DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDRAULIC ANALYSIS

Prepared For

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
2801 West Durango Street
Phoenix, Arizona 85009
(602) 506-1501

Prepared By

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TECHNICAL DATA NOTEBOOK
HYDRAULIC ANALYSIS

SECTION 4: HYDRAULIC ANALYSIS
AND
SECTION 4.1: Method Description

SECTION 4: HYDRAULIC ANALYSIS

4.1 Method Description

4.1.1 Purpose of Study

The purpose of this floodplain delineation study is to investigate the existence and severity of flood hazards for the Deadman Wash watershed area, in an unincorporated part of Maricopa County. This report identifies existing and potential flood hazards and provides valuable hydraulic data for future developments and improvements in the watershed.

This hydraulic analysis report is a part of the study contract for the Deadman Wash Floodplain Delineation Study, Contract No. FCD 90-65. This report is the **Section 4** of the **Technical Data Notebook (TDN)**, which is organized in a sequence according to the documentation index numbering system in the Instructions for Organizing and Submitting Technical Documentation for Flood Studies, developed by the Arizona Department of Water Resources (ADWR), Engineering Division, dated August 1990 and revised September 1991 (Reference 1). **Section 6** in the **TDN** is also included in this report for a list of references.

4.1.2 Area Studied

Scope of Study

The study area is located in northeastern Maricopa County, Arizona, and is shown in **Figure 1 - Vicinity Map**. This floodplain delineation study covers areas of projected development and proposed drainage improvements within the Deadman Wash watershed. Study reaches selected for detailed hydraulic analysis are as follows:

1. Deadman Wash - from New River to future 22nd Avenue alignment in Section 24, T6N, R2E, approximately 10.5 miles in length.

2. Unnamed Tributary - Stream Number 4 from the mouth to 1.5 miles upstream.

3. Unnamed Tributaries - Stream Numbers 7 and 8 from the mouth to 1 mile upstream near I-17 East Rest Area.

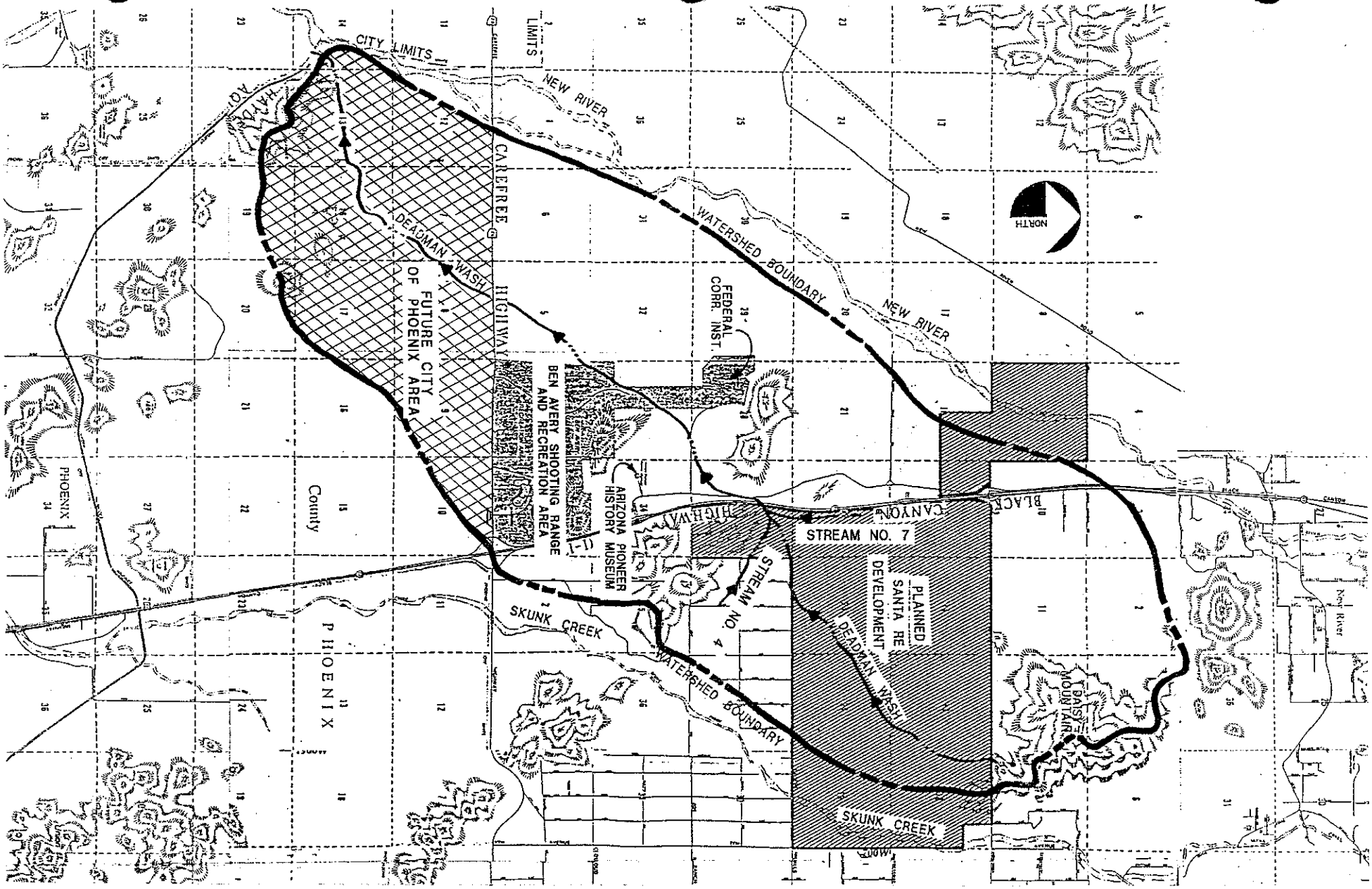

FIGURE 1

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

DEADMAN WASH FLOODPLAIN DELINEATION STUDY
MARICOPA COUNTY

GRAPHIC SCALE IN MILES

1 0 1 2 3

VICINITY MAP

Community Description

Maricopa County, encompassing a total area of 9,238 square miles, is located in the south central portion of Arizona. The incorporated communities within the county cover an area in excess of 100 square miles, and an additional 3,330 square miles are government lands. A large portion of the remaining county land is undeveloped. The 1990 population of Maricopa County was 2.1 million.

Terrain in Maricopa County varies from rugged mountains to plains and deserts. Numerous small, intermittent streams and washes traverse the county. Major streams in the county are the Gila, Salt, Agua Fria, New and Hassayampa Rivers. The residential, industrial, and agricultural developments are concentrated along these major streams and are continue to grow. The climate in Maricopa County consists of mild, short winters and long, hot summers.

The study area is predominantly desert and undeveloped lands. There is some existing residential development east of I-17 between Desert Hills Drive and Irvine Road which consists of single family lots in excess of 1 acre i size. A future development of the planned community Santa Re was proposed in the east portion of the study watershed (Figure 1 & Reference 9). A County park, Ben Avery Shooting Range and Recreation Area is located just west of I-17. The Arizona Pioneer History Museum, Federal Correctional Institute and a trailer park are also situated just west of I-17.

A future City of Phoenix area was designated in the watershed south of Carefree Highway. An area master drainage study was performed to identify flood hazards and provide conceptual design of drainage channels, storm drains and roadway crossings (Reference 8).

Principal Flood Problems

The large portions of Maricopa County have experienced destructive floods. The principal flood hazards result from channel flows with erosive velocities and substantial sediment in steep mountains, and from overland sheet flows on alluvial slopes with inundation, and channel shifting and migration. Although most of the precipitation falls during the summer and winter seasons in the county, the flooding may occur any time of the year.

Deadman Wash, a tributary of the New River, originates at the Daisy Mountain and flows southwesterly for approximately 13 miles to its confluence with the New River. It drains an area of approximately 34 square miles. Flood hazards for the east portion of the watershed result from flows with high velocities and substantial debris in rugged mountain slopes. The central and south portions of the watershed consist of wide, flat floodplains and relatively small channels, and

will experience overland sheet flooding, inundation, and channel migration.

Three major drainage crossings exist along the Deadman Wash. Two bridges have been constructed on Deadman Wash to carry the I-17 northbound and southbound traffic. Two tributaries join Deadman Wash just upstream of the northbound bridge. Vegetation is very dense at these bridge locations. A pipe culvert crossing at Joy Ranch Road near the Federal Correctional Institute has experienced severe bank erosion and stream bed scour. The roadway was inundated and impassible in the pass floods. A dip section on Deadman Wash crosses Carefree Highway.

Deadman Wash becomes a wide, shallow, and not well-defined channel, approximately 3,400 feet north of the Carefree Highway. The overland flow occurs on a wide, flat floodplain area and the majority of flow crosses the Carefree Highway through a dip section. The sheetflow flooding will continue downstream toward the river mouth. The dam and levee structure for the Snodgrass Tank creates a significant constriction to the stormwaters. The 106 feet wide spillway just north of the tank will breach flows through the levee and create inundation upstream.

Flood Protection Measures

No flood protection measures exist in the study area. There are at least 17 stock tanks presented in the Deadman Wash watershed. The dam and dike structures for these tanks were not considered in the hydraulic analyses due to the lack of proper maintenance. One exception was the dam and levee structure for the Snodgrass Tank near the New River. Based on the field observations, this structure is structurally sound and will impound floodwater with an adequate freeboard for a 100-year storm.

4.1.3 Hydrologic Analyses

The watershed hydrology was developed utilizing procedures and methodologies described in the Hydrologic Design Manual for Maricopa County, Arizona (Manual), by Flood Control District of Maricopa County, dated September 1, 1990 (Reference 2). The hydrologic analysis was performed using the U.S. Army Corps of Engineers' (USCE) HEC-1 computer program, version 4.0, dated September 1990, as implemented by Haestad Methods, Inc (Reference 3).

The HEC-1 modeling was developed for the current watershed conditions using the S-graph method, Green-Ampt infiltration losses, normal depth routing, storage routing, and hydrograph diversion. The summary of peak discharges at key locations are listed in **Table 1**. The results of hydrologic analysis are described in **Section 3** of **TDN** (under a separate cover), by HNTB, dated May 1992.

Table 1

Summary of Peak Discharges at Key Locations

Flooding Source and Location	Drainage Area (square miles)	100-Year Peak Discharges (cfs)
Deadman Wash		
At New River	34.01	9,680
At unnamed tributary (Stream No. 4)	33.34	9,690
At unnamed tributary (Stream No. 11)	26.63	9,410
At unnamed tributary (Stream No. 12)	19.36	8,760
At Carefree Highway	19.07	9,100
At unnamed tributary (Stream No. 9)	18.04	9,100
At Joy Ranch Road	14.99	9,700
At I-17	12.72	9,460
At unnamed tributary (Stream No. 4)	6.42	6,110
At unnamed tributary (Stream No. 3)	4.70	4,480
At unnamed tributary (Stream No. 2)	3.75	3,660
At 31st Avenue (Stream No. 1)	2.49	2,770
At Future 29th Avenue	1.21	1,840
At Future 22nd Avenue	0.52	1,020
Unnamed Tributary (Stream No. 4)		
At I-17	1.63	1,740
At Irvine Road	1.26	1,660
At 29th Avenue	0.56	770
Unnamed Tributary (Stream No. 7)		
At I-17	6.30	4,280
At I-17 East Rest Area	4.76	3,180

4.1.4 Hydraulic Analyses

Standard hydraulic methods were utilized to determine the 100-year recurrence flood hazards for this floodplain delineation study. This study was based on the current conditions of the reaches on the streams studied. The water surface profiles were performed using the U.S. Army Corps of Engineers' (USCE) HEC-2 computer program, version 4.6.2, dated May 1991, as implemented by Haestad Methods, Inc (Reference 3). Profiles were calculated for the Deadman Wash and its two tributaries. Floodplain and floodway boundaries, and flood hazard zones for insurance application were also determined. Existing drainage structures were modeled in HEC-2 to obtain floodplain and floodway data. No channel improvements and scour analysis were included in this study.

Cross-section data for this study were digitized from topographic maps made from aerial survey flown in October, 1991 by Aerial Mapping Company, Inc. (Reference 13). The topographic maps for the study reaches were furnished with a scale of 1" = 200' and contour intervals of 2' or 4'. The contour interval of 4' was used on topographic maps for the study reaches east of I-17, while a contour interval of 2; was used for the reaches west of I-17. Additional cross-section data were obtained from field surveys and as-built plans for the roadway crossings and bridges. Locations of selected cross sections used in the hydraulic analyses are shown on **Exhibit 1 - Flood Profiles**. These cross sections are also shown on **Exhibit 2 - Flood Boundary and Floodway Maps**.

Manning n values were selected based on the results of field observations and engineering judgment. These values were estimated in accordance with the procedures outlined in the Estimating Manning's Roughness Coefficients for Stream Channels and Flood Plains in Maricopa County, Arizona, prepared by the U.S. Geological Survey (USGS) for FCDMC, dated April 1991 (Reference 12). Values ranged from 0.38 to 0.80 for the channel and from 0.65 to 0.95 for the overbanks. The starting water surface elevation for Deadman Wash was obtained using critical depth.

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HYDRAULIC ANALYSIS

SECTION 4: HYDRAULIC ANALYSIS
AND
SECTION 4.2 Parameter Estimation

4.2 Parameter Estimation

4.2.1 Manning's n Values

The delineation of drainage sub-basins was accomplished using the current 7.5 Minute Series topographic quadrangle maps at a scale of 1" = 2,000' with contour intervals of 20' or 40'. The four USGS quadrangle maps used, in clockwise order, are Daisy Mountain, New River SE, Biscuit Flat, and New River. In addition, aerial photographs, existing topographic maps, and the current SCS soils maps were also utilized in Manning's n estimation. Table 2 shows the Manning's n values estimated for each cross section channel and overbanks. The Manning's n Determination report is included in Appendix A.

4.2.2 Expansion and Contraction Coefficients

For most of the study reaches, the contraction and expansion coefficients were selected as 0.1 and 0.3, respectively. The values were adjusted at the spillway near Snodgrass Tank and the existing drainage structures. For the I-17 northbound and southbound bridges, values of 0.6 and 0.8 were used to compute additional losses associated with skewed piers and channel bends.

Table 2
Cross Section Roughness Coefficient Values

Project: Deadman Wash Floodplain Delineation Study
Stream: Deadman Wash from New River to future 22nd Avenue

SECNO	XNL	XNCH	XNR	CCHV	CEHV	Remarks
0.092	–	0.060	–	0.1	0.3	NH card used
0.159	–	0.060	–	0.1	0.3	NH card used
0.202	–	0.060	–	0.1	0.3	NH card used
0.299	–	0.060	–	0.1	0.3	NH card used
0.382	–	0.060	–	0.3	0.5	NH card used
0.516	0.065	0.040	0.065	0.3	0.5	
0.618	0.065	0.038	0.065	0.3	0.5	
0.721	0.065	0.038	0.065	0.1	0.3	
0.803	0.065	0.038	0.065	0.1	0.3	
0.909	0.065	0.038	0.065	0.1	0.3	
0.988	0.065	0.038	0.065	0.1	0.3	
1.079	0.065	0.038	0.065	0.1	0.3	
1.199	0.065	0.038	0.065	0.1	0.3	
1.313	–	0.038	–	0.1	0.3	NH card used
1.419	0.065	0.038	0.065	0.1	0.3	
1.527	0.065	0.038	0.065	0.1	0.3	
1.620	–	0.038	–	0.1	0.3	NH card used
1.717	–	0.038	–	0.1	0.3	NH card used
1.811	–	0.048	–	0.1	0.3	NH card used
1.909	0.065	0.048	0.065	0.1	0.3	
2.004	0.065	0.048	0.065	0.1	0.3	
2.060	0.065	0.048	0.065	0.1	0.3	
2.142	0.065	0.048	0.065	0.1	0.3	
2.233	0.065	0.048	0.065	0.1	0.3	
2.326	0.065	0.055	0.065	0.1	0.3	
2.406	0.065	0.055	0.065	0.1	0.3	
2.500	0.065	0.055	0.065	0.1	0.3	
2.595	0.065	0.055	0.065	0.1	0.3	
2.689	0.065	0.055	0.065	0.1	0.3	
2.777	0.065	0.055	0.065	0.1	0.3	
2.872	0.065	0.055	0.065	0.1	0.3	
2.947	0.065	0.055	0.065	0.1	0.3	
3.023	0.065	0.055	0.065	0.1	0.3	
3.117	0.065	0.055	0.065	0.1	0.3	
3.209	0.065	0.055	0.065	0.1	0.3	
3.284	0.065	0.055	0.065	0.1	0.3	
3.347	0.065	0.048	0.065	0.1	0.3	
3.385	0.065	0.048	0.065	0.1	0.3	
3.481	0.065	0.048	0.065	0.1	0.3	
3.546	0.065	0.048	0.065	0.1	0.3	

Table 2
Cross Section Roughness Coefficient Values

Project: Deadman Wash Floodplain Delineation Study
Stream: Deadman Wash from New River to future 22nd Avenue

SECNO	XNL	XNCH	XNR	CCHV	CEHV	Remarks
3.639	0.016	0.016	0.016	0.1	0.3	
3.651	0.065	0.048	0.065	0.1	0.3	
3.710	0.065	0.048	0.065	0.1	0.3	
3.804	0.065	0.048	0.065	0.1	0.3	
3.881	0.065	0.048	0.065	0.1	0.3	
3.957	0.065	0.048	0.065	0.1	0.3	
4.019	0.065	0.048	0.065	0.1	0.3	
4.058	0.065	0.048	0.065	0.1	0.3	
4.146	0.065	0.048	0.065	0.1	0.3	
4.197	0.065	0.048	0.065	0.1	0.3	
4.262	0.065	0.048	0.065	0.1	0.3	
4.333	0.065	0.048	0.065	0.1	0.3	
4.390	0.080	0.065	0.080	0.1	0.3	
4.492	0.080	0.065	0.080	0.1	0.3	
4.567	0.080	0.065	0.080	0.1	0.3	
4.662	–	0.065	–	0.1	0.3	NH card used
4.756	–	0.065	–	0.1	0.3	NH card used
4.850	–	0.065	–	0.1	0.3	NH card used
4.943	–	0.065	–	0.1	0.3	NH card used
5.034	–	0.065	–	0.1	0.3	NH card used
5.113	–	0.065	–	0.1	0.3	NH card used
5.189	–	0.065	–	0.1	0.3	NH card used
5.284	–	0.065	–	0.1	0.3	NH card used
5.379	–	0.065	–	0.1	0.3	NH card used
5.473	–	0.065	–	0.1	0.3	NH card used
5.552	–	0.065	–	0.1	0.3	NH card used
5.646	0.080	0.065	0.080	0.1	0.3	NC card used
5.741	0.080	0.065	0.080	0.1	0.3	
5.835	0.080	0.065	0.080	0.1	0.3	
5.928	–	0.055	–	0.1	0.3	NH card used
6.021	0.070	0.055	0.070	0.1	0.3	
6.108	0.070	0.055	0.070	0.1	0.3	
6.205	0.070	0.055	0.070	0.1	0.3	
6.280	0.070	0.055	0.070	0.3	0.5	
6.362	0.070	0.055	0.070	0.3	0.5	
6.363	0.070	0.012	0.070	0.3	0.5	
6.371	0.070	0.012	0.070	0.3	0.5	
6.372	0.080	0.065	0.080	0.1	0.3	
6.467	0.080	0.065	0.080	0.1	0.3	
6.558	0.080	0.065	0.080	0.1	0.3	

Table 2
Cross Section Roughness Coefficient Values

Project: Deadman Wash Floodplain Delineation Study
Stream: Deadman Wash from New River to future 22nd Avenue

SECNO	XNL	XNCH	XNR	CCHV	CEHV	Remarks
6.654	0.080	0.065	0.080	0.1	0.3	
6.751	0.080	0.065	0.080	0.1	0.3	
6.849	0.080	0.065	0.080	0.1	0.3	
6.945	0.080	0.065	0.080	0.1	0.3	
7.042	0.080	0.065	0.080	0.1	0.3	
7.133	0.080	0.065	0.080	0.1	0.3	
7.228	0.080	0.065	0.080	0.1	0.3	
7.323	0.080	0.065	0.080	0.1	0.3	
7.417	0.080	0.065	0.080	0.1	0.3	
7.513	0.080	0.065	0.080	0.1	0.3	
7.587	0.080	0.065	0.080	0.1	0.3	
7.663	0.070	0.055	0.070	0.1	0.3	
7.738	0.070	0.055	0.070	0.6	0.8	
7.766	0.095	0.080	0.095	0.6	0.8	
7.769	0.095	0.013	0.095	0.6	0.8	
7.778	0.095	0.013	0.095	0.6	0.8	
7.785	0.095	0.080	0.095	0.6	0.8	
7.792	0.095	0.013	0.095	0.6	0.8	
7.800	0.095	0.013	0.095	0.6	0.8	
7.812	0.095	0.075	0.095	0.1	0.3	
7.872	–	0.075	–	0.1	0.3	NH card used
7.921	–	0.075	–	0.1	0.3	NH card used
8.016	–	0.075	–	0.1	0.3	NH card used
8.111	0.095	0.075	0.095	0.1	0.3	
8.187	0.095	0.075	0.095	0.1	0.3	
8.278	0.095	0.075	0.095	0.1	0.3	
8.373	0.080	0.065	0.080	0.1	0.3	
8.485	0.080	0.065	0.080	0.1	0.3	
8.574	–	0.065	–	0.1	0.3	NH card used
8.670	–	0.065	–	0.1	0.3	NH card used
8.763	–	0.065	–	0.1	0.3	NH card used
8.853	–	0.065	–	0.1	0.3	NH card used
8.939	–	0.065	–	0.1	0.3	NH card used
9.021	–	0.065	–	0.1	0.3	NH card used
9.114	–	0.065	–	0.1	0.3	NH card used
9.210	–	0.065	–	0.1	0.3	NH card used
9.304	–	0.065	–	0.1	0.3	NH card used
9.400	0.080	0.065	0.080	0.1	0.3	
9.492	0.090	0.070	0.090	0.1	0.3	
9.586	0.090	0.070	0.090	0.1	0.3	

Table 2
Cross Section Roughness Coefficient Values

Project: Deadman Wash Floodplain Delineation Study
Stream: Deadman Wash from New River to future 22nd Avenue

SECNO	XNL	XNCH	XNR	CCHV	CEHV	Remarks
9.682	0.090	0.070	0.090	0.1	0.3	
9.776	0.090	0.070	0.090	0.1	0.3	
9.872	0.090	0.070	0.090	0.1	0.3	
9.966	0.090	0.070	0.090	0.1	0.3	
10.058	0.090	0.070	0.090	0.1	0.3	
10.151	0.090	0.070	0.090	0.1	0.3	
10.230	0.090	0.070	0.090	0.1	0.3	
10.325	0.090	0.070	0.090	0.1	0.3	
10.419	0.090	0.070	0.090	0.1	0.3	
10.544	0.090	0.070	0.090	0.1	0.3	

Table 3
Cross Section Locations and Reach Lengths

Project: Deadman Wash Floodplain Delineation Study
Stream: Deadman Wash from New River to future 22nd Avenue

SECNO	Distance (Miles)	XLOBL (ft)	XLCH (ft)	XLOBR (ft)	Remarks
0.092	0.092	0	0	0	HEC-1 point C10Y
0.159	0.159	340	354	400	confluence with Stream 15
0.202	0.202	210	227	240	
0.299	0.299	520	512	400	
0.382	0.382	400	438	550	
0.516	0.516	680	708	750	Snodgrass Tank
0.618	0.618	600	539	490	confluence with Stream 14
0.721	0.721	400	544	400	
0.803	0.803	470	433	285	
0.909	0.909	450	560	460	
0.988	0.988	410	417	410	
1.079	1.079	420	480	500	
1.199	1.199	650	634	630	
1.313	1.313	560	602	450	
1.419	1.419	570	560	440	
1.527	1.527	450	570	550	
1.620	1.620	400	491	510	
1.717	1.717	470	512	450	
1.811	1.811	630	496	240	
1.909	1.909	517	517	480	confluence with Stream 11
2.004	2.004	502	502	502	
2.060	2.060	370	296	230	
2.142	2.142	200	433	400	
2.233	2.233	500	480	450	
2.326	2.326	500	491	400	
2.406	2.406	410	422	410	
2.500	2.500	410	496	500	
2.595	2.595	502	502	502	
2.689	2.689	400	496	550	
2.777	2.777	440	465	420	
2.872	2.872	570	502	330	
2.947	2.947	320	396	420	
3.023	3.023	290	401	460	
3.117	3.117	360	496	320	
3.209	3.209	380	486	270	
3.284	3.284	320	396	440	confluence with Stream 12
3.347	3.347	350	333	200	
3.385	3.385	215	201	215	
3.481	3.481	450	507	550	
3.546	3.546	400	343	300	

Table 3
Cross Section Locations and Reach Lengths

Project: Deadman Wash Floodplain Delineation Study
Stream: *Deadman Wash from New River to future 22nd Avenue*

SECNO	Distance (Miles)	XLOBL (ft)	XLCH (ft)	XLOBR (ft)	Remarks
3.639	3.639	650	491	440	S. edge Carefree Hwy
3.651	3.651	63	63	63	N. edge Carefree Hwy
3.710	3.710	110	312	240	
3.804	3.804	400	496	520	
3.881	3.881	380	407	420	
3.957	3.957	400	401	400	
4.019	4.019	350	327	320	
4.058	4.058	190	206	210	
4.146	4.146	440	465	465	
4.197	4.197	280	269	265	
4.262	4.262	400	343	300	
4.333	4.333	370	375	370	downstream side of levee
4.390	4.390	290	301	301	
4.492	4.492	500	539	500	split flow starts
4.567	4.567	370	396	396	confluence with Stream 9
4.662	4.662	390	502	430	
4.756	4.756	520	496	470	
4.850	4.850	520	496	480	
4.943	4.943	500	491	430	
5.034	5.034	420	480	540	
5.113	5.113	417	417	320	
5.189	5.189	410	401	340	
5.284	5.284	310	502	250	
5.379	5.379	400	502	590	
5.473	5.473	530	496	480	
5.552	5.552	540	417	250	
5.646	5.646	270	496	480	
5.741	5.741	520	502	480	
5.835	5.835	496	496	450	
5.928	5.928	500	491	440	
6.021	6.021	480	491	580	
6.108	6.108	380	459	420	
6.205	6.205	310	512	512	
6.280	6.280	660	396	340	
6.362	6.362	600	433	340	
6.363	6.363	4	4	4	pipes at Joy Ranch Rd.
6.371	6.371	45	45	45	pipes at Joy Ranch Rd.
6.372	6.372	4	4	4	
6.467	6.467	250	502	580	roadway overtopping
6.558	6.558	420	480	480	roadway overtopping

Table 3
Cross Section Locations and Reach Lengths

Project: Deadman Wash Floodplain Delineation Study
Stream: Deadman Wash from New River to future 22nd Avenue

SECNO	Distance (Miles)	XLOBL (ft)	XLCH (ft)	XLOBR (ft)	Remarks
6.654	6.654	450	507	460	roadway overtopping
6.751	6.751	485	512	500	
6.849	6.849	370	517	520	
6.945	6.945	695	507	375	
7.042	7.042	650	512	360	unnamed tank ignored
7.133	7.133	430	480	440	pond area ignored
7.228	7.228	502	502	502	pond area ignored
7.323	7.323	540	502	450	
7.417	7.417	490	496	500	
7.513	7.513	550	507	507	
7.587	7.587	290	391	391	
7.663	7.663	280	401	430	
7.738	7.738	370	396	410	
7.766	7.766	110	148	160	
7.769	7.769	17	17	17	dm. face I–17 SB bridge
7.778	7.778	45	45	45	up. face I–17 SB bridge
7.785	7.785	38	38	38	
7.792	7.792	35	35	35	dm. face I–17 NB bridge
7.800	7.800	44	44	44	up. face I–17 NB bridge
7.812	7.812	64	64	64	confluence with Stream 7 & 8
7.872	7.872	280	317	330	
7.921	7.921	310	259	120	
8.016	8.016	510	502	470	confluence with Stream 4
8.111	8.111	502	502	502	
8.187	8.187	401	401	401	
8.278	8.278	430	480	510	
8.373	8.373	510	502	480	confluence with Stream 3
8.485	8.485	500	591	600	confluence with Stream 2
8.574	8.574	500	470	400	
8.670	8.670	507	507	480	
8.763	8.763	510	491	440	
8.853	8.853	440	475	520	
8.939	8.939	440	454	430	
9.021	9.021	510	433	310	confluence with Stream 1
9.114	9.114	400	491	470	
9.210	9.210	530	507	400	
9.304	9.304	430	496	580	
9.400	9.400	507	507	507	
9.492	9.492	400	486	540	
9.586	9.586	550	496	450	future 29th Ave. alignment

Table 3
Cross Section Locations and Reach Lengths

Project: Deadman Wash Floodplain Delineation Study
Stream: Deadman Wash from New River to future 22nd Avenue

SECNO	Distance (Miles)	XLOBL (ft)	XLCH (ft)	XLOBR (ft)	Remarks
9.682	9.682	480	507	510	
9.776	9.776	490	496	480	
9.872	9.872	510	507	480	
9.966	9.966	470	496	520	
10.058	10.058	490	486	440	
10.151	10.151	440	491	500	
10.230	10.230	460	417	340	
10.325	10.325	470	502	550	
10.419	10.419	510	496	420	
10.544	10.544	650	660	650	future 22nd Ave. alignment

4.3 Cross-Section Description

Cross section locations were taken at approximately every 500 feet along the thalweg unless intermediate sections were required. The cross section number was labeled according to distance in miles along the thalweg from the river mouth. The basis of cross section labeling is mile 0.000 at the confluence with the New River.

Each cross section was oriented such that it is normal to the direction of flow across the entire channel and floodplain. Cross sections will be bent or doglegged as required. Each cross section's geometric data will cover at least the entire 100-year floodplain.

Significant grade changes along a cross section were digitized from left to right looking downstream. The geometric data were recorded in accordance with HEC-2 format. The positional accuracy of these data is to the nearest one foot horizontally and to the nearest 0.5 vertically. The channel station center line (thalweg) was designated as Station 10,000 in compiling cross section geometric data.

4.3.1 Channel and Overbanks

The digitized cross section data at the selected locations were provided by Aerial Mapping Company, Inc. in a HEC-2 input format. These data were processed by HNTB to set up the HEC-2 models. The channel left and right bank stations, channel and overbank reach lengths, and Manning's n values for channel and overbanks were entered to the models.

A total of 150 cross sections were taken for the study reaches. Ten of these cross sections were field verified with ground survey and are included in **Appendix A - Survey Field Notes** in the **TDN** for **Hydrology**, volume 2 of 2, by HNTB, dated May 1992.

Adjustments were made to the cross section data for ineffective areas, multiple channels, and ponding areas. The X3 cards were used to reflect the ineffective or ponding areas identified on topographic maps. The NH cards were used to simulate the multiple channels or at the confluence of washes.

Table 2 in **Section 4.2.1** presents the Manning's n values used to channel and overbanks for each cross section. **Table 3** shows the reach lengths used to each cross section's channel and overbanks. The channel length was determined by the distance along the thalweg. The overbank length was selected based on the distance between sections measuring through the centroid of the overbank area.

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Final cross sections were plotted and included in **Exhibit A - Cross Section Plots**. These plots showed water surface profiles, Manning's n values, ineffective flow areas, and encroachment.

4.3.2 Bridges, Culverts and Construction

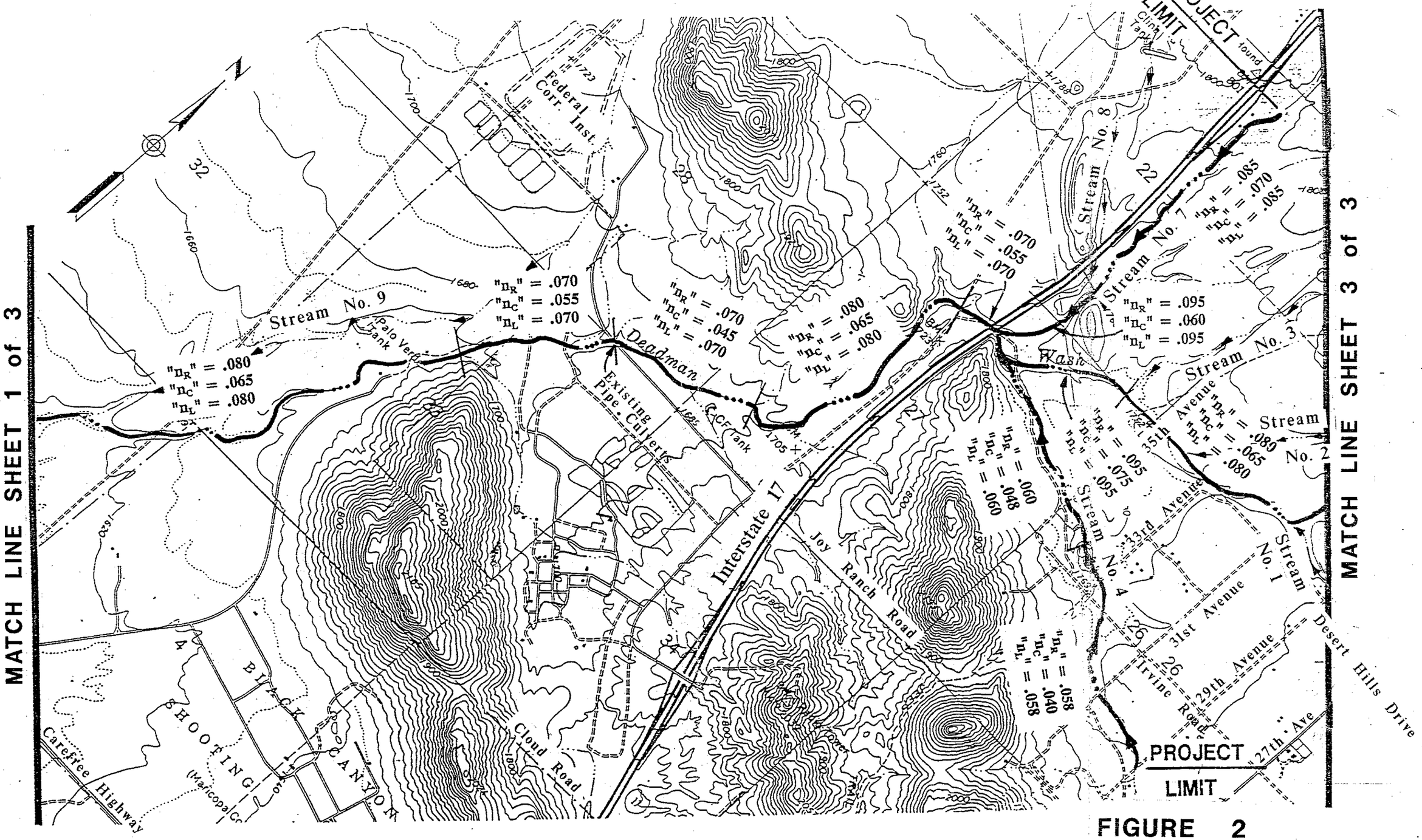

FIGURE 2

Study Reaches
For
Deadman Wash Floodplain Delineation Study

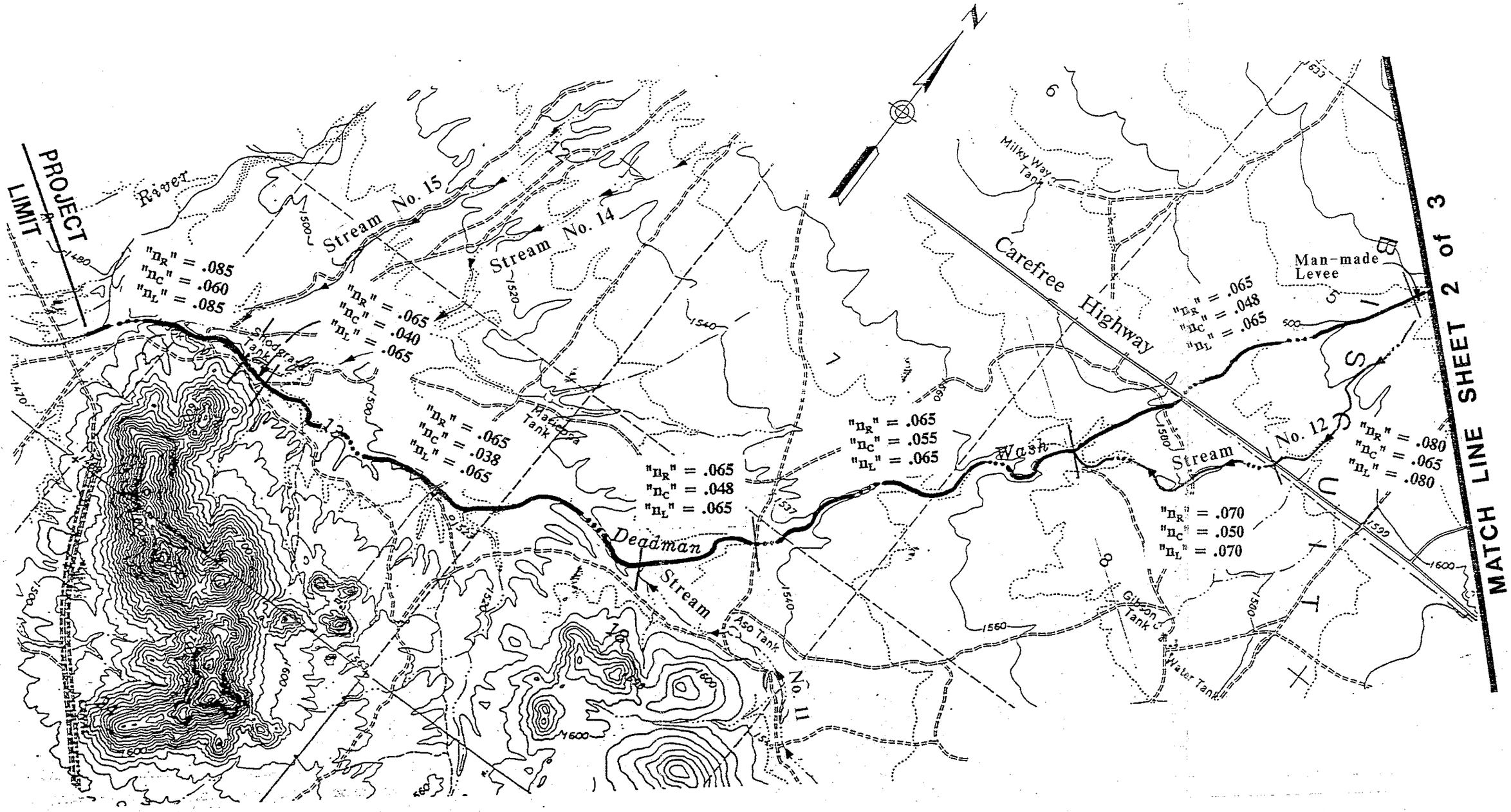

FIGURE 2

Study Reaches
For
Deadman Wash Floodplain Delineation Study

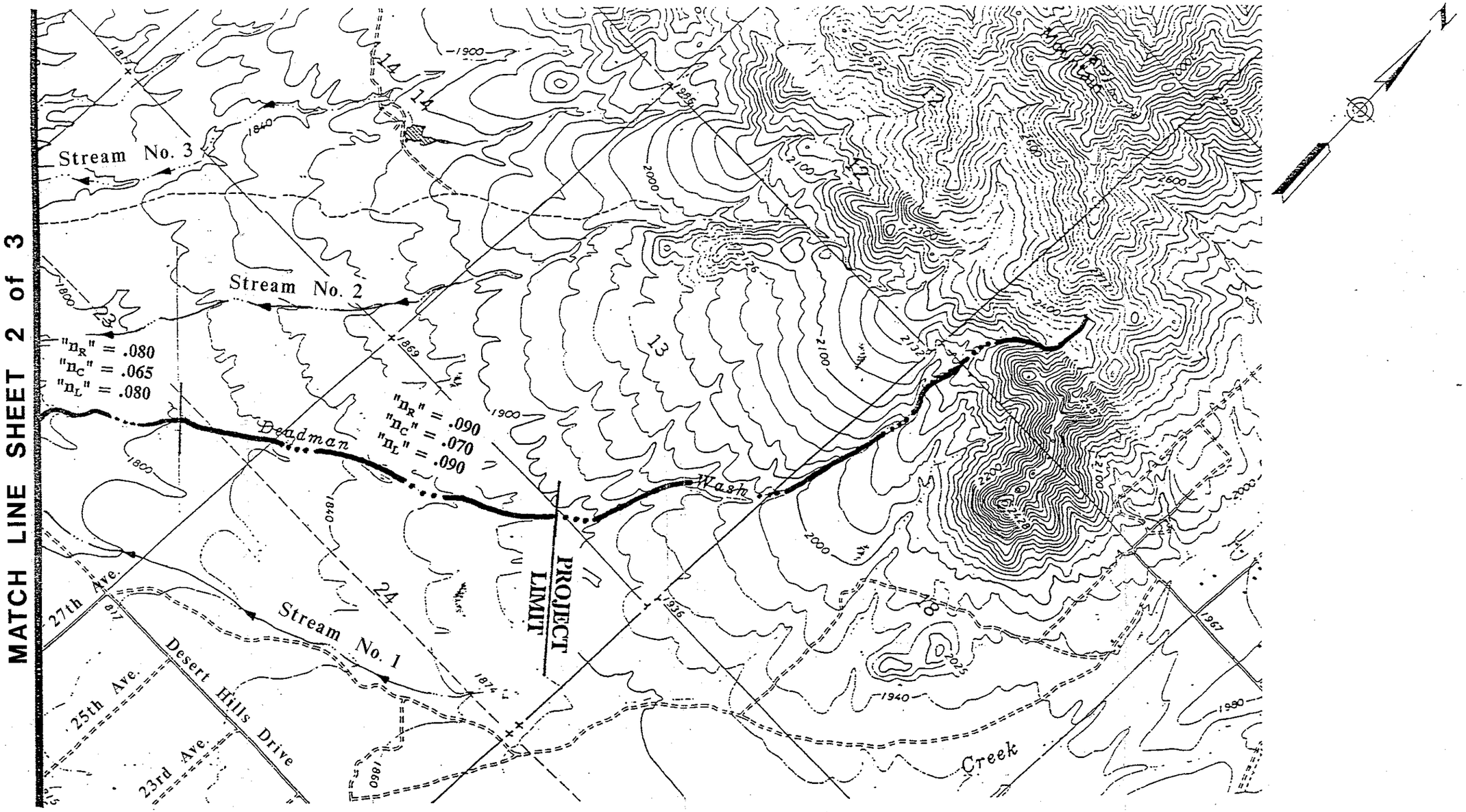

FIGURE 2

Study Reaches
For
Deadman Wash Floodplain Delineation Study

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4.4 Calibration

Calibration is a major task for the hydraulic analysis in order to obtain reasonable results. Since no observed data were available for the study reaches, the effort was concentrated on the verification of critical input parameters for HEC-2 models. The verification was accomplished by examining the key output variables which may affect the accuracy of the results. These key variables include computed water surface elevation, top width, velocity, flow distribution, energy slope, and any warning messages. In addition, topographic maps, aerial

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4.5 Special Problems and Solutions

4.5.1 Snodgrass Tank Levee

Problem:

The dam and levee structure of Snodgrass Tank near the New River creates a significant constriction to the floodwaters. There is an opening through the levee, approximately 106 feet wide, located just north of the tank. It appears that the floodwaters will pond behind the dam and levee structure and breach through the opening. It will require a detailed analysis to determine whether or not this structure will be stable during a 100-year flood event.

Solution:

The ineffective flow areas were identified for SECNO 0.382 and SECNO 0.618. X3 cards were used to model these ineffective flow areas. The contraction and expansion coefficients of 0.3 and 0.5 were assigned to simulate the abrupt contraction and expansion caused by the levee.

Discussion:

The flow runs through the levee with a velocity of 12 feet per second and a water surface elevation of 1495.13 feet. There is approximately 5 feet of freeboard provided by this structure. Therefore, this structure will be stable and inundated the upstream area during a 100-year storm. In addition, there is approximately 2 feet of backwater effect to upstream area caused by this structure.

4.5.2 Split Flow Caused by Diversion Structure

Problem:

A split flow occurs at approximately 4,200 feet north of Carefree Highway between Deadman Wash and an unnamed tributary - Stream No. 12. This flow split is caused by a man-made levee functioned as a diversion structure. This levee is approximately 700 feet long from the headwater of Stream Number 12.

The overland flow exists upstream of the flow split location and the levee diverts the left overbank flow into the Stream Number 12. This diversion flow will cross the Carefree Highway and re-join the main channel at approximately 1,700 feet south of the highway. There is no physical barrier between the main channel and this tributary. The overbank flows spread over a wide and flat floodplain area

between these two streams. The floodplain width varies from 1,000 feet to 2,500 feet. The existence of any island conditions on this floodplain area must be examined and evaluated.

Deadman Wash becomes a wide and shallow channel from just downstream of the diversion structure to the confluence with Stream Number 12. Deadman Wash crosses the Carefree Highway through a dip section, approximately 1,000 feet long.

Stream number 12 has a meandering, narrow, and well-defined channel, approximately 1.5 mile long from the mouth. There is a corrugated arch pipe across the highway. Significant amount of silt is presented in this crossing. An equivalent pipe size of 68 inches were used in the HEC-2 analysis.

Solution:

A more detailed hydraulic analysis of this sheet flow flooding area was conducted. The following approach was taken to solve this problem.

Step 1: An initial HEC-2 run was made with proper peak discharges in reaches. The existing pipe on Stream Number 12 was not simulated. A review of the results indicated dramatic shifts in flows between streams. The computed floodplain limits were as wide as 2,500 feet.

Step 2: An approximate watershed boundary was delineated. The man-made diversion structure should provide a 55-45 flow split according to the results of Hydrology Report for this project under a separate cover. The overland sheet flow usually has a random path and may split and form multiple channels. In order to identify exact flow split throughout this reach, the HEC-2 tributary stream profile computations were performed. The special culvert method was also used to model the existing pipe on this tributary.

Step 3: The model was calibrated through a trial-and-error process until the energy grade line values along the watershed boundary are virtually the same with a 0.5 $\pm$ difference based on the assumed flow split ratios.

Discussion:

The overflow occurs upstream of the split flow location with approximately 61 percent of the flow on the left overbank area. The flow split reduces to 45

percent to Stream Number 12 through the levee. The floodplain consists of multiple channels although the dip section on Carefree Highway has the capacity to drain all the 100-year flood with a water depth of 2.4 feet. The review of topography indicated that roadway overtopping occurs in the vicinity of the pipe culvert on the tributary. The split ratio becomes a 68-32 flow split south of Carefree Highway.

The results showed that the existing culvert has a capacity of 213 cfs during a 100-year storm event. Table 4 presents the energy grade line comparison between Deadman Wash and Stream Number 12. It should be noted that the unsteady flow condition occurs just upstream of Carefree Highway. The overland flood on Stream Number 12 will not turn southwesterly and travel 1,200 feet to the dip section. The overland flow will spill over the highway. The flow distribution was not sensitive to SECNo 3.957 because it showed that a 90 percent of total flow of 9,100 cfs can be drained on the Stream Number 12 floodplain without significant increase on the energy grade line.

4.5.3 Roadway Overtopping at Joy Road Ranch Road

Problem:

The existing structure at Joy Ranch Road consists of twin 72-inch, 60-inch and 48 inch reinforced concrete pipe. This structure experienced sever bank erosion and stream bed scour. The roadway was inundated and impassible in the pass floods. It is evident that the flow breaks out of the winding channel upstream of this structure and overtops the roadway.

Solution:

The roadway overtopping was analyzed using the split flow option in HEC-2 model. The split flow occurs from SECNO 6.467 to SECNO 6.654 and returns on SECNO 6.280 just downstream of the structure. The roadway grades between SECNO 6.467 and SECNO 6.654 were input to the HEC-2 model to calculate the amount of breakout. In addition, the special culvert method was used to model only the twin 72-inch pipes and roadway weir flow on top of the structure. It was determined that only the twin 72-inch pipes will be hydraulically functioned during a major flood due to the debris and siltation concern to the smaller pipes.

Discussion:

There is a roadway overtopping of 1,180 cfs, approximately 12 percent of total flow occurring just upstream of this drainage structure. This structure has a capacity of 740 cfs, approximately 9 percent of the flow reached the structure. The culvert outlet velocity is only abut 9 feet per second. However, the roadway

Table 4
Summary of Split Flow Analysis Caused by the Levee

SECNO	Distance from Mouth (miles)		Discharge (cfs)		CWSEL (feet)		EG (feet)		EG Difference (feet)	Remarks
	Deadman	Tributary	Deadman	Tributary	Deadman	Tributary	Deadman	Tributary		
3.284	3.284	N/A	8,760	N/A	1572.03	N/A	1572.34	N/A	N/A	Stream number 12 mouth
3.347	3.347	0.074	6,000	2,760	1573.71	1573.71	1574.22	1573.98	0.24	
3.385	3.385	0.149	6,000	2,760	1575.15	1575.57	1575.57	1575.86	−0.29	
3.481	3.481	0.245	6,000	2,760	1578.63	1578.45	1579.07	1578.83	0.24	
3.546	3.546	0.34	6,000	2,760	1581.54	1581.21	1581.83	1581.35	0.48	
0.434	N/A	0.434	N/A	2,760	N/A	1583.18	N/A	1583.28	N/A	
0.529	N/A	0.529	N/A	2,760	N/A	1586.61	N/A	1586.87	N/A	
0.624	N/A	0.624	N/A	2,760	N/A	1590.12	N/A	1590.28	N/A	
3.651	3.651	0.717	6,000	2,760	1586.41	1594.24	1586.83	1594.26	−7.43	roadway overflow occurs
3.710	3.710	N/A	6,000	N/A	1588.85	N/A	1589.01	N/A	N/A	
3.804	3.804	N/A	5,000	N/A	1591.77	N/A	1591.93	N/A	N/A	
3.881	3.881	0.776	5,000	4,100	1595.01	1594.42	1595.16	1594.59	0.57	
3.957	3.957	0.813	5,000	4,100	1598.09	1597.13	1598.26	1597.25	1.01	Not senstive to flow distri.
4.019	4.019	0.905	5,000	4,100	1600.60	1600.17	1600.76	1600.30	0.46	
4.058	4.058	0.978	5,000	4,100	1602.06	1602.25	1602.26	1602.34	−0.08	
4.146	4.146	1.053	5,000	4,100	1605.43	1604.67	1605.61	1604.79	0.82	Data fluctuation
4.197	4.197	1.134	5,000	4,100	1607.27	1607.13	1607.56	1607.29	0.27	
4.262	4.262	1.229	5,000	4,100	1610.06	1610.28	1610.38	1610.51	−0.13	
4.333	4.333	1.303	5,000	4,100	1612.27	1612.35	1612.46	1612.53	−0.07	
4.390	4.390	1.366	5,000	4,100	1614.13	1614.07	1614.41	1614.48	−0.07	
4.492	4.492	N/A	9,100	N/A	1617.66	N/A	1617.85	N/A	N/A	Spilt flow starts

overflow has a water depth of 3 feet, which will create roadway closure, bank erosion and steam bed erosion.

4.5.4 I-17 Bridges

Problem:

There is two 4-span I-17 bridges provided the northbound and southbound traffic. The opening width of these bridges is 128 feet three 2 feet wide piers. Two tributaries join Deadman Wash just upstream of I-17. The southbound bridge piers have been constructed with a skew angle to the flow, which will introduce additional losses. The incoming Deadman Wash channel to the northbound bridge is skewed approximately 30 degrees. Vegetation is very dense through these bridges. It appears that these bridges have the capacity to drain a 100-year flood. However, the downstream channel i relatively shallow and small.

Solution:

It was decided that the special bridge method was used to determine the class of flow through these bridges. The bridges were modeled separately. The contraction and expansion coefficients of 0.6 and 0.8 were used through the bridge sections. A 100 percent clogging factor was applied to the piers.

Discussion:

Class a low flow was determined for both bridges, which means that the flow is in a subcritical flow regime. There is virtually no freeboard for the southbound bridge and the northbound bridge has approximately 3.4 feet of freeboard. No significant backwater effect was caused by these bridges. The downstream channel only has a capacity to convey 50 percent of the total flow with a channel velocity of 9 feet per second.

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4.6 Floodway Management and Insurance Application

The National Flood Insurance Program encourages state and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound floodplain management measures.

4.6.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the Federal Emergency Management Agency as the base flood for purposes of floodplain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. for the study reaches of Deadman Wash the flood boundaries of the 100-year flood has been delineated using the flood elevations determined as each cross section. The boundaries between cross sections were interpolated using the topographic maps.

4.6.2 Floodway Modeling

Encroachment on floodplains such as structures and fill, reduces flood-carrying, increases flood heights and velocities and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain area, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood height. The federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodway in this study is presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodway presented in this study was computed on the basis of equal conveyance reduction assuming stable channels with rigid boundaries. Because of the meandering and dynamic nature of the Deadman Wash, the usual dividing lines between floodway and floodway fringes are not permanent. There is some risk of flooding and bank scour at any location within the 100-year boundary.

As shown on the Flood Boundary and Floodway maps, the floodway widths were determined at cross sections. Between cross sections, the boundaries were

interpolated. In cases where the boundaries of the floodway and the 100-year floodplain are either close together or collinear, only the floodway boundary has been shown.

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood by more than one foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4. The results of these computations are tabulated at selected cross sections for the study reaches of Deadman Wash.

4.6.3 Insurance Application

Flood insurance zones and zone numbers are assigned based on the type of flood hazard resulting from the hydraulic analyses. Appropriate flood insurance rate zones were delineated on **Exhibit 2 - Flood Boundary and floodway Map.**

The flood insurance rate zones are designated according to the following criteria:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study (FIS) by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations (BFEs) or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that ae determined in the FIS by detailed methods. In most instances, BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding with a constant water-surface elevation (usually areas of ponding) where average depths are between 1 and 3 feet. The BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain where average depths are between 1 and 3 feet. The depth should be averaged along the cross section and then along the direction of flow to determine the extent of the zone. Average depths derived form the detailed hydraulic analyses are shown within this zone. Typically, alluvial fan flood hazards are shown as Zone AO on the Flood Insurance Rate Map (FIRM).

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No BFEs or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no BFEs are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 100-year floodplain, and areas of 100-year sheet flow flooding where average depths are less than 1 foot, areas of 100-year stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 100-year flood by levees. No BFEs or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible. Zone D

designation may not be used in Flood Insurance Studies unless otherwise approved by the Regional PO.

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Table 5
HEC-2 Models

HEC - 1 MODEL	SECNO		
INPUT FILE	FROM	TO	DESCRIPTION
SUN1.HC2	0.092	3.209	New River to the confluence with Stream Number 12.
C10TSP.HC2	3.209	4.662	Confluence with Stream Number 12 to confluence with Stream Number 9.
SUN2.HC2	4.492	6.021	Confluence with Stream number 9 to 1,800' downstream of Joy Ranch Road Pipe Culverts.
C10MSC.HC2	5.928	6.751	1,800' downstream of Joy Ranch Road Pipe Culverts to CF Tank.
SUN3.HC2	6,751	8.111	CF Tank to confluence with Stream Number 3 just upstream of I-17.
SUN4.HC2	8.016	10.544	Upstream of I-17 to future 22nd Avenue.

4.7 Final Results and Computer Runs

DMSEC4.TDN/bgs

HEC2 S/N: 1126460209 HMVersion: 6.40 Data File: sun1.hc2

```
*********************************************
*  HEC-2 WATER SURFACE PROFILES             *
*                                           *
*  Version   4.6.2;  May 1991               *
*                                           *
*  RUN DATE    25MAY92    TIME   13:11:51   *
*********************************************
```

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

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

```
:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
:::                                       :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
:::                                       :::
:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
```

```
============================
H A E S T A D   M E T H O D S
============================
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 25MAY92 13:11:51

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

 Version   4.6.2;  May 1991
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T1      Deadman Wash Floodplain Delineation Study
T2      Hydraulic Analysis of Deadman Wash, SECNO 0.092 to SECNO 3.209
T3      Deadman Wash 100-year Q   Subcritical Flow,    May 1992

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                           -1

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1                 -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         8        42         3         2        26         5        39
     53         4        54

QT        1      9680
NC                                     .1        .3
NH        5      .085     9947.2     .060     10030.1     .085     10365.6     .060     10419.8     .085
NH   10572.
          ************************************************************
          Deadman Wash Floodplain Delineation Study prepared for
          FCDMC by Howard Needles Tammen & Bergendoff (HNTB), 1992.

          This floodplain delineation study begins at the New River,
          and the water surface elevation starts at critical depth.
          The higher water suface elevation in New River was not used
          to start the HEC-2 runs due to the difference in time of peak.

          NC cards were used where majority of flow expected to remain
          in the channel, while NH cards were used for the braided
          channel or at the confluence of washes.

          The first run is the natural profile run, and X3 cards were
          used in some sections to better model ineffective flow areas.

          The control line on the thalweg of Deadman Wash is
          Station 10,000, and all cross section data were stationed
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looking downstream.

Cross section numbers indicate in river miles above the mouth.

Q of 9,680 cfs at C10X was used instead of 9,610 computed at C10Y.

NH cards were used for SECNO 0.092 through SECNO 0.382.
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X1    0.092       48    9947.2   10030.1        0        0        0
GR   1495.0   9861.4    1494.3    9888.1   1493.6   9909.2   1489.2   9931.7   1483.5   9947.2
GR   1475.3   9958.1    1474.4    9969.2   1473.9   9982.3   1473.9   9993.1   1472.6  10000.0
GR   1472.6  10007.8    1472.7   10011.0   1478.0  10022.7   1479.6  10030.1   1479.9  10043.5
GR   1479.9  10059.8    1480.9   10078.5   1481.1  10100.3   1481.0  10116.7   1481.2  10134.9
GR   1481.4  10149.7    1481.3   10163.9   1481.4  10181.9   1481.1  10194.4   1481.5  10214.4
GR   1481.5  10225.6    1481.1   10242.2   1481.2  10269.9   1481.9  10293.6   1481.6  10319.2
GR   1481.5  10341.0    1481.8   10356.9   1480.9  10365.6   1479.2  10374.2   1478.6  10382.6
GR   1478.7  10387.2    1479.7   10390.2   1479.2  10395.7   1477.9  10400.0   1478.1  10404.2
GR   1480.2  10411.0    1480.9   10419.8   1482.3  10435.5   1482.5  10462.4   1482.5  10494.5
GR   1482.9  10531.7    1483.0   10571.5   1483.1  10572.0

NH       7      .085    9974.0      .060  10052.6      .085  10446.8      .060  10508.3      .085
NH   10711.     .060   10745.1      .085  10918.6
X1    0.159       60    9974.0   10052.6      340      400      354
GR   1501.2   9937.3    1492.2    9953.1   1482.8   9974.0   1475.5   9981.8   1474.4   9991.3
GR   1474.2  10000.0    1475.8   10010.0   1477.0  10024.3   1478.5  10032.7   1480.9  10043.1
GR   1483.3  10052.6    1483.3   10064.2   1481.6  10081.9   1482.2  10099.6   1482.4  10120.1
GR   1483.1  10135.6    1482.5   10156.1   1482.5  10177.0   1482.8  10193.4   1483.2  10204.5
GR   1484.1  10218.5    1482.6   10233.1   1483.0  10240.1   1482.9  10257.7   1483.1  10289.8
GR   1483.5  10301.8    1483.5   10331.3   1484.3  10373.1   1484.2  10409.9   1483.0  10446.8
GR   1481.1  10463.4    1480.8   10478.5   1480.3  10484.2   1479.8  10490.0   1481.4  10496.6
GR   1483.7  10508.3    1484.0   10521.9   1483.6  10541.7   1482.7  10551.4   1483.9  10561.4
GR   1485.0  10569.3    1484.6   10587.4   1484.3  10613.4   1483.4  10627.7   1482.7  10638.8
GR   1484.2  10656.9    1484.3   10677.0   1484.3  10700.9   1482.5  10711.4   1479.9  10720.2
GR   1479.4  10725.9    1480.9   10732.1   1482.8  10745.1   1483.8  10759.5   1484.2  10790.3
GR   1484.4  10822.6    1484.9   10852.1   1485.4  10878.6   1485.3  10910.7   1485.3  10918.6

NH       5      .085    9967.9      .060  10037.3      .085  10106.0      .060  10356.5      .085
NH   11297.
X1    0.202       86    9967.9   10037.3      210      240      227
GR   1495.7   9951.0    1483.4    9967.9   1476.4   9982.3   1473.2   9990.6   1472.7   9997.4
GR   1473.1  10000.0    1474.5   10004.2   1478.9  10012.8   1482.0  10024.4   1484.4  10037.3
GR   1484.4  10052.1    1483.8   10066.8   1482.5  10072.0   1482.2  10081.6   1483.6  10092.0
GR   1483.5  10106.0    1481.9   10117.3   1480.3  10128.1   1476.7  10139.1   1475.8  10146.9
GR   1475.5  10156.7    1477.0   10161.3   1481.6  10175.0   1483.7  10183.4   1483.5  10188.8
GR   1480.1  10201.8    1478.9   10209.1   1480.5  10213.9   1482.8  10229.0   1484.1  10244.9
GR   1484.5  10267.9    1483.7   10280.8   1482.0  10289.5   1482.1  10304.7   1479.9  10311.3
GR   1479.0  10315.9    1480.6   10323.1   1482.7  10337.5   1484.6  10356.5   1484.5  10379.2
GR   1484.9  10412.7    1485.0   10443.5   1485.1  10481.5   1485.4  10515.7   1485.5  10555.8
GR   1486.3  10577.1    1485.8   10620.2   1486.0  10658.7   1486.8  10686.7   1487.0  10704.0
GR   1485.1  10716.1    1483.0   10726.8   1482.6  10737.5   1481.2  10740.3   1481.3  10745.1
GR   1483.8  10753.2    1485.5   10763.6   1486.1  10774.2   1485.5  10781.1   1484.9  10787.4
GR   1486.4  10802.9    1486.2   10820.5   1486.7  10839.3   1486.5  10850.1   1485.6  10861.8
GR   1486.0  10874.5    1485.6   10885.4   1485.2  10890.4   1486.0  10903.3   1485.7  10926.1
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GR   1486.0    10956.2    1486.3    10985.8    1486.1    11019.6    1486.7    11048.0    1485.9    11070.3
GR   1485.4    11090.6    1483.8    11102.9    1482.9    11113.3    1484.2    11126.0    1485.9    11145.7
GR   1486.8    11168.3    1486.5    11197.2    1486.5    11229.6    1487.1    11260.3    1487.1    11288.8
GR   1487.7    11297.2

NH       5       .085    9970.1       .060   10031.1       .085   10214.4       .060   10267.1       .085
NH   10505.      .060   10710.0       .085   10955.0
X1    0.299        54    9970.1    10031.1       520       400       512
GR   1499.7     9701.1    1498.1     9730.5    1496.9     9754.1    1496.2     9772.4    1493.2     9802.5
GR   1491.1     9836.3    1489.3     9857.8    1485.1     9876.7    1484.3     9890.5    1484.6     9918.2
GR   1485.0     9944.8    1485.0     9970.1    1484.5     9981.5    1481.8     9988.3    1474.0     9993.9
GR   1473.8    10000.0    1474.3    10006.9    1483.3    10015.9    1485.1    10031.1    1484.0    10043.9
GR   1479.2    10053.6    1480.3    10066.1    1482.3    10080.6    1482.0    10082.8    1484.0    10096.2
GR   1484.3    10117.2    1484.9    10138.4    1483.9    10146.3    1484.9    10170.4    1485.9    10184.6
GR   1485.7    10203.1    1483.5    10214.4    1480.5    10225.2    1478.4    10231.7    1478.8    10242.0
GR   1481.9    10254.5    1484.7    10267.1    1485.9    10286.7    1486.2    10311.4    1486.2    10337.6
GR   1486.1    10368.8    1486.2    10392.8    1485.7    10417.9    1485.5    10434.3    1483.1    10446.6
GR   1484.7    10455.1    1485.7    10472.9    1486.1    10496.0    1486.2    10505.0    1484.0    10625.0
GR   1484.0    10685.0    1486.0    10710.0    1488.0    10880.0    1488.6    10955.0

NC                                       .3        .5
NH       5       .085    9958.6       .060   10015.2       .085   10640.2       .060   10718.5       .085
NH   10816.
          X3 card was used to model ineffective area.
          Contraction and expansion coefficients changed to 0.3 and
          0.5 for the dam and dike structures at Snodgrass Tank.
X1    0.382        56    9958.6    10015.2       400       550       438
X3       10                         9940.0                 10430.0
GR   1492.1     9781.2    1489.1     9807.0    1488.7     9838.6    1488.6     9852.4    1488.2     9869.9
GR   1487.6     9881.8    1485.3     9897.6    1482.2     9909.8    1480.7     9926.6    1481.5     9940.4
GR   1484.0     9951.7    1485.3     9958.6    1482.8     9965.5    1481.8     9980.0    1480.8     9992.8
GR   1479.3    10000.0    1480.5    10007.6    1485.2    10015.2    1487.8    10025.5    1487.9    10046.7
GR   1486.6    10069.7    1485.3    10082.1    1483.2    10095.7    1483.1    10106.6    1484.3    10125.5
GR   1485.5    10148.8    1486.2    10172.8    1486.3    10196.8    1486.5    10217.4    1487.9    10241.4
GR   1488.5    10265.8    1488.6    10292.1    1489.3    10312.8    1489.2    10333.8    1489.4    10363.4
GR   1489.9    10400.6    1490.8    10433.1    1490.9    10465.9    1490.9    10496.3    1492.1    10528.1
GR   1491.7    10564.9    1491.7    10599.3    1491.2    10625.2    1489.3    10640.2    1488.8    10655.0
GR   1488.1    10662.8    1485.9    10665.3    1486.0    10667.3    1488.2    10671.9    1488.8    10689.6
GR   1489.6    10718.5    1491.1    10745.2    1491.2    10767.9    1491.3    10792.4    1490.7    10813.0
GR   1490.4    10816.3

NC      .065       .065       .040
          The area of the stock tank (Snodgrass Tank) is ineffective,
          and it's ignored. However, the dam and dike structures act
          as a constriction to the flow.
X1    0.516        80    9828.1    10114.2       680       750       708
GR   1507.2     9207.8    1505.8     9230.3    1503.4     9252.4    1498.7     9271.8    1497.6     9281.0
GR   1498.4     9290.6    1500.5     9298.4    1501.8     9323.6    1501.6     9353.2    1500.5     9391.1
GR   1500.2     9427.1    1501.1     9459.8    1500.7     9484.2    1500.9     9496.9    1500.7     9517.7
GR   1500.6     9520.3    1500.6     9554.9    1500.4     9580.2    1500.3     9623.0    1501.4     9668.8
GR   1501.4     9709.7    1501.2     9754.3    1501.3     9792.3    1500.1     9828.1    1497.9     9858.1
GR   1498.0     9913.8    1497.2     9950.6    1496.0     9959.7    1487.5     9977.9    1485.2    10000.0
GR   1485.8    10027.2    1486.8    10043.6    1491.3    10066.6    1498.5    10077.7    1500.1    10114.2
GR   1500.5    10146.6    1500.8    10177.7    1500.7    10216.3    1499.4    10257.3    1500.6    10299.3
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GR   1500.0    10332.7    1499.8    10379.3    1499.7    10431.0    1500.4    10476.0    1501.4    10502.3
GR   1502.0    10526.2    1500.5    10527.7    1501.0    10560.9    1500.7    10591.6    1500.0    10617.6
GR   1500.3    10651.5    1499.7    10692.0    1499.8    10725.7    1500.0    10743.3    1499.0    10755.2
GR   1497.0    10777.6    1495.9    10795.0    1495.7    10815.0    1496.5    10849.1    1497.5    10896.8
GR   1498.1    10946.7    1498.3    10989.5    1498.0    11020.9    1497.6    11052.9    1496.6    11071.7
GR   1496.7    11088.7    1497.7    11117.7    1498.6    11147.7    1498.6    11171.4    1498.9    11205.5
GR   1499.1    11241.7    1498.9    11270.8    1497.1    11300.9    1496.3    11333.3    1496.3    11374.1
GR   1497.2    11413.7    1496.9    11450.9    1499.7    11489.6    1500.0    11540.6    1500.2    11541.3

QT       1       9690
NC    .065       .065       .038
         Q changed to 9,690 cfs at C10W (the confluence with Stream No.
         14).  CCHV = 0.3 for abrupt contraction.
         X3 card was used to model ineffective area.
         NC card was used, channel = .038 and overbanks = .065.
X1   0.618         67     9961.3    10051.6       600       490       539
X3      10                           9690.0                10420
GR   1500.0     9590.0    1496.4     9645.0    1496.1     9673.6    1495.1     9706.2    1496.2     9726.3
GR   1497.9     9750.4    1498.2     9775.2    1497.9     9800.0    1497.4     9820.1    1496.7     9831.4
GR   1495.0     9850.6    1493.9     9879.2    1493.2     9905.1    1492.4     9924.2    1492.9     9943.9
GR   1493.2     9961.3    1492.3     9972.4    1490.8     9983.7    1490.1     9995.7    1489.9    10000.0
GR   1490.5    10011.3    1491.8    10017.3    1493.5    10029.8    1493.7    10051.6    1493.5    10072.4
GR   1493.2    10102.0    1493.1    10134.2    1492.8    10166.9    1492.6    10200.5    1492.6    10233.7
GR   1492.3    10257.9    1492.4    10277.4    1492.2    10303.5    1492.6    10335.6    1493.1    10365.8
GR   1494.1    10389.1    1494.1    10420.1    1493.4    10461.6    1492.8    10502.8    1493.0    10539.0
GR   1492.6    10577.9    1492.7    10616.2    1492.7    10661.3    1492.8    10704.4    1493.3    10746.6
GR   1493.8    10778.5    1495.6    10809.6    1495.9    10854.0    1496.8    10897.3    1496.6    10937.4
GR   1495.9    10958.7    1496.9    10992.7    1497.1    11034.2    1497.8    11081.1    1498.4    11119.0
GR   1498.8    11148.5    1498.5    11191.7    1496.5    11233.4    1495.4    11258.3    1496.0    11294.9
GR   1496.5    11331.5    1496.7    11366.1    1497.0    11403.2    1497.4    11441.2    1497.6    11477.4
GR   1498.7    11509.9    1499.0    11511.3

NC                                       .1        .3
         Contraction and expansion coefficients changed to 0.1 and 0.3.
X1   0.721         79     9989.4    10022.5       400       400       544
GR   1499.5     9788.0    1498.0     9807.3    1498.3     9822.1    1496.7     9838.2    1495.9     9854.4
GR   1495.6     9875.0    1495.9     9884.3    1495.1     9896.1    1495.1     9921.8    1494.7     9944.9
GR   1495.4     9968.0    1496.0     9983.3    1495.0     9989.4    1492.4     9993.1    1492.1     9999.8
GR   1492.2    10000.0    1492.6    10009.6    1494.2    10022.5    1494.4    10035.5    1494.9    10060.3
GR   1495.3    10092.1    1496.1    10120.5    1495.3    10130.4    1494.0    10138.7    1495.2    10148.9
GR   1494.9    10172.3    1494.9    10196.6    1494.7    10234.0    1494.6    10271.8    1494.3    10305.8
GR   1494.1    10328.1    1494.0    10345.3    1494.7    10365.8    1494.5    10398.4    1494.8    10432.3
GR   1495.3    10465.5    1495.1    10499.1    1495.0    10540.3    1494.8    10579.6    1494.8    10614.1
GR   1495.2    10651.1    1495.3    10659.0    1495.3    10680.3    1495.4    10697.8    1494.9    10724.5
GR   1494.8    10762.6    1494.3    10786.7    1494.8    10797.4    1494.6    10813.2    1495.1    10836.1
GR   1495.0    10871.3    1495.9    10897.4    1496.6    10922.8    1496.6    10946.7    1497.2    10973.7
GR   1498.6    10996.4    1498.8    11014.4    1497.9    11041.4    1497.9    11070.3    1498.1    11103.5
GR   1498.1    11136.8    1498.6    11166.9    1500.6    11200.6    1501.4    11215.4    1501.3    11249.2
GR   1500.3    11283.6    1500.6    11322.6    1501.2    11356.1    1501.2    11390.1    1500.9    11417.4
GR   1500.2    11436.4    1499.3    11454.1    1499.3    11463.1    1501.9    11477.9    1501.9    11496.8
GR   1501.3    11523.2    1500.3    11548.6    1499.9    11564.7    1500.6    11577.5
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X1	0.803	78	9986.3	10025.5	470	285	433			
GR	1503.4	9499.6	1503.3	9520.4	1502.7	9546.2	1501.9	9567.8	1500.9	9588.6
GR	1501.4	9611.4	1501.1	9636.2	1500.0	9653.3	1500.9	9678.0	1501.3	9710.2
GR	1500.5	9752.3	1499.1	9789.6	1498.9	9828.3	1498.7	9862.0	1498.9	9892.6
GR	1498.6	9923.8	1498.1	9951.6	1496.8	9971.8	1496.3	9986.3	1494.5	9994.9
GR	1493.3	9998.8	1493.4	10000.0	1494.3	10013.6	1496.4	10025.5	1496.5	10044.9
GR	1497.0	10080.5	1496.8	10114.6	1497.1	10120.1	1495.9	10157.9	1495.5	10196.2
GR	1494.7	10220.4	1495.0	10244.3	1495.1	10273.3	1495.6	10291.5	1495.6	10310.8
GR	1496.2	10324.6	1497.1	10347.6	1497.0	10372.1	1496.5	10391.2	1496.1	10401.9
GR	1496.0	10419.4	1495.9	10449.3	1496.1	10475.3	1496.7	10505.1	1496.1	10537.0
GR	1496.2	10563.6	1496.5	10585.8	1496.5	10609.9	1496.5	10639.5	1496.2	10672.3
GR	1496.1	10701.4	1495.8	10712.6	1496.5	10730.9	1496.9	10751.0	1496.5	10759.9
GR	1497.2	10774.6	1497.1	10814.9	1498.0	10855.8	1498.1	10896.9	1498.5	10938.3
GR	1499.3	10986.4	1499.6	11035.8	1499.8	11085.7	1500.9	11125.0	1501.4	11135.2
GR	1502.8	11171.0	1502.7	11201.9	1502.1	11227.0	1501.3	11244.7	1500.9	11258.8
GR	1502.8	11276.6	1504.8	11293.8	1505.0	11318.3	1505.0	11335.2	1505.0	11367.9
GR	1505.2	11399.6	1504.9	11419.1	1505.6	11440.6				
X1	0.909	78	9938.6	10031.2	450	460	560			
GR	1505.8	9553.0	1504.9	9577.7	1504.9	9604.2	1504.7	9632.9	1504.8	9665.0
GR	1504.0	9699.7	1502.4	9727.3	1501.9	9760.6	1501.3	9790.5	1500.8	9812.0
GR	1501.2	9836.2	1500.5	9857.9	1499.7	9881.5	1498.9	9902.2	1500.5	9921.3
GR	1499.5	9938.6	1498.7	9961.3	1499.6	9975.1	1497.5	9984.4	1495.8	9994.5
GR	1495.5	10000.0	1495.8	10010.2	1497.7	10019.3	1499.9	10031.2	1499.3	10059.0
GR	1499.0	10096.0	1498.3	10126.5	1498.3	10154.4	1498.7	10171.9	1498.0	10183.2
GR	1498.7	10194.2	1498.9	10209.9	1498.9	10225.5	1498.3	10256.4	1498.4	10295.4
GR	1497.6	10317.5	1499.0	10335.7	1499.2	10366.3	1498.7	10398.4	1498.5	10436.0
GR	1498.6	10470.1	1498.6	10491.8	1498.5	10522.6	1498.6	10557.2	1498.6	10598.8
GR	1498.6	10633.5	1498.7	10656.7	1498.6	10688.6	1498.3	10724.7	1498.4	10764.6
GR	1498.3	10789.9	1498.6	10800.3	1498.9	10818.8	1498.2	10833.9	1499.1	10856.5
GR	1498.6	10890.7	1498.8	10918.1	1498.8	10951.3	1498.3	10965.7	1499.0	10979.7
GR	1499.8	11019.5	1501.6	11038.7	1501.5	11066.0	1502.6	11096.8	1503.2	11134.9
GR	1503.1	11167.6	1503.2	11202.3	1503.4	11235.3	1502.9	11262.5	1503.8	11290.9
GR	1505.4	11316.4	1506.2	11344.8	1506.2	11371.7	1506.2	11396.9	1506.2	11426.2
GR	1505.8	11457.6	1505.6	11487.3	1506.2	11513.5				
X1	0.988	74	9993.3	10028.7	410	410	417			
GR	1509.5	9360.3	1508.9	9391.8	1508.0	9438.7	1507.2	9485.8	1506.4	9536.0
GR	1505.2	9571.7	1504.5	9591.2	1504.7	9609.2	1504.7	9644.3	1504.0	9685.6
GR	1502.6	9707.9	1503.0	9737.0	1502.8	9774.7	1502.2	9812.3	1500.8	9845.1
GR	1500.8	9873.6	1500.3	9911.9	1501.1	9938.3	1501.7	9951.9	1501.2	9969.1
GR	1500.9	9983.4	1500.3	9993.4	1497.0	9999.3	1496.4	10000.0	1496.6	10009.4
GR	1497.6	10016.1	1500.9	10028.7	1499.7	10048.4	1499.5	10068.2	1498.2	10072.8
GR	1499.0	10077.9	1499.2	10091.3	1500.7	10109.1	1501.9	10135.2	1500.0	10154.3
GR	1500.2	10180.6	1500.4	10213.0	1500.3	10245.3	1500.3	10284.7	1500.4	10319.2
GR	1500.6	10355.5	1501.5	10395.2	1501.0	10434.0	1501.0	10471.4	1501.2	10511.9
GR	1500.9	10547.6	1501.0	10572.6	1501.4	10598.7	1501.3	10625.7	1501.0	10657.5
GR	1501.0	10683.1	1501.3	10714.7	1501.2	10737.3	1501.3	10766.6	1501.8	10799.7
GR	1502.3	10830.8	1502.0	10857.4	1501.7	10888.8	1501.6	10927.6	1501.8	10953.9
GR	1502.6	10981.5	1503.5	10999.8	1505.9	11014.0	1507.2	11039.6	1507.8	11049.7
GR	1509.0	11094.5	1509.5	11136.9	1509.8	11172.9	1509.8	11209.7	1509.7	11244.2
GR	1510.1	11277.2	1510.4	11308.8	1510.6	11340.4	1510.8	11342.4		

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X1    1.079       62    9975.6   10020.6      420       500       480
GR   1509.0   9437.9    1508.5    9484.7   1507.2    9536.2    1507.4    9561.1    1508.1    9575.9
GR   1506.7   9597.7    1506.6    9635.8   1506.6    9683.4    1505.9    9727.3    1505.3    9762.7
GR   1504.3   9785.9    1504.0    9799.5   1502.8    9804.7    1504.2    9817.4    1504.2    9838.7
GR   1503.7   9871.5    1504.4    9885.3   1503.3    9904.9    1503.0    9928.9    1503.5    9947.1
GR   1503.6   9961.1    1502.7    9975.6   1500.0    9984.5    1498.7    9993.6    1498.8   10000.0
GR   1500.1  10008.9    1502.8   10020.6   1502.6   10041.4    1502.3   10065.7    1501.7   10076.4
GR   1499.9  10083.6    1501.3   10092.3   1501.6   10106.4    1502.3   10124.0    1502.1   10146.8
GR   1502.5  10172.7    1502.6   10173.0   1501.7   10193.8    1502.5   10222.2    1502.5   10258.1
GR   1503.2  10290.6    1504.4   10326.1   1503.6   10358.5    1503.7   10396.2    1503.8   10426.7
GR   1503.8  10460.2    1503.6   10497.6   1503.5   10532.0    1503.7   10568.0    1504.6   10609.1
GR   1504.6  10638.9    1503.7   10676.8   1504.2   10721.0    1504.3   10772.1    1503.9   10821.9
GR   1503.7  10869.9    1504.2   10913.1   1505.3   10947.7    1506.6   10980.6    1506.9   11019.6
GR   1506.8  11035.6    1507.7   11046.5

X1    1.199       55    9982.3   10022.9      650       630       634
GR   1516.4   9779.8    1515.8    9802.3   1515.8    9827.9    1512.2    9864.0    1511.0    9900.9
GR   1509.8   9933.1    1508.2    9956.1   1505.4    9970.4    1503.6    9982.3    1500.9    9993.4
GR   1500.4  10000.0    1500.3   10004.3   1501.7   10012.7    1504.3   10022.9    1506.1   10033.4
GR   1504.6  10047.4    1505.2   10060.5   1504.9   10072.1    1506.2   10080.8    1504.5   10092.1
GR   1506.4  10105.9    1506.4   10123.3   1505.4   10146.1    1504.4   10170.8    1505.3   10185.6
GR   1505.5  10200.3    1504.5   10208.4   1506.3   10224.0    1506.3   10252.4    1506.7   10286.5
GR   1507.1  10330.2    1506.9   10354.9   1507.0   10389.3    1506.8   10405.9    1506.0   10414.6
GR   1506.4  10427.6    1505.7   10444.9   1506.4   10465.0    1506.4   10486.3    1507.7   10503.2
GR   1508.6  10524.6    1508.5   10538.6   1508.3   10571.6    1507.4   10601.5    1506.4   10623.6
GR   1507.5  10646.1    1508.5   10671.2   1508.2   10693.9    1507.9   10709.2    1509.2   10738.1
GR   1510.1  10771.1    1510.1   10807.3   1510.1   10846.3    1510.4   10893.6    1511.2   10923.1

NH       5      .065    9650.6      .045    9674.7      .065    9964.6      .038   10041.7      .065
NH   10880.
          NH cards were used.
X1    1.313       73    9964.6   10041.7      560       450       602
GR   1513.6   9411.0    1511.9    9464.0   1511.9    9504.8    1514.5    9515.1    1511.7    9528.2
GR   1511.8   9553.8    1511.7    9575.1   1510.1    9595.1    1508.8    9608.1    1509.5    9623.8
GR   1510.0   9637.1    1509.6    9646.5   1508.0    9650.6    1506.4    9654.5    1506.2    9660.0
GR   1506.7   9666.4    1508.6    9674.7   1508.7    9683.7    1508.9    9706.5    1509.3    9725.0
GR   1508.7   9737.1    1510.4    9756.9   1511.0    9780.5    1511.1    9792.5    1510.4    9817.4
GR   1509.2   9847.5    1509.1    9864.8   1508.0    9882.2    1505.8    9890.1    1507.9    9900.2
GR   1508.8   9916.6    1509.1    9941.5   1509.4    9964.6    1507.8    9977.6    1505.1    9992.6
GR   1503.7  10000.0    1503.6   10004.9   1505.6   10014.2    1506.3   10022.9    1509.2   10041.7
GR   1509.0  10067.9    1508.3   10088.4   1509.0   10106.0    1508.4   10115.8    1508.9   10129.8
GR   1508.7  10175.5    1508.8   10208.3   1508.9   10239.9    1508.4   10270.5    1508.6   10293.7
GR   1508.9  10308.1    1508.1   10314.4   1508.5   10328.7    1508.4   10346.6    1508.3   10356.7
GR   1508.7  10373.7    1507.9   10385.5   1508.4   10402.8    1508.6   10428.9    1509.4   10452.2
GR   1511.0  10473.8    1511.2   10496.8   1511.1   10529.7    1510.9   10561.8    1509.6   10598.9
GR   1509.9  10634.9    1510.1   10676.1   1510.2   10718.4    1510.2   10758.7    1510.2   10796.8
GR   1510.5  10844.6    1511.6   10875.7   1512.0   10880.0
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NC     .065       .065       .038
          NC card was used, channel = .038 and overbanks = .065.
X1    1.419        58     9971.6    10027.0       570       440       560
GR   1515.6    9384.9     1515.5     9420.7    1515.6    9441.8    1515.2    9476.8    1515.1    9507.9
GR   1514.6    9541.0     1515.3     9566.5    1515.4    9595.5    1515.4    9624.1    1514.4    9648.7
GR   1514.3    9667.5     1515.1     9695.2    1514.9    9725.3    1515.6    9758.1    1515.4    9790.2
GR   1514.7    9818.6     1513.5     9828.0    1514.3    9845.6    1513.7    9864.5    1511.9    9879.5
GR   1511.2    9902.7     1511.8     9930.7    1511.9    9950.2    1510.1    9959.2    1511.3    9971.6
GR   1510.7    9981.0     1506.7     9991.3    1506.3    9999.9    1506.1   10000.0    1507.3   10014.7
GR   1511.8   10027.0     1512.2    10036.9    1512.1   10060.4    1511.9   10090.3    1511.9   10111.2
GR   1511.9   10155.8     1512.5    10195.0    1512.7   10220.3    1512.5   10244.6    1511.7   10271.9
GR   1510.9   10286.9     1510.5    10294.8    1510.4   10307.8    1511.2   10322.8    1511.6   10354.4
GR   1512.6   10386.5     1513.0    10427.3    1512.8   10466.5    1513.0   10501.6    1512.8   10542.4
GR   1513.3   10583.1     1513.3    10620.5    1513.5   10656.0    1514.8   10693.0    1515.1   10733.3
GR   1515.2   10774.1     1515.2    10802.7    1515.5   10812.0

X1    1.527        54     9987.8    10021.8       450       550       570
GR   1518.3    9365.5     1518.5     9380.0    1517.3    9401.2    1517.2    9415.2    1516.8    9434.7
GR   1516.4    9456.1     1516.7     9493.0    1518.2    9527.0    1518.8    9557.0    1518.9    9583.9
GR   1518.3    9611.7     1517.7     9635.4    1517.7    9662.6    1517.2    9686.9    1515.1    9704.3
GR   1513.7    9714.8     1514.4     9726.9    1513.7    9737.2    1512.9    9744.8    1513.8    9755.3
GR   1513.8    9776.5     1514.4     9804.2    1514.7    9836.8    1514.5    9877.0    1514.5    9908.2
GR   1515.3    9942.4     1515.9     9965.8    1515.3    9978.8    1513.3    9987.8    1508.0    9995.6
GR   1507.8   10000.0     1507.9    10008.3    1509.5   10013.9    1513.0   10021.8    1514.5   10034.0
GR   1514.0   10049.4     1512.8    10058.0    1512.8   10068.8    1515.2   10087.7    1515.5   10119.0
GR   1516.9   10151.5     1516.5    10189.0    1516.2   10223.8    1517.2   10257.7    1517.0   10298.7
GR   1517.2   10337.8     1517.4    10381.3    1517.6   10424.3    1517.7   10451.5    1517.8   10474.7
GR   1517.9   10508.9     1518.0    10546.6    1518.8   10576.0    1520.1   10605.1

NH       5       .065     9988.4       .038   10025.9       .065   10264.2       .048   10358.0       .065
NH   10607.
          NH cards were used for SECNO 1.620 through SECNO 1.811.
X1    1.620        53     9988.4    10025.9       400       510       491
GR   1521.5    9361.5     1521.2     9387.2    1520.6    9424.6    1520.6    9454.2    1517.9    9477.6
GR   1518.0    9510.1     1518.6     9552.9    1518.9    9600.0    1518.5    9642.3    1518.3    9674.4
GR   1517.2    9715.6     1517.5     9733.8    1517.2    9758.4    1517.0    9781.0    1517.5    9802.2
GR   1517.5    9831.0     1517.7     9856.4    1518.1    9887.9    1519.2    9911.7    1519.6    9933.2
GR   1519.4    9957.8     1517.6     9978.6    1515.5    9988.4    1513.6    9997.6    1513.5   10000.0
GR   1514.0   10013.9     1515.2    10025.9    1515.5   10051.9    1514.8   10067.5    1515.7   10077.3
GR   1519.4   10095.0     1521.1    10114.7    1521.6   10132.8    1521.3   10158.3    1520.8   10172.4
GR   1519.8   10209.5     1519.1    10242.6    1517.6   10264.2    1515.9   10281.2    1517.4   10292.0
GR   1517.5   10310.0     1517.6    10333.3    1518.1   10343.0    1516.7   10351.0    1518.1   10358.0
GR   1519.7   10384.6     1520.3    10412.5    1519.9   10449.7    1520.5   10485.7    1521.2   10523.8
GR   1522.5   10560.7     1523.5    10598.9    1523.7   10607.2

NH       5       .065     9975.4       .038   10031.7       .065   10532.2       .048   10726.2       .065
NH   11017.
X1    1.717        77     9975.4    10031.7       470       450       512
GR   1527.8    9302.7     1527.7     9344.7    1527.2    9391.1    1525.6    9444.1    1524.7    9499.4
GR   1524.2    9519.9     1524.6     9551.0    1523.9    9592.5    1522.6    9631.3    1522.2    9665.0
GR   1520.6    9695.1     1521.0     9714.0    1520.4    9733.3    1521.5    9745.6    1520.9    9768.6
GR   1520.5    9793.6     1521.5     9809.2    1522.3    9836.1    1522.7    9856.0    1522.3    9884.9
GR   1523.2    9907.7     1522.4     9939.8    1521.2    9954.9    1520.7    9965.8    1520.5    9975.4
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GR   1517.9    9984.4    1515.1    9992.1    1514.8   10000.0    1515.3   10012.7    1517.7   10018.0
GR   1520.1   10031.7    1520.8   10054.5    1520.7   10071.2    1518.9   10080.4    1520.0   10095.7
GR   1521.9   10111.4    1522.2   10133.2    1522.8   10138.9    1522.2   10179.3    1522.0   10219.0
GR   1521.4   10238.4    1522.6   10252.2    1523.3   10281.3    1523.5   10311.3    1522.3   10335.0
GR   1522.2   10351.3    1523.5   10381.7    1524.1   10411.6    1524.8   10447.8    1523.9   10479.3
GR   1524.2   10508.2    1524.2   10532.2    1521.8   10549.2    1520.5   10566.6    1520.6   10590.1
GR   1521.2   10601.0    1520.6   10615.2    1520.4   10631.1    1520.5   10640.3    1519.7   10647.7
GR   1521.5   10660.9    1522.2   10674.9    1521.4   10688.8    1522.4   10705.9    1523.9   10726.2
GR   1524.7   10750.5    1524.7   10780.5    1523.6   10807.2    1522.3   10837.2    1521.7   10857.4
GR   1522.3   10868.5    1521.5   10892.3    1522.8   10918.6    1523.3   10951.6    1524.1   10982.9
GR   1525.1   11016.1    1525.7   11016.8

NH       4      .065    9978.1      .048   10035.9      .065   10741.9      .055   11320.0
X1   1.811        80    9978.1   10035.9      630      240      496
GR   1531.3    9392.3    1530.4    9442.9    1529.0    9497.6    1528.6    9545.8    1526.4    9562.0
GR   1527.3    9581.5    1527.5    9617.4    1526.8    9658.1    1525.9    9700.6    1525.5    9731.9
GR   1524.0    9747.2    1524.4    9756.4    1524.6    9770.3    1523.6    9806.6    1523.5    9840.5
GR   1523.6    9858.1    1524.4    9870.3    1523.7    9876.7    1521.3    9887.6    1522.6    9892.4
GR   1523.0    9905.6    1523.4    9936.1    1524.0    9961.3    1524.0    9978.1    1523.1    9985.7
GR   1519.5    9993.2    1517.4    9999.7    1517.2   10000.0    1518.3   10009.3    1522.6   10019.5
GR   1523.8   10035.9    1524.2   10065.1    1524.0   10087.2    1522.6   10097.5    1523.5   10111.5
GR   1523.0   10142.4    1522.3   10165.1    1521.7   10175.4    1522.8   10192.5    1522.6   10205.0
GR   1522.1   10212.6    1524.1   10230.0    1524.1   10252.5    1523.1   10266.0    1523.1   10276.0
GR   1524.7   10296.4    1524.6   10324.7    1524.4   10359.0    1525.0   10389.3    1524.9   10423.4
GR   1524.4   10455.2    1524.1   10471.4    1524.4   10508.8    1525.2   10550.7    1525.7   10588.0
GR   1525.7   10615.7    1524.9   10642.0    1525.5   10671.2    1525.5   10704.0    1525.5   10741.9
GR   1524.4   10776.8    1523.9   10804.1    1523.1   10838.8    1522.7   10874.7    1522.2   10902.3
GR   1522.3   10916.5    1521.6   10925.0    1522.9   10942.1    1522.9   10978.2    1522.9   11000.8
GR   1523.5   11020.3    1523.6   11037.9    1524.6   11072.4    1524.5   11096.0    1524.8   11129.7
GR   1525.1   11170.9    1525.2   11214.0    1525.1   11257.2    1525.1   11279.3    1526.2   11320.0

QT       1      9410
NC    .065      .065      .048
          Q changed to 9,410 cfs at C10U (the confluence with Stream No.
          11).  NC card was used, channel = .048, overbanks = .065.
X1   1.909        58    9981.2   10029.0      517      480      517
GR   1531.1    9212.8    1527.5    9289.9    1526.4    9329.9    1526.9    9353.6    1526.8    9418.7
GR   1526.4    9452.6    1526.2    9473.1    1524.6    9483.6    1523.9    9490.3    1525.5    9501.0
GR   1525.5    9526.0    1525.0    9539.8    1524.1    9547.1    1525.6    9569.8    1525.0    9596.0
GR   1524.2    9603.3    1525.4    9615.0    1525.9    9648.8    1526.7    9695.0    1526.8    9749.8
GR   1526.9    9824.0    1527.9    9883.7    1528.0    9919.1    1526.2    9947.2    1527.0    9967.8
GR   1526.2    9981.2    1519.4    9991.0    1518.5    9999.5    1519.0   10000.0    1521.1   10008.5
GR   1524.6   10016.3    1524.9   10029.0    1527.1   10060.8    1526.8   10106.9    1527.4   10147.2
GR   1527.8   10178.5    1528.2   10241.6    1528.6   10318.7    1530.9   10391.5    1530.6   10438.2
GR   1530.6   10481.0    1530.9   10534.6    1531.0   10565.8    1531.6   10615.4    1531.8   10670.4
GR   1530.4   10715.3    1528.5   10761.1    1527.9   10813.4    1526.8   10850.1    1525.7   10857.0
GR   1526.4   10866.7    1526.1   10899.8    1525.9   10926.7    1525.8   10937.5    1527.2   10965.8
GR   1528.1   10986.6    1529.6   11014.1    1530.1   11046.4
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X1	2.004	66	9985.8	10015.2	502	502	502			
GR	1533.0	9041.8	1532.5	9061.0	1532.0	9091.8	1531.8	9150.0	1531.5	9190.0
GR	1531.0	9291.8	1530.2	9348.8	1531.1	9387.1	1531.7	9433.5	1531.2	9478.8
GR	1531.3	9523.1	1532.1	9561.6	1532.4	9585.2	1532.2	9628.7	1532.6	9659.9
GR	1532.8	9682.2	1532.6	9713.0	1531.7	9740.6	1531.2	9762.9	1531.6	9792.8
GR	1531.5	9825.7	1531.5	9862.0	1531.4	9888.5	1531.3	9903.1	1531.8	9924.4
GR	1532.1	9951.1	1532.2	9973.9	1528.1	9985.8	1524.4	9995.4	1523.6	10000.0
GR	1524.5	10007.5	1527.7	10015.2	1527.5	10034.2	1528.7	10057.7	1531.1	10084.2
GR	1531.5	10117.2	1532.1	10148.4	1532.1	10172.7	1530.9	10203.8	1530.6	10231.9
GR	1530.8	10251.6	1531.1	10270.9	1532.3	10295.8	1532.4	10325.2	1532.8	10355.3
GR	1533.0	10382.8	1533.9	10414.1	1533.9	10447.0	1534.0	10487.4	1534.1	10527.1
GR	1534.3	10570.4	1533.4	10604.2	1532.3	10637.7	1532.5	10678.8	1532.0	10717.0
GR	1531.1	10752.8	1531.6	10791.6	1531.3	10818.8	1531.6	10851.4	1531.1	10884.2
GR	1531.7	10926.6	1532.0	10967.8	1532.3	11007.6	1532.7	11047.2	1533.6	11085.6
GR	1534.5	11104.8								
X1	2.060	63	9972.8	10018.2	370	230	296			
GR	1535.8	9190.8	1535.5	9247.0	1535.8	9295.9	1535.9	9349.4	1535.6	9399.6
GR	1535.5	9444.1	1535.7	9496.4	1535.7	9545.2	1535.6	9588.6	1534.5	9626.6
GR	1534.6	9663.5	1534.4	9697.7	1534.2	9746.5	1533.9	9788.3	1533.9	9835.8
GR	1533.6	9864.9	1534.9	9895.5	1535.1	9925.5	1533.9	9952.7	1531.2	9972.8
GR	1527.9	9983.8	1526.7	9994.9	1525.8	10000.0	1526.6	10007.8	1530.6	10018.2
GR	1532.2	10026.7	1530.9	10039.5	1531.0	10065.2	1531.1	10089.6	1531.1	10122.9
GR	1532.2	10136.1	1533.6	10152.2	1531.7	10169.3	1531.9	10204.3	1532.3	10237.2
GR	1532.6	10273.1	1533.9	10312.5	1534.2	10350.6	1535.2	10390.2	1535.1	10431.0
GR	1535.1	10436.0	1535.5	10470.4	1536.0	10496.1	1534.8	10524.3	1533.6	10554.8
GR	1533.6	10596.6	1533.3	10624.5	1533.1	10650.5	1533.0	10686.2	1532.6	10720.2
GR	1532.1	10731.2	1533.2	10747.3	1532.4	10769.5	1532.2	10774.8	1532.7	10783.7
GR	1532.6	10804.7	1532.8	10836.3	1532.8	10876.3	1533.3	10910.6	1533.4	10949.0
GR	1533.6	10988.9	1534.4	10992.8	1535.5	11053.0				
X1	2.142	55	9977.7	10020.2	200	400	433			
GR	1537.2	9001.6	1536.6	9076.3	1536.6	9136.8	1536.6	9200.5	1536.4	9255.1
GR	1535.9	9319.6	1535.7	9371.7	1535.8	9424.0	1536.0	9491.6	1535.8	9541.5
GR	1535.8	9593.4	1535.8	9648.5	1535.4	9701.6	1534.7	9735.1	1534.4	9763.7
GR	1532.5	9795.4	1531.3	9813.4	1531.1	9819.2	1533.2	9836.8	1534.1	9863.8
GR	1534.5	9891.4	1533.8	9914.3	1533.9	9941.3	1534.6	9955.6	1534.8	9970.4
GR	1533.9	9977.7	1528.2	9989.1	1527.6	9993.8	1527.7	10000.0	1529.1	10008.2
GR	1532.2	10020.2	1533.1	10028.8	1532.8	10038.4	1533.1	10055.5	1534.7	10069.1
GR	1536.7	10083.7	1537.3	10103.9	1536.8	10125.7	1536.8	10164.8	1536.7	10196.5
GR	1536.5	10210.0	1537.1	10249.1	1536.6	10287.1	1536.2	10334.8	1536.3	10381.4
GR	1536.3	10437.1	1535.4	10478.8	1536.0	10512.4	1535.8	10525.4	1535.5	10531.4
GR	1536.0	10544.1	1536.1	10573.2	1536.3	10610.5	1536.4	10641.3	1537.2	10683.0
X1	2.233	60	9990.8	10016.0	500	450	480			
GR	1540.2	8886.0	1540.0	8901.0	1539.8	8951.0	1539.5	9015.0	1539.3	9086.0
GR	1539.2	9186.0	1539.1	9241.0	1539.5	9296.4	1538.9	9354.6	1539.1	9406.6
GR	1538.9	9468.3	1538.8	9521.9	1538.6	9579.7	1538.5	9626.6	1538.5	9682.1
GR	1538.7	9735.3	1538.9	9787.7	1539.0	9833.8	1538.5	9875.3	1537.4	9914.9
GR	1536.6	9950.8	1536.8	9965.3	1536.7	9981.1	1535.1	9990.8	1531.7	9995.9
GR	1531.3	10000.0	1531.8	10006.3	1534.5	10016.0	1537.3	10026.9	1537.4	10032.9
GR	1536.9	10048.0	1536.5	10057.4	1536.8	10077.9	1536.7	10102.4	1536.0	10110.1
GR	1537.0	10121.7	1537.0	10138.2	1537.2	10170.9	1538.1	10204.3	1537.8	10245.6

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GR   1537.3   10276.5   1537.2   10283.3   1537.9   10306.0   1538.8   10327.2   1539.2   10340.2
GR   1539.3   10371.5   1539.6   10406.5   1539.9   10449.8   1539.9   10488.7   1540.6   10527.8
GR   1540.6   10556.3   1539.2   10586.7   1538.9   10626.5   1538.6   10672.9   1537.7   10707.0
GR   1537.3   10728.0   1538.6   10742.8   1541.0   10761.9   1541.6   10781.0   1540.5   10799.8

NC     .065      .065      .055
          NC card was used, channel = .055 and overbanks = .065.
X1    2.326        71    9984.4   10042.2     500       400       491
GR   1543.1    9082.1   1542.9    9133.4   1543.5    9171.4   1543.0    9226.9   1543.0    9281.9
GR   1542.9    9330.1   1543.1    9367.4   1542.6    9413.8   1542.9    9455.9   1543.3    9490.7
GR   1543.7    9525.9   1543.8    9556.3   1543.3    9581.0   1542.3    9602.4   1542.3    9630.0
GR   1542.2    9661.8   1541.8    9690.6   1542.1    9714.7   1541.9    9739.9   1541.2    9757.9
GR   1541.8    9777.7   1540.6    9802.5   1539.8    9822.2   1540.3    9845.8   1540.0    9873.3
GR   1539.8    9886.6   1540.0    9896.4   1538.6    9900.1   1537.7    9902.1   1538.2    9903.7
GR   1540.0    9910.3   1541.0    9935.0   1541.1    9954.7   1541.4    9968.7   1540.8    9984.4
GR   1538.2    9994.5   1536.3   10000.0   1535.7   10010.9   1535.9   10017.4   1538.1   10025.2
GR   1539.1   10042.2   1539.6   10055.5   1539.1   10057.7   1540.7   10065.1   1540.0   10076.1
GR   1540.3   10095.0   1540.1   10124.1   1539.5   10157.1   1539.9   10186.5   1540.7   10226.7
GR   1541.0   10260.6   1541.1   10277.9   1541.5   10307.2   1541.5   10342.5   1541.8   10365.2
GR   1541.7   10403.9   1541.8   10446.4   1542.1   10483.2   1541.6   10523.5   1540.9   10567.1
GR   1540.7   10611.0   1539.8   10642.0   1539.6   10665.2   1541.5   10692.1   1541.5   10711.5
GR   1541.2   10741.9   1540.9   10784.0   1541.2   10818.1   1540.4   10833.3   1542.0   10950.0
GR   1544.0   11170.0

X1    2.406        66    9977.3   10018.4     410       410       422
GR   1546.6    9190.5   1546.2    9247.3   1546.0    9319.2   1545.7    9397.9   1545.0    9463.4
GR   1545.3    9512.0   1545.7    9547.0   1545.5    9548.1   1544.1    9594.7   1543.7    9644.9
GR   1543.1    9685.8   1542.1    9705.5   1543.3    9720.2   1542.4    9738.2   1544.0    9767.7
GR   1544.9    9794.9   1544.4    9841.6   1544.1    9885.8   1544.0    9917.4   1544.2    9950.7
GR   1544.1    9969.0   1542.6    9977.3   1537.1    9984.6   1535.5    9991.1   1535.3    9995.8
GR   1536.3   10000.0   1538.5   10008.5   1543.9   10018.4   1544.8   10043.2   1544.8   10072.1
GR   1544.0   10110.2   1543.1   10145.0   1543.5   10179.3   1543.7   10180.7   1543.2   10211.1
GR   1543.7   10229.0   1545.1   10256.4   1544.6   10279.6   1545.1   10306.1   1545.4   10329.2
GR   1544.6   10356.5   1542.8   10380.9   1542.2   10398.7   1541.5   10406.8   1542.4   10418.4
GR   1543.6   10452.4   1543.9   10481.2   1542.9   10498.1   1543.1   10515.7   1544.1   10541.6
GR   1545.9   10562.4   1545.6   10583.3   1544.6   10614.0   1544.5   10641.0   1545.1   10664.1
GR   1544.9   10702.4   1544.8   10742.1   1544.9   10780.4   1545.0   10819.9   1545.0   10849.5
GR   1544.8   10861.6   1545.8   10892.8   1546.0   10925.1   1546.6   10950.7   1546.9   10976.7
GR   1547.0   10976.9

X1    2.500        56    9978.9   10023.0     410       500       496
GR   1550.0    8740.0   1547.2    9255.3   1546.6    9298.1   1546.0    9335.8   1546.6    9366.5
GR   1547.4    9389.4   1547.1    9404.9   1546.8    9426.0   1547.2    9455.6   1547.1    9491.3
GR   1547.0    9517.8   1547.0    9541.5   1547.3    9566.0   1547.9    9593.0   1548.7    9623.7
GR   1548.4    9649.6   1547.7    9680.1   1547.6    9710.3   1547.7    9733.5   1547.7    9760.7
GR   1547.7    9789.1   1547.2    9816.8   1546.2    9837.2   1547.3    9852.7   1547.4    9878.4
GR   1547.4    9900.9   1546.8    9930.6   1546.2    9955.0   1545.9    9963.6   1546.8    9972.3
GR   1545.4    9978.9   1540.8    9989.3   1540.2    9997.1   1540.3   10000.0   1541.2   10003.7
GR   1544.3   10013.4   1546.4   10023.0   1546.7   10048.5   1546.4   10082.1   1547.3   10122.9
GR   1548.4   10155.9   1547.9   10191.4   1547.8   10239.9   1547.6   10292.0   1547.5   10335.1
GR   1547.6   10378.6   1547.5   10424.6   1547.5   10468.2   1547.5   10518.8   1547.8   10566.8
GR   1547.9   10608.8   1547.8   10649.1   1547.3   10674.8   1547.8   10711.8   1548.2   10732.1
GR   1550.0   10942.0
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X1    2.595       48    9985.1   10023.7       502       502       502
GR   1553.2   9019.0    1551.2    9188.1    1550.9    9201.5    1551.5    9238.9    1551.1    9318.7
GR   1551.0   9375.9    1551.0    9438.0    1550.7    9494.1    1551.5    9538.7    1551.7    9579.7
GR   1551.5   9611.9    1550.8    9652.0    1551.0    9694.4    1551.7    9726.3    1551.9    9767.4
GR   1552.2   9806.4    1551.3    9841.8    1550.9    9868.4    1551.6    9891.8    1550.6    9917.9
GR   1548.0   9940.7    1549.1    9956.0    1549.5    9969.6    1549.5    9985.1    1543.1    9992.4
GR   1540.3   9999.6    1540.4   10000.0    1540.7   10008.4    1547.3   10014.8    1549.6   10023.7
GR   1550.1  10041.2    1549.0   10058.6    1549.6   10089.7    1551.3   10121.2    1552.7   10141.4
GR   1552.7  10176.0    1552.7   10218.7    1552.7   10254.0    1552.8   10290.2    1553.3   10329.7
GR   1552.8  10373.4    1552.6   10411.7    1552.6   10466.1    1552.3   10528.8    1552.5   10571.7
GR   1552.7  10613.8    1552.8   10652.1    1552.9   10679.0

X1    2.689       39    9971.4   10037.4       400       550       496
GR   1555.3   9000.0    1553.2    9155.2    1552.9    9320.3    1552.0    9406.8    1552.2    9558.0
GR   1552.1   9680.1    1551.8    9736.2    1552.4    9767.7    1553.0    9795.3    1552.6    9808.4
GR   1551.9   9887.8    1551.4    9925.4    1551.5    9955.8    1551.6    9971.4    1544.7    9992.1
GR   1543.9  10000.0    1549.0   10008.6    1548.5   10019.9    1547.6   10026.9    1549.2   10037.4
GR   1549.7  10058.7    1549.8   10082.3    1550.0   10097.1    1553.6   10112.2    1554.2   10120.8
GR   1553.8  10139.3    1554.8   10168.8    1555.6   10191.3    1556.4   10207.3    1555.9   10244.8
GR   1555.3  10309.1    1555.1   10408.7    1555.0   10489.0    1554.8   10560.5    1555.1   10668.7
GR   1555.2  10730.5    1555.3   10782.2    1556.2   10849.8    1556.0   10853.0

X1    2.777       52    9976.8   10029.1       440       420       465
GR   1557.0   8954.0    1555.0    9293.1    1555.2    9317.8    1556.0    9404.2    1555.9    9463.3
GR   1556.0   9523.5    1556.9    9579.0    1556.4    9617.9    1555.3    9690.4    1555.0    9719.6
GR   1555.4   9760.4    1555.1    9804.8    1555.7    9833.9    1555.4    9858.6    1555.8    9898.2
GR   1557.0   9921.6    1556.9    9939.5    1556.0    9951.7    1555.1    9959.7    1553.9    9976.8
GR   1547.0   9992.6    1546.6    9999.8    1546.3   10000.0    1547.4   10006.2    1552.4   10029.1
GR   1553.5  10047.7    1553.2   10066.0    1553.3   10089.9    1552.8   10114.7    1553.1   10146.7
GR   1553.1  10162.1    1554.6   10198.5    1555.3   10220.6    1554.8   10250.6    1554.3   10275.4
GR   1554.0  10291.8    1554.5   10312.1    1556.2   10337.3    1557.3   10362.8    1557.0   10414.7
GR   1558.0  10461.6    1558.2   10506.5    1559.0   10556.5    1558.7   10594.8    1558.2   10661.4
GR   1557.8  10720.6    1558.0   10749.0    1558.9   10785.6    1559.4   10829.2    1559.1   10885.2
GR   1559.2  10990.6    1558.7   11045.8

        X3 card was used to model ineffective area.
X1    2.872       64    9978.4   10028.8       570       330       502
X3       10                      9412.4
GR   1560.0   9231.8    1560.2    9283.8    1561.5    9349.7    1562.0    9374.4    1562.4    9412.4
GR   1562.0   9436.7    1560.6    9463.4    1559.9    9507.2    1559.8    9536.4    1560.1    9576.5
GR   1559.5   9630.3    1559.1    9659.9    1558.6    9705.4    1558.0    9739.9    1557.1    9766.9
GR   1556.2   9779.5    1556.1    9786.6    1554.3    9792.6    1555.9    9798.5    1557.2    9817.9
GR   1557.3   9826.0    1557.4    9848.4    1558.4    9857.7    1559.5    9870.5    1559.4    9873.1
GR   1559.7   9887.3    1559.1    9896.5    1557.8    9906.6    1554.8    9922.8    1555.4    9931.5
GR   1555.6   9939.6    1556.7    9960.0    1556.3    9978.4    1555.0    9984.0    1549.8    9993.1
GR   1549.6  10000.0    1549.8   10008.2    1555.7   10020.3    1556.1   10028.8    1555.6   10044.0
GR   1556.1  10075.1    1556.3   10103.3    1556.8   10136.4    1557.6   10159.5    1557.4   10170.7
GR   1557.1  10195.8    1556.6   10226.0    1557.4   10257.8    1558.3   10285.7    1559.2   10307.8
GR   1559.3  10322.3    1558.5   10332.5    1558.4   10349.4    1558.5   10392.7    1558.6   10442.1
GR   1559.0  10483.8    1559.9   10534.7    1560.5   10586.7    1560.1   10657.3    1559.8   10730.1
GR   1559.7  10796.4    1560.1   10878.0    1560.3   10962.2    1561.0   11001.9
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X1	2.947	49	9971.0	10038.8	320	420	396			
GR	1563.2	9197.5	1563.0	9250.5	1561.7	9316.6	1560.6	9355.0	1560.1	9387.1
GR	1560.1	9413.8	1560.3	9436.1	1559.6	9466.6	1559.0	9497.8	1559.8	9518.3
GR	1560.4	9553.0	1560.7	9580.9	1561.1	9609.7	1560.8	9631.1	1560.0	9647.5
GR	1560.4	9665.1	1560.7	9692.6	1560.7	9727.6	1561.0	9751.7	1561.3	9777.6
GR	1561.0	9799.2	1559.4	9815.6	1559.2	9850.0	1559.0	9852.9	1558.6	9871.5
GR	1558.4	9912.7	1558.0	9938.5	1558.2	9954.4	1559.1	9971.0	1551.6	9994.2
GR	1551.4	10000.0	1551.0	10003.7	1557.6	10018.7	1558.6	10038.8	1561.1	10072.8
GR	1561.1	10116.6	1561.4	10146.4	1563.0	10173.3	1562.5	10214.1	1562.6	10237.6
GR	1562.3	10288.7	1562.2	10337.0	1562.4	10395.6	1561.9	10447.8	1561.4	10497.6
GR	1561.8	10559.8	1561.8	10615.9	1561.9	10680.6	1562.2	10742.6		
X1	3.023	60	9969.5	10028.0	290	460	401			
GR	1564.7	9268.2	1565.3	9303.0	1564.7	9335.8	1563.4	9409.2	1563.4	9461.5
GR	1562.3	9496.0	1561.6	9540.3	1561.9	9597.4	1562.3	9635.8	1562.4	9689.0
GR	1562.1	9732.0	1562.3	9763.6	1563.5	9782.8	1563.3	9796.8	1563.1	9838.0
GR	1562.3	9877.3	1561.2	9900.4	1560.1	9914.4	1559.0	9920.3	1559.9	9926.9
GR	1560.6	9942.1	1559.2	9947.1	1561.0	9956.8	1560.4	9969.5	1558.0	9985.3
GR	1555.5	10000.0	1555.1	10005.1	1558.4	10017.7	1559.8	10028.0	1559.8	10049.2
GR	1560.1	10060.2	1556.8	10066.2	1559.6	10076.9	1560.7	10089.9	1562.0	10096.3
GR	1561.7	10112.3	1563.4	10137.4	1564.5	10160.8	1565.3	10177.3	1565.5	10192.9
GR	1562.6	10214.6	1561.7	10222.9	1561.4	10227.3	1562.7	10242.3	1564.3	10267.5
GR	1565.4	10282.8	1565.0	10301.1	1564.6	10311.1	1565.6	10331.5	1566.1	10365.2
GR	1566.5	10413.8	1566.1	10460.4	1566.2	10485.8	1567.0	10512.8	1566.7	10557.3
GR	1566.4	10604.6	1566.1	10663.8	1566.2	10715.2	1566.7	10776.4	1566.8	10803.2
X1	3.117	57	9976.5	10022.5	360	320	496			
GR	1568.6	9520.0	1568.1	9547.3	1568.1	9569.8	1568.4	9602.0	1568.4	9619.1
GR	1567.9	9645.2	1566.5	9672.4	1566.1	9686.8	1565.9	9701.6	1567.0	9727.0
GR	1567.4	9745.0	1566.3	9776.2	1565.6	9810.5	1565.7	9849.0	1565.7	9887.7
GR	1565.6	9928.2	1565.4	9954.9	1565.2	9976.4	1558.6	9993.9	1557.8	10000.0
GR	1557.9	10007.0	1562.1	10022.5	1563.0	10033.7	1563.5	10054.7	1562.7	10094.5
GR	1563.6	10120.9	1564.4	10150.3	1564.0	10167.2	1564.9	10202.3	1565.9	10218.1
GR	1566.1	10229.7	1565.2	10244.5	1564.0	10268.1	1562.6	10279.8	1562.5	10284.2
GR	1564.1	10291.3	1564.1	10305.3	1563.6	10329.6	1563.4	10345.3	1563.8	10355.7
GR	1566.2	10380.2	1567.0	10392.8	1567.2	10420.6	1566.7	10425.3	1566.0	10471.1
GR	1565.9	10497.2	1566.0	10516.7	1566.7	10550.4	1566.8	10595.1	1567.3	10632.5
GR	1567.8	10683.5	1568.0	10765.7	1568.4	10864.1	1569.0	10904.7	1569.4	10983.6
GR	1570.0	11066.6	1569.7	11087.7						
X1	3.209	60	9982.4	10017.8	380	270	486			
GR	1572.2	9355.8	1572.4	9413.0	1571.4	9458.5	1570.4	9499.6	1569.7	9531.8
GR	1569.5	9579.9	1569.2	9608.0	1569.2	9626.5	1569.3	9648.5	1568.3	9678.4
GR	1567.2	9708.6	1567.6	9722.5	1568.8	9750.3	1569.0	9760.3	1568.3	9769.4
GR	1565.9	9782.4	1564.5	9789.5	1564.2	9800.7	1565.9	9810.7	1566.0	9832.2
GR	1566.4	9856.7	1566.7	9873.6	1566.2	9896.1	1565.7	9909.0	1566.0	9935.3
GR	1566.2	9947.8	1567.0	9957.4	1567.3	9972.0	1567.1	9982.4	1566.2	9986.1
GR	1559.8	9993.6	1559.1	9999.0	1559.3	10000.0	1559.2	10005.6	1565.6	10012.5
GR	1566.7	10017.8	1566.4	10033.2	1566.6	10059.1	1566.4	10090.5	1566.0	10110.8
GR	1566.2	10131.0	1567.0	10147.5	1569.4	10164.7	1569.8	10178.3	1569.2	10198.7
GR	1569.1	10229.4	1568.0	10254.4	1568.0	10294.4	1568.0	10329.7	1568.2	10368.0
GR	1568.4	10399.7	1568.4	10442.4	1568.9	10498.8	1569.5	10549.7	1569.5	10595.7
GR	1570.0	10633.6	1570.6	10660.7	1571.2	10704.9	1571.3	10745.5	1572.3	10835.9

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

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO .092
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
3720 CRITICAL DEPTH ASSUMED

****

Deadman Wash Floodplain Delineation Study prepared for
FCDMC by Howard Needles Tammen & Bergendoff (HNTB), 1992.

This floodplain delineation study begins at the New River,
and the water surface elevation starts at critical depth.
The higher water suface elevation in New River was not used
to start the HEC-2 runs due to the difference in time of peak.

NC cards were used where majority of flow expected to remain
in the channel, while NH cards were used for the braided
channel or at the confluence of washes.

The first run is the natural profile run, and X3 cards were
used in some sections to better model ineffective flow areas.

The control line on the thalweg of Deadman Wash is
Station 10,000, and all cross section data were stationed
looking downstream.

Cross section numbers indicate in river miles above the mouth.

Q of 9,680 cfs at C10X was used instead of 9,610 computed at
C10Y.

NH cards were used for SECNO 0.092 through SECNO 0.382.

****

.092	10.16	1482.76	1482.76	.00	1484.11	1.35	.00	.00	1483.50
9680.0	.0	6805.8	2874.2	.0	626.5	761.4	.0	.0	1479.60
.00	.00	10.86	3.77	.000	.060	.074	.000	1472.60	9948.18
.013601	0.	0.	0.	0	13	0	.00	570.47	10518.66

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

FLOW DISTRIBUTION FOR SECNO= .09 CWSEL= 1482.76

STA=	9948.	10030.	10060.	10117.	10194.	10270.	10374.	10387.	10400.	10411.	10519.
PER Q=	70.3	3.7	3.7	3.2	3.1	3.9	3.8	3.3	3.4	1.6	
AREA=	626.5	86.9	110.5	116.1	112.1	134.1	51.3	47.0	44.5	58.8	
VEL=	10.9	4.2	3.2	2.7	2.7	2.8	7.2	6.8	7.3	2.6	
DEPTH=	7.6	2.9	1.9	1.5	1.5	1.3	3.9	3.7	4.0	.5	

1490 NH CARD USED
*SECNO .159
3280 CROSS SECTION .16 EXTENDED .86 FEET

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.04

.159	11.95	1486.15	1484.56	.00	1486.43	.27	2.21	.11	1482.80
9680.0	16.7	4049.7	5613.7	12.5	691.7	2357.8	19.7	6.9	1483.30
.03	1.33	5.85	2.38	.085	.060	.076	.000	1474.20	9966.54
.003276	340.	354.	400.	3	5	0	.00	952.06	10918.60

FLOW DISTRIBUTION FOR SECNO= .16 CWSEL= 1486.15

STA=	9967.	9974.	10053.	10100.	10136.	10177.	10233.	10290.	10373.	10463.	10479.	10490.	10508.
PER Q=	.2	41.8	4.4	3.2	3.5	3.7	4.1	3.9	5.5	3.5	3.2	3.1	
AREA=	12.5	691.7	174.1	131.9	145.3	168.7	181.3	207.0	232.8	78.6	67.4	78.9	
VEL=	1.3	5.9	2.4	2.4	2.3	2.1	2.2	1.8	2.3	4.3	4.6	3.8	
DEPTH=	1.7	8.8	3.7	3.7	3.5	3.0	3.2	2.5	2.6	5.2	5.9	4.3	

STA=	10508.	10587.	10677.	10720.	10732.	10760.	10911.	10919.
PER Q=	3.1	3.6	3.3	3.7	3.0	3.2	.1	
AREA=	173.9	199.2	117.0	74.3	97.1	223.5	6.8	
VEL=	1.8	1.7	2.8	4.8	3.0	1.4	.8	
DEPTH=	2.2	2.2	2.7	6.2	3.5	1.5	.9	

1490 NH CARD USED
*SECNO .202

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

3265 DIVIDED FLOW

.202	14.19	1486.89	1483.75	.00	1487.05	.17	.61	.01	1483.40
9680.0	8.4	2741.9	6929.7	8.3	596.6	2702.5	37.1	13.0	1484.40
.05	1.01	4.60	2.56	.085	.060	.066	.000	1472.70	9963.11
.002113	210.	227.	240.	2	10	0	.00	1275.31	11249.23

FLOW DISTRIBUTION FOR SECNO= .20 CWSEL= 1486.89

STA=	9963.	9968.	10037.	10092.	10128.	10139.	10147.	10157.	10175.	10202.	10214.	10245.	10290.
PER Q=	.1	28.3	3.5	4.6	4.3	4.7	6.5	7.2	3.8	3.8	4.2	3.2	
AREA=	8.3	596.6	182.0	156.4	92.2	83.0	110.1	152.8	119.4	88.4	133.6	130.4	
VEL=	1.0	4.6	1.8	2.9	4.5	5.5	5.7	4.6	3.1	4.2	3.1	2.4	
DEPTH=	1.7	8.6	3.3	4.3	8.4	10.6	11.2	8.4	4.5	7.3	4.3	2.9	

STA=	10290.	10311.	10323.	10357.	10482.	10738.	10890.	11126.	11249.
PER Q=	3.9	3.7	4.2	3.4	3.6	3.1	3.2	.6	
AREA=	112.3	85.2	136.8	255.4	306.1	212.3	275.0	71.1	
VEL=	3.4	4.2	3.0	1.3	1.1	1.4	1.1	.8	
DEPTH=	5.2	7.2	4.1	2.0	1.2	1.4	1.2	.6	

1490 NH CARD USED
*SECNO .299

.299	14.21	1488.01	1485.63	.00	1488.18	.17	1.13	.00	1485.00
9680.0	700.7	2221.4	6757.8	324.7	449.9	2518.9	69.2	23.9	1485.10
.09	2.16	4.94	2.68	.085	.060	.078	.000	1473.80	9863.61
.003287	520.	512.	400.	2	9	0	.00	1017.38	10880.99

FLOW DISTRIBUTION FOR SECNO= .30 CWSEL= 1488.01

STA=	9864.	9918.	9970.	10031.	10054.	10066.	10081.	10117.	10170.	10225.	10232.	10242.	10255.
PER Q=	3.7	3.6	22.9	3.1	4.4	3.6	4.5	4.5	5.4	3.3	6.3	5.3	
AREA=	163.2	161.4	449.9	106.4	103.2	97.3	161.0	187.7	181.3	55.6	96.9	95.7	
VEL=	2.2	2.1	4.9	2.8	4.1	3.5	2.7	2.3	2.9	5.7	6.3	5.4	
DEPTH=	3.0	3.1	7.4	4.7	8.3	6.7	4.4	3.5	3.3	8.6	9.4	7.7	

STA=	10255.	10287.	10393.	10455.	10625.	10685.	10880.
PER Q=	3.5	3.1	3.6	9.5	6.3	3.4	
AREA=	112.4	198.3	171.7	464.4	240.5	246.5	
VEL=	3.0	1.5	2.0	2.0	2.5	1.3	
DEPTH=	3.5	1.9	2.8	2.7	4.0	1.3	

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

CCHV= .300 CEHV= .500
1490 NH CARD USED
*SECNO .382

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .63

3470 ENCROACHMENT STATIONS= 9940.0 10430.0 TYPE= 1 TARGET= 490.000
X3 card was used to model ineffective area.
Contraction and expansion coefficients changed to 0.3 and
0.5 for the dam and dike structures at Snodgrass Tank.

.382	10.91	1490.21	1488.70	.00	1490.95	.74	2.48	.28	1485.30
9680.0	696.6	4374.3	4609.1	126.1	478.5	1151.5	99.1	32.9	1485.20
.11	5.52	9.14	4.00	.085	.060	.085	.000	1479.30	9940.00
.008303	400.	438.	550.	3	19	0	.00	471.68	10411.68

FLOW DISTRIBUTION FOR SECNO= .38 CWSEL= 1490.21

STA=	9940.	9952.	9959.	10015.	10070.	10096.	10107.	10126.	10149.	10173.	10197.	10217.	10266.
PER Q=	5.2	2.0	45.2	5.2	6.6	4.7	7.0	6.2	4.6	3.9	3.1	3.8	
AREA=	87.8	38.3	478.5	156.1	133.8	76.9	123.0	123.6	104.6	95.0	78.4	121.1	
VEL=	5.8	4.9	9.1	3.2	4.8	5.9	5.5	4.8	4.2	4.0	3.9	3.0	
DEPTH=	7.5	5.6	8.5	2.9	5.1	7.1	6.5	5.3	4.4	4.0	3.8	2.5	

STA=	10266.	10412.
PER Q=	2.5	
AREA=	138.9	
VEL=	1.7	
DEPTH=	1.0	

*SECNO .516

3301 HV CHANGED MORE THAN HVINS

The area of the stock tank (Snodgrass Tank) is ineffective,
and it's ignored. However, the dam and dike structures act
as a constriction to the flow.

.516	9.93	1495.13	1493.82	.00	1497.32	2.20	5.65	.73	1500.10
9680.0	.0	9680.0	.0	.0	813.8	.0	120.5	37.8	1500.10
.12	.00	11.89	.00	.000	.040	.000	.000	1485.20	9961.57
.007488	680.	708.	750.	2	15	0	.00	110.93	10072.50

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

FLOW DISTRIBUTION FOR SECNO= .52 CWSEL= 1495.13

STA= 9962. 10114.
PER Q= 100.0
AREA= 813.8
VEL= 11.9
DEPTH= 7.3

*SECNO .618

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.78

3470 ENCROACHMENT STATIONS= 9690.0 10420.0 TYPE= 1 TARGET= 730.000
Q changed to 9,690 cfs at C10W (the confluence with Stream No. 14). CCHV = 0.3 for abrupt contraction.
X3 card was used to model ineffective area.
NC card was used, channel = .038 and overbanks = .065.

.618	9.01	1498.91	1495.31	.00	1499.06	.14	1.12	.62	1493.20
9690.0	1755.8	2798.6	5135.6	923.4	630.1	2193.5	148.1	43.0	1493.70
.18	1.90	4.44	2.34	.065	.038	.065	.000	1489.90	9690.00
.000974	600.	539.	490.	2	11	0	.00	730.00	10420.00

FLOW DISTRIBUTION FOR SECNO= .62 CWSEL= 1498.91

STA=	9690.	9831.	9879.	9905.	9944.	9961.	10052.	10102.	10134.	10167.	10201.	10234.	10258.
PER Q=	3.2	3.4	3.1	5.9	2.4	28.9	6.3	4.4	4.7	5.2	5.3	4.0	
AREA=	256.6	186.2	138.7	239.9	101.9	630.1	274.9	185.4	194.8	208.6	209.4	156.3	
VEL=	1.2	1.8	2.2	2.4	2.3	4.4	2.2	2.3	2.3	2.4	2.4	2.5	
DEPTH=	1.8	3.9	5.4	6.2	5.9	7.0	5.5	5.8	6.0	6.2	6.3	6.5	

STA=	10258.	10277.	10304.	10336.	10366.	10420.
PER Q=	3.3	4.5	5.4	4.5	5.6	
AREA=	127.9	172.4	208.9	182.9	272.2	
VEL=	2.5	2.5	2.5	2.4	2.0	
DEPTH=	6.6	6.6	6.5	6.1	5.0	

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

CCHV= .100 CEHV= .300
*SECNO .721

3265 DIVIDED FLOW

Contraction and expansion coefficients changed to 0.1 and 0.3.

.721	7.29	1499.39	1496.66	.00	1499.46	.06	.39	.01	1495.00
9690.0	1071.5	845.4	7773.1	661.3	214.9	4409.2	191.0	53.0	1494.20
.24	1.62	3.93	1.76	.065	.038	.065	.000	1492.10	9789.36
.000869	400.	544.	400.	3	8	0	.00	1402.31	11463.64

FLOW DISTRIBUTION FOR SECNO= .72 CWSEL= 1499.39

STA=	9789.	9884.	9945.	9989.	10023.	10060.	10121.	10172.	10234.	10272.	10306.	10345.	10398.
PER Q=	3.1	4.8	3.2	8.7	3.7	4.3	4.2	5.4	3.5	3.4	4.4	5.2	
AREA=	220.5	260.1	180.6	214.9	183.9	241.5	226.5	281.0	179.3	168.1	207.8	259.7	
VEL=	1.4	1.8	1.7	3.9	1.9	1.7	1.8	1.9	1.9	2.0	2.0	1.9	
DEPTH=	2.3	4.3	4.1	6.5	4.9	4.0	4.4	4.6	4.7	4.9	5.3	4.9	

STA=	10398.	10432.	10499.	10540.	10580.	10614.	10651.	10698.	10763.	10797.	10836.	10897.	10996.
PER Q=	3.2	5.2	3.3	3.3	3.0	3.0	3.4	5.4	3.4	3.4	4.6	3.3	
AREA=	160.8	285.2	179.0	176.6	158.5	162.6	190.7	286.5	168.6	178.2	255.9	247.9	
VEL=	1.9	1.8	1.8	1.8	1.9	1.8	1.7	1.8	1.9	1.9	1.7	1.3	
DEPTH=	4.7	4.3	4.3	4.5	4.6	4.4	4.1	4.4	4.8	4.6	4.2	2.5	

STA=	10996.	11464.
PER Q=	1.7	
AREA=	211.0	
VEL=	.8	
DEPTH=	.5	

*SECNO .803

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .57

.803	6.47	1499.77	1498.17	.00	1499.93	.16	.44	.03	1496.30
9690.0	414.4	1190.4	8085.2	261.8	201.1	3054.5	222.5	62.9	1496.40
.27	1.58	5.92	2.65	.065	.038	.065	.000	1493.30	9771.90
.002643	470.	433.	285.	1	18	0	.00	1304.84	11076.75

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

FLOW DISTRIBUTION FOR SECNO= .80 CWSEL= 1499.77

STA=	9772.	9972.	9986.	10026.	10081.	10158.	10196.	10220.	10244.	10273.	10311.	10348.	10391.
PER Q=	3.0	1.2	12.3	4.4	6.1	4.8	3.8	4.1	4.7	5.1	3.4	3.0	
AREA=	215.1	46.6	201.1	171.6	236.5	155.7	112.9	117.4	136.7	160.7	125.0	124.1	
VEL=	1.4	2.6	5.9	2.5	2.5	3.0	3.3	3.4	3.3	3.1	2.7	2.4	
DEPTH=	1.1	3.2	5.1	3.1	3.1	4.1	4.7	4.9	4.7	4.3	3.4	2.8	

STA=	10391.	10449.	10505.	10564.	10610.	10672.	10701.	10731.	10775.	10856.	11077.
PER Q=	6.3	5.6	5.7	4.2	5.7	3.0	3.2	3.3	4.3	2.7	
AREA=	216.1	198.1	203.5	154.5	208.6	105.2	108.9	131.7	195.9	191.5	
VEL=	2.8	2.7	2.7	2.6	2.6	2.8	2.8	2.5	2.1	1.4	
DEPTH=	3.7	3.6	3.5	3.3	3.3	3.6	3.7	3.0	2.4	.9	

*SECNO .909

.909	5.82	1501.32	1500.14	.00	1501.52	.20	1.58	.01	1499.50
9690.0	272.5	1807.6	7609.9	147.8	313.6	2630.8	257.9	76.4	1499.90
.31	1.84	5.76	2.89	.065	.038	.065	.000	1495.50	9789.62
.004321	450.	560.	460.	2	13	0	.00	1246.06	11035.69

FLOW DISTRIBUTION FOR SECNO= .91 CWSEL= 1501.32

STA=	9790.	9939.	10031.	10096.	10154.	10194.	10256.	10295.	10336.	10398.	10436.	10492.	10557.
PER Q=	2.8	18.7	3.1	5.2	3.6	4.7	3.7	4.3	3.9	3.1	4.7	5.5	
AREA=	147.8	313.6	127.9	165.6	115.5	161.2	115.7	128.2	143.9	102.2	153.3	181.0	
VEL=	1.8	5.8	2.4	3.0	3.1	2.8	3.1	3.3	2.6	2.9	2.9	3.0	
DEPTH=	1.0	3.4	2.0	2.8	2.9	2.6	3.0	3.2	2.3	2.7	2.7	2.8	

STA=	10557.	10599.	10657.	10725.	10765.	10800.	10857.	10918.	10966.	11036.
PER Q=	3.4	4.7	5.8	3.8	3.3	4.5	4.5	3.6	3.1	
AREA=	113.1	156.2	188.6	118.4	104.9	149.6	156.1	123.4	126.0	
VEL=	2.9	2.9	3.0	3.1	3.1	2.9	2.8	2.8	2.4	
DEPTH=	2.7	2.7	2.8	3.0	2.9	2.7	2.5	2.6	1.8	

*SECNO .988

.988	6.87	1503.27	1502.61	.00	1503.57	.30	2.02	.03	1500.90
9690.0	1243.0	1728.9	6718.1	449.5	214.3	2166.9	285.8	88.4	1500.90
.33	2.77	8.07	3.10	.065	.038	.065	.000	1496.40	9697.20
.005617	410.	417.	410.	2	9	0	.00	1297.95	10995.15

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

FLOW DISTRIBUTION FOR SECNO= .99 CWSEL= 1503.27

STA=	9697.	9874.	9912.	9969.	9983.	10029.	10068.	10091.	10135.	10181.	10213.	10245.	10285.
PER Q=	4.5	3.6	3.8	1.0	17.8	5.2	4.7	3.8	4.6	3.5	3.4	4.3	
AREA=	188.9	104.2	124.7	31.8	214.3	131.2	100.1	110.6	127.7	96.3	94.4	117.1	
VEL=	2.3	3.3	2.9	2.9	8.1	3.8	4.5	3.3	3.5	3.5	3.5	3.5	
DEPTH=	1.1	2.7	2.2	2.2	4.7	3.3	4.3	2.5	2.8	3.0	2.9	3.0	

STA=	10285.	10319.	10356.	10434.	10512.	10573.	10658.	10715.	10800.	10928.	10995.
PER Q=	3.6	3.5	4.9	5.2	4.2	4.9	3.7	4.4	3.9	1.6	
AREA=	100.8	100.6	166.6	172.9	137.3	173.4	125.2	161.9	175.4	75.5	
VEL=	3.5	3.4	2.8	2.9	3.0	2.8	2.9	2.6	2.1	2.0	
DEPTH=	2.9	2.8	2.1	2.2	2.3	2.0	2.2	1.9	1.4	1.1	

*SECNO 1.079

1.079	7.08	1505.78	1505.18	.00	1506.13	.35	2.54	.01	1502.70
9690.0	1099.9	2115.3	6474.9	427.4	250.0	2151.2	317.4	102.4	1502.80
.37	2.57	8.46	3.01	.065	.038	.065	.000	1498.70	9734.26
.004883	420.	480.	500.	2	10	0	.00	1225.63	10959.90

FLOW DISTRIBUTION FOR SECNO= 1.08 CWSEL= 1505.78

STA=	9734.	9872.	9929.	9976.	10021.	10066.	10084.	10106.	10147.	10173.	10222.	10258.	10291.
PER Q=	4.3	3.5	3.5	21.8	5.2	3.3	4.9	5.9	3.4	7.1	4.3	3.2	
AREA=	187.0	124.9	115.5	250.0	145.1	76.3	106.2	149.1	90.2	181.1	117.8	95.3	
VEL=	2.3	2.7	2.9	8.5	3.5	4.2	4.5	3.8	3.7	3.8	3.5	3.3	
DEPTH=	1.4	2.2	2.5	5.6	3.2	4.3	4.7	3.7	3.5	3.7	3.3	2.9	

STA=	10291.	10359.	10427.	10498.	10568.	10677.	10772.	10870.	10960.
PER Q=	3.2	3.8	3.8	4.3	3.6	3.7	4.4	2.6	
AREA=	128.1	142.4	144.3	155.3	164.2	159.3	178.9	117.8	
VEL=	2.4	2.6	2.6	2.7	2.1	2.3	2.4	2.1	
DEPTH=	1.9	2.1	2.0	2.2	1.5	1.7	1.8	1.3	

*SECNO 1.199

3301 HV CHANGED MORE THAN HVINS

1.199	8.67	1508.97	1508.72	.00	1509.87	.90	3.57	.17	1503.60
9690.0	365.2	3459.0	5865.8	88.4	294.3	1612.6	352.4	117.0	1504.30
.39	4.13	11.75	3.64	.065	.038	.065	.000	1500.30	9945.08
.006606	650.	634.	630.	1	11	0	.00	787.84	10732.92

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

FLOW DISTRIBUTION FOR SECNO= 1.20 CWSEL= 1508.97

STA=	9945.	9982.	10023.	10047.	10072.	10092.	10123.	10171.	10200.	10224.	10287.	10355.	10406.
PER Q=	3.8	35.7	4.1	4.8	3.1	3.7	7.7	5.3	4.0	5.7	4.3	3.2	
AREA=	88.4	294.3	90.2	98.7	70.6	93.2	170.4	113.4	87.8	159.9	138.9	103.7	
VEL=	4.1	11.8	4.4	4.7	4.3	3.9	4.4	4.6	4.4	3.5	3.0	3.0	
DEPTH=	2.4	7.2	3.7	4.0	3.5	3.0	3.6	3.8	3.7	2.6	2.0	2.0	

STA=	10406.	10445.	10486.	10624.	10733.
PER Q=	4.1	4.3	3.7	2.5	
AREA=	108.8	113.3	153.5	110.3	
VEL=	3.7	3.6	2.3	2.2	
DEPTH=	2.8	2.7	1.1	1.0	

1490 NH CARD USED
*SECNO 1.313

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.53

NH cards were used.

1.313	8.23	1511.83	1510.79	.00	1512.06	.23	2.13	.07	1509.40
9690.0	2686.7	2604.0	4399.3	1003.5	412.6	1903.7	382.5	128.9	1509.20
.43	2.68	6.31	2.31	.061	.038	.065	.000	1503.60	9527.61
.002827	560.	602.	450.	2	10	0	.00	1350.53	10878.14

FLOW DISTRIBUTION FOR SECNO= 1.31 CWSEL= 1511.83

STA=	9528.	9651.	9666.	9707.	9757.	9865.	9900.	9942.	9965.	10042.	10088.	10130.	10176.
PER Q=	3.2	4.5	4.2	3.1	3.2	4.8	3.5	1.4	26.9	3.5	3.5	3.6	
AREA=	154.1	82.9	132.3	129.7	170.0	146.2	128.6	59.5	412.6	136.6	131.0	138.3	
VEL=	2.0	5.3	3.1	2.3	1.8	3.2	2.6	2.3	6.3	2.5	2.6	2.5	
DEPTH=	1.3	5.2	3.3	2.6	1.6	4.1	3.1	2.6	5.4	2.9	3.2	3.0	

STA=	10176.	10240.	10294.	10329.	10374.	10403.	10452.	10635.	10759.	10878.
PER Q=	5.1	4.8	3.2	4.3	3.1	4.1	3.8	3.8	2.5	
AREA=	195.0	174.4	115.7	152.1	105.2	152.7	233.9	211.8	157.0	
VEL=	2.5	2.7	2.7	2.7	2.9	2.6	1.6	1.7	1.5	
DEPTH=	3.0	3.2	3.3	3.4	3.6	3.1	1.3	1.7	1.3	

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

*SECNO 1.419

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
NC card was used, channel = .038 and overbanks = .065.

1.419	8.29	1514.39	1514.39	.00	1515.36	.96	2.30	.22	1511.30
9690.0	1284.7	3861.3	4544.0	317.1	331.9	1277.3	412.0	141.2	1511.80
.45	4.05	11.63	3.56	.065	.038	.065	.000	1506.10	9649.83
.008473	570.	560.	440.	0	5	0	.00	881.38	10681.45

FLOW DISTRIBUTION FOR SECNO= 1.42 CWSEL= 1514.39

STA=	9650.	9903.	9931.	9959.	9972.	10027.	10090.	10156.	10195.	10272.	10295.	10323.	10354.
PER Q=	3.8	3.6	3.5	2.4	39.8	5.7	6.5	3.2	5.2	3.7	5.5	4.3	
AREA=	110.2	81.0	80.2	45.8	331.9	148.0	163.4	86.0	151.6	75.6	105.2	94.6	
VEL=	3.4	4.3	4.2	5.0	11.6	3.7	3.9	3.6	3.3	4.7	5.1	4.4	
DEPTH=	.4	2.9	2.8	3.7	6.0	2.3	2.5	2.2	2.0	3.3	3.8	3.0	

STA=	10354.	10427.	10502.	10583.	10681.
PER Q=	4.7	3.2	3.2	1.9	
AREA=	138.7	111.0	115.7	87.6	
VEL=	3.3	2.8	2.7	2.0	
DEPTH=	1.9	1.5	1.4	.9	

*SECNO 1.527

3265 DIVIDED FLOW

1.527	10.24	1518.04	1517.69	.00	1518.81	.77	3.44	.02	1513.30
9690.0	4235.5	3280.0	2174.5	1203.5	292.7	738.1	436.6	152.7	1513.00
.48	3.52	11.21	2.95	.065	.038	.065	.000	1507.80	9388.19
.005136	450.	570.	550.	2	11	0	.00	1060.92	10547.94

FLOW DISTRIBUTION FOR SECNO= 1.53 CWSEL= 1518.04

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

STA=	9388.	9704.	9727.	9745.	9777.	9804.	9837.	9877.	9908.	9942.	9988.	10022.	10049.
PER Q=	3.8	3.6	3.5	6.3	4.6	4.4	5.3	4.3	3.9	4.1	33.8	4.7	
AREA=	200.3	86.4	77.1	139.0	109.0	113.7	138.1	110.3	107.3	122.3	292.7	110.6	
VEL=	1.8	4.0	4.3	4.4	4.1	3.8	3.7	3.8	3.5	3.2	11.2	4.1	
DEPTH=	.6	3.8	4.3	4.4	3.9	3.5	3.4	3.5	3.1	2.7	8.6	4.0	

STA=	10049.	10069.	10088.	10152.	10258.	10548.
PER Q=	4.7	3.3	4.3	3.4	2.1	
AREA=	96.4	76.3	143.8	154.1	156.9	
VEL=	4.8	4.1	2.9	2.1	1.3	
DEPTH=	5.0	4.0	2.3	1.5	.5	

1490 NH CARD USED
*SECNO 1.620

3265 DIVIDED FLOW

NH cards were used for SECNO 1.620 through SECNO 1.811.

1.620	7.15	1520.65	1519.93	.00	1521.11	.46	2.27	.03	1515.50
9690.0	3995.3	2254.2	3440.6	1322.1	241.7	860.3	460.6	163.5	1515.20
.51	3.02	9.33	4.00	.065	.038	.057	.000	1513.50	9421.51
.004789	400.	491.	510.	2	17	0	.00	1003.83	10493.84

FLOW DISTRIBUTION FOR SECNO= 1.62 CWSEL= 1520.65

STA=	9422.	9510.	9600.	9674.	9716.	9758.	9781.	9831.	9888.	9979.	9988.	10026.	10052.
PER Q=	3.4	5.1	4.1	4.0	5.1	3.0	5.8	5.4	3.5	1.7	23.3	6.8	
AREA=	121.9	190.0	154.7	119.5	141.2	80.2	162.8	164.1	147.4	40.2	241.7	137.8	
VEL=	2.7	2.6	2.6	3.2	3.5	3.7	3.5	3.2	2.3	4.0	9.3	4.8	
DEPTH=	1.4	2.1	2.1	2.9	3.3	3.5	3.3	2.9	1.6	4.1	6.4	5.3	

STA=	10052.	10068.	10095.	10281.	10310.	10333.	10358.	10494.
PER Q=	4.4	4.5	6.0	5.2	3.4	3.5	1.7	
AREA=	85.8	107.8	178.1	100.8	72.2	75.9	101.9	
VEL=	4.9	4.1	3.3	5.0	4.6	4.5	1.6	
DEPTH=	5.5	3.9	1.0	3.5	3.1	3.1	.8	

1490 NH CARD USED
*SECNO 1.717

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

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

1.717	8.71	1523.51	1523.51	.00	1524.38	.87	2.66	.12	1520.50
9690.0	1874.9	4011.6	3803.6	626.8	368.1	1080.0	484.7	174.7	1520.10
.53	2.99	10.90	3.52	.065	.038	.057	.000	1514.80	9604.17
.006594	470.	512.	450.	0	12	0	.00	1112.29	10959.78

FLOW DISTRIBUTION FOR SECNO= 1.72 CWSEL= 1523.51

STA=	9604.	9714.	9746.	9794.	9885.	9975.	10032.	10071.	10096.	10179.	10281.	10567.	10590.
PER Q=	4.8	3.2	4.5	3.5	3.4	41.4	4.6	4.6	3.1	3.1	3.1	3.7	
AREA=	164.4	85.7	123.3	131.7	121.7	368.1	115.8	96.2	118.5	128.1	109.7	69.5	
VEL=	2.8	3.6	3.5	2.6	2.7	10.9	3.8	4.6	2.5	2.3	2.7	5.2	
DEPTH=	1.5	2.7	2.6	1.4	1.3	6.5	2.9	3.9	1.4	1.3	.4	3.0	

STA=	10590.	10615.	10640.	10661.	10837.	10919.	10960.
PER Q=	3.2	4.1	3.5	3.1	3.0	.2	
AREA=	65.5	76.0	63.6	99.7	121.3	16.0	
VEL=	4.8	5.3	5.3	3.0	2.4	1.1	
DEPTH=	2.6	3.0	3.1	.6	1.5	.4	

1490 NH CARD USED
*SECNO 1.811

3301 HV CHANGED MORE THAN HVINS

1.811	8.93	1526.13	1525.07	.00	1526.29	.17	1.85	.07	1524.00
9690.0	1549.4	1575.8	6564.8	611.3	292.2	2434.2	507.1	185.5	1523.80
.56	2.53	5.39	2.70	.065	.048	.059	.000	1517.20	9689.87
.003681	630.	496.	240.	2	13	0	.00	1627.44	11317.31

FLOW DISTRIBUTION FOR SECNO= 1.81 CWSEL= 1526.13

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

STA=	9690.	9807.	9858.	9906.	9961.	9978.	10036.	10098.	10142.	10175.	10205.	10253.	10325.
PER Q=	3.0	3.6	4.4	4.2	.8	16.3	3.3	3.9	4.2	3.7	3.6	3.7	
AREA=	149.6	132.7	142.8	150.4	35.7	292.2	136.0	132.0	121.4	109.1	127.0	151.6	
VEL=	2.0	2.6	3.0	2.7	2.3	5.4	2.4	2.8	3.3	3.3	2.8	2.4	
DEPTH=	1.3	2.6	3.0	2.7	2.1	5.1	2.2	2.9	3.7	3.7	2.7	2.1	

STA=	10325.	10455.	10551.	10804.	10875.	10902.	10925.	10978.	11020.	11072.	11214.	11317.
PER Q=	3.4	3.2	3.7	7.2	4.1	3.9	7.1	4.7	3.3	3.6	1.3	
AREA=	186.2	156.2	225.3	207.0	101.5	90.6	182.8	130.0	115.3	177.6	84.4	
VEL=	1.8	2.0	1.6	3.4	3.9	4.1	3.7	3.5	2.8	1.9	1.5	
DEPTH=	1.4	1.6	.9	2.9	3.7	4.0	3.4	3.1	2.2	1.3	.8	

*SECNO 1.909

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .67

Q changed to 9,410 cfs at C10U (the confluence with Stream No. 11). NC card was used, channel = .048, overbanks = .065.

1.909	9.97	1528.47	1528.12	.00	1528.95	.48	2.57	.09	1526.20
9410.0	4939.7	2715.8	1754.5	1408.4	304.1	605.5	539.4	201.9	1524.90
.59	3.51	8.93	2.90	.065	.048	.065	.000	1518.50	9269.06
.007731	517.	517.	480.	2	9	0	.00	1255.12	10993.44

FLOW DISTRIBUTION FOR SECNO= 1.91 CWSEL= 1528.47

STA=	9269.	9354.	9419.	9473.	9490.	9526.	9547.	9570.	9596.	9615.	9649.	9695.	9824.
PER Q=	3.2	3.1	3.7	3.0	5.4	3.6	4.1	3.8	3.7	4.1	3.6	6.5	
AREA=	114.3	105.6	108.0	60.6	114.7	73.1	82.2	83.1	71.2	95.4	100.4	214.8	
VEL=	2.7	2.8	3.2	4.7	4.4	4.6	4.7	4.3	4.8	4.0	3.4	2.8	
DEPTH=	1.4	1.6	2.0	3.5	3.2	3.5	3.6	3.2	3.7	2.8	2.2	1.7	

STA=	9824.	9968.	9981.	10029.	10061.	10147.	10867.	10927.	10966.	10993.
PER Q=	4.0	.8	28.9	3.1	3.4	3.5	5.3	3.0	.3	
AREA=	159.7	25.1	304.1	78.6	125.5	158.7	140.1	84.2	18.4	
VEL=	2.3	3.1	8.9	3.7	2.6	2.1	3.5	3.4	1.7	
DEPTH=	1.1	1.9	6.4	2.5	1.5	.2	2.3	2.2	.7	

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

*SECNO 2.004

3265 DIVIDED FLOW

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.004	9.24	1532.84	1532.84	.00	1533.47	.63	4.25	.04	1528.10
9410.0	3231.8	2471.0	3707.2	1141.7	221.8	1044.4	566.6	219.2	1527.70
.61	2.83	11.14	3.55	.065	.048	.065	.000	1523.60	9047.90
.009333	502.	502.	502.	0	14	0	.00	1745.07	11053.23

FLOW DISTRIBUTION FOR SECNO= 2.00 CWSEL= 1532.84

STA=	9048.	9292.	9349.	9387.	9479.	9562.	9793.	9889.	9986.	10015.	10034.	10058.	10084.
PER Q=	8.0	5.1	3.3	3.8	3.4	3.4	3.7	3.6	26.3	7.1	7.4	3.7	
AREA=	284.8	127.7	83.9	129.9	114.4	152.0	128.0	120.9	221.8	99.6	111.4	77.9	
VEL=	2.6	3.8	3.7	2.8	2.8	2.1	2.7	2.8	11.1	6.7	6.2	4.5	
DEPTH=	1.2	2.2	2.2	1.4	1.4	.7	1.3	1.2	7.5	5.2	4.7	2.9	

STA=	10084.	10204.	10252.	10753.	10851.	10927.	11053.
PER Q=	3.9	3.9	4.3	4.2	3.3	1.6	
AREA=	143.1	100.9	178.1	141.1	110.0	82.3	
VEL=	2.6	3.6	2.3	2.8	2.8	1.8	
DEPTH=	1.2	2.1	.4	1.4	1.5	.6	

*SECNO 2.060

3265 DIVIDED FLOW

2.060	9.24	1535.04	1534.61	.00	1535.50	.46	2.02	.02	1531.20
9410.0	564.3	2829.1	6016.6	301.7	327.1	1860.9	582.3	229.3	1530.60
.63	1.87	8.65	3.23	.065	.048	.065	.000	1525.80	9607.89
.005840	370.	296.	230.	2	10	0	.00	1275.22	11027.91

FLOW DISTRIBUTION FOR SECNO= 2.06 CWSEL= 1535.04

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

STA=	9608.	9865.	9973.	10018.	10040.	10065.	10090.	10123.	10169.	10204.	10237.	10273.	10555.
PER Q=	3.7	2.3	30.1	3.2	5.0	4.6	6.1	4.3	4.6	3.7	3.3	3.2	
AREA=	211.2	90.6	327.1	75.6	105.2	97.4	131.3	120.1	113.5	96.8	93.0	148.7	
VEL=	1.7	2.4	8.6	4.0	4.5	4.4	4.4	3.4	3.8	3.6	3.3	2.0	
DEPTH=	.8	.8	7.2	3.6	4.1	4.0	3.9	2.6	3.2	2.9	2.6	.5	

STA=	10555.	10651.	10720.	10770.	10805.	10876.	10949.	11028.
PER Q=	3.9	4.5	3.9	3.0	5.3	3.7	1.7	
AREA=	152.5	147.3	117.9	87.8	163.6	133.3	76.8	
VEL=	2.4	2.9	3.1	3.2	3.0	2.6	2.1	
DEPTH=	1.6	2.1	2.4	2.5	2.3	1.8	1.0	

*SECNO 2.142

3265 DIVIDED FLOW

2.142	9.51	1537.11	1536.81	.00	1537.59	.48	2.08	.01	1533.90
9410.0	4946.6	2867.3	1596.1	1571.7	319.9	631.7	601.2	239.7	1532.20
.65	3.15	8.96	2.53	.065	.048	.065	.000	1527.60	9013.06
.006024	200.	433.	400.	2	6	0	.00	1650.30	10678.20

FLOW DISTRIBUTION FOR SECNO= 2.14 CWSEL= 1537.11

STA=	9013.	9372.	9492.	9649.	9735.	9795.	9813.	9837.	9864.	9914.	9941.	9978.	10020.
PER Q=	4.0	3.4	4.4	4.1	7.8	5.3	6.9	4.0	5.5	3.6	3.5	30.5	
AREA=	242.3	152.7	200.2	149.0	189.1	93.7	121.5	93.4	145.2	88.0	96.6	319.9	
VEL=	1.6	2.1	2.1	2.6	3.9	5.3	5.3	4.1	3.6	3.9	3.4	9.0	
DEPTH=	.7	1.3	1.3	1.7	3.1	5.2	5.2	3.5	2.9	3.3	2.7	7.5	

STA=	10020.	10038.	10056.	10335.	10512.	10678.
PER Q=	3.9	3.5	3.3	3.7	2.6	
AREA=	78.3	71.1	154.9	184.7	142.7	
VEL=	4.7	4.6	2.0	1.9	1.7	
DEPTH=	4.3	4.2	.6	1.0	.9	

*SECNO 2.233

3265 DIVIDED FLOW

2.233	8.86	1540.16	1539.82	.00	1540.50	.34	2.90	.01	1535.10
9410.0	3499.6	1732.6	4177.9	1425.6	192.4	1282.2	631.1	258.8	1534.50
.68	2.45	9.01	3.26	.065	.048	.065	.000	1531.30	8888.59
.006063	500.	480.	450.	2	13	0	.00	1804.45	10755.26

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

FLOW DISTRIBUTION FOR SECNO= 2.23 CWSEL= 1540.16

STA=	8889.	9186.	9407.	9522.	9627.	9735.	9875.	9951.	9981.	9991.	10016.	10048.	10078.
PER Q=	3.0	4.2	3.1	4.0	4.6	4.3	7.5	4.5	2.0	18.4	4.7	4.6	
AREA=	193.2	220.6	142.4	160.5	175.7	186.3	201.4	104.2	41.4	192.4	108.9	104.6	
VEL=	1.5	1.8	2.1	2.4	2.5	2.2	3.5	4.1	4.6	9.0	4.1	4.1	
DEPTH=	.6	1.0	1.2	1.5	1.6	1.3	2.7	3.4	4.3	7.6	3.4	3.5	

STA=	10078.	10102.	10122.	10171.	10246.	10283.	10327.	10673.	10728.	10755.
PER Q=	3.6	3.3	6.1	5.9	3.7	3.2	4.1	4.1	1.2	
AREA=	83.7	71.9	152.5	175.5	100.6	97.9	219.3	124.7	42.5	
VEL=	4.0	4.3	3.8	3.2	3.4	3.1	1.7	3.1	2.7	
DEPTH=	3.4	3.7	3.1	2.3	2.7	2.2	.6	2.3	1.6	

*SECNO 2.326

3265 DIVIDED FLOW

NC card was used, channel = .055 and overbanks = .065.

2.326	7.26	1542.96	1542.24	.00	1543.19	.23	2.68	.01	1540.80
9410.0	2066.6	1937.7	5405.7	711.6	308.9	1860.5	660.7	276.3	1539.10
.72	2.90	6.27	2.91	.065	.055	.065	.000	1535.70	9119.90
.005900	500.	491.	400.	1	17	0	.00	1597.77	11054.79

FLOW DISTRIBUTION FOR SECNO= 2.33 CWSEL= 1542.96

STA=	9120.	9778.	9822.	9873.	9900.	9935.	9984.	10042.	10065.	10124.	10157.	10187.	10227.
PER Q=	3.4	3.2	5.5	3.3	4.1	2.5	20.6	3.3	5.9	4.2	3.9	3.8	
AREA=	190.3	97.7	145.6	84.0	103.6	90.4	308.9	78.4	161.7	104.0	95.6	106.6	
VEL=	1.7	3.0	3.5	3.7	3.7	2.6	6.3	4.0	3.4	3.8	3.9	3.4	
DEPTH=	.3	2.2	2.8	3.1	3.0	1.8	5.3	3.4	2.7	3.2	3.3	2.7	

STA=	10227.	10278.	10365.	10524.	10611.	10642.	10665.	10742.	10818.	10950.	11055.
PER Q=	3.1	3.1	3.6	4.9	3.0	3.1	4.1	4.2	6.6	.6	
AREA=	104.2	129.3	179.0	168.7	83.8	75.5	141.5	145.0	237.3	49.9	
VEL=	2.8	2.3	1.9	2.7	3.4	3.9	2.7	2.7	2.6	1.1	
DEPTH=	2.0	1.5	1.1	1.9	2.7	3.3	1.8	1.9	1.8	.5	

*SECNO 2.406

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

3265 DIVIDED FLOW

2.406	10.41	1545.71	1545.53	.00	1546.22	.51	2.95	.08	1542.60
9410.0	2649.2	2842.0	3918.7	821.8	309.5	1217.4	685.4	290.8	1543.90
.74	3.22	9.18	3.22	.065	.055	.065	.000	1535.30	9394.25
.008810	410.	422.	410.	2	16	0	.00	1480.74	10890.11

FLOW DISTRIBUTION FOR SECNO= 2.41 CWSEL= 1545.71

STA=	9394.	9645.	9686.	9720.	9768.	9886.	9951.	9977.	10018.	10145.	10179.	10229.	10381.
PER Q=	4.8	3.8	5.1	5.5	4.0	3.4	1.7	30.2	5.8	3.4	4.4	4.2	
AREA=	192.5	94.6	105.6	125.7	148.8	106.3	48.2	309.5	185.6	82.8	112.3	158.3	
VEL=	2.3	3.8	4.5	4.1	2.5	3.0	3.2	9.2	2.9	3.9	3.7	2.5	
DEPTH=	.8	2.3	3.1	2.6	1.3	1.6	1.8	7.5	1.5	2.4	2.3	1.0	

STA=	10381.	10407.	10452.	10498.	10542.	10742.	10890.
PER Q=	4.6	6.5	3.6	4.2	3.1	2.0	
AREA=	88.5	135.9	95.7	102.5	148.5	107.3	
VEL=	4.9	4.5	3.5	3.8	1.9	1.8	
DEPTH=	3.4	3.0	2.1	2.4	.7	.7	

*SECNO 2.500

2.500	8.99	1549.19	1548.72	.00	1549.41	.22	3.16	.03	1545.40
9410.0	4593.4	1944.5	2872.0	1795.6	287.6	1220.9	715.1	308.8	1546.40
.78	2.56	6.76	2.35	.065	.055	.065	.000	1540.20	8888.92
.005421	410.	496.	500.	2	13	0	.00	1958.72	10847.64

FLOW DISTRIBUTION FOR SECNO= 2.50 CWSEL= 1549.19

STA=	8889.	9255.	9298.	9336.	9367.	9426.	9491.	9542.	9650.	9761.	9837.	9901.	9955.
PER Q=	6.5	3.0	4.0	3.2	3.8	4.1	3.3	3.2	3.6	3.9	3.6	4.1	
AREA=	364.7	98.0	109.0	88.7	127.5	137.7	108.7	136.9	157.6	141.4	125.4	127.8	
VEL=	1.7	2.9	3.4	3.4	2.8	2.8	2.8	2.2	2.1	2.6	2.7	3.0	
DEPTH=	1.0	2.3	2.9	2.9	2.1	2.1	2.2	1.3	1.4	1.8	2.0	2.4	

STA=	9955.	9979.	10023.	10082.	10123.	10240.	10335.	10425.	10519.	10649.	10732.	10848.
PER Q=	2.7	20.7	5.3	3.0	3.1	3.6	3.7	4.0	4.2	3.0	.6	
AREA=	72.1	287.6	156.1	95.5	146.2	148.4	146.9	159.3	184.3	127.0	57.2	
VEL=	3.5	6.8	3.2	3.0	2.0	2.3	2.3	2.4	2.1	2.3	1.1	
DEPTH=	3.0	6.5	2.6	2.3	1.2	1.6	1.6	1.7	1.4	1.5	.5	

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

*SECNO 2.595

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

2.595	12.35	1552.65	1552.65	.00	1553.43	.78	3.76	.17	1549.50
9410.0	4556.4	3455.0	1398.6	1330.0	324.6	319.1	745.5	327.5	1549.60
.80	3.43	10.64	4.38	.065	.055	.065	.000	1540.30	9065.24
.011013	502.	502.	502.	0	17	0	.00	1277.88	10603.93

FLOW DISTRIBUTION FOR SECNO= 2.60 CWSEL= 1552.65

STA=	9065.	9239.	9319.	9376.	9438.	9494.	9580.	9694.	9842.	9918.	9941.	9956.	9985.
PER Q=	4.4	3.4	3.2	3.7	3.8	3.5	5.7	3.3	3.8	4.3	4.1	5.3	
AREA=	165.1	108.0	91.7	102.7	101.2	112.4	168.5	132.1	114.7	76.4	62.8	94.5	
VEL=	2.5	2.9	3.3	3.4	3.6	2.9	3.2	2.3	3.2	5.4	6.1	5.3	
DEPTH=	1.0	1.4	1.6	1.7	1.8	1.3	1.5	.9	1.5	3.4	4.1	3.2	

STA=	9985.	10024.	10059.	10090.	10141.	10604.
PER Q=	36.7	5.4	6.0	3.3	.2	
AREA=	324.6	103.0	104.3	82.6	29.2	
VEL=	10.6	4.9	5.4	3.7	.8	
DEPTH=	8.4	3.0	3.4	1.6	.1	

*SECNO 2.689

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.22

2.689	11.36	1555.26	1553.69	.00	1555.42	.15	1.92	.06	1551.60
9410.0	5586.8	2444.1	1379.1	2562.9	505.9	544.3	773.5	342.4	1549.20
.85	2.18	4.83	2.53	.065	.055	.065	.000	1543.90	9002.65
.002234	400.	496.	550.	4	17	0	.00	1615.90	10763.66

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

FLOW DISTRIBUTION FOR SECNO= 2.69 CWSEL= 1555.26

STA=	9003.	9320.	9407.	9558.	9680.	9736.	9795.	9888.	9925.	9956.	9971.	10037.	10059.
PER Q=	9.0	5.6	11.8	9.3	4.7	4.0	6.4	3.7	3.3	1.6	26.0	4.6	
AREA=	523.0	243.4	478.4	380.2	185.9	170.4	271.6	135.9	115.9	57.9	505.9	123.8	
VEL=	1.6	2.2	2.3	2.3	2.4	2.2	2.2	2.5	2.6	2.6	4.8	3.5	
DEPTH=	1.6	2.8	3.2	3.1	3.3	2.9	2.9	3.6	3.8	3.7	7.7	5.8	

STA=	10059.	10082.	10112.	10764.
PER Q=	4.7	4.1	1.2	
AREA=	130.1	131.7	158.6	
VEL=	3.4	3.0	.7	
DEPTH=	5.5	4.4	.2	

*SECNO 2.777

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .49

2.777	10.35	1556.65	1556.58	.00	1557.35	.70	1.77	.16	1553.90
9410.0	1940.2	3696.5	3773.2	852.2	386.8	840.6	802.2	356.9	1552.40
.87	2.28	9.56	4.49	.065	.055	.065	.000	1546.30	9011.52
.009181	440.	465.	420.	3	13	0	.00	1275.34	10347.98

FLOW DISTRIBUTION FOR SECNO= 2.78 CWSEL= 1556.65

STA=	9012.	9293.	9404.	9720.	9805.	9960.	9977.	10029.	10048.	10066.	10090.	10115.	10147.
PER Q=	4.8	3.4	4.3	3.6	3.0	1.4	39.3	3.8	3.1	4.3	4.9	6.6	
AREA=	233.8	130.2	203.8	122.2	125.2	36.9	386.8	69.0	60.6	81.5	89.5	118.7	
VEL=	1.9	2.5	2.0	2.8	2.3	3.7	9.6	5.2	4.9	5.0	5.2	5.3	
DEPTH=	.8	1.2	.6	1.4	.8	2.2	7.4	3.7	3.3	3.4	3.6	3.7	

STA=	10147.	10199.	10275.	10312.	10348.
PER Q=	7.7	4.8	3.8	.9	
AREA=	157.1	138.5	90.1	35.5	
VEL=	4.6	3.3	4.0	2.5	
DEPTH=	3.0	1.8	2.5	1.0	

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

*SECNO 2.872

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 9412.4 11001.9 TYPE= 1 TARGET= -9412.400
X3 card was used to model ineffective area.

2.872	10.48	1560.08	1559.13	.00	1560.42	.34	3.04	.04	1556.30
9410.0	2928.1	2680.7	3801.2	874.8	375.8	1208.4	825.7	370.5	1556.10
.89	3.35	7.13	3.15	.065	.055	.065	.000	1549.60	9495.77
.005156	570.	502.	330.	3	10	0	.00	1263.84	10874.46

FLOW DISTRIBUTION FOR SECNO= 2.87 CWSEL= 1560.08

STA=	9496.	9740.	9780.	9799.	9826.	9887.	9923.	9940.	9960.	9978.	10029.	10075.	10103.
PER Q=	3.2	3.9	4.1	3.6	3.1	3.0	4.0	3.5	2.7	28.5	8.9	4.7	
AREA=	169.1	111.6	86.6	91.5	105.2	84.0	80.5	80.2	65.9	375.8	196.0	109.5	
VEL=	1.8	3.3	4.5	3.7	2.7	3.4	4.7	4.1	3.8	7.1	4.3	4.1	
DEPTH=	.7	2.8	4.6	3.3	1.7	2.4	4.8	3.9	3.6	7.5	4.2	3.9	

STA=	10103.	10136.	10171.	10226.	10258.	10349.	10442.	10874.
PER Q=	4.7	3.3	6.2	3.6	3.6	3.5	1.8	
AREA=	116.9	95.5	168.7	98.0	143.5	146.4	133.8	
VEL=	3.8	3.3	3.5	3.5	2.3	2.2	1.3	
DEPTH=	3.5	2.8	3.1	3.1	1.6	1.6	.3	

*SECNO 2.947

3265 DIVIDED FLOW

2.947	11.20	1562.20	1561.71	.00	1562.71	.51	2.24	.05	1559.10
9410.0	5117.3	3723.2	569.5	1433.4	462.3	283.9	845.2	381.0	1558.60
.91	3.57	8.05	2.01	.065	.055	.065	.000	1551.00	9291.36
.007225	320.	396.	420.	2	9	0	.00	1193.40	10741.84

FLOW DISTRIBUTION FOR SECNO= 2.95 CWSEL= 1562.20

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

STA=	9291.	9414.	9467.	9498.	9553.	9648.	9728.	9850.	9872.	9913.	9939.	9954.	9971.
PER Q=	4.6	3.9	3.8	4.8	3.8	3.9	7.1	3.3	7.5	5.4	3.4	2.8	
AREA=	161.7	113.0	90.4	130.1	139.4	132.8	214.5	72.2	152.3	103.1	65.1	58.9	
VEL=	2.7	3.2	3.9	3.5	2.5	2.7	3.1	4.4	4.6	4.9	5.0	4.5	
DEPTH=	1.3	2.1	2.9	2.4	1.5	1.7	1.8	3.4	3.7	4.0	4.1	3.5	

STA=	9971.	10039.	10117.	10742.
PER Q=	39.6	4.0	2.1	
AREA=	462.3	127.8	156.1	
VEL=	8.1	2.9	1.3	
DEPTH=	6.8	1.6	.2	

*SECNO 3.023

3265 DIVIDED FLOW

3.023	9.46	1564.56	1563.64	.00	1564.93	.37	2.21	.01	1560.40
9410.0	4328.4	2860.8	2220.8	1364.3	401.7	555.9	862.9	389.4	1559.80
.94	3.17	7.12	3.99	.065	.055	.065	.000	1555.10	9343.40
.005436	290.	401.	460.	1	13	0	.00	890.05	10271.19

FLOW DISTRIBUTION FOR SECNO= 3.02 CWSEL= 1564.56

STA=	9343.	9496.	9540.	9597.	9636.	9689.	9732.	9783.	9877.	9914.	9927.	9942.	9957.
PER Q=	3.2	3.9	5.7	3.1	3.6	3.1	3.2	3.6	4.8	3.3	3.1	3.2	
AREA=	158.5	115.9	160.8	94.7	117.9	99.6	106.7	145.9	119.9	63.4	65.6	66.6	
VEL=	1.9	3.2	3.4	3.1	2.9	3.0	2.8	2.3	3.7	4.9	4.5	4.5	
DEPTH=	1.0	2.6	2.8	2.5	2.2	2.3	2.1	1.5	3.2	5.1	4.3	4.5	

STA=	9957.	9970.	10028.	10049.	10066.	10077.	10096.	10161.	10268.	10271.
PER Q=	2.2	30.4	5.1	4.5	4.1	3.6	3.1	3.1	.0	
AREA=	49.1	401.7	101.0	87.5	68.1	78.0	108.4	112.3	.5	
VEL=	4.1	7.1	4.8	4.9	5.7	4.3	2.7	2.6	.4	
DEPTH=	3.9	6.9	4.8	5.1	6.4	4.0	1.7	1.1	.1	

*SECNO 3.117

3265 DIVIDED FLOW

3.117	9.28	1567.08	1566.72	.00	1567.69	.61	2.69	.07	1565.20
9410.0	897.8	2936.4	5575.8	340.2	319.1	1231.4	880.6	396.6	1562.10
.95	2.64	9.20	4.53	.065	.055	.065	.000	1557.80	9661.17
.009260	360.	496.	320.	1	10	0	.00	912.96	10615.88

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

FLOW DISTRIBUTION FOR SECNO= 3.12 CWSEL= 1567.08

STA=	9661.	9849.	9928.	9976.	10023.	10034.	10055.	10095.	10121.	10150.	10202.	10268.	10284.
PER Q=	3.6	3.3	2.6	31.2	3.2	4.6	9.3	6.0	4.5	6.4	4.3	3.8	
AREA=	148.7	111.2	80.4	319.1	50.7	80.4	158.3	103.7	90.5	140.9	118.6	64.1	
VEL=	2.3	2.8	3.1	9.2	6.0	5.4	5.5	5.5	4.7	4.3	3.4	5.5	
DEPTH=	.8	1.4	1.7	6.9	4.5	3.8	4.0	3.9	3.1	2.7	1.8	4.0	

STA=	10284.	10305.	10330.	10345.	10380.	10616.
PER Q=	3.5	4.0	3.1	3.9	2.7	
AREA=	68.5	78.4	56.2	87.1	134.0	
VEL=	4.8	4.8	5.1	4.2	1.9	
DEPTH=	3.2	3.2	3.6	2.5	.6	

*SECNO 3.209

3.209	10.89	1569.99	1569.04	.00	1570.31	.32	2.59	.03	1567.10
9410.0	4203.2	1923.7	3283.0	1096.4	265.4	1064.0	897.2	404.0	1566.70
.98	3.83	7.25	3.09	.065	.055	.065	.000	1559.10	9518.41
.005880	380.	486.	270.	2	9	0	.00	1114.50	10632.92

FLOW DISTRIBUTION FOR SECNO= 3.21 CWSEL= 1569.99

STA=	9518.	9709.	9769.	9790.	9801.	9832.	9857.	9896.	9935.	9957.	9982.	10018.	10059.
PER Q=	3.8	3.1	3.2	3.7	6.8	4.2	5.9	7.7	3.6	2.6	20.4	6.1	
AREA=	173.0	108.9	71.6	63.2	136.3	92.9	137.8	161.0	81.2	70.5	265.4	143.4	
VEL=	2.1	2.7	4.2	5.6	4.7	4.3	4.0	4.5	4.2	3.5	7.2	4.0	
DEPTH=	.9	1.8	3.6	5.6	4.3	3.8	3.5	4.1	3.7	2.8	7.5	3.5	

STA=	10059.	10091.	10111.	10131.	10165.	10294.	10368.	10442.	10633.
PER Q=	4.7	3.5	3.6	3.2	3.8	4.1	3.1	2.7	
AREA=	109.6	77.0	78.6	86.8	156.8	142.7	121.5	147.6	
VEL=	4.0	4.3	4.3	3.5	2.3	2.7	2.4	1.7	
DEPTH=	3.5	3.8	3.9	2.6	1.2	1.9	1.6	.8	

THIS RUN EXECUTED 25MAY92 13:12:52

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

Deadman Wash 100-year Q

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
*	.092	9680.00	1482.76	10.16	1472.60	1484.11	1482.76	10.86	136.01	.00	9948.18	570.47	10518.66
*	.159	9680.00	1486.15	11.95	1474.20	1486.43	1484.56	5.85	32.76	354.00	9966.54	952.06	10918.60
	.202	9680.00	1486.89	14.19	1472.70	1487.05	1483.75	4.60	21.13	227.00	9963.11	1275.31	11249.23
	.299	9680.00	1488.01	14.21	1473.80	1488.18	1485.63	4.94	32.87	512.00	9863.61	1017.38	10880.99
*	.382	9680.00	1490.21	10.91	1479.30	1490.95	1488.70	9.14	83.03	438.00	9940.00	471.68	10411.68
	.516	9680.00	1495.13	9.93	1485.20	1497.32	1493.82	11.89	74.88	708.00	9961.57	110.93	10072.50
*	.618	9690.00	1498.91	9.01	1489.90	1499.06	1495.31	4.44	9.74	539.00	9690.00	730.00	10420.00
	.721	9690.00	1499.39	7.29	1492.10	1499.46	1496.66	3.93	8.69	544.00	9789.36	1402.31	11463.64
*	.803	9690.00	1499.77	6.47	1493.30	1499.93	1498.17	5.92	26.43	433.00	9771.90	1304.84	11076.75
	.909	9690.00	1501.32	5.82	1495.50	1501.52	1500.14	5.76	43.21	560.00	9789.62	1246.06	11035.69
	.988	9690.00	1503.27	6.87	1496.40	1503.57	1502.61	8.07	56.17	417.00	9697.20	1297.95	10995.15
	1.079	9690.00	1505.78	7.08	1498.70	1506.13	1505.18	8.46	48.83	480.00	9734.26	1225.63	10959.90
	1.199	9690.00	1508.97	8.67	1500.30	1509.87	1508.72	11.75	66.06	634.00	9945.08	787.84	10732.92
*	1.313	9690.00	1511.83	8.23	1503.60	1512.06	1510.79	6.31	28.27	602.00	9527.61	1350.53	10878.14
*	1.419	9690.00	1514.39	8.29	1506.10	1515.36	1514.39	11.63	84.73	560.00	9649.83	881.38	10681.45
	1.527	9690.00	1518.04	10.24	1507.80	1518.81	1517.69	11.21	51.36	570.00	9388.19	1060.92	10547.94
	1.620	9690.00	1520.65	7.15	1513.50	1521.11	1519.93	9.33	47.89	491.00	9421.51	1003.83	10493.84

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
*	1.717	9690.00	1523.51	8.71	1514.80	1524.38	1523.51	10.90	65.94	512.00	9604.17	1112.29	10959.78
	1.811	9690.00	1526.13	8.93	1517.20	1526.29	1525.07	5.39	36.81	496.00	9689.87	1627.44	11317.31
*	1.909	9410.00	1528.47	9.97	1518.50	1528.95	1528.12	8.93	77.31	517.00	9269.06	1255.12	10993.44
*	2.004	9410.00	1532.84	9.24	1523.60	1533.47	1532.84	11.14	93.33	502.00	9047.90	1745.07	11053.23
	2.060	9410.00	1535.04	9.24	1525.80	1535.50	1534.61	8.65	58.40	296.00	9607.89	1275.22	11027.91
	2.142	9410.00	1537.11	9.51	1527.60	1537.59	1536.81	8.96	60.24	433.00	9013.06	1650.30	10678.20
	2.233	9410.00	1540.16	8.86	1531.30	1540.50	1539.82	9.01	60.63	480.00	8888.59	1804.45	10755.26
	2.326	9410.00	1542.96	7.26	1535.70	1543.19	1542.24	6.27	59.00	491.00	9119.90	1597.77	11054.79
	2.406	9410.00	1545.71	10.41	1535.30	1546.22	1545.53	9.18	88.10	422.00	9394.25	1480.74	10890.11
	2.500	9410.00	1549.19	8.99	1540.20	1549.41	1548.72	6.76	54.21	496.00	8888.92	1958.72	10847.64
*	2.595	9410.00	1552.65	12.35	1540.30	1553.43	1552.65	10.64	110.13	502.00	9065.24	1277.88	10603.93
*	2.689	9410.00	1555.26	11.36	1543.90	1555.42	1553.69	4.83	22.34	496.00	9002.65	1615.90	10763.66
*	2.777	9410.00	1556.65	10.35	1546.30	1557.35	1556.58	9.56	91.81	465.00	9011.52	1275.34	10347.98
	2.872	9410.00	1560.08	10.48	1549.60	1560.42	1559.13	7.13	51.56	502.00	9495.77	1263.84	10874.46
	2.947	9410.00	1562.20	11.20	1551.00	1562.71	1561.71	8.05	72.25	396.00	9291.36	1193.40	10741.84
	3.023	9410.00	1564.56	9.46	1555.10	1564.93	1563.64	7.12	54.36	401.00	9343.40	890.05	10271.19
	3.117	9410.00	1567.08	9.28	1557.80	1567.69	1566.72	9.20	92.60	496.00	9661.17	912.96	10615.88
	3.209	9410.00	1569.99	10.89	1559.10	1570.31	1569.04	7.25	58.80	486.00	9518.41	1114.50	10632.92

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION SECNO=      .092  PROFILE=  1  CRITICAL DEPTH ASSUMED

WARNING SECNO=      .159  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .382  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .618  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      .803  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     1.313  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     1.419  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.419  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     1.717  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     1.717  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     1.909  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     2.004  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.004  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     2.595  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     2.595  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     2.689  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     2.777  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

Normal program termination
```

HEC2 S/N: 1126460209 HMVersion: 6.40 Data File: c10tsp.hc2

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*********************************************
*  HEC-2 WATER SURFACE PROFILES             *
*                                           *
*  Version   4.6.2;  May 1991               *
*                                           *
*  RUN DATE    25MAY92    TIME   13:49:04   *
*********************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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:::::::::::::::::::::::::::::::::::::::::::::
:::                                       :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
:::                                       :::
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:::::::::::::::::::::::::::::::::::::::::::::
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============================
H A E S T A D   M E T H O D S
============================
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 25MAY92 13:49:04

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

 Version   4.6.2;  May 1991
************************************


T1      Deadman Wash Floodplain Delineation Study
T2      Hydraulic Analysis of Deadman Wash, SECNO 3.209 to SECNO 4.662
T3      Deadman Wash 100-year Q   Subcritical Flow,    May 1992

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                                                                 1569.99

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1                 -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         8        42         3         2        26         5        39
     53         4        54

QT        1      9410
NC     .065      .065      .055        .1        .3
          ***************************************************************
          Tributary stream profile calculations were performed to
          solve the flow split ratios through this split reach.

          X3 cards were used to model the image boundary line
          between the main channel and Stream No. 12.

          Special culvert method was used for the pipe culvert on
          Stream No. 12 across the Carefree Highway.

          Q is approximately 9,100 cfs to Carefree Highway, and
          8,760 cfs south of the highway.

          X4 cards were used to model channel at SECNO 3.639 and
          SECNO 3.648.
          ***************************************************************
          Q is 9,410 cfs at this section.
          NC card was used, channel = .055, overbanks = .065.
X1    3.209        60    9982.4   10017.8         0         0         0
GR   1572.2    9355.8    1572.4    9413.0    1571.4    9458.5    1570.4    9499.6    1569.7    9531.8
GR   1569.5    9579.9    1569.2    9608.0    1569.2    9626.5    1569.3    9648.5    1568.3    9678.4
GR   1567.2    9708.6    1567.6    9722.5    1568.8    9750.3    1569.0    9760.3    1568.3    9769.4
GR   1565.9    9782.4    1564.5    9789.5    1564.2    9800.7    1565.9    9810.7    1566.0    9832.2
GR   1566.4    9856.7    1566.7    9873.6    1566.2    9896.1    1565.7    9909.0    1566.0    9935.3
GR   1566.2    9947.8    1567.0    9957.4    1567.3    9972.0    1567.1    9982.4    1566.2    9986.1
```

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GR   1559.8    9993.6    1559.1    9999.0    1559.3   10000.0    1559.2   10005.6    1565.6   10012.5
GR   1566.7   10017.8    1566.4   10033.2    1566.6   10059.1    1566.4   10090.5    1566.0   10110.8
GR   1566.2   10131.0    1567.0   10147.5    1569.4   10164.7    1569.8   10178.3    1569.2   10198.7
GR   1569.1   10229.4    1568.0   10254.4    1568.0   10294.4    1568.0   10329.7    1568.2   10368.0
GR   1568.4   10399.7    1568.4   10442.4    1568.9   10498.8    1569.5   10549.7    1569.5   10595.7
GR   1570.0   10633.6    1570.6   10660.7    1571.2   10704.9    1571.3   10745.5    1572.3   10835.9

QT        1       8760
          Q changed to 8,760 cfs at C10T (the confluence with Stream
          No. 12).
X1    3.284         47    9972.4   10043.6     320       440       396
GR   1572.5    9300.0    1570.9    9412.1    1571.4    9449.7    1570.5    9483.4    1569.8    9518.5
GR   1570.1    9546.0    1570.7    9577.1    1570.7    9594.0    1571.1    9617.8    1570.7    9638.9
GR   1570.0    9651.2    1569.5    9677.9    1569.6    9730.3    1569.4    9775.5    1568.7    9796.2
GR   1567.2    9816.3    1566.9    9829.0    1567.5    9848.4    1567.9    9887.9    1568.5    9905.7
GR   1568.6    9931.6    1568.1    9957.5    1568.5    9972.4    1567.7    9981.8    1563.2    9988.5
GR   1562.1   10000.0    1562.4   10006.6    1567.2   10020.2    1569.2   10043.6    1569.6   10061.8
GR   1569.4   10087.6    1569.4   10109.3    1569.7   10144.8    1571.4   10191.5    1572.7   10241.0
GR   1574.1   10278.3    1574.0   10306.6    1573.3   10364.2    1572.0   10441.7    1571.3   10475.1
GR   1571.3   10526.2    1571.9   10559.0    1573.7   10638.8    1574.7   10749.3    1575.4   10861.0
GR   1576.0   10991.8    1576.1   11109.3

QT        1       6000
NC     .065       .065      .048
          Q changed to 6,000 cfs for the main channel, 68% of total flow.
X1    3.347         65    9922.8   10038.2     350       200       333
X3       10                        9756.9
GR   1573.9    9205.8    1574.0    9271.4    1573.4    9285.4    1573.1    9325.0    1573.1    9382.7
GR   1573.3    9435.3    1573.3    9470.1    1573.0    9508.7    1573.0    9543.8    1571.5    9566.0
GR   1570.4    9571.8    1566.4    9584.3    1566.3    9588.0    1569.2    9602.3    1570.7    9619.2
GR   1570.4    9628.9    1570.0    9637.1    1570.9    9673.3    1570.9    9702.1    1570.7    9713.3
GR   1569.4    9721.8    1570.8    9729.1    1570.1    9738.3    1571.1    9756.9    1571.1    9782.1
GR   1570.6    9796.0    1571.3    9809.8    1572.7    9828.3    1572.9    9853.8    1572.8    9856.2
GR   1572.1    9890.7    1570.7    9922.8    1569.7    9960.8    1568.3    9989.0    1566.1    9993.8
GR   1565.6   10000.0    1565.6   10004.6    1568.0   10013.3    1571.2   10027.9    1571.7   10038.2
GR   1571.3   10052.7    1570.9   10065.0    1572.6   10086.2    1573.2   10106.1    1572.5   10155.5
GR   1572.1   10208.9    1572.5   10243.4    1574.3   10294.2    1574.5   10296.7    1574.1   10332.1
GR   1572.8   10410.1    1572.1   10458.0    1571.8   10489.1    1572.3   10530.3    1573.1   10570.7
GR   1574.1   10619.6    1574.9   10679.4    1574.9   10736.5    1575.2   10818.7    1575.8   10901.3
GR   1576.0   11012.2    1576.9   11092.5    1577.3   11163.0    1577.1   11241.4    1577.1   11243.4

X1    3.385         77    9946.8   10089.8     215       215       201
X3       10                        9673.4
GR   1577.5    8930.9    1576.8    8950.6    1576.6    9008.3    1576.1    9076.7    1576.2    9139.7
GR   1575.5    9192.0    1575.0    9212.3    1575.2    9246.8    1575.4    9276.9    1576.0    9304.0
GR   1575.4    9316.8    1574.3    9338.4    1575.2    9366.3    1575.1    9371.8    1574.0    9410.8
GR   1571.5    9416.4    1572.7    9433.9    1573.5    9457.0    1572.4    9467.3    1571.6    9472.9
GR   1571.1    9479.4    1573.4    9490.2    1574.6    9506.5    1574.6    9524.8    1573.8    9534.5
GR   1569.7    9542.5    1569.7    9546.0    1571.3    9562.3    1572.9    9572.7    1572.5    9593.2
GR   1573.7    9612.8    1574.5    9647.6    1575.1    9673.4    1574.6    9690.2    1573.4    9721.8
GR   1572.8    9761.3    1572.4    9787.2    1573.0    9811.4    1573.1    9846.6    1572.8    9864.2
GR   1571.1    9876.1    1572.2    9892.2    1573.1    9924.7    1573.4    9946.8    1572.6    9959.0
GR   1570.4    9973.8    1569.8    9980.2    1571.3    9989.6    1570.7    9996.8    1568.3   10000.0
GR   1568.2   10006.1    1570.0   10012.4    1570.0   10023.7    1570.5   10042.5    1571.0   10060.3
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GR	1574.2	10089.8	1575.0	10109.0	1575.4	10145.3	1574.8	10196.7	1574.0	10229.7
GR	1574.1	10262.7	1574.4	10315.5	1573.9	10339.1	1573.6	10359.4	1573.8	10401.1
GR	1574.8	10434.9	1575.5	10458.1	1576.3	10486.4	1576.1	10516.5	1575.8	10539.0
GR	1576.2	10565.8	1576.7	10631.5	1577.3	10740.2	1577.8	10851.5	1577.7	10957.6
GR	1578.4	11073.4	1578.8	11110.7						
X1	3.481	89	9954.9	10065.6	450	550	507			
X3	10			9522.6						
GR	1579.3	8610.4	1579.5	8676.1	1579.2	8757.2	1578.8	8823.4	1578.6	8879.7
GR	1578.4	8965.6	1578.0	9040.0	1578.2	9111.4	1578.2	9149.4	1578.7	9154.2
GR	1579.8	9175.3	1578.9	9185.1	1576.7	9198.6	1576.8	9211.4	1577.5	9227.9
GR	1577.0	9239.2	1577.6	9249.7	1576.8	9254.9	1577.4	9263.0	1577.7	9269.1
GR	1577.2	9274.7	1575.5	9279.9	1573.2	9286.3	1571.9	9295.3	1574.9	9308.6
GR	1575.5	9320.4	1578.0	9329.5	1577.6	9332.5	1576.4	9339.3	1576.8	9356.2
GR	1572.7	9362.2	1576.8	9375.0	1576.0	9391.7	1576.4	9413.8	1576.3	9430.5
GR	1575.3	9440.9	1577.1	9461.9	1577.2	9489.2	1577.3	9522.6	1577.1	9556.1
GR	1578.0	9569.6	1577.6	9579.6	1576.8	9594.5	1576.7	9618.6	1576.0	9632.9
GR	1576.7	9650.0	1577.0	9665.8	1576.5	9683.7	1577.1	9714.8	1577.1	9762.3
GR	1577.3	9790.8	1578.0	9806.8	1577.8	9818.8	1577.1	9839.8	1577.5	9862.1
GR	1578.3	9888.8	1578.4	9916.0	1577.9	9936.7	1576.9	9954.9	1573.8	9978.5
GR	1573.9	9987.6	1574.0	9995.0	1572.1	10000.0	1572.9	10005.2	1574.0	10020.9
GR	1575.3	10041.7	1576.6	10065.6	1577.2	10082.6	1577.0	10097.8	1577.6	10133.6
GR	1577.8	10153.2	1576.9	10182.0	1576.7	10207.9	1576.4	10243.7	1576.4	10277.1
GR	1576.4	10292.9	1577.0	10314.7	1577.8	10341.7	1578.9	10372.2	1579.9	10419.7
GR	1580.3	10464.3	1580.8	10509.2	1581.7	10602.0	1582.6	10697.2	1582.8	10787.1
GR	1582.7	10898.3	1582.8	11003.4	1583.4	11123.9	1583.7	11221.5		
X1	3.546	95	9924.5	10034.8	400	300	343			
X3	10			9285.2						
GR	1579.4	8078.6	1580.0	8119.9	1579.9	8295.1	1580.7	8400.3	1580.1	8493.5
GR	1580.2	8505.1	1581.0	8564.3	1580.9	8577.0	1579.7	8585.1	1576.7	8593.0
GR	1576.1	8598.3	1576.6	8603.5	1580.3	8621.8	1580.2	8650.3	1580.5	8732.8
GR	1580.6	8738.7	1580.1	8822.7	1579.8	8861.9	1580.3	8878.1	1579.2	8888.3
GR	1579.7	8891.9	1578.0	8900.8	1579.5	8910.7	1580.1	8922.5	1579.3	8933.2
GR	1578.2	8941.0	1579.5	8949.9	1578.9	8955.5	1580.5	8970.3	1581.1	9001.8
GR	1580.2	9029.0	1580.5	9064.9	1580.5	9090.8	1580.8	9106.9	1581.2	9120.4
GR	1581.2	9135.5	1580.1	9145.5	1578.2	9159.3	1578.2	9171.5	1578.0	9190.6
GR	1577.6	9203.8	1579.0	9216.8	1580.2	9228.5	1580.2	9246.0	1580.4	9270.1
GR	1579.7	9285.2	1580.3	9326.1	1580.4	9378.0	1580.4	9405.5	1581.5	9416.2
GR	1581.1	9447.7	1580.9	9504.2	1581.0	9517.0	1581.3	9559.4	1581.2	9606.5
GR	1579.5	9642.9	1578.9	9675.6	1579.8	9702.4	1579.9	9726.5	1580.8	9747.6
GR	1580.6	9775.9	1579.5	9810.0	1578.8	9838.5	1579.3	9862.0	1579.2	9886.9
GR	1579.3	9911.9	1579.1	9924.5	1577.5	9937.8	1576.7	9948.4	1577.4	9954.7
GR	1577.5	9972.9	1577.8	9993.9	1578.2	10000.0	1579.7	10019.9	1580.4	10034.8
GR	1580.1	10071.1	1579.7	10129.6	1579.4	10184.5	1579.5	10227.9	1579.4	10266.9
GR	1580.4	10287.7	1581.3	10318.7	1582.1	10354.2	1583.0	10408.7	1583.0	10476.2
GR	1583.1	10554.0	1584.1	10637.0	1584.4	10708.6	1585.0	10793.5	1585.0	10883.5
GR	1584.3	10966.3	1584.4	11051.0	1584.0	11110.7	1584.2	11188.7	1584.3	11219.7

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NC     .016      .016      .016
          Downstream (south) side edge of Carefree Highway pavement.
          NC card was used to model the dip section "n" = .016.
X1    3.639        46    9838.3   10230.8       650       440       491
X3       10                       8870.7
GR   1596.0    7219.3    1595.0    7370.7    1594.4    7511.8    1594.3    7637.2    1593.5    7793.7
GR   1593.0    7896.5    1593.0    7910.3    1593.4    7923.3    1592.7    8017.9    1592.2    8094.5
GR   1591.3    8178.9    1589.9    8347.3    1589.6    8471.3    1589.9    8533.2    1589.1    8758.9
GR   1588.9    8870.7    1588.6    8992.5    1588.3    9123.3    1587.7    9273.0    1587.0    9370.9
GR   1585.3    9513.4    1584.2    9561.1    1584.3    9604.1    1584.1    9664.4    1584.3    9717.0
GR   1584.2    9773.6    1584.4    9838.3    1584.1    9893.6    1583.9    9947.8    1583.9   10000.0
GR   1583.3   10055.1    1583.6   10079.8    1584.0   10144.3    1584.2   10230.8    1584.3   10334.0
GR   1585.1   10470.0    1586.0   10603.9    1586.1   10720.8    1587.0   10871.0    1587.0   10951.3
GR   1586.9   11034.1    1586.5   11111.0    1586.2   11167.6    1586.3   11204.5    1586.1   11280.3
GR   1586.1   11307.8

          Upstream (north) side edge of Carefree Highway pavement.
X1    3.648        62    9797.2   10245.0        46        46        46
X3       10                       8850.0                 10812.0
GR   1596.6    7212.1    1596.7    7285.1    1596.0    7362.4    1595.2    7422.6    1594.3    7496.8
GR   1594.4    7553.8    1594.4    7626.3    1592.9    7671.3    1594.1    7698.5    1594.3    7747.8
GR   1593.5    7797.7    1593.7    7847.4    1593.6    7894.8    1594.1    7926.1    1594.2    7960.7
GR   1593.7    7996.2    1593.2    8092.1    1592.1    8201.4    1591.4    8325.4    1591.4    8473.3
GR   1590.2    8525.0    1590.3    8731.8    1589.9    8924.9    1588.6    9141.3    1588.0    9290.0
GR   1587.1    9353.5    1586.3    9461.3    1585.2    9488.5    1585.6    9536.6    1585.0    9603.9
GR   1585.0    9674.7    1584.6    9706.3    1584.7    9727.4    1584.8    9768.9    1585.4    9797.2
GR   1584.8    9835.5    1584.5    9882.8    1584.9    9937.8    1584.4    9990.7    1584.6   10000.0
GR   1584.4   10040.3    1584.1   10079.4    1584.7   10122.1    1585.1   10160.1    1584.6   10201.4
GR   1585.6   10245.0    1585.9   10289.1    1586.5   10352.2    1586.8   10411.8    1587.1   10492.9
GR   1588.2   10576.3    1588.3   10660.4    1588.1   10745.8    1588.6   10812.0    1588.2   10882.1
GR   1587.3   10934.1    1587.3   11000.9    1587.1   11053.5    1587.2   11109.6    1586.8   11161.8
GR   1586.7   11220.9    1586.2   11265.8

NC     .065      .065      .048
          NC card was used, channel = .048, overbanks = .065.
X1    3.651                                     17        17        17
X3       10                       8850.0                 10812.0

X1    3.710        62    9685.4   10219.0       110       240       312
X3       10                       8784.0
GR   1591.6    8332.1    1590.5    8398.9    1590.6    8464.0    1590.2    8520.2    1589.8    8621.4
GR   1589.2    8654.5    1589.6    8692.6    1589.2    8715.5    1589.7    8740.7    1591.0    8767.9
GR   1591.0    8784.0    1590.9    8815.9    1590.2    8853.4    1590.0    8887.3    1589.9    8922.4
GR   1589.5    8958.9    1589.4    9006.5    1589.5    9046.2    1588.8    9094.0    1588.5    9142.9
GR   1588.4    9161.3    1587.8    9204.4    1588.2    9261.4    1588.7    9305.0    1588.9    9323.0
GR   1588.6    9333.5    1587.4    9351.2    1586.2    9381.1    1586.2    9399.2    1585.8    9422.6
GR   1585.9    9448.2    1586.4    9461.6    1587.5    9472.7    1588.7    9484.1    1587.9    9497.7
GR   1587.5    9517.2    1586.4    9534.0    1586.4    9576.7    1586.2    9604.1    1586.4    9622.6
GR   1587.3    9655.5    1588.0    9685.4    1587.8    9733.8    1587.2    9788.9    1586.7    9829.2
GR   1587.1    9877.5    1586.6    9916.6    1586.2    9980.8    1586.1   10000.0    1586.1   10047.5
GR   1586.8   10123.9    1586.5   10165.7    1588.1   10219.0    1589.3   10263.4    1589.7   10316.1
GR   1589.6   10401.7    1590.7   10447.3    1590.6   10495.1    1590.4   10566.0    1591.4   10607.3
GR   1591.5   10653.9    1591.4   10656.2
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```
QT        1      5000
          Q changed to 5,000 cfs in the main channel, 55% of total flow.
X1    3.804        56    9891.7   10163.3       400       520       496
X3       10                        8826.2
GR   1592.2    8386.9    1591.4    8461.0    1590.8    8512.7    1590.8    8572.6    1590.2    8622.2
GR   1589.4    8687.6    1589.9    8726.6    1589.9    8758.6    1590.2    8771.3    1590.6    8786.4
GR   1591.9    8809.5    1591.7    8826.2    1591.8    8860.7    1590.9    8889.2    1590.2    8949.1
GR   1590.7    8956.1    1590.4    8997.6    1591.2    9027.3    1591.1    9048.0    1591.1    9077.8
GR   1591.0    9121.0    1590.4    9168.0    1589.7    9232.6    1589.5    9308.9    1589.9    9359.9
GR   1590.3    9405.0    1589.6    9419.6    1588.5    9432.0    1588.5    9439.3    1589.4    9452.8
GR   1589.0    9471.1    1589.8    9490.9    1589.6    9523.6    1589.5    9566.4    1589.7    9602.7
GR   1589.9    9624.6    1591.0    9644.6    1592.1    9687.9    1591.6    9725.6    1592.0    9779.2
GR   1592.0    9840.7    1591.5    9891.7    1590.7    9923.8    1591.0    9952.8    1590.6    9974.4
GR   1590.0    9987.2    1590.9   10000.0    1590.2   10036.9    1590.7   10076.4    1591.0   10113.2
GR   1591.4   10163.3    1592.4   10196.2    1592.4   10217.0    1593.8   10240.3    1595.4   10275.5
GR   1595.5   10283.1

X1    3.881        61    9827.0   10075.8       380       420       407
X3       10                        9032.5
GR   1596.0    7662.0    1594.8    7792.0    1594.0    7926.0    1592.0    7939.0    1590.5    7944.0
GR   1590.5    7956.0    1592.0    7961.0    1594.0    8160.0    1592.5    8312.0    1594.0    8406.0
GR   1594.4    8481.8    1594.7    8540.0    1594.5    8618.0    1593.8    8642.4    1592.8    8667.7
GR   1592.6    8683.4    1593.2    8704.7    1592.9    8741.7    1592.9    8765.4    1593.1    8816.8
GR   1592.5    8876.0    1592.4    8903.3    1592.5    8952.9    1592.8    8990.1    1593.7    9032.5
GR   1593.9    9090.6    1594.2    9147.3    1594.2    9187.9    1593.8    9214.0    1593.6    9237.2
GR   1593.9    9244.3    1594.4    9262.0    1594.5    9298.0    1593.9    9325.4    1593.1    9341.6
GR   1592.6    9352.5    1592.5    9372.3    1592.3    9390.5    1592.0    9417.8    1592.0    9444.6
GR   1592.4    9470.4    1592.8    9492.4    1593.1    9539.3    1593.0    9602.7    1593.1    9659.8
GR   1593.1    9710.9    1593.4    9760.1    1593.3    9797.6    1593.9    9827.0    1593.5    9861.7
GR   1593.7    9901.8    1593.9    9948.4    1593.8    9983.3    1593.9   10000.0    1593.8   10022.3
GR   1593.8   10040.2    1594.5   10075.8    1595.7   10109.4    1596.5   10141.4    1597.2   10171.5
GR   1597.7   10197.6

X1    3.957        93    9870.7   10062.3       400       400       401
X3       10                        9246.0
GR   1597.0    7553.0    1597.2    7625.3    1597.3    7681.4    1597.6    7728.8    1598.0    7785.4
GR   1597.7    7813.4    1597.2    7846.1    1596.6    7877.3    1595.9    7903.9    1595.7    7914.4
GR   1596.0    7930.1    1595.9    7956.3    1596.0    7974.9    1595.9    8003.2    1596.2    8020.1
GR   1595.9    8027.8    1591.5    8038.3    1591.4    8046.2    1595.1    8059.6    1596.6    8069.6
GR   1596.7    8082.7    1596.0    8093.0    1595.9    8101.4    1596.4    8109.7    1596.1    8135.6
GR   1595.8    8175.0    1595.4    8214.9    1595.4    8261.1    1595.3    8300.1    1595.5    8329.3
GR   1595.7    8364.7    1595.8    8388.9    1595.9    8412.3    1596.0    8423.0    1593.8    8431.2
GR   1596.4    8438.6    1595.9    8452.2    1595.5    8474.0    1596.1    8492.8    1597.1    8526.2
GR   1597.4    8563.4    1597.4    8581.7    1596.6    8633.9    1596.3    8692.7    1595.9    8746.9
GR   1596.0    8801.1    1595.9    8855.2    1596.0    8891.7    1596.3    8948.8    1596.3    8979.0
GR   1595.9    9012.0    1595.6    9079.0    1595.2    9122.3    1594.9    9149.8    1595.7    9169.2
GR   1595.8    9200.2    1595.9    9246.0    1596.2    9299.0    1596.0    9351.1    1595.6    9393.2
GR   1595.4    9416.6    1595.6    9440.8    1596.1    9468.8    1596.4    9500.2    1596.5    9519.9
GR   1596.1    9553.6    1596.2    9602.2    1596.0    9639.4    1596.0    9669.5    1596.6    9696.7
GR   1596.5    9732.4    1596.1    9764.6    1596.3    9786.4    1597.1    9808.7    1597.4    9839.5
GR   1597.3    9870.7    1596.3    9888.9    1596.3    9909.3    1596.3    9936.1    1596.4    9970.6
GR   1595.8    9997.0    1595.5   10000.0    1596.3   10011.3    1595.7   10028.3    1596.7   10043.4
GR   1597.5   10062.3    1597.5   10079.6    1597.7   10100.9    1599.2   10127.8    1600.3   10159.4
```

GR	1601.2	10188.7	1602.2	10227.1	1602.3	10240.7				
X1	4.019	85	9860.4	10092.8	350	320	327			
X3	10			9274.4						
GR	1601.1	7874.3	1601.4	7924.5	1600.9	7953.1	1600.6	7982.4	1599.3	8014.6
GR	1598.8	8056.0	1598.6	8083.8	1598.8	8112.9	1598.1	8132.0	1598.2	8146.1
GR	1599.1	8160.6	1598.9	8183.4	1598.6	8199.4	1598.1	8213.5	1597.7	8226.0
GR	1598.8	8237.4	1598.5	8244.7	1594.2	8250.7	1594.4	8260.4	1599.3	8274.2
GR	1599.4	8287.7	1599.4	8308.3	1598.1	8314.4	1598.2	8318.3	1599.5	8326.5
GR	1599.4	8345.8	1599.1	8378.4	1599.2	8416.8	1599.3	8452.2	1599.3	8479.5
GR	1599.1	8509.6	1598.7	8538.3	1598.5	8562.5	1598.4	8580.8	1598.1	8597.0
GR	1596.1	8603.3	1596.7	8610.9	1599.0	8616.8	1598.6	8635.2	1598.8	8673.7
GR	1599.0	8731.8	1598.8	8781.8	1599.2	8845.5	1598.9	8889.7	1598.9	8940.1
GR	1598.9	8968.7	1599.5	9006.6	1599.4	9046.4	1600.2	9079.6	1600.6	9103.4
GR	1600.2	9124.4	1599.1	9143.3	1599.0	9186.4	1598.6	9225.1	1598.3	9274.4
GR	1598.2	9323.9	1598.3	9359.8	1598.0	9406.5	1597.5	9444.8	1597.9	9473.1
GR	1597.8	9507.6	1598.5	9547.3	1598.9	9582.3	1598.6	9608.6	1598.8	9643.3
GR	1599.0	9673.9	1598.8	9694.2	1599.2	9746.2	1599.4	9799.4	1599.5	9828.5
GR	1599.5	9860.4	1599.1	9896.3	1599.0	9945.1	1599.0	9978.6	1598.5	10000.0
GR	1599.0	10020.3	1598.8	10039.6	1598.7	10058.0	1599.7	10092.8	1600.6	10130.6
GR	1600.8	10161.4	1601.7	10201.1	1602.5	10242.2	1603.5	10294.4	1604.2	10312.2
X1	4.058	91	9851.4	10088.7	190	210	206			
X3	10			9319.9						
GR	1604.0	7770.7	1603.5	7854.1	1603.6	7909.5	1603.3	7970.2	1603.2	8009.2
GR	1602.3	8031.3	1601.9	8057.2	1602.0	8098.1	1601.9	8130.8	1600.8	8161.8
GR	1601.1	8184.4	1600.1	8195.1	1601.2	8207.0	1600.7	8222.8	1600.7	8255.8
GR	1600.7	8297.1	1600.9	8324.9	1600.3	8354.1	1600.4	8377.7	1601.3	8385.3
GR	1600.9	8398.2	1598.1	8406.9	1598.5	8410.9	1601.3	8422.6	1600.9	8435.3
GR	1600.8	8445.7	1601.9	8455.1	1601.0	8464.6	1597.8	8472.8	1598.9	8480.3
GR	1598.9	8486.2	1597.4	8492.6	1597.6	8496.3	1601.5	8515.2	1601.5	8538.4
GR	1600.9	8569.1	1601.0	8611.6	1600.0	8656.6	1600.9	8689.6	1601.0	8698.7
GR	1599.6	8707.6	1600.5	8715.7	1600.4	8739.6	1600.4	8762.1	1598.4	8772.7
GR	1598.9	8776.9	1601.0	8785.7	1600.7	8813.4	1600.8	8882.6	1601.0	8901.8
GR	1600.9	8956.9	1600.9	9016.1	1600.9	9065.1	1601.0	9105.0	1601.0	9139.0
GR	1602.1	9159.2	1601.9	9167.1	1600.9	9185.7	1600.8	9208.6	1600.7	9243.3
GR	1600.8	9276.8	1600.9	9319.9	1600.5	9351.9	1600.0	9381.5	1599.9	9432.4
GR	1599.3	9487.7	1599.5	9543.5	1599.5	9601.5	1600.2	9652.4	1600.6	9696.0
GR	1600.6	9762.7	1600.7	9795.9	1601.1	9851.4	1600.6	9894.4	1600.5	9916.0
GR	1601.0	9949.7	1600.6	9987.3	1600.0	9998.7	1599.8	10000.0	1600.4	10023.8
GR	1600.1	10051.9	1600.0	10073.6	1600.9	10088.7	1602.2	10127.8	1603.5	10172.8
GR	1603.5	10213.2	1603.5	10263.2	1604.1	10305.5	1604.9	10355.1	1605.1	10405.4
GR	1605.6	10422.7								
X1	4.146	74	9883.9	10097.7	440	465	465			
X3	10			9411.9						
GR	1606.1	8005.2	1605.9	8063.7	1605.2	8127.8	1605.2	8189.8	1604.6	8244.6
GR	1603.2	8296.6	1603.4	8342.5	1602.6	8366.6	1601.5	8390.0	1601.9	8417.4
GR	1602.7	8440.0	1603.7	8467.6	1603.5	8497.0	1603.4	8540.6	1603.5	8581.5
GR	1603.4	8628.2	1603.4	8660.3	1602.6	8691.2	1602.3	8703.8	1602.0	8715.3
GR	1603.8	8726.1	1603.7	8741.0	1604.3	8774.4	1604.2	8797.3	1604.3	8834.7
GR	1603.8	8854.0	1602.8	8860.3	1602.9	8864.6	1603.6	8880.0	1602.9	8890.3
GR	1600.9	8902.7	1600.9	8910.9	1601.9	8918.8	1603.4	8929.1	1603.8	8957.0
GR	1603.4	8980.0	1603.6	9005.5	1603.5	9023.0	1602.2	9031.4	1600.4	9038.8

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GR   1600.4    9044.6   1603.6   9053.4   1603.8   9076.1   1604.1   9114.8   1603.6   9162.1
GR   1603.1    9216.8   1603.6   9290.3   1603.5   9345.5   1603.4   9370.2   1604.0   9411.9
GR   1604.4    9447.0   1603.3   9484.6   1602.6   9518.3   1602.9   9564.5   1602.7   9605.1
GR   1602.6    9621.6   1602.7   9677.4   1603.2   9740.1   1603.6   9781.0   1603.6   9837.1
GR   1603.8    9883.9   1603.1   9928.3   1602.6   9937.9   1603.9   9949.7   1602.7   9963.8
GR   1603.7    9983.1   1603.3  10000.0   1603.5  10018.8   1603.3  10051.1   1603.1  10071.2
GR   1605.2   10097.7   1605.4  10121.6   1606.9  10161.0   1608.1  10208.0

X1     4.197      60    9896.1  10106.9    280      265      269
X3        10                    9543.8
GR   1607.8    8410.4   1607.8   8460.6   1608.0   8511.7   1606.6   8563.6   1607.1   8611.7
GR   1606.0    8673.6   1606.3   8715.0   1606.3   8760.1   1605.7   8796.6   1605.9   8813.1
GR   1603.5    8832.8   1602.6   8842.6   1603.2   8860.2   1603.1   8871.9   1604.5   8908.3
GR   1605.9    8948.6   1605.7   8976.9   1605.0   8990.5   1604.6   9008.4   1605.1   9037.7
GR   1605.5    9084.3   1606.1   9121.6   1606.3   9142.8   1604.8   9153.6   1606.5   9159.7
GR   1606.6    9172.1   1605.0   9176.1   1606.5   9183.8   1607.3   9199.1   1606.9   9217.7
GR   1605.7    9223.9   1601.3   9234.0   1601.1   9242.5   1601.3   9251.2   1606.3   9263.6
GR   1606.6    9287.0   1605.8   9300.1   1606.3   9316.4   1605.6   9373.2   1605.6   9428.6
GR   1605.9    9477.5   1605.8   9543.8   1605.3   9614.6   1605.6   9678.4   1606.0   9720.0
GR   1606.1    9761.0   1604.3   9805.8   1604.8   9853.3   1605.2   9896.1   1605.0   9940.3
GR   1604.6   10000.0   1604.3  10040.8   1604.3  10071.8   1604.3  10090.9   1605.2  10106.9
GR   1606.6   10144.5   1608.0  10188.6   1608.3  10240.5   1610.2  10293.6   1609.9  10299.2

X1     4.262      49    9965.0  10108.7    400      300      343
X3        10                    9687.2
GR   1612.0    8594.7   1612.6   8675.3   1611.1   8759.5   1611.7   8808.4   1611.3   8864.0
GR   1610.7    8900.0   1611.0   8948.8   1610.2   9006.3   1610.5   9052.6   1608.9   9089.5
GR   1608.4    9138.3   1608.5   9185.9   1607.2   9211.9   1607.7   9242.7   1608.3   9276.2
GR   1608.8    9309.8   1608.9   9349.5   1609.4   9377.8   1603.3   9392.6   1603.0   9400.2
GR   1603.3    9412.7   1609.1   9424.5   1609.2   9436.0   1609.0   9470.2   1608.5   9508.3
GR   1607.8    9568.8   1607.8   9622.6   1608.5   9647.8   1609.0   9687.2   1608.1   9726.1
GR   1608.4    9730.7   1608.6   9770.6   1608.2   9813.7   1608.1   9870.0   1607.5   9926.9
GR   1607.2    9965.0   1605.9   9997.2   1605.7  10000.0   1607.8  10020.4   1608.9  10034.4
GR   1607.6   10054.9   1606.9  10076.0   1607.4  10108.7   1607.2  10137.5   1607.0  10169.8
GR   1608.9   10199.9   1610.6  10257.5   1611.8  10302.6   1612.7  10352.5

        Just downstream of the levee (diversion structure).
X1     4.333      66    9949.0  10055.2    370      370      375
X3        10                    9762.7
GR   1615.2    8781.1   1614.8   8859.4   1614.1   8911.1   1613.7   8972.6   1613.2   9037.9
GR   1612.7    9068.1   1612.2   9090.3   1612.2   9121.6   1611.6   9152.8   1611.4   9197.6
GR   1610.2    9241.6   1610.3   9269.3   1610.5   9306.4   1609.9   9331.6   1609.4   9356.2
GR   1609.4    9370.8   1609.7   9393.8   1609.4   9415.1   1609.6   9422.8   1610.3   9434.1
GR   1610.1    9452.5   1605.0   9467.4   1604.4   9487.3   1610.4   9510.3   1610.5   9530.7
GR   1609.7    9566.9   1609.1   9599.5   1609.6   9624.8   1610.3   9640.9   1611.4   9657.1
GR   1611.4    9678.9   1611.5   9679.8   1611.2   9705.3   1610.7   9733.0   1609.4   9762.7
GR   1609.3    9788.9   1609.2   9831.9   1609.3   9857.1   1609.4   9882.9   1609.3   9910.2
GR   1609.4    9929.2   1609.3   9940.5   1611.4   9949.0   1609.1   9963.3   1608.1   9980.3
GR   1607.9    9993.7   1607.4  10000.0   1607.1  10006.8   1609.9  10019.9   1609.6  10033.7
GR   1608.7   10040.6   1609.6  10055.2   1609.6  10080.2   1609.5  10104.0   1609.3  10130.6
GR   1609.3   10152.9   1609.1  10175.3   1609.2  10196.0   1609.6  10220.0   1609.8  10244.7
GR   1610.1   10267.6   1611.8  10294.4   1613.2  10326.1   1613.6  10364.5   1614.2  10407.0
GR   1614.6   10431.6
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NC     .080       .080       .065
          NC card was used to change n values, channel = .065,
          overbanks = .085.
X1    4.390        68      9952.9    10032.8       290       301       301
X3                                    9721.0
GR   1616.3    9071.8    1615.9     9092.0    1615.1    9113.3    1613.7    9123.4    1613.0    9135.4
GR   1612.6    9151.9    1612.7     9166.4    1614.1    9182.3    1614.2    9196.9    1613.6    9224.3
GR   1614.6    9245.2    1614.5     9273.2    1613.5    9306.7    1613.1    9341.9    1612.3    9379.9
GR   1612.3    9411.2    1612.6     9444.8    1613.1    9470.3    1612.6    9488.9    1612.4    9518.8
GR   1611.9    9552.9    1611.2     9585.4    1611.4    9610.3    1611.4    9642.7    1611.4    9658.1
GR   1611.1    9667.8    1607.2     9681.5    1607.6    9699.1    1606.9    9715.4    1608.8    9727.8
GR   1610.1    9736.5    1610.3     9747.8    1610.3    9767.5    1611.6    9785.0    1612.4    9800.1
GR   1612.3    9827.9    1612.1     9858.3    1611.7    9869.3    1611.7    9886.1    1612.6    9904.9
GR   1612.4    9923.4    1611.9     9940.0    1616.0    9952.9    1613.0    9964.9    1611.9    9975.7
GR   1609.3    9985.9    1609.0     9989.2    1608.5   10000.0    1609.2   10009.9    1611.3   10019.8
GR   1612.7   10032.8    1612.5    10062.1    1613.2   10097.6    1613.6   10123.4    1612.3   10146.7
GR   1611.8   10176.5    1612.0    10205.4    1611.9   10234.1    1612.5   10266.7    1612.7   10305.7
GR   1613.8   10334.7    1614.8    10361.7    1615.4   10398.5    1616.7   10450.7    1617.6   10482.7
GR   1619.2   10520.8    1620.1    10565.1    1620.4   10590.2

QT        1       9100
          Split flow location.
          Q changed to 9,100 cfs at C10R (split flow starts here).
X1    4.492        52      9967.1    10077.3       500       500       539
GR   1617.8    8967.0    1617.5     9067.2    1617.1    9187.2    1617.1    9240.0    1617.0    9284.4
GR   1616.4    9310.4    1616.0     9332.5    1615.3    9349.3    1613.7    9359.5    1612.9    9367.8
GR   1613.1    9376.1    1613.3     9381.5    1614.7    9389.0    1615.1    9397.8    1615.3    9416.9
GR   1615.2    9434.0    1615.0     9461.0    1614.9    9490.4    1614.5    9519.6    1614.7    9539.1
GR   1615.7    9561.3    1614.8     9580.5    1614.7    9601.8    1615.0    9636.8    1615.0    9669.6
GR   1615.2    9699.9    1614.9     9737.6    1614.5    9779.3    1614.5    9817.1    1614.0    9861.8
GR   1613.3    9888.1    1613.6     9914.4    1614.6    9931.0    1614.5    9949.2    1615.3    9967.1
GR   1610.9    9982.1    1611.6    10000.0    1611.6   10025.5    1610.3   10029.5    1612.5   10040.3
GR   1613.8   10056.6    1614.3    10077.3    1614.7   10109.7    1615.9   10162.8    1617.3   10211.3
GR   1618.6   10273.9    1620.1    10332.2    1620.8   10371.8    1622.0   10412.7    1622.9   10447.7
GR   1623.5   10495.5    1623.8    10506.8

          The confluence with Stream No. 9.
X1    4.567        43      9953.3    10041.6       370       396       396
GR   1620.4    8923.3    1619.2     8988.6    1619.3    9028.8    1619.7    9082.1    1619.8    9138.2
GR   1619.8    9218.5    1619.9     9301.5    1620.1    9357.8    1620.3    9393.5    1619.7    9434.1
GR   1618.3    9455.5    1617.4     9469.4    1615.9    9481.5    1616.8    9490.2    1616.5    9505.3
GR   1616.8    9540.6    1617.0     9555.6    1617.4    9580.9    1617.7    9609.8    1617.4    9623.6
GR   1617.4    9649.3    1618.0     9686.8    1618.0    9709.7    1617.2    9730.8    1617.8    9755.2
GR   1617.8    9790.2    1617.5     9814.9    1617.2    9853.3    1616.3    9914.4    1616.3    9944.0
GR   1615.9    9966.2    1613.8     9985.8    1612.3   10000.0    1611.9   10012.9    1615.4   10026.8
GR   1617.7   10041.6    1618.5    10056.3    1618.8   10072.4    1619.2   10085.7    1620.5   10107.6
GR   1621.6   10160.9    1623.4    10246.7    1623.3   10248.2
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NH      5      .080    9966.0     .065   10034.9     .080   10258.4     .065   10315.5     .080
NH  10510.
        NH cards were used.
X1  4.662        44    9966.0   10034.9       390     430       502
GR 1624.0    8520.2    1623.8    8720.2    1623.0  8880.2    1622.0    9060.1    1621.8    9496.1
GR 1621.5    9561.3    1621.8    9608.5    1621.8  9620.2    1622.0    9672.2    1622.0    9714.0
GR 1621.9    9753.1    1621.9    9781.0    1620.2  9814.4    1619.1    9841.4    1618.7    9857.4
GR 1620.0    9883.2    1621.2    9912.3    1621.1  9945.8    1619.6    9966.0    1614.0    9991.3
GR 1614.3   10000.0    1614.1   10008.0    1619.1 10034.9    1620.2   10048.3    1619.5   10069.2
GR 1619.1   10091.2    1620.2   10116.4    1620.4 10138.7    1620.5   10146.8    1619.5   10182.9
GR 1618.8   10214.3    1618.8   10230.5    1619.6 10244.7    1618.7   10258.4    1615.8   10270.5
GR 1616.2   10277.8    1617.9   10291.9    1618.5 10315.5    1619.3   10341.6    1620.6   10369.5
GR 1622.6   10403.7    1623.4   10431.7    1623.9 10477.6    1625.6   10510.2

QT      1       2760
NC   .070       .065      .050
X1 -3.347         65    9571.8    9602.3       350     400       510
X3     10                                           9756.9
GR 1573.9    9205.8    1574.0    9271.4    1573.4  9285.4    1573.1    9325.0    1573.1    9382.7
GR 1573.3    9435.3    1573.3    9470.1    1573.0  9508.7    1573.0    9543.8    1571.5    9566.0
GR 1570.4    9571.8    1566.4    9584.3    1566.3  9588.0    1569.2    9602.3    1570.7    9619.2
GR 1570.4    9628.9    1570.0    9637.1    1570.9  9673.3    1570.9    9702.1    1570.7    9713.3
GR 1569.4    9721.8    1570.8    9729.1    1570.1  9738.3    1571.1    9756.9    1571.1    9782.1
GR 1570.6    9796.0    1571.3    9809.8    1572.7  9828.3    1572.9    9853.8    1572.8    9856.2
GR 1572.1    9890.7    1570.7    9922.8    1569.7  9960.8    1568.3    9989.0    1566.1    9993.8
GR 1565.6   10000.0    1565.6   10004.6    1568.0 10013.3    1571.2   10027.9    1571.7   10038.2
GR 1571.3   10052.7    1570.9   10065.0    1572.6 10086.2    1573.2   10106.1    1572.5   10155.5
GR 1572.1   10208.9    1572.5   10243.4    1574.3 10294.2    1574.5   10296.7    1574.1   10332.1
GR 1572.8   10410.1    1572.1   10458.0    1571.8 10489.1    1572.3   10530.3    1573.1   10570.7
GR 1574.1   10619.6    1574.9   10679.4    1574.9 10736.5    1575.2   10818.7    1575.8   10901.3
GR 1576.0   11012.2    1576.9   11092.5    1577.3 11163.0    1577.1   11241.4    1577.1   11243.4

X1 3.385         77    9524.8    9572.7       450     330       396
X3     10                                           9673.4
GR 1577.5    8930.9    1576.8    8950.6    1576.6  9008.3    1576.1    9076.7    1576.2    9139.7
GR 1575.5    9192.0    1575.0    9212.3    1575.2  9246.8    1575.4    9276.9    1576.0    9304.0
GR 1575.4    9316.8    1574.3    9338.4    1575.2  9366.3    1575.1    9371.8    1574.0    9410.8
GR 1571.5    9416.4    1572.7    9433.9    1573.5  9457.0    1572.4    9467.3    1571.6    9472.9
GR 1571.1    9479.4    1573.4    9490.2    1574.6  9506.5    1574.6    9524.8    1573.8    9534.5
GR 1569.7    9542.5    1569.7    9546.0    1571.3  9562.3    1572.9    9572.7    1572.5    9593.2
GR 1573.7    9612.8    1574.5    9647.6    1575.1  9673.4    1574.6    9690.2    1573.4    9721.8
GR 1572.8    9761.3    1572.4    9787.2    1573.0  9811.4    1573.1    9846.6    1572.8    9864.2
GR 1571.1    9876.1    1572.2    9892.2    1573.1  9924.7    1573.4    9946.8    1572.6    9959.0
GR 1570.4    9973.8    1569.8    9980.2    1571.3  9989.6    1570.7    9996.8    1568.3   10000.0
GR 1568.2   10006.1    1570.0   10012.4    1570.0 10023.7    1570.5   10042.5    1571.0   10060.3
GR 1574.2   10089.8    1575.0   10109.0    1575.4 10145.3    1574.8   10196.7    1574.0   10229.7
GR 1574.1   10262.7    1574.4   10315.5    1573.9 10339.1    1573.6   10359.4    1573.8   10401.1
GR 1574.8   10434.9    1575.5   10458.1    1576.3 10486.4    1576.1   10516.5    1575.8   10539.0
GR 1576.2   10565.8    1576.7   10631.5    1577.3 10740.2    1577.8   10851.5    1577.7   10957.6
GR 1578.4   11073.4    1578.8   11110.7
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X1    3.481      89   9279.9   9320.4     310     450     506
X3       10                              9522.6
GR   1579.3  8610.4   1579.5   8676.1  1579.2  8757.2  1578.8  8823.4  1578.6  8879.7
GR   1578.4  8965.6   1578.0   9040.0  1578.2  9111.4  1578.2  9149.4  1578.7  9154.2
GR   1579.8  9175.3   1578.9   9185.1  1576.7  9198.6  1576.8  9211.4  1577.5  9227.9
GR   1577.0  9239.2   1577.6   9249.7  1576.8  9254.9  1577.4  9263.0  1577.7  9269.1
GR   1577.2  9274.7   1575.5   9279.9  1573.2  9286.3  1571.9  9295.3  1574.9  9308.6
GR   1575.5  9320.4   1578.0   9329.5  1577.6  9332.5  1576.4  9339.3  1576.8  9356.2
GR   1572.7  9362.2   1576.8   9375.0  1576.0  9391.7  1576.4  9413.8  1576.3  9430.5
GR   1575.3  9440.9   1577.1   9461.9  1577.2  9489.2  1577.3  9522.6  1577.1  9556.1
GR   1578.0  9569.6   1577.6   9579.6  1576.8  9594.5  1576.7  9618.6  1576.0  9632.9
GR   1576.7  9650.0   1577.0   9665.8  1576.5  9683.7  1577.1  9714.8  1577.1  9762.3
GR   1577.3  9790.8   1578.0   9806.8  1577.8  9818.8  1577.1  9839.8  1577.5  9862.1
GR   1578.3  9888.8   1578.4   9916.0  1577.9  9936.7  1576.9  9954.9  1573.8  9978.5
GR   1573.9  9987.6   1574.0   9995.0  1572.1 10000.0  1572.9 10005.2  1574.0 10020.9
GR   1575.3 10041.7   1576.6  10065.6  1577.2 10082.6  1577.0 10097.8  1577.6 10133.6
GR   1577.8 10153.2   1576.9  10182.0  1576.7 10207.9  1576.4 10243.7  1576.4 10277.1
GR   1576.4 10292.9   1577.0  10314.7  1577.8 10341.7  1578.9 10372.2  1579.9 10419.7
GR   1580.3 10464.3   1580.8  10509.2  1581.7 10602.0  1582.6 10697.2  1582.8 10787.1
GR   1582.7 10898.3   1582.8  11003.4  1583.4 11123.9  1583.7 11221.5

X1    3.546      95   8585.1   8621.8     400     360     502
X3       10                   8295.1              9285.2
GR   1579.4  8078.6   1580.0   8119.9  1579.9  8295.1  1580.7  8400.3  1580.1  8493.5
GR   1580.2  8505.1   1581.0   8564.3  1580.9  8577.0  1579.7  8585.1  1576.7  8593.0
GR   1576.1  8598.3   1576.6   8603.5  1580.3  8621.8  1580.2  8650.3  1580.5  8732.8
GR   1580.6  8738.7   1580.1   8822.7  1579.8  8861.9  1580.3  8878.1  1579.2  8888.3
GR   1579.7  8891.9   1578.0   8900.8  1579.5  8910.7  1580.1  8922.5  1579.3  8933.2
GR   1578.2  8941.0   1579.5   8949.9  1578.9  8955.5  1580.5  8970.3  1581.1  9001.8
GR   1580.2  9029.0   1580.5   9064.9  1580.5  9090.8  1580.8  9106.9  1581.2  9120.4
GR   1581.2  9135.5   1580.1   9145.5  1578.2  9159.3  1578.2  9171.5  1578.0  9190.6
GR   1577.6  9203.8   1579.0   9216.8  1580.2  9228.5  1580.2  9246.0  1580.4  9270.1
GR   1579.7  9285.2   1580.3   9326.1  1580.4  9378.0  1580.4  9405.5  1581.5  9416.2
GR   1581.1  9447.7   1580.9   9504.2  1581.0  9517.0  1581.3  9559.4  1581.2  9606.5
GR   1579.5  9642.9   1578.9   9675.6  1579.8  9702.4  1579.9  9726.5  1580.8  9747.6
GR   1580.6  9775.9   1579.5   9810.0  1578.8  9838.5  1579.3  9862.0  1579.2  9886.9
GR   1579.3  9911.9   1579.1   9924.5  1577.5  9937.8  1576.7  9948.4  1577.4  9954.7
GR   1577.5  9972.9   1577.8   9993.9  1578.2 10000.0  1579.7 10019.9  1580.4 10034.8
GR   1580.1 10071.1   1579.7  10129.6  1579.4 10184.5  1579.5 10227.9  1579.4 10266.9
GR   1580.4 10287.7   1581.3  10318.7  1582.1 10354.2  1583.0 10408.7  1583.0 10476.2
GR   1583.1 10554.0   1584.1  10637.0  1584.4 10708.6  1585.0 10793.5  1585.0 10883.5
GR   1584.3 10966.3   1584.4  11051.0  1584.0 11110.7  1584.2 11188.7  1584.3 11219.7

          SECNO 0.434, 0.529, and 0.624 are the river miles on Stream No. 12.
X1    0.434      48   9988.4  10077.4     630     300     496
X3       10                             10662.7
GR   1585.1  9615.8   1584.7   9716.9  1584.1  9766.1  1583.2  9793.6  1582.6  9819.5
GR   1582.9  9834.9   1582.8   9860.9  1581.6  9875.3  1582.1  9893.3  1581.8  9911.5
GR   1583.0  9924.3   1583.0   9965.7  1582.7  9988.4  1578.7  9998.8  1578.8 10000.0
GR   1578.4 10004.2   1578.7  10008.4  1583.3 10020.8  1582.7 10053.6  1580.3 10061.0
GR   1580.3 10064.6   1582.4  10077.4  1582.5 10106.0  1581.9 10137.6  1581.8 10177.6
GR   1581.8 10229.4   1581.3  10261.0  1582.1 10286.5  1582.1 10314.6  1581.7 10337.5
GR   1581.7 10356.5   1582.4  10375.6  1582.3 10406.8  1581.4 10434.8  1581.2 10448.9
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GR	1580.8	10466.3	1579.1	10472.9	1580.3	10504.1	1580.6	10536.0	1581.5	10561.3
GR	1582.0	10588.1	1582.1	10619.0	1582.2	10662.7	1582.5	10702.9	1583.1	10748.1
GR	1583.8	10777.2	1584.2	10806.1	1584.6	10845.5				
X1	0.529	46	9988.8	10022.6	430	500	502			
X3	10					10571.3				
GR	1586.8	9477.5	1587.2	9533.1	1587.3	9574.9	1586.2	9637.1	1586.0	9693.9
GR	1585.3	9742.9	1584.2	9756.9	1585.3	9765.1	1584.9	9784.7	1585.5	9818.1
GR	1585.2	9861.8	1585.8	9915.1	1585.9	9949.8	1585.8	9962.6	1586.4	9974.9
GR	1586.4	9988.8	1582.1	9996.3	1581.6	10000.0	1581.1	10008.5	1586.5	10022.6
GR	1586.4	10036.3	1585.6	10060.9	1586.3	10065.6	1585.8	10080.3	1583.4	10086.1
GR	1583.2	10088.6	1584.4	10097.0	1586.4	10102.7	1586.2	10117.0	1585.5	10135.2
GR	1585.6	10162.1	1586.1	10199.2	1586.0	10242.9	1586.2	10276.2	1586.2	10301.9
GR	1585.7	10335.3	1585.0	10368.2	1584.6	10380.1	1585.0	10397.0	1584.8	10413.6
GR	1585.3	10436.7	1585.7	10463.7	1586.0	10506.5	1586.8	10534.6	1586.9	10564.1
GR	1587.0	10571.3								
X1	0.624	36	9980.8	10012.6	400	460	502			
X3	10					10353.6				
GR	1589.0	9541.4	1589.8	9607.8	1589.5	9632.1	1588.9	9646.7	1589.4	9663.2
GR	1588.7	9700.9	1587.8	9751.6	1587.7	9779.4	1587.7	9801.2	1588.1	9838.7
GR	1588.4	9872.6	1589.2	9923.6	1589.5	9968.9	1589.5	9980.8	1584.4	9992.2
GR	1584.2	9998.9	1585.0	10000.0	1589.2	10012.6	1589.2	10033.9	1588.4	10063.3
GR	1588.7	10084.3	1588.4	10088.6	1588.6	10101.0	1589.6	10123.3	1589.1	10153.1
GR	1588.6	10195.4	1589.3	10218.1	1589.2	10230.3	1588.4	10245.3	1589.3	10253.3
GR	1589.3	10270.1	1588.9	10313.6	1589.0	10353.6	1588.0	10563.0	1588.0	10663.0
GR	1589.0	10720.0								
NC	.016	.016	.050							
X1	3.639	46	7950.0	7968.0	540	210	428			
X3	10					8870.7		1593.1	1593.1	
X4	4	1590.0	7950.0	1586.0	7955.0	1586.0	7963.0	1590.0	7968.0	
GR	1596.0	7219.3	1595.0	7370.7	1594.4	7511.8	1594.3	7637.2	1593.5	7793.7
GR	1593.0	7896.5	1593.0	7910.3	1593.4	7923.3	1592.7	8017.9	1592.2	8094.5
GR	1591.3	8178.9	1589.9	8347.3	1589.6	8471.3	1589.9	8533.2	1589.1	8758.9
GR	1588.9	8870.7	1588.6	8992.5	1588.3	9123.3	1587.7	9273.0	1587.0	9370.9
GR	1585.3	9513.4	1584.2	9561.1	1584.3	9604.1	1584.1	9664.4	1584.3	9717.0
GR	1584.2	9773.6	1584.4	9838.3	1584.1	9893.6	1583.9	9947.8	1583.9	10000.0
GR	1583.3	10055.1	1583.6	10079.8	1584.0	10144.3	1584.2	10230.8	1584.3	10334.0
GR	1585.1	10470.0	1586.0	10603.9	1586.1	10720.8	1587.0	10871.0	1587.0	10951.3
GR	1586.9	11034.1	1586.5	11111.0	1586.2	11167.6	1586.3	11204.5	1586.1	11280.3
GR	1586.1	11307.8								
SC	1.024	0.8	3.0		5.67		46	2.2	1586.4	1586.0
NC	.080	.065	.050							
X1	3.648	62	7926.1	7960.7	46	46	46			
X2			2		1585.1					
X3	10					8850.0		1593.1	1593.1	
X4	4	1590.0	7942.0	1586.4	7946.0	1586.4	7954.0	1590.0	7958.0	
BT	-10	7645	1594.5		7950	1594.1		8355	1591.1	
BT		8750	1590.1		9235	1588.6		9735	1585.1	
BT		9975	1585.1		10260	1585.1		10630	1587.1	
BT		10875	1588.2							
GR	1596.6	7212.1	1596.7	7285.1	1596.0	7362.4	1595.2	7422.6	1594.3	7496.8

GR	1594.4	7553.8	1594.4	7626.3	1592.9	7671.3	1594.1	7698.5	1594.3	7747.8
GR	1593.5	7797.7	1593.7	7847.4	1593.6	7894.8	1594.1	7926.1	1594.2	7960.7
GR	1593.7	7996.2	1593.2	8092.1	1592.1	8201.4	1591.4	8325.4	1591.4	8473.3
GR	1590.2	8525.0	1590.3	8731.8	1589.9	8924.9	1588.6	9141.3	1588.0	9290.0
GR	1587.1	9353.5	1586.3	9461.3	1585.2	9488.5	1585.6	9536.6	1585.0	9603.9
GR	1585.0	9674.7	1584.6	9706.3	1584.7	9727.4	1584.8	9768.9	1585.4	9797.2
GR	1584.8	9835.5	1584.5	9882.8	1584.9	9937.8	1584.4	9990.7	1584.6	10000.0
GR	1584.4	10040.3	1584.1	10079.4	1584.7	10122.1	1585.1	10160.1	1584.6	10201.4
GR	1585.6	10245.0	1585.9	10289.1	1586.5	10352.2	1586.8	10411.8	1587.1	10492.9
GR	1588.2	10576.3	1588.3	10660.4	1588.1	10745.8	1588.6	10812.0	1588.2	10882.1
GR	1587.3	10934.1	1587.3	11000.9	1587.1	11053.5	1587.2	11109.6	1586.8	11161.8
GR	1586.7	11220.9	1586.2	11265.8						
X1	3.651				17	17	17			
X3	10					8850.0				
QT	1	4100								
NC	.080	.065	.065							
X1	3.881	61	7939.0	7961.0	400	170	312			
X3	10					9032.5				
GR	1596.0	7662.0	1594.8	7792.0	1594.0	7926.0	1592.0	7939.0	1590.5	7944.0
GR	1590.5	7956.0	1592.0	7961.0	1594.0	8160.0	1592.5	8312.0	1594.0	8406.0
GR	1594.4	8481.8	1594.7	8540.0	1594.5	8618.0	1593.8	8642.4	1592.8	8667.7
GR	1592.6	8683.4	1593.2	8704.7	1592.9	8741.7	1592.9	8765.4	1593.1	8816.8
GR	1592.5	8876.0	1592.4	8903.3	1592.5	8952.9	1592.8	8990.1	1593.7	9032.5
GR	1593.9	9090.6	1594.2	9147.3	1594.2	9187.9	1593.8	9214.0	1593.6	9237.2
GR	1593.9	9244.3	1594.4	9262.0	1594.5	9298.0	1593.9	9325.4	1593.1	9341.6
GR	1592.6	9352.5	1592.5	9372.3	1592.3	9390.5	1592.0	9417.8	1592.0	9444.6
GR	1592.4	9470.4	1592.8	9492.4	1593.1	9539.3	1593.0	9602.7	1593.1	9659.8
GR	1593.1	9710.9	1593.4	9760.1	1593.3	9797.6	1593.9	9827.0	1593.5	9861.7
GR	1593.7	9901.8	1593.9	9948.4	1593.8	9983.3	1593.9	10000.0	1593.8	10022.3
GR	1593.8	10040.2	1594.5	10075.8	1595.7	10109.4	1596.5	10141.4	1597.2	10171.5
GR	1597.7	10197.6								
X1	3.957	93	8027.8	8059.6	180	340	195			
X3	10					9246.0				
GR	1597.0	7553.0	1597.2	7625.3	1597.3	7681.4	1597.6	7728.8	1598.0	7785.4
GR	1597.7	7813.4	1597.2	7846.1	1596.6	7877.3	1595.9	7903.9	1595.7	7914.4
GR	1596.0	7930.1	1595.9	7956.3	1596.0	7974.9	1595.9	8003.2	1596.2	8020.1
GR	1595.9	8027.8	1591.5	8038.3	1591.4	8046.2	1595.1	8059.6	1596.6	8069.6
GR	1596.7	8082.7	1596.0	8093.0	1595.9	8101.4	1596.4	8109.7	1596.1	8135.6
GR	1595.8	8175.0	1595.4	8214.9	1595.4	8261.1	1595.3	8300.1	1595.5	8329.3
GR	1595.7	8364.7	1595.8	8388.9	1595.9	8412.3	1596.0	8423.0	1593.8	8431.2
GR	1596.4	8438.6	1595.9	8452.2	1595.5	8474.0	1596.1	8492.8	1597.1	8526.2
GR	1597.4	8563.4	1597.4	8581.7	1596.6	8633.9	1596.3	8692.7	1595.9	8746.9
GR	1596.0	8801.1	1595.9	8855.2	1596.0	8891.7	1596.3	8948.8	1596.3	8979.0
GR	1595.9	9012.0	1595.6	9079.0	1595.2	9122.3	1594.9	9149.8	1595.7	9169.2
GR	1595.8	9200.2	1595.9	9246.0	1596.2	9299.0	1596.0	9351.1	1595.6	9393.2
GR	1595.4	9416.6	1595.6	9440.8	1596.1	9468.8	1596.4	9500.2	1596.5	9519.9
GR	1596.1	9553.6	1596.2	9602.2	1596.0	9639.4	1596.0	9669.5	1596.6	9696.7
GR	1596.5	9732.4	1596.1	9764.6	1596.3	9786.4	1597.1	9808.7	1597.4	9839.5
GR	1597.3	9870.7	1596.3	9888.9	1596.3	9909.3	1596.3	9936.1	1596.4	9970.6
GR	1595.8	9997.0	1595.5	10000.0	1596.3	10011.3	1595.7	10028.3	1596.7	10043.4
GR	1597.5	10062.3	1597.5	10079.6	1597.7	10100.9	1599.2	10127.8	1600.3	10159.4

GR	1601.2	10188.7	1602.2	10227.1	1602.3	10240.7				
X1	4.019	85	8244.7	8274.2	520	400	486			
X3	10					9274.4				
GR	1601.1	7874.3	1601.4	7924.5	1600.9	7953.1	1600.6	7982.4	1599.3	8014.6
GR	1598.8	8056.0	1598.6	8083.8	1598.8	8112.9	1598.1	8132.0	1598.2	8146.1
GR	1599.1	8160.6	1598.9	8183.4	1598.6	8199.4	1598.1	8213.5	1597.7	8226.0
GR	1598.8	8237.4	1598.5	8244.7	1594.2	8250.7	1594.4	8260.4	1599.3	8274.2
GR	1599.4	8287.7	1599.4	8308.3	1598.1	8314.4	1598.2	8318.3	1599.5	8326.5
GR	1599.4	8345.8	1599.1	8378.4	1599.2	8416.8	1599.3	8452.2	1599.3	8479.5
GR	1599.1	8509.6	1598.7	8538.3	1598.5	8562.5	1598.4	8580.8	1598.1	8597.0
GR	1596.1	8603.3	1596.7	8610.9	1599.0	8616.8	1598.6	8635.2	1598.8	8673.7
GR	1599.0	8731.8	1598.8	8781.8	1599.2	8845.5	1598.9	8889.7	1598.9	8940.1
GR	1598.9	8968.7	1599.5	9006.6	1599.4	9046.4	1600.2	9079.6	1600.6	9103.4
GR	1600.2	9124.4	1599.1	9143.3	1599.0	9186.4	1598.6	9225.1	1598.3	9274.4
GR	1598.2	9323.9	1598.3	9359.8	1598.0	9406.5	1597.5	9444.8	1597.9	9473.1
GR	1597.8	9507.6	1598.5	9547.3	1598.9	9582.3	1598.6	9608.6	1598.8	9643.3
GR	1599.0	9673.9	1598.8	9694.2	1599.2	9746.2	1599.4	9799.4	1599.5	9828.5
GR	1599.5	9860.4	1599.1	9896.3	1599.0	9945.1	1599.0	9978.6	1598.5	10000.0
GR	1599.0	10020.3	1598.8	10039.6	1598.7	10058.0	1599.7	10092.8	1600.6	10130.6
GR	1600.8	10161.4	1601.7	10201.1	1602.5	10242.2	1603.5	10294.4	1604.2	10312.2
X1	4.058	91	8464.6	8515.2	420	280	385			
X3	10					9319.9				
GR	1604.0	7770.7	1603.5	7854.1	1603.6	7909.5	1603.3	7970.2	1603.2	8009.2
GR	1602.3	8031.3	1601.9	8057.2	1602.0	8098.1	1601.9	8130.8	1600.8	8161.8
GR	1601.1	8184.4	1600.1	8195.1	1601.2	8207.0	1600.7	8222.8	1600.7	8255.8
GR	1600.7	8297.1	1600.9	8324.9	1600.3	8354.1	1600.4	8377.7	1601.3	8385.3
GR	1600.9	8398.2	1598.1	8406.9	1598.5	8410.9	1601.3	8422.6	1600.9	8435.3
GR	1600.8	8445.7	1601.9	8455.1	1601.0	8464.6	1597.8	8472.8	1598.9	8480.3
GR	1598.9	8486.2	1597.4	8492.6	1597.6	8496.3	1601.5	8515.2	1601.5	8538.4
GR	1600.9	8569.1	1601.0	8611.6	1600.0	8656.6	1600.9	8689.6	1601.0	8698.7
GR	1599.6	8707.6	1600.5	8715.7	1600.4	8739.6	1600.4	8762.1	1598.4	8772.7
GR	1598.9	8776.9	1601.0	8785.7	1600.7	8813.4	1600.8	8882.6	1601.0	8901.8
GR	1600.9	8956.9	1600.9	9016.1	1600.9	9065.1	1601.0	9105.0	1601.0	9139.0
GR	1602.1	9159.2	1601.9	9167.1	1600.9	9185.7	1600.8	9208.6	1600.7	9243.3
GR	1600.8	9276.8	1600.9	9319.9	1600.5	9351.9	1600.0	9381.5	1599.9	9432.4
GR	1599.3	9487.7	1599.5	9543.5	1599.5	9601.5	1600.2	9652.4	1600.6	9696.0
GR	1600.6	9762.7	1600.7	9795.9	1601.1	9851.4	1600.6	9894.4	1600.5	9916.0
GR	1601.0	9949.7	1600.6	9987.3	1600.0	9998.7	1599.8	10000.0	1600.4	10023.8
GR	1600.1	10051.9	1600.0	10073.6	1600.9	10088.7	1602.2	10127.8	1603.5	10172.8
GR	1603.5	10213.2	1603.5	10263.2	1604.1	10305.5	1604.9	10355.1	1605.1	10405.4
GR	1605.6	10422.7								
X1	4.146	74	8880.0	8929.1	380	340	396			
X3	10					9411.9				
GR	1606.1	8005.2	1605.9	8063.7	1605.2	8127.8	1605.2	8189.8	1604.6	8244.6
GR	1603.2	8296.6	1603.4	8342.5	1602.6	8366.6	1601.5	8390.0	1601.9	8417.4
GR	1602.7	8440.0	1603.7	8467.6	1603.5	8497.0	1603.4	8540.6	1603.5	8581.5
GR	1603.4	8628.2	1603.4	8660.3	1602.6	8691.2	1602.3	8703.8	1602.0	8715.3
GR	1603.8	8726.1	1603.7	8741.0	1604.3	8774.4	1604.2	8797.3	1604.3	8834.7
GR	1603.8	8854.0	1602.8	8860.3	1602.9	8864.6	1603.6	8880.0	1602.9	8890.3
GR	1600.9	8902.7	1600.9	8910.9	1601.9	8918.8	1603.4	8929.1	1603.8	8957.0
GR	1603.4	8980.0	1603.6	9005.5	1603.5	9023.0	1602.2	9031.4	1600.4	9038.8

GR	1600.4	9044.6	1603.6	9053.4	1603.8	9076.1	1604.1	9114.8	1603.6	9162.1
GR	1603.1	9216.8	1603.6	9290.3	1603.5	9345.5	1603.4	9370.2	1604.0	9411.9
GR	1604.4	9447.0	1603.3	9484.6	1602.6	9518.3	1602.9	9564.5	1602.7	9605.1
GR	1602.6	9621.6	1602.7	9677.4	1603.2	9740.1	1603.6	9781.0	1603.6	9837.1
GR	1603.8	9883.9	1603.1	9928.3	1602.6	9937.9	1603.9	9949.7	1602.7	9963.8
GR	1603.7	9983.1	1603.3	10000.0	1603.5	10018.8	1603.3	10051.1	1603.1	10071.2
GR	1605.2	10097.7	1605.4	10121.6	1606.9	10161.0	1608.1	10208.0		
X1	4.197	60	9223.9	9263.6	260	400	428			
X3	10					9543.8				
GR	1607.8	8410.4	1607.8	8460.6	1608.0	8511.7	1606.6	8563.6	1607.1	8611.7
GR	1606.0	8673.6	1606.3	8715.0	1606.3	8760.1	1605.7	8796.6	1605.9	8813.1
GR	1603.5	8832.8	1602.6	8842.6	1603.2	8860.2	1603.1	8871.9	1604.5	8908.3
GR	1605.9	8948.6	1605.7	8976.9	1605.0	8990.5	1604.6	9008.4	1605.1	9037.7
GR	1605.5	9084.3	1606.1	9121.6	1606.3	9142.8	1604.8	9153.6	1606.5	9159.7
GR	1606.6	9172.1	1605.0	9176.1	1606.5	9183.8	1607.3	9199.1	1606.9	9217.7
GR	1605.7	9223.9	1601.3	9234.0	1601.1	9242.5	1601.3	9251.2	1606.3	9263.6
GR	1606.6	9287.0	1605.8	9300.1	1606.3	9316.4	1605.6	9373.2	1605.6	9428.6
GR	1605.9	9477.5	1605.8	9543.8	1605.3	9614.6	1605.6	9678.4	1606.0	9720.0
GR	1606.1	9761.0	1604.3	9805.8	1604.8	9853.3	1605.2	9896.1	1605.0	9940.3
GR	1604.6	10000.0	1604.3	10040.8	1604.3	10071.8	1604.3	10090.9	1605.2	10106.9
GR	1606.6	10144.5	1608.0	10188.6	1608.3	10240.5	1610.2	10293.6	1609.9	10299.2
X1	4.262	49	9377.8	9424.5	500	450	502			
X3	10					9687.2				
GR	1612.0	8594.7	1612.6	8675.3	1611.1	8759.5	1611.7	8808.4	1611.3	8864.0
GR	1610.7	8900.0	1611.0	8948.8	1610.2	9006.3	1610.5	9052.6	1608.9	9089.5
GR	1608.4	9138.3	1608.5	9185.9	1607.2	9211.9	1607.7	9242.7	1608.3	9276.2
GR	1608.8	9309.8	1608.9	9349.5	1609.4	9377.8	1603.3	9392.6	1603.0	9400.2
GR	1603.3	9412.7	1609.1	9424.5	1609.2	9436.0	1609.0	9470.2	1608.5	9508.3
GR	1607.8	9568.8	1607.8	9622.6	1608.5	9647.8	1609.0	9687.2	1608.1	9726.1
GR	1608.4	9730.7	1608.6	9770.6	1608.2	9813.7	1608.1	9870.0	1607.5	9926.9
GR	1607.2	9965.0	1605.9	9997.2	1605.7	10000.0	1607.8	10020.4	1608.9	10034.4
GR	1607.6	10054.9	1606.9	10076.0	1607.4	10108.7	1607.2	10137.5	1607.0	10169.8
GR	1608.9	10199.9	1610.6	10257.5	1611.8	10302.6	1612.7	10352.5		
X1	4.333	66	9452.5	9510.3	430	360	391			
X3	10					9762.7				
GR	1615.2	8781.1	1614.8	8859.4	1614.1	8911.1	1613.7	8972.6	1613.2	9037.9
GR	1612.7	9068.1	1612.2	9090.3	1612.2	9121.6	1611.6	9152.8	1611.4	9197.6
GR	1610.2	9241.6	1610.3	9269.3	1610.5	9306.4	1609.9	9331.6	1609.4	9356.2
GR	1609.4	9370.8	1609.7	9393.8	1609.4	9415.1	1609.6	9422.8	1610.3	9434.1
GR	1610.1	9452.5	1605.0	9467.4	1604.4	9487.3	1610.4	9510.3	1610.5	9530.7
GR	1609.7	9566.9	1609.1	9599.5	1609.6	9624.8	1610.3	9640.9	1611.4	9657.1
GR	1611.4	9678.9	1611.5	9679.8	1611.2	9705.3	1610.7	9733.0	1609.4	9762.7
GR	1609.3	9788.9	1609.2	9831.9	1609.3	9857.1	1609.4	9882.9	1609.3	9910.2
GR	1609.4	9929.2	1609.3	9940.5	1611.4	9949.0	1609.1	9963.3	1608.1	9980.3
GR	1607.9	9993.7	1607.4	10000.0	1607.1	10006.8	1609.9	10019.9	1609.6	10033.7
GR	1608.7	10040.6	1609.6	10055.2	1609.6	10080.2	1609.5	10104.0	1609.3	10130.6
GR	1609.3	10152.9	1609.1	10175.3	1609.2	10196.0	1609.6	10220.0	1609.8	10244.7
GR	1610.1	10267.6	1611.8	10294.4	1613.2	10326.1	1613.6	10364.5	1614.2	10407.0
GR	1614.6	10431.6								

X1	4.390	68	9667.8	9747.8	330	330	333			
X3	10					9721.0				
GR	1616.3	9071.8	1615.9	9092.0	1615.1	9113.3	1613.7	9123.4	1613.0	9135.4
GR	1612.6	9151.9	1612.7	9166.4	1614.1	9182.3	1614.2	9196.9	1613.6	9224.3
GR	1614.6	9245.2	1614.5	9273.2	1613.5	9306.7	1613.1	9341.9	1612.3	9379.9
GR	1612.3	9411.2	1612.6	9444.8	1613.1	9470.3	1612.6	9488.9	1612.4	9518.8
GR	1611.9	9552.9	1611.2	9585.4	1611.4	9610.3	1611.4	9642.7	1611.4	9658.1
GR	1611.1	9667.8	1607.2	9681.5	1607.6	9699.1	1606.9	9715.4	1608.8	9727.8
GR	1610.1	9736.5	1610.3	9747.8	1610.3	9767.5	1611.6	9785.0	1612.4	9800.1
GR	1612.3	9827.9	1612.1	9858.3	1611.7	9869.3	1611.7	9886.1	1612.6	9904.9
GR	1612.4	9923.4	1611.9	9940.0	1616.0	9952.9	1613.0	9964.9	1611.9	9975.7
GR	1609.3	9985.9	1609.0	9989.2	1608.5	10000.0	1609.2	10009.9	1611.3	10019.8
GR	1612.7	10032.8	1612.5	10062.1	1613.2	10097.6	1613.6	10123.4	1612.3	10146.7
GR	1611.8	10176.5	1612.0	10205.4	1611.9	10234.1	1612.5	10266.7	1612.7	10305.7
GR	1613.8	10334.7	1614.8	10361.7	1615.4	10398.5	1616.7	10450.7	1617.6	10482.7
GR	1619.2	10520.8	1620.1	10565.1	1620.4	10590.2				

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

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300
*SECNO 3.209

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Tributary stream profile calculations were performed to
solve the flow split ratios through this split reach.

X3 cards were used to model the image boundary line
between the main channel and Stream No. 12.

Special culvert method was used for the pipe culvert on
Stream No. 12 across the Carefree Highway.

Q is approximately 9,100 cfs to Carefree Highway, and
8,760 cfs south of the highway.

X4 cards were used to model channel at SECNO 3.639 and
SECNO 3.648.
**************************************************************
Q is 9,410 cfs at this section.
NC card was used, channel = .055, overbanks = .065.
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3.209	10.89	1569.99	1569.05	1569.99	1570.31	.32	.00	.00	1567.10
9410.0	4203.3	1924.4	3282.4	1096.0	265.4	1063.4	.0	.0	1566.70
.00	3.84	7.25	3.09	.065	.055	.065	.000	1559.10	9518.46
.005887	0.	0.	0.	0	8	0	.00	1114.38	10632.84

FLOW DISTRIBUTION FOR SECNO= 3.21 CWSEL= 1569.99

STA=	9518.	9709.	9769.	9790.	9801.	9832.	9857.	9896.	9935.	9957.	9982.	10018.	10059.
PER Q=	3.8	3.1	3.2	3.7	6.8	4.2	5.9	7.7	3.6	2.6	20.5	6.1	
AREA=	172.8	108.9	71.6	63.2	136.3	92.9	137.8	161.0	81.2	70.5	265.4	143.4	
VEL=	2.1	2.7	4.2	5.6	4.7	4.3	4.0	4.5	4.2	3.5	7.3	4.0	
DEPTH=	.9	1.8	3.6	5.6	4.3	3.8	3.5	4.1	3.7	2.8	7.5	3.5	

STA=	10059.	10091.	10111.	10131.	10165.	10294.	10368.	10442.	10633.
PER Q=	4.7	3.5	3.6	3.2	3.8	4.1	3.1	2.7	
AREA=	109.6	76.9	78.6	86.7	156.7	142.6	121.5	147.4	
VEL=	4.0	4.3	4.3	3.5	2.3	2.7	2.4	1.7	
DEPTH=	3.5	3.8	3.9	2.6	1.2	1.9	1.6	.8	

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

*SECNO 3.284

3265 DIVIDED FLOW

Q changed to 8,760 cfs at C10T (the confluence with Stream No. 12).

3.284	9.93	1572.03	1570.99	.00	1572.34	.32	2.03	.00	1568.50
8760.0	4922.7	2823.4	1013.9	1464.6	441.0	397.8	20.0	9.1	1569.20
.02	3.36	6.40	2.55	.065	.055	.065	.000	1562.10	9333.30
.005156	320.	396.	440.	2	14	0	.00	1006.28	10564.53

FLOW DISTRIBUTION FOR SECNO= 3.28 CWSEL= 1572.03

STA=	9333.	9519.	9577.	9678.	9730.	9776.	9816.	9829.	9848.	9888.	9906.	9932.	9958.
PER Q=	3.7	3.0	4.0	4.4	4.0	6.3	3.4	5.0	8.5	3.1	3.9	4.2	
AREA=	179.2	107.6	154.2	129.7	114.1	143.5	63.2	93.6	170.8	68.1	90.0	95.2	
VEL=	1.8	2.5	2.3	3.0	3.0	3.8	4.8	4.7	4.4	4.0	3.8	3.9	
DEPTH=	1.0	1.8	1.5	2.5	2.5	3.5	5.0	4.8	4.3	3.8	3.5	3.7	

STA=	9958.	9972.	10044.	10088.	10145.	10565.
PER Q=	2.5	32.2	4.0	5.0	2.6	
AREA=	55.5	441.0	112.9	144.8	140.1	
VEL=	3.9	6.4	3.1	3.1	1.6	
DEPTH=	3.7	6.2	2.6	2.5	.3	

*SECNO 3.347

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .60

3470 ENCROACHMENT STATIONS= 9756.9 11243.4 TYPE= 1 TARGET= -9756.900

Q changed to 6,000 cfs for the main channel, 68% of total flow.

3.347	8.11	1573.71	1573.22	.00	1574.22	.51	1.82	.06	1570.70
6000.0	982.6	3679.1	1338.3	318.2	526.9	567.3	33.1	14.9	1571.70
.04	3.09	6.98	2.36	.065	.048	.065	.000	1565.60	9756.90
.006810	350.	333.	200.	2	13	0	.00	765.72	10600.55

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

FLOW DISTRIBUTION FOR SECNO= 3.35 CWSEL= 1573.71

STA=	9757.	9782.	9810.	9891.	9923.	10038.	10065.	10156.	10243.	10458.	10530.	10601.
PER Q=	3.7	4.9	3.8	4.1	61.3	3.6	3.7	4.9	3.1	5.5	1.4	
AREA=	65.8	77.9	100.4	74.2	526.9	64.2	100.2	124.0	105.9	123.1	49.9	
VEL=	3.3	3.8	2.2	3.3	7.0	3.4	2.2	2.4	1.8	2.7	1.7	
DEPTH=	2.6	2.8	1.2	2.3	4.6	2.4	1.1	1.4	.5	1.7	.7	

*SECNO 3.385

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 9673.4 11110.7 TYPE= 1 TARGET= -9673.400

3.385	6.95	1575.15	1574.53	.00	1575.57	.42	1.34	.01	1573.40
6000.0	1837.6	3663.8	498.6	578.5	588.1	269.2	39.9	18.5	1574.20
.05	3.18	6.23	1.85	.065	.048	.065	.000	1568.20	9673.40
.006237	215.	201.	215.	2	14	0	.00	729.38	10446.56

FLOW DISTRIBUTION FOR SECNO= 3.38 CWSEL= 1575.15

STA=	9673.	9761.	9787.	9811.	9847.	9876.	9892.	9925.	9947.	10090.	10316.	10401.	10447.
PER Q=	5.2	3.7	3.2	3.7	4.4	3.9	4.5	1.9	61.1	3.4	4.1	.8	
AREA=	122.5	66.1	59.3	74.0	76.9	56.4	81.3	42.0	588.1	125.7	112.6	30.8	
VEL=	2.6	3.4	3.3	3.0	3.5	4.2	3.3	2.8	6.2	1.6	2.2	1.6	
DEPTH=	1.4	2.6	2.5	2.1	2.6	3.5	2.5	1.9	4.1	.6	1.3	.7	

*SECNO 3.481

3470 ENCROACHMENT STATIONS= 9522.6 11221.5 TYPE= 1 TARGET= -9522.600

3.481	6.73	~~1578.63~~	1578.24	.00	1579.07	.44	3.49	.01	1576.90
6000.0	1551.4	3068.6	1380.0	577.7	443.0	470.6	56.6	27.5	1576.60
.08	2.69	6.93	2.93	.065	.048	.065	.000	1571.90	9522.60
.007947	450.	507.	550.	3	9	0	.00	842.00	10364.60

FLOW DISTRIBUTION FOR SECNO= 3.48 CWSEL= 1578.63

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

STA=	9523.	9595.	9633.	9666.	9715.	9762.	9840.	9955.	10066.	10134.	10208.	10244.	10277.
PER Q=	3.7	4.2	3.7	4.6	3.3	3.4	2.9	51.1	4.4	4.5	4.1	4.3	
AREA=	91.8	77.8	67.0	90.4	72.5	89.7	88.6	443.0	100.0	102.2	74.3	74.3	
VEL=	2.4	3.3	3.3	3.1	2.7	2.3	2.0	6.9	2.7	2.6	3.3	3.5	
DEPTH=	1.3	2.0	2.0	1.8	1.5	1.2	.8	4.0	1.5	1.4	2.1	2.2	

STA=	10277.	10315.	10365.
PER Q=	4.2	1.5	
AREA=	77.2	42.6	
VEL=	3.3	2.1	
DEPTH=	2.1	.9	

*SECNO 3.546

3470 ENCROACHMENT STATIONS= 9285.2 11219.7 TYPE= 1 TARGET= -9285.200

3.546	4.84	1581.54	1581.03	.00	1581.83	.30	2.75	.01	1579.10
6000.0	2337.4	2246.2	1416.3	825.3	369.5	480.0	69.5	35.3	1580.40
.10	2.83	6.08	2.95	.065	.048	.065	.000	1576.70	9285.20
.007714	400.	343.	300.	3	13	0	.00	1043.99	10329.19

FLOW DISTRIBUTION FOR SECNO= 3.55 CWSEL= 1581.54

STA=	9285.	9378.	9643.	9676.	9702.	9776.	9839.	9862.	9887.	9912.	9925.	10035.	10130.
PER Q=	5.0	4.3	4.5	3.3	3.6	6.3	3.6	3.3	3.3	1.7	37.4	6.3	
AREA=	124.4	155.9	76.4	58.6	89.4	118.7	58.4	56.9	57.2	29.4	369.5	142.4	
VEL=	2.4	1.7	3.5	3.4	2.4	3.2	3.7	3.5	3.5	3.5	6.1	2.7	
DEPTH=	1.3	.6	2.3	2.2	1.2	1.9	2.5	2.3	2.3	2.3	3.4	1.5	

STA=	10130.	10185.	10228.	10267.	10329.
PER Q=	5.8	4.9	4.4	2.1	
AREA=	109.1	90.6	81.4	56.6	
VEL=	3.2	3.3	3.3	2.3	
DEPTH=	2.0	2.1	2.1	.9	

*SECNO 3.639
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 8870.7 11307.8 TYPE= 1 TARGET= -8870.700
Downstream (south) side edge of Carefree Highway pavement.

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        NC card was used to model the dip section "n" = .016.
    3.639      1.99   1585.29   1585.29       .00   1585.83       .54      2.51       .07   1584.40
   6000.0    1660.3    3464.6     875.0     317.1     538.4     190.8      86.5      48.2   1584.20
      .13      5.24      6.44      4.59      .016      .016      .016      .000   1583.30   9513.75
  .003150      650.      491.      440.         0        18         0       .00    984.82  10498.57


FLOW DISTRIBUTION FOR SECNO=      3.64          CWSEL=   1585.29

STA=    9514.    9561.    9604.    9664.    9717.    9774.    9838.   10231.   10334.   10470.   10499.
  PER Q=      1.5      4.0      6.1      5.3      5.3      5.5     57.7      9.6      4.9       .0
   AREA=     25.9     44.8     65.8     57.4     59.0     64.2    538.4    107.5     80.5      2.7
    VEL=      3.5      5.4      5.5      5.5      5.4      5.2      6.4      5.4      3.7      1.1
  DEPTH=       .5      1.0      1.1      1.1      1.0      1.0      1.4      1.0       .6       .1

*SECNO 3.648
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     8850.0   10812.0  TYPE=      1  TARGET=     1962.000
        Upstream (north) side edge of Carefree Highway pavement.
    3.648      2.02   1586.12   1586.12       .00   1586.71       .59       .14       .02   1585.40
   6000.0    1837.2    4116.9      45.9     337.4     633.8      18.7      87.6      49.2   1585.60
      .13      5.45      6.50      2.45      .016      .016      .016      .000   1584.10   9465.80
  .003079       46.       46.       46.         0         5         0       .00    846.23  10312.03


FLOW DISTRIBUTION FOR SECNO=      3.65          CWSEL=   1586.12

STA=    9466.    9489.    9537.    9604.    9675.    9706.    9727.    9769.    9797.   10245.   10289.   10312.
  PER Q=       .5      2.4      4.1      7.3      4.3      3.4      6.0      2.5     68.6       .7       .0
   AREA=     10.4     34.5     55.1     79.2     41.6     31.0     56.8     28.8    633.8     16.2      2.5
    VEL=      3.1      4.1      4.5      5.6      6.2      6.7      6.4      5.2      6.5      2.6      1.2
  DEPTH=       .5       .7       .8      1.1      1.3      1.5      1.4      1.0      1.4       .4       .1

*SECNO 3.651
3280 CROSS SECTION      3.65 EXTENDED       .20 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .43


3470 ENCROACHMENT STATIONS=     8850.0   10812.0  TYPE=      1  TARGET=     1962.000
        NC card was used, channel = .048, overbanks = .065.
    3.651      2.31   1586.41   1586.16       .00   1586.83       .42       .10       .02   1585.40
   6000.0    1566.5    4353.7      79.8     433.1     761.0      42.0      88.0      49.5   1585.60
      .13      3.62      5.72      1.90      .065      .048      .065      .000   1584.10   9447.53
  .016838       17.       17.       17.         4         5         0       .00    894.39  10341.92
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 3.65 CWSEL= 1586.41

STA=	9448.	9489.	9537.	9604.	9675.	9706.	9727.	9769.	9797.	10245.	10289.	10342.
PER Q=	.7	2.4	3.9	6.1	3.4	2.7	4.7	2.2	72.6	1.1	.3	
AREA=	18.4	48.2	74.2	99.3	50.6	37.0	68.6	36.9	761.0	28.8	13.3	
VEL=	2.2	3.0	3.2	3.7	4.1	4.3	4.1	3.5	5.7	2.2	1.2	
DEPTH=	.5	1.0	1.1	1.4	1.6	1.8	1.7	1.3	1.7	.7	.3	

*SECNO 3.710

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.78

3470 ENCROACHMENT STATIONS= 8784.0 10656.2 TYPE= 1 TARGET= -8784.000

3.710	2.75	1588.85	1588.00	.00	1589.01	.16	2.16	.03	1588.00
6000.0	2195.5	3795.7	8.8	832.7	1063.7	10.2	96.3	54.6	1588.10
.15	2.64	3.57	.86	.065	.048	.065	.000	1586.10	9091.01
.005295	110.	312.	240.	3	11	0	.00	1148.50	10246.52

FLOW DISTRIBUTION FOR SECNO= 3.71 CWSEL= 1588.85

STA=	9091.	9381.	9423.	9448.	9484.	9577.	9604.	9656.	9685.	10219.	10247.
PER Q=	5.5	6.2	4.4	3.0	7.4	3.6	5.3	1.1	63.3	.1	
AREA=	192.1	114.4	76.6	65.6	165.9	69.7	112.7	35.7	1063.7	10.2	
VEL=	1.7	3.3	3.5	2.8	2.7	3.1	2.8	1.9	3.6	.9	
DEPTH=	.7	2.8	3.0	1.8	1.8	2.5	2.2	1.2	2.0	.4	

*SECNO 3.804

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .63

3470 ENCROACHMENT STATIONS= 8826.2 10283.1 TYPE= 1 TARGET= -8826.200
Q changed to 5,000 cfs in the main channel, 55% of total flow.

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3.804	1.77	1591.77	1591.51	.00	1591.93	.16	2.92	.00	1591.50
5000.0	4222.3	776.0	1.7	1296.2	265.7	2.3	113.7	66.2	1591.40
.19	3.26	2.92	.72	.065	.048	.065	.000	1590.00	8826.20
.009169	400.	496.	520.	3	12	0	.00	1187.86	10175.63

FLOW DISTRIBUTION FOR SECNO= 3.80 CWSEL= 1591.77

STA=	8826.	8949.	8998.	9121.	9233.	9309.	9360.	9405.	9432.	9453.	9471.	9491.	9524.
PER Q=	4.0	3.0	3.4	9.3	12.2	7.5	4.7	4.6	5.6	3.9	3.7	4.8	
AREA=	86.4	60.1	93.3	161.9	165.9	105.8	75.5	60.4	62.0	47.1	47.0	67.8	
VEL=	2.3	2.5	1.8	2.9	3.7	3.6	3.1	3.8	4.5	4.1	3.9	3.6	
DEPTH=	.7	1.2	.8	1.5	2.2	2.1	1.7	2.2	3.0	2.6	2.4	2.1	

STA=	9524.	9566.	9603.	9645.	9892.	10163.	10176.
PER Q=	7.1	5.8	4.4	.3	15.5	.0	
AREA=	95.2	78.9	69.7	18.9	265.7	2.3	
VEL=	3.7	3.7	3.1	.9	2.9	.7	
DEPTH=	2.2	2.2	1.7	.1	1.0	.2	

*SECNO 3.881

3470 ENCROACHMENT STATIONS= 9032.5 10197.6 TYPE= 1 TARGET= -9032.500

3.881	1.51	1595.01	1594.34	.00	1595.16	.15	3.22	.00	1593.90
5000.0	4090.8	906.2	3.0	1331.6	296.9	3.7	127.8	76.2	1594.50
.23	3.07	3.05	.81	.065	.048	.065	.000	1593.50	9032.50
.007683	380.	407.	420.	4	21	0	.00	1057.64	10090.14

FLOW DISTRIBUTION FOR SECNO= 3.88 CWSEL= 1595.01

STA=	9033.	9091.	9188.	9262.	9353.	9372.	9391.	9418.	9445.	9470.	9492.	9539.	9603.
PER Q=	3.2	3.3	3.5	4.2	3.6	3.6	6.3	6.7	5.8	3.8	6.3	7.8	
AREA=	70.4	87.5	81.1	90.5	48.7	47.5	78.1	80.7	72.6	53.1	96.7	124.4	
VEL=	2.2	1.9	2.2	2.3	3.7	3.8	4.0	4.2	4.0	3.6	3.2	3.1	
DEPTH=	1.2	.9	1.1	1.0	2.5	2.6	2.9	3.0	2.8	2.4	2.1	2.0	

STA=	9603.	9660.	9711.	9760.	9798.	9827.	10076.	10090.
PER Q=	7.0	6.0	5.1	3.5	2.1	18.1	.1	
AREA=	112.0	97.7	86.7	62.3	41.5	296.9	3.7	
VEL=	3.1	3.1	2.9	2.8	2.5	3.1	.8	
DEPTH=	2.0	1.9	1.8	1.7	1.4	1.2	.3	

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

*SECNO 3.957

3470 ENCROACHMENT STATIONS= 9246.0 10240.7 TYPE= 1 TARGET= -9246.000

3.957	2.59	1598.09	1597.33	.00	1598.26	.18	3.10	.01	1597.30
5000.0	3639.4	1332.0	28.6	1158.9	335.6	22.1	142.3	85.0	1597.50
.26	3.14	3.97	1.30	.065	.048	.065	.000	1595.50	9246.00
.007796	400.	401.	400.	3	25	0	.00	861.91	10107.91

FLOW DISTRIBUTION FOR SECNO= 3.96 CWSEL= 1598.09

STA=	9246.	9299.	9351.	9393.	9417.	9441.	9469.	9500.	9554.	9602.	9639.	9670.	9732.
PER Q=	6.8	6.6	6.8	4.6	4.8	4.3	3.5	5.4	5.9	4.7	4.2	5.9	
AREA=	108.2	103.7	96.5	60.6	62.7	62.7	57.8	92.7	94.3	74.1	62.9	103.7	
VEL=	3.2	3.2	3.5	3.8	3.8	3.5	3.0	2.9	3.1	3.2	3.3	2.8	
DEPTH=	2.0	2.0	2.3	2.6	2.6	2.2	1.8	1.7	1.9	2.0	2.1	1.6	

STA=	9732.	9765.	9809.	9871.	10062.	10108.
PER Q=	3.4	4.1	1.7	26.6	.6	
AREA=	57.7	72.2	49.0	335.6	22.1	
VEL=	3.0	2.8	1.7	4.0	1.3	
DEPTH=	1.8	1.6	.8	1.8	.5	

*SECNO 4.019

3470 ENCROACHMENT STATIONS= 9274.4 10312.2 TYPE= 1 TARGET= -9274.400

4.019	2.10	1600.60	1599.76	.00	1600.76	.16	2.49	.00	1599.50
5000.0	3707.9	1273.5	18.7	1186.1	368.3	17.0	154.5	91.8	1599.70
.29	3.13	3.46	1.10	.065	.048	.065	.000	1598.50	9274.40
.006753	350.	327.	320.	2	21	0	.00	856.14	10130.54

FLOW DISTRIBUTION FOR SECNO= 4.02 CWSEL= 1600.60

STA=	9274.	9324.	9360.	9407.	9445.	9473.	9508.	9547.	9582.	9643.	9694.	9746.	9799.
PER Q=	7.5	5.6	7.8	8.2	6.3	7.0	6.6	3.8	6.5	4.6	4.3	3.1	
AREA=	116.3	84.3	114.3	109.1	82.0	94.8	97.2	66.4	114.5	86.5	83.1	69.1	
VEL=	3.2	3.3	3.4	3.8	3.8	3.7	3.4	2.9	2.9	2.7	2.6	2.2	
DEPTH=	2.3	2.3	2.4	2.8	2.9	2.7	2.4	1.9	1.9	1.7	1.6	1.3	

STA=	9799.	9860.	10093.	10131.
PER Q=	2.8	25.5	.4	
AREA=	68.5	368.3	17.0	
VEL=	2.0	3.5	1.1	
DEPTH=	1.1	1.6	.4	

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

*SECNO 4.058

3470 ENCROACHMENT STATIONS= 9319.9 10422.7 TYPE= 1 TARGET= -9319.900

4.058	2.26	1602.06	1601.34	.00	1602.26	.20	1.49	.01	1601.10
5000.0	3565.1	1404.8	30.1	1030.5	364.3	20.2	161.2	95.5	1600.90
.31	3.46	3.86	1.49	.065	.048	.065	.000	1599.80	9319.90
.008765	190.	206.	210.	1	14	0	.00	803.67	10123.57

FLOW DISTRIBUTION FOR SECNO= 4.06 CWSEL= 1602.06

STA=	9320.	9382.	9432.	9488.	9544.	9602.	9652.	9696.	9763.	9851.	10089.	10124.
PER Q=	5.6	7.6	10.6	12.2	11.9	8.2	4.3	5.4	5.6	28.1	.6	
AREA=	97.0	107.4	136.0	148.4	148.4	112.5	72.3	97.3	111.1	364.3	20.2	
VEL=	2.9	3.5	3.9	4.1	4.0	3.6	3.0	2.8	2.5	3.9	1.5	
DEPTH=	1.6	2.1	2.5	2.7	2.6	2.2	1.7	1.5	1.3	1.5	.6	

*SECNO 4.146

3470 ENCROACHMENT STATIONS= 9411.9 10208.0 TYPE= 1 TARGET= -9411.900

4.146	2.83	1605.43	1604.45	.00	1605.61	.19	3.35	.00	1603.80
5000.0	3320.8	1677.8	1.4	1038.4	425.9	3.0	175.9	103.3	1605.20
.34	3.20	3.94	.46	.065	.048	.065	.000	1602.60	9411.90
.006471	440.	465.	465.	3	59	0	.00	710.40	10122.30

FLOW DISTRIBUTION FOR SECNO= 4.15 CWSEL= 1605.43

STA=	9412.	9485.	9518.	9565.	9605.	9622.	9677.	9740.	9781.	9837.	9884.	10098.	10122.
PER Q=	4.7	5.6	8.8	7.5	3.3	11.3	10.5	4.9	5.6	4.3	33.6	.0	
AREA=	102.3	83.5	123.7	106.6	45.8	154.9	155.3	82.9	102.5	80.8	425.9	3.0	
VEL=	2.3	3.4	3.5	3.5	3.6	3.6	3.4	2.9	2.7	2.6	3.9	.5	
DEPTH=	1.4	2.5	2.7	2.6	2.8	2.8	2.5	2.0	1.8	1.7	2.0	.1	

*SECNO 4.197

3470 ENCROACHMENT STATIONS= 9543.8 10299.2 TYPE= 1 TARGET= -9543.800

4.197	2.97	1607.27	1606.54	.00	1607.56	.29	1.92	.03	1605.20
5000.0	2087.3	2779.8	132.9	668.5	547.7	58.6	184.6	107.5	1605.20
.36	3.12	5.08	2.27	.065	.048	.065	.000	1604.30	9543.80
.007524	280.	269.	265.	2	22	0	.00	621.83	10165.63

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

FLOW DISTRIBUTION FOR SECNO= 4.20 CWSEL= 1607.27

STA=	9544.	9615.	9678.	9720.	9761.	9806.	9853.	9896.	10107.	10145.	10166.
PER Q=	6.8	6.9	3.1	2.3	6.0	10.0	6.7	55.6	2.5	.1	
AREA=	121.8	116.2	61.2	50.1	92.8	129.2	97.2	547.7	51.5	7.1	
VEL=	2.8	3.0	2.6	2.3	3.2	3.9	3.4	5.1	2.4	1.0	
DEPTH=	1.7	1.8	1.5	1.2	2.1	2.7	2.3	2.6	1.4	.3	

*SECNO 4.262

3470 ENCROACHMENT STATIONS= 9687.2 10352.5 TYPE= 1 TARGET= -9687.200

4.262	4.36	1610.06	1609.29	.00	1610.38	.32	2.81	.01	1607.20
5000.0	1761.1	2268.3	970.7	539.0	407.3	260.8	195.0	112.4	1607.40
.38	3.27	5.57	3.72	.065	.048	.065	.000	1605.70	9687.20
.008084	400.	343.	300.	3	41	0	.00	551.85	10239.05

FLOW DISTRIBUTION FOR SECNO= 4.26 CWSEL= 1610.06

STA=	9687.	9726.	9731.	9771.	9814.	9870.	9927.	9965.	10109.	10138.	10170.	10200.	10239.
PER Q=	3.1	.5	3.4	4.1	6.8	9.1	8.2	45.4	6.4	8.1	4.3	.6	
AREA=	58.6	8.3	62.1	71.4	107.3	128.3	103.1	407.3	79.4	95.5	63.4	22.6	
VEL=	2.7	3.0	2.8	2.9	3.2	3.5	4.0	5.6	4.0	4.2	3.4	1.4	
DEPTH=	1.5	1.8	1.6	1.7	1.9	2.3	2.7	2.8	2.8	3.0	2.1	.6	

*SECNO 4.333

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.41

3470 ENCROACHMENT STATIONS= 9762.7 10431.6 TYPE= 1 TARGET= -9762.700
Just downstream of the levee (diversion structure).

4.333	5.17	1612.27	1611.41	.00	1612.46	.19	2.07	.01	1611.40
5000.0	1599.8	1618.4	1781.9	541.9	362.8	630.3	206.7	117.1	1609.60
.41	2.95	4.46	2.83	.065	.048	.065	.000	1607.10	9762.70
.004068	370.	375.	370.	2	32	0	.00	542.29	10305.00

FLOW DISTRIBUTION FOR SECNO= 4.33 CWSEL= 1612.27

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

STA=	9763.	9789.	9832.	9857.	9883.	9910.	9929.	9949.	10055.	10080.	10104.	10131.	10153.
PER Q=	4.2	7.9	4.6	4.5	4.7	3.3	2.7	32.4	3.7	3.7	4.5	4.0	
AREA=	76.4	129.8	76.0	75.3	79.7	55.4	49.3	362.8	66.7	64.7	76.3	66.2	
VEL=	2.8	3.0	3.0	3.0	3.0	3.0	2.7	4.5	2.8	2.8	2.9	3.0	
DEPTH=	2.9	3.0	3.0	2.9	2.9	2.9	2.5	3.4	2.7	2.7	2.9	3.0	

STA=	10153.	10175.	10196.	10220.	10245.	10294.	10305.
PER Q=	4.2	4.0	4.1	3.5	3.9	.0	
AREA=	68.7	64.5	68.8	63.4	88.4	2.5	
VEL=	3.1	3.1	2.9	2.7	2.2	.6	
DEPTH=	3.1	3.1	2.9	2.6	1.8	.2	

*SECNO 4.390

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .59

3470 ENCROACHMENT STATIONS= 9721.0 10590.2 TYPE= 1 TARGET= -9721.000
NC card was used to change n values, channel = .065,
overbanks = .085.

4.390	7.23	1614.13	1613.35	.00	1614.41	.28	1.92	.03	1616.00
5000.0	2230.4	1405.3	1364.2	569.3	249.5	474.6	216.4	121.0	1612.70
.43	3.92	5.63	2.87	.080	.065	.080	.000	1606.90	9721.00
.011853	290.	301.	301.	2	12	0	.00	609.18	10343.56

FLOW DISTRIBUTION FOR SECNO= 4.39 CWSEL= 1614.13

STA=	9721.	9728.	9737.	9748.	9768.	9785.	9828.	9858.	9886.	9923.	9947.	10033.	10098.
PER Q=	3.3	4.6	4.5	7.5	4.9	5.1	3.7	4.7	4.1	2.4	28.1	4.6	
AREA=	39.8	40.7	44.4	75.4	55.6	81.6	58.6	65.3	67.3	40.6	249.5	90.2	
VEL=	4.2	5.6	5.0	4.9	4.4	3.1	3.1	3.6	3.0	3.0	5.6	2.5	
DEPTH=	5.8	4.7	3.9	3.8	3.2	1.9	1.9	2.3	1.8	1.7	3.4	1.4	

STA=	10098.	10177.	10205.	10234.	10267.	10306.	10344.
PER Q=	5.9	4.4	4.2	3.9	3.2	1.0	
AREA=	108.2	64.4	62.5	62.9	59.6	26.9	
VEL=	2.7	3.4	3.4	3.1	2.7	1.8	
DEPTH=	1.4	2.2	2.2	1.9	1.5	.7	

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

*SECNO 4.492

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.75

Split flow location.
Q changed to 9,100 cfs at C10R (split flow starts here).

4.492	7.36	1617.66	1616.31	.00	1617.85	.20	3.44	.01	1615.30
9100.0	5557.8	2877.0	665.2	2060.1	580.1	281.9	240.9	131.6	1614.30
.47	2.70	4.96	2.36	.080	.065	.080	.000	1610.30	9014.49
.005209	500.	539.	500.	4	10	0	.00	1214.04	10228.53

FLOW DISTRIBUTION FOR SECNO= 4.49 CWSEL= 1617.66

STA=	9014.	9360.	9376.	9417.	9490.	9539.	9602.	9670.	9738.	9779.	9817.	9862.	9888.
PER Q=	3.7	3.0	3.9	5.3	4.5	4.5	5.3	4.9	3.7	3.8	5.1	3.9	
AREA=	226.6	74.8	122.7	189.8	146.0	162.7	185.5	175.8	123.3	119.4	152.3	105.4	
VEL=	1.5	3.7	2.9	2.5	2.8	2.5	2.6	2.5	2.8	2.9	3.0	3.4	
DEPTH=	.7	4.5	3.0	2.6	3.0	2.6	2.7	2.6	3.0	3.2	3.4	4.0	

STA=	9888.	9914.	9949.	9967.	10077.	10110.	10163.	10229.
PER Q=	4.2	3.8	1.4	31.6	3.2	3.3	.8	
AREA=	110.7	115.6	49.4	580.1	102.3	125.2	54.4	
VEL=	3.5	3.0	2.6	5.0	2.9	2.4	1.3	
DEPTH=	4.2	3.3	2.8	5.3	3.2	2.4	.8	

*SECNO 4.567

3265 DIVIDED FLOW

The confluence with Stream No. 9.

4.567	8.20	1620.10	1619.17	.00	1620.49	.39	2.58	.06	1616.30
9100.0	5290.9	3639.1	170.0	1580.2	536.8	73.9	263.1	141.6	1617.70
.50	3.35	6.78	2.30	.080	.065	.080	.000	1611.90	8939.87
.009159	370.	396.	396.	2	6	0	.00	1110.15	10100.79

FLOW DISTRIBUTION FOR SECNO= 4.57 CWSEL= 1620.10

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

STA=	8940.	9469.	9490.	9541.	9581.	9624.	9687.	9731.	9790.	9853.	9914.	9944.	10042.
PER Q=	3.4	3.4	7.7	4.9	4.0	5.8	3.4	5.1	6.2	8.9	5.3	40.0	
AREA=	216.4	74.3	173.7	121.2	108.7	159.1	100.6	143.7	165.8	204.4	112.3	536.8	
VEL=	1.4	4.1	4.1	3.7	3.3	3.3	3.1	3.2	3.4	4.0	4.3	6.8	
DEPTH=	.4	3.6	3.4	3.0	2.5	2.5	2.3	2.4	2.6	3.3	3.8	5.5	

STA=	10042.	10101.
PER Q=	1.9	
AREA=	73.9	
VEL=	2.3	
DEPTH=	1.2	

1490 NH CARD USED
*SECNO 4.662

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.45

NH cards were used.

4.662	8.96	1622.96	1621.34	.00	1623.17	.21	2.67	.02	1619.60
9100.0	2324.8	2560.5	4214.7	1372.1	474.2	1309.8	288.9	153.8	1619.10
.53	1.69	5.40	3.22	.080	.065	.075	.000	1614.00	8885.95
.004349	390.	502.	430.	2	12	0	.00	1530.63	10416.58

FLOW DISTRIBUTION FOR SECNO= 4.66 CWSEL= 1622.96

STA=	8886.	9496.	9672.	9841.	9883.	9966.	10035.	10069.	10116.	10183.	10214.	10245.	10271.
PER Q=	7.2	3.4	5.5	5.2	4.2	28.1	3.2	5.1	5.0	3.9	4.1	5.3	
AREA=	549.9	217.3	263.7	158.4	182.7	474.2	109.6	164.3	187.0	119.9	121.0	121.5	
VEL=	1.2	1.4	1.9	3.0	2.1	5.4	2.7	2.8	2.4	3.0	3.1	4.0	
DEPTH=	.9	1.2	1.6	3.8	2.2	6.9	3.2	3.5	2.8	3.8	4.0	4.7	

STA=	10271.	10278.	10292.	10316.	10342.	10404.	10417.
PER Q=	3.1	4.5	5.3	3.6	3.1	.0	
AREA=	50.9	83.4	112.5	106.2	131.0	2.4	
VEL=	5.5	4.9	4.3	3.1	2.2	.4	
DEPTH=	7.0	5.9	4.8	4.1	2.1	.2	

*SECNO -3.347
START TRIB COMP

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

-3.347 3.347 1573.710

3470 ENCROACHMENT STATIONS= .0 9756.9 TYPE= 1 TARGET= 9756.899

-3.347	8.11	1573.71	.00	.00	1573.98	.27	1.79	.90	1570.40
2760.0	218.0	1031.2	1510.7	190.6	178.8	499.8	307.4	162.4	1569.20
.56	1.14	5.77	3.02	.070	.050	.065	.000	1565.60	9278.17
.003703	350.	510.	400.	0	0	0	.00	478.73	9756.90

FLOW DISTRIBUTION FOR SECNO= -3.35 CWSEL= 1573.71

STA=	9278.	9509.	9572.	9602.	9619.	9629.	9637.	9673.	9702.	9713.	9722.	9729.	9738.
PER Q=	3.6	4.3	37.4	7.7	3.3	3.3	13.1	8.1	3.3	3.7	3.1	3.3	
AREA=	117.2	73.3	178.8	63.5	30.7	28.8	118.0	80.9	32.6	31.1	26.4	30.0	
VEL=	.8	1.6	5.8	3.4	3.0	3.2	3.1	2.8	2.8	3.3	3.2	3.1	
DEPTH=	.5	1.2	5.9	3.8	3.2	3.5	3.3	2.8	2.9	3.7	3.6	3.3	

STA=	9738.	9757.
PER Q=	5.7	
AREA=	57.8	
VEL=	2.7	
DEPTH=	3.1	

*SECNO 3.385

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 9673.4 TYPE= 1 TARGET= 9673.399

3.385	5.87	1575.57	1574.78	.00	1575.86	.29	1.87	.00	1574.60
2760.0	1150.0	1068.6	541.3	400.2	183.2	178.4	314.6	166.8	1572.90
.59	2.87	5.83	3.03	.070	.050	.065	.000	1569.70	9186.66
.006661	450.	396.	330.	2	14	0	.00	458.25	9673.40

FLOW DISTRIBUTION FOR SECNO= 3.38 CWSEL= 1575.57

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

STA=	9187.	9366.	9416.	9434.	9457.	9467.	9479.	9490.	9525.	9573.	9593.	9613.	9648.
PER Q=	3.1	4.5	8.7	6.5	3.2	7.4	4.9	3.3	38.7	8.0	6.0	4.5	
AREA=	70.6	58.0	60.8	57.1	27.0	47.4	35.9	43.4	183.2	58.9	48.4	51.2	
VEL=	1.2	2.1	4.0	3.2	3.3	4.3	3.8	2.1	5.8	3.8	3.4	2.4	
DEPTH=	.4	1.2	3.5	2.5	2.6	3.9	3.3	1.3	3.8	2.9	2.5	1.5	

STA=	9648.	9673.
PER Q=	1.1	
AREA=	19.9	
VEL=	1.6	
DEPTH=	.8	

*SECNO 3.481

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 9522.6 TYPE= 1 TARGET= 9522.599

3.481	6.55	1578.45	1577.85	.00	1578.83	.38	2.94	.03	1575.50
2760.0	290.3	1230.6	1239.1	171.2	184.8	397.2	321.8	171.1	1575.50
.62	1.70	6.66	3.12	.070	.050	.065	.000	1571.90	8944.78
.006818	310.	506.	450.	3	8	0	.00	541.73	9522.60

FLOW DISTRIBUTION FOR SECNO= 3.48 CWSEL= 1578.45

STA=	8945.	9211.	9250.	9280.	9320.	9356.	9362.	9375.	9392.	9414.	9431.	9441.	9462.
PER Q=	4.0	3.4	3.1	44.6	5.6	3.2	7.5	3.8	5.8	3.9	3.6	5.5	
AREA=	84.7	47.0	39.4	184.8	58.5	22.2	47.3	34.2	49.7	35.0	27.5	47.2	
VEL=	1.3	2.0	2.2	6.7	2.7	4.0	4.4	3.0	3.2	3.1	3.6	3.2	
DEPTH=	.3	1.2	1.3	4.6	1.6	3.7	3.7	2.0	2.2	2.1	2.6	2.2	

STA=	9462.	9523.
PER Q=	5.9	
AREA=	75.5	
VEL=	2.2	
DEPTH=	1.2	

*SECNO 3.546

3470 ENCROACHMENT STATIONS= 8295.1 9285.2 TYPE= 1 TARGET= 990.101

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3.546	5.11	1581.21	1580.75	.00	1581.35	.14	2.49	.02	1579.70
2760.0	316.2	609.1	1834.6	230.8	125.1	795.3	330.3	177.8	1580.30
.66	1.37	4.87	2.31	.070	.050	.065	.000	1576.10	8295.10
.005416	400.	502.	360.	2	14	0	.00	990.10	9285.20

FLOW DISTRIBUTION FOR SECNO= 3.55 CWSEL= 1581.21

STA=	8295.	8400.	8494.	8585.	8622.	8733.	8823.	8862.	8901.	8923.	8941.	8956.	9065.
PER Q=	5.1	3.7	2.7	22.1	5.6	4.2	3.5	5.2	4.0	3.4	3.3	4.6	
AREA=	95.9	75.7	59.2	125.1	98.5	76.3	49.5	61.1	41.0	35.4	32.3	81.6	
VEL=	1.5	1.4	1.2	4.9	1.6	1.5	2.0	2.4	2.7	2.7	2.9	1.5	
DEPTH=	.9	.8	.6	3.4	.9	.8	1.3	1.6	1.9	1.9	2.2	.7	

STA=	9065.	9159.	9172.	9191.	9204.	9217.	9270.	9285.
PER Q=	4.4	4.7	7.7	6.2	4.7	3.9	1.1	
AREA=	64.6	36.7	59.4	45.0	37.9	58.5	17.5	
VEL=	1.9	3.5	3.6	3.8	3.4	1.8	1.7	
DEPTH=	.7	3.0	3.1	3.4	2.9	1.1	1.2	

*SECNO .434

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 10662.7 TYPE= 1 TARGET= 10662.700
SECNO 0.434, 0.529, and 0.624 are the river miles on Stream No. 12.

.434	4.78	1583.18	1582.44	.00	1583.28	.10	1.93	.00	1582.70
2760.0	144.4	467.2	2148.4	108.7	149.7	894.4	340.2	186.3	1582.40
.70	1.33	3.12	2.40	.070	.050	.065	.000	1578.40	9794.27
.005141	630.	496.	300.	3	13	0	.00	861.80	10662.70

FLOW DISTRIBUTION FOR SECNO= .43 CWSEL= 1583.18

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

STA=	9794.	9912.	9988.	10077.	10178.	10229.	10261.	10315.	10357.	10435.	10466.	10504.	10536.
PER Q=	4.4	.8	16.9	6.7	5.3	4.3	4.8	4.2	5.5	6.2	17.5	10.1	
AREA=	83.4	25.3	149.7	105.5	71.7	51.6	68.3	57.6	85.1	64.6	130.1	87.2	
VEL=	1.5	.9	3.1	1.7	2.0	2.3	2.0	2.0	1.8	2.7	3.7	3.2	
DEPTH=	.7	.3	1.8	1.1	1.4	1.6	1.3	1.4	1.1	2.1	3.4	2.7	

STA=	10536.	10561.	10619.	10663.
PER Q=	5.3	5.2	2.7	
AREA=	54.0	73.5	45.2	
VEL=	2.7	1.9	1.7	
DEPTH=	2.1	1.3	1.0	

*SECNO .529
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 10571.3 TYPE= 1 TARGET= 10571.300

.529	5.51	1586.61	1586.61	.00	1586.87	.26	3.41	.05	1586.40
2760.0	822.6	791.5	1145.8	357.1	119.5	453.4	351.7	196.0	1586.50
.74	2.30	6.62	2.53	.070	.050	.065	.000	1581.10	9614.10
.010017	430.	502.	500.	0	20	0	.00	913.72	10527.81

FLOW DISTRIBUTION FOR SECNO= .53 CWSEL= 1586.61

STA=	9614.	9743.	9757.	9785.	9818.	9862.	9915.	9989.	10023.	10086.	10097.	10162.	10243.
PER Q=	5.0	3.0	4.7	4.5	4.9	4.9	2.7	28.7	3.0	5.4	4.2	3.3	
AREA=	80.4	26.0	44.8	47.0	54.9	59.0	45.1	119.5	40.0	31.8	53.5	52.4	
VEL=	1.7	3.2	2.9	2.7	2.5	2.3	1.6	6.6	2.1	4.7	2.2	1.7	
DEPTH=	.6	1.9	1.6	1.4	1.3	1.1	.6	3.5	.6	2.9	.8	.6	

STA=	10243.	10368.	10397.	10414.	10437.	10507.	10528.
PER Q=	6.7	6.4	3.4	4.0	4.9	.2	
AREA=	90.6	52.0	28.3	36.0	62.3	6.5	
VEL=	2.1	3.4	3.3	3.1	2.2	1.0	
DEPTH=	.7	1.8	1.7	1.6	.9	.3	

*SECNO .624
3280 CROSS SECTION .62 EXTENDED 1.12 FEET

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

3470 ENCROACHMENT STATIONS= .0 10353.6 TYPE= 1 TARGET= 10353.600

.624	5.92	1590.12	1589.67	.00	1590.28	.16	3.40	.01	1589.50
2760.0	1355.7	634.7	769.7	599.4	119.3	390.3	362.0	204.6	1589.20
.78	2.26	5.32	1.97	.070	.050	.065	.000	1584.20	9541.40
.005968	400.	502.	460.	5	6	0	.00	812.20	10353.60

FLOW DISTRIBUTION FOR SECNO= .62 CWSEL= 1590.12

STA=	9541.	9647.	9701.	9752.	9779.	9801.	9839.	9873.	9924.	9981.	10013.	10063.	10089.
PER Q=	3.4	3.4	8.6	7.0	5.7	8.4	5.7	4.8	2.1	23.0	4.2	3.4	
AREA=	72.8	56.4	94.9	65.9	52.8	83.3	63.4	67.4	42.4	119.3	58.5	39.8	
VEL=	1.3	1.7	2.5	2.9	3.0	2.8	2.5	2.0	1.3	5.3	2.0	2.4	
DEPTH=	.7	1.0	1.9	2.4	2.4	2.2	1.9	1.3	.7	3.8	1.2	1.6	

STA=	10089.	10123.	10195.	10245.	10314.	10354.
PER Q=	3.3	5.3	4.0	4.4	3.3	
AREA=	42.9	76.8	57.1	68.4	46.9	
VEL=	2.1	1.9	2.0	1.8	1.9	
DEPTH=	1.2	1.1	1.1	1.0	1.2	

*SECNO 3.639

3265 DIVIDED FLOW

3280 CROSS SECTION 3.64 EXTENDED 7.07 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 8870.7 TYPE= 1 TARGET= 8870.699

3.639	7.17	1593.17	1593.17	.00	1593.19	.02	.03	.01	1590.00
2760.0	25.6	49.3	2685.1	45.2	109.1	2628.7	374.4	211.0	1590.00
.87	.57	.45	1.02	.016	.050	.016	.000	1586.00	7861.59
.000025	540.	428.	210.	0	17	0	.00	999.82	8870.70

FLOW DISTRIBUTION FOR SECNO= 3.64 CWSEL= 1593.17

STA=	7862.	7950.	7968.	8095.	8347.	8471.	8533.	8759.	8871.
PER Q=	.9	1.8	3.0	16.3	16.3	8.2	33.4	20.0	
AREA=	45.2	109.1	145.9	552.6	424.1	211.7	828.3	466.2	
VEL=	.6	.5	.6	.8	1.1	1.1	1.1	1.2	
DEPTH=	.5	6.1	1.2	2.2	3.4	3.4	3.7	4.2	

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

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	1	.024	.80	3.00	.00	5.67	.00	46.00	2	2	1586.40	1586.00

CHART 2 - CORRUGATED METAL PIPE CULVERT
SCALE 2 - MITERED TO CONFORM TO SLOPE

5130, EGIC= 2143.89..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 2017.17 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
*SECNO 3.648
5155, 20 TRIALS OF QWEIR NOT ENOUGH; POSSIBLY INVALID
FINAL QWEIR + QCULV = 2779. DOES NOT EQUAL ACTUAL Q = 2760.

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG = 1593.17
5150, EG OF 1593.17 LESS THAN XEG OF 1593.19

3265 DIVIDED FLOW

3280 CROSS SECTION 3.65 EXTENDED 6.94 FEET

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

SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2143.89	2017.17	.00	2566.	213.	2.573	25.2	1585.10	2800.

3470 ENCROACHMENT STATIONS= .0 8850.0 TYPE= 1 TARGET= 8849.999

3.648	9.04	1593.14	.00	.00	1593.19	.05	.00	.00	1594.10
2760.0	.3	297.8	2462.0	1.5	115.7	1552.1	376.7	212.0	1594.20
.87	.18	2.57	1.59	.080	.050	.065	.000	1584.10	7664.11
.001526	46.	46.	46.	2	0	0	.00	794.74	8850.00

FLOW DISTRIBUTION FOR SECNO= 3.65 CWSEL= 1593.14

STA=	7664.	7677.	7961.	8201.	8325.	8473.	8525.	8732.	8850.
PER Q=	.0	10.8	1.1	6.9	12.0	6.9	39.2	23.0	
AREA=	1.5	115.7	53.7	172.3	257.3	121.0	597.6	350.1	
VEL=	.2	2.6	.6	1.1	1.3	1.6	1.8	1.8	
DEPTH=	.1	3.8	.2	1.4	1.7	2.3	2.9	3.0	

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

*SECNO 3.651

3265 DIVIDED FLOW

3280 CROSS SECTION 3.65 EXTENDED 8.04 FEET

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= .0 8850.0 TYPE= 1 TARGET= 8849.999

3.651	7.84	1594.24	1594.24	.00	1594.26	.02	.01	.00	1594.10
2760.0	36.4	221.7	2501.9	139.0	151.7	2473.4	377.6	212.4	1594.20
.88	.26	1.46	1.01	.080	.050	.065	.000	1586.40	7631.05
.000411	17.	17.	17.	0	24	0	.00	1200.97	8850.00

FLOW DISTRIBUTION FOR SECNO= 3.65 CWSEL= 1594.24

STA=	7631.	7926.	7961.	8201.	8325.	8473.	8525.	8732.	8850.
PER Q=	1.3	8.0	5.2	9.5	14.2	6.8	34.9	20.1	
AREA=	139.0	151.7	260.3	309.0	420.3	177.9	825.5	480.4	
VEL=	.3	1.5	.5	.9	.9	1.1	1.2	1.2	
DEPTH=	.5	4.4	1.1	2.5	2.8	3.4	4.0	4.1	

*SECNO 3.881

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .29

3470 ENCROACHMENT STATIONS= .0 9032.5 TYPE= 1 TARGET= 9032.499

3.881	3.92	1594.42	1593.93	.00	1594.59	.17	.28	.05	1592.00
4100.0	54.6	432.7	3612.8	33.0	78.7	1201.5	386.4	217.8	1592.00
.90	1.65	5.50	3.01	.080	.065	.065	.000	1590.50	7856.12
.010861	400.	312.	170.	2	15	0	.00	1040.64	9032.50

FLOW DISTRIBUTION FOR SECNO= 3.88 CWSEL= 1594.42

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

STA=	7856.	7939.	7961.	8160.	8312.	8406.	8683.	8742.	8817.	8876.	8903.	8953.	8990.
PER Q=	1.3	10.6	20.7	11.4	7.1	4.5	6.1	8.1	7.7	4.9	8.9	5.6	
AREA=	33.0	78.7	282.0	177.4	109.7	78.4	82.9	108.8	95.7	53.7	97.6	65.7	
VEL=	1.7	5.5	3.0	2.6	2.6	2.4	3.0	3.1	3.3	3.7	3.7	3.5	
DEPTH=	.4	3.6	1.4	1.2	1.2	.3	1.4	1.4	1.6	2.0	2.0	1.8	

STA=	8990.	9032.
PER Q=	3.2	
AREA=	49.5	
VEL=	2.6	
DEPTH=	1.2	

*SECNO 3.957

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 9246.0 TYPE= 1 TARGET= 9245.999

3.957	5.73	1597.13	1596.65	.00	1597.25	.12	2.65	.01	1595.90
4100.0	291.7	629.9	3178.4	181.8	133.0	1384.0	397.4	226.6	1595.10
.93	1.60	4.73	2.30	.080	.065	.065	.000	1591.40	7553.00
.006734	180.	195.	340.	4	16	0	.00	1376.89	9246.00

FLOW DISTRIBUTION FOR SECNO= 3.96 CWSEL= 1597.13

STA=	7553.	7956.	8020.	8028.	8060.	8136.	8215.	8261.	8300.	8329.	8365.	8412.	8439.
PER Q=	3.8	3.0	.3	15.4	3.0	6.1	5.3	4.7	3.3	3.3	3.5	3.1	
AREA=	99.5	73.9	8.4	133.0	68.3	107.9	80.2	69.6	50.7	54.3	63.6	46.1	
VEL=	1.5	1.7	1.6	4.7	1.8	2.3	2.7	2.8	2.7	2.5	2.3	2.8	
DEPTH=	.2	1.2	1.1	4.2	.9	1.4	1.7	1.8	1.7	1.5	1.3	1.8	

STA=	8439.	8493.	8747.	8801.	8855.	8949.	9079.	9122.	9150.	9200.	9246.
PER Q=	3.8	4.8	3.3	3.3	4.8	7.9	5.0	4.3	4.9	3.1	
AREA=	69.8	123.7	64.2	64.1	99.5	152.2	75.1	57.3	78.5	58.9	
VEL=	2.2	1.6	2.1	2.1	2.0	2.1	2.7	3.1	2.5	2.2	
DEPTH=	1.3	.5	1.2	1.2	1.1	1.2	1.7	2.1	1.6	1.3	

*SECNO 4.019

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

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 9274.4 TYPE= 1 TARGET= 9274.399

4.019	5.97	1600.17	1599.71	.00	1600.30	.13	3.05	.00	1598.50
4100.0	771.2	623.6	2705.2	359.0	125.7	1137.9	413.6	239.3	1599.30
.97	2.15	4.96	2.38	.080	.065	.065	.000	1594.20	7993.07
.007521	520.	486.	400.	5	9	0	.00	1234.72	9274.40

FLOW DISTRIBUTION FOR SECNO= 4.02 CWSEL= 1600.17

STA=	7993.	8084.	8132.	8183.	8226.	8245.	8274.	8346.	8417.	8510.	8563.	8597.	8611.
PER Q=	4.2	4.0	4.1	4.6	1.9	15.2	3.4	3.3	3.9	4.5	4.5	5.3	
AREA=	96.5	75.6	77.2	76.7	33.0	125.7	68.1	69.1	85.4	74.4	62.6	48.0	
VEL=	1.8	2.2	2.2	2.4	2.4	5.0	2.0	1.9	1.9	2.5	3.0	4.5	
DEPTH=	1.1	1.6	1.5	1.8	1.8	4.3	1.0	1.0	.9	1.4	1.8	3.5	

STA=	8611.	8674.	8732.	8782.	8846.	8940.	9007.	9186.	9225.	9274.
PER Q=	6.1	4.2	3.6	4.0	6.2	3.8	4.3	3.2	5.7	
AREA=	95.4	73.7	63.5	74.5	113.4	73.0	99.0	53.0	84.8	
VEL=	2.6	2.3	2.3	2.2	2.2	2.1	1.8	2.4	2.8	
DEPTH=	1.5	1.3	1.3	1.2	1.2	1.1	.6	1.4	1.7	

*SECNO 4.058

3470 ENCROACHMENT STATIONS= .0 9319.9 TYPE= 1 TARGET= 9319.899

4.058	4.85	1602.25	1601.52	.00	1602.34	.09	2.04	.00	1601.00
4100.0	955.4	610.2	2534.4	530.5	167.7	1154.1	426.6	248.6	1601.50
1.01	1.80	3.64	2.20	.080	.065	.065	.000	1597.40	8034.00
.005303	420.	385.	280.	3	18	0	.00	1285.90	9319.90

FLOW DISTRIBUTION FOR SECNO= 4.06 CWSEL= 1602.25

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

STA=	8034.	8195.	8256.	8325.	8378.	8411.	8465.	8515.	8612.	8657.	8690.	8740.	8773.
PER Q=	3.2	4.0	4.6	4.5	3.8	3.2	14.9	4.7	4.7	3.6	5.5	5.0	
AREA=	102.3	91.2	104.9	93.5	65.5	73.2	167.7	105.7	79.1	59.7	90.4	72.1	
VEL=	1.3	1.8	1.8	2.0	2.4	1.8	3.6	1.8	2.4	2.5	2.5	2.9	
DEPTH=	.6	1.5	1.5	1.8	2.0	1.4	3.3	1.1	1.8	1.8	1.8	2.2	

STA=	8773.	8813.	8883.	8957.	9016.	9065.	9139.	9243.	9320.
PER Q=	4.8	5.6	4.8	4.0	3.3	4.6	5.5	5.7	
AREA=	74.5	104.4	98.2	80.4	66.6	95.0	116.9	111.2	
VEL=	2.7	2.2	2.0	2.0	2.0	2.0	1.9	2.1	
DEPTH=	1.8	1.5	1.3	1.4	1.4	1.3	1.1	1.5	

*SECNO 4.146

3470 ENCROACHMENT STATIONS= .0 9411.9 TYPE= 1 TARGET= 9411.899

4.146	3.77	1604.67	1604.05	.00	1604.79	.12	2.44	.01	1603.60
4100.0	2042.4	508.9	1548.7	853.2	126.6	583.7	440.7	258.7	1603.40
1.05	2.39	4.02	2.65	.080	.065	.065	.000	1600.90	8238.01
.008823	380.	396.	340.	2	13	0	.00	1173.89	9411.90

FLOW DISTRIBUTION FOR SECNO= 4.15 CWSEL= 1604.67

STA=	8238.	8343.	8390.	8417.	8440.	8497.	8582.	8660.	8691.	8715.	8835.	8880.	8929.
PER Q=	4.7	7.4	7.2	4.1	3.6	5.0	4.8	3.1	4.3	3.1	2.5	12.4	
AREA=	103.4	101.7	81.4	53.6	72.2	103.3	97.9	51.7	57.0	80.8	50.4	126.6	
VEL=	1.9	3.0	3.6	3.1	2.1	2.0	2.0	2.5	3.1	1.6	2.0	4.0	
DEPTH=	1.0	2.1	3.0	2.4	1.3	1.2	1.2	1.7	2.4	.7	1.1	2.6	

STA=	8929.	9006.	9039.	9045.	9076.	9217.	9290.	9346.	9412.
PER Q=	4.7	5.2	3.4	3.4	7.5	6.1	3.5	3.9	
AREA=	84.5	59.9	24.8	45.6	139.2	97.2	61.9	70.7	
VEL=	2.3	3.5	5.7	3.1	2.2	2.6	2.3	2.2	
DEPTH=	1.1	1.8	4.3	1.4	1.0	1.3	1.1	1.1	

*SECNO 4.197

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 9543.8 TYPE= 1 TARGET= 9543.799

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
4.197	6.03	1607.13	1606.35	.00	1607.29	.15	2.49	.01	1605.70
4100.0	2439.7	888.4	771.9	993.1	180.3	352.0	452.0	266.6	1606.30
1.08	2.46	4.93	2.19	.080	.065	.065	.000	1601.10	8543.67
.006577	260.	428.	400.	2	11	0	.00	989.48	9543.80

FLOW DISTRIBUTION FOR SECNO= 4.20 CWSEL= 1607.13

STA=	8544.	8760.	8833.	8843.	8860.	8872.	8908.	8949.	8991.	9038.	9084.	9154.	9224.
PER Q=	4.0	5.8	3.8	7.2	4.3	10.0	4.5	3.0	7.0	4.7	3.8	1.6	
AREA=	134.2	111.6	40.1	74.6	46.7	121.5	78.1	62.2	108.9	85.6	86.9	42.8	
VEL=	1.2	2.1	3.8	3.9	3.8	3.4	2.3	2.0	2.6	2.3	1.8	1.5	
DEPTH=	.6	1.5	4.1	4.2	4.0	3.3	1.9	1.5	2.3	1.8	1.3	.6	

STA=	9224.	9264.	9373.	9429.	9478.	9544.
PER Q=	21.7	5.4	5.1	3.8	4.5	
AREA=	180.3	113.6	85.2	67.9	85.4	
VEL=	4.9	1.9	2.5	2.3	2.2	
DEPTH=	4.5	1.0	1.5	1.4	1.3	

*SECNO 4.262

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 9687.2 TYPE= 1 TARGET= 9687.199

4.262	7.28	1610.28	1609.52	.00	1610.51	.23	3.20	.02	1609.40
4100.0	1315.0	1367.0	1418.1	564.9	249.9	489.4	467.8	275.7	1609.10
1.12	2.33	5.47	2.90	.080	.065	.065	.000	1603.00	9000.12
.006568	500.	502.	450.	3	8	0	.00	649.10	9687.20

FLOW DISTRIBUTION FOR SECNO= 4.26 CWSEL= 1610.28

STA=	9000.	9138.	9186.	9212.	9243.	9276.	9310.	9378.	9425.	9508.	9569.	9623.	9648.
PER Q=	4.7	4.8	4.2	6.4	4.9	3.1	3.9	33.3	6.2	9.7	11.1	4.0	
AREA=	102.8	87.4	63.3	87.3	76.6	58.3	89.1	249.9	112.1	129.2	133.7	53.8	
VEL=	1.9	2.3	2.7	3.0	2.6	2.2	1.8	5.5	2.3	3.1	3.4	3.1	
DEPTH=	.7	1.8	2.4	2.8	2.3	1.7	1.3	5.4	1.3	2.1	2.5	2.1	

STA=	9648.	9687.
PER Q=	3.6	
AREA=	60.5	
VEL=	2.4	
DEPTH=	1.5	

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

*SECNO 4.333

3470 ENCROACHMENT STATIONS= .0 9762.7 TYPE= 1 TARGET= 9762.699

4.333	7.95	1612.35	1611.27	.00	1612.53	.18	2.02	.00	1610.10
4100.0	1258.7	1576.2	1265.1	632.7	337.6	509.5	480.5	281.8	1610.40
1.15	1.99	4.67	2.48	.080	.065	.065	.000	1604.40	9083.60
.004112	430.	391.	360.	2	10	0	.00	679.10	9762.70

FLOW DISTRIBUTION FOR SECNO= 4.33 CWSEL= 1612.35

STA=	9084.	9242.	9306.	9356.	9394.	9415.	9453.	9510.	9567.	9600.	9625.	9657.	9733.
PER Q=	3.9	6.1	6.4	6.3	3.4	4.6	38.4	7.1	7.1	5.6	3.6	3.4	
AREA=	125.6	130.6	120.6	107.5	59.7	88.7	337.6	120.3	96.2	75.9	63.0	85.9	
VEL=	1.3	1.9	2.2	2.4	2.4	2.1	4.7	2.4	3.0	3.0	2.4	1.6	
DEPTH=	.8	2.0	2.4	2.9	2.8	2.4	5.8	2.1	3.0	3.0	1.9	1.1	

STA=	9733.	9763.
PER Q=	4.0	
AREA=	68.3	
VEL=	2.4	
DEPTH=	2.3	

*SECNO 4.390

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 9721.0 TYPE= 1 TARGET= 9720.999

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1611.10 ELREA= 100000.00

4.390	7.17	1614.07	1613.53	.00	1614.48	.40	1.88	.07	1611.10
4100.0	1917.5	2182.5	.0	737.1	333.9	.0	490.2	286.3	100000.00
1.17	2.60	6.54	.00	.080	.065	.000	.000	1606.90	9120.70
.008313	330.	333.	330.	2	10	0	.00	526.40	9721.00

FLOW DISTRIBUTION FOR SECNO= 4.39 CWSEL= 1614.07

STA=	9121.	9342.	9411.	9445.	9519.	9553.	9585.	9610.	9643.	9658.	9668.	9748.
PER Q=	3.9	6.0	3.1	5.2	4.2	6.3	5.6	6.9	3.3	2.3	53.2	
AREA=	101.8	107.7	54.6	101.0	65.6	82.0	69.1	86.6	41.2	27.4	333.9	
VEL=	1.6	2.3	2.3	2.1	2.6	3.1	3.3	3.3	3.3	3.4	6.5	
DEPTH=	.5	1.6	1.6	1.4	1.9	2.5	2.8	2.7	2.7	2.8	6.3	

THIS RUN EXECUTED 25MAY92 13:50:05

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

Deadman Wash 100-year Q

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
	3.209	9410.00	1569.99	10.89	1559.10	1570.31	1569.05	7.25	58.87	.00	9518.46	1114.38	10632.84
	3.284	8760.00	1572.03	9.93	1562.10	1572.34	1570.99	6.40	51.56	396.00	9333.30	1006.28	10564.53
*	3.347	6000.00	1573.71	8.11	1565.60	1574.22	1573.22	6.98	68.10	333.00	9756.90	765.72	10600.55
	3.385	6000.00	1575.15	6.95	1568.20	1575.57	1574.53	6.23	62.37	201.00	9673.40	729.38	10446.56
	3.481	6000.00	1578.63	6.73	1571.90	1579.07	1578.24	6.93	79.47	507.00	9522.60	842.00	10364.60
	3.546	6000.00	1581.54	4.84	1576.70	1581.83	1581.03	6.08	77.14	343.00	9285.20	1043.99	10329.19
*	3.639	6000.00	1585.29	1.99	1583.30	1585.83	1585.29	6.44	31.50	491.00	9513.75	984.82	10498.57
*	3.648	6000.00	1586.12	2.02	1584.10	1586.71	1586.12	6.50	30.79	46.00	9465.80	846.23	10312.03
*	3.651	6000.00	1586.41	2.31	1584.10	1586.83	1586.16	5.72	168.38	17.00	9447.53	894.39	10341.92
*	3.710	6000.00	1588.85	2.75	1586.10	1589.01	1588.00	3.57	52.95	312.00	9091.01	1148.50	10246.52
*	3.804	5000.00	1591.77	1.77	1590.00	1591.93	1591.51	2.92	91.69	496.00	8826.20	1187.86	10175.63
	3.881	5000.00	1595.01	1.51	1593.50	1595.16	1594.34	3.05	76.83	407.00	9032.50	1057.64	10090.14
	3.957	5000.00	1598.09	2.59	1595.50	1598.26	1597.33	3.97	77.96	401.00	9246.00	861.91	10107.91
	4.019	5000.00	1600.60	2.10	1598.50	1600.76	1599.76	3.46	67.53	327.00	9274.40	856.14	10130.54
	4.058	5000.00	1602.06	2.26	1599.80	1602.26	1601.34	3.86	87.65	206.00	9319.90	803.67	10123.57
	4.146	5000.00	1605.43	2.83	1602.60	1605.61	1604.45	3.94	64.71	465.00	9411.90	710.40	10122.30
	4.197	5000.00	1607.27	2.97	1604.30	1607.56	1606.54	5.08	75.24	269.00	9543.80	621.83	10165.63

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
	4.262	5000.00	1610.06	4.36	1605.70	1610.38	1609.29	5.57	80.84	343.00	9687.20	551.85	10239.05
*	4.333	5000.00	1612.27	5.17	1607.10	1612.46	1611.41	4.46	40.68	375.00	9762.70	542.29	10305.00
*	4.390	5000.00	1614.13	7.23	1606.90	1614.41	1613.35	5.63	118.53	301.00	9721.00	609.18	10343.56
*	4.492	9100.00	1617.66	7.36	1610.30	1617.85	1616.31	4.96	52.09	539.00	9014.49	1214.04	10228.53
	4.567	9100.00	1620.10	8.20	1611.90	1620.49	1619.17	6.78	91.59	396.00	8939.87	1110.15	10100.79
*	4.662	9100.00	1622.96	8.96	1614.00	1623.17	1621.34	5.40	43.49	502.00	8885.95	1530.63	10416.58
	-3.347	2760.00	1573.71	8.11	1565.60	1573.98	.00	5.77	37.03	510.00	9278.17	478.73	9756.90
	3.385	2760.00	1575.57	5.87	1569.70	1575.86	1574.78	5.83	66.61	396.00	9186.66	458.25	9673.40
	3.481	2760.00	1578.45	6.55	1571.90	1578.83	1577.85	6.66	68.18	506.00	8944.78	541.73	9522.60
	3.546	2760.00	1581.21	5.11	1576.10	1581.35	1580.75	4.87	54.16	502.00	8295.10	990.10	9285.20
	.434	2760.00	1583.18	4.78	1578.40	1583.28	1582.44	3.12	51.41	496.00	9794.27	861.80	10662.70
*	.529	2760.00	1586.61	5.51	1581.10	1586.87	1586.61	6.62	100.17	502.00	9614.10	913.72	10527.81
	.624	2760.00	1590.12	5.92	1584.20	1590.28	1589.67	5.32	59.68	502.00	9541.40	812.20	10353.60
*	3.639	2760.00	1593.17	7.17	1586.00	1593.19	1593.17	.45	.25	428.00	7861.59	999.82	8870.70
*	3.648	2760.00	1593.14	9.04	1584.10	1593.19	.00	2.57	15.26	46.00	7664.11	794.74	8850.00
*	3.651	2760.00	1594.24	7.84	1586.40	1594.26	1594.24	1.46	4.11	17.00	7631.05	1200.97	8850.00
*	3.881	4100.00	1594.42	3.92	1590.50	1594.59	1593.93	5.50	108.61	312.00	7856.12	1040.64	9032.50
	3.957	4100.00	1597.13	5.73	1591.40	1597.25	1596.65	4.73	67.34	195.00	7553.00	1376.89	9246.00
	4.019	4100.00	1600.17	5.97	1594.20	1600.30	1599.71	4.96	75.21	486.00	7993.07	1234.72	9274.40
	4.058	4100.00	1602.25	4.85	1597.40	1602.34	1601.52	3.64	53.03	385.00	8034.00	1285.90	9319.90
	4.146	4100.00	1604.67	3.77	1600.90	1604.79	1604.05	4.02	88.23	396.00	8238.01	1173.89	9411.90
	4.197	4100.00	1607.13	6.03	1601.10	1607.29	1606.35	4.93	65.77	428.00	8543.67	989.48	9543.80
	4.262	4100.00	1610.28	7.28	1603.00	1610.51	1609.52	5.47	65.68	502.00	9000.12	649.10	9687.20
	4.333	4100.00	1612.35	7.95	1604.40	1612.53	1611.27	4.67	41.12	391.00	9083.60	679.10	9762.70
	4.390	4100.00	1614.07	7.17	1606.90	1614.48	1613.53	6.54	83.13	333.00	9120.70	526.40	9721.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=     3.347  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     3.639  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.639  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     3.648  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.648  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     3.651  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     3.710  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     3.804  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     4.333  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     4.390  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     4.492  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     4.662  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      .529  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      .529  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     3.639  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.639  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     3.648  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     3.651  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     3.651  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     3.881  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

Normal program termination

HEC2 S/N: 1126460209 HMVersion: 6.40 Data File: sun2.hc2

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*******************************************
*  HEC-2 WATER SURFACE PROFILES           *
*                                         *
*  Version   4.6.2;  May 1991             *
*                                         *
*  RUN DATE    25MAY92    TIME   15:40:41 *
*******************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
:::                                       :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
:::                                       :::
:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
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============================
H A E S T A D   M E T H O D S
============================
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 25MAY92 15:40:42

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

 Version   4.6.2;  May 1991
************************************


T1      Deadman Wash Floodplain Delineation Study
T2      Hydraulic Analysis of Deadman Wash, SECNO 4.492 to SECNO 6.021
T3      Deadman Wash 100-year Q   Subcritical Flow,    May 1992

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                                                                  1617.66

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1                  -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38        43         1         8        42         3         2        26         5        39
    53         4        54

QT       1      9100
NC    .080      .080      .065        .1        .3
         Split flow location.
         Q changed to 9,100 cfs at C10R (split flow starts here).
X1   4.492        52    9967.1   10077.3         0         0         0
GR  1617.8    8967.0    1617.5    9067.2    1617.1    9187.2    1617.1    9240.0    1617.0    9284.4
GR  1616.4    9310.4    1616.0    9332.5    1615.3    9349.3    1613.7    9359.5    1612.9    9367.8
GR  1613.1    9376.1    1613.3    9381.5    1614.7    9389.0    1615.1    9397.8    1615.3    9416.9
GR  1615.2    9434.0    1615.0    9461.0    1614.9    9490.4    1614.5    9519.6    1614.7    9539.1
GR  1615.7    9561.3    1614.8    9580.5    1614.7    9601.8    1615.0    9636.8    1615.0    9669.6
GR  1615.2    9699.9    1614.9    9737.6    1614.5    9779.3    1614.5    9817.1    1614.0    9861.8
GR  1613.3    9888.1    1613.6    9914.4    1614.6    9931.0    1614.5    9949.2    1615.3    9967.1
GR  1610.9    9982.1    1611.6   10000.0    1611.6   10025.5    1610.3   10029.5    1612.5   10040.3
GR  1613.8   10056.6    1614.3   10077.3    1614.7   10109.7    1615.9   10162.8    1617.3   10211.3
GR  1618.6   10273.9    1620.1   10332.2    1620.8   10371.8    1622.0   10412.7    1622.9   10447.7
GR  1623.5   10495.5    1623.8   10506.8

         The confluence with Stream No. 9.
X1   4.567        43    9953.3   10041.6       370       396       396
GR  1620.4    8923.3    1619.2    8988.6    1619.3    9028.8    1619.7    9082.1    1619.8    9138.2
GR  1619.8    9218.5    1619.9    9301.5    1620.1    9357.8    1620.3    9393.5    1619.7    9434.1
GR  1618.3    9455.5    1617.4    9469.4    1615.9    9481.5    1616.8    9490.2    1616.5    9505.3
GR  1616.8    9540.6    1617.0    9555.6    1617.4    9580.9    1617.7    9609.8    1617.4    9623.6
GR  1617.4    9649.3    1618.0    9686.8    1618.0    9709.7    1617.2    9730.8    1617.8    9755.2
GR  1617.8    9790.2    1617.5    9814.9    1617.2    9853.3    1616.3    9914.4    1616.3    9944.0
GR  1615.9    9966.2    1613.8    9985.8    1612.3   10000.0    1611.9   10012.9    1615.4   10026.8
GR  1617.7   10041.6    1618.5   10056.3    1618.8   10072.4    1619.2   10085.7    1620.5   10107.6
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GR   1621.6    10160.9    1623.4    10246.7    1623.3    10248.2

NH       5       .080    9966.0       .065   10034.9       .080   10258.4       .065   10315.5       .080
NH   10510.
          NH cards were used for SECNO 4.662 to SECNO 5.552.
X1    4.662        44    9966.0    10034.9       390       430       502
GR   1624.0     8520.2   1623.8     8720.2   1623.0     8880.2   1622.0     9060.1   1621.8     9496.1
GR   1621.5     9561.3   1621.8     9608.5   1621.8     9620.2   1622.0     9672.2   1622.0     9714.0
GR   1621.9     9753.1   1621.9     9781.0   1620.2     9814.4   1619.1     9841.4   1618.7     9857.4
GR   1620.0     9883.2   1621.2     9912.3   1621.1     9945.8   1619.6     9966.0   1614.0     9991.3
GR   1614.3    10000.0   1614.1    10008.0   1619.1    10034.9   1620.2    10048.3   1619.5    10069.2
GR   1619.1    10091.2   1620.2    10116.4   1620.4    10138.7   1620.5    10146.8   1619.5    10182.9
GR   1618.8    10214.3   1618.8    10230.5   1619.6    10244.7   1618.7    10258.4   1615.8    10270.5
GR   1616.2    10277.8   1617.9    10291.9   1618.5    10315.5   1619.3    10341.6   1620.6    10369.5
GR   1622.6    10403.7   1623.4    10431.7   1623.9    10477.6   1625.6    10510.2

NH       5       .080    9984.2       .065   10022.8       .085   10553.5       .065   10630.3       .085
NH   10752.
X1    4.756        54    9984.2    10022.8       520       470       496
GR   1626.0     8926.4   1625.1     9372.7   1623.9     9376.7   1624.3     9461.0   1624.1     9523.7
GR   1624.0     9555.6   1624.2     9603.5   1625.2     9653.0   1625.8     9699.1   1625.9     9744.4
GR   1625.4     9793.3   1624.4     9826.1   1623.7     9847.0   1623.8     9882.6   1624.0     9914.4
GR   1623.5     9940.4   1623.5     9963.0   1623.2     9977.2   1621.4     9984.2   1616.9     9991.7
GR   1616.7    10000.0   1616.3    10012.9   1619.9    10022.8   1618.9    10035.9   1619.0    10049.5
GR   1619.9    10061.8   1621.7    10072.3   1621.7    10087.0   1621.9    10116.7   1621.8    10130.0
GR   1622.4    10136.6   1622.5    10151.9   1622.9    10173.8   1624.6    10199.9   1624.4    10253.4
GR   1624.5    10291.1   1624.6    10306.9   1624.2    10357.5   1623.1    10426.5   1622.2    10492.2
GR   1622.1    10527.2   1621.0    10553.5   1619.9    10575.3   1620.0    10586.4   1619.4    10592.6
GR   1618.4    10598.6   1618.4    10600.6   1619.4    10603.9   1620.1    10615.6   1624.5    10630.3
GR   1626.3    10641.5   1627.4    10671.0   1628.5    10710.7   1629.7    10751.5

NH       5       .080    9975.2       .065   10033.8       .085   10690.2       .065   10711.3       .085
NH   10891.
X1    4.850        57    9975.2    10033.8       520       480       496
GR   1629.2     9322.9   1629.5     9439.8   1628.8     9595.7   1628.4     9677.5   1627.7     9729.3
GR   1628.0     9763.6   1627.9     9814.9   1627.6     9840.9   1627.0     9855.3   1627.2     9865.0
GR   1627.7     9877.6   1628.0     9898.3   1627.7     9921.8   1626.8     9941.8   1625.1     9962.0
GR   1623.3     9975.2   1622.7     9982.5   1620.5     9985.9   1619.7     9996.3   1619.1    10000.0
GR   1618.6    10011.9   1623.7    10033.8   1624.5    10042.8   1625.0    10059.2   1625.3    10087.8
GR   1626.2    10134.0   1626.8    10162.4   1627.7    10186.2   1628.5    10226.9   1629.3    10267.1
GR   1629.3    10291.8   1628.2    10309.1   1628.1    10332.0   1628.7    10385.3   1630.2    10435.7
GR   1630.4    10461.1   1629.8    10495.2   1629.4    10537.6   1628.7    10576.3   1628.7    10605.5
GR   1627.5    10628.2   1624.4    10649.6   1624.7    10662.6   1625.0    10676.1   1625.8    10690.2
GR   1621.9    10698.2   1621.7    10702.6   1625.1    10711.3   1624.5    10727.7   1624.3    10750.6
GR   1624.7    10764.0   1625.0    10772.0   1627.8    10781.8   1630.0    10798.2   1631.8    10823.1
GR   1632.7    10864.6   1633.3    10891.1

NH       5       .080    9984.2       .065   10022.8       .085   10553.5       .065   10630.3       .085
NH   10752.
X1    4.943        58    9972.2    10034.4       500       430       491
GR   1634.3     9222.3   1634.6     9283.4   1635.0     9349.0   1634.9     9411.0   1634.8     9471.7
GR   1634.8     9544.2   1634.0     9620.3   1633.9     9678.5   1633.5     9722.1   1632.9     9776.0
GR   1632.4     9814.3   1632.6     9855.5   1631.4     9878.3   1629.7     9909.7   1627.2     9950.8
GR   1626.5     9962.2   1626.8     9972.2   1623.8     9986.9   1623.1    10000.0   1623.3    10010.9
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GR   1625.1   10019.6   1626.9   10034.4   1627.7   10045.7   1627.5   10062.0   1628.9   10081.3
GR   1628.8   10108.9   1628.5   10125.1   1628.9   10154.0   1629.4   10185.2   1630.0   10210.6
GR   1630.1   10259.2   1630.3   10302.4   1630.5   10351.9   1630.9   10402.5   1631.3   10429.0
GR   1631.4   10468.7   1631.0   10511.3   1631.0   10547.1   1630.2   10585.2   1629.8   10623.0
GR   1628.8   10660.8   1628.0   10682.3   1627.0   10697.7   1626.9   10701.3   1627.4   10708.5
GR   1624.3   10721.2   1624.2   10726.4   1624.4   10730.5   1626.7   10741.8   1627.8   10756.4
GR   1627.9   10773.5   1628.2   10791.6   1629.7   10817.3   1631.1   10845.5   1633.4   10878.9
GR   1635.3   10912.2   1637.1   10947.5   1638.1   10973.5

NH       5     .080    9985.0     .065   10024.4     .085   11002.9     .065   11032.4     .085
NH   11327.
X1   5.034       72    9985.0   10024.4     420      540     480
GR   1636.3    9165.7   1636.5    9319.4   1636.2    9430.7   1636.6    9517.8   1636.4    9624.1
GR   1636.7    9695.6   1636.5    9768.2   1635.5    9839.3   1634.9    9878.5   1635.0    9915.4
GR   1635.0    9916.8   1635.0    9948.5   1633.8    9974.1   1633.1    9985.0   1631.0    9989.3
GR   1625.2    9996.8   1624.6    9999.1   1625.2   10000.0   1626.2   10006.6   1632.0   10024.4
GR   1632.5   10070.9   1632.5   10090.4   1631.9   10102.7   1630.5   10110.6   1631.6   10122.3
GR   1632.1   10161.2   1632.2   10179.1   1633.6   10205.9   1634.7   10231.4   1635.6   10257.6
GR   1635.1   10291.6   1635.0   10347.8   1635.7   10372.5   1635.3   10392.9   1634.8   10413.4
GR   1635.1   10465.4   1635.3   10510.6   1635.1   10558.2   1634.7   10599.8   1633.7   10628.6
GR   1633.5   10654.2   1634.8   10666.4   1637.0   10689.6   1637.2   10709.0   1637.6   10735.3
GR   1637.7   10737.0   1636.8   10773.4   1635.5   10802.1   1634.6   10815.8   1634.6   10827.9
GR   1634.3   10861.7   1633.9   10893.7   1633.5   10927.5   1633.8   10953.7   1633.4   10977.2
GR   1632.9   10991.8   1631.6   11002.9   1629.2   11013.2   1629.1   11018.9   1630.3   11032.4
GR   1633.2   11061.8   1633.8   11070.1   1635.1   11098.0   1635.9   11119.2   1636.1   11143.6
GR   1635.6   11170.8   1635.9   11204.4   1636.1   11249.8   1636.6   11263.6   1638.9   11283.4
GR   1640.1   11315.7   1641.0   11326.6

NH       5     .080    9972.9     .065   10058.7     .085   11063.0     .065   11158.0     .085
NH   11450.
X1   5.113       53    9972.9   10058.7     417      320     417
GR   1639.3    9237.1   1639.5    9283.4   1639.8    9360.1   1639.9    9424.2   1640.2    9479.8
GR   1640.5    9534.3   1640.5    9593.1   1640.3    9646.1   1639.3    9717.9   1639.2    9781.3
GR   1638.6    9821.9   1638.2    9849.6   1638.0    9872.4   1637.4    9887.0   1637.2    9894.9
GR   1637.0    9913.6   1635.6    9922.2   1635.4    9938.8   1635.4    9959.6   1635.2    9972.9
GR   1632.0    9983.1   1630.8    9994.6   1630.3   10000.0   1630.3   10019.7   1630.2   10036.2
GR   1635.4   10058.7   1636.2   10111.4   1636.7   10161.5   1637.5   10251.9   1637.8   10327.6
GR   1638.0   10400.0   1638.5   10404.6   1638.7   10426.2   1638.0   10460.2   1637.5   10500.0
GR   1636.2   10554.2   1636.0   10600.5   1636.0   10665.8   1638.0   10705.1   1638.5   10765.0
GR   1638.0   10880.0   1636.0   10896.0   1634.0   11063.0   1632.0   11110.0   1632.0   11120.0
GR   1634.0   11158.0   1636.0   11180.0   1638.2   11342.0   1639.8   11361.0   1640.0   11378.0
GR   1642.0   11408.0   1643.5   11414.9   1644.7   11450.0

NH       5     .080    9983.6     .065   10060.4     .085   11215.2     .070   11265.5     .085
NH   11437.
X1   5.189       78    9983.6   10060.4     410      340     401
GR   1643.0    9201.6   1643.4    9305.2   1644.2    9376.2   1644.2    9430.3   1643.9    9497.2
GR   1643.2    9537.7   1643.4    9584.5   1643.2    9633.2   1643.6    9693.3   1643.5    9733.0
GR   1642.6    9776.4   1641.9    9818.3   1641.2    9838.8   1640.3    9851.7   1639.8    9865.0
GR   1638.1    9879.5   1638.2    9888.8   1639.9    9905.7   1640.9    9916.4   1641.0    9932.3
GR   1640.8    9952.1   1641.0    9952.6   1640.9    9972.2   1639.2    9983.6   1637.5    9990.8
GR   1631.7    9996.9   1632.1   10000.0   1632.8   10027.1   1635.4   10035.8   1636.4   10049.1
GR   1638.8   10060.4   1639.0   10087.6   1639.1   10131.2   1639.8   10197.8   1639.8   10240.0
GR   1639.8   10294.5   1640.5   10351.4   1641.5   10399.7   1641.8   10436.3   1641.0   10483.8
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GR	1640.1	10542.1	1639.6	10564.7	1639.9	10588.8	1637.1	10598.5	1637.6	10608.1
GR	1639.2	10621.6	1639.4	10645.7	1640.9	10661.4	1641.9	10687.3	1642.1	10739.4
GR	1642.6	10793.8	1642.3	10830.3	1641.9	10880.2	1641.5	10923.1	1640.9	10942.2
GR	1639.6	10963.0	1638.7	10980.2	1638.4	10992.4	1639.0	11012.8	1639.1	11038.1
GR	1639.0	11065.7	1639.1	11094.6	1638.0	11128.1	1637.0	11154.5	1637.3	11178.6
GR	1636.9	11196.5	1636.8	11206.2	1637.2	11215.2	1635.0	11223.7	1635.0	11228.6
GR	1636.4	11238.9	1637.3	11265.5	1638.7	11285.4	1640.0	11302.0	1640.4	11325.8
GR	1641.6	11359.5	1643.4	11393.3	1644.8	11437.1				
NH	5	.080	9959.8	.065	10031.3	.085	10804.2	.070	10874.6	.085
NH	11117.									
X1	5.284	78	9958.9	10031.3	310	250	502			
GR	1647.8	8895.1	1647.6	9004.6	1647.1	9077.3	1647.3	9128.8	1646.7	9172.8
GR	1645.5	9274.5	1644.5	9345.3	1644.3	9357.7	1644.6	9390.2	1644.6	9421.9
GR	1644.3	9441.8	1643.1	9458.7	1642.6	9478.9	1641.6	9525.2	1640.5	9534.2
GR	1641.1	9539.2	1641.1	9548.1	1641.8	9560.9	1642.1	9570.0	1643.6	9588.8
GR	1644.0	9618.5	1643.6	9658.5	1642.6	9705.2	1642.0	9763.4	1641.4	9796.5
GR	1641.0	9814.0	1639.7	9825.2	1637.6	9830.1	1640.6	9846.7	1641.1	9870.7
GR	1641.3	9906.6	1641.5	9937.1	1641.3	9958.9	1639.9	9972.4	1637.1	9991.6
GR	1636.8	10000.0	1636.1	10009.6	1636.2	10015.4	1639.5	10021.8	1641.7	10031.3
GR	1642.1	10045.2	1642.4	10058.2	1641.6	10088.3	1640.6	10100.7	1638.6	10109.4
GR	1638.9	10115.7	1639.9	10123.6	1641.4	10132.7	1641.9	10148.1	1642.3	10175.8
GR	1641.5	10198.3	1640.6	10229.2	1640.6	10262.6	1642.1	10308.7	1642.8	10368.4
GR	1643.5	10411.7	1643.1	10456.2	1643.4	10508.4	1642.5	10562.8	1641.8	10600.7
GR	1641.0	10624.7	1640.6	10667.1	1640.5	10727.1	1640.0	10776.1	1639.8	10804.2
GR	1638.9	10820.1	1638.2	10834.5	1638.3	10836.5	1638.9	10855.8	1639.1	10874.6
GR	1639.2	10892.5	1639.1	10915.0	1640.3	10948.8	1641.7	10978.1	1643.3	11025.9
GR	1645.5	11060.5	1648.0	11106.6	1648.2	11116.9				
NH	5	.080	9970.7	.065	10018.8	.085	10777.0	.070	10895.6	.085
NH	11048.									
X1	5.379	68	9970.7	10018.8	400	590	502			
GR	1649.7	9103.0	1649.2	9133.8	1649.4	9167.6	1649.4	9187.1	1648.1	9191.7
GR	1648.0	9234.2	1647.7	9275.2	1648.0	9312.4	1647.1	9337.3	1646.2	9352.1
GR	1647.0	9367.8	1647.5	9388.2	1646.6	9420.7	1645.8	9449.5	1645.8	9471.0
GR	1645.8	9505.1	1645.7	9522.4	1645.2	9562.7	1645.1	9583.9	1645.7	9606.9
GR	1645.8	9641.0	1645.7	9664.5	1644.1	9686.6	1644.4	9704.5	1643.5	9713.7
GR	1644.4	9720.7	1644.0	9751.0	1644.9	9773.6	1644.2	9820.7	1643.6	9852.0
GR	1644.4	9900.1	1645.0	9936.9	1645.4	9953.7	1645.3	9970.8	1636.9	9987.8
GR	1637.2	9996.3	1637.4	10000.0	1637.7	10004.6	1643.7	10018.8	1644.1	10032.6
GR	1644.3	10066.8	1644.0	10080.4	1644.6	10099.7	1645.0	10135.9	1644.9	10173.9
GR	1645.0	10217.8	1645.5	10258.4	1646.8	10315.0	1647.9	10350.6	1647.1	10373.3
GR	1646.8	10423.8	1646.4	10479.1	1646.4	10527.5	1647.3	10572.7	1646.7	10602.6
GR	1646.7	10652.7	1645.4	10717.8	1644.4	10777.0	1643.8	10813.9	1644.1	10834.7
GR	1643.6	10858.2	1645.3	10895.6	1645.9	10924.1	1647.0	10938.1	1647.7	10972.9
GR	1648.6	11007.3	1649.5	11036.2	1650.6	11047.5				
NH	5	.080	9975.0	.065	10027.2	.085	10735.3	.070	10877.4	.085
NH	10964.									
X1	5.473	53	9975.0	10027.2	530	480	496			
GR	1654.2	9394.6	1653.4	9413.0	1653.3	9436.9	1651.8	9465.6	1651.1	9495.7
GR	1649.8	9528.6	1649.6	9566.6	1649.5	9607.9	1649.6	9645.1	1649.3	9687.7
GR	1649.3	9717.3	1649.6	9754.4	1649.4	9778.6	1648.9	9811.4	1649.1	9831.4
GR	1650.0	9857.8	1649.7	9887.2	1649.6	9919.3	1649.1	9951.2	1648.8	9962.9

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GR   1645.7    9975.0    1642.5    9984.3    1641.5    9991.1    1641.0   10000.0    1641.0   10008.5
GR   1642.9   10018.9    1646.7   10027.2    1647.4   10051.4    1647.9   10099.2    1648.4   10154.8
GR   1648.8   10205.9    1648.6   10278.8    1648.7   10327.0    1649.2   10374.1    1649.9   10432.6
GR   1650.6   10465.3    1650.4   10493.9    1649.9   10513.8    1649.8   10548.2    1649.5   10599.7
GR   1649.3   10634.3    1648.6   10675.7    1648.4   10708.9    1648.0   10735.3    1647.2   10746.7
GR   1647.1   10765.7    1647.2   10784.8    1646.7   10804.3    1647.1   10837.9    1647.7   10857.1
GR   1649.1   10877.4    1652.6   10924.9    1654.1   10963.5

NH        5      .080    9977.0      .065   10034.3      .085   10571.4      .070   10783.0      .085
NH    10992.
X1    5.552         56    9977.0   10034.3       540       250       417
GR   1659.8    9443.3    1658.4    9453.6    1656.8    9492.5    1655.0    9522.9    1655.7    9549.1
GR   1655.7    9590.7    1655.7    9631.2    1654.7    9660.0    1652.9    9689.8    1652.4    9731.8
GR   1652.3    9760.6    1653.0    9778.3    1653.3    9822.5    1652.9    9847.7    1652.7    9869.4
GR   1651.2    9882.2    1651.2    9896.4    1652.2    9908.9    1650.8    9925.7    1649.6    9965.7
GR   1647.7    9977.0    1647.1    9994.9    1646.1   10000.0    1645.6   10007.4    1645.5   10015.1
GR   1646.8   10022.4    1648.8   10034.2    1650.4   10063.7    1650.5   10070.0    1649.7   10103.8
GR   1651.5   10115.8    1651.0   10140.6    1651.3   10182.9    1651.8   10237.9    1651.0   10290.0
GR   1651.1   10353.1    1651.7   10389.0    1651.3   10420.5    1651.2   10512.9    1650.6   10571.4
GR   1649.7   10606.1    1649.3   10626.6    1649.2   10659.2    1649.2   10679.1    1649.8   10695.8
GR   1649.6   10720.6    1649.8   10750.5    1649.8   10761.9    1650.9   10783.0    1650.7   10809.2
GR   1650.8   10839.7    1652.7   10865.6    1655.1   10901.7    1656.9   10932.6    1659.8   10971.8
GR   1660.1   10991.7

NC     .080      .080      .065
          NC card was used, channel = .065, overbanks = .080.
X1    5.646         54    9983.2   10023.7       270       480       496
GR   1659.4    9496.4    1658.1    9532.1    1656.6    9578.0    1656.1    9615.0    1654.1    9748.8
GR   1653.1    9797.6    1652.8    9879.1    1652.8    9884.0    1652.9    9914.7    1651.7    9928.0
GR   1650.2    9940.6    1650.8    9955.4    1651.5    9968.8    1651.1    9983.2    1647.3    9994.8
GR   1647.3   10000.0    1648.0   10011.9    1651.3   10023.7    1651.1   10036.0    1648.6   10047.3
GR   1649.7   10062.6    1652.2   10086.6    1652.4   10109.2    1651.5   10122.8    1649.9   10141.6
GR   1650.2   10146.8    1651.6   10161.5    1651.2   10172.3    1649.8   10196.3    1650.3   10206.5
GR   1651.9   10224.9    1652.0   10243.7    1651.7   10274.3    1651.5   10302.4    1652.3   10333.0
GR   1652.6   10350.5    1653.8   10369.3    1655.4   10388.6    1655.7   10415.9    1656.0   10445.2
GR   1656.2   10476.4    1654.9   10495.2    1653.0   10519.0    1652.3   10547.6    1652.0   10565.0
GR   1652.7   10606.1    1653.1   10644.3    1653.6   10694.6    1654.2   10750.0    1653.8   10780.0
GR   1654.0   10794.8    1654.6   10818.4    1657.1   10849.3    1659.9   10893.1

X1    5.741         41    9961.4   10023.6       520       480       502
GR   1673.8    9845.8    1673.6    9858.9    1672.5    9874.3    1669.7    9890.5    1664.4    9918.6
GR   1659.0    9939.1    1657.8    9948.4    1655.3    9961.4    1650.5    9984.7    1649.4    9997.8
GR   1649.3   10000.0    1650.0   10017.1    1654.0   10023.6    1654.2   10042.1    1653.7   10061.3
GR   1654.7   10084.8    1654.6   10101.9    1654.7   10124.7    1654.7   10137.9    1654.2   10155.0
GR   1654.5   10179.0    1655.4   10200.4    1656.3   10226.4    1656.4   10245.5    1655.7   10271.2
GR   1655.8   10303.6    1655.9   10351.5    1656.3   10379.7    1656.8   10417.1    1657.1   10444.3
GR   1657.0   10487.0    1656.8   10530.5    1656.4   10574.1    1655.9   10618.6    1656.0   10653.7
GR   1656.7   10701.8    1657.7   10745.6    1657.2   10774.7    1657.9   10829.5    1658.7   10885.3
GR   1659.1   10898.8
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X1    5.835       37    9973.6   10029.5       496       450       496
GR   1668.5   9828.6    1665.3    9858.1    1662.8    9870.7    1657.9    9884.5    1657.5    9893.8
GR   1656.5   9913.2    1656.5    9930.6    1657.1    9939.8    1658.6    9950.8    1659.0    9963.3
GR   1658.7   9973.6    1654.9    9985.4    1651.7    9990.0    1652.5   10000.0    1652.5   10013.5
GR   1657.7  10029.5    1658.0   10040.5    1657.5   10052.9    1657.4   10086.0    1658.1   10117.0
GR   1658.4  10165.4    1659.0   10212.3    1659.9   10258.2    1659.9   10298.4    1660.3   10350.2
GR   1659.7  10421.3    1659.8   10502.7    1659.6   10562.7    1660.2   10626.8    1660.0   10665.9
GR   1661.4  10698.7    1661.8   10736.3    1661.8   10783.8    1661.9   10821.2    1662.1   10839.1
GR   1663.6  10866.0    1665.2   10894.5

QT       1     9250
NH       5     .070    9814.7      .055    9837.2      .070    9955.7      .055   10039.8      .070
NH   10899
         Q changed to 9,250 cfs at C10P.
         NH cards were used.
X1    5.928       48    9955.7   10039.8       500       440       491
GR   1667.7   9748.1    1661.4    9768.2    1660.1    9778.8    1657.1    9783.3    1656.8    9791.4
GR   1659.5   9800.9    1659.9    9807.3    1660.5    9821.5    1660.3    9834.5    1659.6    9840.8
GR   1659.9   9846.3    1661.4    9857.9    1661.5    9877.3    1662.0    9884.2    1662.2    9907.0
GR   1661.0   9927.2    1659.7    9945.5    1659.6    9955.7    1660.6    9964.7    1655.4    9985.8
GR   1652.8  10000.0    1652.6   10006.8    1653.9   10017.6    1658.8   10026.1    1659.8   10039.8
GR   1661.5  10054.3    1661.8   10070.8    1661.8   10092.9    1662.6   10128.5    1662.8   10159.2
GR   1662.8  10209.9    1662.8   10262.9    1662.7   10309.4    1662.7   10359.7    1662.9   10421.3
GR   1663.3  10455.8    1662.9   10496.3    1662.4   10536.9    1663.2   10574.8    1664.0   10628.6
GR   1664.2  10678.1    1664.1   10703.7    1665.1   10731.5    1665.2   10764.5    1665.1   10817.5
GR   1665.4  10853.5    1665.7   10876.5    1667.1   10900.1

NC    .070      .070      .055
         NC card was used, channel = .055, overbanks = .070.
X1    6.021       61    9971.7   10021.5       480       580       491
GR   1667.6   9158.1    1667.0    9196.2    1667.0    9209.4    1667.1    9228.8    1664.4    9234.4
GR   1666.5   9241.3    1666.9    9262.0    1667.3    9279.6    1665.8    9282.9    1666.0    9284.9
GR   1666.9   9288.8    1666.9    9311.3    1666.5    9344.9    1666.5    9388.2    1666.8    9425.0
GR   1667.9   9463.4    1667.5    9490.2    1667.3    9504.2    1668.0    9539.5    1668.4    9546.4
GR   1668.0   9574.3    1667.3    9629.7    1666.1    9670.2    1664.7    9708.8    1664.2    9722.8
GR   1665.2   9746.2    1664.9    9760.5    1662.7    9769.9    1662.0    9780.5    1663.0    9782.8
GR   1664.4   9790.1    1665.0    9807.9    1665.5    9843.7    1664.6    9873.7    1663.8    9912.7
GR   1663.0   9940.6    1664.3    9952.0    1664.3    9971.7    1658.6    9986.5    1658.0   10000.0
GR   1658.0  10009.8    1667.9   10021.5    1668.5   10040.0    1669.4   10064.7    1669.2   10101.5
GR   1669.8  10158.4    1670.0   10213.1    1670.0   10273.7    1669.9   10320.6    1670.4   10359.9
GR   1670.1  10403.5    1670.1   10481.9    1670.0   10556.6    1670.1   10607.8    1670.9   10656.7
GR   1671.9  10736.0    1672.7   10770.9    1672.9   10811.1    1673.0   10841.2    1673.0   10863.6
GR   1674.3  10893.4
```

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

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300

*SECNO 4.492

Split flow location.

Q changed to 9,100 cfs at C10R (split flow starts here).

4.492	7.36	1617.66	1616.27	1617.66	1617.86	.20	.00	.00	1615.30
9100.0	5558.8	2875.7	665.5	2062.2	580.4	282.2	.0	.0	1614.30
.00	2.70	4.95	2.36	.080	.065	.080	.000	1610.30	9013.76
.005197	0.	0.	0.	0	13	0	.00	1214.88	10228.64

FLOW DISTRIBUTION FOR SECNO= 4.49 CWSEL= 1617.66

STA=	9014.	9360.	9376.	9417.	9490.	9539.	9602.	9670.	9738.	9779.	9817.	9862.	9888.
PER Q=	3.7	3.0	3.9	5.3	4.5	4.5	5.3	4.9	3.7	3.8	5.1	3.9	
AREA=	227.4	74.9	122.8	190.0	146.1	162.9	185.6	176.0	123.4	119.4	152.4	105.5	
VEL=	1.5	3.7	2.9	2.5	2.8	2.5	2.6	2.5	2.8	2.9	3.0	3.4	
DEPTH=	.7	4.5	3.0	2.6	3.0	2.6	2.7	2.6	3.0	3.2	3.4	4.0	

STA=	9888.	9914.	9949.	9967.	10077.	10110.	10163.	10229.
PER Q=	4.2	3.8	1.4	31.6	3.2	3.3	.8	
AREA=	110.7	115.7	49.4	580.4	102.4	125.3	54.5	
VEL=	3.5	3.0	2.6	5.0	2.9	2.4	1.3	
DEPTH=	4.2	3.3	2.8	5.3	3.2	2.4	.8	

*SECNO 4.567

3265 DIVIDED FLOW

The confluence with Stream No. 9.

4.567	8.20	1620.10	1619.17	.00	1620.48	.39	2.57	.06	1616.30
9100.0	5292.0	3637.8	170.2	1581.6	536.9	74.0	22.2	10.0	1617.70
.02	3.35	6.78	2.30	.080	.065	.080	.000	1611.90	8939.79
.009144	370.	396.	396.	2	6	0	.00	1110.77	10100.81

FLOW DISTRIBUTION FOR SECNO= 4.57 CWSEL= 1620.10

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

STA=	8940.	9469.	9490.	9541.	9581.	9624.	9687.	9731.	9790.	9853.	9914.	9944.	10042.
PER Q=	3.4	3.4	7.7	4.9	4.0	5.8	3.4	5.1	6.2	8.9	5.3	40.0	
AREA=	217.1	74.3	173.7	121.3	108.8	159.2	100.7	143.8	165.9	204.5	112.4	536.9	
VEL=	1.4	4.1	4.1	3.7	3.3	3.3	3.1	3.2	3.4	4.0	4.3	6.8	
DEPTH=	.4	3.6	3.4	3.0	2.5	2.5	2.3	2.4	2.6	3.3	3.8	5.5	

STA=	10042.	10101.
PER Q=	1.9	
AREA=	74.0	
VEL=	2.3	
DEPTH=	1.3	

1490 NH CARD USED
*SECNO 4.662

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.45

NH cards were used for SECNO 4.662 to SECNO 5.552.

4.662	8.96	1622.96	1621.34	.00	1623.17	.21	2.67	.02	1619.60
9100.0	2322.2	2562.2	4215.7	1369.8	474.1	1308.9	48.0	22.2	1619.10
.06	1.70	5.40	3.22	.080	.065	.075	.000	1614.00	8886.35
.004360	390.	502.	430.	2	12	0	.00	1530.16	10416.50

FLOW DISTRIBUTION FOR SECNO= 4.66 CWSEL= 1622.96

STA=	8886.	9496.	9672.	9841.	9883.	9966.	10035.	10069.	10116.	10183.	10214.	10245.	10271.
PER Q=	7.2	3.4	5.5	5.2	4.2	28.2	3.2	5.1	5.0	3.9	4.1	5.3	
AREA=	548.6	217.0	263.3	158.3	182.5	474.1	109.6	164.2	186.9	119.8	121.0	121.4	
VEL=	1.2	1.4	1.9	3.0	2.1	5.4	2.7	2.8	2.4	3.0	3.1	4.0	
DEPTH=	.9	1.2	1.6	3.8	2.2	6.9	3.2	3.5	2.8	3.8	4.0	4.7	

STA=	10271.	10278.	10292.	10316.	10342.	10404.	10417.
PER Q=	3.1	4.5	5.3	3.6	3.1	.0	
AREA=	50.8	83.4	112.5	106.1	130.9	2.3	
VEL=	5.5	4.9	4.3	3.1	2.2	.4	
DEPTH=	7.0	5.9	4.8	4.1	2.1	.2	

1490 NH CARD USED
*SECNO 4.756

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

3265 DIVIDED FLOW

4.756	9.07	1625.37	1624.10	.00	1625.66	.29	2.47	.02	1621.40
9100.0	1092.3	2064.9	5942.8	622.8	304.3	1705.4	80.6	38.4	1619.90
.09	1.75	6.79	3.48	.080	.065	.078	.000	1616.30	9237.53
.005985	520.	496.	470.	3	9	0	.00	1270.26	10635.73

FLOW DISTRIBUTION FOR SECNO= 4.76 CWSEL= 1625.37

STA=	9238.	9524.	9847.	9940.	9984.	10023.	10036.	10050.	10062.	10087.	10117.	10152.	10253.
PER Q=	3.4	3.0	3.1	2.4	22.7	3.8	4.5	3.5	3.9	3.7	3.7	3.2	
AREA=	202.7	180.7	146.8	92.5	304.3	78.2	87.3	72.8	102.0	106.1	113.2	147.6	
VEL=	1.5	1.5	1.9	2.4	6.8	4.4	4.7	4.4	3.4	3.2	3.0	2.0	
DEPTH=	.7	.6	1.6	2.1	7.9	6.0	6.4	5.9	4.0	3.6	3.2	1.5	

STA=	10253.	10427.	10492.	10527.	10554.	10575.	10586.	10599.	10616.	10636.
PER Q=	3.9	5.2	3.7	3.7	6.0	3.6	4.8	6.4	1.8	
AREA=	215.8	178.9	112.8	100.5	107.3	60.2	74.0	101.1	47.5	
VEL=	1.7	2.6	3.0	3.3	5.1	5.5	5.9	5.8	3.5	
DEPTH=	1.2	2.7	3.2	3.8	4.9	5.4	6.1	5.9	2.4	

1490 NH CARD USED
*SECNO 4.850

3265 DIVIDED FLOW

4.850	10.08	1628.68	1627.70	.00	1629.28	.61	3.52	.09	1623.30
9100.0	876.4	3993.8	4229.8	360.2	470.9	1101.8	106.4	50.7	1623.70
.12	2.43	8.48	3.84	.080	.065	.081	.000	1618.60	9620.71
.008816	520.	496.	480.	2	5	0	.00	879.28	10788.34

FLOW DISTRIBUTION FOR SECNO= 4.85 CWSEL= 1628.68

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

STA=	9621.	9878.	9962.	9975.	10034.	10059.	10088.	10134.	10332.	10663.	10690.	10703.	10711.
PER Q=	3.2	3.4	3.1	43.9	4.9	4.2	5.0	3.1	4.8	4.1	5.0	3.1	
AREA=	180.9	120.2	59.1	470.9	105.6	100.9	135.3	134.0	140.0	97.9	68.9	45.9	
VEL=	1.6	2.5	4.7	8.5	4.3	3.8	3.4	2.1	3.1	3.8	6.6	6.2	
DEPTH=	.7	1.4	4.5	8.0	4.2	3.5	2.9	.7	.4	3.5	5.6	5.3	

STA=	10711.	10751.	10772.	10788.
PER Q=	7.5	4.0	.7	
AREA=	161.6	86.6	25.2	
VEL=	4.2	4.2	2.6	
DEPTH=	4.1	4.0	1.5	

1490 NH CARD USED
*SECNO 4.943

4.943	8.94	1632.04	1630.31	.00	1632.26	.23	2.94	.04	1626.80
9100.0	973.2	2621.6	5505.2	311.2	465.5	2045.9	131.0	60.4	1626.90
.15	3.13	5.63	2.69	.080	.070	.084	.000	1623.10	9866.17
.004871	500.	491.	430.	2	13	0	.00	992.97	10859.13

FLOW DISTRIBUTION FOR SECNO= 4.94 CWSEL= 1632.04

STA=	9866.	9951.	9972.	10034.	10062.	10109.	10154.	10211.	10302.	10469.	10623.	10682.	10701.
PER Q=	5.8	4.9	28.8	4.6	5.0	4.6	3.9	3.6	3.2	4.3	5.2	3.3	
AREA=	198.1	113.0	465.5	125.9	162.1	151.4	149.5	176.1	201.1	204.8	181.8	88.2	
VEL=	2.7	3.9	5.6	3.4	2.8	2.7	2.3	1.9	1.5	1.9	2.6	3.4	
DEPTH=	2.3	5.3	7.5	4.6	3.5	3.4	2.6	1.9	1.2	1.3	3.1	4.6	

STA=	10701.	10721.	10731.	10742.	10774.	10817.	10859.
PER Q=	4.8	3.8	3.4	5.2	4.7	.9	
AREA=	113.8	72.2	73.3	141.5	151.6	52.6	
VEL=	3.9	4.8	4.2	3.3	2.8	1.6	
DEPTH=	5.7	7.8	6.5	4.5	3.5	1.3	

1490 NH CARD USED
*SECNO 5.034

3265 DIVIDED FLOW

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

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

5.034	10.99	1635.59	1635.01	.00	1636.10	.51	3.75	.08	1633.10
9100.0	227.4	2534.5	6338.1	112.0	286.3	1611.9	159.9	73.2	1632.00
.18	2.03	8.85	3.93	.080	.065	.081	.000	1624.60	9833.14
.012018	420.	480.	540.	2	11	0	.00	1141.20	11110.90

FLOW DISTRIBUTION FOR SECNO= 5.03 CWSEL= 1635.59

STA=	9833.	9985.	10024.	10071.	10103.	10122.	10161.	10206.	10600.	10666.	10928.	10977.	11003.
PER Q=	2.5	27.9	7.3	4.7	5.0	7.4	5.9	3.2	3.2	4.6	3.2	3.1	
AREA=	112.0	286.3	155.2	101.8	87.7	145.4	133.5	203.0	108.3	172.4	97.4	72.6	
VEL=	2.0	8.9	4.3	4.2	5.2	4.6	4.0	1.4	2.7	2.4	3.0	3.9	
DEPTH=	.7	7.3	3.3	3.2	4.5	3.7	3.0	.5	1.6	.7	2.0	2.8	

STA=	11003.	11013.	11019.	11032.	11062.	11111.
PER Q=	4.3	3.5	7.1	5.8	1.3	
AREA=	53.4	36.7	79.5	112.8	52.2	
VEL=	7.4	8.7	8.2	4.7	2.4	
DEPTH=	5.2	6.4	5.9	3.8	1.1	

1490 NH CARD USED
*SECNO 5.113

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.67

5.113	8.09	1638.29	1636.66	.00	1638.50	.22	2.38	.03	1635.20
9100.0	443.2	3102.3	5554.4	207.0	582.7	2177.1	179.5	82.9	1635.40
.21	2.14	5.32	2.55	.080	.065	.076	.000	1630.20	9843.17
.004293	417.	417.	320.	2	14	0	.00	1384.19	11343.10

FLOW DISTRIBUTION FOR SECNO= 5.11 CWSEL= 1638.29

STA=	9843.	9960.	9973.	10059.	10111.	10252.	10601.	10666.	11063.	11110.	11120.	11158.	11342.
PER Q=	3.8	1.1	34.1	3.0	3.3	4.3	3.3	16.4	12.4	3.5	10.0	4.7	
AREA=	167.2	39.8	582.7	131.4	200.2	280.9	149.7	636.4	248.8	62.9	201.1	265.7	
VEL=	2.0	2.5	5.3	2.1	1.5	1.4	2.0	2.4	4.5	5.1	4.5	1.6	
DEPTH=	1.4	3.0	6.8	2.5	1.4	.8	2.3	1.6	5.3	6.3	5.3	1.4	

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

1490 NH CARD USED
*SECNO 5.189

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .56

5.189	8.90	1640.60	1640.11	.00	1641.18	.59	2.57	.11	1639.20
9100.0	261.8	3829.5	5008.8	90.2	453.7	1347.7	199.4	92.4	1638.80
.22	2.90	8.44	3.72	.080	.065	.081	.000	1631.70	9847.38
.013479	410.	401.	340.	2	8	0	.00	981.11	11331.46

FLOW DISTRIBUTION FOR SECNO= 5.19 CWSEL= 1640.60

STA=	9847.	9984.	10060.	10131.	10295.	10608.	10992.	11066.	11128.	11155.	11179.	11197.	11215.
PER Q=	2.9	42.1	3.5	3.4	3.4	3.8	3.8	3.8	3.9	4.2	3.2	3.7	
AREA=	90.2	453.7	113.9	154.2	123.2	126.7	120.9	113.6	81.9	83.2	62.7	68.8	
VEL=	2.9	8.4	2.8	2.0	2.5	2.7	2.8	3.1	4.3	4.6	4.7	4.8	
DEPTH=	.7	5.9	1.6	.9	.4	.3	1.6	1.8	3.1	3.5	3.5	3.7	

STA=	11215.	11229.	11239.	11266.	11331.
PER Q=	5.1	3.9	6.5	2.8	
AREA=	65.7	50.5	99.8	82.7	
VEL=	7.1	7.1	5.9	3.1	
DEPTH=	4.9	4.9	3.8	1.3	

1490 NH CARD USED
*SECNO 5.284

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.70

5.284	7.46	1643.56	1642.08	.00	1643.69	.14	2.47	.04	1641.30
9100.0	1723.4	1685.0	5691.6	791.8	368.6	2207.3	217.5	100.3	1641.70
.26	2.18	4.57	2.58	.080	.065	.081	.000	1636.10	9452.20
.004678	310.	502.	250.	2	18	0	.00	1505.81	11030.01

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

FLOW DISTRIBUTION FOR SECNO= 5.28 CWSEL= 1643.56

STA=	9452.	9561.	9797.	9830.	9871.	9937.	9959.	10031.	10109.	10148.	10229.	10309.	10625.
PER Q=	3.5	3.1	3.0	4.5	3.6	1.1	18.5	3.4	3.5	3.3	5.0	3.6	
AREA=	168.9	184.6	101.4	139.1	150.7	47.1	368.6	152.1	119.1	155.5	200.8	250.6	
VEL=	1.9	1.5	2.7	3.0	2.2	2.1	4.6	2.0	2.7	1.9	2.2	1.3	
DEPTH=	1.6	.8	3.0	3.4	2.3	2.2	5.1	1.9	3.1	1.9	2.5	.8	

STA=	10625.	10667.	10727.	10776.	10804.	10835.	10856.	10875.	10915.	10949.	11030.
PER Q=	3.0	5.0	4.7	3.2	6.2	5.0	3.8	6.3	4.2	2.5	
AREA=	117.1	180.7	162.3	102.9	139.1	106.4	85.8	178.2	130.5	126.3	
VEL=	2.4	2.5	2.7	2.8	4.0	4.2	4.0	3.2	2.9	1.8	
DEPTH=	2.8	3.0	3.3	3.7	4.6	5.0	4.6	4.4	3.9	1.6	

1490 NH CARD USED
*SECNO 5.379

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

5.379	9.95	1646.85	1646.25	.00	1647.17	.33	3.42	.06	1645.40
9100.0	3066.0	2628.5	3405.5	1008.3	372.0	1129.6	252.6	117.7	1643.70
.29	3.04	7.07	3.01	.080	.065	.079	.000	1636.90	9341.45
.009969	400.	502.	590.	3	12	0	.00	1403.17	10936.16

FLOW DISTRIBUTION FOR SECNO= 5.38 CWSEL= 1646.85

STA=	9341.	9563.	9665.	9705.	9751.	9821.	9852.	9900.	9954.	10019.	10067.	10100.	10174.
PER Q=	3.4	3.3	3.2	5.1	5.8	3.9	5.6	3.5	28.9	4.9	3.1	4.4	
AREA=	160.8	132.5	89.5	127.2	162.4	92.3	137.0	106.7	372.0	131.2	85.9	146.2	
VEL=	1.9	2.3	3.2	3.6	3.3	3.8	3.7	3.0	7.1	3.4	3.3	2.7	
DEPTH=	.7	1.3	2.2	2.7	2.3	2.9	2.8	2.0	5.7	2.7	2.6	2.0	

STA=	10174.	10258.	10777.	10814.	10858.	10896.	10936.
PER Q=	4.1	5.3	4.6	6.3	3.7	.9	
AREA=	148.2	255.2	101.4	130.7	89.7	41.3	
VEL=	2.5	1.9	4.2	4.4	3.8	1.9	
DEPTH=	1.8	.5	2.7	3.0	2.4	1.0	

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

1490 NH CARD USED
*SECNO 5.473

5.473	9.74	1650.74	1650.17	.00	1651.09	.35	3.91	.01	1645.70
9100.0	1124.1	3122.6	4853.3	604.6	428.9	1778.7	283.0	133.7	1646.70
.32	1.86	7.28	2.73	.080	.065	.079	.000	1641.00	9504.92
.006369	530.	496.	480.	3	13	0	.00	1394.68	10899.60

FLOW DISTRIBUTION FOR SECNO= 5.47 CWSEL= 1650.74

STA=	9505.	9688.	9811.	9951.	9975.	10027.	10051.	10099.	10155.	10279.	10374.	10634.	10709.
PER Q=	3.5	3.5	3.3	2.0	34.3	3.3	4.8	4.2	6.4	4.4	3.7	3.6	
AREA=	198.3	172.1	171.1	63.1	428.9	89.2	147.5	143.8	257.5	184.6	236.2	148.2	
VEL=	1.6	1.9	1.7	3.0	7.3	3.3	3.0	2.6	2.3	2.2	1.4	2.2	
DEPTH=	1.1	1.4	1.2	2.6	8.2	3.7	3.1	2.6	2.1	1.9	.9	2.0	

STA=	10709.	10747.	10785.	10804.	10838.	10877.	10900.
PER Q=	3.3	6.0	3.3	5.9	4.2	.2	
AREA=	102.7	136.6	73.8	128.9	111.5	18.2	
VEL=	3.0	4.0	4.1	4.2	3.4	1.2	
DEPTH=	2.7	3.6	3.8	3.8	2.8	.8	

1490 NH CARD USED
*SECNO 5.552

3265 DIVIDED FLOW

5.552	7.56	1653.06	1652.20	.00	1653.34	.28	2.25	.01	1647.70
9100.0	803.8	2357.4	5938.8	300.9	358.2	1952.9	303.1	143.6	1648.80
.35	2.67	6.58	3.04	.080	.065	.078	.000	1645.50	9687.09
.007249	540.	417.	250.	3	18	0	.00	1134.34	10871.08

FLOW DISTRIBUTION FOR SECNO= 5.55 CWSEL= 1653.06

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

STA=	9687.	9966.	9977.	10034.	10064.	10104.	10183.	10290.	10353.	10513.	10571.	10606.	10627.
PER Q=	6.5	2.3	25.9	3.8	3.9	4.0	3.8	3.3	6.5	3.5	4.1	3.4	
AREA=	251.0	49.9	358.2	102.2	116.6	155.5	170.0	127.1	276.6	126.6	101.1	73.1	
VEL=	2.4	4.2	6.6	3.4	3.0	2.3	2.0	2.4	2.1	2.5	3.7	4.2	
DEPTH=	.9	4.4	6.3	3.5	2.9	2.0	1.6	2.0	1.7	2.2	2.9	3.6	

STA=	10627.	10659.	10679.	10721.	10751.	10783.	10840.	10871.
PER Q=	6.0	3.8	6.5	4.5	3.8	3.7	.7	
AREA=	124.3	76.9	142.9	100.6	94.5	129.9	35.0	
VEL=	4.4	4.5	4.1	4.1	3.7	2.6	1.7	
DEPTH=	3.8	3.9	3.4	3.4	2.9	2.3	1.1	

*SECNO 5.646

3265 DIVIDED FLOW

NC card was used, channel = .065, overbanks = .080.

5.646	8.24	1655.54	1653.66	.00	1655.69	.15	2.33	.01	1651.10
9100.0	1811.7	1412.2	5876.1	765.1	279.6	2175.9	332.8	154.5	1651.30
.39	2.37	5.05	2.70	.080	.065	.080	.000	1647.30	9652.75
.003845	270.	496.	480.	2	9	0	.00	1092.17	10829.97

FLOW DISTRIBUTION FOR SECNO= 5.65 CWSEL= 1655.54

STA=	9653.	9879.	9928.	9955.	9983.	10024.	10047.	10063.	10087.	10123.	10142.	10162.	10196.
PER Q=	7.6	3.5	4.8	4.0	15.5	4.3	4.2	3.8	3.5	3.3	3.5	5.9	
AREA=	374.2	138.9	132.3	119.8	279.6	117.6	97.7	110.1	121.9	90.9	96.7	165.5	
VEL=	1.8	2.3	3.3	3.0	5.1	3.4	4.0	3.2	2.6	3.3	3.3	3.3	
DEPTH=	1.7	2.8	4.8	4.3	6.9	5.0	6.4	4.6	3.4	4.8	4.9	4.8	

STA=	10196.	10225.	10274.	10302.	10333.	10519.	10565.	10606.	10695.	10818.	10830.
PER Q=	5.0	5.4	3.5	3.3	3.3	3.8	3.6	4.8	3.2	.0	
AREA=	137.6	180.2	110.6	111.3	157.5	141.4	130.9	210.6	190.1	5.4	
VEL=	3.3	2.7	2.9	2.7	1.9	2.4	2.5	2.1	1.5	.7	
DEPTH=	4.8	3.6	3.9	3.6	.8	3.1	3.2	2.4	1.5	.5	

*SECNO 5.741

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .63

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
5.741	8.84	1658.14	1657.55	.00	1658.63	.50	2.84	.10	1655.30
9100.0	51.0	3508.3	5540.7	21.1	433.5	1650.0	362.7	165.6	1654.00
.42	2.42	8.09	3.36	.080	.065	.080	.000	1649.30	9945.80
.009750	520.	502.	480.	2	5	0	.00	900.15	10845.95

FLOW DISTRIBUTION FOR SECNO= 5.74 CWSEL= 1658.14

STA=	9946.	9961.	10024.	10042.	10061.	10085.	10125.	10155.	10179.	10226.	10304.	10352.	10417.
PER Q=	.6	38.6	3.8	4.2	4.6	6.4	5.1	4.4	5.1	5.6	3.8	3.5	
AREA=	21.1	433.5	74.7	80.4	92.5	139.1	108.4	90.9	127.6	165.0	109.5	116.7	
VEL=	2.4	8.1	4.6	4.8	4.6	4.2	4.3	4.5	3.6	3.1	3.2	2.7	
DEPTH=	1.3	7.0	4.0	4.2	3.9	3.5	3.6	3.8	2.7	2.1	2.3	1.8	

STA=	10417.	10574.	10654.	10746.	10846.
PER Q=	4.8	5.4	3.3	.8	
AREA=	199.3	165.1	126.9	54.0	
VEL=	2.2	3.0	2.4	1.3	
DEPTH=	1.3	2.1	1.4	.5	

*SECNO 5.835

5.835	10.17	1661.87	1660.78	.00	1662.20	.32	3.55	.02	1658.70
9100.0	1565.4	2906.0	4628.6	409.5	431.9	1661.4	387.2	175.3	1657.70
.45	3.82	6.73	2.79	.080	.065	.080	.000	1651.70	9873.31
.006003	496.	496.	450.	3	9	0	.00	937.75	10811.06

FLOW DISTRIBUTION FOR SECNO= 5.84 CWSEL= 1661.87

STA=	9873.	9913.	9931.	9951.	9974.	10030.	10053.	10086.	10117.	10165.	10212.	10258.	10350.
PER Q=	6.4	4.5	3.9	2.3	31.9	3.8	6.2	5.2	6.5	5.1	3.2	4.1	
AREA=	155.6	93.5	90.9	69.5	431.9	95.4	146.4	127.8	175.4	148.8	111.2	171.1	
VEL=	3.8	4.4	3.9	3.0	6.7	3.7	3.9	3.7	3.4	3.1	2.6	2.2	
DEPTH=	3.9	5.4	4.5	3.1	7.7	4.1	4.4	4.1	3.6	3.2	2.4	1.9	

STA=	10350.	10421.	10503.	10563.	10627.	10811.
PER Q=	3.2	4.5	3.5	3.1	2.4	
AREA=	133.2	172.8	130.4	126.5	122.5	
VEL=	2.2	2.4	2.4	2.3	1.8	
DEPTH=	1.9	2.1	2.2	2.0	.7	

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

1490 NH CARD USED
*SECNO 5.928
Q changed to 9,250 cfs at C10P.
NH cards were used.

5.928	11.68	1664.28	1663.26	.00	1664.75	.47	2.51	.04	1659.60
9250.0	2754.8	4592.9	1902.3	721.2	648.2	928.9	412.8	185.1	1659.80
.47	3.82	7.09	2.05	.067	.055	.070	.000	1652.60	9759.01
.004686	500.	491.	440.	3	8	0	.00	949.70	10708.71

FLOW DISTRIBUTION FOR SECNO= 5.93 CWSEL= 1664.28

STA=	9759.	9791.	9807.	9835.	9858.	9907.	9946.	9956.	10040.	10071.	10129.	10263.	10360.
PER Q=	6.3	4.3	5.4	3.8	3.5	4.4	2.1	49.7	3.2	3.5	4.2	3.2	
AREA=	135.6	87.5	108.4	94.3	122.1	126.1	47.2	648.2	96.0	128.9	202.0	150.6	
VEL=	4.3	4.5	4.6	3.7	2.7	3.3	4.0	7.1	3.1	2.5	1.9	2.0	
DEPTH=	4.2	5.5	4.0	4.0	2.5	3.3	4.6	7.7	3.1	2.2	1.5	1.6	

STA=	10360.	10496.	10629.	10709.
PER Q=	3.4	3.0	.1	
AREA=	179.7	158.9	12.7	
VEL=	1.8	1.8	.4	
DEPTH=	1.3	1.2	.2	

*SECNO 6.021

3265 DIVIDED FLOW

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

NC card was used, channel = .055, overbanks = .070.

6.021	9.53	1667.53	1667.52	.00	1668.50	.96	3.60	.15	1664.30
9250.0	5320.0	3930.0	.0	1171.1	361.9	.0	435.1	195.1	1667.90
.49	4.54	10.86	.00	.070	.055	.000	.000	1658.00	9162.26
.012767	480.	491.	580.	2	14	0	.00	726.42	10021.07

FLOW DISTRIBUTION FOR SECNO= 6.02 CWSEL= 1667.53

STA=	9162.	9345.	9709.	9746.	9770.	9781.	9808.	9844.	9874.	9913.	9941.	9972.	10022.
PER Q=	3.1	6.4	5.8	3.8	4.3	5.2	3.7	3.5	7.5	7.7	6.4	42.5	
AREA=	127.9	208.4	109.5	70.6	55.0	90.0	81.8	74.5	130.0	115.3	108.0	361.9	
VEL=	2.2	2.9	4.9	5.0	7.2	5.4	4.2	4.4	5.4	6.2	5.5	10.9	
DEPTH=	.7	.6	2.9	3.0	5.2	3.3	2.3	2.5	3.3	4.1	3.5	7.3	

THIS RUN EXECUTED 25MAY92 15:41:10

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

Deadman Wash 100-year Q

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
	4.492	9100.00	1617.66	7.36	1610.30	1617.86	1616.27	4.95	51.97	.00	9013.76	1214.88	10228.64
	4.567	9100.00	1620.10	8.20	1611.90	1620.48	1619.17	6.78	91.44	396.00	8939.79	1110.77	10100.81
*	4.662	9100.00	1622.96	8.96	1614.00	1623.17	1621.34	5.40	43.60	502.00	8886.35	1530.16	10416.50
	4.756	9100.00	1625.37	9.07	1616.30	1625.66	1624.10	6.79	59.85	496.00	9237.53	1270.26	10635.73
	4.850	9100.00	1628.68	10.08	1618.60	1629.28	1627.70	8.48	88.16	496.00	9620.71	879.28	10788.34
	4.943	9100.00	1632.04	8.94	1623.10	1632.26	1630.31	5.63	48.71	491.00	9866.17	992.97	10859.13
*	5.034	9100.00	1635.59	10.99	1624.60	1636.10	1635.01	8.85	120.18	480.00	9833.14	1141.20	11110.90
*	5.113	9100.00	1638.29	8.09	1630.20	1638.50	1636.66	5.32	42.93	417.00	9843.17	1384.19	11343.10
*	5.189	9100.00	1640.60	8.90	1631.70	1641.18	1640.11	8.44	134.79	401.00	9847.38	981.11	11331.46
*	5.284	9100.00	1643.56	7.46	1636.10	1643.69	1642.08	4.57	46.78	502.00	9452.20	1505.81	11030.01
*	5.379	9100.00	1646.85	9.95	1636.90	1647.17	1646.25	7.07	99.69	502.00	9341.45	1403.17	10936.16
	5.473	9100.00	1650.74	9.74	1641.00	1651.09	1650.17	7.28	63.69	496.00	9504.92	1394.68	10899.60
	5.552	9100.00	1653.06	7.56	1645.50	1653.34	1652.20	6.58	72.49	417.00	9687.09	1134.34	10871.08
	5.646	9100.00	1655.54	8.24	1647.30	1655.69	1653.66	5.05	38.45	496.00	9652.75	1092.17	10829.97
*	5.741	9100.00	1658.14	8.84	1649.30	1658.63	1657.55	8.09	97.50	502.00	9945.80	900.15	10845.95
	5.835	9100.00	1661.87	10.17	1651.70	1662.20	1660.78	6.73	60.03	496.00	9873.31	937.75	10811.06
	5.928	9250.00	1664.28	11.68	1652.60	1664.75	1663.26	7.09	46.86	491.00	9759.01	949.70	10708.71

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
*	6.021	9250.00	1667.53	9.53	1658.00	1668.50	1667.52	10.86	127.67	491.00	9162.26	726.42	10021.07

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=     4.662  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     5.034  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     5.113  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     5.189  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     5.284  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     5.379  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     5.741  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     6.021  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

Normal program termination
```

HEC2 S/N: 1126460209 HMVersion: 6.40 Data File: c10msc.hc2

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*******************************************
*  HEC-2 WATER SURFACE PROFILES           *
*                                         *
*  Version   4.6.2;  May 1991             *
*                                         *
*  RUN DATE    25MAY92    TIME   19:21:36 *
*******************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
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X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X    X           X     X
X     X  X        X                      X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X    X            X
X     X  XXXXXXX   XXXXX            XXXXXXX
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:::::::::::::::::::::::::::::::::::::::::::::
:::                                       :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
:::                                       :::
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============================
H A E S T A D   M E T H O D S
============================
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 25MAY92 19:21:37

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

 Version   4.6.2;  May 1991
************************************
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SPLIT FLOW BEING PERFORMED

```
SF      Split Flow Analysis for Multiple Pipe Culverts at Joy Ranch Road

TW      Weir Flow Calculation for Joy Ranch Road Overtopping
WS     3   6.467   6.654   6.280     3.0
WC     0    1686     250  1687.3     650    1691
```

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T1      Deadman Wash Floodplain Delineation Study
T2      Hydraulic Analysis of Deadman Wash, SECNO 5.928 to SECNO 6.751
T3      Deadman Wash 100-year Q   Subcritical Flow,    May 1992

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

              2                                                                   1664.28

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1                  -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         8        42         3         2        26         5        39
     53         4        54

QT       1      9250
NC                                     .1        .3
NH       5      .070    9814.7      .055    9837.2      .070    9955.7      .055   10039.8      .070
NH   10899
         Q changed to 9,250 cfs at C10P.
         NH card was used.
X1   5.928        48    9955.7   10039.8         0         0         0
GR  1667.7    9748.1    1661.4    9768.2    1660.1    9778.8    1657.1    9783.3    1656.8    9791.4
GR  1659.5    9800.9    1659.9    9807.3    1660.5    9821.5    1660.3    9834.5    1659.6    9840.8
GR  1659.9    9846.3    1661.4    9857.9    1661.5    9877.3    1662.0    9884.2    1662.2    9907.0
GR  1661.0    9927.2    1659.7    9945.5    1659.6    9955.7    1660.6    9964.7    1655.4    9985.8
GR  1652.8   10000.0    1652.6   10006.8    1653.9   10017.6    1658.8   10026.1    1659.8   10039.8
GR  1661.5   10054.3    1661.8   10070.8    1661.8   10092.9    1662.6   10128.5    1662.8   10159.2
GR  1662.8   10209.9    1662.8   10262.9    1662.7   10309.4    1662.7   10359.7    1662.9   10421.3
GR  1663.3   10455.8    1662.9   10496.3    1662.4   10536.9    1663.2   10574.8    1664.0   10628.6
GR  1664.2   10678.1    1664.1   10703.7    1665.1   10731.5    1665.2   10764.5    1665.1   10817.5
GR  1665.4   10853.5    1665.7   10876.5    1667.1   10900.1

NC    .070      .070      .055
         NC card was used - channel = 0.055, overbanks = 0.070.
X1   6.021        61    9971.7   10021.5       480       580       491
GR  1667.6    9158.1    1667.0    9196.2    1667.0    9209.4    1667.1    9228.8    1664.4    9234.4
GR  1666.5    9241.3    1666.9    9262.0    1667.3    9279.6    1665.8    9282.9    1666.0    9284.9
GR  1666.9    9288.8    1666.9    9311.3    1666.5    9344.9    1666.5    9388.2    1666.8    9425.0
GR  1667.9    9463.4    1667.5    9490.2    1667.3    9504.2    1668.0    9539.5    1668.4    9546.4
GR  1668.0    9574.3    1667.3    9629.7    1666.1    9670.2    1664.7    9708.8    1664.2    9722.8
GR  1665.2    9746.2    1664.9    9760.5    1662.7    9769.9    1662.0    9780.5    1663.0    9782.8
GR  1664.4    9790.1    1665.0    9807.9    1665.5    9843.7    1664.6    9873.7    1663.8    9912.7
GR  1663.0    9940.6    1664.3    9952.0    1664.3    9971.7    1658.6    9986.5    1658.0   10000.0
GR  1658.0   10009.8    1667.9   10021.5    1668.5   10040.0    1669.4   10064.7    1669.2   10101.5
GR  1669.8   10158.4    1670.0   10213.1    1670.0   10273.7    1669.9   10320.6    1670.4   10359.9
GR  1670.1   10403.5    1670.1   10481.9    1670.0   10556.6    1670.1   10607.8    1670.9   10656.7
GR  1671.9   10736.0    1672.7   10770.9    1672.9   10811.1    1673.0   10841.2    1673.0   10863.6
GR  1674.3   10893.4
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X1    6.108       53    9959.2   10046.2       380       420       459
GR   1672.5   9208.6    1671.0    9324.7    1669.8    9397.4    1669.9    9433.6    1669.8    9488.5
GR   1669.7   9557.0    1669.7    9609.6    1669.0    9650.5    1667.6    9674.8    1667.7    9706.8
GR   1667.7   9728.3    1667.8    9750.2    1665.3    9760.8    1666.2    9772.1    1667.4    9789.9
GR   1669.4   9815.7    1670.4    9836.3    1669.8    9860.8    1669.7    9897.4    1668.5    9940.0
GR   1668.0   9959.2    1665.1    9972.7    1665.0    9983.5    1661.4    9994.4    1661.9   10000.0
GR   1662.5  10016.7    1666.2   10031.5    1668.2   10046.2    1667.5   10068.6    1667.1   10092.9
GR   1667.8  10107.1    1669.8   10122.6    1671.3   10136.7    1671.5   10166.5    1672.9   10204.4
GR   1673.2  10237.1    1673.3   10245.4    1673.3   10287.6    1673.6   10344.8    1673.5   10391.7
GR   1673.5  10445.5    1673.2   10486.3    1673.6   10536.5    1673.8   10571.7    1673.2   10596.9
GR   1673.2  10626.2    1673.3   10678.8    1672.6   10730.2    1672.8   10755.1    1673.7   10763.9
GR   1675.4  10796.3    1676.8   10836.9    1677.0   10837.4

X1    6.205       49    9973.4   10040.3       310       512       512
GR   1674.0   9178.0    1672.3    9217.6    1672.0    9284.6    1671.6    9326.0    1671.0    9360.6
GR   1670.9   9388.2    1671.3    9436.5    1670.9    9480.8    1670.6    9530.1    1670.5    9550.9
GR   1668.9   9559.0    1668.2    9567.4    1670.4    9575.3    1670.1    9613.2    1670.8    9639.0
GR   1671.5   9672.7    1672.4    9695.8    1672.3    9705.2    1669.7    9734.1    1672.0    9745.5
GR   1673.1   9772.1    1673.3    9808.8    1672.7    9831.5    1673.2    9866.3    1672.9    9902.3
GR   1672.5   9941.5    1672.6    9967.4    1671.8    9973.4    1667.0    9988.5    1667.0   10000.0
GR   1667.9  10012.9    1668.1   10029.1    1671.7   10040.3    1670.9   10054.7    1670.1   10067.9
GR   1671.4  10091.9    1672.8   10102.0    1671.4   10116.1    1670.1   10127.7    1671.4   10136.3
GR   1673.0  10146.4    1675.3   10162.6    1675.2   10180.2    1676.2   10228.5    1677.3   10264.1
GR   1677.4  10299.7    1678.3   10333.9    1680.2   10393.2    1680.4   10399.4

QT       1      9700
NC                             .3        .5
         Q changed to 9,700 cfs at C10M (Joy Ranch Road).
         Contraction and expansion values changed to 0.3 and 0.5
         for multiple pipe culverts at Joy Ranch Road.
         Split flow returns to this section.
X1    6.280       61    9986.5   10040.3       660       340       396
GR   1678.2   9250.0    1677.8    9271.9    1677.7    9283.5    1677.1    9294.4    1676.9    9304.5
GR   1677.6   9330.0    1678.1    9350.9    1677.7    9369.3    1677.9    9393.5    1678.0    9416.0
GR   1677.2   9437.7    1678.2    9453.7    1677.5    9470.6    1678.0    9496.1    1677.4    9511.5
GR   1675.3   9518.2    1676.3    9530.1    1674.4    9539.0    1675.9    9546.6    1675.9    9560.1
GR   1676.4   9609.3    1676.6    9646.5    1676.6    9667.7    1676.2    9674.9    1675.5    9680.3
GR   1676.9   9688.1    1677.0    9703.5    1676.4    9733.3    1676.3    9764.1    1676.0    9799.9
GR   1675.3   9826.6    1676.0    9852.0    1676.6    9886.9    1676.6    9916.1    1676.4    9943.1
GR   1676.1   9965.8    1675.7    9986.5    1668.8   10000.0    1668.1   10006.3    1669.0   10017.4
GR   1671.7  10025.1    1673.4   10040.3    1674.1   10057.5    1673.8   10066.7    1673.0   10073.1
GR   1674.0  10085.4    1675.8   10091.7    1676.1   10106.5    1675.2   10125.7    1675.2   10131.8
GR   1672.3  10134.8    1674.3   10139.3    1674.5   10155.7    1676.8   10186.3    1678.8   10215.9
GR   1679.0  10255.8    1679.7   10301.3    1680.3   10364.5    1680.6   10417.9    1681.7   10508.9
GR   1682.3  10531.5

         X3 record was used to reflect left ineffective flow area.
X1    6.362       45    9940.3   10090.2       600       340       433
X3       10                      9444.8                 10502
GR   1683.4   9166.0    1682.5    9313.1    1682.4    9356.8    1682.0    9386.6    1680.5    9397.6
GR   1679.7   9414.3    1681.7    9429.5    1682.7    9444.8    1682.0    9477.7    1681.6    9530.1
GR   1681.3   9579.1    1680.9    9647.8    1680.5    9699.6    1680.5    9783.2    1679.9    9834.5
GR   1680.0   9865.8    1678.7    9876.8    1679.3    9911.7    1679.1    9940.3    1677.8    9956.6
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GR   1677.5    9965.4    1672.0    9982.8    1672.1    9994.5    1671.7   10000.0    1671.4   10010.4
GR   1672.8   10023.5    1674.2   10034.1    1676.1   10043.0    1677.2   10055.4    1677.8   10071.3
GR   1679.1   10090.2    1678.8   10119.3    1678.5   10152.2    1677.7   10184.6    1678.6   10208.4
GR   1677.9   10218.4    1678.1   10221.1    1678.7   10241.5    1678.9   10268.6    1680.7   10309.1
GR   1682.4   10353.9    1682.9   10394.9    1682.9   10430.6    1684.1   10479.5    1683.8   10501.8

NC                        .012
          Downstream face of multiple pipe culverts only 2-72" were considered.
          Special culvert method was used including overtopping analysis.
X1    6.363                                   4         4         4
X3       10   1672.22                                                   1680.0    1680.0

SC    2.012       0.5       3.0                 6.0                  45       1.1   1672.70   1672.22
          Upstream face of multiple pipe culverts only 2-72" were considered.
X1    6.371        36    9967.4   10024.9        45        45        45
X2                          2                1680.4
X3       10
BT       -7      9046    1686.0                9135    1685.2                 9425    1683.2
BT               9735    1681.7               10000    1680.4                10265    1681.3
BT              10595    1686.1
GR   1685.2    9046.6    1684.8    9147.4    1683.7    9274.0    1683.4    9333.7    1682.9    9391.0
GR   1682.8    9435.4    1682.5    9470.4    1682.0    9527.8    1681.9    9590.2    1681.4    9649.2
GR   1680.8    9720.9    1681.4    9771.0    1681.6    9801.9    1679.8    9826.7    1680.8    9863.8
GR   1680.5    9894.6    1679.7    9929.5    1679.7    9967.4    1679.1    9974.9    1673.4    9985.4
GR   1673.2   10000.0    1673.2   10021.1    1680.4   10024.9    1679.5   10061.6    1679.2   10067.0
GR   1679.0   10104.1    1679.0   10138.4    1679.2   10169.1    1680.3   10208.9    1680.0   10236.3
GR   1679.8   10269.0    1680.6   10296.1    1681.5   10334.9    1680.9   10369.2    1683.6   10403.8
GR   1683.7   10445.9

X1    6.372                                   4         4         4                   .001

NC     .080      .080      .065        .1        .3
          Split flow was analyzed from SECNO 6.467 to SECNO 6.654.
          The split flow returns at SECNO 6.280.
X1    6.467        37    9965.2   10038.3       250       580       502
GR   1686.0    9358.0    1684.3    9557.8    1683.9    9584.9    1684.5    9600.0    1684.7    9655.3
GR   1684.7    9705.8    1683.5    9740.6    1683.7    9767.8    1682.5    9790.5    1683.5    9810.1
GR   1682.5    9816.1    1680.6    9820.4    1680.6    9825.7    1682.9    9832.0    1683.7    9852.6
GR   1684.5    9896.0    1684.8    9933.3    1684.9    9934.0    1684.8    9956.1    1683.8    9965.2
GR   1681.2    9972.9    1678.2    9979.8    1677.9    9994.1    1677.8   10000.0    1677.9   10006.2
GR   1679.3   10016.1    1680.4   10026.8    1682.5   10038.3    1682.6   10053.2    1682.1   10066.7
GR   1680.9   10086.3    1681.2   10100.5    1682.5   10110.0    1682.5   10121.3    1685.2   10146.7
GR   1686.7   10191.2    1687.7   10221.2

X1    6.558        35    9970.3   10022.4       420       480       480
GR   1690.0    9110.0    1687.3    9550.6    1685.7    9570.4    1686.2    9578.4    1686.4    9596.0
GR   1686.3    9613.1    1687.1    9633.0    1687.1    9660.5    1686.7    9707.2    1686.0    9741.2
GR   1686.8    9793.0    1686.8    9825.7    1686.7    9826.5    1686.8    9861.9    1686.9    9886.6
GR   1684.0    9896.6    1684.6    9902.9    1685.1    9911.1    1684.5    9917.5    1681.8    9925.9
GR   1680.8    9931.8    1682.7    9944.7    1684.4    9955.6    1683.8    9970.3    1681.9    9984.7
GR   1680.8    9992.1    1678.7   10000.0    1678.5   10008.3    1678.6   10016.2    1686.4   10022.4
GR   1687.0   10036.1    1686.7   10047.2    1688.2   10078.3    1689.7   10125.6    1689.9   10128.2
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X1    6.654       42    9975.9   10035.7       450       460       507
GR   1692.2   9278.0    1690.7    9560.7    1689.2    9579.8    1689.7    9589.1    1690.4    9613.1
GR   1690.2   9646.3    1689.7    9660.7    1687.6    9665.1    1688.1    9669.6    1689.5    9677.2
GR   1689.2   9687.1    1688.9    9705.1    1689.7    9730.2    1690.1    9753.0    1689.1    9776.1
GR   1687.8   9786.5    1688.7    9793.3    1687.2    9802.3    1688.0    9809.1    1687.7    9816.8
GR   1685.9   9819.2    1685.9    9821.8    1688.0    9829.6    1687.7    9838.4    1688.6    9856.2
GR   1689.1   9895.7    1689.1    9927.9    1689.9    9959.5    1689.9    9975.9    1681.6    9986.6
GR   1681.9   9991.8    1682.2   10000.0    1682.1   10013.2    1685.3   10024.5    1689.1   10035.7
GR   1688.8  10050.6    1687.5   10065.3    1687.5   10078.8    1688.2   10097.0    1689.4   10122.2
GR   1693.5  10171.6    1693.8   10197.3

QT       1      9790
NC    .080      .080      .065        .1        .3
         The area of the stock tank (CF Tank) is ineffective,
         X3 card was used to ignore it.
         Q changed to 9,790 cfs at C10L (CF Tank).
X1    6.751       45    9961.2   10040.5       485       500       512
X3       10                       9623.6    1693.1
GR   1696.0   9288.0    1694.0    9482.0    1693.8    9490.0    1693.7    9520.0    1694.0    9530.0
GR   1693.9   9623.6    1691.0    9662.1    1690.5    9689.8    1691.1    9718.9    1690.9    9735.9
GR   1690.9   9750.5    1692.0    9760.5    1697.7    9778.5    1697.2    9780.9    1693.9    9786.0
GR   1692.0   9794.2    1691.8    9811.4    1692.0    9834.5    1690.7    9850.0    1692.9    9855.4
GR   1693.2   9861.0    1690.5    9870.8    1687.4    9883.7    1687.7    9887.3    1690.6    9897.3
GR   1690.4   9910.7    1691.8    9926.5    1692.7    9938.1    1693.4    9954.3    1693.5    9961.2
GR   1691.7   9970.5    1691.4    9975.5    1687.7    9985.8    1686.8    9991.8    1685.9   10000.0
GR   1685.4  10010.2    1692.3   10026.2    1692.4   10040.5    1692.6   10072.2    1691.5   10101.7
GR   1691.6  10108.3    1688.9   10112.8    1690.7   10119.6    1693.1   10137.6    1695.7   10165.1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 5.928
Q changed to 9,250 cfs at C10P.
NH card was used.

5.928	11.68	1664.28	1663.18	1664.28	1664.75	.47	.00	.00	1659.60
9250.0	2754.8	4593.2	1902.0	721.2	648.2	928.7	.0	.0	1659.80
.00	3.82	7.09	2.05	.067	.055	.070	.000	1652.60	9759.01
.004687	0.	0.	0.	0	8	0	.00	949.69	10708.71

FLOW DISTRIBUTION FOR SECNO= 5.93 CWSEL= 1664.28

STA=	9759.	9791.	9807.	9835.	9858.	9907.	9946.	9956.	10040.	10071.	10129.	10263.	10360.
PER Q=	6.3	4.3	5.4	3.8	3.5	4.4	2.1	49.7	3.2	3.5	4.2	3.2	
AREA=	135.6	87.5	108.4	94.3	122.1	126.1	47.2	648.2	96.0	128.9	202.0	150.6	
VEL=	4.3	4.5	4.6	3.7	2.7	3.3	4.0	7.1	3.1	2.5	1.9	2.0	
DEPTH=	4.2	5.5	4.0	4.0	2.5	3.3	4.6	7.7	3.1	2.2	1.5	1.6	

STA=	10360.	10496.	10629.	10709.
PER Q=	3.4	3.0	.1	
AREA=	179.7	158.9	12.7	
VEL=	1.8	1.8	.4	
DEPTH=	1.3	1.2	.2	

*SECNO 6.021

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .60

NC card was used - channel = 0.055, overbanks = 0.070.

6.021	9.54	1667.54	1667.51	.00	1668.50	.97	3.61	.15	1664.30
9250.0	5315.0	3935.0	.0	1167.9	361.6	.0	22.3	10.0	1667.90
.02	4.55	10.88	.00	.070	.055	.000	.000	1658.00	9162.56
.012825	480.	491.	580.	2	14	0	.00	725.01	10021.06

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

FLOW DISTRIBUTION FOR SECNO= 6.02 CWSEL= 1667.54

STA=	9163.	9345.	9709.	9746.	9770.	9781.	9808.	9844.	9874.	9913.	9941.	9972.	10022.
PER Q=	3.0	6.4	5.8	3.8	4.3	5.2	3.7	3.5	7.5	7.7	6.4	42.5	
AREA=	127.0	207.3	109.3	70.5	54.9	89.9	81.6	74.4	129.9	115.2	107.9	361.6	
VEL=	2.2	2.9	4.9	5.0	7.2	5.4	4.2	4.4	5.4	6.2	5.5	10.9	
DEPTH=	.7	.6	2.9	3.0	5.2	3.3	2.3	2.5	3.3	4.1	3.5	7.3	

*SECNO 6.108

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.57

6.108	9.98	1671.38	1670.42	.00	1671.80	.42	3.24	.06	1668.00
9250.0	4096.7	4142.1	1011.2	1404.0	596.0	286.2	39.9	17.1	1668.20
.04	2.92	6.95	3.53	.070	.055	.070	.000	1661.40	9295.29
.005202	380.	459.	420.	3	10	0	.00	853.33	10148.62

FLOW DISTRIBUTION FOR SECNO= 6.11 CWSEL= 1671.38

STA=	9295.	9489.	9610.	9675.	9707.	9728.	9750.	9772.	9790.	9836.	9940.	9959.	10046.
PER Q=	4.3	4.6	4.8	4.8	3.1	3.1	5.7	3.7	3.3	4.8	2.1	44.8	
AREA=	216.2	200.0	157.9	119.4	79.1	79.5	114.8	81.5	107.4	188.1	60.1	596.0	
VEL=	1.8	2.1	2.8	3.7	3.6	3.6	4.6	4.2	2.8	2.3	3.3	6.9	
DEPTH=	1.1	1.7	2.4	3.7	3.7	3.6	5.2	4.6	2.3	1.8	3.1	6.9	

STA=	10046.	10069.	10093.	10123.	10149.
PER Q=	3.0	4.2	3.5	.2	
AREA=	79.1	99.1	95.8	12.2	
VEL=	3.5	3.9	3.4	1.3	
DEPTH=	3.5	4.1	3.2	.5	

*SECNO 6.205

6.205	6.88	1673.88	1672.97	.00	1674.21	.33	2.40	.01	1671.80
9250.0	5727.7	2549.0	973.2	1725.9	369.6	283.0	60.1	24.4	1671.70
.07	3.32	6.90	3.44	.070	.055	.070	.000	1667.00	9180.78
.006850	310.	512.	512.	4	14	0	.00	971.83	10152.60

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

FLOW DISTRIBUTION FOR SECNO= 6.20 CWSEL= 1673.88

STA=	9181.	9285.	9361.	9388.	9437.	9481.	9530.	9559.	9575.	9613.	9639.	9673.	9734.
PER Q=	3.6	5.9	3.1	5.0	4.6	6.3	4.6	4.4	6.2	3.8	3.4	4.9	
AREA=	145.1	175.4	80.9	134.3	123.2	154.4	103.1	81.0	137.6	88.5	92.0	142.2	
VEL=	2.3	3.1	3.6	3.5	3.5	3.8	4.1	5.1	4.2	4.0	3.4	3.2	
DEPTH=	1.4	2.3	2.9	2.8	2.8	3.1	3.6	5.0	3.6	3.4	2.7	2.3	

STA=	9734.	9866.	9973.	10040.	10068.	10092.	10136.	10153.
PER Q=	3.5	2.5	27.6	3.2	3.1	3.8	.5	
AREA=	147.3	120.8	369.6	81.8	75.1	106.3	19.7	
VEL=	2.2	2.0	6.9	3.7	3.8	3.3	2.3	
DEPTH=	1.1	1.1	5.5	3.0	3.1	2.4	1.2	

CCHV= .300 CEHV= .500
*SECNO 6.280

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

Q changed to 9,700 cfs at C10M (Joy Ranch Road).
Contraction and expansion values changed to 0.3 and 0.5
for multiple pipe culverts at Joy Ranch Road.
Split flow returns to this section.

6.280	9.96	1678.06	1678.00	.00	1678.92	.86	4.45	.27	1675.70
9700.0	3151.6	4042.1	2506.3	966.2	387.8	492.9	86.9	37.5	1673.40
.09	3.26	10.42	5.08	.070	.055	.070	.000	1668.10	9257.54
.011300	660.	396.	340.	2	15	0	.00	938.60	10204.98

FLOW DISTRIBUTION FOR SECNO= 6.28 CWSEL= 1678.06

STA=	9258.	9539.	9609.	9675.	9764.	9827.	9887.	9966.	9987.	10040.	10058.	10073.	10085.
PER Q=	3.9	5.5	3.1	4.3	5.1	4.7	4.0	1.7	41.7	4.6	4.2	3.6	
AREA=	156.4	145.4	101.1	136.9	132.9	122.8	126.0	44.8	387.8	74.2	67.7	56.1	
VEL=	2.4	3.7	3.0	3.1	3.8	3.7	3.1	3.8	10.4	6.0	6.0	6.2	
DEPTH=	.6	2.1	1.5	1.5	2.1	2.0	1.6	2.2	7.2	4.3	4.3	4.6	

STA=	10085.	10126.	10156.	10186.	10205.
PER Q=	4.1	6.1	3.1	.2	
AREA=	97.5	111.9	73.8	11.8	
VEL=	4.1	5.3	4.1	1.7	
DEPTH=	2.4	3.7	2.4	.6	

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

*SECNO 6.362

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.43

3470 ENCROACHMENT STATIONS= 9444.8 10502.0 TYPE= 1 TARGET= 1057.200
X3 record was used to reflect left ineffective flow area.

6.362	10.28	1681.68	1680.10	.00	1682.08	.40	3.02	.14	1679.10
8524.0	1009.5	5621.8	1892.7	523.2	941.5	658.4	108.3	48.0	1679.10
.12	1.93	5.97	2.87	.070	.055	.070	.000	1671.40	9518.95
.004267	600.	433.	340.	2	15	0	.00	816.11	10335.06

FLOW DISTRIBUTION FOR SECNO= 6.36 CWSEL= 1681.68

STA=	9519.	9783.	9877.	9940.	10090.	10152.	10185.	10208.	10242.	10309.	10335.
PER Q=	3.2	3.6	5.1	66.0	5.9	4.4	3.2	4.1	4.5	.1	
AREA=	202.3	156.2	164.8	941.5	179.4	116.2	84.1	111.3	154.5	12.8	
VEL=	1.3	2.0	2.6	6.0	2.8	3.2	3.2	3.1	2.5	.9	
DEPTH=	.8	1.7	2.6	6.3	2.9	3.6	3.5	3.4	2.3	.5	

*SECNO 6.363

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.94

Downstream face of multiple pipe culverts only 2-72" were considered.
Special culvert method was used including overtopping analysis.

6.363	9.11	1681.33	1680.28	.00	1682.44	1.11	.00	.35	1679.10
8524.0	246.5	7754.8	522.7	418.7	875.2	574.5	108.5	48.1	1679.10
.12	.59	8.86	.91	.070	.012	.070	.000	1672.22	9391.47
.000493	4.	4.	4.	3	16	0	.00	787.91	10325.86

FLOW DISTRIBUTION FOR SECNO= 6.36 CWSEL= 1681.33

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

STA=	9391.	9940.	10090.	10208.	10326.
PER Q=	2.9	91.0	3.8	2.3	
AREA=	418.7	875.2	338.5	236.0	
VEL=	.6	8.9	1.0	.8	
DEPTH=	.8	5.8	2.9	2.0	

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	2	.012	.50	3.00	.00	6.00	.00	45.00	1	1	1672.70	1672.22

CHART 1 - CONCRETE PIPE CULVERT; NO BEVELED RING ENTRANCE
SCALE 1 - SQUARE EDGE ENTRANCE WITH HEADWALL

5130, EGIC= 2581.00..MAY BE TOO LARGE IF INLET CONTROLS.
5135, EGOC= 2249.39 ..MAY BE TOO LARGE IF OUTLET CONTROLS.
*SECNO 6.371

SPECIAL CULVERT INLET CONTROL + WEIR FLOW, EG = 1683.46
SPECIAL CULVERT

EGIC	EGOC	H4	QWEIR	QCULV	VCH	ACULV	ELTRD	WEIRLN
2581.00	2249.39	1.02	7795.	738.	12.048	56.5	1680.40	1027.

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3710 WSEL ASSUMED BASED ON MIN DIFF
3693 PROBABLE MINIMUM SPECIFIC ENERGY
Upstream face of multiple pipe culverts only 2-72" were considered.

6.371	10.19	1683.39	1683.24	.00	1684.97	1.57	.02	.99	1679.70
8524.0	1095.7	5934.1	1494.2	1182.2	492.5	1231.1	111.0	49.0	1680.40
.12	.93	12.05	1.21	.070	.012	.070	.000	1673.20	9334.33
.000614	45.	45.	45.	20	8	0	.00	1066.84	10401.17

FLOW DISTRIBUTION FOR SECNO= 6.37 CWSEL= 1683.39

STA=	9334.	9721.	9864.	9967.	10025.	10104.	10169.	10236.	10335.	10401.
PER Q=	4.1	4.1	4.7	69.6	4.7	4.6	3.3	3.8	1.1	
AREA=	487.5	355.1	339.5	492.5	307.6	282.6	234.0	291.8	115.1	
VEL=	.7	1.0	1.2	12.0	1.3	1.4	1.2	1.1	.8	
DEPTH=	1.3	2.5	3.3	8.6	3.9	4.3	3.5	3.0	1.7	

*SECNO 6.372

6.372	10.20	1683.40	1683.17	.00	1684.97	1.57	.00	.00	1679.70
8524.0	1095.7	5934.1	1494.2	1182.2	492.5	1231.1	111.2	49.1	1680.40
.12	.93	12.05	1.21	.070	.012	.070	.000	1673.20	9334.33
.000614	4.	4.	4.	0	5	0	.00	1066.84	10401.17

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

FLOW DISTRIBUTION FOR SECNO= 6.37 CWSEL= 1683.40

STA=	9334.	9721.	9864.	9967.	10025.	10104.	10169.	10236.	10335.	10401.
PER Q=	4.1	4.1	4.7	69.6	4.7	4.6	3.3	3.8	1.1	
AREA=	487.5	355.1	339.5	492.5	307.6	282.6	234.0	291.8	115.1	
VEL=	.7	1.0	1.2	12.0	1.3	1.4	1.2	1.1	.8	
DEPTH=	1.3	2.5	3.3	8.6	3.9	4.3	3.5	3.0	1.7	

CCHV= .100 CEHV= .300
*SECNO 6.467

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
Split flow was analyzed from SECNO 6.467 to SECNO 6.654.
The split flow returns at SECNO 6.280.

6.467	7.56	1685.36	1685.36	.00	1686.43	1.06	.84	.05	1683.80
8524.0	2157.8	4482.1	1884.1	606.8	427.5	324.0	132.0	56.5	1682.50
.13	3.56	10.49	5.82	.080	.065	.080	.000	1677.80	9432.98
.020475	250.	502.	580.	0	13	0	.00	718.53	10151.51

FLOW DISTRIBUTION FOR SECNO= 6.47 CWSEL= 1685.36

STA=	9433.	9600.	9741.	9791.	9816.	9826.	9853.	9965.	10038.	10067.	10086.	10101.	10121.
PER Q=	3.2	3.5	4.9	3.3	3.4	3.7	3.2	52.6	5.2	5.8	5.1	4.4	
AREA=	118.0	119.5	99.3	60.5	41.6	65.2	102.7	427.5	82.6	75.7	61.2	65.7	
VEL=	2.3	2.5	4.2	4.7	7.0	4.9	2.7	10.5	5.4	6.5	7.0	5.7	
DEPTH=	.7	.8	2.0	2.4	4.3	2.4	.9	5.8	2.9	3.9	4.3	3.2	

STA=	10121.	10152.
PER Q=	1.6	
AREA=	38.8	
VEL=	3.5	
DEPTH=	1.3	

*SECNO 6.558

3301 HV CHANGED MORE THAN HVINS

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.25

6.558	11.26	1689.76	1688.21	.00	1690.01	.25	3.51	.08	1683.80
8524.0	5373.6	2779.1	371.2	2059.2	467.5	185.3	152.6	64.9	1686.40
.17	2.61	5.95	2.00	.080	.065	.080	.000	1678.50	9147.81
.004026	420.	480.	480.	4	9	0	.00	978.68	10126.49

FLOW DISTRIBUTION FOR SECNO= 6.56 CWSEL= 1689.76

STA=	9148.	9551.	9596.	9633.	9707.	9741.	9793.	9862.	9897.	9911.	9926.	9945.	9956.
PER Q=	7.9	4.9	3.6	5.7	3.6	5.4	5.9	3.6	3.1	3.9	8.5	3.1	
AREA=	497.1	156.3	119.5	207.3	116.2	174.5	206.3	115.3	74.8	87.4	153.4	67.8	
VEL=	1.4	2.7	2.6	2.3	2.7	2.6	2.4	2.6	3.5	3.8	4.7	4.0	
DEPTH=	1.2	3.4	3.2	2.8	3.4	3.4	3.0	3.3	5.2	5.9	8.2	6.2	

STA=	9956.	9970.	10022.	10078.	10126.
PER Q=	3.7	32.6	3.9	.5	
AREA=	83.3	467.5	146.5	38.7	
VEL=	3.7	5.9	2.3	1.0	
DEPTH=	5.7	9.0	2.6	.8	

*SECNO 6.654

6.654	10.58	1692.18	1691.12	.00	1692.63	.45	2.56	.06	1689.90
9700.0	4534.7	3747.1	1418.2	1447.2	489.9	380.7	179.3	74.5	1689.10
.20	3.13	7.65	3.73	.080	.065	.080	.000	1681.60	9282.44
.007377	450.	507.	460.	2	9	0	.00	873.21	10155.65

FLOW DISTRIBUTION FOR SECNO= 6.65 CWSEL= 1692.18

STA=	9282.	9580.	9646.	9677.	9730.	9776.	9802.	9819.	9838.	9896.	9928.	9976.	10036.
PER Q=	3.9	3.8	3.2	5.3	3.3	4.2	3.4	4.5	7.8	3.4	3.7	38.6	
AREA=	247.9	138.7	92.7	156.5	111.4	103.5	77.3	95.2	203.1	99.1	121.9	489.9	
VEL=	1.5	2.6	3.4	3.3	2.9	4.0	4.3	4.6	3.7	3.4	3.0	7.6	
DEPTH=	.8	2.1	3.0	3.0	2.4	4.0	4.6	5.0	3.5	3.1	2.5	8.2	

STA=	10036.	10065.	10097.	10122.	10156.
PER Q=	4.2	6.3	3.1	.9	
AREA=	107.3	141.9	85.1	46.4	
VEL=	3.8	4.3	3.6	2.0	
DEPTH=	3.6	4.5	3.4	1.4	

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

CCHV= .100 CEHV= .300
*SECNO 6.751

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 9623.6 10165.1 TYPE= 1 TARGET= -9623.600
ELENCL= 1693.10 ELENCR= 100000.00
The area of the stock tank (CF Tank) is ineffective,
X3 card was used to ignore it.
Q changed to 9,790 cfs at C10L (CF Tank).

6.751	10.21	1695.61	1693.70	.00	1695.88	.27	3.23	.02	1693.50
9790.0	5658.2	2843.1	1288.7	1699.9	493.2	394.2	207.0	84.1	1692.40
.23	3.33	5.76	3.27	.080	.065	.080	.000	1685.40	9325.81
.005782	485.	512.	500.	2	16	0	.00	826.88	10164.15

FLOW DISTRIBUTION FOR SECNO= 6.75 CWSEL= 1695.61

STA=	9326.	9520.	9624.	9662.	9690.	9719.	9736.	9761.	9811.	9850.	9884.	9897.	9927.
PER Q=	3.1	3.5	3.8	5.6	5.8	3.1	4.3	3.3	5.5	6.6	4.8	5.7	
AREA=	195.2	173.0	121.7	134.6	140.0	78.4	110.4	108.5	151.7	157.7	93.6	139.7	
VEL=	1.5	2.0	3.0	4.1	4.0	3.9	3.8	2.9	3.5	4.1	5.0	4.0	
DEPTH=	1.0	1.7	3.2	4.9	4.8	4.6	4.5	2.1	3.9	4.7	6.9	4.8	

STA=	9927.	9961.	10041.	10072.	10102.	10120.	10164.
PER Q=	2.7	29.0	3.0	3.5	3.7	2.9	
AREA=	95.4	493.2	98.6	105.0	90.4	100.1	
VEL=	2.8	5.8	3.0	3.3	4.1	2.8	
DEPTH=	2.7	6.2	3.1	3.6	5.1	2.2	

TW Weir Flow Calculation for Joy Ranch Road Overtopping

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
1176.05	1177.78	.15	1176.05	1177.78	.15	5	1685.362	1692.180	6.467	6.654

THIS RUN EXECUTED 25MAY92 19:22:41

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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

Deadman Wash 100-year Q

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
	5.928	9250.00	1664.28	11.68	1652.60	1664.75	1663.18	7.09	46.87	.00	9759.01	949.69	10708.71
*	6.021	9250.00	1667.54	9.54	1658.00	1668.50	1667.51	10.88	128.25	491.00	9162.56	725.01	10021.06
*	6.108	9250.00	1671.38	9.98	1661.40	1671.80	1670.42	6.95	52.02	459.00	9295.29	853.33	10148.62
	6.205	9250.00	1673.88	6.88	1667.00	1674.21	1672.97	6.90	68.50	512.00	9180.78	971.83	10152.60
	6.280	9700.00	1678.06	9.96	1668.10	1678.92	1678.00	10.42	113.00	396.00	9257.54	938.60	10204.98
*	6.362	8523.95	1681.68	10.28	1671.40	1682.08	1680.10	5.97	42.67	433.00	9518.95	816.11	10335.06
*	6.363	8523.95	1681.33	9.11	1672.22	1682.44	1680.28	8.86	4.93	4.00	9391.47	787.91	10325.86
*	6.371	8523.95	1683.39	10.19	1673.20	1684.97	1683.24	12.05	6.14	45.00	9334.33	1066.84	10401.17
	6.372	8523.95	1683.40	10.20	1673.20	1684.97	1683.17	12.05	6.14	4.00	9334.33	1066.84	10401.17
*	6.467	8523.95	1685.36	7.56	1677.80	1686.43	1685.36	10.49	204.75	502.00	9432.98	718.53	10151.51
*	6.558	8523.95	1689.76	11.26	1678.50	1690.01	1688.21	5.95	40.26	480.00	9147.81	978.68	10126.49
	6.654	9700.00	1692.18	10.58	1681.60	1692.63	1691.12	7.65	73.77	507.00	9282.44	873.21	10155.65
	6.751	9790.00	1695.61	10.21	1685.40	1695.88	1693.70	5.76	57.82	512.00	9325.81	826.88	10164.15

SUMMARY OF ERRORS AND SPECIAL NOTES

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WARNING SECNO=      6.021  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      6.108  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      6.362  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      6.363  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      6.371  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=      6.371  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=      6.371  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=      6.467  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      6.467  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      6.558  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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Normal program termination

HEC2 S/N: 1126460209 HMVersion: 6.40 Data File: sun3.hc2

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*********************************************
*  HEC-2 WATER SURFACE PROFILES             *
*                                           *
*  Version   4.6.2;  May 1991               *
*                                           *
*  RUN DATE    25MAY92    TIME   20:44:11   *
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***************************************
*  U.S. ARMY CORPS OF ENGINEERS       *
*  HYDROLOGIC ENGINEERING CENTER      *
*  609 SECOND STREET, SUITE D         *
*  DAVIS, CALIFORNIA 95616-4687       *
*          (916) 756-1104             *
***************************************
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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:::::::::::::::::::::::::::::::::::::::::::::
:::                                       :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
:::                                       :::
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============================
H A E S T A D   M E T H O D S
============================
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37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 25MAY92 20:44:11

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

 Version   4.6.2;  May 1991
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T1      Deadman Wash Floodplain Delineation Study
T2      Hydraulic Analysis of Deadman Wash, SECNO 6.751 to SECNO 8.111
T3      Deadman Wash 100-year Q   Subcritical Flow,    May 1992

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                                                                  1695.61

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1                   -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38        43         1         8        42         3         2        26         5        39
    53         4        54

QT       1      9790
NC    .080      .080      .065       .1        .3
         The area of the stock tank (CF Tank) is ineffective,
         X3 card was used to ignore it.
         Q changed to 9,790 cfs at C10L (CF Tank).
X1   6.751        45    9961.2   10040.5         0         0         0
X3      10                       9623.6    1693.1
GR  1696.0    9288.0    1694.0    9482.0    1693.8    9490.0    1693.7    9520.0    1694.0    9530.0
GR  1693.9    9623.6    1691.0    9662.1    1690.5    9689.8    1691.1    9718.9    1690.9    9735.9
GR  1690.9    9750.5    1692.0    9760.5    1697.7    9778.5    1697.2    9780.9    1693.9    9786.0
GR  1692.0    9794.2    1691.8    9811.4    1692.0    9834.5    1690.7    9850.0    1692.9    9855.4
GR  1693.2    9861.0    1690.5    9870.8    1687.4    9883.7    1687.7    9887.3    1690.6    9897.3
GR  1690.4    9910.7    1691.8    9926.5    1692.7    9938.1    1693.4    9954.3    1693.5    9961.2
GR  1691.7    9970.5    1691.4    9975.5    1687.7    9985.8    1686.8    9991.8    1685.9   10000.0
GR  1685.4   10010.2    1692.3   10026.2    1692.4   10040.5    1692.6   10072.2    1691.5   10101.7
GR  1691.6   10108.3    1688.9   10112.8    1690.7   10119.6    1693.1   10137.6    1695.7   10165.1

X1   6.849        46    9965.3   10018.9       370       520       517
GR  1699.1    9110.0    1698.0    9160.0    1698.5    9190.0    1698.0    9230.0    1697.0    9360.0
GR  1695.9    9502.9    1695.7    9521.6    1695.2    9548.0    1694.2    9583.7    1694.2    9607.2
GR  1694.2    9613.6    1693.7    9618.9    1694.7    9626.4    1694.4    9654.9    1694.8    9700.4
GR  1695.6    9738.6    1696.3    9767.5    1696.5    9826.0    1696.1    9863.6    1696.0    9895.4
GR  1695.4    9927.1    1695.9    9951.5    1695.6    9965.3    1691.2    9981.0    1690.9    9993.2
GR  1690.8   10000.0    1690.8   10005.2    1694.3   10018.9    1694.3   10038.5    1694.1   10040.9
GR  1695.5   10057.4    1695.4   10068.5    1694.0   10084.3    1693.5   10093.9    1693.6   10099.8
GR  1696.2   10106.2    1697.0   10122.9    1697.6   10149.9    1697.5   10167.5    1694.6   10175.2
GR  1696.7   10193.3    1696.9   10215.1    1697.3   10260.2    1697.4   10282.3    1698.8   10306.8
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GR   1699.4    10310.3

X1    6.945        47    9967.9   10019.3      695      375      507
GR   1703.8    9495.0   1702.6    9546.5   1701.1   9590.1   1700.5   9620.3   1700.1   9651.4
GR   1700.3    9672.4   1700.5    9710.4   1700.4   9750.7   1699.6   9785.2   1699.3   9814.7
GR   1699.8    9839.7   1699.2    9864.0   1698.6   9876.6   1698.7   9893.4   1698.2   9900.6
GR   1698.8    9918.6   1698.6    9934.5   1698.9   9956.1   1699.1   9967.9   1698.4   9976.1
GR   1690.9    9987.4   1692.0    9997.4   1692.3  10000.0   1693.0  10006.3   1700.2  10019.3
GR   1699.7   10029.7   1698.8   10058.5   1698.7  10123.7   1698.7  10183.9   1698.9  10216.8
GR   1699.0   10229.2   1699.0   10235.0   1697.6  10241.2   1699.0  10247.9   1699.5  10257.3
GR   1698.7   10267.8   1695.6   10276.7   1696.3  10290.9   1697.6  10310.1   1697.4  10330.0
GR   1698.8   10348.1   1698.7   10360.2   1698.0  10366.6   1699.3  10382.8   1700.9  10427.8
GR   1702.1   10477.7   1702.2   10492.6

          The depressed area in the unnamed stock tank is ignored,
          X3 card was used.
X1    7.042        55    9969.3   10027.6      650      360      512
X3       10                                         10064.5   1700.7
GR   1707.5    9546.2   1705.9    9557.3   1708.3   9567.6   1706.0   9576.1   1705.8   9611.1
GR   1706.6    9628.3   1705.7    9640.0   1705.3   9679.8   1703.9   9721.4   1703.1   9762.3
GR   1702.6    9790.0   1703.2    9815.4   1701.7   9857.1   1701.3   9896.5   1701.3   9918.5
GR   1701.5    9943.9   1701.8    9969.3   1697.6   9983.0   1693.3   9985.9   1693.5   9991.8
GR   1697.6   10000.0   1698.7   10011.6   1699.7  10027.6   1699.7  10044.0   1698.9  10053.8
GR   1700.7   10064.5   1700.4   10072.8   1697.4  10079.3   1696.9  10081.7   1701.7  10095.8
GR   1702.6   10105.2   1701.6   10134.1   1701.0  10163.1   1700.6  10203.4   1700.7  10234.8
GR   1700.8   10254.8   1699.8   10261.6   1698.4  10265.8   1700.7  10272.8   1701.2  10283.0
GR   1700.8   10291.5   1698.8   10298.0   1698.9  10301.9   1700.3  10308.7   1700.7  10316.7
GR   1699.5   10323.2   1699.5   10327.2   1700.9  10335.0   1700.8  10350.6   1701.7  10395.5
GR   1702.1   10426.6   1703.4   10460.0   1705.4  10507.0   1706.9  10539.7   1706.8  10541.0

          The area in the pond is ignored, X3 card was used.
X1    7.133        45    9957.8   10162.4      430      440      480
X3       10                       9945.0    1704.1
GR   1709.5    9424.7   1709.0    9461.5   1707.4   9496.7   1707.2   9530.3   1706.4   9557.1
GR   1705.7    9567.5   1706.2    9592.6   1708.1   9608.0   1705.0   9626.2   1704.6   9652.5
GR   1703.6    9675.7   1703.5    9701.1   1703.0   9729.2   1703.0   9743.8   1703.7   9752.6
GR   1700.3    9763.8   1697.8    9774.6   1697.6   9797.7   1697.5   9824.1   1697.7   9854.4
GR   1697.8    9881.6   1697.5    9905.5   1697.6   9920.6   1697.9   9925.9   1702.5   9936.7
GR   1704.1    9945.0   1703.4    9957.8   1701.4   9970.5   1697.5   9980.7   1697.8  10000.0
GR   1698.0   10026.2   1697.9   10052.7   1698.0  10069.4   1698.6  10086.4   1702.8  10097.9
GR   1703.1   10110.4   1702.9   10132.8   1702.8  10149.0   1705.1  10162.4   1706.0  10176.2
GR   1705.5   10192.6   1705.6   10201.2   1707.5  10223.6   1709.1  10249.5   1709.3  10254.7

          The area in the pond is ignored, X3 card was used.
X1    7.228        38    9872.2   10206.6      502      502      502
X3       10                       9831.4    1704.3
GR   1710.9    9535.1   1710.3    9574.5   1709.6   9617.6   1709.3   9635.5   1707.8   9643.3
GR   1708.9    9650.2   1707.4    9657.3   1708.4   9687.5   1707.2   9697.7   1701.9   9714.5
GR   1700.6    9724.7   1699.9    9734.7   1701.3   9751.8   1701.5   9762.7   1701.5   9788.8
GR   1701.0    9804.7   1700.7    9812.2   1701.5   9817.3   1704.3   9831.4   1704.4   9849.4
GR   1704.7    9872.2   1703.0    9891.4   1700.7   9904.0   1701.7   9920.2   1701.5   9960.3
GR   1701.3   10000.0   1701.8   10058.5   1701.3  10101.1   1701.6  10154.4   1702.6  10178.4
GR   1703.0   10192.4   1706.1   10206.6   1706.9  10217.9   1706.1  10231.1   1705.5  10240.6
GR   1707.0   10250.5   1708.5   10262.7   1712.8  10278.7
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X1    7.323       44    9984.7   10031.3       540       450       502
GR   1717.1   9690.9    1716.0    9701.7    1715.7    9726.5    1714.5    9734.1    1715.3    9744.6
GR   1715.6   9769.6    1713.9    9797.3    1711.8    9814.6    1709.9    9824.8    1709.9    9831.8
GR   1710.2   9849.2    1705.9    9864.5    1705.3    9869.6    1706.9    9877.6    1707.0    9894.1
GR   1707.0   9913.4    1705.5    9925.2    1704.8    9935.4    1705.0    9943.6    1708.8    9952.6
GR   1710.1   9964.9    1710.4    9978.3    1709.8    9984.8    1705.6    9988.0    1703.7    9990.7
GR   1704.0  10000.0    1704.4   10011.5    1704.3   10020.1    1706.4   10031.3    1706.8   10047.1
GR   1707.3  10059.8    1709.5   10074.3    1710.4   10090.1    1710.5   10113.2    1710.6   10135.4
GR   1712.1  10161.5    1712.2   10190.0    1710.9   10214.7    1711.3   10239.1    1710.1   10252.2
GR   1711.1  10263.7    1711.8   10269.7    1711.4   10302.3    1714.8   10326.4

X1    7.417       30    9972.3   10036.8       490       500       496
GR   1719.0   9650.0    1716.5    9693.0    1716.8    9710.5    1716.2    9727.4    1714.9    9747.4
GR   1714.4   9765.9    1714.9    9791.7    1713.5    9814.6    1709.6    9828.7    1709.0    9840.9
GR   1708.9   9859.7    1708.9    9882.6    1708.9    9892.6    1710.7    9911.7    1711.5    9929.5
GR   1712.4   9955.6    1712.5    9972.3    1706.6    9984.7    1707.3    9999.1    1707.4   10000.0
GR   1707.8  10015.8    1708.0   10024.0    1712.6   10036.8    1713.1   10050.9    1713.7   10069.6
GR   1714.0  10080.0    1716.7   10086.5    1717.9   10096.7    1719.4   10109.4    1719.1   10111.1

X1    7.513       37    9972.8   10053.5       550       507       507
GR   1724.4   9526.1    1722.8    9533.3    1722.4    9550.7    1721.2    9581.5    1720.3    9593.1
GR   1720.6   9625.6    1721.2    9650.3    1720.6    9666.6    1718.5    9671.4    1716.8    9680.2
GR   1717.2   9688.7    1720.3    9691.0    1720.5    9698.9    1719.9    9707.9    1716.8    9717.9
GR   1715.5   9725.6    1716.6    9744.0    1716.6    9773.7    1716.5    9794.8    1718.6    9810.5
GR   1719.2   9828.6    1720.2    9860.4    1720.1    9871.3    1720.3    9882.2    1720.0    9896.6
GR   1719.5   9917.7    1718.9    9940.8    1717.6    9958.1    1716.8    9972.8    1713.1    9984.6
GR   1710.9   9993.9    1711.0   10000.0    1711.5   10011.8    1712.2   10026.0    1713.6   10033.3
GR   1725.5  10053.5    1731.1   10067.4

QT       1     10000
         Q changed to 10,000 cfs at C10J (just 1,050' west of I-17).
X1    7.587       52    9952.4   10033.7       290       391       391
GR   1726.0   9341.0    1724.0    9367.5    1723.0    9386.0    1723.6    9404.2    1722.5    9417.9
GR   1722.0   9429.9    1722.4    9435.7    1723.8    9450.5    1724.6    9470.1    1724.6    9491.0
GR   1724.3   9510.7    1723.5    9525.0    1722.7    9536.0    1723.0    9552.3    1722.3    9570.8
GR   1723.5   9583.3    1722.7    9601.8    1722.4    9626.9    1721.8    9641.0    1718.8    9651.8
GR   1717.4   9655.3    1717.6    9659.6    1719.0    9669.7    1718.5    9684.2    1718.7    9691.5
GR   1722.1   9701.0    1722.3    9706.2    1718.4    9715.0    1720.0    9720.6    1722.6    9734.3
GR   1723.2   9748.3    1724.0    9765.7    1723.9    9792.2    1724.1    9814.1    1723.5    9845.2
GR   1722.6   9877.0    1722.1    9902.9    1721.3    9915.8    1721.8    9938.7    1721.1    9952.4
GR   1718.4   9966.0    1717.9    9982.6    1716.6    9992.0    1715.6   10000.0    1715.9   10006.7
GR   1717.9  10018.3    1723.2   10033.7    1726.1   10050.0    1727.7   10067.8    1728.8   10095.4
GR   1730.8  10126.0    1730.8   10129.3

X1    7.663       48    9974.3   10044.2       280       430       401

NC     .070     .070      .055
GR   1729.0   9470.0    1729.2    9486.5    1726.7    9505.5    1725.4    9518.2    1724.6    9523.9
GR   1723.9   9540.7    1723.3    9560.3    1723.8    9572.7    1722.7    9587.7    1723.2    9596.1
GR   1724.9   9612.5    1725.5    9641.1    1725.6    9656.0    1725.7    9686.1    1724.7    9713.7
GR   1724.5   9741.9    1724.2    9761.3    1723.7    9787.3    1723.3    9812.2    1723.0    9831.5
GR   1723.3   9846.0    1723.3    9856.1    1721.9    9859.8    1723.2    9866.3    1723.5    9881.5
GR   1725.0   9891.1    1725.3    9906.9    1725.2    9908.2    1725.6    9927.0    1724.5    9945.2
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GR   1723.4    9960.9    1722.7    9974.3    1719.6    9985.7    1718.8    9993.5    1718.4   10000.0
GR   1718.8   10015.0    1719.4   10029.4    1722.9   10044.2    1723.2   10063.4    1724.4   10088.8
GR   1724.4   10112.2    1725.9   10133.6    1727.3   10154.8    1727.8   10195.9    1728.7   10224.1
GR   1727.4   10229.6    1729.6   10250.8    1729.4   10259.5
QT       1       9460
NC                                     .6         .8
          NC card was used - channel = .055, overbanks = .070.
          Contraction and expansion values changed to .6 and .8
          for I-17 southbound and northbound bridges.
X1    7.738        31    9967.8   10032.3       370       410       396
GR   1730.0    9700.0    1727.9    9740.9    1725.4    9769.9    1725.2    9798.2    1725.7    9837.9
GR   1726.9    9873.3    1727.3    9904.1    1728.5    9934.4    1727.6    9957.7    1725.8    9967.8
GR   1720.8    9980.9    1720.2    9992.9    1718.8   10000.0    1718.8   10007.1    1720.5   10014.2
GR   1725.6   10032.3    1726.8   10042.0    1725.6   10059.3    1726.4   10078.7    1725.9   10095.9
GR   1726.5   10107.9    1726.4   10121.4    1726.3   10146.2    1727.0   10170.2    1728.6   10194.0
GR   1728.9   10234.2    1729.4   10275.6    1729.8   10316.2    1730.4   10370.2    1730.6   10428.8
GR   1730.6   10434.6

NC     .095      .095      .080
X1    7.766        22    9949.6   10075.6       110       160       148
GR   1731.6    9701.6    1732.0    9737.1    1731.6    9812.3    1731.0    9890.0    1731.1    9936.4
GR   1729.1    9949.6    1725.0    9968.1    1719.8    9990.7    1719.1   10000.0    1719.3   10021.1
GR   1721.1   10052.5    1729.0   10075.6    1733.3   10087.6    1732.6   10106.0    1732.3   10155.5
GR   1733.0   10223.7    1734.6   10297.7    1734.8   10395.8    1735.5   10464.4    1736.5   10577.2
GR   1738.1   10664.6    1737.7   10679.7

NC                        .013
X1    7.769         8    9936.0   10064.0        17        17        17
X3       10                                                            1734.0    1734.0
GR   1735.3       9815    1733.0    9936.0    1720.8    9936.01   1720.8    9962.0    1719.5    9966.0
GR   1719.5   10063.99    1732.8   10064.0    1736.8   10410.0

SB    1.90       1.6       2.6                 128        12      1400              1719.7    1719.5
X1    7.778        10    9936.0   10064.0        45        45        45
X2                          1    1733.0    1735.1
X3       10                                                            1734.1    1734.1
BT       -7    9815.0    1735.3              9936.0    1735.2    1733.0    9962.0    1735.2    1733.0
BT             9966.0    1735.1    1732.9   10034.0    1735.3    1733.0   10064.0    1735.2    1732.8
BT            10410.0    1736.8
GR   1735.3    9815.0    1733.0    9936.0    1722.0    9936.01   1722.0    9962.0    1719.7    9966.0
GR   1719.7   10034.0    1719.8   10038.0    1719.8   10063.99   1732.8   10064.0    1736.8   10410.0

NC                        .080
X1    7.785        40    9914.5   10085.1        38        38        38
GR   1750.8    9303.1    1750.6    9339.8    1749.2    9399.0    1748.5    9438.4    1747.4    9476.3
GR   1747.5    9511.0    1746.6    9559.9    1745.3    9615.2    1742.5    9650.9    1740.4    9689.0
GR   1738.3    9721.2    1736.7    9763.1    1736.7    9800.5    1736.5    9839.0    1734.9    9873.0
GR   1734.3    9898.9    1734.7    9914.5    1733.6    9924.1    1728.2    9936.3    1722.4    9962.5
GR   1722.3    9979.6    1720.6    9993.7    1720.9   10000.0    1721.9   10015.8    1721.9   10030.8
GR   1722.3   10052.6    1722.4   10064.0    1730.3   10074.4    1734.4   10085.1    1734.0   10101.5
GR   1733.7   10136.0    1734.1   10219.4    1733.2   10285.8    1731.9   10352.7    1732.6   10403.2
GR   1732.6   10479.1    1733.0   10535.1    1733.9   10602.8    1734.4   10675.1    1735.7   10744.6
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NC                      .013
X1    7.792        16   9939.0   10061.01       35       35       35
X3       10                                                   1738.6   1738.6
GR   1738.2      9939   1722.92   9939.01  1722.92     9964  1738.20   9964.01  1738.07     9968
GR   1722.2   9968.01   1722.17      9998  1738.07  9998.01  1737.86     10002  1722.22  10002.01
GR   1722.2     10032   1737.86  10032.01  1737.83    10036  1722.99  10036.01  1722.99    10061
GR   1737.8  10061.01

SB    1.90       1.6       2.6               122       12     1740            1722.94  1722.22
X1   7.800        16      9939   10061.01     44       44       44
X2                            1    1737.9  1739.2
X3       10                                                   1938.7   1938.7
BT      -10      9820    1739.7              9939   1739.4   1738.2   9964.01  1739.4  1738.20
BT               9968    1739.4   1738.07  9998.01   1739.2  1738.07     10000  1739.2
BT              10002    1739.2   1737.86 10032.01   1739.2  1737.86  10061.01  1739.2   1737.8
BT              10265    1739.2
GR   1738.2      9939   1724.02   9939.01  1724.02     9964  1738.20   9964.01  1738.07     9968
GR   1723.8   9968.01   1723.82      9998  1738.07  9998.01  1737.86     10002  1722.94  10002.01
GR   1722.9     10032   1737.86  10032.01  1737.83    10036  1723.74  10036.01  1723.74    10061
GR   1737.8  10061.01

NC    .095      .095      .075        .1       .3
X1   7.812        36    9949.4   10163.9       64       64       64
X3       10                                  10187.5   1734.0
GR   1750.9    9868.8   1749.3    9880.1   1742.6   9901.1   1741.4    9915.1  1739.6   9928.1
GR   1731.1    9949.4   1727.7    9963.3   1724.7   9989.8   1723.2   10000.0  1723.3  10008.2
GR   1725.2   10017.8   1725.8   10031.9   1725.3  10042.8   1724.0   10055.3  1724.0  10059.9
GR   1725.5   10071.7   1724.0   10084.9   1725.6  10094.7   1724.8   10106.5  1723.4  10116.4
GR   1723.2   10122.8   1723.4   10129.1   1729.9  10144.3   1732.8   10163.9  1734.0  10187.5
GR   1732.4   10219.8   1731.5   10270.4   1732.0  10307.7   1732.0   10349.8  1731.5  10394.3
GR   1731.9   10422.5   1731.0   10437.1   1729.0  10450.0   1729.4   10470.8  1729.6  10474.3
GR   1736.0   10700.0

NH       5      .095    9973.5      .075  10089.1     .095  10471.1      .060  10520.5     .095
NH   10674.
X1   7.872        48    9973.5   10089.1      280      330      317
GR   1751.8    9916.8   1745.4    9939.6   1739.4   9957.0   1732.6    9973.5  1727.9   9989.4
GR   1727.0    9995.4   1725.7   10000.0   1726.0  10010.8   1729.7   10029.2  1729.6  10043.9
GR   1728.7   10054.5   1731.6   10089.0   1731.3  10105.2   1731.3   10130.4  1730.9  10170.8
GR   1730.8   10201.5   1730.3   10227.0   1732.4  10253.3   1732.7   10269.0  1732.9  10289.4
GR   1733.8   10314.8   1733.0   10330.4   1732.4  10345.9   1732.0   10379.0  1731.3  10412.7
GR   1731.4   10439.3   1731.0   10461.2   1731.3  10471.1   1728.0   10477.6  1726.7  10487.1
GR   1726.6   10493.5   1727.1   10500.6   1729.0  10507.9   1732.5   10520.5  1732.6  10539.7
GR   1731.4   10551.5   1730.0   10562.0   1731.8  10574.0   1730.5   10582.2  1730.0  10589.2
GR   1732.2   10593.9   1732.8   10600.2   1731.5  10613.6   1732.8   10627.7  1733.3  10660.4
GR   1733.1   10673.8   1734.0   10928.8   1736.0  10993.8

NH       5      .095    9986.8      .075  10028.9     .095  10380.7      .060  10448.1     .095
NH   10649.
```

X1	7.921	55	9986.8	10028.9	310	120	259			
GR	1759.6	9650.0	1749.3	9702.3	1741.8	9738.0	1737.5	9763.2	1734.9	9787.2
GR	1732.1	9814.7	1732.2	9830.7	1732.1	9853.6	1731.3	9865.9	1731.6	9875.1
GR	1732.3	9891.3	1732.4	9915.0	1731.8	9941.4	1732.7	9964.7	1732.2	9974.7
GR	1730.6	9986.8	1728.1	9996.5	1727.9	10000.0	1727.7	10007.4	1729.8	10016.6
GR	1732.3	10028.9	1732.4	10042.8	1732.0	10065.9	1731.4	10096.3	1732.0	10119.0
GR	1732.0	10143.9	1731.2	10167.6	1732.8	10185.1	1733.5	10202.5	1733.8	10227.9
GR	1733.7	10228.8	1733.6	10250.8	1731.9	10283.7	1731.9	10329.7	1733.2	10362.6
GR	1732.9	10380.7	1729.8	10391.4	1727.5	10407.6	1726.4	10417.6	1726.5	10426.3
GR	1728.7	10435.1	1731.6	10448.1	1732.7	10464.7	1732.2	10476.8	1730.1	10491.0
GR	1732.2	10505.5	1729.9	10516.3	1732.8	10527.8	1731.7	10546.6	1732.9	10559.0
GR	1733.2	10588.7	1733.2	10616.0	1734.0	10875.0	1736.0	10915.0	1736.3	10940.0
QT	1	6110								
NH	4	.095	9391.3	.080	9980.6	.075	10017.4	.095	10307.4	
X1	8.016	40	9980.6	10017.4	510	470	502			
GR	1744.3	9367.4	1742.0	9391.3	1739.6	9412.2	1738.9	9414.4	1739.2	9430.5
GR	1737.9	9444.3	1736.7	9456.2	1737.0	9464.3	1737.0	9489.3	1736.7	9526.9
GR	1736.7	9558.5	1736.6	9576.0	1736.6	9604.2	1737.0	9630.8	1737.7	9661.0
GR	1738.5	9692.6	1738.5	9723.3	1739.2	9769.4	1739.0	9779.2	1739.2	9803.5
GR	1739.2	9830.7	1738.1	9858.0	1735.7	9882.6	1735.0	9901.8	1734.2	9922.9
GR	1734.2	9946.2	1734.6	9962.7	1734.9	9980.6	1730.1	9996.7	1729.9	10000.0
GR	1730.2	10010.6	1734.9	10017.4	1735.2	10026.5	1734.6	10047.7	1735.7	10079.8
GR	1736.1	10135.5	1736.6	10184.6	1737.9	10224.0	1741.9	10269.1	1743.2	10307.4
NC	.095	.095	.075							
X1	8.111	25	9982.1	10012.7	502	502	502			
GR	1747.4	9517.4	1745.1	9563.0	1742.8	9604.9	1741.9	9655.2	1741.5	9701.4
GR	1740.2	9758.2	1738.4	9794.0	1738.6	9818.9	1739.2	9848.0	1739.2	9882.1
GR	1737.9	9913.3	1736.3	9948.2	1737.3	9974.0	1736.6	9982.1	1733.4	9992.2
GR	1732.2	9996.2	1732.2	10000.0	1732.9	10005.6	1736.6	10012.7	1737.1	10034.4
GR	1737.7	10052.1	1741.0	10070.6	1743.3	10102.9	1744.8	10142.7	1745.8	10149.0

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

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300
*SECNO 6.751

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 9623.6 10165.1 TYPE= 1 TARGET= -9623.600
ELENCL= 1693.10 ELENCR= 100000.00
The area of the stock tank (CF Tank) is ineffective,
X3 card was used to ignore it.
Q changed to 9,790 cfs at C10L (CF Tank).

6.751	10.21	1695.61	1693.73	1695.61	1695.88	.27	.00	.00	1693.50
9790.0	5658.1	2843.2	1288.7	1699.7	493.2	394.1	.0	.0	1692.40
.00	3.33	5.77	3.27	.080	.065	.080	.000	1685.40	9325.83
.005783	0.	0.	0.	0	11	0	.00	826.86	10164.15

FLOW DISTRIBUTION FOR SECNO= 6.75 CWSEL= 1695.61

STA=	9326.	9520.	9624.	9662.	9690.	9719.	9736.	9761.	9811.	9850.	9884.	9897.	9927.
PER Q=	3.1	3.5	3.8	5.6	5.8	3.1	4.3	3.3	5.5	6.6	4.8	5.7	
AREA=	195.2	173.0	121.7	134.6	140.0	78.4	110.4	108.5	151.7	157.7	93.6	139.7	
VEL=	1.5	2.0	3.0	4.1	4.0	3.9	3.8	2.9	3.5	4.1	5.0	4.0	
DEPTH=	1.0	1.7	3.2	4.9	4.8	4.6	4.5	2.1	3.9	4.7	6.9	4.8	

STA=	9927.	9961.	10041.	10072.	10102.	10120.	10164.
PER Q=	2.7	29.0	3.0	3.5	3.7	2.9	
AREA=	95.4	493.2	98.6	105.0	90.4	100.1	
VEL=	2.8	5.8	3.0	3.3	4.1	2.8	
DEPTH=	2.7	6.2	3.1	3.6	5.1	2.2	

*SECNO 6.849

3265 DIVIDED FLOW

6.849	7.62	1698.42	1697.35	.00	1698.69	.27	2.81	.00	1695.60
9790.0	5610.9	2252.9	1926.2	1799.7	340.1	609.7	25.8	9.3	1694.30
.03	3.12	6.62	3.16	.080	.065	.080	.000	1690.80	9141.01
.007332	370.	517.	520.	2	17	0	.00	1147.58	10300.11

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

FLOW DISTRIBUTION FOR SECNO= 6.85 CWSEL= 1698.42

STA=	9141.	9503.	9548.	9584.	9607.	9626.	9655.	9700.	9739.	9826.	9895.	9952.	9965.
PER Q=	9.1	4.1	5.2	4.2	3.5	4.4	6.9	4.4	5.2	4.3	4.9	1.2	
AREA=	416.7	127.3	132.7	99.1	82.3	110.2	173.7	122.9	189.4	154.9	153.7	36.8	
VEL=	2.1	3.2	3.8	4.2	4.2	3.9	3.9	3.5	2.7	2.7	3.1	3.1	
DEPTH=	1.2	2.8	3.7	4.2	4.3	3.9	3.8	3.2	2.2	2.2	2.7	2.7	

STA=	9965.	10019.	10039.	10069.	10094.	10150.	10215.	10300.
PER Q=	23.0	3.4	3.8	4.3	3.4	3.1	1.7	
AREA=	340.1	80.7	102.8	103.6	111.8	118.9	92.1	
VEL=	6.6	4.1	3.6	4.1	3.0	2.6	1.8	
DEPTH=	6.3	4.1	3.4	4.1	2.0	1.8	1.1	

*SECNO 6.945

6.945	11.18	1702.08	1700.89	.00	1702.36	.28	3.67	.00	1699.10
9790.0	2467.3	2425.2	4897.5	903.8	374.2	1427.3	60.3	22.8	1700.20
.07	2.73	6.48	3.43	.080	.065	.080	.000	1690.90	9561.52
.006335	695.	507.	375.	2	9	0	.00	915.48	10477.00

FLOW DISTRIBUTION FOR SECNO= 6.95 CWSEL= 1702.08

STA=	9562.	9710.	9785.	9840.	9877.	9919.	9956.	9968.	10019.	10059.	10124.	10184.	10217.
PER Q=	4.3	3.1	4.0	3.1	5.2	4.3	1.2	24.8	3.0	7.3	6.9	3.6	
AREA=	211.8	137.7	141.0	102.9	148.3	125.8	36.4	374.2	103.8	217.3	203.7	108.0	
VEL=	2.0	2.2	2.8	2.9	3.4	3.3	3.1	6.5	2.8	3.3	3.3	3.3	
DEPTH=	1.4	1.8	2.6	2.8	3.5	3.4	3.1	7.3	2.6	3.3	3.4	3.3	

STA=	10217.	10248.	10277.	10291.	10310.	10330.	10360.	10428.	10477.
PER Q=	3.6	3.6	4.4	4.4	3.8	4.1	4.9	.3	
AREA=	105.5	101.9	87.1	98.6	91.2	112.4	168.7	29.1	
VEL=	3.3	3.5	4.9	4.4	4.1	3.6	2.8	1.0	
DEPTH=	3.4	3.5	6.1	5.1	4.6	3.7	2.5	.6	

*SECNO 7.042

3470 ENCROACHMENT STATIONS= .0 10064.5 TYPE= 1 TARGET= 10064.500

The depressed area in the unnamed stock tank is ignored,
X3 card was used.

7.042	11.55	1704.85	1703.30	.00	1705.12	.27	2.76	.00	1701.80
9790.0	1775.3	2471.3	5543.3	651.6	409.5	1632.3	89.1	32.4	1699.70
.10	2.72	6.03	3.40	.080	.065	.080	.000	1693.30	9693.28
.005654	650.	512.	360.	2	13	0	.00	800.71	10493.99

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

FLOW DISTRIBUTION FOR SECNO= 7.04 CWSEL= 1704.85

STA=	9693.	9815.	9897.	9944.	9969.	10028.	10044.	10064.	10096.	10163.	10203.	10235.	10262.
PER Q=	3.4	6.8	5.4	2.5	25.2	3.6	4.7	4.4	6.3	5.8	4.8	4.0	
AREA=	173.1	231.8	165.6	81.2	409.5	84.4	108.3	122.7	207.6	161.1	130.2	109.8	
VEL=	1.9	2.9	3.2	3.0	6.0	4.2	4.2	3.5	3.0	3.5	3.6	3.6	
DEPTH=	1.4	2.9	3.5	3.2	7.0	5.1	5.3	3.9	3.1	4.0	4.1	4.1	

STA=	10262.	10283.	10309.	10335.	10396.	10460.	10494.
PER Q=	3.1	3.8	4.0	7.6	4.3	.3	
AREA=	86.2	103.7	108.3	223.8	161.6	24.6	
VEL=	3.5	3.5	3.6	3.3	2.6	1.1	
DEPTH=	4.0	4.0	4.1	3.7	2.5	.7	

*SECNO 7.133

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 9945.0 10254.7 TYPE= 1 TARGET= -9945.000
ELENCL= 1704.10 ELENCR= 100000.00
The area in the pond is ignored, X3 card was used.

7.133	9.48	1706.98	1704.76	.00	1707.33	.35	2.19	.02	1703.40
9790.0	2283.3	7420.8	85.9	989.5	1409.4	63.3	115.8	39.8	1705.10
.13	2.31	5.27	1.36	.080	.065	.080	.000	1697.50	9537.74
.004095	430.	480.	440.	2	20	0	.00	664.02	10217.44

FLOW DISTRIBUTION FOR SECNO= 7.13 CWSEL= 1706.98

STA=	9538.	9676.	9729.	9775.	9824.	9882.	9926.	9958.	10162.	10217.
PER Q=	3.2	3.8	3.2	3.5	4.1	3.1	2.4	75.8	.9	
AREA=	173.2	154.0	130.7	142.5	165.5	127.5	96.3	1409.4	63.3	
VEL=	1.8	2.4	2.4	2.4	2.4	2.4	2.5	5.3	1.4	
DEPTH=	1.3	2.9	2.9	2.9	2.9	2.9	3.0	6.9	1.2	

*SECNO 7.228

3265 DIVIDED FLOW

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

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.43

3470 ENCROACHMENT STATIONS= 9831.4 10278.7 TYPE= 1 TARGET= -9831.400
ELENCL= 1704.30 ELENCR= 100000.00
The area in the pond is ignored, X3 card was used.

7.228	7.86	1708.56	1704.96	.00	1708.74	.18	1.39	.02	1704.70
9790.0	1538.4	8101.4	150.2	746.1	2237.2	109.3	147.8	47.2	1706.10
.17	2.06	3.62	1.37	.080	.065	.080	.000	1700.70	9639.36
.001996	502.	502.	502.	3	11	0	.00	619.79	10262.92

FLOW DISTRIBUTION FOR SECNO= 7.23 CWSEL= 1708.56

STA=	9639.	9752.	9789.	9831.	9872.	10207.	10263.
PER Q=	4.5	3.5	4.0	3.6	82.8	1.5	
AREA=	240.1	157.5	181.4	167.1	2237.2	109.3	
VEL=	1.9	2.2	2.2	2.1	3.6	1.4	
DEPTH=	2.1	4.3	4.3	4.1	6.7	1.9	

*SECNO 7.323

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

7.323	7.35	1711.05	1711.05	.00	1712.66	1.62	2.61	.43	1710.40
9790.0	4513.1	3824.5	1452.5	522.6	301.2	214.2	172.0	52.9	1706.40
.18	8.64	12.70	6.78	.080	.065	.080	.000	1703.70	9818.64
.032660	540.	502.	450.	0	11	0	.00	357.54	10263.09

FLOW DISTRIBUTION FOR SECNO= 7.32 CWSEL= 1711.05

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

STA=	9819.	9865.	9878.	9894.	9913.	9925.	9935.	9944.	9953.	9978.	10031.	10047.	10060.
PER Q=	4.2	6.8	5.9	6.8	5.5	6.7	5.8	3.1	1.2	39.1	6.5	4.4	
AREA=	74.8	67.4	67.6	78.1	56.6	60.2	50.4	37.3	30.3	301.2	70.3	50.8	
VEL=	5.5	9.9	8.6	8.5	9.5	10.9	11.3	8.2	4.0	12.7	9.1	8.5	
DEPTH=	1.6	5.1	4.1	4.0	4.8	5.9	6.1	4.1	1.2	5.7	4.4	4.0	

STA=	10060.	10090.	10263.
PER Q=	3.1	.8	
AREA=	55.7	37.5	
VEL=	5.5	2.1	
DEPTH=	1.8	.2	

*SECNO 7.417

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.65

7.417	10.62	1717.22	1714.04	.00	1717.63	.41	4.85	.12	1712.50
9790.0	5528.7	3708.5	552.8	1316.6	568.9	181.4	189.6	57.2	1712.60
.21	4.20	6.52	3.05	.080	.065	.080	.000	1706.60	9680.62
.004663	490.	496.	500.	6	5	0	.00	410.30	10090.92

FLOW DISTRIBUTION FOR SECNO= 7.42 CWSEL= 1717.22

STA=	9681.	9792.	9829.	9841.	9860.	9883.	9893.	9912.	9930.	9956.	9972.	10037.	10070.
PER Q=	3.6	5.1	5.0	8.2	10.1	4.4	7.0	4.7	5.4	2.9	37.9	4.4	
AREA=	173.8	149.1	96.6	155.5	190.5	83.2	141.7	108.9	137.5	79.7	568.9	133.0	
VEL=	2.0	3.3	5.0	5.2	5.2	5.2	4.8	4.2	3.8	3.6	6.5	3.2	
DEPTH=	1.6	4.0	7.9	8.3	8.3	8.3	7.4	6.1	5.3	4.8	8.8	4.1	

STA=	10070.	10091.
PER Q=	1.3	
AREA=	48.3	
VEL=	2.5	
DEPTH=	2.3	

*SECNO 7.513

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

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .53

7.513	9.87	1720.77	1720.48	.00	1722.07	1.30	4.18	.27	1716.80
9790.0	3755.9	6034.1	.0	745.6	550.4	.0	210.2	62.5	1725.50
.23	5.04	10.96	.00	.080	.065	.000	.000	1710.90	9587.00
.016296	550.	507.	507.	4	12	0	.00	429.29	10045.48

FLOW DISTRIBUTION FOR SECNO= 7.51 CWSEL= 1720.77

STA=	9587.	9689.	9726.	9744.	9774.	9795.	9829.	9958.	9973.	10054.
PER Q=	3.6	3.6	5.9	7.8	5.6	3.9	4.9	3.0	61.6	
AREA=	78.4	72.6	86.9	123.9	89.1	84.5	157.7	52.5	550.4	
VEL=	4.5	4.9	6.7	6.1	6.2	4.5	3.1	5.5	11.0	
DEPTH=	.8	2.0	4.7	4.2	4.2	2.5	1.2	3.6	7.6	

*SECNO 7.587

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.51

Q changed to 10,000 cfs at C10J (just 1,050' west of I-17).

7.587	9.71	1725.31	1723.95	.00	1725.77	.45	3.61	.08	1721.10
10000.0	5810.0	4169.4	20.5	1605.7	578.9	12.5	223.1	66.4	1723.20
.25	3.62	7.20	1.64	.080	.065	.080	.000	1715.60	9350.14
.007423	290.	391.	391.	3	9	0	.00	695.43	10045.56

FLOW DISTRIBUTION FOR SECNO= 7.59 CWSEL= 1725.31

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

STA=	9350.	9430.	9536.	9583.	9627.	9652.	9660.	9670.	9684.	9701.	9721.	9748.	9877.
PER Q=	4.0	3.4	3.5	3.3	4.0	3.5	4.1	5.3	4.9	4.2	3.2	4.9	
AREA=	149.2	148.8	119.5	110.2	99.4	58.8	70.8	95.1	95.6	94.0	88.7	213.4	
VEL=	2.7	2.3	3.0	3.0	4.1	6.0	5.8	5.6	5.1	4.5	3.6	2.3	
DEPTH=	1.9	1.4	2.5	2.5	4.0	7.5	7.0	6.6	5.7	4.8	3.2	1.7	

STA=	9877.	9916.	9939.	9952.	10034.	10046.
PER Q=	4.3	3.3	2.1	41.7	.2	
AREA=	123.2	86.1	52.9	578.9	12.5	
VEL=	3.5	3.9	3.9	7.2	1.6	
DEPTH=	3.2	3.8	3.9	7.1	1.1	

*SECNO 7.663

7.663	8.99	1727.39	1726.32	.00	1727.86	.46	2.09	.00	1722.70
10000.0	4921.7	4037.5	1040.8	1445.4	536.0	309.9	239.6	71.2	1722.90
.27	3.41	7.53	3.36	.070	.055	.070	.000	1718.40	9500.23
.005228	280.	401.	430.	4	14	0	.00	662.25	10162.48

FLOW DISTRIBUTION FOR SECNO= 7.66 CWSEL= 1727.39

STA=	9500.	9560.	9588.	9613.	9686.	9742.	9787.	9812.	9832.	9856.	9882.	9945.	9974.
PER Q=	5.2	4.3	3.4	3.4	4.0	5.0	3.7	3.3	4.1	4.5	4.1	4.3	
AREA=	159.7	109.8	92.2	142.7	139.3	148.6	96.9	81.9	102.9	110.7	148.5	112.3	
VEL=	3.3	3.9	3.7	2.4	2.8	3.4	3.8	4.0	4.0	4.1	2.7	3.8	
DEPTH=	2.7	4.0	3.7	1.9	2.5	3.3	3.9	4.2	4.2	4.4	2.3	3.9	

STA=	9974.	10044.	10063.	10089.	10134.	10162.
PER Q=	40.4	3.4	3.3	3.5	.2	
AREA=	536.0	83.4	91.3	118.1	17.2	
VEL=	7.5	4.1	3.6	3.0	1.3	
DEPTH=	7.7	4.3	3.6	2.6	.6	

CCHV= .600 CEHV= .800

*SECNO 7.738

NC card was used - channel = .055, overbanks = .070.
Contraction and expansion values changed to .6 and .8
for I-17 southbound and northbound bridges.

7.738	10.84	1729.64	1728.84	.00	1730.36	.72	2.29	.21	1725.80
9460.0	2727.2	4734.7	1998.1	720.1	531.6	562.8	257.8	76.7	1725.60
.28	3.79	8.91	3.55	.070	.055	.070	.000	1718.80	9707.10
.006794	370.	396.	410.	2	8	0	.00	592.42	10299.51

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

FLOW DISTRIBUTION FOR SECNO= 7.74 CWSEL= 1729.64

STA=	9707.	9770.	9798.	9838.	9873.	9934.	9968.	10032.	10059.	10079.	10108.	10146.	10194.
PER Q=	3.8	6.0	8.0	4.9	4.1	2.0	50.0	3.9	3.1	4.3	5.1	4.0	
AREA=	115.9	122.7	166.2	118.1	130.7	66.6	531.6	92.8	70.5	101.2	124.5	115.3	
VEL=	3.1	4.7	4.5	3.9	3.0	2.9	8.9	4.0	4.1	4.0	3.8	3.2	
DEPTH=	1.8	4.3	4.2	3.3	2.1	2.0	8.2	3.4	3.6	3.5	3.3	2.4	

STA=	10194.	10300.
PER Q=	.8	
AREA=	58.5	
VEL=	1.4	
DEPTH=	.6	

*SECNO 7.766

7.766	11.75	1730.85	1727.60	.00	1732.03	1.18	1.31	.36	1729.10
9460.0	16.4	9435.8	7.8	10.2	1082.1	4.8	262.5	77.9	1729.00
.29	1.61	8.72	1.62	.095	.080	.095	.000	1719.10	9938.02
.012854	110.	148.	160.	2	15	0	.00	142.75	10080.77

FLOW DISTRIBUTION FOR SECNO= 7.77 CWSEL= 1730.85

STA=	9938.	9950.	10076.	10081.
PER Q=	.2	99.7	.1	
AREA=	10.2	1082.1	4.8	
VEL=	1.6	8.7	1.6	
DEPTH=	.9	8.6	.9	

*SECNO 7.769

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 9.90

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1734.00 ELREA= 1734.00

7.769	12.31	1731.81	1725.28	.00	1732.40	.59	.01	.36	1733.00
9460.0	.0	9460.0	.0	.0	1540.2	.0	263.0	78.0	1732.80
.29	.00	6.14	.00	.000	.013	.000	.000	1719.50	9936.00
.000131	17.	17.	17.	2	8	0	.00	128.00	10064.00

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

FLOW DISTRIBUTION FOR SECNO= 7.77 CWSEL= 1731.81

STA= 9936. 10064.
PER Q= 100.0
AREA= 1540.2
VEL= 6.1
DEPTH= 12.0

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.90	1.60	2.60	.00	128.00	12.00	1400.00	.00	1719.70	1719.50

*SECNO 7.778
CLASS A LOW FLOW

3420 BRIDGE W.S.= 1731.76 BRIDGE VELOCITY= 6.71 CALCULATED CHANNEL AREA= 1399.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	1732.78	.38	0.	9460.	1400.	1543.	1733.00	1735.10	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1734.10 ELREA= 1734.10

7.778	12.48	1732.18	.00	.00	1732.78	.59	.38	.00	1733.00
9460.0	.0	9460.0	.0	.0	1530.7	.0	264.6	78.1	1732.80
.29	.00	6.18	.00	.000	.013	.000	.000	1719.70	9936.00
.000133	45.	45.	45.	0	0	0	.00	128.00	10064.00

FLOW DISTRIBUTION FOR SECNO= 7.78 CWSEL= 1732.18

STA= 9936. 10064.
PER Q= 100.0
AREA= 1530.7
VEL= 6.2
DEPTH= 12.0

*SECNO 7.785

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

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .12

7.785	11.56	1732.16	1728.01	.00	1732.97	.81	.02	.18	1734.70
9460.0	.0	9458.5	1.5	.0	1307.6	4.1	265.8	78.2	1734.40
.29	.00	7.23	.38	.000	.080	.095	.000	1720.60	9927.36
.008944	38.	38.	38.	2	14	0	.00	183.63	10371.23

FLOW DISTRIBUTION FOR SECNO= 7.78 CWSEL= 1732.16

STA=	9927.	10085.	10371.
PER Q=	100.0	.0	
AREA=	1307.6	4.1	
VEL=	7.2	.4	
DEPTH=	8.6	.0	

*SECNO 7.792

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 3.82

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1738.60 ELREA= 1738.60

7.792	9.95	1732.12	1728.65	.00	1733.37	1.25	.05	.35	1738.20
9460.0	.0	9460.0	.0	.0	1053.8	.0	266.8	78.3	1737.80
.29	.00	8.98	.00	.000	.013	.000	.000	1722.17	9939.00
.000612	35.	35.	35.	2	11	0	.00	110.01	10061.01

FLOW DISTRIBUTION FOR SECNO= 7.79 CWSEL= 1732.12

STA=	9939.	10061.
PER Q=	100.0	
AREA=	1053.8	
VEL=	9.0	
DEPTH=	9.6	

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

SPECIAL BRIDGE

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.90	1.60	2.60	.00	122.00	12.00	1740.00	.00	1722.94	1722.22

*SECNO 7.800

3265 DIVIDED FLOW

CLASS A LOW FLOW

3420 BRIDGE W.S.= 1732.17 BRIDGE VELOCITY= 8.97 CALCULATED CHANNEL AREA= 1015.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	1734.55	1.22	0.	9460.	1740.	1646.	1737.90	1739.20	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1938.70 ELREA= 1938.70

7.800	10.44	1733.34	.00	.00	1734.55	1.21	1.18	.00	1738.20
9460.0	.0	9460.0	.0	.0	1071.3	.0	267.9	78.5	1737.80
.29	.00	8.83	.00	.000	.013	.000	.000	1722.90	9939.00
.000585	44.	44.	44.	0	0	0	.00	110.02	10061.01

FLOW DISTRIBUTION FOR SECNO= 7.80 CWSEL= 1733.34

STA= 9939. 10061.
PER Q= 100.0
AREA= 1071.3
VEL= 8.8
DEPTH= 9.7

CCHV= .100 CEHV= .300
*SECNO 7.812

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .38

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


3470 ENCROACHMENT STATIONS=        .0   10187.5  TYPE=      1  TARGET=    10187.500
     7.812     11.10   1734.30   1729.33       .00   1734.71       .41       .08       .08   1731.10
    9460.0      16.6    9383.4      60.0      12.9    1817.6     113.5     270.1      78.9   1732.80
       .30      1.29      5.16       .53      .095      .075      .095      .000   1723.20   9941.37
   .004002       64.       64.       64.         2        14         0       .00    567.15  10508.52


FLOW DISTRIBUTION FOR SECNO=      7.81          CWSEL=   1734.30

STA=    9941.    9949.   10164.   10509.
  PER Q=       .2     99.2       .6
   AREA=     12.9   1817.6    113.5
    VEL=      1.3      5.2       .5
  DEPTH=      1.6      8.5       .3

1490 NH CARD USED
*SECNO 7.872
     7.872      9.97   1735.67   1732.77       .00   1735.78       .11      1.04       .03   1732.60
    9460.0      11.6    2805.4    6643.0      11.4     775.1    2987.9     291.3      84.9   1731.60
       .33      1.02      3.62      2.22      .095      .075      .086      .000   1725.70   9966.08
   .002681      280.      317.      330.         2        22         0       .00   1016.64  10982.71


FLOW DISTRIBUTION FOR SECNO=      7.87          CWSEL=   1735.67

STA=    9966.    9974.   10089.   10130.   10171.   10202.   10227.   10269.   10346.   10413.   10461.   10487.   10494.
  PER Q=       .1     29.7      4.0      4.3      3.6      3.3      3.5      3.2      5.2      4.9      7.0      3.4
   AREA=     11.4    775.1    178.0    184.2    147.6    130.3    162.1    198.1    249.6    212.3    162.6     57.7
    VEL=      1.0      3.6      2.1      2.2      2.3      2.4      2.0      1.5      2.0      2.2      4.1      5.6
  DEPTH=      1.5      6.7      4.3      4.6      4.8      5.1      3.9      2.6      3.7      4.4      6.3      9.0

STA=   10494.   10501.   10521.   10562.   10589.   10660.   10929.   10983.
  PER Q=      3.6      5.2      3.3      3.2      4.1      8.1       .3
   AREA=     62.5    117.4    154.9    131.9    223.1    570.7     44.7
    VEL=      5.5      4.2      2.0      2.3      1.7      1.3       .7
  DEPTH=      8.8      5.9      3.7      4.9      3.1      2.1       .8

1490 NH CARD USED
*SECNO 7.921
     7.921      9.71   1736.11   1733.50       .00   1736.20       .08       .41       .00   1730.60
    9460.0    1469.8     980.9    7009.3     775.8     285.5    3152.6     305.8      88.6   1732.30
       .35      1.89      3.44      2.22      .095      .075      .083      .000   1726.40   9776.02
   .002404      310.      259.      120.         2        13         0       .00   1148.25  10924.27
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 7.92 CWSEL= 1736.11

STA=	9776.	9854.	9891.	9941.	9987.	10029.	10096.	10144.	10185.	10284.	10330.	10381.	10408.
PER Q=	4.3	3.6	3.9	3.8	10.4	5.8	4.3	3.9	4.6	4.1	3.2	7.7	
AREA=	232.7	164.6	195.0	183.6	285.5	276.7	202.5	178.9	280.9	193.7	172.6	171.8	
VEL=	1.7	2.0	1.9	2.0	3.4	2.0	2.0	2.0	1.6	2.0	1.7	4.2	
DEPTH=	3.0	4.4	3.9	4.0	6.8	4.1	4.3	4.3	2.8	4.2	3.4	6.4	

STA=	10408.	10418.	10426.	10435.	10448.	10491.	10528.	10589.	10875.	10924.
PER Q=	5.1	4.9	3.9	3.2	3.8	4.2	3.9	11.1	.4	
AREA=	91.6	84.1	74.9	77.5	180.5	181.4	210.8	729.9	45.0	
VEL=	5.3	5.5	5.0	3.9	2.0	2.2	1.8	1.4	.8	
DEPTH=	9.2	9.7	8.5	6.0	4.2	4.9	3.5	2.5	.9	

1490 NH CARD USED
*SECNO 8.016

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .22

8.016	7.94	1737.84	1737.67	.00	1738.52	.68	2.15	.18	1734.90
6110.0	2497.7	2179.0	1433.3	546.0	230.6	379.8	335.5	98.2	1734.90
.37	4.57	9.45	3.77	.080	.075	.095	.000	1729.90	9444.83
.021248	510.	502.	470.	2	14	0	.00	583.70	10222.37

FLOW DISTRIBUTION FOR SECNO= 8.02 CWSEL= 1737.84

STA=	9445.	9527.	9604.	9902.	9923.	9946.	9963.	9981.	10017.	10048.	10080.	10136.	10185.
PER Q=	3.0	4.6	6.7	6.7	8.9	5.7	5.2	35.7	6.7	6.3	6.3	3.6	
AREA=	73.2	92.3	114.8	68.5	85.0	56.9	55.4	230.6	87.9	86.5	108.4	73.5	
VEL=	2.5	3.0	3.6	5.9	6.4	6.2	5.8	9.4	4.6	4.4	3.6	3.0	
DEPTH=	.9	1.2	.4	3.2	3.6	3.4	3.1	6.3	2.9	2.7	1.9	1.5	

STA=	10185.	10222.
PER Q=	.6	
AREA=	23.5	
VEL=	1.7	
DEPTH=	.6	

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

*SECNO 8.111

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.06

8.111	10.68	1742.88	1740.50	.00	1743.12	.24	4.56	.04	1736.60
6110.0	3478.4	1623.3	1008.3	1219.7	276.3	318.6	352.6	104.4	1736.60
.41	2.85	5.87	3.16	.095	.075	.095	.000	1732.20	9603.30
.005008	502.	502.	502.	3	8	0	.00	493.81	10097.11

FLOW DISTRIBUTION FOR SECNO= 8.11 CWSEL= 1742.88

STA=	9603.	9758.	9794.	9819.	9848.	9882.	9913.	9948.	9974.	9982.	10013.	10034.	10052.
PER Q=	4.8	5.4	5.3	5.3	5.4	6.5	11.8	9.5	2.9	26.6	7.9	5.5	
AREA=	197.7	128.4	109.3	116.0	125.8	135.3	202.0	157.1	48.1	276.3	131.0	97.1	
VEL=	1.5	2.6	3.0	2.8	2.6	2.9	3.6	3.7	3.6	5.9	3.7	3.4	
DEPTH=	1.3	3.6	4.4	4.0	3.7	4.3	5.8	6.1	5.9	9.0	6.0	5.5	

STA=	10052.	10097.
PER Q=	3.2	
AREA=	90.5	
VEL=	2.1	
DEPTH=	2.0	

THIS RUN EXECUTED 25MAY92 20:44:37

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

Deadman Wash 100-year Q

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
	6.751	9790.00	1695.61	10.21	1685.40	1695.88	1693.73	5.77	57.83	.00	9325.83	826.86	10164.15
	6.849	9790.00	1698.42	7.62	1690.80	1698.69	1697.35	6.62	73.32	517.00	9141.01	1147.58	10300.11
	6.945	9790.00	1702.08	11.18	1690.90	1702.36	1700.89	6.48	63.35	507.00	9561.52	915.48	10477.00
	7.042	9790.00	1704.85	11.55	1693.30	1705.12	1703.30	6.03	56.54	512.00	9693.28	800.71	10493.99
	7.133	9790.00	1706.98	9.48	1697.50	1707.33	1704.76	5.27	40.95	480.00	9537.74	664.02	10217.44
*	7.228	9790.00	1708.56	7.86	1700.70	1708.74	1704.96	3.62	19.96	502.00	9639.36	619.79	10262.92
*	7.323	9790.00	1711.05	7.35	1703.70	1712.66	1711.05	12.70	326.60	502.00	9818.64	357.54	10263.09
*	7.417	9790.00	1717.22	10.62	1706.60	1717.63	1714.04	6.52	46.63	496.00	9680.62	410.30	10090.92
*	7.513	9790.00	1720.77	9.87	1710.90	1722.07	1720.48	10.96	162.96	507.00	9587.00	429.29	10045.48
*	7.587	10000.00	1725.31	9.71	1715.60	1725.77	1723.95	7.20	74.23	391.00	9350.14	695.43	10045.56
	7.663	10000.00	1727.39	8.99	1718.40	1727.86	1726.32	7.53	52.28	401.00	9500.23	662.25	10162.48
	7.738	9460.00	1729.64	10.84	1718.80	1730.36	1728.84	8.91	67.94	396.00	9707.10	592.42	10299.51
	7.766	9460.00	1730.85	11.75	1719.10	1732.03	1727.60	8.72	128.54	148.00	9938.02	142.75	10080.77
*	7.769	9460.00	1731.81	12.31	1719.50	1732.40	1725.28	6.14	1.31	17.00	9936.00	128.00	10064.00
	7.778	9460.00	1732.18	12.48	1719.70	1732.78	.00	6.18	1.33	45.00	9936.00	128.00	10064.00
*	7.785	9460.00	1732.16	11.56	1720.60	1732.97	1728.01	7.23	89.44	38.00	9927.36	183.63	10371.23
*	7.792	9460.00	1732.12	9.95	1722.17	1733.37	1728.65	8.98	6.12	35.00	9939.00	110.01	10061.01

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
	7.800	9460.00	1733.34	10.44	1722.90	1734.55	.00	8.83	5.85	44.00	9939.00	110.02	10061.01
*	7.812	9460.00	1734.30	11.10	1723.20	1734.71	1729.33	5.16	40.02	64.00	9941.37	567.15	10508.52
	7.872	9460.00	1735.67	9.97	1725.70	1735.78	1732.77	3.62	26.81	317.00	9966.08	1016.64	10982.71
	7.921	9460.00	1736.11	9.71	1726.40	1736.20	1733.50	3.44	24.04	259.00	9776.02	1148.25	10924.27
*	8.016	6110.00	1737.84	7.94	1729.90	1738.52	1737.67	9.45	212.48	502.00	9444.83	583.70	10222.37
*	8.111	6110.00	1742.88	10.68	1732.20	1743.12	1740.50	5.87	50.08	502.00	9603.30	493.81	10097.11

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=      7.228  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=      7.323  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=      7.323  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=      7.417  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      7.513  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      7.587  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      7.769  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      7.785  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      7.792  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      7.812  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.016  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.111  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

Normal program termination

HEC2 S/N: 1126460209 HMVersion: 6.40 Data File: sun4.hc2

```
*******************************************
*  HEC-2 WATER SURFACE PROFILES           *
*                                         *
*  Version   4.6.2;  May 1991             *
*                                         *
*  RUN DATE    25MAY92    TIME   21:47:57 *
*******************************************
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X    X            X     X
X     X  X        X                         X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X    X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
:::                                       :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
:::                                       :::
:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
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==========
H A E S T A D M E T H O D S
==========

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 25MAY92 21:47:58

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

 Version   4.6.2;  May 1991
************************************


T1      Deadman Wash Floodplain Delineation Study
T2      Hydraulic Analysis of Deadman Wash, SECNO 8.016 to SECNO 10.544
T3      Deadman Wash 100-year Q   Subcritical Flow,    May 1992

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                                                                  1737.84

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1                  -1                                      -1                            15


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         8        42         3         2        26         5        39
     53         4        54

QT       1      6110
NC                                     .1        .3
NH       4      .095    9391.3      .080    9980.6      .075   10017.4      .095   10307.4
         Q changed to 6,110 cfs at the confluence with Stream No. 4.
X1   8.016        40    9980.6   10017.4         0         0         0
GR  1744.3    9367.4    1742.0    9391.3    1739.6    9412.2    1738.9    9414.4    1739.2    9430.5
GR  1737.9    9444.3    1736.7    9456.2    1737.0    9464.3    1737.0    9489.3    1736.7    9526.9
GR  1736.7    9558.5    1736.6    9576.0    1736.6    9604.2    1737.0    9630.8    1737.7    9661.0
GR  1738.5    9692.6    1738.5    9723.3    1739.2    9769.4    1739.0    9779.2    1739.2    9803.5
GR  1739.2    9830.7    1738.1    9858.0    1735.7    9882.6    1735.0    9901.8    1734.2    9922.9
GR  1734.2    9946.2    1734.6    9962.7    1734.9    9980.6    1730.1    9996.7    1729.9   10000.0
GR  1730.2   10010.6    1734.9   10017.4    1735.2   10026.5    1734.6   10047.7    1735.7   10079.8
GR  1736.1   10135.5    1736.6   10184.6    1737.9   10224.0    1741.9   10269.1    1743.2   10307.4

NC    .095      .095      .075
         NC card was used - channel = .075, overbanks = .095.
X1   8.111        25    9982.1   10012.7       502       502       502
GR  1747.4    9517.4    1745.1    9563.0    1742.8    9604.9    1741.9    9655.2    1741.5    9701.4
GR  1740.2    9758.2    1738.4    9794.0    1738.6    9818.9    1739.2    9848.0    1739.2    9882.1
GR  1737.9    9913.3    1736.3    9948.2    1737.3    9974.0    1736.6    9982.1    1733.4    9992.2
GR  1732.2    9996.2    1732.2   10000.0    1732.9   10005.6    1736.6   10012.7    1737.1   10034.4
GR  1737.7   10052.1    1741.0   10070.6    1743.3   10102.9    1744.8   10142.7    1745.8   10149.0
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X1    8.187       19    9967.5   10036.8       401       401       401
GR   1751.7   9509.3    1748.4    9555.5    1744.4    9602.1    1743.4    9631.3    1742.7    9641.2
GR   1743.2   9661.2    1742.4    9726.9    1742.5    9779.6    1742.7    9833.8    1742.3    9885.5
GR   1741.3   9935.2    1741.5    9967.4    1738.6    9988.3    1737.3   10000.0    1736.7   10009.8
GR   1739.0  10022.4    1743.0   10036.8    1747.1   10061.2    1748.7   10079.6

X1    8.278       37    9974.9   10034.2       430       510       480
GR   1759.6   9431.0    1759.0    9475.4    1757.0    9520.3    1754.5    9548.2    1751.3    9595.2
GR   1749.5   9624.4    1748.6    9652.4    1746.8    9682.4    1746.0    9706.7    1745.6    9720.4
GR   1746.4   9748.4    1746.1    9794.4    1746.4    9834.6    1746.5    9869.9    1747.0    9900.8
GR   1747.1   9934.4    1745.8    9953.8    1746.3    9968.5    1744.9    9974.9    1740.9    9985.9
GR   1739.4   9999.1    1739.2   10000.0    1740.8   10008.5    1742.6   10018.1    1745.6   10034.2
GR   1745.6  10047.3    1742.5   10061.1    1744.0   10077.3    1745.6   10101.4    1746.2   10143.9
GR   1746.7  10164.0    1746.3   10211.5    1746.0   10261.8    1747.2   10303.7    1748.3   10350.4
GR   1749.0  10390.8    1749.5   10401.7

QT       1      4480
NC    .080      .080      .065
         Q changed to 4,480 cfs at the confluence with Stream No. 3.
X1    8.373       30    9956.0   10019.8       510       480       502
GR   1763.9   9459.5    1761.6    9510.5    1758.4    9561.0    1754.3    9613.2    1751.8    9660.0
GR   1751.2   9691.7    1752.1    9720.5    1752.4    9767.3    1752.9    9825.8    1752.5    9866.4
GR   1751.3   9892.2    1749.1    9906.4    1749.0    9930.0    1748.5    9956.0    1747.0    9978.7
GR   1746.3   9989.9    1745.3    9997.8    1744.8   10000.0    1745.6   10007.2    1749.0   10019.8
GR   1749.9  10053.1    1749.8   10089.5    1748.8   10105.8    1749.8   10129.7    1750.3   10173.5
GR   1750.3  10215.9    1750.3   10269.3    1751.6   10315.8    1752.6   10363.6    1753.9   10390.4

QT       1      3660
         Q changed to 3,660 cfs at the confluence with Stream No. 2.
X1    8.485       28    9975.8   10043.0       500       600       591
GR   1760.4   9559.1    1759.2    9578.1    1757.9    9585.5    1760.2    9614.7    1759.6    9650.1
GR   1758.4   9714.6    1756.6    9799.1    1755.2    9867.6    1754.5    9919.1    1754.9    9958.9
GR   1754.1   9975.8    1752.0    9986.1    1750.4    9993.8    1750.3   10000.0    1750.4   10005.8
GR   1752.2  10017.0    1754.9   10043.0    1754.2   10071.1    1752.4   10084.7    1753.8   10112.0
GR   1755.9  10155.5    1756.8   10192.9    1756.1   10225.8    1755.5   10248.5    1757.4   10292.1
GR   1758.9  10345.7    1760.4   10394.0    1761.5   10410.2

NH       5      .080    9971.5      .065   10026.5      .080   10269.4      .070   10311.4      .080
NH   10720.
         NH cards were used from SECNO 8.574 to SECNO 9.304.
X1    8.574       27    9971.5   10026.5       500       400       470
GR   1776.4   9697.0    1775.9    9787.6    1774.7    9860.0    1771.9    9908.8    1764.2    9945.8
GR   1758.2   9971.5    1755.7    9980.1    1755.2    9991.0    1755.7   10000.0    1756.6   10012.3
GR   1760.0  10026.5    1759.8   10070.7    1760.1   10082.0    1758.7   10124.3    1757.7   10148.2
GR   1760.2  10190.5    1759.8   10237.5    1758.0   10269.4    1755.9   10281.3    1757.9   10311.4
GR   1758.9  10350.2    1758.9   10390.8    1758.2   10433.7    1758.1   10465.8    1758.9   10516.7
GR   1760.0  10539.7    1764.0   10720.0
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NH      5      .080    9992.3     .065   10016.2     .080   10444.8     .070   10456.2     .080
NH  10760.
X1   8.670        35    9992.3   10016.2     507     480     507
GR  1775.3    9881.1    1770.7    9909.5  1763.7  9934.9  1761.1    9953.3  1761.4    9967.4
GR  1761.1    9983.5    1760.0    9992.3  1757.9  9998.8  1757.1   10000.0  1758.4   10009.0
GR  1761.0   10016.2    1762.1   10044.2  1764.0 10066.9  1763.9   10086.7  1763.7   10126.7
GR  1762.7   10172.1    1761.3   10202.2  1763.0 10227.1  1763.0   10273.4  1763.4   10312.3
GR  1762.5   10348.5    1761.8   10374.7  1762.1 10406.3  1761.7   10437.9  1761.3   10444.8
GR  1759.6   10447.6    1759.6   10449.9  1761.8 10456.2  1760.2   10481.6  1761.3   10505.4
GR  1761.8   10540.2    1762.0   10583.4  1762.6 10613.1  1763.1   10637.7  1764.3   10760.0

NH      5      .080    9988.6     .065   10017.7     .080   10217.8     .070   10245.6     .080
NH  10533.
X1   8.763        27    9988.6   10017.7     510     440     491
GR  1778.9    9880.2    1771.1    9919.2  1766.0  9942.1  1766.3    9974.7  1765.2    9988.5
GR  1763.0    9996.1    1761.0   10000.0  1761.0 10000.0  1762.4   10009.4  1764.3   10017.7
GR  1765.1   10038.1    1765.2   10067.1  1766.2 10087.7  1767.2   10111.7  1767.5   10111.8
GR  1765.3   10159.4    1764.0   10192.3  1763.9 10217.8  1762.6   10225.8  1762.6   10233.7
GR  1765.2   10245.6    1765.3   10278.7  1766.4 10314.2  1766.3   10323.0  1767.7   10533.0
GR  1768.0   10928.0    1772.0   11032.0

NH      5      .080    9992.8     .065   10029.1     .080   10292.6     .070   10321.1     .080
NH  10706.
X1   8.853        28    9992.8   10029.1     440     520     475
GR  1774.4    9839.7    1770.6    9876.7  1768.7  9910.8  1769.0    9941.8  1768.5    9969.3
GR  1767.8    9992.8    1767.4    9999.1  1766.0 10000.0  1766.9   10012.0  1769.2   10029.0
GR  1769.4   10058.1    1769.7   10107.3  1772.0 10179.0  1772.6   10207.5  1772.1   10253.4
GR  1770.6   10278.6    1769.5   10292.6  1767.7 10302.7  1770.3   10321.1  1770.4   10350.9
GR  1771.1   10376.0    1771.2   10404.9  1770.9 10458.8  1768.7   10500.8  1769.9   10537.9
GR  1770.6   10568.2    1771.0   10606.0  1773.0 10706.0

NH      5      .080    9982.1     .065   10019.9     .080   10619.4     .070   10642.6     .080
NH  10905.
X1   8.939        35    9982.1   10019.9     440     430     454
GR  1787.6    9817.0    1785.5    9854.7  1783.2  9904.8  1781.1    9942.1  1778.4    9964.3
GR  1772.8    9982.1    1769.0    9995.8  1768.1 10000.0  1769.0   10006.0  1771.9   10019.9
GR  1772.1   10057.6    1773.5   10100.0  1773.5 10151.1  1774.7   10196.1  1773.8   10236.8
GR  1773.1   10277.4    1774.0   10313.7  1775.3 10355.6  1774.7   10403.6  1774.7   10452.0
GR  1774.5   10489.6    1774.0   10506.9  1774.8 10540.2  1775.2   10576.0  1774.9   10597.6
GR  1773.2   10607.9    1773.8   10619.4  1772.8 10627.5  1773.8   10642.6  1773.2   10686.7
GR  1774.1   10731.5    1774.6   10797.8  1774.1 10857.7  1774.4   10888.1  1775.2   10904.5

QT      1     2770
NH      5      .080    9981.1     .065   10035.6     .080   10502.8     .070   10521.9     .080
NH  10733.
        Q changed to 2,770 cfs at the confluence with Stream No. 1.
X1   9.021        35    9981.1   10035.6     510     310     433
GR  1782.4    9438.9    1782.9    9504.6  1781.4  9566.3  1781.5    9635.0  1781.0    9710.3
GR  1781.9    9777.5    1782.8    9844.2  1783.2  9907.1  1782.3    9954.4  1776.9    9981.1
GR  1774.1    9995.9    1774.0   10000.0  1775.7 10017.9  1776.9   10035.6  1776.1   10101.5
GR  1777.7   10145.6    1777.1   10182.4  1777.0 10206.9  1777.8   10243.3  1777.8   10275.6
GR  1778.0   10309.4    1779.1   10345.4  1778.3 10390.1  1778.7   10434.6  1777.7   10483.3
GR  1776.2   10502.8    1773.9   10510.7  1775.5 10521.9  1777.9   10551.2  1776.9   10581.1
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GR   1777.7   10618.2   1776.9   10652.3   1776.2   10671.6   1780.4   10709.8   1780.7   10732.5

NH      5      .080    9980.5     .065   10026.5     .080   10454.2     .070   10473.1     .080
NH  10610.
X1   9.114       37    9980.5   10026.5     400      470      491
GR   1787.1   9406.3   1785.4    9464.0   1783.6    9507.9   1782.2    9524.4   1783.4    9547.7
GR   1782.6   9592.7   1781.6    9636.2   1781.4    9684.6   1781.3    9728.9   1782.5    9774.8
GR   1783.1   9824.3   1782.7    9844.8   1782.3    9898.3   1781.2    9946.1   1780.6    9980.5
GR   1778.0   9990.8   1777.5    9994.7   1779.9   10000.0   1782.1   10026.5   1782.1   10075.4
GR   1782.2  10120.0   1782.6   10142.2   1783.9   10169.2   1783.5   10194.4   1783.6   10240.4
GR   1783.6  10287.5   1782.7   10317.3   1783.4   10354.6   1783.4   10401.0   1783.9   10439.5
GR   1784.0  10454.2   1782.7   10459.4   1783.9   10473.1   1783.6   10509.6   1783.7   10531.6
GR   1784.7  10574.0   1785.2   10610.6

NH      5      .080    9989.4     .065   10025.7     .080   10467.2     .070   10489.5     .080
NH  10698.
X1   9.210       32    9989.4   10025.7     530      400      507
GR   1795.4   9587.8   1794.4    9667.2   1792.5    9733.3   1791.3    9778.0   1787.9    9806.1
GR   1788.2   9841.7   1788.3    9898.2   1788.4    9947.2   1788.0    9974.3   1787.4    9989.4
GR   1785.4   9996.9   1786.0   10000.0   1787.9   10025.7   1789.0   10053.0   1787.8   10122.2
GR   1786.3  10198.0   1786.6   10246.2   1787.0   10284.6   1786.6   10331.3   1786.9   10369.4
GR   1786.7  10417.4   1786.9   10435.8   1786.9   10446.8   1786.9   10467.2   1784.0   10482.7
GR   1785.2  10489.5   1786.6   10510.7   1786.2   10546.1   1784.6   10562.2   1786.3   10588.1
GR   1786.2  10598.2   1788.4   10698.0

NH      5      .080    9958.9     .065   10014.7     .080   10269.4     .070   10311.4     .080
NH  10720.
X1   9.304       35    9958.9   10014.7     430      580      496
GR   1796.6   9487.1   1796.2    9541.9   1795.3    9596.4   1794.5    9642.3   1793.9    9681.1
GR   1791.5   9692.7   1792.8    9714.0   1792.2    9738.4   1791.5    9743.9   1793.7    9765.7
GR   1794.4   9795.5   1794.8    9833.8   1794.4    9880.6   1793.2    9926.7   1793.6    9958.9
GR   1792.4   9988.4   1791.0    9994.3   1792.4   10000.0   1793.7   10014.7   1794.8   10047.1
GR   1794.9  10085.7   1794.2   10143.3   1796.1   10189.7   1796.2   10204.6   1794.8   10247.3
GR   1793.7  10286.1   1791.8   10293.2   1794.4   10310.5   1794.6   10357.0   1794.5   10403.8
GR   1794.4  10430.8   1792.6   10442.0   1794.9   10458.5   1794.1   10499.3   1795.2   10550.0

NC    .080      .080      .065
          NC card was used - channel = .065, overbanks = .080.
X1   9.400       29    9982.5   10026.5     500      507      507
GR   1801.7   9613.0   1801.5    9662.7   1799.2    9705.7   1798.7    9752.0   1799.1    9788.2
GR   1799.6   9826.7   1800.4    9867.5   1800.4    9909.7   1800.0    9946.1   1799.4    9967.8
GR   1800.0   9982.5   1799.1    9992.7   1797.8    9997.0   1798.1   10000.0   1799.5   10007.1
GR   1800.4  10026.6   1800.1   10067.4   1800.3   10107.1   1800.6   10154.8   1802.2   10204.0
GR   1802.3  10267.0   1802.1   10332.9   1802.4   10392.4   1802.5   10439.1   1801.7   10477.2
GR   1803.2  10491.7   1803.5   10524.8   1804.0   10587.3   1803.9   10595.0

NC    .090      .090      .070
          NC card was used - channel = .070, overbanks = .090.
X1   9.492       22    9990.1   10022.3     400      540      486
GR   1808.1   9596.6   1807.7    9663.0   1806.7    9742.6   1806.4    9807.3   1804.7    9845.2
GR   1804.0   9863.4   1803.6    9871.0   1805.3    9889.8   1805.2    9925.8   1805.0    9943.8
GR   1806.1   9965.5   1805.7    9990.1   1803.9    9999.1   1803.7   10000.0   1804.6   10008.2
GR   1805.1  10022.2   1805.2   10068.0   1806.8   10130.2   1807.8   10177.3   1810.1   10221.3
GR   1812.0  10258.3   1811.6   10261.6
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QT        1      1840
          Q changed to 1,840 cfs at future 29th Avenue.
X1    9.586        21    9978.6   10033.7       550       450       496
GR   1814.8    9526.5    1814.8    9575.7    1815.1    9612.7    1815.0    9686.3    1814.5    9772.3
GR   1813.6    9831.8    1811.4    9894.5    1811.8    9954.2    1811.7    9978.6    1810.7    9985.0
GR   1808.6    9993.8    1808.4   10000.0    1810.0   10008.0    1811.3   10033.7    1811.6   10080.8
GR   1813.3   10137.0    1814.9   10195.7    1814.0   10244.3    1813.4   10286.7    1815.3   10334.0
GR   1817.4   10342.2

X1    9.682        27    9932.9   10020.5       480       510       507
GR   1822.0    9455.7    1821.8    9543.5    1823.0    9630.3    1822.5    9707.5    1821.5    9787.4
GR   1821.3    9860.1    1819.6    9909.7    1818.0    9932.9    1817.0    9945.1    1818.6    9967.8
GR   1818.3    9990.0    1817.0   10000.0    1818.7   10020.5    1818.9   10064.1    1818.8   10087.5
GR   1817.6   10097.8    1819.1   10117.7    1818.4   10144.3    1817.9   10157.7    1816.2   10160.5
GR   1816.6   10169.2    1818.2   10184.2    1818.8   10217.6    1820.4   10278.1    1821.8   10321.9
GR   1823.2   10366.2    1823.5   10422.6

X1    9.776        33    9966.0   10015.6       490       480       496
GR   1829.7    9454.7    1830.0    9528.4    1830.0    9607.6    1830.4    9670.6    1829.4    9738.2
GR   1827.2    9780.7    1826.2    9808.6    1826.3    9842.0    1826.7    9860.1    1826.1    9866.6
GR   1827.6    9891.0    1827.7    9934.4    1827.1    9966.0    1825.3    9990.0    1824.8   10000.0
GR   1826.4   10015.6    1827.2   10047.0    1826.4   10072.7    1824.6   10080.4    1824.7   10088.1
GR   1826.3   10101.3    1826.2   10118.7    1824.2   10122.2    1827.4   10134.7    1826.5   10148.9
GR   1824.4   10156.8    1824.0   10163.2    1826.2   10191.1    1826.4   10232.6    1826.2   10269.9
GR   1828.7   10331.7    1830.4   10406.8    1832.3   10460.2

X1    9.872        26    9988.4   10010.5       510       480       507
GR   1840.3    9315.3    1840.0    9420.8    1838.6    9558.6    1835.5    9676.3    1835.0    9747.6
GR   1835.3    9826.3    1836.2    9906.7    1836.1    9951.6    1835.0    9974.2    1832.5    9988.4
GR   1829.7    9995.2    1829.8   10000.0    1831.0   10010.5    1833.7   10024.9    1833.8   10077.1
GR   1833.9   10128.5    1832.3   10164.3    1831.0   10181.2    1833.2   10218.6    1834.1   10253.2
GR   1833.8   10276.5    1832.1   10291.4    1833.3   10308.6    1831.9   10316.4    1833.8   10335.2
GR   1835.9   10379.0

X1    9.966        19    9988.7   10021.8       470       520       496
GR   1845.3    9578.0    1844.0    9649.8    1843.1    9698.5    1844.1    9769.0    1844.4    9846.2
GR   1845.0    9916.1    1845.5    9938.2    1845.2    9974.9    1843.7    9988.7    1836.6   10000.0
GR   1837.0   10007.0    1840.2   10021.8    1841.6   10065.2    1841.1   10101.4    1840.9   10134.7
GR   1841.5   10183.5    1843.5   10239.2    1845.4   10294.5    1846.0   10336.0

X1   10.058        19    9976.2   10038.5       490       440       486
GR   1854.5    9495.1    1853.4    9568.9    1853.7    9637.1    1853.2    9691.8    1850.8    9725.0
GR   1849.1    9747.9    1850.6    9789.1    1850.2    9813.3    1847.6    9828.5    1849.3    9852.5
GR   1849.9    9909.1    1849.9    9946.4    1849.5    9976.2    1846.9    9992.8    1845.7   10000.0
GR   1847.1   10011.7    1852.0   10038.5    1853.8   10086.9    1853.1   10111.7

X1   10.151        17    9881.6   10062.3       440       500       491
GR   1856.8    9578.9    1856.4    9630.1    1855.4    9701.5    1854.8    9771.7    1855.1    9832.0
GR   1854.8    9881.6    1852.8    9902.8    1853.0    9943.8    1853.5    9979.3    1853.1   10000.0
GR   1853.8   10021.6    1852.3   10041.6    1853.6   10062.3    1858.6   10095.9    1861.3   10123.9
GR   1863.0   10180.0    1863.0   10208.9
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X1   10.230      17   9980.0   10015.3      460      340      417
GR   1866.9   9769.5   1864.9    9822.4   1861.7   9871.6   1861.1   9902.0   1860.7   9923.4
GR   1861.0   9947.9   1860.5    9971.6   1859.5   9980.0   1858.0   9986.7   1857.3   9996.4
GR   1856.8  10000.0   1860.0   10015.3   1861.6  10033.8   1860.7  10068.7   1860.6  10121.0
GR   1861.6  10178.5   1863.3   10201.0

X1   10.325      20   9950.0   10014.5      470      550      502
GR   1873.3   9718.6   1872.1    9754.2   1871.5   9795.8   1872.1   9833.0   1872.0   9873.8
GR   1871.0   9910.6   1870.4    9936.4   1869.5   9950.0   1868.4   9953.4   1866.9   9964.3
GR   1867.6   9974.6   1868.9    9986.9   1869.2   9996.5   1867.6  10000.0   1870.7  10014.5
GR   1871.7  10039.0   1869.4   10062.1   1874.2  10096.2   1876.9  10149.6   1877.8  10153.4

X1   10.419      17   9987.1   10034.2      510      420      496
GR   1884.0   9717.6   1885.0    9777.5   1885.5   9855.0   1884.2   9913.2   1883.2   9947.7
GR   1880.0   9960.4   1878.9    9987.1   1877.3   9996.2   1876.1  10000.0   1877.9  10011.4
GR   1878.8  10034.2   1879.3   10058.6   1880.5  10094.4   1880.1  10133.9   1881.0  10169.3
GR   1883.2  10210.6   1884.0   10211.5

QT        1    1020
          Q changed to 1,020 cfs at future 22nd Avenue.
X1   10.544      14   9969.4   10009.1      650      650      660
GR   1898.7   9789.3   1896.6    9834.8   1893.8   9863.7   1894.1   9900.8   1891.9   9920.5
GR   1893.0   9940.8   1892.2    9969.4   1890.2   9985.2   1889.3   9999.2   1889.7  10000.0
GR   1891.1  10009.1   1892.9   10032.3   1896.4  10056.7   1898.3  10062.8
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 8.016

3265 DIVIDED FLOW

Q changed to 6,110 cfs at the confluence with Stream No. 4.

8.016	7.94	1737.84	1737.71	1737.84	1738.52	.68	.00	.00	1734.90
6110.0	2494.8	2183.5	1431.7	543.9	230.4	378.6	.0	.0	1734.90
.00	4.59	9.48	3.78	.080	.075	.095	.000	1729.90	9444.90
.021406	0.	0.	0.	0	5	0	.00	583.15	10222.18

FLOW DISTRIBUTION FOR SECNO= 8.02 CWSEL= 1737.84

STA=	9445.	9527.	9604.	9902.	9923.	9946.	9963.	9981.	10017.	10048.	10080.	10136.	10185.
PER Q=	3.0	4.6	6.7	6.7	8.9	5.8	5.2	35.7	6.7	6.3	6.3	3.6	
AREA=	72.7	91.8	114.1	68.4	84.8	56.8	55.3	230.4	87.7	86.3	108.1	73.2	
VEL=	2.5	3.1	3.6	5.9	6.4	6.2	5.8	9.5	4.6	4.4	3.6	3.0	
DEPTH=	.9	1.2	.4	3.2	3.6	3.4	3.1	6.3	2.9	2.7	1.9	1.5	

STA=	10185.	10222.
PER Q=	.6	
AREA=	23.3	
VEL=	1.7	
DEPTH=	.6	

*SECNO 8.111

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.07

NC card was used - channel = .075, overbanks = .095.

8.111	10.69	1742.89	1740.50	.00	1743.13	.24	4.56	.04	1736.60
6110.0	3479.1	1622.5	1008.4	1220.8	276.4	318.9	17.1	6.2	1736.60
.04	2.85	5.87	3.16	.095	.075	.095	.000	1732.20	9603.25
.004998	502.	502.	502.	5	8	0	.00	493.90	10097.15

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

FLOW DISTRIBUTION FOR SECNO= 8.11 CWSEL= 1742.89

STA=	9603.	9758.	9794.	9819.	9848.	9882.	9913.	9948.	9974.	9982.	10013.	10034.	10052.
PER Q=	4.8	5.5	5.3	5.3	5.4	6.5	11.8	9.5	2.8	26.6	7.9	5.5	
AREA=	198.1	128.5	109.3	116.1	125.9	135.4	202.1	157.1	48.1	276.4	131.1	97.2	
VEL=	1.5	2.6	3.0	2.8	2.6	2.9	3.6	3.7	3.6	5.9	3.7	3.4	
DEPTH=	1.3	3.6	4.4	4.0	3.7	4.3	5.8	6.1	5.9	9.0	6.0	5.5	

STA=	10052.	10097.
PER Q=	3.2	
AREA=	90.6	
VEL=	2.1	
DEPTH=	2.0	

*SECNO 8.187

8.187	8.72	1745.42	1744.29	.00	1745.79	.37	2.62	.04	1741.50
6110.0	3274.4	2806.4	29.2	1068.3	441.8	17.5	32.5	10.6	1743.00
.06	3.06	6.35	1.66	.095	.075	.095	.000	1736.70	9590.12
.008888	401.	401.	401.	3	14	0	.00	461.13	10051.25

FLOW DISTRIBUTION FOR SECNO= 8.19 CWSEL= 1745.42

STA=	9590.	9602.	9631.	9641.	9661.	9727.	9780.	9834.	9886.	9935.	9967.	10037.	10051.
PER Q=	.1	1.4	1.0	2.2	7.9	7.8	7.4	7.5	10.3	7.9	45.9	.5	
AREA=	6.2	44.6	23.5	49.6	172.7	157.0	153.3	151.4	180.3	129.7	441.8	17.5	
VEL=	.9	2.0	2.6	2.7	2.8	3.1	2.9	3.0	3.5	3.7	6.4	1.7	
DEPTH=	.5	1.5	2.4	2.5	2.6	3.0	2.8	2.9	3.6	4.0	6.4	1.2	

*SECNO 8.278

8.278	9.68	1748.88	1747.59	.00	1749.10	.22	3.30	.01	1744.90
6110.0	1671.3	2216.1	2222.5	769.6	411.1	883.4	51.5	16.9	1745.60
.10	2.17	5.39	2.52	.095	.075	.095	.000	1739.20	9643.65
.005778	430.	480.	510.	2	10	0	.00	740.28	10383.94

FLOW DISTRIBUTION FOR SECNO= 8.28 CWSEL= 1748.88

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

STA=	9644.	9720.	9748.	9794.	9835.	9870.	9934.	9969.	9975.	10034.	10061.	10077.	10101.
PER Q=	4.7	3.2	4.5	3.9	3.0	3.9	3.3	.9	36.3	5.5	5.6	4.9	
AREA=	139.2	80.7	121.0	105.8	85.8	127.4	88.8	21.0	411.1	109.6	91.2	98.4	
VEL=	2.0	2.4	2.3	2.3	2.1	1.9	2.3	2.6	5.4	3.1	3.8	3.0	
DEPTH=	1.8	2.9	2.6	2.6	2.4	2.0	2.6	3.3	6.9	4.1	5.6	4.1	

STA=	10101.	10144.	10212.	10262.	10304.	10384.
PER Q=	5.1	5.6	5.2	3.2	1.2	
AREA=	126.7	162.0	137.4	95.6	62.6	
VEL=	2.5	2.1	2.3	2.1	1.2	
DEPTH=	3.0	2.4	2.7	2.3	.8	

*SECNO 8.373

3265 DIVIDED FLOW

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

Q changed to 4,480 cfs at the confluence with Stream No. 3.

8.373	7.30	1752.10	1751.33	.00	1752.45	.35	3.31	.04	1748.50
4480.0	698.8	2097.5	1683.8	225.7	335.2	604.3	69.9	24.1	1749.00
.13	3.10	6.26	2.79	.080	.065	.080	.000	1744.80	9654.39
.008318	510.	502.	480.	2	18	0	.00	530.78	10339.69

FLOW DISTRIBUTION FOR SECNO= 8.37 CWSEL= 1752.10

STA=	9654.	9930.	9956.	10020.	10053.	10090.	10106.	10130.	10174.	10216.	10269.	10340.
PER Q=	8.2	7.4	46.8	6.4	5.3	3.4	5.0	5.5	4.3	5.4	2.3	
AREA=	138.6	87.1	335.2	88.2	81.9	45.6	66.9	89.8	76.3	96.1	59.4	
VEL=	2.7	3.8	6.3	3.2	2.9	3.4	3.4	2.7	2.5	2.5	1.7	
DEPTH=	.5	3.3	5.3	2.6	2.2	2.8	2.8	2.0	1.8	1.8	.8	

*SECNO 8.485

Q changed to 3,660 cfs at the confluence with Stream No. 2.

8.485	6.59	1756.89	1756.02	.00	1757.19	.30	4.73	.01	1754.10
3660.0	756.8	1759.1	1144.1	301.7	311.0	387.5	84.1	30.8	1754.90
.17	2.51	5.66	2.95	.080	.065	.080	.000	1750.30	9785.66
.008036	500.	591.	600.	4	14	0	.00	494.66	10280.31

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

FLOW DISTRIBUTION FOR SECNO= 8.48 CWSEL= 1756.89

STA=	9786.	9868.	9919.	9959.	9976.	10043.	10071.	10085.	10112.	10156.	10280.
PER Q=	3.1	7.7	6.7	3.3	48.1	5.3	5.2	11.4	6.5	2.9	
AREA=	69.5	104.9	87.0	40.3	311.0	65.7	48.8	103.4	88.6	81.1	
VEL=	1.6	2.7	2.8	3.0	5.7	2.9	3.9	4.0	2.7	1.3	
DEPTH=	.8	2.0	2.2	2.4	4.6	2.3	3.6	3.8	2.0	.6	

1490 NH CARD USED
*SECNO 8.574
NH cards were used from SECNO 8.574 to SECNO 9.304.

8.574	5.35	1760.55	1759.73	.00	1760.77	.21	3.57	.01	1758.20
3660.0	22.0	1130.6	2507.5	11.9	218.8	892.0	94.6	36.2	1760.00
.20	1.85	5.17	2.81	.080	.065	.077	.000	1755.20	9961.41
.008259	500.	470.	400.	2	18	0	.00	603.34	10564.75

FLOW DISTRIBUTION FOR SECNO= 8.57 CWSEL= 1760.55

STA=	9961.	9972.	10027.	10124.	10148.	10191.	10269.	10281.	10311.	10350.	10391.	10434.	10466.
PER Q=	.6	30.9	3.7	4.6	4.3	4.2	5.3	13.7	6.4	4.3	6.3	6.4	
AREA=	11.9	218.8	84.7	56.3	67.9	78.9	42.9	110.0	83.6	67.2	86.0	77.2	
VEL=	1.8	5.2	1.6	3.0	2.3	2.0	4.5	4.6	2.8	2.4	2.7	3.0	
DEPTH=	1.2	4.0	.9	2.4	1.6	1.0	3.6	3.7	2.2	1.7	2.0	2.4	

STA=	10466.	10517.	10565.
PER Q=	7.8	1.4	
AREA=	104.6	32.4	
VEL=	2.7	1.6	
DEPTH=	2.1	.7	

1490 NH CARD USED
*SECNO 8.670

8.670	6.97	1764.07	1763.12	.00	1764.23	.16	3.45	.01	1760.00
3660.0	415.3	695.1	2549.6	147.6	129.7	1100.1	108.6	44.0	1761.00
.25	2.81	5.36	2.32	.080	.065	.079	.000	1757.10	9933.53
.006126	507.	507.	480.	3	11	0	.00	803.80	10737.33

FLOW DISTRIBUTION FOR SECNO= 8.67 CWSEL= 1764.07

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

STA=	9934.	9967.	9984.	9992.	10016.	10044.	10202.	10273.	10375.	10406.	10438.	10450.	10482.
PER Q=	4.9	3.6	2.8	19.0	5.2	6.6	5.0	6.1	4.4	4.6	3.6	8.7	
AREA=	71.0	45.5	31.0	129.7	70.8	139.3	97.9	125.5	67.2	68.8	38.2	99.4	
VEL=	2.5	2.9	3.4	5.4	2.7	1.7	1.9	1.8	2.4	2.4	3.4	3.2	
DEPTH=	2.1	2.8	3.5	5.4	2.5	.9	1.4	1.2	2.1	2.2	3.2	3.1	

STA=	10482.	10505.	10540.	10583.	10613.	10737.
PER Q=	7.0	6.5	6.3	3.1	2.6	
AREA=	79.2	88.0	94.1	52.8	78.9	
VEL=	3.2	2.7	2.4	2.1	1.2	
DEPTH=	3.3	2.5	2.2	1.8	.6	

1490 NH CARD USED
*SECNO 8.763

8.763	6.51	1767.51	1766.80	.00	1767.78	.27	3.52	.03	1765.20
3660.0	175.6	853.9	2630.6	74.0	136.7	791.9	120.9	51.0	1764.30
.28	2.37	6.25	3.32	.080	.065	.078	.000	1761.00	9935.30
.010024	510.	491.	440.	2	10	0	.00	569.87	10505.17

FLOW DISTRIBUTION FOR SECNO= 8.76 CWSEL= 1767.51

STA=	9935.	9989.	10018.	10038.	10067.	10112.	10192.	10218.	10226.	10234.	10246.	10279.	10314.
PER Q=	4.8	23.3	5.8	6.2	3.7	12.5	10.8	5.2	6.5	5.8	6.6	4.2	
AREA=	74.0	136.7	57.4	68.6	56.9	147.3	90.9	34.1	38.8	43.0	75.0	59.1	
VEL=	2.4	6.2	3.7	3.3	2.4	3.1	4.3	5.5	6.1	4.9	3.2	2.6	
DEPTH=	1.4	4.7	2.8	2.4	1.3	1.8	3.6	4.3	4.9	3.6	2.3	1.7	

STA=	10314.	10505.
PER Q=	4.6	
AREA=	120.9	
VEL=	1.4	
DEPTH=	.6	

1490 NH CARD USED
*SECNO 8.853

3265 DIVIDED FLOW

8.853	5.77	1771.77	1770.78	.00	1771.94	.17	4.15	.01	1767.80
3660.0	1068.4	797.7	1793.8	337.7	158.0	763.6	133.9	58.4	1769.20
.32	3.16	5.05	2.35	.080	.065	.078	.000	1766.00	9865.30
.007089	440.	475.	520.	4	13	0	.00	692.19	10644.55

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

FLOW DISTRIBUTION FOR SECNO= 8.85 CWSEL= 1771.77

STA=	9865.	9911.	9942.	9969.	9993.	10029.	10058.	10107.	10279.	10303.	10321.	10376.	10501.
PER Q=	5.3	7.9	7.4	8.6	21.8	5.6	7.9	3.3	4.8	4.9	3.4	7.4	
AREA=	79.0	90.6	83.1	85.1	158.0	71.9	109.3	78.4	56.1	51.0	68.0	139.6	
VEL=	2.5	3.2	3.3	3.7	5.1	2.9	2.7	1.5	3.1	3.5	1.8	2.0	
DEPTH=	1.7	2.9	3.0	3.6	4.4	2.5	2.2	.5	2.3	2.8	1.2	1.1	

STA=	10501.	10538.	10606.	10645.
PER Q=	7.2	4.1	.3	
AREA=	91.7	82.8	14.9	
VEL=	2.9	1.8	.8	
DEPTH=	2.5	1.2	.4	

1490 NH CARD USED
*SECNO 8.939

3265 DIVIDED FLOW

8.939	7.09	1775.19	1774.81	.00	1775.46	.26	3.49	.03	1772.80
3660.0	17.6	1215.9	2426.5	9.1	192.6	1020.3	146.3	66.3	1771.90
.36	1.93	6.31	2.38	.080	.065	.079	.000	1768.10	9974.49
.009000	440.	454.	430.	3	12	0	.00	917.42	10904.41

FLOW DISTRIBUTION FOR SECNO= 8.94 CWSEL= 1775.19

STA=	9974.	9982.	10020.	10058.	10100.	10151.	10237.	10277.	10314.	10507.	10619.	10643.	10687.
PER Q=	.5	33.2	12.6	8.8	5.9	4.3	4.9	4.0	3.2	3.2	3.7	5.1	
AREA=	9.1	192.6	120.5	101.6	86.6	87.8	70.9	59.7	95.6	67.9	44.0	74.8	
VEL=	1.9	6.3	3.8	3.2	2.5	1.8	2.6	2.5	1.2	1.7	3.1	2.5	
DEPTH=	1.2	5.1	3.2	2.4	1.7	1.0	1.7	1.6	.5	.6	1.9	1.7	

STA=	10687.	10732.	10858.	10904.
PER Q=	4.5	4.6	1.5	
AREA=	69.2	106.7	35.2	
VEL=	2.4	1.6	1.6	
DEPTH=	1.5	.8	.8	

1490 NH CARD USED

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

*SECNO 9.021

3265 DIVIDED FLOW

Q changed to 2,770 cfs at the confluence with Stream No. 1.

9.021	4.65	1778.55	1777.92	.00	1778.74	.18	3.27	.01	1776.90
2770.0	10.7	816.3	1942.9	6.7	169.6	745.2	154.5	72.1	1776.90
.39	1.60	4.81	2.61	.080	.065	.078	.000	1773.90	9972.95
.009853	510.	433.	310.	1	11	0	.00	646.94	10692.96

FLOW DISTRIBUTION FOR SECNO= 9.02 CWSEL= 1778.55

STA=	9973.	9981.	10036.	10102.	10146.	10182.	10207.	10243.	10483.	10511.	10522.	10551.	10618.
PER Q=	.4	29.5	14.5	6.8	3.1	3.2	3.1	3.3	7.5	8.0	5.4	6.1	
AREA=	6.7	169.6	135.0	72.7	42.3	36.7	41.8	73.7	58.8	43.1	54.2	80.7	
VEL=	1.6	4.8	3.0	2.6	2.0	2.4	2.0	1.2	3.6	5.1	2.8	2.1	
DEPTH=	.8	3.1	2.0	1.6	1.1	1.5	1.1	.3	2.1	3.8	1.8	1.2	

STA=	10618.	10652.	10672.	10693.
PER Q=	3.3	4.1	1.9	
AREA=	42.6	38.6	25.1	
VEL=	2.1	2.9	2.0	
DEPTH=	1.2	2.0	1.2	

1490 NH CARD USED
*SECNO 9.114

3265 DIVIDED FLOW

9.114	5.89	1783.39	1782.94	.00	1783.59	.21	4.85	.01	1780.60
2770.0	1600.4	818.8	350.8	596.7	152.3	171.0	164.0	79.1	1782.10
.42	2.68	5.38	2.05	.080	.065	.080	.000	1777.50	9510.38
.011521	400.	491.	470.	4	12	0	.00	717.63	10467.27

FLOW DISTRIBUTION FOR SECNO= 9.11 CWSEL= 1783.39

STA=	9510.	9636.	9685.	9729.	9775.	9898.	9946.	9981.	10027.	10075.	10120.	10467.
PER Q=	6.6	10.1	10.5	6.4	5.1	7.8	11.3	29.6	5.4	4.6	2.7	
AREA=	95.7	91.5	90.4	68.4	86.8	78.4	85.6	152.3	63.1	55.3	52.6	
VEL=	1.9	3.0	3.2	2.6	1.6	2.8	3.7	5.4	2.4	2.3	1.4	
DEPTH=	.8	1.9	2.0	1.5	.7	1.6	2.5	3.3	1.3	1.2	.2	

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

1490 NH CARD USED
*SECNO 9.210

3265 DIVIDED FLOW

9.210	4.29	1788.29	1787.40	.00	1788.41	.12	4.81	.01	1787.40
2770.0	20.2	170.6	2579.2	23.7	56.8	948.4	174.1	86.9	1787.90
.47	.85	3.00	2.72	.080	.065	.079	.000	1784.00	9802.84
.009643	530.	507.	400.	4	14	0	.00	772.47	10693.19

FLOW DISTRIBUTION FOR SECNO= 9.21 CWSEL= 1788.29

STA=	9803.	9989.	10026.	10198.	10246.	10285.	10331.	10369.	10417.	10447.	10483.	10490.	10511.
PER Q=	.7	6.2	7.4	8.8	4.9	6.0	5.2	6.2	3.6	8.9	4.5	6.0	
AREA=	23.7	56.8	103.2	88.9	57.4	69.8	58.8	71.7	42.8	72.5	25.1	50.8	
VEL=	.9	3.0	2.0	2.7	2.4	2.4	2.4	2.4	2.3	3.4	4.9	3.3	
DEPTH=	.1	1.6	.6	1.8	1.5	1.5	1.5	1.5	1.5	2.0	3.7	2.4	

STA=	10511.	10546.	10562.	10588.	10693.
PER Q=	6.8	6.2	9.7	8.9	
AREA=	67.0	46.6	73.7	120.1	
VEL=	2.8	3.7	3.7	2.1	
DEPTH=	1.9	2.9	2.8	1.1	

1490 NH CARD USED
*SECNO 9.304

3265 DIVIDED FLOW

9.304	3.97	1794.97	1794.60	.00	1795.20	.23	6.75	.03	1793.60
2770.0	1500.5	647.6	621.8	416.9	124.6	267.0	185.4	96.8	1793.70
.51	3.60	5.20	2.33	.080	.065	.076	.000	1791.00	9615.03
.017901	430.	496.	580.	4	9	0	.00	844.90	10539.65

FLOW DISTRIBUTION FOR SECNO= 9.30 CWSEL= 1794.97

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

STA=	9615.	9693.	9714.	9738.	9744.	9766.	9834.	9927.	9959.	10015.	10143.	10293.	10311.
PER Q=	6.5	10.8	9.9	3.3	8.2	3.0	6.2	6.2	23.4	3.1	5.4	5.0	
AREA=	63.0	60.2	60.4	17.2	51.8	41.9	71.7	50.7	124.6	52.8	51.8	32.4	
VEL=	2.9	5.0	4.5	5.3	4.4	2.0	2.4	3.4	5.2	1.6	2.9	4.3	
DEPTH=	.8	2.8	2.5	3.1	2.4	.6	.8	1.6	2.2	.4	.3	1.9	

STA=	10311.	10431.	10459.	10540.
PER Q=	3.0	4.0	2.0	
AREA=	56.2	36.7	37.1	
VEL=	1.5	3.0	1.5	
DEPTH=	.5	1.3	.5	

*SECNO 9.400

NC card was used - channel = .065, overbanks = .080.

9.400	3.90	1801.70	1800.93	.00	1801.85	.15	6.65	.01	1800.00
2770.0	1934.1	303.3	532.6	633.1	67.7	230.7	195.5	105.0	1799.50
.56	3.05	4.48	2.31	.080	.065	.080	.000	1797.80	9613.46
.010166	500.	507.	507.	4	14	0	.00	575.11	10188.57

FLOW DISTRIBUTION FOR SECNO= 9.40 CWSEL= 1801.70

STA=	9613.	9706.	9752.	9788.	9827.	9868.	9910.	9946.	9968.	9983.	10007.	10027.	10067.
PER Q=	4.8	16.9	13.6	10.8	6.7	4.4	4.8	4.6	3.1	10.9	3.3	5.1	
AREA=	62.8	127.2	101.3	90.4	69.3	54.8	54.5	43.4	29.4	67.7	34.1	59.1	
VEL=	2.1	3.7	3.7	3.3	2.7	2.2	2.5	3.0	3.0	4.5	2.7	2.4	
DEPTH=	.7	2.7	2.8	2.3	1.7	1.3	1.5	2.0	2.0	2.8	1.7	1.4	

STA=	10067.	10107.	10155.	10189.
PER Q=	5.3	4.7	.8	
AREA=	59.5	59.5	18.5	
VEL=	2.5	2.2	1.3	
DEPTH=	1.5	1.2	.5	

*SECNO 9.492

NC card was used - channel = .070, overbanks = .090.

9.492	3.80	1807.40	1806.69	.00	1807.62	.23	5.75	.02	1805.70
2770.0	1659.8	485.5	624.6	476.7	88.8	197.6	204.1	110.4	1805.10
.59	3.48	5.47	3.16	.090	.070	.090	.000	1803.60	9687.44
.017286	400.	486.	540.	4	15	0	.00	470.69	10158.13

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

FLOW DISTRIBUTION FOR SECNO= 9.49 CWSEL= 1807.40

STA=	9687.	9807.	9845.	9863.	9871.	9890.	9926.	9944.	9966.	9990.	10022.	10068.	10130.
PER Q=	4.6	8.2	9.1	5.0	8.9	10.0	5.6	4.7	3.8	17.5	13.8	8.5	
AREA=	73.7	69.8	55.4	27.3	55.3	77.1	41.3	40.0	36.7	88.8	102.7	86.6	
VEL=	1.7	3.3	4.6	5.1	4.4	3.6	3.8	3.3	2.8	5.5	3.7	2.7	
DEPTH=	.6	1.8	3.0	3.6	2.9	2.1	2.3	1.8	1.5	2.8	2.2	1.4	

STA=	10130.	10158.
PER Q=	.3	
AREA=	8.3	
VEL=	1.0	
DEPTH=	.3	

*SECNO 9.586

3265 DIVIDED FLOW

Q changed to 1,840 cfs at future 29th Avenue.

9.586	5.32	1813.72	1812.75	.00	1813.91	.19	6.28	.00	1811.70
1840.0	550.0	889.2	400.8	251.2	199.2	186.0	212.3	115.2	1811.30
.63	2.19	4.46	2.15	.090	.070	.090	.000	1808.40	9824.03
.008065	550.	496.	450.	4	11	0	.00	358.63	10294.60

FLOW DISTRIBUTION FOR SECNO= 9.59 CWSEL= 1813.72

STA=	9824.	9895.	9954.	9979.	10034.	10081.	10137.	10152.	10287.	10295.
PER Q=	7.0	16.8	6.1	48.3	14.9	6.7	.1	.1	.0	
AREA=	76.8	126.4	48.0	199.2	106.8	71.2	3.2	3.6	1.3	
VEL=	1.7	2.4	2.3	4.5	2.6	1.7	.5	.4	.4	
DEPTH=	1.1	2.1	2.0	3.6	2.3	1.3	.2	.0	.2	

*SECNO 9.682

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .62

9.682	3.64	1819.84	1819.31	.00	1820.08	.24	6.16	.02	1818.00
1840.0	59.9	798.4	981.6	25.2	169.0	307.9	218.9	119.3	1818.70
.67	2.38	4.72	3.19	.090	.070	.090	.000	1816.20	9902.50
.020696	480.	507.	510.	3	14	0	.00	354.69	10257.19

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

FLOW DISTRIBUTION FOR SECNO= 9.68 CWSEL= 1819.84

STA=	9902.	9933.	10021.	10064.	10088.	10098.	10118.	10144.	10158.	10169.	10184.	10218.	10257.
PER Q=	3.3	43.4	6.1	3.0	3.0	5.0	4.0	4.2	10.6	8.6	7.1	1.7	
AREA=	25.2	169.0	45.6	23.3	17.0	29.8	29.2	22.7	37.8	36.7	45.0	20.7	
VEL=	2.4	4.7	2.4	2.4	3.3	3.1	2.5	3.4	5.2	4.3	2.9	1.5	
DEPTH=	.8	1.9	1.0	1.0	1.6	1.5	1.1	1.7	3.3	2.4	1.3	.5	

*SECNO 9.776

9.776	3.71	1827.71	1827.03	.00	1827.83	.13	7.74	.01	1827.10
1840.0	279.6	353.1	1207.2	142.9	95.7	442.5	225.4	124.3	1826.40
.72	1.96	3.69	2.73	.090	.070	.090	.000	1824.00	9770.88
.012646	490.	496.	480.	6	10	0	.00	536.31	10307.19

FLOW DISTRIBUTION FOR SECNO= 9.78 CWSEL= 1827.71

STA=	9771.	9842.	9867.	9966.	10016.	10073.	10088.	10101.	10119.	10135.	10157.	10163.	10191.
PER Q=	9.3	3.5	2.4	19.2	4.9	7.9	5.0	3.3	5.1	3.9	5.2	13.9	
AREA=	79.3	30.4	33.2	95.7	51.9	40.6	29.2	25.4	32.6	28.6	22.5	72.8	
VEL=	2.2	2.1	1.3	3.7	1.7	3.6	3.1	2.4	2.9	2.5	4.3	3.5	
DEPTH=	1.1	1.2	.3	1.9	.9	2.6	2.2	1.5	2.0	1.3	3.5	2.6	

STA=	10191.	10233.	10270.	10307.
PER Q=	7.4	6.7	2.4	
AREA=	58.4	52.5	28.1	
VEL=	2.3	2.3	1.5	
DEPTH=	1.4	1.4	.8	

*SECNO 9.872

9.872	4.78	1834.48	1834.09	.00	1834.78	.30	6.90	.05	1832.50
1840.0	22.7	584.5	1232.9	11.1	88.5	431.3	232.2	129.4	1831.00
.75	2.04	6.61	2.86	.090	.070	.090	.000	1829.70	9977.17
.015804	510.	507.	480.	4	11	0	.00	372.17	10349.34

FLOW DISTRIBUTION FOR SECNO= 9.87 CWSEL= 1834.48

STA=	9977.	9988.	10011.	10025.	10077.	10164.	10181.	10219.	10277.	10291.	10309.	10335.	10349.
PER Q=	1.2	31.8	5.7	3.5	9.6	10.8	17.9	3.8	3.4	5.1	7.3	.3	
AREA=	11.1	88.5	30.6	38.0	81.6	47.8	88.9	40.9	22.8	30.6	45.3	4.8	
VEL=	2.0	6.6	3.4	1.7	2.2	4.1	3.7	1.7	2.7	3.0	2.9	1.0	
DEPTH=	1.0	4.0	2.1	.7	.9	2.8	2.4	.7	1.5	1.8	1.7	.3	

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


*SECNO 9.966
    9.966      6.21   1842.81   1842.42       .00   1843.27       .46      8.44       .05   1843.70
   1840.0        .0     949.5     890.5        .0     134.9     297.7     237.9     132.9   1840.20
      .78       .00      7.04      2.99      .000      .070      .090      .000   1836.60   9990.12
  .017360      470.      496.      520.         4        11         0       .00    229.75  10219.87


FLOW DISTRIBUTION FOR SECNO=      9.97          CWSEL=   1842.81

STA=    9990.   10022.   10065.   10101.   10135.   10184.   10220.
  PER Q=     51.6     15.0      8.0     10.5     12.7      2.1
   AREA=    134.9     82.7     52.7     60.1     78.4     23.7
    VEL=      7.0      3.3      2.8      3.2      3.0      1.6
  DEPTH=      4.3      1.9      1.5      1.8      1.6       .7

*SECNO 10.058
   10.058      5.24   1850.94   1850.55       .00   1851.25       .31      7.97       .02   1849.50
   1840.0     868.8     971.2        .0     324.0     172.5        .0     243.0     135.9   1852.00
      .81      2.68      5.63       .00      .090      .070      .000      .000   1845.70   9723.02
  .016155      490.      486.      440.         4        14         0       .00    309.70  10032.72


FLOW DISTRIBUTION FOR SECNO=     10.06          CWSEL=   1850.94

STA=    9723.    9748.    9789.    9813.    9829.    9853.    9909.    9946.    9976.   10039.
  PER Q=      2.6      5.5      1.0      5.6     12.5     10.6      4.6      4.9     52.8
   AREA=     22.9     45.0     13.2     31.1     59.8     76.0     38.9     37.1    172.5
    VEL=      2.1      2.2      1.4      3.3      3.9      2.6      2.2      2.4      5.6
  DEPTH=       .9      1.1       .5      2.0      2.5      1.3      1.0      1.2      3.1

*SECNO 10.151

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.54

   10.151      3.57   1855.87   1854.70       .00   1856.03       .16      4.76       .02   1854.80
   1840.0     196.9    1617.6      25.5     163.5     481.4      17.3     249.2     139.6   1853.60
      .85      1.20      3.36      1.47      .090      .070      .090      .000   1852.30   9667.79
  .006795      440.      491.      500.         5        13         0       .00    409.78  10077.57
```

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

FLOW DISTRIBUTION FOR SECNO= 10.15 CWSEL= 1855.87

STA=	9668.	9702.	9772.	9832.	9882.	10062.	10078.
PER Q=	.2	3.4	3.9	3.2	87.9	1.4	
AREA=	8.0	54.2	55.6	45.7	481.4	17.3	
VEL=	.5	1.1	1.3	1.3	3.4	1.5	
DEPTH=	.2	.8	.9	.9	2.7	1.1	

*SECNO 10.230

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

10.230	5.12	1861.92	1861.92	.00	1862.59	.67	4.89	.15	1859.50
1840.0	306.3	1097.6	436.1	108.5	134.2	162.4	254.3	143.1	1860.00
.87	2.82	8.18	2.68	.090	.070	.090	.000	1856.80	9868.16
.025561	460.	417.	340.	0	11	0	.00	314.62	10182.78

FLOW DISTRIBUTION FOR SECNO= 10.23 CWSEL= 1861.92

STA=	9868.	9872.	9902.	9923.	9948.	9972.	9980.	10015.	10034.	10069.	10121.	10179.	10183.
PER Q=	.0	1.5	3.2	4.0	4.4	3.6	59.6	3.2	3.3	11.2	6.0	.0	
AREA=	.4	15.9	21.9	26.3	27.8	16.2	134.2	20.8	27.0	66.6	47.4	.7	
VEL=	.6	1.7	2.7	2.8	2.9	4.1	8.2	2.8	2.2	3.1	2.3	.8	
DEPTH=	.1	.5	1.0	1.1	1.2	1.9	3.8	1.1	.8	1.3	.8	.2	

*SECNO 10.325

3265 DIVIDED FLOW

10.325	5.10	1872.00	1871.32	.00	1872.48	.48	9.87	.02	1869.50
1840.0	210.3	1449.7	180.0	95.9	234.9	77.0	259.0	146.5	1870.70
.90	2.19	6.17	2.34	.090	.070	.090	.000	1866.90	9761.28
.015400	470.	502.	550.	5	11	0	.00	272.08	10080.56

FLOW DISTRIBUTION FOR SECNO= 10.32 CWSEL= 1872.00

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

STA=	9761.	9796.	9827.	9911.	9936.	9950.	10015.	10039.	10062.	10081.
PER Q=	.4	.3	1.3	4.4	5.0	78.8	1.9	4.8	3.2	
AREA=	8.6	7.7	18.3	33.5	27.9	234.9	19.6	33.4	24.0	
VEL=	.8	.8	1.3	2.4	3.3	6.2	1.8	2.6	2.4	
DEPTH=	.2	.2	.2	1.3	2.0	3.6	.8	1.4	1.3	

*SECNO 10.419

10.419	5.09	1881.19	1881.09	.00	1881.79	.60	9.28	.04	1878.90
1840.0	179.0	1166.6	494.4	49.3	157.8	156.7	263.2	149.2	1878.80
.92	3.63	7.40	3.15	.090	.070	.090	.000	1876.10	9955.67
.024547	510.	496.	420.	3	6	0	.00	217.22	10172.89

FLOW DISTRIBUTION FOR SECNO= 10.42 CWSEL= 1881.19

STA=	9956.	9960.	9987.	10034.	10059.	10094.	10134.	10169.	10173.
PER Q=	.3	9.5	63.4	12.2	7.7	4.6	2.4	.0	
AREA=	2.8	46.5	157.8	52.2	46.2	35.2	22.7	.3	
VEL=	1.8	3.7	7.4	4.3	3.1	2.4	1.9	.5	
DEPTH=	.6	1.7	3.3	2.1	1.3	.9	.6	.1	

*SECNO 10.544

3265 DIVIDED FLOW

Q changed to 1,020 cfs at future 22nd Avenue.

10.544	4.56	1893.86	1893.24	.00	1894.20	.34	12.38	.03	1892.20
1020.0	176.1	719.5	124.4	82.1	134.6	46.4	267.9	151.9	1891.10
.96	2.14	5.35	2.68	.090	.070	.090	.000	1889.30	9863.08
.012611	650.	660.	650.	4	16	0	.00	144.13	10039.00

FLOW DISTRIBUTION FOR SECNO= 10.54 CWSEL= 1893.86

STA=	9863.	9921.	9941.	9969.	10009.	10032.	10039.
PER Q=	3.1	6.5	7.6	70.5	11.8	.4	
AREA=	17.4	28.6	36.0	134.6	43.2	3.2	
VEL=	1.8	2.3	2.2	5.3	2.8	1.1	
DEPTH=	.3	1.4	1.3	3.4	1.9	.5	

THIS RUN EXECUTED 25MAY92 21:48:23

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

Deadman Wash 100-year Q

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
	8.016	6110.00	1737.84	7.94	1729.90	1738.52	1737.71	9.48	214.06	.00	9444.90	583.15	10222.18
*	8.111	6110.00	1742.89	10.69	1732.20	1743.13	1740.50	5.87	49.98	502.00	9603.25	493.90	10097.15
	8.187	6110.00	1745.42	8.72	1736.70	1745.79	1744.29	6.35	88.88	401.00	9590.12	461.13	10051.25
	8.278	6110.00	1748.88	9.68	1739.20	1749.10	1747.59	5.39	57.78	480.00	9643.65	740.28	10383.94
*	8.373	4480.00	1752.10	7.30	1744.80	1752.45	1751.33	6.26	83.18	502.00	9654.39	530.78	10339.69
	8.485	3660.00	1756.89	6.59	1750.30	1757.19	1756.02	5.66	80.36	591.00	9785.66	494.66	10280.31
	8.574	3660.00	1760.55	5.35	1755.20	1760.77	1759.73	5.17	82.59	470.00	9961.41	603.34	10564.75
	8.670	3660.00	1764.07	6.97	1757.10	1764.23	1763.12	5.36	61.26	507.00	9933.53	803.80	10737.33
	8.763	3660.00	1767.51	6.51	1761.00	1767.78	1766.80	6.25	100.24	491.00	9935.30	569.87	10505.17
	8.853	3660.00	1771.77	5.77	1766.00	1771.94	1770.78	5.05	70.89	475.00	9865.30	692.19	10644.55
	8.939	3660.00	1775.19	7.09	1768.10	1775.46	1774.81	6.31	90.00	454.00	9974.49	917.42	10904.41
	9.021	2770.00	1778.55	4.65	1773.90	1778.74	1777.92	4.81	98.53	433.00	9972.95	646.94	10692.96
	9.114	2770.00	1783.39	5.89	1777.50	1783.59	1782.94	5.38	115.21	491.00	9510.38	717.63	10467.27
	9.210	2770.00	1788.29	4.29	1784.00	1788.41	1787.40	3.00	96.43	507.00	9802.84	772.47	10693.19
	9.304	2770.00	1794.97	3.97	1791.00	1795.20	1794.60	5.20	179.01	496.00	9615.03	844.90	10539.65
	9.400	2770.00	1801.70	3.90	1797.80	1801.85	1800.93	4.48	101.66	507.00	9613.46	575.11	10188.57
	9.492	2770.00	1807.40	3.80	1803.60	1807.62	1806.69	5.47	172.86	486.00	9687.44	470.69	10158.13

	SECNO	Q	CWSEL	DEPTH	ELMIN	EG	CRIWS	VCH	10*KS	XLCH	SSTA	TOPWID	ENDST
	9.586	1840.00	1813.72	5.32	1808.40	1813.91	1812.75	4.46	80.65	496.00	9824.03	358.63	10294.60
*	9.682	1840.00	1819.84	3.64	1816.20	1820.08	1819.31	4.72	206.96	507.00	9902.50	354.69	10257.19
	9.776	1840.00	1827.71	3.71	1824.00	1827.83	1827.03	3.69	126.46	496.00	9770.88	536.31	10307.19
	9.872	1840.00	1834.48	4.78	1829.70	1834.78	1834.09	6.61	158.04	507.00	9977.17	372.17	10349.34
	9.966	1840.00	1842.81	6.21	1836.60	1843.27	1842.42	7.04	173.60	496.00	9990.12	229.75	10219.87
	10.058	1840.00	1850.94	5.24	1845.70	1851.25	1850.55	5.63	161.55	486.00	9723.02	309.70	10032.72
*	10.151	1840.00	1855.87	3.57	1852.30	1856.03	1854.70	3.36	67.95	491.00	9667.79	409.78	10077.57
*	10.230	1840.00	1861.92	5.12	1856.80	1862.59	1861.92	8.18	255.61	417.00	9868.16	314.62	10182.78
	10.325	1840.00	1872.00	5.10	1866.90	1872.48	1871.32	6.17	154.00	502.00	9761.28	272.08	10080.56
	10.419	1840.00	1881.19	5.09	1876.10	1881.79	1881.09	7.40	245.47	496.00	9955.67	217.22	10172.89
	10.544	1020.00	1893.86	4.56	1889.30	1894.20	1893.24	5.35	126.11	660.00	9863.08	144.13	10039.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=      8.111  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      8.373  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      9.682  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     10.151  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     10.230  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     10.230  PROFILE=  1  MINIMUM SPECIFIC ENERGY
```

Normal program termination

DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDRAULIC ANALYSIS

SECTION 4: HYDRAULIC ANALYSIS
AND
SECTION 4.8: Final Modeling Results on Diskette

DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

SECTION 6: REFERENCE MATERIALS

SECTION 6: REFERENCE MATERIALS

6.5 Referenced Technical Papers and Documents

6.5.1 References

1. Arizona Department of Water Resources, "Instructions for Organizing and Submitting Technical Documentation for Flood Studies," Engineering Division, August 1991, revised September 1991.

2. Flood Control District of Maricopa County, "Hydrologic Design Manual for Maricopa County, Arizona," September 1, 1990.

3. Haestad Methods, Inc., "HEC-1 Flood Hydrograph Package, User's Manual and Computer Model, Version 4.0," developed by the U.S. Army Corps of Engineers, Hydrologic Engineering Center, September 1990.

4. National Weather Service, "NOAA Technical Memorandum NWS Hydro-40, Depth-Area Ratios in the Semi-Arid Southwest United States," August 1984.

5. Federal Highway Administration, "HY-8 Culvert Hydraulics Computer Program, Version 1.1," 1985.

6. Federal Highway Administration, "Hydraulic Design of Highway Culverts," Hydraulic Design Series No. 5, September 1985.

7. Haestad Methods, Inc., "HEC-2 Water Surface Profiles, User's Manual and Computer Model, Version 4.6.2," developed by the U.S. Army Corps of Engineers, Hydrologic Engineering Center, May 1991.

8. Sea, Inc., "Deadman's Wash Area Drainage Master Study for City of Phoenix", Volumes 1 and 2," September 1990.

9. Coe & Van Loo Consultants, Inc., "Santa Re - Conceptual Master Drainage Report, Maricopa County," April 1991.

10. Soil Conservation Service, "Soil Survey of Aguila-Carfree Area, Parts of Maricopa and Pinal Counties, Arizona," April 1986.

11. Bureau of Reclamation, "Flood Hydrology Manual," U.S. Department of the Interior, first edition, 1989.

12. Flood Control District of Maricopa County, "Estimated Manning's Roughness Coefficients for Stream Channels and Flood Plains in Maricopa County, Arizona," prepared by U.S. Geological Survey, April 1991.

13. Aerial Mapping Company, Inc., Topographic maps, Scale 1" = 200', 2' countour intervals and 4' contour intervals, 1991.

14. Topographic Maps for Santa Re, Scale 1" = 200', 2' contour intervals, undated (aerial company name unknown).

15. Soil Conservation Service, "National Engineering Handbook, Section 4, Hydrology," March, 1985.

16. Creighton, David E., "Cyclic Streamflow Test for Validity of Randomness," Arizona Department of Water Resources, undated.

17. U.S. Geological Survey, "Basin Characteristics and Streamflow Statistics in Arizona, as of 1989," Water-Resources Investigations Report 91-4041.

6.5.2 As-Built Plans

1. Arizona Department of Transportation, As-Built Plans.

   a. Phoenix-Cordes Junction, Maricopa County I-17-1(56), dated 2-1-65.

   b. Phoenix Cordes Junction, Maricopa County I-17-1(57), dated 1-10-67.

   c. Phoenix Cordes Junction, Maricopa County I-17-1(61), dated 6-12-69.

2. Maricopa County Highway Department, As-Built Plans.

   a. Black Mountain Road (Now Carefree Highway west of I-17), Ridge Route to U.S. 69, Maricopa County, dated 8-13-65.

   b. Carefree Road (East of I-17) Black Canyon Freeway to Cave Creek, Maricopa County, dated 8-23-74.

DMTDNS6

DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

APPENDIX B: Manning's n Determination Report

MANNING'S N VALUE DETERMINATION REPORT

DEADMAN WASH FLOODPLAIN DELINEATION STUDY

FOR

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FCD 90-65

Prepared by:

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February 14, 1992
Revised March 16, 1992

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Manning's N Value Determination Report

for

Deadman Wash Floodplain Delineation Study

Date: January 31, 1992

Location: Deadman Wash Watershed, Maricopa County, Arizona

Subject: Field Investigations of Floodplain Characteristics

Present: FCDMC: Russ Cruff, Tim Murphy, Afshin Ahouraiyan
HNTB: Dick Wells, Gary Sun

INTRODUCTION

A follow-up reconnaissance field trip was made to observe floodplain characteristics and drainage structures in the study reaches. In addition, the routing channel characteristics for hydrologic analysis were also investigated and discussed. This report summarizes the results of Manning's n value determination for use in backwater analyses of Deadman Wash and its two tributaries - Stream Nos. 4 and 7.

The estimation of Manning's roughness coefficient, n, for the selected study sub-reaches is included with a summary spreadsheet showing the components of the roughness coefficient. A set of photographs for channel and floodplain conditions with a brief description is also provided in this report. Exhibits 1 through 3 are included at the end of this report and present the estimated Manning's n values for the study streams. The comparison with the known resistance of similar sites was made to aid and verify the selected n values.

METHODOLOGY

The determination of Manning's n values in this study was estimated by use of the following materials and references:

A. Aerial Photographs - 1: 9,000 and 1:17,600 contact prints of flight used for topographic mapping.

B. Photographs taken during field reconnaissance trips.

C. Video tapes that were filmed during field reconnaissance trips.

D. References as listed below:

1. Flood Control District of Maricopa County, "Estimated Manning's Roughness Coefficients for Stream Channels and Flood Plains in Maricopa County, Arizona," Prepared by the U.S. Geological Survey, April 1991.

2. U.S. Geological Survey, "Roughness Characteristics of Natural Channels," Water-Supply paper 1849, Third Printing, 1987.

3. U.S. Geological Survey, "Roughness Coefficients for Stream Channels in Arizona, " Open-File Report, 1973.

4. Federal Highway Administration, "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains," Report No. FHWA-TS-84-204, April 1984.

5. V.T. Chow, "Open Channel Hydraulics," McGraw-Hill, 1959.

The procedure outlined in Reference 1 was used to determine the roughness coefficients for channels and floodplains in this study. The total n value was determined by assigning a base n value for the channel or floodplain and applying adjustments for various roughness factors. These roughness factors considered consist of degree of irregularity, effects of obstruction, vegetation, and variations in channel cross section, and degree of meandering (References 4 & 5). The adjustments were made to the base value through addition or multiplying by a factor to arrive at a total value. Photographs of channels and floodplains of known resistance were used to aid in determining of roughness coefficients. These photographs were used for comparison with field situations to help verify selected n values. The estimated n values were also checked against values found within the above references (References 1, 2 & 3).

The total value of Manning's n was computed by:

$$n = (n_b + n_1 + n_2 + n_3 + n_4)\, m$$

Where: n_b = a base value of n for a straight uniform channel;

n_1 = a value for the degree of surface irregularities;

n_2 = a value for the effects of obstruction;

n_3 = a value for vegetation;

n_4 = a value for variations in shape and size of the channel cross section;

and m = a multiplier to correct for meandering of the channel.

Selection of Base n Values

Base values of Manning's n were selected from Table 1 in Reference 1. In general, a base value ranging from 0.035 to 0.050 was assigned to Deadman Wash from the headwater to near Aso Tank, and from Snodgrass Tank to the New River. A base value of 0.030 was used for Deadman Wash between Aso and Snodgrass Tanks to represent coarse sand, gravel, and firm soil. Reference 1 contains the estimation of roughness coefficients for the New River area just northwest of this study area.

Adjustment Factors for Channels and Floodplains

Channel irregularities, obstructions, vegetation, varations, and meandering increase the roughness, and the value for n was adjusted accordingly. For study reaches, some weeds and low-growing brush create obstructions to the channel flow. The vegetation is fairly dense along top of banks, and overflow areas have a medium to dense cover of bushes and trees. No meander adjustment was made to the total n value for this project, because the flow will not be confined to the channel and the overbank flow is expected.

Subdivision of Cross Section

Each cross section was divided into left overflow, channel, and right overflow areas. Subdivision of channel cross sections was not needed for this study because the streams contain well-defined channels with fairly uniform roughness across the cross section.

RESULTS

The Manning's n values required for the floodplain delineation study were determined. The values estimated for the study reaches vary from 0.038 to 0.080 for the channels, and from 0.058 to 0.090 for the floodplains. The n values were estimated for 19 representive reaches with 16 photographs in this report. The results of n values for channels and overflow areas are also shown on Exhibits 1 through 3.

BGS/rjc
NREPORT.RJC

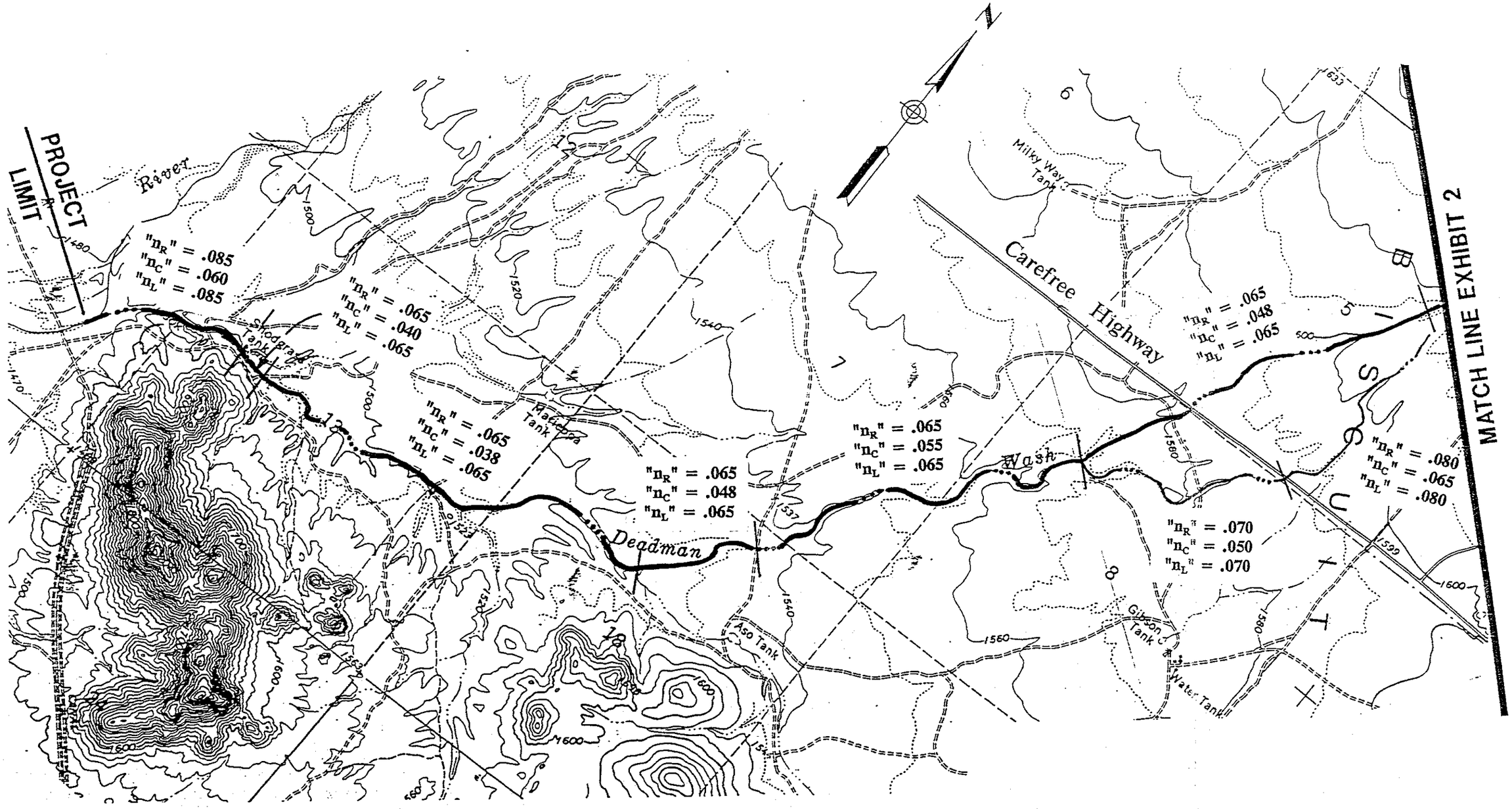

EXHIBIT 1

Manning's n Value
For
Deadman Wash Floodplain Delineation Study

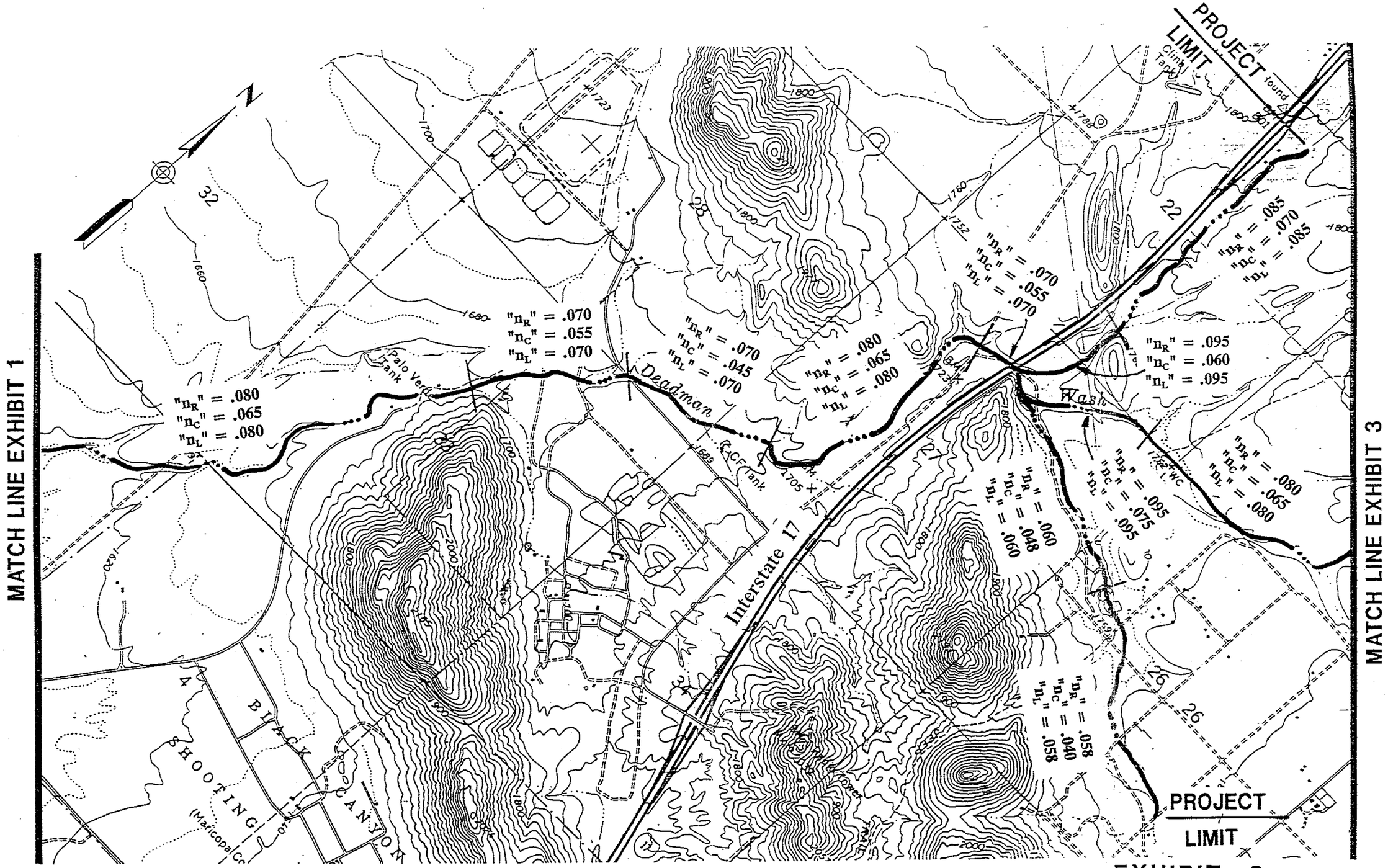

EXHIBIT 2

Manning's n Value
For
Deadman Wash Floodplain Delineation Study

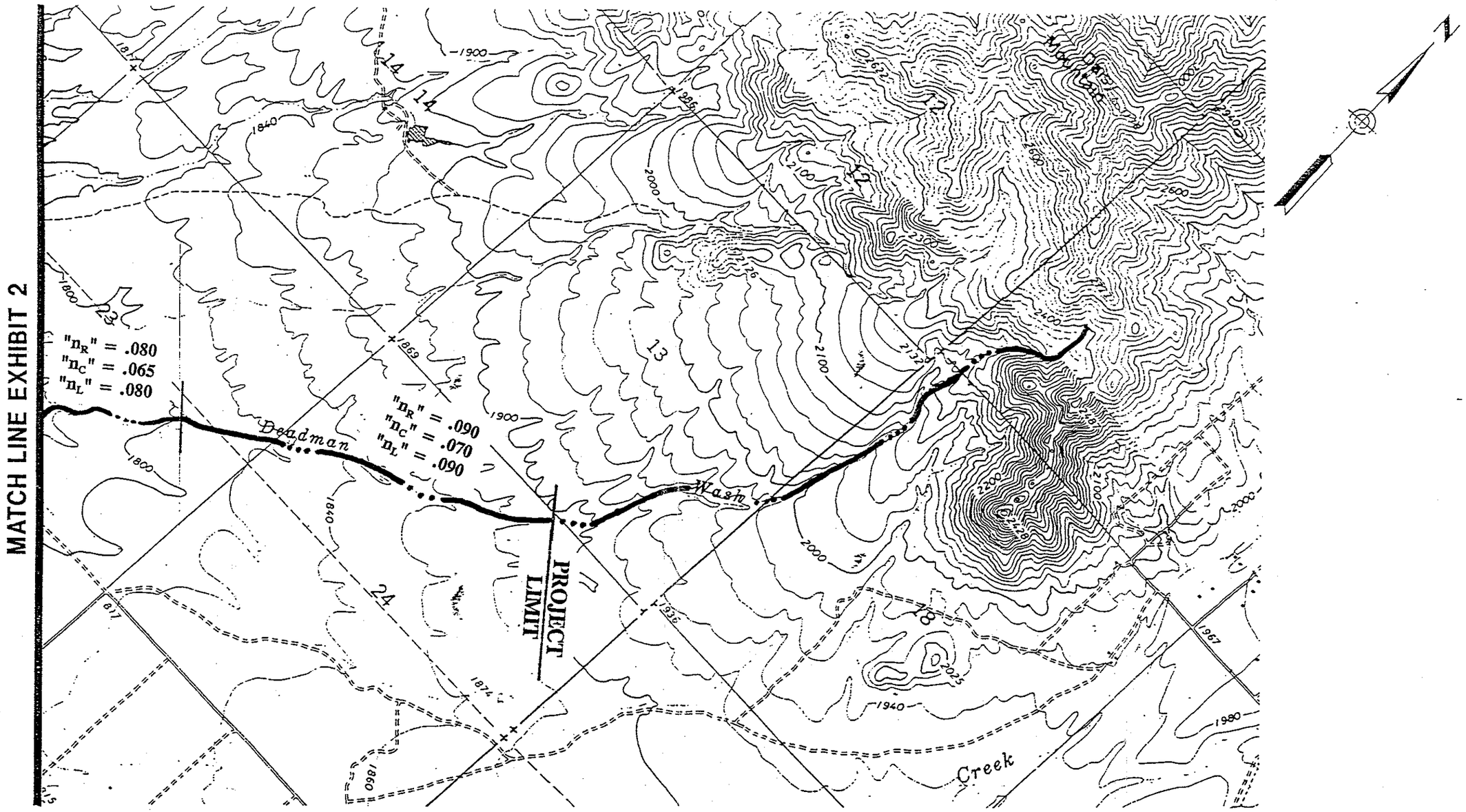

EXHIBIT 3

Manning's n Value
For
Deadman Wash Floodplain Delineation Study

PHOTO NO. 1
Deadman Wash just downstream of Snodgrass Tank. Bed material is cobbles and boulders. Bed and banks have a fairly heavy growth of trees and brush.

PHOTO NO. 2
Deadman Wash at Snodgrass Tank. Bed and banks are lined with grass and small trees.

PHOTO NO. 3
Deadman Wash between Maricopa and Aso Tanks. Bed is mostly coarse sand and gravel with trees and brush along top of banks.

PHOTO NO. 4
Deadman Wash just north of Aso Tank. Bed material is gravel and cobbles. Banks are heavily lined with overhanging trees and brush.

PHOTO NO. 5

Stream No. 12 at Carefree Highway (Looking downstream). Bed is mostly sand and silt. Banks are lined with overhanging trees and brush.

PHOTO NO. 6

Stream No. 12 at spilt flow location. The man-made dike divided Deadman Wash with Stream No. 12 is stable. Bed material is coarse gravel and cobbles. Banks have thick growth of brush.

PHOTO NO. 7

Deadman Wash cross culvert (2 - 72" & 2 - 60" RCPs) with some debris at Joy Ranch Road (Looking downstream). Bed is mostly coarse gravel at the culvert upstream, and cobbles and boulders at the downstream side. The overhanging tree is almost completely blocking off the 60" RCP on the left.

PHOTO NO. 8

Deadman Wash at the concentration point with DA-10J, approximately 1,000 ft west of I-17. A wide channel (B=80') consists of cobbles and boulders with scattered bushes and overhanging trees.

PHOTO NO. 9

Deadman Wash just downstream of I-17 bridges. Bed material is cobbles and boulders. Both banks are lined with overhanging trees.

PHOTO NO. 10

Deadman Wash just upstream of I-17 bridges near the confluence with Stream No. 4. Bed is cobbles and large boulders with scattered weeds and bushes. Banks are lined with heavy growth of trees and brush.

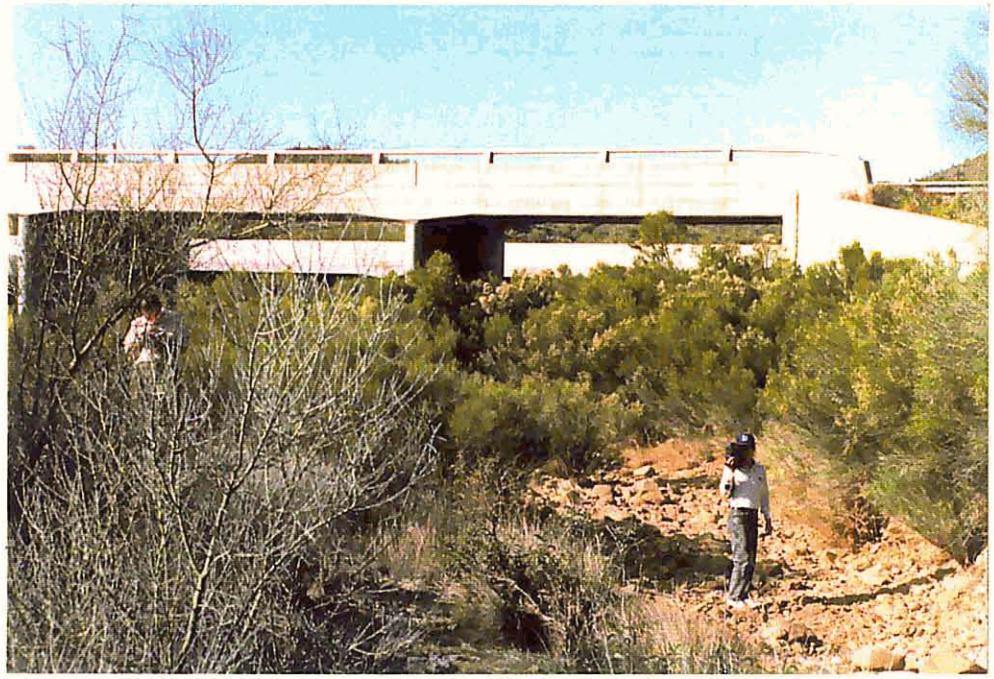

PHOTO NO. 11
Stream No. 8 just upstream of I-17 Bridges. Bed consists of cobbles and boulders. banks are lined with brush and small trees.

PHOTO NO. 12
Deadman Wash just upstream of I-17 Bridges. Bed consists of rock and boulders. Bed and banks between I-17 bridges have a dense vegetation. Banks are irregular with bushes and small trees.

PHOTO NO. 13
Stream No. 7 East of I-17 West Rest Area (Looking upstream). Bed consists of boulders and has scattered growth of weeds and bushes. Banks are lined with trees and brush.

PHOTO NO. 14
Stream No. 4 at Irvine Road (Looking upstream). Bed consists of sand and silt with scattered cobbles. banks are irregular with grass, bushes and small trees.

PHOTO NO. 15
Deadman Wash next to Desert Hills Drive where Stream No. 1 joins the wash (Looking downstream). Bed is cobbles and boulders. Banks are lined with overhanging trees and brush.

PHOTO NO. 16
Deadman Wash in Reach 10A - 10B (Looking upstream). Bed consists of angular cobbles and boulders. Banks are irregular with trees and brush growing down to the low waterline.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Adjacent to Snodgrass Tank (R10W – 10X)
Photo No : 1
Section Description : Bed material is cobbles and boulders.
Channel and floodplain have a dense growth of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Cobbles	nb	.030 – .050	0.035	0.035	0.035
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005		0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025		0.020	
	Large		.025 – .050	0.035		0.035
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.085	0.060	0.085

NVALUE1.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : At Snodgrass Tank
Photo No : 2
Section Description : Bed and banks are lined with grass and small trees.
Floodplain has a dense growth of trees and brush.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Firm Soil	nb	.025 – .032	0.030	0.030	0.030
	Coarse Sand		.026 – .035			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005			
	Moderate		.006 – .010	0.010	0.010	0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.005		0.005
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.065	0.040	0.065

NVALUE2.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Between Maricopa and Aso Tanks
Photo No : 3
Section Description : Bed material is coarse sand and coarse gravel with overhanging trees and brush along the banks. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Sand	nb	.026 – .035	0.030	0.030	0.030
	Coarse Gravel		.028			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004		0.003	
	Minor		.005 – .015	0.005		0.005
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.065	0.038	0.065

NVALUES.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : North of Aso Tank
Photo No : 4
Section Description : Bed material is gravel and cobbles with heavily overhanging trees and brush along the banks. Floodplain has a medium to dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.030	0.040	0.030
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004		0.003	
	Minor		.005 – .015	0.005		0.005
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.065	0.048	0.065

NVALUE4.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 12
Location : At Carefree Highway
Photo No : 5
Section Description : Bed material is silt, sand and gravel with overhanging trees and brush along the banks. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Firm Soil	nb	.025 – .032	0.030	0.030	0.030
	Gravel		.028 – .035			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.010	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.070	0.050	0.070

NVALUE6.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 12
Location : At Split Flow Location
Photo No : 6
Section Description : Bed material is gravel and cobbles with low–growing trees and brush. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material		nb				
	Gravel		.028 – .035			
	Cobble		.030 – .050	0.040	0.040	0.040
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.010	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.010	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.080	0.065	0.080

NVALUE6.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Cross Culverts at Joy Ranch Road (Downstream Channel)
Photo No : 7
Section Description : Bed material is cobbles and boulders downstream of culverts. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.035	0.050	0.035
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005		0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.070	0.055	0.070

NVALUE7D.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Cross Culverts at Joy Ranch Road (Upstream Channel)
Photo No : 7
Section Description : Bed material is coarse gravel and cobbles upstream of culverts. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.035	0.040	0.035
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005		0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
$n = (nb + n1 + n2 + n3 + n4)\ m$				0.070	0.045	0.070

NVALUE7U.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Approx. 1,000 ft west of I–17
Photo No : 8
Section Description : Bed material is cobbles and boulders with scattered weeds and bushes. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.050	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005		0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.010	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.080	0.065	0.080

NVALUES.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Just downstream of I–17 bridges
Photo No : 9
Section Description : Bed material is cobbles and boulders with overhanging trees. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.050	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005	0.005	0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010		0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.010		0.010
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.070	0.055	0.070

NVALUE9.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Just upstream of I–17 bridges
Photo No : 10
Section Description : Bed material is cobbles, boulders, and large rock with weeds and brush. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.045	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005			
	Moderate		.006 – .010	0.010	0.005	0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.015	0.010	0.015
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.025	0.015	0.025
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.095	0.075	0.095

NVALUE10.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 8
Location : Just upstream of I–17 bridges
Photo No : 11
Section Description : Bed material is cobbles and boulders with overhanging brush. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.045	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005			
	Moderate		.006 – .010	0.010	0.005	0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.015	0.005	0.015
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.025		0.025
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
$n = (nb + n1 + n2 + n3 + n4)\ m$				0.095	0.060	0.095

NVALUE11.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : I--17 bridges
Photo No : 12
Section Description : Bed material is cobbles and boulders with small trees and brush.
A dense cover of trees and brush along the banks.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.045	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.015	0.015	0.015
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.025	0.015	0.025
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.095	0.080	0.095

NVALUE12.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 7
Location : East of I–17 East Rest Area
Photo No : 13
Section Description : Bed material is cobbles and boulders with weeds and overhanging brush. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.045	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.010	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.010	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.085	0.070	0.085

NVALUE13.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 4
Location : At Irvine Road
Photo No : 14
Section Description : Bed material is silt, sand and small cobbles with overhanging brush and trees. Floodplain has grass and scattered trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Sand	nb	.026 – .035	0.035	0.035	0.035
	Cobble		.030 – .050			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004	0.003		0.003
	Minor		.005 – .015			
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010	0.010		0.010
	Medium		.010 – .025			
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.058	0.040	0.058

NVALUE14.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Next to Desert Hills Drive (R10E – 10F)
Photo No : 15
Section Description : Bed material is cobbles and boulders with weeds and overhanging brush and trees. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material						
	Cobble	nb	.030 – .050			
	Boulder		.040 – .070	0.050	0.050	0.050
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010	0.010	0.005	0.010
	Medium		.010 – .025			
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.080	0.065	0.080

NVALUE16.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Reach 10A – 10B
Photo No : 16
Section Description : Bed material is cobbles and boulders with weeds and overhanging brush and trees. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material						
	Cobble	nb	.030 – .050			
	Boulder		.040 – .070	0.050	0.050	0.050
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005			
	Moderate		.006 – .010	0.010	0.010	0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.090	0.070	0.090

NVALUE16.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : From 2000' South of Carefree Highway to Split Flow Location
Photo No : N/A
Section Description : Bed material is firm soil, sand and gravel with weeds and brush. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Firm Soil	nb	.025 – .032	0.030	0.030	0.030
	Gravel		.028 – .035			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005			
	Moderate		.006 – .010	0.010	0.008	0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.015		0.015
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
$n = (nb + n1 + n2 + n3 + n4)\ m$				0.065	0.048	0.065

NVALUE17.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 4
Location : Between I–17 and Unnamed Stock Tank
Photo No : N/A
Section Description : Bed material is gravel and cobbles with overhanging brush. Floodplain has grass and scattered trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Gravel	nb	.028 – .035	0.030		0.030
	Cobble		.030 – .050		0.040	
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004		0.003	
	Minor		.005 – .015	0.010		0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010	0.010		0.010
	Medium		.010 – .025			
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.060	0.048	0.060

NVALUE18.WK3