“NO RISE” HYDRAULIC REPORT

Whispering Woods 3rd Plat
Mouse Creek

Lee’s Summit, Missouri | April 15, 2025

SNYDER & ASSOCIATES

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Whispering Woods 3rd Plat
Mouse Creek

Lee's Summit, Missouri | April 15, 2025

Prepared for:

Whispering Woods Land, L.L.C.
803 P.C.A Road
Warrensburg, Mo 64093

Snyder & Associates, Inc. Project No. 120.0485.11

Prepared by:

I hereby certify that this Engineering Document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the Laws of the State of Missouri.

4/15/25

Shawn Duke, P.E. Date

License Number PE-2013006489

My License Renewal Date is December 31, 2025

Pages or sheets covered by this Seal: All Pages

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APPENDICES

1. INTRODUCTION

This hydraulic report covers the construction of the Whispering Woods 3rd Plat residential development in Lee's Summit, Missouri consisting of a roadway culvert over Mouse Creek, relocation of the Mouse Creek channel to the historical stream alignment, and placement of fill for the development. The development is located within the SW quarter of Section 24, T47N, R32W as depicted in Figure 1-1.

The purpose of this report is to hydraulically design the culvert and conveyance improvements to meet a no-rise condition.

The City of Lee's Summit participates in the National Flood Insurance Program (NFIP). The proposed project is located within a Zone AE special flood hazard area of Mouse Creek, as shown on the annotated NFHL (National Flood Hazard Layer) map panel number 29095C0531G. The map panel is included within the Flood Insurance Study (FIS) developed for Jackson County and Incorporated Areas, Missouri, with an effective date of December 7, 2023. An annotated copy of the NFHL has been included as Figure 1-2.

FILE PATH: V:\Projects\2020\120.0485.11\GIS\Exh_Fig1-1_VicinityMap.mxd

SOURCES: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

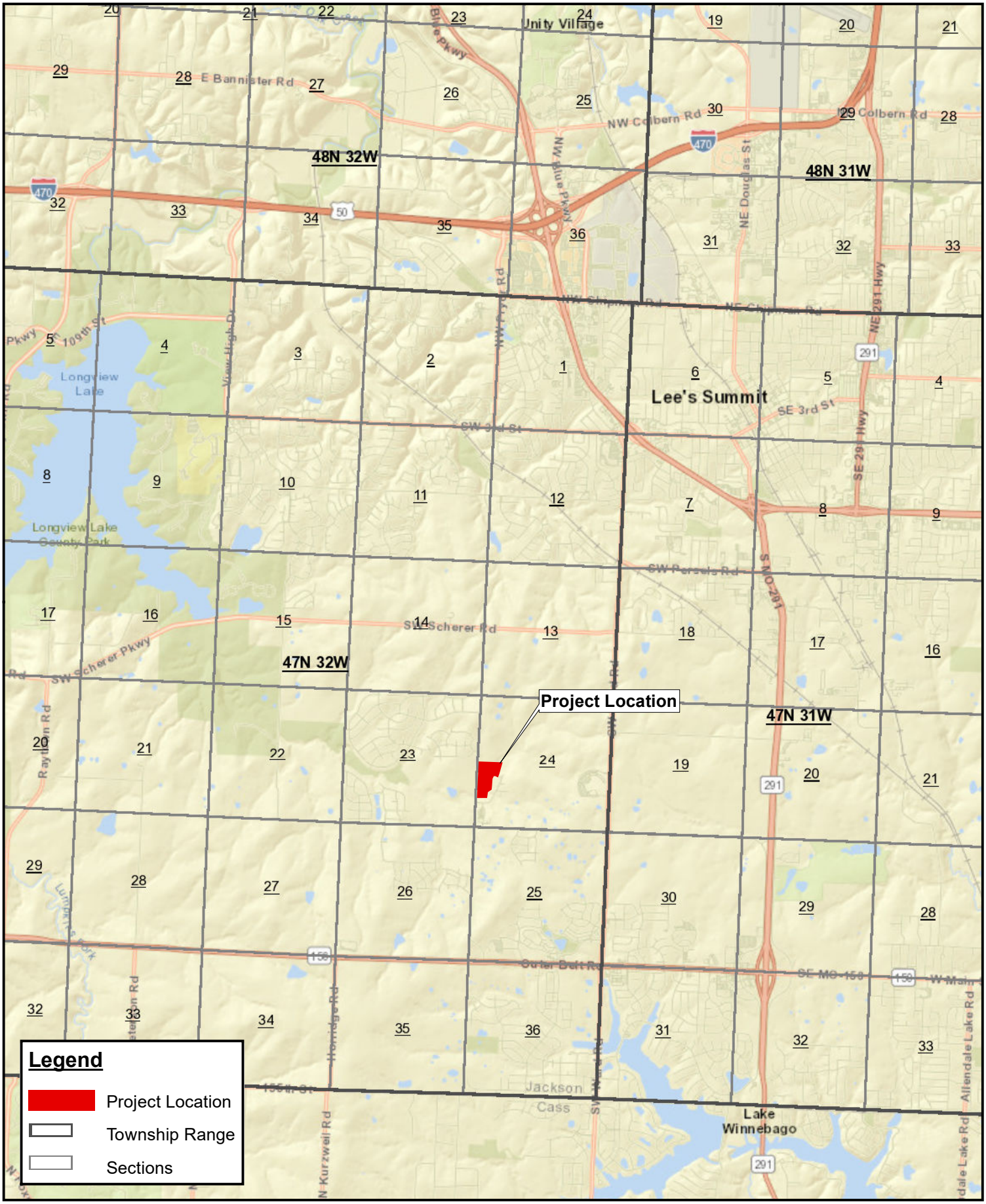

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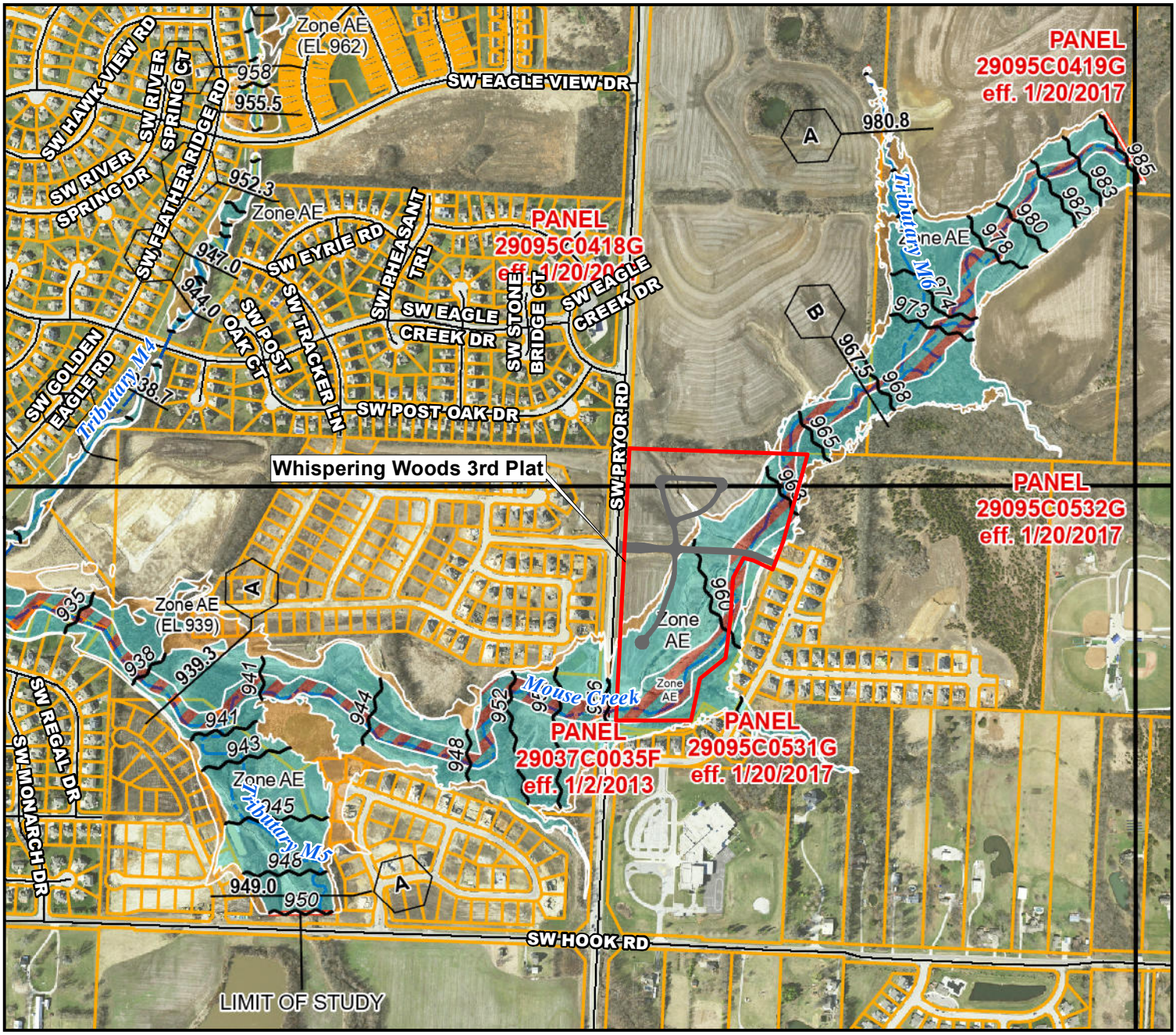
Figure 1-1: Vicinity Map

FILE PATH: V:\Projects\2020\120.0485.11\GIS\Exh_Fig1-2_NFHLMap.mxd

SOURCES: Aerial Imagery: Lee's Summit, 2022;



Legend

- Whispering Woods 3rd Plat
- Road
- Parcels
- FIRM Panels
- Cross-Sections
- Base Flood Elevations
- Profile Baseline

Flood Hazard Boundaries

- Limit Lines
- NP
- SFHA / Flood Zone Boundary
- Flowage Easement Boundary

Flood Hazard Zones

Zone Type

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Area with Risk Due to Levee

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0 400 800

Feet

Figure 1-2: Annotated NFHL Map

2. HYDROLOGY

Peak discharges for the 10-, 2-, 1-, and 0.2-percent annual chance flood events along Mouse Creek were established using a Frequency, Discharge, Drainage Area Curve published in Figure 1 of the Jackson County Flood Insurance Study, effective date December 7, 2023. Table 2-1 summarizes the peak discharges from the effective model near the project location. The discharges were interpolated at each effective cross section using the drainage area noted in the effective model.

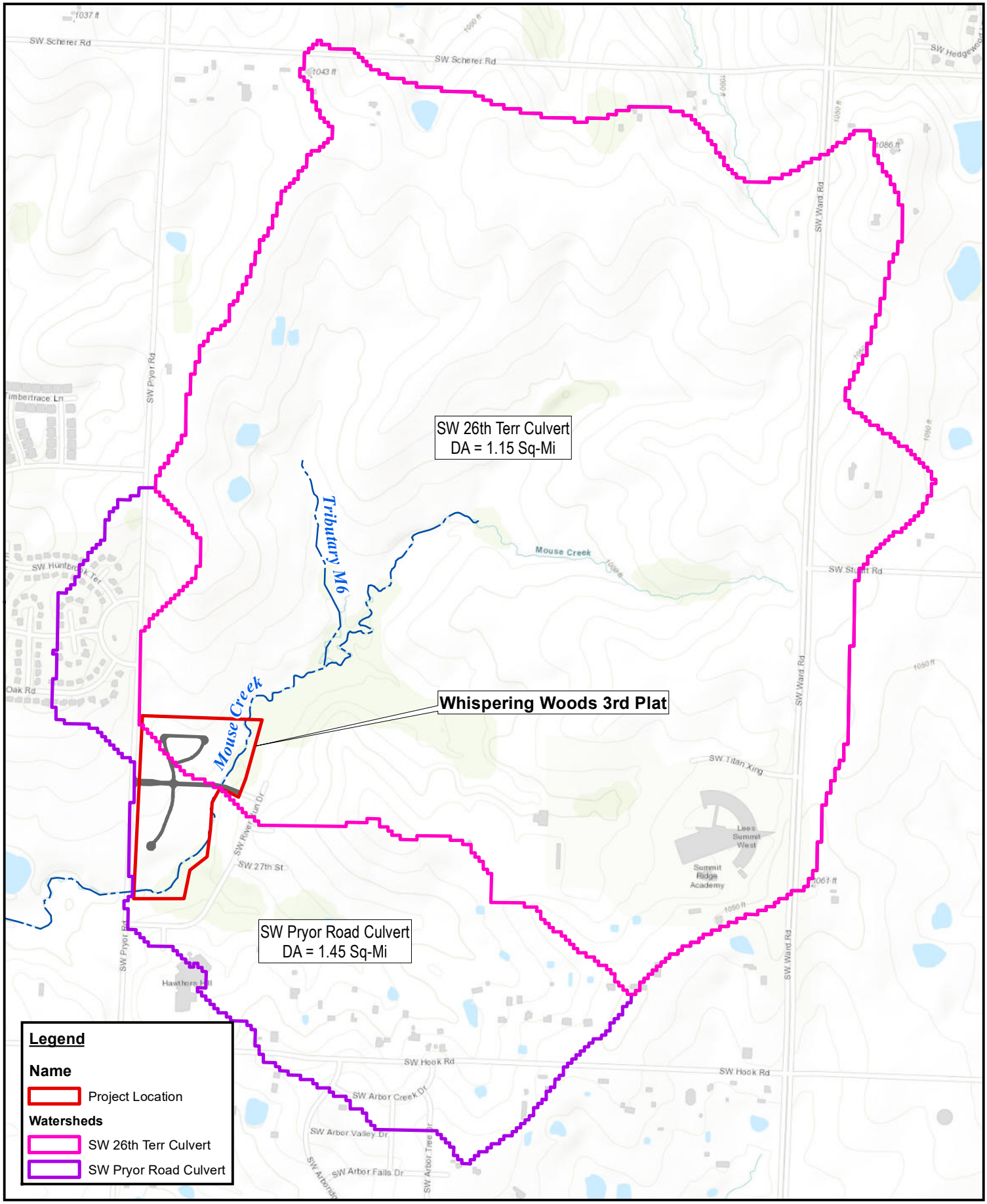
The drainage area to the proposed SW 26th Terrace culvert site is 1.15 square miles and the drainage area to the southern limit of the project at SW Pryor Road is 1.45 square miles as shown in Figure 2-1. Given the close proximity of the project location to the effective model flow changes and the regulatory nature of the 1% annual chance flood profile, these discharges were used for hydraulic design of the culvert.

Table 2-1: Summary of Discharges

Flooding Source and WSP RS	RAS RS	WSP Drainage Area (Sq-Mi)	Peak Discharges (cfs)			
			10%-Annual Chance	2%-Annual Chance	1%-Annual Chance	0.2%-Annual Chance
Mouse Creek						
69	18450	2.63	1,150	2,050	2,700	4,500
70	19950	1.60	800	1,500	2,000	3,300
73A	21450	1.52	750	1,450	1,900	3,000
73	21650	1.34	700	1,300	1,650	2,600
76	24250	0.94	560	1,000	1,400	2,100
77	26250	0.40	310	550	680	1,200

FILE PATH: V:\Projects\2020\120.0485.11\GIS\Exh_Fig2-1_WatershedMap.mxd

SOURCES: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Communi



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N

0 500 1,000

Feet

Figure 2-1: Watershed Map

3. HYDRAULICS

a. Duplicate Model [MouseCreek.p01]

The project is located within the detailed studied reach of Mouse Creek. This reach includes published base flood elevations and a mapped regulatory floodway. A request was made to the FEMA Project Library for a copy of the effective model. The effective model for Mouse Creek was created with U.S. Department of Agriculture, Soil Conservation Service, WSP-IN Step-Backwater Computer Program, December 1971. FEMA provided a paper copy of the input and output data. FEMA's hydrologic and hydraulic analysis of Mouse Creek was completed in 1973 as noted in the paper copy of the effective model.

Elevations in the effective model were originally presented in the NGVD29 vertical datum. The countywide datum conversion used in the FIS is NGVD29 + 0.306 ft = NAVD. Since the WSP model is no longer supported by FEMA and is not available with modern computing systems, the effective model was duplicated in HEC-RAS, v.6.4.1. Ground datapoints, Manning's 'n' values, reach lengths, and other model parameters from the effective model were entered into HEC-RAS for cross sections 69 through 77. Cross section 69 from the effective model represents lettered cross section "A" on the effective FIRM panel. Cross section locations were spatially digitized between letter cross sections along FEMA's published baseline profile (FIS Figure 238P). HEC-RAS river stations were then reassigned based on the distance above SW Scherer Road. Starting water surface elevations were extracted from the FIS profile for Mouse Creek at lettered cross section "A". Since the effective FIS profile is presented in the NAVD elevation datum, the starting water surface elevations had to be converted back to NGVD to match the effective model. The starting water surface elevations for the duplicate model are show in Table 3-1 below.

Table 3-1: Duplicate Model Boundary Conditions

Profile	Elevation NGVD	Elevation NAVD
10 Year	936.39	936.7
50 Year	937.99	938.3
100 Year	938.99	939.3
500 Year	940.19	940.5

The results of the duplicate model are compared back to effective model output in Table 3-2. Values from the effective model were interpolated from the individual effective model cross section rating curves and illustrate that the duplicated model in HEC-RAS v.6.4.1 shows variable changes in the 1% annual chance profile. These variations are due to differences in modeling routines and bridge/culvert calculations between the WSP and HEC-RAS models. However, the duplicated model is determined to be satisfactory for modeling the proposed culvert. Model output from this and all subsequent models are located in Appendix B.

Table 3-2: Duplicate Model Review - Summary of Water Surface Elevations

Cross Section	Effective Model [WSP][12]	Duplicate Model [HEC-RAS][1] MouseCreek.p01	Difference (Duplicate – Effective)	Remark
	1%	1%	1%	
18450	938.99	938.99	0.00	WSP RS 69 (FEMA XS A)
19950	944.59	944.69	0.10	WSP RS 70
21450	954.08	954.02	-0.06	WSP RS 73A
21550	SW Pryor Road			WSP RS 72
21650	956.38	957.04	0.66	WSP RS 73
24250	967.34	966.41	-0.93	WSP RS 76 (FEMA XS B)
26250	980.20	980.76	0.56	WSP RS 77

[1] Elevations in NGVD29
[2] Effective model results interpolated from WSP output rating curves at each river section

b. Pre-Project Model [MouseCreek.p02]

The Pre-Project Model updates the Duplicate Model with new cross sections throughout the study reach including upstream and downstream of the proposed SW 26th Terrace culvert. The pre-project model revisions included the following:

- Copy duplicate model geometry and steady flow file.
- Convert elevations to NAVD using the countywide FIS datum adjustment.
- Keep cross section geometry at RS 18450 (WSP 69/FIS A) for the downstream model tie-in.
- Add additional cross section throughout the model given the large distances between effective cross sections.
- Cut new ground elevation data at RS 19950, 21450, 21650, 24250, 26250 from statewide LiDAR and topographic survey.
- Add natural ground cross sections upstream and downstream of the proposed SW 26th Terrace road crossing.
- Update Manning's 'n' values based on the latest aerial imagery per the following table:

Table 3-3: Pre-Project Model Manning's 'n' Values

Landuse	Manning 'n' value
Channel	0.05
Timber	0.10
Row Crop	0.06
Developed	0.05

- Update Pryor Road culvert from survey data.
- Keep profile baseline but assign the main channel to the graded channel upstream of Pryor Road.
- River cross sections are oriented looking downstream left to right.

Locations of model cross-sections are shown on the Hydraulic Workmap depicted in Figure 4-1 on page 11. The results of the Pre-Project Model are compared to the Duplicate Model and are shown below in

Table 3-4. This comparison shows a decrease in the water surface elevations of all profiles with the additional natural cross sections and updated ground data at effective model cross sections. The pre-project model is considered the base model where all proposed improvements are compared to.

Table 3-4: Pre-Project Model Review - Summary of Water Surface Elevations

Cross Section	Duplicate [HEC-RAS][1] MouseCreek.p01				Pre-Project [HEC-RAS][2] MouseCreek.p02				Difference (Pre-Project - Duplicate)			
	1%	10%	2%	0.2%	1%	10%	2%	0.2%	1%	10%	2%	0.2%
18450	939.30	936.70	938.30	940.50	939.30	936.70	938.30	940.50	0.00	0.00	0.00	0.00
19084					940.62	938.79	940.09	941.71				
19642					941.44	939.91	941.40	942.77				
19950	945.00	943.85	945.11	946.84	943.77	941.70	943.87	947.46	-1.23	-2.15	-1.24	0.62
20315					946.59	944.54	946.45	948.71				
21040					950.26	948.60	949.65	951.03				
21450	954.33	951.22	953.80	955.50	950.98	949.34	950.46	951.73	-3.35	-1.88	-3.34	-3.77
21550	SW Pryor Road											
21650	957.35	956.04	957.10	957.79	952.31	949.52	951.73	954.68	-5.04	-6.52	-5.37	-3.11
21976					953.90	952.54	953.24	955.55				
22303					955.93	953.89	955.12	956.89				
22589					957.44	955.31	956.67	958.27				
22834					958.42	956.19	957.61	959.29				
22940					958.58	956.62	957.88	959.43				
23020.4					959.27	957.15	958.46	960.20				
23181					960.24	957.73	959.36	961.05				
23270.2					961.42	959.81	960.76	962.39				
23370.1					962.70	960.91	962.17	963.33				
23470					963.88	962.33	963.34	964.57				
23897					965.17	963.38	964.54	965.97				
24250	966.72	964.92	966.19	967.38	966.77	964.98	966.14	967.54	0.05	0.06	-0.05	0.16
24918					968.92	968.04	968.87	969.93				
25447					972.25	970.53	972.05	972.48				
26250	981.07	980.29	980.76	981.69	978.35	977.99	978.35	979.08	-2.72	-2.30	-2.41	-2.61

[1] Elevations converted to NAVD (NGVD29+0.306)
[2] Elevations in NAVD

c. Post Project Model [MouseCreek.p08]

The Pre-Project Model geometry was copied and used for the basis of the Post Project Model. The proposed culvert design and site grading was added to HEC-RAS for evaluation of changes to the flood profiles. The following changes were incorporated into the post project model:

- Copy pre-project model geometry and steady flow file.
- Create a proposed surface by combining the proposed grading with the survey+lidar terrain.
- Modify cross sections in the project area with the proposed grading.
- Shift the main channel designation to the old river channel with new channel grading.
- Add proposed culvert for SW 26th Terrace.

  - Triple 8 ft x 8 ft Reinforced Concrete Box Culvert
  - 90 ft length
  - Manning's 'n' 0.013
  - Flared wingwalls
  - US invert 949.7
  - DS invert 949.3
  - Slope 0.44%
- Culvert station 22885
- Deck/Roadway distance = 24 ft, width = 62 ft, SS 4:1
- Modify contraction and expansion coefficients to 0.3 and 0.5 respectively to RS 22834, 22940, and 23020.4.
- Use a two-stage channel design with the flood plain bench on the left descending bank through the historical channel alignment to improve conveyance below the SW 26th Terrace culvert.
  - 5 ft bottom width
  - Low stage channel depth 3 ft
  - 3:1 slopes
  - 8 ft wide right bank bench
- Add ineffective flow areas to the upstream and downstream culvert cross sections.

The results of the Post Project Model are shown in Table 3-5 and compared to the Pre-Project Model. These results indicate that the proposed culvert and channel grading will decrease the 1% annual chance profile below SW 26th Terrace when compared to the pre-project model. The furthest upstream property boundary is near cross section 23470, at this cross section the post project 1% annual chance profile is lower than the pre-project model. All remaining modeled cross sections upstream of the property show no change to the 1% annual chance profile.

Table 3-5: Post Project Model Review - Summary of Water Surface Elevations

Cross Section	Pre-Project [HEC-RAS][1]				Post Project [HEC-RAS][1]				Difference (Post Project - Pre-Project)			
	MouseCreek.p02				MouseCreek.p08							
	1%	10%	2%	0.2%	1%	10%	2%	0.2%	1%	10%	2%	0.2%
18450	939.30	936.70	938.30	940.50	939.30	936.70	938.30	940.50	0.00	0.00	0.00	0.00
19084	940.62	938.79	940.09	941.71	940.62	938.79	940.09	941.71	0.00	0.00	0.00	0.00
19642	941.44	939.91	941.40	942.77	941.44	939.91	941.40	942.77	0.00	0.00	0.00	0.00
19950	943.77	941.70	943.87	947.46	943.77	941.70	943.87	947.46	0.00	0.00	0.00	0.00
20315	946.59	944.54	946.45	948.71	946.59	944.54	946.45	948.71	0.00	0.00	0.00	0.00
21040	950.26	948.60	949.65	951.03	950.26	948.60	949.65	951.03	0.00	0.00	0.00	0.00
21450	950.98	949.34	950.46	951.73	950.98	949.34	950.46	951.73	0.00	0.00	0.00	0.00
21550	SW Pryor Road											
21650	952.31	949.52	951.73	954.68	952.31	949.52	951.73	954.68	0.00	0.00	0.00	0.00
21976	953.90	952.54	953.24	955.55	953.49	951.92	952.87	955.30	-0.41	-0.62	-0.37	-0.25
22303	955.93	953.89	955.12	956.89	954.75	952.83	954.00	955.90	-1.18	-1.06	-1.12	-0.99
22589	957.44	955.31	956.67	958.27	956.19	954.01	955.30	957.33	-1.25	-1.30	-1.37	-0.94
22834	958.42	956.19	957.61	959.29	956.69	954.53	955.86	957.76	-1.73	-1.66	-1.75	-1.53
22885	SW 26th Terrace											
22940	958.58	956.62	957.88	959.43	957.93	954.90	956.64	960.35	-0.65	-1.72	-1.24	0.92

Cross Section	Pre-Project [HEC-RAS][1]				Post Project [HEC-RAS][1]				Difference (Post Project - Pre-Project)			
	MouseCreek.p02				MouseCreek.p08							
	1%	10%	2%	0.2%	1%	10%	2%	0.2%	1%	10%	2%	0.2%
23020.4	959.27	957.15	958.46	960.20	957.95	954.92	956.65	960.45	-1.32	-2.23	-1.81	0.25
23181	960.24	957.73	959.36	961.05	959.24	957.02	958.44	960.93	-1.00	-0.71	-0.92	-0.12
23270.2	961.42	959.81	960.76	962.39	961.40	959.51	960.67	962.20	-0.02	-0.30	-0.09	-0.19
23370.1	962.70	960.91	962.17	963.33	962.56	960.90	962.09	963.08	-0.14	-0.01	-0.08	-0.25
23470	963.88	962.33	963.34	964.57	963.62	962.30	963.16	964.23	-0.26	-0.03	-0.18	-0.34
23897	965.17	963.38	964.54	965.97	965.17	963.34	964.54	965.96	0.00	-0.04	0.00	-0.01
24250	966.77	964.98	966.14	967.54	966.77	964.98	966.14	967.54	0.00	0.00	0.00	0.00
24918	968.92	968.04	968.87	969.93	968.92	968.04	968.87	969.93	0.00	0.00	0.00	0.00
25447	972.25	970.53	972.05	972.48	972.25	970.53	972.05	972.48	0.00	0.00	0.00	0.00
26250	978.35	977.99	978.35	979.08	978.35	977.99	978.35	979.08	0.00	0.00	0.00	0.00

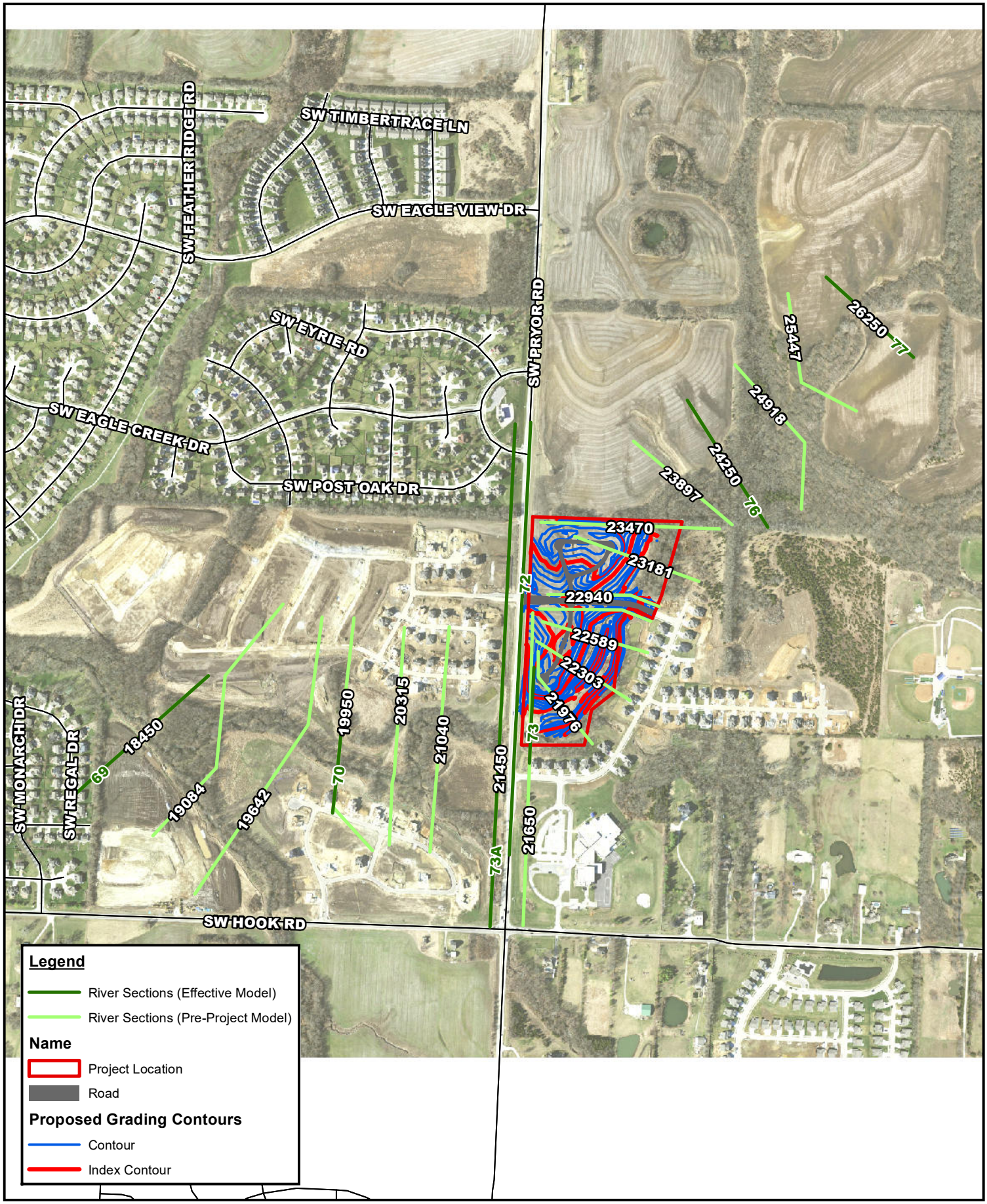
[1] Elevations in NAVD

4. CONCLUSION

The results of the Post Project Model shown in Table 3-5 and compared to the Pre-Project Model indicate that the proposed culvert and channel grading will decrease the 1% annual chance profile below SW 26th Terrace when compared to the pre-project model therefore meeting the "No Rise" requirements.
This study is requesting approval of the Floodplain development permit for the proposed culvert and grading improvements associated with the 26th Terrace Street Improvements with Whispering Woods 3rd Plat.

FILE PATH: V:\Projects\2020\120.0485.11\GIS\Exh_Fig3-1_HydraulicWorkmap.mxd

SOURCES: Aerial Imagery: Lee's Summit, 2022;



SNYDER & ASSOCIATES

0 400 800

Feet

Figure 3-1: Hydraulic Workmap

APPENDIX A
HYDROLOGIC DATA

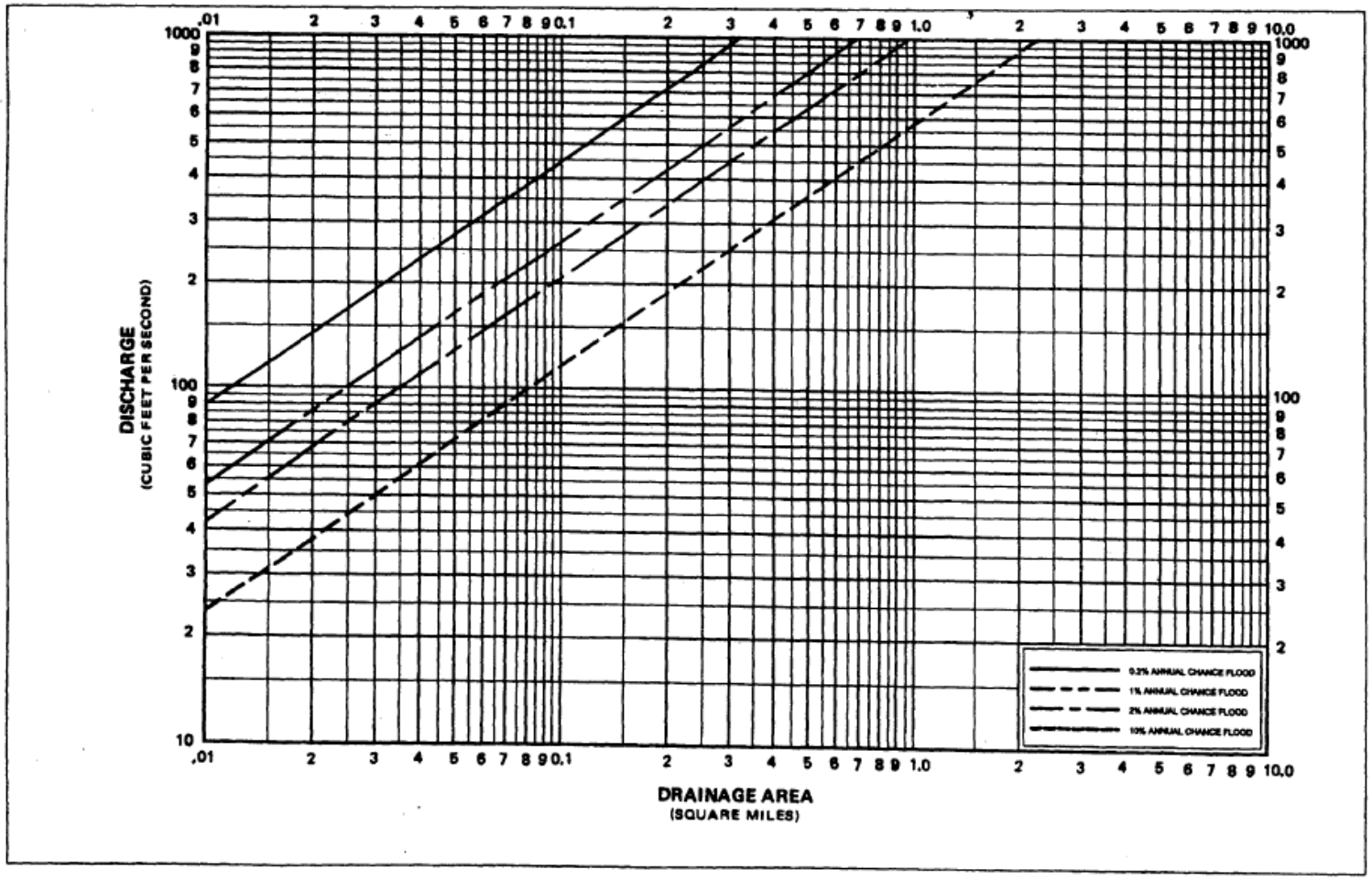


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

JACKSON COUNTY, MO
AND INCORPORATED AREAS

FREQUENCY DISCHARGE, DRAINAGE AREA CURVES

LITTLE CEDAR CREEK, LITTLE CEDAR CREEK TRIBUTARY, MOUSE CREEK, TRIBUTARY B3 TO BIG CREEK, TRIBUTARY J1, TRIBUTARY M1, TRIBUTARY M2, TRIBUTARY M3, TRIBUTARY M4, TRIBUTARY M5, AND TRIBUTARY M6

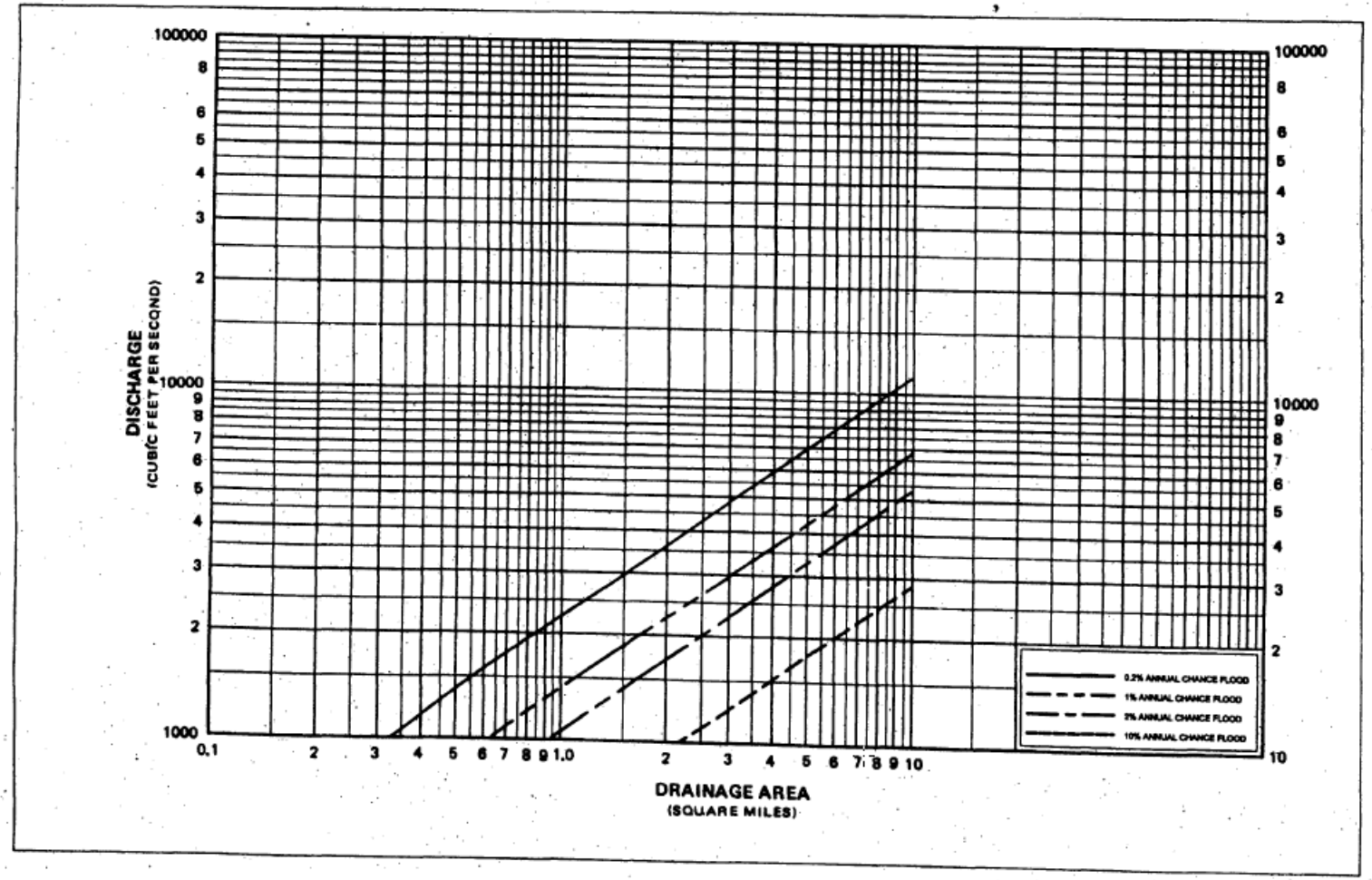


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

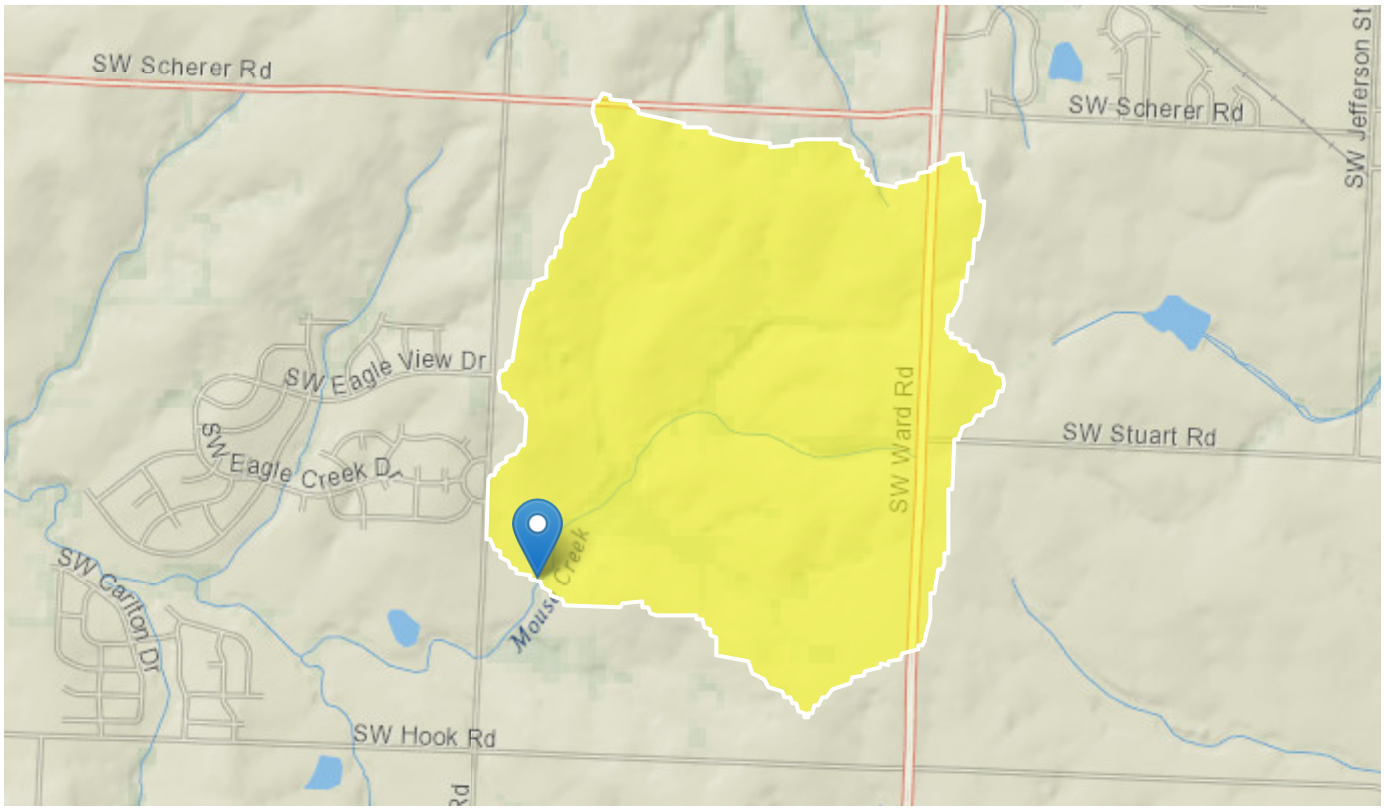
JACKSON COUNTY, MO
AND INCORPORATED AREAS

FREQUENCY DISCHARGE, DRAINAGE AREA CURVES

LITTLE CEDAR CREEK, LITTLE CEDAR CREEK TRIBUTARY, MOUSE CREEK, TRIBUTARY B3 TO BIG CREEK, TRIBUTARY J1, TRIBUTARY M1, TRIBUTARY M2, TRIBUTARY M3, TRIBUTARY M4, TRIBUTARY M5, AND TRIBUTARY M6

SW 26th Terrace Culvert

Region ID: MO
Workspace ID: MO20220617174331310000
Clicked Point (Latitude, Longitude): 38.87401, -94.41367
Time: 2022-06-17 12:43:54 -0500



Drainage area and stream stats flow to the SW 26th Terrace Culvert (Whispering Woods 3rd Plat)

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSHAPE	Basin Shape Factor for Area	3.14	dimensionless
DRNAREA	Area that drains to a point on a stream	1.15	square miles
IMPNLCD01	Percentage of impervious area determined from NLCD 2001 impervious dataset	1.86	percent

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Rural Statewide Region 1 SIR 2014 5165]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.15	square miles	0.11	8212.38
BSHAPE	Basin Shape Factor	3.14	dimensionless	2.25	26.59

Peak-Flow Statistics Parameters [Peak Urban Statewide SIR 2010 5073]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.15	square miles	0.28	189
IMPNLCD01	Percent Impervious NLCD2001	1.86	percent	2.3	46

Peak-Flow Statistics Flow Report [Peak Rural Statewide Region 1 SIR 2014 5165]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
50-percent AEP flood	310	ft^3/s	38.4
20-percent AEP flood	582	ft^3/s	30.8
10-percent AEP flood	789	ft^3/s	29.1
4-percent AEP flood	1070	ft^3/s	28.8
2-percent AEP flood	1300	ft^3/s	28.7
1-percent AEP flood	1520	ft^3/s	29.8
0.5-percent AEP flood	1750	ft^3/s	31
0.2-percent AEP flood	2050	ft^3/s	33.2

Peak-Flow Statistics Disclaimers [Peak Urban Statewide SIR 2010 5073]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [Peak Urban Statewide SIR 2010 5073]

Statistic	Value	Unit
50-percent AEP flood	217	ft^3/s
20-percent AEP flood	401	ft^3/s
10-percent AEP flood	549	ft^3/s
4-percent AEP flood	755	ft^3/s
2-percent AEP flood	930	ft^3/s
1-percent AEP flood	1110	ft^3/s
0.2-percent AEP flood	1590	ft^3/s

Peak-Flow Statistics Citations

Southard, R.E.,2010, Estimation of the Magnitude and Frequency of Floods in Urban Basins in Missouri: U.S. Geological Survey Scientific Investigations Report 2010-5073, 27 p. (http://pubs.usgs.gov/sir/2010/5073/)

Southard, R.E., and Veilleux, A.G.,2014, Methods for estimating annual exceedance-probability discharges and largest recorded floods for unregulated streams in rural Missouri: U.S. Geological Survey Scientific Investigations Report 2014–5165, 39 p. (http://pubs.usgs.gov/sir/2014/5165/)

Application Version: 4.10.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

APPENDIX B
HYDRAULIC DATA

COMPUTER RUNS (INCLUDED WITH SUBMITTAL)

HEC-RAS Project: MouseCreek.prj			
Model Name	**Plan File**	**Geometry File**	**Steady Flow File**
Duplicate	MouseCreek.p01	MouseCreek.g01	MouseCreek.f01
Pre-Project	MouseCreek.p02	MouseCreek.g02	MouseCreek.f02
Post Project	MouseCreek.p08	MouseCreek.g09	MouseCreek.f02

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XSECTN   31      1.0      1.0      0.0      0.0      .0.44    WSP 440
ELEV     986.0   967.0    971.0    1.0                        WSP 441
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N VALUE  0.075   0.050    0.075                               WSP 442
SEGMENT  2.              3.                                  WSP 443
DATA     -910.   986.5    -590.    977.1    -395.0   971.0    WSP 444
DATA     -395.0  971.0    -390.    967.0    -385.    967.5    WSP 445
DATA     -375.0  971.4    -375.0   971.4    -225.    973.2    WSP 446
DATA  1  0.      982.5    160.     988.4                      WSP 447
TITLE    CEDAR CREEK TRIB. H                                 WSP 448
TRIBUTARY 41     1600.    1600.                               WSP 449
XSECTN   42      1.0      1.0      0.0      0.0      0.19     WSP 450
ELEV     1000.0  982.8    984.8    1.0                        WSP 451
N VALUE  0.070   0.050    0.070                               WSP 452
SEGMENT  2.              3.                                  WSP 453
DATA     -730.   1002.0   -575.    992.1    -370.    989.1    WSP 454
DATA     -237.0  984.8    -237.0   984.8    -220.    982.8    WSP 455
DATA     -218.   983.0    -215.    983.9    -203.0   986.1    WSP 456
DATA     -203.0  986.1    0.       994.7    270.     999.2    WSP 457
DATA  1  270.    1000.0                                       WSP 458
TITLE    LEES SUMMIT FLOOD INS. STUDY - CREEK E - APRIL 1973 WSP 459
FINAL  3 174                                                 WSP 460
CSM-ELEV 25.             50.              75.                WSP 461
CSM-ELEV 100.            200.             300.               WSP 462
CSM-ELEV 400.            500.             1000.              WSP 463
CSM-ELEV 1500.           2000.            2500.              WSP 464
CSM-ELEV 3000.           3500.            4000.              WSP 465
SLOPE    0.0155                                              WSP 466
XSECTN   59      100.     100.     0.0      0.0      0.32     WSP 467
ELEV     909.0   888.4    893.9    1.0                        WSP 468
N VALUE  0.070   0.050    0.070                               WSP 469
SEGMENT  2.              3.                                  WSP 470
DATA     -52F.   917.1    -62.     897.0    0.0      895.1    WSP 471
DATA     0.      895.1    16.      888.4    30.      888.7    WSP 472
DATA     45.0    893.9    45.0     893.9    220.     891.4    WSP 473
DATA  1  280.    898.4    345.     900.2    345.     909.0    WSP 474
BRIDGE   60      100.     100.                                WSP 475
COEF     0.80    0.60     .80      1.0                        WSP 476
DATA     14.     896.5    14.      889.5    24.      889.2    WSP 477
DATA  1  24.     896.5    14.      896.5                      WSP 478
DATA     -655.   925.1    -290.    902.8    19.      897.8    WSP 479
DATA  2  115.    896.8    433.     900.1                      WSP 480
XSECTN   61      1.0      1.0      0.0      .0       0.32     WSP 481
ELEV     916.0   894.6    896.4    1.0                        WSP 482
N VALUE  0.070   0.055    0.070                               WSP 483
SEGMENT  2.              3.                                  WSP 484
DATA     -230.   918.0    0.       902.2    70.0     896.6    WSP 485
DATA     70.0    896.6    79.      894.6    84.      894.8    WSP 486
DATA     86.0    896.4    86.0     896.4    96.      896.4    WSP 487
DATA  1  105.    900.2    240.     906.0    480.     916.4    WSP 488
TITLE    MOUSE CREEK                                         WSP 489
FINAL  3 174     65  67   69  72   76                         WSP 490
CSM-ELEV 20.             40.              60.                WSP 491
CSM-ELEV 100.            150.             200.               WSP 492
CSM-ELEV 300.            400.             500.               WSP 493
CSM-ELEV 600.            800.             1000.              WSP 494
CSM-ELEV
SLOPE    0.0020                                              WSP 496
XSECTN   63A     100.     100.     0.0      0.0      7.10     WSP 497
ELEV     897.0   882.8    886.2    1.0                        WSP 498
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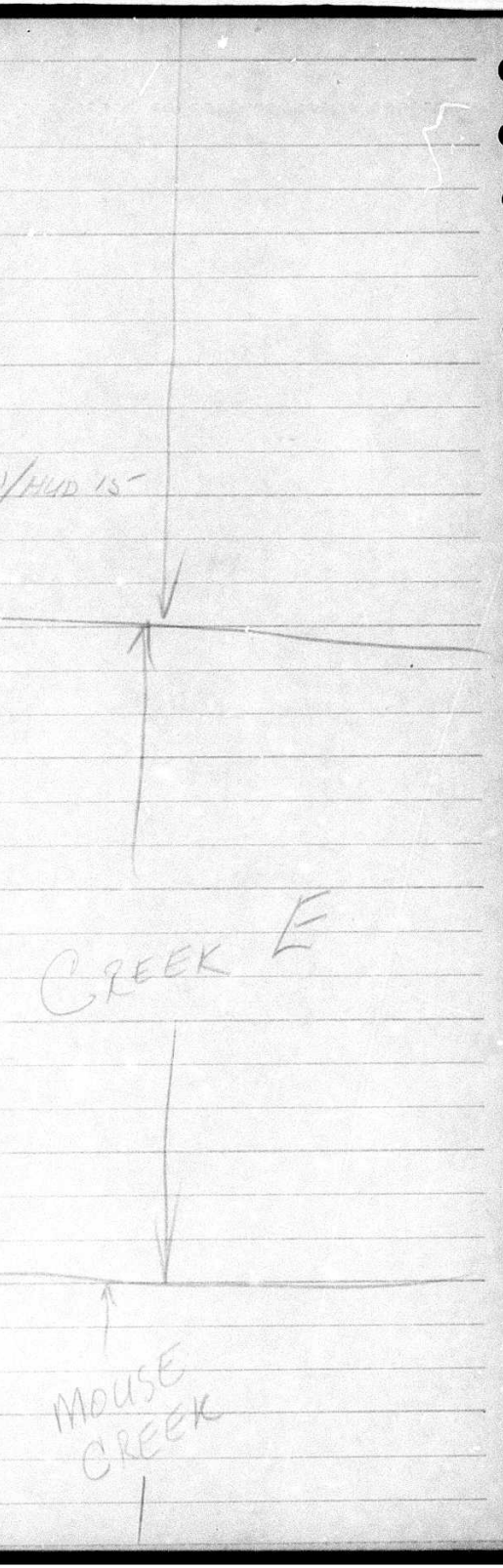

XSECTN	63A	100.	100.	0.0	0.0	7.10	WSP 497
ELEV	897.0	882.8	886.2	1.0			WSP 498

N VALUE	0.075	0.055	0.075				WSP 499
SEGMENT	2.		3.				WSP 500
DATA	-176.	899.6	0.	894.4	36.	892.9	WSP 501
DATA	63.0	886.2	63.0	886.2	72.	883.4	WSP 502
DATA	81.	882.8	99.	883.5	100.0	886.2	WSP 503
DATA	100.0	886.2	111.	886.9	117.	888.8	WSP 504
DATA 1	400.	887.5	755.	893.3	990.	901.1	WSP 505
BRIDGE	62	100.	100.				WSP 506
COEF	0.85	0.60	0.80	1.0			WSP 507
DATA	31.	888.7	31.	883.7	38.	880.3	WSP 508
DATA	52.	879.1	69.	879.0	69.	888.8	WSP 509
DATA 1	31.	888.7					WSP 510
DATA	-765.	897.2	-445.	892.4	-15.	887.7	WSP 511
DATA	0.	888.3	31.	889.9	71.	890.3	WSP 512
DATA 2	160.	886.1	630.	892.7	870.	905.9	WSP 513
XSECTN	63	5500.	3100.	0.0	0.0	7.10	WSP 514
ELEV	902.0	882.8	886.2	1.0			WSP 515
N VALUE	0.075	0.055	0.075				WSP 516
SEGMENT	2.		3.				WSP 517
DATA	-176.	902.0	-176.	899.6	0.	894.4	WSP 518
DATA	36.	892.9	63.0	886.2	63.0	886.2	WSP 519
DATA	72.	883.4	81.	882.8	99.	883.5	WSP 520
DATA	100.0	886.2	100.0	886.2	111.	886.9	WSP 521
DATA	117.	888.8	400.	887.5	755.	893.3	WSP 522
DATA 1	990.	901.1	990.	902.0			WSP 523
XSECTN	64	5200.	3400.	0.0	0.0	6.08	WSP 524
ELEV	917.0	893.7	901.1	1.0			WSP 525
N VALUE	0.090	0.055	0.080				WSP 526
SEGMENT	2.		3.				WSP 527
DATA	-415.	925.1	-330.	916.7	-220.	903.9	WSP 528
DATA	-100.0	902.2	-100.0	902.2	-95.	894.0	WSP 529
DATA	-81.	893.7	-68.	894.8	-59.0	901.1	WSP 530
DATA	-59.0	901.1	0.	901.6	275.	902.2	WSP 531
DATA 1	625.	905.4	870.	916.1	870.	917.0	WSP 532
XSECTN	65	4600.	3400.	0.0	0.0	5.68	WSP 533
ELEV	922.0	903.4	906.1	1.0			WSP 534
N VALUE	0.070	0.050	0.070				WSP 535
SEGMENT	2.		3.				WSP 536
DATA	-315.	922.0	-315.	921.9	-185.	910.2	WSP 537
DATA	-88.0	906.1	-88.0	906.1	-80.	903.5	WSP 538
DATA	-52.	903.4	-49.0	907.3	-49.0	907.3	WSP 539
DATA	-30.	909.0	0.	913.6	245.	914.7	WSP 540
DATA 1	880.	924.5					WSP 541
XSECTN	67	3000.	2400.	0.0	0.0	3.79	WSP 542
ELEV	943.0	918.6	923.3	1.0			WSP 543
N VALUE	0.070	0.050	0.070				WSP 544
SEGMENT	2.		3.				WSP 545
DATA	-65.	948.0	0.	937.9	47.	926.7	WSP 546
DATA	63.0	925.0	63.0	925.0	68.	918.6	WSP 547
DATA	92.	918.8	97.0	923.3	97.0	923.3	WSP 548
DATA 1	470.	924.4	925.	935.1	1300.	943.1	WSP 549
XSECTN	69	1500.	1200.	0.0	0.0	2.63	WSP 550
ELEV	949.0	930.6	933.2	1.0			WSP 551
N VALUE	0.070	0.050	0.070				WSP 552
SEGMENT	2.		3.				WSP 553
DATA	-638.	959.3	-295.	935.8	-260.	935.9	WSP 554
DATA	-252.0	933.2	-252.0	933.2	-250.	930.6	WSP 555

X-SEC USED W/HUD 15

MOUSE CREEK

X-SEC USED W/HUD 15

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DATA       -638.     959.3     -295.     935.8     -260.     935.9     WSP 554
DATA       -252.0    933.2     -252.0    933.2     -250.     930.6     WSP 555
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DATA       -235.     930.6     -232.0    933.7     -232.0    933.7     WSP 556
DATA       -180.     935.4     -165.     938.0     0.        938.8     WSP 557
DATA   1   500.      943.3     500.      949.0                         WSP 558
XSECTN     70        1500.     1100.     0.0       0.0       1.60      WSP 559
ELEV       958.0     936.6     942.2     1.0                           WSP 560
N VALUE    0.070     0.050     0.070                                   WSP 561
SEGMENT    2.                  3.                                    WSP 562
DATA       -315.     965.5     -125.     947.4     0.0       944.7     WSP 563
DATA       0.0       944.7     12.       936.6     35.       936.9     WSP 564
DATA       45.0      942.2     45.0      942.2     185.      946.3     WSP 565
DATA   1   235.      956.7     235.      958.0                         WSP 566
XSECTN     73A       100.      100.      0.0       0.0       1.52      WSP 567
ELEV       977.0     945.2     952.8     1.0                           WSP 568
N VALUE    0.070     0.050     0.070     0.055     0.070               WSP 569
SEGMENT    2.        4.        5.                                      WSP 570
DATA       -1200.    977.9     -975.     965.7     -920.0    962.9     WSP 571
DATA       -920.0    962.9     -914.     956.9     -910.     956.9     WSP 572
DATA       -901.0    961.2     -901.0    961.2     -750.     955.5     WSP 573
DATA       260.0     953.4     260.0     953.4     278.      945.2     WSP 574
DATA       286.      945.8     298.0     952.8     298.0     952.8     WSP 575
DATA       615.      956.5     745.      957.9     1330.     970.0     WSP 576
DATA   1   2000.     982.7                                             WSP 577
BRIDGE     72        100.      100.                                    WSP 578
COEF       0.80      0.60      0.80      1.0                           WSP 579
DATA       -752.     959.1     -752.     955.5     -748.     955.5     WSP 580
DATA       -748.     959.1     255.      953.1     255.      945.8     WSP 581
DATA       265.      945.8     265.      953.1     255.      953.1     WSP 582
DATA   1   -748.     959.1     -752.     959.1                         WSP 583
DATA       -1600.    978.7     -1100.    962.2     -965.     961.8     WSP 584
DATA       -765.     962.2     -750.     962.1     260.      955.5     WSP 585
DATA   2   745.      957.9     1330.     970.0     2000.     982.7     WSP 586
XSECTN     73        2600.     2400.     0.0       0.0       1.34      WSP 587
ELEV       977.0     945.2     952.8     1.0                           WSP 588
N VALUE    0.085     0.055     0.075                                   WSP 589
SEGMENT    2.                  3.                                    WSP 590
DATA       -180.     977.0     -180.     962.0     -120.     952.0     WSP 591
DATA       0.0       953.4     0.0       953.4     18.       945.2     WSP 592
DATA       26.       945.8     38.0      952.8     38.0      952.8     WSP 593
DATA   1   355.      956.5     430.      961.6     430.      977.0     WSP 594
XSECTN     76        2000.     1800.     0.0       0.0       0.94      WSP 595
ELEV       983.0     959.2     963.4     1.0                           WSP 596
N VALUE    0.075     0.055     0.075                                   WSP 597
SEGMENT    2.                  3.                                    WSP 598
DATA       -440.     984.5     -250.     967.2     -121.0    965.0     WSP 599
DATA       -121.0    965.0     -115.     959.3     -109.     959.2     WSP 600
DATA       -105.0    963.4     -105.0    963.4     0.        966.7     WSP 601
DATA   1   210.      972.2     515.      983.8                         WSP 602
XSECTN     77        1.0       1.0       0.0       0.0       0.40      WSP 603
ELEV       994.0     975.3     978.6     1.0                           WSP 604
N VALUE    0.070     0.055     0.070                                   WSP 605
SEGMENT    2.                  3.                                    WSP 606
DATA       -440.     994.0     -440.     993.3     -240.     983.7     WSP 607
DATA       0.        979.4     29.0      979.0     29.0      979.0     WSP 608
DATA       31.       975.3     32.       975.3     34.       976.8     WSP 609
DATA       50.0      978.6     50.0      978.6     148.      978.8     WSP 610
DATA   1   315.      992.3     315.      994.0                         WSP 611
TITLE      MOUSE CREEK TRIB A                                         WSP 612
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MOUSE CREEK

x-sec Used w/ HUD 15

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DATA   1  315.      992.3     315.      994.0                                WSP 611
TITLE     MOUSE CREEK TRIB A                                               WSP 612
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TRIBUTARY 65        3750.     3250.                                          WSP 613
XSECTN    80        1.0       1.0       0.0       0.0       0.56           WSP 614
ELEV      959.0     940.9     942.8     1.0                                WSP 615
N VALUE   0.070     0.050     0.070                                        WSP 616
SEGMENT   2.                  3.                                           WSP 617
DATA      -305.     959.8     -110.     948.6     -85.      944.3          WSP 618
DATA      -44.0     942.8     -44.0     942.8     -36.      940.9          WSP 619
DATA      -29.      940.9     -22.0     942.8     -22.0     942.8          WSP 620
DATA   1  0.        943.3     325.      959.4                              WSP 621
TITLE     MOUSE CREEK TRIB. B                                              WSP 622
TRIBUTARY 65        3200.     2200.                                          WSP 623
XSECTN    66        1.0       1.0       0.0       0.0       0.49           WSP 624
ELEV      936.0     917.5     920.8     1.0                                WSP 625
N VALUE   0.075     0.055     0.075                                        WSP 626
SEGMENT   2.                  3.                                           WSP 627
DATA      -490.     940.9     -265.     926.5     -205.     925.1          WSP 628
DATA      -183.0    921.8     -183.0    921.8     -179.     917.5          WSP 629
DATA      -172.     918.0     -165.0    920.8     -165.0    920.8          WSP 630
DATA      -155.     923.2     0.        925.4     250.      932.2          WSP 631
DATA   1  250.      936.0                                                  WSP 632
TITLE     MOUSE CREEK TRIB. C                                              WSP 633
TRIBUTARY 67        2550.     2200.                                          WSP 634
XSECTN    79        1.0       1.0       0.0       0.0       0.32           WSP 635
ELEV      966.0     943.8     948.3     1.0                                WSP 636
N VALUE   0.070     0.045     0.070                                        WSP 637
SEGMENT   2.                  3.                                           WSP 638
DATA      -380.     966.6     -70.      953.3     0.0       951.7          WSP 639
DATA      0.0       951.7     19.       943.8     25.       943.8          WSP 640
DATA      32.0      948.3     32.0      948.3     150.      950.0          WSP 641
DATA   1  495.      970.4                                                  WSP 642
TITLE     MOUSE CREEK TRIB. D                                              WSP 643
TRIBUTARY 67        2600.     2400.                                          WSP 644
XSECTN    68        1.0       1.0       0.0       0.0       0.46           WSP 645
ELEV      957.0     934.7     938.6     1.                                 WSP 646
N VALUE   0.070     0.050     0.070                                        WSP 647
SEGMENT   2.                  3.                                           WSP 648
DATA      -270.     959.0     -75.      944.0     -65.      939.7          WSP 649
DATA      -52.0     938.6     -52.0     938.6     -49.      935.5          WSP 650
DATA      -44.      934.7     -41.0     940.1     -41.0     940.1          WSP 651
DATA      -15.      939.9     0.        941.7     285.      945.0          WSP 652
DATA   1  670.      957.4                                                  WSP 653
TITLE     MOUSE CREEK TRIB E                                               WSP 654
TRIBUTARY 69        2000.     1500.                                          WSP 655
XSECTN    71        1.0       1.0       0.0       0.0       0.90           WSP 656
ELEV      958.0     940.4     942.9     1.0                                WSP 657
N VALUE   0.070     0.050     0.070                                        WSP 658
SEGMENT   2.                  3.                                           WSP 659
DATA      -460.     962.4     -205.     949.4     0.        948.5          WSP 660
DATA      25.       946.1     30.0      946.1     30.0      946.1          WSP 661
DATA      34.       940.4     42.       940.7     46.0      942.9          WSP 662
DATA      46.0      942.9     68.       947.6     130.      948.9          WSP 663
DATA   1  285.      957.0     285.      958.0                              WSP 664
TITLE     MOUSE CREEK TRIB F                                               WSP 665
TRIBUTARY 72        100.      100.                                           WSP 666
XSECTN    74        100.      100.      0.0       0.0       0.17           WSP 667
ELEV      977.0     956.9     961.2     1.0                                WSP 668
N VALUE   0.070     0.050     0.070                                        WSP 669
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X-Sec Used w/HUD 15

X-Sec Used w/HUD 15

X-Sec Used w/HUD 15

MOUSE CREEK

X-Sec Used w/HUD 15

X-Sec Used w/HUD 15

ELEV	977.0	956.9	961.2	1.0			WSP 668
N VALUE	0.070	0.050	0.070				WSP 669

SEGMENT	2.		3.				WSP 670
DATA	-270.	977.9	-34.	965.7	0.	965.8	WSP 671
DATA	21.0	962.9	21.0	962.9	27.	956.9	WSP 672
DATA	31.	956.9	40.0	961.2	40.0	961.2	WSP 673
DATA 1	210.	970.0	485.	991.9			WSP 674
BRIDGE	75	100.	100.				WSP 675
COEF	0.85	0.60	0.80	1.0			WSP 676
DATA	22.	964.3	22.	956.8	30.	956.8	WSP 677
DATA 1	30.	964.3	22.	964.3			WSP 678
DATA	-365.	978.9	-66.	965.4	-34.	965.7	WSP 679
DATA	0.	965.8	12.	966.3	25.	966.8	WSP 680
DATA 2	39.	966.7	275.	972.0	560.	993.0	WSP 681
XSECTN	74A	1.0	1.0	0.0	0.0	0.17	WSP 682
ELEV	978.0	956.9	961.2	1.0			WSP 683
N VALUE	0.070	0.050	0.070				WSP 684
SEGMENT	2.		3.				WSP 685
DATA	-270.	978.0	-270.	977.9	-34.	965.7	WSP 686
DATA	0.	965.8	21.0	962.9	21.0	962.9	WSP 687
DATA	27.	956.9	31.	956.9	40.0	961.2	WSP 688
DATA 1	40.0	961.2	210.	970.0	485.	991.9	WSP 689
TITLE	MOUSE CREEK TRIB C						WSP 690
TRIBUTARY	76	1300.	1300.				WSP 691
XSECTN	78	1.0	1.0	0.0	0.0	0.17	WSP 692
ELEV	996.0	976.5	978.1	1.0			WSP 693
N VALUE	0.070	0.055	0.070				WSP 694
SEGMENT	2.		3.				WSP 695
DATA	-300.	996.7	0.	979.7	39.0	978.1	WSP 696
DATA	39.0	978.1	41.	977.0	47.	976.5	WSP 697
DATA	50.0	980.3	50.0	980.3	330.	984.2	WSP 698
DATA 1	605.	996.9					WSP 699
TITLE	MIDDLE BIG CREEK TRIB. 1						WSP 700
FINAL 3	174	87					WSP 701
CSM-ELEV	5.		10.		25.		WSP 702
CSM-ELEV	75.		100.		150.		WSP 703
CSM-ELEV	200.		250.		300.		WSP 704
CSM-ELEV	400.		500.		600.		WSP 705
CSM-ELEV	800.		1000.		1500.		WSP 706
SLOPE	0.0034						WSP 707
XSECTN	86A	100.	100.	0.0	0.0	3.78	WSP 708
ELEV	950.0	928.2	935.0	1.0			WSP 709
N VALUE	0.080	0.055	0.070				WSP 710
SEGMENT	2.		3.				WSP 711
DATA	-646.	971.3	-50.	938.1	0.0	937.0	WSP 712
DATA	0.0	937.0	8.	930.3	15.	928.7	WSP 713
DATA	32.	928.2	44.	933.5	62.0	935.0	WSP 714
DATA	62.0	935.0	505.	940.3	855.	947.9	WSP 715
DATA 1	855.	950.0					WSP 716
BRIDGE	85	100.	100.				WSP 717
COEF	0.85	0.60	0.80	1.0			WSP 718
DATA	-23.	937.9	-23.	928.3	-37.	927.7	WSP 719
DATA	-65.	928.0	-82.	933.5	-82.	937.9	WSP 720
DATA 1	-23.	937.9					WSP 721
DATA	-720.	958.6	-165.	942.3	-82.	940.6	WSP 722
DATA	-23.	939.9	0.	937.3	50.	934.7	WSP 723
DATA 2	425.	936.0	760.	950.0	1240.	970.1	WSP 724
XSECTN	86	2600.	2400.	0.0	0.0	3.78	WSP 725
ELEV	950.0	928.2	935.0	1.0			WSP 726

X-Sec. Used w/HUD 15

MOUSE CREEK

X-Section Used w/HUD 15

MIDDLE BIG CREEK

OUTPUT LISTING FOR SECTION 63A

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
1.	1.	100.	100.	7.10

ELEVATION	TOTAL KD	END AREA
897.00	462067.7	6156.17
896.00	369961.1	5233.68
895.00	288873.3	4375.16
894.00	218382.3	3579.83
893.00	159361.2	2841.80
892.00	111927.6	2173.27
891.00	73391.0	1570.08
890.00	43637.5	1032.13
889.00	22632.5	559.42
888.00	12031.8	222.60
887.00	7502.2	132.60
886.00	4241.0	89.42
885.00	2042.8	54.93
884.00	565.0	24.02
883.00	4.7	0.81

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
142.00	1.95	885.51	284.00	2.42	886.64	426.00	2.46	887.44
710.00	2.05	888.36	1065.00	1.81	889.05	1420.00	1.85	889.43
2130.00	1.92	890.13	2840.00	2.04	890.66	3550.00	2.13	891.15
4260.00	2.22	891.56	5680.00	2.38	892.31	7100.00	2.50	892.98

INFORMATION LISTING FOR BRIDGE SECTION 62

OPENING COEF. 0.850 ORIFICE COEF. 0.600 ROADWAY COEF. 0.800

OPENING	ELEVATION	END AREA	Q CONTROL
	888.80	338.84	5822.04
	887.80	302.74	4881.06
	886.80	264.74	4000.29
	885.80	226.74	3181.53
	884.80	188.74	2430.15
	883.80	150.74	1753.37
	882.80	113.58	1174.45
	881.80	78.46	692.76
	880.80	45.40	315.56
	879.80	15.60	72.21

ROADWAY	ELEVATION	FLOW OVER ROAD (CFS)
	905.90	357243.50
	904.90	326348.56
	903.90	297733.87
	902.90	269894.56
	901.90	243327.15
	900.90	218028.53
	899.90	193996.93
	898.90	171232.09
	897.90	149735.15
	896.90	127749.03
	895.90	103967.82
	894.90	82974.40
	893.90	64656.85
	892.90	48899.01
	891.90	33680.39
	890.90	21113.60
	889.90	10992.72
	888.90	4591.04
	887.90	1135.52
	886.90	131.14

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

OUTPUT LISTING FOR SECTION 63

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
100.	100.	5500.	3100.	7.10

ELEVATION	TOTAL KD	END AREA
902.00	1124257.0	11618.55
901.00	953362.2	10452.70
900.00	809713.7	9304.78
899.00	680713.7	8193.07
898.00	565523.8	7142.63
897.00	462067.7	6156.17
896.00	369961.1	5233.68
895.00	288873.3	4375.16
894.00	218382.3	3579.83
893.00	159361.2	2841.80
892.00	111927.6	2173.27
891.00	73391.0	1570.08
890.00	43637.5	1032.13
889.00	22632.5	559.42
888.00	12031.8	222.60
887.00	7502.2	132.60
886.00	4241.0	89.42
885.00	2042.8	54.93
884.00	565.0	24.02
883.00	4.7	0.81

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
142.00	1.72	885.79	284.00	2.17	886.95	425.99	2.10	887.77
710.00	1.58	888.66	1065.00	1.47	889.33	1420.00	1.57	889.72
2130.00	1.67	890.43	2840.00	1.81	890.98	3550.00	1.91	891.46
4260.00	2.01	891.90	5680.00	2.17	892.64	7100.00	2.30	893.31

OUTPUT LISTING FOR SECTION 64

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
5500.	3100.	5200.	3400.	6.08

ELEVATION	TOTAL KD	END AREA
917.00	1754095.2	14524.42
916.00	1271862.5	13326.18
915.00	1113422.2	12150.23
914.00	965202.7	11005.77
913.00	827169.7	9892.81
912.00	699308.2	8811.33
911.00	581628.6	7761.34
910.00	474175.2	6742.84
909.00	377036.8	5755.84
908.00	290364.6	4800.32
907.00	214400.4	3876.30
906.00	149525.7	2983.77
905.00	98411.8	2129.64
904.00	62286.7	1377.91
903.00	37928.0	769.25
902.00	24021.3	345.83
901.00	18188.1	230.24
900.00	13931.0	191.14
899.00	10190.3	154.07
898.00	6970.4	119.04
897.00	4284.5	86.05
896.00	2161.9	55.09
895.00	667.5	26.18
894.00	20.0	2.63

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
126.54	1.92	896.33	253.09	2.42	897.54	379.63	2.78	898.49
632.72	3.32	899.97	949.09	3.92	901.09	1265.45	4.63	901.36
1898.18	3.54	902.44	2530.90	3.05	903.09	3163.63	2.91	903.51
3796.36	2.84	903.92	5061.81	2.85	904.52	6327.27	2.87	905.07

OUTPUT LISTING FOR SECTION 65

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
5200.	3400.	4600.	3400.	5.68

ELEVATION	TOTAL KD	END AREA
922.00	618827.3	7057.82
921.00	513766.3	6061.71
920.00	421704.0	5141.44
919.00	341420.0	4297.09
918.00	272262.6	3528.64
917.00	213571.8	2836.10
916.00	164688.0	2219.46
915.00	124982.4	1678.73
914.00	97012.4	1252.60
913.00	78590.0	1014.28
912.00	59358.6	810.90
911.00	43117.1	625.15
910.00	29901.9	457.28
909.00	20009.7	315.58
908.00	12744.7	206.39
907.00	7624.9	131.56
906.00	4106.2	83.61
905.00	1755.9	47.84
904.00	307.7	15.92

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
120.23	1.86	905.46	240.47	2.60	906.17	360.71	2.85	906.88
601.18	2.97	907.93	901.78	3.00	908.85	1202.37	3.12	909.48
1803.56	3.29	910.53	2404.75	3.49	911.33	3005.94	3.68	912.01
3607.12	3.86	912.59	4809.50	4.05	913.71	6011.88	4.02	914.56

OUTPUT LISTING FOR SECTION 67

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
4600.	3400.	3000.	2400.	3.79

ELEVATION	TOTAL KD	END AREA
943.00	1903769.2	16294.45
942.00	1705015.5	14992.97
941.00	1519549.5	13744.80
940.00	1347008.7	12549.94
939.00	1187029.0	11408.39
938.00	1039241.5	10320.15
937.00	902488.2	9284.32
936.00	776970.1	8299.57
935.00	662205.2	7365.87
934.00	556172.2	6480.65
933.00	460272.5	5642.15
932.00	374203.6	4850.37
931.00	297669.6	4105.31
930.00	230386.5	3406.96
929.00	172090.9	2755.34
928.00	122555.1	2150.44
927.00	81617.0	1592.26
926.00	49283.8	1082.07
925.00	25689.0	623.59
924.00	12513.7	236.43
923.00	8041.4	120.56
922.00	5153.8	89.40
921.00	2820.7	60.14
920.00	1092.6	32.76
919.00	95.6	7.28

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
88.07	2.20	920.25	176.15	2.78	921.10	264.22	3.18	921.77
440.37	3.76	922.87	660.56	3.82	923.44	880.75	3.34	924.06
1321.13	2.79	924.60	1761.50	2.65	925.08	2201.88	2.72	925.39
2642.26	2.77	925.71	3523.01	2.88	926.26	4403.77	2.99	926.75

OUTPUT LISTING FOR SECTION 69

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
3000.	2400.	1500	1200.	2.63

ELEVATION	TOTAL KD	END AREA
949.00	835256.7	8868.14
948.00	696350.5	7887.77
947.00	568718.1	6922.00
946.00	452656.9	5970.83
945.00	348544.8	5034.25
944.00	256876.0	4112.26
943.00	181911.9	3209.87
942.00	128672.9	2405.96
941.00	87604.9	1727.76
940.00	57268.1	1175.26
939.00	36121.2	748.47
938.00	27247.5	477.83
937.00	17446.8	325.90
936.00	10307.8	194.33
935.00	6113.4	111.40
934.00	3510.0	63.07
933.00	1881.8	41.00
932.00	767.4	22.70
931.00	96.0	6.13

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
65.76	2.42	932.23	131.53	3.01	933.11	197.30	3.68	933.56
328.83	3.83	934.46	493.25	3.80	935.21	657.67	3.73	935.77
986.51	3.77	936.50	1315.35	3.85	937.09	1644.18	4.00	937.55
1973.02	4.08	938.01	2630.70	3.52	938.98	3288.37	3.5.	939.41

OUTPUT LISTING FOR SECTION 70

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
1500.	1200.	1500.	1100.	1.60

ELEVATION	TOTAL KD	END AREA
958.00	614966.2	5214.96
957.00	538214.8	4748.94
956.00	468262.6	4294.59
955.00	404031.3	3855.33
954.00	344644.0	3431.38
953.00	290062.8	3022.73
952.00	240262.2	2629.38
951.00	195234.6	2251.34
950.00	154998.0	1888.61
949.00	119610.5	1541.18
948.00	89198.0	1209.05
947.00	64351.3	895.10
946.00	45777.3	627.12
945.00	32903.7	432.39
944.00	23834.8	307.13
943.00	17170.4	219.52
942.00	12147.7	166.89
941.00	8308.4	127.95
940.00	5175.2	92.38
939.00	2737.7	60.17
938.00	1007.8	31.34
937.00	68.5	5.87

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
43.45	1.85	937.68	86.90	2.20	938.27	130.35	2.51	938.70
217.26	2.92	939.43	325.89	3.31	940.16	434.52	3.63	940.75
651.78	4.19	941.69	869.04	4.89	942.19	1086.30	5.19	942.79
1303.56	5.26	943.31	1738.08	5.21	944.20	2172.60	5.2[illegible]	944.84

OUTPUT LISTING FOR SECTION 73A

DISTANCES DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
1500.	1100.	100.	100.	1.52

ELEVATION	TOTAL KD	END AREA
977.00	6949050.0	47481.00
976.00	6369074.0	44633.91
975.00	5816270.0	41857.01
974.00	5290296.0	39153.32
973.00	4790811.0	36519.81
972.00	4317481.0	33957.51
971.00	3869972.5	31466.41
970.00	3447961.0	29046.50
969.00	3048248.0	26695.60
968.00	2673236.0	24411.48
967.00	2322681.5	22194.15
966.00	1996355.7	20043.60
965.00	1694074.0	17960.15
964.00	1415629.5	15944.62
963.00	1160803.2	13997.09
962.00	929537.3	12110.00
961.00	723374.8	10272.92
960.00	546991.3	8504.62
959.00	393825.7	6814.25
958.00	264243.5	5201.82
957.00	161743.8	3685.33
956.00	84758.7	2292.53
955.00	37804.4	1070.01
954.00	18295.8	357.29
953.00	12053.0	172.89
952.00	8762.6	135.70
951.00	6132.8	104.10
950.00	4037.6	76.40
949.00	2431.1	52.62
948.00	1264.0	32.75
947.00	494.7	16.79
946.00	76.0	4.73

OUTPUT LISTING FOR SECTION 73A CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
41.58	2.38	947.03	83.16	2.95	947.70	124.75	3.30	948.24
207.92	3.79	949.08	311.88	4.24	949.87	415.84	4.58	950.51
623.76	5.10	951.56	831.69	5.53	952.38	1039.61	6.28	952.79
1247.53	6.16	953.15	1663.38	4.88	953.90	2079.22	4.05	954.21

INFORMATION LISTING FOR BRIDGE SECTION 72

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

OPENING	ELEVATION	END AREA	Q CONTROL
	959.10	87.40	62864.07
	958.10	83.40	40657.25
	957.10	79.40	24109.74
	956.10	75.40	12632.10
	955.10	73.00	5561.97
	954.10	73.00	2083.55
	953.10	73.00	1118.77
	952.10	63.00	896.95
	951.10	53.00	692.10
	950.10	43.00	505.78
	949.10	33.00	340.04
	948.10	23.00	197.86
	947.10	13.00	84.07
	946.10	3.00	9.32

INFORMATION LISTING FOR BRIDGE SECTION 72 (CONTINUED)

ROADWAY ELEVATION	FLOW OVER ROAD (CFS)
982.70	1266501.75
981.70	1179758.00
980.70	1096312.00
979.70	1016131.37
978.70	939183.00
977.70	857573.00
976.70	780179.50
975.70	706933.25
974.70	637763.62
973.70	572599.25
972.70	511367.56
971.70	453995.00
970.70	400407.06
969.70	350703.62
968.70	304963.25
967.70	262661.50
966.70	223727.06
965.70	188088.68
964.70	155675.03
963.70	126415.87
962.70	100242.65
961.70	61926.85
960.70	41643.99
959.70	25930.10
958.70	14385.83
957.70	6322.11
956.70	1389.11
955.70	15.74

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

OUTPUT LISTING FOR SECTION 73

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
100.	100.	2600.	2400.	1.34

ELEVATION	TOTAL KD	END AREA
977.00	2063663.2	13630.22
976.00	1917076.5	13020.22
975.00	1774555.2	12410.22
974.00	1636196.7	11800.22
973.00	1502104.7	11190.22
972.00	1372389.7	10580.22
971.00	1247169.2	9970.22
970.00	1126570.0	9360.22
969.00	1010728.1	8750.22
968.00	899791.7	8140.21
967.00	793922.1	7530.22
966.00	693296.1	6920.22
965.00	598109.7	6310.22
964.00	508582.3	5700.22
963.00	424961.8	5090.22
962.00	347533.3	4480.22
961.00	280645.0	3875.86
960.00	221792.6	3291.04
959.00	169568.2	2726.92
958.00	124118.4	2183.51
957.00	85695.9	1660.80
956.00	56044.5	1167.67
955.00	35166.2	757.35
954.00	20856.4	438.70
953.00	12557.2	218.75
952.00	8762.6	135.70
951.00	6132.8	104.10
950.00	4037.6	76.40
949.00	2431.1	52.62
948.00	1266.0	32.75
947.00	494.7	16.79
946.00	76.0	4.73

OUTPUT LISTING FOR SECTION 73 CONTINUED.

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
37.29	1.53	947.46	74.58	1.97	948.24	111.88	2.26	948.83
186.47	2.65	949.73	279.70	2.96	950.65	372.94	2.99	951.65
559.41	1.48	953.71	745.89	0.81	955.39	932.36	0.85	955.81
1118.83	0.96	955.96	1491.78	1.14	956.27	1864.72	1.30	956.52

OUTPUT LISTING FOR SECTION 76

DISTANCES DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
2600.	2400.	2000.	1800.	0.94

ELEVATION	TOTAL KD	END AREA
983.00	1021051.3	10169.06
982.00	900659.0	9270.20
981.00	788932.0	8408.62
980.00	685641.5	7584.32
979.00	590556.7	6797.29
978.00	503446.3	6047.54
977.00	424078.1	5335.06
976.00	352220.3	4659.86
975.00	287642.8	4021.94
974.00	230118.6	3421.29
973.00	179427.6	2857.91
972.00	135710.9	2332.05
971.00	99920.7	1851.55
970.00	70392.9	1420.22
969.00	46755.4	1038.04
968.00	28661.0	705.04
967.00	15985.9	422.15
966.00	8610.7	219.27
965.00	4677.8	107.13
964.00	2741.5	56.65
963.00	1672.4	36.58
962.00	942.9	24.07
961.00	422.5	13.56
960.00	99.8	5.06

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
27.25	2.20	960.85	54.51	2.68	961.63	81.77	2.99	962.25
136.29	3.35	963.19	204.43	3.62	963.98	272.58	3.33	964.49
408.87	2.90	965.29	545.17	2.63	965.88	681.46	2.56	966.22
817.75	2.55	966.49	1090.34	2.55	967.01	1362.93	2.64	967.32

OUTPUT LISTING FOR SECTION 77

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
2000.	1800.	1.	1.	0.40

ELEVATION	TOTAL KD	END AREA
994.00	793656.0	7776.89
993.00	675448.5	7022.83
992.00	574755.3	6285.05
991.00	486685.5	5577.45
990.00	406460.2	4903.04
989.00	333885.1	4261.85
988.00	268774.1	3653.85
987.00	210952.9	3079.06
986.00	160266.4	2537.47
985.00	116590.3	2029.09
984.00	79852.7	1553.91
983.00	51587.9	1120.50
982.00	30711.8	753.70
981.00	15877.9	455.09
980.00	6349.6	224.66
979.00	1449.7	63.75
978.00	367.2	14.97
977.00	90.6	4.55
976.00	16.7	1.15

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
12.24	1.97	977.15	24.48	2.14	977.65	36.72	2.17	978.03
61.20	2.03	978.30	91.81	2.07	978.59	122.41	2.04	978.91
183.62	2.17	979.12	244.83	2.25	979.27	306.04	2.30	979.42
367.25	2.33	979.57	489.67	2.38	979.87	612.08	2.49	980.08

OUTPUT LISTING FOR SECTION 80

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
3750.	3250.	1.	1.	0.56

ELEVATION	TOTAL KD	END AREA
959.00	479386.2	5111.52
958.00	409585.6	4522.32
957.00	346712.0	3970.72
956.00	290463.1	3456.71
955.00	240528.9	2980.30
954.00	196593.4	2541.49
953.00	158332.6	2140.27
952.00	125415.9	1776.65
951.00	97507.4	1450.63
950.00	74269.8	1162.21
949.00	55377.9	911.38
948.00	39483.8	696.06
947.00	26225.0	507.68
946.00	15959.3	345.29
945.00	8463.0	208.90
944.00	3610.5	99.48
943.00	1207.1	33.37
942.00	314.7	12.47
941.00	4.5	0.74

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
16.90	2.39	941.53	33.81	2.58	942.02	50.72	2.93	942.22
84.54	3.29	942.62	126.81	3.73	943.00	169.09	3.74	943.17
253.63	3.67	943.53	338.18	3.64	943.89	422.73	3.72	944.12
507.27	3.80	944.30	676.37	3.89	944.67	845.46	3.97	945.02

OUTPUT LISTING FOR SECTION 66

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
3200.	2200.	1.	1.	0.49

ELEVATION	TOTAL KD	END AREA
936.00	486251.0	5656.06
935.00	403799.6	5000.43
934.00	328415.3	4360.43
933.00	260210.7	3736.06
932.00	200836.3	3128.04
931.00	154831.0	2560.65
930.00	115866.5	2045.65
929.00	83515.0	1583.03
928.00	57345.7	1172.81
927.00	36933.9	814.98
926.00	22210.2	512.94
925.00	13189.1	289.63
924.00	7908.4	152.03
923.00	5136.1	90.23
922.00	3125.6	60.48
921.00	1729.2	39.73
920.00	835.9	23.65
919.00	286.2	11.04
918.00	19.5	1.86

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
14.89	1.63	918.78	29.78	1.97	919.31	44.67	2.16	919.75
74.46	2.47	920.39	111.69	3.05	920.79	148.93	3.36	921.21
223.39	3.73	921.96	297.86	3.92	922.51	372.32	4.01	923.03
446.79	3.80	923.43	595.72	3.48	924.13	744.65	3.17	924.59

OUTPUT LISTING FOR SECTION 79

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
2550.	2200.	1.	1.	0.32

ELEVATION	TOTAL KD	END AREA
966.00	800768.6	7597.33
965.00	698295.7	6830.84
964.00	604378.8	6104.56
963.00	518718.9	5418.51
962.00	441011.7	4772.67
961.00	370947.2	4167.06
960.00	308209.6	3601.66
959.00	252477.3	3076.49
958.00	203421.7	2591.53
957.00	160708.2	2146.80
956.00	123996.4	1742.28
955.00	92941.9	1377.99
954.00	67203.6	1053.91
953.00	46532.4	770.98
952.00	30627.0	543.69
951.00	18929.0	366.95
950.00	10599.0	211.38
949.00	6010.2	101.37
948.00	3593.1	60.13
947.00	2034.4	39.47
946.00	960.5	22.78
945.00	306.2	10.05
944.00	13.7	1.27

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
9.82	2.57	944.28	19.65	2.81	944.64	29.47	2.93	944.99
49.12	3.44	945.32	73.68	3.80	945.72	98.25	4.07	946.07
147.37	4.56	946.56	196.50	4.87	947.03	245.62	5.19	947.37
294.75	5.44	947.70	393.00	5.58	948.24	491.25	5.99	948.52

OUTPUT LISTING FOR SECTION 68

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
2600.	2400.	1.	1.	0.46

ELEVATION	TOTAL KD	END AREA
957.00	822598.7	8520.96
956.00	710099.8	7641.40
955.00	607197.5	6805.89
954.00	513578.3	6014.42
953.00	428927.6	5267.01
952.00	352927.9	4563.65
951.00	285261.1	3904.33
950.00	225610.2	3289.06
949.00	173662.5	2717.84
948.00	129115.9	2190.67
947.00	91689.7	1707.55
946.00	61148.3	1268.48
945.00	37358.1	873.46
944.00	23011.8	550.14
943.00	13377.9	320.84
942.00	8043.7	180.24
941.00	4830.8	109.21
940.00	2558.6	53.00
939.00	1507.9	31.43
938.00	859.0	20.54
937.00	412.0	12.05
936.00	119.5	5.09
935.00	2.4	0.30

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
14.01	2.16	936.19	28.03	2.59	936.81	42.05	2.89	937.28
70.08	3.25	938.08	105.12	3.73	938.69	140.16	3.83	939.23
210.25	3.88	940.01	280.33	3.68	940.40	350.42	3.59	940.78
420.50	3.57	941.11	560.67	3.57	941.66	700.84	3.53	942.12

OUTPUT LISTING FOR SECTION 71

DISTANCES DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
2000.	1500.	1.	1.	0.90

ELEVATION	TOTAL KD	END AREA
958.00	403124.9	4838.81
957.00	326291.7	4189.93
956.00	262204.3	3570.22
955.00	205700.7	2989.27
954.00	156547.9	2447.07
953.00	114533.7	1943.62
952.00	79483.1	1478.92
951.00	51291.1	1052.97
950.00	30002.0	665.77
949.00	16726.5	333.97
948.00	11815.2	196.02
947.00	8513.7	135.46
946.00	5687.1	93.89
945.00	3726.9	66.14
944.00	2229.3	43.78
943.00	1133.5	26.79
942.00	446.8	14.03
941.00	62.1	3.80

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
26.21	2.15	941.81	52.42	2.63	942.45	78.63	3.08	942.89
131.05	3.71	943.49	196.58	4.07	944.19	262.11	4.31	944.75
393.16	4.67	945.64	524.22	4.87	946.32	655.27	4.99	946.89
786.33	4.90	947.40	1048.44	4.44	948.28	1310.55	4.04	948.92

// XEQ RESIN

OUTPUT LISTING FOR SECTION 74

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
200.	200.	100.	100.	0.17

ELEVATION	TOTAL KD	END AREA
977.00	409245.3	4473.40
976.00	346409.7	3938.86
975.00	289772.6	3436.22
974.00	239091.7	2965.49
973.00	194121.6	2526.65
972.00	154614.0	2119.71
971.00	120318.9	1744.68
970.00	90985.7	1401.55
969.00	67541.8	1093.70
968.00	48577.8	824.51
967.00	33711.6	593.98
966.00	22568.4	402.12
965.00	15269.5	272.00
964.00	9790.5	177.66
963.00	5998.1	109.88
962.00	3636.3	66.13
961.00	2128.7	42.39
960.00	1176.8	27.26
959.00	534.8	15.22
958.00	157.0	6.27
957.00	2.5	0.41

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
5.13	4.20	957.13*	10.27	4.75	957.29*	15.40	4.97	957.45*
25.67	5.15	957.77*	38.51	5.50	958.08*	51.35	5.96	958.26*
77.02	6.37	958.64	102.70	6.59	959.02	128.37	6.99	959.25
154.05	7.29	959.48	205.40	7.77	959.92	256.75	8.35	960.22*

* INDICATES CRITICAL FLOW.

INFORMATION LISTING FOR BRIDGE SECTION 75

OPENING COEF. 0.850 ORIFICE COEF. 0.600 ROADWAY COEF. 0.800

OPENING	ELEVATION	END AREA	Q CONTROL
	964.30	60.00	932.03
	963.30	52.00	751.99
	962.30	44.00	585.31
	961.30	36.00	433.17
	960.30	28.00	297.12
	959.30	20.00	179.37
	958.30	12.00	83.36
	957.30	4.00	16.04

ROADWAY	ELEVATION	FLOW OVER ROAD (CFS)
	993.00	332628.00
	992.00	310097.75
	991.00	288416.93
	990.00	267577.12
	989.00	247569.71
	988.00	228386.21
	987.00	210018.06
	986.00	192456.78
	985.00	175693.90
	984.00	159721.09
	983.00	144530.03
	982.00	130112.46
	981.00	116460.48
	980.00	103566.21
	979.00	91422.17
	978.00	77810.48
	977.00	65233.83
	976.00	53925.81
	975.00	43842.84
	974.00	34939.93
	973.00	27170.53
	972.00	20486.42
	971.00	13820.21
	970.00	8657.52
	969.00	4864.45
	968.00	2292.43
	967.00	772.01
	966.00	96.94

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

OUTPUT LISTING FOR SECTION 74A

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
100.	100.	1.	1.	0.17

ELEVATION	TOTAL KD	END AREA
978.00	479237.4	5039.75
977.00	409245.3	4473.40
976.00	346409.7	3938.86
975.00	289772.6	3436.22
974.00	239091.7	2965.49
973.00	194121.6	2526.65
972.00	154614.0	2119.71
971.00	120318.9	1744.68
970.00	90985.7	1401.55
969.00	67541.8	1093.70
968.00	48577.8	824.51
967.00	33711.6	593.98
966.00	22568.4	402.12
965.00	15269.5	272.00
964.00	9790.5	177.66
963.00	5998.1	109.88
962.00	3636.3	66.13
961.00	2128.7	42.39
960.00	1176.8	27.26
959.00	534.8	15.22
958.00	157.0	6.27
957.00	2.5	0.41

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
5.13	1.05	957.75	10.27	1.39	958.11	15.40	1.62	958.35
25.67	1.93	958.77	38.51	2.21	959.17	51.35	2.46	959.46
77.02	2.81	960.00	102.70	3.06	960.40	128.37	3.31	960.75
154.05	3.49	961.06	205.40	3.64	961.58	256.75	3.78	962.03

OUTPUT LISTING FOR SECTION 78

DISTANCES DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
1300.	1300.	1.	1.	0.17

ELEVATION	TOTAL KD	END AREA
996.00	843320.7	8573.99
995.00	730530.2	7720.48
994.00	626890.0	6906.27
993.00	532138.6	6131.36
992.00	446014.3	5395.75
991.00	368256.8	4699.44
990.00	298608.0	4042.43
989.00	236814.8	3424.72
988.00	182633.2	2846.32
987.00	135834.8	2307.21
986.00	96217.6	1807.41
985.00	63628.2	1346.90
984.00	38442.5	926.70
983.00	21875.4	579.89
982.00	11240.4	322.53
981.00	5239.9	154.60
980.00	2291.3	72.93
979.00	832.5	28.73
978.00	239.1	9.29
977.00	16.6	1.59

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
5.13	1.98	977.12	10.27	2.43	977.33	15.40	2.60	977.55
25.67	2.76	977.99	38.51	2.84	978.21	51.35	2.91	978.42
77.02	2.96	978.85	102.70	3.02	979.11	128.37	3.05	979.29
154.05	3.08	979.47	205.40	3.11	979.83	256.75	3.16	980.09

OUTPUT LISTING FOR SECTION 78

DISTANCES

DOWNSTREAM CHANNEL	DOWNSTREAM VALLEY	UPSTREAM CHANNEL	UPSTREAM VALLEY	DRAINAGE AREA SQUARE MILES
1300.	1300.	1.	1.	0.17

ELEVATION	TOTAL KD	END AREA
996.00	843320.7	8573.99
995.00	730530.2	7720.48
994.00	626890.0	6906.27
993.00	532138.6	6131.36
992.00	446014.3	5395.75
991.00	368256.8	4699.44
990.00	298608.0	4042.43
989.00	236814.8	3424.72
988.00	182633.2	2846.32
987.00	135834.8	2307.21
986.00	96217.6	1807.41
985.00	63628.2	1346.90
984.00	38442.5	926.70
983.00	21875.4	579.89
982.00	11240.4	322.53
981.00	5239.9	154.60
980.00	2291.3	72.93
979.00	832.5	28.73
978.00	239.1	9.29
977.00	16.6	1.59

CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.	CFS	VELOCITY	ELEV.
5.13	1.98	977.12	10.27	2.43	977.33	15.40	2.60	977.55
25.67	2.76	977.99	38.51	2.84	978.21	51.35	2.91	978.42
77.02	2.96	978.85	102.70	3.02	979.11	128.37	3.05	979.29
154.05	3.08	979.47	205.40	3.11	979.83	256.75	3.16	980.09

NO SECTION IN ELEV. FILE BY THE NAME OF 2

NO SECTION IN ELEV. FILE BY THE NAME OF 5

NO SECTION IN ELEV. FILE BY THE NAME OF 7

SECTION 8

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-358.	-29.					
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
0.5	-311.	-190.	-265.	-190.	121.	75.	825.2
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
1.0	-283.	-190.	-265.	-190.	93.	75.	825.7
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-265.	-190.	-265.	-190.	75.	75.	826.7

NO SECTION IN ELEV. FILE BY THE NAME OF 12

SECTION 14

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-111.	102.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	0.	89.	0.	89.	89.	89.	868.7
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	0.	89.	0.	89.	89.	89.	869.2
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	0.	89.	0.	89.	89.	89.	870.2

NO SECTION IN ELEV. FILE BY THE NAME OF 17

SECTION 18

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-490.	-225.					
0.5	-454.	-354.	-440.	-408.	100.	32.	904.3
1.0	-447.	-372.	-440.	-408.	75.	32.	904.8

```
50.0  DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED
        2.0    -440.    -396.    -440.    -408.          44.          32.       905.8

        NO SECTION IN ELEV. FILE BY THE NAME OF  32

        NO SECTION IN ELEV. FILE BY THE NAME OF  32A

        NO SECTION IN ELEV. FILE BY THE NAME OF  34

        NO SECTION IN ELEV. FILE BY THE NAME OF  34A

                SECTION  36
                  FLOODWAY STA     CHANNEL STA            WIDTHS
    CONDITION     LEFT    RIGHT    LEFT    RIGHT    FLOODWAY     CHANNEL    ELEV
        0.0       67.     263.
 50.0  DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED
        0.5       68.     152.      68.     103.          84.          35.      930.3
 50.0  DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED
        1.0       68.     129.      68.     103.          61.          35.      930.8
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
        2.0       68.     103.      68.     103.          35.          35.      931.8

        NO SECTION IN ELEV. FILE BY THE NAME OF  37

        NO SECTION IN ELEV. FILE BY THE NAME OF  37A

                SECTION  41
                  FLOODWAY STA     CHANNEL STA            WIDTHS
    CONDITION     LEFT    RIGHT    LEFT    RIGHT    FLOODWAY     CHANNEL    ELEV
        0.0       -58.     -8.
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
        0.5       -43.    -18.     -43.    -18.          25.          25.      962.4
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
        1.0       -43.    -18.     -43.    -18.          25.          25.      962.9
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
        2.0       -43.    -18.     -43.    -18.          25.          25.      963.9

        NO SECTION IN ELEV. FILE BY THE NAME OF  44A
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NO SECTION IN ELEV. FILE BY THE NAME OF 44

NO SECTION IN ELEV. FILE BY THE NAME OF 45

NO SECTION IN ELEV. FILE BY THE NAME OF 40A

SECTION 40

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	144.	307.			163	27	
0.5	188.	250.	207.	234.	62.	27.	954.8
1.0	195.	240.	207.	234.	45.	27.	955.3
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	207.	234.	207.	234.	27.	27.	956.3

NO SECTION IN ELEV. FILE BY THE NAME OF 4A

SECTION 4

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	18.	416.			398.	45	
0.5	35.	328.	40.	85.	293.	45.	810.8
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE LEFT OVERBANK USED							
1.0	40.	287.	40.	85.	247.	45.	811.3
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE LEFT OVERBANK USED							
2.0	40.	232.	40.	85.	192.	45.	812.3

SECTION 9

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-149.	-29.			120.		
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	-118.	-82.	-118.	-82.	36.	36.	835.9
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-118.	-82.	-118.	-82.	36.	36.	836.4
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-118.	-82.	-118.	-82.	36.	36.	837.4

NO SECTION IN ELEV. FILE BY THE NAME OF 10

NO SECTION IN ELEV. FILE BY THE NAME OF 10A

SECTION 13

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-296.	-260.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	-300.	-258.	-300.	-258.	42.	42.	878.1
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-300.	-258.	-300.	-258.	42.	42.	878.6
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-300.	-258.	-300.	-258.	42.	42.	879.6

SECTION 15

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	166.	272.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	137.	325.	137.	325.	188.	188.	918.4
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	137.	325.	137.	325.	188.	188.	918.9
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	137.	325.	137.	325.	188.	188.	919.9

SECTION 16

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	60.	95.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	69.	118.	69.	118.	49.	49.	918.4
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	69.	118.	69.	118.	49.	49.	918.9
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	69.	118.	69.	118.	49.	49.	919.9

NO SECTION IN ELEV. FILE BY THE NAME OF 19

NO SECTION IN ELEV. FILE BY THE NAME OF 19A

SECTION 21

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-274.	-93.					
0.5	-259.	-161.	-245.	-219.	98.	26.	921.3
1.0	-254.	-173.	-245.	-219.	81.	26.	921.8
2.0	-246.	-189.	-245.	-219.	57.	26.	922.8

NO SECTION IN ELEV. FILE BY THE NAME OF 22

NO SECTION IN ELEV. FILE BY THE NAME OF 22A

SECTION 24

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-115.	0.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	-92.	-25.	-92.	-25.	67.	67.	934.9
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-92.	-25.	-92.	-25.	67.	67.	935.4
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-92.	-25.	-92.	-25.	67.	67.	936.4

NO SECTION IN ELEV. FILE BY THE NAME OF 26

NO SECTION IN ELEV. FILE BY THE NAME OF 28A

SECTION 28

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-119.	152.					
0.5	-33.	82.	0.	25.	115.	25.	952.5
1.0	-21.	63.	0.	25.	84.	25.	953.0
2.0	-7.	44.	0.	25.	51.	25.	954.0

NO SECTION IN ELEV. FILE BY THE NAME OF 30A

NO SECTION IN ELEV. FILE BY THE NAME OF 30

NO SECTION IN ELEV. FILE BY THE NAME OF 31

SECTION 42

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-274.	-203.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	-237.	-203.	-237.	-203.	34.	34.	986.5
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-237.	-203.	-237.	-203.	34.	34.	987.0
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-237.	-203.	-237.	-203.	34.	34.	988.0

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// JOB

LOG DRIVE   CART SPEC   CART AVAIL  PHY DRIVE
  0000        0003        0003        0000

V2 M08   ACTUAL  8K  CONFIG  8K

// XEQ HUD15
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PAGE   1

// JOB

LOG DRIVE    CART SPEC    CART AVAIL   PHY DRIVE
  0000         0003         0003         0000

V2 M08   ACTUAL  8K  CONFIG  8K

// XEQ HUD15
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NO SECTION IN ELEV. FILE BY THE NAME OF 63A

NO SECTION IN ELEV. FILE BY THE NAME OF 63

SECTION 64

	FLOODWAY STA		CHANNEL STA		WIDTHS		
CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
0.0	-224.	515.			739		
0.5	-119.	184.	-100.	-59.	303.	41.	904.9
50.0 DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
1.0	-100.	111.	-100.	-59.	211.	41.	905.4
50.0 DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
2.0	-100.	21.	-100.	-59.	121.	41.	906.4

NO SECTION IN ELEV. FILE BY THE NAME OF 65

NO SECTION IN ELEV. FILE BY THE NAME OF 67

SECTION 69

	FLOODWAY STA		CHANNEL STA		WIDTHS		
CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
0.0	-341.	22.			363		
0.5	-292.	-203.	-252.	-232.	89.	20.	939.5
1.0	-280.	-209.	-252.	-232.	71.	20.	940.0
2.0	-266.	-217.	-252.	-232.	49.	20.	941.0

NO SECTION IN ELEV. FILE BY THE NAME OF 70

NO SECTION IN ELEV. FILE BY THE NAME OF 73A

NO SECTION IN ELEV. FILE BY THE NAME OF 73

SECTION 76

FLOODWAY STA		CHANNEL STA		WIDTHS

CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
			FLOODWAY STA		WIDTHS		
			CHANNEL STA				
0.0	-250.	19.			269		
0.5	-151.	-66.	-121.	-105.	85.	16.	967.7
1.0	-138.	-77.	-121.	-105.	61.	16.	968.2
2.0	-126.	-88.	-121.	-105.	38.	16.	969.2

NO SECTION IN ELEV. FILE BY THE NAME OF 77

SECTION 80

CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
	FLOODWAY STA		CHANNEL STA		WIDTHS		
0.0	-90.	38.			128		
0.5	-58.	-6.	-44.	-22.	52.	22.	945.7
1.0	-50.	-15.	-44.	-22.	35.	22.	946.2
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-44.	-22.	-44.	-22.	22.	22.	947.2

SECTION 66

CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
	FLOODWAY STA		CHANNEL STA		WIDTHS		
0.0	-202.	-42.			160		
0.5	-185.	-148.	-183.	-165.	37.	18.	925.3
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE LEFT OVERBANK USED							
1.0	-183.	-161.	-183.	-165.	22.	18.	925.8
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-183.	-165.	-183.	-165.	18.	18.	926.8

SECTION 79

CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
	FLOODWAY STA		CHANNEL STA		WIDTHS		
0.0	6.	66.			60		
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	0.	32.	0.	32.	32.	32.	949.3
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	0.	32.	0.	32.	32.	32.	949.8
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	0.	32.	0.	32.	32.	32.	950.8

SECTION 68

CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
	FLOODWAY STA		CHANNEL STA		WIDTHS		
0.0	-71.	60.			131		
0.5	-62.	-23.	-52.	-41.	39.	11.	942.9
1.0	-59.	-29.	-52.	-41.	30.	11.	943.4
2.0	-55.	-36.	-52.	-41.	19.	11.	944.4

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-68.	125.			193		
0.5	26.	55.	30.	46.	29.	16.	949.3
50.0 DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
1.0	30.	51.	30.	46.	21.	16.	949.8
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	30.	46.	30.	46.	16.	16.	950.8

SECTION 74

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	22.	39.			17		
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	21.	40.	21.	40.	19.	19.	961.5
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	21.	40.	21.	40.	19.	19.	962.0
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	21.	40.	21.	40.	19.	19.	963.0

NO SECTION IN ELEV. FILE BY THE NAME OF 74A

SECTION ~~78~~

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	~~605.~~	~~-300.~~			905		
0.5	39.	50.	39.	50.	11.	11.	941.3
1.0	39.	50.	39.	50.	11.	11.	941.8
2.0	39.	50.	39.	50.	11.	11.	942.8

// PAUSE

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// JOB
LOG DRIVE   CART SPEC   CART AVAIL  PHY DRIVE
  0000        0003        0003        0000
V2 M08   ACTUAL  8K  CONFIG  8K
// XEQ HUD15
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NO SECTION IN ELEV. FILE BY THE NAME OF 86A

NO SECTION IN ELEV. FILE BY THE NAME OF 86

NO SECTION IN ELEV. FILE BY THE NAME OF 87

NO SECTION IN ELEV. FILE BY THE NAME OF 89

NO SECTION IN ELEV. FILE BY THE NAME OF 89A

NO SECTION IN ELEV. FILE BY THE NAME OF 91

NO SECTION IN ELEV. FILE BY THE NAME OF 88

NO SECTION IN ELEV. FILE BY THE NAME OF 92

NO SECTION IN ELEV. FILE BY THE NAME OF 93

NO SECTION IN ELEV. FILE BY THE NAME OF 94

NO SECTION IN ELEV. FILE BY THE NAME OF 95

NO SECTION IN ELEV. FILE BY THE NAME OF 95A

NO SECTION IN ELEV. FILE BY THE NAME OF 97

NO SECTION IN ELEV. FILE BY THE NAME OF 100

NO SECTION IN ELEV. FILE BY THE NAME OF 101

NO SECTION IN ELEV. FILE BY THE NAME OF 101A

SECTION 103

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	158.	455.			297		
0.5	235.	338.	260.	284.	103.	24.	956.5
1.0	247.	322.	260.	284.	75.	24.	957.0
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE LEFT OVERBANK USED							
2.0	260.	305.	260.	284.	45.	24.	958.0

NO SECTION IN ELEV. FILE BY THE NAME OF 104

NO SECTION IN ELEV. FILE BY THE NAME OF 104A

NO SECTION IN ELEV. FILE BY THE NAME OF 107A

NO SECTION IN ELEV. FILE BY THE NAME OF 107

SECTION 109

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	29.	166.			137		
0.5	87.	129.	107.	126.	42.	19.	987.6
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
1.0	99.	126.	107.	126.	27.	19.	988.1
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	107.	126.	107.	126.	19.	19.	989.1

NO SECTION IN ELEV. FILE BY THE NAME OF 139A

SECTION 139

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-25.	419.			444		

	0.5	8.	237.	10.	46.	229.	36.	896.6
50.0	DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
	1.0	10.	194.	10.	46.	184.	36.	897.1
50.0	DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
	2.0	10.	146.	10.	46.	136.	36.	898.1

NO SECTION IN ELEV. FILE BY THE NAME OF 140

SECTION 146

	FLOODWAY STA		CHANNEL STA		WIDTHS		
CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
0.0	-270.	-66.			204		
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	-125.	-64.	-125.	-64.	61.	61.	922.0
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-125.	-64.	-125.	-64.	61.	61.	922.5
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-125.	-64.	-125.	-64.	61.	61.	923.5

NO SECTION IN ELEV. FILE BY THE NAME OF 146A

NO SECTION IN ELEV. FILE BY THE NAME OF 146B

NO SECTION IN ELEV. FILE BY THE NAME OF 148

NO SECTION IN ELEV. FILE BY THE NAME OF 148A

SECTION 150

	FLOODWAY STA		CHANNEL STA		WIDTHS		
CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
0.0	0.	-770.			770		
0.5	-352.	-324.	-352.	-324.	28.	28.	0.5
1.0	-352.	-324.	-352.	-324.	28.	28.	1.0
2.0	-352.	-324.	-352.	-324.	28.	28.	2.0

NO SECTION IN ELEV. FILE BY THE NAME OF 151

SECTION 141

	FLOODWAY STA		CHANNEL STA		WIDTHS		
CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
0.0	345.	-20.			365		

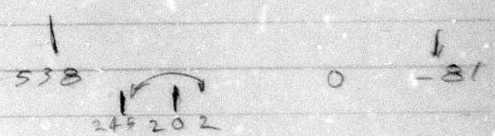
0.5	92.	115.	92.	115.	23.	23.	-19.5
1.0	92.	115.	92.	115.	23.	23.	-19.0
2.0	92.	115.	92.	115.	23.	23.	-18.0

NO SECTION IN ELEV. FILE BY THE NAME OF 143A

NO SECTION IN ELEV. FILE BY THE NAME OF 143

SECTION 144

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
-0.0	538.	-81.					
0.5	202.	245.	202.	245.	43.	43.	-80.5
1.0	202.	245.	202.	245.	43.	43.	-80.0
2.0	202.	245.	202.	245.	43.	43.	-79.0



NO SECTION IN ELEV. FILE BY THE NAME OF 144A

NO SECTION IN ELEV. FILE BY THE NAME OF 160A

NO SECTION IN ELEV. FILE BY THE NAME OF 160B

SECTION 161

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	30.	-290.					
0.5	-114.	-94.	-114.	-94.	20.	20.	-219.5
1.0	-114.	-94.	-114.	-94.	20.	20.	-219.0
2.0	-114.	-94.	-114.	-94.	20.	20.	-218.0

NO SECTION IN ELEV. FILE BY THE NAME OF 161A

SECTION 163

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	286.	-293.					
0.5	-36.	0.	-36.	0.	36.	36.	-35.5
1.0	-36.	0.	-36.	0.	36.	36.	-35.0
2.0	-36.	0.	-36.	0.	36.	36.	-34.0

NO SECTION IN ELEV. FILE BY THE NAME OF 165

SECTION 166

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	490.	-166.			656		
0.5	122.	166.	122.	166.	44.	44.	34.5
1.0	122.	166.	122.	166.	44.	44.	35.0
2.0	122.	166.	122.	166.	44.	44.	36.0

NO SECTION IN ELEV. FILE BY THE NAME OF 168

SECTION 169

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-346.	148.			494		
0.5	-301.	-98.	-194.	-156.	203.	38.	782.8
1.0	-289.	-112.	-194.	-156.	177.	38.	783.3
2.0	-271.	-125.	-194.	-156.	146.	38.	784.3

NO SECTION IN ELEV. FILE BY THE NAME OF 170

NO SECTION IN ELEV. FILE BY THE NAME OF 128A

NO SECTION IN ELEV. FILE BY THE NAME OF 128

SECTION 129

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-55.	122.			177		
0.5	-3.	77.	15.	37.	80.	22.	918.1
1.0	6.	63.	15.	37.	57.	22.	918.6
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE LEFT OVERBANK USED							
2.0	15.	48.	15.	37.	33.	22.	919.6

SECTION 130

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	62.	256.			194		
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
0.5	186.	255.	217.	255.	69.	38.	934.5
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
1.0	206.	255.	217.	255.	49.	38.	935.0

CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW

2.0	217.	255.	217.	255.	38.	38.	936.0

NO SECTION IN ELEV. FILE BY THE NAME OF 152

SECTION 153

	FLOODWAY STA		CHANNEL STA		WIDTHS		
CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
0.0	31.	117.			86		
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	66.	109.	66.	109.	43.	43.	959.4
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	66.	109.	66.	109.	43.	43.	959.9
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	66.	109.	66.	109.	43.	43.	960.9

NO SECTION IN ELEV. FILE BY THE NAME OF 153A

SECTION 131

	FLOODWAY STA		CHANNEL STA		WIDTHS		
CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
0.0	-139.	-19.			120		
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	-56.	-30.	-56.	-30.	26.	26.	956.9
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-56.	-30.	-56.	-30.	26.	26.	957.4
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-56.	-30.	-56.	-30.	26.	26.	958.4

NO SECTION IN ELEV. FILE BY THE NAME OF 133

SECTION 134

	FLOODWAY STA		CHANNEL STA		WIDTHS		
CONDITION	LEFT	RIGHT	LEFT	RIGHT	FLOODWAY	CHANNEL	ELEV
0.0	88.	200.			112		
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE LEFT OVERBANK USED							
0.5	115.	166.	115.	125.	51.	10.	978.8
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE LEFT OVERBANK USED							
1.0	115.	144.	115.	125.	29.	10.	979.3
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	115.	125.	115.	125.	10.	10.	980.3

NO SECTION IN ELEV. FILE BY THE NAME OF 134A

SECTION 155

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-109.	-15.			94		
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	-53.	-25.	-53.	-25.	28.	28.	957.1
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-53.	-25.	-53.	-25.	28.	28.	957.6
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-53.	-25.	-53.	-25.	28.	28.	958.6

NO SECTION IN ELEV. FILE BY THE NAME OF 155A

SECTION 136

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-325.	-141.			184		
0.5	-286.	-213.	-277.	-221.	73.	56.	893.7
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-277.	-221.	-277.	-221.	56.	56.	894.2
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-277.	-221.	-277.	-221.	56.	56.	895.2

NO SECTION IN ELEV. FILE BY THE NAME OF 137

SECTION 121

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-163.	-30.			133		
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
0.5	-69.	-23.	-65.	-23.	46.	42.	893.8
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-65.	-23.	-65.	-23.	42.	42.	894.3
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-65.	-23.	-65.	-23.	42.	42.	895.3

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NO SECTION IN ELEV. FILE BY THE NAME OF 122

SECTION 123

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-210.	-35.			175		
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
0.5	-104.	-37.	-67.	-37.	67.	30.	938.6
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
1.0	-84.	-37.	-67.	-37.	47.	30.	939.1
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							

2.0	-67.	-37.	-67.	-37.	30.	30.	940.1

NO SECTION IN ELEV. FILE BY THE NAME OF 123A

SECTION 125

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	102.	214.					
50.0 DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
0.5	102.	157.	102.	138.	55.	36.	953.7
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	102.	138.	102.	138.	36.	36.	954.2
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	102.	138.	102.	138.	36.	36.	955.2

NO SECTION IN ELEV. FILE BY THE NAME OF 125A

SECTION 114

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	171.	292.					
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
0.5	245.	296.	270.	296.	51.	26.	879.2
50.0 DID NOT PRODUCE DESIRED STAGE, ENTIRE RIGHT OVERBANK USED							
1.0	257.	296.	270.	296.	39.	26.	879.7
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	270.	296.	270.	296.	26.	26.	880.7

NO SECTION IN ELEV. FILE BY THE NAME OF 115

SECTION 171

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	89.	266.					
50.0 DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
0.5	99.	165.	99.	122.	66.	23.	863.7
50.0 DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
1.0	99.	146.	99.	122.	47.	23.	864.2
50.0 DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED							
2.0	99.	126.	99.	122.	27.	23.	865.2

NO SECTION IN ELEV. FILE BY THE NAME OF 172

SECTION 173

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	227.	351.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	238.	704.	238.	704.	466.	466.	882.2
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	238.	704.	238.	704.	466.	466.	882.7
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	238.	704.	238.	704.	466.	466.	883.7

NO SECTION IN ELEV. FILE BY THE NAME OF 174

SECTION 110

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	104.	132.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	95.	142.	95.	142.	47.	47.	780.0
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	95.	142.	95.	142.	47.	47.	780.5
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	95.	142.	95.	142.	47.	47.	781.5

SECTION 112

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-37.	-12.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	-40.	0.	-40.	0.	40.	40.	853.5
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	-40.	0.	-40.	0.	40.	40.	854.0
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	-40.	0.	-40.	0.	40.	40.	855.0

SECTION 113

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	-12.	65.					
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
0.5	0.	31.	0.	31.	31.	31.	844.6
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
1.0	0.	31.	0.	31.	31.	31.	845.1
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW							
2.0	0.	31.	0.	31.	31.	31.	846.1

SECTION 167

CONDITION	FLOODWAY STA LEFT	FLOODWAY STA RIGHT	CHANNEL STA LEFT	CHANNEL STA RIGHT	WIDTHS FLOODWAY	WIDTHS CHANNEL	ELEV
0.0	72.	159.					

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          0.5    105.    132.    115.    125.        27.        10.      921.7
          1.0    110.    128.    115.    125.        18.        10.      922.2
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
          2.0    115.    125.    115.    125.        10.        10.      923.2


                SECTION  120
                  FLOODWAY STA     CHANNEL STA           WIDTHS
     CONDITION    LEFT   RIGHT     LEFT   RIGHT     FLOODWAY     CHANNEL   ELEV
          0.0    -29.     26.                                55
 50.0  DID NOT PRODUCE DESIRED STAGE,ENTIRE LEFT OVERBANK USED
          0.5    -20.     -1.    -20.     -9.        19.        11.      892.0
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
          1.0    -20.     -9.    -20.     -9.        11.        11.      892.5
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
          2.0    -20.     -9.    -20.     -9.        11.        11.      893.5


                SECTION  111
                  FLOODWAY STA     CHANNEL STA           WIDTHS
     CONDITION    LEFT   RIGHT     LEFT   RIGHT     FLOODWAY     CHANNEL   ELEV
          0.0    -34.     70.                               104
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
          0.5     32.     52.     32.     52.        20.        20.      846.0
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
          1.0     32.     52.     32.     52.        20.        20.      846.5
CHANNEL CAPACITY IS SUFFICIENT TO CARRY FLOW
          2.0     32.     52.     32.     52.        20.        20.      847.5
// PAUSE
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Listed 6-12-73

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PAGE   1

// JOB

LOG DRIVE   CART SPEC   CART AVAIL   PHY DRIVE
  0000        0003         0003         0000

V2 M08   ACTUAL  8K  CONFIG  8K

// FOR
* LIST ALL
LEE'S SUMMIT FLOOD INSURANCE STUDY, MISSOURI  6-12-73
8          824.7
14         868.2
18         903.8
36         929.8
41         961.9
21         920.8
24         934.4
28         952.0
4          810.3
9          835.4
13         877.6
15         917.9
16         917.9
40         954.3
42         986.0      1
64         904.4
69         939.0
76         967.2
80         945.2
66         924.8
68         942.4
79         948.8
78         940.8
71         948.8
74         961.0      1
87         946.8
91         964.6
88         959.5
92         924.9
95         972.4
100        932.1
103        956.0
109        987.1
110        779.5
111        845.5
112        853.0
113        844.1
114        878.7
120        891.5
171        863.2
173        881.7
167        921.2
169        782.3
121        893.3
123        938.1
125        953.2
129        917.6
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130         934.0
153         958.9
131         956.4
134         978.3
155         956.6
136         893.2
139         896.1
146         921.5
150         949.1
141         907.3
144         930.0
161         928.5
163         947.8
166         962.3
COMPILATION DISCONTINUED

M 14 SYSTEM PROGRAM DETECTED MONITOR CONTROL RECORD

// PAUS
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PAGE  1

// JOB    0007

LOG DRIVE   CART SPEC   CART AVAIL  PHY DRIVE
  0000        0007        0007        0000

V2 M01   ACTUAL  8K  CONFIG  8K

// XEQ HUD15
```

HUD TYPE 15 STUDY

LEE'S SUMMIT, MO. 8-27-73

SECTION 87

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	-307	-1	-41	0	*	266	41	-1	306	946.80
			RIGHT FLOODPLAIN-NO KD NEEDED.							
0.5	-171	0	-41	0	*	130	41	0	171	947.30
			RIGHT FLOODPLAIN-NO KD NEEDED.							
1.0	-126	0	-41	0	*	85	41	0	126	947.80
			RIGHT FLOODPLAIN-NO KD NEEDED.							
2.0	-78	0	-41	0	*	37	41	0	78	948.80
			RIGHT FLOODPLAIN-NO KD NEEDED.							
3.0	-52	0	-41	0	*	11	41	0	52	949.80

SECTION 88

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	-204	-17	-130	-112	*	74	18	95	187	959.50
0.5	-150	-74	-130	-112	*	20	18	38	76	960.00
1.0	-143	-86	-130	-112	*	13	18	26	57	960.50
2.0	-135	-97	-130	-112	*	5	18	15	38	961.50
			LEFT FLOODPLAIN-NO KD NEEDED.							
3.0	-130	-105	-130	-112	*	0	18	7	25	962.50

SECTION 91

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	-161	-31	-80	-50	*	81	30	19	130	964.60
			CHANNEL WILL CARRY THE FLOW WITHOUT FRICTION ONLY							
0.5	-80	-50	-80	-50	*	0	30	0	30	965.10
			CHANNEL WILL CARRY THE FLOW.							
1.0	-80	-50	-80	-50	*	0	30	0	30	965.60

SECTION 92

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	-92	73	20	37	*	112	17	36	165	924.90
0.5	-33	45	20	37	*	53	17	8	78	925.40
1.0	2	40	20	37	*	18	17	3	38	925.90
			RIGHT FLOODPLAIN-NO KD NEEDED.							
2.0	15	37	20	37	*	5	17	0	22	926.90
			CHANNEL WILL CARRY THE FLOW WITHOUT FRICTION ONLY							
3.0	20	37	20	37	*	0	17	0	17	927.90

SECTION 95

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	-227	-11	-107	-85	*	120	22	74	216	972.40
0.5	-134	-68	-107	-85	*	27	22	17	66	972.90
1.0	-121	-77	-107	-85	*	14	22	8	44	973.40

HUD TYPE 15 STUDY

LEE'S SUMMIT, MO. 8-27-73

SECTION 95

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
	CHANNEL WILL CARRY THE FLOW WITHOUT FRICTION ONLY									
2.0	-107	-85	-107	-85	*	0	22	0	22	974.40
	CHANNEL WILL CARRY THE FLOW.									
3.0	-107	-85	-107	-85	*	0	22	0	22	975.40

HUD TYPE 15 STUDY

LEE'S SUMMIT, MO. FLOOD INSURANCE STUDY

SECTION 141 R-12 AA-12

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	58	196	92	115	*	34	23	81	138	907.30
0.5	87	144	92	115	*	5	23	29	57	907.80
			LEFT FLOODPLAIN-NO KD NEEDED.							
1.0	92	134	92	115	*	0	23	19	42	908.30
			LEFT FLOODPLAIN-NO KD NEEDED.							
1.5	92	127	92	115	*	0	23	12	35	908.80
			LEFT FLOODPLAIN-NO KD NEEDED.							
2.0	92	122	92	115	*	0	23	7	30	909.30
		CHANNEL WILL CARRY THE FLOW WITHOUT FRICTION ONLY								
3.0	92	115	92	115	*	0	23	0	23	910.30
		CHANNEL WILL CARRY THE FLOW WITHOUT FRICTION ONLY								
4.0	92	115	92	115	*	0	23	0	23	911.30

SECTION 144 R-13 AA-13

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	205	292	202	245	*	-3	43	47	87	930.00
			CHANNEL WILL CARRY THE FLOW.							
0.5	202	245	202	245	*	0	43	0	43	930.50

SECTION 150 R-11 DD-11

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	-443	-245	-352	-324	*	91	28	79	198	949.10
0.5	-378	-299	-352	-324	*	26	28	25	79	949.60
1.0	-368	-323	-352	-324	*	16	28	1	45	950.10
			RIGHT FLOODPLAIN-NO KD NEEDED.							
1.5	-358	-324	-352	-324	*	6	28	0	34	950.60
		CHANNEL WILL CARRY THE FLOW WITHOUT FRICTION ONLY								
2.0	-352	-324	-352	-324	*	0	28	0	28	951.10
			CHANNEL WILL CARRY THE FLOW.							
3.0	-352	-324	-352	-324	*	0	28	0	28	952.10

SECTION 161 AA-15

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	-189	-32	-114	-94	*	75	20	62	157	928.50
0.5	-135	-72	-114	-94	*	21	20	22	63	929.00
1.0	-126	-79	-114	-94	*	12	20	15	47	929.50
1.5	-121	-83	-114	-94	*	7	20	11	38	930.00
2.0	-117	-87	-114	-94	*	3	20	7	30	930.50
		CHANNEL WILL CARRY THE FLOW WITHOUT FRICTION ONLY								
3.0	-114	-94	-114	-94	*	0	20	0	20	931.50

HUD TYPE 15 STUDY

LEE'S SUMMIT, MO. FLOOD INSURANCE STUDY

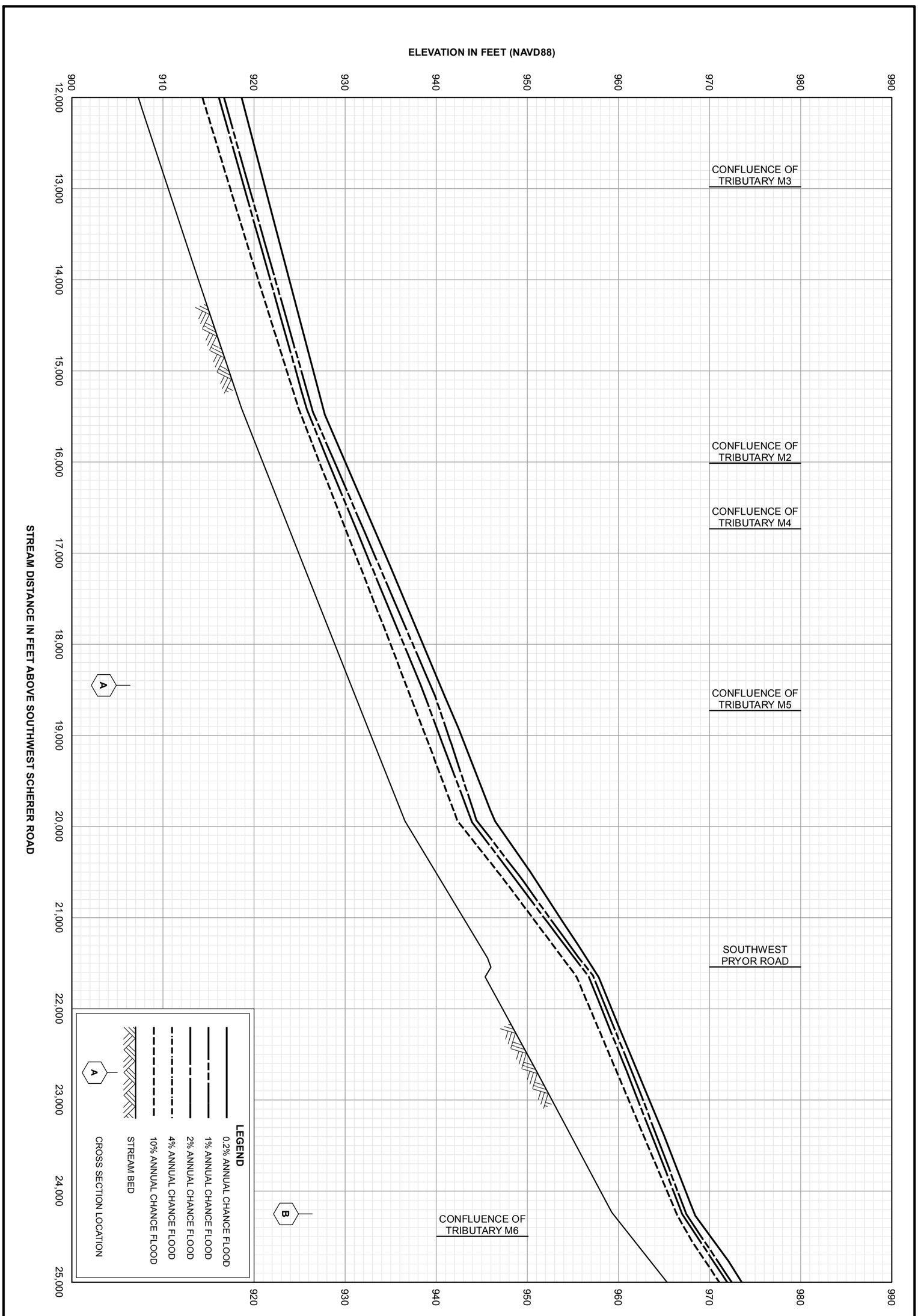
SECTION 161

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
	CHANNEL WILL CARRY THE FLOW WITHOUT FRICTION ONLY									
4.0	-114	-94	-114	-94	*	0	20	0	20	932.50

SECTION 166 AA-16

	STATIONS				*	WIDTHS				
	FLOODWAY		CHANNEL		*	LEFT		RIGHT		
STAGE	LEFT	RIGHT	LEFT	RIGHT	*	FLDWY	CHANNEL	FLDWY	TOTAL	ELEV.
0.0	33	163	122	166	*	89	44	-3	130	962.30
	CHANNEL WILL CARRY THE FLOW.									
0.5	122	166	122	166	*	0	44	0	44	962.80

// PAUSE



238P

FEDERAL EMERGENCY MANAGEMENT AGENCY

JACKSON COUNTY, MO
AND INCORPORATED AREAS

FLOOD PROFILES

MOUSE CREEK

HEC-RAS Plan: DupEffNGVD River: MouseCr Reach: MouseCr

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)	
MouseCr	18450	100YR	2700.00	930.60	938.99	937.53	939.37	0.003998	6.95	744.82	362.67	0.43
MouseCr	18450	10YR	1150.00	930.60	936.39	935.97	937.03	0.007809	7.48	243.22	129.32	0.57
MouseCr	18450	50YR	2050.00	930.60	937.99	937.00	938.49	0.005370	7.37	476.20	161.91	0.49
MouseCr	18450	500YR	4500.00	930.60	940.19	938.92	940.55	0.003899	7.53	1270.54	513.52	0.44
MouseCr	19950	100YR	2000.00	936.60	944.69		945.29	0.004532	6.45	388.83	130.14	0.45
MouseCr	19950	10YR	1150.00	936.60	943.54		943.89	0.003142	4.84	262.26	88.98	0.37
MouseCr	19950	50YR	2050.00	936.60	944.80	942.18	945.39	0.004434	6.46	403.14	138.44	0.45
MouseCr	19950	500YR	4500.00	936.60	946.53	945.66	947.59	0.006718	9.32	763.15	271.02	0.58
MouseCr	21450	100YR	1900.00	945.20	954.02	952.66	954.95	0.010528	8.14	366.20	441.03	0.61
MouseCr	21450	10YR	750.00	945.20	950.91		951.76	0.016046	7.39	101.43	29.29	0.70
MouseCr	21450	50YR	1450.00	945.20	953.49	951.79	954.36	0.010285	7.52	212.39	142.12	0.59
MouseCr	21450	500YR	3000.00	945.20	955.19		955.51	0.004649	6.15	1270.63	1104.29	0.42
MouseCr	21550		Bridge									
MouseCr	21650	100YR	1650.00	945.20	957.04	952.67	957.07	0.000353	1.99	1679.57	513.11	0.12
MouseCr	21650	10YR	700.00	945.20	955.73	949.85	955.74	0.000198	1.33	1045.83	430.98	0.09
MouseCr	21650	50YR	1300.00	945.20	956.79	951.47	956.81	0.000269	1.71	1554.26	508.03	0.10
MouseCr	21650	500YR	2600.00	945.20	957.48	954.24	957.53	0.000618	2.73	1908.68	522.28	0.16
MouseCr	24250	100YR	1400.00	959.20	966.41	966.41	967.23	0.015785	9.16	291.26	194.39	0.68
MouseCr	24250	10YR	560.00	959.20	964.61	964.61	965.64	0.021857	8.47	83.72	54.20	0.76
MouseCr	24250	50YR	1000.00	959.20	965.88	965.88	966.70	0.015625	8.53	201.50	146.80	0.67
MouseCr	24250	500YR	2100.00	959.20	967.07	967.07	967.84	0.015012	9.63	440.95	256.92	0.68
MouseCr	26250	100YR	680.00	975.30	980.76		980.82	0.002537	2.82	392.38	247.83	0.27
MouseCr	26250	10YR	310.00	975.30	979.98		980.03	0.002373	2.29	221.57	195.26	0.25
MouseCr	26250	50YR	550.00	975.30	980.45		980.51	0.002859	2.81	319.36	226.85	0.28
MouseCr	26250	500YR	1200.00	975.30	981.38		981.47	0.003069	3.47	561.30	290.61	0.31

HEC-RAS Plan: PreProjNAVD River: MouseCr Reach: MouseCr

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)	
MouseCr	18450	100YR	2700.00	930.91	939.30	937.84	939.68	0.003998	6.95	744.82	362.67	0.43
MouseCr	18450	10YR	1150.00	930.91	936.70	936.28	937.34	0.007809	7.48	243.22	129.32	0.57
MouseCr	18450	50YR	2050.00	930.91	938.30	937.31	938.80	0.005370	7.37	476.20	161.91	0.49
MouseCr	18450	500YR	4500.00	930.91	940.50	939.23	940.86	0.003899	7.53	1270.54	513.52	0.44
MouseCr	19084	100YR	2000.00	929.58	940.62	935.87	940.80	0.001135	3.80	743.41	619.62	0.24
MouseCr	19084	10YR	1150.00	929.58	938.79	934.40	938.98	0.001363	3.49	386.78	316.39	0.25
MouseCr	19084	50YR	2050.00	929.58	940.09	935.96	940.35	0.001722	4.46	621.43	546.18	0.29
MouseCr	19084	500YR	4500.00	929.58	941.71	939.67	941.85	0.001152	4.17	2362.42	850.47	0.25
MouseCr	19642	100YR	2000.00	932.94	941.44	939.37	942.36	0.007780	7.69	260.04	83.07	0.58
MouseCr	19642	10YR	1150.00	932.94	939.91	937.75	940.47	0.005801	5.99	192.01	70.50	0.49
MouseCr	19642	50YR	2050.00	932.94	941.40	939.45	942.38	0.008293	7.93	258.56	82.78	0.60
MouseCr	19642	500YR	4500.00	932.94	942.77	942.77	945.68	0.022244	13.68	328.99	211.80	1.00
MouseCr	19950	100YR	2000.00	933.92	943.77	941.08	944.47	0.006006	6.71	298.12	55.84	0.51
MouseCr	19950	10YR	1150.00	933.92	941.70	939.44	942.23	0.005619	5.84	196.92	42.96	0.48
MouseCr	19950	50YR	2050.00	933.92	943.87	941.16	944.58	0.006058	6.76	303.45	56.65	0.51
MouseCr	19950	500YR	4500.00	933.92	947.46	944.70	947.88	0.003050	5.89	1093.63	404.11	0.39
MouseCr	20315	100YR	1900.00	940.16	946.59	946.58	948.07	0.016176	10.21	241.48	113.93	0.84
MouseCr	20315	10YR	750.00	940.16	944.54	944.36	945.54	0.022168	8.03	95.44	50.07	0.89
MouseCr	20315	50YR	1450.00	940.16	946.45	945.77	947.40	0.010647	8.12	226.30	108.45	0.68
MouseCr	20315	500YR	3000.00	940.16	948.71	947.95	949.51	0.006689	8.46	672.24	333.80	0.58
MouseCr	21040	100YR	1900.00	940.58	950.26		950.38	0.001530	4.04	1138.10	661.56	0.27
MouseCr	21040	10YR	750.00	940.58	948.60	946.22	948.76	0.001955	3.82	382.08	320.32	0.29
MouseCr	21040	50YR	1450.00	940.58	949.65		949.79	0.001882	4.22	785.68	479.30	0.29
MouseCr	21040	500YR	3000.00	940.58	951.03		951.15	0.001576	4.40	1675.81	702.84	0.28
MouseCr	21450	100YR	1900.00	943.68	950.98	948.20	951.44	0.003329	5.44	349.47	95.62	0.40
MouseCr	21450	10YR	750.00	943.68	949.34	946.35	949.48	0.001553	2.98	251.48	66.36	0.26
MouseCr	21450	50YR	1450.00	943.68	950.46	947.54	950.78	0.002638	4.55	318.64	83.22	0.35
MouseCr	21450	500YR	3000.00	943.68	951.73	949.42	952.63	0.005520	7.60	394.97	116.10	0.52
MouseCr	21550		Culvert									
MouseCr	21650	100YR	1650.00	946.56	952.31	950.44	952.60	0.003661	4.34	380.60	129.99	0.39
MouseCr	21650	10YR	700.00	946.56	949.52	949.28	950.05	0.021422	5.85	119.64	76.20	0.82
MouseCr	21650	50YR	1300.00	946.56	951.73	950.11	951.98	0.003777	4.02	323.09	122.39	0.39
MouseCr	21650	500YR	2600.00	946.56	954.68	951.21	954.94	0.001918	4.07	644.76	239.65	0.30
MouseCr	21976	100YR	1400.00	946.67	953.90		954.32	0.007472	6.33	318.13	92.67	0.53
MouseCr	21976	10YR	560.00	946.67	952.54	950.55	952.71	0.003361	3.88	207.00	71.98	0.35
MouseCr	21976	50YR	1000.00	946.67	953.24		953.56	0.006176	5.53	260.20	82.25	0.47
MouseCr	21976	500YR	2100.00	946.67	955.55		955.83	0.004179	5.66	655.18	299.80	0.41
MouseCr	22303	100YR	1400.00	947.11	955.93		956.43	0.005549	6.10	306.32	153.04	0.48
MouseCr	22303	10YR	560.00	947.11	953.89		954.21	0.006136	4.65	133.75	56.25	0.47
MouseCr	22303	50YR	1000.00	947.11	955.12		955.55	0.005803	5.54	218.25	82.26	0.48
MouseCr	22303	500YR	2100.00	947.11	956.89	955.40	957.38	0.005033	6.53	538.15	307.56	0.47
MouseCr	22589	100YR	1400.00	948.08	957.44		957.87	0.004563	5.42	306.50	237.13	0.44
MouseCr	22589	10YR	560.00	948.08	955.31		955.55	0.003655	3.96	146.60	102.68	0.37
MouseCr	22589	50YR	1000.00	948.08	956.67		957.02	0.004505	4.78	227.26	145.72	0.42
MouseCr	22589	500YR	2100.00	948.08	958.27		958.76	0.004671	6.11	509.22	377.89	0.46
MouseCr	22834	100YR	1400.00	949.32	958.42	956.03	958.65	0.002437	4.61	455.32	171.94	0.32
MouseCr	22834	10YR	560.00	949.32	956.19	953.72	956.49	0.003891	4.38	127.79	105.54	0.38
MouseCr	22834	50YR	1000.00	949.32	957.61	955.08	957.86	0.002817	4.52	321.04	160.71	0.34
MouseCr	22834	500YR	2100.00	949.32	959.29	957.72	959.56	0.002546	5.14	612.16	187.56	0.34
MouseCr	22940	100YR	1400.00	949.71	958.58		959.18	0.007909	7.08	263.46	101.59	0.53
MouseCr	22940	10YR	560.00	949.71	956.62		957.04	0.006109	5.45	122.44	55.13	0.45
MouseCr	22940	50YR	1000.00	949.71	957.88		958.39	0.007056	6.36	204.25	74.63	0.49
MouseCr	22940	500YR	2100.00	949.71	959.43		960.14	0.008526	8.08	381.02	174.36	0.56
MouseCr	23020.4	100YR	1400.00	949.65	959.27		959.70	0.004951	5.63	333.14	164.31	0.44
MouseCr	23020.4	10YR	560.00	949.65	957.15		957.40	0.003177	4.05	142.64	47.96	0.34
MouseCr	23020.4	50YR	1000.00	949.65	958.46		958.85	0.004435	5.14	230.80	98.50	0.41
MouseCr	23020.4	500YR	2100.00	949.65	960.20		960.67	0.004844	6.23	529.38	264.33	0.45
MouseCr	23181	100YR	1400.00	953.05	960.24		961.00	0.012218	7.64	222.62	81.23	0.68
MouseCr	23181	10YR	560.00	953.05	957.73	957.73	958.80	0.024562	8.41	71.16	38.59	0.91
MouseCr	23181	50YR	1000.00	953.05	959.36		960.14	0.014215	7.55	157.28	67.75	0.72
MouseCr	23181	500YR	2100.00	953.05	961.05		962.05	0.013044	8.95	294.12	97.77	0.73

HEC-RAS Plan: PreProjNAVD River: MouseCr Reach: MouseCr (Continued)

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)	
MouseCr	23270.2	100YR	1400.00	954.36	961.42		961.87	0.008356	5.87	292.65	163.73	0.57
MouseCr	23270.2	10YR	560.00	954.36	959.81	959.03	960.17	0.009900	5.02	120.84	67.50	0.58
MouseCr	23270.2	50YR	1000.00	954.36	960.76		961.18	0.009932	5.52	202.86	106.56	0.60
MouseCr	23270.2	500YR	2100.00	954.36	962.39		962.84	0.006400	6.11	478.74	220.98	0.52
MouseCr	23370.1	100YR	1400.00	955.83	962.70	962.70	963.55	0.015257	8.74	274.34	189.71	0.76
MouseCr	23370.1	10YR	560.00	955.83	960.91	960.91	961.93	0.024160	8.33	74.37	41.21	0.89
MouseCr	23370.1	50YR	1000.00	955.83	962.17	962.17	963.00	0.015974	8.16	183.12	155.20	0.76
MouseCr	23370.1	500YR	2100.00	955.83	963.33	963.33	964.26	0.015664	9.74	400.48	209.52	0.79
MouseCr	23470	100YR	1400.00	956.23	963.88	961.29	964.10	0.002529	4.10	504.94	241.79	0.33
MouseCr	23470	10YR	560.00	956.23	962.33	959.56	962.46	0.001782	2.84	196.97	93.99	0.27
MouseCr	23470	50YR	1000.00	956.23	963.34	960.56	963.52	0.002195	3.52	382.52	215.04	0.31
MouseCr	23470	500YR	2100.00	956.23	964.57	962.34	964.87	0.003011	4.91	698.65	334.93	0.37
MouseCr	23897	100YR	1400.00	958.37	965.17	963.34	965.56	0.004859	5.16	346.38	245.34	0.45
MouseCr	23897	10YR	560.00	958.37	963.38	961.65	963.60	0.004159	3.82	146.51	57.55	0.40
MouseCr	23897	50YR	1000.00	958.37	964.54	962.65	964.89	0.004938	4.74	211.14	135.04	0.45
MouseCr	23897	500YR	2100.00	958.37	965.97	964.35	966.39	0.004674	5.70	595.82	311.31	0.46
MouseCr	24250	100YR	1400.00	960.38	966.77	965.16	967.10	0.004022	4.99	398.39	195.11	0.42
MouseCr	24250	10YR	560.00	960.38	964.98	963.49	965.24	0.005134	4.10	136.71	91.01	0.44
MouseCr	24250	50YR	1000.00	960.38	966.14	964.49	966.40	0.003768	4.37	300.59	121.42	0.39
MouseCr	24250	500YR	2100.00	960.38	967.54	965.95	967.96	0.004524	5.89	575.41	301.78	0.46
MouseCr	24918	100YR	680.00	962.89	968.92	967.51	969.37	0.007856	5.45	139.70	243.21	0.54
MouseCr	24918	10YR	310.00	962.89	968.04	966.08	968.22	0.003518	3.41	90.98	120.76	0.36
MouseCr	24918	50YR	550.00	962.89	968.87	967.08	969.17	0.005406	4.49	135.05	232.39	0.45
MouseCr	24918	500YR	1200.00	962.89	969.93	969.11	970.03	0.002277	3.52	633.94	421.07	0.31
MouseCr	25447	100YR	680.00	965.63	972.25	970.78	972.55	0.005158	4.96	226.66	189.55	0.44
MouseCr	25447	10YR	310.00	965.63	970.53	969.18	970.90	0.007504	4.87	63.70	30.37	0.51
MouseCr	25447	50YR	550.00	965.63	972.05	970.28	972.32	0.004506	4.49	191.16	176.01	0.41
MouseCr	25447	500YR	1200.00	965.63	972.48	972.48	973.16	0.011222	7.62	277.21	243.13	0.66
MouseCr	26250	100YR	680.00	974.20	978.35	978.35	978.64	0.010100	5.68	205.51	220.43	0.61
MouseCr	26250	10YR	310.00	974.20	977.99	977.69	978.46	0.012418	5.73	70.52	177.08	0.66
MouseCr	26250	50YR	550.00	974.20	978.35	978.35	978.54	0.006607	4.60	205.51	220.43	0.49
MouseCr	26250	500YR	1200.00	974.20	979.08	978.61	979.33	0.007265	5.65	370.83	282.37	0.53

HEC-RAS Plan: PostProjectRev River: MouseCr Reach: MouseCr

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)	
MouseCr	18450	100YR	2700.00	930.91	939.30	937.84	939.68	0.003998	6.95	744.82	362.67	0.43
MouseCr	18450	10YR	1150.00	930.91	936.70	936.28	937.34	0.007809	7.48	243.22	129.32	0.57
MouseCr	18450	50YR	2050.00	930.91	938.30	937.31	938.80	0.005370	7.37	476.20	161.91	0.49
MouseCr	18450	500YR	4500.00	930.91	940.50	939.23	940.86	0.003899	7.53	1270.54	513.52	0.44
MouseCr	19084	100YR	2000.00	929.58	940.62	935.87	940.80	0.001135	3.80	743.41	619.62	0.24
MouseCr	19084	10YR	1150.00	929.58	938.79	934.40	938.98	0.001363	3.49	386.78	316.39	0.25
MouseCr	19084	50YR	2050.00	929.58	940.09	935.96	940.35	0.001722	4.46	621.43	546.18	0.29
MouseCr	19084	500YR	4500.00	929.58	941.71	939.67	941.85	0.001152	4.17	2362.42	850.47	0.25
MouseCr	19642	100YR	2000.00	932.94	941.44	939.37	942.36	0.007780	7.69	260.04	83.07	0.58
MouseCr	19642	10YR	1150.00	932.94	939.91	937.75	940.47	0.005801	5.99	192.01	70.50	0.49
MouseCr	19642	50YR	2050.00	932.94	941.40	939.45	942.38	0.008293	7.93	258.56	82.78	0.60
MouseCr	19642	500YR	4500.00	932.94	942.77	942.77	945.68	0.022244	13.68	328.99	211.80	1.00
MouseCr	19950	100YR	2000.00	933.92	943.77	941.08	944.47	0.006006	6.71	298.12	55.84	0.51
MouseCr	19950	10YR	1150.00	933.92	941.70	939.44	942.23	0.005619	5.84	196.92	42.96	0.48
MouseCr	19950	50YR	2050.00	933.92	943.87	941.16	944.58	0.006058	6.76	303.45	56.65	0.51
MouseCr	19950	500YR	4500.00	933.92	947.46	944.70	947.88	0.003050	5.89	1093.63	404.11	0.39
MouseCr	20315	100YR	1900.00	940.16	946.59	946.58	948.07	0.016176	10.21	241.48	113.93	0.84
MouseCr	20315	10YR	750.00	940.16	944.54	944.36	945.54	0.022168	8.03	95.44	50.07	0.89
MouseCr	20315	50YR	1450.00	940.16	946.45	945.77	947.40	0.010647	8.12	226.30	108.45	0.68
MouseCr	20315	500YR	3000.00	940.16	948.71	947.95	949.51	0.006689	8.46	672.24	333.80	0.58
MouseCr	21040	100YR	1900.00	940.58	950.26		950.38	0.001530	4.04	1138.11	661.56	0.27
MouseCr	21040	10YR	750.00	940.58	948.60	946.22	948.76	0.001955	3.82	382.07	320.31	0.29
MouseCr	21040	50YR	1450.00	940.58	949.65		949.79	0.001882	4.22	785.66	479.29	0.29
MouseCr	21040	500YR	3000.00	940.58	951.03		951.15	0.001576	4.40	1675.82	702.84	0.28
MouseCr	21450	100YR	1900.00	943.68	950.98	948.20	951.44	0.003329	5.44	349.47	95.62	0.40
MouseCr	21450	10YR	750.00	943.68	949.34	946.35	949.48	0.001553	2.98	251.48	66.36	0.26
MouseCr	21450	50YR	1450.00	943.68	950.46	947.54	950.78	0.002638	4.55	318.64	83.22	0.35
MouseCr	21450	500YR	3000.00	943.68	951.73	949.42	952.63	0.005520	7.60	394.97	116.10	0.52
MouseCr	21550		Culvert									
MouseCr	21650	100YR	1650.00	946.56	952.31	950.44	952.60	0.003661	4.34	380.60	129.99	0.39
MouseCr	21650	10YR	700.00	946.56	949.52	949.28	950.05	0.021422	5.85	119.64	76.20	0.82
MouseCr	21650	50YR	1300.00	946.56	951.73	950.11	951.98	0.003777	4.02	323.09	122.39	0.39
MouseCr	21650	500YR	2600.00	946.56	954.68	951.21	954.94	0.001918	4.07	644.76	218.36	0.30
MouseCr	21976	100YR	1400.00	946.89	953.49		953.84	0.003778	4.76	294.26	96.65	0.48
MouseCr	21976	10YR	560.00	946.89	951.92	950.27	952.09	0.002323	3.34	167.54	64.67	0.37
MouseCr	21976	50YR	1000.00	946.89	952.87		953.15	0.003247	4.20	238.18	84.16	0.44
MouseCr	21976	500YR	2100.00	946.89	955.30		955.56	0.001862	4.16	566.95	203.18	0.36
MouseCr	22303	100YR	1400.00	947.83	954.75		955.42	0.005509	6.58	212.63	103.62	0.59
MouseCr	22303	10YR	560.00	947.83	952.83		953.18	0.004600	4.76	117.58	80.28	0.51
MouseCr	22303	50YR	1000.00	947.83	954.00		954.52	0.004984	5.79	172.85	94.47	0.55
MouseCr	22303	500YR	2100.00	947.83	955.90		956.66	0.005253	7.16	329.99	136.21	0.59
MouseCr	22589	100YR	1400.00	948.68	956.19		956.58	0.003022	5.16	307.04	172.59	0.45
MouseCr	22589	10YR	560.00	948.68	954.01		954.28	0.003152	4.13	135.48	82.32	0.43
MouseCr	22589	50YR	1000.00	948.68	955.30		955.67	0.003265	4.92	214.05	151.91	0.45
MouseCr	22589	500YR	2100.00	948.68	957.33		957.75	0.002817	5.50	450.83	231.50	0.44
MouseCr	22834	100YR	1400.00	949.30	956.69	953.22	957.18	0.001752	5.59	250.29	43.68	0.37
MouseCr	22834	10YR	560.00	949.30	954.53	951.53	954.69	0.000932	3.21	174.57	41.10	0.25
MouseCr	22834	50YR	1000.00	949.30	955.86	952.49	956.18	0.001350	4.52	221.14	42.53	0.32
MouseCr	22834	500YR	2100.00	949.30	957.76	954.35	958.59	0.002477	7.30	287.71	45.60	0.45
MouseCr	22885		Culvert									
MouseCr	22940	100YR	1400.00	949.70	957.93	953.64	958.21	0.001190	4.25	329.80	47.85	0.29
MouseCr	22940	10YR	560.00	949.70	954.90	951.98	955.03	0.000985	2.94	190.19	43.94	0.25
MouseCr	22940	50YR	1000.00	949.70	956.64	952.93	956.86	0.001112	3.72	268.95	46.40	0.27
MouseCr	22940	500YR	2100.00	949.70	960.35	954.71	960.69	0.001054	4.68	449.11	125.01	0.28
MouseCr	23020.4	100YR	1400.00	949.65	957.95		958.56	0.005920	6.30	222.27	44.68	0.50
MouseCr	23020.4	10YR	560.00	949.65	954.92		955.35	0.006778	5.25	106.73	31.62	0.50
MouseCr	23020.4	50YR	1000.00	949.65	956.65		957.20	0.006365	5.95	168.01	39.10	0.51
MouseCr	23020.4	500YR	2100.00	949.65	960.45		960.84	0.002641	5.37	621.79	260.71	0.35
MouseCr	23181	100YR	1400.00	953.05	959.24	959.24	960.70	0.021817	10.10	156.09	54.14	0.91
MouseCr	23181	10YR	560.00	953.05	957.02	957.02	958.30	0.028801	9.07	61.92	26.24	0.99

HEC-RAS Plan: PostProjectRev River: MouseCr Reach: MouseCr (Continued)

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)	
MouseCr	23181	50YR	1000.00	953.05	958.44	958.44	959.77	0.022463	9.48	115.39	46.99	0.91
MouseCr	23181	500YR	2100.00	953.05	960.93		961.82	0.014189	8.36	301.93	107.07	0.69
MouseCr	23270.2	100YR	1400.00	954.36	961.40	960.56	961.78	0.007033	5.46	312.99	185.11	0.53
MouseCr	23270.2	10YR	560.00	954.36	959.51	958.90	959.97	0.012213	5.59	106.06	57.97	0.65
MouseCr	23270.2	50YR	1000.00	954.36	960.67	959.93	961.09	0.009691	5.44	202.40	118.15	0.59
MouseCr	23270.2	500YR	2100.00	954.36	962.20		962.61	0.006146	5.89	478.24	228.15	0.51
MouseCr	23370.1	100YR	1400.00	955.83	962.56	962.56	963.28	0.014363	8.28	279.53	210.56	0.73
MouseCr	23370.1	10YR	560.00	955.83	960.90	960.90	961.90	0.024053	8.29	73.81	41.94	0.89
MouseCr	23370.1	50YR	1000.00	955.83	962.09	962.09	962.80	0.014991	7.78	189.19	173.74	0.73
MouseCr	23370.1	500YR	2100.00	955.83	963.08	963.08	963.90	0.015567	9.36	396.47	234.47	0.78
MouseCr	23470	100YR	1400.00	956.23	963.62		963.89	0.003257	4.48	443.34	228.32	0.38
MouseCr	23470	10YR	560.00	956.23	962.30		962.43	0.001766	2.82	213.14	92.65	0.27
MouseCr	23470	50YR	1000.00	956.23	963.16		963.36	0.002656	3.76	344.34	200.50	0.33
MouseCr	23470	500YR	2100.00	956.23	964.23		964.61	0.004099	5.48	598.24	289.20	0.43
MouseCr	23897	100YR	1400.00	958.37	965.17	963.34	965.56	0.004858	5.16	346.42	245.40	0.45
MouseCr	23897	10YR	560.00	958.37	963.34	961.65	963.58	0.004285	3.86	144.92	56.60	0.40
MouseCr	23897	50YR	1000.00	958.37	964.54	962.65	964.89	0.004938	4.74	211.14	135.04	0.45
MouseCr	23897	500YR	2100.00	958.37	965.96	964.35	966.38	0.004705	5.72	593.75	310.31	0.46
MouseCr	24250	100YR	1400.00	960.38	966.77	965.16	967.10	0.004022	4.99	398.38	195.10	0.42
MouseCr	24250	10YR	560.00	960.38	964.98	963.49	965.24	0.005143	4.10	136.63	90.97	0.44
MouseCr	24250	50YR	1000.00	960.38	966.14	964.49	966.40	0.003768	4.37	300.59	121.42	0.39
MouseCr	24250	500YR	2100.00	960.38	967.54	965.95	967.96	0.004525	5.89	575.35	301.76	0.46
MouseCr	24918	100YR	680.00	962.89	968.92	967.51	969.37	0.007856	5.45	139.70	243.21	0.54
MouseCr	24918	10YR	310.00	962.89	968.04	966.08	968.22	0.003515	3.41	91.01	120.82	0.36
MouseCr	24918	50YR	550.00	962.89	968.87	967.08	969.17	0.005406	4.49	135.05	232.39	0.45
MouseCr	24918	500YR	1200.00	962.89	969.93	969.11	970.03	0.002277	3.52	633.96	421.09	0.31
MouseCr	25447	100YR	680.00	965.63	972.25	970.78	972.55	0.005158	4.96	226.66	189.55	0.44
MouseCr	25447	10YR	310.00	965.63	970.53	969.18	970.90	0.007506	4.87	63.69	30.37	0.51
MouseCr	25447	50YR	550.00	965.63	972.05	970.28	972.32	0.004506	4.49	191.16	176.01	0.41
MouseCr	25447	500YR	1200.00	965.63	972.48	972.48	973.16	0.011222	7.62	277.21	243.13	0.66
MouseCr	26250	100YR	680.00	974.20	978.35	978.35	978.64	0.010100	5.68	205.51	220.43	0.61
MouseCr	26250	10YR	310.00	974.20	977.99	977.69	978.46	0.012418	5.73	70.52	177.08	0.66
MouseCr	26250	50YR	550.00	974.20	978.35	978.35	978.54	0.006607	4.60	205.51	220.43	0.49
MouseCr	26250	500YR	1200.00	974.20	979.08	978.61	979.33	0.007265	5.65	370.83	282.37	0.53

LEE'S SUMMIT
MISSOURI

v.1-2016

ENGINEERING 'NO RISE' CERTIFICATION

Floodplain Dev. Permit #: _____ Date Issued: _____ Date: 4/15/2025

Lee's Summit MO 290174
Community

_____
County

_____
State

Whispering Woods Land LLC
Applicant

803 PCA Road, Warrensburg, MO 64093
Address

816-564-2230
Phone

Sndver & Associates, Inc
Engineer

201 NW 72nd Street, Gladstone, MO 64118
Address

816-364-5222
Phone

SITE INFORMATION

1. Location: _____ 1/4; SW 1/4; Section 24; Township 47N; Range 36W

   Property Address: 3923 SW PRYOR RD, LEE'S SUMMIT, MO 64082

2. Affected NFIP map panel number(s): 29095C0531G

3. Type of Development: Filling ☐ Grading ☑ Excavation ☑ Minor Improvement ☐ Substantial Improvement ☐
   Routine Maintenance ☐ New Construction ☑ Other ☐

4. Description of Development: Construction of Triple 8'x8' Box Culvert for Roadway crossing, restoration of creek to historic channel alignment, construction of residental subdivision.

5. Name of Flooding Source (stream, lake, etc): MOUSE CREEK

COMMENTS

See "NO RISE" HYDRAULIC REPORT FOR WHISPERING WOODS 3RD PLAT

NOTE: All provisions of City of Lee's Summit UDO Article 6, Division II, Floodplain Management Ordinance, shall be in compliance.

I certify that I am a duly qualified engineer licensed to practice in the State of Missouri. I further certify that the attached technical data support the determination that this proposed development will NOT create any increase to the 1% elevations on the identified flooding source at published cross-sections in the Flood Insurance Study for the City of Lee's Summit, Missouri dated December 1971 and will NOT create any increase to the 1% elevations at unpublished cross-sections in the vicinity of the proposed development.

Shawn Duke, PE
Engineer Name

_____
Signature

4/15/2025
Date

Project Engineer/Manager
Title

PE-2013006489
License #

(SEAL)