82	94.25	8.32	1604.71	1133.06
* 7100.000	570.00	.00	.00	2223.90	11000.00	2230.37	2230.37	2232.32	154.30	11.35	982.26	885.55
7200.000(L)	1065.00	.00	.00	2231.80	11000.00	2237.60	.00	2237.94	51.53	4.95	2426.77	1532.38
* 7200.000	1065.00	.00	.00	2231.80	11000.00	2238.54	.00	2238.90	32.53	4.86	2312.25	1928.50
* 7300.000(M)	800.00	.00	.00	2238.40	11000.00	2244.11	2244.11	2244.97	83.49	8.26	1754.98	1203.84
* 7300.000	800.00	.00	.00	2238.40	11000.00	2244.10	2244.10	2245.91	145.33	10.80	1018.76	912.47

DUCK CREEK FINAL 100-yr

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	4500.000(A)	11000.00	2164.50	.00	.00	.01	91.79	.00
*	4500.000	11000.00	2164.50	.00	.00	.00	91.80	.00
*	4600.000	11000.00	2165.04	.00	.54	.00	92.12	100.00
*	4600.000	11000.00	2165.04	.00	.54	.00	92.12	100.00
	4650.000	11000.00	2166.99	.00	1.95	.00	113.93	50.00
	4650.000	11000.00	2166.99	.00	1.95	.00	113.93	50.00
*	4750.000	11000.00	2166.71	.00	-.28	.00	89.44	100.00
*	4750.000	11000.00	2166.71	.00	-.28	.00	89.44	100.00
*	4850.000	11000.00	2168.06	.00	1.36	.00	113.68	100.00
*	4850.000	11000.00	2168.06	.00	1.36	.00	113.68	100.00
*	4950.000(B)	11000.00	2169.82	.00	1.75	.00	132.03	100.00
*	4950.000	11000.00	2169.82	.00	1.75	.00	132.03	100.00
	5050.000	11000.00	2170.95	.00	1.13	.00	140.09	100.00
	5050.000	11000.00	2170.94	-.01	1.12	-.01	140.03	100.00
*	5150.000(C)	11000.00	2174.23	.00	3.28	.00	405.91	100.00
*	5150.000	11000.00	2174.23	.00	3.29	.00	405.46	100.00
*	5250.000	11000.00	2175.33	.00	1.10	.00	426.42	100.00
*	5250.000	11000.00	2175.33	.00	1.10	.00	426.44	100.00
	5350.000	11000.00	2175.46	.00	.13	.00	413.63	100.00
	5350.000	11000.00	2175.46	.00	.13	.00	413.62	100.00
	5450.000	11000.00	2175.97	.00	.51	.00	440.34	100.00
	5450.000	11000.00	2175.97	.00	.51	.00	440.41	100.00
	5550.000	11000.00	2176.49	.00	.52	.00	426.63	100.00
	5550.000	11000.00	2176.49	.00	.51	.00	426.59	100.00
	6400.000(D)	11000.00	2178.55	.00	2.06	.00	570.24	200.00
	6400.000	11000.00	2178.52	-.03	2.03	-.03	465.00	200.00
*	6500.000(E)	11000.00	2185.70	.00	7.16	.00	438.04	1150.00
*	6500.000	11000.00	2185.73	.03	7.22	.03	438.74	1150.00
*	6600.000(F)	9500.00	2193.47	.00	7.77	.00	1040.93	1150.00
*	6600.000	9500.00	2194.25	.78	8.52	.78	565.81	1150.00
*	6700.000(G)	9500.00	2201.05	.00	7.58	.00	322.02	1050.00
*	6700.000	9500.00	2201.05	.00	6.80	.00	321.97	1050.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	6800.000(H)	9500.00	2209.94	.00	8.88	.00	246.74	790.00
*	6800.000	9500.00	2209.97	.03	8.92	.03	235.20	790.00
	6900.000(I)	9500.00	2214.90	.00	4.96	.00	271.05	880.00
	6900.000	9500.00	2215.05	.15	5.08	.15	221.00	880.00
*	7000.000(J)	9500.00	2217.17	.00	2.27	.00	455.34	420.00
*	7000.000	9500.00	2217.48	.32	2.43	.32	212.00	420.00
	7050.000	9500.00	2225.85	.00	8.68	.00	821.78	1110.00
*	7050.000	9500.00	2226.61	.76	9.13	.76	455.00	1110.00
	7100.000(K)	11000.00	2229.98	.00	4.13	.00	802.36	570.00
*	7100.000	11000.00	2230.37	.39	3.76	.39	252.90	570.00
	7200.000(L)	11000.00	2237.60	.00	7.62	.00	1224.08	1065.00
*	7200.000	11000.00	2238.54	.94	8.17	.94	702.14	1065.00
*	7300.000(M)	11000.00	2244.11	.00	6.51	.00	1068.59	800.00
*	7300.000	11000.00	2244.10	-.01	5.56	-.01	290.00	800.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=	4500.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4500.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4600.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4600.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4600.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4600.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4750.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4750.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4750.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	4750.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4750.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4750.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	4850.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4850.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4850.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	4850.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4850.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4850.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	4950.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4950.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4950.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	4950.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	4950.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	4950.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	5150.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	5150.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	5150.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	5150.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	5150.000	PROFILE=	2	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	5150.000	PROFILE=	2	20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=	5250.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	5250.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	6500.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	6500.000	PROFILE=	1	MINIMUM SPECIFIC ENERGY
WARNING SECNO=	6500.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	6600.000	PROFILE=	1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=	6600.000	PROFILE=	2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=	6700.000	PROFILE=	1	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	6700.000	PROFILE=	1	PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=	6700.000	PROFILE=	1	20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=	6700.000	PROFILE=	2	CRITICAL DEPTH ASSUMED
CAUTION SECNO=	6700.000	PROFILE=	2	MINIMUM SPECIFIC ENERGY

WARNING SECNO= 6800.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 6800.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 7000.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO= 7000.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7000.000 PROFILE= 2 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 7050.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 7100.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7100.000 PROFILE= 2 MINIMUM SPECIFIC ENERGY

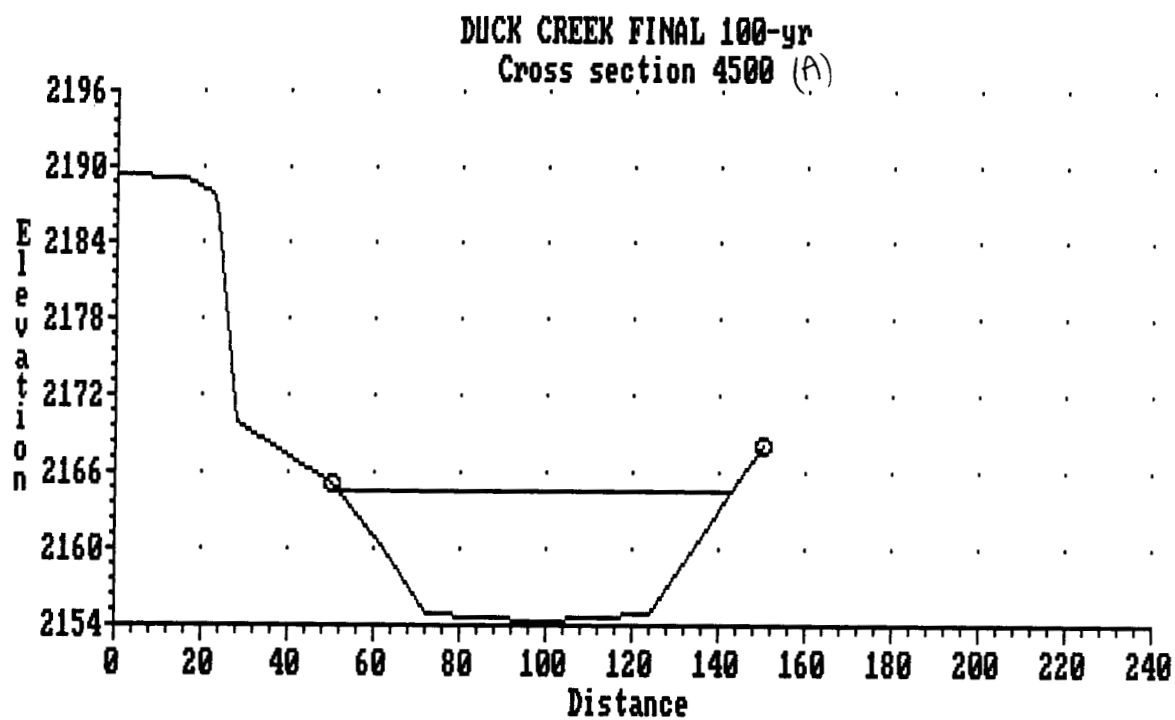
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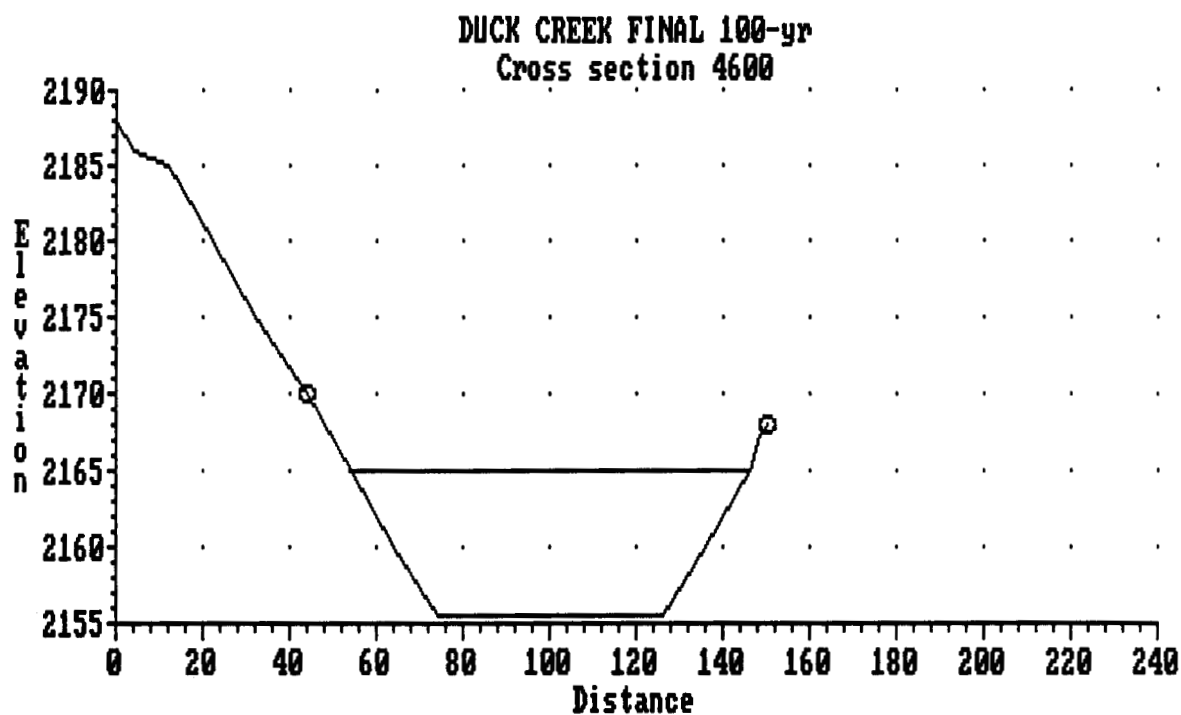
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CAUTION SECNO= 7300.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7300.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7300.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

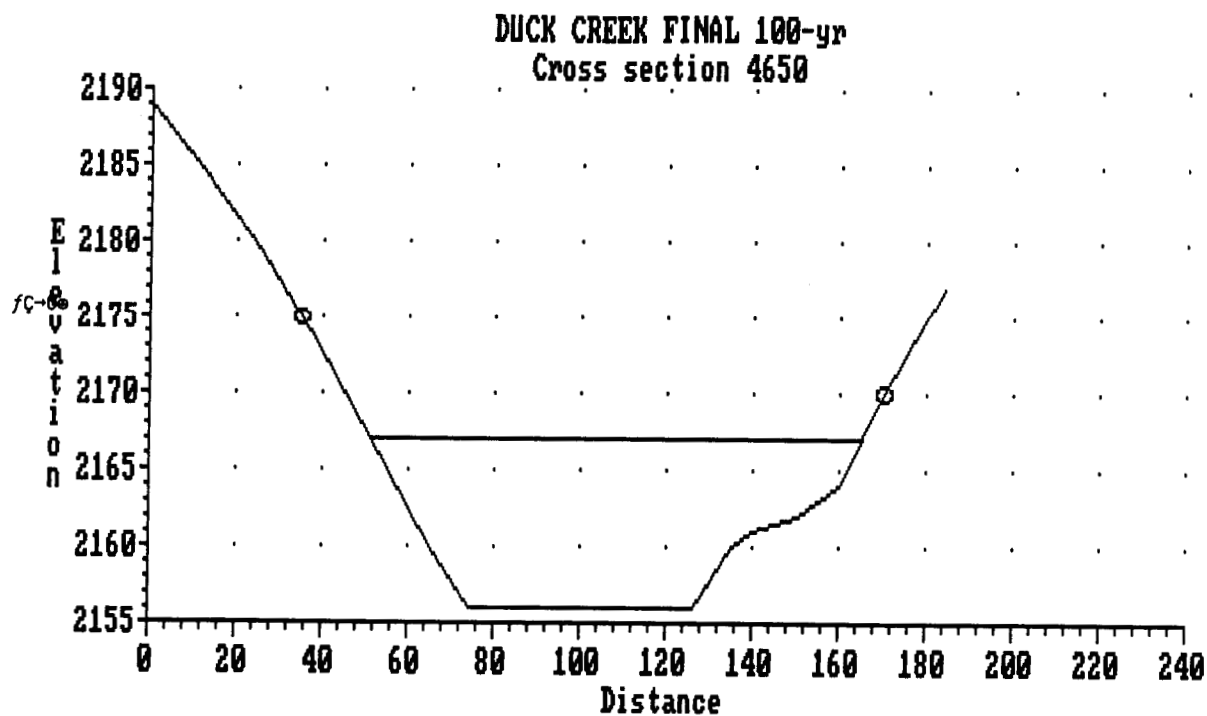
FLOODWAY DATA, DUCK CREEK FINAL 100-yr
PROFILE NO. 2

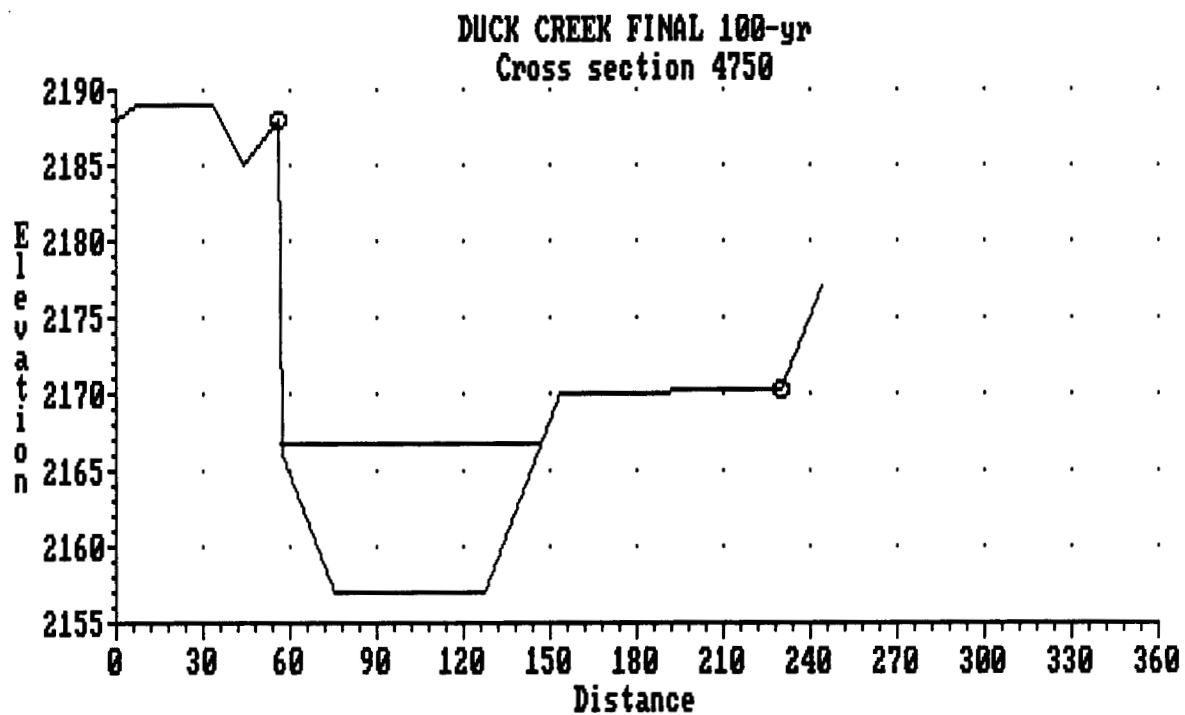
STATION	WIDTH	FLOODWAY		WATER SURFACE ELEVATION		
		SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
4500.000 (A)	92.	699.	15.7	2164.5	2164.5	.0
4600.000	92.	699.	15.7	2165.0	2165.0	.0
4650.000	114.	916.	12.0	2167.0	2167.0	.0
4750.000	89.	693.	15.9	2166.7	2166.7	.0
4850.000	114.	748.	14.7	2168.1	2168.1	.0
4950.000 (B)	132.	791.	13.9	2169.8	2169.8	.0
5050.000	140.	885.	12.4	2170.9	2170.9	.0
5150.000 (C)	405.	1138.	9.7	2174.2	2174.2	.0
5250.000	426.	1499.	7.3	2175.3	2175.3	.0
5350.000	414.	1262.	8.7	2175.5	2175.5	.0
5450.000	450.	1259.	8.7	2176.0	2176.0	.0
5550.000	435.	1238.	8.9	2176.5	2176.5	.0
6400.000 (D)	465.	1930.	5.7	2178.5	2178.5	.0
6500.000 (E)	439.	1168.	9.4	2185.7	2185.7	.0
6600.000 (F)	566.	1994.	4.8	2194.3	2193.5	.8
6700.000 (G)	322.	954.	10.0	2201.1	2201.1	.0
6800.000 (H)	235.	1087.	8.7	2209.9	2209.9	.0
6900.000 (I)	221.	1284.	7.4	2215.1	2214.9	.2
7000.000 (J)	212.	837.	11.4	2217.5	2217.2	.3
7050.000	455.	1734.	5.5	2226.7	2225.9	.8
7100.000 (K)	253.	982.	11.2	2230.4	2230.0	.4
7200.000 (L)	702.	2312.	4.8	2238.5	2237.6	.9
7300.000 (M)	290.	1019.	10.8	2244.1	2244.1	.0

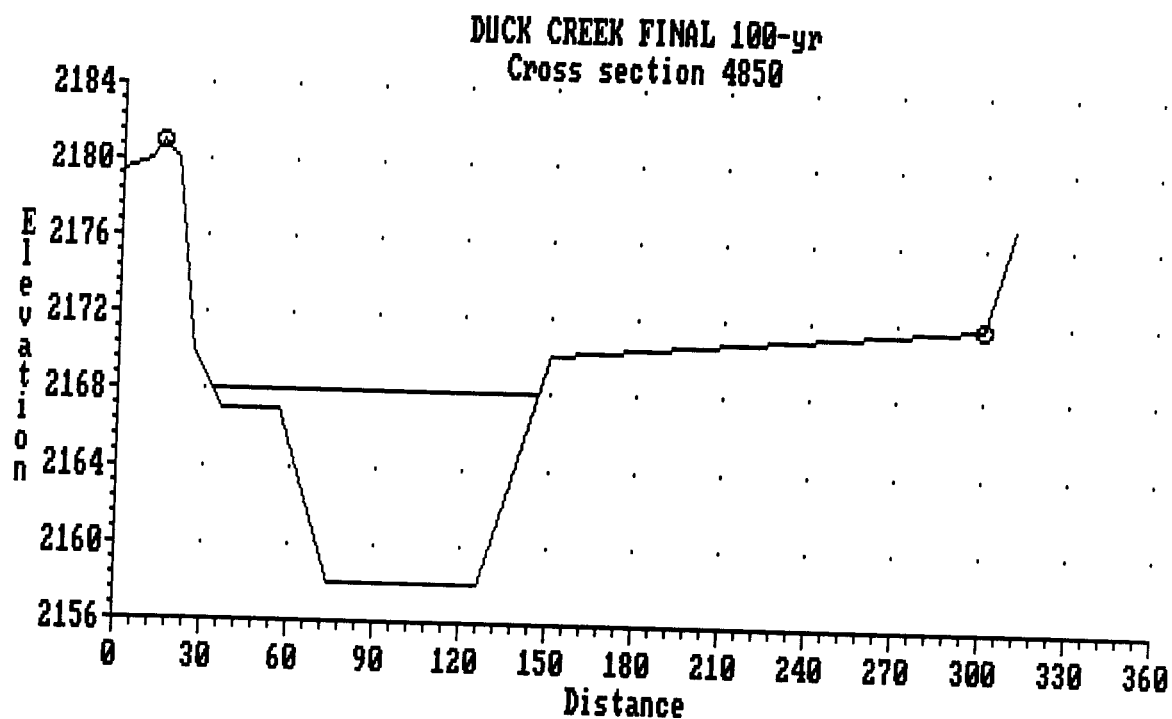
Normal program termination

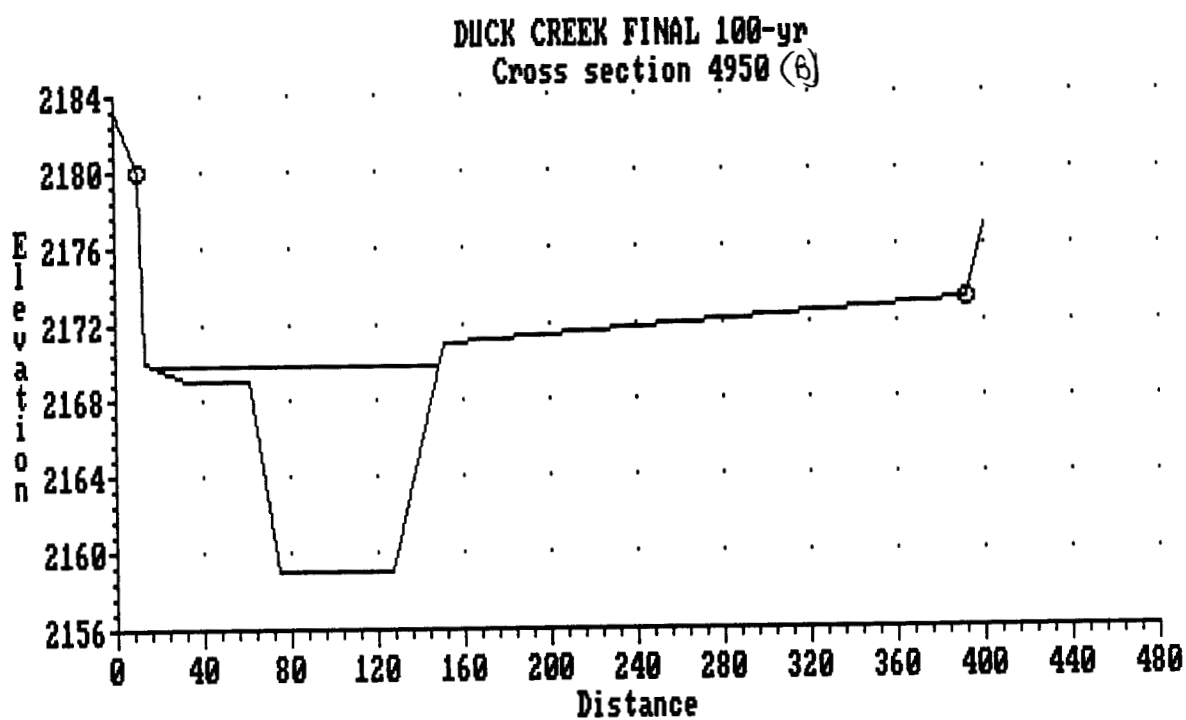


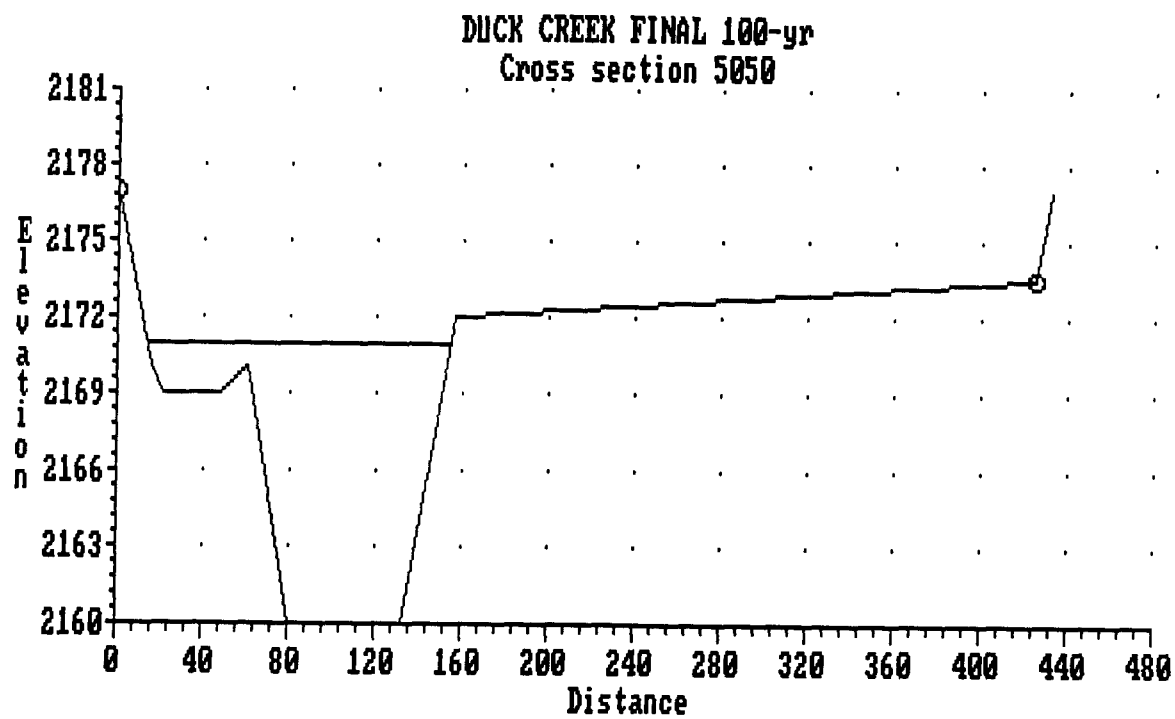




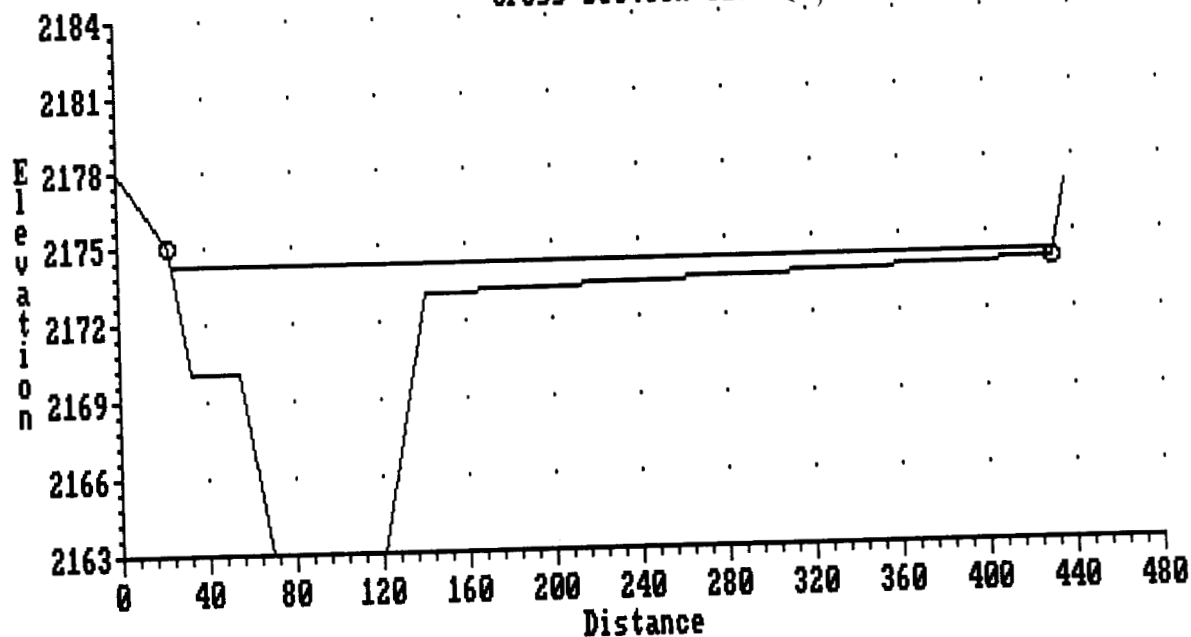


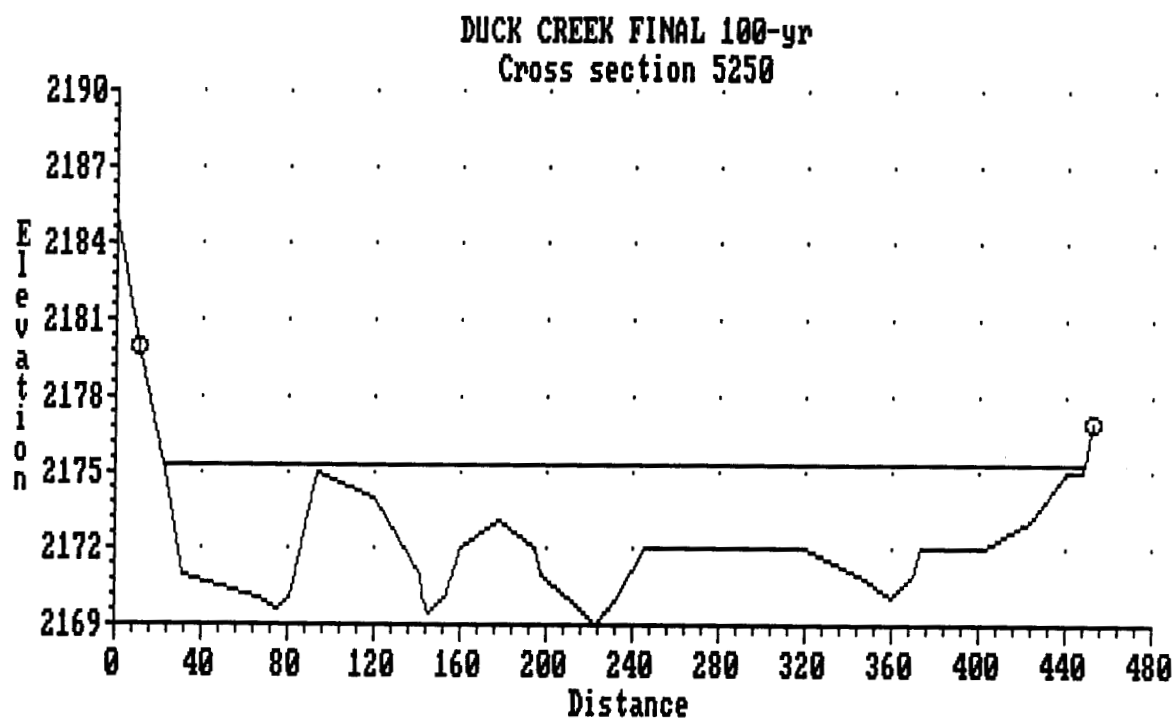


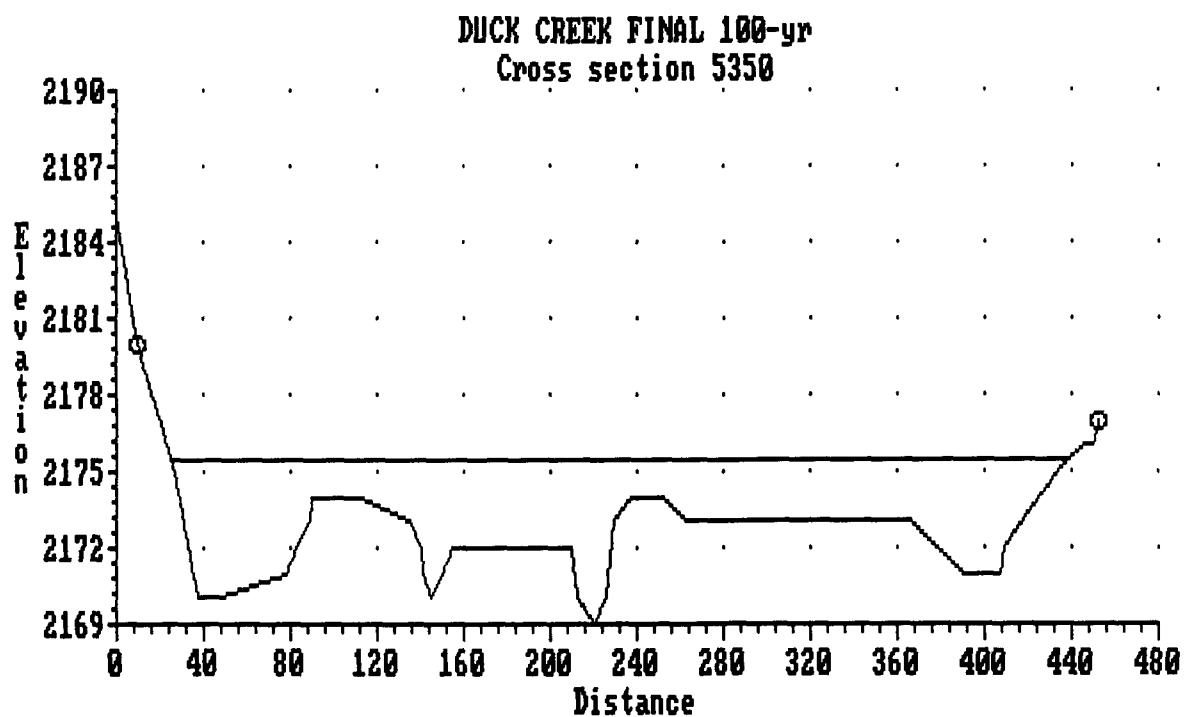


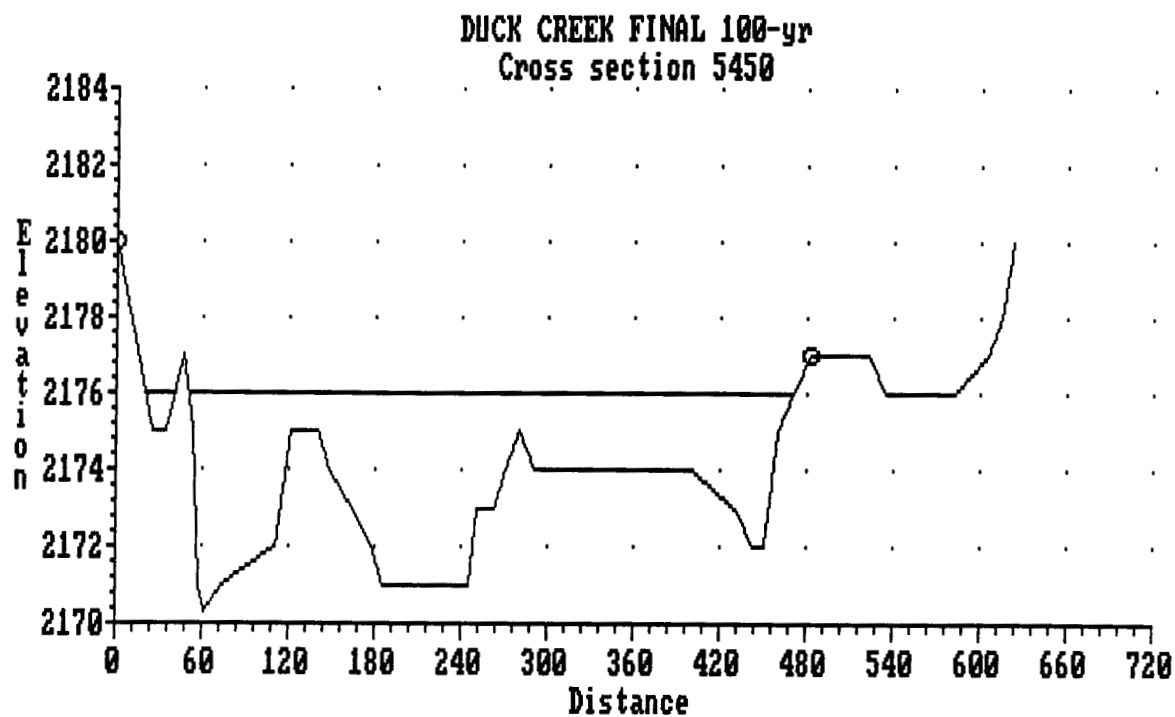


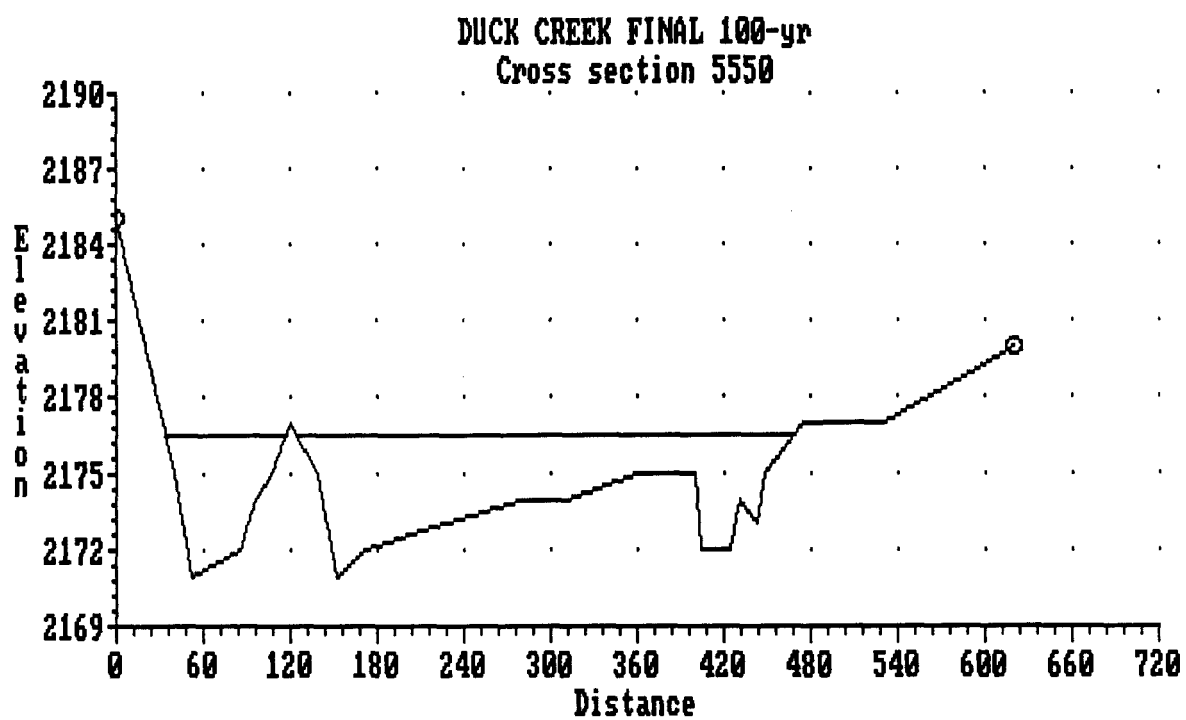
DUCK CREEK FINAL 100-yr Cross section 5150 (c)

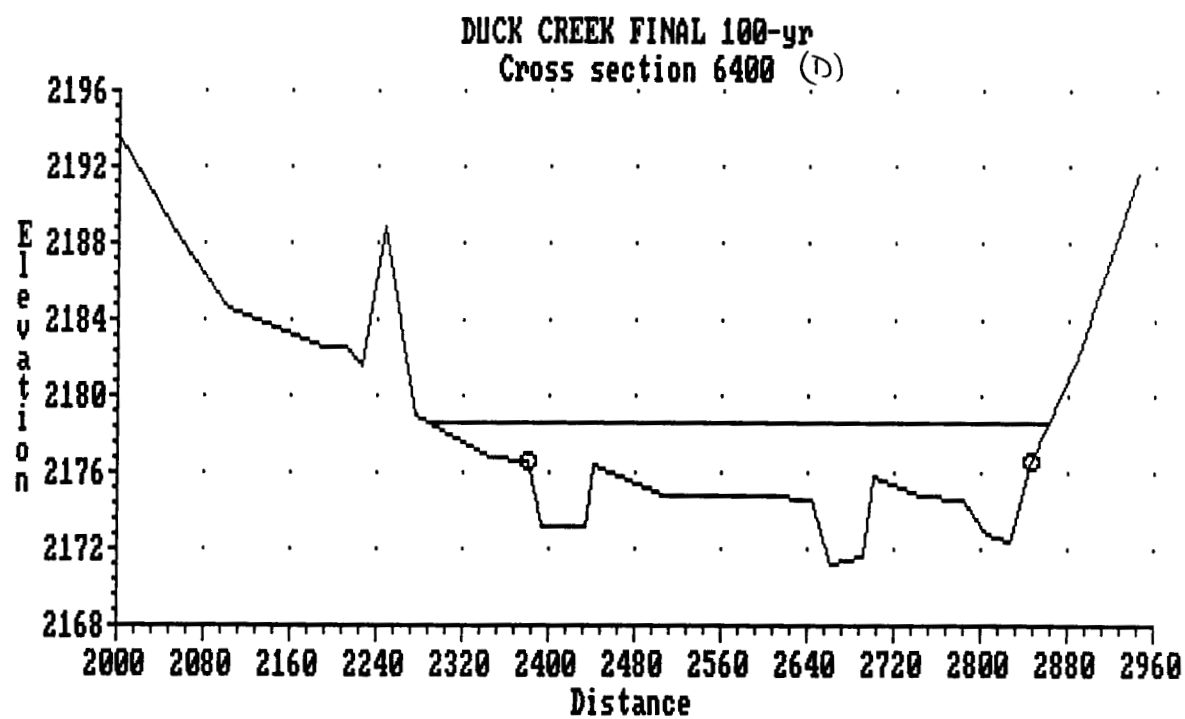


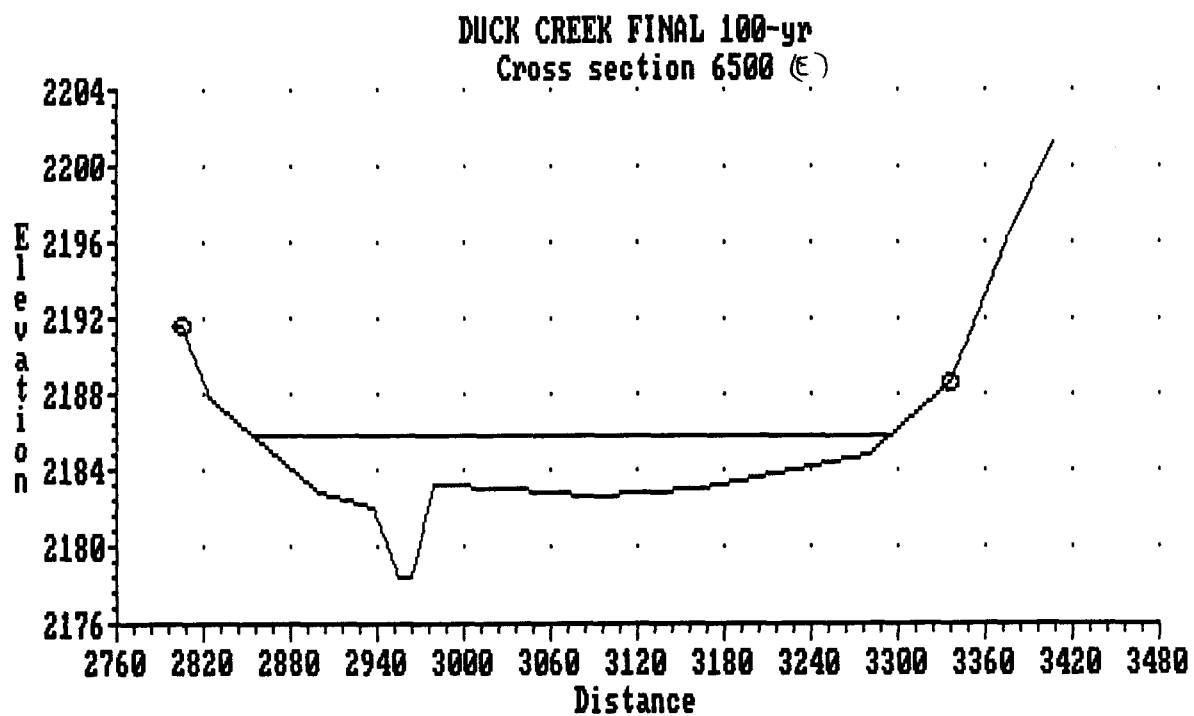


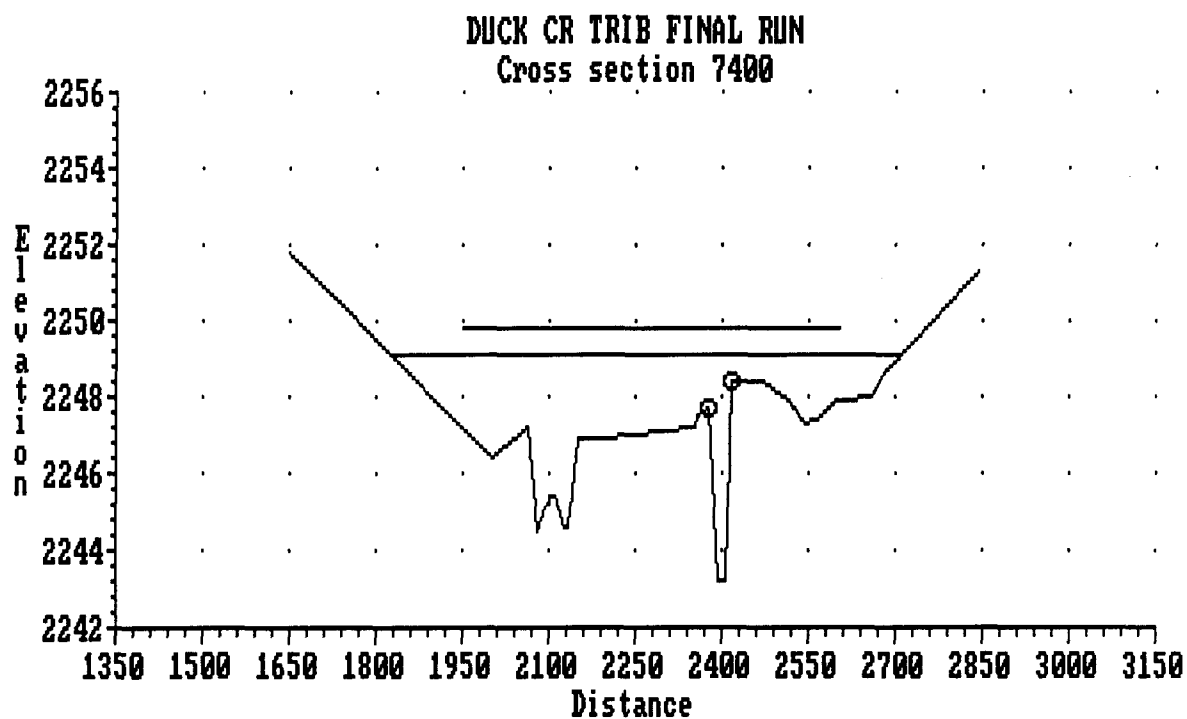


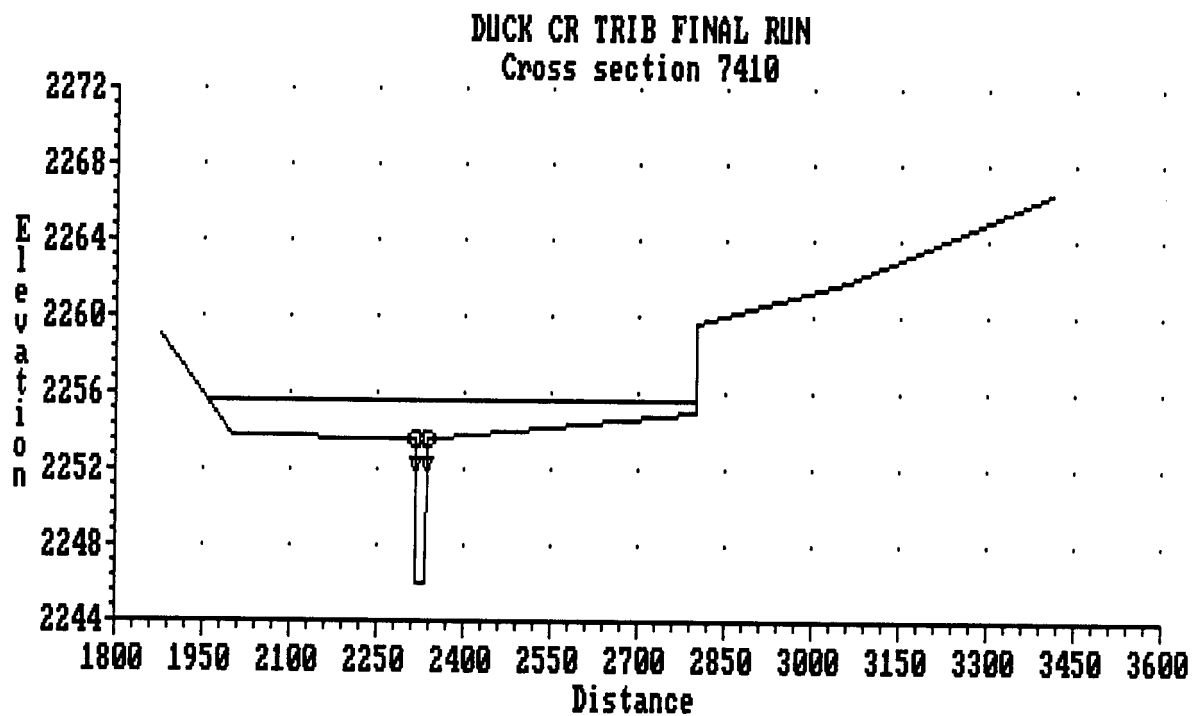


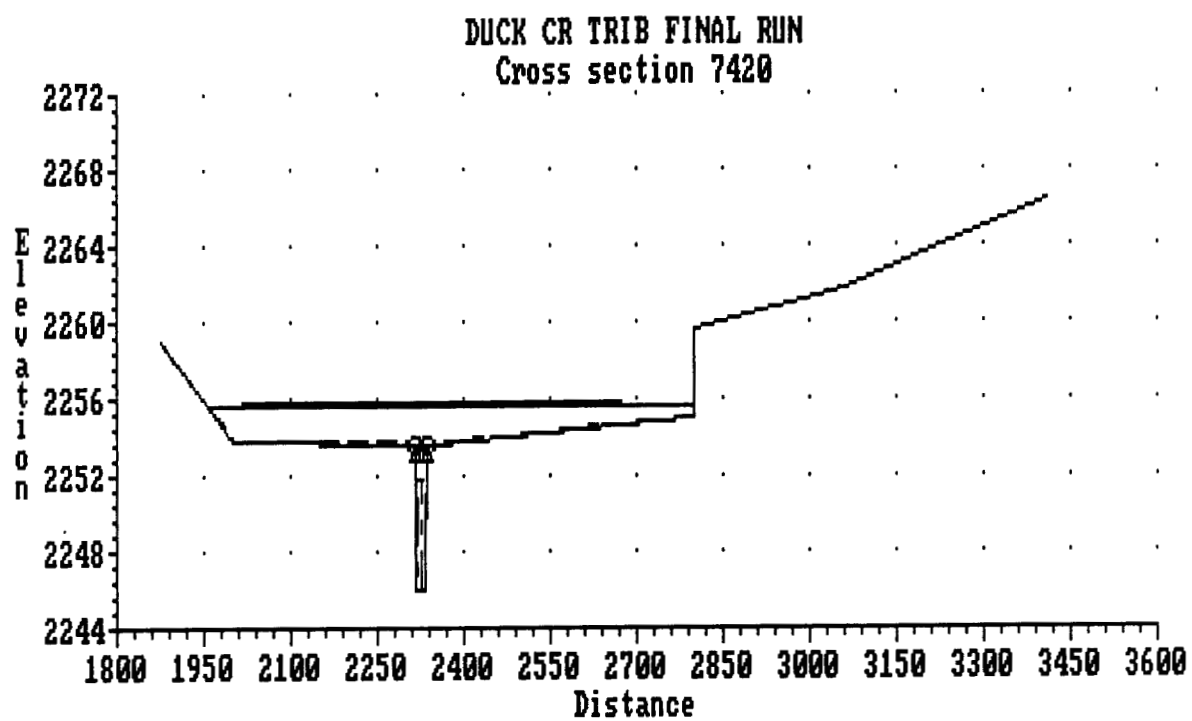


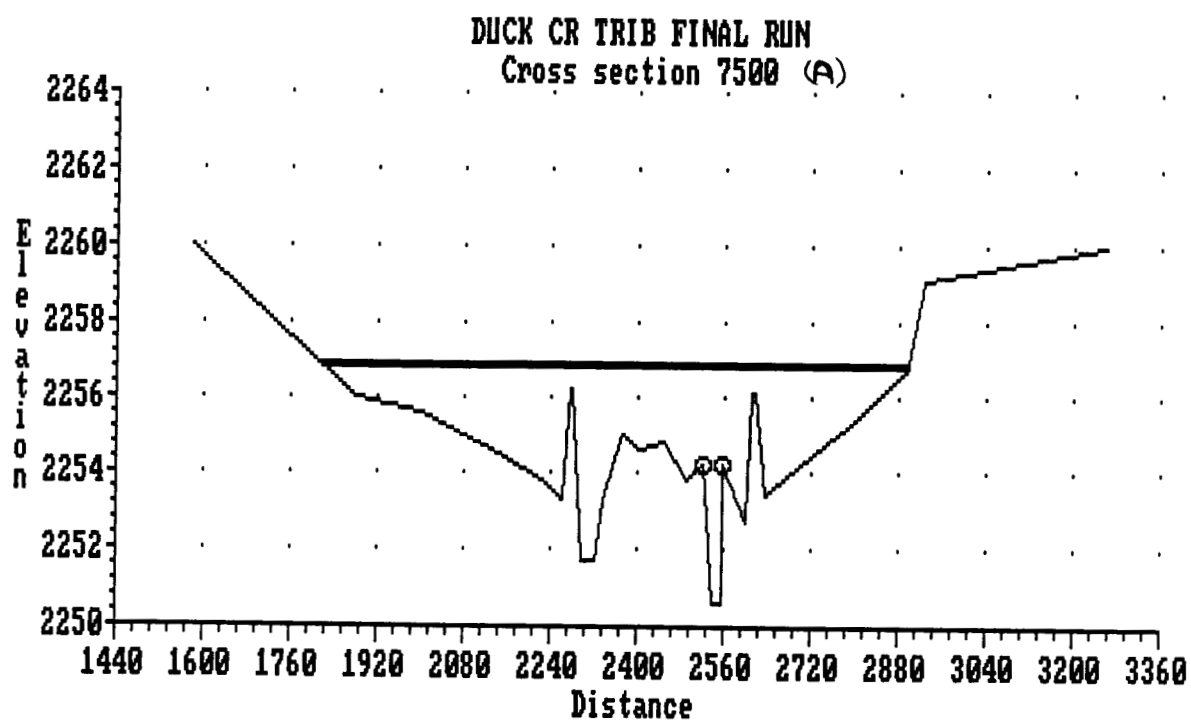




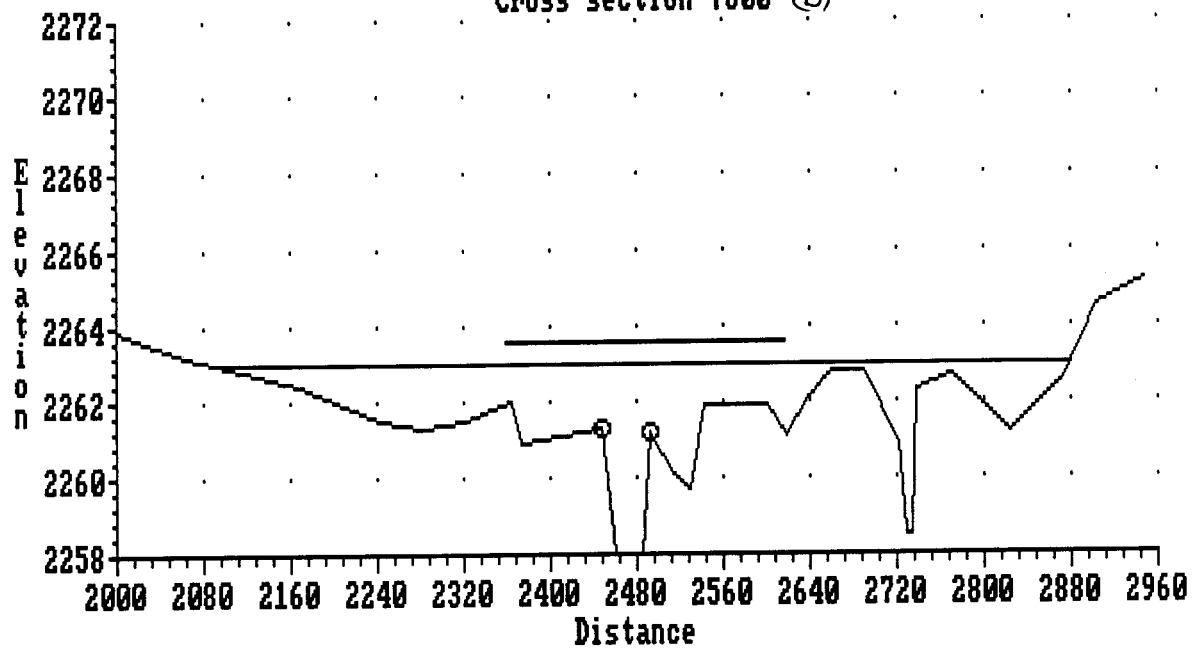


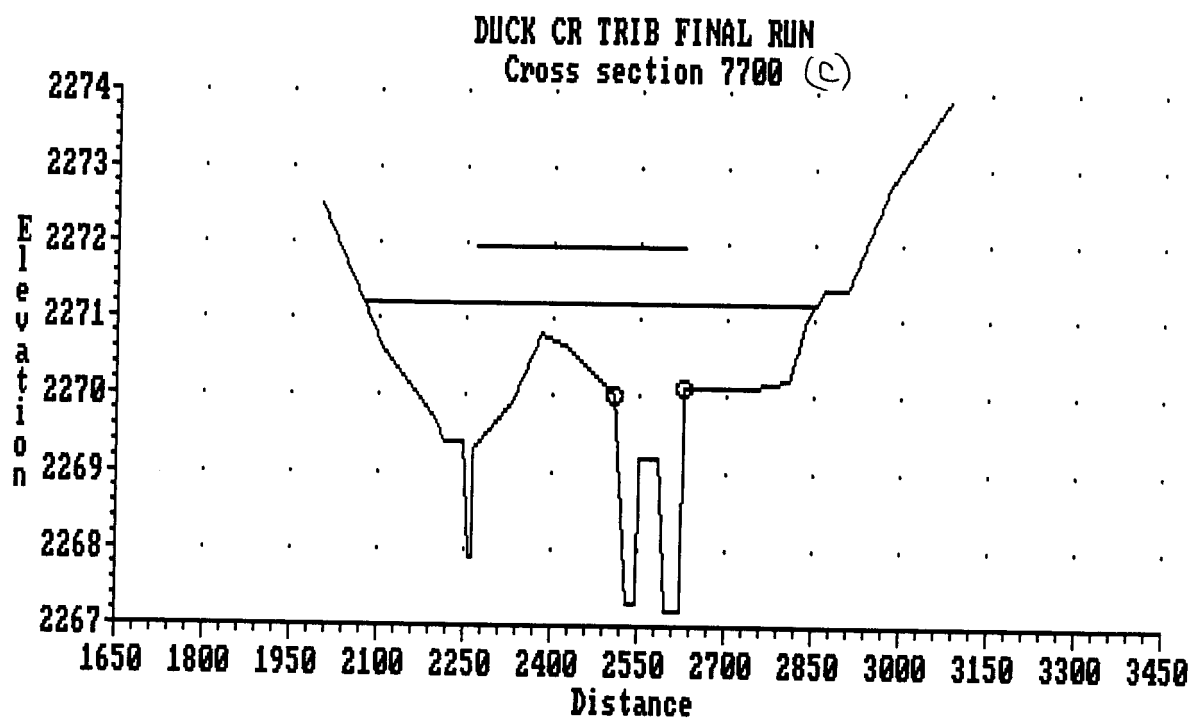


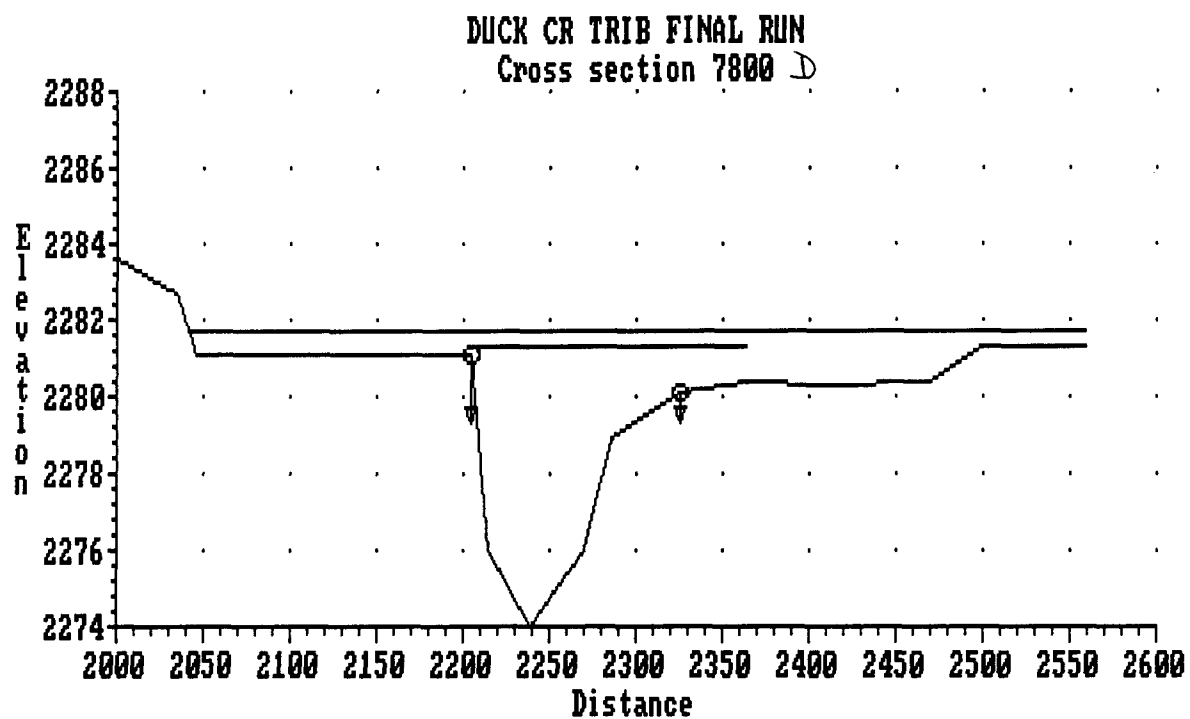


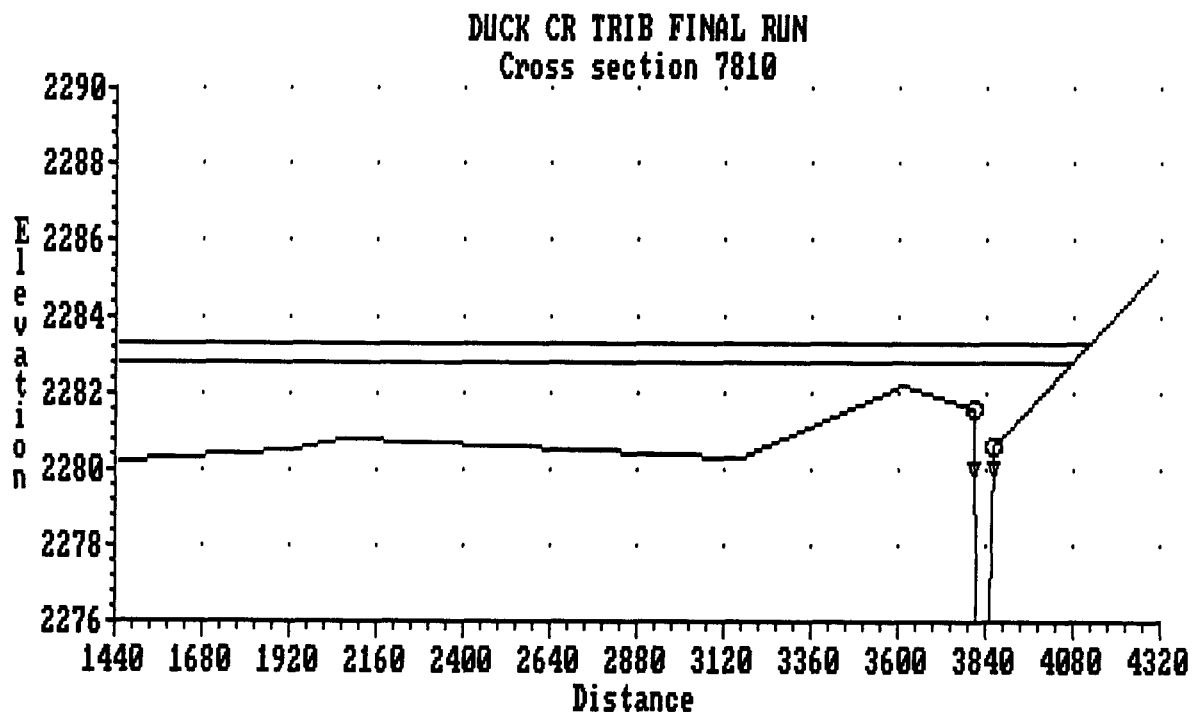


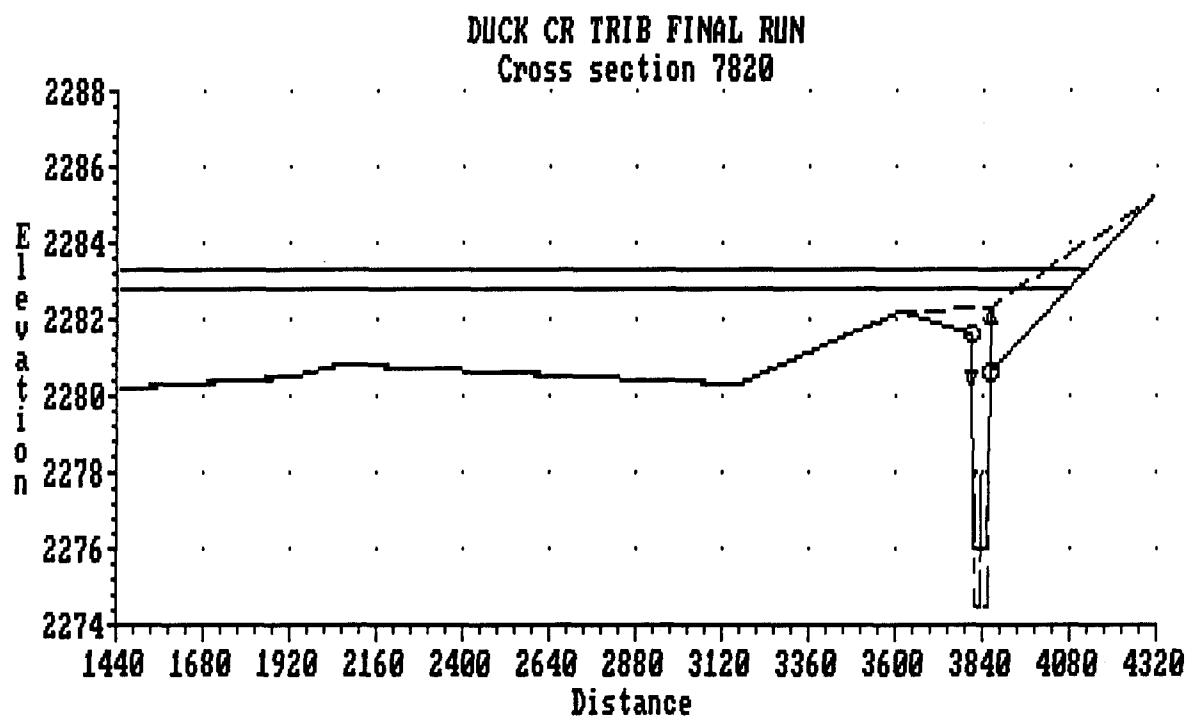
DUCK CR TRIB FINAL RUN
Cross section 7600 (B)

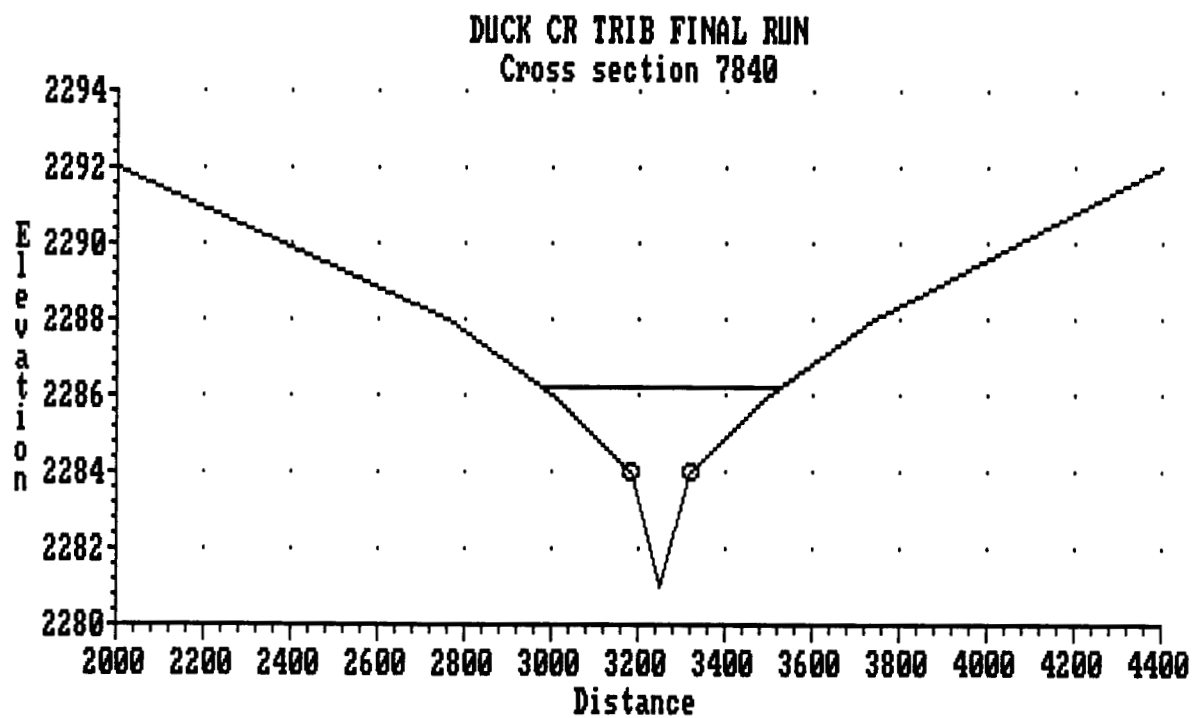












DUCK CREEK

(DUCK CREEK AND DUCK CREEK TRIBUTARY CONFLUENCE TO INTERSTATE - 15)

**SFUSDUCK: Split Flow Run On Duck Creek
Above Confluence With Tributary, 19pp**

**USDUCKFW: Floodway Run On Duck Creek
Above Confluence With Tributary, 27pp**

SFTRIB: Split Flow Run On Duck Creek Tributary, 21pp

TRIBFW: Floodway Run On Duck Creek Tributary, 28pp

THIS RUN EXECUTED 14MAY93 12:00:21

:*****

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

PLIT FLOW BEING PERFORMED

^F Split Flows from tributary u/s Las Vegas Blvd. and u/s Interstate 15

IC 50% of flow returns to tributary from split u/s of Las Vegas
P 50

TN Pyle Road Normal Split Flow u.s. of Las Vegas Boulevard
S 4 7420 7500 7400 .04 .0007
G 0 2253.9 310 2250.2 600 2253.5 880 2256.7

JC 50% of flow returns to the tributary from split u/s I-15
D 50

TN Normal Split Flow u.s. of Interstate 15
S 4 7820 7840 7700 .04 .0008
G 0 2280 130 2280 420 2284 780 2288

T1 Clark County, Nevada FIS - 100-year flood (REVISED BY MBJ)
 T2 James M. Montgomery, Consulting Engineers, Inc. (ORIGINAL DECK)
 T3 DUCK CR TRIB FINAL RUN SUB-CRITICAL RUN UPSTREAM OF CONFLUENCE W/DUCK

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		2							2244.13	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1		-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	38	43	1	50	42	39	53	54	4	26
	25	8								
QT	1	13465								
NC	.04	.04	.038	.1	.3					
X1 (M)	7300	15	2569	2859	810	785	800			
X4	1	2242.1	2515							
GR	2244.2	2130	2242.1	2515	2242.3	2569	2240.5	2599	2238.4	2631
GR	2238.4	2662	2240.1	2671	2241.1	2703	2238.5	2712	2238.5	2732
GR	2240.9	2744	2242.9	2859	2243.0	2936	2244.0	3210	2245.0	3250
QT	1	6300								
LAS VEGAS BLVD.& Tributary- Single 6x12 RCB										
X1	7400	28	2377	2418	770	750	780			
GR	2251.8	1650	2246.4	2000	2247.2	2063	2244.5	2081	2245.1	2093
GR	2245.2	2101	2245.4	2101	2245.4	2110	2244.6	2125	2244.6	2134
GR	2246.9	2151	2246.9	2190	2247.2	2354	2247.5	2355	2247.7	2377
GR	2243.2	2392	2243.2	2406	2248.4	2418	2248.4	2470	2247.9	2518
GR	2247.3	2542	2247.4	2562	2247.9	2599	2247.9	2611	2248.0	2661
GR	2248.6	2679	2250.2	2775	2251.3	2844				
X1	7410	12	2316	2335	550	550	550			
X3	10							2251.8	2251.8	
GR	2259.0	1875	2253.9	2000	2253.7	2300	2250.5	2316	2246	2317
GR	2246.0	2334	2253.5	2335	2253.7	2351	2255.0	2800	2259.5	2800
GR	2261.8	3060	2266.3	3410						
SB	.9	1.83	2.6		13	1.0	50		2246	2246
X1	7420				40	40	40			
X2			1	2251.8	2253.7					
X3	10							2253.7	2253.7	
BT	-6	1875	2259.0		2000	2253.9		2300	2253.7	
BT		2351	2253.7		2800	2255.0		2801	2259.5	

QT	1	5700								
X1 (A)	7500	28	2521	2557	300	300	300			
IR	2260.0	1580	2256.0	1880	2255.6	2000	2254.4	2155	2253.8	2222
GR	2253.3	2263	2256.2	2274	2256.2	2280	2251.7	2296	2251.7	2322
IR	2253.3	2337	2255.0	2372	2254.6	2403	2254.8	2450	2253.8	2488
IR	2254.2	2521	2250.6	2538	2250.6	2555	2254.2	2557	2252.7	2598
GR	2256.1	2608	2256.1	2618	2253.4	2634	2254.3	2710	2255.4	2803
GR	2256.7	2895	2259.1	2927	2260.0	3260				

X1 (B)	7600	29	2448	2493	865	860	865			
GR	2263.9	2000	2263.2	2064	2262.4	2169	2261.5	2243	2261.3	2283
IR	2261.5	2322	2262.0	2364	2260.9	2374	2261.3	2448	2258.0	2460
IR	2258.0	2486	2261.2	2493	2260.1	2513	2259.7	2530	2261.9	2542
GR	2261.9	2601	2261.1	2618	2262.0	2637	2262.8	2659	2262.8	2690
IR	2260.9	2721	2258.5	2729	2258.5	2734	2262.3	2737	2262.7	2769
IR	2261.2	2824	2262.6	2873	2264.5	2903	2265.2	2947		

X1 (C)	7700	27	2507	2628	970	905	915			
IR	2272.5	2000	2270.6	2105	2269.7	2196	2269.4	2214	2269.4	2245
IR	2267.9	2255	2267.9	2262	2269.3	2264	2269.9	2329	2270.8	2380
GR	2270.6	2429	2270.0	2507	2267.3	2530	2267.3	2545	2269.2	2549
IR	2269.2	2583	2267.2	2598	2267.2	2623	2270.1	2628	2270.1	2679
R	2270.1	2744	2270.2	2808	2271.0	2837	2271.4	2867	2271.4	2908
GR	2272.8	2981	2273.9	3079						

X1 (D)	7800	18	2204	2326	1050	940	1000			
X3	10							2279.3	2279.3	
GR	2283.6	2000	2283.6	2000	2282.7	2034	2281.1	2045	2281.1	2147
R	2281.1	2194	2281.1	2197	2281.1	2204	2276.0	2214	2274.0	2239
R	2276.0	2270	2278.9	2285	2280.1	2326	2280.4	2366	2280.3	2409
GR	2280.4	2469	2281.3	2499	2281.3	2559				

CROSS SECTIONS ADDED - Plans show three (3) 4hx12w culverts at 1-15

X1	7810	11	3810	3860	70	600	280			
X3	10							2279.8	2279.8	
R	2280.2	1450	2280.5	1930	2280.8	2070	2280.5	2725	2280.3	3170
R	2282.2	3610	2281.6	3810	2276.0	3815	2276.0	3852	2280.6	3860
GR	2285.2	4310								

B	.9	1.83	2.6		37	2.0	120		2274.5	2273.5
X1	7820				150	150	150			
'2			1	2278.0	2280.5					
3	10							2280.2	2282.3	
BT	-9	1451	2280.2		1931	2280.5		2071	2280.8	
BT		2726	2280.5		3169	2280.3		3609	2282.2	
T		3611	2282.2		3860	2282.3		4309	2285.2	

X1	7840	9	3200	3320	400	400	400			
R	2292	2000	2288	2760	2286	3000	2284	3180	2281	3250
R	2284	3320	2286	3500	2288	3740	2292	4400		

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 7300.000 (M)

7300.000	5.73	2244.13	2244.08	2244.13	2244.93	.80	.00	.00	2242.30
10744.4	1779.1	8217.1	748.1	481.9	1027.3	263.8	.0	.0	2242.90
.00	3.69	8.00	2.84	.040	.038	.040	.000	2238.40	2142.85
.007779	810.	800.	785.	0	4	0	.00	1072.35	3215.20

*SECNO 7400.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .66

LAS VEGAS BLVD.& Tributary- Single 6x12 RCB

7400.000	5.52	2248.72	.00	.00	2248.86	.14	3.86	.07	2247.70
3579.4	2610.3	677.8	291.3	968.6	161.5	195.1	27.4	16.8	2248.40
.07	2.69	4.20	1.49	.040	.038	.040	.000	2243.20	1849.41
.001956	770.	780.	750.	3	0	0	.00	836.99	2686.40

*SECNO 7410.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

7410.000	8.48	2254.48	2254.48	.00	2254.89	.41	1.20	.08	2250.50
1578.2	451.3	989.2	137.6	246.5	155.1	119.4	39.1	26.1	2253.50
.11	1.83	6.38	1.15	.040	.038	.040	.000	2246.00	1985.76
.002864	550.	550.	550.	20	8	0	.00	634.98	2620.74

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 2252.22 , NOT 2254.48 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SECNO	DEPTH	CWSEL	CRWS	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
XB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.83	2.60	.00	13.00	1.00	50.00	.00	2246.00	2246.00

*SECNO 7420.000

0870 D.S. ENERGY OF 2254.89 IS HIGHER THAN COMPUTED ENERGY OF 2254.83
 PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2282.79	2256.97	.00	1418.	175.	50.	70.	2251.80	2253.70	763.
7420.000	8.56	2254.56	.00	.00	2254.89	.34	.00	.00	2250.50
1578.2	486.7	928.5	162.9	274.1	156.7	144.4	39.6	26.7	2253.50
.11	1.78	5.92	1.13	.040	.038	.040	.000	2246.00	1983.72
.002440	40.	40.	40.	3	0	7	.00	665.77	2649.49

*SECNO 7500.000 (A)

0265 DIVIDED FLOW

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.35

7500.000	5.14	2255.74	.00	.00	2256.03	.29	1.13	.00	2254.20
4980.5	2790.5	972.4	1217.6	754.4	150.7	353.0	45.9	31.9	2254.20
.13	3.70	6.45	3.45	.040	.038	.040	.000	2250.60	1959.49
.004416	300.	300.	300.	5	0	0	.00	844.58	2826.72

*SECNO 7600.000 (B)

7185 MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

7600.000	4.84	2262.84	2262.84	.00	2263.40	.57	4.93	.08	2261.30
4980.5	1495.7	1621.2	1863.6	379.2	186.6	421.4	68.1	47.8	2261.20
.17	3.94	8.69	4.42	.040	.038	.040	.000	2258.00	2111.84
.007661	865.	865.	860.	8	10	0	.00	764.88	2876.72

SECNO 7700.000 (C)

7185 MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

7700.000	3.89	2271.08	2271.08	.00	2271.64	.55	7.78	.00	2270.00
4980.5	1822.6	2521.8	636.2	437.1	340.8	188.4	89.1	64.3	2270.10
.22	4.17	7.40	3.38	.040	.038	.040	.000	2267.20	2078.20
.009152	970.	915.	905.	5	14	0	.00	765.17	2843.37

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 7800.000 (0)

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

7800.000	6.92	2280.92	2280.92	.00	2282.04	1.12	8.84	.17	2281.10
4261.0	.0	4048.7	212.4	.0	465.2	89.6	106.6	76.3	2280.10
.25	.00	8.70	2.37	.000	.038	.040	.000	2274.00	2204.36
.008428	1050.	1000.	940.	4	14	0	.00	281.89	2486.25

*SECNO 7810.000

3280 CROSS SECTION 7810.00 EXTENDED 2.12 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.99

CROSS SECTIONS ADDED - Plans show three (3) 4hx12w culverts at I-15

7810.000	6.32	2282.32	.00	.00	2282.34	.02	.19	.11	2281.60
4261.0	3553.9	617.9	89.2	3679.1	283.5	144.5	113.6	81.0	2280.60
.30	.97	2.18	.62	.040	.038	.040	.000	2276.00	1450.00
.000338	70.	280.	600.	3	0	0	.00	2578.12	4028.12

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 2279.70 , NOT 2282.32 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.83	2.60	.00	37.00	2.00	120.00	.00	2274.50	2273.50

*SECNO 7820.000

6870 D.S. ENERGY OF 2282.34 IS HIGHER THAN COMPUTED ENERGY OF 2282.33

3280 CROSS SECTION 7820.00 EXTENDED 2.13 FEET

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

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

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2318.15	2284.21	.00	4194.	68.	120.	123.	2278.00	2280.50	2413.
7820.000	6.32	2282.32	.00	.00	2282.34	.02	.00	.00	2281.60
4261.0	3556.5	614.9	89.6	3698.1	283.9	145.8	127.8	89.9	2280.60
.34	.96	2.17	.61	.040	.038	.040	.000	2276.00	1450.00
.000333	150.	150.	150.	0	0	15	.00	2578.91	4028.91

*SECNO 7840.000

J301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

7840.000	5.25	2286.25	2286.25	.00	2286.98	.74	.43	.21	2284.00
5700.0	801.7	4096.6	801.7	227.8	524.4	227.8	151.2	104.3	2284.00
.35	3.52	7.81	3.52	.040	.038	.040	.000	2281.00	2970.56
.006870	400.	400.	400.	20	10	0	.00	558.89	3529.44

TN Pyle Road Normal Split Flow u.s. of Las Vegas Boulevard

TOTAL AREA	AVG VELOCITY	MAX DEPTH	AVG DEPTH	TOF WIDTH	TOP WIDTH
1974.6	1.96	4.77	2.52	880.0	784.5

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
4002.33	3871.29	3.33	4002.33	3871.29	3.33	21	2254.555	2255.737	7420.000	7500.000

TN Normal Split Flow u.s. of Interstate 15

TOTAL AREA	AVG VELOCITY	MAX DEPTH	AVG DEPTH	TOF WIDTH	TOP WIDTH
853.1	1.68	2.97	1.74	780.0	491.2

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1438.96	1436.68	.16	5441.29	5307.97	2.48	21	2282.318	2286.245	7820.000	7840.000

THIS RUN EXECUTED 14MAY93 12:00:33

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

BUCK CR TRIB FINAL RUN

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
(A)	7300.000	10744.35	2244.13	.00	2238.40	.00	2142.85	3215.20	1072.35	8.00	1773.01	5.73
*	7400.000	3579.35	2248.72	.00	2243.20	780.00	1849.41	2686.40	836.99	4.20	1325.23	5.52
*	7410.000	1578.19	2254.48	.00	2246.00	550.00	1985.76	2620.74	634.98	6.38	521.11	8.48
*	7420.000	1578.19	2254.56	.00	2246.00	40.00	1983.72	2649.49	665.77	5.92	575.25	8.56
(A)	7500.000	4980.52	2255.74	.00	2250.60	300.00	1959.49	2826.72	844.58	6.45	1257.97	5.14
(B)	7600.000	4980.52	2262.84	.00	2258.00	865.00	2111.84	2876.72	764.88	8.69	987.20	4.84
(C)	7700.000	4980.52	2271.08	.00	2267.20	915.00	2078.20	2843.37	765.17	7.40	966.35	3.89
(D)	7800.000	4261.04	2280.92	.00	2274.00	1000.00	2204.36	2486.25	281.89	8.70	554.83	6.92
	7810.000	4261.04	2282.32	.00	2276.00	280.00	1450.00	4028.12	2578.12	2.18	4107.12	6.32
*	7820.000	4261.04	2282.32	.00	2276.00	150.00	1450.00	4028.91	2578.91	2.17	4127.89	6.32
	7840.000	5700.00	2286.25	.00	2281.00	400.00	2970.56	3529.44	558.89	7.81	979.90	5.25

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 7400.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 7410.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 7410.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 7410.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 7420.000 PROFILE= 1 HYDRAULIC JUMP D.S.

WARNING SECNO= 7500.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 7600.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 7600.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 7700.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 7700.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 7800.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 7800.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 7810.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

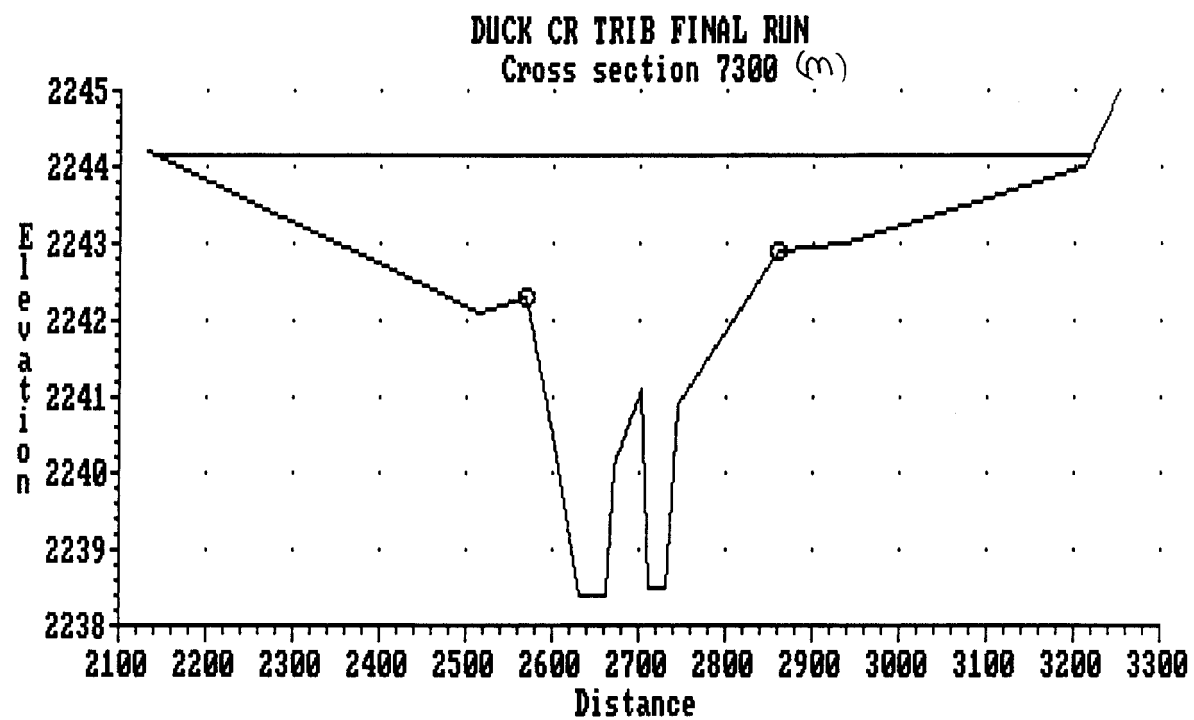
CAUTION SECNO= 7820.000 PROFILE= 1 HYDRAULIC JUMP D.S.

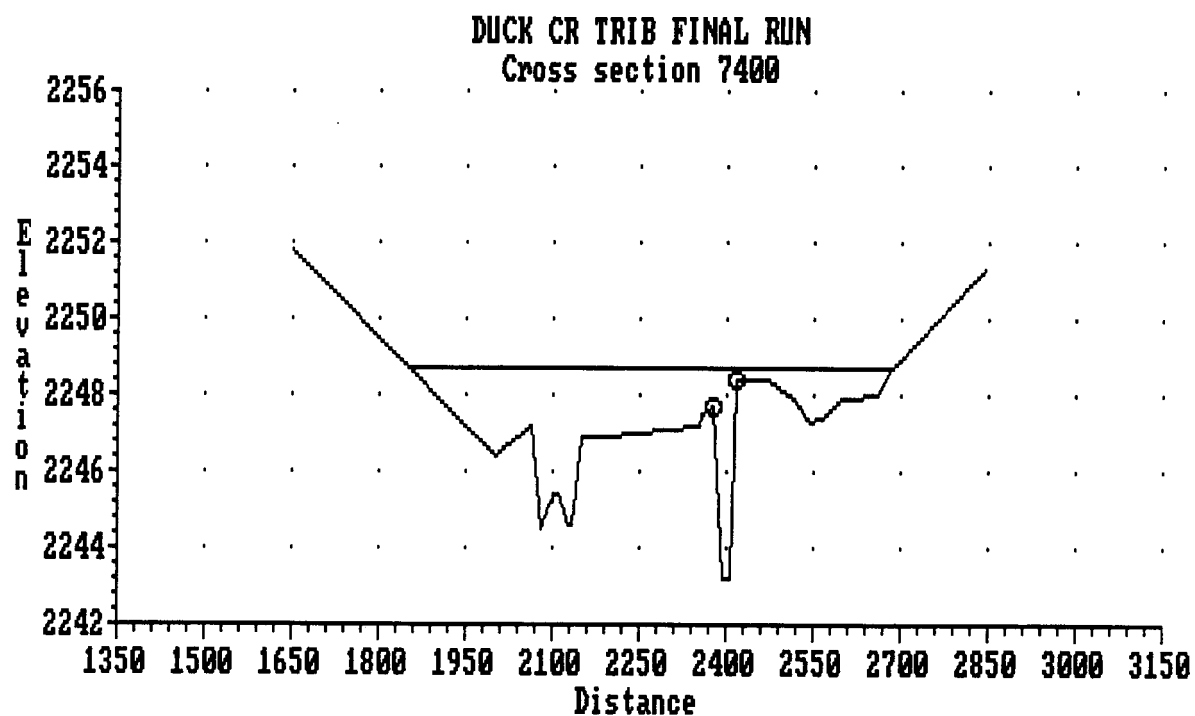
CAUTION SECNO= 7840.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

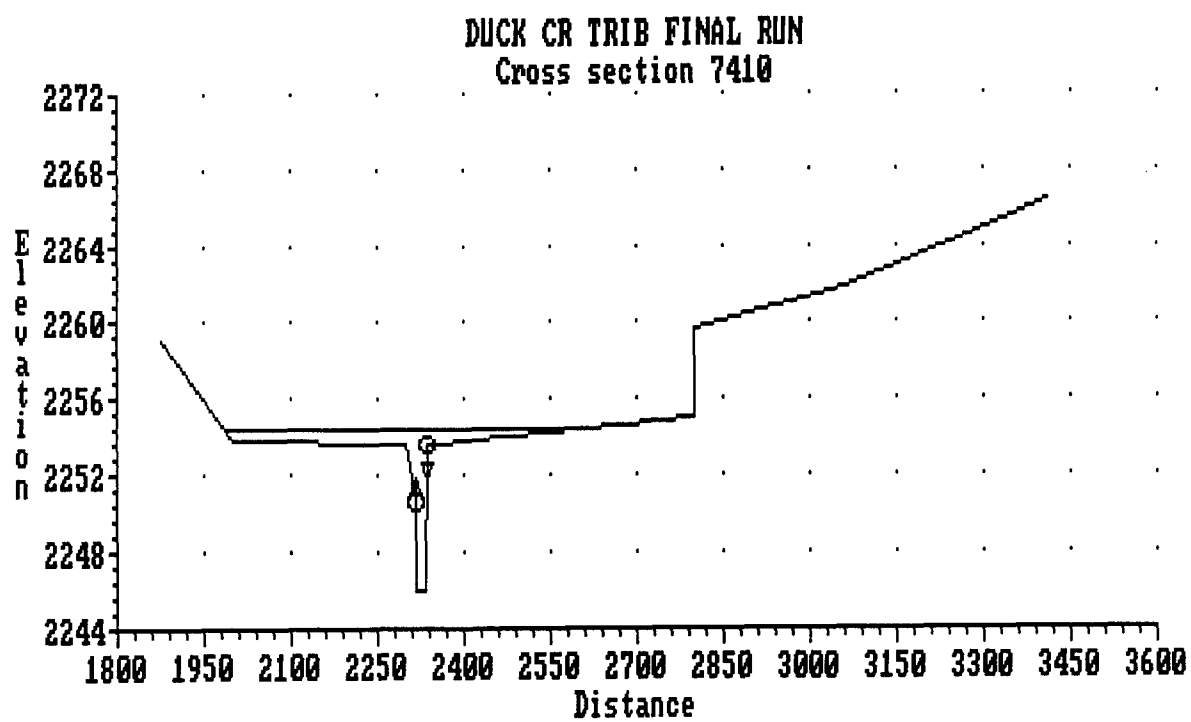
CAUTION SECNO= 7840.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY

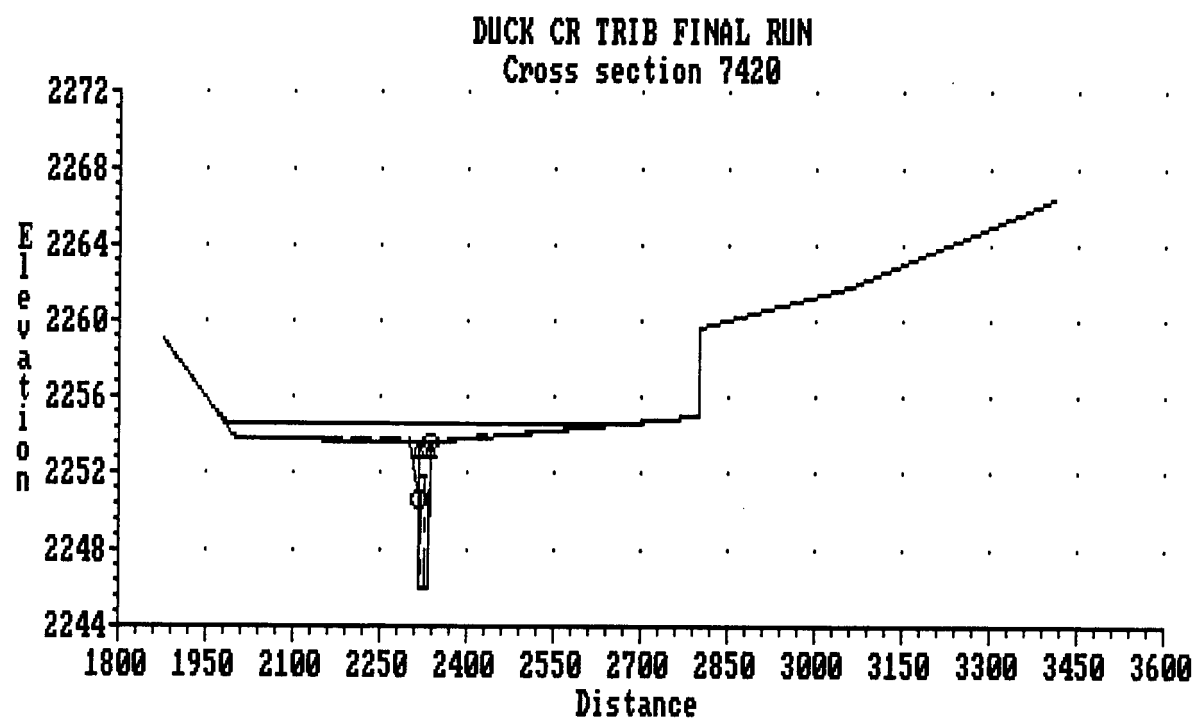
CAUTION SECNO= 7840.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

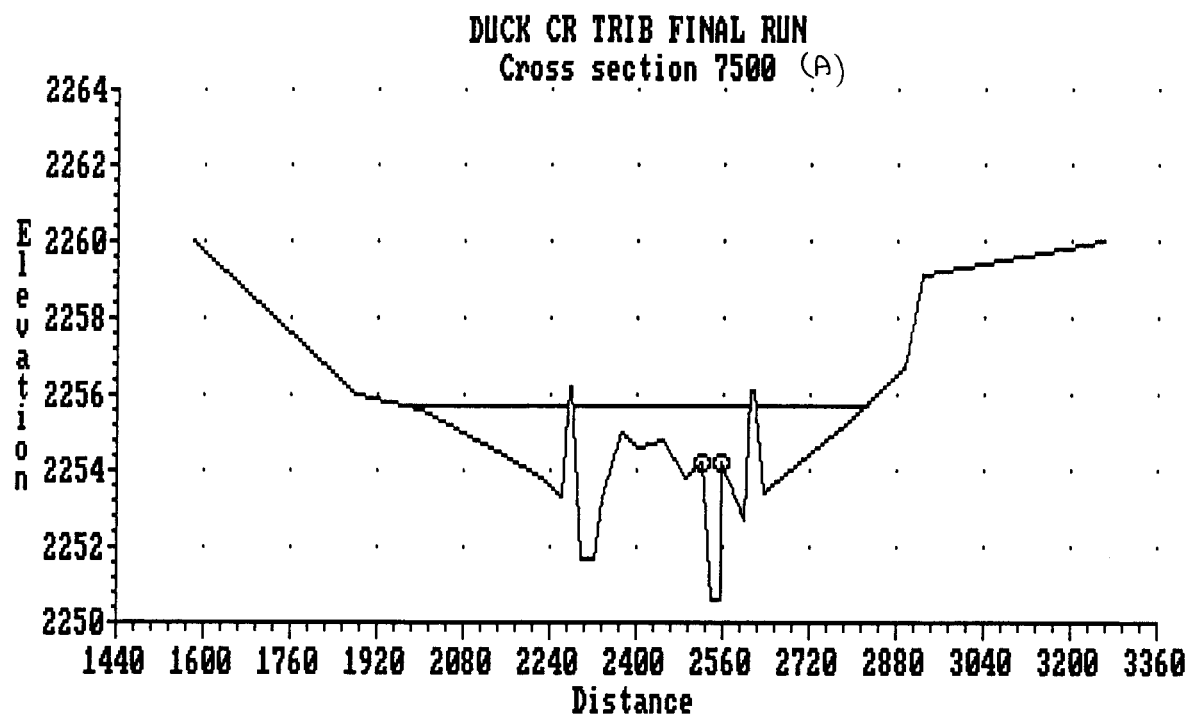
Normal program termination

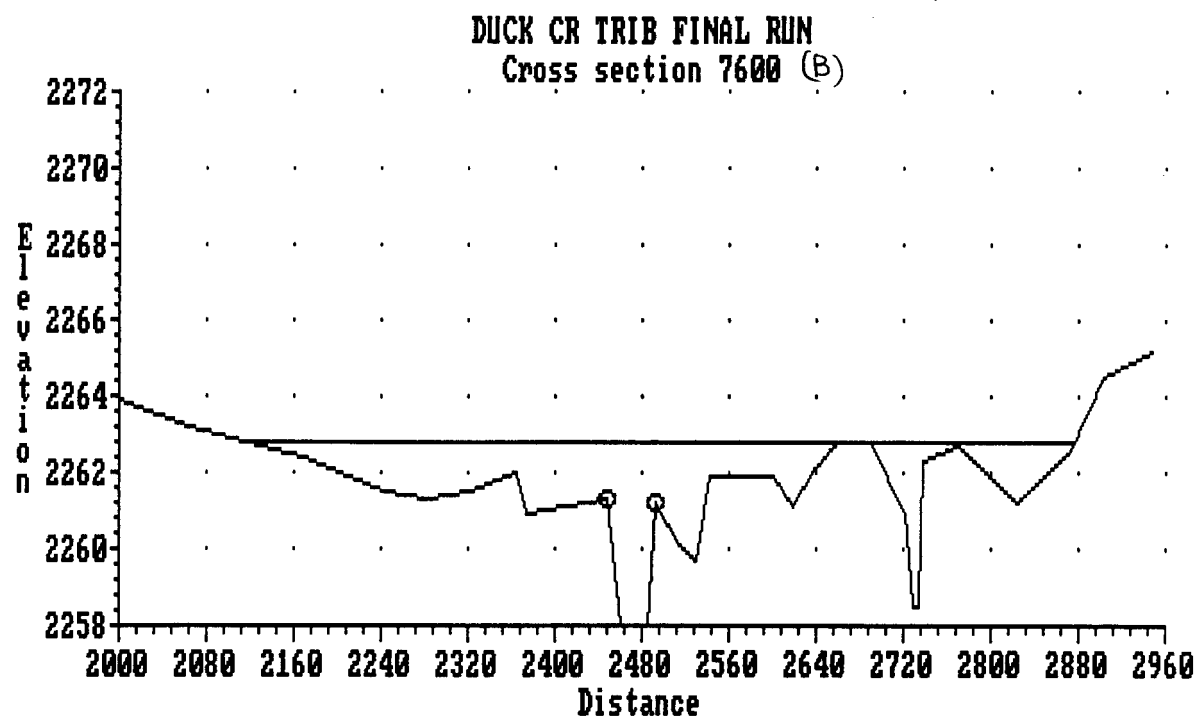


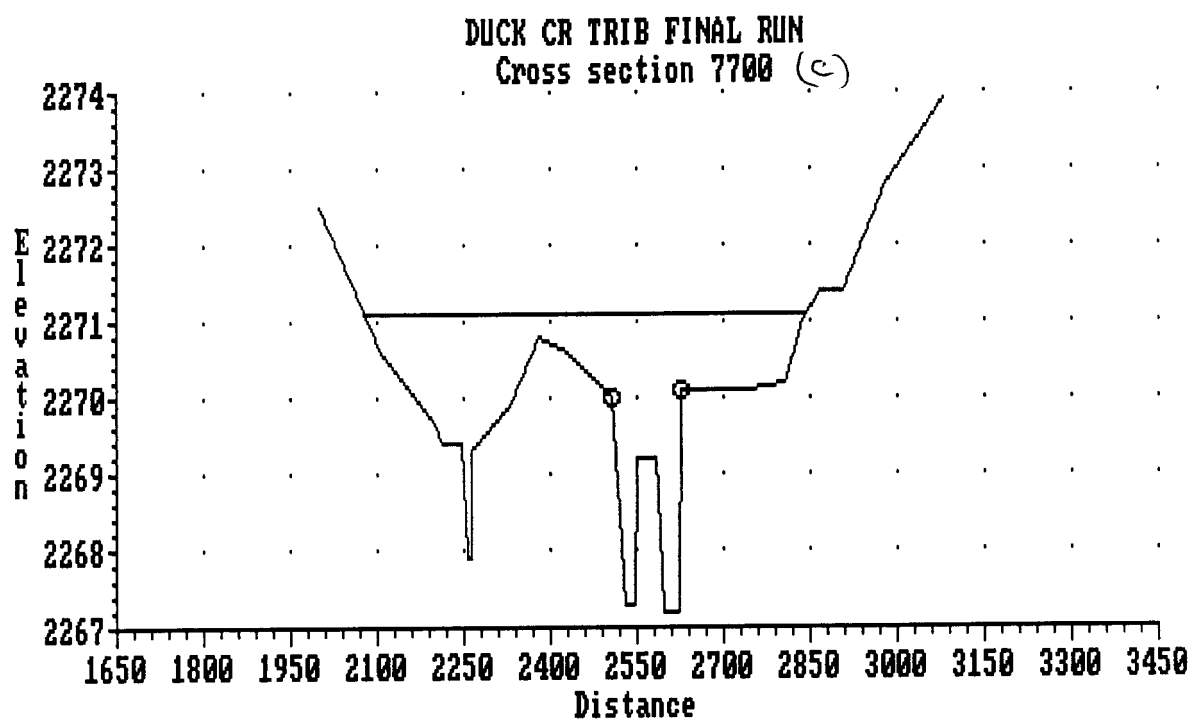


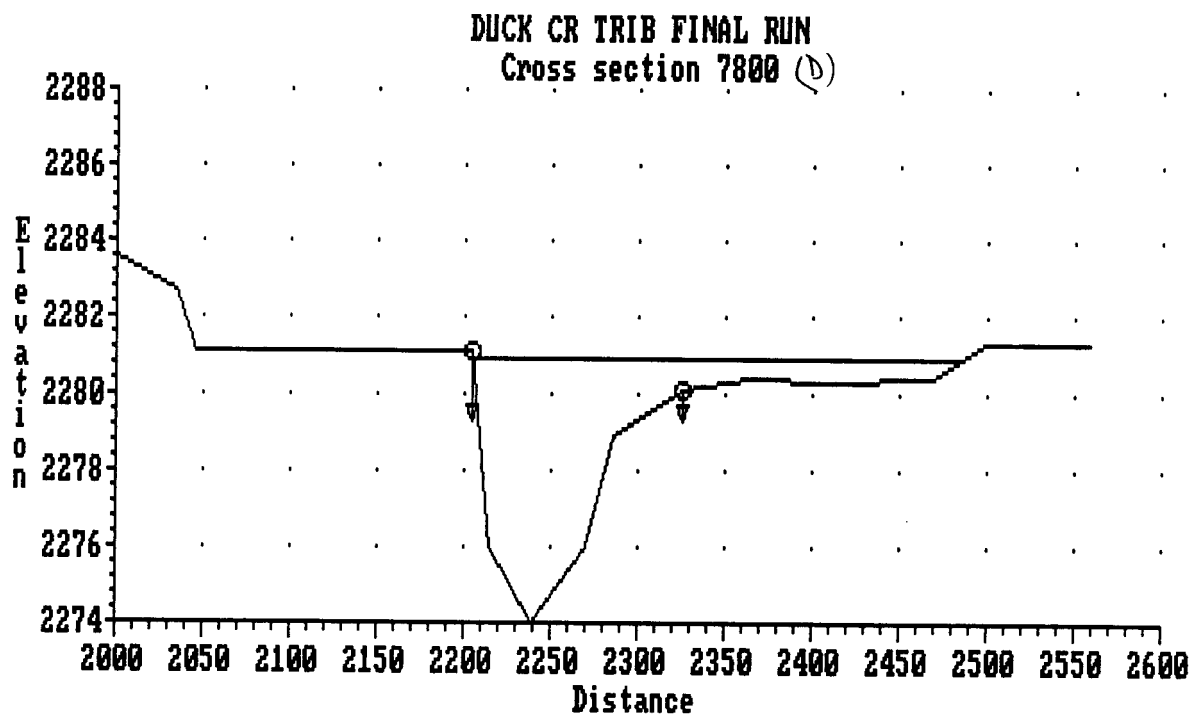




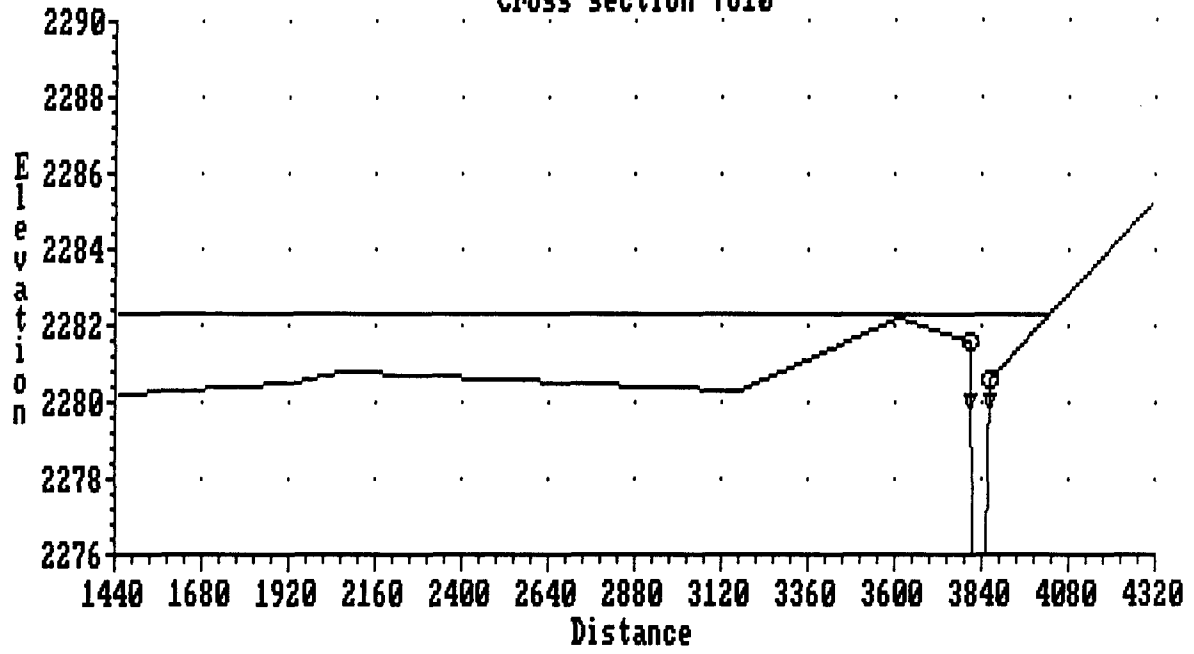


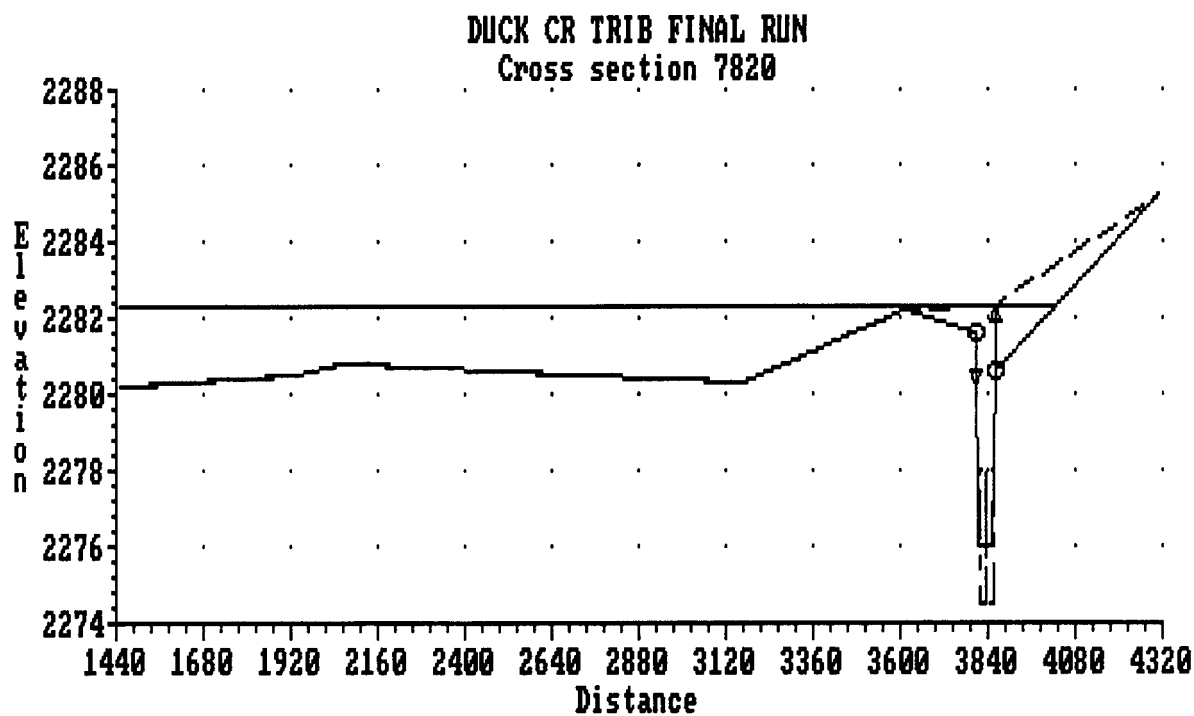


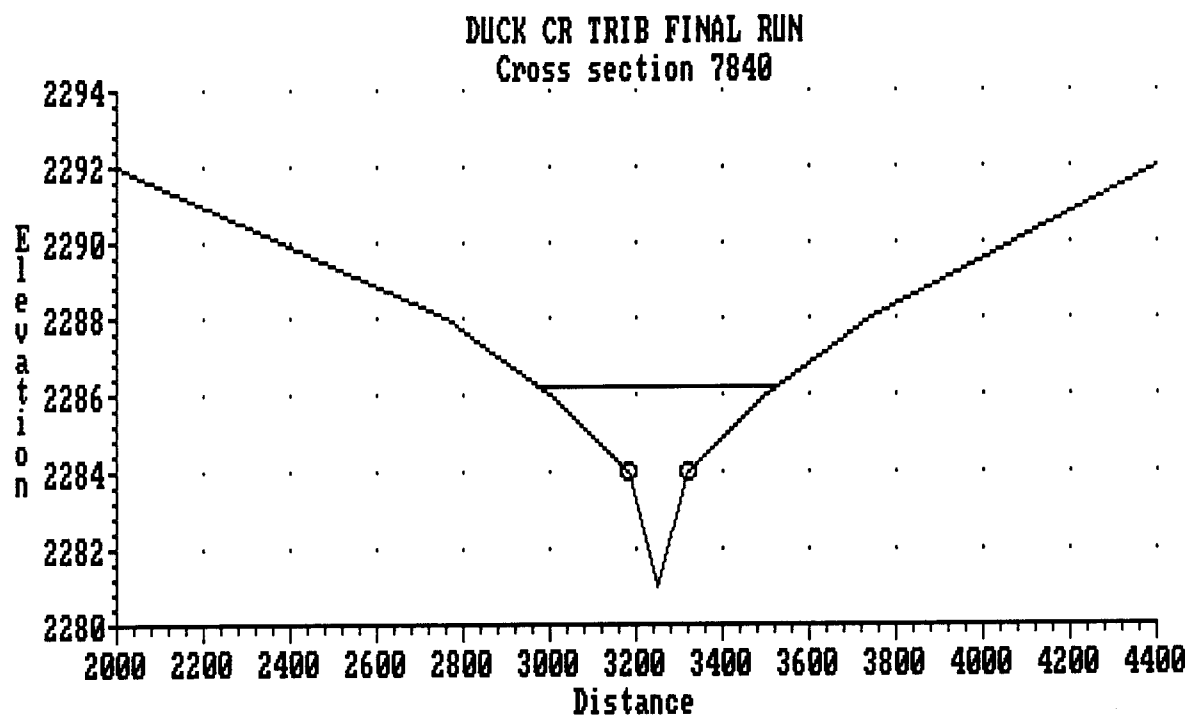




DUCK CR TRIB FINAL RUN
Cross section 7810







THIS RUN EXECUTED 14MAY93 12:14:35

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 Clark County, Nevada FIS - 100-year flood (REVISED BY MBJ)
 T2 James M. Montgomery, Consulting Engineers, Inc. (ORIGINAL DECK)
 T3 DUCK CR TRIB FINAL RUN SUB-CRITICAL RUN UPSTREAM OF CONFLUENCE W/DUCK

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
----	--------	-----	------	------	------	--------	-------	---	------	----

2

2244.13

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

1

-1

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 200

QT	2	11000	11000							
ET			10.4							
NC	.04	.04	.038	.1	.3					
(1(m))	7300	15	2569	2859	810	785	800			
X4	1	2242.1	2515							
GR	2244.2	2130	2242.1	2515	2242.3	2569	2240.5	2599	2238.4	2631
GR	2238.4	2662	2240.1	2671	2241.1	2703	2238.5	2712	2238.5	2732
GR	2240.9	2744	2242.9	2859	2243.0	2936	2244.0	3210	2245.0	3250

QT	2	6300	6300							
ET			1.4							

LAS VEGAS BLVD.& Tributary- Single 6x12 RCB

K1	7400	28	2377	2418	770	750	780			
GR	2251.8	1650	2246.4	2000	2247.2	2063	2244.5	2081	2245.1	2093
GR	2245.2	2101	2245.4	2101	2245.4	2110	2244.6	2125	2244.6	2134
GR	2246.9	2151	2246.9	2190	2247.2	2354	2247.5	2355	2247.7	2377
GR	2243.2	2392	2243.2	2406	2248.4	2418	2248.4	2470	2247.9	2518
GR	2247.3	2542	2247.4	2562	2247.9	2599	2247.9	2611	2248.0	2661
GR	2248.6	2679	2250.2	2775	2251.3	2844				

ET			1.4							
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X1	7410	12	2316	2335	550	550	550			
X3	10							2251.8	2251.8	
GR	2259.0	1875	2253.9	2000	2253.7	2300	2253.5	2316	2246	2317
GR	2246.0	2334	2253.5	2335	2253.7	2351	2255.0	2800	2259.5	2800
GR	2261.8	3060	2266.3	3410						

SB	.9	1.83	2.6		37	2.0	120		2274.5	2273.5
ET			0.4							
X1	7820				150	150	150			
X2			1	2278.0	2280.5					
X3	10							2280.2	2282.3	
BT	-9	1451	2280.2		1931	2280.5		2071	2280.8	
BT		2726	2280.5		3169	2280.3		3609	2282.2	
BT		3611	2282.2		3860	2282.3		4309	2285.2	
ET			8.4							
X1	7840	9	3200	3320	400	400	400			
GR	2292	2000	2288	2760	2286	3000	2284	3180	2281	3250
GR	2284	3320	2286	3500	2288	3740	2292	4400		

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 7300.000 (M)

3720 CRITICAL DEPTH ASSUMED

7300.000	5.73	2244.13	2244.13	2244.13	2244.97	.84	.00	.00	2242.30
11000.0	1822.5	8410.3	767.2	482.4	1027.7	264.2	.0	.0	2242.90
.00	3.78	8.18	2.90	.040	.038	.040	.000	2238.40	2142.62
.008140	810.	800.	785.	0	4	0	.00	1072.62	3215.24

*SECNO 7400.000

3301 HV CHANGED MORE THAN HVINS

LAS VEGAS BLVD.& Tributary- Single 6x12 RCB

7400.000	5.91	2249.11	.00	.00	2249.38	.26	4.35	.06	2247.70
6300.0	4531.3	1037.8	730.9	1178.1	177.4	303.8	30.4	17.2	2248.40
.05	3.85	5.85	2.41	.040	.038	.040	.000	2243.20	1824.26
.003353	770.	780.	750.	4	0	0	.00	885.41	2709.68

*SECNO 7410.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

7410.000	9.50	2255.50	2255.50	.00	2256.16	.65	2.63	.12	2253.50
6300.0	2556.3	1783.0	1960.7	572.8	173.1	548.1	49.0	28.1	2253.50
.08	4.46	10.30	3.58	.040	.038	.040	.000	2246.00	1960.71
.007352	550.	550.	550.	20	15	0	.00	839.29	2800.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.83	2.60	.00	13.00	1.00	50.00	.00	2246.00	2246.00	

*SECNO 7420.000

6870 D.S. ENERGY OF 2256.16 IS HIGHER THAN COMPUTED ENERGY OF 2256.10
 PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

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

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2706.64	2256.16	.09	6072.	229.	50.	70.	2251.80	2253.70	854.

7420.000	9.68	2255.68	.00	.00	2256.16	.48	.00	.00	2253.50
6300.0	2597.3	1578.9	2123.8	636.9	176.5	631.5	50.3	28.9	2253.50
.08	4.08	8.95	3.36	.040	.038	.040	.000	2246.00	1956.32
.005403	40.	40.	40.	4	0	9	.00	843.68	2800.00

*SECNO 7500.000 (A)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.91

7500.000	6.18	2256.78	.00	.00	2256.89	.11	.69	.04	2254.20
5700.0	3418.6	738.9	1542.5	1434.9	188.4	670.0	63.1	35.5	2254.20
.11	2.38	3.92	2.30	.040	.038	.040	.000	2250.60	1821.28
.001211	300.	300.	300.	3	0	0	.00	1074.83	2896.11

*SECNO 7600.000 (B)

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

7600.000	4.96	2262.96	2262.96	.00	2263.56	.60	2.16	.15	2261.30
5700.0	1781.0	1738.1	2180.9	423.1	192.3	470.4	96.6	53.9	2261.20
.16	4.21	9.04	4.64	.040	.038	.040	.000	2258.00	2095.11
.007960	865.	865.	860.	20	14	0	.00	783.62	2878.73

*SECNO 7700.000 (C)

7700.000	3.98	2271.18	.00	.00	2271.80	.61	8.23	.00	2270.00
5700.0	2149.6	2769.5	780.9	479.0	352.5	209.6	119.4	70.7	2270.10
.20	4.49	7.86	3.72	.040	.038	.040	.000	2267.20	2072.85
.009860	970.	915.	905.	5	0	0	.00	777.80	2850.64

*SECNO 7800.000 (D)

3280 CROSS SECTION 7800.00 EXTENDED .39 FEET

7185 MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

7800.000	7.69	2281.69	2281.69	.00	2282.62	.93	7.73	.10	2281.10
5700.0	192.0	4705.5	802.5	94.2	558.9	243.1	141.7	85.6	2280.10
.24	2.04	8.42	3.30	.040	.038	.040	.000	2274.00	2040.98
.006204	1050.	1000.	940.	4	14	0	.00	518.02	2559.00

*SECNO 7810.000

3280 CROSS SECTION 7810.00 EXTENDED 2.64 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.91

CROSS SECTIONS ADDED - Plans show three (3) 4hx12w culverts at I-15

7810.000	6.84	2282.84	.00	.00	2282.86	.02	.15	.09	2281.60
5700.0	4916.5	625.1	158.4	4916.7	309.8	246.1	151.9	91.3	2280.60
.29	1.00	2.02	.64	.040	.038	.040	.000	2276.00	1450.00
.000258	70.	280.	600.	3	0	0	.00	2629.42	4079.42

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 2281.02 , NOT 2282.84 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.83	2.60	.00	37.00	2.00	120.00	.00	2274.50	2273.50

*SECNO 7820.000

6790 POSSIBLE INVALID SOLUTION 20 TRIALS OF EG NOT ENOUGH

FINAL QWEIR + QPR = 5641. DOES NOT EQUAL ACTUAL Q = 5700.

6870 D.S. ENERGY OF 2282.86 IS HIGHER THAN COMPUTED ENERGY OF 2282.85

3280 CROSS SECTION 7820.00 EXTENDED 2.65 FEET

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

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

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2346.96	2286.28	.00	5571.	70.	120.	123.	2278.00	2280.50	2495.
7820.000	6.84	2282.84	.00	.00	2282.86	.02	.00	.00	2281.60
5700.0	4918.5	622.5	159.1	4938.6	310.2	248.1	170.8	100.4	2280.60
.33	1.00	2.01	.64	.040	.038	.040	.000	2276.00	1450.00
.000254	150.	150.	150.	0	0	20	.00	2630.33	4080.33

*SECNO 7840.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

7840.000	5.22	2286.22	2286.22	.00	2286.98	.76	.29	.22	2284.00
5700.0	787.8	4124.4	787.8	222.4	520.7	222.4	200.4	115.0	2284.00
.34	3.54	7.92	3.54	.040	.038	.040	.000	2281.00	2973.66
.007126	400.	400.	400.	20	14	0	.00	552.68	3526.34

T1 Method 4 Floodway Profile -- Equal Conveyance
T2 Tributary to Duck Creek -- Confluence at section 7300
T3 Tributary Final 100-yr 100 Year Floodway

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2244.10	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

*PROF 2

CCHV= .100 CEHV= .300

*SECNO 7300.000 (M)

2800 NAT Q1= 1219.23 WSEL= 2244.13 ENC Q1= 1410.67 WSEL= 2245.13 RATIO= -.1570

NAT Q1= 2319. RATIOS LOB, CH, ROB= .2443 .6083 .1474 WSEL= 2245.13

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2569.0	2859.0	TYPE=	4	TARGET=	.392			
7300.000	5.72	2244.12	2244.12	2244.13	2245.91	1.79	.00	.00	2242.30
11000.0	.0	11000.0	.0	.0	1023.3	.0	.0	.0	2242.90
.00	.00	10.75	.00	.000	.038	.000	.000	2238.40	2569.00
.014321	810.	800.	785.	0	4	0	.00	290.00	2859.00

*SECNO 7400.000

2800 NAT Q1= 1087.91 WSEL= 2249.11 ENC Q1= 1087.91 WSEL= 2249.21 RATIO= .0000

NAT Q1= 1168. RATIOS LOB, CH, ROB= .7165 .1594 .1241 WSEL= 2249.21

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.65

3470 ENCROACHMENT STATIONS=	1948.6	2602.9	TYPE=	4	TARGET=	.069			
LAS VEGAS BLVD.& Tributary- Single 6x12 RCB									
7400.000	6.58	2249.78	.00	2249.11	2249.97	.19	3.90	.16	2247.70
6300.0	4562.1	946.0	792.0	1346.7	205.0	337.7	25.8	8.3	2248.40
.06	3.39	4.62	2.35	.040	.038	.040	.000	2243.20	1948.62
.001722	770.	780.	750.	4	0	0	.00	654.29	2602.91

*SECNO 7410.000

2800 NAT Q1= 734.74 WSEL= 2255.50 ENC Q1= 734.74 WSEL= 2255.60 RATIO= .0000

NAT Q1= 802. RATIOS LOB, CH, ROB= .4096 .2641 .3263 WSEL= 2255.60

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

3470 ENCROACHMENT STATIONS= 2022.6 2643.1 TYPE= 4 TARGET= .084

7410.000	9.57	2255.57	2255.57	2255.50	2256.32	.75	1.75	.17	2253.50
6300.0	2518.1	1857.6	1924.2	523.5	174.3	453.0	45.0	16.4	2253.50
.09	4.81	10.66	4.25	.040	.038	.040	.000	2246.00	2022.59
.007799	550.	550.	550.	20	12	0	.00	620.47	2643.06

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.83	2.60	.00	13.00	1.00	50.00	.00	2246.00	2246.00

*SECNO 7420.000

6870 D.S. ENERGY OF 2256.32 IS HIGHER THAN COMPUTED ENERGY OF 2256.10

2800 NAT Q1= 857.09 WSEL= 2255.68 ENC Q1= 857.09 WSEL= 2255.78 RATIO= .0000

NAT Q1= 928. RATIOS LOB, CH, ROB= .4151 .2356 .3493 WSEL= 2255.78

WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3470 ENCROACHMENT STATIONS= 2017.2 2674.9 TYPE= 4 TARGET= .076

7420.000	9.74	2255.74	.00	2255.68	2256.29	.54	.27	.02	2253.50
6300.0	2564.8	1642.0	2093.2	585.4	177.6	544.1	46.1	17.0	2253.50
.09	4.38	9.24	3.85	.040	.038	.040	.000	2246.00	2017.16
.005718	40.	40.	40.	0	0	9	.00	657.77	2674.93

*SECNO 7500.000 (A)

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.09

7500.000	6.28	2256.88	.00	2256.78	2256.98	.10	.65	.04	2254.20
5700.0	3430.8	715.7	1553.5	1504.5	191.9	703.6	58.9	23.0	2254.20
.12	2.28	3.73	2.21	.040	.038	.040	.000	2250.60	1813.86
.001067	300.	300.	300.	2	0	0	.00	1083.56	2897.43

*SECNO 7600.000 (B)

2800 NAT Q1= 638.86 WSEL= 2262.96 ENC Q1= 638.86 WSEL= 2263.76 RATIO= .0000

NAT Q1= 1201. RATIOS LOB, CH, ROB= .3678 .2159 .4162 WSEL= 2263.76

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2358.4 2617.1 TYPE= 4 TARGET= .468

7600.000	5.60	2263.60	2263.60	2262.96	2264.75	1.14	2.06	.31	2261.30
5700.0	1398.9	2385.7	1915.4	216.0	221.1	289.7	89.9	36.3	2261.20
.15	6.48	10.79	6.61	.040	.038	.040	.000	2258.00	2358.36
.009418	865.	865.	860.	20	10	0	.00	258.75	2617.11

*SECNO 7700.000 (C)

2800 NAT Q1= 574.02 WSEL= 2271.18 ENC Q1= 574.02 WSEL= 2271.78 RATIO= .0000
 NAT Q1= 975. RATIOS LOB, CH, ROB= .4257 .3910 .1833 WSEL= 2271.78

3470 ENCROACHMENT STATIONS= 2266.8 2628.0 TYPE= 4 TARGET= .411

7700.000	4.77	2271.97	2271.78	2271.18	2272.76	.79	7.98	.04	2270.00
5700.0	2052.7	3647.3	.0	422.2	448.1	.0	107.0	43.0	2270.10
.19	4.86	8.14	.00	.040	.038	.000	.000	2267.20	2266.81
.007843	970.	915.	905.	12	14	0	.00	361.19	2628.00

*SECNO 7800.000 (D)

2800 NAT Q1= 723.65 WSEL= 2281.69 ENC Q1= 723.65 WSEL= 2282.09 RATIO= .0000
 NAT Q1= 913. RATIOS LOB, CH, ROB= .0640 .7526 .1834 WSEL= 2282.09

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2204.0 2362.8 TYPE= 4 TARGET= .207

7800.000	7.29	2281.29	2281.29	2281.69	2283.08	1.79	9.54	.30	2281.10
5700.0	.0	5541.9	158.1	.0	510.7	38.7	123.5	49.1	2280.10
.21	.00	10.85	4.08	.000	.038	.040	.000	2274.00	2204.00
.011648	1050.	1000.	940.	10	11	0	.00	158.83	2362.83

*SECNO 7810.000

3280 CROSS SECTION 7810.00 EXTENDED 3.13 FEET

3301 HV CHANGED MORE THAN HVINS

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 9.29

CROSS SECTIONS ADDED - Plans show three (3) 4hx12w culverts at I-15

7810.000	7.33	2283.33	2281.35	2282.84	2283.34	.01	.09	.18	2281.60
5700.0	4993.7	513.0	193.2	6061.0	334.0	364.0	133.9	53.6	2280.60
.28	.82	1.54	.53	.040	.038	.040	.000	2276.00	1450.00
.000135	70.	280.	600.	9	17	0	.00	2676.86	4126.86

SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS 2281.02 , NOT 2283.33 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.83	2.60	.00	37.00	2.00	120.00	.00	2274.50	2273.50

*SECNO 7820.000

6870 D.S. ENERGY OF 2283.34 IS HIGHER THAN COMPUTED ENERGY OF 2283.34

3280 CROSS SECTION 7820.00 EXTENDED 3.13 FEET

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2347.44	2283.34	.00	5619.	66.	120.	123.	2278.00	2280.50	2569.

7820.000	7.33	2283.33	.00	2282.84	2283.34	.01	.00	.00	2281.60
5700.0	4994.0	512.7	193.4	6065.6	334.1	364.5	157.2	62.8	2280.60
.32	.82	1.53	.53	.040	.038	.040	.000	2276.00	1450.00
.000135	150.	150.	150.	.1	0	14	.00	2677.05	4127.05

*SECNO 7840.000

2800 NAT Q1= 675.21 WSEL= 2286.22 ENC Q1= 675.99 WSEL= 2287.02 RATIO= -.0012
 NAT Q1= 1137. RATIOS LOB, CH, ROB= .2028 .5945 .2028 WSEL= 2287.02

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

3470 ENCROACHMENT STATIONS=	3180.0	3320.0	TYPE=	4	TARGET=	.406			
7840.000	5.19	2286.19	2286.19	2286.22	2288.08	1.89	.18	.56	2284.00
5700.0	.0	5700.0	.0	.0	516.7	.0	190.6	75.8	2284.00
.34	.00	11.03	.00	.000	.038	.000	.000	2281.00	3180.00
.014551	400.	400.	400.	20	19	0	.00	140.00	3320.00

THIS RUN EXECUTED 14MAY93 12:14:38

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

DUCK CR TRIB FINAL RUN

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
* (M)	7300.000	.00	.00	.00	2238.40	11000.00	2244.13	2244.13	2244.97	81.40	8.18	1774.32	1219.23
*	7300.000	.00	.00	.00	2238.40	11000.00	2244.12	2244.12	2245.91	143.21	10.75	1023.29	919.18
	7400.000	780.00	.00	.00	2243.20	6300.00	2249.11	.00	2249.38	33.53	5.85	1659.32	1087.91
*	7400.000	780.00	.00	.00	2243.20	6300.00	2249.78	.00	2249.97	17.22	4.62	1889.31	1518.08
*	7410.000	550.00	.00	.00	2246.00	6300.00	2255.50	2255.50	2256.16	73.52	10.30	1294.02	734.74
*	7410.000	550.00	.00	.00	2246.00	6300.00	2255.57	2255.57	2256.32	77.99	10.66	1150.79	713.38
	7420.000	40.00	2253.70	2251.80	2246.00	6300.00	2255.68	.00	2256.16	54.03	8.95	1444.81	857.09
	7420.000	40.00	999999.00	.00	2246.00	6300.00	2255.74	.00	2256.29	57.18	9.24	1307.07	833.14
* (A)	7500.000	300.00	.00	.00	2250.60	5700.00	2256.78	.00	2256.89	12.11	3.92	2293.29	1638.14
*	7500.000	300.00	.00	.00	2250.60	5700.00	2256.88	.00	2256.98	10.67	3.73	2399.99	1744.83
* (B)	7600.000	865.00	.00	.00	2258.00	5700.00	2262.96	2262.96	2263.56	79.60	9.04	1085.87	638.86
*	7600.000	865.00	.00	.00	2258.00	5700.00	2263.60	2263.60	2264.75	94.18	10.79	726.81	587.34
(C)	7700.000	915.00	.00	.00	2267.20	5700.00	2271.18	.00	2271.80	98.60	7.86	1041.12	574.02
	7700.000	915.00	.00	.00	2267.20	5700.00	2271.97	2271.78	2272.76	78.43	8.14	870.27	643.63
* (D)	7800.000	1000.00	.00	.00	2274.00	5700.00	2281.69	2281.69	2282.62	62.04	8.42	896.21	723.65
*	7800.000	1000.00	.00	.00	2274.00	5700.00	2281.29	2281.29	2283.08	116.48	10.85	549.41	528.15
*	7810.000	280.00	.00	.00	2276.00	5700.00	2282.84	.00	2282.86	2.58	2.02	5472.57	3550.96
*	7810.000	280.00	.00	.00	2276.00	5700.00	2283.33	2281.35	2283.34	1.35	1.54	6758.98	4905.69
*	7820.000	150.00	2280.50	2278.00	2276.00	5700.00	2282.84	.00	2282.86	2.54	2.01	5496.97	3574.99
*	7820.000	150.00	2280.50	2278.00	2276.00	5700.00	2283.33	.00	2283.34	1.35	1.53	6764.21	4911.54
*	7840.000	400.00	.00	.00	2281.00	5700.00	2286.22	2286.22	2286.98	71.26	7.92	965.52	675.21
*	7840.000	400.00	.00	.00	2281.00	5700.00	2286.19	2286.19	2288.08	145.51	11.03	516.73	472.53

DUCK CR TRIB FINAL RUN

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	7300.000	11000.00	2244.13	.00	.00	.00	1072.62	.00
*	7300.000	11000.00	2244.12	-.02	.00	-.02	290.00	.00
	7400.000	6300.00	2249.11	.00	4.98	.00	885.41	780.00
*	7400.000	6300.00	2249.78	.67	5.67	.67	654.29	780.00
*	7410.000	6300.00	2255.50	.00	6.39	.00	839.29	550.00
*	7410.000	6300.00	2255.57	.06	5.78	.06	620.47	550.00
	7420.000	6300.00	2255.68	.00	.18	.00	843.68	40.00
	7420.000	6300.00	2255.74	.06	.18	.06	657.77	40.00
*	7500.000	5700.00	2256.78	.00	1.10	.00	1074.83	300.00
*	7500.000	5700.00	2256.88	.10	1.14	.10	1083.56	300.00
*	7600.000	5700.00	2262.96	.00	6.18	.00	783.62	865.00
*	7600.000	5700.00	2263.60	.64	6.72	.64	258.75	865.00
	7700.000	5700.00	2271.18	.00	8.22	.00	777.80	915.00
	7700.000	5700.00	2271.97	.79	8.36	.79	361.19	915.00
*	7800.000	5700.00	2281.69	.00	10.50	.00	518.02	1000.00
*	7800.000	5700.00	2281.29	-.40	9.32	-.40	158.83	1000.00
*	7810.000	5700.00	2282.84	.00	1.16	.00	2629.42	280.00
*	7810.000	5700.00	2283.33	.48	2.04	.48	2676.86	280.00
*	7820.000	5700.00	2282.84	.00	.00	.00	2630.33	150.00
*	7820.000	5700.00	2283.33	.48	.00	.48	2677.05	150.00
*	7840.000	5700.00	2286.22	.00	3.38	.00	552.68	400.00
*	7840.000	5700.00	2286.19	-.03	2.86	-.03	140.00	400.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 7300.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7300.000 PROFILE= 2 CRITICAL DEPTH ASSUMED

WARNING SECNO= 7400.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 7410.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7410.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7410.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 7410.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7410.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7410.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 7500.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 7500.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 7600.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7600.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7600.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 7600.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7600.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7600.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 7800.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7800.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7800.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7800.000 PROFILE= 2 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 7810.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 7810.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

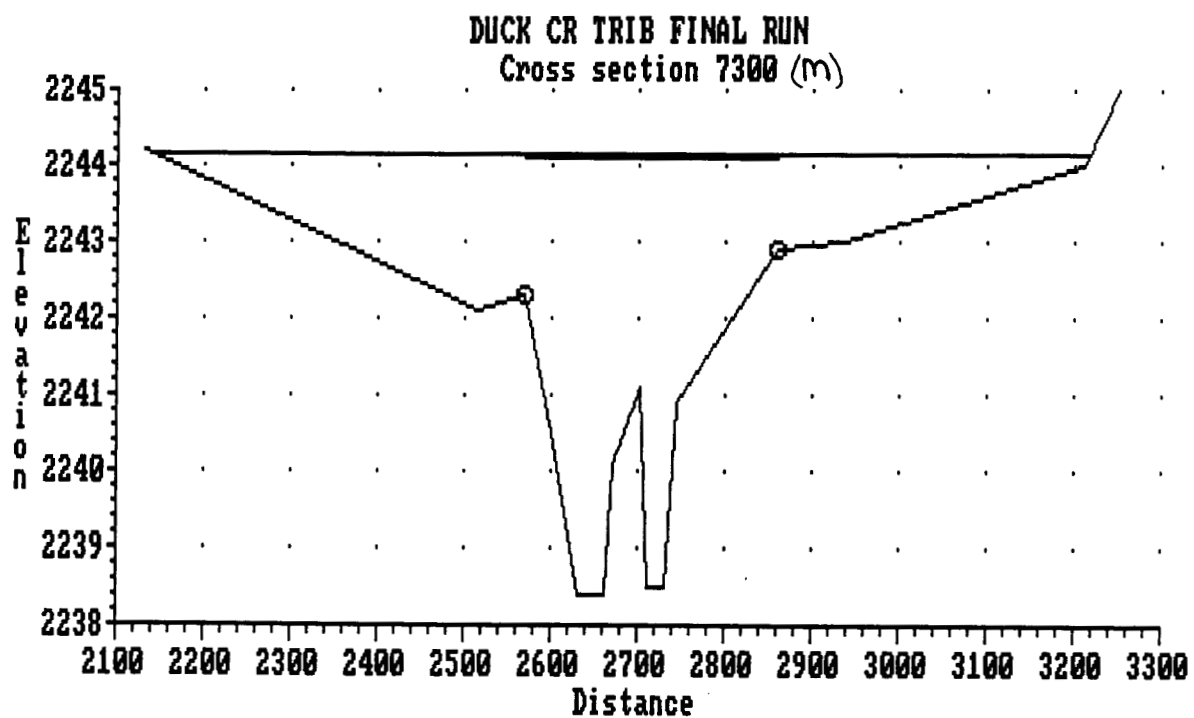
CAUTION SECNO= 7820.000 PROFILE= 1 HYDRAULIC JUMP D.S.
CAUTION SECNO= 7820.000 PROFILE= 1 20 TRIALS OF EG NOT ENOUGH
CAUTION SECNO= 7820.000 PROFILE= 2 HYDRAULIC JUMP D.S.

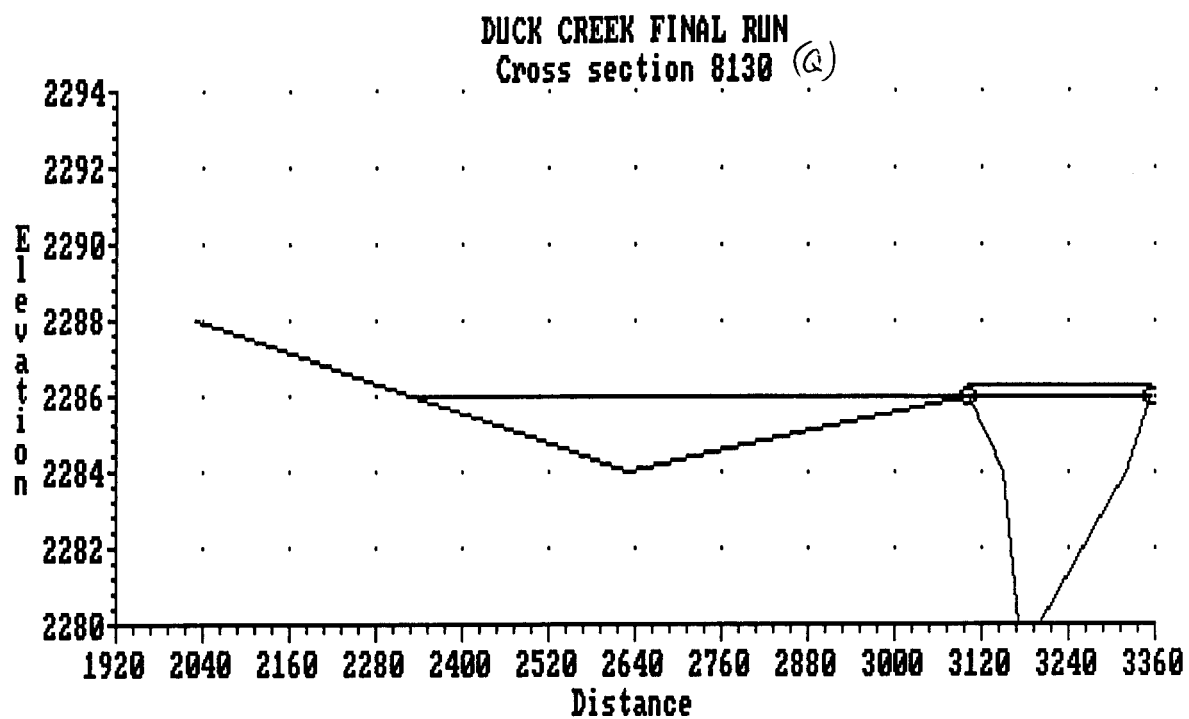
CAUTION SECNO= 7840.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7840.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7840.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 7840.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7840.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7840.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

FLOODWAY DATA, DUCK CR TRIB FINAL RUN
PROFILE NO. 2

STATION	WIDTH	FLOODWAY		WATER SURFACE ELEVATION		
		SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
(C) 7300.000	290.	1023.	10.7	2244.1	2244.1	.0
7400.000	654.	1889.	3.3	2249.8	2249.1	.7
7410.000	620.	1151.	5.5	2255.6	2255.5	.1
7420.000	658.	1307.	4.8	2255.8	2255.7	.1
(A) 7500.000	1084.	2400.	2.4	2256.9	2256.8	.1
(B) 7600.000	259.	727.	7.8	2263.6	2263.0	.6
(C) 7700.000	361.	870.	6.5	2272.0	2271.2	.8
(D) 7800.000	159.	549.	10.4	2281.3	2281.7	-.4
7810.000	2677.	6759.	.8	2283.3	2282.8	.5
7820.000	2677.	6764.	.8	2283.3	2282.8	.5
7840.000	140.	517.	11.0	2286.2	2286.2	.0

Normal program termination





THIS RUN EXECUTED 14MAY93 11:51:29

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

SPLIT FLOW BEING PERFORMED

SF Split Flows from Duck Creek u.s. of Las Vegas Blvd and u.s. of I-15

JC 30% of Split flow u.s of Las Vegas Boulevard re-enters at section 7200

JP 30

TN Split Normal Flow u.s. of Las Vegas Boulevard

NS 3 7890 7900 7300 .04 .0016

NG 0 2248 200 2252 400 2256

JC 30% of Split flow u.s of I-15 reenters at section 8100

JP 30

TN Split Normal Flow u.s. of Interstate 15

NS 5 8120 8125 8100 .04 .0015

NG 0 2281 30 2276 120 2276 260 2280 300 2281.0

T1 Clark County, Nevada FIS - 100-year flood (REVISED BY MBJ)
 T2 James M. Montgomery, Consulting Engineers, Inc. (ORIGINAL DECK)
 T3 DUCK CREEK FINAL RUN SUB-CRITICAL RUN UPSTREAM OF CONFLUENCE W/TRIB

J1 ICHECK INQ NINV IDIR STRT METRIC HVINS Q WSEL FQ

2

2244.13

J2 NPROF IPLOT PRFVS XSECV XSECH FN ALLDC IBW CHNIM ITRACE

1

-1

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38 43 1 50 42 39 53 54 4 26
 25 8

QT 1 13310

NC .04 .04 .038 .1 .3

Split flow modelled in trib added u/s Las Vegas and u/s I-15

X1 (M) 7300 15 2569 2859 810 785 800

X4 1 2242.1 2515

GR 2244.2 2130 2242.1 2515 2242.3 2569 2240.5 2599 2238.4 2631

GR 2238.4 2662 2240.1 2671 2241.1 2703 2238.5 2712 2238.5 2732

GR 2240.9 2744 2242.9 2859 2243.0 2936 2244 3210 2245 3250

QT 1 11500

NC .3 .5

LAS VEGAS BLVD. BRIDGE - SPECIAL BRIDGE MODELED

X1 7880 14 4420 4471 710 900 745

X3 10

2249.9 2249.9

GR 2250.2 3320 2250.2 3320 2250.2 3320 2250.2 3320 2250.2 3720

GR 2251.2 4410 2250.5 4420 2244.9 4432 2244.9 4469 2251.1 4471

GR 2251.1 4475 2253.9 5160 2253.7 5180 2255.0 5640

SB 1.25 1.56 2.6 31.6 1.6 150 2244.9 2244.9

X1 7890 65.0 65.0 65.0

X2 1 2249.90 2251.1

X3 10 2250.2 2251.1

BT -9 1801 2253.3 3340 2250.3 3721 2250.2

BT 4411 2251.2 4440 2250.6 4470 2251.1

BT 4474 2251.1 4750 2251.8 5159 2253.9

QT 1 9700

X1 (N) 7900 34 2452 2537 195 195 190

GR 2252.5 1466 2252 1466 2252 1466 2252 1466 2250.5 1810

GR 2250.4 2000 2250.4 2052 2248.3 2069 2248.1 2075 2248.8 2080

GR 2249.0 2117 2250.0 2126 2250.4 2155 2249.7 2193 2249.5 2220

GR 2250.2 2252 2249.9 2289 2249.8 2330 2250.1 2413 2250.8 2441

GR 2251.6 2452 2247.7 2469 2248.0 2527 2249.7 2537 2250.0 2633

GR 2250.3 2719 2250.4 2786 2250.5 2935 2250.3 3402 2252 3500

GR 2248 3520 2248 3540 2252 3575 2256 3890

X1 (b) 8000	26	2394	2582	1050	1060	1020			
GR 2261.3	1530	2260.1	2000	2260.1	2000	2258.4	2233	2257.4	2258
GR 2258.8	2279	2258.8	2314	2259.3	2338	2260.4	2394	2259.7	2441
GR 2259.7	2474	2259.2	2516	2257.2	2519	2257.2	2537	2260.5	2541
GR 2259.9	2558	2257.9	2567	2260.1	2582	2260.0	2582	2260.4	2641
GR 2259.1	2664	2260.5	2744	2260.6	2791	2260.9	2846	2259.9	2894
GR 2261.4	2926								

NC			.3	.5					
X1 (p) 8100	22	2386	2437	630	965	655			
GR 2276.0	1580	2272.0	1880	2272.5	2260	2272.3	2327	2270.5	2343
GR 2271.4	2386	2267.8	2390	2267.8	2411	2269.3	2413	2269.3	2430
GR 2272.7	2437	2272.7	2504	2272.0	2554	2270.5	2578	2271.3	2598
GR 2271.6	2641	2272.1	2684	2272.3	2706	2270.9	2726	2272.1	2743
GR 2272.6	2802	2273.8	2871						

NC			.5	.7					
	I-15 BRIDGE		- SPECIAL BRIDGE MODELED						
X1 8110	30	2343	2437	435	410	420			
X3 10							2276.0	2276.0	
X4 1	2276.5	2259.95							
GR 2282.0	350	2282.0	351	2280.0	850	2277.6	1450	2279.2	2001
GR 2276.5	2259.9	2276.5	2260	2275.3	2327	2273.8	2343	2273.8	2385
GR 2270.4	2386	2270.7	2390	2270.7	2411	2270.7	2427.5	2270.7	2429
GR 2272.3	2430	2275.7	2437	2275.7	2504	2275.0	2554	2272.5	2578
GR 2273.3	2598	2273.6	2641	2274.1	2684	2274.3	2706	2272.9	2726
GR 2274.1	2743	2274.6	2802	2276.8	2871	2276.5	3080	2280.8	3200

SB .9	1.83	2.6		37	1.0	144		2270.7	2270.7
X1 8120				193	193	193			
X2		1	2276.0	2278.4					
X3 10							2277.6	2279.6	
BT -5	850	2280.0		1451	2277.6		2000	2279.2	
BT	2400	2279.6		3200	2280.8				

X1 8125	10	2690	2760	100	100	100			
GR 2281.0	1000	2280.0	1500	2276.0	2000	2275.5	2450	2275.5	2690
GR 2271.0	2700	2271.1	2750	2275.0	2760	2276.0	3200	2281	5000

X1 (Q) 8130	8	3100	3355	700	665	670			
GR 2288.0	2030	2284.0	2630	2286.0	3100	2284.0	3150	2280.0	3170
GR 2280.0	3200	2284.0	3320	2286.0	3355				

SECNO	DEPTH	CWSEL	CRWS	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 7300.000 (M)

3720 CRITICAL DEPTH ASSUMED

Split flow modelled in trib added u/s Las Vegas and u/s I-15

7300.000	5.73	2244.13	2244.13	2244.13	2244.97	.84	.00	.00	2242.30
11009.5	1826.0	8413.2	770.3	483.4	1028.3	265.0	.0	.0	2242.90
.00	3.78	8.18	2.91	.040	.038	.040	.000	2238.40	2142.22
.008129	810.	800.	785.	0	4	0	.00	1073.11	3215.33

CCHV= .300 CEHV= .500

*SECNO 7880.000

3280 CROSS SECTION 7880.00 EXTENDED 1.71 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

LAS VEGAS BLVD. BRIDGE - SPECIAL BRIDGE MODELED

7880.000	7.01	2251.91	2251.91	.00	2252.55	.64	5.26	.06	2250.50
8850.0	5645.0	3067.6	137.3	1533.2	317.9	84.2	31.6	21.1	2251.10
.04	3.68	9.65	1.63	.040	.038	.040	.000	2244.90	3320.00
.006122	710.	745.	900.	4	11	0	.00	1353.97	4673.97

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	2.60	.00	31.60	1.60	150.00	.00	2244.90	2244.90

*SECNO 7890.000

6870 D.S. ENERGY OF 2252.55 IS HIGHER THAN COMPUTED ENERGY OF 2252.15

3280 CROSS SECTION 7890.00 EXTENDED 1.87 FEET

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2336.24	2252.55	.13	8394.	464.	150.	150.	2249.90	2251.10	2424.
7890.000	7.17	2252.07	.00	.00	2252.55	.48	.00	.00	2250.50
8850.0	5871.3	2787.8	190.8	1708.3	326.0	119.6	34.6	23.2	2251.10
.04	3.44	8.55	1.60	.040	.038	.040	.000	2244.90	3320.00
.004648	65.	65.	65.	2	0	8	.00	1392.91	4712.91

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

*SECNO 7900.000 (N)

3280 CROSS SECTION 7900.00 EXTENDED .36 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.99

7900.000	5.15	2252.85	.00	.00	2252.89	.04	.21	.13	2251.60
8215.0	3447.6	870.1	3897.3	2347.2	385.1	2647.3	51.4	31.2	2249.70
.07	1.47	2.26	1.47	.040	.038	.040	.000	2247.70	1466.00
.000449	195.	190.	195.	3	0	0	.00	2176.58	3642.58

*SECNO 8000.000 (O)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8000.000	3.77	2260.97	2260.97	.00	2261.53	.56	1.36	.26	2260.40
8215.0	5394.4	1854.2	966.3	872.1	295.3	239.2	133.3	72.6	2260.10
.12	6.19	6.28	4.04	.040	.038	.040	.000	2257.20	1658.52
.014343	1050.	1020.	1060.	20	13	0	.00	1258.35	2916.87

CCHV= .300 CEHV= .500

*SECNO 8100.000 (P)

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8100.000	5.69	2273.49	2273.49	.00	2274.12	.63	7.79	.04	2271.40
8215.0	3285.4	2268.7	2660.9	771.6	233.7	564.8	158.1	92.5	2272.70
.16	4.26	9.71	4.71	.040	.038	.040	.000	2267.80	1768.07
.008663	630.	655.	965.	4	14	0	.00	1085.24	2853.31

CCHV= .500 CEHV= .700

*SECNO 8110.000

3265 DIVIDED FLOW

I-15 BRIDGE

- SPECIAL BRIDGE MODELED

8110.000	6.14	2276.54	.00	.00	2277.13	.59	2.99	.02	2273.80
7578.5	234.9	2992.3	4351.3	75.0	394.2	855.6	172.0	100.9	2275.70
.18	3.13	7.59	5.09	.040	.038	.040	.000	2270.40	2255.90
.005906	435.	420.	410.	3	0	0	.00	637.25	3081.17

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

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.83	2.60	.00	37.00	1.00	144.00	.00	2270.70	2270.70

*SECNO 8120.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 6.15

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2355.25	2282.21	.04	6014.	1605.	144.	191.	2276.00	2278.40	1866.
8120.000	9.65	2280.05	.00	.00	2280.07	.03	2.94	.00	2273.80
7578.5	1896.3	1338.6	4343.6	2591.8	723.8	3261.2	189.5	107.5	2275.70
.22	.73	1.85	1.33	.040	.038	.040	.000	2270.40	838.12
.000156	193.	193.	193.	2	0	8	.00	2340.88	3179.00

*SECNO 8125.000

8125.000	9.07	2280.07	.00	.00	2280.09	.02	.01	.00	2275.50
9700.0	4210.6	1077.8	4411.5	4084.0	589.8	5003.3	208.2	113.8	2275.00
.24	1.03	1.83	.88	.040	.038	.040	.000	2271.00	1462.16
.000132	100.	100.	100.	2	0	0	.00	3205.09	4667.25

*SECNO 8130.000 (Q)

3280 CROSS SECTION 8130.00 EXTENDED .08 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8130.000	6.08	2286.08	2286.08	.00	2286.83	.74	.28	.51	2286.00
9700.0	2965.1	6734.9	.0	834.2	846.1	.0	296.9	147.0	2286.00
.27	3.55	7.96	.00	.040	.038	.000	.000	2280.00	2317.59
.008400	700.	670.	665.	20	18	0	.00	1037.41	3355.00

TN Split Normal Flow u.s. of Las Vegas Boulevard

TOTAL	AVG	MAX	AVG	TOF	TOP
AREA	VELOCITY	DEPTH	DEPTH	WIDTH	WIDTH
459.0	2.54	4.07	2.03	400.0	225.6

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1165.01	1164.68	.03	1165.01	1164.68	.03	5	2252.069	2252.855	7890.000	7900.000

TN Split Normal Flow u.s. of Interstate 15

TOTAL	AVG	MAX	AVG	TOF	TOP
AREA	VELOCITY	DEPTH	DEPTH	WIDTH	WIDTH
703.3	3.02	4.06	2.73	300.0	257.2

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
2121.46	2121.53	.00	3286.47	3286.21	.01	5	2280.047	2280.075	8120.000	8125.000

THIS RUN EXECUTED 14MAY93 11:51:32

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

DUCK CREEK FINAL RUN

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DIFWSP	ELMIN	XLCH	SSTA	ENDST	TOPWID	VCH	AREA	DEPTH
*	7300.000	(M) 11009.47	2244.13	.00	2238.40	.00	2142.22	3215.33	1073.11	8.18	1776.68	5.73
*	7880.000	8849.97	2251.91	.00	2244.90	745.00	3320.00	4673.97	1353.97	9.65	1935.26	7.01
	7890.000	8849.97	2252.07	.00	2244.90	65.00	3320.00	4712.91	1392.91	8.55	2153.88	7.17
*	7900.000	(W) 8214.98	2252.85	.00	2247.70	190.00	1466.00	3642.58	2176.58	2.26	5379.55	5.15
*	8000.000	(C) 8214.98	2260.97	.00	2257.20	1020.00	1658.52	2916.87	1258.35	6.28	1406.58	3.77
*	8100.000	(P) 8214.98	2273.49	.00	2267.80	655.00	1768.07	2853.31	1085.24	9.71	1570.13	5.69
	8110.000	7578.54	2276.54	.00	2270.40	420.00	2255.90	3081.17	637.25	7.59	1324.81	6.14
*	8120.000	7578.54	2280.05	.00	2270.40	193.00	838.12	3179.00	2340.88	1.85	6576.78	9.65
	8125.000	9700.00	2280.07	.00	2271.00	100.00	1462.16	4667.25	3205.09	1.83	9677.11	9.07
*	8130.000	(Q) 9700.00	2286.08	.00	2280.00	670.00	2317.59	3355.00	1037.41	7.96	1680.35	6.08

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 7300.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 7880.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7880.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 7900.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

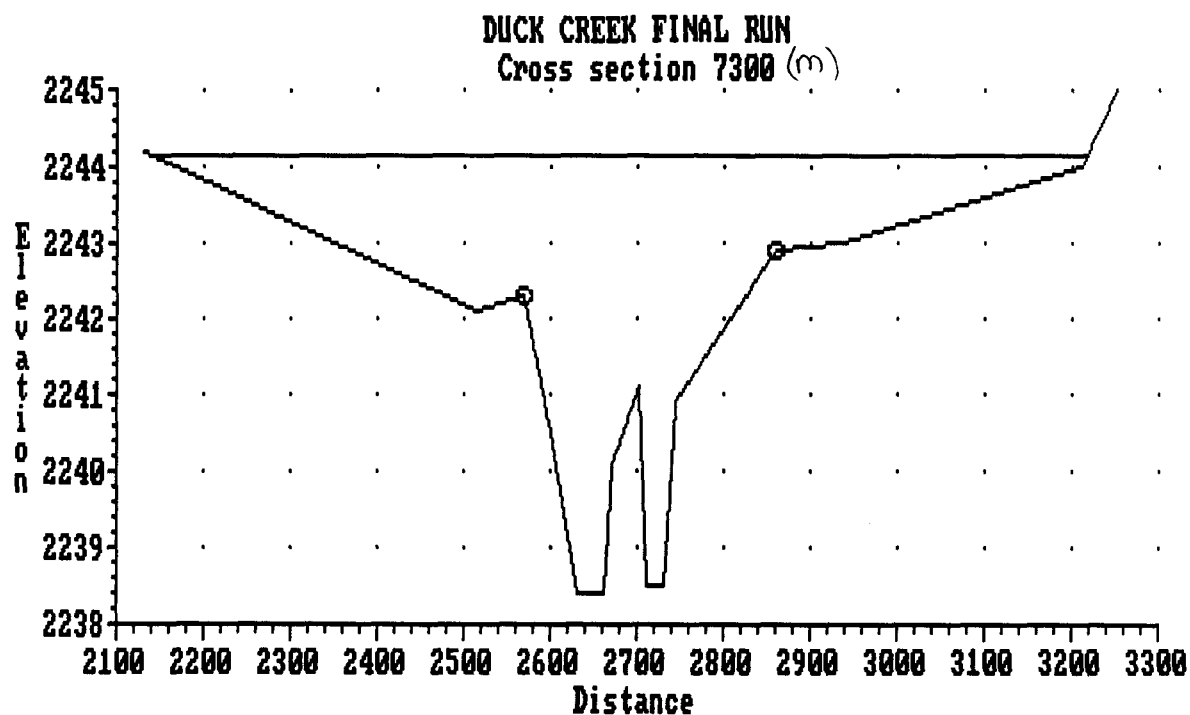
CAUTION SECNO= 8000.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8000.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8000.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

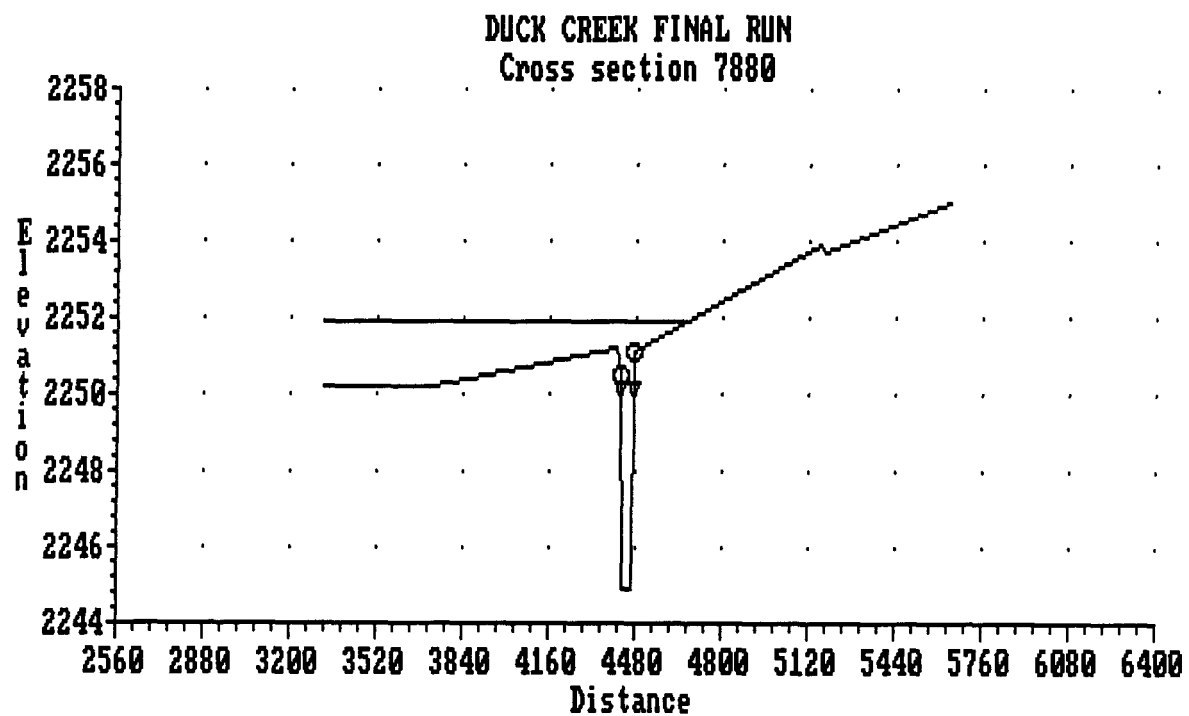
CAUTION SECNO= 8100.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8100.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

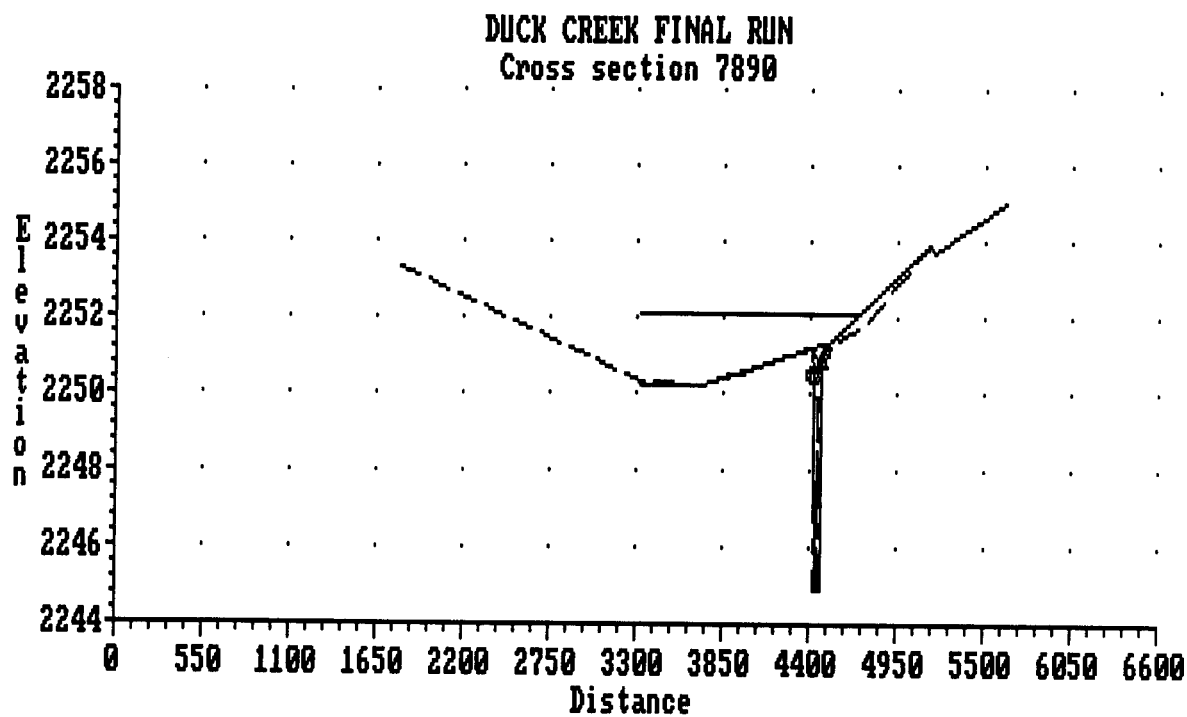
WARNING SECNO= 8120.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

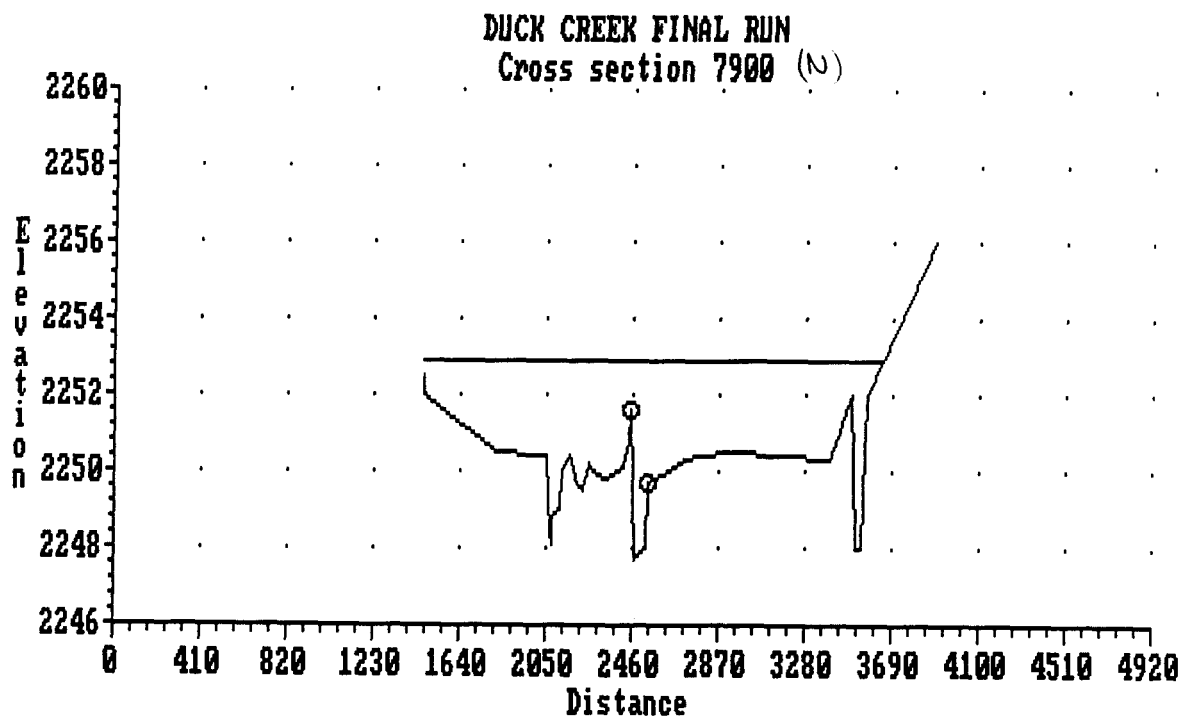
CAUTION SECNO= 8130.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8130.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8130.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

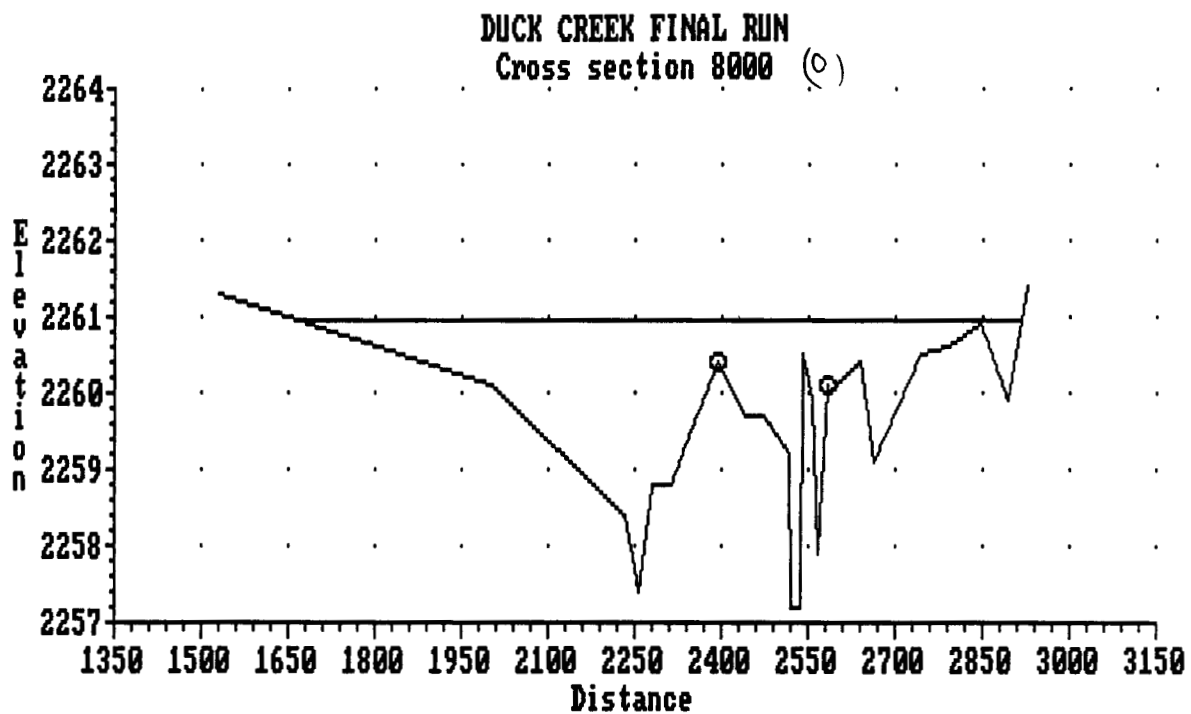
Normal program termination



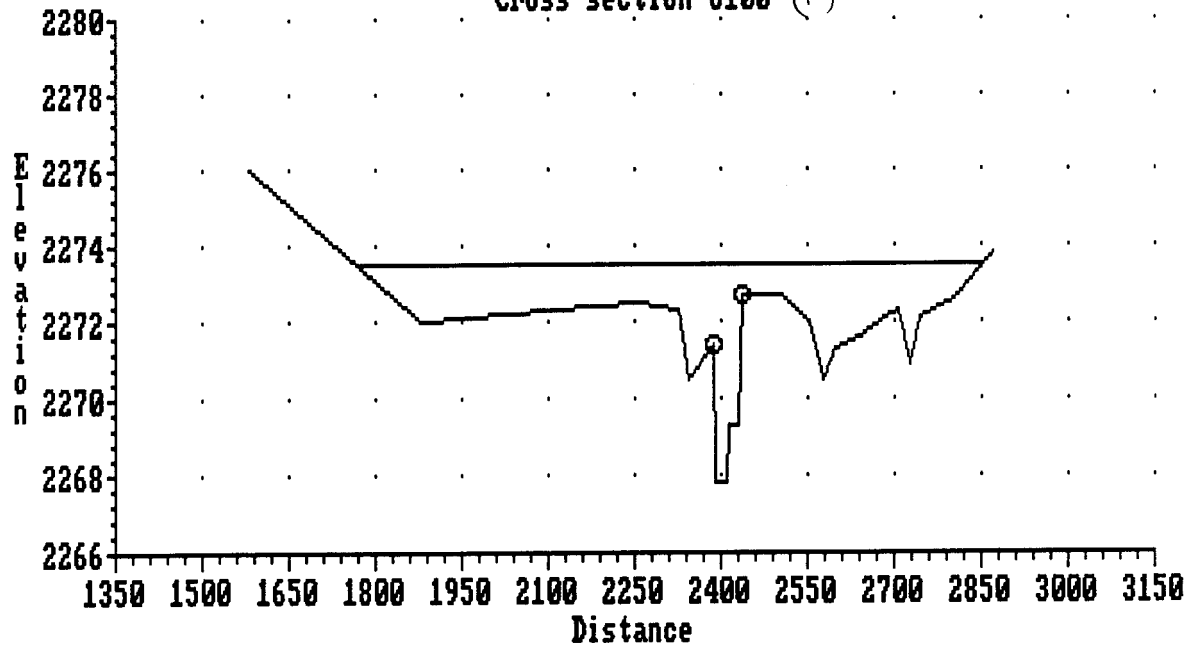


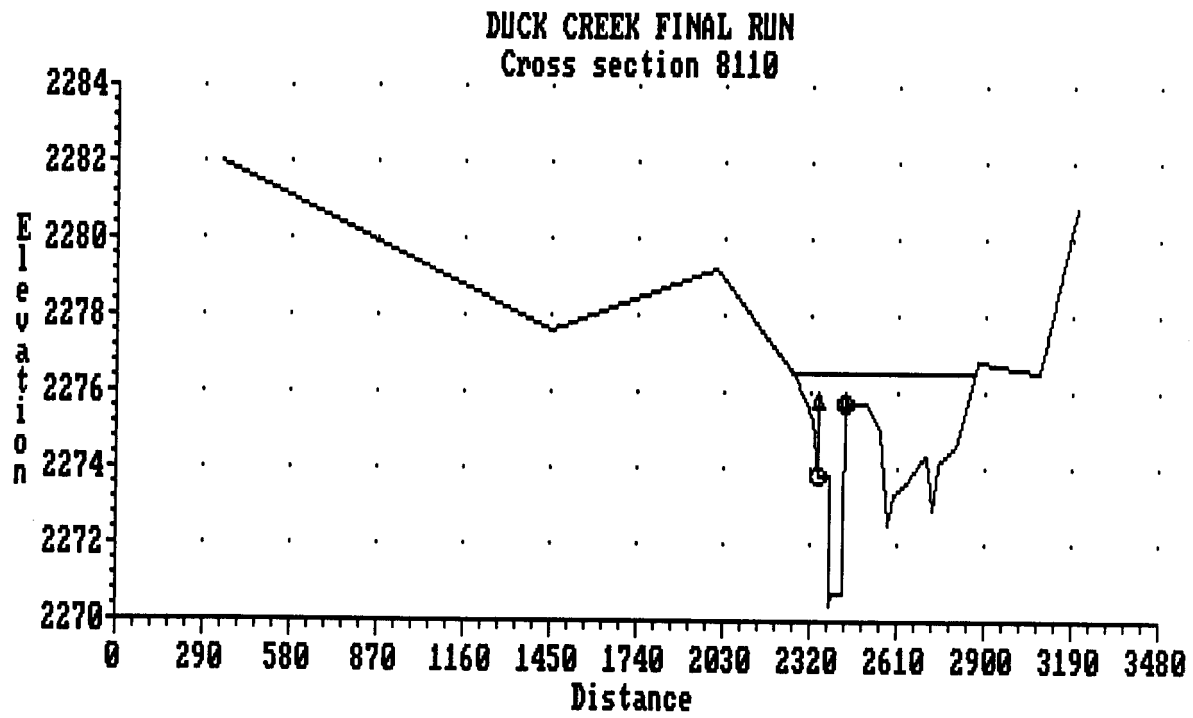


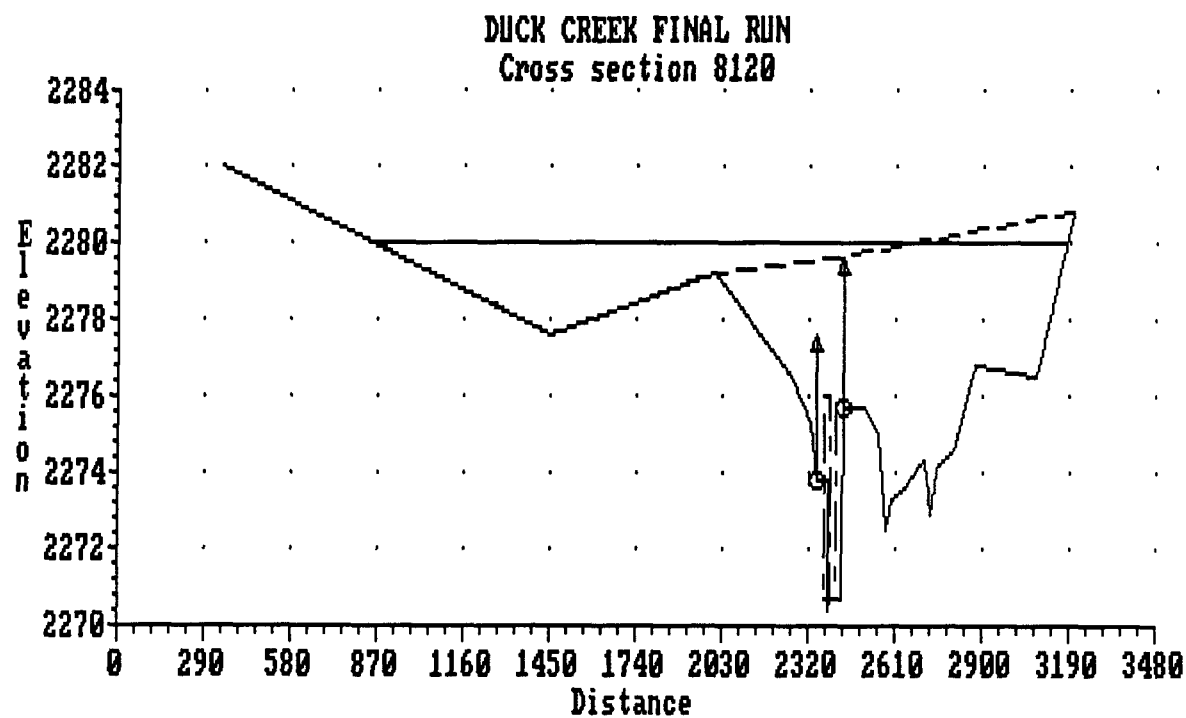




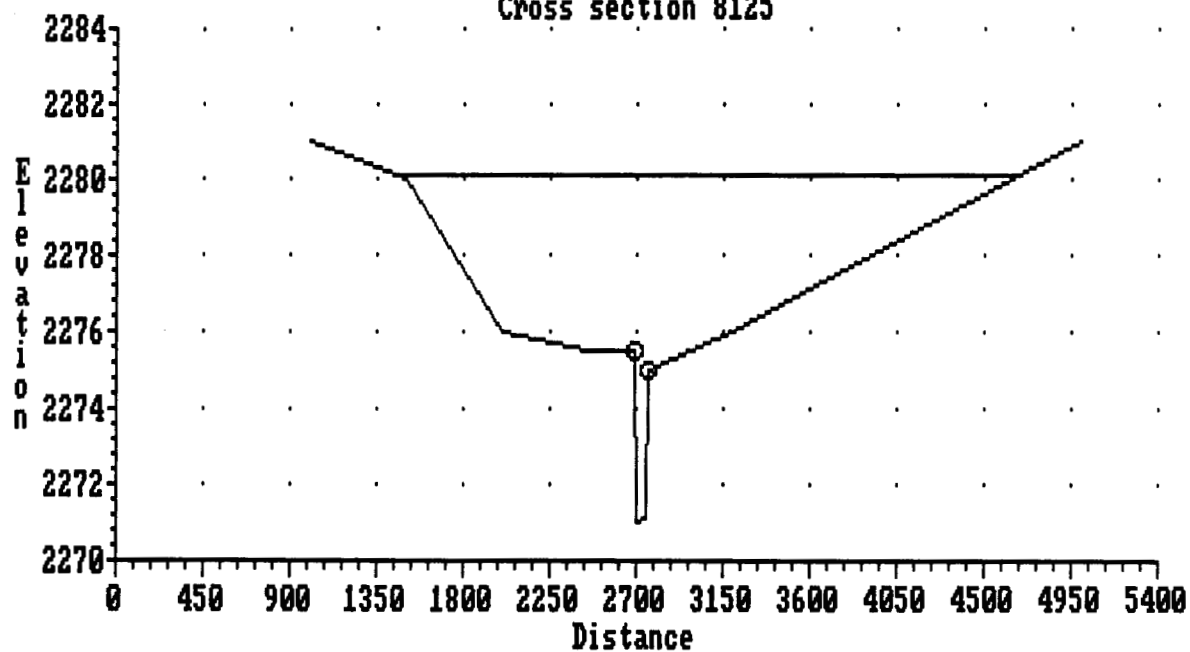
DUCK CREEK FINAL RUN
Cross section 8100 (P)

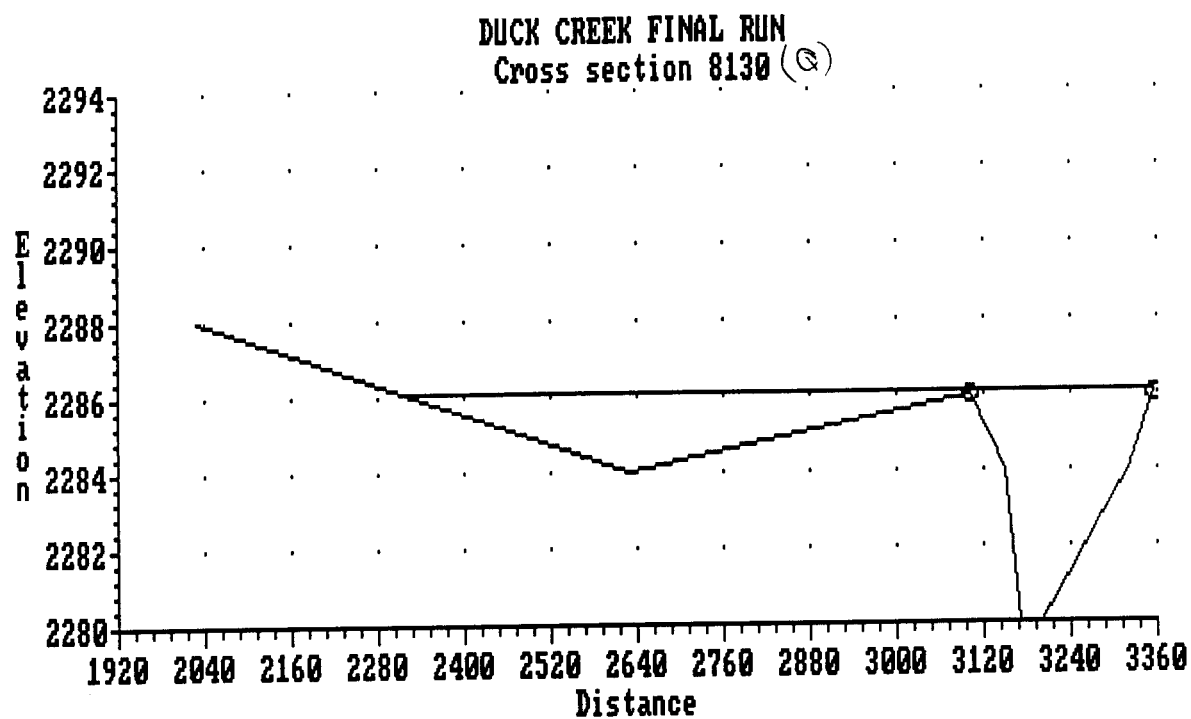






DUCK CREEK FINAL RUN Cross section 8125





THIS RUN EXECUTED 14MAY93 11:58:41

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

T1 Clark County, Nevada FIS - 100-year flood (REVISED BY MBJ)
 T2 James M. Montgomery, Consulting Engineers, Inc. (ORIGINAL DECK)
 T3 DUCK CREEK FINAL RUN SUB-CRITICAL RUN UPSTREAM OF CONFLUENCE W/TRIB

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

2244.13

J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
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1

-1

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150

200

QT	2	11000	11000							
ET			10.4							
NC	.04	.04	.038	.1	.3					
Split flow modelled in trib added u/s Las Vegas and u/s I-15										
X1 (M)	7300	15	2569	2859	810	785	800			
X4	1	2242.1	2515							
GR	2244.2	2130	2242.1	2515	2242.3	2569	2240.5	2599	2238.4	2631
GR	2238.4	2662	2240.1	2671	2241.1	2703	2238.5	2712	2238.5	2732
GR	2240.9	2744	2242.9	2859	2243.0	2936	2244	3210	2245	3250
QT	2	9700	9700							
NC				.3	.5					
ET			9.4							
LAS VEGAS BLVD. BRIDGE - SPECIAL BRIDGE MODELED										
X1	7880	14	4420	4471	710	900	745			
X3	10							2249.9	2249.9	
GR	2250.2	3320	2250.2	3320	2250.2	3320	2250.2	3320	2250.2	3720
GR	2251.2	4410	2250.5	4420	2244.9	4432	2244.9	4469	2251.1	4471
GR	2251.1	4475	2253.9	5160	2253.7	5180	2255.0	5640		
SB	1.25	1.56	2.6		31.6	1.6	150		2244.9	2244.9
ET			7.4							
X1	7890				65.0	65.0	65.0			
X2			1	2249.90	2251.1					
X3	10							2250.2	2251.1	
BT	-9	1801	2253.3		3340	2250.3		3721	2250.2	
BT		4411	2251.2		4440	2250.6		4470	2251.1	
BT		4474	2251.1		4750	2251.8		5159	2253.9	

QT	2	9700	9700						
ET			0.4						
X1 (N)	7900	34	2452	2537	195	195	190		
GR	2252.5	1466	2252	1466	2252	1466	2252	1466	2250.5 1810
GR	2250.4	2000	2250.4	2052	2248.3	2069	2248.1	2075	2248.8 2080
GR	2249.0	2117	2250.0	2126	2250.4	2155	2249.7	2193	2249.5 2220
GR	2250.2	2252	2249.9	2289	2249.8	2330	2250.1	2413	2250.8 2441
GR	2251.6	2452	2247.7	2469	2248.0	2527	2249.7	2537	2250.0 2633
GR	2250.3	2719	2250.4	2786	2250.5	2935	2250.3	3402	2252 3500
GR	2248	3520	2248	3540	2252	3575	2256	3890	

ET			6.4						
X1 (O)	8000	26	2394	2582	1050	1060	1020		
GR	2261.3	1530	2260.1	2000	2260.1	2000	2258.4	2233	2257.4 2258
GR	2258.8	2279	2258.8	2314	2259.3	2338	2260.4	2394	2259.7 2441
GR	2259.7	2474	2259.2	2516	2257.2	2519	2257.2	2537	2260.5 2541
GR	2259.9	2558	2257.9	2567	2260.1	2582	2260.0	2582	2260.4 2641
GR	2259.1	2664	2260.5	2744	2260.6	2791	2260.9	2846	2259.9 2894
GR	2261.4	2926							

NC				.3	.5				
ET			6.4						
X1 (P)	8100	22	2386	2437	630	965	655		
GR	2276.0	1580	2272.0	1880	2272.5	2260	2272.3	2327	2270.5 2343
GR	2271.4	2386	2267.8	2390	2267.8	2411	2269.3	2413	2269.3 2430
GR	2272.7	2437	2272.7	2504	2272.0	2554	2270.5	2578	2271.3 2598
GR	2271.6	2641	2272.1	2684	2272.3	2706	2270.9	2726	2272.1 2743
GR	2272.6	2802	2273.8	2871					

NC				.5	.7				
ET			0.4						
		I-15 BRIDGE		- SPECIAL BRIDGE MODELED					
X1	8110	30	2343	2437	435	410	420		
X3	10							2276.0	2276.0
X4	1	2276.5	2259.95						
GR	2282.0	350	2282.0	351	2280.0	850	2277.6	1450	2279.2 2001
GR	2276.5	2259.9	2276.5	2260	2275.3	2327	2273.8	2343	2273.8 2385
GR	2270.4	2386	2270.7	2390	2270.7	2411	2270.7	2427.5	2270.7 2429
GR	2272.3	2430	2275.7	2437	2275.7	2504	2275.0	2554	2272.5 2578
GR	2273.3	2598	2273.6	2641	2274.1	2684	2274.3	2706	2272.9 2726
GR	2274.1	2743	2274.6	2802	2276.8	2871	2276.5	3080	2280.8 3200

SB	.9	1.83	2.6		37	1.0	144		2270.7 2270.7
ET			1.4						
X1	8120				193	193	193		
X2			1	2276.0	2278.4				
X3	10							2277.6	2279.6
BT	-5	850	2280.0		1451	2277.6		2000	2279.2
BT		2400	2279.6		3200	2280.8			

ET			2.4							
X1	8125	10	2690	2760	100	100	100			
GR	2281.0	1000	2280.0	1500	2276.0	2000	2275.5	2450	2275.5	2690
GR	2271.0	2700	2271.1	2750	2275.0	2760	2276.0	3200	2281	5000

ET			9.4							
X1 (Q)	8130	8	3100	3355	700	665	670			
GR	2288.0	2030	2284.0	2630	2286.0	3100	2284.0	3150	2280.0	3170
GR	2280.0	3200	2284.0	3320	2286.0	3355				

SECNO	DEPTH	CWSEL	CRISW	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 7300.000 (M)

3720 CRITICAL DEPTH ASSUMED

Split flow modelled in trib added u/s Las Vegas and u/s I-15

7300.000	5.73	2244.13	2244.13	2244.13	2244.97	.84	.00	.00	2242.30
11000.0	1822.5	8410.3	767.2	482.4	1027.7	264.2	.0	.0	2242.90
.00	3.78	8.18	2.90	.040	.038	.040	.000	2238.40	2142.62
.008140	810.	800.	785.	0	4	0	.00	1072.62	3215.24

CCHV= .300 CEHV= .500

*SECNO 7880.000

3280 CROSS SECTION 7880.00 EXTENDED 1.84 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

LAS VEGAS BLVD. BRIDGE - SPECIAL BRIDGE MODELED

7880.000	7.14	2252.04	2252.04	.00	2252.65	.61	5.14	.07	2250.50
9700.0	6384.2	3120.4	195.4	1668.8	324.2	111.0	33.0	21.4	2251.10
.04	3.83	9.63	1.76	.040	.038	.040	.000	2244.90	3320.00
.005934	710.	745.	900.	3	11	0	.00	1384.13	4704.13

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	2.60	.00	31.60	1.60	150.00	.00	2244.90	2244.90

*SECNO 7890.000

6870 D.S. ENERGY OF 2252.65 IS HIGHER THAN COMPUTED ENERGY OF 2252.24

3280 CROSS SECTION 7890.00 EXTENDED 1.94 FEET

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2353.33	2252.77	.12	9188.	438.	150.	150.	2249.90	2251.10	2493.
7890.000	7.24	2252.14	.00	.00	2252.65	.51	.00	.00	2250.50
9700.0	6527.8	2935.4	236.9	1785.7	329.6	137.2	36.2	23.5	2251.10
.04	3.66	8.91	1.73	.040	.038	.040	.000	2244.90	3320.00
.004969	65.	65.	65.	2	0	9	.00	1410.11	4730.11

SECNO	DEPTH	CWSEL	CRWS	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 7900.000 (N)

3280 CROSS SECTION 7900.00 EXTENDED .48 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.03

7900.000	5.28	2252.98	.00	.00	2253.03	.05	.24	.14	2251.60
9700.0	4086.6	997.1	4616.2	2464.0	395.2	2778.7	53.8	31.6	2249.70
.07	1.66	2.52	1.66	.040	.038	.040	.000	2247.70	1466.00
.000542	195.	190.	195.	2	0	0	.00	2185.90	3651.90

*SECNO 8000.000 (O)

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8000.000	3.91	2261.11	2261.11	.00	2261.72	.61	1.60	.28	2260.40
9700.0	6274.5	2162.0	1263.5	977.1	321.2	285.5	141.0	73.8	2260.10
.12	6.42	6.73	4.43	.040	.038	.040	.000	2257.20	1604.59
.014736	1050.	1020.	1060.	20	13	0	.00	1315.22	2919.81

CCHV= .300 CEHV= .500

*SECNO 8100.000 (P)

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

8100.000	5.86	2273.66	2273.66	.00	2274.33	.67	8.08	.03	2271.40
9700.0	4044.1	2449.6	3206.3	874.8	242.1	634.4	168.8	94.4	2272.70
.15	4.62	10.12	5.05	.040	.038	.040	.000	2267.80	1755.67
.008975	630.	655.	965.	5	14	0	.00	1107.14	2862.82

CCHV= .500 CEHV= .700

*SECNO 8110.000

I-15 BRIDGE

- SPECIAL BRIDGE MODELED

8110.000	6.46	2276.86	.00	.00	2277.55	.70	3.21	.02	2273.80
9700.0	387.9	3571.4	5740.7	107.2	423.9	1035.8	184.8	103.9	2275.70
.17	3.62	8.43	5.54	.040	.038	.040	.000	2270.40	2225.67
.006608	435.	420.	410.	3	0	0	.00	864.29	3089.96

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

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.83	2.60	.00	37.00	1.00	144.00	.00	2270.70	2270.70

*SECNO 8120.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 5.72

PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
2405.80	2284.87	.05	8152.	1596.	144.	191.	2276.00	2278.40	2049.
8120.000	9.91	2280.31	.00	.00	2280.35	.04	2.80	.00	2273.80
9700.0	2681.6	1612.7	5405.7	2998.4	748.6	3458.4	204.2	111.1	2275.70
.20	.89	2.15	1.56	.040	.038	.040	.000	2270.40	772.15
.000202	193.	193.	193.	2	0	9	.00	2414.23	3186.38

*SECNO 8125.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.40

8125.000	9.36	2280.36	.00	.00	2280.37	.02	.01	.01	2275.50
9700.0	4215.9	1007.3	4476.7	4451.1	609.6	5556.9	224.7	117.9	2275.00
.23	.95	1.65	.81	.040	.038	.040	.000	2271.00	1320.80
.000103	100.	100.	100.	2	0	0	.00	3448.22	4769.02

*SECNO 8130.000 (Q)

3280 CROSS SECTION 8130.00 EXTENDED .01 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

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

3720 CRITICAL DEPTH ASSUMED

8130.000	6.01	2286.01	2286.01	.00	2286.83	.82	.23	.57	2286.00
9700.0	2817.5	6882.5	.0	776.4	827.1	.0	320.1	152.9	2286.00
.26	3.63	8.32	.00	.040	.038	.000	.000	2280.00	2328.75
.009458	700.	670.	665.	20	14	0	.00	1026.25	3355.00

T1 Method 4 Floodway Profile -- Equal Conveyance
T2 Duck Creek -- from confluence at 7300
T3 Duck Creek Final Run 100-Year Floodway

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							2244.10	
J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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

**PROF 2

CCHV= .100 CEHV= .300

*SECNO 7300.000 (M)

2800 NAT Q1= 1219.23 WSEL= 2244.13 ENC Q1= 1410.67 WSEL= 2245.13 RATIO= -.1570

NAT Q1= 2319. RATIOS LOB, CH, ROB= .2443 .6083 .1474 WSEL= 2245.13

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 2569.0 2859.0 TYPE= 4 TARGET= .392

Split flow modelled in trib added u/s Las Vegas and u/s I-15

7300.000	5.72	2244.12	2244.12	2244.13	2245.91	1.79	.00	.00	2242.30
11000.0	.0	11000.0	.0	.0	1023.3	.0	.0	.0	2242.90
.00	.00	10.75	.00	.000	.038	.000	.000	2238.40	2569.00
.014321	810.	800.	785.	0	4	0	.00	290.00	2859.00

CCHV= .300 CEHV= .500

*SECNO 7880.000

2800 NAT Q1= 1259.23 WSEL= 2252.04 ENC Q1= 1259.23 WSEL= 2252.94 RATIO= .0000

NAT Q1= 2439. RATIOS LOB, CH, ROB= .7319 .2071 .0610 WSEL= 2252.94

3280 CROSS SECTION 7880.00 EXTENDED 2.65 FEET

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 3848.9 4471.0 TYPE= 4 TARGET= .484

LAS VEGAS BLVD. BRIDGE - SPECIAL BRIDGE MODELED

7880.000	7.95	2252.85	2252.85	2252.04	2253.81	.97	7.11	.25	2250.50
9700.0	5732.6	3967.3	.0	1171.2	365.4	.0	21.4	7.6	2251.10
.03	4.89	10.86	.00	.040	.038	.000	.000	2244.90	3848.94
.006700	710.	745.	900.	4	13	0	.00	622.06	4471.00

SPECIAL BRIDGE

SECNO	DEPTH	CWSEL	CRWS	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

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.56	2.60	.00	31.60	1.60	150.00	.00	2244.90	2244.90

*SECNO 7890.000

6870 D.S. ENERGY OF 2253.81 IS HIGHER THAN COMPUTED ENERGY OF 2252.88

2800 NAT Q1= 1376.07 WSEL= 2252.14 ENC Q1= 1376.07 WSEL= 2252.84 RATIO= .0000

NAT Q1= 2287. RATIOS LOB, CH, ROB= .7280 .2158 .0562 WSEL= 2252.84

WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3280 CROSS SECTION 7890.00 EXTENDED 2.75 FEET

3470 ENCROACHMENT STATIONS=	3739.7	4471.0	TYPE=	4	TARGET=	.398
7890.000	8.05	2252.95	.00	2252.14	2253.55	.60
9700.0	6395.2	3304.8	.0	1516.4	370.5	.0
.03	4.22	8.92	.00	.040	.038	.000
.004450	65.	65.	65.	0	0	12

*SECNO 7900.000 (N)

2800 NAT Q1= 4168.36 WSEL= 2252.98 ENC Q1= 4168.36 WSEL= 2252.98 RATIO= .0000

NAT Q1= 4173. RATIOS LOB, CH, ROB= .4213 .1028 .4759 WSEL= 2252.98

3280 CROSS SECTION 7900.00 EXTENDED 1.31 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.44

3470 ENCROACHMENT STATIONS=	1473.8	3600.6	TYPE=	4	TARGET=	.001
7900.000	6.11	2253.81	.00	2252.98	2253.84	.03
9700.0	4169.3	846.9	4683.8	3268.9	465.8	3645.6
.07	1.28	1.82	1.28	.040	.038	.040
.000226	195.	190.	195.	2	0	0

*SECNO 8000.000 (O)

2800 NAT Q1= 799.08 WSEL= 2261.11 ENC Q1= 799.08 WSEL= 2261.71 RATIO= .0000

NAT Q1= 1432. RATIOS LOB, CH, ROB= .6275 .2053 .1672 WSEL= 2261.71

3280 CROSS SECTION 8000.00 EXTENDED .34 FEET

3301 HV CHANGED MORE THAN HVINS

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

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2159.1	2582.0	TYPE=	4	TARGET=	.442
8000.000	4.44	2261.64	2261.64	2261.11	2262.93	1.29
9700.0	6166.7	3533.3	.0	648.2	420.0	.0
.10	9.51	8.41	.00	.040	.038	.000
.016267	1050.	1020.	1060.	20	19	0

CCHV= .300 CEHV= .500

*SECNO 8100.000 (P)

2800 NAT Q1= 1023.92 WSEL= 2273.66 ENC Q1= 1023.92 WSEL= 2274.26 RATIO= .0000

NAT Q1= 1633. RATIOS LOB, CH, ROB= .4589 .1931 .3480 WSEL= 2274.26

3280 CROSS SECTION 8100.00 EXTENDED .32 FEET

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=	2051.3	2620.7	TYPE=	4	TARGET=	.373
8100.000	6.32	2274.12	2274.12	2273.66	2275.23	1.10
9700.0	4124.5	3111.8	2463.7	663.2	265.9	379.9
.13	6.22	11.70	6.48	.040	.038	.040
.010598	630.	655.	965.	13	11	0

CCHV= .500 CEHV= .700

*SECNO 8110.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.80

I-15 BRIDGE			- SPECIAL BRIDGE MODELED						
8110.000	7.06	2277.46	2276.49	2276.86	2277.85	.38	2.26	.36	2273.80
9700.0	557.9	3093.4	6048.7	196.0	480.9	1436.9	181.9	60.9	2275.70
.15	2.85	6.43	4.21	.040	.038	.040	.000	2270.40	2167.52
.003255	435.	420.	410.	12	8	0	.00	939.36	3106.88

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

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.83	2.60	.00	37.00	1.00	144.00	.00	2270.70	2270.70

*SECNO 8120.000

2800 NAT Q1= 6820.06 WSEL= 2280.31 ENC Q1= 6820.06 WSEL= 2280.41 RATIO= .0000
 NAT Q1= 7119. RATIOS LOB, CH, ROB= .2858 .1626 .5516 WSEL= 2280.41
 WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE
 3280 CROSS SECTION 8120.00 EXTENDED .12 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.84

3470 ENCROACHMENT STATIONS= 1222.5 3075.4 TYPE= 4 TARGET= .042

8120.000	10.52	2280.92	.00	2280.31	2280.95	.03	.07	.18	2273.80
9700.0	3016.0	1510.7	5173.3	3272.0	805.6	3625.3	203.6	67.1	2275.70
.19	.92	1.88	1.43	.040	.038	.040	.000	2270.40	1222.53
.000139	193.	193.	193.	0	0	9	.00	1852.88	3075.41

*SECNO 8125.000

2800 NAT Q1= 9562.59 WSEL= 2280.36 ENC Q1= 9562.59 WSEL= 2280.56 RATIO= .0000
 NAT Q1= 10394. RATIOS LOB, CH, ROB= .4349 .0992 .4659 WSEL= 2280.56

3470 ENCROACHMENT STATIONS= 1867.4 3816.9 TYPE= 4 TARGET= .080

8125.000	9.95	2280.95	.00	2280.36	2280.96	.02	.01	.01	2275.50
9700.0	4154.6	983.2	4562.2	4224.8	650.2	4911.4	223.7	71.5	2275.00
.22	.98	1.51	.93	.040	.038	.040	.000	2271.00	1867.44
.000079	100.	100.	100.	1	0	0	.00	1949.45	3816.89

*SECNO 8130.000 (Q)

2800 NAT Q1= 997.43 WSEL= 2286.01 ENC Q1= 1061.89 WSEL= 2286.91 RATIO= -.0646
 NAT Q1= 1877. RATIOS LOB, CH, ROB= .4342 .5658 .0000 WSEL= 2286.91
 3280 CROSS SECTION 8130.00 EXTENDED .28 FEET

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3693 PROBABLE MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

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

3470 ENCROACHMENT STATIONS=	3100.0	3355.0	TYPE=	4	TARGET=	.434			
8130.000	6.28	2286.28	2286.28	2286.01	2288.10	1.82	.19	1.26	2286.00
9700.0	.0	9700.0	.0	.0	895.6	.0	307.0	88.7	2286.00
.24	.00	10.83	.00	.000	.038	.000	.000	2280.00	3100.00
.014451	700.	670.	665.	20	14	0	.00	255.00	3355.00

THIS RUN EXECUTED 14MAY93 11:58:44

HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991

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

DUCK CREEK FINAL RUN

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
(m)	7300.000	.00	.00	.00	2238.40	11000.00	2244.13	2244.13	2244.97	81.40	8.18	1774.32	1219.23
*	7300.000	.00	.00	.00	2238.40	11000.00	2244.12	2244.12	2245.91	143.21	10.75	1023.29	919.18
*	7880.000	745.00	.00	.00	2244.90	9700.00	2252.04	2252.04	2252.65	59.34	9.63	2104.05	1259.23
*	7880.000	745.00	.00	.00	2244.90	9700.00	2252.85	2252.85	2253.81	67.00	10.86	1536.60	1185.00
	7890.000	65.00	2251.10	2249.90	2244.90	9700.00	2252.14	.00	2252.65	49.69	8.91	2252.42	1376.07
	7890.000	65.00	999999.00	.00	2244.90	9700.00	2252.95	.00	2253.55	44.50	8.92	1886.89	1454.12
(u)	7900.000	190.00	.00	.00	2247.70	9700.00	2252.98	.00	2253.03	5.42	2.52	5637.83	4168.36
*	7900.000	190.00	.00	.00	2247.70	9700.00	2253.81	.00	2253.84	2.26	1.82	7380.23	6454.92
(v)	8000.000	1020.00	.00	.00	2257.20	9700.00	2261.11	2261.11	2261.72	147.36	6.73	1583.76	799.08
*	8000.000	1020.00	.00	.00	2257.20	9700.00	2261.64	2261.64	2262.93	162.67	8.41	1068.15	760.53
(p)	8100.000	655.00	.00	.00	2267.80	9700.00	2273.66	2273.66	2274.33	89.75	10.12	1751.31	1023.92
*	8100.000	655.00	.00	.00	2267.80	9700.00	2274.12	2274.12	2275.23	105.98	11.70	1309.08	942.25
	8110.000	420.00	.00	.00	2270.40	9700.00	2276.86	.00	2277.55	66.08	8.43	1566.78	1193.25
*	8110.000	420.00	.00	.00	2270.40	9700.00	2277.46	2276.49	2277.85	32.55	6.43	2113.69	1700.11
*	8120.000	193.00	2278.40	2276.00	2270.40	9700.00	2280.31	.00	2280.35	2.02	2.15	7205.42	6820.06
*	8120.000	193.00	999999.00	.00	2270.40	9700.00	2280.92	.00	2280.95	1.39	1.88	7702.92	8227.69
*	8125.000	100.00	.00	.00	2271.00	9700.00	2280.36	.00	2280.37	1.03	1.65	10617.60	9562.59
	8125.000	100.00	.00	.00	2271.00	9700.00	2280.95	.00	2280.96	.79	1.51	9786.39	10909.61
*	8130.000	670.00	.00	.00	2280.00	9700.00	2286.01	2286.01	2286.83	94.58	8.32	1603.51	997.43
*	8130.000	670.00	.00	.00	2280.00	9700.00	2286.28	2286.28	2288.10	144.51	10.83	895.60	806.90

DUCK CREEK FINAL RUN

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
(m)	7300.000	11000.00	2244.13	.00	.00	.00	1072.62	.00
*	7300.000	11000.00	2244.12	-.02	.00	-.02	290.00	.00
	7880.000	9700.00	2252.04	.00	7.91	.00	1384.13	745.00
*	7880.000	9700.00	2252.85	.81	8.73	.81	622.06	745.00
	7890.000	9700.00	2252.14	.00	.10	.00	1410.11	65.00
	7890.000	9700.00	2252.95	.81	.10	.81	731.35	65.00
(n)	7900.000	9700.00	2252.98	.00	.84	.00	2185.90	190.00
	7900.000	9700.00	2253.81	.83	.86	.83	2126.73	190.00
(o)	8000.000	9700.00	2261.11	.00	8.13	.00	1315.22	1020.00
	8000.000	9700.00	2261.64	.53	7.83	.53	422.94	1020.00
(p)	8100.000	9700.00	2273.66	.00	12.55	.00	1107.14	655.00
	8100.000	9700.00	2274.12	.47	12.49	.47	569.45	655.00
	8110.000	9700.00	2276.86	.00	3.20	.00	864.29	420.00
	8110.000	9700.00	2277.46	.61	3.34	.61	939.36	420.00
*	8120.000	9700.00	2280.31	.00	3.46	.00	2414.23	193.00
	8120.000	9700.00	2280.92	.61	3.46	.61	1852.88	193.00
*	8125.000	9700.00	2280.36	.00	.05	.00	3448.22	100.00
	8125.000	9700.00	2280.95	.59	.03	.59	1949.45	100.00
(q)	8130.000	9700.00	2286.01	.00	5.65	.00	1026.25	670.00
	8130.000	9700.00	2286.28	.27	5.33	.27	255.00	670.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 7300.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7300.000 PROFILE= 2 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 7880.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7880.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 7880.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 7880.000 PROFILE= 2 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 7900.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 7900.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 8000.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8000.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8000.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 8000.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8000.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8000.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 8100.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8100.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8100.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8100.000 PROFILE= 2 MINIMUM SPECIFIC ENERGY

WARNING SECNO= 8110.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8120.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 8120.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8125.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 8130.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8130.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8130.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 8130.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8130.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8130.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

FLOODWAY DATA, DUCK CREEK FINAL RUN
PROFILE NO. 2

STATION	WIDTH	FLOODWAY		WATER SURFACE ELEVATION		
		SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
7300.000 (m)	290.	1023.	10.7	2244.1	2244.1	.0
7880.000	622.	1537.	6.3	2252.8	2252.0	.8
7890.000	731.	1887.	5.1	2252.9	2252.1	.8
7900.000 (w)	2127.	7380.	1.3	2253.8	2253.0	.8
8000.000 (o)	423.	1068.	9.1	2261.6	2261.1	.5
8100.000 (p)	569.	1309.	7.4	2274.2	2273.7	.5
8110.000	939.	2114.	4.6	2277.5	2276.9	.6
8120.000	1853.	7703.	1.3	2280.9	2280.3	.6
8125.000	1949.	9786.	1.0	2281.0	2280.4	.6
9130.000 (Q)	255.	896.	10.8	2286.3	2286.0	.3

Normal program termination

