

\*\*\* 80-80 LIST OF INPUT DATA FOR HUC15 \*\*\*

WSPIN	ELRFAM CL	FLCCD	INS	STUDY	NORTH	CAROLINA	LICK	CREEK
7	280.5	4238.						
8	280.9	3445.						
9	283.	3390.						
10	285.2	2943.						
11	290.6	2834.						
12	292.8	2800.						
13	293.7	2625.						
14	296.8	2573.						
15	304.4	1441.						
16	313.6	1332.						
17	324.9	1121.						
18	302.8	1819.						
19	310.8	1530.						
20	323.	411.	1					
TITLE LICK CREEK								
WSP	10/16/75	PLCI						8
FINAL	23	15						1
CSM-ELEV	1.66		2.76		4.57			2
CSM-ELEV	7.59		12.60		20.91			3
CSM-ELEV	34.71		57.62		95.64			4
CSM-ELEV	158.74		263.48		437.34			5
CSM-ELEV	725.93		1204.93		2000.00			6
SLCFE	.00236							7
XSECTN	1	1100.	1100.		9.87			9
ELEV	287.8	260.5	267.5	1.				10
N VALLE	.09	.06	.09					11
SEGMENT	2.		3.					12
DATA	0.	287.8	100.	286.4	200.	283.1		13
DATA	300.	275.2	346.	270.2	400.	267.8		14
DATA	477.	268.9	477.	208.9	484.	261.3		15
DATA	489.	260.5	495.	261.3	500.	261.6		16
DATA	512.	268.9	512.	268.9	600.	268.4		17
DATA	700.	268.2	800.	267.5	900.	268.1		18
DATA	1000.	268.8	1066.	268.9	1100.	272.3		19
DATA	1113.	274.2	1184.	291.2				20
XSECTN	2	900.	900.		9.62			21
ELEV	292.9	263.1	268.9	1.				22
N VALLE	.09	.06	.09					23
SEGMENT	2.		3.					23A
DATA	0.	292.9	200.	287.9	300.	290.9		24
DATA	400.	287.9	500.	284.1	600.	278.6		25
DATA	700.	275.9	800.	273.4	900.	271.1		26
DATA	923.	271.8	923.	271.8	933.	264.		27
DATA	940.	263.1	946.	264.	966.	271.8		28
DATA	966.	271.8	1000.	270.9	1100.	270.3		29
DATA	1220.	268.9	1368.	287.6	1381.	292.9		30
XSECTN	3	700.	700.		9.54			31
ELEV	296.2	265.4	271.4	1.				32
N VALLE	.09	.06	.09					33
SEGMENT	2.		3.					34
DATA	612.	296.2	700.	293.2	800.	289.7		35
DATA	900.	297.9	1000.	284.7	1100.	280.1		36
DATA	1200.	276.7	1300.	275.9	1400.	272.9		37
DATA	1500.	272.2	1582.	273.	1582.	273.		38
DATA	1564.	266.2	1590.	265.4	1602.	266.3		39

DATA	1607.	273.5	1607.	273.5	1700.	271.4	40
DATA	1800.	271.5	1804.	271.6	1900.	286.1	41
DATA 1	2000.	295.8	2005.	296.2			42
XSECTN	4	850.	850.			8.98	43
ELEV	298.1	266.6	271.9	1.			44
N VALUE	.09	.06	.09				45
SEGMENT	2.		3.				46
DATA	C.	298.1	200.	289.6	300.	286.3	47
DATA	375.	285.2	368.	273.8	400.	272.8	48
DATA	500.	273.4	600.	273.6	625.	274.	49
DATA	625.	274.	637.	267.3	648.	266.6	50
DATA	660.	267.3	613.	274.4	673.	274.4	51
DATA	700.	274.2	800.	274.3	900.	273.3	52
DATA	1000.	271.9	1100.	274.2	1200.	275.3	53
DATA	1300.	276.7	1400.	280.5	1500.	284.7	54
DATA 1	1600.	297.6	1603.	298.1			55
XSECTN	5	100.	100.			8.95	56
ELEV	300.1	267.2	272.	1.			57
N VALUE	.09	.06	.09				58
SEGMENT	2.		3.				59
DATA	C.	300.1	100.	293.4	200.	286.8	60
DATA	300.	281.8	400.	279.	445.	274.	61
DATA	445.	274.	453.	268.7	454.	267.6	62
DATA	460.	267.2	466.	267.7	467.	268.7	63
DATA	465.	272.	469.	272.	500.	274.1	64
DATA	600.	276.7	700.	280.1	600.	281.3	65
DATA 1	900.	282.1	974.	282.4	1075.	301.7	66
BRIDGE	6	100.	100.				67
CCEF	.8	.6	.8	1.		68	
DATA	560.	277.7	562.	274.7	565.	274.3	69
DATA	572.	269.	580.	268.2	587.	269.	70
DATA	595.	274.8	600.	273.4	621.5	274.2	71
DATA 1	627.5	277.6	560.	277.7			72
DATA	C.	300.1	100.	269.9	200.	293.2	73
DATA	300.	288.4	400.	284.	500.	280.9	74
DATA	560.	279.7	630.	279.7	700.	280.2	75
DATA	800.	281.7	900.	284.5	1000.	288.1	76
DATA 2	1100.	292.5	1200.	297.2	1254.	300.1	77
XSECTN	7	600.	600.			8.92	78
ELEV	300.1	268.5	271.4	1.			79
N VALUE	.09	.06	.09				80
SEGMENT	2.		3.				81
DATA	C.	300.1	100.	295.1	200.	290.	82
DATA	300.	282.	400.	279.3	500.	277.3	83
DATA	547.	274.2	547.	274.2	551.	266.8	84
DATA	557.	268.5	562.	268.8	565.	271.8	85
DATA	565.	271.8	600.	273.4	700.	275.5	86
DATA	800.	275.5	900.	282.8	1000.	288.7	87
DATA 1	1100.	293.5	1200.	296.5	1246.	300.8	88
XSECTN	8	1050.	1050.			6.42	88
ELEV	306.5	270.8	275.7	1.			89
N VALUE	.08	.06	.09				90
SEGMENT	2.		3.				91
DATA	C.	306.5	100.	300.6	200.	294.9	92
DATA	300.	288.5	400.	283.6	500.	280.2	93
DATA	600.	277.7	700.	276.6	800.	275.7	94
DATA	900.	276.2	1000.	276.6	1100.	277.6	95
DATA	1200.	278.	1300.	278.1	1318.	278.5	96
DATA	1318.	278.5	1326.	277.8	1326.	270.9	97
DATA	1335.	270.8	1341.	277.8	1348.	277.9	98
DATA	1348.	277.9	1400.	278.2	1500.	278.6	99
DATA 1	1600.	297.6	1631.	301.7	1665.	306.5	100
XSECTN	9	1500.	1500.			6.26	101
ELEV	303.2	273.	277.8	1.			102
N VALUE	.08	.06	.09				103
SEGMENT	2.		3.				104
DATA	1200.						

DATA	700.	305.2	800.	300.1	900.	294.9	105
DATA	1000.	291.4	1100.	288.8	1200.	285.	106
DATA	1300.	285.6	1400.	285.7	1500.	285.3	107
DATA	1550.	281.5	1600.	277.8	1700.	278.5	108
DATA	1800.	279.2	1900.	279.8	1943.	279.9	109
DATA	1943.	279.9	1946.	273.5	1952.	273.	110
DATA	1957.	273.5	1962.	280.5	1962.	280.5	111
DATA	1 2000.	303.2	2005.	305.2			112
XSECTN	10	1300.	1300.			5.00	113
ELEV	308.3	275.7	282.6	1.			114
N VALUE	.07	.06	.07				115
SEGMENT	2.		3.				116
DATA	C.	308.3	100.	304.4	200.	298.9	117
DATA	300.	295.3	400.	287.	441.	282.9	118
DATA	500.	282.6	600.	283.1	600.	283.1	119
DATA	609.	277.5	615.	275.7	623.	277.5	120
DATA	634.	283.1	634.	283.1	700.	282.9	121
DATA	800.	282.8	900.	283.3	1000.	282.8	122
DATA	1100.	283.6	1200.	283.6	1300.	283.1	123
DATA	1400.	285.9	1417.	285.9	1484.	298.7	124
DATA	1 1520.	308.7					125
XSECTN	11	100.	100.			4.71	126
ELEV	312.5	281.8	286.4	1.			127
N VALUE	.09	.07	.08				128
SEGMENT	2.		3.				129
DATA	C.	312.5	100.	309.1	200.	301.5	130
DATA	300.	293.2	400.	289.9	492.	288.7	131
DATA	500.	285.8	500.	285.8	502.	282.2	132
DATA	508.	281.8	513.	282.2	521.	286.4	133
DATA	521.	286.4	600.	287.8	700.	288.1	134
DATA	800.	288.7	827.	289.1	900.	295.3	135
DATA	1 1000.	301.1	1100.	308.9	1200.	313.4	136
BRIDGE	12	100.	100.				137
CCEF	.8	.6	.8	1.		138	
DATA	560.	290.8	560.	286.4	575.	284.6	139
DATA	575.	284.6	582.	283.2	590.	280.5	140
DATA	592.	279.8	599.	282.3	606.	286.2	141
DATA	1 608.	286.6	608.	290.8	560.	290.8	142
DATA	C.	312.4	100.	308.4	200.	303.2	143
DATA	300.	298.6	400.	294.8	500.	292.7	144
DATA	558.	242.3	610.	292.2	700.	292.4	145
DATA	800.	293.2	900.	295.3	1000.	299.	146
DATA	2 1100.	304.	1200.	310.	1240.	312.4	147
XSECTN	13	1900.	1900.			4.62	148
ELEV	312.6	281.9	285.3	1.			149
N VALUE	.10	.07	.08				150
SEGMENT	2.		3.				151
DATA	C.	312.6	100.	308.4	200.	303.	152
DATA	300.	297.1	400.	289.2	500.	285.3	153
DATA	558.	286.6	558.	286.6	560.	282.3	154
DATA	564.	281.9	567.	282.3	570.	286.9	155
DATA	570.	286.9	600.	287.1	700.	287.	156
DATA	800.	289.9	900.	294.6	1000.	299.	157
DATA	1 1100.	305.8	1200.	310.6	1233.	313.4	158
XSECTN	14	1950.	1950.			4.17	159
ELEV	317.9	286.3	289.4	1.			160
N VALUE	.075	.06	.075				161
SEGMENT	2.		3.				162
DATA	C.	317.9	100.	313.3	200.	309.5	163
DATA	300.	306.9	400.	300.8	425.	298.8	164
DATA	455.	291.2	468.	291.5	468.	291.5	165
DATA	471.	287.	477.	286.2	483.	287.	166
DATA	487.	291.5	487.	291.5	500.	291.	167
DATA	600.	289.8	700.	289.6	800.	290.1	168
DATA	900.	290.2	1000.	289.4	1100.	289.9	169
DATA	1200.	292.3	1300.	297.2	1400.	310.3	170

DATA	1	1456.	317.	1465.	317.9			171
XSECTN	15	2350.	2350.	2350.		4.04		172
ELEV		321.6	289.9	292.9	1.			173
N VALLE		.08	.065	.08				174
SEGMENT	2.			3.				175
DATA	C.	321.6	100.	311.8	200.	304.3		176
DATA	300.	303.2	400.	309.4	500.	305.3		177
DATA	600.	299.8	700.	300.7	800.	300.9		178
DATA	900.	295.5	1000.	295.	1100.	294.6		179
DATA	1200.	298.9	1300.	300.	1400.	296.5		180
DATA	1500.	293.6	1600.	293.9	1634.	294.8		181
DATA	1634.	294.8	1637.	290.7	1641.	289.9		182
DATA	1645.	290.7	1650.	295.4	1650.	295.4		183
DATA	1700.	294.3	1800.	292.7	1900.	292.9		184
DATA	1	2040.	304.7	2142.	320.7	2150.	321.6	185
XSECTN	16	2450.	2450.			1.61		186
ELEV		321.7	301.	301.	1.			187
N VALLE		.10						188
SEGMENT	1.		1.					189
DATA	C.	321.7	100.	316.	200.	310.7		190
DATA	300.	304.8	400.	301.	470.	301.7		191
DATA	482.	301.	500.	301.2	541.	301.7		192
DATA	600.	301.6	659.	301.7	700.	308.5		193
DATA	1	741.	316.8	800.	326.8	837.	331.8	194
XSECTN	17	1800.	1800.			1.42		195
ELEV		335.7	308.5	308.5	1.			196
N VALLE		.10	.045	.08				197
SEGMENT	2.		3.					198
DATA	C.	335.7	100.	330.8	162.	327.7		199
DATA	200.	322.4	254.	315.2	300.	314.2		200
DATA	400.	312.5	500.	311.6	600.	310.7		201
DATA	698.	311.2	698.	311.2	699.	309.2		202
DATA	700.	308.5	702.	308.6	706.	309.2		203
DATA	711.	311.	711.	311.	776.	315.2		204
DATA	1	792.	316.4	893.	338.9			205
XSECTN	18	1.	1.			1.08		206
ELEV		342.3	317.5	320.3	1.			207
N VALLE		.08	.045	.08				208
SEGMENT	2.		3.					209
DATA	C.	342.3	100.	332.2	200.	322.1		210
DATA	205.	320.3	205.	320.3	206.	318.		211
DATA	208.	317.5	210.	318.	214.	320.3		212
DATA	214.	320.3	245.	321.1	300.	333.7		213
DATA	1	375.	338.5	400.	341.	500.	343.5	214
TITLE		LICK CREEK TRIB	1					207
TRIETARY	15	2760.	2500.					208
XSECTN	21	2200.	2200.			2.33		209
ELEV		321.	295.	299.3	1.			210
N VALLE		.08	.06	.08				211
SEGMENT	2.		3.					212
DATA	1100.	331.	1200.	323.3	1300.	312.8		213
DATA	1400.	306.1	1500.	301.3	1600.	301.2		214
DATA	1700.	299.3	1800.	300.2	1835.	300.9		215
DATA	1835.	300.9	1841.	295.2	1846.	295.		216
DATA	1851.	295.2	1856.	301.	1856.	301.		217
DATA	1	1900.	301.2	2000.	333.1			218
XSECTN	22	2900.	2900.			1.77		219
ELEV		330.	300.6	306.9	1.			220
N VALLE		.08	.06	.08				221
SEGMENT	2.		3.					222
DATA	1289.	330.9	1400.	320.5	1500.	316.9		223
DATA	1600.	313.4	1681.	308.	1681.	308.		224
DATA	1690.	300.9	1695.	300.6	1697.	300.9		225
DATA	1700.	306.9	1700.	306.9	1761.	307.1		226
DATA	1	1800.	311.3	1900.	321.5	2000.	330.	227
XSECTN	23	1.	1.			.22		228

ELEV	353.3	322.3	329.8	1.			229
N VALUE	.08	.60	.08				230
SEGMENT	2.		3.				230A
DATA	C.	353.3	100.	334.	149.	330.7	231
DATA	162.	325.6	162.	325.6	163.	322.6	232
DATA	165.	322.3	168.	322.6	172.	329.8	233
DATA	172.	329.8	185.	231.	200.	337.2	234
DATA	1 257.	353.3					235

THE FLCCD CARDS FOR THE FOLLOWING CROSS-SECTIONS  
ARE NOT GOING TO BE USED IN THIS HUC15 RUN.

SIA5

80-80 Listing (Input Painted)  
sent to Bernard Johnson  
8/25/77 AO Barfoot

WSPIN DURHAM CO FLOOD INS STUDY NORTH CAROLINA LICK CREEK

*A* SECTION 1

BANKS ARE AT 477. 512.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.C	336.	1050.	141.	35.	578.	754.	271.3	2340.	1.93
0.5	401.	907.	76.		395.	506.	271.8	2007.	2.25
1.C	420.	831.	57.		319.	411.	272.3	1844.	2.45
1.5	436.	781.	41.		269.	345.	272.8	1715.	2.63
2.C	449.	739.	28.		227.	290.	273.3	1592.	2.84

*B* SECTION 2

BANKS ARE AT 923. 966.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.C	776.	1333.	147.	43.	367.	557.	274.0	1591.	2.23
0.5	885.	1273.	38.		307.	368.	274.5	1778.	2.50
1.C	904.	1228.	19.		262.	324.	275.0	1646.	2.70
1.5	918.	1190.	5.		224.	272.	275.5	1527.	2.91
NO KC NEEDED IN LEFT FLOODPLAIN									
2.C	923.	1153.	0.		187.	230.	276.0	1414.	3.14

*C* SECTION 3

BANKS ARE AT 1582. 1607.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.C	1250.	1835.	332.	25.	226.	585.	276.3	2047.	2.16
0.5	1435.	1781.	147.		174.	346.	276.8	1714.	2.58
1.C	1463.	1756.	119.		149.	293.	277.3	1608.	2.75
1.5	1484.	1736.	98.		129.	252.	277.8	1514.	2.92
2.C	1499.	1720.	83.		113.	221.	278.3	1439.	3.07

WSPIN DURHAM CO FLOOD INS STUDY NORTH CAROLINA LICK CREEK

*D* SECTION 4

BANKS ARE AT 629. 673.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
0.C	357.	1311.	272.	44.	638.	954.	277.1	3255.	1.31
0.5	419.	1036.	210.		363.	617.	277.6	2763.	1.54
1.C	457.	987.	172.		314.	530.	278.1	2591.	1.64
1.5	489.	946.	140.		273.	457.	278.6	2429.	1.75
2.C	514.	908.	115.		235.	394.	279.1	2280.	1.87

*E* SECTION 5

BANKS ARE AT 445. <sup>457</sup> 465. ✓

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	357.	708.	88.	24.	235.	351.	280.2	1342.	3.16
0.5	428.	566.	17.		97.	138.	280.7	994.	4.27
1.C	434.	547.	11.		78.	113.	281.2	922.	4.61
1.5	438.	534.	7.		65.	96.	281.7	867.	4.90
2.C	442.	525.	3.		56.	83.	282.2	818.	5.19



NOCC	NOCC	NOCC	NOCC	END	JOB 318	7.33.15	AM	10	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC
NOCC	NOCC	NOCC	NOCC	END	JOB 318	7.33.15	AM	10	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC
NOCC	NOCC	NOCC	NOCC	END	JOB 318	7.33.15	AM	10	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC
NOCC	NOCC	NOCC	NOCC	END	JOB 318	7.33.15	AM	10	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC
NOCC	NOCC	NOCC	NOCC	END	JOB 318	7.33.15	AM	10	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC

NOCC BUSINESS FORM INC 5

OUTPUT LISTING FOR SECTION 1 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
16.38	1.12	261.95	27.24	1.35	262.26	45.10	1.53	262.76
74.91	1.83	263.32	124.36	2.13	264.12	206.38	2.48	265.16
342.58	2.86	266.50	568.70	2.50	267.98	943.96	1.59	268.88
1566.76	1.55	269.47	2600.54	1.68	270.22	4316.54	1.93	271.15
7164.92	2.26	272.37	11892.65	2.68	273.97	19740.00	3.20	276.09

Moore Business Forms, Inc. S

OUTPUT LISTING FOR SECTION 2  
DISTANCES

DOWNSTREAM		UPSTREAM		DRAINAGE AREA SQUARE MILES
CHANNEL	VALLEY	CHANNEL	VALLEY	
1100.	1100.	900.	900.	9.62
	ELEVATION		TOTAL KD	END AREA
	292.90		2020666.2	18951.23
	291.90		1832552.2	17591.46
	290.90		1654869.2	16274.14
	289.90		1516436.2	15032.60
	288.90		1394034.5	13900.19
	287.90		1289358.7	12876.89
	286.90		1158073.7	11922.57
	285.90		1034293.7	10997.12
	284.90		917878.1	10100.56
	283.90		808149.8	9232.72
	282.90		703188.5	8388.23
	281.90		605210.1	7564.48
	280.90		514234.8	6761.49
	279.90		430304.1	5979.25
	278.90		353487.4	5217.75
	277.90		285456.3	4481.62
	276.90		225420.5	3784.25
	275.90		172606.8	3126.48
	274.90		127095.6	2509.79
	273.90		88642.1	1935.67
	272.90		57230.7	1404.56
	271.90		32697.1	894.79
	270.90		17542.6	508.23
	269.90		9905.3	229.34
	268.90		6412.8	115.72
	267.90		4262.7	85.79
	266.90		2586.9	59.72
	265.90		1347.6	37.49
	264.90		510.2	19.10
	263.90		0.0	0.00

Model 1000000 Form 5  
 1113

OUTPUT LISTING FOR SECTION 2 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
16.08	1.31	264.53	26.74	1.36	264.92	44.28	1.59	265.36
73.55	1.84	266.00	122.10	2.11	266.80	202.63	2.42	267.81
336.37	2.49	269.06	558.38	1.72	270.23	926.83	1.58	271.09
1538.33	1.71	271.90	2553.35	1.93	272.73	4238.20	2.24	273.80
7034.89	2.63	275.15	11676.83	3.08	276.90	19381.75	3.61	279.08

Shore Research Corp., Inc.  
2200 Broadway, New York, N.Y. 10024

OUTPUT LISTING FOR SECTION 3

DISTANCES

DOWNSTREAM CHANNEL	VALLEY	UPSTREAM CHANNEL	VALLEY	DRAINAGE AREA SQUARE MILES
900.	900.	700.	700.	9.53

ELEVATION	TOTAL KD	END AREA
296.20	2279747.5	21672.42
295.20	2087192.0	20299.94
294.20	1903390.0	18967.28
293.20	1729262.7	17674.27
292.20	1564043.5	16420.51
291.20	1408127.0	15205.64
290.20	1261343.7	14029.64
289.20	1131287.0	12895.90
288.20	1018870.3	11824.66
287.20	907050.5	10813.32
286.20	799542.2	9844.64
285.20	697642.5	8916.01
284.20	601248.2	8024.09
283.20	510345.5	7161.73
282.20	426798.0	6327.71
281.20	350310.3	5522.06
280.20	281152.5	4744.77
279.20	220434.6	3998.95
278.20	167109.4	3289.12
277.20	121054.8	2615.32
276.20	85308.1	1989.51
275.20	57009.8	1460.90
274.20	33676.9	976.38
273.20	17430.2	533.83
272.20	9640.6	224.93
271.20	6448.5	108.61
270.20	4631.5	86.23
269.20	3052.6	64.84
268.20	1733.5	44.44
267.20	714.4	25.02
266.20	89.3	6.66

OUTPUT LISTING FOR SECTION 3 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
15.97	1.15	266.58	26.56	1.30	266.94	43.99	1.52	267.39
73.06	1.78	268.01	121.28	2.11	268.82	201.27	2.51	269.90
334.11	2.83	271.27	554.64	1.91	272.40	920.62	1.61	273.27
1528.02	1.67	274.04	2536.24	1.89	274.94	4209.81	2.16	276.11
6987.76	2.46	277.52	11598.60	2.85	279.28	19251.91	3.33	281.50

Moore Business Forms, Inc. 5  
13000 Bowers Firms, Inc. 5

OUTPUT LISTING FOR SECTION 4

DISTANCES

DOWNSTREAM CHANNEL 700. VALLEY 700. UPSTREAM CHANNEL 850. VALLEY 850. DRAINAGE AREA SQUARE MILES 8.98

ELEVATION	TOTAL KD	END AREA
298.10	3621790.5	29950.49
297.10	3348674.0	28362.48
296.10	3087976.5	26805.52
295.10	2838182.0	25279.85
294.10	2599216.0	23785.46
293.10	2371012.0	22322.35
292.10	2153507.5	20890.52
291.10	1946646.0	19489.98
290.10	1750379.5	18120.71
289.10	1566894.0	16783.57
288.10	1396613.7	15483.64
287.10	1237484.5	14221.77
286.10	1089095.0	12997.87
285.10	948433.7	11809.23
284.10	809851.3	10643.95
283.10	683707.2	9504.61
282.10	567296.0	8392.51
281.10	460726.5	7307.63
280.10	364360.0	6250.19
279.10	278494.3	5222.04
278.10	203093.2	4223.61
277.10	138567.4	3254.93
276.10	86976.7	2324.10
275.10	48313.6	1464.91
274.10	24291.6	716.05
273.10	13714.4	284.00
272.10	9224.9	155.59
271.10	6281.4	117.29
270.10	3883.0	84.30
269.10	2018.3	54.35
268.10	704.2	27.41
267.10	40.3	4.10

OUTPUT LISTING FOR SECTION 4 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
15.31	0.91	267.63	25.45	0.99	268.01	42.15	1.17	268.40
70.00	1.35	269.00	116.22	1.56	269.75	192.87	1.79	270.79
320.16	1.97	272.14	531.48	1.50	273.25	882.17	1.18	274.13
1464.20	1.12	274.87	2430.32	1.20	275.74	4033.99	1.32	276.86
6695.93	1.52	278.26	11114.19	1.79	280.03	18447.87	2.14	282.29



OUTPUT LISTING FOR SECTION 5  
DISTANCES

DOWNSTREAM CHANNEL	VALLEY	UPSTREAM CHANNEL	VALLEY	DRAINAGE AREA SQUARE MILES
850.	850.	100.	100.	8.95
	ELEVATION		TOTAL RD	END AREA
	300.10		2056398.5	18091.64
	299.10		1885579.5	17035.09
	298.10		1722115.0	15998.70
	297.10		1565967.5	14982.47
	296.10		1417102.5	13986.40
	295.10		1275492.0	13010.49
	294.10		1141110.2	12054.73
	293.10		1013971.5	11119.15
	292.10		894111.8	10203.89
	291.10		781452.6	9309.02
	290.10		675999.3	8434.53
	289.10		577770.7	7580.42
	288.10		486801.0	6746.71
	287.10		403146.3	5933.37
	286.10		327548.0	5141.61
	285.10		259772.5	4314.87
	284.10		199642.6	3633.35
	283.10		147313.2	2917.08
	282.10		109249.0	2236.89
	281.10		85956.9	1706.41
	280.10		68261.8	1307.60
	279.10		51334.6	1000.88
	278.10		37307.6	748.46
	277.10		26201.6	534.59
	276.10		17999.6	360.76
	275.10		12301.4	233.67
	274.10		8481.3	153.99
	273.10		5871.6	106.99
	272.10		3970.6	76.17
	271.10		2582.2	56.04
	270.10		1489.9	38.02
	269.10		676.2	22.11
	268.10		150.1	8.29

Major Business Form, Inc. 5  
 Major Business Form, Inc. 5

OUTPUT LISTING FOR SECTION 5 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
15.27	0.96	268.64	25.39	1.12	269.12	42.05	1.37	269.62
69.84	1.64	270.33	115.94	1.97	271.22	192.40	2.29	272.34
319.39	2.36	273.69	530.20	2.39	274.94	880.05	2.43	276.10
1460.68	2.61	277.20	2424.47	2.89	278.44	4024.28	3.19	279.93
6679.81	3.22	281.78	11087.45	3.43	283.52	18403.48	3.89	285.54

Model 5000 Form, Inc. 5

INFORMATION LISTING FOR BRIDGE SECTION 6

OPENING COEF. 0.800    ORIFICE COEF. 0.600    ROADWAY COEF. 0.800

OPENING	ELEVATION	END AREA	Q CONTROL
	277.70	359.72	5077.95
	276.70	295.93	3841.52
	275.70	229.43	2759.00
	274.70	163.62	1856.40
	273.70	108.02	1242.98
	272.70	79.98	848.92
	271.70	56.34	529.24
	270.70	35.40	279.32
	269.70	17.16	100.37
	268.70	2.34	6.64

Moore Business Form, Inc. 5

INFORMATION LISTING FOR BRIDGE SECTION 6 (CONTINUED)

ROADWAY	ELEVATION	FLOW OVER ROAD (CFS)
	300.10	516130.18
	299.10	482125.56
	298.10	449427.25
	297.10	417925.50
	296.10	386913.75
	295.10	357260.87
	294.10	328948.31
	293.10	301261.00
	292.10	268947.87
	291.10	238596.28
	290.10	210395.56
	289.10	184292.71
	288.10	160122.21
	287.10	136828.53
	286.10	115674.51
	285.10	96590.96
	284.10	79084.98
	283.10	62004.62
	282.10	47107.14
	281.10	32684.23
	280.10	18060.88
	279.10	4840.75
	278.10	3630.60
	277.10	2622.86
	276.10	1804.77
	275.10	1162.66
	274.10	681.66
	273.10	345.39
	272.10	135.36
	271.10	29.74
	270.10	0.33

THE HEAD-LOSS IS REFLECTED BETWEEN THE EXIT AND APPROACH SECTION. A RATING CURVE IS NOT DEVELOPED SEPARATELY FOR THE BRIDGE. NORMAL PROFILES ARE COMPUTED WHEN THE BRIDGE DOES NOT CONTROL THE FLOW.

Model Submittal Form, Inc. 8  
 Model Submittal Form, Inc. 8

OUTPUT LISTING FOR SECTION 7

DISTANCES		DRAINAGE AREA	
DOWNSTREAM	UPSTREAM	SQUARE MILES	
CHANNEL	VALLEY	CHANNEL	VALLEY
100.	100.	600.	600.
	ELEVATION	TOTAL RD	END AREA
	300.10	2004447.7	19087.28
	299.10	1838248.0	17875.28
	298.10	1680971.7	16703.28
	297.10	1532419.0	15571.28
	296.10	1392388.2	14479.28
	295.10	1260675.7	13427.28
	294.10	1136808.2	12415.09
	293.10	1021086.8	11442.56
	292.10	913460.3	10510.33
	291.10	813328.5	9618.55
	290.10	720469.6	8767.20
	289.10	631779.5	7953.41
	288.10	548161.8	7172.30
	287.10	470125.7	6420.94
	286.10	398413.1	5699.04
	285.10	332932.1	5006.58
	284.10	273604.5	4343.57
	283.10	220372.5	3710.01
	282.10	172592.2	3105.11
	281.10	132371.7	2536.48
	280.10	98117.6	2018.47
	279.10	70019.8	1551.46
	278.10	47514.0	1143.99
	277.10	30099.7	799.53
	276.10	16728.3	495.07
	275.10	9980.2	262.19
	274.10	5894.9	145.92
	273.10	3620.1	82.68
	272.10	2135.4	48.36
	271.10	1174.2	31.55
	270.10	488.2	17.42
	269.10	70.4	5.02

Short Distance Form, Inc. 5  
 Issue 8-1964 Form No. 5  
 Short Distance Form, Inc. 5

OUTPUT LISTING FOR SECTION 7 .CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
15.23	1.54	269.48	25.33	1.71	269.88	41.95	1.97	270.36
69.67	2.25	271.04	115.66	2.57	271.89	191.94	2.45	272.96
318.62	1.99	274.21	528.92	1.60	275.38	877.92	1.43	276.48
1457.15	1.51	277.56	2418.61	1.66	278.85	4014.56	1.87	280.32
6663.68	2.11	282.16	11060.67	2.59	283.95	18359.03	3.23	286.05

Hydro Data Corp. Form No. 5

OUTPUT LISTING FOR SECTION 8

DISTANCES

DOWNSTREAM CHANNEL	VALLEY	UPSTREAM CHANNEL	VALLEY	DRAINAGE AREA
600.	600.	1050.	1050.	SQUARE MILES

ELEVATION	TOTAL KD	END AREA
306.50	5757395.0	38495.38
305.50	5404084.0	36842.39
304.50	5061934.0	35213.44
303.50	4730889.0	33608.53
302.50	4410895.0	32027.64
301.50	4102024.0	30470.80
300.50	3804717.5	28938.31
299.50	3519267.0	27430.69
298.50	3244704.5	25948.18
297.50	2980745.5	24490.76
296.50	2725419.5	23057.07
295.50	2480803.5	21646.19
294.50	2246492.0	20258.05
293.50	2022295.7	1892.00
292.50	1808846.2	17547.88
291.50	1606181.0	16225.69
290.50	1414356.2	14925.42
289.50	1233445.2	13647.09
288.50	1064072.5	12390.86
287.50	906591.7	11158.37
286.50	760319.2	9950.01
285.50	625414.7	8765.78
284.50	502068.2	7605.68
283.50	390864.3	6469.76
282.50	293987.0	5364.25
281.50	209493.0	4293.41
280.50	137870.5	3257.25
279.50	80438.2	2258.36
278.50	38143.3	1305.47
277.50	17405.6	612.42
276.50	7214.0	209.72
275.50	4312.8	83.07
274.50	2759.1	60.58
273.50	1539.2	40.43
272.50	649.2	22.62
271.50	118.4	7.32

OUTPUT LISTING FOR SECTION 8 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
11.97	1.24	271.64	19.91	1.44	271.91	32.97	1.60	272.35
54.75	1.85	272.88	90.90	2.10	273.63	150.85	2.40	274.58
250.41	2.23	275.72	415.69	1.49	276.66	689.99	1.14	277.46
1145.22	0.99	278.27	1900.86	0.91	279.29	3155.16	0.92	280.64
5237.18	0.99	282.42	8692.91	1.18	284.24	14428.91	1.46	286.41

Model Business Forms, Inc. 5



OUTPUT LISTING FOR SECTION 9  
DISTANCES

DOWNSTREAM		UPSTREAM		DRAINAGE AREA SQUARE MILES
CHANNEL 1050.	VALLEY 1050.	CHANNEL 1500.	VALLEY 1500.	
	ELEVATION		TOTAL KD	END AREA
	303.20		2601041.5	21226.96
	302.20		2378390.0	19976.82
	301.20		2165222.0	18747.96
	300.20		1961518.0	17540.39
	299.20		1766903.5	16353.93
	298.20		1581704.5	15188.39
	297.20		1405972.7	14043.75
	296.20		1239733.7	12920.02
	295.20		1083026.0	11817.19
	294.20		939951.5	10737.56
	293.20		808170.3	9687.75
	292.20		685903.1	8668.18
	291.20		573896.1	7679.06
	290.20		474446.7	6726.91
	289.20		384385.9	5814.90
	288.20		301792.1	4940.83
	287.20		227352.1	4095.73
	286.20		162511.6	3278.61
	285.20		146020.3	2577.95
	284.20		115371.0	2119.27
	283.20		82916.6	1689.81
	282.20		55583.1	1285.70
	281.20		33096.0	906.02
	280.20		15592.9	535.80
	279.20		6900.5	227.30
	278.20		3603.9	79.15
	277.20		2425.9	51.54
	276.20		1507.2	36.76
	275.20		765.7	23.15
	274.20		238.1	10.73
	273.20		0.0	0.00

OUTPUT LISTING FOR SECTION 9 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
11.75	1.09	274.19	19.54	1.36	274.48	32.35	1.59	274.96
53.73	1.88	275.58	89.20	2.21	276.43	148.04	2.45	277.51
245.74	1.87	278.54	407.94	1.52	279.32	677.12	1.43	279.98
1123.87	1.60	280.64	1865.42	1.81	281.51	3096.35	2.08	282.69
5139.55	2.36	284.31	8530.85	2.42	286.48	14159.92	2.76	288.40

Hydro-Biologics, Inc.  
4000 Business Center, Inc. 5  
4000 Business Center, Inc. 5  
Water District Form, Inc. 5

OUTPUT LISTING FOR SECTION 10  
DISTANCES

DOWNSTREAM		UPSTREAM		DRAINAGE AREA SQUARE MILES
CHANNEL 1500.	VALLEY 1500.	CHANNEL 1300.	VALLEY 1300.	
	ELEVATION		TOTAL KD	END AREA
	308.30		4920881.0	30447.08
	307.30		4574321.0	28943.15
	306.30		4241136.0	27468.45
	305.30		3921239.0	26022.99
	304.30		3613782.5	24606.74
	303.30		3312184.5	23215.29
	302.30		3023074.5	21845.62
	301.30		2746439.5	20497.73
	300.30		2482279.0	19171.63
	299.30		2230596.5	17867.30
	298.30		1996219.5	16586.62
	297.30		1778711.0	15337.89
	296.30		1574315.5	14122.16
	295.30		1383047.7	12939.46
	294.30		1195049.2	11781.90
	293.30		1019143.8	10641.62
	292.30		855513.0	9518.62
	291.30		704379.6	8412.91
	290.30		566022.1	7324.47
	289.30		440791.6	6253.33
	288.30		329140.5	5199.46
	287.30		231668.6	4162.88
	286.30		149030.8	3143.07
	285.30		85023.7	2154.28
	284.30		37956.3	1215.57
	283.30		12034.5	367.19
	282.30		6962.4	120.94
	281.30		4770.1	91.58
	280.30		3031.5	65.80
	279.30		1711.1	43.58
	278.30		775.2	24.94
	277.30		207.9	9.95
	276.30		15.2	1.40

OUTPUT LISTING FOR SECTION 10 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
9.91	0.98	277.30	16.49	1.17	277.56	27.30	1.33	277.99
45.34	1.52	278.55	75.28	1.71	279.30	124.93	1.93	280.23
207.38	2.25	281.31	344.27	2.32	282.40	571.44	1.55	283.29
948.46	1.42	283.64	1574.27	1.33	284.25	2613.07	1.43	284.93
4337.37	1.51	286.01	7199.37	1.59	287.64	11949.85	1.85	289.47

Model B-100 V. Form 100-1  
Riverside Business Forms, Inc. 5

OUTPUT LISTING FOR SECTION 11

DISTANCES

DOWNSTREAM		UPSTREAM		DRAINAGE AREA SQUARE MILES
CHANNEL	VALLEY	CHANNEL	VALLEY	
1300.	1300.	100.	100.	4.71

ELEVATION	TOTAL KD	END AREA
312.50	2155975.5	18769.22
311.50	1997109.0	17615.03
310.50	1848450.5	16512.49
309.50	1709798.5	15461.57
308.50	1568167.0	14458.61
307.50	1422246.2	13484.62
306.50	1283844.5	12536.61
305.50	1152862.5	11614.58
304.50	1029202.7	10718.53
303.50	912770.8	9848.45
302.50	803476.3	9004.36
301.50	701232.7	8186.24
300.50	607115.0	7394.34
299.50	520985.0	6631.38
298.50	441661.7	5897.71
297.50	369039.6	5193.33
296.50	303025.0	4518.23
295.50	243540.0	3872.43
294.50	189309.8	3254.16
293.50	141306.1	2659.83
292.50	100787.2	2093.79
291.50	67365.6	1569.01
290.50	40696.9	1086.30
289.50	21109.8	649.38
288.50	9699.4	303.09
287.50	5337.3	131.22
286.50	3176.0	72.77
285.50	1958.0	51.89
284.50	1079.1	34.00
283.50	448.6	18.57
282.50	71.6	5.61

OUTPUT LISTING FOR SECTION 11 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
9.47	1.15	282.69	15.75	1.37	282.94	26.08	1.53	283.37
43.32	1.79	283.85	71.91	2.06	284.54	119.34	2.37	285.40
198.11	2.75	286.45	328.87	2.55	287.45	545.88	2.04	288.28
906.03	2.06	288.88	1503.85	2.15	289.60	2496.18	2.41	290.37
4143.36	2.75	291.36	6877.33	3.11	292.69	11415.32	3.59	294.36

Moore Business Forms, Inc. 5

INFORMATION LISTING FOR BRIDGE SECTION 12

OPENING COEF. 0.800 DRIFICE COEF. 0.600 ROADWAY COEF. 0.800

OPENING	ELEVATION	END AREA	Q CONTROL
	290.80	340.25	5271.72
	289.80	292.25	4234.10
	288.80	244.25	3282.36
	287.80	196.25	2426.24
	286.80	148.25	1680.77
	285.80	103.09	1094.39
	284.80	67.87	677.42
	283.80	44.05	389.75
	282.80	25.33	187.46
	281.80	11.31	66.84
	280.80	2.82	11.84
	279.80	0.00	0.00

ROADWAY	ELEVATION	FLOW OVER ROAD (CFS)
	312.40	279190.31
	311.40	250023.56
	310.40	222723.75
	309.40	197250.84
	308.40	173563.59
	307.40	152412.37
	306.40	132808.06
	305.40	114714.65
	304.40	98095.51
	303.40	82727.39
	302.40	68577.75
	301.40	55887.64
	300.40	44624.15
	299.40	34737.71
	298.40	25977.80
	297.40	18384.86
	296.40	12206.66
	295.40	7360.71
	294.40	3545.32
	293.40	1117.74
	292.40	34.71

THE HEAD-LOSS IS REFLECTED BETWEEN THE EXIT AND APPROACH SECTION. A RATING CURVE IS NOT DEVELOPED SEPARATELY FOR THE BRIDGE. NORMAL PROFILES ARE COMPUTED WHEN THE BRIDGE DOES NOT CONTROL THE FLOW.

OUTPUT LISTING FOR SECTION 13  
DISTANCES

DOWNSTREAM CHANNEL 100.	VALLEY 100.	UPSTREAM CHANNEL 1900.	VALLEY 1900.	DRAINAGE AREA SQUARE MILES 4.62
	ELEVATION		TOTAL KD	END AREA
	312.60		2091820.7	19371.06
	311.60		1915420.7	18165.28
	310.60		1747984.0	16995.10
	309.60		1599906.7	15865.05
	308.60		1460774.2	14779.63
	307.60		1327171.2	13737.16
	306.60		1200964.7	12734.15
	305.60		1081647.5	11770.37
	304.60		965695.3	10841.78
	303.60		857100.3	9946.41
	302.60		755388.8	9084.14
	301.60		660207.6	8253.81
	300.60		571899.8	7455.13
	299.60		490339.4	6688.11
	298.60		416725.0	5953.38
	297.60		351652.5	5256.89
	296.60		292289.0	4599.53
	295.60		238339.7	3978.10
	294.60		190259.2	3392.05
	293.60		147546.1	2840.66
	292.60		110350.6	2323.21
	291.60		78546.2	1839.69
	290.60		52042.3	1390.11
	289.60		31002.5	975.06
	288.60		16017.1	606.25
	287.60		6430.2	296.52
	286.60		2285.1	101.19
	285.60		1061.6	30.58
	284.60		608.5	20.45
	283.60		265.2	11.44
	282.60		44.8	3.55

Model Business Form, Inc. 5  
 Model Business Form, Inc. 5



OUTPUT LISTING FOR SECTION 13 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
9.33	1.10	283.21	15.52	1.34	283.60	25.69	1.62	284.07
42.68	1.98	284.69	70.85	2.39	285.50	117.58	1.52	286.25
195.19	1.05	287.02	324.03	0.88	287.82	537.84	0.89	288.57
892.69	1.07	289.19	1481.71	1.31	289.95	2459.43	1.08	292.46
4082.35	1.43	293.59	6776.06	1.99	294.59	11247.23	2.74	295.79

Hydro-Engineering, Inc.  
1000 15th Street, N.W.  
Washington, D.C. 20004  
Phone: 202-331-1111

OUTPUT LISTING FOR SECTION 14

DISTANCES

DOWNSTREAM		UPSTREAM		DRAINAGE AREA SQUARE MILES
CHANNEL	VALLEY	CHANNEL	VALLEY	
1900.	1900.	1950.	1950.	

4.17

ELEVATION	TOTAL KD	END AREA
317.90	4510772.0	29098.66
316.90	4207158.0	27649.53
315.90	3911434.5	26231.15
314.90	3627253.5	24842.87
313.90	3354500.5	23484.69
312.90	3093787.0	22156.98
311.90	2845478.5	20863.11
310.90	2608380.0	19603.92
309.90	2381852.5	18379.34
308.90	2167559.5	17191.03
307.90	1966118.0	16047.84
306.90	1776446.0	14950.75
305.90	1591646.0	13888.72
304.90	1416589.2	12850.71
303.90	1251252.5	11836.74
302.90	1095631.7	10846.79
301.90	949751.5	9880.86
300.90	813691.0	8938.97
299.90	686874.2	8019.52
298.90	569844.1	7120.23
297.90	461326.6	6237.60
296.90	363576.1	5367.18
295.90	278363.0	4517.98
294.90	203185.4	3693.14
293.90	138379.2	2892.65
292.90	84454.5	2116.51
291.90	42524.2	1358.32
290.90	14800.0	669.07
289.90	1989.0	45.54
288.90	1077.3	29.80
287.90	409.4	15.62
286.90	0.0	0.00

OUTPUT LISTING FOR SECTION 14 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
8.62	1.22	287.34	14.33	1.20	287.65	23.74	1.32	288.05
39.43	1.55	288.58	65.45	1.77	289.31	108.62	1.69	289.92
180.31	1.10	290.08	299.33	0.86	290.37	496.84	0.77	290.85
824.65	0.89	291.26	1368.77	1.00	291.90	2271.98	0.92	293.32
3771.20	1.12	294.47	6259.61	1.43	295.69	10390.00	1.84	297.19

OUTPUT LISTING FOR SECTION 15

DISTANCES

DOWNSTREAM		UPSTREAM		DRAINAGE AREA SQUARE MILES
CHANNEL 1950.	VALLEY 1950.	CHANNEL 2350.	VALLEY 2350.	

ELEVATION	TOTAL KD	END AREA
321.60	6418471.0	45272.07
320.60	5957224.0	43131.61
319.60	5506731.0	41008.75
318.60	5071667.0	38902.46
317.60	4652163.0	36812.75
316.60	4248360.0	34739.61
315.60	3860418.5	32683.07
314.60	3488515.0	30643.09
313.60	3132850.0	28619.70
312.60	2793646.5	26612.88
311.60	2471634.5	24622.71
310.60	2168455.0	22651.25
309.60	1882457.7	20699.49
308.60	1631618.7	18780.41
307.60	1402419.5	16920.74
306.60	1190250.7	15121.30
305.60	994976.5	13382.09
304.60	815405.6	11701.61
303.60	668833.3	10097.71
302.60	531099.8	8608.13
301.60	399804.0	7157.16
300.60	29243.6	5757.62
299.60	222634.0	4555.20
298.60	156938.8	3519.46
297.60	99871.5	2582.51
296.60	55204.1	1727.76
295.60	23242.1	957.63
294.60	7290.9	368.74
293.60	1591.6	67.48
292.60	684.9	21.64
291.60	262.9	11.12
290.60	27.4	2.45

OUTPUT LISTING FOR SECTION 15 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
8.41	1.00	291.27	13.98	1.14	291.69	23.16	1.35	292.16
38.46	1.32	292.75	63.86	1.10	293.38	105.98	0.96	293.73
175.92	0.92	294.00	292.04	0.91	294.43	484.74	0.98	294.80
804.56	1.07	295.24	1335.43	1.20	295.79	2216.62	1.30	296.56
3679.32	1.49	297.45	6107.10	1.73	298.60	10136.86	1.96	300.10

OUTPUT LISTING FOR SECTION 16  
DISTANCES

DOWNSTREAM CHANNEL	VALLEY	UPSTREAM CHANNEL	VALLEY	DRAINAGE AREA SQUARE MILES
2350.	2350.	2450.	2450.	1.61
	ELEVATION		TOTAL KD	END AREA
	321.70		924861.0	10752.85
	320.70		835831.7	9994.66
	319.70		751805.6	9259.92
	318.70		672688.8	8548.62
	317.70		598387.8	7860.77
	316.70		528757.8	7196.35
	315.70		463484.0	6554.87
	314.70		403219.6	5936.87
	313.70		347411.6	5342.67
	312.70		295958.0	4772.29
	311.70		248800.0	4225.71
	310.70		205821.3	3702.94
	309.70		166432.8	3203.01
	308.70		131087.0	2724.98
	307.70		99903.8	2269.18
	306.70		72747.0	1836.35
	305.70		49578.8	1426.49
	304.70		30501.1	1039.65
	303.70		16020.9	681.37
	302.70		5787.1	355.43
	301.70		0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
3.96	1.18	301.70	6.59	1.96	301.70	10.92	1.04	301.72
18.14	1.03	301.74	30.13	1.06	301.77	50.00	1.00	301.83
83.00	0.97	301.93	137.78	0.94	302.10	228.70	0.93	302.38
379.59	0.98	302.78	630.05	1.19	303.22	1045.80	1.40	303.87
1735.91	1.65	304.72	2881.34	1.96	305.79	4782.59	2.32	307.21

OUTPUT LISTING FOR SECTION 17				
DISTANCES				
DOWNSTREAM		UPSTREAM		DRAINAGE AREA SQUARE MILES
CHANNEL	VALLEY	CHANNEL	VALLEY	
	2450.	2450.	1800.	1.42
ELEVATION		TOTAL KD		END AREA
	335.70		1644732.2	15351.66
	334.70		1522023.2	14485.47
	333.70		1405130.7	13644.18
	332.70		1293946.2	12827.79
	331.70		1188361.2	12036.30
	330.70		1088228.2	11269.70
	329.70		993117.5	10527.75
	328.70		903257.0	9810.29
	327.70		818538.5	9117.33
	326.70		728583.7	8442.43
	325.70		643414.1	7779.19
	324.70		563049.3	7127.62
	323.70		487516.7	6487.70
	322.70		416853.6	5859.44
	321.70		351234.6	5242.94
	320.70		290645.1	4638.52
	319.70		235110.6	4046.20
	318.70		184737.8	3465.97
	317.70		139668.8	2897.83
	316.70		100097.6	2341.79
	315.70		66711.2	1800.01
	314.70		41059.2	1285.95
	313.70		22647.3	832.34
	312.70		9994.8	452.00
	311.70		2966.2	158.84
	310.70		661.1	17.03
	309.70		160.4	6.75
	308.70		0.0	0.00

OUTPUT LISTING FOR SECTION 17 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
3.56	1.46	309.05	5.92	1.48	309.28	9.81	1.52	309.64
16.29	1.82	309.90	27.04	2.14	310.26	44.88	2.11	310.72
74.51	1.46	310.93	123.69	1.22	311.28	205.31	1.18	311.74
340.77	1.28	312.05	565.62	1.35	312.57	938.86	1.54	313.10
1558.39	1.73	313.84	2586.69	1.96	314.75	4293.51	2.27	315.85



OUTPUT LISTING FOR SECTION 18  
DISTANCES

DOWNSTREAM		UPSTREAM		DRAINAGE AREA SQUARE MILES
CHANNEL 1800.	VALLEY 1800.	CHANNEL 1.	VALLEY 1.	
	ELEVATION		TOTAL KD	END AREA
	342.30		396750.6	4391.10
	341.30		360080.5	3964.05
	340.30		319822.5	3579.55
	339.30		278774.7	3216.31
	338.30		241750.7	2873.07
	337.30		210281.4	2553.56
	336.30		182494.6	2259.58
	335.30		158297.0	1991.12
	334.30		137654.9	1748.19
	333.30		118540.5	1529.89
	332.30		98948.7	1327.88
	331.30		81511.5	1140.13
	330.30		66126.3	966.65
	329.30		52688.2	807.43
	328.30		41089.3	662.49
	327.30		31218.9	531.80
	326.30		22963.0	415.39
	325.30		16204.1	313.24
	324.30		10820.9	225.36
	323.30		6689.1	151.74
	322.30		3686.5	92.39
	321.30		1660.1	45.02
	320.30		664.9	15.94
	319.30		262.9	8.03
	318.30		44.8	2.29

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
2.80	2.60	317.14*	4.66	1.65	318.38	7.71	1.94	318.58
12.82	2.19	318.91	21.28	2.45	319.37	35.32	2.81	319.86
58.63	2.97	320.42	97.33	2.77	320.95	161.55	2.84	321.54
268.14	3.01	322.22	445.06	3.32	322.99	738.75	3.68	323.95
1226.23	4.09	325.13	2035.36	4.60	326.57	3378.39	5.19	328.20

\* INDICATES CRITICAL FLOW.

WSPIN DURHAM CO FLOOD INS STUDY NORTH CAROLINA LICK CREEK

**G** SECTION 7

BANKS ARE AT 547. 565.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
F C.C	356.	868.	191.	18.	303.	513.	280.5	2220.	1.91
C.5	487.	776.	60.		205.	283.	281.0	1833.	2.31
1.0	505.	737.	42.		172.	232.	281.5	1702.	2.49
1.5	514.	711.	33.		146.	197.	282.0	1601.	2.65
2.0	520.	691.	27.		126.	171.	282.5	1521.	2.79

**H** SECTION 8

BANKS ARE AT 1318. 1348.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
G C.C	475.	1512.	839.	30.	164.	1033.	280.9	3668.	0.94
C.5	726.	1449.	592.		101.	723.	281.4	3201.	1.08
1.0	802.	1418.	516.		70.	616.	281.9	3005.	1.15
1.5	861.	1396.	457.		50.	537.	282.4	2844.	1.21
2.0	912.	1385.	406.		37.	473.	282.9	2705.	1.27

**I** SECTION 9

BANKS ARE AT 1943. 1962.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	1554.	1966.	389.	15.	4.	412.	283.0	1607.	2.11
NO KC NEEDED IN RIGHT FLOODPLAIN									
C.5	1648.	1962.	295.		0.	314.	283.5	1457.	2.33
NO KC NEEDED IN RIGHT FLOODPLAIN									
1.0	1690.	1962.	253.		0.	272.	284.0	1374.	2.47
NO KC NEEDED IN RIGHT FLOODPLAIN									
1.5	1725.	1962.	218.		0.	237.	284.5	1302.	2.60
NO KC NEEDED IN RIGHT FLOODPLAIN									
2.0	1755.	1962.	188.		0.	207.	285.0	1234.	2.75

H

WSPIN DURHAM CG FLOOD INS STUDY NORTH CAROLINA LICK CREEK

SECTION 10

BANKS ARE AT 600. 634.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	418.	1375.	182.	34.	741.	957.	285.2	2058.	1.43
0.5	488.	1048.	112.		414.	560.	285.7	1680.	1.75
1.0	518.	940.	82.		306.	422.	286.2	1505.	1.96
1.5	540.	861.	60.		227.	321.	286.7	1352.	2.18
2.0	555.	813.	45.		179.	258.	287.2	1245.	2.36

SECTION 11

BANKS ARE AT 500. 521.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	379.	845.	121.	21.	324.	466.	290.6	1133.	2.50
0.5	472.	708.	28.		187.	236.	291.1	900.	3.15
1.0	487.	658.	13.		137.	171.	291.6	799.	3.55
1.5	494.	627.	6.		106.	133.	292.1	731.	3.88
2.0	498.	606.	2.		85.	108.	292.6	676.	4.19

SECTION 13

BANKS ARE AT 558. 570.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	354.	862.	204.	12.	292.	507.	292.8	2424.	1.16
0.5	437.	738.	121.		168.	301.	293.3	2008.	1.39
1.0	454.	714.	104.		144.	260.	291.8	1905.	1.47
1.5	466.	698.	92.		128.	232.	294.3	1831.	1.53
2.0	475.	684.	83.		114.	209.	294.8	1763.	1.59

WSPIN DURHAM CC FLOOD INS STUDY NORTH CAROLINA LICK CREEK

N SECTION 14

BANKS ARE AT 468. 487.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	445.	1229.	23.	19.	742.	783.	293.7	2736.	0.96
0.5	460.	1026.	8.		539.	566.	294.2	2419.	1.09
1.0	466.	944.	2.		457.	478.	294.7	2262.	1.16
NO KC NEEDED IN LEFT FLOODPLAIN									
1.5	468.	868.	C.		381.	400.	295.2	2105.	1.25
NO KC NEEDED IN LEFT FLOODPLAIN									
2.0	468.	805.	C.		322.	341.	295.7	1977.	1.33

O SECTION 15

BANKS ARE AT 1634. 1650.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	876.	1946.	758.	16.	296.	1070.	296.8	1892.	1.36
0.5	1076.	1871.	558.		221.	795.	297.3	1657.	1.55
1.0	1477.	1834.	157.		184.	357.	297.6	1382.	1.86
1.5	1506.	1804.	128.		154.	298.	298.3	1289.	2.00
2.0	1526.	1780.	108.		130.	254.	298.8	1214.	2.12

P SECTION 16

BANKS ARE AT C. 837.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	311.	675.	C.	837.	0.	865.	304.4	929.	1.55

CHANNEL WILL CARRY THE FLOW ONLY ONE SEGMENT - THE CHANNEL. COMPUTATIONS DISCONTINUED.



WSPIN CLRPM CG FLOOD INS STUDY NORTH CAROLINA LICK CREEK

**Q** SECTION 17

BANKS ARE AT 698. 711.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	341.	751.	357.	13.	40.	410.	313.6	791.	1.68
0.5	544.	720.	154.		5.	176.	314.1	571.	2.33
1.0	582.	714.	116.		3.	132.	314.6	504.	2.64
NC KC NEEDED IN RIGHT	FLOODPLAIN								
1.5	606.	711.	92.		0.	105.	315.1	454.	2.93
NC KC NEEDED IN RIGHT	FLOODPLAIN								
2.0	626.	711.	72.		0.	85.	315.6	411.	3.24

**R** SECTION 18

BANKS ARE AT 205. 214.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	172.	262.	33.	9.	48.	89.	324.9	276.	4.06
0.5	196.	243.	9.		29.	47.	325.4	232.	4.83
1.0	201.	237.	4.		23.	36.	325.9	208.	5.39
1.5	202.	233.	3.		19.	31.	326.4	199.	5.64
NC KC NEEDED IN LEFT	FLOODPLAIN								
2.0	205.	230.	0.		16.	25.	326.9	178.	6.31

**A** SECTION 21

BANKS ARE AT 1835. 1856.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	1469.	1905.	366.	21.	45.	436.	302.8	1025.	1.77
0.5	1656.	1877.	179.		21.	221.	303.3	796.	2.29
1.0	1693.	1865.	142.		9.	172.	303.8	725.	2.51
NC KC NEEDED IN RIGHT	FLOODPLAIN								
1.5	1717.	1856.	118.		0.	139.	304.3	663.	2.74
NC KC NEEDED IN RIGHT	FLOODPLAIN								
2.0	1738.	1856.	97.		0.	118.	304.8	622.	2.92

WSPIN CURFAM CL FLOOD INS STUDY NORTH CAROLINA LICK CREEK

B

SECTION 22

BANKS ARE AT 1681. 1700.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	1639.	1755.	42.	19.	95.	156.	310.8	502.	3.05
C.5	1673.	1755.	8.		55.	62.	311.3	419.	3.65
1.0	1680.	1744.	1.		44.	64.	311.8	383.	3.99
NC KC NEEDED IN LEFT FLOODPLAIN									
1.5	1681.	1733.	0.		33.	52.	312.3	353.	4.33
NC KC NEEDED IN LEFT FLOODPLAIN									
2.0	1681.	1725.	0.		25.	44.	312.8	333.	4.60

C

SECTION 23

BANKS ARE AT 162. 172.

STAGE	FLOODWAY STA		*-----WIDTHS-----*			TOTAL	ELEV	AREA	V AVE
	LEFT	RIGHT	LEFT	CHANNEL	RIGHT				
C.C	115.	190.	47.	10.	18.	75.	333.0	230.	1.79
C.5	150.	182.	12.		11.	33.	333.5	196.	2.10
1.0	152.	181.	10.		9.	29.	334.0	197.	2.08
1.5	153.	179.	9.		7.	26.	334.5	199.	2.07
2.0	154.	178.	8.		6.	24.	335.0	201.	2.04

NOCC	NOCC	NOCC	NOCC	END	JCB	500	7.32.46	AM	11	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC
NOCC	NOCC	NOCC	NOCC	END	JCB	500	7.32.46	AM	11	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC
NOCC	NOCC	NOCC	NOCC	END	JCB	500	7.32.46	AM	11	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC
NOCC	NOCC	NOCC	NOCC	END	JCB	500	7.32.46	AM	11	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC
NOCC	NOCC	NOCC	NOCC	END	JCB	500	7.32.46	AM	11	MAY	77	M65	4RJ07	SCSF3717	ADP-JOBS/NC-HUD15	NOCC	NOC

3

SECTION	DOWNSTREAM		UPSTREAM		DRAINAGE AREA, SQ MI	*N* VALUE BY SEGMENTS					
	CHANNEL	VALLEY	CHANNEL	VALLEY		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
1	1.	1.	1100.	1100.	9.87	0.090	0.060	0.090			

ELEVATION	KD VALUES		TOTAL	END AREA SQ. FT.
	CHANNEL	VALLEY		
287.00	153781.8	1581350.7	1735132.5	16392.08
286.00	143049.5	1442308.0	1588357.5	15296.85
285.00	132761.2	1308819.5	1441580.7	14270.83
284.00	122725.6	1178503.2	1301228.7	13272.27
283.00	112942.7	1054359.5	1167302.2	12301.20
282.00	103597.1	933388.2	1036985.3	11362.57
281.00	94532.7	817663.0	912195.7	10439.33
280.00	85748.8	707816.6	793565.3	9530.24
279.00	77395.0	606842.1	684237.1	8642.36
278.00	69385.6	512845.0	582230.7	7770.97
277.00	61665.1	424659.1	486324.2	6913.22
276.00	54319.1	343923.3	398242.5	6072.80
275.00	47376.8	271014.8	318391.6	5250.45
274.00	40851.7	206046.7	246898.4	4443.83
273.00	34709.6	148787.5	183497.1	3652.07
272.00	26940.8	99154.2	128095.0	2875.24
271.00	23617.8	58701.2	82319.1	2117.32
270.00	18738.4	27771.8	46510.2	1380.18
269.00	14471.3	8314.1	22785.5	694.54
268.00	11039.0	899.8	11938.9	260.51
267.00	8226.0	0.0	8226.0	133.84
266.00	5875.5	0.0	5875.5	105.02
265.00	3924.0	0.0	3924.0	78.77
264.00	2346.2	0.0	2346.2	55.00
263.00	1154.0	0.0	1154.0	33.85
262.00	345.2	0.0	345.2	15.24
261.00	18.2	0.0	18.2	1.78
260.50	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
16.38	1.09	261.99	27.24	1.30	262.32	45.10	1.54	262.77
74.91	1.81	263.36	124.36	2.12	264.15	206.38	2.47	265.18
342.58	2.86	266.51	568.70	2.27	267.95	943.96	1.66	268.80
1566.76	1.50	269.53	2600.54	1.68	270.23	4316.54	1.93	271.16
7164.92	2.26	272.38	11892.65	2.69	273.97	19740.00	3.20	276.10



-----DISTANCE-----											
SECTION	DOWNSTREAM		UPSTREAM		DRAINAGE AREA, SQ MI	'N' VALUE BY SEGMENTS					
	CHANNEL	VALLEY	CHANNEL	VALLEY		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
2	1100.	1100.	900.	900.	9.62	0.090	0.060	0.090			

ELEVATION	-----KD VALUES-----			TOTAL	END AREA SQ. FT.
	CHANNEL	VALLEY	VALLEY		
292.00	219683.6	1631686.2	1851369.7	17727.48	
291.00	205571.5	1479265.5	1684837.0	16424.13	
290.00	191694.3	1341059.5	1532753.7	15173.17	
289.00	178250.4	1230541.5	1408791.7	14029.84	
288.00	165249.7	1124157.2	1289407.0	12997.48	
287.00	152504.1	1018918.0	1171422.2	12018.90	
286.00	140343.1	908033.5	1048376.5	11096.35	
285.00	128494.5	802334.0	930828.5	10195.45	
284.00	117018.2	702468.7	819487.0	9319.69	
283.00	106081.2	608444.7	714525.8	8475.20	
282.00	95575.3	520836.1	616411.5	7651.04	
281.00	85444.7	438738.4	524183.1	6844.31	
280.00	75758.5	363082.6	438841.2	6057.91	
279.00	66620.1	295198.6	361818.7	5295.79	
278.00	57949.0	235295.4	293244.5	4560.45	
277.00	49752.8	182610.6	232363.5	3859.16	
276.00	42044.8	136519.1	178563.9	3196.08	
275.00	34834.1	96811.9	131646.0	2571.48	
274.00	28217.8	64272.4	92490.2	1993.12	
273.00	22171.8	38200.2	60372.0	1457.73	
272.00	16791.3	18703.5	35494.9	969.44	
271.00	12661.6	6426.3	19087.9	549.38	
270.00	9461.1	1599.5	11060.7	276.69	
269.00	6690.0	145.4	6835.5	130.36	
268.00	4472.8	0.0	4472.8	88.75	
267.00	2754.1	0.0	2754.1	62.33	
266.00	1463.0	0.0	1463.0	39.63	
265.00	582.4	0.0	582.4	20.83	
264.00	94.1	0.0	94.1	5.94	
263.10	0.0	0.0	0.0	0.00	

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
16.08	1.10	264.61	26.74	1.31	264.97	44.28	1.55	265.43
73.55	1.81	266.04	122.10	2.09	266.83	202.63	2.41	267.83
336.37	2.23	269.14	558.38	1.74	270.30	926.83	1.57	271.12
1538.32	1.64	271.92	2553.35	1.89	272.78	4238.20	2.22	273.84
7034.89	2.62	275.18	11676.82	3.07	276.91	19381.75	3.60	279.11

-----DISTANCES-----						'N' VALUE BY SEGMENTS					
SECTION	DOWNSTREAM		UPSTREAM		DRAINAGE AREA, SQ MI	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
	CHANNEL	VALLEY	CHANNEL	VALLEY							
3	900.	900.	700.	700.	9.53	0.090	0.060	0.090			

-----KD VALUES-----				END AREA
ELEVATION	CHANNEL	VALLEY	TOTAL	SQ. FT.
296.00	138662.4	2102115.0	2240777.0	21394.73
295.00	130872.8	1922472.5	2053345.2	20046.19
294.00	123146.7	1745954.2	1869100.7	18711.11
293.00	115673.9	1581936.7	1697610.5	17429.90
292.00	108383.9	1426520.0	1534903.7	16186.16
291.00	101215.7	1276837.7	1378053.5	14967.40
290.00	94358.6	1144286.2	1238644.7	13811.60
289.00	87628.9	1022477.6	1110106.5	12692.22
288.00	81090.1	916785.6	997875.7	11627.48
287.00	74795.8	812053.1	886848.8	10626.29
286.00	68679.5	711083.7	779763.2	9663.61
285.00	62738.5	615400.0	678138.5	8734.89
284.00	57097.1	526541.1	583638.2	7855.20
283.00	51640.3	443143.9	494784.2	6999.51
282.00	46365.4	365212.1	411577.5	6167.20
281.00	41325.6	294577.6	335903.1	5364.38
280.00	36564.9	232683.5	269248.4	4595.88
279.00	32034.2	178319.6	210353.9	3859.91
278.00	27739.4	130888.5	158628.0	3158.00
277.00	23676.2	90621.3	114297.5	2490.97
276.00	19888.3	59822.0	79710.3	1888.99
275.00	16370.0	36229.0	52599.1	1365.63
274.00	13143.1	17526.2	30669.3	889.18
273.00	10345.1	5588.7	15933.9	466.71
272.00	8104.7	1280.6	9385.3	214.42
271.00	6066.9	0.0	6066.9	104.05
270.00	4305.9	0.0	4305.9	81.91
269.00	2767.1	0.0	2767.1	60.68
268.00	1516.1	0.0	1516.1	40.52
267.00	552.8	0.0	552.8	21.26
266.00	41.4	0.0	41.4	3.75
265.40	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
15.97	1.01	266.70	26.56	1.23	267.01	43.99	1.47	267.45
73.06	1.75	268.06	121.28	2.09	268.86	201.27	2.50	269.93
334.11	2.99	271.32	554.64	1.75	272.60	920.62	1.57	273.31
1528.02	1.62	274.11	2536.24	1.85	275.01	4209.81	2.13	276.16
6987.76	2.44	277.56	11598.59	2.83	279.31	19251.91	3.32	281.53

SECTION	DISTANCES				DRAINAGE AREA, SQ MI	'N' VALUE BY SEGMENTS					
	DOWNSTREAM CHANNEL 700.	VALLEY 700.	UPSTREAM CHANNEL 850.	VALLEY 850.		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
4					8.98	0.090	0.060	0.090			

KD VALUES

ELEVATION	CHANNEL	VALLEY	TOTAL	END AREA SQ. FT.
298.00	284038.5	3310375.5	3594413.5	29791.58
297.00	268071.4	3055796.0	3323867.0	28210.42
296.00	252508.6	2813932.0	3066440.5	26662.85
295.00	237204.9	2579192.0	2816396.5	25136.55
294.00	222289.6	2355138.0	2577427.5	23642.16
293.00	207872.5	2144336.0	2352208.5	22187.81
292.00	193707.3	1940127.5	2133835.0	20753.48
291.00	180051.3	1749041.5	1929092.7	19359.19
290.00	166786.4	1568724.5	1735510.7	17995.38
289.00	153782.2	1395587.5	1549369.7	16651.90
288.00	141404.1	1241027.2	1382431.2	15363.39
287.00	129385.4	1095400.7	1224786.0	14106.83
286.00	117729.3	957464.5	1075193.7	12881.35
285.00	106565.1	826466.2	933031.3	11694.92
284.00	95906.6	703513.2	799419.8	10535.33
283.00	85616.4	587573.6	673190.0	9396.57
282.00	75803.6	481381.7	557185.3	8285.55
281.00	66450.7	384168.0	450618.7	7200.67
280.00	57690.9	298680.3	356371.3	6148.99
279.00	49422.3	222728.8	272151.1	5125.64
278.00	41626.5	155823.4	197449.9	4129.00
277.00	34394.7	99870.7	134265.5	3163.42
276.00	27727.6	56254.9	83982.5	2243.78
275.00	21650.2	25052.3	46702.6	1394.54
274.00	16435.6	6950.1	23385.7	679.31
273.00	12327.6	784.6	13112.2	261.78
272.00	8926.4	71.3	8997.7	156.39
271.00	6039.0	0.0	6039.0	113.97
270.00	3693.8	0.0	3693.8	81.29
269.00	1861.6	0.0	1861.6	51.52
268.00	617.7	0.0	617.7	24.95
267.00	22.2	0.0	22.2	2.62
266.00	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
15.31	0.79	267.77	25.45	0.95	268.07	42.15	1.13	268.47
70.00	1.33	269.03	116.22	1.55	269.80	192.87	1.78	270.82
320.16	1.79	272.20	531.48	1.29	273.41	882.17	1.09	274.19
1464.20	1.07	274.97	2430.32	1.17	275.81	4033.99	1.30	276.92
6695.93	1.51	278.29	11114.19	1.79	280.06	18447.87	2.13	282.31

SECTION	DISTANCES		DRAINAGE		'N' VALUE BY SEGMENTS						
	DOWNSTREAM CHANNEL	VALLEY	UPSTREAM CHANNEL	VALLEY	AREA, SQ MI	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
5	850.	850.	100.	100.	8.95	0.090	0.060	0.090			

ELEVATION	KD VALUES			TOTAL	END AREA SQ. FT.
	CHANNEL	VALLEY	VALLEY		
300.00	162247.2	1876888.2	2039135.5	17985.51	
299.00	153672.4	1717876.7	1871549.0	16937.83	
298.00	145184.8	1562162.7	1707347.5	15899.42	
297.00	136974.9	1416693.0	1553667.7	14890.04	
296.00	128834.4	1273784.5	1402618.7	13887.93	
295.00	121028.4	1142872.0	1263900.2	12920.08	
294.00	113351.2	1016465.6	1129816.7	11965.14	
293.00	105866.9	896819.3	1002686.2	11029.57	
292.00	98645.6	786182.8	884828.3	10120.03	
291.00	91557.3	680037.3	771594.6	9223.52	
290.00	84738.3	582847.7	667586.0	8353.11	
289.00	78113.1	491979.1	570092.2	7501.05	
288.00	71678.9	407309.5	478988.4	6666.92	
287.00	65491.9	330580.8	396072.8	5855.63	
286.00	59558.5	262685.1	322243.7	5069.88	
285.00	53818.8	201132.2	254951.1	4304.64	
284.00	48274.6	145782.0	194056.6	3560.61	
283.00	43041.6	100276.9	143318.5	2849.38	
282.00	38045.2	70740.0	108785.3	2203.94	
281.00	33291.0	51397.4	84688.5	1683.55	
280.00	28784.9	37344.6	66129.6	1286.05	
279.00	24528.0	25444.0	49972.0	977.30	
278.00	20567.0	15734.5	36301.5	728.43	
277.00	16890.6	8595.6	25486.3	518.62	
276.00	13510.3	3999.9	17510.2	349.72	
275.00	10433.1	1515.4	11948.6	226.42	
274.00	7759.5	501.4	8261.0	150.70	
273.00	5577.5	98.8	5696.3	104.16	
272.00	3807.8	0.0	3807.8	74.06	
271.00	2471.7	0.0	2471.7	54.23	
270.00	1407.1	0.0	1407.1	36.42	
269.00	616.1	0.0	616.1	20.68	
268.00	115.2	0.0	115.2	7.01	
267.20	0.0	0.0	0.0	0.00	

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
15.27	0.89	268.74	25.39	1.10	269.15	42.05	1.34	269.68
69.84	1.63	270.37	115.94	1.95	271.26	192.40	2.26	272.39
319.39	2.34	273.74	530.20	2.31	275.03	880.05	2.40	276.13
1460.68	2.58	277.25	2424.47	2.85	278.50	4024.28	3.12	280.01
6679.61	3.20	281.81	11087.45	3.40	283.57	18403.48	3.88	285.57

BRIDGE SECTION 6

COEFFICIENTS  
 OPENING=0.079, ORIFICE=0.059, ROADWAY=0.079

DISTANCES

ELEVATION	OPENING END AREA	Q CRIT.	DOWNSTREAM		UPSTREAM	
			CHANNEL 100.0	VALLEY 100.0	CHANNEL 100.0	VALLEY 100.0
			ROADWAY			
			Q IN CFS			
268.2000	0.00	0.00			269.9000	0.00
268.4374	0.52	1.03			270.6549	0.93
268.6749	2.11	5.84			271.4098	5.28
268.9124	4.75	16.10			272.1647	14.55
269.1498	8.27	34.73			272.9196	29.87
269.3873	12.01	59.94			273.6745	52.19
269.6248	15.89	89.93			274.4294	82.32
269.8622	19.93	124.39			275.1843	121.03
270.0997	24.12	163.12			275.9392	169.00
270.3372	28.47	206.00			276.6941	226.86
270.5746	32.96	252.92			277.4490	295.23
270.8121	37.61	303.86			278.2039	374.66
271.0496	42.41	358.75			278.9588	465.71
271.2870	47.36	417.58			279.7137	569.48
271.5245	52.47	480.35			280.4686	686.62
271.7620	57.72	547.03			281.2235	817.91
271.9995	63.13	617.65			281.9784	963.81
272.2369	68.69	692.19			282.7333	1124.92
272.4744	74.41	770.69			283.4882	1301.41
272.7119	80.27	853.15			284.2431	1493.63
272.9493	86.29	939.57			284.9980	1701.83
273.1868	92.46	1030.02			285.7529	1926.45
273.4243	98.80	1124.49			286.5078	2167.97
273.6617	106.56	1225.65			287.2627	2426.81
273.8992	116.61	1338.97			288.0176	2703.37
274.1367	128.96	1467.70			288.7725	3008.07
274.3741	143.10	1618.81			289.5274	3341.31
274.6116	157.92	1789.23			290.2823	3703.51
274.8491	173.37	1975.65			291.0372	4095.17
275.0865	188.96	2179.83			291.7921	4516.80
275.3240	204.60	2395.62			292.5470	4968.80
275.5615	220.27	2622.17			293.3019	5451.67
275.7990	235.98	2858.87			294.0568	5965.81
276.0364	251.72	3105.17			294.8117	6511.61
276.2739	267.51	3360.79			295.5666	7089.57
276.5114	283.33	3625.31			296.3215	7700.20
276.7488	299.19	3898.36			297.0764	8344.11
276.9863	315.09	4179.83			297.8313	9021.81
277.2238	331.03	4469.41			298.5862	9733.80
277.4612	347.00	4766.81			299.3411	10480.57
277.7000	359.72	5077.94			300.1000	11262.60

THE HEAD-LOSS IS REFLECTED BETWEEN THE EXIT AND APPROACH SECTIONS. A RATING CURVE IS NOT DEVELOPED SEPERATELY FOR THE BRIDGE. NORMAL PROFILES ARE COMPUTED WHEN THE BRIDGE DOES NOT CONTROL THE FLOW.

---DISTANCES---

SECTION	DOWNSTREAM CHANNEL	VALLEY	UPSTREAM CHANNEL	VALLEY	DRAINAGE AREA, SQ MI	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
7	100.	100.	600.	600.	8.92	0.090	0.060	0.090			

\*N\* VALUE BY SEGMENTS

---KD VALUES---

ELEVATION	CHANNEL	VALLEY	AREA, SQ MI	TOTAL	END AREA
300.00	115832.7	1872001.7	1987834.5	18966.13	
299.00	109566.6	1713309.2	1822875.7	17759.73	
298.00	103477.8	1565616.0	1669093.7	16603.73	
297.00	97462.0	1422223.5	1519685.5	15468.12	
296.00	91616.5	1288866.0	1380482.5	14380.12	
295.00	85934.7	1164451.2	1250386.0	13336.84	
294.00	80347.0	1045139.3	1125486.5	12319.08	
293.00	74974.2	937256.6	1012230.7	11358.63	
292.00	69723.5	835436.7	905160.1	10430.49	
291.00	64594.8	739679.6	804274.5	9534.66	
290.00	59677.1	652471.3	712148.5	8692.85	
289.00	54894.8	569389.3	624284.1	7881.15	
288.00	50247.3	490241.0	540488.5	7097.78	
287.00	45806.4	417914.5	463720.9	6352.32	
286.00	41530.3	351583.1	393113.4	5635.71	
285.00	37392.3	290162.0	327554.3	4942.96	
284.00	33432.9	234911.7	268344.6	4280.54	
283.00	29665.4	186054.1	215719.5	3649.92	
282.00	26095.4	143260.5	169356.0	3050.47	
281.00	22705.9	107042.3	129748.3	2491.30	
280.00	19491.6	76444.8	95936.5	1975.83	
279.00	16485.5	51767.6	68253.1	1515.70	
278.00	13684.7	32521.4	46206.2	1114.73	
277.00	11097.2	17944.1	29041.3	771.76	
276.00	8720.4	7263.5	15983.9	468.40	
275.00	6578.4	2861.2	9439.6	252.37	
274.00	4728.4	930.4	5658.9	139.21	
273.00	3265.1	210.5	3475.6	79.25	
272.00	2035.0	19.0	2054.1	47.76	
271.00	1100.6	0.0	1100.6	30.10	
270.00	437.6	0.0	437.6	16.12	
269.00	48.5	0.0	48.5	3.89	
268.50	0.0	0.0	0.0	0.00	

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
15.23	1.39	269.595	25.33	1.64	269.945	41.95	2.46	270.07
69.67	0.82	273.12	115.66	1.36	273.125	191.94	0.82	274.90
318.62	0.82	275.72	528.92	0.54	277.61	877.92	0.57	279.03
1457.15	0.76	279.85	2418.61	1.05	280.64	4014.56	1.29	282.10
6663.60	1.51	284.20	11060.67	1.78	286.81	18359.03	2.08	290.12

\* BRIDGE DID NOT CONTROL FLOW

-----DISTANCES-----

SECTION	DOWNSTREAM		UPSTREAM		DRAINAGE AREA, SQ MI	'N' VALUE BY SEGMENTS					
	CHANNEL	VALLEY	CHANNEL	VALLEY		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
b	600.	600.	1050.	1050.	6.42	0.080	0.060	0.090			

-----KD VALUES-----

ELEVATION	CHANNEL	VALLEY	TOTAL	END AREA SQ. FT.
306.00	224478.5	5357654.0	5582132.0	37671.89
305.00	213194.6	5018422.0	5231616.0	36024.92
304.00	202293.4	4697166.0	4899459.0	34417.60
303.00	191477.1	4379818.0	4571295.0	32818.93
302.00	181001.0	4078103.0	4259104.0	31254.88
301.00	170698.5	3784541.5	3955240.0	29708.42
300.00	160656.3	3503213.5	3663869.5	28188.35
299.00	150865.3	3233019.0	3383884.0	26693.83
298.00	141241.6	2970248.5	3111490.0	25216.33
297.00	132020.5	2722585.5	2854606.0	23777.98
296.00	122963.9	2481353.0	2604316.5	22354.26
295.00	114154.2	2249767.0	2363921.0	20952.50
294.00	105681.6	2030805.0	2136486.5	19579.30
293.00	97374.2	1818144.2	1915518.2	18219.83
292.00	89390.6	1618067.0	1707457.5	16886.67
291.00	81716.8	1429801.5	1511518.2	15578.08
290.00	74279.5	1250446.5	1324726.0	14287.90
289.00	67080.7	1080029.7	1147110.2	13016.15
288.00	60290.6	925910.6	986201.1	11776.42
287.00	53735.0	780341.0	834075.8	10555.51
286.00	47484.3	645788.5	693272.8	9358.74
285.00	41533.5	521932.8	563466.3	8185.12
284.00	35889.5	408960.3	444849.9	7034.68
283.00	30642.7	311638.0	342280.7	5916.00
282.00	25697.9	225468.5	251166.4	4827.27
281.00	21113.7	151962.9	173076.6	3773.77
280.00	16898.0	91583.7	108481.7	2755.63
279.00	13047.5	45447.2	58514.7	1779.27
278.00	9767.3	15842.8	25610.2	897.23
277.00	7342.1	4898.8	12240.9	419.96
276.00	5282.4	1130.6	6413.1	164.50
275.00	3493.6	0.0	3493.6	71.53
274.00	2121.1	0.0	2121.1	50.31
273.00	1059.3	0.0	1059.3	31.28
272.00	331.8	0.0	331.8	14.59
271.00	9.9	0.0	9.9	1.47
270.00	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
11.97	1.11	271.74	19.91	1.33	272.02	32.97	1.63	272.35
54.75	1.23	273.70	90.90	1.73	274.11	150.85	1.78	275.56
250.41	0.76	276.64	415.69	0.51	277.83	689.99	0.36	279.11
1145.22	0.42	279.93	1900.84	0.54	280.74	3155.16	0.62	282.20
5237.18	0.70	284.30	8692.91	0.83	286.92	14428.91	0.98	290.24

-----DISTANCES-----											
SECTION	DOWNSREAM		UPSTREAM		DRAINAGE AREA, SQ MI	'N' VALUE BY SEGMENTS					
	CHANNEL	VALLEY	CHANNEL	VALLEY		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
9	1050.	1050.	1500.	1500.	6.26	0.080	0.060	0.090			

-----KD VALUES-----				END AREA
ELEVATION	CHANNEL	VALLEY	TOTAL	SQ. FT.
303.00	98086.8	2458815.5	2556902.0	20977.86
302.00	92363.1	2243786.0	2336149.0	19731.97
301.00	86806.2	2039957.5	2126764.0	18511.62
300.00	81336.4	1841834.0	1923170.2	17304.42
299.00	76048.0	1655329.2	1731377.0	16124.24
298.00	70878.5	1477753.7	1548652.2	14964.13
297.00	65841.8	1306132.0	1371973.7	13817.40
296.00	61022.3	1149475.0	1210497.2	12704.12
295.00	56293.8	999953.8	1056247.7	11604.46
294.00	51702.0	861138.1	912840.1	10525.24
293.00	47328.0	737538.7	784866.7	9487.52
292.00	43088.0	622114.3	665202.3	8475.30
291.00	38983.3	515405.1	554388.5	7490.29
290.00	35062.2	421758.8	456821.0	6546.17
289.00	31316.5	337257.6	368574.1	5643.62
288.00	27739.7	260106.5	287846.3	4774.66
287.00	24332.3	190829.5	215161.8	3934.59
286.00	21098.1	138500.1	159598.3	3145.73
285.00	18041.6	126982.8	145024.5	2481.13
284.00	15196.0	93277.4	108473.5	2031.38
283.00	12549.1	64492.1	77041.3	1606.99
282.00	10108.9	40628.1	50737.0	1207.95
281.00	7884.3	21209.7	29094.1	831.66
280.00	6019.7	7686.7	13706.4	470.63
279.00	4557.0	1711.0	6268.0	197.93
278.00	3305.7	117.3	3423.1	75.94
277.00	2234.0	0.0	2234.0	48.54
276.00	1339.6	0.0	1339.6	33.94
275.00	642.4	0.0	642.4	20.58
274.00	167.9	0.0	167.9	8.42
273.00	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
11.75	1.07	274.21	19.54	1.29	274.56	32.35	1.56	275.00
53.73	1.70	275.82	89.20	2.11	276.58	148.04	2.24	277.87
245.74	1.39	278.89	407.94	1.13	279.66	677.12	1.07	280.45
1123.87	1.24	281.19	1565.42	1.51	282.06	3096.35	1.73	283.43
5139.55	1.84	285.46	8530.85	1.82	287.89	14159.92	1.91	290.91



-----DISTANCES-----						'N' VALUE BY SEGMENTS					
SECTION	DOWNSTREAM		UPSTREAM		DRAINAGE AREA, SQ MI	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
	CHANNEL	VALLEY	CHANNEL	VALLEY							
10	1500.	1500.	1300.	1300.	5.00	0.070	0.060	0.070			

-----KD VALUES-----				END AREA
ELEVATION	CHANNEL	VALLEY	TOTAL	SQ. FT.
308.00	219117.2	4597527.0	4816644.0	29995.34
307.00	206851.3	4271260.0	4478111.0	28508.94
306.00	194742.5	3952013.0	4146755.0	27038.34
305.00	183000.2	3649145.5	3832145.5	25604.58
304.00	171510.5	3353394.5	3524905.0	24193.05
303.00	160273.4	3064760.5	3225033.5	22803.76
302.00	149474.0	2793232.5	2942706.5	21445.85
301.00	138872.6	2529444.0	2668316.5	20101.88
300.00	128619.5	2279280.0	2407899.5	18782.31
299.00	118723.2	2045630.5	2164354.0	17488.60
298.00	109029.1	1821415.5	1930444.5	16210.70
297.00	99776.2	1618406.0	1718182.0	14975.17
296.00	90852.2	1427924.0	1518776.2	13771.99
295.00	82214.0	1245159.7	1327373.7	12593.24
294.00	73913.7	1067873.5	1141787.2	11439.13
293.00	66060.9	905466.2	971527.1	10306.81
292.00	58496.0	752558.2	811054.2	9188.13
291.00	51305.2	611959.5	663264.7	8086.91
290.00	44479.2	483315.3	527794.5	7002.28
289.00	38075.6	368518.1	406593.7	5936.32
288.00	32110.5	268190.8	300301.4	4889.02
287.00	26519.6	180327.0	206846.6	3857.04
286.00	21376.5	108799.8	130176.3	2844.55
285.00	16688.4	54150.3	70836.7	1872.68
284.00	12478.6	17246.7	29725.3	947.68
283.00	9003.2	2837.3	11840.5	328.21
282.00	6271.6	0.0	6271.6	111.88
281.00	4235.6	0.0	4235.6	83.74
280.00	2603.4	0.0	2603.4	58.85
279.00	1408.4	0.0	1408.4	37.77
278.00	570.2	0.0	570.2	20.10
277.00	124.3	0.0	124.3	6.68
276.00	2.9	0.0	2.9	0.38
275.70	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
9.91	0.95	277.33	16.44	1.10	277.66	27.30	1.29	278.07
45.34	1.46	278.64	75.78	1.68	279.35	124.93	1.86	280.35
207.36	2.17	281.42	344.27	2.64	282.59	571.44	0.84	283.70
948.45	1.12	283.88	1574.27	1.17	284.43	2613.07	1.26	285.20
4337.37	1.26	286.53	7199.36	1.31	288.54	11949.85	1.40	291.36

SECTION 11	DISTANCES				DRAINAGE AREA, SQ MI 4.71	"N" VALUE BY SEGMENTS					
	DOWNSTREAM CHANNEL 1300.	VALLEY 1300.	UPSTREAM CHANNEL 100.	VALLEY 100.		NO. 1 0.090	NO. 2 0.070	NO. 3 0.080	NO. 4	NO. 5	NO. 6

ELEVATION	K0 VALUES			END AREA SQ. FT.
	CHANNEL	VALLEY	TOTAL	
312.00	110701.0	1967419.7	2078120.7	18200.14
311.00	104400.4	1819965.0	1924365.2	17071.77
310.00	98252.0	1682102.5	1780354.5	15996.04
309.00	92205.1	1550635.5	1642840.5	14955.40
308.00	86401.9	1409707.2	1496109.0	13976.19
307.00	80698.3	1273200.2	1353898.5	13013.61
306.00	75144.2	1143325.7	1218469.7	12075.99
305.00	69793.8	1022657.7	1092451.7	11171.63
304.00	64543.3	906404.0	970947.2	10283.36
303.00	59488.3	798603.2	858091.6	9426.28
302.00	54620.3	698515.5	753135.7	8598.29
301.00	49894.8	604836.3	654731.1	7792.53
300.00	45313.0	517879.0	563192.1	7009.20
299.00	40977.0	440857.0	481854.0	6266.74
298.00	36781.9	368934.5	405716.4	5547.13
297.00	32769.7	303490.6	336260.3	4856.80
296.00	28937.1	244104.6	273041.8	4194.56
295.00	25288.1	190479.6	215767.7	3560.26
294.00	21876.0	143263.7	165139.7	2956.40
293.00	18643.4	102062.1	120705.5	2374.67
292.00	15624.7	68149.0	83773.8	1829.51
291.00	12823.6	40899.8	53723.4	1325.76
290.00	10248.8	20281.7	30530.5	864.28
289.00	7891.1	6349.8	14240.9	460.19
288.00	5817.5	1288.5	7106.0	202.04
287.00	4011.6	228.4	4240.0	101.84
286.00	2509.0	0.1	2509.2	61.80
285.00	1497.2	0.0	1497.2	42.74
284.00	738.0	0.0	738.0	26.03
283.00	226.7	0.0	226.7	11.78
282.00	2.5	0.0	2.5	0.55
281.00	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
9.47	1.02	282.79	15.75	1.25	283.05	26.08	1.49	283.42
43.32	1.74	283.92	71.91	2.02	284.58	119.34	2.34	285.44
198.11	2.61	286.50	328.87	2.55	287.52	545.88	1.85	288.43
906.03	1.94	289.01	1503.85	2.07	289.68	2496.18	2.31	290.47
4143.36	2.63	291.50	6877.33	2.94	292.93	11415.32	3.23	294.96

BRIDGE SECTION 12

COEFFICIENTS

OPENING=0.079, ORIFICE=0.059, ROADWAY=0.079

DISTANCES

ELEVATION	DOWNSTREAM		UPSTREAM	
	CHANNEL 100.0	VALLEY 100.0	CHANNEL 100.0	VALLEY 100.0
	OPENING	Q CRIT.	ROADWAY	Q IN CFS
279.8000	0.00	0.00	292.2000	0.00
280.0750	0.21	0.44	292.7049	21.20
280.3499	0.85	2.54	293.2098	81.72
280.6248	1.92	7.21	293.7147	172.36
280.8997	3.42	15.06	294.2196	299.59
281.1746	5.34	26.34	294.7245	466.54
281.4495	7.69	41.46	295.2294	664.20
281.7244	10.47	60.76	295.7343	883.75
281.9993	13.68	84.57	296.2392	1133.98
282.2742	17.31	113.21	296.7441	1417.81
282.5491	21.34	149.58	297.2490	1736.32
282.8240	25.72	191.31	297.7539	2090.59
283.0989	30.46	238.33	298.2588	2481.70
283.3738	35.54	291.81	298.7637	2907.15
283.6487	40.95	353.44	299.2686	3353.82
283.9236	46.66	420.71	299.7735	3827.27
284.1985	52.69	493.78	300.2784	4334.95
284.4734	59.02	572.78	300.7833	4877.59
284.7484	66.33	659.74	301.2882	5455.82
285.0233	74.86	758.15	301.7931	6070.35
285.2982	84.15	867.13	302.2980	6721.67
285.5731	94.21	986.99	302.8029	7410.46
285.8480	105.03	1118.10	303.3078	8137.23
286.1229	116.62	1260.87	303.8127	8894.63
286.3978	129.04	1418.48	304.3176	9679.07
286.6727	142.13	1595.04	304.8225	10493.93
286.9476	155.33	1782.96	305.3274	11345.94
287.2225	168.53	1980.86	305.8323	12235.35
287.4974	181.72	2188.05	306.3372	13162.75
287.7723	194.92	2404.01	306.8421	14128.61
288.0472	208.11	2628.29	307.3470	15133.51
288.3221	221.31	2860.55	307.8519	16177.69
288.5970	234.50	3100.45	308.3568	17261.70
288.8719	247.70	3347.74	308.8617	18428.14
289.1469	260.90	3602.23	309.3666	19643.14
289.4218	274.09	3863.57	309.8715	20903.62
289.6967	287.29	4131.64	310.3764	22210.10
289.9716	300.48	4406.25	310.8813	23563.31
290.2465	313.68	4687.23	311.3862	24963.43
290.5214	326.87	4974.43	311.8911	26411.11
290.8000	340.25	5271.73	312.4000	27919.01

THE HEAD-LOSS IS REFLECTED BETWEEN THE EXIT AND APPROACH SECTIONS. A RATING CURVE IS NOT DEVELOPED SEPERATELY FOR THE BRIDGE. NORMAL PROFILES ARE COMPUTED WHEN THE BRIDGE DOES NOT CONTROL THE FLOW.

SECTION	DISTANCES				DRAINAGE AREA, SQ MI	'N' VALUE BY SEGMENTS					
	DOWNSTREAM CHANNEL	VALLEY	UPSTREAM CHANNEL	VALLEY		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
13	100.	100.	1900.	1900.	4.62	0.100	0.070	0.080			

ELEVATION	KD VALUES			TOTAL	END AREA SQ. FT.
	CHANNEL	VALLEY	VALLEY		
312.00	54345.1	1933476.0	1987821.0	18654.92	
311.00	51239.6	1764667.0	1815906.5	17466.94	
310.00	48221.5	1613256.7	1661478.2	16325.77	
309.00	45252.8	1470545.2	1515798.0	15211.68	
308.00	42392.1	1339000.5	1381392.5	14160.64	
307.00	39592.7	1213089.7	1252682.2	13141.48	
306.00	36854.5	1092813.0	1129667.5	12154.21	
305.00	34229.1	979067.3	1013296.3	11219.73	
304.00	31652.2	869191.0	900843.2	10306.07	
303.00	29159.6	766649.0	795808.6	9427.31	
302.00	26770.4	672241.7	699012.1	8589.28	
301.00	24451.6	583482.3	607933.8	7777.94	
300.00	22203.7	500460.9	522664.6	6993.22	
299.00	20064.8	426391.6	446456.3	6248.61	
298.00	18006.5	360033.0	378039.6	5537.68	
297.00	16037.7	300287.2	316325.0	4864.42	
296.00	14157.6	245845.6	260003.2	4227.22	
295.00	12368.0	196726.8	209094.8	3624.15	
294.00	10683.2	153575.7	164259.0	3059.04	
293.00	9097.8	115724.7	124822.5	2527.66	
292.00	7616.8	83252.7	90869.6	2030.57	
291.00	6243.1	56006.4	62249.6	1567.41	
290.00	4981.0	33926.6	38907.7	1138.19	
289.00	3834.7	17640.7	21475.4	749.08	
288.00	2817.8	7217.6	10035.5	417.71	
287.00	1937.4	1797.7	3735.2	170.60	
286.00	1277.0	158.6	1435.7	54.65	
285.00	778.4	0.0	778.4	24.38	
284.00	390.7	0.0	390.7	14.93	
283.00	118.3	0.0	118.3	6.59	
282.00	0.7	0.0	0.7	0.17	
281.90	0.0	0.0	0.0	0.00	

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
9.33	1.81	282.81	15.52	2.10	283.10	25.69	2.42	283.50
42.68	2.79	284.04	70.85	3.21	284.76	117.58	2.78	285.68
195.19	0.11	291.36	324.03	0.17	291.52	537.84	0.18	293.67
892.69	0.25	294.81	1481.71	0.34	296.10	2459.43	0.46	297.65
4082.35	0.61	299.55	6776.06	0.79	301.96	11247.23	1.00	304.96

SECTION	DOWNSTREAM		UPSTREAM		DRAINAGE AREA, SQ MI	'N' VALUE BY SEGMENTS					
	CHANNEL 1900.	VALLEY 1900.	CHANNEL 1950.	VALLEY 1950.		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
14					4.17	0.075	0.060	0.075			

ELEVATION	KD VALUES			END AREA SQ. FT.
	CHANNEL	VALLEY	TOTAL	
317.00	114306.7	4123223.5	4237530.0	27794.50
316.00	107952.7	3837224.0	3945176.5	26383.88
315.00	101644.9	3554377.0	3656021.5	24982.66
314.00	95566.9	3288827.5	3384394.0	23627.49
313.00	89611.6	3033002.5	3122614.0	22297.79
312.00	83779.1	2786902.0	2870681.0	20993.58
311.00	78172.1	2556914.0	2635086.0	19739.25
310.00	72667.2	2334068.0	2406735.0	18507.66
309.00	67341.8	2123709.5	2191051.0	17316.19
308.00	62188.7	1926427.7	1988616.2	16171.42
307.00	57180.0	1738157.5	1795337.5	15063.66
306.00	52335.9	1557833.7	1610169.5	13995.57
305.00	47708.9	1388142.2	1435851.0	12958.88
304.00	43229.8	1226311.0	1269540.7	11942.50
303.00	38898.2	1072400.0	1111298.0	10946.06
302.00	34779.2	929663.2	964442.5	9977.73
301.00	30862.2	797282.2	828144.5	9035.34
300.00	27129.4	673713.5	700842.8	8114.11
299.00	23585.2	558938.5	582523.7	7212.36
298.00	20228.2	452561.5	472789.8	6326.59
297.00	17093.4	356848.6	373942.0	5455.98
296.00	14173.8	273320.5	287494.2	4604.39
295.00	11477.7	199847.3	211335.0	3777.11
294.00	9007.4	136188.2	145195.6	2973.46
293.00	6789.0	83412.7	90201.7	2194.89
292.00	4818.9	41861.2	46680.2	1441.19
291.00	3266.7	14014.1	17280.9	737.79
290.00	2127.9	2858.5	4986.5	245.40
289.00	1168.7	0.0	1168.7	31.38
288.00	468.5	0.0	468.5	17.00
287.00	55.6	0.0	55.6	4.24
286.30	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
8.62	0.92	287.42	14.31	1.11	287.69	23.74	1.33	288.06
39.43	1.58	288.56	65.45	1.86	289.25	108.62	0.34	290.19
180.31	0.17	291.44	299.33	0.24	291.67	496.84	0.18	293.70
824.65	0.22	294.84	1368.77	0.28	296.14	2271.98	0.37	297.70
3771.20	0.48	299.62	6259.61	0.62	302.04	10390.00	0.79	305.06

SECTION 15	DISTANCES		DRAINAGE		IN. VALUE BY SEGMENTS					
	CHANNEL 1950.	VALLEY 1950.	CHANNEL 2350.	VALLEY 2350.	AREA, SQ MI 4.04	NO. 1 0.080	NO. 2 0.069	NO. 3 0.080	NO. 4	NO. 5

ELEVATION	RD VALUES			END AREA SQ. FT.
	CHANNEL	VALLEY	TOTAL	
321.00	87917.1	6054020.0	6141949.0	43988.41
320.00	83000.0	5607097.0	5690105.0	41861.35
319.00	78181.0	5169141.0	5247322.0	39746.77
318.00	73453.4	4749537.0	4823030.0	37651.92
317.00	68803.5	4340305.0	4409100.0	35560.18
316.00	64444.5	3953627.0	4018071.5	33508.31
315.00	60102.5	3579701.0	3639803.5	31461.71
314.00	55857.5	3218526.5	3274384.0	29428.37
313.00	51791.1	2880781.5	2932572.5	27416.90
312.00	47801.0	2553586.5	2601368.0	25419.81
311.00	43946.0	2244933.5	2280079.5	23438.78
310.00	40254.2	1958420.0	1998682.2	21482.37
309.00	36674.2	1696744.0	1733418.0	19554.61
308.00	33206.0	1459953.5	1493160.2	17661.35
307.00	29912.4	1245900.5	1275092.7	15843.84
306.00	26746.4	1047271.5	1074018.0	14081.14
305.00	23722.6	864727.2	888449.7	12376.95
304.00	20839.9	703885.1	724725.0	10742.64
303.00	18101.6	570972.7	589074.2	9198.63
302.00	15530.5	435713.3	451243.8	7735.64
301.00	13118.0	316731.3	329849.3	6392.39
300.00	10872.0	230897.6	250770.5	5021.36
299.00	8799.6	174381.5	183181.2	3724.44
298.00	6905.9	114863.3	121769.3	2951.15
297.00	5198.9	66826.0	72025.0	2062.72
296.00	3701.7	31751.2	35452.9	1261.75
295.00	2473.5	10448.7	12922.3	589.40
294.00	1576.5	1400.1	2976.7	161.82
293.00	907.0	34.1	941.2	30.50
292.00	413.3	0.0	413.3	15.14
291.00	98.9	0.0	98.9	5.70
290.00	0.4	0.0	0.4	0.10
289.00	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
8.41	0.93	291.37	13.98	1.11	291.74	23.16	1.32	292.22
38.46	1.55	292.86	63.86	1.11	293.50	105.98	0.72	293.93
175.92	0.64	294.33	292.04	0.74	294.64	484.74	0.62	295.32
804.56	0.64	295.99	1335.43	0.67	296.91	2216.62	0.69	298.23
3679.32	0.72	300.03	6107.10	0.74	302.34	10136.86	0.78	305.29

-----DISTANCES-----

SECTION	DOWNSTREAM		UPSTREAM		DRAINAGE AREA, SQ MI	'N' VALUE BY SEGMENTS					
	CHANNEL	VALLEY	CHANNEL	VALLEY		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
16	2350.	2350.	2450.	2450.	1.61	0.100					

-----KD VALUES-----

ELEVATION	CHANNEL	VALLEY	TOTAL	END AREA SQ. FT.
321.00	862721.2	0.0	862721.2	10222.98
320.00	777681.5	0.0	777681.5	9483.55
319.00	696495.2	0.0	696495.2	8762.40
318.00	620755.1	0.0	620755.1	8067.51
317.00	549874.1	0.0	549874.1	7396.99
316.00	483471.1	0.0	483471.1	6749.11
315.00	421545.4	0.0	421545.4	6123.61
314.00	364131.0	0.0	364131.0	5520.84
313.00	310950.6	0.0	310950.6	4940.93
312.00	262509.1	0.0	262509.1	4387.21
311.00	218282.0	0.0	218282.0	3857.29
310.00	177824.8	0.0	177824.8	3350.72
309.00	141270.3	0.0	141270.3	2866.12
308.00	109068.5	0.0	109068.5	2404.92
307.00	80795.8	0.0	80795.8	1965.64
306.00	56350.1	0.0	56350.1	1548.43
305.00	35958.5	0.0	35958.5	1154.26
304.00	19929.0	0.0	19929.0	785.47
303.00	8394.6	0.0	8394.6	449.83
302.00	1506.5	0.0	1506.5	147.18
301.00	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
3.96	0.26	301.35	6.59	0.32	301.42	10.92	0.34	301.52
18.14	0.39	301.62	30.13	0.38	301.75	50.00	0.42	301.90
83.00	0.51	302.05	137.78	0.66	302.21	228.70	0.77	302.50
379.59	0.93	302.86	630.05	1.11	303.36	1045.80	1.28	304.08
1735.91	1.46	305.09	2881.34	1.63	306.52	4782.59	1.78	308.59

DISTANCES		DOWNSTREAM		UPSTREAM		DRAINAGE	'N' VALUE BY SEGMENTS					
SECTION	CHANNEL	VALLEY	CHANNEL	VALLEY	AREA, SQ MI	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	
17	2450.	2450.	1800.	1800.	1.42	0.100	0.045	0.080				

KD VALUES				END AREA
ELEVATION	CHANNEL	VALLEY	TOTAL	SQ. FT.
335.00	87515.5	1472550.5	1560066.0	14750.60
334.00	81859.0	1358167.2	1440026.2	13895.86
333.00	76418.8	1251849.7	1328268.5	13076.98
332.00	71101.4	1149871.5	1220972.7	12278.01
331.00	65906.8	1052233.0	1118139.7	11498.97
330.00	60924.3	961352.6	1022277.0	10753.31
329.00	56078.0	874757.3	930835.3	10028.50
328.00	51367.4	791650.2	843017.6	9323.81
327.00	46864.3	708130.1	754994.3	8645.85
326.00	42526.9	627113.7	669640.6	7979.83
325.00	38328.3	548980.0	587308.2	7323.47
324.00	34309.2	475629.2	509938.4	6679.12
323.00	30482.9	407327.6	437810.5	6047.36
322.00	26854.9	344222.8	371077.7	5428.28
321.00	23408.2	285768.6	309176.8	4820.72
320.00	20137.3	231740.3	251877.6	4224.17
319.00	17075.2	182884.0	199959.1	3640.31
318.00	14219.0	139083.9	153302.9	3068.54
317.00	11576.5	100511.6	112088.2	2508.87
316.00	9145.1	67375.5	76520.6	1962.04
315.00	6948.5	41206.2	48154.8	1436.47
314.00	5008.1	22693.9	27702.0	963.55
313.00	3333.8	10135.7	13469.5	561.66
312.00	1937.4	2754.2	4691.7	240.29
311.00	887.7	154.3	1042.1	41.13
310.00	297.3	0.0	297.3	9.54
309.00	24.6	0.0	24.6	1.65
308.50	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
3.56	2.90	308.92*	5.92	1.21	309.46	9.81	1.49	309.67
16.29	1.74	309.98	27.04	2.05	310.36	44.88	1.89	310.83
74.51	0.97	311.23	123.69	1.08	311.47	205.31	1.05	311.81
340.77	1.20	312.16	565.62	1.31	312.63	938.86	1.48	313.19
1558.39	1.67	313.93	2586.69	1.89	314.85	4293.51	2.14	316.07

\* INDICATES CRITICAL FLOW



SECTION	DOWNSTREAM		UPSTREAM		DRAINAGE AREA, SQ MI	IN. VALUE BY SEGMENTS					
	CHANNEL	VALLEY	CHANNEL	VALLEY		NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
18	1800.	1800.	1.	1.	1.08	0.080	0.045	0.080			

-----KD VALUES-----

ELEVATION	CHANNEL	VALLEY	TOTAL	END AREA SQ. FT.
342.00	49309.5	336192.8	385502.3	4261.50
341.00	45879.0	300942.8	346821.8	3853.73
340.00	42508.8	264447.6	306956.4	3470.22
339.00	39277.1	228674.8	267951.9	3115.70
338.00	36134.1	196626.0	232760.2	2780.29
337.00	33079.7	168718.8	201798.5	2464.35
336.00	30160.8	145292.3	175453.1	2180.58
335.00	27350.0	125252.1	152602.2	1921.82
334.00	24629.9	107222.6	131852.6	1683.23
333.00	22026.9	90524.5	112551.5	1468.57
332.00	19549.8	74065.0	93614.9	1270.84
331.00	17202.3	59758.7	76961.1	1088.52
330.00	14973.2	47258.6	62231.8	919.89
329.00	12859.1	36387.2	49246.3	764.24
328.00	10881.4	27282.4	38163.8	623.57
327.00	9038.4	19737.0	28775.5	497.17
326.00	7335.3	13631.0	20966.3	385.03
325.00	5770.4	8781.0	14551.4	286.45
324.00	4359.3	5139.8	9499.1	202.27
323.00	3116.3	2596.1	5712.5	132.93
322.00	2048.3	975.3	3023.6	77.72
321.00	1165.6	116.9	1282.5	33.87
320.00	526.4	0.0	526.4	13.38
319.00	181.9	0.0	181.9	6.11
318.00	14.4	0.0	14.4	1.02
317.50	0.0	0.0	0.0	0.00

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
2.80	1.31	318.26	4.66	1.47	318.47	7.71	1.80	318.69
12.82	2.06	319.02	21.28	2.38	319.42	35.32	2.75	319.94
58.63	2.60	320.56	97.33	2.67	321.10	161.55	2.70	321.62
268.14	2.97	322.26	445.06	3.27	323.05	738.75	3.64	324.01
1226.23	4.05	325.17	2035.36	4.57	326.56	3378.39	5.13	328.26