0321-09

HYDRAULIC ANALYSIS

for the

WAREHOUSE AND DISTRIBUTION FACILITY

KRISTAL CORPORATION
RENO, NEVADA

FILE UNDER DRY CREEK/LONGLEY LANE

Prepared For

Charles R. Kelley, AIA

March, 1994

Reno/Sparks, Nevada
Las Vegas, Nevada
Phoenix, Arizona

SCA incorporated
CONSULTING ENGINEERS

03/09

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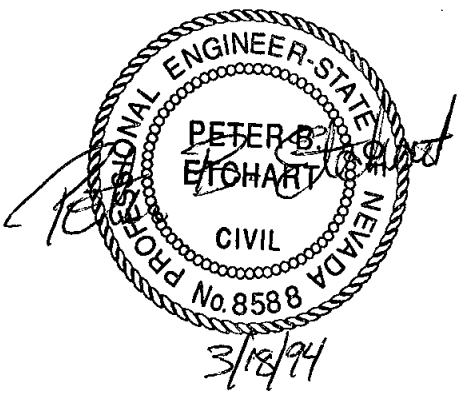

Prepared By

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(702) 358-6931

March, 1994

Project No. 2523-01-1

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THE KRISTAL CORPORATION

HYDRAULIC ANALYSIS

I. INTRODUCTION

The purpose of this study is to update the Preliminary Drainage Study for the Warehouse and Distribution Facility for the Kristal Corporation prepared for Charles R. Kelley, AIA in January, 1994. This report addresses the new Federal Emergency Management Agency (FEMA) Flood Hazard Zone Information which was forwarded to SEA, Inc. by Bob Gottsacker, P.E. of the City of Reno Department of Community Development.

The Kristal Corporation Warehouse is a proposed development on approximately 2.8 acres. The project site is located on the west side of Louie Lane and is situated within a portion of the northwest quarter (NW 1/4) of Section 32, T19N, R20E, MDM, Reno, Nevada. The proposed building site has undeveloped land to the south, and existing paved 24 foot access easement and building to the north, the Dry Creek Flood Control Channel (Boynton Slough) to the west, and the Park 2001 development to the east which consists of several existing buildings. The runoff from the site itself currently flows overland toward the Dry Creek Flood Control Channel. The location of the Kristal Corporation site is shown in Figure 1.

II. FLOOD ZONE CRITERIA

The current published FEMA Flood Insurance Map (FIRM) Panel No. 320020 1461 C shows the project site within Flood Hazard Zone B. Flood Zone Designation B represents areas between limits of the 100-year flood and 500-year flood; or areas subject to 100-year flooding with average depths less than one (1) foot. The Flood Insurance Map shows the Zone A Flood being contained in the Dry Creek Flood Control Channel.

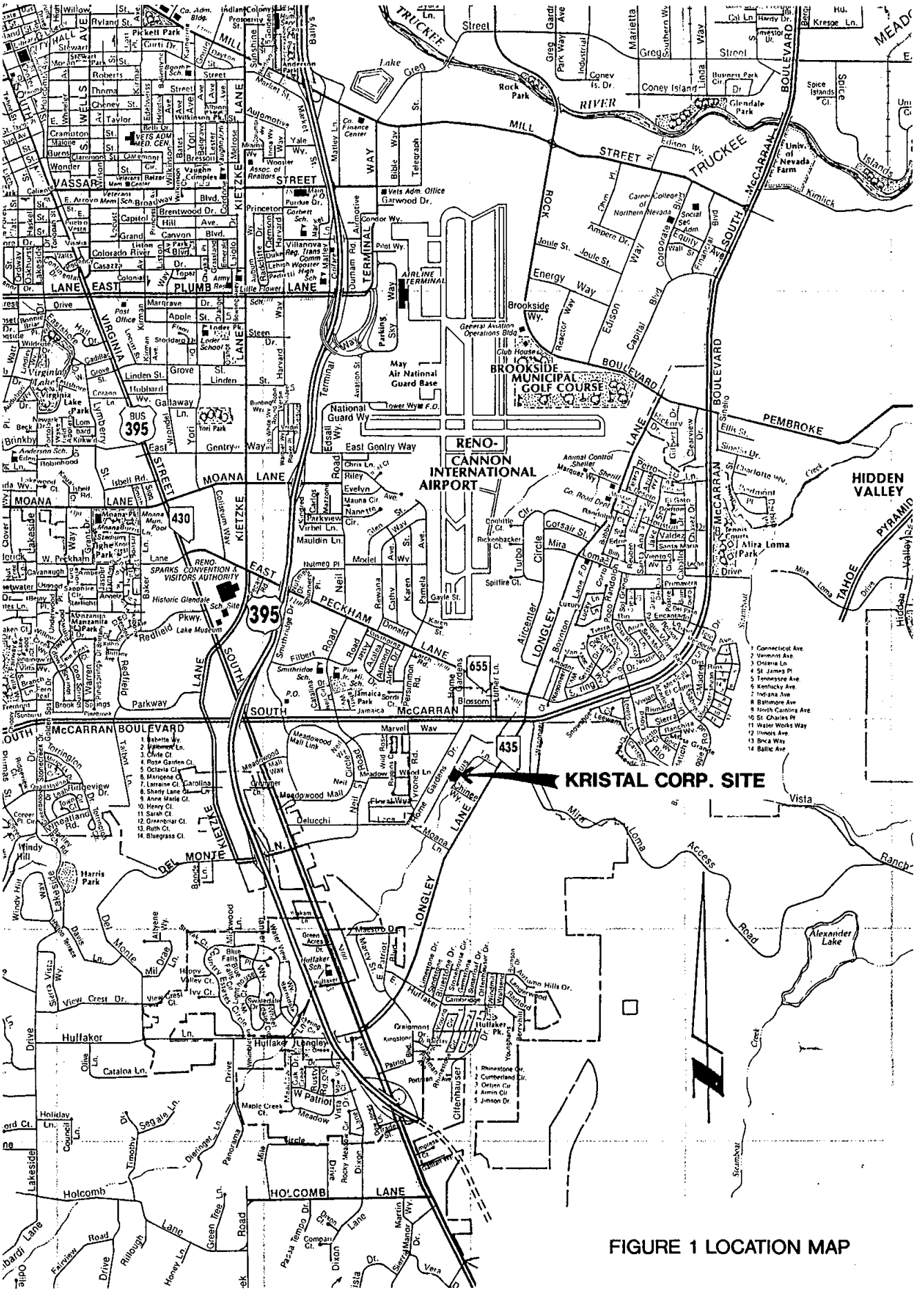


FIGURE 1 LOCATION MAP

The recent information sent to the City of Reno from Michael Baker Jr. Inc. shows a split flow taking place beginning at Virginia Street with a portion of the flow proceeding along the east side of the Dry Creek Flood Control Channel. It is our understanding that the overflow area is being reclassified as being in Flood Hazard Zone A. In a Zone A, new non-residential construction is required to have the finished floor elevated to one foot or more above the base flood elevation or two feet above the highest adjacent undisturbed ground elevation for Zone AO (where no depth number is specified). The area of overflow which impacts the proposed Kristal Corporation site is shown in Figure 2. The corresponding HEC-2 analysis is included in the appendix and is labeled "Baker Right Overbank HEC-2 Run". The last downstream section included in this analysis is 234.1 which is approximately 600' above the proposed Kristal Corporation building. In order to utilize this information in regards to the Kristal Corporation site, the Michael Baker Jr. study was extended downstream to include the Kristal Corporation site.

III. HYDRAULIC ANALYSIS

Our extension of the Michael Baker Jr. analysis includes three downstream sections. The sections were located downstream (Sta. 223.7), through (Sta. 226.9) and upstream (Sta. 230.2) of the Kristal Corporation site. The cross-section were taken from existing topographic information and improvement drawings produced by Summit Engineering Corporation for the Park 2001 Industrial Site. The cross-sections included the Dry Creek Flood Control Channel and extended to Longley Lane to the east. The location of the additional cross-sections along with the existing Baker Analysis downstream cross-sections are shown in Figure 3.

A flow rate of 750 cfs was used in the downstream sections of the Michael Baker Jr. study. This flow rate was also used in our extension of this analysis. For the Baker downstream section of 234.1 the 750 cfs was constricted to an area between the eastern bank of Dry Creek to the west and the old Longley Lane roadway to the east. The cross-section taken

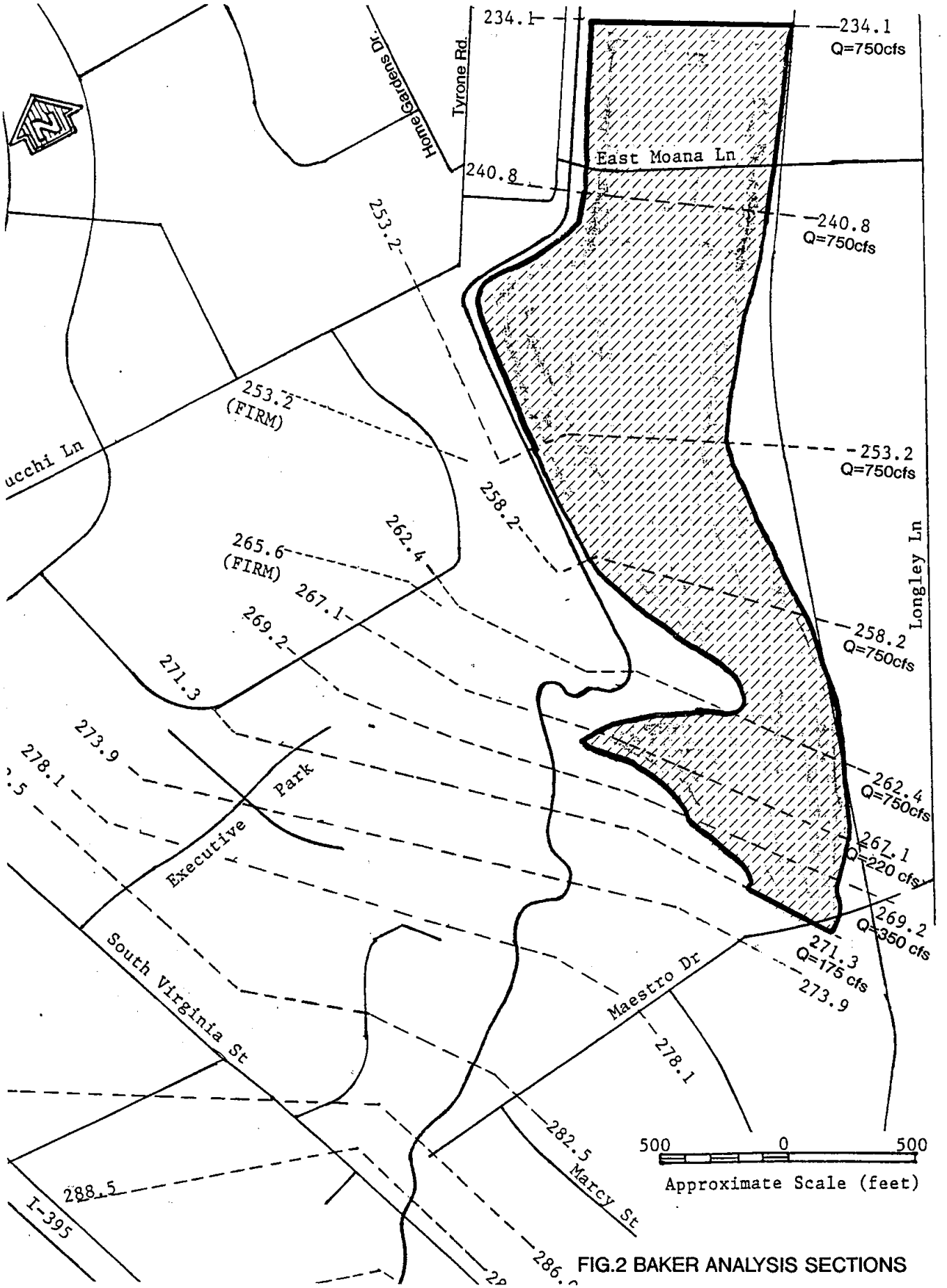


FIG.2 BAKER ANALYSIS SECTIONS

at Station 230.2 utilizes these same flow boundary constraints. The old Longley Lane roadway was eliminated north of Chinee Way with the construction of the Park 2001 improvements and therefore the storm runoff will not be constricted to the east of this roadway for Stations 223.7 and 226.9. For the existing condition cross-sections taken at Stations 223.7 and 226.9, our analysis was performed using Longley Lane as the eastern flow boundary constraint (HEC-2 Run #1 in Appendix). In order to be conservative in our analysis, the restriction at Longley Lane was set so as not to include the drainage channel on the west side of Longley Lane. The same flow restrictions were also used with the proposed condition of adding the Kristal Corporation Building and the proposed Reed Electrical Building which is located south of Chinee Way, west of Louie Lane ("HEC-2 RUN #2" in the Appendix). The computed water surface elevations for the existing and proposed conditions are presented in Table 1.

TABLE 1
Computed Water Surface Elevations

Station	Existing Conditions	Proposed Conditions
223.7	4428.5	4428.5
226.9	4429.14	4429.30
230.2	4429.53	4429.80
234.1	4431.69	4431.67

As can be seen on the Preliminary Grading Plan (Figure 4 - Appendix), the top of bank elevation for the Dry Creek Flood Control Channel at Station 226.9 (Kristal Corporation site) is 4427.97. For both existing and proposed conditions the computed water surface elevation is higher than the top of bank elevation for the Dry Creek Flood Control Channel. The proposed finished floor elevation of 4430.5 for the Kristal Corporation building is approximately two (2) to three (3) feet above the adjacent bank of the Dry Creek Flood

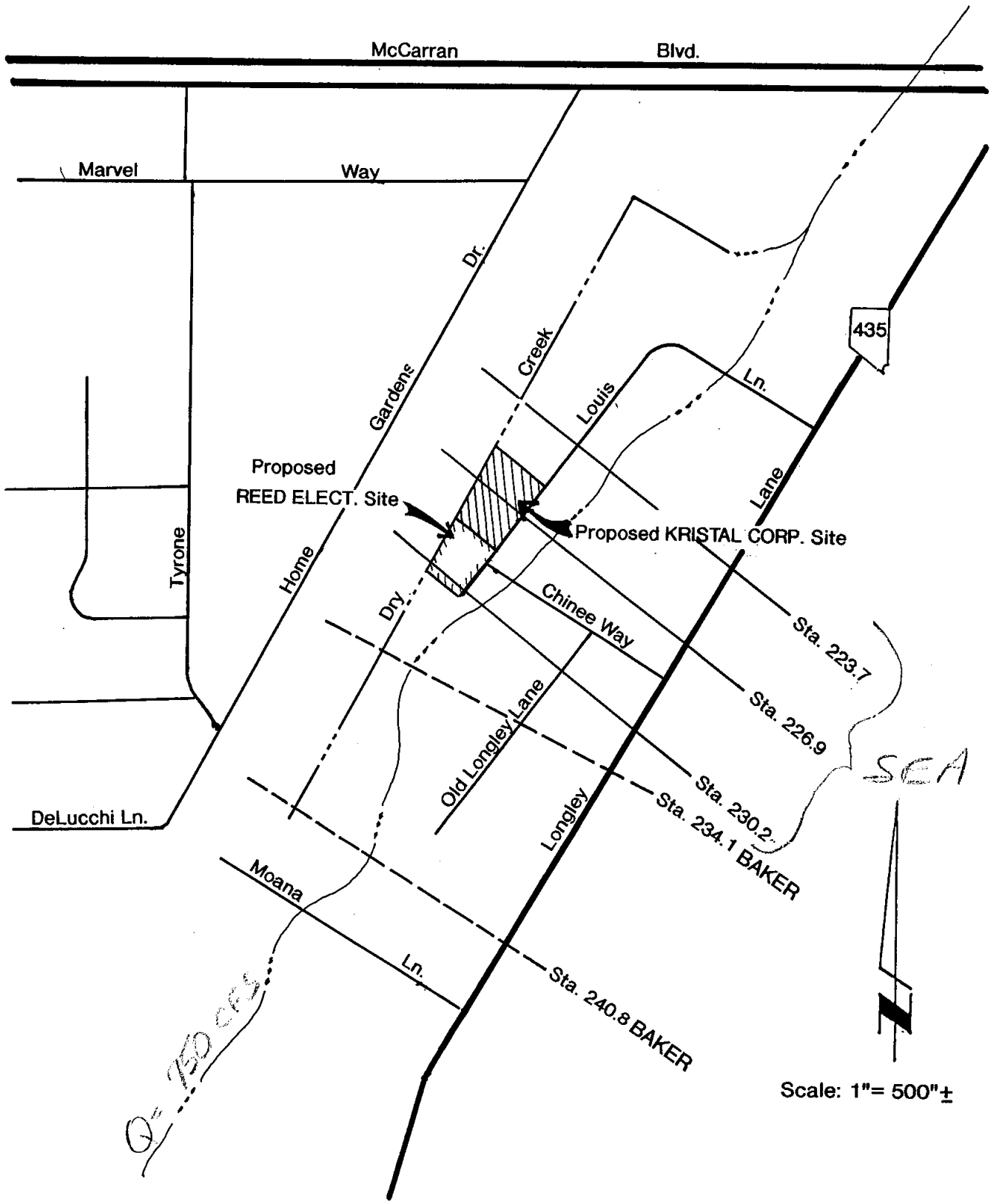


FIG. 3 ADDITIONAL CROSS SECTIONS

Control Channel. The proposed finished floor elevation is also over a foot higher than the above conservatively computed water surface elevation.

An additional HEC-2 analysis was performed on the Dry Creek Flood Control Channel for the new cross-sections using a flow rate of 4600 cfs. The flow rate of 4600 cfs includes the 3850 cfs shown in the Dry Creek Flood Control Channel at station 234.1 in the Michael Baker Jr. analysis plus the entire 750 cfs from the right overbank. This analysis (HEC-2 RUN #3 in the Appendix) reveals that the Dry Creek Flood Control Channel is capable of conveying the 4600 cfs flow rate without overtopping.

IV. CONCLUSIONS

The finished floor elevation of the proposed Kristal Corporation Warehouse and Distribution Facility is 4430.5. This finished floor elevation is two feet above the existing undisturbed ground and is over a foot higher than the computed water surface elevation. The computed water surface elevation is conservative since it does not account for water flowing back into the Dry Creek Flood Control Channel. The finished floor elevation is two (2) to three (3) feet above the top of bank elevation for the Dry Creek Flood Control Channel. Due to this elevation difference, storm runoff would flow into the Dry Creek Flood Control Channel before it would threaten the building. Adjacent to the location of the proposed Kristal Corporation building, the Dry Creek Flood Control Channel is capable of handling the additional runoff from the right overbank without overtopping.

Based on the above analysis, it is concluded that the finished floor elevation of 4430.5 meets the requirements for construction in flood zone A as set forth in the City of Reno Flood Hazard Ordinance.

APPENDIX

HEC-2 RUN #1

```
**********************************************
*  HEC-2 WATER SURFACE PROFILES              *
*                                            *
*  Version   4.6.0;  February 1991           *
*                                            *
*  RUN DATE    16MAR94    TIME   10:48:18    *
**********************************************
```

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

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

16MAR94 10:48:18 PAGE 1

THIS RUN EXECUTED 16MAR94 10:48:18

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

 Version   4.6.0;  February 1991
**************************************
```

```
T1      DRY CREEK - APPEAL RESOLUTION (EXT'D DOWNSTREAM TO KRISTAL CORP. SITE)
T2      EXRIGHT1.DAT
T3      EXISTING GROUND, RESTRICT FLOW OUTSIDE OF CHANNEL - 3/14/94
        LONGLEY LN RESTRICTION FOR STATIONS 223.7 AND 226.9
        EX. DIRT RD. RESTRICTION FOR STATION 230.2

I1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ
        0        2        0        0    .0043        0        0        0        0        0

I2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE
       -1        0       -1       2.                         -1

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

      38       27       43        1       28        2        3       42        8

QT      1      750
        **********************************************************************
        THREE NEW SECTIONS ADDED - 223.7, 226.9 and 230.2
        TOPO FROM SUMMIT PLANS FOR  PARK 2001   - too low for flood conditions
        **********************************************************************

NC    .045     .045     .03      .1       .3
ET               9.1                                                  100.     1141.1
X1    223.7     47.       0.     100.       0.       0.       0.                    1
GR    4426.6     0.    4418.9    23.    4418.6    35.    4417.1    50.    4418.6    65.
GR    4418.9    77.    4426.6   100.    4429.1   130.    4435.    130.1   4435.    369.
```

GR	4429.1	369.1	4428.1	416.	4427.7	416.1	4428.	430.	4428.	439.
GR	4428.	449.	4427.7	465.	4428.1	465.1	4428.4	504.	4435.	504.1
R	4435.	739.	4428.27	739.1	4427.13	760.	4427.	761.5	4427.13	763.
R	4427.9	812.	4435.	812.1	4435.	913.	4427.95	913.1	4427.	947.
GR	4426.9	948.5	4427.	950.	4427.83	985.	4435.	985.1	4435.	1065.
R	4428.	1065.1	4427.79	1075.	4427.29	1075.1	4427.	1090.	4426.62	1141.
R	4427.	1141.1	4420.45	1160.	4420.45	1167.	4426.	1182.	4426.3	1191.
GR	4427.	1227.	4427.26	1233.						
T		9.1							100.	1170.1
X1	226.9	43.	0.	100.	320.	320.	320.			1
GR	4428.0	0.	4420.3	23.	4419.97	35.	4418.47	50.	4419.97	65.
GR	4420.3	77.	4427.97	100.	4428.	210.	4429.	404.	4429.67	417.
R	4429.3	417.1	4429.75	440.	4429.3	464.	4429.67	464.1	4429.5	493.
R	4429.	493.1	4428.11	537.	4428.49	537.1	4429.5	543.	4435.	543.1
GR	4435.	950.	4429.96	950.1	4427.82	963.	4427.32	963.1	4427.21	976.
R	4427.1	977.5	4427.21	979.	4427.83	1013.	4435.	1013.1	4435.	1094.

R	4428.0	1094.1	4427.79	1104.	4427.29	1104.1	4427.	1116.	4426.	1160.
GR	4425.8	1170.	4426.12	1170.1	4426.	1172.	4422.03	1190.	4427.	1207.
GR	4428.	1233.	4429.	1255.	4429.13	1261.				
T		9.1							100.	908.
X1	230.2	46.	0.	100.	330.	330.	330.			1
GR	4429.4	0.	4421.7	23.	4421.4	35.	4419.9	50.	4421.4	65.
R	4421.7	77.	4429.4	100.	4429.	103.	4429.	404.	4427.	413.
GR	4427.	424.	4428.	432.	4428.8	600.	4428.7	730.	4428.5	824.
GR	4429.	883.	4430.	891.	4430.3	895.	4430.6	908.	4430.4	920.
R	4430.	928.	4429.	930.	4428.4	933.	4429.	935.	4430.	941.
R	4430.3	945.	4430.	949.	4429.	967.	4429.	986.	4430.	990.
GR	4430.2	992.	4430.	995.	4429.41	1021.	4429.29	1023.	4429.41	1025.
GR	4430.0	1045.	4435.	1045.1	4435.	1125.	4430.	1125.1	4429.76	1136.
R	4429.3	1136.1	4427.75	1202.	4428.08	1202.1	4423.67	1222.	4430.	1259.
R	4431.	1293.								
NC	.035	.035	.03	← too optimistic for flood condition						
T		9.1							1011.6	1707.7
X1	234.1	48	822.8	922.1	400	380	390			
GR	4432.6	0.0	4433.7	21.2	4432.6	32.2	4433.8	44.7	4434.1	60.3
R	4433.5	88.7	4432.6	116.0	4432.1	259.3	4432.3	356.9	4432.1	429.2
R	4433.2	447.5	4433.2	465.6	4432.1	472.6	4432.3	551.9	4432.5	696.3
GR	4431.9	822.8	4423.7	844.3	4422.7	878.5	4425.3	893.1	4433.4	922.1
GR	4433.3	949.7	4432.3	959.2	4438.3	975.5	4437.9	1011.6	4431.4	1022.9
R	4431.7	1131.3	4431.2	1240.8	4432.9	1259.7	4427.3	1271.1	4431.2	1286.0
R	4430.5	1289.2	4431.7	1405.6	4432.0	1566.9	4432.5	1692.8	4428.5	1700.3
GR	4433.9	1707.7	4433.6	1727.7	4432.2	1740.8	4426.5	1747.8	4432.8	1756.6
R	4432.1	1761.9	4431.9	1950.9	4431.6	2090.1	4427.9	2103.3	4429.7	2111.8
R	4434.3	2129.2	4434.0	2142.7	4434.6	2174.0				
NC	.045	.040	.035	.1	.3					
T		9.1							655.8	1433.5
1	240.8	53	553	655.8	670	670	670			
GR	4436.7	0.0	4434.0	13.6	4435.5	22.8	4435.6	75.3	4435.4	165.1
GR	4437.4	173.4	4437.3	200.1	4436.1	210.9	4435.3	354.3	4435.7	439.8
R	4436.2	553.0	4427.6	578.1	4426.7	592.0	4426.5	614.8	4428.6	629.4
R	4436.8	655.8	4435.9	675.2	4436.8	705.3	4436.8	811.0	4436.4	908.8
GR	4436.0	994.7	4435.3	1043.1	4436.8	1056.1	4436.8	1079.7	4436.5	1085.5
R	4436.9	1175.4	4437.4	1291.9	4436.0	1371.9	4433.4	1378.2	4436.5	1385.2
R	4437.3	1411.8	4437.0	1422.2	4437.6	1433.5	4437.3	1445.5	4436.8	1461.3
GR	4437.3	1481.4	4433.6	1490.1	4436.1	1496.3	4435.9	1598.0	4435.4	1684.4
GR	4437.1	1691.0	4432.7	1703.9	4437.6	1718.9	4436.2	1729.1	4436.0	1773.0
R	4431.7	1784.9	4431.0	1832.9	4430.2	1887.2	4435.2	1894.4	4435.1	1915.0

GR	4435.8	1921.4	4436.1	1938.6	4436.6	1974.4				

++
+ NEW CROSS SECTION DATA WAS ENTERED BELOW +
+ NUMBERS 265.6, 273.8, AND 280.0 WERE DELETED +
++

++
+ MODIFIED THE FLOWS TO REPRESENT THE +

+ RESULTS OF THE SPLIT FLOW ANALYSIS (5-11-93) +
+ => WEIR COEFFICIENT 3.1 +
+ => TRUNCATED CROSS SECTIONS +
++

********** MODIFIED SECTION 253.2**********

IC	.050	.045	.035	.1	.3					
QT	1	750								
ET		9.1							917.8	1716.5
X1	253.2	43	817.4	917.8	450	1240	1240			
GR	4441.0	0.0	4444.0	420.0	4444.0	610.0	4447.0	690.0	4444.0	720.0
GR	4448.0	721.5	4442.4	779.2	4443.1	817.4	4434.6	845.7	4435.0	852.4
GR	4433.6	858.7	4433.3	883.0	4435.1	897.2	4442.2	917.8	4441.6	1029.1
GR	4441.6	1162.0	4441.3	1240.0	4440.8	1300.0	4440.4	1373.0	4440.8	1465.0
GR	4441.6	1483.4	4441.3	1505.2	4442.0	1512.1	4442.3	1638.8	4443.3	1716.5
GR	4442.8	1803.0	4442.5	1865.6	4443.8	1882.8	4443.0	1893.2	4441.2	1919.7
GR	4442.1	1925.8	4437.8	1936.8	4440.5	1954.8	4439.4	2068.8	4439.2	2174.1
GR	4436.0	2191.4	4439.0	2209.8	4439.0	2295.9	4439.6	2372.9	4437.1	2378.8
GR	4441.9	2382.8	4442.1	2399.0	4442.6	2430.0				

**********CROSS SECTION 258.2**********

QT	1	750								
ET		9.1							1298.6	2260
X1	258.2	82	1186.1	1298.6	1000	1750	500			
GR	4450.0	906.6	4449.8	908.6	4449.0	912.6	4448.9	913.3	4448.0	918.2
GR	4447.5	919.7	4446.7	922.5	4446.5	924.1	4446.4	924.9	4446.0	927.9
GR	4445.1	933.7	4445.0	934.6	4444.4	946.5	4444.0	952.2	4444.1	978.4
GR	4444.4	1009.2	4444.6	1020.1	4444.8	1024.2	4445.0	1030.7	4445.0	1038.0
GR	4444.6	1042.9	4444.1	1049.7	4444.0	1050.9	4444.0	1059.7	4444.1	1062.2
GR	4444.6	1089.2	4444.6	1135.5	4444.8	1157.6	4445.0	1164.1	4445.0	1164.1
GR	4445.0	1165.1	4445.1	1169.5	4445.2	1173.7	4445.2	1186.1	4445.1	1193.3
GR	4445.0	1197.5	4443.0	1206.0	4442.7	1206.5	4442.6	1206.6	4442.3	1207.1
GR	4442.0	1207.7	4441.9	1207.9	4441.0	1209.9	4440.0	1214.5	4439.7	1215.3
GR	4439.0	1217.3	4439.0	1217.4	4438.0	1220.3	4437.1	1223.6	4437.0	1224.1
GR	4436.5	1230.1	4436.0	1235.1	4436.0	1256.7	4436.4	1262.2	4437.0	1271.4
GR	4437.7	1275.8	4438.9	1280.0	4439.0	1280.2	4440.0	1282.8	4440.4	1283.8
GR	4441.0	1285.4	4441.9	1287.4	4442.5	1288.8	4443.0	1289.9	4444.0	1291.5
GR	4444.2	1296.7	4444.2	1298.6	4444.1	1300.1	4444.0	1304.5	4444.0	1304.6
GR	4443.9	1304.7	4443.8	1305.2	4443.6	1305.5	4443.6	1305.6	4443.4	1306.6
GR	4443.3	1307.3	4442.5	1470	4443	2200	4443.5	2260	4442	2300
GR	4444	2550	4445	2700						

**********CROSS SECTION 262.4**********

QT	1	750								
ET		9.1							2400	2820
X1	262.4	76	1831.7	1930.2	300	430	420			
GR	4446.0	1148.7	4446.0	1148.8	4446.4	1162.2	4446.4	1163.7	4446.6	1195.1
GR	4446.6	1195.9	4446.1	1198.5	4446.0	1434.6	4446.1	1439.2	4446.4	1461.8

GR	4446.5	1474.5	4446.5	1519.7	4446.5	1528.7	4446.5	1528.9	4446.5	1529.1
GR	4446.5	1530.4	4446.5	1534.7	4446.6	1578.3	4446.4	1621.1	4446.4	1631.5
R	4446.4	1638.3	4446.3	1653.6	4446.2	1697.3	4446.4	1708.1	4446.4	1710.2

R	4446.2	1742.5	4446.2	1752.1	4446.2	1752.6	4446.2	1755.6	4446.2	1757.3
GR	4446.2	1758.7	4446.2	1765.3	4446.1	1797.3	4446.1	1815.4	4446.0	1823.8
R	4446.0	1831.7	4445.6	1834.5	4445.0	1838.5	4444.2	1841.5	4444.0	1842.1
R	4443.7	1842.8	4443.0	1844.6	4442.5	1846.4	4442.0	1848.3	4441.3	1851.1
GR	4441.0	1852.4	4440.1	1858.0	4439.8	1859.8	4439.0	1864.8	4438.8	1867.1
GR	4438.0	1876.9	4438.0	1894.4	4438.4	1900.7	4439.0	1910.7	4439.3	1912.2
R	4440.0	1917.5	4440.9	1920.5	4441.0	1920.6	4441.9	1923.6	4442.0	1923.7
R	4442.0	1923.8	4443.0	1925.4	4443.4	1926.4	4444.0	1928.3	4445.0	1930.2
GR	4445.0	1937.9	4444.0	1980	4445	2050	4446	2400	4445	2800
GR	4446	2820	4444	2850	4445	2900	4446	3050	4444	3140
R	4447	3210								

```
************************************************
*    EXTENDED THE CROSS SECTIONS 267.1, 269.2, *
*    AND 271.3 TO LONGLEY LANE. DATA WAS       *
*    OBTAINED FROM SUMMIT ENGINEERING THRU     *
*    THE STATE FARMS STOCK FACILITY.           *
************************************************
```

QT	1	2200								

**********CROSS SECTION 267.1**********

T		9.1							1891.6	3137.0
X1	267.1	86	1852.2	1879.4	260	180	470			
R	4447.7	1166.9	4447.7	1167.6	4447.1	1186.6	4447.0	1189.1	4446.9	1189.7
R	4446.0	1192.3	4445.1	1195.9	4445.0	1198.4	4445.3	1199.5	4446.0	1201.1
GR	4446.3	1203.0	4446.4	1203.6	4447.0	1207.0	4447.1	1213.1	4447.1	1220.1
GR	4447.5	1231.4	4447.5	1231.6	4447.2	1246.9	4447.0	1247.6	4447.0	1250.9
R	4447.9	1252.0	4448.0	1252.1	4448.0	1257.2	4447.8	1260.7	4447.5	1268.7
R	4447.1	1280.4	4447.2	1390.1	4447.4	1406.7	4447.5	1425.5	4447.9	1445.9
GR	4447.8	1481.0	4447.4	1506.3	4447.3	1561.8	4447.0	1618.6	4447.0	1675.1
GR	4447.2	1720.4	4447.2	1721.5	4447.6	1787.7	4447.6	1803.1	4447.7	1804.6
R	4447.1	1852.2	4447.1	1852.5	4447.0	1854.0	4446.6	1855.6	4446.5	1856.2
R	4446.0	1859.1	4445.7	1860.1	4445.0	1863.3	4445.0	1869.4	4445.3	1872.8
GR	4446.0	1874.3	4446.7	1878.0	4447.0	1879.4	4447.5	1885.9	4447.8	1891.6
R	4447.8	1916.8	4447.6	1933.7	4447.4	2006.9	4447.3	2047.6	4447.2	2073.4
R	4447.1	2121.7	4447.0	2167.3	4446.9	2191.3	4446.0	2335.0	4445.0	2340.0
GR	4446.0	2345.0	4446.0	2365.0	4445.7	2500.0	4446.0	2682.0	4446.5	2960.0
GR	4447.0	3137.0	4444.5	3150.0	4447.0	3154.0	4448.0	3166.0	4448.0	3174.0
R	4447.0	3175.0	4447.0	3210.0	4448.0	3215.0	4448.0	3220.0	4444.5	3227.0
R	4447.0	3230.0	4447.0	3235.0	4446.5	3240.0	4447.0	3242.0	4448.0	3435.0
GR	4450.8	3533.0								

**********CROSS SECTION 269.2**********

QT	1	350								
T		9.1							2832.0	3483.0
1	269.2	55	2241.8	2301.8	190	190	210			
GR	4450.2	1260.4	4446.0	1271.4	4446.0	1287.1	4447.0	1290.0	4447.0	1308.2
GR	4446.0	1310.4	4446.0	1314.1	4447.0	1316.5	4448.0	1353.3	4448.2	1383.3
R	4448.1	1450.5	4448.2	1473.3	4448.2	1492.8	4448.0	1530.2	4449.0	1605.1
R	4448.0	1616.2	4449.0	1626.1	4449.0	1634.8	4448.4	1902.7	4448.5	1957.5
GR	4448.6	2013.4	4448.6	2070.1	4448.0	2101.4	4447.9	2123.0	4448.0	2155.8
GR	4448.0	2187.6	4448.0	2197.9	4448.2	2198.0	4448.4	2241.8	4446.0	2260.3

GR	4446.0	2278.4	4448.2	2301.8	4447.9	2457.1	4447.9	2568.7	4448.0	2815.0
GR	4446.5	2820.0	4447.0	2822.0	4448.0	2823.0	4448.5	2832.0	4448.0	2841.0
R	4447.5	3180.0	4448.0	3477.0	4448.2	3483.0	4448.0	3487.0	4447.9	3504.0
R	4448.0	3542.0	4448.2	3546.0	4448.0	3549.0	4447.8	3552.0	4448.0	3556.0
GR	4448.0	3568.0	4449.0	3622.0	4448.0	3625.0	4452.0	3830.0	4452.2	3870.0

************CROSS SECTION 271.3***************

ET		9.1							3333.0	4020.0
T	1	175								
1	271.3	63	2515.9	2538.3	210	200	210			
GR	4451.0	1238.9	4451.0	1251.0	4446.0	1263.3	4446.0	1266.9	4449.0	1286.7
GR	4449.5	1462.0	4449.6	1464.0	4449.5	1471.8	4449.3	1507.5	4449.0	1645.1
R	4448.0	1647.2	4448.6	1654.3	4449.0	1655.2	4449.8	1692.5	4450.0	1705.8
R	4450.2	1736.5	4450.6	1791.6	4450.9	1823.1	4451.0	1829.4	4450.5	1860.6
GR	4450.4	1868.6	4450.2	1907.8	4450.0	1944.1	4449.9	1955.0	4449.8	1988.2
R	4449.6	2187.9	4449.8	2238.0	4450.0	2294.6	4450.0	2416.5	4449.9	2417.5
R	4449.0	2453.1	4448.2	2511.8	4448.0	2515.9	4447.0	2524.5	4447.0	2536.5
GR	4448.0	2538.3	4448.1	2538.6	4449.0	2540.4	4449.0	2680.7	4449.1	2697.8
GR	4449.1	2720.1	4449.0	2723.2	4449.1	2732.4	4448.9	2843.4	4448.8	2987.9
R	4448.2	3246.0	4447.5	3250.0	4448.0	3254.0	4449.0	3265.0	4448.8	3270.0
R	4449.0	3281.0	4448.8	3300.0	4449.0	3315.0	4449.4	3333.0	4449.0	3348.0
GR	4448.6	3450.0	4448.9	3520.0	4449.0	3675.0	4451.9	4020.0	4451.0	4100.0
GR	4452.0	4150.0	4456.0	4300.0	4456.2	4310.0				

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

*PROF 1

RITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300

SECNO 223.700

096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

3265 DIVIDED FLOW

280 CROSS SECTION 223.70 EXTENDED 1.24 FEET

470 ENCROACHMENT STATIONS= 100.0 1141.1 TYPE= 1 TARGET= 1041.100

223.700	11.40	4428.50	4428.10	.00	4428.59	.08	.00	.00	100000.00
750.0	.0	.0	750.0	.0	.0	325.0	.0	.0	4426.60
.00	.00	.00	2.31	.000	.000	.045	.000	4417.10	100.00
.004288	0.	0.	0.	0	45	23	.00	350.65	1141.10

SECNO 226.900

3265 DIVIDED FLOW

280 CROSS SECTION 226.90 EXTENDED .02 FEET

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.08

```
3470 ENCROACHMENT STATIONS=      100.0    1170.1  TYPE=      1  TARGET=     1070.100
   226.900     10.67   4429.14   4428.45       .00   4429.17       .03       .58       .01 100000.00
     750.0        .0        .0     750.0        .0        .0     557.3       3.2       3.1   4427.97
       .07       .00       .00      1.35      .000      .000      .045      .000   4418.47    100.00
   .000986      320.      320.      320.         3        14         0       .00    488.74   1170.10


*SECNO 230.200

3470 ENCROACHMENT STATIONS=      100.0     908.0  TYPE=      1  TARGET=      808.000
   230.200      9.63   4429.53   4428.89       .00   4429.55       .02       .38       .00 100000.00
     750.0        .0        .0     750.0        .0        .0     644.0       7.8       7.9   4429.40
       .14       .00       .00      1.16      .000      .000      .045      .000   4419.90    100.00
   .001364      330.      330.      330.         3        15         0       .00    787.24    887.24



   16MAR94      10:48:18                                                                          PAGE    7

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


*SECNO 234.100

3265 DIVIDED FLOW

3185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     1011.6    1707.7  TYPE=      1  TARGET=      696.100
   234.100      8.99   4431.69   4431.69       .00   4431.94       .25      1.09       .07 100000.00
     750.0        .0        .0     750.0        .0        .0     186.1      11.4      13.0 100000.00
       .17       .00       .00      4.03      .000      .000      .035      .000   4422.70   1022.40
   .009524      400.      390.      380.         0        12         0       .00    369.68   1704.67


CCHV=      .100 CEHV=      .300
*SECNO 240.800

3265 DIVIDED FLOW

3280 CROSS SECTION    240.80 EXTENDED       .36 FEET


3470 ENCROACHMENT STATIONS=      655.8    1433.5  TYPE=      1  TARGET=      777.700
   240.800     10.45   4436.95   4436.68       .00   4437.04       .09      5.09       .02 100000.00
     750.0        .0        .0     750.0        .0        .0     307.7      15.2      20.5   4436.80
       .25       .00       .00      2.44      .000      .000      .040      .000   4426.50    655.80
   .006192      670.      670.      670.         5        13         0       .00    615.63   1400.35


CCHV=      .100 CEHV=      .300
*SECNO 253.200

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


3470 ENCROACHMENT STATIONS=      917.8    1716.5  TYPE=      1  TARGET=      798.700
   253.200      8.69   4441.99   4441.46       .00   4442.04       .05      4.99       .00 100000.00
```

750.0	.0	.0	750.0	.0	.0	426.7	25.7	37.2	4442.20
.44	.00	.00	1.76	.000	.000	.045	.000	4433.30	955.38
.002828	450.	1240.	1240.	8	8	0	.00	556.69	1512.08

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 258.200

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.32

470 ENCROACHMENT STATIONS=			1298.6	2260.0	TYPE=	1	TARGET=	961.400	
258.200	7.83	4443.83	4442.99	.00	4443.84	.01	1.79	.00	100000.00
750.0	.0	.0	750.0	.0	.0	971.6	53.8	67.6	4444.20
1.07	.00	.00	.77	.000	.000	.045	.000	4436.00	1305.07
.000524	1000.	500.	1750.	8	11	0	.00	954.93	2260.00

*SECNO 262.400

185 MINIMUM SPECIFIC ENERGY

720 CRITICAL DEPTH ASSUMED

470 ENCROACHMENT STATIONS=			2400.0	2820.0	TYPE=	1	TARGET=	420.000	
262.400	7.93	4445.93	4445.93	.00	4446.20	.27	.73	.08	100000.00
750.0	.0	.0	750.0	.0	.0	180.6	59.4	74.2	100000.00
1.10	.00	.00	4.15	.000	.000	.045	.000	4438.00	2429.10
.044102	300.	420.	430.	0	5	0	.00	389.44	2818.54

*SECNO 267.100

302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 9.55

470 ENCROACHMENT STATIONS=			1891.6	3137.0	TYPE=	1	TARGET=	1245.400	
267.100	2.74	4447.24	4446.74	.00	4447.32	.08	1.10	.02	100000.00
2200.0	.0	.0	2200.0	.0	.0	978.2	61.8	77.2	100000.00
1.12	.00	.00	2.25	.000	.000	.045	.000	4444.50	2063.16
.004161	260.	470.	180.	10	14	0	.00	1073.84	3137.00

SECNO 269.200

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .13

3470 ENCROACHMENT STATIONS=			2832.0	3483.0	TYPE=	1	TARGET=	651.000	
269.200	2.13	4448.13	4447.94	.00	4448.16	.03	.84	.00	100000.00
350.0	.0	.0	350.0	.0	.0	245.5	64.5	81.0	100000.00
1.16	.00	.00	1.43	.000	.000	.045	.000	4446.00	2838.57
.006668	190.	210.	190.	4	12	0	.00	642.49	3481.05

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 271.300
7185 MINIMUM SPECIFIC ENERGY
7720 CRITICAL DEPTH ASSUMED

7470 ENCROACHMENT STATIONS= 3333.0 4020.0 TYPE= 1 TARGET= 687.000

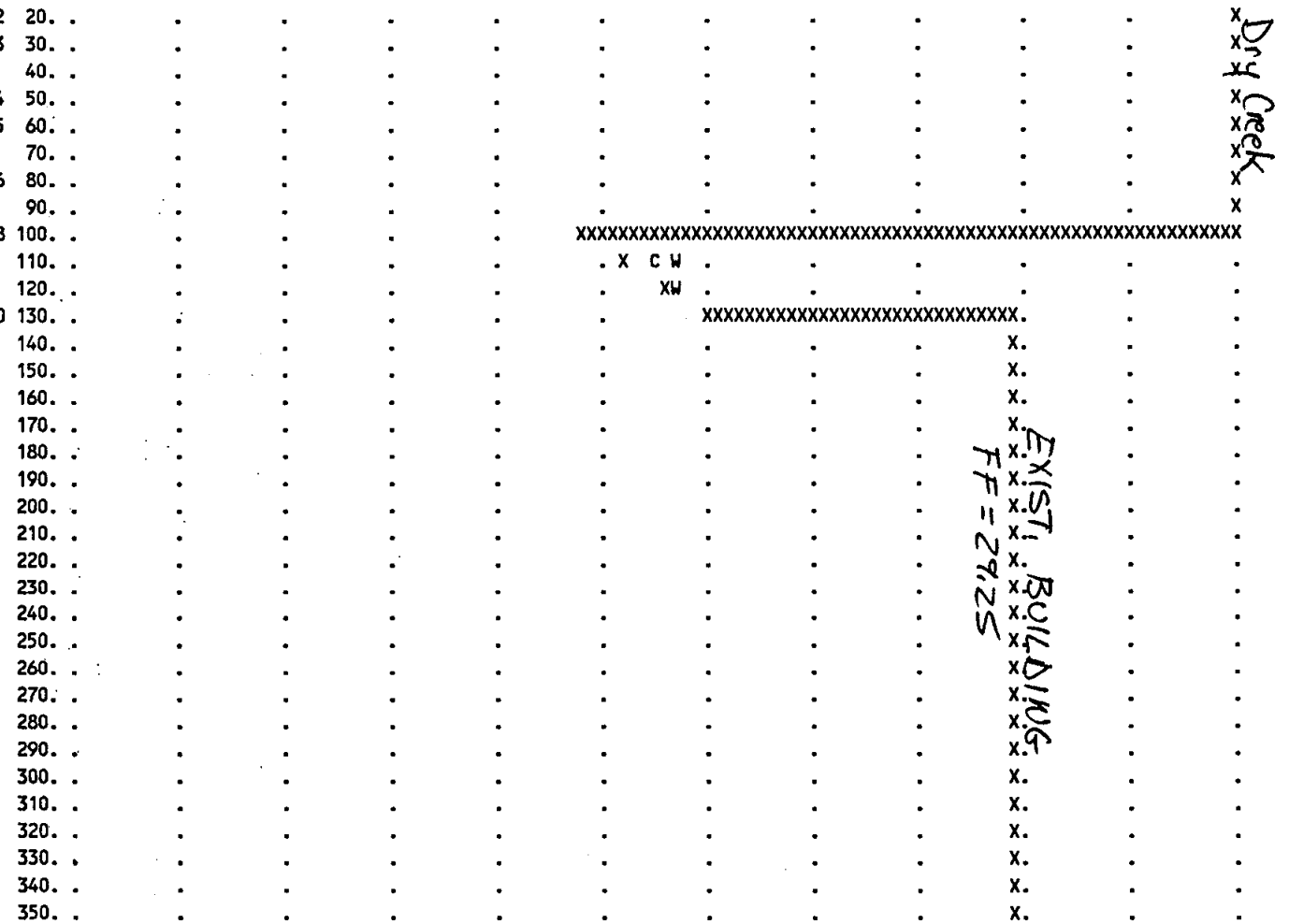
271.300	4.13	4450.13	4450.13	.00	4450.13	.00	.11	.00	100000.00
175.0	.0	.0	175.0	.0	.0	502.9	66.2	83.6	100000.00
1.32	.00	.00	.35	.000	.000	.045	.000	4446.00	3333.00
.000093	210.	210.	200.	0	27	0	.00	475.90	3808.90

CROSS SECTION 223.70
STREAM EXISTING GROUND, RESTRIC
DISCHARGE= 750.

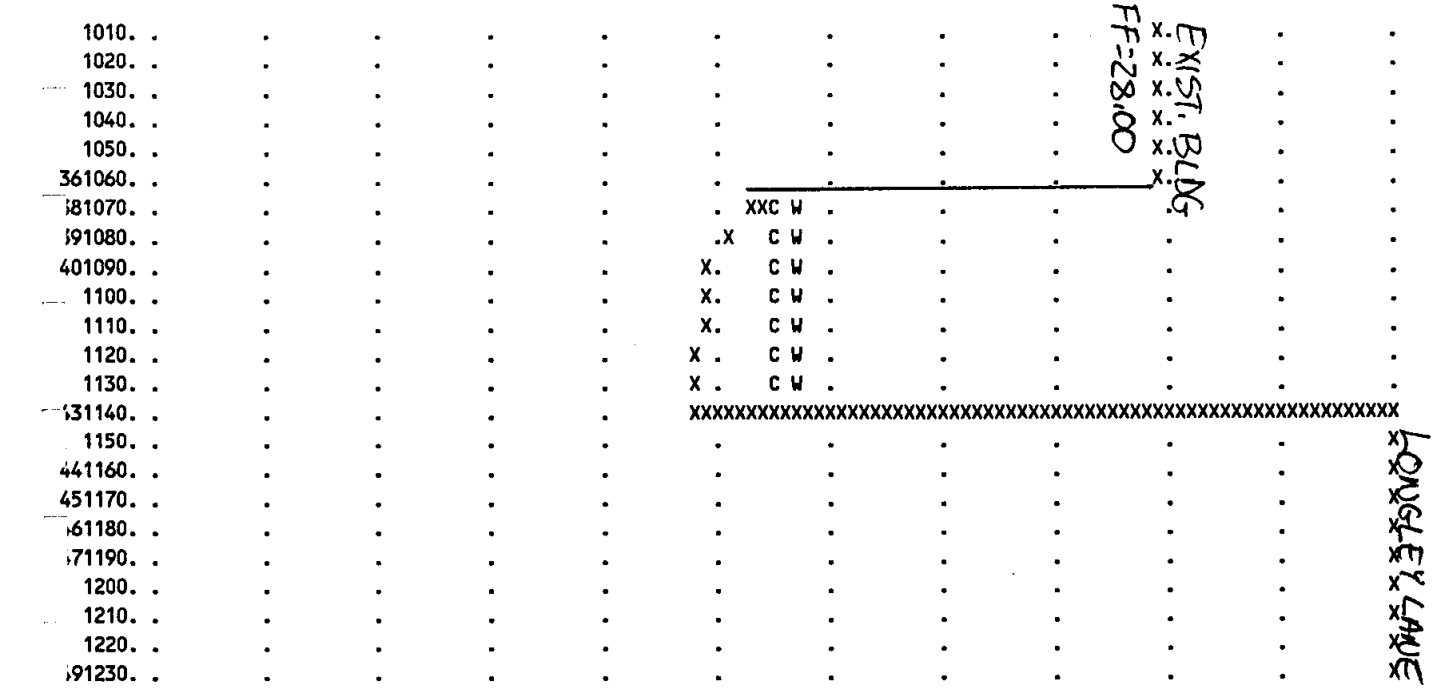
PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 4417.1 4419.1 4421.1 4423.1 4425.1 4427.1 4429.1 4431.1 4433.1 4435.1 4437.1

STA-FEET



EXIST. BUILDING
FF = 28.44
EXIST. BUILDING
FF = 28.00



IRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

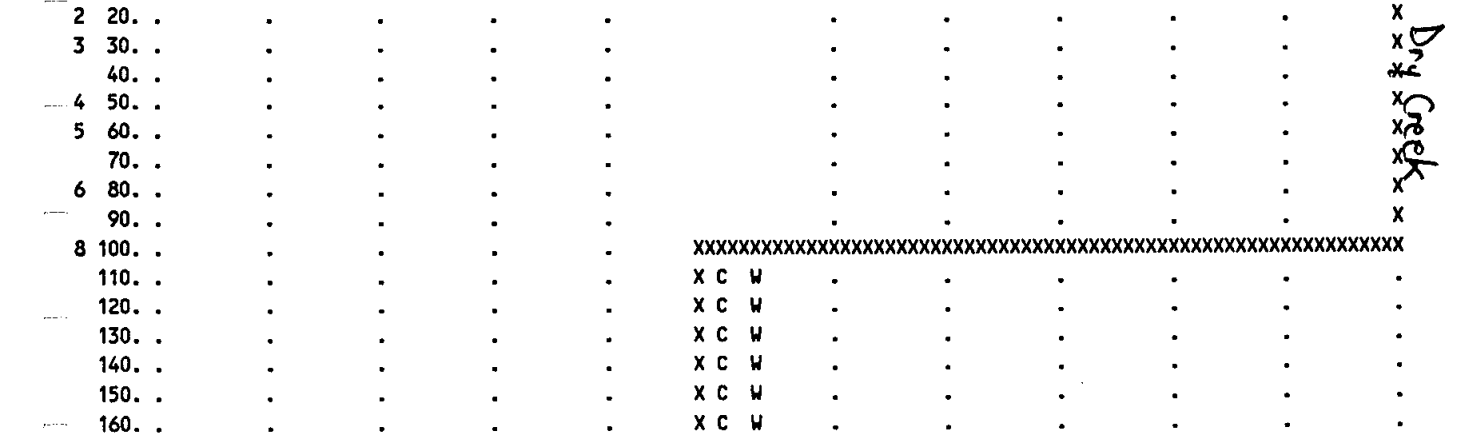
EL(I),STA(I)									
100000.00	23.00	100000.00	35.00	100000.00	50.00	100000.00	65.00	100000.00	77.00
100000.00	100.00	4426.60	100.00	4429.10	130.00	4435.00	130.10	4435.00	369.00
4429.10	369.10	4428.10	416.00	4427.70	416.10	4428.00	430.00	4428.00	439.00
4428.00	449.00	4427.70	465.00	4428.10	465.10	4428.40	504.00	4435.00	504.10
4435.00	739.00	4428.27	739.10	4427.13	760.00	4427.00	761.50	4427.13	763.00
4427.90	812.00	4435.00	812.10	4435.00	913.00	4427.95	913.10	4427.00	947.00
4426.90	948.50	4427.00	950.00	4427.83	985.00	4435.00	985.10	4435.00	1065.00
4428.00	1065.10	4427.79	1075.00	4427.29	1075.10	4427.00	1090.00	4426.62	1141.00
4427.00	1141.10	100000.00	1141.10	100000.00	1160.00	100000.00	1167.00	100000.00	1182.00
100000.00	1191.00	100000.00	1227.00	100000.00	1233.00				

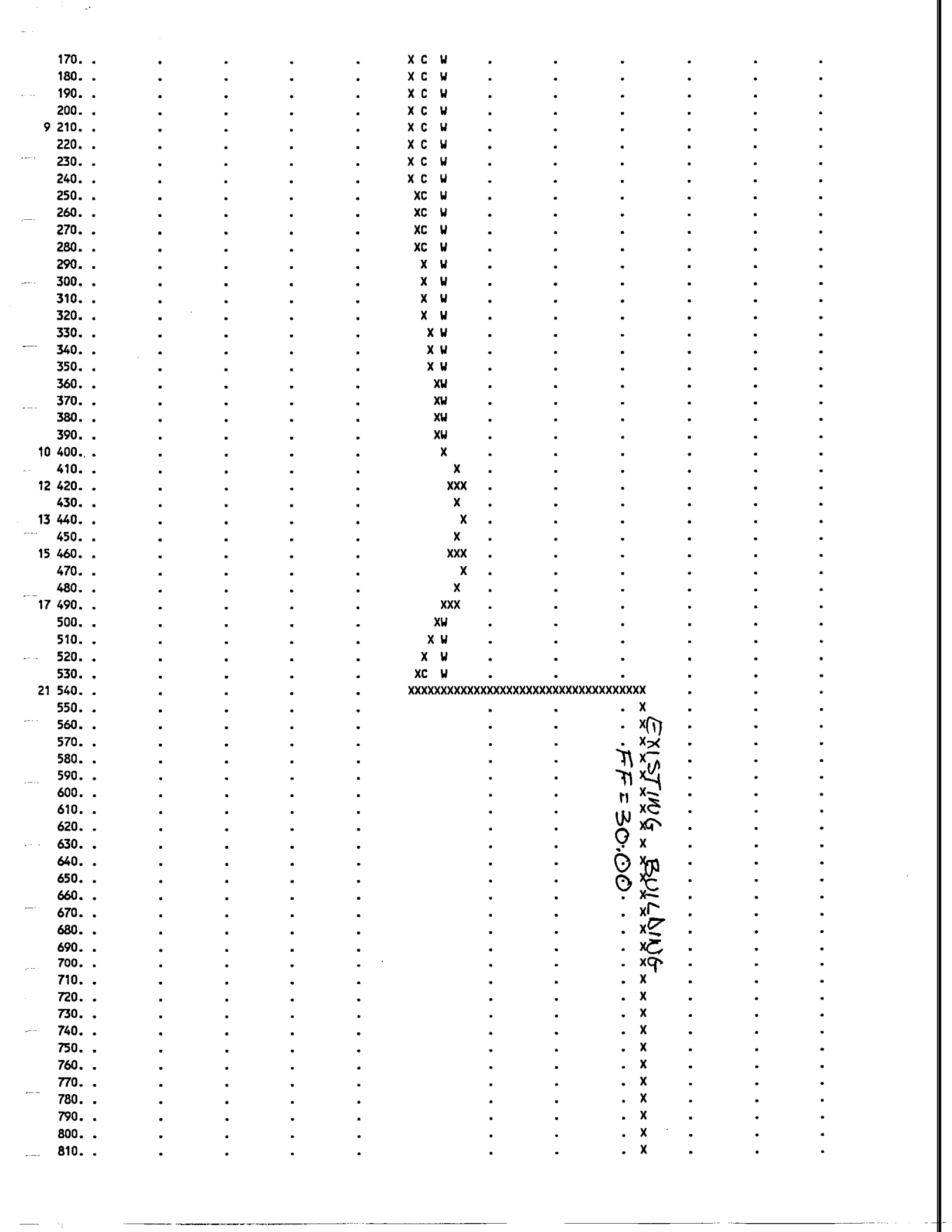
CROSS SECTION 226.90
STREAM EXISTING GROUND, RESTRIC
DISCHARGE= 750.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 4418.5 4420.5 4422.5 4424.5 4426.5 4428.5 4430.5 4432.5 4434.5 4436.5 4438.5

STA-FEET

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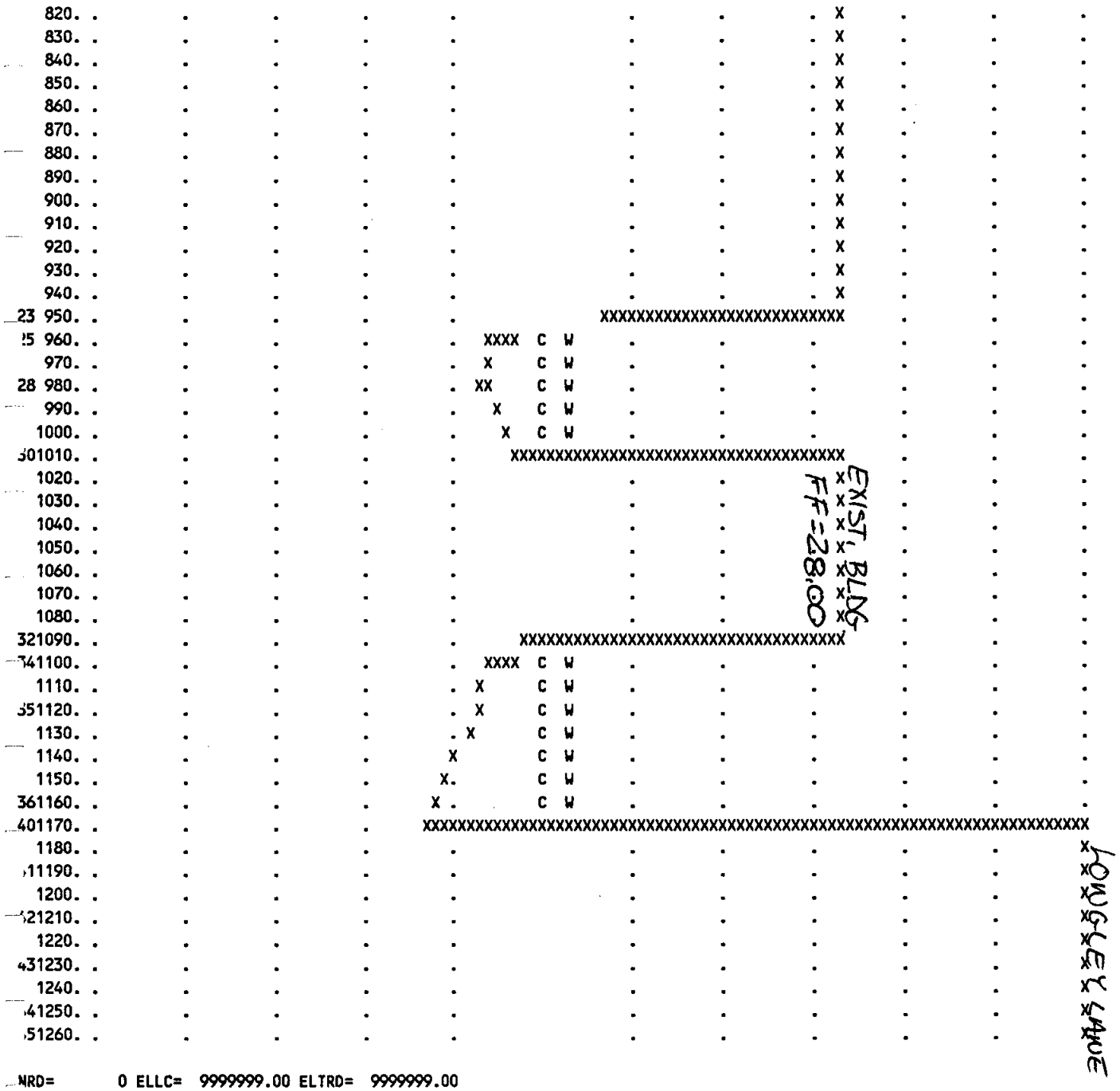
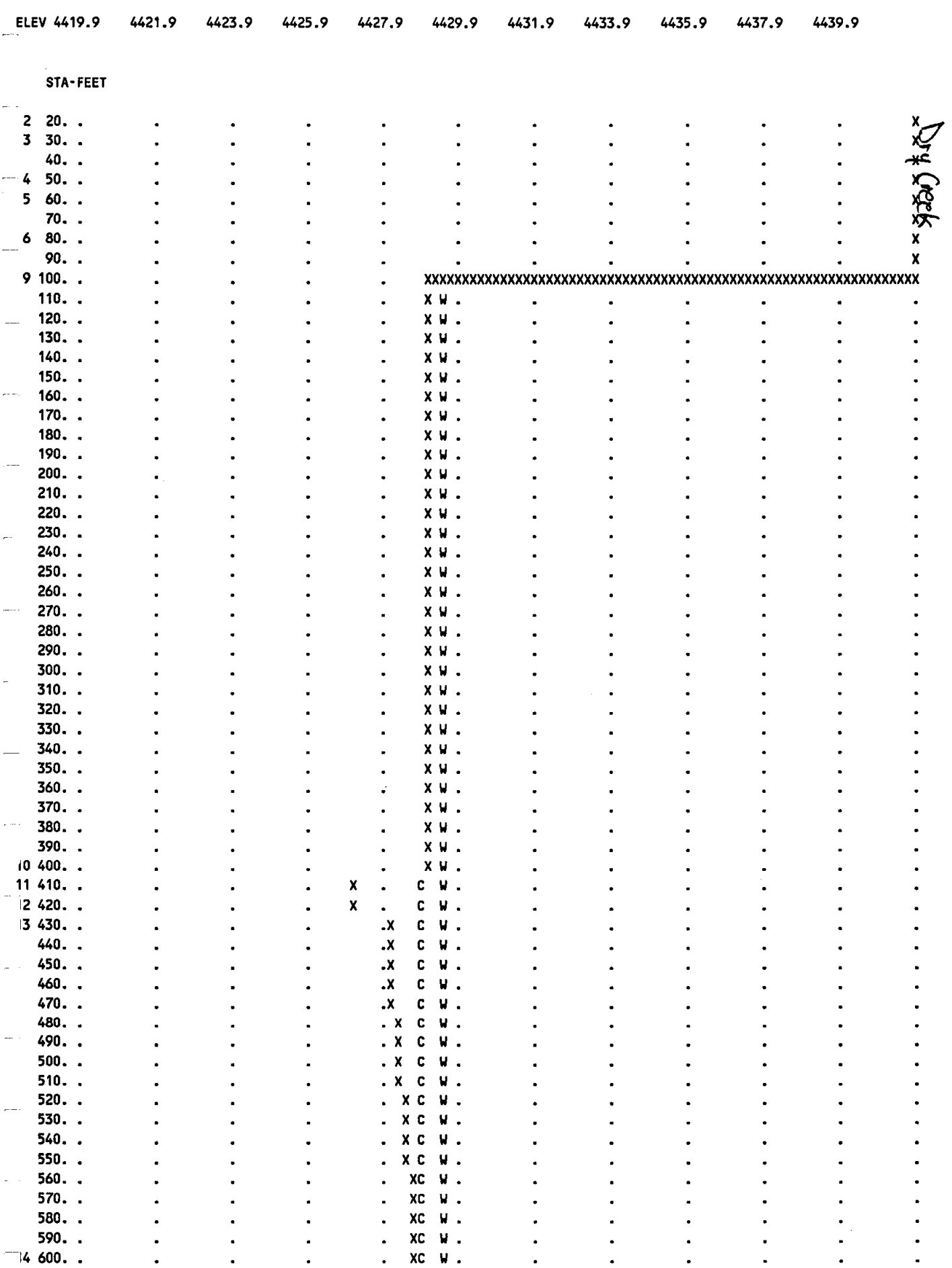


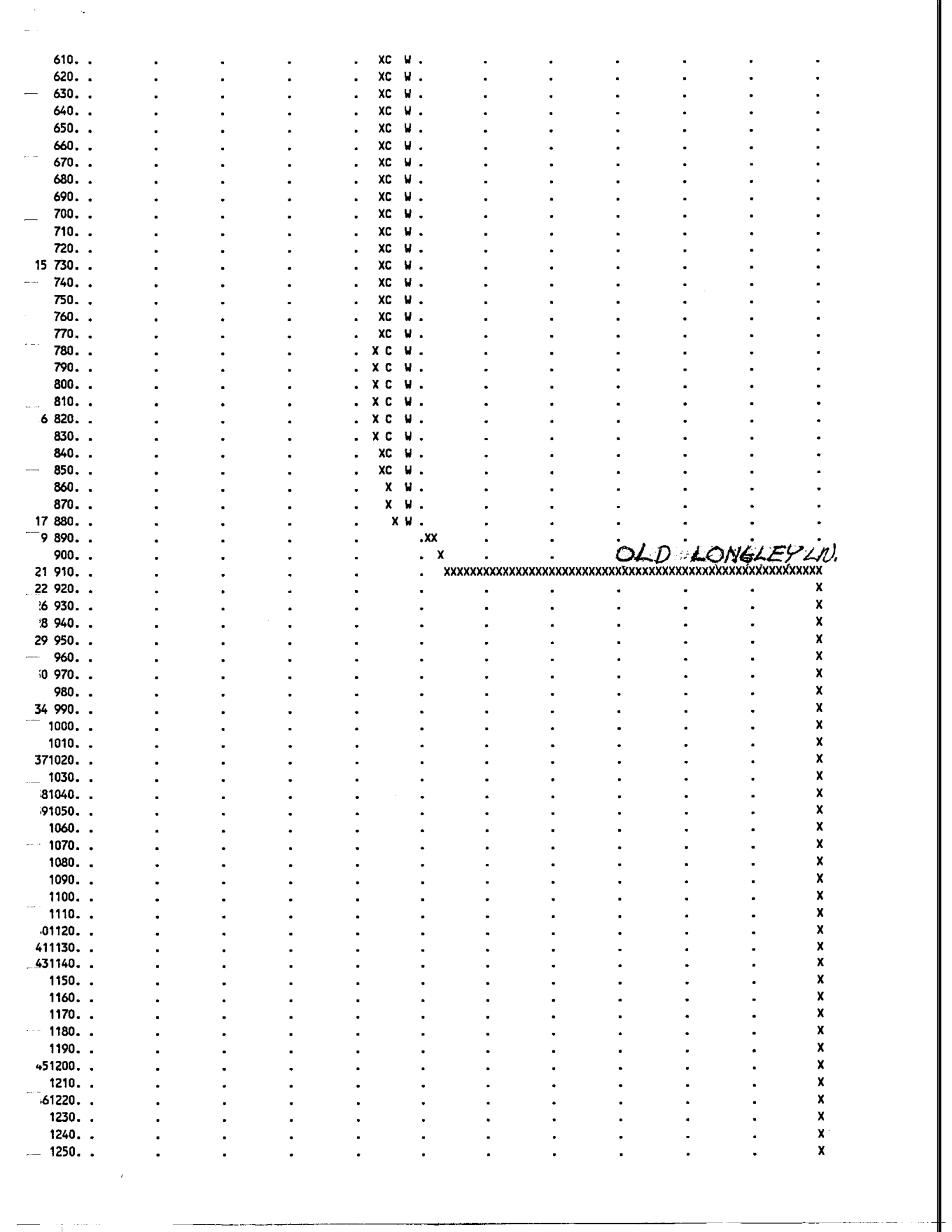
NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)									
100000.00	23.00	100000.00	35.00	100000.00	50.00	100000.00	65.00	100000.00	77.00
100000.00	100.00	4427.97	100.00	4428.00	210.00	4429.00	404.00	4429.67	417.00
4429.30	417.10	4429.75	440.00	4429.30	464.00	4429.67	464.10	4429.50	493.00
4429.00	493.10	4428.11	537.00	4428.49	537.10	4429.50	543.00	4435.00	543.10
4435.00	950.00	4429.96	950.10	4427.82	963.00	4427.32	963.10	4427.21	976.00
4427.10	977.50	4427.21	979.00	4427.83	1013.00	4435.00	1013.10	4435.00	1094.00
4428.00	1094.10	4427.79	1104.00	4427.29	1104.10	4427.00	1116.00	4426.00	1160.00
4425.80	1170.00	4426.12	1170.10	100000.00	1170.10	100000.00	1172.00	100000.00	1190.00
100000.00	1207.00	100000.00	1233.00	100000.00	1255.00	100000.00	1261.00		

CROSS SECTION 230.20
STREAM EXISTING GROUND, RESTRIC
DISCHARGE= 750.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL


ELEV 4419.9 4421.9 4423.9 4425.9 4427.9 4429.9 4431.9 4433.9 4435.9 4437.9 4439.9
STA-FEET
Dry Creek


OLD LONGLEY LN.

+71260. .	.	.	.	.	.	.	.	.	.	.	X
1270. .	.	.	.	.	.	.	.	.	.	.	X
1280. .	.	.	.	.	.	.	.	.	.	.	X
81290. .	.	.	.	.	.	.	.	.	.	.	X

NRD= 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

100000.00	23.00	100000.00	35.00	100000.00	50.00	100000.00	65.00	100000.00	77.00
100000.00	100.00	4429.40	100.00	4429.00	103.00	4429.00	404.00	4427.00	413.00
4427.00	424.00	4428.00	432.00	4428.80	600.00	4428.70	730.00	4428.50	824.00
4429.00	883.00	4430.00	891.00	4430.30	895.00	4430.60	908.00	100000.00	908.00
100000.00	920.00	100000.00	928.00	100000.00	930.00	100000.00	933.00	100000.00	935.00
100000.00	941.00	100000.00	945.00	100000.00	949.00	100000.00	967.00	100000.00	986.00
100000.00	990.00	100000.00	992.00	100000.00	995.00	100000.00	1021.00	100000.00	1023.00
100000.00	1025.00	100000.00	1045.00	100000.00	1045.10	100000.00	1125.00	100000.00	1125.10
100000.00	1136.00	100000.00	1136.10	100000.00	1202.00	100000.00	1202.10	100000.00	1222.00
100000.00	1259.00	100000.00	1293.00						

THIS RUN EXECUTED 16MAR94 10:48:24

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991
****

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

XISTING GROUND, RESTRIC

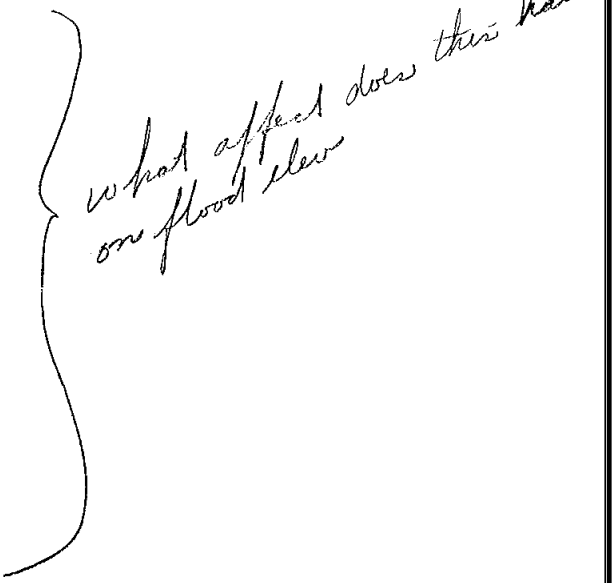
SUMMARY PRINTOUT

asterisk (*) get cut off!

	SECNO	STENCL	Q	CWSEL	STENCR	CRIWS	EG	ELMIN	DEPTH
	223.700	100.00	750.00	4428.50	1141.10	4428.10	4428.59	4417.10	11.40
	226.900	100.00	750.00	4429.14	1170.10	4428.45	4429.17	4418.47	10.67
	230.200	100.00	750.00	4429.53	908.00	4428.89	4429.55	4419.90	9.63
*	234.100	1011.60	750.00	4431.69	1707.70	4431.69	4431.94	4422.70	8.99
	240.800	655.80	750.00	4436.95	1433.50	4436.68	4437.04	4426.50	10.45
*	253.200	917.80	750.00	4441.99	1716.50	4441.46	4442.04	4433.30	8.69
	258.200	1298.60	750.00	4443.83	2260.00	4442.99	4443.84	4436.00	7.83
*	262.400	2400.00	750.00	4445.93	2820.00	4445.93	4446.20	4438.00	7.93
	267.100	1891.60	2200.00	4447.24	3137.00	4446.74	4447.32	4444.50	2.74
*	269.200	2832.00	350.00	4448.13	3483.00	4447.94	4448.16	4446.00	2.13
	271.300	3333.00	175.00	4450.13	4020.00	4450.13	4450.13	4446.00	4.13

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING	SECNO=	226.900	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION	SECNO=	234.100	PROFILE= 1	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	234.100	PROFILE= 1	MINIMUM SPECIFIC ENERGY
WARNING	SECNO=	253.200	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING	SECNO=	258.200	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION	SECNO=	262.400	PROFILE= 1	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	262.400	PROFILE= 1	MINIMUM SPECIFIC ENERGY
WARNING	SECNO=	267.100	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING	SECNO=	269.200	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION	SECNO=	271.300	PROFILE= 1	CRITICAL DEPTH ASSUMED
CAUTION	SECNO=	271.300	PROFILE= 1	MINIMUM SPECIFIC ENERGY



HEC-2 RUN #2

```
*********************************************          ****************************************
*  HEC-2 WATER SURFACE PROFILES             *          *  U.S. ARMY CORPS OF ENGINEERS        *
*                                           *          *  HYDROLOGIC ENGINEERING CENTER       *
*  Version    4.6.0;  February 1991         *          *  609 SECOND STREET, SUITE D          *
*                                           *          *  DAVIS, CALIFORNIA 95616-4687        *
*  RUN DATE    16MAR94    TIME    11:05:23  *          *        (916) 756-1104                *
*********************************************          ****************************************


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

  16MAR94      11:05:23                                                        PAGE     1


                                                        THIS RUN EXECUTED 16MAR94    11:05:23
 ***********************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.0;  February 1991
 ***********************************


 T1     DRY CREEK - APPEAL RESOLUTION (EXT'D DOWNSTREAM TO KRISTAL CORP. SITE)
 T2     PRRIGHT1.DAT
 T3     PROPOSED GROUND W/ KRISTAL CORP. & REED ELECT. BUILDINGS - 3/14/94
        LONGLEY LANE RESTRICTION FOR STATIONS 223.7 AND 226.9
        EXISTING DIRT ROAD RESTRICTION FOR STATION 230.2

 J1  ICHECK    INQ     NINV     IDIR     STRT    METRIC   HVINS     Q      WSEL      FQ

       0        2        0        0     .0043      0        0       0        0        0

 J2  NPROF    IPLOT    PRFVS    XSECV    XSECH     FN     ALLDC    IBW     CHNIM    ITRACE

      -1        0       -1       2.


     VARIABLE CODES FOR SUMMARY PRINTOUT

      38       27       43        1       28        2        3       42        8

         1      750
        ************************************************************
         THREE NEW SECTIONS ADDED - 223.7, 226.9 and 230.2
         TOPO FROM SUMMIT PLANS FOR  PARK 2001
        ************************************************************
 NC    .045     .045      .03       .1       .3
 ET             9.1                                                           100.    1141.1
      223.7      47.       0.     100.       0.        0.       0.                        1.
 GR  4426.6       0.   4418.9      23.   4418.6       35.   4417.1      50.   4418.6      65.
 GR  4418.9      77.   4426.6     100.   4429.1      130.    4435.    130.1    4435.     369.
     4429.1    369.1   4428.1     416.   4427.7    416.1     4428.     430.    4428.     439.
```

GR	4428.	449.	4427.7	465.	4428.1	465.1	4428.4	504.	4435.	504.1
GR	4435.	739.	4428.27	739.1	4427.13	760.	4427.	761.5	4427.13	763.
[illegible]	4427.9	812.	4435.	812.1	4435.	913.	4427.95	913.1	4427.	947.
[illegible]	4426.9	948.5	4427.	950.	4427.83	985.	4435.	985.1	4435.	1065.
GR	4428.	1065.1	4427.79	1075.	4427.29	1075.1	4427.	1090.	4426.62	1141.
GR	4427.	1141.1	4420.45	1160.	4420.45	1167.	4426.	1182.	4426.3	1191.
[illegible]	4427.	1227.	4427.26	1233.						
ET		9.1							100.	1170.1
[illegible]1	226.9	48.	0.	100.	320.	320.	320.			1.
[illegible]	4428.0	0.	4420.3	23.	4419.97	35.	4418.47	50.	4419.97	65.
GR	4420.3	77.	4427.97	100.	4428.	104.	4430.	132.	4430.5	132.1
GR	4430.5	371.	4430.	371.1	4428.9	398.5	4429.	402.	4429.67	417.
[illegible]	4429.3	417.1	4429.75	440.	4429.3	464.	4429.67	464.1	4429.5	493.
[illegible]	4429.	493.1	4428.11	537.	4428.49	537.1	4429.5	543.	4435.	543.1
GR	4435.	950.	4429.96	950.2	4427.82	963.	4427.32	963.1	4427.21	976.
GR	4427.1	977.5	4427.21	979.	4427.83	1013.	4435.	1013.1	4435.	1094.

[illegible]	4428.0	1094.1	4427.79	1104.	4427.29	1104.1	4427.	1116.	4426.	1160.
GR	4425.8	1170.	4426.12	1170.1	4426.	1172.	4422.03	1190.	4427.	1207.
GR	4428.	1233.	4429.	1255.	4429.13	1261.				
[illegible]		9.1							100.	908.
X1	230.2	46.	0.	100.	330.	330.	330.			1.
GR	4429.4	0.	4421.7	23.	4421.4	35.	4419.9	50.	4421.4	65.
[illegible]	4421.7	77.	4429.4	100.	4431.5	174.	4432.	174.1	4432.	376.
[illegible]	4431.5	376.1	4428.	432.	4428.8	600.	4428.7	730.	4428.5	824.
GR	4429.	883.	4430.	891.	4430.3	895.	4430.6	908.	4430.4	920.
[illegible]R	4430.	928.	4429.	930.	4428.4	933.	4429.	935.	4430.	941.
[illegible]	4430.3	945.	4430.	949.	4429.	967.	4429.	986.	4430.	990.
GR	4430.2	992.	4430.	995.	4429.41	1021.	4429.29	1023.	4429.41	1025.
GR	4430.0	1045.	4435.	1045.1	4435.	1125.	4430.	1125.1	4429.76	1136.
[illegible]	4429.3	1136.1	4427.75	1202.	4428.08	1202.1	4423.67	1222.	4430.	1259.
[illegible]	4431.	1293.								
NC	.035	.035	.03							
[illegible]		9.1							1011.6	1707.7
[illegible]1	234.1	48	822.8	922.1	400	380	390			
GR	4432.6	0.0	4433.7	21.2	4432.6	32.2	4433.8	44.7	4434.1	60.3
[illegible]R	4433.5	88.7	4432.6	116.0	4432.1	259.3	4432.3	356.9	4432.1	429.2
[illegible]	4433.2	447.5	4433.2	465.6	4432.1	472.6	4432.3	551.9	4432.5	696.3
GR	4431.9	822.8	4423.7	844.3	4422.7	878.5	4425.3	893.1	4433.4	922.1
GR	4433.3	949.7	4432.3	959.2	4438.3	975.5	4437.9	1011.6	4431.4	1022.9
[illegible]	4431.7	1131.3	4431.2	1240.8	4432.9	1259.7	4427.3	1271.1	4431.2	1286.0
[illegible]	4430.5	1289.2	4431.7	1405.6	4432.0	1566.9	4432.5	1692.8	4428.5	1700.3
GR	4433.9	1707.7	4433.6	1727.7	4432.2	1740.8	4426.5	1747.8	4432.8	1756.6
GR	4432.1	1761.9	4431.9	1950.9	4431.6	2090.1	4427.9	2103.3	4429.7	2111.8
[illegible]	4434.3	2129.2	4434.0	2142.7	4434.6	2174.0				
NC	.045	.040	.035	.1	.3					
[illegible]		9.1							655.8	1433.5
I	240.8	53	553	655.8	670	670	670			
GR	4436.7	0.0	4434.0	13.6	4435.5	22.8	4435.6	75.3	4435.4	165.1
GR	4437.4	173.4	4437.3	200.1	4436.1	210.9	4435.3	354.3	4435.7	439.8
[illegible]	4436.2	553.0	4427.6	578.1	4426.7	592.0	4426.5	614.8	4428.6	629.4
[illegible]	4436.8	655.8	4435.9	675.2	4436.8	705.3	4436.8	811.0	4436.4	908.8
GR	4436.0	994.7	4435.3	1043.1	4436.8	1056.1	4436.8	1079.7	4436.5	1085.5
GR	4436.9	1175.4	4437.4	1291.9	4436.0	1371.9	4433.4	1378.2	4436.5	1385.2
[illegible]	4437.3	1411.8	4437.0	1422.2	4437.6	1433.5	4437.3	1445.5	4436.8	1461.3
GR	4437.3	1481.4	4433.6	1490.1	4436.1	1496.3	4435.9	1598.0	4435.4	1684.4
GR	4437.1	1691.0	4432.7	1703.9	4437.6	1718.9	4436.2	1729.1	4436.0	1773.0
[illegible]	4431.7	1784.9	4431.0	1832.9	4430.2	1887.2	4435.2	1894.4	4435.1	1915.0

R	4435.8	1921.4	4436.1	1938.6	4436.6	1974.4				

```
+++++++++++++++++++++++++++++++++++++++++++++++++
+ NEW CROSS SECTION DATA WAS ENTERED BELOW      +
+ NUMBERS 265.6, 273.8, AND 280.0 WERE DELETED  +
+++++++++++++++++++++++++++++++++++++++++++++++++


+++++++++++++++++++++++++++++++++++++++++++++++++
+ MODIFIED THE FLOWS TO REPRESENT THE          +
```



```
+ RESULTS OF THE SPLIT FLOW ANALYSIS (5-11-93) +
+   => WEIR COEFFICIENT 3.1                    +
+   => TRUNCATED CROSS SECTIONS                +
+++++++++++++++++++++++++++++++++++++++++++++++++

********** MODIFIED SECTION 253.2*************
```

C	.050	.045	.035	.1	.3					
T	1	750								
ET		9.1							917.8	1716.5
1	253.2	43	817.4	917.8	450	1240	1240			
R	4441.0	0.0	4444.0	420.0	4444.0	610.0	4447.0	690.0	4444.0	720.0
GR	4448.0	721.5	4442.4	779.2	4443.1	817.4	4434.6	845.7	4435.0	852.4
GR	4433.6	858.7	4433.3	883.0	4435.1	897.2	4442.2	917.8	4441.6	1029.1
R	4441.6	1162.0	4441.3	1240.0	4440.8	1300.0	4440.4	1373.0	4440.8	1465.0
R	4441.6	1483.4	4441.3	1505.2	4442.0	1512.1	4442.3	1638.8	4443.3	1716.5
GR	4442.8	1803.0	4442.5	1865.6	4443.8	1882.8	4443.0	1893.2	4441.2	1919.7
GR	4442.1	1925.8	4437.8	1936.8	4440.5	1954.8	4439.4	2068.8	4439.2	2174.1
R	4436.0	2191.4	4439.0	2209.8	4439.0	2295.9	4439.6	2372.9	4437.1	2378.8
R	4441.9	2382.8	4442.1	2399.0	4442.6	2430.0				

```
**********CROSS SECTION 258.2****************
```

QT	1	750								
ET		9.1							1298.6	2260
1	258.2	82	1186.1	1298.6	1000	1750	500			
R	4450.0	906.6	4449.8	908.6	4449.0	912.6	4448.9	913.3	4448.0	918.2
GR	4447.5	919.7	4446.7	922.5	4446.5	924.1	4446.4	924.9	4446.0	927.9
GR	4445.1	933.7	4445.0	934.6	4444.4	946.5	4444.0	952.2	4444.1	978.4
R	4444.4	1009.2	4444.6	1020.1	4444.8	1024.2	4445.0	1030.7	4445.0	1038.0
R	4444.6	1042.9	4444.1	1049.7	4444.0	1050.9	4444.0	1059.7	4444.1	1062.2
GR	4444.6	1089.2	4444.6	1135.5	4444.8	1157.6	4445.0	1164.1	4445.0	1164.1
R	4445.0	1165.1	4445.1	1169.5	4445.2	1173.7	4445.2	1186.1	4445.1	1193.3
R	4445.0	1197.5	4443.0	1206.0	4442.7	1206.5	4442.6	1206.6	4442.3	1207.1
GR	4442.0	1207.7	4441.9	1207.9	4441.0	1209.9	4440.0	1214.5	4439.7	1215.3
GR	4439.0	1217.3	4439.0	1217.4	4438.0	1220.3	4437.1	1223.6	4437.0	1224.1
R	4436.5	1230.1	4436.0	1235.1	4436.0	1256.7	4436.4	1262.2	4437.0	1271.4
R	4437.7	1275.8	4438.9	1280.0	4439.0	1280.2	4440.0	1282.8	4440.4	1283.8
GR	4441.0	1285.4	4441.9	1287.4	4442.5	1288.8	4443.0	1289.9	4444.0	1291.5
GR	4444.2	1296.7	4444.2	1298.6	4444.1	1300.1	4444.0	1304.5	4444.0	1304.6
R	4443.9	1304.7	4443.8	1305.2	4443.6	1305.5	4443.6	1305.6	4443.4	1306.6
R	4443.3	1307.3	4442.5	1470	4443	2200	4443.5	2260	4442	2300
GR	4444	2550	4445	2700						

```
***********CROSS SECTION 262.4***************
```

QT	1	750								
T		9.1							2400	2820
1	262.4	76	1831.7	1930.2	300	430	420			
GR	4446.0	1148.7	4446.0	1148.8	4446.4	1162.2	4446.4	1163.7	4446.6	1195.1
R	4446.6	1195.9	4446.1	1198.5	4446.0	1434.6	4446.1	1439.2	4446.4	1461.8

GR	4446.5	1474.5	4446.5	1519.7	4446.5	1528.7	4446.5	1528.9	4446.5	1529.1
GR	4446.5	1530.4	4446.5	1534.7	4446.6	1578.3	4446.4	1621.1	4446.4	1631.5
GR	4446.4	1638.3	4446.3	1653.6	4446.2	1697.3	4446.4	1708.1	4446.4	1710.2

GR	4446.2	1742.5	4446.2	1752.1	4446.2	1752.6	4446.2	1755.6	4446.2	1757.3
GR	4446.2	1758.7	4446.2	1765.3	4446.1	1797.3	4446.1	1815.4	4446.0	1823.8
GR	4446.0	1831.7	4445.6	1834.5	4445.0	1838.5	4444.2	1841.5	4444.0	1842.1
GR	4443.7	1842.8	4443.0	1844.6	4442.5	1846.4	4442.0	1848.3	4441.3	1851.1
GR	4441.0	1852.4	4440.1	1858.0	4439.8	1859.8	4439.0	1864.8	4438.8	1867.1
GR	4438.0	1876.9	4438.0	1894.4	4438.4	1900.7	4439.0	1910.7	4439.3	1912.2
GR	4440.0	1917.5	4440.9	1920.5	4441.0	1920.6	4441.9	1923.6	4442.0	1923.7
GR	4442.0	1923.8	4443.0	1925.4	4443.4	1926.4	4444.0	1928.3	4445.0	1930.2
GR	4445.0	1937.9	4444.0	1980	4445	2050	4446	2400	4445	2800
GR	4446	2820	4444	2850	4445	2900	4446	3050	4444	3140
GR	4447	3210								

```
****************************************************
*    EXTENDED THE CROSS SECTIONS 267.1, 269.2, *
*    AND 271.3 TO LONGLEY LANE. DATA WAS        *
*    OBTAINED FROM SUMMIT ENGINEERING THRU      *
*    THE STATE FARMS STOCK FACILITY.            *
****************************************************
```

QT	1	2200								

************CROSS SECTION 267.1*****************

ET		9.1							1891.6	3137.0
X1	267.1	86	1852.2	1879.4	260	180	470			
GR	4447.7	1166.9	4447.7	1167.6	4447.1	1186.6	4447.0	1189.1	4446.9	1189.7
GR	4446.0	1192.3	4445.1	1195.9	4445.0	1198.4	4445.3	1199.5	4446.0	1201.1
GR	4446.3	1203.0	4446.4	1203.6	4447.0	1207.0	4447.1	1213.1	4447.1	1220.1
GR	4447.5	1231.4	4447.5	1231.6	4447.2	1246.9	4447.0	1247.6	4447.0	1250.9
GR	4447.9	1252.0	4448.0	1252.1	4448.0	1257.2	4447.8	1260.7	4447.5	1268.7
GR	4447.1	1280.4	4447.2	1390.1	4447.4	1406.7	4447.5	1425.5	4447.9	1445.9
GR	4447.8	1481.0	4447.4	1506.3	4447.3	1561.8	4447.0	1618.6	4447.0	1675.1
GR	4447.2	1720.4	4447.2	1721.5	4447.6	1787.7	4447.6	1803.1	4447.7	1804.6
GR	4447.1	1852.2	4447.1	1852.5	4447.0	1854.0	4446.6	1855.6	4446.5	1856.2
GR	4446.0	1859.1	4445.7	1860.1	4445.0	1863.3	4445.0	1869.4	4445.3	1872.8
GR	4446.0	1874.3	4446.7	1878.0	4447.0	1879.4	4447.5	1885.9	4447.8	1891.6
GR	4447.8	1916.8	4447.6	1933.7	4447.4	2006.9	4447.3	2047.6	4447.2	2073.4
GR	4447.1	2121.7	4447.0	2167.3	4446.9	2191.3	4446.0	2335.0	4445.0	2340.0
GR	4446.0	2345.0	4446.0	2365.0	4445.7	2500.0	4446.0	2682.0	4446.5	2960.0
GR	4447.0	3137.0	4444.5	3150.0	4447.0	3154.0	4448.0	3166.0	4448.0	3174.0
GR	4447.0	3175.0	4447.0	3210.0	4448.0	3215.0	4448.0	3220.0	4444.5	3227.0
GR	4447.0	3230.0	4447.0	3235.0	4446.5	3240.0	4447.0	3242.0	4448.0	3435.0
GR	4450.8	3533.0								

***********CROSS SECTION 269.2****************

QT	1	350								
ET		9.1							2832.0	3483.0
X1	269.2	55	2241.8	2301.8	190	190	210			
GR	4450.2	1260.4	4446.0	1271.4	4446.0	1287.1	4447.0	1290.0	4447.0	1308.2
GR	4446.0	1310.4	4446.0	1314.1	4447.0	1316.5	4448.0	1353.3	4448.2	1383.3
GR	4448.1	1450.5	4448.2	1473.3	4448.2	1492.8	4448.0	1530.2	4449.0	1605.1
GR	4448.0	1616.2	4449.0	1626.1	4449.0	1634.8	4448.4	1902.7	4448.5	1957.5
GR	4448.6	2013.4	4448.6	2070.1	4448.0	2101.4	4447.9	2123.0	4448.0	2155.8
GR	4448.0	2187.6	4448.0	2197.9	4448.2	2198.0	4448.4	2241.8	4446.0	2260.3

```
GR  4446.0    2278.4    4448.2    2301.8    4447.9    2457.1    4447.9    2568.7    4448.0    2815.0
GR  4446.5    2820.0    4447.0    2822.0    4448.0    2823.0    4448.5    2832.0    4448.0    2841.0
GR  4447.5    3180.0    4448.0    3477.0    4448.2    3483.0    4448.0    3487.0    4447.9    3504.0
GR  4448.0    3542.0    4448.2    3546.0    4448.0    3549.0    4447.8    3552.0    4448.0    3556.0
GR  4448.0    3568.0    4449.0    3622.0    4448.0    3625.0    4452.0    3830.0    4452.2    3870.0

       *************CROSS SECTION 271.3****************

ET               9.1                                                          3333.0    4020.0
QT       1       175
X1   271.3        63    2515.9    2538.3       210       200       210
GR  4451.0    1238.9    4451.0    1251.0    4446.0    1263.3    4446.0    1266.9    4449.0    1286.7
GR  4449.5    1462.0    4449.6    1464.0    4449.5    1471.8    4449.3    1507.5    4449.0    1645.1
GR  4448.0    1647.2    4448.6    1654.3    4449.0    1655.2    4449.8    1692.5    4450.0    1705.8
GR  4450.2    1736.5    4450.6    1791.6    4450.9    1823.1    4451.0    1829.4    4450.5    1860.6
GR  4450.4    1868.6    4450.2    1907.8    4450.0    1944.1    4449.9    1955.0    4449.8    1988.2
GR  4449.6    2187.9    4449.8    2238.0    4450.0    2294.6    4450.0    2416.5    4449.9    2417.5
GR  4449.0    2453.1    4448.2    2511.8    4448.0    2515.9    4447.0    2524.5    4447.0    2536.5
GR  4448.0    2538.3    4448.1    2538.6    4449.0    2540.4    4449.0    2680.7    4449.1    2697.8
GR  4449.1    2720.1    4449.0    2723.2    4449.1    2732.4    4448.9    2843.4    4448.8    2987.9
GR  4448.2    3246.0    4447.5    3250.0    4448.0    3254.0    4449.0    3265.0    4448.8    3270.0
GR  4449.0    3281.0    4448.8    3300.0    4449.0    3315.0    4449.4    3333.0    4449.0    3348.0
GR  4448.6    3450.0    4448.9    3520.0    4449.0    3675.0    4451.9    4020.0    4451.0    4100.0
GR  4452.0    4150.0    4456.0    4300.0    4456.2    4310.0
```



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

*PROF 1

CCHV=     .100 CEHV=     .300
*SECNO 223.700
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

3265 DIVIDED FLOW

3280 CROSS SECTION    223.70 EXTENDED      1.24 FEET

3470 ENCROACHMENT STATIONS=      100.0    1141.1  TYPE=      1  TARGET=     1041.100
   223.700     11.40   4428.50       .00       .00   4428.59       .08       .00       .00 100000.00
     750.0        .0        .0     750.0        .0        .0     325.0        .0        .0   4426.60
       .00       .00       .00      2.31      .000      .000      .045      .000   4417.10    100.00
   .004288        0.        0.        0.         0         0        23       .00    350.65   1141.10

*SECNO 226.900

3265 DIVIDED FLOW

3280 CROSS SECTION    226.90 EXTENDED       .17 FEET

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

```
347  ENCROACHMENT STATIONS=      100.0    1170.1  TYPE=      1  TARGET=     1070.100
   226.900      10.83   4429.30       .00       .00   4429.37       .07       .78       .00 100000.00
     750.0         .0         .0     750.0         .0         .0     354.1       2.5       2.1   4427.97
       .04        .00        .00      2.12       .000       .000       .045       .000   4418.47    100.00
   .001585       320.       320.       320.          3          0          0        .00    226.75   1170.10


*SE  O 230.200

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      100.0     908.0  TYPE=      1  TARGET=      808.000
   230.200       9.90   4429.80       .00       .00   4429.83       .03       .45       .00 100000.00
     750.0         .0         .0     750.0         .0         .0     579.6       6.0       4.9   4429.40
       .11        .00        .00      1.29       .000       .000       .045       .000   4419.90    100.00
   .001197       330.       330.       330.          3          0          0        .00    500.47    889.43



   16MAR94      11:05:23                                                                                PAGE    7


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


*SE  O 234.100

3265 DIVIDED FLOW

368  20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
372  CRITICAL DEPTH ASSUMED

347  ENCROACHMENT STATIONS=     1011.6    1707.7  TYPE=      1  TARGET=      696.100
   234.100       8.97   4431.67   4431.67       .00   4431.94       .27      1.01       .07 100000.00
     750.0         .0         .0     750.0         .0         .0     178.4       9.3       8.6 100000.00
       .14        .00        .00      4.20       .000       .000       .035       .000   4422.70   1022.44
   .010198       400.       390.       380.         20         17          0        .00    354.75   1704.64


CCH      .100 CEHV=      .300
*SECNO 240.800

326  IVIDED FLOW

3280 CROSS SECTION    240.80 EXTENDED        .37 FEET


3470 ENCROACHMENT STATIONS=      655.8    1433.5  TYPE=      1  TARGET=      777.700
   240.800      10.47   4436.97       .00       .00   4437.06       .09      5.10       .02 100000.00
     750.0         .0         .0     750.0         .0         .0     314.3      13.1      16.1   4436.80
       .22        .00        .00      2.39       .000       .000       .040       .000   4426.50    655.80
   .005894       670.       670.       670.         10          0          0        .00    619.10   1400.71


CCHV=      .100 CEHV=      .300
*SECNO 253.200

330  WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.42
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34.J ENCROACHMENT STATIONS=      917.8    1716.5  TYPE=       1  TARGET=       798.700
   253.200        8.69   4441.99        .00        .00   4442.04        .05       4.98        .00 100000.00
     750.0          .0        .0      750.0         .0        .0      422.1       23.6       32.8   4442.20
       .41         .00       .00       1.78       .000      .000       .045       .000    4433.30    956.92
   .002910        450.     1240.      1240.         10         0          0        .00     555.07   1511.99
```



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


*S  NO 258.200

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


34.J ENCROACHMENT STATIONS=     1298.6    2260.0  TYPE=       1  TARGET=       961.400
   258.200        7.83   4443.83        .00        .00   4443.84        .01       1.80        .00 100000.00
     750.0          .0        .0      750.0         .0        .0      974.4       51.7       63.1   4444.20
      1.04         .00       .00        .77       .000      .000       .045       .000    4436.00   1305.05
   .000519       1000.      500.      1750.          8         0          0        .00     954.95   2260.00


*S  NO 262.400
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
36ᴼᶟ PROBABLE MINIMUM SPECIFIC ENERGY
37   CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     2400.0    2820.0  TYPE=       1  TARGET=       420.000
    62.400        7.92   4445.92    4445.92        .00   4446.20        .27        .73        .08 100000.00
     750.0          .0        .0      750.0         .0        .0      178.5       57.3       69.8 100000.00
      1.07         .00       .00       4.20       .000      .000       .045       .000    4438.00   2431.25
  _.045490        300.      420.       430.         20         5          0        .00     387.19   2818.44


*SECNO 267.100

33   WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  9.70


34   ENCROACHMENT STATIONS=     1891.6    3137.0  TYPE=       1  TARGET=      1245.400
    67.100        2.74   4447.24        .00        .00   4447.32        .08       1.11        .02 100000.00
    2200.0          .0        .0     2200.0         .0        .0      978.2       59.7       72.8 100000.00
   __ 1.09         .00       .00       2.25       .000      .000       .045       .000    4444.50   2063.16
    004161        260.      470.       180.          9         0          0        .00    1073.84   3137.00


*S⁻⁻NO 269.200

33ᴜᴄ WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .12


34   ENCROACHMENT STATIONS=     2832.0    3483.0  TYPE=       1  TARGET=       651.000
   269.200        2.14   4448.14        .00        .00   4448.17        .03        .84        .00 100000.00
     350.0          .0        .0      350.0         .0        .0      242.6       62.4       76.5 100000.00
      1.13         .00       .00       1.44       .000      .000       .045       .000    4446.00   2838.64
   .006928        190.      210.       190.          5         0          0        .00     642.28   3480.92
```

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

* CNO 271.300

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

3470 ENCROACHMENT STATIONS= 3333.0 4020.0 TYPE= 1 TARGET= 687.000

271.300	3.29	4449.29	.00	.00	4449.31	.02	1.14	.00	100000.00
175.0	.0	.0	175.0	.0	.0	146.5	63.3	78.9	100000.00
1.18	.00	.00	1.19	.000	.000	.045	.000	4446.00	3337.18
.004062	210.	210.	200.	2	0	0	.00	372.16	3709.33

1

CROSS SECTION 223.70

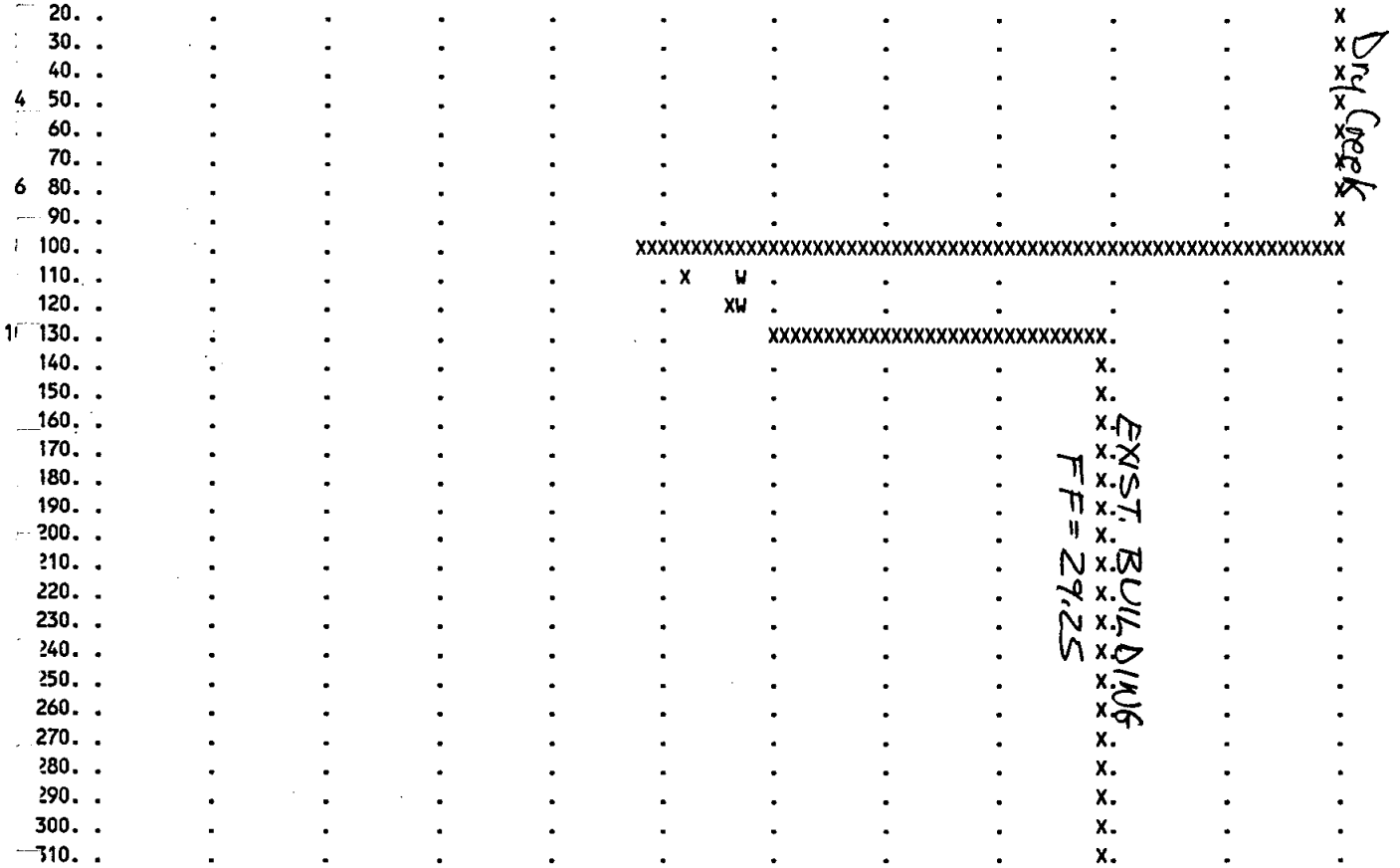
S EAM PROPOSED GROUND W/ KRIST

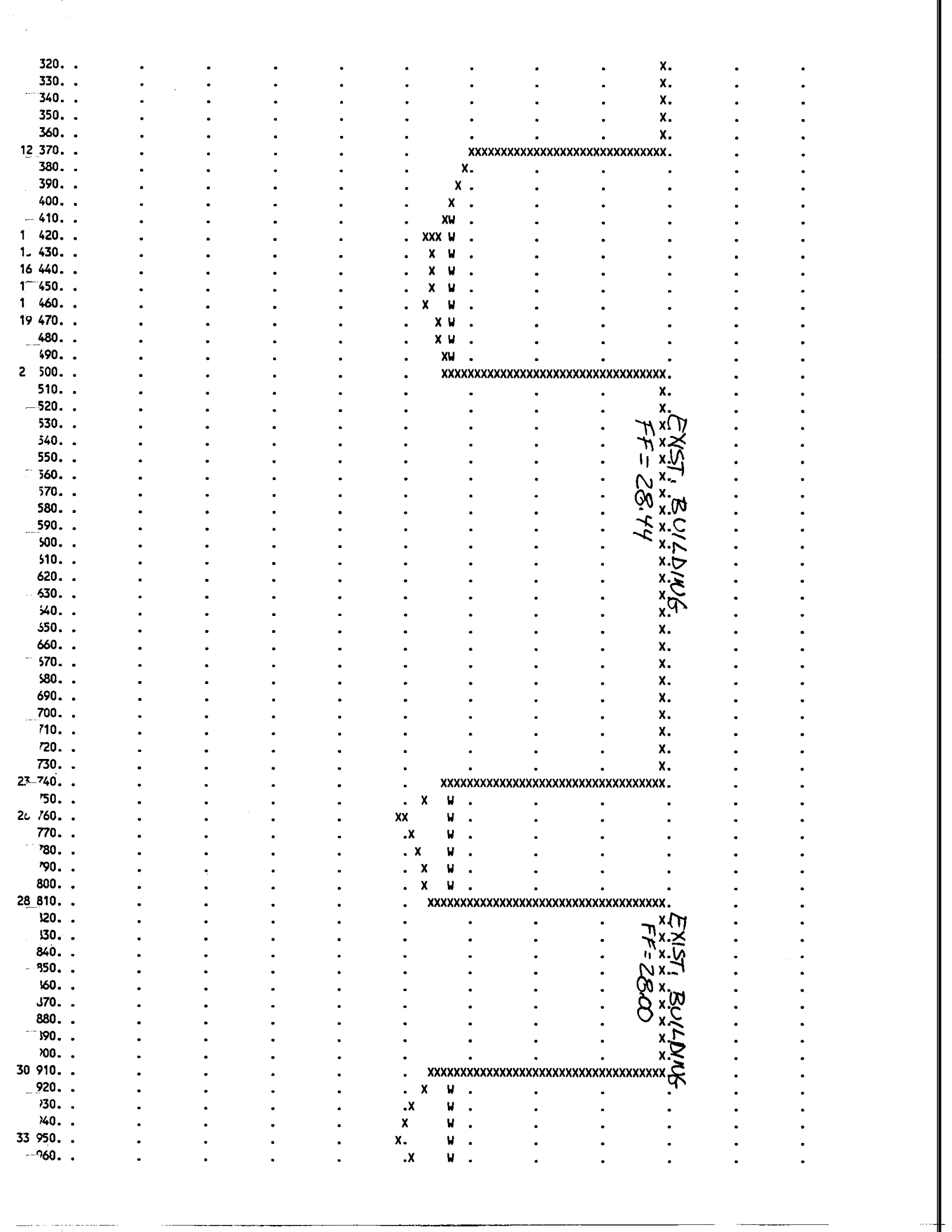
D CHARGE= 750.

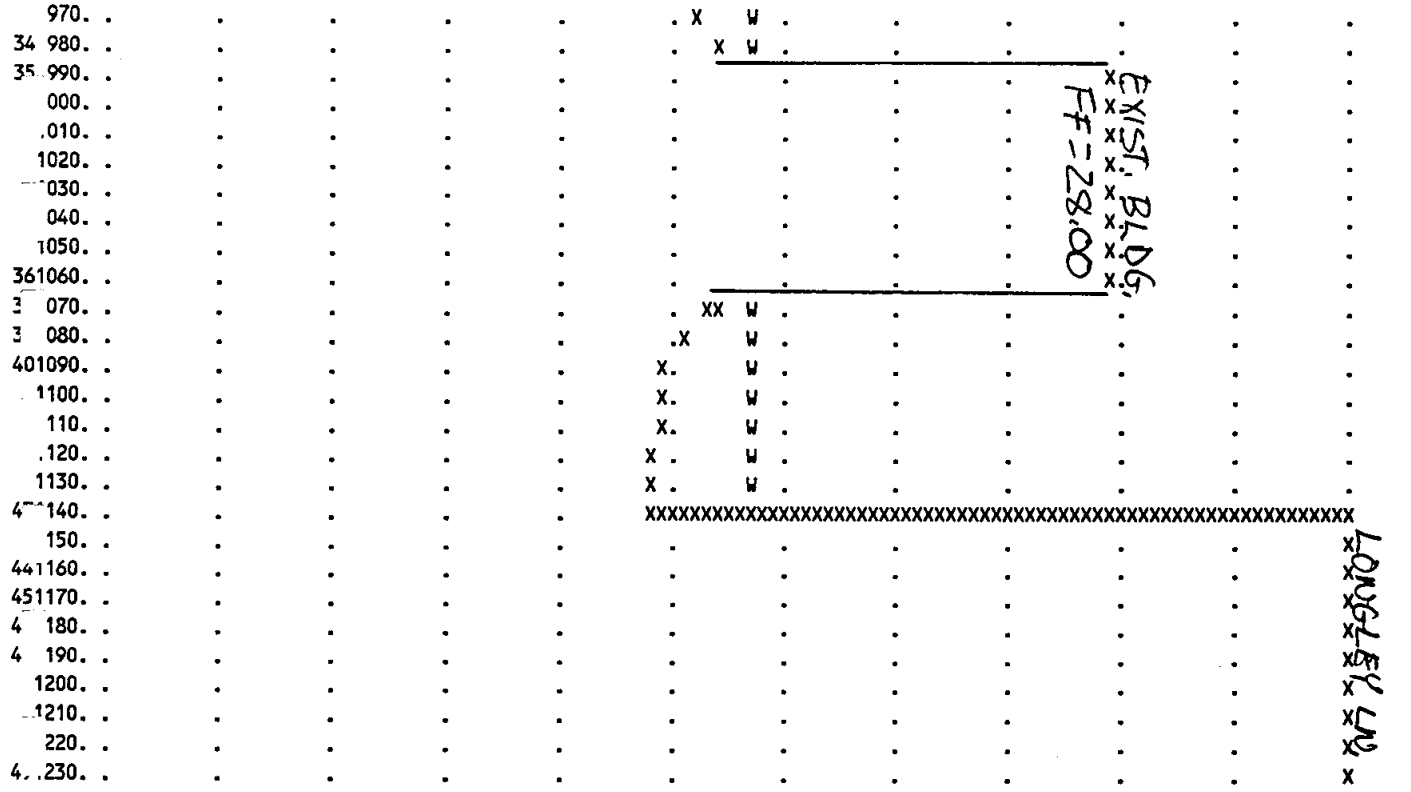
P TTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 4417.1 4419.1 4421.1 4423.1 4425.1 4427.1 4429.1 4431.1 4433.1 4435.1 4437.1

STA-FEET




EXIST. BUILDING
FF = 28.44
EXIST. BUILDING
FF = 28.00



N = 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)									
100000.00	23.00	100000.00	35.00	100000.00	50.00	100000.00	65.00	100000.00	77.00
00000.00	100.00	4426.60	100.00	4429.10	130.00	4435.00	130.10	4435.00	369.00
4429.10	369.10	4428.10	416.00	4427.70	416.10	4428.00	430.00	4428.00	439.00
4428.00	449.00	4427.70	465.00	4428.10	465.10	4428.40	504.00	4435.00	504.10
4435.00	739.00	4428.27	739.10	4427.13	760.00	4427.00	761.50	4427.13	763.00
4427.90	812.00	4435.00	812.10	4435.00	913.00	4427.95	913.10	4427.00	947.00
4426.90	948.50	4427.00	950.00	4427.83	985.00	4435.00	985.10	4435.00	1065.00
4428.00	1065.10	4427.79	1075.00	4427.29	1075.10	4427.00	1090.00	4426.62	1141.00
4427.00	1141.10	100000.00	1141.10	100000.00	1160.00	100000.00	1167.00	100000.00	1182.00
00000.00	1191.00	100000.00	1227.00	100000.00	1233.00				

1

CROSS SECTION 226.90

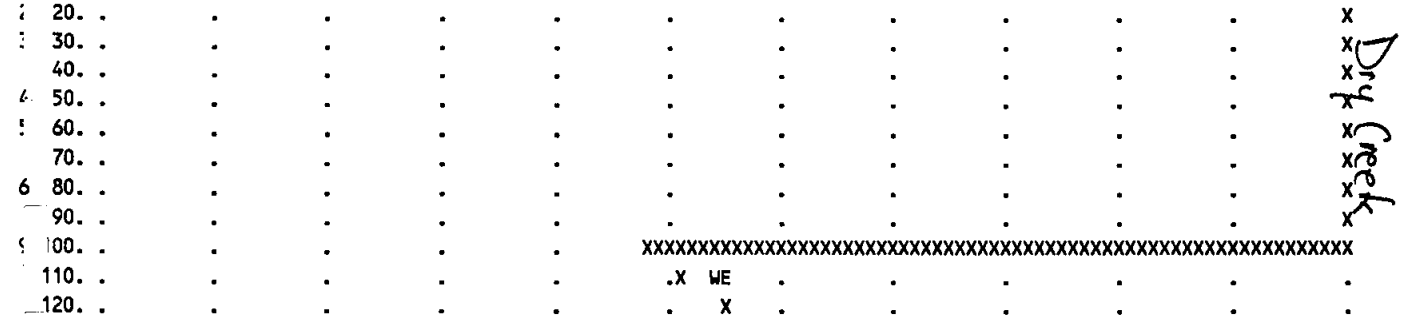
STREAM PROPOSED GROUND W/ KRIST

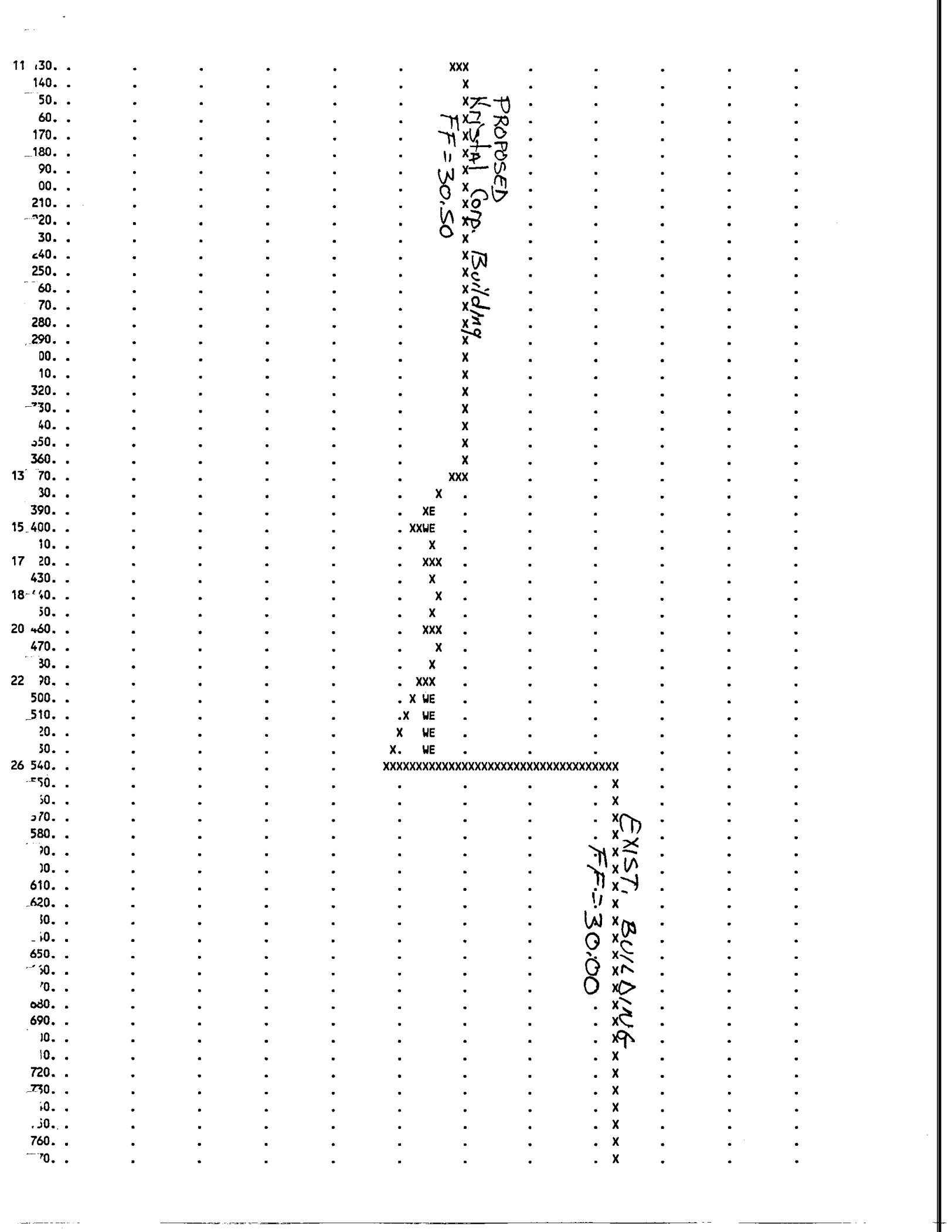
DISCHARGE= 750.

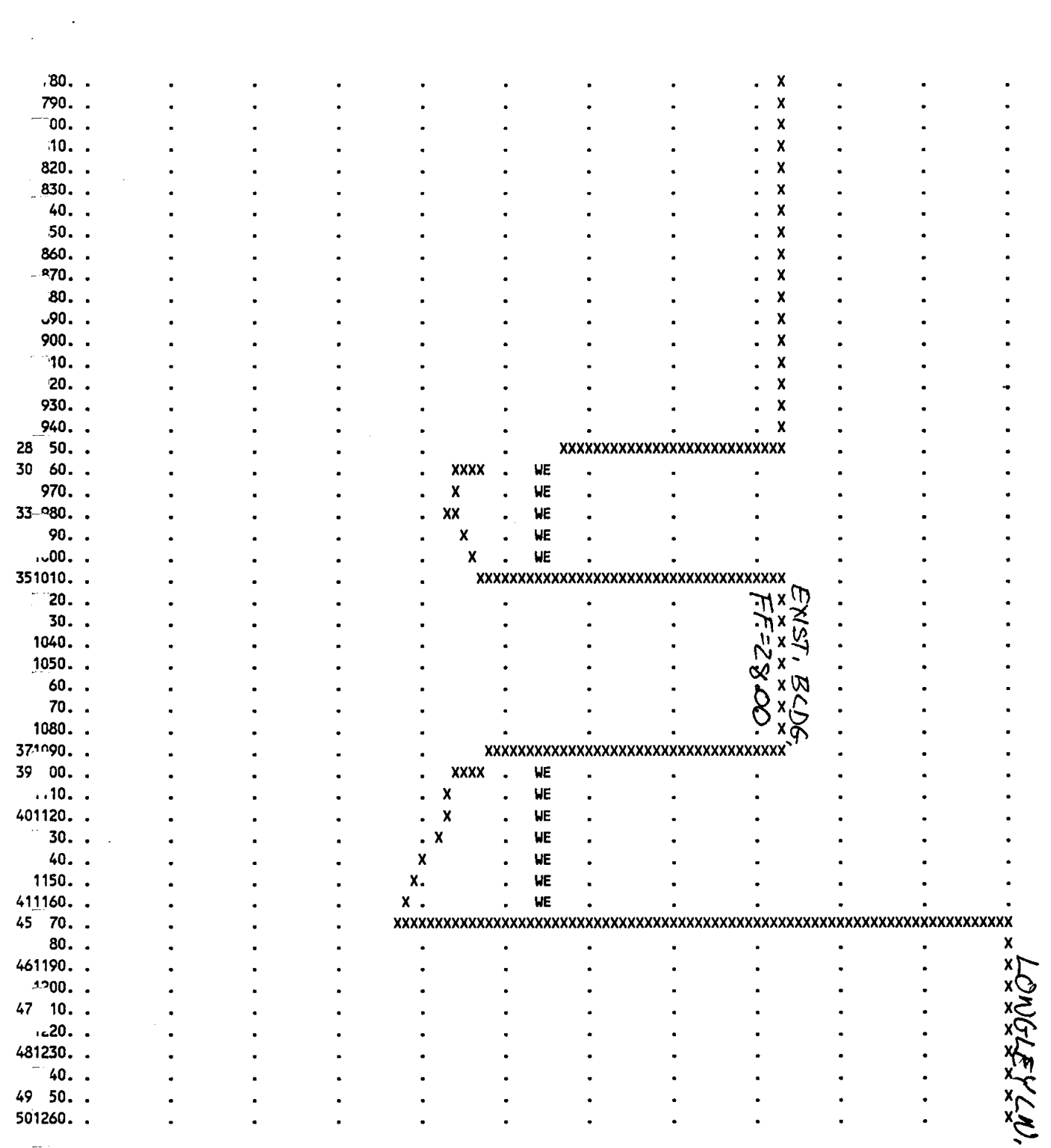
PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

ELEV 4418.5 4420.5 4422.5 4424.5 4426.5 4428.5 4430.5 4432.5 4434.5 4436.5 4438.5

STA-FEET




PROPOSED
Krystal Corp. Building
FF = 30.50
EXIST. BUILDING
FF = 30.00



NR 0 ELLC= 9999999.00 ELTRD= 9999999.00

EL(I),STA(I)

100000.00	23.00	100000.00	35.00	100000.00	50.00	100000.00	65.00	100000.00	77.00
0000.00	100.00	4427.97	100.00	4428.00	104.00	4430.00	132.00	4430.50	132.10
4430.50	371.00	4430.00	371.10	4428.90	398.50	4429.00	402.00	4429.67	417.00
4429.30	417.10	4429.75	440.00	4429.30	464.00	4429.67	464.10	4429.50	493.00
4429.00	493.10	4428.11	537.00	4428.49	537.10	4429.50	543.00	4435.00	543.10
4435.00	950.00	4429.96	950.20	4427.82	963.00	4427.32	963.10	4427.21	976.00
4427.10	977.50	4427.21	979.00	4427.83	1013.00	4435.00	1013.10	4435.00	1094.00
4428.00	1094.10	4427.79	1104.00	4427.29	1104.10	4427.00	1116.00	4426.00	1160.00
4425.80	1170.00	4426.12	1170.10	100000.00	1170.10	100000.00	1172.00	100000.00	1190.00
0000.00	1207.00	100000.00	1233.00	100000.00	1255.00	100000.00	1261.00		

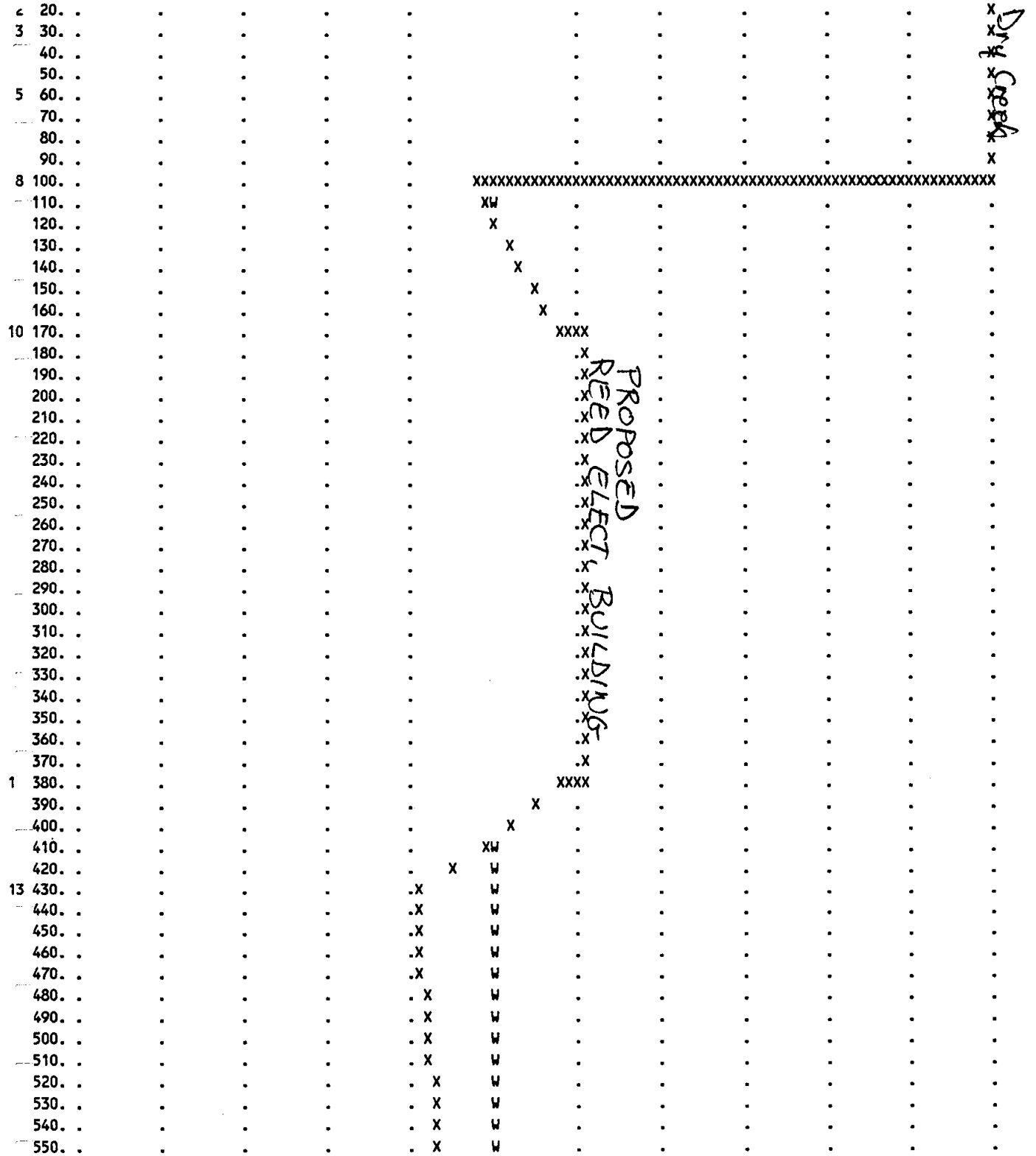
CROSS SECTION 230.20

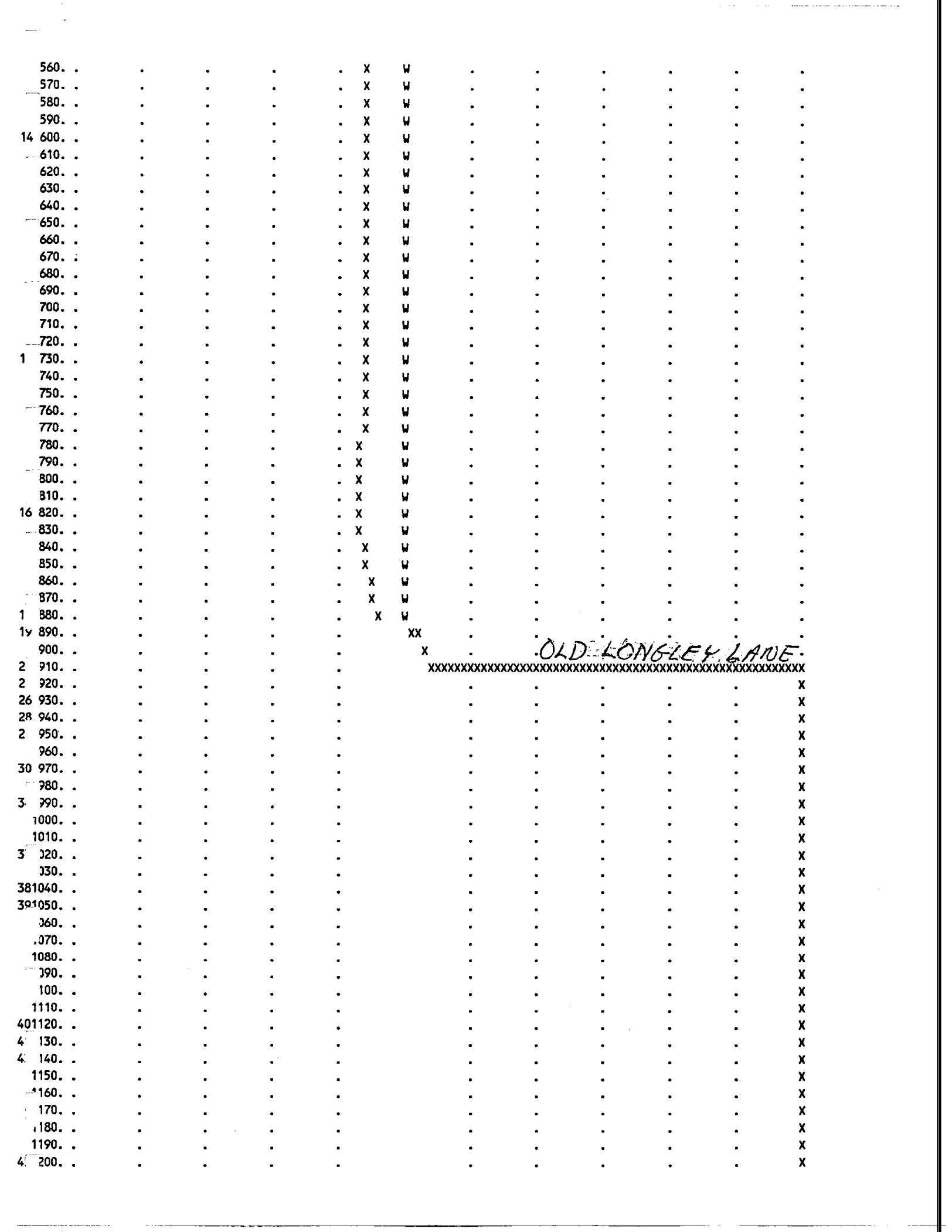
STREAM PROPOSED GROUND W/ KRIST
DISCHARGE= 750.

PLOTTED POINTS (BY PRIORITY)-B=BOTTOM BRIDGE,T=TOP BRIDGE,X=GROUND,W=WATER SUR,E=ENERGY GRADIENT,C=CRITICAL WSEL

E V 4419.9 4421.9 4423.9 4425.9 4427.9 4429.9 4431.9 4433.9 4435.9 4437.9 4439.9

STA-FEET




OLD LONGLEY LANE

```
 .210. .        .        .        .        .                  .        .        .        .        .        X
461220. .       .        .        .        .                  .        .        .        .        .        X
  ''230. .      .        .        .        .                  .        .        .        .        .        X
   240. .       .        .        .        .                  .        .        .        .        .        X
  1250. .       .        .        .        .                  .        .        .        .        .        X
471260. .       .        .        .        .                  .        .        .        .        .        X
   270. .       .        .        .        .                  .        .        .        .        .        X
   280. .       .        .        .        .                  .        .        .        .        .        X
481290. .       .        .        .        .                  .        .        .        .        .        X

NI  =      0 ELLC=  9999999.00 ELTRD=  9999999.00

 EL(I),STA(I)
 ''00000.00     23.00  100000.00     35.00  100000.00     50.00  100000.00     65.00  100000.00     77.00
  )0000.00    100.00    4429.40    100.00    4431.50    174.00    4432.00    174.10    4432.00    376.00
   4431.50    376.10    4428.00    432.00    4428.80    600.00    4428.70    730.00    4428.50    824.00
   4429.00    883.00    4430.00    891.00    4430.30    895.00    4430.60    908.00  100000.00    908.00
  )0000.00    920.00  100000.00    928.00  100000.00    930.00  100000.00    933.00  100000.00    935.00
  )0000.00    941.00  100000.00    945.00  100000.00    949.00  100000.00    967.00  100000.00    986.00
 100000.00    990.00  100000.00    992.00  100000.00    995.00  100000.00   1021.00  100000.00   1023.00
 100000.00   1025.00  100000.00   1045.00  100000.00   1045.10  100000.00   1125.00  100000.00   1125.10
  )0000.00   1136.00  100000.00   1136.10  100000.00   1202.00  100000.00   1202.10  100000.00   1222.00
 .J0000.00   1259.00  100000.00   1293.00
1
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THIS RUN EXECUTED 16MAR94 11:05:27

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

 Version  4.6.0;  February 1991
**************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

PROPOSED GROUND W/ KRIST

SUMMARY PRINTOUT

	SECNO	STENCL	Q	CWSEL	STENCR	CRIWS	EG	ELMIN	DEPTH
	223.700	100.00	750.00	4428.50	1141.10	.00	4428.59	4417.10	11.40
*	226.900	100.00	750.00	4429.30	1170.10	.00	4429.37	4418.47	10.83
	230.200	100.00	750.00	4429.80	908.00	.00	4429.83	4419.90	9.90
*	234.100	1011.60	750.00	4431.67	1707.70	4431.67	4431.94	4422.70	8.97
	240.800	655.80	750.00	4436.97	1433.50	.00	4437.06	4426.50	10.47
*	253.200	917.80	750.00	4441.99	1716.50	.00	4442.04	4433.30	8.69
*	258.200	1298.60	750.00	4443.83	2260.00	.00	4443.84	4436.00	7.83
*	262.400	2400.00	750.00	4445.92	2820.00	4445.92	4446.20	4438.00	7.92
*	267.100	1891.60	2200.00	4447.24	3137.00	.00	4447.32	4444.50	2.74

*	269.200	2832.00	350.00	4448.14	3483.00	.00	4448.17	4446.00	2.14
*	271.300	3333.00	175.00	4449.29	4020.00	.00	4449.31	4446.00	3.29

1

MARY OF ERRORS AND SPECIAL NOTES

W NING SECNO= 226.900 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 234.100 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 234.100 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
C TION SECNO= 234.100 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 253.200 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

W NING SECNO= 258.200 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 262.400 PROFILE= 1 CRITICAL DEPTH ASSUMED
C TION SECNO= 262.400 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
C TION SECNO= 262.400 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 267.100 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

W NING SECNO= 269.200 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 271.300 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

HEC-2 RUN #3

```
1 *******************************************          ****************************************
  * HEC-2 WATER SURFACE PROFILES              *          * U.S. ARMY CORPS OF ENGINEERS         *
  *                                           *          * HYDROLOGIC ENGINEERING CENTER        *
  * Version  4.6.0;  February 1991            *          * 609 SECOND STREET, SUITE D           *
  *                                           *          * DAVIS, CALIFORNIA 95616-4687         *
  * RUN DATE   15MAR94   TIME   14:34:37      *          *         (916) 756-1104               *
  *******************************************          ****************************************
```

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

1

15MAR94 14:34:37 PAGE 1

THIS RUN EXECUTED 15MAR94 14:34:37

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**********************************
EC-2 WATER SURFACE PROFILES

Version  4.6.0;  February 1991
**********************************
```

T1 DRY CREEK - APPEAL RESOLUTION (EXT'D DOWNSTREAM TO KRISTAL CORP. SITE)
CHNL1.DAT
T3 TOTAL FLOW OF 4600 CFS IN MAIN CHANNEL - 3/14/94

ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
0	2	0	0	.0043	0	0	0	0	0

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38	27	43	1	28	2	3	42	8

QT 1 4600

```
*******************************************************************
THREE NEW SECTIONS ADDED - 223.7, 226.9 and 230.2
TOPO FROM SUMMIT PLANS FOR  PARK 2001
*******************************************************************
```

NC	.045	.045	.03	.1	.3					
E		9.1							0.	100.
X1	223.7	47.	0.	100.	0.	0.	0.			
GR	4426.6	0.	4418.9	23.	4418.6	35.	4417.1	50.	4418.6	65.
G	4418.9	77.	4426.6	100.	4429.1	130.	4429.25	130.1	4429.25	369.
G	4429.1	369.1	4428.1	416.	4427.7	416.1	4428.	430.	4428.	439.
GR	4428.	449.	4427.7	465.	4428.1	465.1	4428.4	504.	4428.44	504.1
GR	4428.4	739.	4428.27	739.1	4427.13	760.	4427.	761.5	4427.13	763.

C..	4427.9	812.	4428.	812.1	4428.	913.	4427.95	913.1	4427.	947.
GR	4426.9	948.5	4427.	950.	4427.83	985.	4428.	985.1	4428.	1065.
C	4428.	1065.1	4427.79	1075.	4427.29	1075.1	4427.	1090.	4426.62	1141.
C	4427.	1141.1	4420.45	1160.	4420.45	1167.	4426.	1182.	4426.3	1191.
GR	4427.	1227.	4427.26	1233.						

E		9.1							0.	100.
X	226.9	43.	0.	100.	320.	320.	320.			
GR	4428.0	0.	4420.3	23.	4419.97	35.	4418.47	50.	4419.97	65.
GR	4420.3	77.	4427.97	100.	4428.	210.	4429.	404.	4429.67	417.
G	4429.3	417.1	4429.75	440.	4429.3	464.	4429.67	464.1	4429.5	493.
G..	4429.	493.1	4428.11	537.	4428.49	537.1	4429.5	543.	4430.	543.1
GR	4430.	950.	4429.96	950.1	4427.82	963.	4427.32	963.1	4427.21	976.
G	4427.1	977.5	4427.21	979.	4427.83	1013.	4428.	1013.1	4428.	1094.
G	4428.0	1094.1	4427.79	1104.	4427.29	1104.1	4427.	1116.	4426.	1160.
GR	4425.8	1170.	4426.12	1170.1	4426.	1172.	4422.03	1190.	4427.	1207.
GR	4428.	1233.	4429.	1255.	4429.13	1261.				

E.		9.1							0.	100.
X1	230.2	46.	0.	100.	330.	330.	330.			
G	4429.4	0.	4421.7	23.	4421.4	35.	4419.9	50.	4421.4	65.
G	4421.7	77.	4429.4	100.	4429.	103.	4429.	404.	4427.	413.
GR	4427.	424.	4428.	432.	4428.8	600.	4428.7	730.	4428.5	824.
GR	4429.	883.	4430.	891.	4430.3	895.	4430.6	908.	4430.4	920.
G	4430.	928.	4429.	930.	4428.4	933.	4429.	935.	4430.	941.
G	4430.3	945.	4430.	949.	4429.	967.	4429.	986.	4430.	990.
GR	4430.2	992.	4430.	995.	4429.41	1021.	4429.29	1023.	4429.41	1025.
GR	4430.0	1045.	4430.	1045.1	4430.	1125.	4430.	1125.1	4429.76	1136.
G	4429.3	1136.1	4427.75	1202.	4428.08	1202.1	4423.67	1222.	4430.	1259.
G..	4431.	1293.								

N	.035	.035	.03							
E		9.1							822.8	922.1
X1	234.1	48	822.8	922.1	400	380	390			
GR	4432.6	0.0	4433.7	21.2	4432.6	32.2	4433.8	44.7	4434.1	60.3
G	4433.5	88.7	4432.6	116.0	4432.1	259.3	4432.3	356.9	4432.1	429.2
G	4433.2	447.5	4433.2	465.6	4432.1	472.6	4432.3	551.9	4432.5	696.3
GR	4431.9	822.8	4423.7	844.3	4422.7	878.5	4425.3	893.1	4433.4	922.1
GR	4433.3	949.7	4432.3	959.2	4438.3	975.5	4437.9	1011.6	4431.4	1022.9
G	4431.7	1131.3	4431.2	1240.8	4432.9	1259.7	4427.3	1271.1	4431.2	1286.0
G..	4430.5	1289.2	4431.7	1405.6	4432.0	1566.9	4432.5	1692.8	4428.5	1700.3
GR	4433.9	1707.7	4433.6	1727.7	4432.2	1740.8	4426.5	1747.8	4432.8	1756.6
G	4432.1	1761.9	4431.9	1950.9	4431.6	2090.1	4427.9	2103.3	4429.7	2111.8
G	4434.3	2129.2	4434.0	2142.7	4434.6	2174.0				

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

* OF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CEHV= .100 CEHV= .300
*SECNO 223.700
96 WSEL NOT GIVEN, AVG OF MAX, MIN USED

223.700	7.87	4424.97	4423.91	.00	4426.44	1.47	.00	.00	4426.60
4600.0	.0	4600.0	.0	.0	473.1	.0	.0	.0	4426.60
.00	.00	9.72	.00	.000	.030	.000	.000	4417.10	4.86
.004367	0.	0.	0.	0	11	4	.00	90.27	95.14

*SECNO 226.900

226.900	7.90	4426.37	4425.26	.00	4427.83	1.46	1.39	.00	4428.00
4600.0	.0	4600.0	.0	.0	474.3	.0	3.5	.7	4427.97
.01	.00	9.70	.00	.000	.030	.000	.000	4418.47	4.87
.004333	320.	320.	320.	0	15	0	.00	90.32	95.20

*SECNO 230.200

230.200	7.91	4427.81	4426.68	.00	4429.26	1.45	1.42	.00	4429.40
4600.0	.0	4600.0	.0	.0	476.3	.0	7.1	1.3	4429.40
.02	.00	9.66	.00	.000	.030	.000	.000	4419.90	4.76
.004282	330.	330.	330.	0	15	0	.00	90.49	95.24

*SECNO 234.100

01 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
20 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 822.8 922.1 TYPE= 1 TARGET= 99.300

234.100	6.79	4429.49	4429.49	.00	4431.88	2.39	2.26	.28	4431.90
4600.0	.0	4600.0	.0	.0	370.7	.0	10.9	2.1	100000.00
.03	.00	12.41	.00	.000	.030	.000	.000	4422.70	829.12
.008239	400.	390.	380.	0	15	0	.00	78.99	908.11

****
HEC-2 WATER SURFACE PROFILES

ersion 4.6.0; February 1991
****

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

TAL FLOW OF 4600 CFS I

SUMMARY PRINTOUT

SECNO	STENCL	Q	CWSEL	STENCR	CRIWS	EG	ELMIN	DEPTH
223.700	.00	4600.00	4424.97	100.00	4423.91	4426.44	4417.10	7.87
226.900	.00	4600.00	4426.37	100.00	4425.26	4427.83	4418.47	7.90

230.200	.00	4600.00	4427.81	100.00	4426.68	4429.26	4419.90	7.91
234.100	822.80	4600.00	4429.49	922.10	4429.49	4431.88	4422.70	6.79

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 234.100 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 234.100 PROFILE= 1 MINIMUM SPECIFIC ENERGY

BAKER RIGHT OVERBANK HEC-2 RUN

```
1*************************************************
*  WATER SURFACE PROFILES                        *
*  VERSION OF SEPTEMBER 1988                     *
*  ERROR: 01,02,03                               *
*  UPDATED:  SEPTEMBER 1989                      *
*  RUN DATE     1/14/94    TIME    11: 2: 0      *
**************************************************
```

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

```
X     X  XXXXXXX   XXXXX               XXXXX
X     X  X        X     X             X     X
X     X  X        X                         X
XXXXXXX  XXXX     X         XXXXX      XXXXX
X     X  X        X                   X
X     X  X        X     X             X
X     X  XXXXXXX   XXXXX              XXXXXXX
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END OF BANNER
1
1/14/94   11: 2: 0   PAGE 1

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**************************************************
HEC2 RELEASE DATED SEP 88 UPDATED SEPT 1989

ERROR CORR -  01,02,03
MODIFICATION -
**************************************************
```

THIS RUN EXECUTED 1/14/94   11: 2: 0

T1 DRY CREEK - APPEAL RESOLUTION
T2 RIGHT.DAT
T3 RED

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2	0	0	.005	0	0	0	4425.09	0

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

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38	27	43	1	28	2	3

QT	1	750								
NC	.035	.035	.03							
ET		9.1							1011.6	1707.7
X1	234.1	48	822.8	922.1	840	840	840			
GR	4432.6	0.0	4433.7	21.2	4432.6	32.2	4433.8	44.7	4434.1	60.3
GR	4433.5	88.7	4432.6	116.0	4432.1	259.3	4432.3	356.9	4432.1	429.2
GR	4433.2	447.5	4433.2	465.6	4432.1	472.6	4432.3	551.9	4432.5	696.3
GR	4431.9	822.8	4423.7	844.3	4422.7	878.5	4425.3	893.1	4433.4	922.1
GR	4433.3	949.7	4432.3	959.2	4438.3	975.5	4437.9	1011.6	4431.4	1022.9
GR	4431.7	1131.3	4431.2	1240.8	4432.9	1259.7	4427.3	1271.1	4431.2	1286.0
GR	4430.5	1289.2	4431.7	1405.6	4432.0	1566.9	4432.5	1692.8	4428.5	1700.3
GR	4433.9	1707.7	4433.6	1727.7	4432.2	1740.8	4426.5	1747.8	4432.8	1756.6
GR	4432.1	1761.9	4431.9	1950.9	4431.6	2090.1	4427.9	2103.3	4429.7	2111.8
GR	4434.3	2129.2	4434.0	2142.7	4434.6	2174.0				
NC	.045	.040	.035	.1	.3					
ET		9.1							655.8	1433.5
X1	240.8	53	553	655.8	670	670	670			
GR	4436.7	0.0	4434.0	13.6	4435.5	22.8	4435.6	75.3	4435.4	165.1
GR	4437.4	173.4	4437.3	200.1	4436.1	210.9	4435.3	354.3	4435.7	439.8
GR	4436.2	553.0	4427.6	578.1	4426.7	592.0	4426.5	614.8	4428.6	629.4
GR	4436.8	655.8	4435.9	675.2	4436.8	705.3	4436.8	811.0	4436.4	908.8
GR	4436.0	994.7	4435.3	1043.1	4436.8	1056.1	4436.8	1079.7	4436.5	1085.5
GR	4436.9	1175.4	4437.4	1291.9	4436.0	1371.9	4433.4	1378.2	4436.5	1385.2
GR	4437.3	1411.8	4437.0	1422.2	4437.6	1433.5	4437.3	1445.5	4436.8	1461.3
GR	4437.3	1481.4	4433.6	1490.1	4436.1	1496.3	4435.9	1598.0	4435.4	1684.4
GR	4437.1	1691.0	4432.7	1703.9	4437.6	1718.9	4436.2	1729.1	4436.0	1773.0
GR	4431.7	1784.9	4431.0	1832.9	4430.2	1887.2	4435.2	1894.4	4435.1	1915.0

1
1/14/94   11: 2: 0   PAGE 2

GR	4435.8	1921.4	4436.1	1938.6	4436.6	1974.4

```
+++++++++++++++++++++++++++++++++++++++++++++++
+ NEW CROSS SECTION DATA WAS ENTERED BELOW    +
+ NUMBERS 265.6, 273.8, AND 280.0 WERE DELETED +
+++++++++++++++++++++++++++++++++++++++++++++++

+++++++++++++++++++++++++++++++++++++++++++++++
+ MODIFIED THE FLOWS TO REPRESENT THE         +
+ RESULTS OF THE SPLIT FLOW ANALYSIS (5-11-93) +
+    => WEIR COEFFICIENT 3.1                  +
+    => TRUNCATED CROSS SECTIONS              +
+++++++++++++++++++++++++++++++++++++++++++++++
```

********** MODIFIED SECTION 253.2************

NC	.050	.045	.035	.1	.3					
QT	1	750								
ET		9.1							917.8	1716.5
X1	253.2	43	817.4	917.8	450	1240	1240			
GR	4441.0	0.0	4444.0	420.0	4444.0	610.0	4447.0	690.0	4444.0	720.0
GR	4448.0	721.5	4442.4	779.2	4443.1	817.4	4434.6	845.7	4435.0	852.4
GR	4433.6	858.7	4433.3	883.0	4435.1	897.2	4442.2	917.8	4441.6	1029.1
GR	4441.6	1162.0	4441.3	1240.0	4440.8	1300.0	4440.4	1373.0	4440.8	1465.0
GR	4441.6	1483.4	4441.3	1505.2	4442.0	1512.1	4442.3	1638.8	4443.3	1716.5
GR	4442.8	1803.0	4442.5	1865.6	4443.8	1882.8	4443.0	1893.2	4441.2	1919.7
GR	4442.1	1925.8	4437.8	1936.8	4440.5	1954.8	4439.4	2068.8	4439.2	2174.1
GR	4436.0	2191.4	4439.0	2209.8	4439.0	2295.9	4439.6	2372.9	4437.1	2378.8
GR	4441.9	2382.8	4442.1	2399.0	4442.6	2430.0				

**********CROSS SECTION 258.2**********

QT	1	750								
RT		9.1								
X1	258.2	82	1186.1	1298.6	1000	1750	500		1298.6	2260
GR	4450.0	906.6	4449.8	908.6	4449.0	912.6	4448.9	913.3	4448.0	918.2
GR	4447.5	919.7	4446.7	922.5	4446.5	924.1	4446.4	924.9	4446.0	927.9
GR	4445.1	933.7	4445.0	934.6	4444.4	946.5	4444.0	952.2	4444.1	978.4
GR	4444.4	1009.2	4444.6	1020.1	4444.8	1024.2	4445.0	1030.7	4445.0	1038.0
GR	4444.6	1042.9	4444.1	1049.7	4444.0	1050.9	4444.0	1059.7	4444.1	1062.2
GR	4444.6	1089.2	4444.6	1135.5	4444.8	1157.6	4445.0	1164.1	4445.0	1164.1
GR	4445.0	1165.1	4445.1	1169.5	4445.2	1173.7	4445.2	1186.1	4445.1	1193.3
GR	4445.0	1197.5	4443.0	1206.0	4442.7	1206.5	4442.6	1206.6	4442.3	1207.1
GR	4442.0	1207.7	4441.9	1207.9	4441.0	1209.9	4440.0	1214.5	4439.7	1215.3
GR	4439.0	1217.3	4439.0	1217.4	4438.0	1220.3	4437.1	1223.6	4437.0	1224.1
GR	4436.5	1230.1	4436.0	1235.1	4436.0	1256.7	4436.4	1262.2	4437.0	1271.4
GR	4437.7	1275.8	4438.9	1280.0	4439.0	1280.2	4440.0	1282.8	4440.4	1283.8
GR	4441.0	1285.4	4441.9	1287.4	4442.5	1288.8	4443.0	1289.9	4444.0	1291.5
GR	4444.2	1296.7	4444.2	1298.6	4444.1	1300.1	4444.0	1304.5	4444.0	1304.6
GR	4443.9	1304.7	4443.8	1305.2	4443.6	1305.5	4443.6	1305.6	4443.4	1306.6
GR	4443.3	1307.3	4442.5	1470	4443	2200	4443.5	2260	4442	2300
GR	4444	2550	4445	2700						

**********CROSS SECTION 262.4**********

QT	1	750								
RT		9.1								
X1	262.4	76	1831.7	1930.2	300	430	420		2400	2820
GR	4446.0	1148.7	4446.0	1148.8	4446.4	1162.2	4446.4	1163.7	4446.6	1195.1
GR	4446.6	1195.9	4446.1	1198.5	4446.0	1434.6	4446.1	1439.2	4446.4	1461.8
GR	4446.5	1474.5	4446.5	1519.7	4446.5	1528.7	4446.5	1528.9	4446.5	1529.1
GR	4446.5	1530.4	4446.5	1534.7	4446.6	1578.3	4446.4	1621.1	4446.4	1631.5
GR	4446.4	1638.3	4446.3	1653.6	4446.2	1697.3	4446.4	1708.1	4446.4	1710.2
GR	4446.2	1742.5	4446.2	1752.1	4446.2	1752.6	4446.2	1755.6	4446.2	1757.3
GR	4446.2	1758.7	4446.2	1765.3	4446.1	1797.3	4446.1	1815.4	4446.0	1823.8
GR	4446.0	1831.7	4445.6	1834.5	4445.0	1838.5	4444.2	1841.5	4444.0	1842.1
GR	4443.7	1842.8	4443.0	1844.6	4442.5	1846.4	4442.0	1848.3	4441.3	1851.1
GR	4441.0	1852.4	4440.1	1858.0	4439.8	1859.8	4439.0	1864.8	4438.8	1867.1
GR	4438.0	1876.9	4438.0	1894.4	4438.4	1900.7	4439.0	1910.7	4439.3	1912.2
GR	4440.0	1917.5	4440.9	1920.5	4441.0	1920.6	4441.9	1923.6	4442.0	1923.7
GR	4442.0	1923.8	4443.0	1925.4	4443.4	1926.4	4444.0	1928.3	4445.0	1930.2
GR	4445.0	1937.9	4444.0	1980	4445	2050	4446	2400	4445	2800
GR	4446	2820	4444	2850	4445	2900	4446	3050	4444	3140
GR	4447	3210								

****
* EXTENDED THE CROSS SECTIONS 267.1, 269.2, *
* AND 271.3 TO LONGLEY LANE. DATA WAS *
* OBTAINED FROM SUMMIT ENGINEERING THRU *
* THE STATE FARMS STOCK FACILITY. *
****

QT 1 2200

**********CROSS SECTION 267.1**********

RT		9.1								
X1	267.1	86	1852.2	1879.4	260	180	470		1891.6	3137.0
GR	4447.7	1166.9	4447.7	1167.6	4447.1	1186.6	4447.0	1189.1	4446.9	1189.7
GR	4446.0	1192.3	4445.1	1195.9	4445.0	1198.4	4445.3	1199.5	4446.0	1201.1
GR	4446.3	1203.0	4446.4	1203.6	4447.0	1207.0	4447.1	1213.1	4447.1	1220.1
GR	4447.5	1231.4	4447.5	1231.6	4447.2	1246.9	4447.0	1247.6	4447.0	1250.9
GR	4447.9	1252.0	4448.0	1252.1	4448.0	1257.2	4447.8	1260.7	4447.5	1268.7
GR	4447.1	1280.4	4447.2	1390.1	4447.4	1406.7	4447.5	1425.5	4447.9	1445.9
GR	4447.8	1481.0	4447.4	1506.3	4447.3	1561.8	4447.0	1618.6	4447.0	1675.1
GR	4447.2	1720.4	4447.2	1721.5	4447.6	1787.7	4447.6	1803.1	4447.7	1804.6
GR	4447.1	1852.2	4447.1	1852.5	4447.0	1854.0	4446.6	1855.6	4446.5	1856.2
GR	4446.0	1859.1	4445.7	1860.1	4445.0	1863.3	4445.0	1869.4	4445.3	1872.8
GR	4446.0	1874.3	4446.7	1878.0	4447.0	1879.4	4447.5	1885.9	4447.8	1891.6
GR	4447.8	1916.8	4447.6	1933.7	4447.4	2006.9	4447.3	2047.6	4447.2	2073.4
GR	4447.1	2121.7	4447.0	2167.3	4446.9	2191.3	4446.0	2335.0	4445.0	2340.0
GR	4446.0	2345.0	4446.0	2365.0	4445.7	2500.0	4446.0	2682.0	4446.5	2960.0
GR	4447.0	3137.0	4444.5	3150.0	4447.0	3154.0	4448.0	3166.0	4448.0	3174.0
GR	4447.0	3175.0	4447.0	3210.0	4448.0	3215.0	4448.0	3220.0	4444.5	3227.0
GR	4447.0	3230.0	4447.0	3235.0	4446.5	3240.0	4447.0	3242.0	4448.0	3435.0
GR	4450.8	3533.0								

**********CROSS SECTION 269.2**********

QT	1	350								
RT		9.1								
X1	269.2	55	2241.8	2301.8	190	190	210		2832.0	3483.0
GR	4450.2	1260.4	4446.0	1271.4	4446.0	1287.1	4447.0	1290.0	4447.0	1308.2
GR	4446.0	1310.4	4446.0	1314.1	4447.0	1316.5	4448.0	1353.3	4448.2	1383.3
GR	4448.1	1450.5	4448.2	1473.3	4448.2	1492.8	4448.0	1530.2	4449.0	1605.1
GR	4448.0	1616.2	4449.0	1626.1	4449.0	1634.8	4448.4	1902.7	4448.5	1957.5
GR	4448.6	2013.4	4448.6	2070.1	4448.0	2101.4	4447.9	2123.0	4448.0	2135.8
GR	4448.0	2187.6	4448.0	2197.9	4448.2	2198.0	4448.4	2241.8	4446.0	2260.3
GR	4446.0	2278.4	4448.2	2301.8	4447.9	2457.1	4447.9	2568.7	4448.0	2815.0
GR	4446.5	2820.0	4447.0	2822.0	4448.0	2823.0	4448.5	2832.0	4448.0	2841.0
GR	4447.5	3180.0	4448.0	3477.0	4448.2	3483.0	4448.0	3487.0	4447.9	3504.0
GR	4448.0	3542.0	4448.2	3546.0	4448.0	3549.0	4447.8	3552.0	4448.0	3556.0
GR	4448.0	3568.0	4449.0	3622.0	4448.0	3625.0	4452.0	3830.0	4452.2	3870.0

**********CROSS SECTION 271.3**********

RT		9.1								
QT	1	175							3333.0	4020.0
X1	271.3	63	2515.9	2538.3	210	200	210			
GR	4451.0	1238.9	4451.0	1251.0	4446.0	1263.3	4446.0	1266.9	4449.0	1286.7
GR	4449.5	1462.0	4449.6	1464.0	4449.5	1471.8	4449.3	1507.5	4449.0	1645.1
GR	4448.0	1647.2	4448.6	1654.3	4449.0	1655.2	4449.8	1692.5	4450.0	1705.8
GR	4450.2	1736.5	4450.6	1791.6	4450.9	1823.1	4451.0	1829.4	4450.5	1860.6
GR	4450.4	1868.6	4450.2	1907.8	4450.0	1944.1	4449.9	1955.0	4449.8	1988.2
GR	4449.6	2187.9	4449.8	2238.0	4450.0	2294.6	4450.0	2416.5	4449.9	2417.5
GR	4449.0	2453.1	4448.2	2511.8	4448.0	2515.9	4447.0	2524.5	4447.0	2536.5
GR	4448.0	2538.3	4448.1	2538.6	4449.0	2540.4	4449.0	2680.7	4449.1	2697.8
GR	4449.1	2720.1	4449.0	2723.2	4449.1	2732.4	4448.9	2843.4	4448.8	2987.9
GR	4448.2	3246.0	4447.5	3250.0	4448.0	3254.0	4449.0	3265.0	4448.8	3270.0
GR	4449.0	3281.0	4448.8	3300.0	4449.0	3315.0	4449.4	3333.0	4449.0	3348.0
GR	4448.6	3450.0	4448.9	3520.0	4449.0	3675.0	4451.9	4020.0	4451.0	4100.0
GR	4452.0	4150.0	4456.0	4300.0	4456.2	4310.0				

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	EV	EL	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

*SECNO 234.100

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=			1011.6	1707.7	TYPE=	1	TARGET=	696.100	
234.100	9.16	4431.86	.00	.00	4431.99	.13	.00	.00100000.00	
750.	0.	0.	750.	0.	0.	259.	0.	0.	100000.00
.00	.00	.00	2.89	.000	.000	.035	.000	4422.70	1022.10
.004983	840.	840.	840.	0	0	27	.00	468.25	1704.91

0
CCEV= .100 CEEV= .300
*SECNO 240.800

3265 DIVIDED FLOW

3280 CROSS SECTION 240.80 EXTENDED .21 FEET

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

3470 ENCROACHMENT STATIONS=			655.8	1433.5	TYPE=	1	TARGET=	777.700	
240.800	10.31	4436.81	4436.68	.00	4436.99	.18	4.98	.01100000.00	
750.	0.	0.	750.	0.	0.	222.	4.	8.	4436.80
.05	.00	.00	3.39	.000	.000	.040	.000	4426.50	655.80
.012276	670.	670.	670.	16	13	0	.00	569.31	1395.51

0
CCEV= .100 CEEV= .300
*SECNO 253.200

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.45

3470 ENCROACHMENT STATIONS=			917.8	1716.5	TYPE=	1	TARGET=	798.700	
253.200	8.79	4442.09	.00	.00	4442.13	.04	5.12	.01100000.00	
750.	0.	0.	750.	0.	0.	483.	14.	25.	4442.20
.28	.00	.00	1.55	.000	.000	.045	.000	4433.30	937.54
.002050	450.	1240.	1240.	14	0	0	.00	614.18	1551.72

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	EV	EL	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 258.200

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

3470 ENCROACHMENT STATIONS=			1298.6	2260.0	TYPE=	1	TARGET=	961.400	
258.200	7.81	4443.81	.00	.00	4443.82	.01	1.69	.00100000.00	
750.	0.	0.	750.	0.	0.	953.	43.	56.	4444.20
.89	.00	.00	.79	.000	.000	.045	.000	4436.00	1305.17
.000558	1000.	500.	1750.	11	0	0	.00	954.83	2260.00

0
*SECNO 262.400
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=			2400.0	2820.0	TYPE=	1	TARGET=	420.000	
262.400	7.97	4445.97	4445.97	.00	4446.19	.23	.76	.06100000.00	
750.	0.	0.	750.	0.	0.	196.	48.	63.	100000.00
.93	.00	.00	3.82	.000	.000	.045	.000	4438.00	2413.09
.035200	300.	420.	430.	20	5	0	.00	406.26	2819.34

0
*SECNO 267.100

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 8.43

3470 ENCROACHMENT STATIONS=			1891.6	3137.0	TYPE=	1	TARGET=	1245.400	
267.100	2.73	4447.23	.00	.00	4447.31	.08	1.10	.01100000.00	
2200.	0.	0.	2200.	0.	0.	970.	51.	66.	100000.00
.95	.00	.00	2.27	.000	.000	.045	.000	4444.50	2065.05
.004258	260.	470.	180.	8	0	0	.00	1071.95	3137.00

0
*SECNO 269.200

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .13

3470 ENCROACHMENT STATIONS=			2832.0	3483.0	TYPE=	1	TARGET=	651.000	
269.200	2.14	4448.14	.00	.00	4448.17	.03	.85	.00100000.00	
350.	0.	0.	350.	0.	0.	247.	53.	70.	100000.00
.98	.00	.00	1.42	.000	.000	.045	.000	4446.00	2838.53
.006556	190.	210.	190.	6	0	0	.00	642.58	3481.11

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	EV	EL	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 271.300

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

3470 ENCROACHMENT STATIONS=			3333.0	4020.0	TYPE=	1	TARGET=	687.000	
271.300	3.28	4449.28	.00	.00	4449.30	.02	1.13	.00100000.00	
175.	0.	0.	175.	0.	0.	143.	54.	72.	100000.00
1.03	.00	.00	1.22	.000	.000	.045	.000	4446.00	3337.49
.004336	210.	210.	200.	2	0	0	.00	370.86	3708.34

0
1

THIS RUN EXECUTED 1/14/94 11: 2:24

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

RED

SUMMARY PRINTOUT

	SECNO	STENCL	Q	CWSEL	STENCR	CRIWS	EG
	234.100	1011.60	750.00	4431.86	1707.70	.00	4431.99
*	240.800	655.80	750.00	4436.81	1433.50	4436.68	4436.99
*	253.200	917.80	750.00	4442.09	1716.50	.00	4442.13
*	258.200	1298.60	750.00	4443.81	2260.00	.00	4443.82
*	262.400	2400.00	750.00	4445.97	2820.00	4445.97	4446.19
*	267.100	1891.60	2200.00	4447.23	3137.00	.00	4447.31
*	269.200	2832.00	350.00	4448.14	3483.00	.00	4448.17
*	271.300	3333.00	175.00	4449.28	4020.00	.00	4449.30

1

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 240.800 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 253.200 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 258.200 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 262.400 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 262.400 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 262.400 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 267.100 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 269.200 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 271.300 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

DRY CREEK
100' EASEMENT

DRY CREEK FLOOD CONTROL CHANNEL

STATION 226.9

BENCH +1.5 FROM F.L.

19.51 F.L. | 19.29 F.L. | 19.08 F.L. | 18.86 F.L. | 18.63 F.L. | 18.43 F.L. | 18.22 F.L. | 18.00 F.L. | 17.79 F.L.

29.01 T.B. | 28.79 T.B. | 28.58 T.B. | 28.38 T.B. | 28.11 T.B. | 27.93 T.B. | 27.72 T.B. | 27.50 T.B. | 27.09 T.B.

Q100=2.2cfs

28"ø RCP CLASS III
168 L.F., S=0.62%

28-TYPE 1A
80.78 TC, 1E

ASPHALT PAVING

CONCRETE RETAINING WALL

6' CONC. APRON OVER 6' TYPE 2 AGG. BASE

Q100=0.85cfs
30"ø CMP
28.5 RIM
28.5 I.E.

Valley Gutter

LANDSCAPING

4' CONC. WALK

H.C.

WORK IN THIS AREA SHOWN FOR INFORMATION ONLY - NOT INCLUDED IN SCOPE OF WORK

edge of pavement

N.I.C.

S 58° 37' 35" E 303.00'

S 31° 22' 25" W 387.67'

FUTURE 20' FIRE ACCESS ROAD

FUTURE ADDITION
26,760 S.F.
(FUTURE FF=30.50)

4'-0" CONC. STOOP TYP.

PROPOSED BUILDING
33,000 S.F.
FF=30.50

FUTURE PAVING

EXISTING PAVING

24' ACCESS EASEMENT AND P.U.E.

29.30 (EX.T.C.)
29.27 (EX.E.P.)
29.51 (EX.E.P.)
29.30 (EX.E.P.)
29.22 (EX.T.C.)
29.88 (EX.T.C.)

SEC. C-2

20'-0" FRONT YARD SETBACK

LANDSCAPING

EXISTING ELEC. & TELE. CONDUIT

30.97 T.C.

6'-0" WIDE CONC. VALLEY GUTTER

(E) 8" SANITARY SEWER

EXISTING SSMH
RIM = 443030
I.E. (IN) 442409
I.E. (OUT) 442399

(E) 8" S.S. STUB
I.E. = 442425
(VERIFY LOCATION)

(E) 1" GAS

(E) 8" WATER

(E) 8" SANITARY SEWER

(E) 4" GAS
(E) 12" WATER

LOUIE LANE

GRADING AND DRAINAGE PLAN 1"=20'-0"

NOTE:
TOPOGRAPHICAL INFORMATION TAKEN FROM IMPROVEMENT PLANS PREPARED BY SUMMIT ENGINEERING FOR PARK 2001 PHASE I DATED MARCH 1987, & TOPOGRAPHIC MAP DATED DEC. 3, 1993

PRELIMINARY GRADING PLAN

NOT FOR CONSTRUCTION

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RENO, SPARKS, NEVADA
LAS VEGAS, NEVADA
PHOENIX, ARIZONA
incorporated
SSS
CONSULTING ENGINEERS

WAREHOUSE AND DISTRIBUTION FACILITY FOR

THE KRISTAL CORPORATION

RENO, NEVADA

LOUIS LANE

SHEET TITLE
GRADING AND DRAINAGE PLAN

REVISIONS
MARK | DATE | DESCRIPTION

ISSUES
DATE | DESCRIPTION

DATE 12-29-93
PROJECT NO.
DRAWN BY C.R.K.
CHECKED BY

SHEET NO. C-1

2523-01-1

FIGURE 4