

FLOOD HAZARD ANALYSES

COAL CREEK AND ROCK CREEK

BOULDER AND WELD COUNTIES

COLORADO

Appendix II

Theoretical Floodway Computations

Prepared by the
U.S. Department of Agriculture
Soil Conservation Service
in cooperation with the
Colorado Water Conservation Board
Urban Drainage and Flood Control District
Boulder County
Weld County

August 1976

APPENDIX II

A limited number of copies of this appendix has been produced for planners, engineers, developers, and others concerned with the development of Coal Creek and Rock Creek flood plains. It was prepared by the U. S. Department of Agriculture, Soil Conservation Service, in cooperation with the Colorado Water Conservation Board, the Urban Drainage and Flood Control District, Boulder and Weld Counties.

Included are computations for a theoretical floodway capable of carrying the 100-year frequency discharge at an increase in rise in water surface elevation above the pre-floodway water surface elevation. Data are in computer printout form and include floodway widths, cross sectional flow area, and average velocities. Computations are for an increase in rise of water surface in 0.5' increments from 0.0' to 2.0' above the 100-year flood. The theoretical floodway was computed on the basis of equal conveyance reduction from each side of the flood plain. The "Floodway widths - HUD 15 Computer Program," developed by the Soil Conservation Service, is the methodology used for the computations.

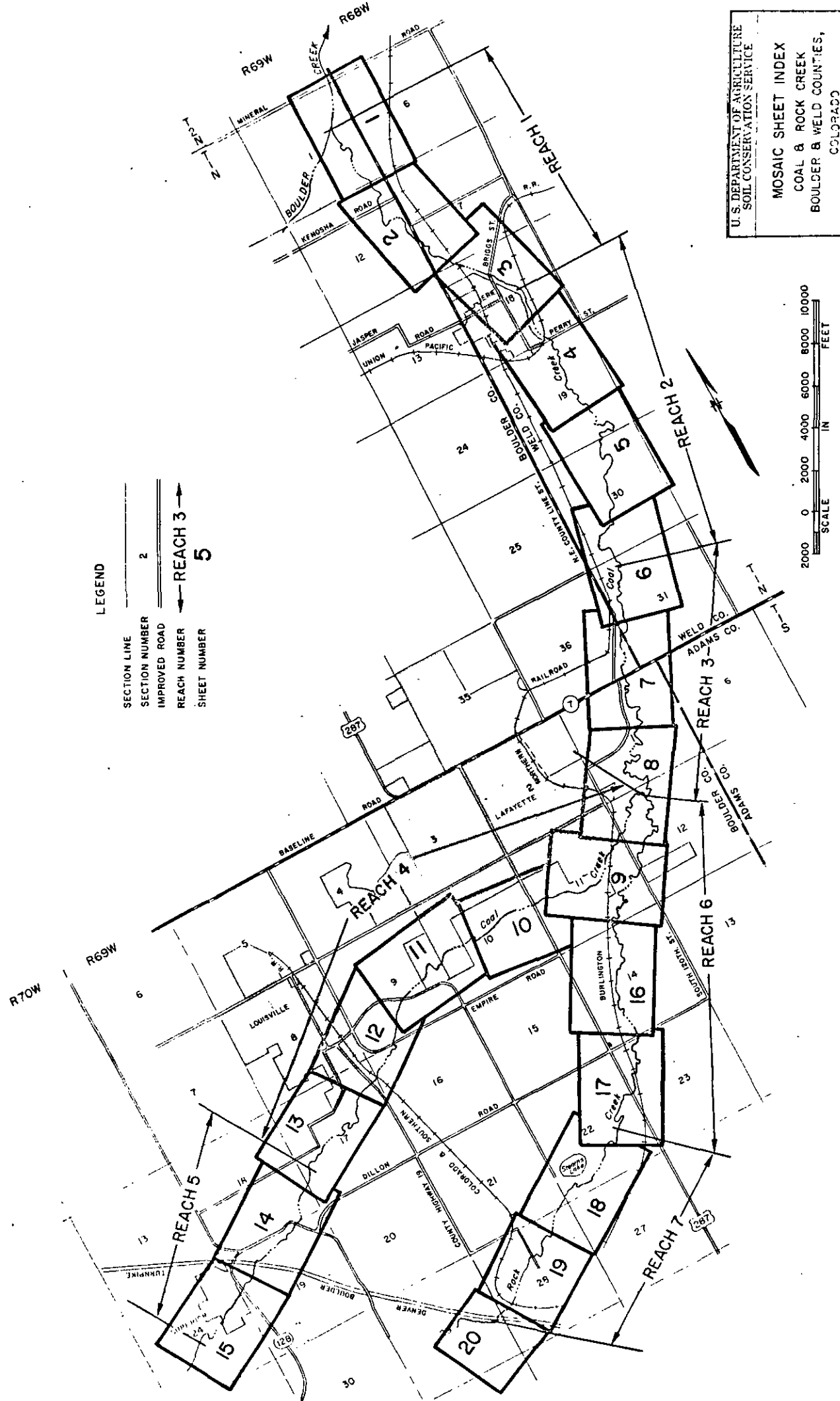
The data are keyed to the original cross sections and are compatible for use with the water surface profiles, photomaps, and other exhibits in the main report. The floodway stationing at each cross section is from left to right when viewed in a downstream direction.

As a general guide for orientation purposes, the following designations are assigned to stream names, photomap, reach, and cross-section numbers.

<u>Stream Name</u>	<u>Photomap Numbers</u>	<u>Reach Number</u>	<u>Cross Section Number</u>
Coal Creek	1-3	1	5-19
Coal Creek	3-6	2	19-35
Coal Creek	6-8	3	35-46
Coal Creek	8-13	4	46-85
Coal Creek	13-15	5	85-100
Rock Creek	8-9, 16-17	6	46-120
Rock Creek	17-20	7	120-138

The locations of the study reaches and photomap designations are illustrated on the Mosaic Sheet Index. A small scale reproduction of the Mosaic Sheet Index from the main report is included on the following page.

The hydrologic, hydraulic, and other pertinent data are on file with the U.S. Department of Agriculture, Soil Conservation Service, 2490 West 26th Avenue, Denver, Colorado.



LEGEND
 SECTION LINE
 SECTION NUMBER 2
 IMPROVED ROAD
 REACH NUMBER
 SHEET NUMBER 5

2000 0 2000 4000 6000 8000 10000
 SCALE IN FEET

WSP2 COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 005

BANKS ARE AT 826. 1167.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	
0.0	206.	3897.	620.	2730.	341.	2730.	3691.	4966.7	1.83
0.5	675.	3095.	151.	1928.		1928.	2420.	4967.2	2.09
1.0	793.	2415.	33.	1248.		1248.	1622.	4967.7	2.39
NO KD NEEDED IN LEFT FLOODPLAIN									
2.0	826.	1888.	0.	721.		721.	1062.	4968.7	2.76

SECTION 006

BANKS ARE AT 1719. 1760.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	
0.0	1462.	3772.	257.	2012.	41.	2012.	2310.	4972.6	2.26
0.5	1688.	3270.	31.	1510.		1510.	1582.	4973.1	2.59
1.0	1694.	2807.	25.	1047.		1047.	1113.	4973.6	2.96
2.0	1702.	2502.	17.	742.		742.	800.	4974.6	3.34

SECTION 007

BANKS ARE AT 920. 1000.

STAGE	FLOODWAY STA					*-----WIDTHS-----*							
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE				
0.0	641.	2346.	279.	80.	1346.	1705.	4981.6	4871.	2.51				
0.5	869.	1930.	51.		930.	1061.	4982.1	4087.	2.99				
1.0	879.	1704.	41.		704.	825.	4982.6	3739.	3.27				
2.0	894.	1430.	26.		430.	536.	4983.6	3212.	3.81				

SECTION 008

BANKS ARE AT 677. 726.

STAGE	FLOODWAY STA					*-----WIDTHS-----*							
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE				
0.0	107.	2054.	570.	49.	1328.	1947.	4986.1	4590.	2.66				
0.5	536.	1510.	141.		784.	974.	4986.6	3730.	3.28				
1.0	574.	1329.	103.		603.	755.	4987.1	3398.	3.60				
2.0	615.	1123.	62.		397.	508.	4988.1	2945.	4.15				

SECTION 010

BANKS ARE AT 1630. 1692.

STAGE	FLOODWAY STA					*-----WIDTHS-----*							
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE				
C.C	1060.	2847.	570.	62.	1155.	1787.	4987.9	7517.	1.63				
0.5	1402.	2503.	228.		811.	1101.	4988.4	6320.	1.93				
1.0	1439.	2393.	191.		701.	954.	4988.9	5991.	2.04				
2.0	1487.	2232.	143.		540.	745.	4989.9	5472.	2.23				

WSP2

COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 011

BANKS ARE AT 2329. 2363.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
0.0	1753.	3187.	576.		34.	824.			1434.	4992.4	4860.	2.52
0.5	2010.	2812.	319.			449.			802.	4992.9	3941.	3.11
1.0	2083.	2751.	246.			388.			668.	4993.4	3693.	3.32
2.0	2165.	2660.	164.			297.			495.	4994.4	3315.	3.69

SECTION 012

BANKS ARE AT 705. 740.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
0.0	428.	1908.	277.		35.	1168.			1480.	4995.6	5464.	2.24
0.5	587.	1520.	118.			780.			933.	4996.1	4631.	2.64
1.0	622.	1383.	83.			643.			761.	4996.6	4333.	2.82
2.0	657.	1259.	48.			519.			602.	4997.6	3988.	3.07

SECTION 013

BANKS ARE AT 816. 863.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
0.0	682.	2270.	134.		47.	1407.			1587.	4999.2	5001.	2.44
NO KD NEEDED IN LEFT FLOODPLAIN												
0.5	816.	1898.	0.			1035.			1082.	4999.7	4398.	2.78
NO KD NEEDED IN LEFT FLOODPLAIN												
1.0	816.	1779.	0.			916.			963.	5000.2	4198.	2.91
NO KD NEEDED IN LEFT FLOODPLAIN												
2.0	816.	1609.	0.			746.			793.	5001.2	3894.	3.14

SECTION 014

BANKS ARE AT 1279. 1324.

STAGE	FLOODWAY STA					*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	632.	2570.	647.	45.	1246.				1938.	5002.5	5423.	2.26
0.5	828.	2218.	451.		894.				1390.	5003.0	4764.	2.57
1.0	919.	2069.	360.		745.				1150.	5003.5	4425.	2.77
2.0	1046.	1862.	233.		538.				816.	5004.5	3889.	3.15

SECTION 015

BANKS ARE AT 1439. 1470.

STAGE	FLOODWAY STA					*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	989.	2655.	450.	31.	1185.				1665.	5007.7	5108.	2.40
0.5	1048.	2214.	391.		744.				1166.	5008.2	4444.	2.76
1.0	1136.	2074.	303.		604.				938.	5008.7	4088.	3.00
2.0	1254.	1921.	185.		451.				667.	5009.7	3609.	3.40

SECTION 016

BANKS ARE AT 1611. 1667.

STAGE	FLOODWAY STA					*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	827.	2813.	784.	56.	1146.				1986.	5009.5	6128.	2.00
0.5	1044.	2509.	567.		842.				1465.	5010.0	5511.	2.23
1.0	1143.	2354.	468.		687.				1211.	5010.5	5118.	2.40
2.0	1289.	2157.	322.		490.				868.	5011.5	4504.	2.73

WSP2 COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 018

BANKS ARE AT 1412. 1521.

FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	415.	2259.	997.	109.	738.	1843.	5013.1	5587.	2.20
0.5	711.	1911.	701.		390.	1200.	5013.6	4766.	2.58
1.0	826.	1823.	586.		302.	997.	5014.1	4433.	2.77
2.0	982.	1716.	430.		195.	734.	5015.1	3938.	3.12

SECTION 019

BANKS ARE AT 2310. 2390.

FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	867.	2390.	1443.	80.	0.	1523.	5016.0	4777.	2.57
NO KD NEEDED IN RIGHT FLOODPLAIN									
0.5	1267.	2390.	1043.		0.	1123.	5016.5	4335.	2.83
NO KD NEEDED IN RIGHT FLOODPLAIN									
1.0	1434.	2390.	876.		0.	956.	5017.0	4074.	3.01
NO KD NEEDED IN RIGHT FLOODPLAIN									
2.0	1677.	2390.	633.		0.	713.	5018.0	3648.	3.36

SECTION 020

BANKS ARE AT 2149. 2306.

FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	1143.	2537.	1006.	157.	231.	1394.	5019.7	4271.	2.87
0.5	1578.	2344.	571.		38.	766.	5020.2	3543.	3.46
NO KD NEEDED IN RIGHT FLOODPLAIN									
1.0	1709.	2306.	440.		0.	597.	5020.7	3237.	3.79
NO KD NEEDED IN RIGHT FLOODPLAIN									
2.0	1914.	2306.	235.		0.	392.	5021.7	2784.	4.41

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SECTION 021

BANKS ARE AT 2097. 2257.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	831.	2608.	1266.	160.	351.	5022.7	4817.	2.55
NO KD NEEDED IN RIGHT FLOODPLAIN								
0.5	1291.	2257.	806.		0.	5023.2	4122.	2.98
NO KD NEEDED IN RIGHT FLOODPLAIN								
1.0	1529.	2257.	568.		0.	5023.7	3733.	3.28
NO KD NEEDED IN RIGHT FLOODPLAIN								
2.0	1815.	2257.	282.		0.	5024.7	3149.	3.89

SECTION 022

BANKS ARE AT 1597. 1757.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	358.	1837.	1239.	160.	80.	5024.6	3798.	3.23
NO KD NEEDED IN RIGHT FLOODPLAIN								
0.5	689.	1757.	908.		0.	5025.1	3481.	3.52
NO KD NEEDED IN RIGHT FLOODPLAIN								
1.0	920.	1757.	677.		0.	5025.6	3135.	3.91
NO KD NEEDED IN RIGHT FLOODPLAIN								
2.0	1419.	1757.	178.		0.	5026.6	2396.	5.12

SECTION 024

BANKS ARE AT 1939. 2020.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	735.	2303.	1204.	81.	283.	5028.8	4408.	2.78
0.5	1730.	2147.	209.		127.	5029.3	3066.	3.99
1.0	1776.	2119.	163.		99.	5029.8	2877.	4.26
2.0	1832.	2084.	107.		64.	5030.8	2603.	4.71

WSP2

COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 026

BANKS ARE AT 1904. 1969.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT						
0.0	576.	2446.	1328.		65.	477.			1870.	5029.9	8324.	1.47
0.5	906.	2291.	998.			322.			1385.	5030.4	7460.	1.64
1.0	1022.	2241.	882.			272.			1219.	5030.9	7101.	1.72
2.0	1220.	2155.	684.			186.			935.	5031.9	6431.	1.90

SECTION 027

BANKS ARE AT 1846. 1923.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT						
0.0	1019.	2541.	827.		77.	618.			1521.	5035.2	4961.	2.47
0.5	1399.	2337.	447.			414.			938.	5035.7	4212.	2.91
1.0	1556.	2278.	290.			355.			722.	5036.2	3859.	3.18
2.0	1705.	2196.	141.			273.			491.	5037.2	3381.	3.63

SECTION 028

BANKS ARE AT 1905. 1960.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT						
0.0	1533.	2189.	372.		55.	229.			656.	5040.9	3211.	3.82
0.5	1684.	2014.	221.			54.			330.	5041.4	2654.	4.62
1.0	1708.	1995.	197.			35.			287.	5041.9	2541.	4.83
2.0	1746.	1976.	159.			16.			230.	5042.9	2366.	5.18

WSP2

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SECTION 029

BANKS ARE AT 2677. 2741.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	915.	2757.	1762.	64.	16.	1842.	5047.1	5911.	2.07
0.5	2272.	2744.	405.		3.	472.	5047.6	3672.	3.33
NO KD NEEDED IN RIGHT FLOODPLAIN									
1.0	2303.	2741.	374.		0.	438.	5048.1	3560.	3.43
NO KD NEEDED IN RIGHT FLOODPLAIN									
2.0	2368.	2741.	309.		0.	373.	5049.1	3344.	3.66

SECTION 030

BANKS ARE AT 1217. 1278.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	853.	1931.	364.	61.	653.	1078.	5056.3	4063.	3.00
0.5	982.	1581.	235.		303.	599.	5056.8	3333.	3.66
1.0	1034.	1501.	183.		223.	467.	5057.3	3057.	3.99
2.0	1105.	1418.	112.		140.	313.	5058.3	2674.	4.56

SECTION 031

BANKS ARE AT 878. 983.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	385.	1771.	493.	105.	788.	1386.	5059.9	5337.	2.29
0.5	621.	1502.	257.		519.	881.	5060.4	4596.	2.65
1.0	684.	1461.	194.		478.	777.	5060.9	4406.	2.77
2.0	746.	1360.	132.		377.	614.	5061.9	4021.	3.04

WSP2 COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 032

BANKS ARE AT 1305. 1386.

FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	1113.	2173.	192.	81.	787.	1060.	5065.7	4055.	3.01
0.5	1159.	1597.	146.		211.	438.	5066.2	3075.	3.97
1.0	1184.	1575.	121.		189.	391.	5066.7	2969.	4.11
2.0	1216.	1551.	89.		165.	335.	5067.7	2809.	4.35

SECTION 033

BANKS ARE AT 698. 820.

FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	499.	1882.	199.	122.	1062.	1383.	5070.2	4593.	2.59
0.5	633.	1655.	65.		835.	1022.	5070.7	4100.	2.90
1.0	654.	1447.	44.		627.	793.	5071.2	3760.	3.16
2.0	680.	1207.	18.		387.	527.	5072.2	3275.	3.63

SECTION 034

BANKS ARE AT 1023. 1089.

FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	815.	2139.	209.	66.	1050.	1325.	5074.6	4424.	2.69
0.5	996.	1943.	27.		854.	947.	5075.1	4025.	2.95
1.0	1010.	1838.	13.		749.	828.	5075.6	3823.	3.11
NO KD NEEDED IN LEFT FLOODPLAIN									
2.0	1023.	1611.	0.		522.	588.	5076.6	3356.	3.54

SECTION 035

BANKS ARE AT 899. 976.

STAGE	FLOODWAY STA *-----WIDTHS-----*				
	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL
0.0	818.	2266.	77.	1290.	1448.
0.5	893.	1586.	6.	610.	693.
NO KD NEEDED IN LEFT FLOODPLAIN					
1.0	899.	1447.	0.	471.	548.
NO KD NEEDED IN LEFT FLOODPLAIN					
2.0	899.	1263.	0.	287.	364.
					5082.6
					2877.
					4.12

SECTION 036

BANKS ARE AT 759. 934.

STAGE	FLOODWAY STA *-----WIDTHS-----*				
	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL
0.0	505.	1605.	175.	671.	1100.
0.5	683.	1009.	76.	75.	326.
1.0	696.	980.	63.	46.	284.
2.0	720.	937.	39.	3.	217.
					5085.7
					3519.
					3.37
					5086.2
					2647.
					4.48
					5086.7
					2537.
					4.67
					5087.7
					2329.
					5.09

SECTION 037

BANKS ARE AT 995. 1063.

STAGE	FLOODWAY STA *-----WIDTHS-----*				
	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL
0.0	284.	1333.	68.	270.	1049.
0.5	822.	1112.	173.	49.	290.
1.0	842.	1068.	153.	5.	226.
NO KD NEEDED IN RIGHT FLOODPLAIN					
2.0	880.	1063.	115.	0.	183.
					5090.3
					4048.
					2.85
					5090.8
					2695.
					4.28
					5091.3
					2562.
					4.50
					5092.3
					2394.
					4.82

WSP2

COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 038

BANKS ARE AT 1060. 1195.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	875.	1823.	185.	135.	628.		948.	5094.7	3749.	3.07
0.5	936.	1431.	124.		236.		495.	5095.2	3305.	3.48
1.0	949.	1305.	111.		110.		356.	5095.7	3081.	3.73
NO KD NEEDED IN RIGHT FLOODPLAIN										
2.0	994.	1195.	66.		0.		201.	5096.7	2685.	4.29

SECTION 039

BANKS ARE AT 1919. 2059.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	1230.	2225.	689.	140.	166.		996.	5096.4	4054.	2.83
0.5	1861.	2173.	58.		114.		312.	5096.9	3551.	3.23
1.0	1873.	2152.	46.		93.		279.	5097.4	3433.	3.34
2.0	1889.	2118.	30.		59.		229.	5098.4	3238.	3.54

SECTION 040

BANKS ARE AT 1780. 1901.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	1521.	2278.	259.	121.	377.		757.	5098.9	3808.	2.93

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC500CF921CF0A4 - REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUD15 000279E0 011CCB90 FD000008 001DB7F8

SECTION 042

BANKS ARE AT 1852. 1986.

FLOODWAY STA		*-----WIDTHS-----*				TOTAL		ELEV		AREA		V AVE	
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
0.0	946.	2142.	906.	134.	156.	1196.	5101.3	2809.	3.98				

IHC209I IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC500CF921CFOA4 . REGISTER CONTAINED 00000000C9940000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0096 621D0242 001CE9F0 00000003 001CF6BC

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUD15 000279E0 011CCB90 FD000008 001D87F8

ENTRY POINT= 011CCB90

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

0.5 1573. 2063. 279. 77. 490. 5101.8 2315. 4.83

NO KD NEEDED IN RIGHT FLOODPLAIN

1.0 1782. 1986. 70. 0. 204. 5102.3 1985. 5.63

CHANNEL WILL CARRY FLOW W/O FRICTION BUT WONT WITH

2.0 1852. 1986. 0. 0. 134. 5103.3 1831. 6.10

SECTION 043

BANKS ARE AT 1545. 1744.

FLOODWAY STA		*-----WIDTHS-----*				TOTAL		ELEV		AREA		V AVE	
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
0.0	504.	1706.	1041.	199.	-38.	1202.	5109.0	3599.	3.10				

NO KD NEEDED IN RIGHT FLOODPLAIN

IHC209I IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC500CF921CFOA4 . REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUD15 000279E0 011CCB90 FD000008 001D87F8

ENTRY POINT= 011CCB90

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

SECTION 043(Continued)

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUD15 000279E0 011CCB90 FD000008 C01DB7F8

ENTRY POINT= 011CCB90

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

0.5 906. 1744. 639.

NO KD NEEDED IN RGT FLOODPLAIN

838. 5109.5 3190. 3.50

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC5000F921CF0A4 . REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 C01CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUD15 000279E0 011CCB90 FD000008 001DB7F8

ENTRY POINT= 011CCB90

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

1.0 1070. 1744. 475.

NO KD NEEDED IN RGT FLOODPLAIN

674. 5110.0 2993. 3.73

2.0 1218. 1744. 327. 526. 5111.0 2866. 3.89

SECTION 044

BANKS ARE AT 1761. 1893.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	349.	2148.	1412.	132.	255.	1799.	5115.0	4035.	2.77
0.5	775.	2017.	986.		124.	1242.	5115.5	3444.	3.24
1.0	923.	1999.	838.		106.	1076.	5116.0	3263.	3.42
2.0	1710.	1972.	51.		79.	262.	5117.0	2787.	4.01

SECTION 045

BANKS ARE AT 1534. 1645.

FLOODWAY STA		*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	1302.	1878.	232.	111.	577.	5120.8	2957.	3.78
NO KD NEEDED IN LEFT FLOODPLAIN								
0.5	1534.	1816.	0.	171.	282.	5121.3	2669.	4.19
NO KD NEEDED IN LEFT FLOODPLAIN								
1.0	1534.	1783.	0.	138.	249.	5121.8	2570.	4.35
NO KD NEEDED IN LEFT FLOODPLAIN								
2.0	1534.	1740.	0.	95.	206.	5122.8	2434.	4.59

SECTION 046

BANKS ARE AT 1749. 1944.

FLOODWAY STA		*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	1067.	2113.	682.	195.	1045.	5129.2	3652.	2.91
NO KD NEEDED IN RIGHT FLOODPLAIN								
0.5	1203.	1944.	546.	0.	741.	5129.7	3360.	3.17
NO KD NEEDED IN RIGHT FLOODPLAIN								
1.0	1276.	1944.	473.	0.	668.	5130.2	3237.	3.29
NO KD NEEDED IN RIGHT FLOODPLAIN								

IHC9001 EXECUTION TERMINATING DUE TO ERROR COUNT FOR ERROR NUMBER 209

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC5000F921CFOA4 - REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUD15 000279E0 011CC890 FD000008 001D87F8

ENTRY POINT= 011CC890

SECTION 047

BANKS ARE AT 979. 1064.

STAGE	FLOODWAY STA				*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT				
0.0	995.	1470.	0.		85.	406.	475.	5133.6	1590.	2.63
NO KD NEEDED	IN LEFT FLOODPLAIN									
0.5	979.	1297.	0.			233.	318.	5134.1	1355.	3.08
NO KD NEEDED	IN LEFT FLOODPLAIN									
1.0	979.	1238.	0.			174.	259.	5134.6	1260.	3.32
NO KD NEEDED	IN LEFT FLOODPLAIN									
1.5	979.	1200.	0.			136.	221.	5135.1	1196.	3.49
NO KD NEEDED	IN LEFT FLOODPLAIN									
2.0	979.	1173.	0.			109.	194.	5135.6	1149.	3.64

SECTION 048

BANKS ARE AT 2348. 2723.

STAGE	FLOODWAY STA				*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT				
0.0	1867.	2779.	481.		375.	56.	912.	5139.2	1649.	2.57
CHANNEL WILL CARRY THE FLOW.										
0.5	2348.	2723.	0.			0.	375.	5139.7	1748.	2.42
CHANNEL WILL CARRY THE FLOW										
1.0	2348.	2723.	0.			0.	375.	5140.2	1926.	2.20
CHANNEL WILL CARRY THE FLOW										
1.5	2348.	2723.	0.			0.	375.	5140.7	2107.	2.01
CHANNEL WILL CARRY THE FLOW										
2.0	2348.	2723.	0.			0.	375.	5141.2	2290.	1.85

SECTION 050

BANKS ARE AT 2394. 2605.

STAGE	FLOODWAY STA				*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT				
0.0	2305.	2595.	89.		211.	0.	290.	5142.5	1489.	2.85
NO KD NEEDED	IN RIGHT FLOODPLAIN									
0.5	2383.	2605.	11.			0.	222.	5143.0	1384.	3.07
CHANNEL WILL CARRY THE FLOW										
1.0	2394.	2605.	0.			0.	211.	5143.5	1456.	2.92
CHANNEL WILL CARRY THE FLOW										
1.5	2394.	2605.	0.			0.	211.	5144.0	1561.	2.72
CHANNEL WILL CARRY THE FLOW										
2.0	2394.	2605.	0.			0.	211.	5144.5	1666.	2.55

SECTION 051

BANKS ARE AT 1967. 2507.

FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
STAGE	LEFT RIGHT	LEFT	CHANNEL	RIGHT				
0.0	1121. 2478.	846.	540.	0.	1357.	5145.3	2078.	1.98
CHANNEL WILL CARRY THE FLOW								
0.5	1967. 2507.	0.		0.	540.	5145.8	2304.	1.79
CHANNEL WILL CARRY THE FLOW								
1.0	1967. 2507.	0.		0.	540.	5146.3	2545.	1.62
CHANNEL WILL CARRY THE FLOW								
1.5	1967. 2507.	0.		0.	540.	5146.8	2793.	1.47
CHANNEL WILL CARRY THE FLOW								
2.0	1967. 2507.	0.		0.	540.	5147.3	3052.	1.35

SECTION 053

BANKS ARE AT 2272. 2621.

FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
STAGE	LEFT RIGHT	LEFT	CHANNEL	RIGHT				
0.0	950. 2746.	1322.	349.	125.	1797.	5147.9	2257.	1.82
NO KD NEEDED IN RIGHT FLOODPLAIN								
0.5	2227. 2621.	45.		0.	394.	5148.4	1743.	2.36
CHANNEL WILL CARRY FLOW WITHOUT FRICTION ONLY								
1.0	2272. 2621.	0.		0.	349.	5148.9	1691.	2.43
CHANNEL WILL CARRY THE FLOW								
1.5	2272. 2621.	0.		0.	349.	5149.4	1865.	2.21
CHANNEL WILL CARRY THE FLOW								
2.0	2272. 2621.	0.		0.	349.	5149.9	2040.	2.02

SECTION 054

BANKS ARE AT 1540. 1588.

FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
STAGE	LEFT RIGHT	LEFT	CHANNEL	RIGHT				
0.0	1549. 1982.	0.	48.	394.	432.	5152.6	1215.	3.38
NO KD NEEDED IN LEFT FLOODPLAIN								
0.5	1540. 1790.	0.		202.	250.	5153.1	980.	4.19

SECTION 055

BANKS ARE AT 2116. 2295.

		FLOODWAY STA		*-----WIDTHS-----*							
	STAGE	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
	0.0	1352.	2288.	764.		179.	0.	937.	5159.6	1398.	2.94
NO KD NEEDED	IN RIGHT	FLOODPLAIN									
	0.5	1418.	2295.	698.			0.	877.	5160.1	1613.	2.54
NO KD NEEDED	IN RIGHT	FLOODPLAIN									
	1.0	1489.	2295.	627.			0.	806.	5160.6	1557.	2.64
NO KD NEEDED	IN RIGHT	FLOODPLAIN									
	1.5	1720.	2295.	396.			0.	575.	5161.1	1400.	2.93
NO KD NEEDED	IN RIGHT	FLOODPLAIN									
	2.0	2040.	2295.	76.			0.	255.	5161.6	1142.	3.59

SECTION 056

BANKS ARE AT 1375. 1446.

STAGE	FLOODWAY STA		*-----WIDTHS-----*					TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT						
0.0	620.	2686.	755.	71.	1240.		2066.	5166.7	1774.	2.31	
0.5	1288.	1620.	87.	.	174.		332.	5167.2	1085.	3.78	
1.0	1308.	1539.	67.		93.		231.	5167.7	982.	4.17	
1.5	1324.	1497.	51.		51.		173.	5168.2	903.	4.53	
2.0	1335.	1473.	40.		27.		138.	5168.7	852.	4.81	

SECTION 057

BANKS ARE AT 981. 1081.

STAGE	FLOODWAY STA				*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT						
0.0	870.	2579.	111.	100.	1498.	1708.	5175.9	2118.	1.94		
0.5	954.	1970.	27.		889.	1016.	5176.4	1742.	2.36		
1.0	973.	1668.	8.		587.	695.	5176.9	1518.	2.70		
NO KD NEEDED	IN LEFT	FLOODPLAIN									
1.5	981.	1506.	0.		425.	525.	5177.4	1368.	3.00		
NO KD NEEDED	IN LEFT	FLOODPLAIN									
2.0	981.	1358.	0.		277.	377.	5177.9	1218.	3.37		

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COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 058

BANKS ARE AT 572. 627.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT			
0.0	254.	1964.	318.	55.	1337.	5183.9	1719.	2.39
0.5	362.	799.	210.		172.	5184.4	1170.	3.51
1.0	532.	764.	40.		137.	5184.9	1026.	4.01
1.5	553.	737.	19.		110.	5185.4	953.	4.31
2.0	564.	717.	8.		90.	5185.9	902.	4.56
					TOTAL			
					1710.			
					437.			
					232.			
					184.			
					153.			

SECTION 060

BANKS ARE AT 1087. 1166.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT			
0.0	797.	2484.	290.	79.	1318.	5187.4	3442.	1.20
0.5	983.	2304.	104.		1138.	5187.9	3099.	1.33
1.0	1007.	2184.	80.		1018.	5188.4	3048.	1.35
1.5	1025.	2021.	62.		855.	5188.9	2885.	1.43
2.0	1039.	1795.	48.		629.	5189.4	2615.	1.57
					TOTAL			
					1688.			
					1321.			
					1177.			
					996.			
					756.			

SECTION 061

BANKS ARE AT 992. 1063.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT			
0.0	889.	1443.	103.	71.	380.	5194.6	1393.	3.10
0.5	912.	1142.	80.		79.	5195.1	1108.	3.89
1.0	928.	1124.	64.		61.	5195.6	1047.	4.12
1.5	946.	1111.	46.		48.	5196.1	984.	4.38
2.0	959.	1102.	33.		39.	5196.6	943.	4.58
					TOTAL			
					554.			
					230.			
					196.			
					165.			
					143.			

SECTION 062

BANKS ARE AT 1581. 1626.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	1428.	1725.	153.	45.	99.	297.	5207.3	1006.	4.47
0.5	1466.	1681.	115.		55.	215.	5207.8	904.	4.97
1.0	1493.	1664.	88.		38.	171.	5208.3	834.	5.39
1.5	1510.	1653.	71.		27.	143.	5208.8	788.	5.70
2.0	1523.	1640.	58.		14.	117.	5209.3	740.	6.07

SECTION 063

BANKS ARE AT 1555. 1658.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	1447.	2311.	108.	103.	653.	864.	5216.9	1080.	3.81

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFA5000F9214C4FE . REGISTER CONTAINED 000000000E39800

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC	0102	6214D92E	0014BCF0	00000003	0014CC48
FLWAY	0353	4214BCB2	0014C918	00000004	00149DD8
FLOWRU		0001E288	01149848	FD000008	00157FF8

ENTRY POINT= 01149848

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFA5000F9214C4FE . REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC	0102	6214D92E	0014BCF0	00000003	0014CC48
FLWAY	0353	4214BCB2	0014C918	00000004	00149DD8
FLOWRU		0001E288	01149848	FD000008	00157FF8

SECTION 063 (Continued)

BANKS ARE AT 1555. 1653.

STAGE	FLOODWAY STA				*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT				
0.0	1447.	2311.	108.		103.	653.	864.	5216.9	1086.	3.81
0.5	1485.	2244.	70.			586.	759.	5217.4	999.	4.11
1.0	1536.	2216.	19.			558.	680.	5217.9	933.	4.40
NO ID NEEDED IN LEFT FLOODPLAIN										
1.5	1555.	2187.	0.			529.	632.	5218.4	926.	4.44
CHANNEL WILL CARRY FLOW WITHOUT FRICTION ONLY										
2.0	1555.	1653.	0.			0.	103.	5218.9	704.	5.83

SECTION 064

BANKS ARE AT 958. 1062.

STAGE	FLOODWAY STA				*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT				
0.0	947.	1806.	11.		104.	744.	858.	5232.9	1141.	3.53
NO ID NEEDED IN LEFT FLOODPLAIN										
0.5	958.	1102.	0.			40.	144.	5233.4	719.	5.61
NO ID NEEDED IN LEFT FLOODPLAIN										
1.0	958.	1071.	0.			9.	113.	5233.9	664.	6.08
CHANNEL WILL CARRY THE FLOW										
1.5	958.	1062.	0.			0.	104.	5234.4	679.	5.94
CHANNEL WILL CARRY THE FLOW										
2.0	958.	1062.	0.			0.	104.	5234.9	731.	5.51

SECTION 065

BANKS ARE AT 1035. 1186.

STAGE	FLOODWAY STA				*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT				
0.0	896.	1214.	139.		151.	28.	318.	5245.6	986.	4.10
NO ID NEEDED IN RIGHT FLOODPLAIN										
0.5	1029.	1186.	6.			0.	157.	5246.1	823.	4.91
CHANNEL WILL CARRY THE FLOW										
1.0	1035.	1186.	0.			0.	151.	5246.6	883.	4.58
CHANNEL WILL CARRY THE FLOW										
1.5	1035.	1186.	0.			0.	151.	5247.1	958.	4.22
CHANNEL WILL CARRY THE FLOW										
2.0	1035.	1186.	0.			0.	151.	5247.6	1034.	3.91

SECTION 066 BANKS ARE AT 1547. 1686.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	1375.	1672.	172.	139.	297.	5257.5	1057.	3.82
NO KD NEEDED IN RIGHT FLOODPLAIN								
0.5	1458.	1686.	89.		228.	5258.0	951.	4.24
NO KD NEEDED IN RIGHT FLOODPLAIN								
1.0	1492.	1686.	55.		194.	5258.5	903.	4.47
NO KD NEEDED IN RIGHT FLOODPLAIN								
1.5	1520.	1686.	27.		166.	5259.0	860.	4.69
NO KD NEEDED IN RIGHT FLOODPLAIN								
2.0	1541.	1686.	6.		145.	5259.5	826.	4.88

SECTION 067

BANKS ARE AT 1247. 1310.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	1119.	1374.	128.	63.	255.	5266.3	839.	4.59
0.5	1192.	1351.	55.		159.	5266.8	732.	5.25
1.0	1212.	1339.	35.		127.	5267.3	681.	5.65
1.5	1227.	1330.	20.		103.	5267.8	636.	6.05
2.0	1237.	1324.	10.		87.	5268.3	608.	6.33

SECTION 069

BANKS ARE AT 1081. 1176.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	673.	1370.	408.	95.	697.	5278.9	1383.	2.78
0.5	1031.	1206.	50.		175.	5279.4	1034.	3.72
1.0	1040.	1194.	41.		154.	5279.9	997.	3.86
1.5	1048.	1185.	33.		137.	5280.4	960.	4.01
2.0	1056.	1177.	25.		121.	5280.9	911.	4.22

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SECTION 070

BANKS ARE AT 1072. 1168.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	890.	1218.	182.	96.	328.	5286.6	941.	4.07
0.5	998.	1181.	74.		183.	5287.1	797.	4.81
NO KD NEEDED IN RIGHT FLOODPLAIN								
1.0	1037.	1163.	35.		131.	5287.6	712.	5.38
CHANNEL WILL CARRY FLOW WITHOUT FRICTION ONLY								
1.5	1072.	1168.	0.		96.	5288.1	668.	5.73
CHANNEL WILL CARRY THE FLOW								
2.0	1072.	1168.	0.		96.	5288.6	716.	5.35

WSP2

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SECTION 071

BANKS ARE AT 1601. 1810.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	
0.0	1575.	1758.	26.		209.	0.	182.	5291.5	4.53
CHANNEL WILL CARRY THE FLOW									
0.5	1601.	1810.	0.			0.	209.	5292.0	4.23
CHANNEL WILL CARRY THE FLOW									
1.0	1601.	1810.	0.			0.	209.	5292.5	3.88
CHANNEL WILL CARRY THE FLOW									
1.5	1601.	1810.	0.			0.	209.	5293.0	3.58
CHANNEL WILL CARRY THE FLOW									
2.0	1601.	1810.	0.			0.	209.	5293.5	3.32

SECTION 073

BANKS ARE AT 1708. 1814.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	
0.0	1321.	1919.	387.		106.	105.	598.	5300.3	1.02
0.5	1390.	1867.	318.			53.	477.	5300.8	1.09
1.0	1423.	1846.	285.			32.	423.	5301.3	1.14
1.5	1451.	1832.	257.			18.	381.	5301.8	1.19
2.0	1474.	1821.	234.			7.	347.	5302.3	1.23

SECTION 074

BANKS ARE AT 1610. 1669.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	
0.0	910.	1974.	700.		59.	305.	1064.	5316.6	2.97
0.5	1019.	1874.	591.			205.	855.	5317.1	3.42
1.0	1572.	1805.	38.			136.	233.	5317.6	4.14
1.5	1591.	1756.	19.			87.	165.	5318.1	4.66
2.0	1603.	1729.	7.			60.	126.	5318.6	5.11

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ROCK CREEK, COLORADO HUD 15

SECTION 076

BANKS ARE AT 2713. 2796.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	1039.	3035.	1674.	83.	1996.	5330.3	12580.	0.31
0.5	1996.	2942.	717.		946.	5330.8	9504.	0.41
1.0	2055.	2923.	658.		868.	5331.3	9203.	0.42
1.5	2108.	2907.	605.		799.	5331.8	8919.	0.44
2.0	2155.	2893.	558.	97.	738.	5332.3	8652.	0.45

SECTION 078

BANKS ARE AT 2713. 2861.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	1002.	3035.	1711.	148.	2032.	5330.6	10791.	0.40
0.5	1936.	2944.	777.		1008.	5331.1	8289.	0.52
1.0	2025.	2917.	688.		892.	5331.6	7919.	0.55
1.5	2097.	2899.	616.		802.	5332.1	7607.	0.57
2.0	2157.	2885.	556.	24.	728.	5332.6	7329.	0.59

SECTION 079

BANKS ARE AT 2244. 2312.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	1892.	2631.	352.	68.	739.	5331.6	2951.	1.81
0.5	2058.	2448.	186.		390.	5332.1	2366.	2.25
1.0	2087.	2404.	157.		317.	5332.6	2203.	2.42
1.5	2108.	2377.	136.		269.	5333.1	2086.	2.55
2.0	2125.	2357.	119.	45.	232.	5333.6	1981.	2.69

SECTION 080

BANKS ARE AT 965. 1013.

STAGE	FLOODWAY STA				*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT					
0.0	673.	1012.	292.	0.	48.	0.	339.	5336.0	1371.	3.97	
NO KD NEEDED IN	RIGHT	FLOODPLAIN									
0.5	787.	1013.	178.	0.			226.	5336.5	1190.	4.57	
NO KD NEEDED IN	RIGHT	FLOODPLAIN									
1.0	811.	1013.	154.	0.			202.	5337.0	1144.	4.76	
NO KD NEEDED IN	RIGHT	FLOODPLAIN									
1.5	830.	1013.	135.	0.			183.	5337.5	1104.	4.93	
NO KD NEEDED IN	RIGHT	FLOODPLAIN									
2.0	846.	1013.	119.	0.			167.	5338.0	1065.	5.11	

SECTION 081

BANKS ARE AT 2574. 2785.

STAGE	FLOODWAY STA				*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT					
0.0	1743.	2772.	831.	0.	211.	0.	1029.	5348.5	1564.	3.52	
NO KD NEEDED IN	RIGHT	FLOODPLAIN									
0.5	2426.	2785.	148.	0.			359.	5349.0	1138.	4.83	
CHANNEL WILL CARRY THE FLOW											
1.0	2574.	2785.	0.	0.			211.	5349.5	1185.	4.64	
CHANNEL WILL CARRY THE FLOW											
1.5	2574.	2785.	0.	0.			211.	5350.0	1286.	4.28	
CHANNEL WILL CARRY THE FLOW											
2.0	2574.	2785.	0.	0.			211.	5350.5	1387.	3.96	

SECTION 082

BANKS ARE AT 1775. 1849.

STAGE	FLOODWAY STA				*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT					
0.0	1217.	2104.	558.	255.	74.	0.	887.	5359.6	1041.	4.01	
0.5	1727.	1903.	48.	54.			176.	5360.1	774.	5.39	
1.0	1747.	1868.	28.	19.			121.	5360.6	689.	6.06	
NO KD NEEDED IN	RIGHT	FLOODPLAIN									
1.5	1759.	1849.	16.	0.			90.	5361.1	625.	6.67	
CHANNEL WILL CARRY FLOW WITHOUT FRICTION ONLY											
2.0	1775.	1849.	0.	0.			74.	5361.6	580.	7.19	

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ROCK CREEK, COLORADO HUD 15

SECTION 083

BANKS ARE AT 2010. 2122.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	2010.	2600.	0.	112.	589.	5368.7	1418.	2.95
NO KD NEEDED IN LEFT FLOODPLAIN								
0.5	2010.	2465.	0.		455.	5369.2	1277.	3.28
NO KD NEEDED IN LEFT FLOODPLAIN								
1.0	2010.	2332.	0.		322.	5369.7	1116.	3.75
NO KD NEEDED IN LEFT FLOODPLAIN								
1.5	2010.	2222.	0.		212.	5370.2	964.	4.34
NO KD NEEDED IN LEFT FLOODPLAIN								
2.0	2010.	2168.	0.		158.	5370.7	868.	4.83

SECTION 084

BANKS ARE AT 1326. 1370.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	1230.	1682.	96.	44.	452.	5376.4	1266.	3.48
0.5	1309.	1569.	17.		260.	5376.9	1063.	4.15
NO KD NEEDED IN LEFT FLOODPLAIN								
1.0	1326.	1537.	0.		211.	5377.4	990.	4.45
NO KD NEEDED IN LEFT FLOODPLAIN								
1.5	1326.	1510.	0.		184.	5377.9	935.	4.72
NO KD NEEDED IN LEFT FLOODPLAIN								
2.0	1326.	1485.	0.		159.	5378.4	886.	4.98

SECTION 085

BANKS ARE AT 1036. 1117.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL RIGHT				
0.0	602.	1631.	434.	81.	1029.	5387.7	1331.	2.84
0.5	864.	1439.	172.		575.	5388.2	1118.	3.38
1.0	979.	1385.	57.		406.	5388.7	989.	3.82
1.5	1025.	1345.	11.		320.	5389.2	903.	4.19
NO KD NEEDED IN LEFT FLOODPLAIN								
2.0	1036.	1302.	0.		266.	5389.7	833.	4.54

SECTION 086

BANKS ARE AT 786. 884.

STAGE	FLOODWAY STA				*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT					
0.0	308.	1579.	478.		98.	695.	1271.	5399.8	1309.	2.86	
0.5	526.	890.	260.			6.	364.	5400.3	1023.	3.66	
NO KD NEEDED	IN RIGHT	FLOODPLAIN									
1.0	601.	884.	185.			0.	283.	5400.8	918.	4.08	
NO KD NEEDED	IN RIGHT	FLOODPLAIN									
1.5	679.	884.	107.			0.	205.	5401.3	813.	4.60	
NO KD NEEDED	IN RIGHT	FLOODPLAIN									
2.0	733.	884.	53.			0.	151.	5401.8	725.	5.16	

SECTION 087

BANKS ARE AT 849. 980.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	101.	969.	748.	131.	0.	868.	5410.6	1497.	2.51	
NO KD NEEDED	IN RIGHT	FLOODPLAIN	477.		0.	608.	5411.1	1296.	2.90	
0.5	372.	980.								
NO KD NEEDED	IN RIGHT	FLOODPLAIN			0.	374.	5411.6	1081.	3.47	
1.0	606.	980.	243.							
NO KD NEEDED	IN RIGHT	FLOODPLAIN			0.	282.	5412.1	972.	3.86	
1.5	698.	980.	151.							
NO KD NEEDED	IN RIGHT	FLOODPLAIN			0.	218.	5412.6	878.	4.28	
2.0	762.	980.	87.							

SECTION 088

BANKS ARE AT 877. 946.

STAGE	FLOODWAY STA		*-----WIDTHS-----*					TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT						
0.0	686.	1395.	191.	69.	449.	709.	5417.6	910.	4.13		
0.5	867.	1005.	10.		59.	138.	5418.1	681.	5.52		
NO KD NEEDED	IN LEFT	FLOODPLAIN									
1.0	877.	986.	0.		40.	109.	5418.6	628.	5.99		
NO KD NEEDED	IN LEFT	FLOODPLAIN									
1.5	877.	969.	0.		23.	92.	5419.1	590.	6.38		
NO KD NEEDED	IN LEFT	FLOODPLAIN									
2.0	877.	957.	0.		11.	80.	5419.6	561.	6.71		

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ROCK CREEK, COLORADO HUD 15

SECTION 090

BANKS ARE AT 925. 976.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	798.	1681.	127.	51.	705.	883.	5425.0	1854.	2.03	
0.5	834.	1222.	91.		246.	388.	5425.5	1438.	2.62	
1.0	860.	1153.	65.		177.	293.	5426.0	1298.	2.90	
1.5	879.	1109.	46.		133.	230.	5426.5	1186.	3.18	
2.0	893.	1061.	32.		85.	168.	5427.0	1060.	3.56	

SECTION 091

BANKS ARE AT 1475. 1591.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	1043.	1623.	432.	116.	32.	580.	5439.7	976.	3.91	
NO KD NEEDED IN RIGHT FLOODPLAIN										
0.5	1443.	1591.	32.		0.	148.	5440.2	679.	5.62	
CHANNEL WILL CARRY THE FLOW										
1.0	1475.	1591.	0.		0.	116.	5440.7	654.	5.83	
CHANNEL WILL CARRY THE FLOW										
1.5	1475.	1591.	0.		0.	116.	5441.2	712.	5.36	
CHANNEL WILL CARRY THE FLOW										
2.0	1475.	1591.	0.		0.	116.	5441.7	770.	4.95	

SECTION 092

BANKS ARE AT 947. 1004.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	920.	1628.	27.	57.	624.	707.	5453.4	1320.	2.89	
NO KC NEEDED IN LEFT FLOODPLAIN										
0.5	947.	1391.	0.		387.	444.	5453.9	1123.	3.40	
NO KD NEEDED IN LEFT FLOODPLAIN										
1.0	947.	1322.	0.		318.	375.	5454.4	1043.	3.66	
NO KD NEEDED IN LEFT FLOODPLAIN										
1.5	947.	1259.	0.		255.	312.	5454.9	965.	3.96	
NO KD NEEDED IN LEFT FLOODPLAIN										
2.0	947.	1189.	0.		185.	242.	5455.4	873.	4.38	

SECTION 094

BANKS ARE AT 753. 823.

	STAGE	FLOODWAY STA LEFT RIGHT	*-----WIDTHS-----*	TOTAL	ELEV	AREA	V AVE
	0.0	619.	1454. LEFT RIGHT CHANNEL 70.	835.	5459.1	2245.	1.70
C.5	731.	1223.		492.	5459.6	1888.	2.03
NO KD NEEDED IN LEFT FLOODPLAIN							
I.0	753.	1152.		399.	5460.1	1751.	2.18
NO KD NEEDED IN LEFT FLOODPLAIN							
I.5	753.	1095.		342.	5460.6	1653.	2.31
NO KD NEEDED IN LEFT FLOODPLAIN							
2.0	753.	1046.		293.	5461.1	1563.	2.45

SECTION 095

BANKS ARE AT 628. 683.

STAGE	FLOODWAY STA		*-----WIDTHS-----*					TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT						
0.0	385.	1023.	243.	55.	340.	639.	5475.9	1175.	3.20		
0.5	519.	757.	109.		74.	238.	5476.4	887.	4.25		
1.0	549.	745.	79.		62.	196.	5476.9	831.	4.53		
1.5	569.	735.	59.		52.	166.	5477.4	787.	4.78		
2.0	584.	726.	44.		43.	142.	5477.9	745.	5.05		

SECTION 097

BANKS ARE AT 677. 731.

	STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
		LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
	0.0	616.	976.	61.	54.	245.	360.	5480.1	870.	4.33
NO KD NEEDED	IN LEFT FLOODPLAIN									
	0.5	677.	837.	0.		106.	160.	5480.6	696.	5.42
NO KD NEEDED	IN LEFT FLOODPLAIN									
	1.0	677.	799.	0.		68.	122.	5481.1	640.	5.89
NO KD NEEDED	IN LEFT FLOODPLAIN									
	1.5	677.	774.	0.		43.	97.	5481.6	597.	6.31
NO KD NEEDED	IN LEFT FLOODPLAIN									
	2.0	677.	757.	0.		26.	80.	5482.1	565.	6.67

WSP2

ROCK CREEK, COLORADO HUD 15

SECTION 098

BANKS ARE AT 806. 861.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL 55.	RIGHT			
0.0	681.	1381.	125.		520.	5491.0	947.	3.99
0.5	731.	1286.	75.		425.	5491.5	821.	4.60
1.0	748.	1252.	58.		391.	5492.0	763.	4.95
1.5	760.	1227.	46.		366.	5492.5	718.	5.26
2.0	769.	861.	37.		0.	5493.0	665.	5.68

NO KD NEEDED IN RIGHT FLOODPLAIN

SECTION 099

BANKS ARE AT 1291. 1337.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL 46.	RIGHT			
0.0	643.	1513.	648.		176.	5513.4	1129.	3.34
0.5	1238.	1470.	53.		133.	5513.9	676.	5.57
1.0	1248.	1453.	43.		116.	5514.4	645.	5.85
1.5	1255.	1441.	36.		104.	5514.9	625.	6.03
2.0	1261.	1432.	30.		95.	5515.4	610.	6.18

SECTION 100

BANKS ARE AT 544. 583.

STAGE	FLOODWAY STA		*-----WIDTHS-----*		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL 39.	RIGHT			
0.0	468.	1110.	76.		527.	5536.3	1261.	3.02
0.5	525.	967.	19.		384.	5536.8	1106.	3.44
1.0	534.	898.	10.		315.	5537.3	1029.	3.70
1.5	540.	831.	4.		248.	5537.8	944.	4.03
2.0	544.	792.	0.		209.	5538.3	888.	4.29

NO KD NEEDED IN LEFT FLOODPLAIN

WSP2

CGAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 101

BANKS ARE AT 620. 655.

FLOODWAY STA		*-----WIDTHS-----*			
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT
0.0	199.	653.	421.	35.	-2.
NO KD NEEDED IN RIGHT FLOODPLAIN					
0.5	389.	655.	231.		0.
NO KD NEEDED IN RIGHT FLOODPLAIN					
1.0	445.	655.	175.		0.
NO KD NEEDED IN RIGHT FLOODPLAIN					
2.0	496.	655.	124.		0.
		TOTAL		ELEV	AREA
		455.		5136.2	2173.
		266.		5136.7	1789.
		210.		5137.2	1646.
		159.		5138.2	1504.
					V AVE
					3.09
					3.75
					4.08
					4.47

SECTION 102

BANKS ARE AT 395. 527.

FLOODWAY STA		*-----WIDTHS-----*			
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT
0.0	170.	830.	225.	132.	303.
NO KD NEEDED IN LEFT FLOODPLAIN					
0.5	395.	611.	0.		84.
NO KD NEEDED IN LEFT FLOODPLAIN					
1.0	395.	565.	0.		38.
CHANNEL WILL CARRY THE FLOW					
2.0	395.	527.	0.		0.
		TOTAL		ELEV	AREA
		660.		5144.2	2055.
		216.		5144.7	1682.
		170.		5145.2	1583.
		132.		5146.2	1526.
					V AVE
					3.27
					4.00
					4.25
					4.41

SECTION 103

BANKS ARE AT 395. 500.

FLOODWAY STA		*-----WIDTHS-----*			
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT
0.0	269.	743.	126.	105.	243.
NO KD NEEDED IN LEFT FLOODPLAIN					
0.5	372.	567.	23.		67.
NO KD NEEDED IN LEFT FLOODPLAIN					
1.0	381.	536.	14.		36.
NO KD NEEDED IN LEFT FLOODPLAIN					
2.0	395.	513.	0.		13.
		TOTAL		ELEV	AREA
		474.		5147.1	2044.
		195.		5147.6	1652.
		155.		5148.1	1562.
					V AVE
					3.29
					4.07
					4.31
					4.68

WSP2 COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 104

BANKS ARE AT 1325. 1400.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
C.C	574.	1523.	751.		75.	123.			949.	5153.3	2264.	2.98
0.5	1228.	1467.	97.			67.			239.	5153.8	1579.	4.27
1.0	1256.	1454.	69.			54.			198.	5154.3	1496.	4.50
2.0	1284.	1435.	41.			35.			151.	5155.3	1387.	4.86

SECTION 105

BANKS ARE AT 671. 712.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
0.0	8.	1402.	663.		41.	690.			1394.	5160.7	2609.	2.59
0.5	527.	1343.	144.			631.			816.	5161.2	1976.	3.42
1.0	546.	1322.	125.			610.			776.	5161.7	2066.	3.27
2.0	575.	951.	96.			239.			376.	5162.7	1741.	3.88

SECTION 106

BANKS ARE AT 158. 283.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
C.C	17.	1232.	141.		125.	949.			1215.	5171.2	2777.	2.44
0.5	105.	1053.	53.			770.			948.	5171.7	2550.	2.66
NO KC NEEDED IN LEFT FLOODPLAIN												
1.0	158.	948.	0.			665.			790.	5172.2	2374.	2.86
NO KD NEEDED IN LEFT FLOODPLAIN												
2.0	158.	595.	0.			312.			437.	5173.2	1938.	3.50

SECTION 107

BANKS ARE AT 1534. 1561.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	788.	1780.	746.	27.	219.	992.	5180.8	2691.	2.60
0.5	994.	1681.	540.		120.	687.	5181.3	2374.	2.95
1.0	1059.	1649.	475.		88.	590.	5181.8	2248.	3.11
2.0	1177.	1614.	357.		53.	437.	5182.8	2013.	3.48

SECTION 108

BANKS ARE AT 1786. 1825.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	1055.	2121.	731.	39.	296.	1066.	5187.1	2706.	2.43
0.5	1248.	1993.	538.		168.	745.	5187.6	2379.	2.77
1.0	1340.	1960.	446.		135.	620.	5188.1	2220.	2.97
2.0	1490.	1920.	296.		95.	430.	5189.1	1941.	3.39

SECTION 109

BANKS ARE AT 1329. 1399.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	656.	1528.	673.	70.	129.	872.	5197.1	2264.	2.93
0.5	943.	1462.	386.		63.	519.	5197.6	1900.	3.50
1.0	1065.	1446.	264.		47.	381.	5198.1	1720.	3.86
2.0	1215.	1426.	114.		27.	211.	5199.1	1436.	4.63

SECTION 110

BANKS ARE AT 1500. 1572.

STAGE	FLOODWAY STA		* WIDTHS	* WIDTHS		TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT		LEFT	RIGHT				
0.0	676.	1749.	824.	72.	177.	1073.	5203.8	2366.	2.78
0.5	1421.	1700.	79.		128.	279.	5204.3	1676.	3.93
1.0	1445.	1680.	55.		108.	235.	5204.8	1592.	4.14
2.0	1464.	1652.	36.		80.	188.	5205.8	1487.	4.43

SECTION III

BANKS ARE AT 1443. 1524.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	171.	1590.	1272.	81.	66.		1419.	5216.9	1935.	3.35
NO KD NEEDED IN RIGHT FLOODPLAIN										
0.5	464.	1524.	979.		0.		1060.	5217.4	1705.	3.81
NO KD NEEDED IN RIGHT FLOODPLAIN										
1.0	615.	1524.	828.		0.		909.	5217.9	1590.	4.08
NO KD NEEDED IN RIGHT FLOODPLAIN										
2.0	917.	1524.	526.		0.		607.	5218.9	1459.	4.45

SECTION 113

BANKS ARE AT 1441. 1564.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.0	462.	1549.	979.	123.	-15.	1087.	5217.9	3569.	1.82
NO KC NEEDED	IN RIGHT FLOODPLAIN								
0.5	1310.	1564.	131.		0.	254.	5218.4	2220.	2.93
NO KC NEEDED	IN RIGHT FLOODPLAIN								
1.0	1329.	1564.	112.		0.	235.	5218.9	2168.	3.00
NO KC NEEDED	IN RIGHT FLOODPLAIN								
2.0	1359.	1564.	82.		0.	205.	5219.9	2090.	3.11

SECTION 114

BANKS ARE AT 818. 928.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	211.	1014.	607.	110.	86.	803.	5224.6	2542.	2.63
0.5	686.	980.	132.		52.	294.	5225.1	1889.	3.54
1.0	708.	972.	110.		44.	264.	5225.6	1831.	3.65
2.0	739.	958.	79.		30.	219.	5226.6	1735.	3.85

SECTION 116

BANKS ARE AT 1920. 2028.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	672.	2021.	1248.	108.	-7.	1349.	5230.5	2748.	2.44

NO KD NEEDED IN RIGHT FLOODPLAIN

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC5000F921CF0A4 . REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUD15 000279E0 011CC890 FD000008 C01D87F8

ENTRY POINT= 011CC890

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC500CF921CF0A4 . REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUD15 000279E0 011CC890 FD000008 001D87F8

ENTRY POINT= 011CC890

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

C.5 1136. 2028. 784.

NO KD NEEDED IN RIGHT FLOODPLAIN

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC500CF921CE0A4 . REGISTER CONTAINED 0000000000000000

SECTION 116(Continued)

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUC15 0CC279E0 011CC890 FD000008 001DB7F8

ENTRY POINT= 011CC890

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

IHC2091 IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC500CF921CF0A4 . REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HUC15 000279E0 011CC890 FD000008 001DB7F8

ENTRY POINT= 011CC890

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

1.0 1207. 2028. 713. 0. 821. 5231.5 2194. 3.06

NO KD NEEDED IN RIGHT FLOODPLAIN

2.0 1316. 2028. 604. 0. 712. 5232.5 2120. 3.16

SECTION 118

BANKS ARE AT 1949. 2069.

FLOODWAY STA		*-----WIDTHS-----*							
STAGE	LEFT	RIGHT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V	AVE
0.0	640.	2189.	1309.	120.	1549.	5232.7	4722.	1.42	
NO KD NEEDED IN RIGHT FLOODPLAIN									
0.5	1162.	2069.	787.	0.	907.	5233.2	4007.	1.67	
NO KD NEEDED IN RIGHT FLOODPLAIN									
1.0	1258.	2069.	691.	0.	811.	5233.7	3897.	1.71	
NO KD NEEDED IN RIGHT FLOODPLAIN									
2.0	1417.	2069.	532.	0.	652.	5234.7	3591.	1.86	

WSP2 COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 119

BANKS ARE AT 1293. 1381.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	1164.	1902.	129.	88.	521.		739.	5241.6	1823.	3.79
0.5	1224.	1478.	69.		97.		254.	5242.1	1430.	4.83
1.0	1247.	1435.	46.		54.		188.	5242.6	1320.	5.23
2.0	1272.	1398.	21.		17.		126.	5243.6	1192.	5.79

SECTION 120

BANKS ARE AT 946. 1005.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	523.	1520.	423.	59.	515.		997.	5247.1	2859.	2.43
0.5	738.	1319.	208.		314.		581.	5247.6	2355.	2.95
1.0	779.	1271.	167.		266.		492.	5248.1	2214.	3.14
2.0	832.	1143.	114.		138.		311.	5249.1	1860.	3.73

SECTION 121

BANKS ARE AT 821. 839.

STAGE	FLOODWAY STA		*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT					
0.0	700.	2045.	121.	18.	1206.		1346.	5256.9	3061.	2.31
0.5	732.	1649.	89.		810.		917.	5257.4	2631.	2.69
1.0	753.	1517.	68.		678.		764.	5257.9	2450.	2.89
2.0	780.	1334.	41.		495.		554.	5258.9	2167.	3.27

WSP2 COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 122

BANKS ARE AT 1723. 1751.

FLOODWAY STA *-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL
0.0	1552.	2925.	171.	28.	1174.	1373.
0.5	1653.	2311.	70.		560.	658.
1.0	1673.	2209.	50.		458.	536.
2.0	1698.	2095.	25.		344.	397.
						5266.6
						1650.
						4.39

SECTION 123

BANKS ARE AT 1577. 1761.

FLOODWAY STA *-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL
0.0	1568.	3355.	9.	184.	1594.	1787.
NO KD NEEDED IN LEFT FLOODPLAIN						
0.5	1577.	2787.	0.		1026.	1210.
NO KD NEEDED IN LEFT FLOODPLAIN						
1.0	1577.	2519.	0.		758.	942.
NO KD NEEDED IN LEFT FLOODPLAIN						
2.0	1577.	2326.	0.		565.	749.
						5274.0
						2418.
						3.04

SECTION 124

BANKS ARE AT 240. 260.

FLOODWAY STA *-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL
0.0	195.	1835.	45.	20.	1575.	1640.
NO KD NEEDED IN LEFT FLOODPLAIN						
0.5	240.	1228.	0.		968.	988.
NO KD NEEDED IN LEFT FLOODPLAIN						
1.0	240.	1127.	0.		867.	887.
NO KD NEEDED IN LEFT FLOODPLAIN						
2.0	240.	893.	0.		633.	653.
						5280.7
						2133.
						2.87

SECTION 125

BANKS ARE AT 1213. 1244.

FLOODWAY STA		*-----WIDTHS-----*							
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	941.	2818.	272.	31.	1574.	1877.	5285.4	2510.	2.55

IHC209I IBCCM - PROGRAM INTERRUPT (P) - DIVIDE CHECK OLD PSW IS FFC500F921CF0A4 . REGISTER CONTAINED 0000000000000000

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

CALC 0120 621D042C 001CE9F0 00000001 001CF6E0

FLWAY 0251 421CE79E 001CF3D0 00000004 001CD038

HDD15 000279E0 011CCB90 FD000008 C01DB7F8

ENTRY POINT= 011CCB90

STANDARD FIXUP TAKEN , EXECUTION CONTINUING

0.5 1018. 2039. 195. 795. 1021. 5285.9 2079. 3.07

NO KD NEEDED IN LEFT FLOODPLAIN

1.0 1213. 1925. 0. 681. 712. 5286.4 2002. 3.19

NO KD NEEDED IN LEFT FLOODPLAIN

2.0 1213. 1745. 0. 501. 532. 5287.4 1801. 3.55

SECTION 126

BANKS ARE AT 1559. 1607.

FLOODWAY STA		*-----WIDTHS-----*							
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	832.	1897.	727.	48.	290.	1064.	5292.4	2053.	2.70
0.5	1097.	1810.	462.		203.	713.	5292.9	1769.	3.13
1.0	1204.	1774.	355.		167.	570.	5293.4	1627.	3.41
2.0	1345.	1726.	214.		119.	381.	5294.4	1406.	3.94

SECTION 127

BANKS ARE AT 1091. 1111.

FLOODWAY STA		*-----WIDTHS-----*							
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	405.	1615.	686.	20.	504.	1210.	5299.5	2024.	2.75
0.5	780.	1320.	311.		209.	540.	5300.0	1558.	3.57
1.0	822.	1265.	269.		154.	443.	5300.5	1451.	3.84
2.0	891.	1203.	200.		92.	312.	5301.5	1276.	4.36

COAL CRK. FLOOD-HAZARD STUDY, COLORADO

SECTION 128

RANKS ARE AT 2060. 211C.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
C.C	1293.	2341.	767.	50.	231.	1048.	5304.9	2045.	2.74
0.5	1448.	2169.	612.		59.	721.	5305.4	1872.	2.99
1.0	1503.	2134.	557.		24.	631.	5305.9	1849.	3.03
NO KD NEEDED IN RIGHT FLOODPLAIN									
2.0	1620.	2110.	440.		0.	490.	5306.9	1738.	3.22

SECTION 130

BANKS ARE AT 1854. 1874.

FLOODWAY STA		WIDTHS				*--*			V AVE	
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA		
0.0	896.	2138.	958.	20.	264.	1242.	5307.5	3097.		1.81
0.5	1248.	1959.	606.		85.	711.	5308.0	2583.		2.17
1.0	1314.	1923.	540.		49.	609.	5308.5	2450.		2.29
2.0	1419.	1895.	435.		21.	476.	5309.5	2245.		2.50

SECTION 131

BANKS ARE AT 1191. 1322.

STAGE	FLOODWAY STA		*	-----WIDTHS-----			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT		LEFT	CHANNEL	RIGHT				
0.0	447.	1314.					868.	5312.3	1905.	2.94
NO KD NEEDED IN RIGHT FLOODPLAIN										
0.5	587.	1322.	604.			0.	735.	5312.8	1795.	3.12
NO KD NEEDED IN RIGHT FLOODPLAIN										
1.0	704.	1322.	487.			0.	618.	5313.3	1687.	3.32
NO KD NEEDED IN RIGHT FLOODPLAIN										
2.0	853.	1322.	338.			0.	469.	5314.3	1535.	3.65

SECTION 132

BANKS ARE AT 409. 430.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
0.0	62.	937.	347.		21.	507.			875.	5323.9	1818.	3.10
0.5	199.	687.	210.			257.			488.	5324.4	1454.	3.87
1.0	260.	606.	149.			176.			346.	5324.9	1275.	4.42
2.0	329.	539.	80.			109.			210.	5325.9	1068.	5.27

SECTION 134

BANKS ARE AT 1139. 1225.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
0.0	286.	1823.	853.		86.	598.			1537.	5338.4	14093.	0.39
0.5	761.	1682.	378.			457.			921.	5338.9	11788.	0.47
1.0	806.	1647.	333.			422.			841.	5339.4	11411.	0.48
2.0	856.	1592.	283.			367.			736.	5340.4	10888.	0.50

SECTION 135

BANKS ARE AT 971. 1138.

STAGE	FLOODWAY STA				*-----WIDTHS-----*				TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	RIGHT	CHANNEL	RIGHT	RIGHT	RIGHT				
0.0	691.	1586.	280.		167.	448.			896.	5339.2	5269.	1.25
0.5	778.	1474.	193.			336.			696.	5339.7	4858.	1.35
1.0	827.	1437.	144.			299.			610.	5340.2	4653.	1.41
2.0	901.	1377.	70.			239.			476.	5341.2	4302.	1.53

WSP2 COAL CRK. FLOOD HAZARD STUDY, COLORADO

SECTION 136

BANKS ARE AT 1279. 1705.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	870.	2220.	409.	426.	515.	1350.	5346.4	2517.	2.70
0.5	1132.	2151.	147.		446.	1019.	5346.9	2245.	3.03
1.0	1169.	2107.	110.		402.	938.	5347.4	2322.	2.93
NO KC NEEDED IN RIGHT FLOODPLAIN									
2.0	1231.	1705.	48.		C.	474.	5348.4	2076.	3.27

SECTION 138

BANKS ARE AT 1443. 1549.

FLOODWAY STA			*-----WIDTHS-----*						
STAGE	LEFT	RIGHT	LEFT	CHANNEL	RIGHT	TOTAL	ELEV	AREA	V AVE
0.0	321.	2148.	1122.	106.	599.	1827.	5356.7	10786.	0.63
0.5	935.	1993.	508.		444.	1058.	5357.2	8892.	0.77
1.0	1014.	1942.	429.		393.	928.	5357.7	8493.	0.80
2.0	1102.	1863.	341.		314.	761.	5358.7	7942.	0.86

IHC900I EXECUTION TERMINATING DUE TO ERROR COUNT FOR ERROR NUMBER 217

IHC217I FIOCS - END OF DATA SET ON UNIT 5

TRACEBACK ROUTINE CALLED FROM ISN REG. 14 REG. 15 REG. 0 REG. 1

IBCGM 001CD884 001D3768 E1110000 C01CCF08

HUD15 000279E0 011CC890 FD000008 001D87F8

ENTRY POINT= 011CC890