Drainage Report for
The Timberlands Addition
Wichita, Kansas

Location

The site is located in Wichita, Sedgwick County, Kansas, West of 127th Street between Kellogg Avenue and Harry Street. It lies in the east half of Section 27, Township 27 South, Range 2 East. The total site area is approximately 11.6 acres. The site is shown in the Andover, Kansas Quadrangle located in Appendix A.

Soils

According to the NRCS (SCS) Sedgwick County Soil Survey found in Appendix B, the site is in the Rosehill Series (Rd: Rosehill silty clay , 1 to 3 percent slopes) and the Clime Series (Ce: Clime silty clay, 3 to 6 percent slopes). The Hydrological Soil Group (HSG) for the site is both "C" and "D". The coefficients for the two soil groups were averaged for calculations.

Pre-developed Conditions

Current Development
The site is undeveloped. Residential houses surround the site on all sides.

Current Landform and Slope
Watershed slopes vary from 1.0% to 6.0%. Elevations range from 1335 in the west to 1315 in the east.

Current Drainage Conditions
The site is not in the regulatory floodplain. The nearest mapped flood zone is 300 ft south of the site and is classified as Zone A3 (FIRM Panel 225, Sedgwick County, Kansas, June 3, 1986) (shown in Appendix C). However, a drainage way does pass through the center of the development. The existing drainage way was modeled using HEC-RAS, Appendix D.

Upstream of Site
Runoff from approximately 318 acres flows into the Timberlands Addition from north and west of the site. The runoff from the upstream area was studied with the Woodland lakes 3rd Addition (WL3). Runoff from approximately 160 acres north and west of the Woodland Lakes 3rd Addition (WL3) flows to the existing 12'x4' reinforced concrete box (RCB) at Lincoln Street. This is referred to as the Main Channel. This runoff flows through two existing ponds on the south side of Lincoln. These ponds were constructed for borrow, and limited detention storage is provided. This channel continues southeast through Reserve B of the WL3. An additional 19 acres drains into the east pond, of WL3, through a 48" pipe under Lincoln Street. An additional 139 acres flows from the north into Reserve C of WL3. This is referred to as the East Tributary. Prior to reaching WL3, the East Tributary passes through three existing detention facilities in Woodland Lakes Estates Addition. Detention storage in these ponds is included in the

hydrology calculations included in this report. The East Tributary and the Main Channel meet just west of the east property line of the WL3.

Current Runoff Characteristics
Runoff for the areas north and west of the site were calculated using an SCS 24-hour storm. The TR-20 software model was used to estimate peak flows, Appendix E. Runoff curve numbers ranged from 84 to 98 based on existing land uses. Times of concentration were calculated using the FAA method, and ranged from 15 to 53 minutes. The existing curve number for The Timberlands Addition is 80 and the existing time of concentration for the site is 15 minutes. A summary of existing flows is shown in Table 1 below.

Table 1. Existing Conditions

Location	2-Year (cfs)	5-Year (cfs)	10-Year (cfs)	100-Year (cfs)
East Tributary WL3				
North Prop. Line of WL3	131	190	228	365
East Prop. Line of WL3	113	170	207	337
Main Channel				
D/S of West Pond of WL3	202	286	334	476
D/S of East Pond of WL3	209	297	351	504
East Prop. Line of WL3	241	344	407	592
Total Entering Site	334	485	574	891
Total Exiting the Site	342	500	601	937

Post-Developed Condition

Proposed Development
The site will develop as approximately 21 residential lots with an average size of 1/4 acre.

Proposed Landform and Slope
The ground surrounding houses will slope away from the houses at a minimum of 2.0%. Streets will have a minimum slope of 0.5%

In order to accommodate the development of the site a portion of the existing floodplain will need to be filled. The creek bed will need to be modified to maintain the existing 100-year water surface elevation. These changes were modeled using HEC-RAS and the results are in Appendix F.

Proposed Runoff Characteristics
The site is shown on the Drainage and Utility Plan, Appendix G. The SCS method was again used in the TR-20 software model to determine runoff under developed conditions, Appendix H. A runoff curve number of 87, and a time of concentration of 15 minutes. These were adjusted to reflect developed conditions. The results of this model are shown below in Table 2.

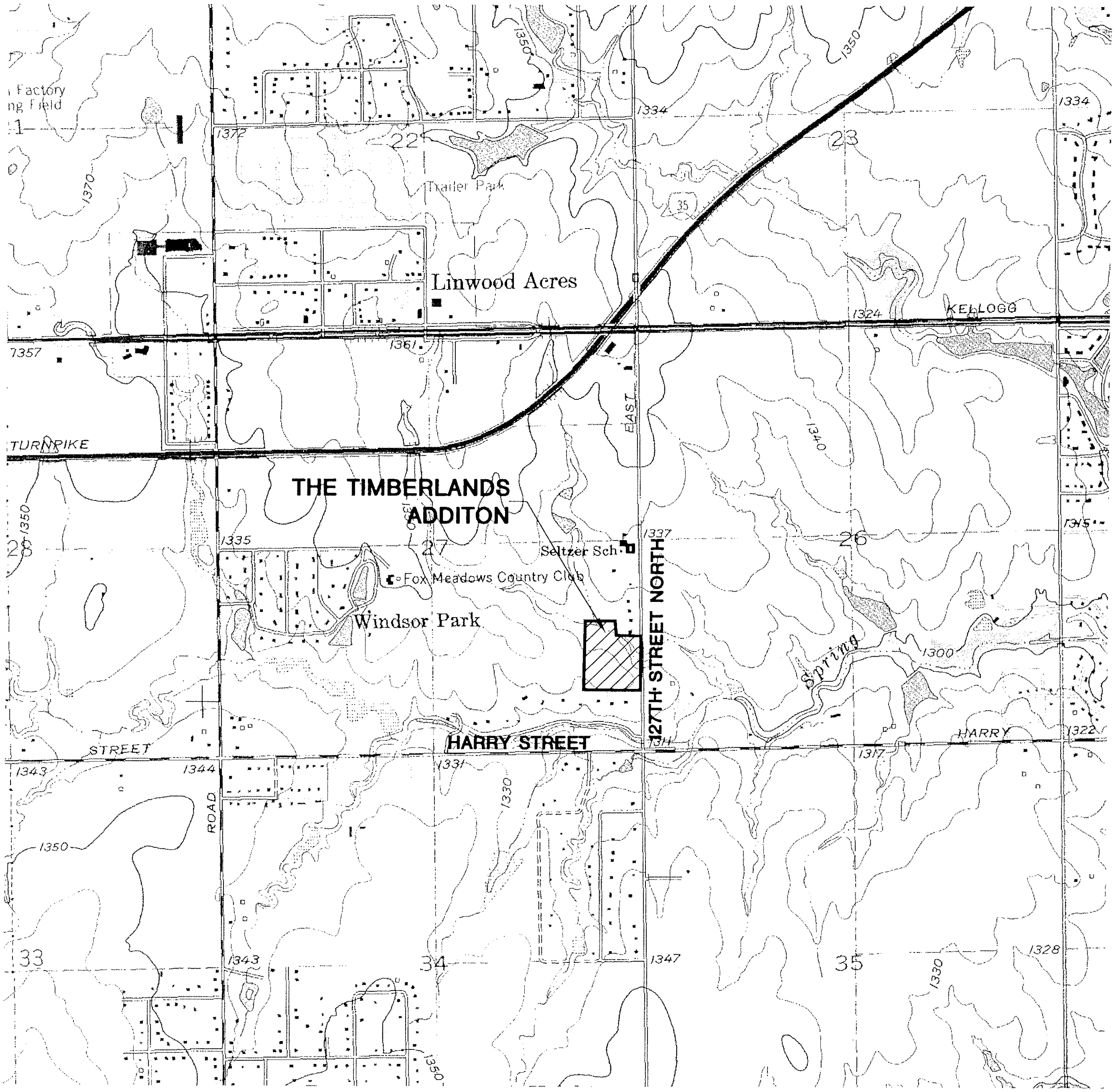
Table 2. Runoff from the Pierce Property.

Sub-Watershed	2-Year (cfs)	5-Year (cfs)	10-Year (cfs)	100-Year (cfs)
Undeveloped	342	500	601	937
Developed	345	505	607	942

Summary

The Pierce Property is an 11.6-acre residential development in southeast Wichita. The site is currently undeveloped agricultural land. A drainage way passes through the site, and was analyzed using the SCS 24-hour storm in the TR-20 software model and HEC-RAS. Flow leaving the site will be increased by 5 cfs, or 0.5%. This increase will have minimal impact on properties downstream.

Appendix A
Quadrangle



SCALE 1:24 000

1 — 1/2 — 0 — 1 MILE

1000 — 0 — 1000 — 2000 — 3000 — 4000 — 5000 — 6000 — 7000 FEET

1 — .5 — 0 — 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

MKEC
ENGINEERING
CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

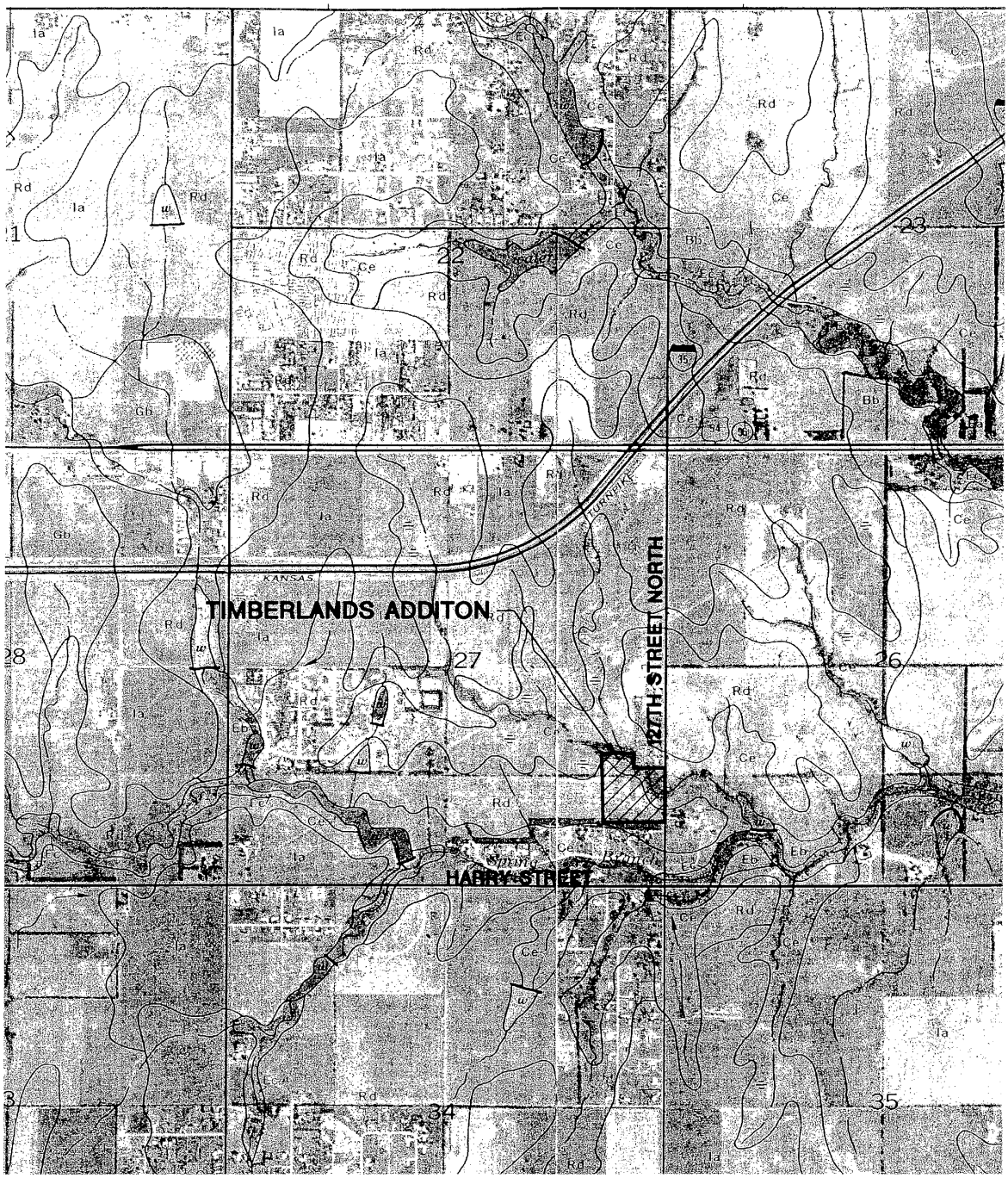
THE TIMBERLANDS ADDITION
PROJECT NAME

ANDOVER QUADRANGLE, KANSAS
SHEET TITLE

DESIGN BY:	DRAWN BY:	CHECKED BY:
AJK	KWS	GJA

DATE	JOB NO.	SHEET/OF
MAY 2005	04416	1 / 1

Appendix B
Soil Survey



J:\CIVIL\04416\DWG\DRNG\04416SOIL.DWG

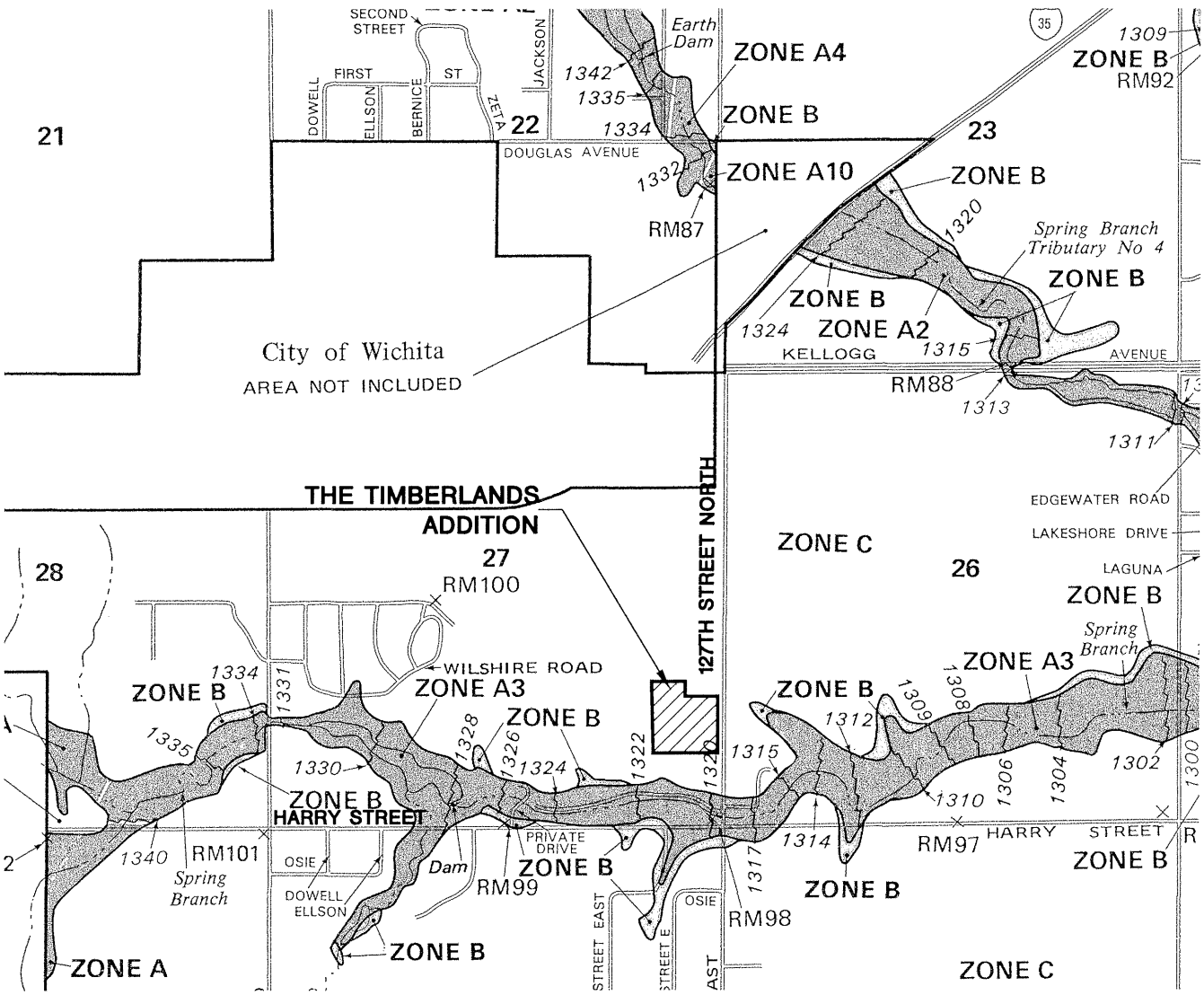
MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

THE TIMBERLANDS ADDITION
PROJECT NAME

SOIL SURVEY
SEDGWICK COUNTY, KANSAS
SHEET TITLE

AJK	KWS	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
JUNE 2005	04416	1 / 1
DATE	JOB NO.	SHEET/OF

Appendix C
FIRM & FBFM



NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

SEDGWICK COUNTY, KANSAS
(UNINCORPORATED AREAS)

PANEL 225 OF 300

COMMUNITY-PANEL NUMBER
200321 0225 A

EFFECTIVE DATE:
JUNE 3, 1986

Federal Emergency Management Agency

APPROXIMATE SCALE

2000 0 2000 FEET

L:\CIVIL\04416\DWG\DRNG\04416FIRM.DWG

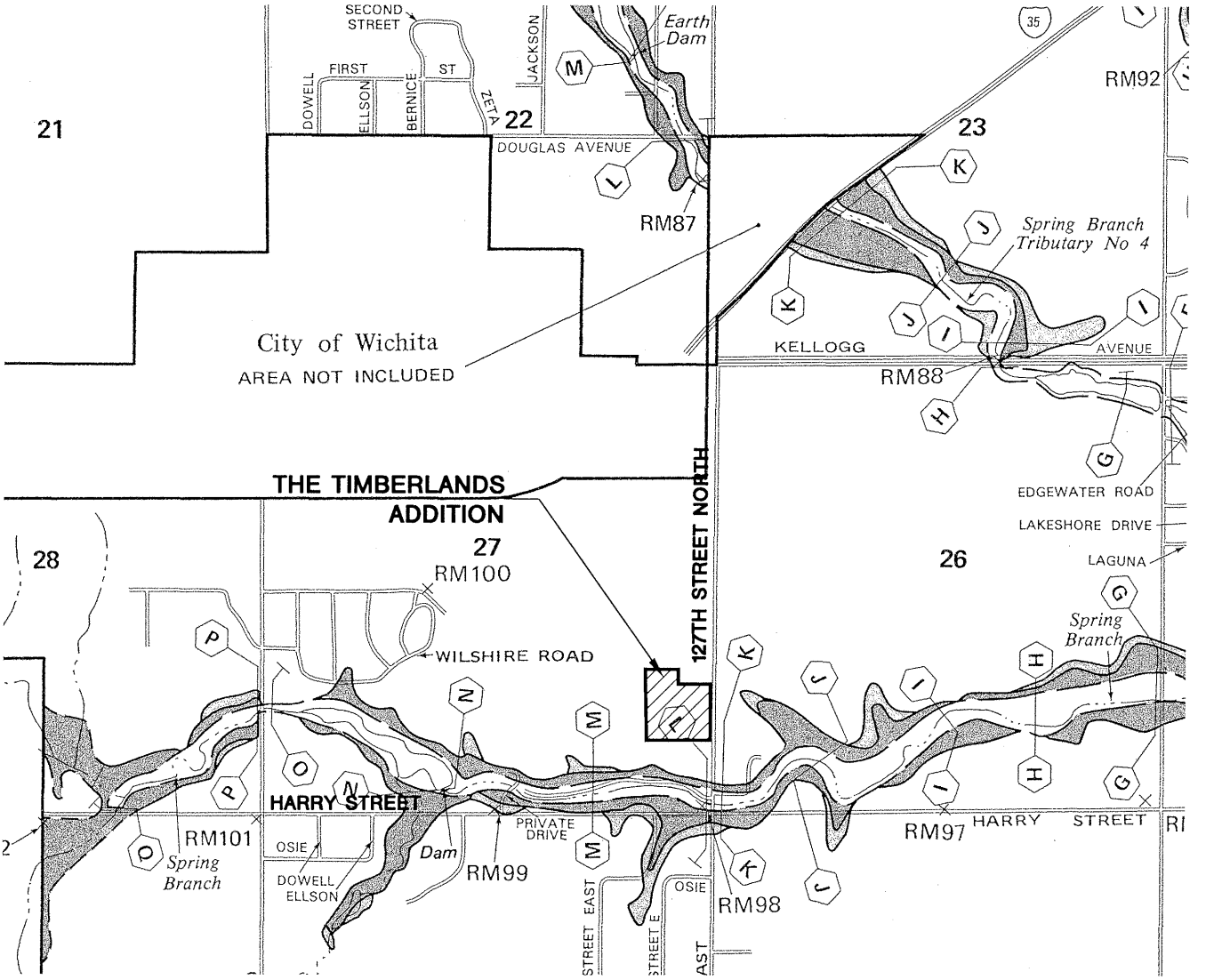
MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

THE TIMBERLANDS ADDITION
PROJECT NAME

FIRM PANEL 225
SEDGWICK COUNTY, KANSAS
SHEET TITLE

AJK	KWS	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:

MAY 2005	04416	1 / 1
DATE	JOB NO.	SHEET/OF



NATIONAL FLOOD INSURANCE PROGRAM

FLOODWAY

FLOOD BOUNDARY AND FLOODWAY MAP

SEDGWICK COUNTY, KANSAS
(UNINCORPORATED AREAS)

PANEL 225 OF 300
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
200321 0225

EFFECTIVE DATE:
JUNE 3, 1986

Federal Emergency Management Agency

APPROXIMATE SCALE
2000 0 2000 FEET

J:\CIVIL\04416\DWG\PRNG\04416FBFM.DWG

MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

THE TIMBERLANDS ADDITION
PROJECT NAME

FBFM PANEL 225
SEDGWICK COUNTY, KANSAS
SHEET TITLE

AJK	KWS	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
MAY 2005	04416	1 / 1
DATE	JOB NO.	SHEET/OF

Appendix D
Existing HEC-RAS MODEL

LINCOLN ST.
RESERVE "A"
RESERVE "B"
RESERVE "C"
RESERVE "D"
RESERVE "E"
RESERVE "G"
GLENMOOR CT.
GLENMOOR ST.
ZELTA CT.
ZELTA ST.
BRACKEN ST.
BRACKEN CT.
BRACKEN CIR.
ZIMMERLY ST.
ZIMMERLY CT.
TIMBERLANDS CT.
E 127TH ST.
WOODLAND LAKES 3RD
WOODLAND LAKES 4TH
TIMBERLANDS

N

SCALE: 1" = 100'
100 0 100 200

LEGEND

100 YR — EXISTING 100 YEAR FLOOD BOUNDARY

100 YR — PROPOSED 100 YEAR FLOOD BOUNDARY

MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

TIMBERLANDS ADDITION
PROJECT NAME

HEC-RAS CROSS SECTIONS
SHEET TITLE

KLA	AJK	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
JUNE 2005	04416	1 / 1
DATE	JOB NO.	SHEET/OF

J:\Civil\04416\dwg\cross\Dwg\PROP100.dwg

HEC-RAS Plan: Existing Profile: 100 YR

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
wood-cedar Combi	1	3.6	100 YR	891.00	1319.76	1324.81	1324.72	1325.31	0.017943	5.70	160.56	145.35	0.90
wood-cedar Combi	1	3.5	100 YR	891.00	1316.97	1323.94		1324.18	0.005166	3.92	227.56	124.78	0.51
wood-cedar Combi	1	3.45	100 YR	891.00	1318.00	1323.42		1323.53	0.001731	2.70	375.54	230.26	0.31
wood-cedar Combi	1	3.4	100 YR	891.00	1316.23	1323.33	1320.24	1323.35	0.000203	1.55	801.79	258.77	0.12
wood-cedar Combi	1	3.3	100 YR	891.00	1315.53	1323.32	1319.36	1323.34	0.000019	1.03	1387.46	498.43	0.08
wood-cedar Combi	1	3.2		Culvert									
wood-cedar Combi	1	3.1	100 YR	891.00	1315.63	1319.35		1319.53	0.003724	3.42	260.90	140.27	0.44
wood-cedar Combi	1	3.0	100 YR	891.00	1314.54	1319.01	1317.87	1319.10	0.002002	2.46	363.22	203.74	0.32
wood-cedar	1	40	100 YR	244.00	1348.00	1351.24	1349.74	1351.26	0.000334	1.25	195.84	159.17	0.20
wood-cedar	1	37.5		Culvert									
wood-cedar	1	35	100 YR	244.00	1344.60	1348.59		1348.63	0.000258	1.51	161.67	80.96	0.19
wood-cedar	1	34	100 YR	244.00	1347.00	1348.21	1348.21	1348.55	0.010519	4.66	52.31	78.04	1.00
wood-cedar	1	32	100 YR	244.00	1341.00	1345.29		1345.36	0.000442	2.20	110.72	46.28	0.25
wood-cedar	1	30	100 YR	244.00	1336.00	1345.32		1345.33	0.000023	0.84	313.39	96.67	0.06
wood-cedar	1	25	100 YR	244.00	1337.00	1345.32	1339.18	1345.33	0.000024	0.84	327.09	122.82	0.07
wood-cedar	1	23		Inl Struct									
wood-cedar	1	22	100 YR	244.00	1343.75	1345.24		1345.25	0.000438	1.06	231.73	302.08	0.21
wood-cedar	1	21	100 YR	244.00	1343.75	1344.68	1344.68	1345.02	0.034205	4.68	52.11	77.53	1.01
wood-cedar	1	20	100 YR	300.00	1335.00	1343.60		1343.61	0.000003	0.31	953.58	165.66	0.02
wood-cedar	1	15	100 YR	300.00	1339.20	1343.57	1340.89	1343.60	0.000212	1.47	204.11	91.22	0.17
wood-cedar	1	13		Culvert									
wood-cedar	1	10	100 YR	300.00	1339.00	1340.39	1340.39	1340.85	0.009672	5.42	55.33	61.84	1.01
wood-cedar	1	8	100 YR	300.00	1337.60	1339.46		1339.55	0.001037	2.42	123.90	86.90	0.36
wood-cedar	1	5.0	100 YR	300.00	1335.34	1339.51		1339.52	0.000074	0.76	429.94	142.60	0.07
wood-cedar	1	4.9	100 YR	300.00	1335.15	1339.51		1339.51	0.000029	0.49	636.11	181.07	0.04
wood-cedar	1	4.8	100 YR	300.00	1335.10	1339.50		1339.51	0.000041	0.55	547.54	168.59	0.05
wood-cedar	1	4.75	100 YR	300.00	1334.73	1339.50		1339.51	0.000066	0.69	451.80	154.68	0.07
wood-cedar	1	4.7	100 YR	476.00	1334.65	1339.49		1339.50	0.000156	1.04	470.78	155.70	0.10
wood-cedar	1	4.65	100 YR	476.00	1334.42	1339.49		1339.50	0.000115	0.96	519.03	168.21	0.09
wood-cedar	1	4.6	100 YR	476.00	1334.39	1339.48	1336.13	1339.50	0.000023	1.02	569.18	184.24	0.09
wood-cedar	1	4.55		Culvert									
wood-cedar	1	4.5	100 YR	476.00	1331.67	1334.60	1334.21	1334.89	0.008947	4.33	110.48	85.62	0.65
wood-cedar	1	4.45	100 YR	476.00	1331.36	1333.96	1333.96	1334.53	0.022546	6.10	78.01	67.86	1.00
wood-cedar	1	4.4	100 YR	476.00	1330.62	1333.84		1333.88	0.000923	1.81	280.72	138.00	0.22
wood-cedar	1	4.3	100 YR	476.00	1324.00	1333.87		1333.87	0.000000	0.12	4057.01	478.15	0.01
wood-cedar	1	4.2	100 YR	476.00	1324.00	1333.87		1333.87	0.000000	0.14	3369.41	435.01	0.01
wood-cedar	1	4.15	100 YR	476.00	1330.85	1333.84		1333.86	0.000570	1.33	359.96	200.60	0.17
wood-cedar	1	4.1	100 YR	476.00	1330.69	1333.77		1333.84	0.001838	2.18	217.87	135.35	0.30
wood-cedar	1	4.09	100 YR	476.00	1330.58	1332.29	1332.29	1332.70	0.026095	5.19	91.78	114.14	1.02
wood-cedar	1	4.05	100 YR	504.00	1328.01	1331.68		1331.85	0.003951	3.34	161.05	124.82	0.45
wood-cedar	1	4	100 YR	504.00	1327.07	1330.52		1330.78	0.008559	4.10	122.99	93.52	0.63
wood-cedar	1	3.98	100 YR	504.00	1326.94	1329.44		1329.76	0.008549	4.79	119.78	100.82	0.66
wood-cedar	1	3.95	100 YR	504.00	1325.38	1328.23		1328.53	0.008958	4.44	119.70	104.45	0.65
wood-cedar	1	3.9	100 YR	592.00	1324.68	1327.71		1327.87	0.002554	3.22	183.88	81.43	0.38
wood-cedar	1	3.85	100 YR	592.00	1323.84	1327.24		1327.39	0.002467	3.10	190.68	86.81	0.37
wood-cedar	1	3.8	100 YR	592.00	1323.72	1327.04	1325.70	1327.35	0.000641	4.44	133.33	146.16	0.44
wood-cedar	1	3.75		Culvert									
wood-cedar	1	3.7	100 YR	592.00	1323.54	1326.38	1325.43	1326.78	0.002669	5.06	116.96	153.17	0.53
wood-cedar	1	3.65	100 YR	592.00	1323.23	1326.45		1326.60	0.002827	3.10	191.16	152.70	0.48
East wood-cedar	1	1.7	100 YR	365.00	1327.54	1330.55		1330.79	0.005543	4.18	103.68	89.73	0.54
East wood-cedar	1	1.63	100 YR	365.00	1326.42	1329.40	1329.40	1329.88	0.017762	5.57	67.45	79.10	0.99
East wood-cedar	1	1.6	100 YR	365.00	1326.07	1328.94		1329.10	0.002357	3.28	111.42	55.06	0.41
East wood-cedar	1	1.5	100 YR	365.00	1325.69	1328.79		1328.92	0.001396	2.88	126.87	50.70	0.32
East wood-cedar	1	1.4	100 YR	365.00	1325.28	1327.92	1327.92	1328.48	0.018033	6.02	60.65	53.85	1.00
East wood-cedar	1	1.38	100 YR	365.00	1325.23	1327.67		1327.83	0.002249	3.20	114.21	56.49	0.40
East wood-cedar	1	1.3	100 YR	365.00	1324.72	1327.68		1327.72	0.000475	1.62	225.32	96.90	0.19
East wood-cedar	1	1.25	100 YR	365.00	1324.20	1327.58		1327.63	0.000426	1.68	217.76	81.70	0.18
East wood-cedar	1	1.2	100 YR	365.00	1324.10	1327.39	1325.78	1327.60	0.000416	3.71	98.32	75.13	0.36
East wood-cedar	1	1.15		Culvert									
East wood-cedar	1	1.1	100 YR	365.00	1324.00	1326.35	1325.69	1326.80	0.005082	5.35	68.20	70.79	0.62
East wood-cedar	1	1.05	100 YR	365.00	1324.00	1326.47		1326.58	0.001512	2.58	141.67	72.24	0.32

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
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PROJECT DATA
Project Title: Cedar View/Woodland Lakes
Project File : Existing.prj
Run Date and Time: 6/8/2005 8:29:43 AM

Project in English units

Project Description:
Woodland Lakes 3rd with proposed ditch grading

PLAN DATA

Plan Title: Timberlands Existing
Plan File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\Existing.p09

Geometry Title: Cedar View/Woodland Lakes
Geometry File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\Existing.g02

Flow Title : Cedar View/Woodland Lakes
Flow File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\Existing.f03

Plan Summary Information:
Number of: Cross Sections = 54 Multiple Openings = 0
Culverts = 6 Inline Structures = 1
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Cedar View/Woodland Lakes
Flow File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\Existing.f03

Flow Data (cfs)

River	Reach	RS	100 YR
wood-cedar	1	40	244
wood-cedar	1	20	300
wood-cedar	1	4.7	476
wood-cedar	1	4.05	504
wood-cedar	1	3.9	592
East wood-cedar	1	1.7	365
East wood-cedar	1	1.3	365
wood-cedar Combi	1	3.6	891

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
East wood-cedar	1	100 YR	Normal S = 0.005	
wood-cedar	1	100 YR	Normal S = 0.002	
wood-cedar Combi	1	100 YR		Normal S = 0.002

GEOMETRY DATA

Geometry Title: Cedar View/Woodland Lakes
Geometry File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\Existing.g02

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
East wood-cedar	1		Junction
wood-cedar	1		Junction
wood-cedar Combi	1	Junction	

JUNCTION INFORMATION

Name: Junction
Description:
Energy computation Method

Length across Junction		Tributary			
River	Reach	River	Reach	Length	Angle
wood-cedar	1	to wood-cedar Combi	1	180	
East wood-cedar	1	to wood-cedar Combi	1	200	

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.7

INPUT
Description: North Prop. Line
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
163.57	1334.36	171.07	1332.69	181.94	1331.21	195.81	1329.43	201.75	1327.57
201.83	1327.54	201.88	1327.54	204.85	1327.55	205.87	1327.9	207.3	1328.34
208.11	1328.33	219.64	1328.79	236.56	1329.46	252.47	1329.9	272.82	1330.39
290.03	1331.06	298.9	1331.24	314.44	1331.47	319.65	1331.55	332.57	1331.71
361.59	1332.19	368.79	1332.22	374.65	1332.54	380.18	1332.65	406.95	1333.74
419.38	1334.02	447.76	1334.79	449.09	1334.84	449.84	1334.87	484.36	1336.2
517.36	1336.92								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
163.57	.045	195.81	.04	236.56	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
195.81	236.56	97	97	.1	.3

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.63

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
182.63	1333.22	192.62	1332.3	206.95	1331.42	220.96	1329.79	234.75	1330.02
236.5	1330.2	255.82	1328.68	260.49	1328.41	262.01	1328.26	264.11	1326.96
264.63	1326.61	266.74	1326.49	267.91	1326.42	269.66	1327.36	270.74	1327.98
272.42	1328.07	276.19	1328.21	280.74	1328.31	312.13	1329.05	316.34	1329.14
321.19	1329.27	356.84	1330.33	380.83	1331.13	380.89	1331.13	384.14	1331.26
428.27	1333.22	444.19	1334.03	457.93	1334.59	468.58	1334.91	511.88	1335.92
513.56	1335.97	531.37	1336.13	538.67	1336.33	564.48	1337.22	566.53	1337.27

```
  594.93  1337.9  609.68 1338.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  182.63    .045   236.5    .035  312.13    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         236.5  312.13               40      40      40             .1       .3

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.6

INPUT
Description:
Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  172.32 1333.06  200.28 1326.07     223 1326.07     248  1329.5  287.57 1330.09
  355.46  1330.3  360.21 1330.47  390.64  1331.9  390.86 1331.91  410.47 1332.52
   421.8 1333.11  440.33 1333.96  463.06 1334.85  473.94  1335.1  513.07 1336.15
   517.7 1336.19  542.56 1337.04  548.07 1337.25  569.49 1337.61  575.91 1337.71
  577.73 1337.76  606.44 1338.38  609.03 1338.43  611.61  1338.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  172.32    .045  172.32    .035     248    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        172.32     248               95      95      95             .1       .3

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.5

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  178.91 1332.56  194.73 1330.09  196.14 1329.71  200.93 1329.62  206.91 1325.69
     238 1325.69  253.89    1329  373.48 1329.37  400.59 1330.92  417.03 1331.59
  433.95 1332.26  446.29 1332.71   456.8 1333.14  473.15 1333.82  489.62 1334.61
   502.9 1335.06  507.88 1335.22  517.64 1335.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  178.91    .045  194.73    .035  253.89    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        194.73  253.89              115     115     115             .1       .3

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.4

INPUT
Description: U/S 48" Tree
Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.66   10.81 1333.09   22.27 1333.03   29.48 1332.77   62.09 1331.61
  145.24 1329.91  149.39 1329.55   165.6 1325.28   180.3 1327.08  210.27 1327.18
     218    1329  337.09 1330.12  343.76 1330.39  357.84 1330.79  358.71 1330.82
  366.44 1331.14  392.78    1332  395.98 1332.11  410.37 1332.49  419.16 1332.81
  445.46 1333.82  452.26 1334.02  474.25 1334.45   483.6 1334.73

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  145.24    .035     218    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        145.24     218               40      40      40             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     200     204    1340
```

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.38

INPUT
Description: D/S 48" Tree
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1333.66	10.81	1333.09	22.27	1333.03	29.48	1332.77	62.09	1331.61
145.24	1329.91	149.39	1329.55	152.31	1328.66	166.31	1325.23	203.31	1325.23
218	1329	337.09	1330.12	343.76	1330.39	357.84	1330.79	358.71	1330.82
366.44	1331.14	392.78	1332	395.98	1332.11	410.37	1332.49	419.16	1332.81
445.46	1333.82	452.26	1334.02	474.25	1334.45	483.6	1334.73		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	145.24	.035	218	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
145.24	218	71	90	75	.1	.3

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.3

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1334.47	19.48	1333.88	37.15	1333.25	57.99	1332.53	63.35	1332.34
97.55	1330.96	104.38	1330.69	122.6	1329.68	141.77	1328.87	149.99	1328.67
154.63	1328.51	179.76	1328.34	201.62	1328.28	239	1328.25	267	1324.72
322.6	1324.72	344.6	1328.36	358.05	1328.72	380.31	1329.47	393.57	1329.81
405.88	1330	413.28	1330.25	434.82	1330.84	452.1	1331.48	460.91	1331.82
470.02	1332.08	486.38	1332.47	507.62	1333.18				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	239	.035	344.6	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239	344.6	190	195	170	.1	.3

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.25

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1328.41	11.34	1328.3	24.29	1328.26	37.25	1328.18	51.82	1328.22
79.35	1328.14	95.55	1328.14	110.12	1328.14	126.32	1328.14	140	1328
164	1324.2	211	1324.2	225.96	1328	239.68	1328.18	251.01	1328.26
271.9	1328.88	276.77	1329.07	280.9	1329.18	298.35	1329.52	327.81	1330.33
337	1330.54	347.87	1330.66	376.59	1331.21				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	140	.035	225.96	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
140	225.96	20	20	20	.1	.3

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.2

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0 1328.48   11.34  1328.3   32.39 1328.22   51.82 1328.18   80.97  1328.1
   169.4    1328     181  1325.4     185  1324.1     217  1324.1     225  1325.4
     231  1326.4   240.6 1327.14  244.74 1327.29   279.6 1328.65  293.33 1329.01
  309.41 1329.46  323.22  1329.8  339.41 1330.23  357.94 1330.63  369.36 1330.76
  388.91 1331.13  389.26 1331.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   169.4    .018     231    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         169.4     231              180      90      70             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     189    1328       F
     219  389.26    1328       F

CULVERT


RIVER: East wood-cedar
REACH: 1                  RS: 1.15

INPUT
Description:
Distance from Upstream XS =      10
Deck/Roadway Width        =      69
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1328       0     400    1328       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1328.48   11.34  1328.3   32.39 1328.22   51.82 1328.18   80.97  1328.1
   169.4    1328     181  1325.4     185  1324.1     217  1324.1     225  1325.4
     231  1326.4   240.6 1327.14  244.74 1327.29   279.6 1328.65  293.33 1329.01
  309.41 1329.46  323.22  1329.8  339.41 1330.23  357.94 1330.63  369.36 1330.76
  388.91 1331.13  389.26 1331.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   169.4    .018     231    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
         169.4     231             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     189    1328       F
     219  389.26    1328       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1328       0     400    1328       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1328.06    9.18 1327.66      23 1327.27   38.74    1327   46.35 1326.92
   65.39 1327.19   75.06 1326.98     256  1326.8     273    1324   315.4    1324
  336.53 1327.52  341.03 1327.64  342.04 1327.65  375.31 1328.04  390.21 1328.21
  392.47 1328.22  422.44 1328.44  454.44  1328.6  463.86 1328.63  469.79 1328.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045     256    .035  336.53    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
          256  336.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     276    1328       F
     305  469.79    1328       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
```

```
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       3      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 10      70     .012     .012        0                  .3              .5
Number of Barrels =  2
Upstream   Elevation =  1324
Centerline Stations
    Sta.    Sta.
     198     209
Downstream Elevation =  1324
Centerline Stations
    Sta.    Sta.
     285     296

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.1

INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1328.06    9.18 1327.66      23 1327.27   38.74    1327   46.35 1326.92
   65.39 1327.19   75.06 1326.98     256  1326.8     273    1324   315.4    1324
  336.53 1327.52  341.03 1327.64  342.04 1327.65  375.31 1328.04  390.21 1328.21
  392.47 1328.22  422.44 1328.44  454.44  1328.6  463.86 1328.63  469.79 1328.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045     256    .035  336.53    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           256  336.53               20      20      20              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     276    1328       F
     305  469.79    1328       F

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.05

INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1328.06    9.18 1327.66      23 1327.27   38.74    1327   46.35 1326.92
   65.39 1327.19   75.06 1326.98     256  1326.8     273    1324   315.4    1324
  336.53 1327.52  341.03 1327.64  342.04 1327.65  375.31 1328.04  390.21 1328.21
  392.47 1328.22  422.44 1328.44  454.44  1328.6  463.86 1328.63  469.79 1328.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045     256    .035  336.53    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           256  336.53              400     170     140              .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 40

INPUT
Description: N of I-35
```

```
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     480    1356     740    1354     890    1352     970    1350    1000    1348
    1030    1350    1110    1352    1260    1354    1520    1356

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     480    .035     890    .025    1110    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           890    1110              160     160     160             .1       .3

CULVERT


RIVER: wood-cedar
REACH: 1                  RS: 37.5

INPUT
Description:
Distance from Upstream XS =      25
Deck/Roadway Width        =      85
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     450  1361.6    1300    1000  1359.9    1300    1500    1362    1300

Upstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     480    1356     740    1354     890    1352     970    1350    1000    1348
    1030    1350    1110    1352    1260    1354    1520    1356

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     480    .035     890    .025    1110    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
           890    1110             .1       .3

Downstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     450  1361.6    1300    1000  1359.9    1300    1500    1362    1300

Downstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     650    1358     800    1356     850    1354     950    1352    1000  1344.6
    1100    1352    1150    1354    1200    1356    1250    1358

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     650    .035     950    .025    1100    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
           950    1100             .1       .3

Upstream Embankment side slope             =       4 horiz. to 1.0 vertical
Downstream Embankment side slope           =       4 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =      .5
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                20     130     .013     .013        0                  .3               .5
Upstream   Elevation =  1346
           Centerline Station =  1000
Downstream Elevation =  1344.6
           Centerline Station =  1000
```

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 35

INPUT
Description: S of I-35
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
650	1358	800	1356	850	1354	950	1352	1000	1344.6
1100	1352	1150	1354	1200	1356	1250	1358		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
650	.035	950	.025	1100	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
950	1100	70	70	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 34

INPUT
Description: N porperty Line
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
974	1351	978	1350	982	1349	985	1348	995	1347
1005	1347	1050	1348	1110	1349	1138	1350	1168	1351

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
974	.035	978	.025	1138	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
978	1138	110	110	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 32

INPUT
Description: North tip of North Pond
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
950	1350	969	1347	974	1346	986	1344	996	1341
1004	1341	1023	1345	1034	1347	1065	1347.5	1095	1347
1130	1346.5	1160	1347						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
950	.035	969	.025	1034	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
969	1034	140	130	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 30

INPUT
Description: Middle of North Pond
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
939	1349	959	1346	963	1345	973	1344	990	1339
999	1336	1002	1336	1010	1339	1015	1341	1026	1344
1075	1346	1116	1347						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
939	.035	973	.025	1026	.035

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           973    1026              215     215     215             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 25

INPUT
Description: N of Wier
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     943    1349     955    1348     960    1347     967    1346     973    1344
     984    1341     990    1339     996    1337    1006    1337    1010    1339
    1015    1341    1028    1344    1125    1346    1135    1347    1175    1348

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     943    .035     973    .025    1028    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           973    1028               50      45      40             .1       .3

INLINE STRUCTURE


RIVER: wood-cedar
REACH: 1                  RS: 23

INPUT
Description: 30 foot base
Distance from Upstream XS =      30
Deck/Roadway Width        =      10
Weir Coefficient          =       3
 Weir Embankment Coordinates    num =        7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     865  1344.5    1000  1344.5    1000    1344    1010    1344    1020    1344
    1020  1344.5    1150  1344.5

Upstream Embankment side slope              =      10 horiz. to 1.0 vertical
Downstream Embankment side slope            =      10 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Weir crest shape                            = Broad Crested


CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 22

INPUT
Description: 1st sta south of weir
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     955    1347     975    1346     980    1345     990    1344     995 1343.75
    1005 1343.75    1010    1344    1275    1345    1300    1346    1320    1347

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     955    .035     980    .025    1275    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           980    1275              140     145     175             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 21

INPUT
Description: 2nd sta south of weir
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     957    1346     960    1345     978    1344     990    1344     995 1343.75
    1005 1343.75    1020    1344    1040    1344    1045    1345    1050    1346
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
957	.045	960	.045	1045	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
960	1045	155	130	110	.1 .3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 20

INPUT
Description: S of wier
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
915	1347	928	1344	946	1341	955	1340	960	1339
972	1335	1000	1335	1048	1335	1060	1339	1065	1340
1080	1342	1100	1344	1115	1345	1140	1346		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
915	.035	928	.025	1100	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
928	1100	350	300	250	.1 .3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 15

INPUT
Description: N of Lincoln
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
830	1346	860	1345	910	1344	965	1343	970	1341
980	1340	1000	1339.2	1015	1340	1032	1346	1100	1346.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
830	.035	910	.025	1032	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
910	1032	10	120	120	.1 .3

CULVERT

RIVER: wood-cedar
REACH: 1 RS: 13

INPUT
Description:
Distance from Upstream XS = 10
Deck/Roadway Width = 90
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
760	1345.04	1300	815	1345.06	1300	865	1345.25	1300
910	1345.66	1300	975	1346	1300	994	1346.3	1300
1006	1346.4	1300	1040	1346.9	1300	1090	1347.29	1300
1140	1347.85	1300	1190	1348.37	1300	1240	1350.88	1300

Upstream Bridge Cross Section Data
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
830	1346	860	1345	910	1344	965	1343	970	1341
980	1340	1000	1339.2	1015	1340	1032	1346	1100	1346.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
830	.035	910	.025	1032	.035

Bank Sta: Left	Right	Coeff Contr.	Expan.
910	1032	.1	.3

Downstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
760	1345.04	1300	815	1345.06	1300	865	1345.25	1300
910	1345.66	1300	975	1346	1300	994	1346.3	1300
1006	1346.4	1300	1040	1346.9	1300	1090	1347.29	1300
1140	1347.85	1300	1190	1348.37	1300	1240	1350.88	1300

Downstream Bridge Cross Section Data
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
810	1348	850	1346	900	1344	940	1342	960	1340
995	1339	1000	1339	1005	1339	1015	1340	1030	1342
1050	1344	1080	1346						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
810	.035	900	.025	1050	.035

Bank Sta: Left Right Coeff Contr. Expan.
900 1050 .1 .3

Upstream Embankment side slope = 3 horiz. to 1.0 vertical
Downstream Embankment side slope = 3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .5
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	4	12

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	10	95	.013	.013	0	.3	.5

Upstream Elevation = 1339.2
Centerline Station = 1000
Downstream Elevation = 1339
Centerline Station = 1000

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 10

INPUT
Description: S of Lincoln
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
810	1348	850	1346	900	1344	940	1342	960	1340
995	1339	1000	1339	1005	1339	1015	1340	1030	1342
1050	1344	1080	1346						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
810	.035	900	.025	1050	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
900 1050 150 160 200 .1 .3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 8

INPUT
Description: Farthest South Station
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
845	1346	900	1344	940	1342	950	1340	965	1338
1000	1337.6	1030	1338	1045	1340	1100	1342	1120	1344
1160	1346								

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
     845    .035     900    .025    1120    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           900    1120               48      50      53             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 5.0

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  1343.2    8.79 1341.86   13.24 1341.91   27.94 1342.17   48.18 1341.12
   51.81 1340.94   69.74 1337.23   73.46 1336.46   77.93 1335.39   78.24 1335.34
  150.61 1335.42  155.26 1336.44  156.59  1336.7  158.62 1336.84  171.12 1337.23
  222.84 1341.13  224.13 1341.21  224.96 1341.28  244.43 1342.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   51.81     .04  158.62    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         51.81  158.62               65      70      77             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.9

INPUT
Description:
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1341.71    1.88 1341.41    3.83 1341.44   11.11 1341.35   26.79 1341.25
   30.23 1340.73   35.71 1339.46   48.14    1337   49.64 1336.61   54.36 1335.39
  162.87 1335.15  164.15 1335.51  165.19 1335.73  168.24 1335.79  179.61 1336.08
  185.96 1336.24   199.1 1337.27  213.24 1338.94  226.17 1341.15  257.09 1342.55
  260.47 1342.61  265.11 1342.95  282.02 1344.06

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   35.71     .04  185.96    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         35.71  185.96               93      90      90             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.8

INPUT
Description:
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1342.52     9.1 1341.86   31.32 1339.81   42.94  1339.1   48.02 1338.38
   61.01 1336.27   61.94 1336.22   84.01 1335.77   84.02 1335.77   84.05 1335.76
   85.15 1335.29  163.04  1335.1  163.85 1335.25  165.32 1335.96  169.84 1335.96
  170.29 1335.96   170.5 1335.96  171.95 1335.95  198.98 1338.74  222.76  1341.8
  224.88 1341.93  233.39  1342.7  238.08 1342.83  243.21 1342.67  262.12 1343.07
  284.67 1343.36  291.32 1343.59  291.92 1343.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   48.02     .04  198.98    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         48.02  198.98               47      45      46             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.75
```

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1341.08	18.15	1339.63	30.53	1338.86	40.66	1336.71	51.14	1336.42
58.22	1335.67	64.3	1334.89	64.86	1334.73	68.09	1335.07	69.05	1335.36
81.96	1335.56	85.94	1335.63	91.03	1335.75	99.04	1335.87	114.2	1335.91
125.47	1335.81	135.38	1335.73	139.87	1335.7	160.23	1338.2	162.4	1338.26
191.74	1341.16	198.19	1341.71	202.95	1341.9	206.6	1341.99		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	40.66	.04	160.23	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
40.66	160.23	3	15	16	.3	.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.7

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1340.78	12.58	1339.78	29.28	1338.74	37.69	1336.95	46.44	1336.7
57.71	1335.52	62.62	1334.89	63.48	1334.65	66.05	1334.92	67.49	1335.34
86.61	1335.65	90.5	1335.72	92.53	1335.74	106.83	1335.68	114.4	1335.7
117.48	1335.67	140.24	1335.48	175.66	1339.81	176.42	1339.84	185.65	1340.76
187.44	1340.91	191.86	1341.08						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	37.69	.04	175.66	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
37.69	175.66	7	16	20	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.65

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1340.85	11.59	1339.93	34.02	1338.55	39.87	1337.37	45.45	1337.25
66.4	1335.15	68.62	1334.87	70.32	1334.42	71.3	1334.52	74.13	1335.31
81.2	1335.42	87.21	1335.55	92.97	1335.76	107.23	1335.72	114.11	1335.53
125.06	1335.28	141.98	1335.22	149.65	1335.14	157.72	1336.08	169.1	1337.33
183.78	1339.18	199.63	1340.67	204.66	1340.79	223.62	1341.58	236.61	1342.15
245.98	1342.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	39.87	.04	169.1	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
39.87	169.1	20	20	20	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.6

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1341.91	23.86	1340.04	53.23	1338.32	55.8	1337.85	57.95	1337.82
70.98	1336.63	79.64	1335.66	88.48	1334.9	90.16	1334.84	91.9	1334.39
95.95	1335.33	96.41	1335.39	99.06	1335.52	108.4	1335.86	111.4	1335.85
124.49	1335.47	131	1335.23	141.26	1335.05	153.45	1334.77	157.06	1334.75
169.94	1334.87	174.63	1335.46	230.83	1340.72	232.12	1340.76	237	1340.96

```
   264.4 1342.18  268.12 1342.35

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   70.98    .018  174.63    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         70.98  174.63               90     100     150             .3       .5

CULVERT


RIVER: wood-cedar
REACH: 1                  RS: 4.55

INPUT
Description:
Distance from Upstream XS =       7
Deck/Roadway Width        =      76
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1342       0    1200    1342       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1341.91   23.86 1340.04   53.23 1338.32    55.8 1337.85   57.95 1337.82
   70.98 1336.63   79.64 1335.66   88.48  1334.9   90.16 1334.84    91.9 1334.39
   95.95 1335.33   96.41 1335.39   99.06 1335.52   108.4 1335.86   111.4 1335.85
  124.49 1335.47     131 1335.23  141.26 1335.05  153.45 1334.77  157.06 1334.75
  169.94 1334.87  174.63 1335.46  230.83 1340.72  232.12 1340.76     237 1340.96
   264.4 1342.18  268.12 1342.35

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   70.98    .018  174.63    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
         70.98  174.63             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1342       0    1200    1342       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    2.06 1342.93    8.79 1342.54    9.14 1342.52   12.01 1342.39   21.95 1341.86
    32.2 1341.15   38.55 1340.98   67.55 1339.76   76.41 1339.39   77.66 1339.31
   81.93 1339.15   96.08 1338.61  104.45 1338.23  127.73 1336.88  135.35  1336.6
  146.08 1335.91   156.9 1335.51  185.65 1334.37     197 1333.83  198.56 1333.77
  201.06 1333.55  203.48 1332.85  207.19 1331.67     209 1331.89   211.6  1332.2
  232.41 1332.92  250.17 1333.51  251.73 1333.55  253.94 1333.58  274.33 1335.37
  276.42 1335.55  279.83    1336  299.13 1338.55  299.83 1338.65  309.45 1339.27
     318 1339.91

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    2.06    .045  185.65     .04  274.33    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        185.65  274.33             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
```

Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	7	76	.013	.013	0	.3	.5

Number of Barrels = 2
Upstream Elevation = 1334.4
Centerline Stations

Sta.	Sta.
155	164

Downstream Elevation = 1334
Centerline Stations

Sta.	Sta.
215	224

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.5

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
2.06	1342.93	8.79	1342.54	9.14	1342.52	12.01	1342.39	21.95	1341.86
32.2	1341.15	38.55	1340.98	67.55	1339.76	76.41	1339.39	77.66	1339.31
81.93	1339.15	96.08	1338.61	104.45	1338.23	127.73	1336.88	135.35	1336.6
146.08	1335.91	156.9	1335.51	185.65	1334.37	197	1333.83	198.56	1333.77
201.06	1333.55	203.48	1332.85	207.19	1331.67	209	1331.89	211.6	1332.2
232.41	1332.92	250.17	1333.51	251.73	1333.55	253.94	1333.58	274.33	1335.37
276.42	1335.55	279.83	1336	299.13	1338.55	299.83	1338.65	309.45	1339.27
318	1339.91								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
2.06	.045	185.65	.04	274.33	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
185.65	274.33	20	20	.3	.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.45

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1342.77	1.58	1342.64	5.89	1342.41	12.34	1341.76	16.03	1341.29
21.5	1341.39	32.15	1341.11	52.07	1340.27	77.07	1339.36	84.01	1339.18
94.45	1338.79	98.25	1338.58	138.22	1336.74	139.28	1336.68	139.47	1336.68
141.17	1336.61	161.15	1335.72	187.94	1334.44	197.05	1334.08	200.37	1333.8
211.67	1332.83	215.48	1331.92	217.52	1331.36	221.25	1331.79	222.51	1331.94
226.85	1332.09	232.32	1332.27	248.23	1333.11	248.52	1333.13	259.51	1333.36
272.56	1334.49	286.43	1336.31	305.01	1338.23	314.12	1339.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	141.17	.04	286.43	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
141.17	286.43	68	75	70	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.4

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1341.74	5.02	1341.03	9.22	1340.43	13.02	1340.81	19.42	1341.42
25.48	1341.53	29.06	1341.6	45.27	1341.16	63.67	1340.66	77.79	1339.28
91.45	1337.92	107.63	1334.84	127.1	1332.5	141.68	1330.69	154.53	1330.58
169.38	1331.49	184.7	1333.5	188.16	1333.47	195.92	1333.08	204.39	1331.79
209.46	1330.89	210.35	1330.95	214.73	1331.09	233.58	1331.48	244.66	1331.65
245.17	1331.64	247.56	1330.98	248.85	1330.62	249.2	1330.9	254.77	1334.31

```
  264.95 1335.75  296.86 1339.22  305.54 1339.68  311.11  1339.8  335.09 1340.29
  341.71 1340.39

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  188.16     .04  254.77    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        188.16  254.77              450     115      80             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.3

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
   18.57 1339.31   44.41 1338.48   56.22 1337.59   65.27 1336.96   80.32 1335.92
   84.59 1335.65   85.56 1335.56   97.32  1334.3   99.17 1334.14  121.72  1331.6
     152    1324     521    1324  552.75 1332.03  557.89 1332.51  565.89 1332.92
  570.68 1333.25  589.35 1334.52  621.41 1336.11  623.54  1336.2   624.9 1336.25
  626.16 1336.39  632.43 1337.02  650.36 1338.58  656.83 1338.92  693.49 1339.93
  697.24 1340.02  697.58 1340.02  697.81 1340.03  698.07 1340.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
   18.57    .045   99.17     .02  589.35    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         99.17  589.35              30      50      20             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.2

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1339.62    6.19 1339.56   11.85 1339.49   45.15  1338.7   55.31 1338.67
   63.26 1338.07    81.1 1337.47  111.71 1335.12  114.57 1334.91  122.97 1335.25
  129.65 1334.69  147.91 1335.34  164.95 1333.88  167.09 1333.82  179.36 1332.33
  185.54 1332.05  207.41 1330.94     235    1324     526    1324  552.31 1330.46
  552.65 1330.54   558.6 1331.67  560.01 1331.71  562.93 1331.78  580.11 1332.23
  586.01  1332.7  587.86 1332.89  606.42 1334.33   620.9 1335.31  629.22 1335.72
  654.18 1336.69  660.94 1337.01  662.22 1337.07  665.43 1337.21  687.29 1338.64
  690.27 1338.74  712.65 1339.75  714.78 1339.86  717.75 1339.96  723.25 1340.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  147.91     .02  629.22    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        147.91  629.22              60      50      30             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.15

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1337.92    7.82 1338.55   11.67 1338.84   26.71 1339.96   26.73 1339.96
    38.3 1339.31   59.75 1337.73   61.29 1337.83   85.04    1337   88.04 1336.73
   96.32 1336.36  105.41 1336.12  126.81    1333  129.06 1332.64  131.45  1332.5
  134.96 1332.32  159.42 1330.85   164.7 1331.14  166.44 1331.25   195.1 1332.66
  196.97 1332.87  197.75 1332.94   198.2 1332.97  201.17 1333.18  212.65 1332.83
  226.99  1332.6  231.48 1332.48  237.14 1332.01  237.42 1331.99  249.35 1331.61
  259.13 1330.98  261.07 1331.17  269.54 1330.87  270.77 1330.92  277.13 1331.12
  288.81 1331.34  291.69 1331.45  305.76 1332.63  325.01 1334.09  330.75 1334.62
   343.3 1335.59  363.05 1336.71  370.92 1337.03  389.76 1337.83  404.51 1338.37
  416.95 1338.78  422.88 1338.76  426.68 1338.88  431.74 1339.12  443.11 1339.67
```

447.95 1339.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	126.81	.04	330.75	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
126.81	330.75	12	12	.3	.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.1

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1338.97	5.73	1338.83	26.37	1337.3	28.84	1337.45	35.74	1337.21
43.97	1336.46	68.37	1335.31	90.23	1334.68	99.66	1334.43	101.12	1334.36
123.84	1333.95	123.87	1333.95	124	1333.95	158.19	1332.81	167.22	1332.56
176.47	1332.27	185.92	1332.1	189.43	1331.86	192.14	1331.27	202.64	1330.94
203.67	1331.24	206.79	1331.21	213.13	1330.99	221.29	1330.72	222.18	1330.69
224.75	1330.75	231.34	1331.02	285.77	1335.47	286.84	1335.55	287.17	1335.58
287.93	1335.64	290.57	1335.79	315	1336.99	321.91	1337.3	340.09	1338.12
348.55	1338.45	370.3	1339.17	375.57	1339.16	384.95	1339.06	385.78	1339.15
393.41	1339.52	414.4	1340.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	124	.04	286.84	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
124	286.84	125	225	240	.3	.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.09

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1336.91	12.29	1336.25	25.48	1336.08	27.98	1335.92	33.21	1335.59
69.73	1333.73	73.99	1333.57	77.38	1333.43	92.24	1332.57	101.59	1332.29
114.03	1332.14	137.47	1331.66	148.72	1331.62	154.5	1331.38	158.06	1331.23
164.55	1330.97	164.59	1330.96	164.82	1330.96	175.92	1330.65	176.61	1330.63
178.47	1330.58	179.16	1330.6	198.06	1331.28	204.26	1331.5	209.05	1331.66
245.02	1334.89	252.72	1335.48	258.06	1335.87	270.2	1336.78	282.21	1337.31
303.43	1338.22	306.61	1338.35	327.84	1339.12	333.73	1339.33	335.77	1339.33
337.38	1339.38	382.87	1339.94	383.27	1339.96				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	92.24	.04	245.02	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
92.24	245.02	99	45	40	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.05

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1336.01	8.29	1334.3	9.71	1334.1	16.94	1333.74	68.85	1331.05
88.71	1330.27	96.75	1329.92	99.94	1328.57	101.43	1328.01	102.71	1328.03
105.13	1328.07	105.84	1328.2	108.37	1328.73	110.99	1329.35	119.83	1329.43
153.42	1331.05	166.54	1331.17	183.93	1331.77	204.16	1332.63	261.5	1335.85
270.84	1336.34	286.11	1336.82	297.36	1337.15	300.19	1337.32	313.92	1337.85
326.13	1338.25	335.14	1338.54	341.76	1338.68	357.67	1339.38	374.58	1339.84

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   68.85     .04  153.42    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         68.85  153.42              210     190     190             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1338.64     .65 1338.69    5.22 1339.08    5.95 1339.15   42.33 1338.97
   47.12 1338.79   51.56 1337.77   99.59 1333.19  121.76 1331.13  128.67 1330.88
  147.12 1329.81  167.92 1328.63  169.22  1328.6   170.9 1327.14  171.01  1327.1
  178.45 1327.07  179.61 1327.07  183.66 1328.44  185.11 1328.92  200.07  1329.2
  200.71 1329.24  205.22 1329.49  218.95    1330  253.25 1331.88  284.64 1333.08
  309.74 1334.64   342.6  1333.8  350.84 1333.52  358.18 1333.56  377.81 1334.15
  393.43 1335.76  403.93 1335.98  406.27    1336

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  121.76     .04  253.25    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        121.76  253.25              105     120     110             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.98

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1335.55   14.39 1334.86   25.72 1334.54   55.59 1333.32   76.47 1332.18
  123.69 1329.87  128.87  1329.7  131.77 1329.59  149.22 1329.07  155.79 1327.34
  157.39 1326.94  158.41 1326.95  163.38 1326.95  163.66 1327.06  166.63 1327.89
  169.25 1327.98  201.93 1327.82  202.42 1327.83  207.79 1328.03  259.13 1330.46
  264.62 1330.46  295.96 1330.39  316.28 1330.78  330.61 1332.11  343.43 1332.34
  347.54 1332.92  364.15 1333.25  368.76 1333.33   376.4 1333.58  399.07 1334.37
  403.54 1334.53  407.29 1334.69  424.75 1335.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  149.22     .04  202.42    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        149.22  202.42              131     141     126             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.95

INPUT
Description:
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.51      19 1332.83   41.08 1331.79   46.22  1331.5   62.53 1330.76
  100.15 1329.28  101.63 1329.23  109.23 1328.94  136.71 1327.98  153.72 1327.46
  158.72 1327.31  164.44 1327.12  167.58 1325.99  169.05 1325.38  174.19 1325.38
  181.95 1325.41  182.74 1325.72  184.14 1326.43  186.88 1326.48  188.15 1326.53
  206.19 1327.02  230.73 1328.17  253.81 1328.63  272.29 1329.37  273.32 1329.41
  278.57 1329.64  296.02 1330.35  323.01 1331.64   338.1 1332.63  362.89 1333.76
  376.65 1334.18  384.94 1334.28  391.42 1334.38  405.74 1334.62  422.01  1334.7
  422.74 1334.72

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  153.72     .04  230.73    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
        153.72  230.73              140     150     180             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.9

INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    1334   14.77 1333.73   39.62 1332.44   57.93 1331.71   92.11 1330.85
   99.16 1330.64  113.43 1330.06   116.9 1329.95  147.38 1328.97   164.2 1328.41
     185 1324.68     225 1324.68     260    1329  285.43 1329.01  313.77 1329.25
  334.01 1329.25  364.95 1329.76  382.38  1330.4  395.97 1331.45  411.98 1332.27
   419.4 1332.66  429.86 1332.86  448.56 1333.76  479.38 1335.38  484.73 1335.48
  485.63 1335.52  488.43 1335.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   164.2     .04     260    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         164.2     260              160     190     170             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.85

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.19    2.62  1333.1   31.34 1332.21   38.05 1332.08   70.39 1331.41
   75.51 1331.29  104.21 1330.63  111.42 1330.46  118.87 1330.26  147.74 1329.29
  152.52 1329.19  162.16 1329.01  190.93 1328.03  195.13 1327.89  205.67 1327.51
  227.65 1326.76     245 1323.84     280 1323.84     305    1328  340.08 1328.05
  376.52 1328.12  388.66 1328.19  395.67 1328.28  399.38 1328.37  402.92 1328.41
  405.32 1328.51  436.72 1330.02  466.15 1331.58  473.73 1331.71  474.05 1331.72
   475.2 1331.81  477.73 1331.94  513.94 1334.02

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  190.93     .04     305    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        190.93     305               20      20      20             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.8

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.07    7.17 1332.93   22.63 1332.45   29.95 1332.22   50.08 1331.82
   63.93 1331.53   79.17 1331.18   86.67 1331.01  106.79 1330.55  127.59 1329.97
  135.19 1329.72  148.55 1329.44  175.49 1328.93  182.47  1328.7  194.33 1328.29
  224.07  1327.2  228.96 1327.04  232.04 1326.92   234.1 1326.86  258.67 1326.06
  264.32 1325.88  265.14 1325.65  266.79 1325.39  267.62 1323.74  291.15 1323.72
  299.96 1323.73  322.53 1326.07  356.45 1326.76  367.19 1326.84  368.47 1326.85
  374.45 1327.03  400.81 1327.73  409.15 1328.01  425.81 1328.54  453.56 1329.76
  463.42 1330.24  469.82 1330.57  471.47  1330.6  477.94 1330.91  501.93 1332.65
  533.23 1334.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   234.1    .018  356.45    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         234.1  356.45               90     100     130             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   265.5    1332       F
```

```
   307.5  533.23    1332       F

CULVERT


RIVER: wood-cedar
REACH: 1                  RS: 3.75

INPUT
Description:
Distance from Upstream XS =      10
Deck/Roadway Width        =      79
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1332       0    1200    1332       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.07    7.17 1332.93   22.63 1332.45   29.95 1332.22   50.08 1331.82
   63.93 1331.53   79.17 1331.18   86.67 1331.01  106.79 1330.55  127.59 1329.97
  135.19 1329.72  148.55 1329.44  175.49 1328.93  182.47  1328.7  194.33 1328.29
  224.07  1327.2  228.96 1327.04  232.04 1326.92   234.1 1326.86  258.67 1326.06
  264.32 1325.88  265.14 1325.65  266.79 1325.39  267.62 1323.74  291.15 1323.72
  299.96 1323.73  322.53 1326.07  356.45 1326.76  367.19 1326.84  368.47 1326.85
  374.45 1327.03  400.81 1327.73  409.15 1328.01  425.81 1328.54  453.56 1329.76
  463.42 1330.24  469.82 1330.57  471.47  1330.6  477.94 1330.91  501.93 1332.65
  533.23 1334.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   234.1    .018  356.45    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
         234.1  356.45             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   265.5    1332       F
   307.5  533.23    1332       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1332       0    1200    1332       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1330.43   27.81 1329.82   31.33 1329.76   33.56 1329.71   35.97 1329.67
   62.97 1329.12   76.32 1328.82   79.72 1328.76  106.31 1328.21  123.23  1327.8
  165.49 1326.64  174.42 1326.36  182.73 1326.32  202.38 1325.47  213.03 1325.15
  220.61 1324.91   231.8 1324.84  234.81 1324.84  254.15 1324.96   256.6 1324.82
   262.7 1323.54  282.01 1323.54  299.28 1323.54  310.46 1324.82  313.51 1325.17
  340.96 1327.62  353.54 1328.24  366.68 1329.15  368.98 1329.36  389.37 1330.79
  401.46  1331.8  417.23 1332.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  202.38     .03  340.96    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        202.38  340.96             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   263.5    1332       F
   305.5  417.23    1332       F

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
```

Culvert #1   Box   4   10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
8	76	.013	.013	0	.3	.5

Number of Barrels = 3
Upstream   Elevation = 1323.5
Centerline Stations

Sta.	Sta.	Sta.
275.5	286.5	297.5

Downstream Elevation = 1323.5
Centerline Stations

Sta.	Sta.	Sta.
273.5	284.5	295.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1   RS: 3.7

INPUT
Description:
Station Elevation Data   num=   32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1330.43	27.81	1329.82	31.33	1329.76	33.56	1329.71	35.97	1329.67
62.97	1329.12	76.32	1328.82	79.72	1328.76	106.31	1328.21	123.23	1327.8
165.49	1326.64	174.42	1326.36	182.73	1326.32	202.38	1325.47	213.03	1325.15
220.61	1324.91	231.8	1324.84	234.81	1324.84	254.15	1324.96	256.6	1324.82
262.7	1323.54	282.01	1323.54	299.28	1323.54	310.46	1324.82	313.51	1325.17
340.96	1327.62	353.54	1328.24	366.68	1329.15	368.98	1329.36	389.37	1330.79
401.46	1331.8	417.23	1332.01						

Manning's n Values   num=   3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	202.38	.03	340.96	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
202.38	340.96	20	20	.3	.5

Ineffective Flow   num=   2

Sta L	Sta R	Elev	Permanent
0	263.5	1332	F
305.5	417.23	1332	F

CROSS SECTION

RIVER: wood-cedar
REACH: 1   RS: 3.65

INPUT
Description:
Station Elevation Data   num=   32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1330.14	7.56	1329.98	25.74	1329.7	37.24	1329.42	49.71	1329.22
70.41	1328.8	81.09	1328.59	90.19	1328.53	113.43	1328.08	118.42	1327.98
121.03	1327.91	135.38	1327.52	179.48	1326.34	196.28	1325.83	230.66	1324.76
237.57	1324.72	265.71	1324.64	282.86	1324.75	284.87	1323.74	285.55	1323.23
287.14	1323.32	287.21	1323.32	287.28	1323.37	290.95	1324.83	306.31	1325.33
353.16	1327.72	363.74	1328.32	378.57	1329.32	381.63	1329.5	406.6	1331.33
410.37	1331.39	428.78	1331.55						

Manning's n Values   num=   3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	179.48	.03	353.16	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
179.48	353.16	50	160	.1	.3

CROSS SECTION

RIVER: wood-cedar Combi
REACH: 1   RS: 3.6

INPUT
Description:
Station Elevation Data   num=   41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0 1329.53   14.99 1329.08   31.87 1328.71   42.39 1328.46   51.47 1328.33
   63.19 1328.06   70.61 1327.97   94.51 1327.88  114.93 1327.52  119.25 1327.43
  184.56  1326.3  200.69 1326.21   239.6  1324.9  258.29 1324.32  261.98  1324.3
  262.12  1324.3   262.4  1324.3  263.93 1324.27  304.57 1323.65  311.04 1323.55
  311.92 1323.54  312.41 1323.23  318.54 1319.99   321.3 1319.87   324.8 1319.76
   327.5 1321.74  328.85 1323.31  330.15 1323.33  343.44 1323.67  386.99 1324.77
  403.67 1325.54  430.41 1326.77  448.39  1327.8  454.85 1327.85  484.47 1328.99
  496.34 1329.44  524.23 1329.99  537.45 1330.38  550.79  1330.7  568.03 1331.48
  576.45 1331.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  263.93     .04  386.99    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        263.93  386.99              150     120     130             .1       .3

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.5

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1334.46   95.64 1333.86  222.91 1330.57  303.15 1328.09  372.09 1327.14
  444.02 1326.85  481.12 1324.52  531.75 1321.23  534.21 1316.97  548.83 1318.77
  560.53 1322.86  588.19 1323.24  617.16    1324  646.98 1325.75  658.92 1325.04
  710.93 1325.38  764.16 1326.65  804.75 1328.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  481.12     .04  617.16    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        481.12  617.16              220     220     200             .1       .3

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.45

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
   15.53    1330  141.83    1328  222.96    1326  287.23    1324  353.86    1322
  420.87    1321  427.73    1318  436.17    1318  440.63    1321  480.62    1322
  527.98    1323  548.44    1324  571.12    1325  617.38    1326  642.15    1327
  667.07    1328  699.63    1329  723.06    1330

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
   15.53    .045  353.86     .04  480.62    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        353.86  480.62              358     342     332             .1       .3

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.4

INPUT
Description:
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1321.74   13.93 1324.57   68.23 1323.15  107.54 1319.59  163.78 1319.24
  212.65 1319.13  221.75 1318.04   223.1 1316.23  233.04 1316.23  236.96 1318.91
  248.44 1320.04  297.46  1322.3  311.43 1323.26  349.28 1325.59  404.27 1328.57
  452.81  1331.5   564.3 1333.98

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  212.65     .04  248.44    .045
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        212.65  248.44              190     220     250             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0    14.1 1330.05       F

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.3

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1324.38    84.1 1323.55  187.54 1323.24  280.66 1321.74   344.6 1320.95
  398.42 1320.08  459.78 1319.95  501.73 1318.86  519.39 1317.16  524.01 1315.53
     534 1315.94  540.15 1318.15  561.88 1318.34  608.25 1319.17   654.8 1323.13
  690.98    1325  737.62 1326.58  833.48 1327.83  885.57 1327.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  459.78    .018  608.25    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        459.78  608.25              40      40      40             .1       .3

CULVERT


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.2

INPUT
Description:
Distance from Upstream XS =      10
Deck/Roadway Width        =    29.9
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0 1326.52       0   85.41  1325.8       0  185.72  1324.8       0
  279.92 1323.62       0  344.07  1322.8       0  396.97 1322.51       0
  458.33 1322.48       0  484.87 1322.57       0  527.23 1322.82       0
  566.86 1323.13       0  629.48 1324.44       0  687.26 1325.97       0
  743.48 1327.28       0  784.66 1327.84       0  829.07 1328.18       0
  867.74  1328.1       0  919.29 1327.66       0  969.86 1326.78       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1324.38    84.1 1323.55  187.54 1323.24  280.66 1321.74   344.6 1320.95
  398.42 1320.08  459.78 1319.95  501.73 1318.86  519.39 1317.16  524.01 1315.53
     534 1315.94  540.15 1318.15  561.88 1318.34  608.25 1319.17   654.8 1323.13
  690.98    1325  737.62 1326.58  833.48 1327.83  885.57 1327.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  459.78    .018  608.25    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        459.78  608.25             .1       .3

Downstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0 1326.52       0   85.41  1325.8       0  185.72  1324.8       0
  279.92 1323.62       0  344.07  1322.8       0  396.97 1322.51       0
  458.33 1322.48       0  484.87 1322.57       0  527.23 1322.82       0
  566.86 1323.13       0  629.48 1324.44       0  687.26 1325.97       0
  743.48 1327.28       0  784.66 1327.84       0  829.07 1328.18       0
  867.74  1328.1       0  919.29 1327.66       0  969.86 1326.78       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1324.48   83.43 1323.76  181.57 1323.17  277.29 1321.95  339.67 1321.21
  393.93 1320.76  446.12 1320.44  516.56 1317.35  518.83 1315.72  533.82 1315.63
  539.56 1316.88  561.27 1317.08  595.38  1317.5  645.99 1323.37  767.11 1325.87
```

```
  787.63  1326.3  825.81 1326.67  862.93 1327.64

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  446.12     .04  645.99    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        446.12  645.99             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       6       5
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 10      30     .013     .013        0                  .3               .5
Number of Barrels =  2
Upstream   Elevation =  1315.65
Centerline Stations
    Sta.    Sta.
     525     531
Downstream Elevation =  1315.5
Centerline Stations
    Sta.    Sta.
     525     531

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.1

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1324.48   83.43 1323.76  181.57 1323.17  277.29 1321.95  339.67 1321.21
  393.93 1320.76  446.12 1320.44  516.56 1317.35  518.83 1315.72  533.82 1315.63
  539.56 1316.88  561.27 1317.08  595.38  1317.5  645.99 1323.37  767.11 1325.87
  787.63  1326.3  825.81 1326.67  862.93 1327.64

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  446.12     .04  645.99    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        446.12  645.99              120     150     160             .1       .3

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.0

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1322.79   83.32 1321.43  156.49 1320.47     231  1322.1  317.22 1320.02
  367.86 1319.17  420.02 1317.64  465.22  1316.5  509.21 1317.41  528.41  1316.6
  534.21 1314.54  538.11  1314.8  542.81 1316.89  560.31 1316.46  573.66 1318.37
  591.54 1321.67  625.64 1322.35  671.66  1322.8  724.53 1323.76  766.76 1324.54
  801.35 1325.24  838.23 1325.85

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  367.86     .04  573.66    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        367.86  573.66               0       0       0             .1       .3
```

SUMMARY OF MANNING'S N VALUES

River:East wood-cedar

Reach	River Sta.	n1	n2	n3
1	1.7	.045	.04	.045
1	1.63	.045	.035	.045
1	1.6	.045	.035	.045
1	1.5	.045	.035	.045
1	1.4	.045	.035	.045
1	1.38	.045	.035	.045
1	1.3	.045	.035	.045
1	1.25	.045	.035	.045
1	1.2	.045	.018	.045
1	1.15	Culvert		
1	1.1	.045	.035	.045
1	1.05	.045	.035	.045

River:wood-cedar

Reach	River Sta.	n1	n2	n3
1	40	.035	.025	.035
1	37.5	Culvert		
1	35	.035	.025	.035
1	34	.035	.025	.035
1	32	.035	.025	.035
1	30	.035	.025	.035
1	25	.035	.025	.045
1	23	Inl Struct		
1	22	.035	.025	.045
1	21	.045	.045	.045
1	20	.035	.025	.045
1	15	.035	.025	.035
1	13	Culvert		
1	10	.035	.025	.035
1	8	.035	.025	.035
1	5.0	.045	.04	.045
1	4.9	.045	.04	.045
1	4.8	.045	.04	.045
1	4.75	.045	.04	.045
1	4.7	.045	.04	.045
1	4.65	.045	.04	.045
1	4.6	.045	.018	.045
1	4.55	Culvert		
1	4.5	.045	.04	.045
1	4.45	.045	.04	.045
1	4.4	.045	.04	.045
1	4.3	.045	.02	.045
1	4.2	.045	.02	.045
1	4.15	.045	.04	.045
1	4.1	.045	.04	.045
1	4.09	.045	.04	.045
1	4.05	.045	.04	.045
1	4	.045	.04	.045
1	3.98	.045	.04	.045
1	3.95	.045	.04	.045
1	3.9	.045	.04	.045
1	3.85	.045	.04	.045
1	3.8	.045	.018	.045
1	3.75	Culvert		
1	3.7	.045	.03	.045
1	3.65	.045	.03	.045

River:wood-cedar Combi

Reach	River Sta.	n1	n2	n3
1	3.6	.045	.04	.045
1	3.5	.045	.04	.045
1	3.45	.045	.04	.045
1	3.4	.045	.04	.045
1	3.3	.045	.018	.045
1	3.2	Culvert		

1	3.1	.045	.04	.045
1	3.0	.045	.04	.045

SUMMARY OF REACH LENGTHS

River: East wood-cedar

Reach	River Sta.	Left	Channel	Right
1	1.7	97	97	97
1	1.63	40	40	40
1	1.6	95	95	95
1	1.5	115	115	115
1	1.4	40	40	40
1	1.38	71	90	75
1	1.3	190	195	170
1	1.25	20	20	20
1	1.2	180	90	70
1	1.15	Culvert		
1	1.1	20	20	20
1	1.05	400	170	140

River: wood-cedar

Reach	River Sta.	Left	Channel	Right
1	40	160	160	160
1	37.5	Culvert		
1	35	70	70	70
1	34	110	110	110
1	32	140	130	115
1	30	215	215	215
1	25	50	45	40
1	23	Inl Struct		
1	22	140	145	175
1	21	155	130	110
1	20	350	300	250
1	15	10	120	120
1	13	Culvert		
1	10	150	160	200
1	8	48	50	53
1	5.0	65	70	77
1	4.9	93	90	90
1	4.8	47	45	46
1	4.75	3	15	16
1	4.7	7	16	20
1	4.65	20	20	20
1	4.6	90	100	150
1	4.55	Culvert		
1	4.5	20	20	20
1	4.45	68	75	70
1	4.4	450	115	80
1	4.3	30	50	20
1	4.2	60	50	30
1	4.15	12	12	12
1	4.1	125	225	240
1	4.09	99	45	40
1	4.05	210	190	190
1	4	105	120	110
1	3.98	131	141	126
1	3.95	140	150	180
1	3.9	160	190	170
1	3.85	20	20	20
1	3.8	90	100	130
1	3.75	Culvert		
1	3.7	20	20	20
1	3.65	50	160	140

River: wood-cedar Combi

Reach	River Sta.	Left	Channel	Right
1	3.6	150	120	130
1	3.5	220	220	200
1	3.45	358	342	332

1	3.4	190	220	250
1	3.3	40	40	40
1	3.2	Culvert		
1	3.1	120	150	160
1	3.0	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: East wood-cedar

Reach	River Sta.	Contr.	Expan.
1	1.7	.1	.3
1	1.63	.1	.3
1	1.6	.1	.3
1	1.5	.1	.3
1	1.4	.1	.3
1	1.38	.1	.3
1	1.3	.1	.3
1	1.25	.1	.3
1	1.2	.3	.5
1	1.15	Culvert	
1	1.1	.3	.5
1	1.05	.1	.3

River: wood-cedar

Reach	River Sta.	Contr.	Expan.
1	40	.1	.3
1	37.5	Culvert	
1	35	.1	.3
1	34	.1	.3
1	32	.1	.3
1	30	.1	.3
1	25	.1	.3
1	23	Inl Struct	
1	22	.1	.3
1	21	.1	.3
1	20	.1	.3
1	15	.1	.3
1	13	Culvert	
1	10	.1	.3
1	8	.1	.3
1	5.0	.1	.3
1	4.9	.1	.3
1	4.8	.1	.3
1	4.75	.3	.5
1	4.7	.1	.3
1	4.65	.1	.3
1	4.6	.3	.5
1	4.55	Culvert	
1	4.5	.3	.5
1	4.45	.1	.3
1	4.4	.1	.3
1	4.3	.1	.3
1	4.2	.1	.3
1	4.15	.3	.5
1	4.1	.3	.5
1	4.09	.1	.3
1	4.05	.1	.3
1	4	.1	.3
1	3.98	.1	.3
1	3.95	.1	.3
1	3.9	.1	.3
1	3.85	.1	.3
1	3.8	.3	.5
1	3.75	Culvert	
1	3.7	.3	.5
1	3.65	.1	.3

River: wood-cedar Combi

Reach	River Sta.	Contr.	Expan.

1		3.6	.1	.3
1		3.5	.1	.3
1		3.45	.1	.3
1		3.4	.1	.3
1		3.3	.1	.3
1		3.2	Culvert	
1		3.1	.1	.3
1		3.0	.1	.3

Appendix E
Existing TR-20 MODEL

1

**********80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY**********

```
JOB TR-20                                          SUMMARY
TITLE     Timberlands - Existing CONDITIONS
TITLE     MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20
 4 DIMHYD              0.02                                                484
 8          .000       .030       .100       .190       .310
 8          .470       .660       .820       .930       .990
 8         1.000       .990       .930       .860       .780
 8          .680       .560       .460       .390       .330
 8          .280       .241       .207       .174       .147
 8          .126       .107       .091       .077       .066
 8          .055       .047       .040       .034       .029
 8          .025       .021       .018       .015       .013
 8          .011       .009       .008       .007       .006
 8          .005       .004       .003       .002       .001
 8          .000       .000       .000       .000       .000
 9 ENDTBL
 5 RAINFL 7            0.08333                                          6-HR M&L
 8          0.0000     0.0033     0.0066     0.0099     0.0132
 8          0.0166     0.0198     0.0248     0.0296     0.0346
 8          0.0404     0.0463     0.0522     0.0590     0.0658
 8          0.0727     0.0796     0.0864     0.0933     0.1136
 8          0.1340     0.1572     0.1832     0.2124     0.2473
 8          0.2850     0.3400     0.4464     0.6034     0.6752
 8          0.7220     0.7409     0.7598     0.7758     0.7919
 8          0.8072     0.8224     0.8310     0.8396     0.8468
 8          0.8540     0.8628     0.8714     0.8773     0.8832
 8          0.8890     0.8939     0.8988     0.9038     0.9086
 8          0.9136     0.9184     0.9233     0.9282     0.9332
 8          0.9380     0.9429     0.9478     0.9527     0.9576
 8          0.9626     0.9664     0.9704     0.9742     0.9782
 8          0.9821     0.9860     0.9884     0.9906     0.9930
 8          0.9954     0.9976     1.0000     1.0000     1.0000
 9 ENDTBL
 5 RAINFL 8           0.5                                               24-HRSCS
 8          .000       .002       .005       .009       .013          ZONE 5
 8          .018       .023       .029       .035       .042
 8          .050       .059       .068       .078       .089
 8          .101       .114       .128       .144       .162
 8          .183       .208       .244       .339       .723
 8          .773       .802       .825       .844       .861
 8          .876       .890       .903       .914       .924
 8          .934       .943       .951       .959       .966
 8          .972       .977       .982       .986       .990
 8          .993       .996       .998      1.000      1.000
 9 ENDTBL
 3 STRUCT      01
 8                     1345.0      0.0        0.0                          I-135
 8                     1347.0      52.0       2.0
 8                     1349.0      140.0      4.5
 8                     1351.0      223.0      12.0
```

1

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
 8                     1353.0      286.0      21.0
 8                     1355.0      336.0      34.0
```

```
  8                       1357.0      378.0       52.0
  8                       1359.0      414.0       76.0
  8                       1361.0      447.0       106.5
  8                       1363.0      475.0       144.0
  9 ENDTBL
  3 STRUCT      09                                                          N PON
  8                       1338.0      0.0         0.0
  8                       1339.0      93.4        0.43
  8                       1340.0      265.3       0.92
  8                       1341.0      496.5       1.46
  8                       1342.0      781.2       2.06
  8                       1343.0      1201.3      2.72
  9 ENDTBL
  3 STRUCT      13                                                          M PON
  8                       1335.0      0.0         0.0
  8                       1336.0      40.1        1.1
  8                       1337.0      113.7       2.36
  8                       1338.0      212.8       3.72
  8                       1339.0      334.8       5.19
  8                       1340.0      483.0       6.75
  8                       1341.0      731.9       8.43
  9 ENDTBL
  3 STRUCT      21                                                          S PON
  8                       1334.0      0.0         0.0
  8                       1335.0      40.1        2.16
  8                       1336.0      113.7       4.48
  8                       1337.0      212.8       6.94
  8                       1338.0      334.8       9.56
  8                       1339.0      483.0       12.32
  8                       1340.0      731.9       15.22
  9 ENDTBL
  3 STRUCT      25
  8                       1346.0      0.0         0.0                     I-135
  8                       1348.0      52.0        0.90
  8                       1350.0      187.0       3.59
  8                       1352.0      297.0       9.60
  8                       1354.0      378.0       22.41
  8                       1356.0      444.0       44.4
  8                       1358.0      500.0       77.13
  8                       1360.0      549.0       127.1
  9 ENDTBL
  6 RUNOFF 1 001        6 0.0867      89.0        0.667               1   U/S I-
  6 RESVOR 2    01 6    7 1345.0                                      1   I-35
  6 RUNOFF 1 002        6 0.032       98.0        0.567               1   U/S WL
  6 ADDHYD 4 003    6 7 5                                             1   SU/S W
  6 RUNOFF 1 004        6 0.0128      84.0        0.733               1   'A'
  6 ADDHYD 4 005    5 6 7                                             1   S@'A'
  6 RUNOFF 1 006        6 0.0028      84.0        0.400               1   'B'
1


 **********************80-80 LIST OF INPUT DATA (CONTINUED)**********************

  6 ADDHYD 4 007    7 6 5                                             1   S @ 'B
  6 RUNOFF 1 008        6 0.0026      88.8        0.25                1   N POND
  6 ADDHYD 4 009    5 6 7                                             1   S - NP
  6 RESVOR 2    09 7    5 1338.0                                      1   R-NP
  6 RUNOFF 1 010        6 0.0019      84.0        0.300               1   'C'
  6 ADDHYD 4 011    5 6 7                                             1   S @ 'C
  6 RUNOFF 1 012        6 0.0090      87.5        0.25                1   M POND
  6 ADDHYD 4 013    7 6 5                                             1   S - M
  6 RESVOR 2    13 5    7 1335.0                                      1   R - M
  6 RUNOFF 1 014        6 0.0167      85.0        0.650               1   'D E F
```

```
  6 ADDHYD 4 015   7 6 5                                                1
  6 RUNOFF 1 016       6 0.0052      84.0        0.417                  1   'J'
  6 ADDHYD 4 017   5 6 7                                                1
  6 RUNOFF 1 018       6 0.0091      85.0        0.567                  1   H1 H2
  6 ADDHYD 4 019   7 6 5                                                1
  6 RUNOFF 1 020       6 0.0107      92.7        0.250                  1   S POND
  6 ADDHYD 4 021   5 6 7                                                1   S - S
  6 RESVOR 2    21 7   5 1334.0                                         1   R - S
  6 RUNOFF 1 022       6 0.0298      87.0        0.333                  1   WDLND3
  6 ADDHYD 4 023   5 6 4                                                1   TOTAL
  6 RUNOFF 1 024       6 0.216       90.0        0.842                  1   U/S I-
  6 RESVOR 2    25 6   7 1346.0                                         1   I-35
  6 RUNOFF 1 026       6 0.0307      87.0        0.320                  1   RES A
  6 ADDHYD 4 027   6 7 5                                                1   LINCOL
  6 RUNOFF 1 028       6 0.0297      87.0        0.408                  1   E TRIB
  6 ADDHYD 4 029   5 6 7                                                1   TO 48"
  6 RUNOFF 1 030       6 0.0159      87.0        0.250                  1   W. PON
  6 ADDHYD 4 031   7 6 5                                                1   W.POND
  6 RUNOFF 1 032       6 0.0090      87.0        0.25                   1   E POND
  6 ADDHYD 4 033   5 6 7                                                1   E POND
  6 RUNOFF 1 034       6 0.0326      87.0        0.597                  1   E PL
  6 ADDHYD 4 035   7 6 5                                                1   E TRIB
  6 ADDHYD 4 036   4 5 6                                                1   E PL T
  6 RUNOFF 1 037       5 0.0181      80.0        0.250                  1   PIERCE
  6 ADDHYD 4 038   6 5 7                                                1   E PL P
    ENDATA
  7 INCREM 6            0.0833
  7 COMPUT 7 001   038   0.0         2.52        1.0        7 2  11  01   2-YR 6
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         3.42        1.0        7 2  12  02   5-YR 6
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         4.02        1.0        7 2  13  03   10-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         5.20        1.0        7 2  14  04   50-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         5.94        1.0        7 2  15  05   100-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         3.48        1.0        8 2  21  01   2-YR Z
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         4.55        1.0        8 2  22  02   5-YR Z
1


 **********80-80 LIST OF INPUT DATA (CONTINUED)**********

    ENDCMP 1
  7 COMPUT 7 001   038   0.0         5.25        1.0        8 2  23  03   10-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         6.98        1.0        8 2  24  04   50-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         7.80        1.0        8 2  25  05   100-YR
    ENDCMP 1
    ENDJOB 2

 **********END OF 80-80 LIST**********
1
 TR20 ------------------------------------------------------------------- SCS -
                    Timberlands - Existing CONDITIONS                VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20           2.04TEST
 09:37:39                    PASS   1   JOB NO.   1                    PAGE   1


             COMPUTED DIMHYD PEAK RATE FACTOR =  484.000
```

```
 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .083 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          2-YR 6
    STARTING TIME =   .00       RAIN DEPTH =  2.52       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =11           STORM NO. = 1            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   1


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          5-YR 6
    STARTING TIME =   .00       RAIN DEPTH =  3.42       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =12           STORM NO. = 2            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   2


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          10-YR
    STARTING TIME =   .00       RAIN DEPTH =  4.02       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =13           STORM NO. = 3            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   3


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          50-YR
    STARTING TIME =   .00       RAIN DEPTH =  5.20       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =14           STORM NO. = 4            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   4
1
 TR20 ------------------------------------------------------------------- SCS -
                    Timberlands - EXISTING CONDITIONS              VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20        2.04TEST
 09:37:39                  PASS   5   JOB NO.   1                   PAGE   2



 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          100-YR
    STARTING TIME =   .00       RAIN DEPTH =  5.94       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =15           STORM NO. = 5            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   5


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          2-YR Z
    STARTING TIME =   .00       RAIN DEPTH =  3.48       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =21           STORM NO. = 1            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   6
```

```
 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          5-YR Z
    STARTING TIME =   .00       RAIN DEPTH =  4.55       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =22           STORM NO. = 2            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   7


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          10-YR
    STARTING TIME =   .00       RAIN DEPTH =  5.25       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =23           STORM NO. = 3            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   8
1
 TR20 ------------------------------------------------------------------- SCS -
                    Timberlands - EXISTING CONDITIONS               VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:37:39                     PASS   9   JOB NO.   1                   PAGE   3



 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          50-YR
    STARTING TIME =   .00       RAIN DEPTH =  6.98       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =24           STORM NO. = 4            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   9


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          100-YR
    STARTING TIME =   .00       RAIN DEPTH =  7.80       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =25           STORM NO. = 5            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS  10
1
 TR20 ------------------------------------------------------------------- SCS -
                    Timberlands - EXISTING CONDITIONS               VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:37:39                      SUMMARY, JOB NO.   1                   PAGE   4


                             SUMMARY TABLE 1
                             ---------------
    SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
    A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
 F-FLAT TOP HYDROGRAPH   T-TRUNCATED HYDROGRAPH   R-RISING TRUNCATED HYDROGRAPH

 XSECTION/  STANDARD                                    PEAK DISCHARGE
 STRUCTURE   CONTROL    DRAINAGE   RUNOFF   ------------------------------------
    ID      OPERATION     AREA     AMOUNT   ELEVATION   TIME     RATE    RATE
                        (SQ MI)     (IN)      (FT)      (HR)     (CFS)   (CSM)

 RAINFALL OF   2.52 inches AND   6.00 hr DURATION, BEGINS AT    .0 hrs.
 RAINTABLE NUMBER  7,    ARC 2
 MAIN TIME INCREMENT   .083 HOURS
```

ALTERNATE 11 STORM 1

XSECTION	1	RUNOFF	.09	1.47	---	2.73	71	788.9
STRUCTURE	1	RESVOR	.09	1.47	1346.80	3.05	47	522.2
XSECTION	2	RUNOFF	.03	2.29	---	2.63	43	1433.3
XSECTION	3	ADDHYD	.12	1.69	---	2.78	75	625.0
XSECTION	4	RUNOFF	.01	1.13	---	2.79	7	700.0
XSECTION	5	ADDHYD	.13	1.64	---	2.78	83	638.5
XSECTION	6	RUNOFF	.00	1.13	---	2.57T	2T	********
XSECTION	7	ADDHYD	.13	1.63	---	2.77	84	646.2
XSECTION	8	RUNOFF	.00	1.46	---	2.46T	4T	********
XSECTION	9	ADDHYD	.14	1.62	---	2.76	86	614.3
STRUCTURE	9	RESVOR	.14	1.62	1338.91	2.83	85	607.1
XSECTION	10	RUNOFF	.00	1.13	---	2.50T	2T	********
XSECTION	11	ADDHYD	.14	1.62	---	2.82	85	607.1
XSECTION	12	RUNOFF	.01	1.36	---	2.46	11	1100.0
XSECTION	13	ADDHYD	.15	1.60	---	2.80	88	586.7
STRUCTURE	13	RESVOR	.15	1.60	1336.54	3.05	80	533.3
XSECTION	14	RUNOFF	.02	1.19	---	2.73	11	550.0
XSECTION	15	ADDHYD	.16	1.56	---	3.00	87	543.8
XSECTION	16	RUNOFF	.01	1.13	---	2.58T	4T	400.0
XSECTION	17	ADDHYD	.17	1.55	---	2.99	89	523.5
XSECTION	18	RUNOFF	.01	1.19	---	2.67	7	700.0
XSECTION	19	ADDHYD	.18	1.53	---	2.96	93	516.7
XSECTION	20	RUNOFF	.01	1.77	---	2.45	18	1800.0
XSECTION	21	ADDHYD	.19	1.54	---	2.94	96	505.3
STRUCTURE	21	RESVOR	.19	1.54	1335.52	3.38	78	410.5
XSECTION	22	RUNOFF	.03	1.33	---	2.52	33	1100.0
XSECTION	23	ADDHYD	.22	1.51	---	3.32	83	377.3
XSECTION	24	RUNOFF	.22	1.55	---	2.83	164	745.5

1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)

ALTERNATE 11 STORM 1

STRUCTURE	25	RESVOR	.22	1.55	1349.31	3.05	140	636.4
XSECTION	26	RUNOFF	.03	1.33	---	2.51	34	1133.3
XSECTION	27	ADDHYD	.25	1.52	---	3.03	149	596.0
XSECTION	28	RUNOFF	.03	1.33	---	2.57	29	966.7
XSECTION	29	ADDHYD	.28	1.50	---	3.00	159	567.9
XSECTION	30	RUNOFF	.02	1.33	---	2.46	20	1000.0

XSECTION	31	ADDHYD	.29	1.49	---	2.99	163	562.1
XSECTION	32	RUNOFF	.01	1.33	---	2.46	11	1100.0
XSECTION	33	ADDHYD	.30	1.49	---	2.99	165	550.0
XSECTION	34	RUNOFF	.03	1.33	---	2.69	26	866.7
XSECTION	35	ADDHYD	.33	1.47	---	2.92	183	554.5
XSECTION	36	ADDHYD	.55	1.49	---	3.04	254	461.8
XSECTION	37	RUNOFF	.02	.90	---	2.48	15	750.0
XSECTION	38	ADDHYD	.57	1.47	---	3.04	258	452.6

RAINFALL OF 3.42 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 12 STORM 2

XSECTION	1	RUNOFF	.09	2.28	---	2.71	111	1233.3
STRUCTURE	1	RESVOR	.09	2.28	1347.59	3.00	78	866.7
XSECTION	2	RUNOFF	.03	3.19	---	2.63	60	2000.0
XSECTION	3	ADDHYD	.12	2.53	---	2.82	116	966.7
XSECTION	4	RUNOFF	.01	1.87	---	2.77	13	1300.0
XSECTION	5	ADDHYD	.13	2.46	---	2.81	129	992.3
XSECTION	6	RUNOFF	.00	1.86	---	2.56T	4T	********
XSECTION	7	ADDHYD	.13	2.45	---	2.80	131	1007.7
XSECTION	8	RUNOFF	.00	2.26	---	2.45	6	********
XSECTION	9	ADDHYD	.14	2.45	---	2.79	133	950.0
STRUCTURE	9	RESVOR	.14	2.45	1339.23	2.83	132	942.9
XSECTION	10	RUNOFF	.00	1.87	---	2.50T	3T	********

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 12 STORM 2

XSECTION	11	ADDHYD	.14	2.44	---	2.83	133	950.0
XSECTION	12	RUNOFF	.01	2.15	---	2.45	18	1800.0
XSECTION	13	ADDHYD	.15	2.42	---	2.81	138	920.0
STRUCTURE	13	RESVOR	.15	2.42	1337.13	3.01	127	846.7
XSECTION	14	RUNOFF	.02	1.94	---	2.72	18	900.0
XSECTION	15	ADDHYD	.16	2.37	---	2.97	140	875.0
XSECTION	16	RUNOFF	.01	1.87	---	2.57	7	700.0
XSECTION	17	ADDHYD	.17	2.36	---	2.96	143	841.2
XSECTION	18	RUNOFF	.01	1.94	---	2.66	11	1100.0
XSECTION	19	ADDHYD	.18	2.34	---	2.94	150	833.3
XSECTION	20	RUNOFF	.01	2.63	---	2.45	26	2600.0
XSECTION	21	ADDHYD	.19	2.35	---	2.93	155	815.8

STRUCTURE	21	RESVOR	.19	2.35	1336.15	3.28	129	678.9
XSECTION	22	RUNOFF	.03	2.11	---	2.51	52	1733.3
XSECTION	23	ADDHYD	.22	2.32	---	3.23	137	622.7
XSECTION	24	RUNOFF	.22	2.37	---	2.82	253	1150.0
STRUCTURE	25	RESVOR	.22	2.37	1350.27	3.08	202	918.2
XSECTION	26	RUNOFF	.03	2.11	---	2.50	55	1833.3
XSECTION	27	ADDHYD	.25	2.34	---	3.04	214	856.0
XSECTION	28	RUNOFF	.03	2.11	---	2.55	47	1566.7
XSECTION	29	ADDHYD	.28	2.31	---	2.86	233	832.1
XSECTION	30	RUNOFF	.02	2.11	---	2.45	32	1600.0
XSECTION	31	ADDHYD	.29	2.30	---	2.84	241	831.0
XSECTION	32	RUNOFF	.01	2.11	---	2.45	18	1800.0
XSECTION	33	ADDHYD	.30	2.30	---	2.83	245	816.7
XSECTION	34	RUNOFF	.03	2.11	---	2.68	41	1366.7
XSECTION	35	ADDHYD	.33	2.28	---	2.79	281	851.5
XSECTION	36	ADDHYD	.55	2.29	---	2.87	390	709.1
XSECTION	37	RUNOFF	.02	1.57	---	2.47	26	1300.0
XSECTION	38	ADDHYD	.57	2.27	---	2.85	396	694.7

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 4.02 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 13 STORM 3

XSECTION	1	RUNOFF	.09	2.84	---	2.70	139	1544.4
STRUCTURE	1	RESVOR	.09	2.84	1348.07	2.98	99	1100.0
XSECTION	2	RUNOFF	.03	3.79	---	2.63	71	2366.7
XSECTION	3	ADDHYD	.12	3.09	---	2.81	146	1216.7
XSECTION	4	RUNOFF	.01	2.39	---	2.77	16	1600.0
XSECTION	5	ADDHYD	.13	3.03	---	2.80	162	1246.2
XSECTION	6	RUNOFF	.00	2.38	---	2.55	5	********
XSECTION	7	ADDHYD	.13	3.01	---	2.79	165	1269.2
XSECTION	8	RUNOFF	.00	2.82	---	2.45	7	********
XSECTION	9	ADDHYD	.14	3.01	---	2.78	167	1192.9
STRUCTURE	9	RESVOR	.14	3.01	1339.42	2.83	166	1185.7
XSECTION	10	RUNOFF	.00	2.39	---	2.49T	4T	********
XSECTION	11	ADDHYD	.14	3.00	---	2.82	168	1200.0
XSECTION	12	RUNOFF	.01	2.70	---	2.45	23	2300.0
XSECTION	13	ADDHYD	.15	2.98	---	2.80	174	1160.0
STRUCTURE	13	RESVOR	.15	2.98	1337.48	2.99	161	1073.3
XSECTION	14	RUNOFF	.02	2.47	---	2.71	23	1150.0

XSECTION	15	ADDHYD	.16	2.93	---	2.94	178	1112.5
XSECTION	16	RUNOFF	.01	2.39	---	2.56	9	900.0
XSECTION	17	ADDHYD	.17	2.91	---	2.93	182	1070.6
XSECTION	18	RUNOFF	.01	2.47	---	2.66	14	1400.0
XSECTION	19	ADDHYD	.18	2.89	---	2.91	191	1061.1
XSECTION	20	RUNOFF	.01	3.21	---	2.44	32	3200.0
XSECTION	21	ADDHYD	.19	2.91	---	2.89	197	1036.8

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 13 STORM 3							
STRUCTURE 21	RESVOR	.19	2.90	1336.54	3.23	167	878.9
XSECTION 22	RUNOFF	.03	2.65	---	2.51	66	2200.0
XSECTION 23	ADDHYD	.22	2.87	---	3.18	179	813.6
XSECTION 24	RUNOFF	.22	2.93	---	2.81	313	1422.7
STRUCTURE 25	RESVOR	.22	2.93	1350.84	3.12	233	1059.1
XSECTION 26	RUNOFF	.03	2.65	---	2.50	69	2300.0
XSECTION 27	ADDHYD	.25	2.90	---	3.08	247	988.0
XSECTION 28	RUNOFF	.03	2.65	---	2.55	59	1966.7
XSECTION 29	ADDHYD	.28	2.87	---	2.71	270	964.3
XSECTION 30	RUNOFF	.02	2.65	---	2.45	40	2000.0
XSECTION 31	ADDHYD	.29	2.86	---	2.67	287	989.7
XSECTION 32	RUNOFF	.01	2.65	---	2.45	23	2300.0
XSECTION 33	ADDHYD	.30	2.85	---	2.63	299	996.7
XSECTION 34	RUNOFF	.03	2.65	---	2.67	52	1733.3
XSECTION 35	ADDHYD	.33	2.83	---	2.65	350	1060.6
XSECTION 36	ADDHYD	.55	2.85	---	2.68	477	867.3
XSECTION 37	RUNOFF	.02	2.06	---	2.46	35	1750.0
XSECTION 38	ADDHYD	.57	2.82	---	2.64	495	868.4

RAINFALL OF 5.20 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	14	STORM	4					
XSECTION	1	RUNOFF	.09	3.96	---	2.70	192	2133.3
STRUCTURE	1	RESVOR	.09	3.96	1349.01	2.96	141	1566.7
XSECTION	2	RUNOFF	.03	4.97	---	2.62	92	3066.7
XSECTION	3	ADDHYD	.12	4.23	---	2.80	203	1691.7
XSECTION	4	RUNOFF	.01	3.45	---	2.76	24	2400.0
XSECTION	5	ADDHYD	.13	4.15	---	2.79	227	1746.2
XSECTION	6	RUNOFF	.00	3.45	---	2.55	7	********

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 14 STORM 4							
XSECTION 8	RUNOFF	.00	3.94	---	2.45	10	********
XSECTION 9	ADDHYD	.14	4.13	---	2.78	234	1671.4
STRUCTURE 9	RESVOR	.14	4.13	1339.81	2.82	233	1664.3
XSECTION 10	RUNOFF	.00	3.45	---	2.49	6	********
XSECTION 11	ADDHYD	.14	4.12	---	2.81	235	1678.6
XSECTION 12	RUNOFF	.01	3.80	---	2.45	32	3200.0
XSECTION 13	ADDHYD	.15	4.11	---	2.79	243	1620.0
STRUCTURE 13	RESVOR	.15	4.11	1338.12	2.96	228	1520.0
XSECTION 14	RUNOFF	.02	3.55	---	2.70	34	1700.0
XSECTION 15	ADDHYD	.16	4.05	---	2.92	254	1587.5
XSECTION 16	RUNOFF	.01	3.45	---	2.56	13	1300.0
XSECTION 17	ADDHYD	.17	4.03	---	2.91	259	1523.5
XSECTION 18	RUNOFF	.01	3.55	---	2.65	20	2000.0
XSECTION 19	ADDHYD	.18	4.01	---	2.88	273	1516.7
XSECTION 20	RUNOFF	.01	4.36	---	2.44	42	4200.0
XSECTION 21	ADDHYD	.19	4.03	---	2.86	282	1484.2
STRUCTURE 21	RESVOR	.19	4.02	1337.26	3.17	244	1284.2
XSECTION 22	RUNOFF	.03	3.75	---	2.50	92	3066.7
XSECTION 23	ADDHYD	.22	3.99	---	3.12	261	1186.4
XSECTION 24	RUNOFF	.22	4.07	---	2.81	433	1968.2
STRUCTURE 25	RESVOR	.22	4.07	1352.04	3.16	299	1359.1
XSECTION 26	RUNOFF	.03	3.75	---	2.50	97	3233.3
XSECTION 27	ADDHYD	.25	4.03	---	3.09	317	1268.0
XSECTION 28	RUNOFF	.03	3.75	---	2.55	83	2766.7
XSECTION 29	ADDHYD	.28	4.00	---	2.60	358	1278.6
XSECTION 30	RUNOFF	.02	3.75	---	2.45	56	2800.0
XSECTION 31	ADDHYD	.29	3.98	---	2.58	396	1365.5
XSECTION 32	RUNOFF	.01	3.75	---	2.45	32	3200.0
XSECTION 33	ADDHYD	.30	3.98	---	2.56	419	1396.7
XSECTION 34	RUNOFF	.03	3.76	---	2.66	74	2466.7

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 14 STORM 4							
XSECTION 35	ADDHYD	.33	3.96	---	2.58	488	1478.8
XSECTION 36	ADDHYD	.55	3.97	---	2.60	673	1223.6
XSECTION 37	RUNOFF	.02	3.06	---	2.46	52	2600.0
XSECTION 38	ADDHYD	.57	3.94	---	2.58	709	1243.9
RAINFALL OF 5.94 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 15 STORM 5							
XSECTION 1	RUNOFF	.09	4.67	---	2.70	226	2511.1
STRUCTURE 1	RESVOR	.09	4.67	1349.27	3.01	151	1677.8
XSECTION 2	RUNOFF	.03	5.71	---	2.62	106	3533.3
XSECTION 3	ADDHYD	.12	4.95	---	2.75	236	1966.7
XSECTION 4	RUNOFF	.01	4.14	---	2.75	28	2800.0
XSECTION 5	ADDHYD	.13	4.87	---	2.75	264	2030.8
XSECTION 6	RUNOFF	.00	4.14	---	2.55	9	********
XSECTION 7	ADDHYD	.13	4.85	---	2.74	270	2076.9
XSECTION 8	RUNOFF	.00	4.65	---	2.44	11	********
XSECTION 9	ADDHYD	.14	4.85	---	2.74	273	1950.0
STRUCTURE 9	RESVOR	.14	4.85	1340.03	2.77	272	1942.9
XSECTION 10	RUNOFF	.00	4.13	---	2.49	7	********
XSECTION 11	ADDHYD	.14	4.84	---	2.77	274	1957.1
XSECTION 12	RUNOFF	.01	4.51	---	2.45	38	3800.0
XSECTION 13	ADDHYD	.15	4.82	---	2.75	286	1906.7
STRUCTURE 13	RESVOR	.15	4.82	1338.42	2.91	264	1760.0
XSECTION 14	RUNOFF	.02	4.24	---	2.70	40	2000.0
XSECTION 15	ADDHYD	.16	4.76	---	2.87	298	1862.5
XSECTION 16	RUNOFF	.01	4.14	---	2.56	16	1600.0
XSECTION 17	ADDHYD	.17	4.74	---	2.86	305	1794.1
XSECTION 18	RUNOFF	.01	4.25	---	2.65	24	2400.0
XSECTION 19	ADDHYD	.18	4.72	---	2.84	324	1800.0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 15 STORM 5							
XSECTION 20	RUNOFF	.01	5.09	---	2.44	49	4900.0
XSECTION 21	ADDHYD	.19	4.74	---	2.82	335	1763.2
STRUCTURE 21	RESVOR	.19	4.73	1337.61	3.12	288	1515.8
XSECTION 22	RUNOFF	.03	4.45	---	2.50	109	3633.3
XSECTION 23	ADDHYD	.22	4.70	---	3.08	310	1409.1
XSECTION 24	RUNOFF	.22	4.78	---	2.80	508	2309.1
STRUCTURE 25	RESVOR	.22	4.79	1352.51	3.21	318	1445.5
XSECTION 26	RUNOFF	.03	4.46	---	2.49	114	3800.0
XSECTION 27	ADDHYD	.25	4.75	---	3.09	338	1352.0
XSECTION 28	RUNOFF	.03	4.46	---	2.54	98	3266.7
XSECTION 29	ADDHYD	.28	4.71	---	2.58	402	1435.7
XSECTION 30	RUNOFF	.02	4.46	---	2.45	66	3300.0
XSECTION 31	ADDHYD	.29	4.70	---	2.54	459	1582.8
XSECTION 32	RUNOFF	.01	4.46	---	2.45	37	3700.0
XSECTION 33	ADDHYD	.30	4.69	---	2.53	491	1636.7
XSECTION 34	RUNOFF	.03	4.46	---	2.66	88	2933.3
XSECTION 35	ADDHYD	.33	4.67	---	2.54	561	1700.0
XSECTION 36	ADDHYD	.55	4.68	---	2.59	786	1429.1
XSECTION 37	RUNOFF	.02	3.72	---	2.45	64	3200.0
XSECTION 38	ADDHYD	.57	4.65	---	2.56	832	1459.6

RAINFALL OF 3.48 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 8, ARC 2

ALTERNATE 21 STORM 1							
XSECTION 1	RUNOFF	.09	2.34	---	12.19	88	977.8
STRUCTURE 1	RESVOR	.09	2.34	1347.25	12.46	63	700.0
XSECTION 2	RUNOFF	.03	3.25	---	12.13	44	1466.7
XSECTION 3	ADDHYD	.12	2.58	---	12.30	94	783.3
XSECTION 4	RUNOFF	.01	1.92	---	12.23	10	1000.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 21 STORM 1							

XSECTION	5	ADDHYD	.13	2.52	---	12.29	104	800.0
XSECTION	6	RUNOFF	.00	1.92	---	12.05T	3T	********
XSECTION	7	ADDHYD	.13	2.50	---	12.27	106	815.4
XSECTION	8	RUNOFF	.00	2.32	---	11.97T	4T	********
XSECTION	9	ADDHYD	.14	2.50	---	12.26	107	764.3
STRUCTURE	9	RESVOR	.14	2.50	1339.08	12.29	107	764.3
XSECTION	10	RUNOFF	.00	1.91	---	12.00T	2T	********
XSECTION	11	ADDHYD	.14	2.49	---	12.28	108	771.4
XSECTION	12	RUNOFF	.01	2.20	---	11.97	12	1200.0
XSECTION	13	ADDHYD	.15	2.48	---	12.25	112	746.7
STRUCTURE	13	RESVOR	.15	2.47	1336.84	12.47	102	680.0
XSECTION	14	RUNOFF	.02	2.00	---	12.18	15	750.0
XSECTION	15	ADDHYD	.16	2.43	---	12.42	112	700.0
XSECTION	16	RUNOFF	.01	1.92	---	12.06	5	500.0
XSECTION	17	ADDHYD	.17	2.41	---	12.40	115	676.5
XSECTION	18	RUNOFF	.01	2.00	---	12.13	9	900.0
XSECTION	19	ADDHYD	.18	2.39	---	12.37	121	672.2
XSECTION	20	RUNOFF	.01	2.68	---	11.97	16	1600.0
XSECTION	21	ADDHYD	.19	2.41	---	12.34	124	652.6
STRUCTURE	21	RESVOR	.19	2.41	1335.85	12.73	103	542.1
XSECTION	22	RUNOFF	.03	2.16	---	12.02	36	1200.0
XSECTION	23	ADDHYD	.22	2.37	---	12.68	108	490.9
XSECTION	24	RUNOFF	.22	2.43	---	12.29	204	927.3
STRUCTURE	25	RESVOR	.22	2.43	1349.84	12.48	176	800.0
XSECTION	26	RUNOFF	.03	2.16	---	12.01	37	1233.3
XSECTION	27	ADDHYD	.25	2.40	---	12.46	185	740.0
XSECTION	28	RUNOFF	.03	2.16	---	12.05	34	1133.3
XSECTION	29	ADDHYD	.28	2.37	---	12.39	197	703.6
XSECTION	30	RUNOFF	.02	2.16	---	11.97	20	1000.0
XSECTION	31	ADDHYD	.29	2.36	---	12.20	203	700.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	21	STORM	1				
XSECTION 32	RUNOFF	.01	2.16	---	11.97	11	1100.0
XSECTION 33	ADDHYD	.30	2.35	---	12.16	209	696.7
XSECTION 34	RUNOFF	.03	2.16	---	12.15	33	1100.0
XSECTION 35	ADDHYD	.33	2.33	---	12.16	242	733.3
XSECTION 36	ADDHYD	.55	2.35	---	12.19	332	603.6

XSECTION	37	RUNOFF	.02	1.62	---	11.98	17	850.0
XSECTION	38	ADDHYD	.57	2.33	---	12.16	342	600.0

RAINFALL OF 4.55 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 22 STORM 2

XSECTION	1	RUNOFF	.09	3.34	---	12.18	124	1377.8
STRUCTURE	1	RESVOR	.09	3.34	1347.92	12.44	93	1033.3
XSECTION	2	RUNOFF	.03	4.31	---	12.13	58	1933.3
XSECTION	3	ADDHYD	.12	3.60	---	12.29	135	1125.0
XSECTION	4	RUNOFF	.01	2.86	---	12.23	15	1500.0
XSECTION	5	ADDHYD	.13	3.53	---	12.28	150	1153.8
XSECTION	6	RUNOFF	.00	2.86	---	12.05T	4T	********
XSECTION	7	ADDHYD	.13	3.51	---	12.27	153	1176.9
XSECTION	8	RUNOFF	.00	3.32	---	11.97	5	********
XSECTION	9	ADDHYD	.14	3.51	---	12.26	155	1107.1
STRUCTURE	9	RESVOR	.14	3.51	1339.35	12.30	154	1100.0
XSECTION	10	RUNOFF	.00	2.86	---	12.00T	3T	********
XSECTION	11	ADDHYD	.14	3.50	---	12.29	155	1107.1
XSECTION	12	RUNOFF	.01	3.19	---	11.97	17	1700.0
XSECTION	13	ADDHYD	.15	3.48	---	12.26	161	1073.3
STRUCTURE	13	RESVOR	.15	3.48	1337.36	12.44	149	993.3
XSECTION	14	RUNOFF	.02	2.95	---	12.18	22	1100.0
XSECTION	15	ADDHYD	.16	3.43	---	12.40	166	1037.5
XSECTION	16	RUNOFF	.01	2.86	---	12.06	8	800.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 22 STORM 2

XSECTION	17	ADDHYD	.17	3.41	---	12.38	169	994.1
XSECTION	18	RUNOFF	.01	2.95	---	12.13	13	1300.0
XSECTION	19	ADDHYD	.18	3.39	---	12.35	178	988.9
XSECTION	20	RUNOFF	.01	3.72	---	11.97	22	2200.0
XSECTION	21	ADDHYD	.19	3.41	---	12.33	183	963.2
STRUCTURE	21	RESVOR	.19	3.40	1336.43	12.64	156	821.1
XSECTION	22	RUNOFF	.03	3.14	---	12.02	52	1733.3
XSECTION	23	ADDHYD	.22	3.37	---	12.60	165	750.0
XSECTION	24	RUNOFF	.22	3.44	---	12.28	285	1295.5
STRUCTURE	25	RESVOR	.22	3.44	1350.60	12.56	220	1000.0
XSECTION	26	RUNOFF	.03	3.14	---	12.01	54	1800.0

XSECTION	27	ADDHYD	.25	3.40	---	12.51	230	920.0
XSECTION	28	RUNOFF	.03	3.14	---	12.05	49	1633.3
XSECTION	29	ADDHYD	.28	3.37	---	12.18	268	957.1
XSECTION	30	RUNOFF	.02	3.14	---	11.97	29	1450.0
XSECTION	31	ADDHYD	.29	3.36	---	12.15	286	986.2
XSECTION	32	RUNOFF	.01	3.14	---	11.97	16	1600.0
XSECTION	33	ADDHYD	.30	3.36	---	12.13	298	993.3
XSECTION	34	RUNOFF	.03	3.14	---	12.15	47	1566.7
XSECTION	35	ADDHYD	.33	3.33	---	12.14	344	1042.4
XSECTION	36	ADDHYD	.55	3.35	---	12.16	482	876.4
XSECTION	37	RUNOFF	.02	2.50	---	11.97	27	1350.0
XSECTION	38	ADDHYD	.57	3.32	---	12.14	500	877.2

RAINFALL OF 5.25 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 23 STORM 3

XSECTION	1	RUNOFF	.09	4.01	---	12.18	148	1644.4
STRUCTURE	1	RESVOR	.09	4.01	1348.36	12.43	112	1244.4
XSECTION	2	RUNOFF	.03	5.00	---	12.13	66	2200.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)

ALTERNATE 23 STORM 3

XSECTION	3	ADDHYD	.12	4.28	---	12.28	162	1350.0
XSECTION	4	RUNOFF	.01	3.50	---	12.22	19	1900.0
XSECTION	5	ADDHYD	.13	4.20	---	12.28	180	1384.6
XSECTION	6	RUNOFF	.00	3.50	---	12.05	5	********
XSECTION	7	ADDHYD	.13	4.19	---	12.27	184	1415.4
XSECTION	8	RUNOFF	.00	3.99	---	11.97	6	********
XSECTION	9	ADDHYD	.14	4.18	---	12.26	186	1328.6
STRUCTURE	9	RESVOR	.14	4.18	1339.53	12.29	185	1321.4
XSECTION	10	RUNOFF	.00	3.50	---	12.00T	4T	********
XSECTION	11	ADDHYD	.14	4.17	---	12.29	187	1335.7
XSECTION	12	RUNOFF	.01	3.85	---	11.97	20	2000.0
XSECTION	13	ADDHYD	.15	4.15	---	12.25	193	1286.7
STRUCTURE	13	RESVOR	.15	4.15	1337.67	12.43	180	1200.0
XSECTION	14	RUNOFF	.02	3.60	---	12.17	27	1350.0
XSECTION	15	ADDHYD	.16	4.10	---	12.38	200	1250.0
XSECTION	16	RUNOFF	.01	3.50	---	12.06	10	1000.0
XSECTION	17	ADDHYD	.17	4.08	---	12.36	205	1205.9

XSECTION	18	RUNOFF	.01	3.60	---	12.13	15	1500.0
XSECTION	19	ADDHYD	.18	4.06	---	12.34	216	1200.0
XSECTION	20	RUNOFF	.01	4.41	---	11.97	26	2600.0
XSECTION	21	ADDHYD	.19	4.08	---	12.30	223	1173.7
STRUCTURE	21	RESVOR	.19	4.07	1336.78	12.62	191	1005.3
XSECTION	22	RUNOFF	.03	3.80	---	12.01	62	2066.7
XSECTION	23	ADDHYD	.22	4.04	---	12.58	202	918.2
XSECTION	24	RUNOFF	.22	4.11	---	12.28	338	1536.4
STRUCTURE	25	RESVOR	.22	4.11	1351.13	12.58	249	1131.8
XSECTION	26	RUNOFF	.03	3.80	---	12.01	64	2133.3
XSECTION	27	ADDHYD	.25	4.07	---	12.55	261	1044.0
XSECTION	28	RUNOFF	.03	3.80	---	12.05	59	1966.7
XSECTION	29	ADDHYD	.28	4.05	---	12.13	304	1085.7

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 23 STORM 3							
XSECTION 30	RUNOFF	.02	3.80	---	11.97	35	1750.0
XSECTION 31	ADDHYD	.29	4.03	---	12.10	335	1155.2
XSECTION 32	RUNOFF	.01	3.80	---	11.97	20	2000.0
XSECTION 33	ADDHYD	.30	4.03	---	12.09	352	1173.3
XSECTION 34	RUNOFF	.03	3.80	---	12.15	57	1900.0
XSECTION 35	ADDHYD	.33	4.00	---	12.10	407	1233.3
XSECTION 36	ADDHYD	.55	4.02	---	12.12	570	1036.4
XSECTION 37	RUNOFF	.02	3.11	---	11.97	33	1650.0
XSECTION 38	ADDHYD	.57	3.99	---	12.11	601	1054.4
RAINFALL OF 6.98 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 24 STORM 4							
XSECTION 1	RUNOFF	.09	5.68	---	12.18	207	2300.0
STRUCTURE 1	RESVOR	.09	5.68	1349.17	12.45	147	1633.3
XSECTION 2	RUNOFF	.03	6.73	---	12.13	89	2966.7
XSECTION 3	ADDHYD	.12	5.97	---	12.25	222	1850.0
XSECTION 4	RUNOFF	.01	5.11	---	12.22	27	2700.0
XSECTION 5	ADDHYD	.13	5.88	---	12.24	249	1915.4
XSECTION 6	RUNOFF	.00	5.11	---	12.05	8	********
XSECTION 7	ADDHYD	.13	5.87	---	12.24	255	1961.5
XSECTION 8	RUNOFF	.00	5.66	---	11.97	8	********
XSECTION 9	ADDHYD	.14	5.86	---	12.23	258	1842.9

STRUCTURE	9	RESVOR	.14	5.86	1339.95	12.26	257	1835.7
XSECTION	10	RUNOFF	.00	5.12	---	12.00	5	********
XSECTION	11	ADDHYD	.14	5.85	---	12.26	259	1850.0
XSECTION	12	RUNOFF	.01	5.51	---	11.97	28	2800.0
XSECTION	13	ADDHYD	.15	5.83	---	12.22	270	1800.0
STRUCTURE	13	RESVOR	.15	5.83	1338.32	12.38	251	1673.3
XSECTION	14	RUNOFF	.02	5.23	---	12.17	38	1900.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID		STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	24	STORM	4					
XSECTION	15	ADDHYD	.16	5.77	---	12.34	284	1775.0
XSECTION	16	RUNOFF	.01	5.12	---	12.05	14	1400.0
XSECTION	17	ADDHYD	.17	5.75	---	12.33	291	1711.8
XSECTION	18	RUNOFF	.01	5.23	---	12.13	22	2200.0
XSECTION	19	ADDHYD	.18	5.72	---	12.31	309	1716.7
XSECTION	20	RUNOFF	.01	6.11	---	11.97	35	3500.0
XSECTION	21	ADDHYD	.19	5.74	---	12.27	319	1678.9
STRUCTURE	21	RESVOR	.19	5.74	1337.53	12.55	277	1457.9
XSECTION	22	RUNOFF	.03	5.46	---	12.01	87	2900.0
XSECTION	23	ADDHYD	.22	5.70	---	12.50	294	1336.4
XSECTION	24	RUNOFF	.22	5.80	---	12.28	468	2127.3
STRUCTURE	25	RESVOR	.22	5.79	1352.29	12.64	309	1404.5
XSECTION	26	RUNOFF	.03	5.45	---	12.01	90	3000.0
XSECTION	27	ADDHYD	.25	5.75	---	12.48	324	1296.0
XSECTION	28	RUNOFF	.03	5.45	---	12.05	83	2766.7
XSECTION	29	ADDHYD	.28	5.72	---	12.13	387	1382.1
XSECTION	30	RUNOFF	.02	5.46	---	11.97	49	2450.0
XSECTION	31	ADDHYD	.29	5.71	---	12.08	430	1482.8
XSECTION	32	RUNOFF	.01	5.46	---	11.97	28	2800.0
XSECTION	33	ADDHYD	.30	5.70	---	12.07	455	1516.7
XSECTION	34	RUNOFF	.03	5.45	---	12.14	80	2666.7
XSECTION	35	ADDHYD	.33	5.67	---	12.08	533	1615.2
XSECTION	36	ADDHYD	.55	5.69	---	12.12	787	1430.9
XSECTION	37	RUNOFF	.02	4.67	---	11.97	49	2450.0
XSECTION	38	ADDHYD	.57	5.65	---	12.10	828	1452.6

RAINFALL OF 7.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 25 STORM 5

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

ALTERNATE 25 STORM 5

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
STRUCTURE 1	RESVOR	.09	6.48	1349.41	12.48	157	1744.4
XSECTION 2	RUNOFF	.03	7.55	---	12.13	99	3300.0
XSECTION 3	ADDHYD	.12	6.77	---	12.20	242	2016.7
XSECTION 4	RUNOFF	.01	5.90	---	12.22	31	3100.0
XSECTION 5	ADDHYD	.13	6.68	---	12.20	273	2100.0
XSECTION 6	RUNOFF	.00	5.90	---	12.05	9	********
XSECTION 7	ADDHYD	.13	6.67	---	12.20	280	2153.8
XSECTION 8	RUNOFF	.00	6.46	---	11.97	9	********
XSECTION 9	ADDHYD	.14	6.66	---	12.19	285	2035.7
STRUCTURE 9	RESVOR	.14	6.66	1340.08	12.23	283	2021.4
XSECTION 10	RUNOFF	.00	5.89	---	11.99	6	********
XSECTION 11	ADDHYD	.14	6.65	---	12.22	286	2042.9
XSECTION 12	RUNOFF	.01	6.31	---	11.97	32	3200.0
XSECTION 13	ADDHYD	.15	6.63	---	12.18	303	2020.0
STRUCTURE 13	RESVOR	.15	6.63	1338.55	12.35	279	1860.0
XSECTION 14	RUNOFF	.02	6.01	---	12.17	43	2150.0
XSECTION 15	ADDHYD	.16	6.57	---	12.32	317	1981.3
XSECTION 16	RUNOFF	.01	5.90	---	12.05	16	1600.0
XSECTION 17	ADDHYD	.17	6.55	---	12.29	327	1923.5
XSECTION 18	RUNOFF	.01	6.01	---	12.13	25	2500.0
XSECTION 19	ADDHYD	.18	6.52	---	12.28	349	1938.9
XSECTION 20	RUNOFF	.01	6.92	---	11.97	40	4000.0
XSECTION 21	ADDHYD	.19	6.54	---	12.24	362	1905.3
STRUCTURE 21	RESVOR	.19	6.54	1337.82	12.52	313	1647.4
XSECTION 22	RUNOFF	.03	6.25	---	12.02	99	3300.0
XSECTION 23	ADDHYD	.22	6.50	---	12.45	334	1518.2
XSECTION 24	RUNOFF	.22	6.61	---	12.28	533	2422.7
STRUCTURE 25	RESVOR	.22	6.61	1352.71	12.68	326	1481.8
XSECTION 26	RUNOFF	.03	6.25	---	12.01	103	3433.3
XSECTION 27	ADDHYD	.25	6.57	---	12.25	346	1384.0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 25 STORM 5							
XSECTION 28	RUNOFF	.03	6.25	---	12.05	95	3166.7
XSECTION 29	ADDHYD	.28	6.53	---	12.13	428	1528.6
XSECTION 30	RUNOFF	.02	6.25	---	11.97	55	2750.0
XSECTION 31	ADDHYD	.29	6.52	---	12.09	476	1641.4
XSECTION 32	RUNOFF	.01	6.25	---	11.97	31	3100.0
XSECTION 33	ADDHYD	.30	6.51	---	12.07	504	1680.0
XSECTION 34	RUNOFF	.03	6.24	---	12.14	90	3000.0
XSECTION 35	ADDHYD	.33	6.48	---	12.08	592	1793.9
XSECTION 36	ADDHYD	.55	6.49	---	12.13	886	1610.9
XSECTION 37	RUNOFF	.02	5.43	---	11.97	57	2850.0
XSECTION 38	ADDHYD	.57	6.46	---	12.10	937	1643.9

1

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
STRUCTURE 25	.22					
ALTERNATE 11		140	*********	*********	*********	*********
ALTERNATE 12		*********	202	*********	*********	*********
ALTERNATE 13		*********	*********	233	*********	*********
ALTERNATE 14		*********	*********	*********	299	*********
ALTERNATE 15		*********	*********	*********	*********	318
ALTERNATE 21		176	*********	*********	*********	*********
ALTERNATE 22		*********	220	*********	*********	*********
ALTERNATE 23		*********	*********	249	*********	*********
ALTERNATE 24		*********	*********	*********	309	*********
ALTERNATE 25		*********	*********	*********	*********	326
STRUCTURE 21	.19					
ALTERNATE 11		78	*********	*********	*********	*********
ALTERNATE 12		*********	129	*********	*********	*********

ALTERNATE	13	*********	*********	167	*********	*********
ALTERNATE	14	*********	*********	*********	244	*********
ALTERNATE	15	*********	*********	*********	*********	288
ALTERNATE	21	103	*********	*********	*********	*********
ALTERNATE	22	*********	156	*********	*********	*********
ALTERNATE	23	*********	*********	191	*********	*********
ALTERNATE	24	*********	*********	*********	277	*********
ALTERNATE	25	*********	*********	*********	*********	313

STRUCTURE 13 .15

ALTERNATE	11	80	*********	*********	*********	*********
ALTERNATE	12	*********	127	*********	*********	*********
ALTERNATE	13	*********	*********	161	*********	*********
ALTERNATE	14	*********	*********	*********	228	*********
ALTERNATE	15	*********	*********	*********	*********	264
ALTERNATE	21	102	*********	*********	*********	*********
ALTERNATE	22	*********	149	*********	*********	*********
ALTERNATE	23	*********	*********	180	*********	*********
ALTERNATE	24	*********	*********	*********	251	*********
ALTERNATE	25	*********	*********	*********	*********	279

STRUCTURE 9 .14

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5

STRUCTURE 9 .14

ALTERNATE	11	85	*********	*********	*********	*********
ALTERNATE	12	*********	132	*********	*********	*********
ALTERNATE	13	*********	*********	166	*********	*********
ALTERNATE	14	*********	*********	*********	233	*********
ALTERNATE	15	*********	*********	*********	*********	272
ALTERNATE	21	107	*********	*********	*********	*********
ALTERNATE	22	*********	154	*********	*********	*********
ALTERNATE	23	*********	*********	185	*********	*********
ALTERNATE	24	*********	*********	*********	257	*********
ALTERNATE	25	*********	*********	*********	*********	283

STRUCTURE 1 .09

ALTERNATE	11	47	*********	*********	*********	*********
ALTERNATE	12	*********	78	*********	*********	*********
ALTERNATE	13	*********	*********	99	*********	*********
ALTERNATE	14	*********	*********	*********	141	*********
ALTERNATE	15	*********	*********	*********	*********	151

ALTERNATE	21	63	*********	*********	*********	*********
ALTERNATE	22	*********	93	*********	*********	*********
ALTERNATE	23	*********	*********	112	*********	*********
ALTERNATE	24	*********	*********	*********	147	*********
ALTERNATE	25	*********	*********	*********	*********	157

XSECTION 1 .09

ALTERNATE	11	71	*********	*********	*********	*********
ALTERNATE	12	*********	111	*********	*********	*********
ALTERNATE	13	*********	*********	139	*********	*********
ALTERNATE	14	*********	*********	*********	192	*********
ALTERNATE	15	*********	*********	*********	*********	226
ALTERNATE	21	88	*********	*********	*********	*********
ALTERNATE	22	*********	124	*********	*********	*********
ALTERNATE	23	*********	*********	148	*********	*********
ALTERNATE	24	*********	*********	*********	207	*********
ALTERNATE	25	*********	*********	*********	*********	233

XSECTION 2 .03

ALTERNATE	11	43	*********	*********	*********	*********

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5

XSECTION 2 .03

ALTERNATE	12	*********	60	*********	*********	*********
ALTERNATE	13	*********	*********	71	*********	*********
ALTERNATE	14	*********	*********	*********	92	*********
ALTERNATE	15	*********	*********	*********	*********	106
ALTERNATE	21	44	*********	*********	*********	*********
ALTERNATE	22	*********	58	*********	*********	*********
ALTERNATE	23	*********	*********	66	*********	*********
ALTERNATE	24	*********	*********	*********	89	*********
ALTERNATE	25	*********	*********	*********	*********	99

XSECTION 3 .12

ALTERNATE	11	75	*********	*********	*********	*********
ALTERNATE	12	*********	116	*********	*********	*********
ALTERNATE	13	*********	*********	146	*********	*********
ALTERNATE	14	*********	*********	*********	203	*********
ALTERNATE	15	*********	*********	*********	*********	236
ALTERNATE	21	94	*********	*********	*********	*********
ALTERNATE	22	*********	135	*********	*********	*********

ALTERNATE	23	*********	*********	162	*********	*********
ALTERNATE	24	*********	*********	*********	222	*********
ALTERNATE	25	*********	*********	*********	*********	242

XSECTION 4 .01

ALTERNATE	11	7	*********	*********	*********	*********
ALTERNATE	12	*********	13	*********	*********	*********
ALTERNATE	13	*********	*********	16	*********	*********
ALTERNATE	14	*********	*********	*********	24	*********
ALTERNATE	15	*********	*********	*********	*********	28
ALTERNATE	21	10	*********	*********	*********	*********
ALTERNATE	22	*********	15	*********	*********	*********
ALTERNATE	23	*********	*********	19	*********	*********
ALTERNATE	24	*********	*********	*********	27	*********
ALTERNATE	25	*********	*********	*********	*********	31

XSECTION 5 .13

ALTERNATE	11	83	*********	*********	*********	*********
ALTERNATE	12	*********	129	*********	*********	*********

1

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 5 .13							
ALTERNATE	13		*********	*********	162	*********	*********
ALTERNATE	14		*********	*********	*********	227	*********
ALTERNATE	15		*********	*********	*********	*********	264
ALTERNATE	21		104	*********	*********	*********	*********
ALTERNATE	22		*********	150	*********	*********	*********
ALTERNATE	23		*********	*********	180	*********	*********
ALTERNATE	24		*********	*********	*********	249	*********
ALTERNATE	25		*********	*********	*********	*********	273
XSECTION 6 .00							
ALTERNATE	11		2	*********	*********	*********	*********
ALTERNATE	12		*********	4	*********	*********	*********
ALTERNATE	13		*********	*********	5	*********	*********
ALTERNATE	14		*********	*********	*********	7	*********
ALTERNATE	15		*********	*********	*********	*********	9
ALTERNATE	21		3	*********	*********	*********	*********
ALTERNATE	22		*********	4	*********	*********	*********
ALTERNATE	23		*********	*********	5	*********	*********
ALTERNATE	24		*********	*********	*********	8	*********
ALTERNATE	25		*********	*********	*********	*********	9

```
 XSECTION    7          .13
 ---------------------------
    ALTERNATE   11              84 ********* ********* ********* *********
    ALTERNATE   12         ********       131 ********* ********* *********
    ALTERNATE   13         ********* *********       165 ********* *********
    ALTERNATE   14         ********* ********* *********       231 *********
    ALTERNATE   15         ********* ********* ********* *********       270

    ALTERNATE   21             106 ********* ********* ********* *********
    ALTERNATE   22         ********       153 ********* ********* *********
    ALTERNATE   23         ********* *********       184 ********* *********
    ALTERNATE   24         ********* ********* *********       255 *********
    ALTERNATE   25         ********* ********* ********* *********       280

 XSECTION    8          .00
 ---------------------------
    ALTERNATE   11               4 ********* ********* ********* *********
    ALTERNATE   12         ********         6 ********* ********* *********
    ALTERNATE   13         ********* *********         7 ********* *********
1
 TR20 ---------------------------------------------------------------------- SCS -
                    Timberlands - EXISTING CONDITIONS                VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20           2.04TEST
 09:37:39                    SUMMARY, JOB NO.   1                      PAGE  24


                           SUMMARY TABLE 3
                           ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID                (SQ MI)          1         2         3         4         5


 XSECTION    8          .00
 ---------------------------
    ALTERNATE   14         ********* ********* *********        10 *********
    ALTERNATE   15         ********* ********* ********* *********        11
    ALTERNATE   21               4 ********* ********* ********* *********
    ALTERNATE   22         ********         5 ********* ********* *********
    ALTERNATE   23         ********* *********         6 ********* *********

    ALTERNATE   24         ********* ********* *********         8 *********
    ALTERNATE   25         ********* ********* ********* *********         9

 XSECTION    9          .14
 ---------------------------
    ALTERNATE   11              86 ********* ********* ********* *********
    ALTERNATE   12         ********       133 ********* ********* *********
    ALTERNATE   13         ********* *********       167 ********* *********
    ALTERNATE   14         ********* ********* *********       234 *********
    ALTERNATE   15         ********* ********* ********* *********       273

    ALTERNATE   21             107 ********* ********* ********* *********
    ALTERNATE   22         ********       155 ********* ********* *********
    ALTERNATE   23         ********* *********       186 ********* *********
    ALTERNATE   24         ********* ********* *********       258 *********
    ALTERNATE   25         ********* ********* ********* *********       285

 XSECTION   10          .00
 ---------------------------
```

ALTERNATE	11	2	*********	*********	*********	*********
ALTERNATE	12	*********	3	*********	*********	*********
ALTERNATE	13	*********	*********	4	*********	*********
ALTERNATE	14	*********	*********	*********	6	*********
ALTERNATE	15	*********	*********	*********	*********	7
ALTERNATE	21	2	*********	*********	*********	*********
ALTERNATE	22	*********	3	*********	*********	*********
ALTERNATE	23	*********	*********	4	*********	*********
ALTERNATE	24	*********	*********	*********	5	*********
ALTERNATE	25	*********	*********	*********	*********	6

XSECTION 11 .14

ALTERNATE	11	85	*********	*********	*********	*********
ALTERNATE	12	*********	133	*********	*********	*********
ALTERNATE	13	*********	*********	168	*********	*********
ALTERNATE	14	*********	*********	*********	235	*********

1

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 11 .14							
ALTERNATE	15		*********	*********	*********	*********	274
ALTERNATE	21		108	*********	*********	*********	*********
ALTERNATE	22		*********	155	*********	*********	*********
ALTERNATE	23		*********	*********	187	*********	*********
ALTERNATE	24		*********	*********	*********	259	*********
ALTERNATE	25		*********	*********	*********	*********	286
XSECTION 12 .01							
ALTERNATE	11		11	*********	*********	*********	*********
ALTERNATE	12		*********	18	*********	*********	*********
ALTERNATE	13		*********	*********	23	*********	*********
ALTERNATE	14		*********	*********	*********	32	*********
ALTERNATE	15		*********	*********	*********	*********	38
ALTERNATE	21		12	*********	*********	*********	*********
ALTERNATE	22		*********	17	*********	*********	*********
ALTERNATE	23		*********	*********	20	*********	*********
ALTERNATE	24		*********	*********	*********	28	*********
ALTERNATE	25		*********	*********	*********	*********	32
XSECTION 13 .15							
ALTERNATE	11		88	*********	*********	*********	*********
ALTERNATE	12		*********	138	*********	*********	*********
ALTERNATE	13		*********	*********	174	*********	*********

ALTERNATE	14	*********	*********	*********	243	*********
ALTERNATE	15	*********	*********	*********	*********	286
ALTERNATE	21	112	*********	*********	*********	*********
ALTERNATE	22	*********	161	*********	*********	*********
ALTERNATE	23	*********	*********	193	*********	*********
ALTERNATE	24	*********	*********	*********	270	*********
ALTERNATE	25	*********	*********	*********	*********	303

XSECTION 14 .02

ALTERNATE	11	11	*********	*********	*********	*********
ALTERNATE	12	*********	18	*********	*********	*********
ALTERNATE	13	*********	*********	23	*********	*********
ALTERNATE	14	*********	*********	*********	34	*********
ALTERNATE	15	*********	*********	*********	*********	40

1

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5

XSECTION 14 .02

ALTERNATE	21	15	*********	*********	*********	*********
ALTERNATE	22	*********	22	*********	*********	*********
ALTERNATE	23	*********	*********	27	*********	*********
ALTERNATE	24	*********	*********	*********	38	*********
ALTERNATE	25	*********	*********	*********	*********	43

XSECTION 15 .16

ALTERNATE	11	87	*********	*********	*********	*********
ALTERNATE	12	*********	140	*********	*********	*********
ALTERNATE	13	*********	*********	178	*********	*********
ALTERNATE	14	*********	*********	*********	254	*********
ALTERNATE	15	*********	*********	*********	*********	298
ALTERNATE	21	112	*********	*********	*********	*********
ALTERNATE	22	*********	166	*********	*********	*********
ALTERNATE	23	*********	*********	200	*********	*********
ALTERNATE	24	*********	*********	*********	284	*********
ALTERNATE	25	*********	*********	*********	*********	317

XSECTION 16 .01

ALTERNATE	11	4	*********	*********	*********	*********
ALTERNATE	12	*********	7	*********	*********	*********
ALTERNATE	13	*********	*********	9	*********	*********
ALTERNATE	14	*********	*********	*********	13	*********
ALTERNATE	15	*********	*********	*********	*********	16
ALTERNATE	21	5	*********	*********	*********	*********

ALTERNATE	22	*********	8	*********	*********	*********
ALTERNATE	23	*********	*********	10	*********	*********
ALTERNATE	24	*********	*********	*********	14	*********
ALTERNATE	25	*********	*********	*********	*********	16

XSECTION 17 .17

ALTERNATE	11	89	*********	*********	*********	*********
ALTERNATE	12	*********	143	*********	*********	*********
ALTERNATE	13	*********	*********	182	*********	*********
ALTERNATE	14	*********	*********	*********	259	*********
ALTERNATE	15	*********	*********	*********	*********	305

ALTERNATE	21	115	*********	*********	*********	*********

1

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5

XSECTION 17 .17

ALTERNATE	22	*********	169	*********	*********	*********
ALTERNATE	23	*********	*********	205	*********	*********
ALTERNATE	24	*********	*********	*********	291	*********
ALTERNATE	25	*********	*********	*********	*********	327

XSECTION 18 .01

ALTERNATE	11	7	*********	*********	*********	*********
ALTERNATE	12	*********	11	*********	*********	*********
ALTERNATE	13	*********	*********	14	*********	*********
ALTERNATE	14	*********	*********	*********	20	*********
ALTERNATE	15	*********	*********	*********	*********	24

ALTERNATE	21	9	*********	*********	*********	*********
ALTERNATE	22	*********	13	*********	*********	*********
ALTERNATE	23	*********	*********	15	*********	*********
ALTERNATE	24	*********	*********	*********	22	*********
ALTERNATE	25	*********	*********	*********	*********	25

XSECTION 19 .18

ALTERNATE	11	93	*********	*********	*********	*********
ALTERNATE	12	*********	150	*********	*********	*********
ALTERNATE	13	*********	*********	191	*********	*********
ALTERNATE	14	*********	*********	*********	273	*********
ALTERNATE	15	*********	*********	*********	*********	324

ALTERNATE	21	121	*********	*********	*********	*********
ALTERNATE	22	*********	178	*********	*********	*********
ALTERNATE	23	*********	*********	216	*********	*********
ALTERNATE	24	*********	*********	*********	309	*********

```
   ALTERNATE   25           ********* ********* ********* *********       349

 XSECTION   20          .01
 ---------------------------
   ALTERNATE   11                 18 ********* ********* ********* *********
   ALTERNATE   12           *********        26 ********* ********* *********
   ALTERNATE   13           ********* *********        32 ********* *********
   ALTERNATE   14           ********* ********* *********        42 *********
   ALTERNATE   15           ********* ********* ********* *********        49

   ALTERNATE   21                 16 ********* ********* ********* *********
   ALTERNATE   22           *********        22 ********* ********* *********
1
 TR20 ------------------------------------------------------------------- SCS -
                  Timberlands - EXISTING CONDITIONS               VERSION
 05/17/**       MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:37:39                   SUMMARY, JOB NO.   1                    PAGE  28


                           SUMMARY TABLE 3
                           ---------------
     STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
     QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID                (SQ MI)          1         2         3         4         5


 XSECTION   20          .01
 ---------------------------
   ALTERNATE   23           ********* *********        26 ********* *********
   ALTERNATE   24           ********* ********* *********        35 *********
   ALTERNATE   25           ********* ********* ********* *********        40

 XSECTION   21          .19
 ---------------------------
   ALTERNATE   11                 96 ********* ********* ********* *********
   ALTERNATE   12           *********       155 ********* ********* *********
   ALTERNATE   13           ********* *********       197 ********* *********
   ALTERNATE   14           ********* ********* *********       282 *********
   ALTERNATE   15           ********* ********* ********* *********       335

   ALTERNATE   21                124 ********* ********* ********* *********
   ALTERNATE   22           *********       183 ********* ********* *********
   ALTERNATE   23           ********* *********       223 ********* *********
   ALTERNATE   24           ********* ********* *********       319 *********
   ALTERNATE   25           ********* ********* ********* *********       362

 XSECTION   22          .03
 ---------------------------
   ALTERNATE   11                 33 ********* ********* ********* *********
   ALTERNATE   12           *********        52 ********* ********* *********
   ALTERNATE   13           ********* *********        66 ********* *********
   ALTERNATE   14           ********* ********* *********        92 *********
   ALTERNATE   15           ********* ********* ********* *********       109

   ALTERNATE   21                 36 ********* ********* ********* *********
   ALTERNATE   22           *********        52 ********* ********* *********
   ALTERNATE   23           ********* *********        62 ********* *********
   ALTERNATE   24           ********* ********* *********        87 *********
   ALTERNATE   25           ********* ********* ********* *********        99

 XSECTION   23          .22
```

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 23		.22					
	ALTERNATE	24	*********	*********	*********	294	*********
	ALTERNATE	25	*********	*********	*********	*********	334
XSECTION 24		.22					
	ALTERNATE	11	164	*********	*********	*********	*********
	ALTERNATE	12	*********	253	*********	*********	*********
	ALTERNATE	13	*********	*********	313	*********	*********
	ALTERNATE	14	*********	*********	*********	433	*********
	ALTERNATE	15	*********	*********	*********	*********	508
	ALTERNATE	21	204	*********	*********	*********	*********
	ALTERNATE	22	*********	285	*********	*********	*********
	ALTERNATE	23	*********	*********	338	*********	*********
	ALTERNATE	24	*********	*********	*********	468	*********
	ALTERNATE	25	*********	*********	*********	*********	533
XSECTION 26		.03					
	ALTERNATE	11	34	*********	*********	*********	*********
	ALTERNATE	12	*********	55	*********	*********	*********
	ALTERNATE	13	*********	*********	69	*********	*********
	ALTERNATE	14	*********	*********	*********	97	*********
	ALTERNATE	15	*********	*********	*********	*********	114
	ALTERNATE	21	37	*********	*********	*********	*********
	ALTERNATE	22	*********	54	*********	*********	*********
	ALTERNATE	23	*********	*********	64	*********	*********
	ALTERNATE	24	*********	*********	*********	90	*********
	ALTERNATE	25	*********	*********	*********	*********	103
XSECTION 27		.25					
	ALTERNATE	11	149	*********	*********	*********	*********
	ALTERNATE	12	*********	214	*********	*********	*********

ALTERNATE	13	*********	*********	247	*********	*********
ALTERNATE	14	*********	*********	*********	317	*********
ALTERNATE	15	*********	*********	*********	*********	338
ALTERNATE	21	185	*********	*********	*********	*********
ALTERNATE	22	*********	230	*********	*********	*********
ALTERNATE	23	*********	*********	261	*********	*********
ALTERNATE	24	*********	*********	*********	324	*********

1

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 27		.25					
ALTERNATE	25		*********	*********	*********	*********	346
XSECTION 28		.03					
ALTERNATE	11		29	*********	*********	*********	*********
ALTERNATE	12		*********	47	*********	*********	*********
ALTERNATE	13		*********	*********	59	*********	*********
ALTERNATE	14		*********	*********	*********	83	*********
ALTERNATE	15		*********	*********	*********	*********	98
ALTERNATE	21		34	*********	*********	*********	*********
ALTERNATE	22		*********	49	*********	*********	*********
ALTERNATE	23		*********	*********	59	*********	*********
ALTERNATE	24		*********	*********	*********	83	*********
ALTERNATE	25		*********	*********	*********	*********	95
XSECTION 29		.28					
ALTERNATE	11		159	*********	*********	*********	*********
ALTERNATE	12		*********	233	*********	*********	*********
ALTERNATE	13		*********	*********	270	*********	*********
ALTERNATE	14		*********	*********	*********	358	*********
ALTERNATE	15		*********	*********	*********	*********	402
ALTERNATE	21		197	*********	*********	*********	*********
ALTERNATE	22		*********	268	*********	*********	*********
ALTERNATE	23		*********	*********	304	*********	*********
ALTERNATE	24		*********	*********	*********	387	*********
ALTERNATE	25		*********	*********	*********	*********	428
XSECTION 30		.02					
ALTERNATE	11		20	*********	*********	*********	*********
ALTERNATE	12		*********	32	*********	*********	*********
ALTERNATE	13		*********	*********	40	*********	*********
ALTERNATE	14		*********	*********	*********	56	*********
ALTERNATE	15		*********	*********	*********	*********	66

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 31		.29					
	ALTERNATE 11		163	*********	*********	*********	*********
	ALTERNATE 12		*********	241	*********	*********	*********
	ALTERNATE 13		*********	*********	287	*********	*********
	ALTERNATE 14		*********	*********	*********	396	*********
	ALTERNATE 15		*********	*********	*********	*********	459
	ALTERNATE 21		203	*********	*********	*********	*********
	ALTERNATE 22		*********	286	*********	*********	*********
	ALTERNATE 23		*********	*********	335	*********	*********
	ALTERNATE 24		*********	*********	*********	430	*********
	ALTERNATE 25		*********	*********	*********	*********	476
XSECTION 32		.01					
	ALTERNATE 11		11	*********	*********	*********	*********
	ALTERNATE 12		*********	18	*********	*********	*********
	ALTERNATE 13		*********	*********	23	*********	*********
	ALTERNATE 14		*********	*********	*********	32	*********
	ALTERNATE 15		*********	*********	*********	*********	37
	ALTERNATE 21		11	*********	*********	*********	*********
	ALTERNATE 22		*********	16	*********	*********	*********
	ALTERNATE 23		*********	*********	20	*********	*********
	ALTERNATE 24		*********	*********	*********	28	*********
	ALTERNATE 25		*********	*********	*********	*********	31
XSECTION 33		.30					
	ALTERNATE 11		165	*********	*********	*********	*********
	ALTERNATE 12		*********	245	*********	*********	*********
	ALTERNATE 13		*********	*********	299	*********	*********
	ALTERNATE 14		*********	*********	*********	419	*********
	ALTERNATE 15		*********	*********	*********	*********	491
	ALTERNATE 21		209	*********	*********	*********	*********
	ALTERNATE 22		*********	298	*********	*********	*********
	ALTERNATE 23		*********	*********	352	*********	*********
	ALTERNATE 24		*********	*********	*********	455	*********
	ALTERNATE 25		*********	*********	*********	*********	504

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 34	.03					
ALTERNATE 11		26	*********	*********	*********	*********
ALTERNATE 12		*********	41	*********	*********	*********
ALTERNATE 13		*********	*********	52	*********	*********
ALTERNATE 14		*********	*********	*********	74	*********
ALTERNATE 15		*********	*********	*********	*********	88
ALTERNATE 21		33	*********	*********	*********	*********
ALTERNATE 22		*********	47	*********	*********	*********
ALTERNATE 23		*********	*********	57	*********	*********
ALTERNATE 24		*********	*********	*********	80	*********
ALTERNATE 25		*********	*********	*********	*********	90
XSECTION 35	.33					
ALTERNATE 11		183	*********	*********	*********	*********
ALTERNATE 12		*********	281	*********	*********	*********
ALTERNATE 13		*********	*********	350	*********	*********
ALTERNATE 14		*********	*********	*********	488	*********
ALTERNATE 15		*********	*********	*********	*********	561
ALTERNATE 21		242	*********	*********	*********	*********
ALTERNATE 22		*********	344	*********	*********	*********
ALTERNATE 23		*********	*********	407	*********	*********
ALTERNATE 24		*********	*********	*********	533	*********
ALTERNATE 25		*********	*********	*********	*********	592
XSECTION 36	.55					
ALTERNATE 11		254	*********	*********	*********	*********
ALTERNATE 12		*********	390	*********	*********	*********
ALTERNATE 13		*********	*********	477	*********	*********
ALTERNATE 14		*********	*********	*********	673	*********
ALTERNATE 15		*********	*********	*********	*********	786
ALTERNATE 21		332	*********	*********	*********	*********
ALTERNATE 22		*********	482	*********	*********	*********
ALTERNATE 23		*********	*********	570	*********	*********
ALTERNATE 24		*********	*********	*********	787	*********
ALTERNATE 25		*********	*********	*********	*********	886

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 37		.02					
ALTERNATE	11		15	*********	*********	*********	*********
ALTERNATE	12		*********	26	*********	*********	*********
ALTERNATE	13		*********	*********	35	*********	*********
ALTERNATE	14		*********	*********	*********	52	*********
ALTERNATE	15		*********	*********	*********	*********	64
ALTERNATE	21		17	*********	*********	*********	*********
ALTERNATE	22		*********	27	*********	*********	*********
ALTERNATE	23		*********	*********	33	*********	*********
ALTERNATE	24		*********	*********	*********	49	*********
ALTERNATE	25		*********	*********	*********	*********	57
XSECTION 38		.57					
ALTERNATE	11		258	*********	*********	*********	*********
ALTERNATE	12		*********	396	*********	*********	*********
ALTERNATE	13		*********	*********	495	*********	*********
ALTERNATE	14		*********	*********	*********	709	*********
ALTERNATE	15		*********	*********	*********	*********	832
ALTERNATE	21		342	*********	*********	*********	*********
ALTERNATE	22		*********	500	*********	*********	*********
ALTERNATE	23		*********	*********	601	*********	*********
ALTERNATE	24		*********	*********	*********	828	*********
ALTERNATE	25		*********	*********	*********	*********	937

1
TR20 ---------- SCS -
Timberlands - EXISTING CONDITIONS VERSION
05/17/** MKEC ENGG CONSULTANTS 9/10/02 WLE3COMB.T20 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = prepierc.t20 , GIVEN DATA FILE
OUTPUT = prepierc.OUT , DATED 05/17/**,09:37:39

FILES GENERATED - DATED 05/17/**,09:37:39

FILE prepierc.TMG CONTAINS MESSAGE + WARNING INFORMATION

TOTAL NUMBER OF WARNINGS = 1, MESSAGES = 0

*** TR-20 RUN COMPLETED ***

Appendix F
Proposed HEC-RAS

HEC-RAS Plan: PropTimber Profile: 100 YR

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
wood-cedar Combi	1	3.6	100 YR	891.00	1319.76	1324.82	1324.72	1325.31	0.017697	5.68	161.29	145.62	0.89
wood-cedar Combi	1	3.5	100 YR	891.00	1316.97	1323.85		1324.11	0.005796	4.12	216.47	119.93	0.54
wood-cedar Combi	1	3.45	100 YR	891.00	1318.00	1323.44		1323.58	0.001188	3.06	315.26	163.74	0.35
wood-cedar Combi	1	3.4	100 YR	891.00	1316.23	1323.29	1320.46	1323.37	0.000332	2.28	459.53	156.51	0.20
wood-cedar Combi	1	3.3	100 YR	891.00	1315.53	1323.32	1319.36	1323.34	0.000019	1.03	1387.46	498.43	0.08
wood-cedar Combi	1	3.2		Culvert									
wood-cedar Combi	1	3.1	100 YR	891.00	1315.63	1319.35		1319.53	0.003724	3.42	260.90	140.27	0.44
wood-cedar Combi	1	3.0	100 YR	891.00	1314.54	1319.01	1317.87	1319.10	0.002002	2.46	363.22	203.74	0.32
wood-cedar	1	40	100 YR	244.00	1348.00	1351.24	1349.74	1351.26	0.000334	1.25	195.84	159.17	0.20
wood-cedar	1	37.5		Culvert									
wood-cedar	1	35	100 YR	244.00	1344.60	1348.59		1348.63	0.000258	1.51	161.67	80.96	0.19
wood-cedar	1	34	100 YR	244.00	1347.00	1348.21	1348.21	1348.55	0.010519	4.66	52.31	78.04	1.00
wood-cedar	1	32	100 YR	244.00	1341.00	1345.29		1345.36	0.000442	2.20	110.72	46.28	0.25
wood-cedar	1	30	100 YR	244.00	1336.00	1345.32		1345.33	0.000023	0.84	313.39	96.67	0.06
wood-cedar	1	25	100 YR	244.00	1337.00	1345.32	1339.18	1345.33	0.000024	0.84	327.09	122.82	0.07
wood-cedar	1	23		Inl Struct									
wood-cedar	1	22	100 YR	244.00	1343.75	1345.24		1345.25	0.000438	1.06	231.73	302.08	0.21
wood-cedar	1	21	100 YR	244.00	1343.75	1344.68	1344.68	1345.02	0.034205	4.68	52.11	77.53	1.01
wood-cedar	1	20	100 YR	300.00	1335.00	1343.60		1343.61	0.000003	0.31	953.58	165.66	0.02
wood-cedar	1	15	100 YR	300.00	1339.20	1343.57	1340.89	1343.60	0.000212	1.47	204.11	91.22	0.17
wood-cedar	1	13		Culvert									
wood-cedar	1	10	100 YR	300.00	1339.00	1340.39	1340.39	1340.85	0.009672	5.42	55.33	61.84	1.01
wood-cedar	1	8	100 YR	300.00	1337.60	1339.46		1339.55	0.001037	2.42	123.90	86.90	0.36
wood-cedar	1	5.0	100 YR	300.00	1335.34	1339.51		1339.52	0.000074	0.76	429.94	142.60	0.07
wood-cedar	1	4.9	100 YR	300.00	1335.15	1339.51		1339.51	0.000029	0.49	636.11	181.07	0.04
wood-cedar	1	4.8	100 YR	300.00	1335.10	1339.50		1339.51	0.000041	0.55	547.54	168.59	0.05
wood-cedar	1	4.75	100 YR	300.00	1334.73	1339.50		1339.51	0.000066	0.69	451.80	154.68	0.07
wood-cedar	1	4.7	100 YR	476.00	1334.65	1339.49		1339.50	0.000156	1.04	470.78	155.70	0.10
wood-cedar	1	4.65	100 YR	476.00	1334.42	1339.49		1339.50	0.000115	0.96	519.03	168.21	0.09
wood-cedar	1	4.6	100 YR	476.00	1334.39	1339.48	1336.13	1339.50	0.000023	1.02	569.18	184.24	0.09
wood-cedar	1	4.55		Culvert									
wood-cedar	1	4.5	100 YR	476.00	1331.67	1334.60	1334.21	1334.89	0.008947	4.33	110.48	85.62	0.65
wood-cedar	1	4.45	100 YR	476.00	1331.36	1333.96	1333.96	1334.53	0.022546	6.10	78.01	67.86	1.00
wood-cedar	1	4.4	100 YR	476.00	1330.62	1333.84		1333.88	0.000923	1.81	280.72	138.00	0.22
wood-cedar	1	4.3	100 YR	476.00	1324.00	1333.87		1333.87	0.000000	0.12	4057.01	478.15	0.01
wood-cedar	1	4.2	100 YR	476.00	1324.00	1333.87		1333.87	0.000000	0.14	3369.41	435.01	0.01
wood-cedar	1	4.15	100 YR	476.00	1330.85	1333.84		1333.86	0.000570	1.33	359.96	200.60	0.17
wood-cedar	1	4.1	100 YR	476.00	1330.69	1333.77		1333.84	0.001838	2.18	217.87	135.35	0.30
wood-cedar	1	4.09	100 YR	476.00	1330.58	1332.29	1332.29	1332.70	0.026095	5.19	91.78	114.14	1.02
wood-cedar	1	4.05	100 YR	504.00	1328.01	1331.68		1331.85	0.003951	3.34	161.05	124.82	0.45
wood-cedar	1	4	100 YR	504.00	1327.07	1330.52		1330.78	0.008559	4.10	122.99	93.52	0.63
wood-cedar	1	3.98	100 YR	504.00	1326.94	1329.44		1329.76	0.008547	4.79	119.80	100.83	0.66
wood-cedar	1	3.95	100 YR	504.00	1325.38	1328.23		1328.53	0.008961	4.44	119.69	104.44	0.65
wood-cedar	1	3.9	100 YR	592.00	1324.68	1327.71		1327.87	0.002555	3.22	183.86	81.42	0.38
wood-cedar	1	3.85	100 YR	592.00	1323.84	1327.24		1327.39	0.002468	3.11	190.63	86.79	0.37
wood-cedar	1	3.8	100 YR	592.00	1323.72	1327.04	1325.70	1327.35	0.000642	4.44	133.31	146.12	0.44
wood-cedar	1	3.75		Culvert									
wood-cedar	1	3.7	100 YR	592.00	1323.54	1326.38	1325.43	1326.77	0.002676	5.07	116.86	153.08	0.54
wood-cedar	1	3.65	100 YR	592.00	1323.23	1326.44		1326.59	0.002843	3.11	190.79	152.56	0.48
East wood-cedar	1	1.7	100 YR	365.00	1327.54	1330.55		1330.79	0.005543	4.18	103.68	89.73	0.54
East wood-cedar	1	1.63	100 YR	365.00	1326.42	1329.40	1329.40	1329.88	0.017762	5.57	67.45	79.10	0.99
East wood-cedar	1	1.6	100 YR	365.00	1326.07	1328.94		1329.10	0.002357	3.28	111.42	55.06	0.41
East wood-cedar	1	1.5	100 YR	365.00	1325.69	1328.79		1328.92	0.001396	2.88	126.87	50.70	0.32
East wood-cedar	1	1.4	100 YR	365.00	1325.28	1327.92	1327.92	1328.48	0.018033	6.02	60.65	53.85	1.00
East wood-cedar	1	1.38	100 YR	365.00	1325.23	1327.67		1327.83	0.002249	3.20	114.21	56.49	0.40
East wood-cedar	1	1.3	100 YR	365.00	1324.72	1327.68		1327.72	0.000475	1.62	225.32	96.90	0.19
East wood-cedar	1	1.25	100 YR	365.00	1324.20	1327.58		1327.63	0.000426	1.68	217.76	81.70	0.18
East wood-cedar	1	1.2	100 YR	365.00	1324.10	1327.39	1325.78	1327.60	0.000416	3.71	98.32	75.13	0.36
East wood-cedar	1	1.15		Culvert									
East wood-cedar	1	1.1	100 YR	365.00	1324.00	1326.35	1325.69	1326.79	0.005108	5.36	68.09	70.75	0.62
East wood-cedar	1	1.05	100 YR	365.00	1324.00	1326.47		1326.57	0.001519	2.58	141.43	72.20	0.32

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: Cedar View/Woodland Lakes
Project File : PROPOSEDwChannelmod.prj
Run Date and Time: 6/8/2005 10:38:21 AM

Project in English units

Project Description:
Timberlands with proposed ditch grading

PLAN DATA

Plan Title: Proposed Timberlands
Plan File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\PROPOSEDwChannelmod.p07

Geometry Title: Cedar View/Woodland Lakes
Geometry File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\PROPOSEDwChannelmod.g02

Flow Title : Cedar View/Woodland Lakes
Flow File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\PROPOSEDwChannelmod.f03

Plan Summary Information:
Number of: Cross Sections = 54 Multiple Openings = 0
Culverts = 6 Inline Structures = 1
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Cedar View/Woodland Lakes
Flow File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\PROPOSEDwChannelmod.f03

Flow Data (cfs)

River	Reach	RS	100 YR
wood-cedar	1	40	244
wood-cedar	1	20	300
wood-cedar	1	4.7	476
wood-cedar	1	4.05	504
wood-cedar	1	3.9	592
East wood-cedar	1	1.7	365
East wood-cedar	1	1.3	365
wood-cedar Combi	1	3.6	891

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
East wood-cedar	1	100 YR	Normal S = 0.005	
wood-cedar	1	100 YR	Normal S = 0.002	
wood-cedar Combi	1	100 YR		Normal S = 0.002

GEOMETRY DATA

Geometry Title: Cedar View/Woodland Lakes
Geometry File : k:\WP\PROJECT\2004\04416- The Pierce Property\Drng\PROPOSEDwChannelmod.g02

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
East wood-cedar	1		Junction
wood-cedar	1		Junction
wood-cedar Combi	1	Junction	

JUNCTION INFORMATION

Name: Junction
Description:
Energy computation Method

Length across Junction		Tributary			
River	Reach	River	Reach	Length	Angle
wood-cedar	1	to wood-cedar Combi	1	180	
East wood-cedar	1	to wood-cedar Combi	1	200	

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.7

INPUT
Description: North Prop. Line
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
163.57	1334.36	171.07	1332.69	181.94	1331.21	195.81	1329.43	201.75	1327.57
201.83	1327.54	201.88	1327.54	204.85	1327.55	205.87	1327.9	207.3	1328.34
208.11	1328.33	219.64	1328.79	236.56	1329.46	252.47	1329.9	272.82	1330.39
290.03	1331.06	298.9	1331.24	314.44	1331.47	319.65	1331.55	332.57	1331.71
361.59	1332.19	368.79	1332.22	374.65	1332.54	380.18	1332.65	406.95	1333.74
419.38	1334.02	447.76	1334.79	449.09	1334.84	449.84	1334.87	484.36	1336.2
517.36	1336.92								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
163.57	.045	195.81	.04	236.56	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
195.81	236.56	97	97	.1	.3

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.63

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
182.63	1333.22	192.62	1332.3	206.95	1331.42	220.96	1329.79	234.75	1330.02
236.5	1330.2	255.82	1328.68	260.49	1328.41	262.01	1328.26	264.11	1326.96
264.63	1326.61	266.74	1326.49	267.91	1326.42	269.66	1327.36	270.74	1327.98
272.42	1328.07	276.19	1328.21	280.74	1328.31	312.13	1329.05	316.34	1329.14
321.19	1329.27	356.84	1330.33	380.83	1331.13	380.89	1331.13	384.14	1331.26
428.27	1333.22	444.19	1334.03	457.93	1334.59	468.58	1334.91	511.88	1335.92
513.56	1335.97	531.37	1336.13	538.67	1336.33	564.48	1337.22	566.53	1337.27

```
  594.93  1337.9  609.68 1338.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  182.63    .045   236.5    .035  312.13    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         236.5  312.13               40      40      40             .1       .3

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.6

INPUT
Description:
Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  172.32 1333.06  200.28 1326.07     223 1326.07     248  1329.5  287.57 1330.09
  355.46  1330.3  360.21 1330.47  390.64  1331.9  390.86 1331.91  410.47 1332.52
   421.8 1333.11  440.33 1333.96  463.06 1334.85  473.94  1335.1  513.07 1336.15
   517.7 1336.19  542.56 1337.04  548.07 1337.25  569.49 1337.61  575.91 1337.71
  577.73 1337.76  606.44 1338.38  609.03 1338.43  611.61  1338.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  172.32    .045  172.32    .035     248    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        172.32     248               95      95      95             .1       .3

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.5

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  178.91 1332.56  194.73 1330.09  196.14 1329.71  200.93 1329.62  206.91 1325.69
     238 1325.69  253.89    1329  373.48 1329.37  400.59 1330.92  417.03 1331.59
  433.95 1332.26  446.29 1332.71   456.8 1333.14  473.15 1333.82  489.62 1334.61
   502.9 1335.06  507.88 1335.22  517.64 1335.43

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  178.91    .045  194.73    .035  253.89    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        194.73  253.89              115     115     115             .1       .3

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.4

INPUT
Description: U/S 48" Tree
Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.66   10.81 1333.09   22.27 1333.03   29.48 1332.77   62.09 1331.61
  145.24 1329.91  149.39 1329.55   165.6 1325.28   180.3 1327.08  210.27 1327.18
     218    1329  337.09 1330.12  343.76 1330.39  357.84 1330.79  358.71 1330.82
  366.44 1331.14  392.78    1332  395.98 1332.11  410.37 1332.49  419.16 1332.81
  445.46 1333.82  452.26 1334.02  474.25 1334.45   483.6 1334.73

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  145.24    .035     218    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        145.24     218               40      40      40             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
     200     204    1340
```

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.38

INPUT
Description: D/S 48" Tree
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1333.66	10.81	1333.09	22.27	1333.03	29.48	1332.77	62.09	1331.61
145.24	1329.91	149.39	1329.55	152.31	1328.66	166.31	1325.23	203.31	1325.23
218	1329	337.09	1330.12	343.76	1330.39	357.84	1330.79	358.71	1330.82
366.44	1331.14	392.78	1332	395.98	1332.11	410.37	1332.49	419.16	1332.81
445.46	1333.82	452.26	1334.02	474.25	1334.45	483.6	1334.73		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	145.24	.035	218	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
145.24	218	71	90	75	.1	.3

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.3

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1334.47	19.48	1333.88	37.15	1333.25	57.99	1332.53	63.35	1332.34
97.55	1330.96	104.38	1330.69	122.6	1329.68	141.77	1328.87	149.99	1328.67
154.63	1328.51	179.76	1328.34	201.62	1328.28	239	1328.25	267	1324.72
322.6	1324.72	344.6	1328.36	358.05	1328.72	380.31	1329.47	393.57	1329.81
405.88	1330	413.28	1330.25	434.82	1330.84	452.1	1331.48	460.91	1331.82
470.02	1332.08	486.38	1332.47	507.62	1333.18				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	239	.035	344.6	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239	344.6	190	195	170	.1	.3

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.25

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1328.41	11.34	1328.3	24.29	1328.26	37.25	1328.18	51.82	1328.22
79.35	1328.14	95.55	1328.14	110.12	1328.14	126.32	1328.14	140	1328
164	1324.2	211	1324.2	225.96	1328	239.68	1328.18	251.01	1328.26
271.9	1328.88	276.77	1329.07	280.9	1329.18	298.35	1329.52	327.81	1330.33
337	1330.54	347.87	1330.66	376.59	1331.21				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	140	.035	225.96	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
140	225.96	20	20	20	.1	.3

CROSS SECTION

RIVER: East wood-cedar
REACH: 1 RS: 1.2

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0 1328.48   11.34  1328.3   32.39 1328.22   51.82 1328.18   80.97  1328.1
   169.4    1328     181  1325.4     185  1324.1     217  1324.1     225  1325.4
     231  1326.4   240.6 1327.14  244.74 1327.29   279.6 1328.65  293.33 1329.01
  309.41 1329.46  323.22  1329.8  339.41 1330.23  357.94 1330.63  369.36 1330.76
  388.91 1331.13  389.26 1331.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   169.4    .018     231    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         169.4     231              180      90      70             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     189    1328       F
     219  389.26    1328       F

CULVERT


RIVER: East wood-cedar
REACH: 1                  RS: 1.15

INPUT
Description:
Distance from Upstream XS =      10
Deck/Roadway Width        =      69
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1328       0     400    1328       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1328.48   11.34  1328.3   32.39 1328.22   51.82 1328.18   80.97  1328.1
   169.4    1328     181  1325.4     185  1324.1     217  1324.1     225  1325.4
     231  1326.4   240.6 1327.14  244.74 1327.29   279.6 1328.65  293.33 1329.01
  309.41 1329.46  323.22  1329.8  339.41 1330.23  357.94 1330.63  369.36 1330.76
  388.91 1331.13  389.26 1331.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   169.4    .018     231    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
         169.4     231             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     189    1328       F
     219  389.26    1328       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1328       0     400    1328       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1328.06    9.18 1327.66      23 1327.27   38.74    1327   46.35 1326.92
   65.39 1327.19   75.06 1326.98     256  1326.8     273    1324   315.4    1324
  336.53 1327.52  341.03 1327.64  342.04 1327.65  375.31 1328.04  390.21 1328.21
  392.47 1328.22  422.44 1328.44  454.44  1328.6  463.86 1328.63  469.79 1328.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045     256    .035  336.53    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
          256  336.53             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     276    1328       F
     305  469.79    1328       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
```

```
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       3      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 10      70     .012     .012        0                  .3              .5
Number of Barrels =  2
Upstream   Elevation =  1324
Centerline Stations
    Sta.    Sta.
     198     209
Downstream Elevation =  1324
Centerline Stations
    Sta.    Sta.
     285     296

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.1

INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1328.06    9.18 1327.66      23 1327.27   38.74    1327   46.35 1326.92
   65.39 1327.19   75.06 1326.98     256  1326.8     273    1324   315.4    1324
  336.53 1327.52  341.03 1327.64  342.04 1327.65  375.31 1328.04  390.21 1328.21
  392.47 1328.22  422.44 1328.44  454.44  1328.6  463.86 1328.63  469.79 1328.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045     256    .035  336.53    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           256  336.53               20      20      20              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     276    1328       F
     305  469.79    1328       F

CROSS SECTION


RIVER: East wood-cedar
REACH: 1                  RS: 1.05

INPUT
Description:
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1328.06    9.18 1327.66      23 1327.27   38.74    1327   46.35 1326.92
   65.39 1327.19   75.06 1326.98     256  1326.8     273    1324   315.4    1324
  336.53 1327.52  341.03 1327.64  342.04 1327.65  375.31 1328.04  390.21 1328.21
  392.47 1328.22  422.44 1328.44  454.44  1328.6  463.86 1328.63  469.79 1328.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045     256    .035  336.53    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           256  336.53              400     170     140              .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 40

INPUT
Description: N of I-35
```

```
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     480    1356     740    1354     890    1352     970    1350    1000    1348
    1030    1350    1110    1352    1260    1354    1520    1356

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     480    .035     890    .025    1110    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           890    1110              160     160     160             .1       .3

CULVERT


RIVER: wood-cedar
REACH: 1                  RS: 37.5

INPUT
Description:
Distance from Upstream XS =      25
Deck/Roadway Width        =      85
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     450  1361.6    1300    1000  1359.9    1300    1500    1362    1300

Upstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     480    1356     740    1354     890    1352     970    1350    1000    1348
    1030    1350    1110    1352    1260    1354    1520    1356

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     480    .035     890    .025    1110    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
           890    1110             .1       .3

Downstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     450  1361.6    1300    1000  1359.9    1300    1500    1362    1300

Downstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     650    1358     800    1356     850    1354     950    1352    1000  1344.6
    1100    1352    1150    1354    1200    1356    1250    1358

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     650    .035     950    .025    1100    .035

Bank Sta: Left   Right    Coeff Contr.   Expan.
           950    1100             .1       .3

Upstream Embankment side slope             =       4 horiz. to 1.0 vertical
Downstream Embankment side slope           =       4 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =      .5
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                20     130     .013     .013        0                  .3               .5
Upstream   Elevation =  1346
           Centerline Station =  1000
Downstream Elevation =  1344.6
           Centerline Station =  1000
```

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 35

INPUT
Description: S of I-35
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
650	1358	800	1356	850	1354	950	1352	1000	1344.6
1100	1352	1150	1354	1200	1356	1250	1358		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
650	.035	950	.025	1100	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
950	1100	70	70	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 34

INPUT
Description: N porperty Line
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
974	1351	978	1350	982	1349	985	1348	995	1347
1005	1347	1050	1348	1110	1349	1138	1350	1168	1351

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
974	.035	978	.025	1138	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
978	1138	110	110	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 32

INPUT
Description: North tip of North Pond
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
950	1350	969	1347	974	1346	986	1344	996	1341
1004	1341	1023	1345	1034	1347	1065	1347.5	1095	1347
1130	1346.5	1160	1347						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
950	.035	969	.025	1034	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
969	1034	140	130	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 30

INPUT
Description: Middle of North Pond
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
939	1349	959	1346	963	1345	973	1344	990	1339
999	1336	1002	1336	1010	1339	1015	1341	1026	1344
1075	1346	1116	1347						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
939	.035	973	.025	1026	.035

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           973    1026              215     215     215             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 25

INPUT
Description: N of Wier
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     943    1349     955    1348     960    1347     967    1346     973    1344
     984    1341     990    1339     996    1337    1006    1337    1010    1339
    1015    1341    1028    1344    1125    1346    1135    1347    1175    1348

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     943    .035     973    .025    1028    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           973    1028               50      45      40             .1       .3

INLINE STRUCTURE


RIVER: wood-cedar
REACH: 1                  RS: 23

INPUT
Description: 30 foot base
Distance from Upstream XS =      30
Deck/Roadway Width        =      10
Weir Coefficient          =       3
 Weir Embankment Coordinates    num =        7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     865  1344.5    1000  1344.5    1000    1344    1010    1344    1020    1344
    1020  1344.5    1150  1344.5

Upstream Embankment side slope              =      10 horiz. to 1.0 vertical
Downstream Embankment side slope            =      10 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Weir crest shape                            = Broad Crested


CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 22

INPUT
Description: 1st sta south of weir
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     955    1347     975    1346     980    1345     990    1344     995 1343.75
    1005 1343.75    1010    1344    1275    1345    1300    1346    1320    1347

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
     955    .035     980    .025    1275    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           980    1275              140     145     175             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 21

INPUT
Description: 2nd sta south of weir
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
     957    1346     960    1345     978    1344     990    1344     995 1343.75
    1005 1343.75    1020    1344    1040    1344    1045    1345    1050    1346
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
957	.045	960	.045	1045	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
960	1045	155	130	110	.1 .3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 20

INPUT
Description: S of wier
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
915	1347	928	1344	946	1341	955	1340	960	1339
972	1335	1000	1335	1048	1335	1060	1339	1065	1340
1080	1342	1100	1344	1115	1345	1140	1346		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
915	.035	928	.025	1100	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
928	1100	350	300	250	.1 .3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 15

INPUT
Description: N of Lincoln
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
830	1346	860	1345	910	1344	965	1343	970	1341
980	1340	1000	1339.2	1015	1340	1032	1346	1100	1346.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
830	.035	910	.025	1032	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
910	1032	10	120	120	.1 .3

CULVERT

RIVER: wood-cedar
REACH: 1 RS: 13

INPUT
Description:
Distance from Upstream XS = 10
Deck/Roadway Width = 90
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
760	1345.04	1300	815	1345.06	1300	865	1345.25	1300
910	1345.66	1300	975	1346	1300	994	1346.3	1300
1006	1346.4	1300	1040	1346.9	1300	1090	1347.29	1300
1140	1347.85	1300	1190	1348.37	1300	1240	1350.88	1300

Upstream Bridge Cross Section Data
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
830	1346	860	1345	910	1344	965	1343	970	1341
980	1340	1000	1339.2	1015	1340	1032	1346	1100	1346.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
830	.035	910	.025	1032	.035

Bank Sta: Left	Right	Coeff Contr.	Expan.
910	1032	.1	.3

Downstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
760	1345.04	1300	815	1345.06	1300	865	1345.25	1300
910	1345.66	1300	975	1346	1300	994	1346.3	1300
1006	1346.4	1300	1040	1346.9	1300	1090	1347.29	1300
1140	1347.85	1300	1190	1348.37	1300	1240	1350.88	1300

Downstream Bridge Cross Section Data
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
810	1348	850	1346	900	1344	940	1342	960	1340
995	1339	1000	1339	1005	1339	1015	1340	1030	1342
1050	1344	1080	1346						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
810	.035	900	.025	1050	.035

Bank Sta: Left Right Coeff Contr. Expan.
900 1050 .1 .3

Upstream Embankment side slope = 3 horiz. to 1.0 vertical
Downstream Embankment side slope = 3 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .5
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	4	12

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	10	95	.013	.013	0	.3	.5

Upstream Elevation = 1339.2
Centerline Station = 1000
Downstream Elevation = 1339
Centerline Station = 1000

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 10

INPUT
Description: S of Lincoln
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
810	1348	850	1346	900	1344	940	1342	960	1340
995	1339	1000	1339	1005	1339	1015	1340	1030	1342
1050	1344	1080	1346						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
810	.035	900	.025	1050	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
900 1050 150 160 200 .1 .3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 8

INPUT
Description: Farthest South Station
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
845	1346	900	1344	940	1342	950	1340	965	1338
1000	1337.6	1030	1338	1045	1340	1100	1342	1120	1344
1160	1346								

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
     845    .035     900    .025    1120    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           900    1120               48      50      53             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 5.0

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  1343.2    8.79 1341.86   13.24 1341.91   27.94 1342.17   48.18 1341.12
   51.81 1340.94   69.74 1337.23   73.46 1336.46   77.93 1335.39   78.24 1335.34
  150.61 1335.42  155.26 1336.44  156.59  1336.7  158.62 1336.84  171.12 1337.23
  222.84 1341.13  224.13 1341.21  224.96 1341.28  244.43 1342.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   51.81     .04  158.62    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         51.81  158.62               65      70      77             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.9

INPUT
Description:
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1341.71    1.88 1341.41    3.83 1341.44   11.11 1341.35   26.79 1341.25
   30.23 1340.73   35.71 1339.46   48.14    1337   49.64 1336.61   54.36 1335.39
  162.87 1335.15  164.15 1335.51  165.19 1335.73  168.24 1335.79  179.61 1336.08
  185.96 1336.24   199.1 1337.27  213.24 1338.94  226.17 1341.15  257.09 1342.55
  260.47 1342.61  265.11 1342.95  282.02 1344.06

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   35.71     .04  185.96    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         35.71  185.96               93      90      90             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.8

INPUT
Description:
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1342.52     9.1 1341.86   31.32 1339.81   42.94  1339.1   48.02 1338.38
   61.01 1336.27   61.94 1336.22   84.01 1335.77   84.02 1335.77   84.05 1335.76
   85.15 1335.29  163.04  1335.1  163.85 1335.25  165.32 1335.96  169.84 1335.96
  170.29 1335.96   170.5 1335.96  171.95 1335.95  198.98 1338.74  222.76  1341.8
  224.88 1341.93  233.39  1342.7  238.08 1342.83  243.21 1342.67  262.12 1343.07
  284.67 1343.36  291.32 1343.59  291.92 1343.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   48.02     .04  198.98    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         48.02  198.98               47      45      46             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.75
```

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1341.08	18.15	1339.63	30.53	1338.86	40.66	1336.71	51.14	1336.42
58.22	1335.67	64.3	1334.89	64.86	1334.73	68.09	1335.07	69.05	1335.36
81.96	1335.56	85.94	1335.63	91.03	1335.75	99.04	1335.87	114.2	1335.91
125.47	1335.81	135.38	1335.73	139.87	1335.7	160.23	1338.2	162.4	1338.26
191.74	1341.16	198.19	1341.71	202.95	1341.9	206.6	1341.99		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	40.66	.04	160.23	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
40.66	160.23	3	15	16	.3	.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.7

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1340.78	12.58	1339.78	29.28	1338.74	37.69	1336.95	46.44	1336.7
57.71	1335.52	62.62	1334.89	63.48	1334.65	66.05	1334.92	67.49	1335.34
86.61	1335.65	90.5	1335.72	92.53	1335.74	106.83	1335.68	114.4	1335.7
117.48	1335.67	140.24	1335.48	175.66	1339.81	176.42	1339.84	185.65	1340.76
187.44	1340.91	191.86	1341.08						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	37.69	.04	175.66	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
37.69	175.66	7	16	20	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.65

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1340.85	11.59	1339.93	34.02	1338.55	39.87	1337.37	45.45	1337.25
66.4	1335.15	68.62	1334.87	70.32	1334.42	71.3	1334.52	74.13	1335.31
81.2	1335.42	87.21	1335.55	92.97	1335.76	107.23	1335.72	114.11	1335.53
125.06	1335.28	141.98	1335.22	149.65	1335.14	157.72	1336.08	169.1	1337.33
183.78	1339.18	199.63	1340.67	204.66	1340.79	223.62	1341.58	236.61	1342.15
245.98	1342.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	39.87	.04	169.1	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
39.87	169.1	20	20	20	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.6

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1341.91	23.86	1340.04	53.23	1338.32	55.8	1337.85	57.95	1337.82
70.98	1336.63	79.64	1335.66	88.48	1334.9	90.16	1334.84	91.9	1334.39
95.95	1335.33	96.41	1335.39	99.06	1335.52	108.4	1335.86	111.4	1335.85
124.49	1335.47	131	1335.23	141.26	1335.05	153.45	1334.77	157.06	1334.75
169.94	1334.87	174.63	1335.46	230.83	1340.72	232.12	1340.76	237	1340.96

```
   264.4 1342.18  268.12 1342.35

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   70.98    .018  174.63    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         70.98  174.63               90     100     150             .3       .5

CULVERT


RIVER: wood-cedar
REACH: 1                  RS: 4.55

INPUT
Description:
Distance from Upstream XS =       7
Deck/Roadway Width        =      76
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1342       0    1200    1342       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1341.91   23.86 1340.04   53.23 1338.32    55.8 1337.85   57.95 1337.82
   70.98 1336.63   79.64 1335.66   88.48  1334.9   90.16 1334.84    91.9 1334.39
   95.95 1335.33   96.41 1335.39   99.06 1335.52   108.4 1335.86   111.4 1335.85
  124.49 1335.47     131 1335.23  141.26 1335.05  153.45 1334.77  157.06 1334.75
  169.94 1334.87  174.63 1335.46  230.83 1340.72  232.12 1340.76     237 1340.96
   264.4 1342.18  268.12 1342.35

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   70.98    .018  174.63    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
         70.98  174.63             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1342       0    1200    1342       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    2.06 1342.93    8.79 1342.54    9.14 1342.52   12.01 1342.39   21.95 1341.86
    32.2 1341.15   38.55 1340.98   67.55 1339.76   76.41 1339.39   77.66 1339.31
   81.93 1339.15   96.08 1338.61  104.45 1338.23  127.73 1336.88  135.35  1336.6
  146.08 1335.91   156.9 1335.51  185.65 1334.37     197 1333.83  198.56 1333.77
  201.06 1333.55  203.48 1332.85  207.19 1331.67     209 1331.89   211.6  1332.2
  232.41 1332.92  250.17 1333.51  251.73 1333.55  253.94 1333.58  274.33 1335.37
  276.42 1335.55  279.83    1336  299.13 1338.55  299.83 1338.65  309.45 1339.27
     318 1339.91

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    2.06    .045  185.65     .04  274.33    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        185.65  274.33             .3       .5

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
```

Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	7	76	.013	.013	0	.3	.5

Number of Barrels = 2
Upstream Elevation = 1334.4
Centerline Stations

Sta.	Sta.
155	164

Downstream Elevation = 1334
Centerline Stations

Sta.	Sta.
215	224

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.5

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
2.06	1342.93	8.79	1342.54	9.14	1342.52	12.01	1342.39	21.95	1341.86
32.2	1341.15	38.55	1340.98	67.55	1339.76	76.41	1339.39	77.66	1339.31
81.93	1339.15	96.08	1338.61	104.45	1338.23	127.73	1336.88	135.35	1336.6
146.08	1335.91	156.9	1335.51	185.65	1334.37	197	1333.83	198.56	1333.77
201.06	1333.55	203.48	1332.85	207.19	1331.67	209	1331.89	211.6	1332.2
232.41	1332.92	250.17	1333.51	251.73	1333.55	253.94	1333.58	274.33	1335.37
276.42	1335.55	279.83	1336	299.13	1338.55	299.83	1338.65	309.45	1339.27
318	1339.91								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
2.06	.045	185.65	.04	274.33	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
185.65	274.33	20	20	.3	.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.45

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1342.77	1.58	1342.64	5.89	1342.41	12.34	1341.76	16.03	1341.29
21.5	1341.39	32.15	1341.11	52.07	1340.27	77.07	1339.36	84.01	1339.18
94.45	1338.79	98.25	1338.58	138.22	1336.74	139.28	1336.68	139.47	1336.68
141.17	1336.61	161.15	1335.72	187.94	1334.44	197.05	1334.08	200.37	1333.8
211.67	1332.83	215.48	1331.92	217.52	1331.36	221.25	1331.79	222.51	1331.94
226.85	1332.09	232.32	1332.27	248.23	1333.11	248.52	1333.13	259.51	1333.36
272.56	1334.49	286.43	1336.31	305.01	1338.23	314.12	1339.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	141.17	.04	286.43	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
141.17	286.43	68	75	70	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.4

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1341.74	5.02	1341.03	9.22	1340.43	13.02	1340.81	19.42	1341.42
25.48	1341.53	29.06	1341.6	45.27	1341.16	63.67	1340.66	77.79	1339.28
91.45	1337.92	107.63	1334.84	127.1	1332.5	141.68	1330.69	154.53	1330.58
169.38	1331.49	184.7	1333.5	188.16	1333.47	195.92	1333.08	204.39	1331.79
209.46	1330.89	210.35	1330.95	214.73	1331.09	233.58	1331.48	244.66	1331.65
245.17	1331.64	247.56	1330.98	248.85	1330.62	249.2	1330.9	254.77	1334.31

```
  264.95 1335.75  296.86 1339.22  305.54 1339.68  311.11  1339.8  335.09 1340.29
  341.71 1340.39

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  188.16     .04  254.77    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        188.16  254.77              450     115      80             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.3

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
   18.57 1339.31   44.41 1338.48   56.22 1337.59   65.27 1336.96   80.32 1335.92
   84.59 1335.65   85.56 1335.56   97.32  1334.3   99.17 1334.14  121.72  1331.6
     152    1324     521    1324  552.75 1332.03  557.89 1332.51  565.89 1332.92
  570.68 1333.25  589.35 1334.52  621.41 1336.11  623.54  1336.2   624.9 1336.25
  626.16 1336.39  632.43 1337.02  650.36 1338.58  656.83 1338.92  693.49 1339.93
  697.24 1340.02  697.58 1340.02  697.81 1340.03  698.07 1340.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
   18.57    .045   99.17     .02  589.35    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         99.17  589.35              30      50      20             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.2

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1339.62    6.19 1339.56   11.85 1339.49   45.15  1338.7   55.31 1338.67
   63.26 1338.07    81.1 1337.47  111.71 1335.12  114.57 1334.91  122.97 1335.25
  129.65 1334.69  147.91 1335.34  164.95 1333.88  167.09 1333.82  179.36 1332.33
  185.54 1332.05  207.41 1330.94     235    1324     526    1324  552.31 1330.46
  552.65 1330.54   558.6 1331.67  560.01 1331.71  562.93 1331.78  580.11 1332.23
  586.01  1332.7  587.86 1332.89  606.42 1334.33   620.9 1335.31  629.22 1335.72
  654.18 1336.69  660.94 1337.01  662.22 1337.07  665.43 1337.21  687.29 1338.64
  690.27 1338.74  712.65 1339.75  714.78 1339.86  717.75 1339.96  723.25 1340.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  147.91     .02  629.22    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        147.91  629.22              60      50      30             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4.15

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1337.92    7.82 1338.55   11.67 1338.84   26.71 1339.96   26.73 1339.96
    38.3 1339.31   59.75 1337.73   61.29 1337.83   85.04    1337   88.04 1336.73
   96.32 1336.36  105.41 1336.12  126.81    1333  129.06 1332.64  131.45  1332.5
  134.96 1332.32  159.42 1330.85   164.7 1331.14  166.44 1331.25   195.1 1332.66
  196.97 1332.87  197.75 1332.94   198.2 1332.97  201.17 1333.18  212.65 1332.83
  226.99  1332.6  231.48 1332.48  237.14 1332.01  237.42 1331.99  249.35 1331.61
  259.13 1330.98  261.07 1331.17  269.54 1330.87  270.77 1330.92  277.13 1331.12
  288.81 1331.34  291.69 1331.45  305.76 1332.63  325.01 1334.09  330.75 1334.62
   343.3 1335.59  363.05 1336.71  370.92 1337.03  389.76 1337.83  404.51 1338.37
  416.95 1338.78  422.88 1338.76  426.68 1338.88  431.74 1339.12  443.11 1339.67
```

447.95 1339.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	126.81	.04	330.75	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
126.81	330.75	12	12	.3	.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.1

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1338.97	5.73	1338.83	26.37	1337.3	28.84	1337.45	35.74	1337.21
43.97	1336.46	68.37	1335.31	90.23	1334.68	99.66	1334.43	101.12	1334.36
123.84	1333.95	123.87	1333.95	124	1333.95	158.19	1332.81	167.22	1332.56
176.47	1332.27	185.92	1332.1	189.43	1331.86	192.14	1331.27	202.64	1330.94
203.67	1331.24	206.79	1331.21	213.13	1330.99	221.29	1330.72	222.18	1330.69
224.75	1330.75	231.34	1331.02	285.77	1335.47	286.84	1335.55	287.17	1335.58
287.93	1335.64	290.57	1335.79	315	1336.99	321.91	1337.3	340.09	1338.12
348.55	1338.45	370.3	1339.17	375.57	1339.16	384.95	1339.06	385.78	1339.15
393.41	1339.52	414.4	1340.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	124	.04	286.84	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
124	286.84	125	225	240	.3	.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.09

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1336.91	12.29	1336.25	25.48	1336.08	27.98	1335.92	33.21	1335.59
69.73	1333.73	73.99	1333.57	77.38	1333.43	92.24	1332.57	101.59	1332.29
114.03	1332.14	137.47	1331.66	148.72	1331.62	154.5	1331.38	158.06	1331.23
164.55	1330.97	164.59	1330.96	164.82	1330.96	175.92	1330.65	176.61	1330.63
178.47	1330.58	179.16	1330.6	198.06	1331.28	204.26	1331.5	209.05	1331.66
245.02	1334.89	252.72	1335.48	258.06	1335.87	270.2	1336.78	282.21	1337.31
303.43	1338.22	306.61	1338.35	327.84	1339.12	333.73	1339.33	335.77	1339.33
337.38	1339.38	382.87	1339.94	383.27	1339.96				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	92.24	.04	245.02	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
92.24	245.02	99	45	40	.1	.3

CROSS SECTION

RIVER: wood-cedar
REACH: 1 RS: 4.05

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1336.01	8.29	1334.3	9.71	1334.1	16.94	1333.74	68.85	1331.05
88.71	1330.27	96.75	1329.92	99.94	1328.57	101.43	1328.01	102.71	1328.03
105.13	1328.07	105.84	1328.2	108.37	1328.73	110.99	1329.35	119.83	1329.43
153.42	1331.05	166.54	1331.17	183.93	1331.77	204.16	1332.63	261.5	1335.85
270.84	1336.34	286.11	1336.82	297.36	1337.15	300.19	1337.32	313.92	1337.85
326.13	1338.25	335.14	1338.54	341.76	1338.68	357.67	1339.38	374.58	1339.84

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   68.85     .04  153.42    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         68.85  153.42              210     190     190             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 4

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1338.64     .65 1338.69    5.22 1339.08    5.95 1339.15   42.33 1338.97
   47.12 1338.79   51.56 1337.77   99.59 1333.19  121.76 1331.13  128.67 1330.88
  147.12 1329.81  167.92 1328.63  169.22  1328.6   170.9 1327.14  171.01  1327.1
  178.45 1327.07  179.61 1327.07  183.66 1328.44  185.11 1328.92  200.07  1329.2
  200.71 1329.24  205.22 1329.49  218.95    1330  253.25 1331.88  284.64 1333.08
  309.74 1334.64   342.6  1333.8  350.84 1333.52  358.18 1333.56  377.81 1334.15
  393.43 1335.76  403.93 1335.98  406.27    1336

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  121.76     .04  253.25    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        121.76  253.25              105     120     110             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.98

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1335.55   14.39 1334.86   25.72 1334.54   55.59 1333.32   76.47 1332.18
  123.69 1329.87  128.87  1329.7  131.77 1329.59  149.22 1329.07  155.79 1327.34
  157.39 1326.94  158.41 1326.95  163.38 1326.95  163.66 1327.06  166.63 1327.89
  169.25 1327.98  201.93 1327.82  202.42 1327.83  207.79 1328.03  259.13 1330.46
  264.62 1330.46  295.96 1330.39  316.28 1330.78  330.61 1332.11  343.43 1332.34
  347.54 1332.92  364.15 1333.25  368.76 1333.33   376.4 1333.58  399.07 1334.37
  403.54 1334.53  407.29 1334.69  424.75 1335.41

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  149.22     .04  202.42    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        149.22  202.42              131     141     126             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.95

INPUT
Description:
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.51      19 1332.83   41.08 1331.79   46.22  1331.5   62.53 1330.76
  100.15 1329.28  101.63 1329.23  109.23 1328.94  136.71 1327.98  153.72 1327.46
  158.72 1327.31  164.44 1327.12  167.58 1325.99  169.05 1325.38  174.19 1325.38
  181.95 1325.41  182.74 1325.72  184.14 1326.43  186.88 1326.48  188.15 1326.53
  206.19 1327.02  230.73 1328.17  253.81 1328.63  272.29 1329.37  273.32 1329.41
  278.57 1329.64  296.02 1330.35  323.01 1331.64   338.1 1332.63  362.89 1333.76
  376.65 1334.18  384.94 1334.28  391.42 1334.38  405.74 1334.62  422.01  1334.7
  422.74 1334.72

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  153.72     .04  230.73    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
        153.72  230.73              140     150     180             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.9

INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    1334   14.77 1333.73   39.62 1332.44   57.93 1331.71   92.11 1330.85
   99.16 1330.64  113.43 1330.06   116.9 1329.95  147.38 1328.97   164.2 1328.41
     185 1324.68     225 1324.68     260    1329  285.43 1329.01  313.77 1329.25
  334.01 1329.25  364.95 1329.76  382.38  1330.4  395.97 1331.45  411.98 1332.27
   419.4 1332.66  429.86 1332.86  448.56 1333.76  479.38 1335.38  484.73 1335.48
  485.63 1335.52  488.43 1335.66

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   164.2     .04     260    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         164.2     260              160     190     170             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.85

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.19    2.62  1333.1   31.34 1332.21   38.05 1332.08   70.39 1331.41
   75.51 1331.29  104.21 1330.63  111.42 1330.46  118.87 1330.26  147.74 1329.29
  152.52 1329.19  162.16 1329.01  190.93 1328.03  195.13 1327.89  205.67 1327.51
  227.65 1326.76     245 1323.84     280 1323.84     305    1328  340.08 1328.05
  376.52 1328.12  388.66 1328.19  395.67 1328.28  399.38 1328.37  402.92 1328.41
  405.32 1328.51  436.72 1330.02  466.15 1331.58  473.73 1331.71  474.05 1331.72
   475.2 1331.81  477.73 1331.94  513.94 1334.02

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  190.93     .04     305    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        190.93     305               20      20      20             .1       .3

CROSS SECTION


RIVER: wood-cedar
REACH: 1                  RS: 3.8

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.07    7.17 1332.93   22.63 1332.45   29.95 1332.22   50.08 1331.82
   63.93 1331.53   79.17 1331.18   86.67 1331.01  106.79 1330.55  127.59 1329.97
  135.19 1329.72  148.55 1329.44  175.49 1328.93  182.47  1328.7  194.33 1328.29
  224.07  1327.2  228.96 1327.04  232.04 1326.92   234.1 1326.86  258.67 1326.06
  264.32 1325.88  265.14 1325.65  266.79 1325.39  267.62 1323.74  291.15 1323.72
  299.96 1323.73  322.53 1326.07  356.45 1326.76  367.19 1326.84  368.47 1326.85
  374.45 1327.03  400.81 1327.73  409.15 1328.01  425.81 1328.54  453.56 1329.76
  463.42 1330.24  469.82 1330.57  471.47  1330.6  477.94 1330.91  501.93 1332.65
  533.23 1334.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   234.1    .018  356.45    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         234.1  356.45               90     100     130             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   265.5    1332       F
```

```
   307.5  533.23    1332       F

CULVERT


RIVER: wood-cedar
REACH: 1                  RS: 3.75

INPUT
Description:
Distance from Upstream XS =      10
Deck/Roadway Width        =      79
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1332       0    1200    1332       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1333.07    7.17 1332.93   22.63 1332.45   29.95 1332.22   50.08 1331.82
   63.93 1331.53   79.17 1331.18   86.67 1331.01  106.79 1330.55  127.59 1329.97
  135.19 1329.72  148.55 1329.44  175.49 1328.93  182.47  1328.7  194.33 1328.29
  224.07  1327.2  228.96 1327.04  232.04 1326.92   234.1 1326.86  258.67 1326.06
  264.32 1325.88  265.14 1325.65  266.79 1325.39  267.62 1323.74  291.15 1323.72
  299.96 1323.73  322.53 1326.07  356.45 1326.76  367.19 1326.84  368.47 1326.85
  374.45 1327.03  400.81 1327.73  409.15 1328.01  425.81 1328.54  453.56 1329.76
  463.42 1330.24  469.82 1330.57  471.47  1330.6  477.94 1330.91  501.93 1332.65
  533.23 1334.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   234.1    .018  356.45    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
         234.1  356.45             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   265.5    1332       F
   307.5  533.23    1332       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    1332       0    1200    1332       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1330.43   27.81 1329.82   31.33 1329.76   33.56 1329.71   35.97 1329.67
   62.97 1329.12   76.32 1328.82   79.72 1328.76  106.31 1328.21  123.23  1327.8
  165.49 1326.64  174.42 1326.36  182.73 1326.32  202.38 1325.47  213.03 1325.15
  220.61 1324.91   231.8 1324.84  234.81 1324.84  254.15 1324.96   256.6 1324.82
   262.7 1323.54  282.01 1323.54  299.28 1323.54  310.46 1324.82  313.51 1325.17
  340.96 1327.62  353.54 1328.24  366.68 1329.15  368.98 1329.36  389.37 1330.79
  401.46  1331.8  417.23 1332.01

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  202.38     .03  340.96    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        202.38  340.96             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   263.5    1332       F
   305.5  417.23    1332       F

Upstream Embankment side slope             =       0 horiz. to 1.0 vertical
Downstream Embankment side slope           =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins        =
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
```

Culvert #1   Box   4   10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
8	76	.013	.013	0	.3	.5

Number of Barrels = 3
Upstream   Elevation = 1323.5
Centerline Stations

Sta.	Sta.	Sta.
275.5	286.5	297.5

Downstream Elevation = 1323.5
Centerline Stations

Sta.	Sta.	Sta.
273.5	284.5	295.5

CROSS SECTION

RIVER: wood-cedar
REACH: 1   RS: 3.7

INPUT
Description:
Station Elevation Data   num=   32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1330.43	27.81	1329.82	31.33	1329.76	33.56	1329.71	35.97	1329.67
62.97	1329.12	76.32	1328.82	79.72	1328.76	106.31	1328.21	123.23	1327.8
165.49	1326.64	174.42	1326.36	182.73	1326.32	202.38	1325.47	213.03	1325.15
220.61	1324.91	231.8	1324.84	234.81	1324.84	254.15	1324.96	256.6	1324.82
262.7	1323.54	282.01	1323.54	299.28	1323.54	310.46	1324.82	313.51	1325.17
340.96	1327.62	353.54	1328.24	366.68	1329.15	368.98	1329.36	389.37	1330.79
401.46	1331.8	417.23	1332.01						

Manning's n Values   num=   3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	202.38	.03	340.96	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
202.38	340.96	20	20	.3	.5

Ineffective Flow   num=   2

Sta L	Sta R	Elev	Permanent
0	263.5	1332	F
305.5	417.23	1332	F

CROSS SECTION

RIVER: wood-cedar
REACH: 1   RS: 3.65

INPUT
Description:
Station Elevation Data   num=   32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	1330.14	7.56	1329.98	25.74	1329.7	37.24	1329.42	49.71	1329.22
70.41	1328.8	81.09	1328.59	90.19	1328.53	113.43	1328.08	118.42	1327.98
121.03	1327.91	135.38	1327.52	179.48	1326.34	196.28	1325.83	230.66	1324.76
237.57	1324.72	265.71	1324.64	282.86	1324.75	284.87	1323.74	285.55	1323.23
287.14	1323.32	287.21	1323.32	287.28	1323.37	290.95	1324.83	306.31	1325.33
353.16	1327.72	363.74	1328.32	378.57	1329.32	381.63	1329.5	406.6	1331.33
410.37	1331.39	428.78	1331.55						

Manning's n Values   num=   3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	179.48	.03	353.16	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
179.48	353.16	50	160	.1	.3

CROSS SECTION

RIVER: wood-cedar Combi
REACH: 1   RS: 3.6

INPUT
Description:
Station Elevation Data   num=   41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0 1329.53   14.99 1329.08   31.87 1328.71   42.39 1328.46   51.47 1328.33
   63.19 1328.06   70.61 1327.97   94.51 1327.88  114.93 1327.52  119.25 1327.43
  184.56  1326.3  200.69 1326.21   239.6  1324.9  258.29 1324.32  261.98  1324.3
  262.12  1324.3   262.4  1324.3  263.93 1324.27  304.57 1323.65  311.04 1323.55
  311.92 1323.54  312.41 1323.23  318.54 1319.99   321.3 1319.87   324.8 1319.76
   327.5 1321.74  328.85 1323.31  330.15 1323.33  343.44 1323.67  386.99 1324.77
  403.67 1325.54  430.41 1326.77  448.39  1327.8  454.85 1327.85  484.47 1328.99
  496.34 1329.44  524.23 1329.99  537.45 1330.38  550.79  1330.7  568.03 1331.48
  576.45 1331.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  263.93     .04  386.99    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        263.93  386.99              150     120     130             .1       .3

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.5

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1334.46   95.64 1333.86  222.91 1330.57  303.15 1328.09  372.09 1327.14
  444.02 1326.85  481.12 1324.52  531.75 1321.23  534.21 1316.97  548.83 1318.77
  560.53 1322.86  588.19 1323.24  617.16    1324  646.98 1325.75  658.92 1325.04
  710.93 1325.38  764.16 1326.65  804.75 1328.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  481.12     .04  617.16    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        481.12  617.16              220     220     200             .1       .3

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.45

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
   15.53    1330  141.83    1328  222.96    1326  287.23    1324  353.86    1322
  420.87    1321  427.73    1318  436.17    1318  450.06 1321.04  470.18  1323.5
  485.88 1323.93  517.11  1324.1  544.66 1324.35  571.12    1325  617.38    1326
  642.15    1327  667.07    1328  699.63    1329  723.06    1330

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
   15.53    .045  353.86     .03  470.18    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        353.86  470.18              358     342     332             .1       .3

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.4

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1321.74   13.93 1324.57   39.95 1326.62  120.55 1326.54  150.24  1326.5
  162.24  1323.5  174.24  1320.5  204.59 1319.48  215.61 1318.03   223.1 1316.23
  233.04 1316.23  236.96 1318.91  248.44 1320.04  297.46  1322.3  311.43 1323.26
  349.28 1325.59  404.27 1328.57  452.81  1331.5   564.3 1333.98

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  162.24     .03  248.44    .045
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        162.24  248.44              190     220     250             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0    14.1 1330.05       F

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.3

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1324.38    84.1 1323.55  187.54 1323.24  280.66 1321.74   344.6 1320.95
  398.42 1320.08  459.78 1319.95  501.73 1318.86  519.39 1317.16  524.01 1315.53
     534 1315.94  540.15 1318.15  561.88 1318.34  608.25 1319.17   654.8 1323.13
  690.98    1325  737.62 1326.58  833.48 1327.83  885.57 1327.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  459.78    .018  608.25    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        459.78  608.25              40      40      40             .1       .3

CULVERT


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.2

INPUT
Description:
Distance from Upstream XS =      10
Deck/Roadway Width        =    29.9
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0 1326.52       0   85.41  1325.8       0  185.72  1324.8       0
  279.92 1323.62       0  344.07  1322.8       0  396.97 1322.51       0
  458.33 1322.48       0  484.87 1322.57       0  527.23 1322.82       0
  566.86 1323.13       0  629.48 1324.44       0  687.26 1325.97       0
  743.48 1327.28       0  784.66 1327.84       0  829.07 1328.18       0
  867.74  1328.1       0  919.29 1327.66       0  969.86 1326.78       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1324.38    84.1 1323.55  187.54 1323.24  280.66 1321.74   344.6 1320.95
  398.42 1320.08  459.78 1319.95  501.73 1318.86  519.39 1317.16  524.01 1315.53
     534 1315.94  540.15 1318.15  561.88 1318.34  608.25 1319.17   654.8 1323.13
  690.98    1325  737.62 1326.58  833.48 1327.83  885.57 1327.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  459.78    .018  608.25    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        459.78  608.25             .1       .3

Downstream  Deck/Roadway Coordinates
    num=      18
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0 1326.52       0   85.41  1325.8       0  185.72  1324.8       0
  279.92 1323.62       0  344.07  1322.8       0  396.97 1322.51       0
  458.33 1322.48       0  484.87 1322.57       0  527.23 1322.82       0
  566.86 1323.13       0  629.48 1324.44       0  687.26 1325.97       0
  743.48 1327.28       0  784.66 1327.84       0  829.07 1328.18       0
  867.74  1328.1       0  919.29 1327.66       0  969.86 1326.78       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1324.48   83.43 1323.76  181.57 1323.17  277.29 1321.95  339.67 1321.21
  393.93 1320.76  446.12 1320.44  516.56 1317.35  518.83 1315.72  533.82 1315.63
  539.56 1316.88  561.27 1317.08  595.38  1317.5  645.99 1323.37  767.11 1325.87
```

```
  787.63  1326.3  825.81 1326.67  862.93 1327.64

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  446.12     .04  645.99    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        446.12  645.99             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       6       5
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 10      30     .013     .013        0                  .3               .5
Number of Barrels =  2
Upstream   Elevation =  1315.65
Centerline Stations
    Sta.    Sta.
     525     531
Downstream Elevation =  1315.5
Centerline Stations
    Sta.    Sta.
     525     531

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.1

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1324.48   83.43 1323.76  181.57 1323.17  277.29 1321.95  339.67 1321.21
  393.93 1320.76  446.12 1320.44  516.56 1317.35  518.83 1315.72  533.82 1315.63
  539.56 1316.88  561.27 1317.08  595.38  1317.5  645.99 1323.37  767.11 1325.87
  787.63  1326.3  825.81 1326.67  862.93 1327.64

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  446.12     .04  645.99    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        446.12  645.99              120     150     160             .1       .3

CROSS SECTION


RIVER: wood-cedar Combi
REACH: 1                  RS: 3.0

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0 1322.79   83.32 1321.43  156.49 1320.47     231  1322.1  317.22 1320.02
  367.86 1319.17  420.02 1317.64  465.22  1316.5  509.21 1317.41  528.41  1316.6
  534.21 1314.54  538.11  1314.8  542.81 1316.89  560.31 1316.46  573.66 1318.37
  591.54 1321.67  625.64 1322.35  671.66  1322.8  724.53 1323.76  766.76 1324.54
  801.35 1325.24  838.23 1325.85

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  367.86     .04  573.66    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        367.86  573.66               0       0       0             .1       .3
```

SUMMARY OF MANNING'S N VALUES

River:East wood-cedar

Reach	River Sta.	n1	n2	n3
1	1.7	.045	.04	.045
1	1.63	.045	.035	.045
1	1.6	.045	.035	.045
1	1.5	.045	.035	.045
1	1.4	.045	.035	.045
1	1.38	.045	.035	.045
1	1.3	.045	.035	.045
1	1.25	.045	.035	.045
1	1.2	.045	.018	.045
1	1.15	Culvert		
1	1.1	.045	.035	.045
1	1.05	.045	.035	.045

River:wood-cedar

Reach	River Sta.	n1	n2	n3
1	40	.035	.025	.035
1	37.5	Culvert		
1	35	.035	.025	.035
1	34	.035	.025	.035
1	32	.035	.025	.035
1	30	.035	.025	.035
1	25	.035	.025	.045
1	23	Inl Struct		
1	22	.035	.025	.045
1	21	.045	.045	.045
1	20	.035	.025	.045
1	15	.035	.025	.035
1	13	Culvert		
1	10	.035	.025	.035
1	8	.035	.025	.035
1	5.0	.045	.04	.045
1	4.9	.045	.04	.045
1	4.8	.045	.04	.045
1	4.75	.045	.04	.045
1	4.7	.045	.04	.045
1	4.65	.045	.04	.045
1	4.6	.045	.018	.045
1	4.55	Culvert		
1	4.5	.045	.04	.045
1	4.45	.045	.04	.045
1	4.4	.045	.04	.045
1	4.3	.045	.02	.045
1	4.2	.045	.02	.045
1	4.15	.045	.04	.045
1	4.1	.045	.04	.045
1	4.09	.045	.04	.045
1	4.05	.045	.04	.045
1	4	.045	.04	.045
1	3.98	.045	.04	.045
1	3.95	.045	.04	.045
1	3.9	.045	.04	.045
1	3.85	.045	.04	.045
1	3.8	.045	.018	.045
1	3.75	Culvert		
1	3.7	.045	.03	.045
1	3.65	.045	.03	.045

River:wood-cedar Combi

Reach	River Sta.	n1	n2	n3
1	3.6	.045	.04	.045
1	3.5	.045	.04	.045
1	3.45	.045	.03	.045
1	3.4	.045	.03	.045
1	3.3	.045	.018	.045
1	3.2	Culvert		

1	3.1	.045	.04	.045
1	3.0	.045	.04	.045

SUMMARY OF REACH LENGTHS

River: East wood-cedar

Reach	River Sta.	Left	Channel	Right
1	1.7	97	97	97
1	1.63	40	40	40
1	1.6	95	95	95
1	1.5	115	115	115
1	1.4	40	40	40
1	1.38	71	90	75
1	1.3	190	195	170
1	1.25	20	20	20
1	1.2	180	90	70
1	1.15	Culvert		
1	1.1	20	20	20
1	1.05	400	170	140

River: wood-cedar

Reach	River Sta.	Left	Channel	Right
1	40	160	160	160
1	37.5	Culvert		
1	35	70	70	70
1	34	110	110	110
1	32	140	130	115
1	30	215	215	215
1	25	50	45	40
1	23	Inl Struct		
1	22	140	145	175
1	21	155	130	110
1	20	350	300	250
1	15	10	120	120
1	13	Culvert		
1	10	150	160	200
1	8	48	50	53
1	5.0	65	70	77
1	4.9	93	90	90
1	4.8	47	45	46
1	4.75	3	15	16
1	4.7	7	16	20
1	4.65	20	20	20
1	4.6	90	100	150
1	4.55	Culvert		
1	4.5	20	20	20
1	4.45	68	75	70
1	4.4	450	115	80
1	4.3	30	50	20
1	4.2	60	50	30
1	4.15	12	12	12
1	4.1	125	225	240
1	4.09	99	45	40
1	4.05	210	190	190
1	4	105	120	110
1	3.98	131	141	126
1	3.95	140	150	180
1	3.9	160	190	170
1	3.85	20	20	20
1	3.8	90	100	130
1	3.75	Culvert		
1	3.7	20	20	20
1	3.65	50	160	140

River: wood-cedar Combi

Reach	River Sta.	Left	Channel	Right
1	3.6	150	120	130
1	3.5	220	220	200
1	3.45	358	342	332

1	3.4	190	220	250
1	3.3	40	40	40
1	3.2	Culvert		
1	3.1	120	150	160
1	3.0	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: East wood-cedar

Reach	River Sta.	Contr.	Expan.
1	1.7	.1	.3
1	1.63	.1	.3
1	1.6	.1	.3
1	1.5	.1	.3
1	1.4	.1	.3
1	1.38	.1	.3
1	1.3	.1	.3
1	1.25	.1	.3
1	1.2	.3	.5
1	1.15	Culvert	
1	1.1	.3	.5
1	1.05	.1	.3

River: wood-cedar

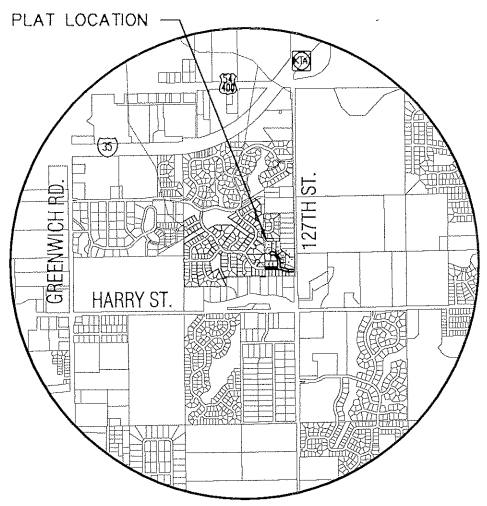
Reach	River Sta.	Contr.	Expan.
1	40	.1	.3
1	37.5	Culvert	
1	35	.1	.3
1	34	.1	.3
1	32	.1	.3
1	30	.1	.3
1	25	.1	.3
1	23	Inl Struct	
1	22	.1	.3
1	21	.1	.3
1	20	.1	.3
1	15	.1	.3
1	13	Culvert	
1	10	.1	.3
1	8	.1	.3
1	5.0	.1	.3
1	4.9	.1	.3
1	4.8	.1	.3
1	4.75	.3	.5
1	4.7	.1	.3
1	4.65	.1	.3
1	4.6	.3	.5
1	4.55	Culvert	
1	4.5	.3	.5
1	4.45	.1	.3
1	4.4	.1	.3
1	4.3	.1	.3
1	4.2	.1	.3
1	4.15	.3	.5
1	4.1	.3	.5
1	4.09	.1	.3
1	4.05	.1	.3
1	4	.1	.3
1	3.98	.1	.3
1	3.95	.1	.3
1	3.9	.1	.3
1	3.85	.1	.3
1	3.8	.3	.5
1	3.75	Culvert	
1	3.7	.3	.5
1	3.65	.1	.3

River: wood-cedar Combi

Reach	River Sta.	Contr.	Expan.

1		3.6	.1	.3
1		3.5	.1	.3
1		3.45	.1	.3
1		3.4	.1	.3
1		3.3	.1	.3
1		3.2	Culvert	
1		3.1	.1	.3
1		3.0	.1	.3

Appendix G
Drainage and Utility Plan



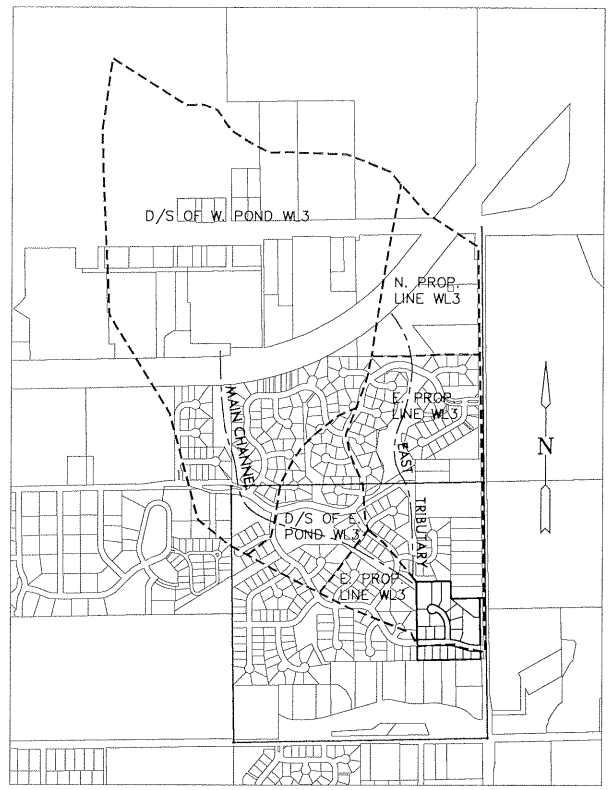
VICINITY MAP

BENCH MARK

BM #9 Railroad spike in West side of 30" tree on Northeast corner 127th Street East and Zimmerly, 30' East of the centerline of 127th Street East and on the North line of Zimmerly extended.
Elev. = 1329.72 (NGVD) 142.32 (City)

LEGEND

- Sec. Corner
- SIGN
- GATE
- TREES
- EDGE OF TREES
- POLE - POLE
- Fnd. Prop. Corner
- GAS METER
- SSMH - SANITARY SEWER MANHOLE
- POWER POLE/GUY ANCHOR
- KGE - ELECTRIC BOX
- FH - FIRE HYDRANT
- WV - WATER VALVE
- WM - WATER METER
- TR - TELEPHONE RISER
- FENCE
- STORM SEWER PIPE
- WATER LINE
- SANITARY SEWER LINE
- GAS LINE
- TELEPHONE LINE
- OVERHEAD ELECTRIC



DRAINAGE SITE

SCALE 1" = 1000'

DRAINAGE AND UTILITY PLAN

THE TIMBERLANDS ADDITION

OWNER / DEVELOPER: G.L. Pierce and c/o Jonathan S. Pierce & Sara P. McCarthy — 1431 S. 127 Street E. — 67207-4517 — 316.686.8823
Donald Olson — 147 N. Parkwood — 67208-4142 — 316.684.2446

Date: JUNE 8, 2005

50 0 50 100

MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9800

H:\CIVIL\04416\DWG\PROP\DRNG\04416.DWG

Appendix H
Proposed TR-20

1

**********80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY**********

```
JOB TR-20                                          SUMMARY
TITLE     TIMBERLANDS - PROP. CONDITIONS
TITLE     MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20
 4 DIMHYD              0.02                                                484
 8          .000       .030       .100       .190       .310
 8          .470       .660       .820       .930       .990
 8         1.000       .990       .930       .860       .780
 8          .680       .560       .460       .390       .330
 8          .280       .241       .207       .174       .147
 8          .126       .107       .091       .077       .066
 8          .055       .047       .040       .034       .029
 8          .025       .021       .018       .015       .013
 8          .011       .009       .008       .007       .006
 8          .005       .004       .003       .002       .001
 8          .000       .000       .000       .000       .000
 9 ENDTBL
 5 RAINFL 7            0.08333                                          6-HR M&L
 8          0.0000     0.0033     0.0066     0.0099     0.0132
 8          0.0166     0.0198     0.0248     0.0296     0.0346
 8          0.0404     0.0463     0.0522     0.0590     0.0658
 8          0.0727     0.0796     0.0864     0.0933     0.1136
 8          0.1340     0.1572     0.1832     0.2124     0.2473
 8          0.2850     0.3400     0.4464     0.6034     0.6752
 8          0.7220     0.7409     0.7598     0.7758     0.7919
 8          0.8072     0.8224     0.8310     0.8396     0.8468
 8          0.8540     0.8628     0.8714     0.8773     0.8832
 8          0.8890     0.8939     0.8988     0.9038     0.9086
 8          0.9136     0.9184     0.9233     0.9282     0.9332
 8          0.9380     0.9429     0.9478     0.9527     0.9576
 8          0.9626     0.9664     0.9704     0.9742     0.9782
 8          0.9821     0.9860     0.9884     0.9906     0.9930
 8          0.9954     0.9976     1.0000     1.0000     1.0000
 9 ENDTBL
 5 RAINFL 8             0.5                                             24-HRSCS
 8          .000        .002       .005       .009       .013          ZONE 5
 8          .018        .023       .029       .035       .042
 8          .050        .059       .068       .078       .089
 8          .101        .114       .128       .144       .162
 8          .183        .208       .244       .339       .723
 8          .773        .802       .825       .844       .861
 8          .876        .890       .903       .914       .924
 8          .934        .943       .951       .959       .966
 8          .972        .977       .982       .986       .990
 8          .993        .996       .998      1.000      1.000
 9 ENDTBL
 3 STRUCT      01
 8                     1345.0       0.0        0.0                        I-135
 8                     1347.0      52.0        2.0
 8                     1349.0     140.0        4.5
 8                     1351.0     223.0       12.0
```

1

**********80-80 LIST OF INPUT DATA (CONTINUED)**********

```
 8                     1353.0     286.0       21.0
 8                     1355.0     336.0       34.0
```

```
  8                       1357.0      378.0       52.0
  8                       1359.0      414.0       76.0
  8                       1361.0      447.0       106.5
  8                       1363.0      475.0       144.0
  9 ENDTBL
  3 STRUCT      09                                                          N PON
  8                       1338.0      0.0         0.0
  8                       1339.0      93.4        0.43
  8                       1340.0      265.3       0.92
  8                       1341.0      496.5       1.46
  8                       1342.0      781.2       2.06
  8                       1343.0      1201.3      2.72
  9 ENDTBL
  3 STRUCT      13                                                          M PON
  8                       1335.0      0.0         0.0
  8                       1336.0      40.1        1.1
  8                       1337.0      113.7       2.36
  8                       1338.0      212.8       3.72
  8                       1339.0      334.8       5.19
  8                       1340.0      483.0       6.75
  8                       1341.0      731.9       8.43
  9 ENDTBL
  3 STRUCT      21                                                          S PON
  8                       1334.0      0.0         0.0
  8                       1335.0      40.1        2.16
  8                       1336.0      113.7       4.48
  8                       1337.0      212.8       6.94
  8                       1338.0      334.8       9.56
  8                       1339.0      483.0       12.32
  8                       1340.0      731.9       15.22
  9 ENDTBL
  3 STRUCT      25
  8                       1346.0      0.0         0.0                     I-135
  8                       1348.0      52.0        0.90
  8                       1350.0      187.0       3.59
  8                       1352.0      297.0       9.60
  8                       1354.0      378.0       22.41
  8                       1356.0      444.0       44.4
  8                       1358.0      500.0       77.13
  8                       1360.0      549.0       127.1
  9 ENDTBL
  6 RUNOFF 1 001        6 0.0867      89.0        0.667               1   U/S I-
  6 RESVOR 2    01 6    7 1345.0                                      1   I-35
  6 RUNOFF 1 002        6 0.032       98.0        0.567               1   U/S WL
  6 ADDHYD 4 003    6 7 5                                             1   SU/S W
  6 RUNOFF 1 004        6 0.0128      84.0        0.733               1   'A'
  6 ADDHYD 4 005    5 6 7                                             1   S@'A'
  6 RUNOFF 1 006        6 0.0028      84.0        0.400               1   'B'
1


 **********************80-80 LIST OF INPUT DATA (CONTINUED)**********************

  6 ADDHYD 4 007    7 6 5                                             1   S @ 'B
  6 RUNOFF 1 008        6 0.0026      88.8        0.25                1   N POND
  6 ADDHYD 4 009    5 6 7                                             1   S - NP
  6 RESVOR 2    09 7    5 1338.0                                      1   R-NP
  6 RUNOFF 1 010        6 0.0019      84.0        0.300               1   'C'
  6 ADDHYD 4 011    5 6 7                                             1   S @ 'C
  6 RUNOFF 1 012        6 0.0090      87.5        0.25                1   M POND
  6 ADDHYD 4 013    7 6 5                                             1   S - M
  6 RESVOR 2    13 5    7 1335.0                                      1   R - M
  6 RUNOFF 1 014        6 0.0167      85.0        0.650               1   'D E F
```

```
  6 ADDHYD 4 015   7 6 5                                                1
  6 RUNOFF 1 016       6 0.0052      84.0        0.417                  1   'J'
  6 ADDHYD 4 017   5 6 7                                                1
  6 RUNOFF 1 018       6 0.0091      85.0        0.567                  1   H1 H2
  6 ADDHYD 4 019   7 6 5                                                1
  6 RUNOFF 1 020       6 0.0107      92.7        0.250                  1   S POND
  6 ADDHYD 4 021   5 6 7                                                1   S - S
  6 RESVOR 2    21 7   5 1334.0                                         1   R - S
  6 RUNOFF 1 022       6 0.0298      87.0        0.333                  1   WDLND3
  6 ADDHYD 4 023   5 6 4                                                1   TOTAL
  6 RUNOFF 1 024       6 0.216       90.0        0.842                  1   U/S I-
  6 RESVOR 2    25 6   7 1346.0                                         1   I-35
  6 RUNOFF 1 026       6 0.0307      87.0        0.320                  1   RES A
  6 ADDHYD 4 027   6 7 5                                                1   LINCOL
  6 RUNOFF 1 028       6 0.0297      87.0        0.408                  1   E TRIB
  6 ADDHYD 4 029   5 6 7                                                1   TO 48"
  6 RUNOFF 1 030       6 0.0159      87.0        0.250                  1   W. PON
  6 ADDHYD 4 031   7 6 5                                                1   W.POND
  6 RUNOFF 1 032       6 0.0090      87.0        0.25                   1   E POND
  6 ADDHYD 4 033   5 6 7                                                1   E POND
  6 RUNOFF 1 034       6 0.0326      87.0        0.597                  1   E PL
  6 ADDHYD 4 035   7 6 5                                                1   E TRIB
  6 ADDHYD 4 036   4 5 6                                                1   E PL T
  6 RUNOFF 1 037       5 0.0181      87.0        0.250                  1   PIERCE
  6 ADDHYD 4 038   6 5 7                                                1   E PL P
    ENDATA
  7 INCREM 6            0.0833
  7 COMPUT 7 001   038   0.0         2.52        1.0         7 2  11  01   2-YR 6
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         3.42        1.0         7 2  12  02   5-YR 6
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         4.02        1.0         7 2  13  03   10-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         5.20        1.0         7 2  14  04   50-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         5.94        1.0         7 2  15  05   100-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         3.48        1.0         8 2  21  01   2-YR Z
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         4.55        1.0         8 2  22  02   5-YR Z
1


 **********80-80 LIST OF INPUT DATA (CONTINUED)**********

    ENDCMP 1
  7 COMPUT 7 001   038   0.0         5.25        1.0         8 2  23  03   10-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         6.98        1.0         8 2  24  04   50-YR
    ENDCMP 1
  7 COMPUT 7 001   038   0.0         7.80        1.0         8 2  25  05   100-YR
    ENDCMP 1
    ENDJOB 2

 **********END OF 80-80 LIST**********
1
 TR20 ------------------------------------------------------------------- SCS -
                    TIMBERLANDS - PROP. CONDITIONS                VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:41:34                    PASS   1   JOB NO.   1                   PAGE   1


             COMPUTED DIMHYD PEAK RATE FACTOR =  484.000
```

```
 EXECUTIVE CONTROL INCREM    MAIN TIME INCREMENT =   .083 HOURS


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          2-YR 6
    STARTING TIME =   .00       RAIN DEPTH =  2.52       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =11           STORM NO. = 1            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   1


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          5-YR 6
    STARTING TIME =   .00       RAIN DEPTH =  3.42       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =12           STORM NO. = 2            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   2


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          10-YR
    STARTING TIME =   .00       RAIN DEPTH =  4.02       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =13           STORM NO. = 3            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   3


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          50-YR
    STARTING TIME =   .00       RAIN DEPTH =  5.20       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =14           STORM NO. = 4            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   4
1
 TR20 ------------------------------------------------------------------- SCS -
                    TIMBERLANDS - PROP. CONDITIONS               VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:41:34                   PASS   5   JOB NO.   1                    PAGE   2



 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          100-YR
    STARTING TIME =   .00       RAIN DEPTH =  5.94       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =15           STORM NO. = 5            RAIN TABLE NO. = 7


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   5


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          2-YR Z
    STARTING TIME =   .00       RAIN DEPTH =  3.48       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =21           STORM NO. = 1            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   6
```

```
 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          5-YR Z
    STARTING TIME =   .00       RAIN DEPTH =  4.55       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =22           STORM NO. = 2            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   7


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          10-YR
    STARTING TIME =   .00       RAIN DEPTH =  5.25       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =23           STORM NO. = 3            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   8
1
 TR20 ------------------------------------------------------------------- SCS -
                    TIMBERLANDS - PROP. CONDITIONS               VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:41:34                    PASS   9   JOB NO.   1                     PAGE   3



 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          50-YR
    STARTING TIME =   .00       RAIN DEPTH =  6.98       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =24           STORM NO. = 4            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS   9


 EXECUTIVE CONTROL COMPUT    FROM XSECTION   1  TO XSECTION  38          100-YR
    STARTING TIME =   .00       RAIN DEPTH =  7.80       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .083 HOURS
    ALTERNATE NO. =25           STORM NO. = 5            RAIN TABLE NO. = 8


 EXECUTIVE CONTROL ENDCMP    COMPUTATIONS COMPLETED FOR PASS  10
1
 TR20 ------------------------------------------------------------------- SCS -
                    TIMBERLANDS - PROP. CONDITIONS               VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:41:34                     SUMMARY, JOB NO.   1                     PAGE   4


                             SUMMARY TABLE 1
                             ---------------
    SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
    A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
 F-FLAT TOP HYDROGRAPH   T-TRUNCATED HYDROGRAPH   R-RISING TRUNCATED HYDROGRAPH

 XSECTION/  STANDARD                                    PEAK DISCHARGE
 STRUCTURE   CONTROL    DRAINAGE   RUNOFF   ------------------------------------
    ID      OPERATION     AREA     AMOUNT   ELEVATION   TIME     RATE     RATE
                         (SQ MI)    (IN)      (FT)      (HR)     (CFS)    (CSM)

 RAINFALL OF   2.52 inches AND   6.00 hr DURATION, BEGINS AT    .0 hrs.
 RAINTABLE NUMBER  7,    ARC 2
 MAIN TIME INCREMENT   .083 HOURS
```

ALTERNATE 11 STORM 1

XSECTION	1	RUNOFF	.09	1.47	---	2.73	71	788.9
STRUCTURE	1	RESVOR	.09	1.47	1346.80	3.05	47	522.2
XSECTION	2	RUNOFF	.03	2.29	---	2.63	43	1433.3
XSECTION	3	ADDHYD	.12	1.69	---	2.78	75	625.0
XSECTION	4	RUNOFF	.01	1.13	---	2.79	7	700.0
XSECTION	5	ADDHYD	.13	1.64	---	2.78	83	638.5
XSECTION	6	RUNOFF	.00	1.13	---	2.57T	2T	********
XSECTION	7	ADDHYD	.13	1.63	---	2.77	84	646.2
XSECTION	8	RUNOFF	.00	1.46	---	2.46T	4T	********
XSECTION	9	ADDHYD	.14	1.62	---	2.76	86	614.3
STRUCTURE	9	RESVOR	.14	1.62	1338.91	2.83	85	607.1
XSECTION	10	RUNOFF	.00	1.13	---	2.50T	2T	********
XSECTION	11	ADDHYD	.14	1.62	---	2.82	85	607.1
XSECTION	12	RUNOFF	.01	1.36	---	2.46	11	1100.0
XSECTION	13	ADDHYD	.15	1.60	---	2.80	88	586.7
STRUCTURE	13	RESVOR	.15	1.60	1336.54	3.05	80	533.3
XSECTION	14	RUNOFF	.02	1.19	---	2.73	11	550.0
XSECTION	15	ADDHYD	.16	1.56	---	3.00	87	543.8
XSECTION	16	RUNOFF	.01	1.13	---	2.58T	4T	400.0
XSECTION	17	ADDHYD	.17	1.55	---	2.99	89	523.5
XSECTION	18	RUNOFF	.01	1.19	---	2.67	7	700.0
XSECTION	19	ADDHYD	.18	1.53	---	2.96	93	516.7
XSECTION	20	RUNOFF	.01	1.77	---	2.45	18	1800.0
XSECTION	21	ADDHYD	.19	1.54	---	2.94	96	505.3
STRUCTURE	21	RESVOR	.19	1.54	1335.52	3.38	78	410.5
XSECTION	22	RUNOFF	.03	1.33	---	2.52	33	1100.0
XSECTION	23	ADDHYD	.22	1.51	---	3.32	83	377.3
XSECTION	24	RUNOFF	.22	1.55	---	2.83	164	745.5

1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)

ALTERNATE 11 STORM 1

STRUCTURE	25	RESVOR	.22	1.55	1349.31	3.05	140	636.4
XSECTION	26	RUNOFF	.03	1.33	---	2.51	34	1133.3
XSECTION	27	ADDHYD	.25	1.52	---	3.03	149	596.0
XSECTION	28	RUNOFF	.03	1.33	---	2.57	29	966.7
XSECTION	29	ADDHYD	.28	1.50	---	3.00	159	567.9
XSECTION	30	RUNOFF	.02	1.33	---	2.46	20	1000.0

XSECTION	31	ADDHYD	.29	1.49	---	2.99	163	562.1
XSECTION	32	RUNOFF	.01	1.33	---	2.46	11	1100.0
XSECTION	33	ADDHYD	.30	1.49	---	2.99	165	550.0
XSECTION	34	RUNOFF	.03	1.33	---	2.69	26	866.7
XSECTION	35	ADDHYD	.33	1.47	---	2.92	183	554.5
XSECTION	36	ADDHYD	.55	1.49	---	3.04	254	461.8
XSECTION	37	RUNOFF	.02	1.33	---	2.46	22	1100.0
XSECTION	38	ADDHYD	.57	1.48	---	3.03	259	454.4

RAINFALL OF 3.42 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 12 STORM 2

XSECTION	1	RUNOFF	.09	2.28	---	2.71	111	1233.3
STRUCTURE	1	RESVOR	.09	2.28	1347.59	3.00	78	866.7
XSECTION	2	RUNOFF	.03	3.19	---	2.63	60	2000.0
XSECTION	3	ADDHYD	.12	2.53	---	2.82	116	966.7
XSECTION	4	RUNOFF	.01	1.87	---	2.77	13	1300.0
XSECTION	5	ADDHYD	.13	2.46	---	2.81	129	992.3
XSECTION	6	RUNOFF	.00	1.86	---	2.56T	4T	********
XSECTION	7	ADDHYD	.13	2.45	---	2.80	131	1007.7
XSECTION	8	RUNOFF	.00	2.26	---	2.45	6	********
XSECTION	9	ADDHYD	.14	2.45	---	2.79	133	950.0
STRUCTURE	9	RESVOR	.14	2.45	1339.23	2.83	132	942.9
XSECTION	10	RUNOFF	.00	1.87	---	2.50T	3T	********

1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 12 STORM 2

XSECTION	11	ADDHYD	.14	2.44	---	2.83	133	950.0
XSECTION	12	RUNOFF	.01	2.15	---	2.45	18	1800.0
XSECTION	13	ADDHYD	.15	2.42	---	2.81	138	920.0
STRUCTURE	13	RESVOR	.15	2.42	1337.13	3.01	127	846.7
XSECTION	14	RUNOFF	.02	1.94	---	2.72	18	900.0
XSECTION	15	ADDHYD	.16	2.37	---	2.97	140	875.0
XSECTION	16	RUNOFF	.01	1.87	---	2.57	7	700.0
XSECTION	17	ADDHYD	.17	2.36	---	2.96	143	841.2
XSECTION	18	RUNOFF	.01	1.94	---	2.66	11	1100.0
XSECTION	19	ADDHYD	.18	2.34	---	2.94	150	833.3
XSECTION	20	RUNOFF	.01	2.63	---	2.45	26	2600.0
XSECTION	21	ADDHYD	.19	2.35	---	2.93	155	815.8

STRUCTURE	21	RESVOR	.19	2.35	1336.15	3.28	129	678.9
XSECTION	22	RUNOFF	.03	2.11	---	2.51	52	1733.3
XSECTION	23	ADDHYD	.22	2.32	---	3.23	137	622.7
XSECTION	24	RUNOFF	.22	2.37	---	2.82	253	1150.0
STRUCTURE	25	RESVOR	.22	2.37	1350.27	3.08	202	918.2
XSECTION	26	RUNOFF	.03	2.11	---	2.50	55	1833.3
XSECTION	27	ADDHYD	.25	2.34	---	3.04	214	856.0
XSECTION	28	RUNOFF	.03	2.11	---	2.55	47	1566.7
XSECTION	29	ADDHYD	.28	2.31	---	2.86	233	832.1
XSECTION	30	RUNOFF	.02	2.11	---	2.45	32	1600.0
XSECTION	31	ADDHYD	.29	2.30	---	2.84	241	831.0
XSECTION	32	RUNOFF	.01	2.11	---	2.45	18	1800.0
XSECTION	33	ADDHYD	.30	2.30	---	2.83	245	816.7
XSECTION	34	RUNOFF	.03	2.11	---	2.68	41	1366.7
XSECTION	35	ADDHYD	.33	2.28	---	2.79	281	851.5
XSECTION	36	ADDHYD	.55	2.29	---	2.87	390	709.1
XSECTION	37	RUNOFF	.02	2.11	---	2.45	36	1800.0
XSECTION	38	ADDHYD	.57	2.29	---	2.85	398	698.2

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

RAINFALL OF 4.02 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 13 STORM 3

XSECTION	1	RUNOFF	.09	2.84	---	2.70	139	1544.4
STRUCTURE	1	RESVOR	.09	2.84	1348.07	2.98	99	1100.0
XSECTION	2	RUNOFF	.03	3.79	---	2.63	71	2366.7
XSECTION	3	ADDHYD	.12	3.09	---	2.81	146	1216.7
XSECTION	4	RUNOFF	.01	2.39	---	2.77	16	1600.0
XSECTION	5	ADDHYD	.13	3.03	---	2.80	162	1246.2
XSECTION	6	RUNOFF	.00	2.38	---	2.55	5	********
XSECTION	7	ADDHYD	.13	3.01	---	2.79	165	1269.2
XSECTION	8	RUNOFF	.00	2.82	---	2.45	7	********
XSECTION	9	ADDHYD	.14	3.01	---	2.78	167	1192.9
STRUCTURE	9	RESVOR	.14	3.01	1339.42	2.83	166	1185.7
XSECTION	10	RUNOFF	.00	2.39	---	2.49T	4T	********
XSECTION	11	ADDHYD	.14	3.00	---	2.82	168	1200.0
XSECTION	12	RUNOFF	.01	2.70	---	2.45	23	2300.0
XSECTION	13	ADDHYD	.15	2.98	---	2.80	174	1160.0
STRUCTURE	13	RESVOR	.15	2.98	1337.48	2.99	161	1073.3
XSECTION	14	RUNOFF	.02	2.47	---	2.71	23	1150.0

XSECTION	15	ADDHYD	.16	2.93	---	2.94	178	1112.5
XSECTION	16	RUNOFF	.01	2.39	---	2.56	9	900.0
XSECTION	17	ADDHYD	.17	2.91	---	2.93	182	1070.6
XSECTION	18	RUNOFF	.01	2.47	---	2.66	14	1400.0
XSECTION	19	ADDHYD	.18	2.89	---	2.91	191	1061.1
XSECTION	20	RUNOFF	.01	3.21	---	2.44	32	3200.0
XSECTION	21	ADDHYD	.19	2.91	---	2.89	197	1036.8

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 13 STORM 3							
STRUCTURE 21	RESVOR	.19	2.90	1336.54	3.23	167	878.9
XSECTION 22	RUNOFF	.03	2.65	---	2.51	66	2200.0
XSECTION 23	ADDHYD	.22	2.87	---	3.18	179	813.6
XSECTION 24	RUNOFF	.22	2.93	---	2.81	313	1422.7
STRUCTURE 25	RESVOR	.22	2.93	1350.84	3.12	233	1059.1
XSECTION 26	RUNOFF	.03	2.65	---	2.50	69	2300.0
XSECTION 27	ADDHYD	.25	2.90	---	3.08	247	988.0
XSECTION 28	RUNOFF	.03	2.65	---	2.55	59	1966.7
XSECTION 29	ADDHYD	.28	2.87	---	2.71	270	964.3
XSECTION 30	RUNOFF	.02	2.65	---	2.45	40	2000.0
XSECTION 31	ADDHYD	.29	2.86	---	2.67	287	989.7
XSECTION 32	RUNOFF	.01	2.65	---	2.45	23	2300.0
XSECTION 33	ADDHYD	.30	2.85	---	2.63	299	996.7
XSECTION 34	RUNOFF	.03	2.65	---	2.67	52	1733.3
XSECTION 35	ADDHYD	.33	2.83	---	2.65	350	1060.6
XSECTION 36	ADDHYD	.55	2.85	---	2.68	477	867.3
XSECTION 37	RUNOFF	.02	2.65	---	2.45	45	2250.0
XSECTION 38	ADDHYD	.57	2.84	---	2.63	499	875.4

RAINFALL OF 5.20 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 14 STORM 4								
XSECTION	1	RUNOFF	.09	3.96	---	2.70	192	2133.3
STRUCTURE	1	RESVOR	.09	3.96	1349.01	2.96	141	1566.7
XSECTION	2	RUNOFF	.03	4.97	---	2.62	92	3066.7
XSECTION	3	ADDHYD	.12	4.23	---	2.80	203	1691.7
XSECTION	4	RUNOFF	.01	3.45	---	2.76	24	2400.0
XSECTION	5	ADDHYD	.13	4.15	---	2.79	227	1746.2
XSECTION	6	RUNOFF	.00	3.45	---	2.55	7	********

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 14 STORM 4							
XSECTION 8	RUNOFF	.00	3.94	---	2.45	10	********
XSECTION 9	ADDHYD	.14	4.13	---	2.78	234	1671.4
STRUCTURE 9	RESVOR	.14	4.13	1339.81	2.82	233	1664.3
XSECTION 10	RUNOFF	.00	3.45	---	2.49	6	********
XSECTION 11	ADDHYD	.14	4.12	---	2.81	235	1678.6
XSECTION 12	RUNOFF	.01	3.80	---	2.45	32	3200.0
XSECTION 13	ADDHYD	.15	4.11	---	2.79	243	1620.0
STRUCTURE 13	RESVOR	.15	4.11	1338.12	2.96	228	1520.0
XSECTION 14	RUNOFF	.02	3.55	---	2.70	34	1700.0
XSECTION 15	ADDHYD	.16	4.05	---	2.92	254	1587.5
XSECTION 16	RUNOFF	.01	3.45	---	2.56	13	1300.0
XSECTION 17	ADDHYD	.17	4.03	---	2.91	259	1523.5
XSECTION 18	RUNOFF	.01	3.55	---	2.65	20	2000.0
XSECTION 19	ADDHYD	.18	4.01	---	2.88	273	1516.7
XSECTION 20	RUNOFF	.01	4.36	---	2.44	42	4200.0
XSECTION 21	ADDHYD	.19	4.03	---	2.86	282	1484.2
STRUCTURE 21	RESVOR	.19	4.02	1337.26	3.17	244	1284.2
XSECTION 22	RUNOFF	.03	3.75	---	2.50	92	3066.7
XSECTION 23	ADDHYD	.22	3.99	---	3.12	261	1186.4
XSECTION 24	RUNOFF	.22	4.07	---	2.81	433	1968.2
STRUCTURE 25	RESVOR	.22	4.07	1352.04	3.16	299	1359.1
XSECTION 26	RUNOFF	.03	3.75	---	2.50	97	3233.3
XSECTION 27	ADDHYD	.25	4.03	---	3.09	317	1268.0
XSECTION 28	RUNOFF	.03	3.75	---	2.55	83	2766.7
XSECTION 29	ADDHYD	.28	4.00	---	2.60	358	1278.6
XSECTION 30	RUNOFF	.02	3.75	---	2.45	56	2800.0
XSECTION 31	ADDHYD	.29	3.98	---	2.58	396	1365.5
XSECTION 32	RUNOFF	.01	3.75	---	2.45	32	3200.0
XSECTION 33	ADDHYD	.30	3.98	---	2.56	419	1396.7
XSECTION 34	RUNOFF	.03	3.76	---	2.66	74	2466.7

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 14 STORM 4							
XSECTION 35	ADDHYD	.33	3.96	---	2.58	488	1478.8
XSECTION 36	ADDHYD	.55	3.97	---	2.60	673	1223.6
XSECTION 37	RUNOFF	.02	3.75	---	2.45	64	3200.0
XSECTION 38	ADDHYD	.57	3.96	---	2.58	716	1256.1
RAINFALL OF 5.94 inches AND 6.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 15 STORM 5							
XSECTION 1	RUNOFF	.09	4.67	---	2.70	226	2511.1
STRUCTURE 1	RESVOR	.09	4.67	1349.27	3.01	151	1677.8
XSECTION 2	RUNOFF	.03	5.71	---	2.62	106	3533.3
XSECTION 3	ADDHYD	.12	4.95	---	2.75	236	1966.7
XSECTION 4	RUNOFF	.01	4.14	---	2.75	28	2800.0
XSECTION 5	ADDHYD	.13	4.87	---	2.75	264	2030.8
XSECTION 6	RUNOFF	.00	4.14	---	2.55	9	********
XSECTION 7	ADDHYD	.13	4.85	---	2.74	270	2076.9
XSECTION 8	RUNOFF	.00	4.65	---	2.44	11	********
XSECTION 9	ADDHYD	.14	4.85	---	2.74	273	1950.0
STRUCTURE 9	RESVOR	.14	4.85	1340.03	2.77	272	1942.9
XSECTION 10	RUNOFF	.00	4.13	---	2.49	7	********
XSECTION 11	ADDHYD	.14	4.84	---	2.77	274	1957.1
XSECTION 12	RUNOFF	.01	4.51	---	2.45	38	3800.0
XSECTION 13	ADDHYD	.15	4.82	---	2.75	286	1906.7
STRUCTURE 13	RESVOR	.15	4.82	1338.42	2.91	264	1760.0
XSECTION 14	RUNOFF	.02	4.24	---	2.70	40	2000.0
XSECTION 15	ADDHYD	.16	4.76	---	2.87	298	1862.5
XSECTION 16	RUNOFF	.01	4.14	---	2.56	16	1600.0
XSECTION 17	ADDHYD	.17	4.74	---	2.86	305	1794.1
XSECTION 18	RUNOFF	.01	4.25	---	2.65	24	2400.0
XSECTION 19	ADDHYD	.18	4.72	---	2.84	324	1800.0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 15 STORM 5							
XSECTION 20	RUNOFF	.01	5.09	---	2.44	49	4900.0
XSECTION 21	ADDHYD	.19	4.74	---	2.82	335	1763.2
STRUCTURE 21	RESVOR	.19	4.73	1337.61	3.12	288	1515.8
XSECTION 22	RUNOFF	.03	4.45	---	2.50	109	3633.3
XSECTION 23	ADDHYD	.22	4.70	---	3.08	310	1409.1
XSECTION 24	RUNOFF	.22	4.78	---	2.80	508	2309.1
STRUCTURE 25	RESVOR	.22	4.79	1352.51	3.21	318	1445.5
XSECTION 26	RUNOFF	.03	4.46	---	2.49	114	3800.0
XSECTION 27	ADDHYD	.25	4.75	---	3.09	338	1352.0
XSECTION 28	RUNOFF	.03	4.46	---	2.54	98	3266.7
XSECTION 29	ADDHYD	.28	4.71	---	2.58	402	1435.7
XSECTION 30	RUNOFF	.02	4.46	---	2.45	66	3300.0
XSECTION 31	ADDHYD	.29	4.70	---	2.54	459	1582.8
XSECTION 32	RUNOFF	.01	4.46	---	2.45	37	3700.0
XSECTION 33	ADDHYD	.30	4.69	---	2.53	491	1636.7
XSECTION 34	RUNOFF	.03	4.46	---	2.66	88	2933.3
XSECTION 35	ADDHYD	.33	4.67	---	2.54	561	1700.0
XSECTION 36	ADDHYD	.55	4.68	---	2.59	786	1429.1
XSECTION 37	RUNOFF	.02	4.46	---	2.45	75	3750.0
XSECTION 38	ADDHYD	.57	4.67	---	2.56	839	1471.9

RAINFALL OF 3.48 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 8, ARC 2

ALTERNATE 21 STORM 1							
XSECTION 1	RUNOFF	.09	2.34	---	12.19	88	977.8
STRUCTURE 1	RESVOR	.09	2.34	1347.25	12.46	63	700.0
XSECTION 2	RUNOFF	.03	3.25	---	12.13	44	1466.7
XSECTION 3	ADDHYD	.12	2.58	---	12.30	94	783.3
XSECTION 4	RUNOFF	.01	1.92	---	12.23	10	1000.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 21 STORM 1							

XSECTION	5	ADDHYD	.13	2.52	---	12.29	104	800.0
XSECTION	6	RUNOFF	.00	1.92	---	12.05T	3T	********
XSECTION	7	ADDHYD	.13	2.50	---	12.27	106	815.4
XSECTION	8	RUNOFF	.00	2.32	---	11.97T	4T	********
XSECTION	9	ADDHYD	.14	2.50	---	12.26	107	764.3
STRUCTURE	9	RESVOR	.14	2.50	1339.08	12.29	107	764.3
XSECTION	10	RUNOFF	.00	1.91	---	12.00T	2T	********
XSECTION	11	ADDHYD	.14	2.49	---	12.28	108	771.4
XSECTION	12	RUNOFF	.01	2.20	---	11.97	12	1200.0
XSECTION	13	ADDHYD	.15	2.48	---	12.25	112	746.7
STRUCTURE	13	RESVOR	.15	2.47	1336.84	12.47	102	680.0
XSECTION	14	RUNOFF	.02	2.00	---	12.18	15	750.0
XSECTION	15	ADDHYD	.16	2.43	---	12.42	112	700.0
XSECTION	16	RUNOFF	.01	1.92	---	12.06	5	500.0
XSECTION	17	ADDHYD	.17	2.41	---	12.40	115	676.5
XSECTION	18	RUNOFF	.01	2.00	---	12.13	9	900.0
XSECTION	19	ADDHYD	.18	2.39	---	12.37	121	672.2
XSECTION	20	RUNOFF	.01	2.68	---	11.97	16	1600.0
XSECTION	21	ADDHYD	.19	2.41	---	12.34	124	652.6
STRUCTURE	21	RESVOR	.19	2.41	1335.85	12.73	103	542.1
XSECTION	22	RUNOFF	.03	2.16	---	12.02	36	1200.0
XSECTION	23	ADDHYD	.22	2.37	---	12.68	108	490.9
XSECTION	24	RUNOFF	.22	2.43	---	12.29	204	927.3
STRUCTURE	25	RESVOR	.22	2.43	1349.84	12.48	176	800.0
XSECTION	26	RUNOFF	.03	2.16	---	12.01	37	1233.3
XSECTION	27	ADDHYD	.25	2.40	---	12.46	185	740.0
XSECTION	28	RUNOFF	.03	2.16	---	12.05	34	1133.3
XSECTION	29	ADDHYD	.28	2.37	---	12.39	197	703.6
XSECTION	30	RUNOFF	.02	2.16	---	11.97	20	1000.0
XSECTION	31	ADDHYD	.29	2.36	---	12.20	203	700.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 21 STORM 1							
XSECTION 32	RUNOFF	.01	2.16	---	11.97	11	1100.0
XSECTION 33	ADDHYD	.30	2.35	---	12.16	209	696.7
XSECTION 34	RUNOFF	.03	2.16	---	12.15	33	1100.0
XSECTION 35	ADDHYD	.33	2.33	---	12.16	242	733.3
XSECTION 36	ADDHYD	.55	2.35	---	12.19	332	603.6

XSECTION	37	RUNOFF	.02	2.16	---	11.97	23	1150.0
XSECTION	38	ADDHYD	.57	2.34	---	12.15	345	605.3

RAINFALL OF 4.55 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 22 STORM 2

XSECTION	1	RUNOFF	.09	3.34	---	12.18	124	1377.8
STRUCTURE	1	RESVOR	.09	3.34	1347.92	12.44	93	1033.3
XSECTION	2	RUNOFF	.03	4.31	---	12.13	58	1933.3
XSECTION	3	ADDHYD	.12	3.60	---	12.29	135	1125.0
XSECTION	4	RUNOFF	.01	2.86	---	12.23	15	1500.0
XSECTION	5	ADDHYD	.13	3.53	---	12.28	150	1153.8
XSECTION	6	RUNOFF	.00	2.86	---	12.05T	4T	********
XSECTION	7	ADDHYD	.13	3.51	---	12.27	153	1176.9
XSECTION	8	RUNOFF	.00	3.32	---	11.97	5	********
XSECTION	9	ADDHYD	.14	3.51	---	12.26	155	1107.1
STRUCTURE	9	RESVOR	.14	3.51	1339.35	12.30	154	1100.0
XSECTION	10	RUNOFF	.00	2.86	---	12.00T	3T	********
XSECTION	11	ADDHYD	.14	3.50	---	12.29	155	1107.1
XSECTION	12	RUNOFF	.01	3.19	---	11.97	17	1700.0
XSECTION	13	ADDHYD	.15	3.48	---	12.26	161	1073.3
STRUCTURE	13	RESVOR	.15	3.48	1337.36	12.44	149	993.3
XSECTION	14	RUNOFF	.02	2.95	---	12.18	22	1100.0
XSECTION	15	ADDHYD	.16	3.43	---	12.40	166	1037.5
XSECTION	16	RUNOFF	.01	2.86	---	12.06	8	800.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 22 STORM 2

XSECTION	17	ADDHYD	.17	3.41	---	12.38	169	994.1
XSECTION	18	RUNOFF	.01	2.95	---	12.13	13	1300.0
XSECTION	19	ADDHYD	.18	3.39	---	12.35	178	988.9
XSECTION	20	RUNOFF	.01	3.72	---	11.97	22	2200.0
XSECTION	21	ADDHYD	.19	3.41	---	12.33	183	963.2
STRUCTURE	21	RESVOR	.19	3.40	1336.43	12.64	156	821.1
XSECTION	22	RUNOFF	.03	3.14	---	12.02	52	1733.3
XSECTION	23	ADDHYD	.22	3.37	---	12.60	165	750.0
XSECTION	24	RUNOFF	.22	3.44	---	12.28	285	1295.5
STRUCTURE	25	RESVOR	.22	3.44	1350.60	12.56	220	1000.0
XSECTION	26	RUNOFF	.03	3.14	---	12.01	54	1800.0

XSECTION	27	ADDHYD	.25	3.40	---	12.51	230	920.0
XSECTION	28	RUNOFF	.03	3.14	---	12.05	49	1633.3
XSECTION	29	ADDHYD	.28	3.37	---	12.18	268	957.1
XSECTION	30	RUNOFF	.02	3.14	---	11.97	29	1450.0
XSECTION	31	ADDHYD	.29	3.36	---	12.15	286	986.2
XSECTION	32	RUNOFF	.01	3.14	---	11.97	16	1600.0
XSECTION	33	ADDHYD	.30	3.36	---	12.13	298	993.3
XSECTION	34	RUNOFF	.03	3.14	---	12.15	47	1566.7
XSECTION	35	ADDHYD	.33	3.33	---	12.14	344	1042.4
XSECTION	36	ADDHYD	.55	3.35	---	12.16	482	876.4
XSECTION	37	RUNOFF	.02	3.14	---	11.97	33	1650.0
XSECTION	38	ADDHYD	.57	3.34	---	12.13	505	886.0

RAINFALL OF 5.25 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 23 STORM 3

XSECTION	1	RUNOFF	.09	4.01	---	12.18	148	1644.4
STRUCTURE	1	RESVOR	.09	4.01	1348.36	12.43	112	1244.4
XSECTION	2	RUNOFF	.03	5.00	---	12.13	66	2200.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)

ALTERNATE 23 STORM 3

XSECTION	3	ADDHYD	.12	4.28	---	12.28	162	1350.0
XSECTION	4	RUNOFF	.01	3.50	---	12.22	19	1900.0
XSECTION	5	ADDHYD	.13	4.20	---	12.28	180	1384.6
XSECTION	6	RUNOFF	.00	3.50	---	12.05	5	********
XSECTION	7	ADDHYD	.13	4.19	---	12.27	184	1415.4
XSECTION	8	RUNOFF	.00	3.99	---	11.97	6	********
XSECTION	9	ADDHYD	.14	4.18	---	12.26	186	1328.6
STRUCTURE	9	RESVOR	.14	4.18	1339.53	12.29	185	1321.4
XSECTION	10	RUNOFF	.00	3.50	---	12.00T	4T	********
XSECTION	11	ADDHYD	.14	4.17	---	12.29	187	1335.7
XSECTION	12	RUNOFF	.01	3.85	---	11.97	20	2000.0
XSECTION	13	ADDHYD	.15	4.15	---	12.25	193	1286.7
STRUCTURE	13	RESVOR	.15	4.15	1337.67	12.43	180	1200.0
XSECTION	14	RUNOFF	.02	3.60	---	12.17	27	1350.0
XSECTION	15	ADDHYD	.16	4.10	---	12.38	200	1250.0
XSECTION	16	RUNOFF	.01	3.50	---	12.06	10	1000.0
XSECTION	17	ADDHYD	.17	4.08	---	12.36	205	1205.9

XSECTION	18	RUNOFF	.01	3.60	---	12.13	15	1500.0
XSECTION	19	ADDHYD	.18	4.06	---	12.34	216	1200.0
XSECTION	20	RUNOFF	.01	4.41	---	11.97	26	2600.0
XSECTION	21	ADDHYD	.19	4.08	---	12.30	223	1173.7
STRUCTURE	21	RESVOR	.19	4.07	1336.78	12.62	191	1005.3
XSECTION	22	RUNOFF	.03	3.80	---	12.01	62	2066.7
XSECTION	23	ADDHYD	.22	4.04	---	12.58	202	918.2
XSECTION	24	RUNOFF	.22	4.11	---	12.28	338	1536.4
STRUCTURE	25	RESVOR	.22	4.11	1351.13	12.58	249	1131.8
XSECTION	26	RUNOFF	.03	3.80	---	12.01	64	2133.3
XSECTION	27	ADDHYD	.25	4.07	---	12.55	261	1044.0
XSECTION	28	RUNOFF	.03	3.80	---	12.05	59	1966.7
XSECTION	29	ADDHYD	.28	4.05	---	12.13	304	1085.7

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 23 STORM 3							
XSECTION 30	RUNOFF	.02	3.80	---	11.97	35	1750.0
XSECTION 31	ADDHYD	.29	4.03	---	12.10	335	1155.2
XSECTION 32	RUNOFF	.01	3.80	---	11.97	20	2000.0
XSECTION 33	ADDHYD	.30	4.03	---	12.09	352	1173.3
XSECTION 34	RUNOFF	.03	3.80	---	12.15	57	1900.0
XSECTION 35	ADDHYD	.33	4.00	---	12.10	407	1233.3
XSECTION 36	ADDHYD	.55	4.02	---	12.12	570	1036.4
XSECTION 37	RUNOFF	.02	3.80	---	11.97	39	1950.0
XSECTION 38	ADDHYD	.57	4.01	---	12.11	607	1064.9

RAINFALL OF 6.98 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE	24	STORM	4					
XSECTION	1	RUNOFF	.09	5.68	---	12.18	207	2300.0
STRUCTURE	1	RESVOR	.09	5.68	1349.17	12.45	147	1633.3
XSECTION	2	RUNOFF	.03	6.73	---	12.13	89	2966.7
XSECTION	3	ADDHYD	.12	5.97	---	12.25	222	1850.0
XSECTION	4	RUNOFF	.01	5.11	---	12.22	27	2700.0
XSECTION	5	ADDHYD	.13	5.88	---	12.24	249	1915.4
XSECTION	6	RUNOFF	.00	5.11	---	12.05	8	********
XSECTION	7	ADDHYD	.13	5.87	---	12.24	255	1961.5
XSECTION	8	RUNOFF	.00	5.66	---	11.97	8	********
XSECTION	9	ADDHYD	.14	5.86	---	12.23	258	1842.9

STRUCTURE	9	RESVOR	.14	5.86	1339.95	12.26	257	1835.7
XSECTION	10	RUNOFF	.00	5.12	---	12.00	5	********
XSECTION	11	ADDHYD	.14	5.85	---	12.26	259	1850.0
XSECTION	12	RUNOFF	.01	5.51	---	11.97	28	2800.0
XSECTION	13	ADDHYD	.15	5.83	---	12.22	270	1800.0
STRUCTURE	13	RESVOR	.15	5.83	1338.32	12.38	251	1673.3
XSECTION	14	RUNOFF	.02	5.23	---	12.17	38	1900.0

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SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID		STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE	24	STORM	4					
XSECTION	15	ADDHYD	.16	5.77	---	12.34	284	1775.0
XSECTION	16	RUNOFF	.01	5.12	---	12.05	14	1400.0
XSECTION	17	ADDHYD	.17	5.75	---	12.33	291	1711.8
XSECTION	18	RUNOFF	.01	5.23	---	12.13	22	2200.0
XSECTION	19	ADDHYD	.18	5.72	---	12.31	309	1716.7
XSECTION	20	RUNOFF	.01	6.11	---	11.97	35	3500.0
XSECTION	21	ADDHYD	.19	5.74	---	12.27	319	1678.9
STRUCTURE	21	RESVOR	.19	5.74	1337.53	12.55	277	1457.9
XSECTION	22	RUNOFF	.03	5.46	---	12.01	87	2900.0
XSECTION	23	ADDHYD	.22	5.70	---	12.50	294	1336.4
XSECTION	24	RUNOFF	.22	5.80	---	12.28	468	2127.3
STRUCTURE	25	RESVOR	.22	5.79	1352.29	12.64	309	1404.5
XSECTION	26	RUNOFF	.03	5.45	---	12.01	90	3000.0
XSECTION	27	ADDHYD	.25	5.75	---	12.48	324	1296.0
XSECTION	28	RUNOFF	.03	5.45	---	12.05	83	2766.7
XSECTION	29	ADDHYD	.28	5.72	---	12.13	387	1382.1
XSECTION	30	RUNOFF	.02	5.46	---	11.97	49	2450.0
XSECTION	31	ADDHYD	.29	5.71	---	12.08	430	1482.8
XSECTION	32	RUNOFF	.01	5.46	---	11.97	28	2800.0
XSECTION	33	ADDHYD	.30	5.70	---	12.07	455	1516.7
XSECTION	34	RUNOFF	.03	5.45	---	12.14	80	2666.7
XSECTION	35	ADDHYD	.33	5.67	---	12.08	533	1615.2
XSECTION	36	ADDHYD	.55	5.69	---	12.12	787	1430.9
XSECTION	37	RUNOFF	.02	5.46	---	11.97	56	2800.0
XSECTION	38	ADDHYD	.57	5.68	---	12.10	834	1463.2

RAINFALL OF 7.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 25 STORM 5

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

ALTERNATE 25 STORM 5

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
STRUCTURE 1	RESVOR	.09	6.48	1349.41	12.48	157	1744.4
XSECTION 2	RUNOFF	.03	7.55	---	12.13	99	3300.0
XSECTION 3	ADDHYD	.12	6.77	---	12.20	242	2016.7
XSECTION 4	RUNOFF	.01	5.90	---	12.22	31	3100.0
XSECTION 5	ADDHYD	.13	6.68	---	12.20	273	2100.0
XSECTION 6	RUNOFF	.00	5.90	---	12.05	9	********
XSECTION 7	ADDHYD	.13	6.67	---	12.20	280	2153.8
XSECTION 8	RUNOFF	.00	6.46	---	11.97	9	********
XSECTION 9	ADDHYD	.14	6.66	---	12.19	285	2035.7
STRUCTURE 9	RESVOR	.14	6.66	1340.08	12.23	283	2021.4
XSECTION 10	RUNOFF	.00	5.89	---	11.99	6	********
XSECTION 11	ADDHYD	.14	6.65	---	12.22	286	2042.9
XSECTION 12	RUNOFF	.01	6.31	---	11.97	32	3200.0
XSECTION 13	ADDHYD	.15	6.63	---	12.18	303	2020.0
STRUCTURE 13	RESVOR	.15	6.63	1338.55	12.35	279	1860.0
XSECTION 14	RUNOFF	.02	6.01	---	12.17	43	2150.0
XSECTION 15	ADDHYD	.16	6.57	---	12.32	317	1981.3
XSECTION 16	RUNOFF	.01	5.90	---	12.05	16	1600.0
XSECTION 17	ADDHYD	.17	6.55	---	12.29	327	1923.5
XSECTION 18	RUNOFF	.01	6.01	---	12.13	25	2500.0
XSECTION 19	ADDHYD	.18	6.52	---	12.28	349	1938.9
XSECTION 20	RUNOFF	.01	6.92	---	11.97	40	4000.0
XSECTION 21	ADDHYD	.19	6.54	---	12.24	362	1905.3
STRUCTURE 21	RESVOR	.19	6.54	1337.82	12.52	313	1647.4
XSECTION 22	RUNOFF	.03	6.25	---	12.02	99	3300.0
XSECTION 23	ADDHYD	.22	6.50	---	12.45	334	1518.2
XSECTION 24	RUNOFF	.22	6.61	---	12.28	533	2422.7
STRUCTURE 25	RESVOR	.22	6.61	1352.71	12.68	326	1481.8
XSECTION 26	RUNOFF	.03	6.25	---	12.01	103	3433.3
XSECTION 27	ADDHYD	.25	6.57	---	12.25	346	1384.0

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	PEAK DISCHARGE TIME (HR)	PEAK DISCHARGE RATE (CFS)	PEAK DISCHARGE RATE (CSM)
ALTERNATE 25 STORM 5							
XSECTION 28	RUNOFF	.03	6.25	---	12.05	95	3166.7
XSECTION 29	ADDHYD	.28	6.53	---	12.13	428	1528.6
XSECTION 30	RUNOFF	.02	6.25	---	11.97	55	2750.0
XSECTION 31	ADDHYD	.29	6.52	---	12.09	476	1641.4
XSECTION 32	RUNOFF	.01	6.25	---	11.97	31	3100.0
XSECTION 33	ADDHYD	.30	6.51	---	12.07	504	1680.0
XSECTION 34	RUNOFF	.03	6.24	---	12.14	90	3000.0
XSECTION 35	ADDHYD	.33	6.48	---	12.08	592	1793.9
XSECTION 36	ADDHYD	.55	6.49	---	12.13	886	1610.9
XSECTION 37	RUNOFF	.02	6.25	---	11.97	63	3150.0
XSECTION 38	ADDHYD	.57	6.48	---	12.10	942	1652.6

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
STRUCTURE 25	.22					
ALTERNATE 11		140	*********	*********	*********	*********
ALTERNATE 12		*********	202	*********	*********	*********
ALTERNATE 13		*********	*********	233	*********	*********
ALTERNATE 14		*********	*********	*********	299	*********
ALTERNATE 15		*********	*********	*********	*********	318
ALTERNATE 21		176	*********	*********	*********	*********
ALTERNATE 22		*********	220	*********	*********	*********
ALTERNATE 23		*********	*********	249	*********	*********
ALTERNATE 24		*********	*********	*********	309	*********
ALTERNATE 25		*********	*********	*********	*********	326
STRUCTURE 21	.19					
ALTERNATE 11		78	*********	*********	*********	*********
ALTERNATE 12		*********	129	*********	*********	*********

ALTERNATE	13	*********	*********	167	*********	*********
ALTERNATE	14	*********	*********	*********	244	*********
ALTERNATE	15	*********	*********	*********	*********	288
ALTERNATE	21	103	*********	*********	*********	*********
ALTERNATE	22	*********	156	*********	*********	*********
ALTERNATE	23	*********	*********	191	*********	*********
ALTERNATE	24	*********	*********	*********	277	*********
ALTERNATE	25	*********	*********	*********	*********	313

STRUCTURE 13 .15

ALTERNATE	11	80	*********	*********	*********	*********
ALTERNATE	12	*********	127	*********	*********	*********
ALTERNATE	13	*********	*********	161	*********	*********
ALTERNATE	14	*********	*********	*********	228	*********
ALTERNATE	15	*********	*********	*********	*********	264
ALTERNATE	21	102	*********	*********	*********	*********
ALTERNATE	22	*********	149	*********	*********	*********
ALTERNATE	23	*********	*********	180	*********	*********
ALTERNATE	24	*********	*********	*********	251	*********
ALTERNATE	25	*********	*********	*********	*********	279

STRUCTURE 9 .14

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5

STRUCTURE 9 .14

ALTERNATE	11	85	*********	*********	*********	*********
ALTERNATE	12	*********	132	*********	*********	*********
ALTERNATE	13	*********	*********	166	*********	*********
ALTERNATE	14	*********	*********	*********	233	*********
ALTERNATE	15	*********	*********	*********	*********	272
ALTERNATE	21	107	*********	*********	*********	*********
ALTERNATE	22	*********	154	*********	*********	*********
ALTERNATE	23	*********	*********	185	*********	*********
ALTERNATE	24	*********	*********	*********	257	*********
ALTERNATE	25	*********	*********	*********	*********	283

STRUCTURE 1 .09

ALTERNATE	11	47	*********	*********	*********	*********
ALTERNATE	12	*********	78	*********	*********	*********
ALTERNATE	13	*********	*********	99	*********	*********
ALTERNATE	14	*********	*********	*********	141	*********
ALTERNATE	15	*********	*********	*********	*********	151

ALTERNATE	21	63	*********	*********	*********	*********
ALTERNATE	22	*********	93	*********	*********	*********
ALTERNATE	23	*********	*********	112	*********	*********
ALTERNATE	24	*********	*********	*********	147	*********
ALTERNATE	25	*********	*********	*********	*********	157

XSECTION 1 .09

ALTERNATE	11	71	*********	*********	*********	*********
ALTERNATE	12	*********	111	*********	*********	*********
ALTERNATE	13	*********	*********	139	*********	*********
ALTERNATE	14	*********	*********	*********	192	*********
ALTERNATE	15	*********	*********	*********	*********	226
ALTERNATE	21	88	*********	*********	*********	*********
ALTERNATE	22	*********	124	*********	*********	*********
ALTERNATE	23	*********	*********	148	*********	*********
ALTERNATE	24	*********	*********	*********	207	*********
ALTERNATE	25	*********	*********	*********	*********	233

XSECTION 2 .03

ALTERNATE	11	43	*********	*********	*********	*********

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5

XSECTION 2 .03

ALTERNATE	12	*********	60	*********	*********	*********
ALTERNATE	13	*********	*********	71	*********	*********
ALTERNATE	14	*********	*********	*********	92	*********
ALTERNATE	15	*********	*********	*********	*********	106
ALTERNATE	21	44	*********	*********	*********	*********
ALTERNATE	22	*********	58	*********	*********	*********
ALTERNATE	23	*********	*********	66	*********	*********
ALTERNATE	24	*********	*********	*********	89	*********
ALTERNATE	25	*********	*********	*********	*********	99

XSECTION 3 .12

ALTERNATE	11	75	*********	*********	*********	*********
ALTERNATE	12	*********	116	*********	*********	*********
ALTERNATE	13	*********	*********	146	*********	*********
ALTERNATE	14	*********	*********	*********	203	*********
ALTERNATE	15	*********	*********	*********	*********	236
ALTERNATE	21	94	*********	*********	*********	*********
ALTERNATE	22	*********	135	*********	*********	*********

```
   ALTERNATE   23            ********* *********       162 ********* *********
   ALTERNATE   24            ********* ********* *********       222 *********
   ALTERNATE   25            ********* ********* ********* *********       242

 XSECTION    4          .01
 ---------------------------
   ALTERNATE   11                    7 ********* ********* ********* *********
   ALTERNATE   12            *********       13 ********* ********* *********
   ALTERNATE   13            ********* *********       16 ********* *********
   ALTERNATE   14            ********* ********* *********       24 *********
   ALTERNATE   15            ********* ********* ********* *********       28

   ALTERNATE   21                   10 ********* ********* ********* *********
   ALTERNATE   22            *********       15 ********* ********* *********
   ALTERNATE   23            ********* *********       19 ********* *********
   ALTERNATE   24            ********* ********* *********       27 *********
   ALTERNATE   25            ********* ********* ********* *********       31

 XSECTION    5          .13
 ---------------------------
   ALTERNATE   11                   83 ********* ********* ********* *********
   ALTERNATE   12            *********      129 ********* ********* *********
1
 TR20 ------------------------------------------------------------------- SCS -
                  TIMBERLANDS - PROP. CONDITIONS                VERSION
 05/17/**        MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:41:34                  SUMMARY, JOB NO.   1                      PAGE  23


                          SUMMARY TABLE 3
                          ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID                (SQ MI)          1         2         3         4         5


 XSECTION    5          .13
 ---------------------------
   ALTERNATE   13            ********* *********       162 ********* *********
   ALTERNATE   14            ********* ********* *********       227 *********
   ALTERNATE   15            ********* ********* ********* *********       264
   ALTERNATE   21                  104 ********* ********* ********* *********
   ALTERNATE   22            *********      150 ********* ********* *********

   ALTERNATE   23            ********* *********       180 ********* *********
   ALTERNATE   24            ********* ********* *********       249 *********
   ALTERNATE   25            ********* ********* ********* *********       273

 XSECTION    6          .00
 ---------------------------
   ALTERNATE   11                    2 ********* ********* ********* *********
   ALTERNATE   12            *********         4 ********* ********* *********
   ALTERNATE   13            ********* *********         5 ********* *********
   ALTERNATE   14            ********* ********* *********         7 *********
   ALTERNATE   15            ********* ********* ********* *********         9

   ALTERNATE   21                    3 ********* ********* ********* *********
   ALTERNATE   22            *********         4 ********* ********* *********
   ALTERNATE   23            ********* *********         5 ********* *********
   ALTERNATE   24            ********* ********* *********         8 *********
   ALTERNATE   25            ********* ********* ********* *********         9
```

```
 XSECTION    7          .13
 ---------------------------
    ALTERNATE   11              84 ********* ********* ********* *********
    ALTERNATE   12         ********       131 ********* ********* *********
    ALTERNATE   13         ********* *********       165 ********* *********
    ALTERNATE   14         ********* ********* *********       231 *********
    ALTERNATE   15         ********* ********* ********* *********       270

    ALTERNATE   21             106 ********* ********* ********* *********
    ALTERNATE   22         ********       153 ********* ********* *********
    ALTERNATE   23         ********* *********       184 ********* *********
    ALTERNATE   24         ********* ********* *********       255 *********
    ALTERNATE   25         ********* ********* ********* *********       280

 XSECTION    8          .00
 ---------------------------
    ALTERNATE   11               4 ********* ********* ********* *********
    ALTERNATE   12         ********         6 ********* ********* *********
    ALTERNATE   13         ********* *********         7 ********* *********
1
 TR20 ------------------------------------------------------------------- SCS -
                    TIMBERLANDS - PROP. CONDITIONS                VERSION
 05/17/**         MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
 09:41:34                    SUMMARY, JOB NO.   1                     PAGE  24


                           SUMMARY TABLE 3
                           ---------------
      STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
      QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID                (SQ MI)          1         2         3         4         5


 XSECTION    8          .00
 ---------------------------
    ALTERNATE   14         ********* ********* *********        10 *********
    ALTERNATE   15         ********* ********* ********* *********        11
    ALTERNATE   21               4 ********* ********* ********* *********
    ALTERNATE   22         ********         5 ********* ********* *********
    ALTERNATE   23         ********* *********         6 ********* *********

    ALTERNATE   24         ********* ********* *********         8 *********
    ALTERNATE   25         ********* ********* ********* *********         9

 XSECTION    9          .14
 ---------------------------
    ALTERNATE   11              86 ********* ********* ********* *********
    ALTERNATE   12         ********       133 ********* ********* *********
    ALTERNATE   13         ********* *********       167 ********* *********
    ALTERNATE   14         ********* ********* *********       234 *********
    ALTERNATE   15         ********* ********* ********* *********       273

    ALTERNATE   21             107 ********* ********* ********* *********
    ALTERNATE   22         ********       155 ********* ********* *********
    ALTERNATE   23         ********* *********       186 ********* *********
    ALTERNATE   24         ********* ********* *********       258 *********
    ALTERNATE   25         ********* ********* ********* *********       285

 XSECTION   10          .00
 ---------------------------
```

ALTERNATE	11	2	********	********	********	********
ALTERNATE	12	********	3	********	********	********
ALTERNATE	13	********	********	4	********	********
ALTERNATE	14	********	********	********	6	********
ALTERNATE	15	********	********	********	********	7
ALTERNATE	21	2	********	********	********	********
ALTERNATE	22	********	3	********	********	********
ALTERNATE	23	********	********	4	********	********
ALTERNATE	24	********	********	********	5	********
ALTERNATE	25	********	********	********	********	6

XSECTION 11 .14

ALTERNATE	11	85	********	********	********	********
ALTERNATE	12	********	133	********	********	********
ALTERNATE	13	********	********	168	********	********
ALTERNATE	14	********	********	********	235	********

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 11 .14							
ALTERNATE	15		********	********	********	********	274
ALTERNATE	21		108	********	********	********	********
ALTERNATE	22		********	155	********	********	********
ALTERNATE	23		********	********	187	********	********
ALTERNATE	24		********	********	********	259	********
ALTERNATE	25		********	********	********	********	286
XSECTION 12 .01							
ALTERNATE	11		11	********	********	********	********
ALTERNATE	12		********	18	********	********	********
ALTERNATE	13		********	********	23	********	********
ALTERNATE	14		********	********	********	32	********
ALTERNATE	15		********	********	********	********	38
ALTERNATE	21		12	********	********	********	********
ALTERNATE	22		********	17	********	********	********
ALTERNATE	23		********	********	20	********	********
ALTERNATE	24		********	********	********	28	********
ALTERNATE	25		********	********	********	********	32
XSECTION 13 .15							
ALTERNATE	11		88	********	********	********	********
ALTERNATE	12		********	138	********	********	********
ALTERNATE	13		********	********	174	********	********

ALTERNATE	14	*********	*********	*********	243	*********
ALTERNATE	15	*********	*********	*********	*********	286
ALTERNATE	21	112	*********	*********	*********	*********
ALTERNATE	22	*********	161	*********	*********	*********
ALTERNATE	23	*********	*********	193	*********	*********
ALTERNATE	24	*********	*********	*********	270	*********
ALTERNATE	25	*********	*********	*********	*********	303

XSECTION 14 .02

ALTERNATE	11	11	*********	*********	*********	*********
ALTERNATE	12	*********	18	*********	*********	*********
ALTERNATE	13	*********	*********	23	*********	*********
ALTERNATE	14	*********	*********	*********	34	*********
ALTERNATE	15	*********	*********	*********	*********	40

1

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5

XSECTION 14 .02

ALTERNATE	21	15	*********	*********	*********	*********
ALTERNATE	22	*********	22	*********	*********	*********
ALTERNATE	23	*********	*********	27	*********	*********
ALTERNATE	24	*********	*********	*********	38	*********
ALTERNATE	25	*********	*********	*********	*********	43

XSECTION 15 .16

ALTERNATE	11	87	*********	*********	*********	*********
ALTERNATE	12	*********	140	*********	*********	*********
ALTERNATE	13	*********	*********	178	*********	*********
ALTERNATE	14	*********	*********	*********	254	*********
ALTERNATE	15	*********	*********	*********	*********	298
ALTERNATE	21	112	*********	*********	*********	*********
ALTERNATE	22	*********	166	*********	*********	*********
ALTERNATE	23	*********	*********	200	*********	*********
ALTERNATE	24	*********	*********	*********	284	*********
ALTERNATE	25	*********	*********	*********	*********	317

XSECTION 16 .01

ALTERNATE	11	4	*********	*********	*********	*********
ALTERNATE	12	*********	7	*********	*********	*********
ALTERNATE	13	*********	*********	9	*********	*********
ALTERNATE	14	*********	*********	*********	13	*********
ALTERNATE	15	*********	*********	*********	*********	16
ALTERNATE	21	5	*********	*********	*********	*********

ALTERNATE	22	*********	8	*********	*********	*********
ALTERNATE	23	*********	*********	10	*********	*********
ALTERNATE	24	*********	*********	*********	14	*********
ALTERNATE	25	*********	*********	*********	*********	16

XSECTION 17 .17

ALTERNATE	11	89	*********	*********	*********	*********
ALTERNATE	12	*********	143	*********	*********	*********
ALTERNATE	13	*********	*********	182	*********	*********
ALTERNATE	14	*********	*********	*********	259	*********
ALTERNATE	15	*********	*********	*********	*********	305

ALTERNATE	21	115	*********	*********	*********	*********

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SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5

XSECTION 17 .17

ALTERNATE	22	*********	169	*********	*********	*********
ALTERNATE	23	*********	*********	205	*********	*********
ALTERNATE	24	*********	*********	*********	291	*********
ALTERNATE	25	*********	*********	*********	*********	327

XSECTION 18 .01

ALTERNATE	11	7	*********	*********	*********	*********
ALTERNATE	12	*********	11	*********	*********	*********
ALTERNATE	13	*********	*********	14	*********	*********
ALTERNATE	14	*********	*********	*********	20	*********
ALTERNATE	15	*********	*********	*********	*********	24

ALTERNATE	21	9	*********	*********	*********	*********
ALTERNATE	22	*********	13	*********	*********	*********
ALTERNATE	23	*********	*********	15	*********	*********
ALTERNATE	24	*********	*********	*********	22	*********
ALTERNATE	25	*********	*********	*********	*********	25

XSECTION 19 .18

ALTERNATE	11	93	*********	*********	*********	*********
ALTERNATE	12	*********	150	*********	*********	*********
ALTERNATE	13	*********	*********	191	*********	*********
ALTERNATE	14	*********	*********	*********	273	*********
ALTERNATE	15	*********	*********	*********	*********	324

ALTERNATE	21	121	*********	*********	*********	*********
ALTERNATE	22	*********	178	*********	*********	*********
ALTERNATE	23	*********	*********	216	*********	*********
ALTERNATE	24	*********	*********	*********	309	*********

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   ALTERNATE   25           ********* ********* ********* *********       349

 XSECTION   20          .01
 ---------------------------
   ALTERNATE   11                 18 ********* ********* ********* *********
   ALTERNATE   12           *********        26 ********* ********* *********
   ALTERNATE   13           ********* *********        32 ********* *********
   ALTERNATE   14           ********* ********* *********        42 *********
   ALTERNATE   15           ********* ********* ********* *********        49

   ALTERNATE   21                 16 ********* ********* ********* *********
   ALTERNATE   22           *********        22 ********* ********* *********
1
 TR20 ------------------------------------------------------------------- SCS -
                  TIMBERLANDS - PROP. CONDITIONS                VERSION
 05/17/**        MKEC ENGG CONSULTANTS 9/10/02  WLE3COMB.T20          2.04TEST
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                           SUMMARY TABLE 3
                           ---------------
     STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
     QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

 XSECTION/          DRAINAGE
 STRUCTURE            AREA       STORM NUMBERS.....
   ID                (SQ MI)          1         2         3         4         5


 XSECTION   20          .01
 ---------------------------
   ALTERNATE   23           ********* *********        26 ********* *********
   ALTERNATE   24           ********* ********* *********        35 *********
   ALTERNATE   25           ********* ********* ********* *********        40

 XSECTION   21          .19
 ---------------------------
   ALTERNATE   11                 96 ********* ********* ********* *********
   ALTERNATE   12           *********       155 ********* ********* *********
   ALTERNATE   13           ********* *********       197 ********* *********
   ALTERNATE   14           ********* ********* *********       282 *********
   ALTERNATE   15           ********* ********* ********* *********       335

   ALTERNATE   21                124 ********* ********* ********* *********
   ALTERNATE   22           *********       183 ********* ********* *********
   ALTERNATE   23           ********* *********       223 ********* *********
   ALTERNATE   24           ********* ********* *********       319 *********
   ALTERNATE   25           ********* ********* ********* *********       362

 XSECTION   22          .03
 ---------------------------
   ALTERNATE   11                 33 ********* ********* ********* *********
   ALTERNATE   12           *********        52 ********* ********* *********
   ALTERNATE   13           ********* *********        66 ********* *********
   ALTERNATE   14           ********* ********* *********        92 *********
   ALTERNATE   15           ********* ********* ********* *********       109

   ALTERNATE   21                 36 ********* ********* ********* *********
   ALTERNATE   22           *********        52 ********* ********* *********
   ALTERNATE   23           ********* *********        62 ********* *********
   ALTERNATE   24           ********* ********* *********        87 *********
   ALTERNATE   25           ********* ********* ********* *********        99

 XSECTION   23          .22
```

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 23		.22					
	ALTERNATE 24		*********	*********	*********	294	*********
	ALTERNATE 25		*********	*********	*********	*********	334
XSECTION 24		.22					
	ALTERNATE 11		164	*********	*********	*********	*********
	ALTERNATE 12		*********	253	*********	*********	*********
	ALTERNATE 13		*********	*********	313	*********	*********
	ALTERNATE 14		*********	*********	*********	433	*********
	ALTERNATE 15		*********	*********	*********	*********	508
	ALTERNATE 21		204	*********	*********	*********	*********
	ALTERNATE 22		*********	285	*********	*********	*********
	ALTERNATE 23		*********	*********	338	*********	*********
	ALTERNATE 24		*********	*********	*********	468	*********
	ALTERNATE 25		*********	*********	*********	*********	533
XSECTION 26		.03					
	ALTERNATE 11		34	*********	*********	*********	*********
	ALTERNATE 12		*********	55	*********	*********	*********
	ALTERNATE 13		*********	*********	69	*********	*********
	ALTERNATE 14		*********	*********	*********	97	*********
	ALTERNATE 15		*********	*********	*********	*********	114
	ALTERNATE 21		37	*********	*********	*********	*********
	ALTERNATE 22		*********	54	*********	*********	*********
	ALTERNATE 23		*********	*********	64	*********	*********
	ALTERNATE 24		*********	*********	*********	90	*********
	ALTERNATE 25		*********	*********	*********	*********	103
XSECTION 27		.25					
	ALTERNATE 11		149	*********	*********	*********	*********
	ALTERNATE 12		*********	214	*********	*********	*********

ALTERNATE	13	*********	*********	247	*********	*********
ALTERNATE	14	*********	*********	*********	317	*********
ALTERNATE	15	*********	*********	*********	*********	338
ALTERNATE	21	185	*********	*********	*********	*********
ALTERNATE	22	*********	230	*********	*********	*********
ALTERNATE	23	*********	*********	261	*********	*********
ALTERNATE	24	*********	*********	*********	324	*********

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION	27	.25					
ALTERNATE	25		*********	*********	*********	*********	346
XSECTION	28	.03					
ALTERNATE	11		29	*********	*********	*********	*********
ALTERNATE	12		*********	47	*********	*********	*********
ALTERNATE	13		*********	*********	59	*********	*********
ALTERNATE	14		*********	*********	*********	83	*********
ALTERNATE	15		*********	*********	*********	*********	98
ALTERNATE	21		34	*********	*********	*********	*********
ALTERNATE	22		*********	49	*********	*********	*********
ALTERNATE	23		*********	*********	59	*********	*********
ALTERNATE	24		*********	*********	*********	83	*********
ALTERNATE	25		*********	*********	*********	*********	95
XSECTION	29	.28					
ALTERNATE	11		159	*********	*********	*********	*********
ALTERNATE	12		*********	233	*********	*********	*********
ALTERNATE	13		*********	*********	270	*********	*********
ALTERNATE	14		*********	*********	*********	358	*********
ALTERNATE	15		*********	*********	*********	*********	402
ALTERNATE	21		197	*********	*********	*********	*********
ALTERNATE	22		*********	268	*********	*********	*********
ALTERNATE	23		*********	*********	304	*********	*********
ALTERNATE	24		*********	*********	*********	387	*********
ALTERNATE	25		*********	*********	*********	*********	428
XSECTION	30	.02					
ALTERNATE	11		20	*********	*********	*********	*********
ALTERNATE	12		*********	32	*********	*********	*********
ALTERNATE	13		*********	*********	40	*********	*********
ALTERNATE	14		*********	*********	*********	56	*********
ALTERNATE	15		*********	*********	*********	*********	66

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION	31	.29					
ALTERNATE	11		163	********	********	********	********
ALTERNATE	12		********	241	********	********	********
ALTERNATE	13		********	********	287	********	********
ALTERNATE	14		********	********	********	396	********
ALTERNATE	15		********	********	********	********	459
ALTERNATE	21		203	********	********	********	********
ALTERNATE	22		********	286	********	********	********
ALTERNATE	23		********	********	335	********	********
ALTERNATE	24		********	********	********	430	********
ALTERNATE	25		********	********	********	********	476
XSECTION	32	.01					
ALTERNATE	11		11	********	********	********	********
ALTERNATE	12		********	18	********	********	********
ALTERNATE	13		********	********	23	********	********
ALTERNATE	14		********	********	********	32	********
ALTERNATE	15		********	********	********	********	37
ALTERNATE	21		11	********	********	********	********
ALTERNATE	22		********	16	********	********	********
ALTERNATE	23		********	********	20	********	********
ALTERNATE	24		********	********	********	28	********
ALTERNATE	25		********	********	********	********	31
XSECTION	33	.30					
ALTERNATE	11		165	********	********	********	********
ALTERNATE	12		********	245	********	********	********
ALTERNATE	13		********	********	299	********	********
ALTERNATE	14		********	********	********	419	********
ALTERNATE	15		********	********	********	********	491
ALTERNATE	21		209	********	********	********	********
ALTERNATE	22		********	298	********	********	********
ALTERNATE	23		********	********	352	********	********
ALTERNATE	24		********	********	********	455	********
ALTERNATE	25		********	********	********	********	504

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 34	.03					
ALTERNATE 11		26	*********	*********	*********	*********
ALTERNATE 12		*********	41	*********	*********	*********
ALTERNATE 13		*********	*********	52	*********	*********
ALTERNATE 14		*********	*********	*********	74	*********
ALTERNATE 15		*********	*********	*********	*********	88
ALTERNATE 21		33	*********	*********	*********	*********
ALTERNATE 22		*********	47	*********	*********	*********
ALTERNATE 23		*********	*********	57	*********	*********
ALTERNATE 24		*********	*********	*********	80	*********
ALTERNATE 25		*********	*********	*********	*********	90
XSECTION 35	.33					
ALTERNATE 11		183	*********	*********	*********	*********
ALTERNATE 12		*********	281	*********	*********	*********
ALTERNATE 13		*********	*********	350	*********	*********
ALTERNATE 14		*********	*********	*********	488	*********
ALTERNATE 15		*********	*********	*********	*********	561
ALTERNATE 21		242	*********	*********	*********	*********
ALTERNATE 22		*********	344	*********	*********	*********
ALTERNATE 23		*********	*********	407	*********	*********
ALTERNATE 24		*********	*********	*********	533	*********
ALTERNATE 25		*********	*********	*********	*********	592
XSECTION 36	.55					
ALTERNATE 11		254	*********	*********	*********	*********
ALTERNATE 12		*********	390	*********	*********	*********
ALTERNATE 13		*********	*********	477	*********	*********
ALTERNATE 14		*********	*********	*********	673	*********
ALTERNATE 15		*********	*********	*********	*********	786
ALTERNATE 21		332	*********	*********	*********	*********
ALTERNATE 22		*********	482	*********	*********	*********
ALTERNATE 23		*********	*********	570	*********	*********
ALTERNATE 24		*********	*********	*********	787	*********
ALTERNATE 25		*********	*********	*********	*********	886

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3	4	5
XSECTION 37		.02					
ALTERNATE	11		22	*********	*********	*********	*********
ALTERNATE	12		*********	36	*********	*********	*********
ALTERNATE	13		*********	*********	45	*********	*********
ALTERNATE	14		*********	*********	*********	64	*********
ALTERNATE	15		*********	*********	*********	*********	75
ALTERNATE	21		23	*********	*********	*********	*********
ALTERNATE	22		*********	33	*********	*********	*********
ALTERNATE	23		*********	*********	39	*********	*********
ALTERNATE	24		*********	*********	*********	56	*********
ALTERNATE	25		*********	*********	*********	*********	63
XSECTION 38		.57					
ALTERNATE	11		259	*********	*********	*********	*********
ALTERNATE	12		*********	398	*********	*********	*********
ALTERNATE	13		*********	*********	499	*********	*********
ALTERNATE	14		*********	*********	*********	716	*********
ALTERNATE	15		*********	*********	*********	*********	839
ALTERNATE	21		345	*********	*********	*********	*********
ALTERNATE	22		*********	505	*********	*********	*********
ALTERNATE	23		*********	*********	607	*********	*********
ALTERNATE	24		*********	*********	*********	834	*********
ALTERNATE	25		*********	*********	*********	*********	942

1
TR20 ---------- SCS -
TIMBERLANDS - PROP. CONDITIONS VERSION
05/17/** MKEC ENGG CONSULTANTS 9/10/02 WLE3COMB.T20 2.04TEST

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = postpier.t20 , GIVEN DATA FILE
OUTPUT = postpier.OUT , DATED 05/17/**,09:41:34

FILES GENERATED - DATED 05/17/**,09:41:34

FILE postpier.TMG CONTAINS MESSAGE + WARNING INFORMATION

TOTAL NUMBER OF WARNINGS = 1, MESSAGES = 0

*** TR-20 RUN COMPLETED ***