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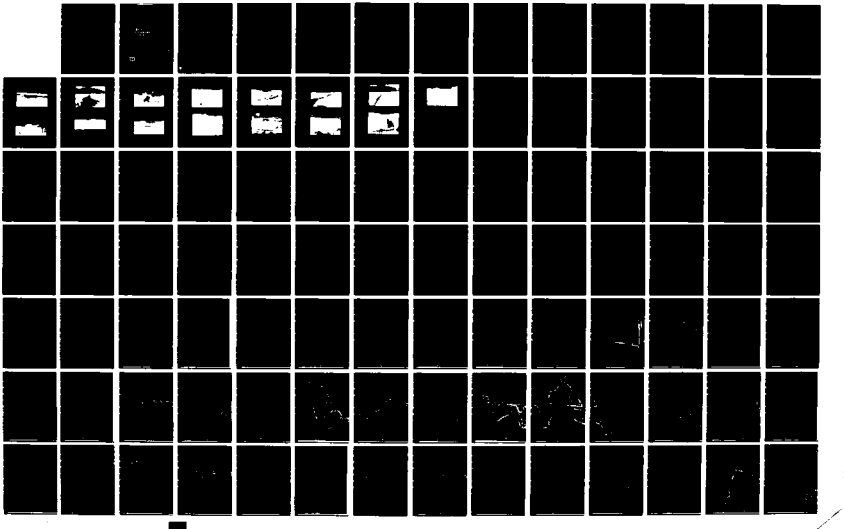
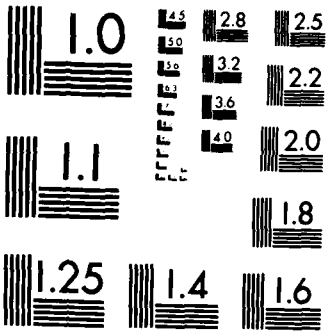




SPECIAL STUDY

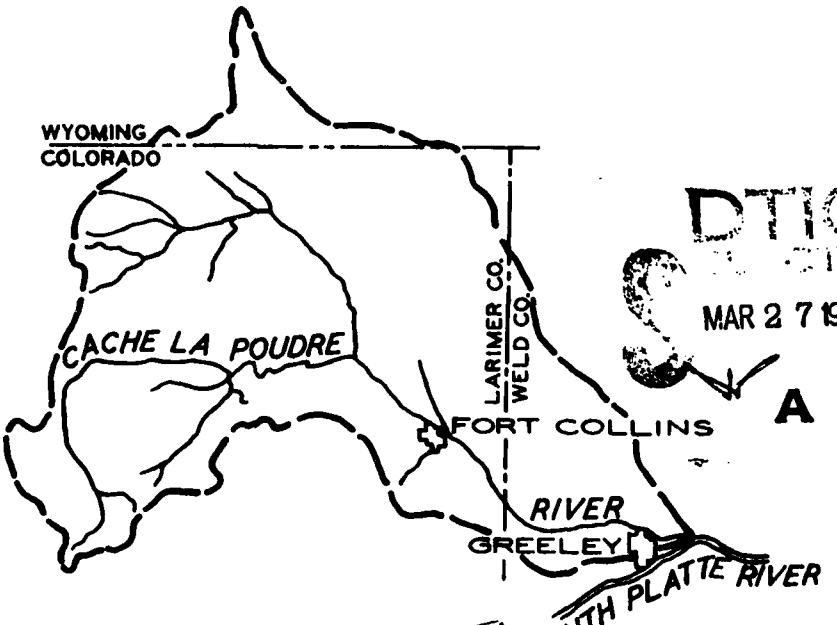
OCTOBER 1981

(5)

AD-A151 769

CACHE LA POUDRE RIVER BASIN
LARIMER - WELD COUNTIES, COLORADO

VOLUME IV
FLOOD PLAIN ANALYSIS
FOSSIL CREEK



US Army Corps of Engineers
Omaha District

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The Cache la Poudre River basin in Colorado is in a rapidly growing area. The population of Larimer and Weld Counties increased by about 60 percent between 1970 and 1980. The basin contains a number of flood hazard areas, from narrow canyon flood plains in the mountainous west to wide valley flood plains in the east. Local interests are concerned about the changing nature of the flood hazards in the basin as a consequence of urban growth, particularly since the catastrophi. Big Thompson River flood in the summer of 1976.

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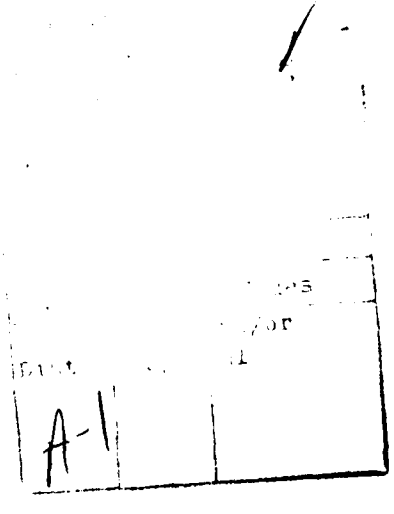
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES
COLORADO

VOLUME	I	FLOOD HAZARD, DAM SAFETY, AND FLOOD WARNING
VOLUME	II	HYDROLOGY
VOLUME	III	FLOOD PLAIN ANALYSIS, SHEEP DRAW
VOLUME	IV	FLOOD PLAIN ANALYSIS, FOSSIL CREEK



SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES
COLORADO

VOLUME IV
FLOOD PLAIN ANALYSIS
FOSSIL CREEK

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SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES
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FOSSIL CREEK

Introduction

BACKGROUND

The Cache la Poudre River basin in Colorado is in a rapidly growing area. The population of Larimer and Weld Counties increased by about 60 percent between 1970 and 1980. The basin contains a number of flood hazard areas, from narrow canyon flood plains in the mountainous west to wide valley flood plains in the east. Local interests are concerned about the changing nature of the flood hazards in the basin as a consequence of urban growth, particularly since the catastrophic Big Thompson River flood in the summer of 1976. Discussions regarding a wide ranging study of the basin were initiated between the Omaha District, Corps of Engineers and local planners and elected officials in 1977 and a plan of study was agreed upon.

AUTHORITY

This study was made under continuing authority in Section 206 of the 1960 Flood Control Act, as amended.

PURPOSE

The purpose of this study was to analyze flood-related problems and provide information that will enable local governments to make decisions that will minimize or reduce flood hazards in the future.

SCOPE OF THE SPECIAL STUDY

The course of the study was primarily determined through coordination with the Omaha District, Colorado Water Conservation Board, Larimer County, Weld County, the city of Fort Collins, the city of Greeley, and the Larimer-Weld Regional Council of Governments. Numerous other agencies and private interests were also contacted during the study.

As the study progressed, tasks were deleted or added in consultation with local interests to respond to changes in identified needs or priorities. Since some work items were independent of other study tasks, the study results are presented in four separate volumes. Volume I considers basin flood hazards, dam safety, and flood warning. Volume II presents the detailed hydrologic analysis for the basin. Volumes III and IV present flood plain studies for Sheep Draw and Fossil Creek, respectively, which are two tributaries of the Cache la Poudre River lying in the path of current urbanization. All geographic locations referred to are in the State of Colorado unless otherwise indicated.

PURPOSE AND SCOPE OF VOLUME IV

One purpose of the Cache la Poudre River Basin Special Study is to present data on existing and future flood potential for streams subject to the effects of increasing urbanization. Two streams in the Cache la Poudre River basin which meet this criteria are Fossil Creek near Fort

Collins and Sheep Draw near Greeley. Local interests also assigned these streams priority for study. Volume III of the Special Study covers Sheep Draw and Volume IV covers Fossil Creek. The locations of these basins are shown on plate 1.

Hydrologic modeling studies were conducted to determine the peak discharges for floods of various probabilities of occurrence. This information was developed first for existing watershed land use. To determine the effect of increasing urbanization on flood runoff, possible future urban land use was superimposed on the Fossil Creek basin. Volume II of this study presents details of the hydrologic studies. Hydraulic modeling studies were conducted to develop the flood water surface profiles and flood plain boundaries. Flood profiles are shown for existing and future conditions. Flooded area maps are shown for existing conditions.

ACKNOWLEDGEMENTS

Principal cooperation and coordination for Volume IV was with representatives of the Federal Emergency Management Agency (FEMA), the Colorado Water Conservation Board (CWCB), Larimer County, and the city of Fort Collins.

RELATED STUDIES

FEMA has completed a report entitled Flood Insurance Study, Larimer County, Colorado, Unincorporated Areas, published in April 1979. Fossil Creek was not included among the streams studied in this flood insurance study.

LOCATION OF DATA

Copies of this report are available for public distribution at the offices listed below. Topographic, hydrologic, and hydraulic data used in this study are also on file in the Flood Plain Management Services Branch, Omaha District Corps of Engineers, 215 North 17th Street, Omaha, NE 68102.

Larimer County Planning Department
P.O. Box 1190
Fort Collins, CO 80522

County Engineer
Larimer County
P.O. Box 1190
Fort Collins, CO 80522

Colorado Water Conservation Board
823 State Centennial Building
1313 Sherman Street
Denver, CO 80203

Flood Plain Analysis

STUDY AREA DESCRIPTION

Fossil Creek, a right-bank tributary to the Cache la Poudre River, is located south of Fort Collins in Larimer County. It has its source near the south end of Horsetooth Reservoir and flows in a generally eastward direction to its confluence with the Cache la Poudre River east of Fossil Creek Reservoir. The basin is about 3 miles wide and 11 miles long. Fossil Creek has a total drainage area of about 32 square

miles and a contributing drainage area of about 29 square miles. A map of the basin is shown on plate 2.

The basin topography is characterized by rolling hills and narrow stream valleys. Elevations in the basin range from 4790 to 5930 feet above mean sea level. Fossil Creek stream slopes range from about 8 to 25 feet per mile through most of the study reach and increase to 100 feet per mile at the upstream end of the study reach. The three Fossil Creek tributaries slope about 35 to 40 feet per mile in their study reaches. The Fossil Creek channel generally ranges from about 2 to 10 feet deep and 40 to 150 feet in top width. The tributary channels typically range from 1 to 6 feet in depth and from 30 to 200 feet in top width. Figures 1 through 15 on the following pages are photographs which illustrate channel conditions in the study reach.

The climate is semiarid. In general, warm summers and mild to cold winters prevail. Intense thunderstorms, sometimes of cloudburst intensity, can occur during the summer months. At Fort Collins, adjacent to the Fossil Creek basin, the mean annual precipitation is about 15 inches. Temperatures range from a mean of 27° F in January to a mean of 71° F in July. The major soil association is the Heldt-Renohill-Kim. Others are the Nunn-Fort Collins-Ulm, Weld-Wiley, and Otero-Nelson-Tassel. These are generally deep, well-drained, medium-textured soils on topography that ranges from level to steep. Vegetation is predominantly grassland or irrigated cropland, with few trees.

The Fossil Creek watershed is crossed by Interstate 25, U.S. Highway 287, and the Colorado and Southern and the Union Pacific railroads. There are county roads on most section lines. The basin is almost entirely rural, with irrigation canals and farms.

floodwater surface elevations were determined from stage-discharge rating curves of combined culvert flow and weir flow or by using bridge analysis techniques contained in the HEC-2 computer program and a publication entitled Hydraulics of Bridge Waterways, published by the U.S. Department of Transportation in 1970. On Fossil Creek upstream from the bridge at Section 275, most of the water flows over the east-west road into the Cache la Poudre River. Very little water flows downstream in Fossil Creek from this point; therefore, the discharges have been reduced to compensate for this. The reach of Fossil Creek between Fossil Creek Dam and the Fossil Creek Dam spillway channel confluence with Fossil Creek is inundated only by backwater from the spillway channel and local drainage. No flood reconstitution was computed because of a lack of flood history.

As discussed in the hydrologic analysis, the flood discharges were computed assuming the existing dams are in place and that road crossings are in place with culverts unobstructed. Flood elevations drawn on the profiles are based on open channel conditions free of debris or ice. The flood elevations are, therefore, considered valid only if hydraulic structures, in general, remain unobstructed. Since some obstruction is common during floods, flood conditions could be worse than shown. All elevations are referenced to mean sea level from the National Geodetic Vertical Datum of 1929.

FINDINGS OF STUDY

Information regarding the more frequent floods, such as the 10-year and 50-year floods is useful for design of minor engineering works or for land use planning where a high failure risk is economically feasible and hazards to life and property are low. The 100-year flood is often used for design when a lower risk of failure is desired. Its most important use is as a standard for flood plain designation and flood plain regulation. The 500-year flood is useful to remind the

total of 278 cross sections were also determined by photogrammetric methods. These cross sections were placed at close intervals above and below bridges and culverts in order to compute the significant backwater effects of these structures. The streambed elevation designated on the water surface profiles is actually the low-water profile on 20 December 1977. However, the flow was estimated as minimal. Bridge cross sections and other structures were field surveyed. The locations of the cross sections are shown on the flooded area maps. Plate 4 is an index which shows the location of the flooded area maps, plates 5 through 21. The cross section locations are also designated on the flood profiles, plates 22 through 57.

Manning's "n" values were .030 to .055 for the channel and .040 to .085 for the overbank and were estimated by field inspection. Starting water surface elevations at the mouth of Fossil Creek were based on Fossil Creek flooding with a coincident base flow of 1,000 cubic feet per second (c.f.s.) in the Cache la Poudre River. The water surface elevation of the Cache la Poudre River was determined by analyzing stage-discharge relationships for the Cache la Poudre River from Flood Plain Information, Cache la Poudre River, Colorado, Volume III, Fort Collins - Greeley, Larimer - Weld County, published by the Omaha District Corps of Engineers in October 1975. Upstream from Fossil Creek Reservoir, the starting water surface elevation was determined by reservoir routings for each flood frequency.

On the tributaries, the starting water surface elevation was at coincident flow on the receiving stream. For example, for a 50-year flood on a tributary, computations would start at the 50-year water surface elevation on the main stream.

Water surface elevations on Fossil Creek and its tributaries were computed by the Corps of Engineers' standard step backwater computer program, HEC-2. The effect of bridges, culverts, and roadways upon

control effect as does one irrigation canal. Roadways that cross Fossil Creek and its tributaries are relatively high and act to retard floodflows. Reservoir routings were made for 24 roads and railroad structures. In general, discharges increase considerably if the road crossings are assumed to be removed. Discharges are somewhat reduced if culverts are assumed to be plugged. At the request of local interests, the dams were considered to be in place and road crossings were assumed to be intact, with culverts unobstructed.

There are six significant dams in the basin. Runoff from the relatively small drainage areas upstream from five of the dams was assumed to be noncontributing to the peak flood discharges. Floods were routed through the largest reservoir, Fossil Creek, with the initial pool elevation at the crest of the spillway. The Fossil Creek dam outlet works does not discharge to Fossil Creek but instead to another basin north of Fossil Creek. The Fossil Creek spillway is located at the southern edge of Fossil Creek dam. Since this area and the spillway channel leading to Fossil Creek are located external to the area for which detailed topographic mapping was developed, flood boundaries were not delineated for the spillway channel.

HYDRAULIC ANALYSIS

The hydraulic analysis was conducted on Fossil Creek and several of its tributaries to determine the water surface elevation of the 10-, 50-, 100-, and 500-year floods.

Topographic mapping was prepared by photogrammetric methods at a scale of 1:2400 and a contour interval of 2 feet. The photography was taken during a flight on 20 December 1977. The mapping was prepared for Larimer County and the Colorado Water Conservation Board by M&I Consulting Engineers of Fort Collins, Colorado, in February 1978. A

HYDROLOGIC ANALYSIS

A hydrologic analysis was carried out to establish the peak discharges for floods of various frequencies. Floods with 10-, 50-, 100-, and 500-year recurrence intervals are presented in this report. A detailed description of the hydrologic analysis is contained in Volume II of this study.

Stream gaging records are not available for Fossil Creek. The Environmental Protection Agency's (EPA) Storm Water Management Model (SWMM) was used to model rainfall-runoff characteristics of the basin. Basin characteristics needed for the model were taken from U.S. Geological Survey (USGS) 7.5 Minute Quadrangle mapping at a scale of 1:24,000 with a contour interval of 10 feet. Rainfall values for 1-hour storm events of various frequency were obtained from the rainfall intensity-duration curves developed by Resource Consultants, Inc. of Fort Collins, Colorado. These curves were derived from the Precipitation-Frequency Atlas of the Western United States, Atlas 2, Volume III, Colorado, published by the National Oceanic and Atmospheric Administration (NOAA) in 1973. The 500-year rainfall value was extrapolated from the 100-year and more frequent events. At the request of local interests, expected probability adjustments were not applied to the rainfall, to avoid conflict with flood frequency information developed in other studies. The time distribution of rainfall within the 1-hour storm was obtained from a storm provided by Resource Consultants, Inc., modified by using the Colorado Urban Hydrograph Procedure as a guide. Infiltration rates were obtained from a Larimer County soil map and the report Soil Resources of Colorado, Region 2-Larimer and Weld Counties, published by the Colorado State University Experiment Station and the Soil Conservation Service in 1976. Detention storage values were 0.3 and 0.2 inches for pervious and impervious areas, respectively.

The effect of future urbanization, existing dams, road structures, and canals was considered. The reservoirs in the basin have some flood

Existing and future urbanization are shown on plate 3. Two of these urbanization levels, existing and projected, are shown in the report entitled Larimer-Weld Region Land Use Alternatives prepared for the Larimer-Weld Regional Council of Governments in November 1977. The land use patterns projected in the cited report were slightly altered to fit hydrologic subareas in the hydrologic model. The existing urbanization reflects little urban development. Projected urbanization is based upon estimated year 2000 land use. This level of urbanization represents an intermediate level of development in that the upstream half of the Fossil Creek basin is urbanized except for the rugged area generally west of Taft Hill Road. Total urbanization assumes the entire basin is urbanized, except generally west of Taft Hill Road.

The percent of imperviousness for land areas was estimated for existing, projected, and total urbanization conditions. Table 1 lists the percent of imperviousness for each land use type considered in the hydrologic model. Urban land use has a significant effect on runoff. To depict existing and future urban land patterns used in the hydrologic model, areas with approximately 40 percent or more imperviousness are indicated on plate 3. Any changes in these land use projections and future urbanization boundaries would change the hydrologic and hydraulic data presented in this study.

Table 1
Percent of Imperviousness for Land Uses
in the Fossil Creek Basin

Land Use	Impervious Area (percent)
Commercial	90
High Density Residential	52
Medium Density Residential	40
Low Density Residential	30
Agricultural	5

· (Stream B). A left-bank tributary of the above-mentioned tributary. The study reach extends from the mouth east of Shields Street to about 1 mile upstream.

· (Stream C). A left-bank tributary of Fossil Creek, which enters near Shields Street. The study reach extends about 1½ miles from its mouth to Taft Hill Road.

FLOOD PROBLEMS

Significant flood history is not available for Fossil Creek as the basin has been sparsely developed. It is known that overflow from creeks created a flood threat south of Fort Collins on 25 July 1977. Flood experience in the area indicates that snowmelt flooding is uncommon and that summer cloudbursts would be the most likely source of flooding. There are no sizable structures within the basin that were constructed specifically for flood control. Incidental flood control is provided, however, by some structures. The largest reservoir in the basin, Fossil Creek Reservoir, is used for irrigation. However, it provides considerable flood control effects downstream. The Union Pacific Railroad crossing upstream from Fossil Creek Reservoir acts as a dam and reduces flood discharges downstream. Several off-stream reservoirs and one irrigation canal control runoff from a small part of the basin area. The many road crossings also reduce flood peak discharges, as discussed in the hydrologic analysis.

ALTERNATIVE LAND USE CONDITIONS

As the Fossil Creek basin is subject to increasing urban development, the flood hazard was evaluated under future as well as existing conditions. Changes in imperviousness that would result from land use changes will affect the runoff potential. To reflect the influence of changing development, three levels of urbanization were considered.

Figure 15. Stream C. At Taft Hill Road looking southwest, October 1979.

However, scattered urbanization is occurring in the vicinity of U.S. Highway 287.

The study reach of Fossil Creek extends from its confluence with the Cache la Poudre River upstream to Taft Hill Road, a distance of about 13 miles. Development on the flood plain within the reach is relatively sparse. The most common form of development is that associated with farmsteads and an agricultural area. However, because urbanization is occurring near U.S. Highway 287, studies were conducted on several Fossil Creek tributaries in this area. These are summarized below:

· (Stream A). A major right-bank tributary of Fossil Creek entering just upstream from the Colorado and Southern railroad. The study reach extends about 3½ miles from the mouth to Taft Hill Road.

Figure 13. Stream B. Looking north at Taft Hill Road crossing, October 1979.

Figure 14. Stream C. At Shields Street looking upstream (reference point 46.5), October 1979.

Figure 11. Stream A. On the county road located one-fourth mile south of the confluence with Stream B, looking downstream (reference point 99), October 1979.

Figure 12. Stream B. At Shields Street looking upstream (reference point 112), October 1979.

Figure 9. Stream A. Looking downstream at the Colorado and Southern Railroad (located at reference point 132), October 1979.

Figure 10. Stream A. At the Colorado and Southern Railroad located one-half mile north of the confluence with Stream B, looking upstream (reference point 124.5), October 1979.

Figure 7. Fossil Creek. At Shields Street looking downstream (reference point 31), October 1979.

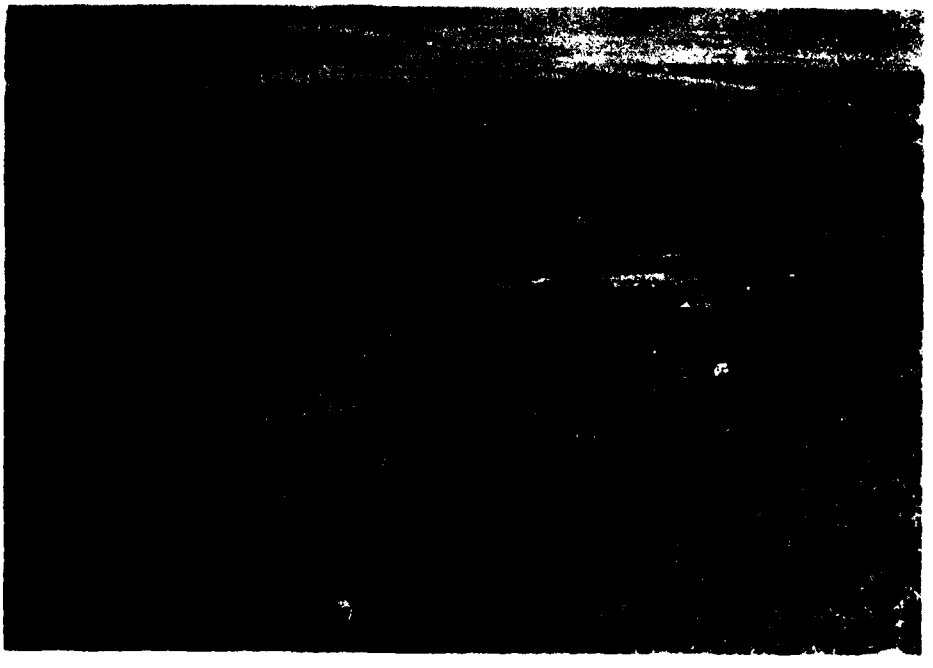


Figure 8. Fossil Creek. At Taft Hill Road looking upstream (reference point 9), October 1979.

Figure 5. Fossil Creek. At U.S. Highway 287 looking upstream (reference point 147), October 1979.

Figure 6. Fossil Creek. Looking upstream at the Colorado and Southern Railroad (located at reference point 138), October 1979.

Figure 3. Fossil Creek. Looking north at Hospital Road crossing (reference point 196), October 1979.

Figure 4. Fossil Creek. Immediately downstream from U.S. Highway 287 looking upstream (reference point 150.5), October 1979.

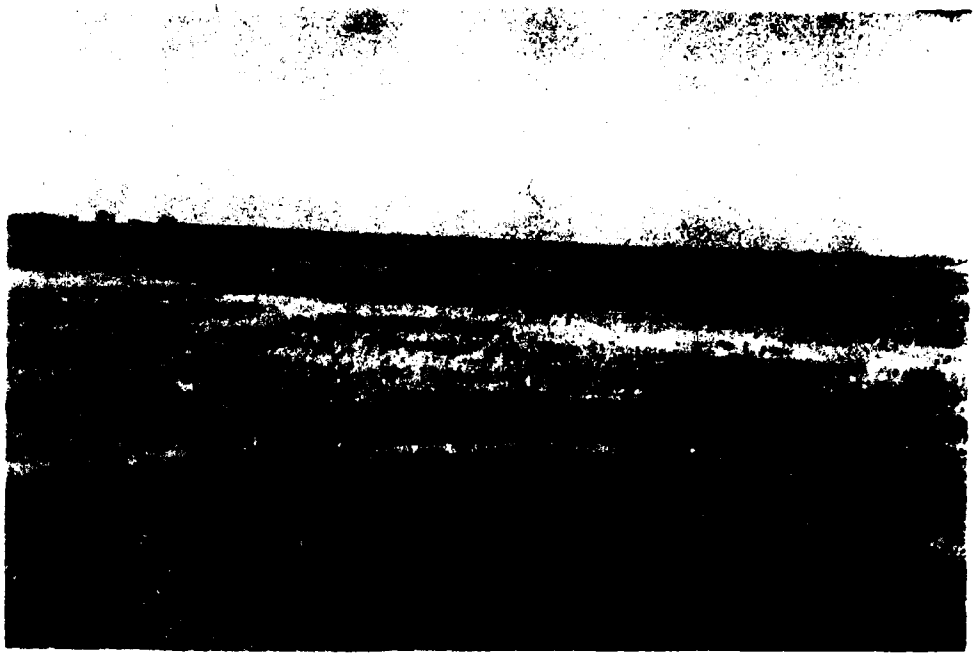


Figure 1. Fossil Creek. About one mile downstream from Fossil Creek Reservoir, looking upstream (reference point 255), October 1979.

Figure 2. Fossil Creek. At Hospital Road looking upstream (reference point 196), October 1979.

public that floods larger than the 100-year flood can and do occur. The 500-year flood can also be used to regulate high risk developments in the flood plain, such as nuclear powerplants or toxic material storage.

Tables 2 through 5 list the discharges and water surface elevations for the 10-, 50-, 100-, and 500-year flood events at selected reference points. Plates 5 through 9, 9A through 9E, and 10 through 21, show the area flooded by the 100-year and 500-year floods under existing conditions. Plates 22 through 39 show the streambed elevation and water surface profiles for the 10-, 50-, 100-, and 500-year floods under existing conditions.

The flood boundaries were located at each cross section and the intervening flood boundaries were drawn based upon detailed topographic mapping, engineering judgment, and field observations. It is, however, possible that more or less flooding should be shown on the flooded area maps. For a specific situation, where more detailed accuracy is required, the flood boundaries can be more accurately established by determining the water surface elevation from the profile or reference table and then locating that elevation by survey on the flood plain.

Tables 6 through 9 show the effect of future basin urbanization on the discharge and elevation of the 100-year flood. Plates 40 through 57 display water surface profiles for the 100-year flood under existing conditions compared with projected and total urbanization conditions.

The effect of the projected and total urbanization conditions on flood characteristics are similar. Under either condition, there is little increase in flooding on Fossil Creek downstream from the Union Pacific Railroad, as the embankment acts like a dam. On Fossil Creek upstream from the Union Pacific railroad, flood depths typically increase at various locations from about 0.2 feet to 2.0 feet. Fossil

Creek discharges increase from 30 to 60 percent. On the three tributaries studied, flood depths generally increase 2 feet or less with urbanization. At a few locations on Fossil Creek and the tributaries, flood depths could increase about 3 feet. Discharges on the tributaries increase up to about 50 percent.

Table 2
Flood Plain Reference Data
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Flood		50-Year Flood		100-Year Flood		500-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
Mouth - Confluence with Cache La Poudre River		0			290		610		780		1160
	278	140	4793.0	4794.5		4794.6		4794.7		4795.0	
	277	460	4795.0	4797.6		4797.7		4797.9		4798.4	
County Road	D/S 276	860	4798.0	4801.0		4801.2		4801.4		4802.1	
	U/S 275	930	4798.4	4806.1		4806.5		4806.6		4807.0	
	274	1220	4801.4	4806.1		4806.5		4806.6		4807.1	
	273	1620	4803.2	4806.6		4807.1		4807.3		4807.7	
	272	1970	4803.8	4807.4		4808.3		4808.6		4809.0	
	271	2490	4805.0	4808.1		4809.0		4809.3		4809.9	
	270	2855	4805.4	4809.3		4810.3		4810.7		4811.5	
	269	3145	4806.1	4809.8		4810.8		4811.2		4811.8	
	268	3470	4806.9	4810.9		4812.0		4812.4		4812.9	
	267	3720	4807.6	4811.6		4812.9		4813.4		4814.3	
	266	4140	4808.5	4812.4		4813.5		4813.9		4814.7	
	265	4500	4810.0	4813.5		4814.4		4814.7		4815.2	
	264	4800	4810.8	4814.3		4815.1		4815.5		4816.0	
	263	5050	4811.5	4815.0		4815.7		4816.0		4816.5	
	262	5425	4813.3	4816.6		4817.4		4817.7		4818.2	
	261	5650	4814.5	4817.6		4818.6		4819.0		4819.6	
County Road	D/S 260	6005	4815.0	4817.9		4818.9		4819.3		4820.0	
	U/S 259	6085	4815.6	4819.0		4819.3		4819.4		4820.0	
	258	6195	4816.3	4819.1		4819.5		4819.6		4820.2	
	257	6670	4816.3	4819.6		4820.1		4820.2		4820.6	
County Road 5	D/S 256.5	6760	4816.7	4819.6		4820.1		4820.2		4820.6	
	U/S 256	6800	4816.5	4820.5		4820.8		4820.9		4821.2	
	255	6930	4817.4	4820.5		4820.8		4820.9		4821.2	
	254	7570	4818.6	4821.2	290	4821.6	610	4821.8	780	4822.0	1160
Spillway Outlet	253.5	7750									

[1] Discharges are prorated between stations.

Table 2 (Cont'd)
Flood Plain Reference Data
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Flood		50-Year Flood		100-Year Flood		500-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
Fossil Creek Reservoir Dam		12620									
	242	21040	4858.6	4863.8	470	4864.3	1070	4864.5	1300	4864.7	1460
	241	21350	4859.6	4863.8		4864.3		4864.5		4864.7	
	240	21915	4861.8	4864.4		4865.0		4865.2		4865.3	
	239	22415	4863.5	4866.2		4866.6		4866.7		4866.8	
	238	23120	4865.0	4866.5		4867.0		4867.1		4867.2	
	237	23410	4865.8	4867.2		4867.6		4867.7		4867.8	
	236	23675	4866.2	4868.0		4868.4		4868.5		4868.6	
	235	23995	4866.6	4868.2		4868.7		4868.8		4868.9	
	234	24310	4867.2	4868.5		4868.9		4869.1		4869.2	
	233	24670	4867.7	4869.0		4869.4		4869.7		4869.8	
County Road	D/S 232.1	24830	4867.7	4869.6	470	4870.1	1070	4870.2	1300	4870.3	1450
	U/S 232.2	24940	4868.1	4875.9	600	4876.4	1260	4876.5	1400	4876.6	1560
	231	25250	4868.6	4875.9		4876.4		4876.5		4876.6	
	230	25770	4869.6	4875.9		4876.4		4876.5		4876.6	
	229	26300	4870.1	4875.9		4876.4		4876.5		4876.6	
	228	26810	4870.5	4875.9		4876.4		4876.5		4876.6	
	227	27300	4870.7	4875.9		4876.4		4876.6		4876.7	
	226	27730	4871.4	4876.6		4877.1		4877.2		4877.3	
	225	28085	4870.9	4877.5		4878.0		4878.1		4878.2	
	224	28510	4870.9	4878.1		4878.8		4878.9		4879.0	
	223	28965	4871.0	4878.9		4880.3		4880.5		4880.6	
	222	29275	4871.0	4879.5		4881.2		4881.3		4881.4	
Union Pacific Railroad	D/S 220.1	29515	4871.[illegible]	4880.0	590	4881.8	1230	4882.0	1340	4882.1	1460
	U/S 219	29720	4874.3	4892.6	1120	4893.8	2400	4894.8	3190	4897.6	4920
Right Bank Tributary	D/S 218.5	29900			1120		2400		3190		4920
	U/S				940		1880		2450		3610
	218	30135	4875.3	4892.6		4893.8		4894.8		4897.6	
	217	30375	4875.5	4892.6		4893.8		4894.8		4897.6	

[1] Discharges are prorated between stations.

Table 2 (Cont'd)
Flood Plain Reference Data
Fossil Creek

Identification		Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Flood Crest Elev. (ft msl)	10-Year Flood Peak Discharge[1] (cfs)	50-Year Flood Crest Elev. (ft msl)	50-Year Flood Peak Discharge[1] (cfs)	100-Year Flood Crest Elev. (ft msl)	100-Year Flood Peak Discharge[1] (cfs)	500-Year Flood Crest Elev. (ft msl)	500-Year Flood Peak Discharge[1] (cfs)
County Road 34	D/S	216	30620	4876.0	4892.6		4893.8		4894.8		4897.6	
	U/S	215.1	30710	4878.0	4893.2		4893.8		4894.8		4897.6	
		214	30910	4878.8	4893.2		4893.8		4894.8		4897.6	
		213	31380	4879.5	4893.2		4893.8		4894.8		4897.6	
		212	32240	4880.4	4893.2		4893.8		4894.8		4897.6	
		211	32590	4880.0	4893.2		4893.8		4894.8		4897.6	
		210	33085	4879.8	4893.2		4893.8		4894.8		4897.6	
		209	33395	4881.4	4893.2		4893.9		4894.8		4897.6	
		208	34030	4881.8	4893.2		4893.9		4894.9		4897.6	
		207	34445	4882.6	4893.2		4893.9		4894.9		4897.7	
		206	34865	4882.6	4893.3		4894.0		4895.0		4897.7	
		205	35225	4884.8	4893.4		4894.3		4895.3		4897.8	
		204	35740	4885.0	4893.6		4894.7		4895.6		4898.0	
		203	36220	4885.9	4893.7		4894.9		4895.8		4898.1	
		202	36535	4886.4	4894.0		4895.2		4896.1		4898.1	
		201	36880	4887.8	4894.5		4896.0		4897.0		4898.9	
		200	37290	4889.0	4895.3		4896.9		4897.7		4899.4	
		199	37690	4891.5	4896.6		4898.2		4899.1		4900.8	
		198	38195	4892.2	4898.5		4900.0		4900.7		4901.8	
Hospital Road	D/S	197	38705	4892.7	4900.3	930	4902.2	1730	4903.1	2240	4904.4	3200
	U/S	196	38840	4893.1	4907.6	930	4908.0	1740	4908.1	2250	4908.2	3200
		195	39065	4893.5	4907.6		4908.0		4908.1		4908.2	
		194	39445	4894.7	4907.6		4908.0		4908.1		4908.2	
		193	40045	4896.8	4907.7		4908.3		4908.5		4909.0	
		192	40490	4897.8	4908.0		4909.1		4909.8		4911.0	
Mail Creek	D/S	191.5	40620			930		1730		2240		3190
	U/S					830		1470		1850		2610

[1] Discharges are prorated between stations.

Table 2 (Cont'd)
Flood Plain Reference Data
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Flood		50-Year Flood		100-Year Flood		500-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
	191	40755	4899.7	4908.1		4909.2		4909.8		4911.1	
	190	41380	4900.8	4908.8		4910.1		4910.7		4911.8	
	189	41720	4900.3	4909.3		4910.8		4911.5		4912.6	
	188	42190	4904.3	4910.3		4912.0		4912.7		4913.9	
	187	42745	4905.2	4912.4		4914.0		4914.7		4915.9	
	186	43730	4907.8	4915.9		4917.7		4918.6		4919.5	
	185	44210	4909.5	4917.3		4919.2		4919.6		4920.1	
	184	45175	4912.4	4919.3		4921.1		4921.8		4922.6	
	183	46390	4916.5	4923.6		4925.0		4925.6		4926.3	
	182	47265	4920.1	4926.5		4927.6		4928.0		4928.6	
	181	48200	4921.9	4928.8		4930.1		4930.5		4931.2	
	180	48445	4922.7	4929.4		4930.9		4931.3		4931.7	
	179	48890	4924.2	4930.8		4932.0		4932.4		4933.1	
	178	49845	4929.0	4935.0		4935.8		4936.2		4936.7	
	153	50150	4930.2	4935.9		4936.8		4937.1		4937.7	
	152	50435	4931.7	4937.2		4938.2		4938.6		4939.2	
Fossil Ridge Drive	D/S 151	50485	4932.2	4937.3		4938.2		4938.7		4939.2	
	U/S 150.5	50585	4933.2	4938.3		4938.9		4939.2		4939.6	
	150	50775	4934.7	4938.7		4939.4		4939.7		4940.2	
	149	50965	4935.6	4939.4		4940.3		4940.6		4941.2	
College Road/ Hwy 287	D/S 148	51290	4936.9	4940.7	770	4941.7	1330	4942.4	1650	4943.0	2260
	U/S 147	51580	4937.1	4942.0	770	4943.4	1330	4944.1	1650	4945.1	2270
	146	51910	4937.2	4944.9		4946.7		4947.5		4948.8	
	145	52120	4938.8	4945.2		4947.0		4947.8		4949.0	
	144	52570	4941.6	4946.4		4947.9		4948.7		4949.7	
	143	52860	4943.4	4948.5		4949.7		4950.3		4951.2	
	142	53090	4945.3	4949.2		4950.4		4951.0		4951.9	

[1] Discharges are prorated between stations.

Table 2 (Cont'd)
Flood Plain Reference Data
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Flood		50-Year Flood		100-Year Flood		500-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
	141	53380	4945.7	4951.8		4953.4		4954.1		4955.2	
Colorado & Southern Railroad	D/S 140	53770	4950.0	4952.9	770	4954.3	1340	4955.0	1660	4955.9	2260
	U/S 138	53980	4950.3	4956.7	770	4958.7	1340	4960.9	1660	4964.4	2310
	137	54595	4951.5	4957.8		4959.6		4961.3		4964.6	
	136	54970	4953.6	4959.1		4960.6		4961.8		4964.7	
Stream A	D/S 65.5	55300			740		1330		1640		2260
	U/S				400		700		910		1330
	65	55415	4956.1	4961.0		4962.3		4963.0		4965.0	
	64.5	55780	4958.6	4962.6		4963.6		4964.2		4965.5	
Fossil Creek Drive	D/S 64	55810	4959.4	4963.0		4963.9		4964.4		4965.5	
	U/S 63	55900	4963.8	4967.6		4968.2		4968.5		4968.9	
	62	56005	4966.0	4967.6		4968.2		4968.5		4968.9	
	61	56250	4965.8	4967.9		4968.5		4968.8		4969.3	
	60	56580	4965.8	4968.5		4969.2		4969.6		4970.1	
	59	56900	4966.3	4970.3		4971.3		4971.9		4972.8	
	58	57270	4968.4	4972.0		4973.0		4973.5		4974.3	
	57	57630	4968.9	4973.2		4974.2		4974.7		4975.5	
	56	57850	4970.6	4974.3		4975.2		4975.7		4976.5	
	55	58250	4973.6	4977.9		4979.0		4979.4		4980.0	
	54	58725	4976.0	4980.6		4981.8		4982.3		4983.2	
Stream C	D/S 53.5	58910			390		720		930		1310
	U/S				180		400		570		890
	33	59180	4981.0	4983.7		4984.7		4985.2		4985.9	
Shields Street	D/S 32	59610	4984.5	4987.4	180	4988.3	380	4988.8	540	4989.6	830
	U/S 31	59740	4989.0	5001.6	220	5002.5	470	5002.7	590	5003.0	850
	30	59950	4993.3	5001.6		5002.5		5002.7		5003.0	
	29	60195	4996.0	5001.6		5002.5		5002.7		5003.0	
	28	60595	5000.0	5001.9		5002.9		5003.2		5003.6	
	27	60890	5004.7	5006.0		5006.5		5006.7		5007.0	
	26	61160	5008.1	5009.9		5010.4		5010.6		5010.9	

[1] Discharges are prorated between stations.

Table 2 (Cont'd)
Flood Plain Reference Data
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Flood		50-Year Flood		100-Year Flood		500-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
	25	61600	5012.6	5014.3		5014.8		5015.0		5015.3	
	24	61890	5016.5	5018.8		5019.3		5019.5		5019.8	
	23	62240	5021.8	5022.9		5023.4		5023.5		5023.9	
	22	62500	5023.9	5025.6		5026.2		5026.4		5026.8	
	21	62925	5025.8	5029.2		5030.1		5030.4		5030.9	
	20	63395	5032.1	5034.4		5035.1		5035.4		5035.7	
	19	63600	5033.5	5036.7		5037.2		5037.4		5037.8	
	18	63810	5036.3	5038.5		5039.3		5039.6		5040.0	
	17	64335	5042.3	5044.5		5045.1		5045.3		5045.6	
	16	64640	5045.8	5048.1		5048.8		5049.0		5049.5	
	15	64990	5050.9	5053.3		5053.9		5054.1		5054.5	
	14	65190	5055.2	5056.8		5057.3		5057.5		5057.7	
	13	65730	5063.3	5064.5		5064.8		5065.0		5065.1	
	12	65945	5067.0	5068.3		5068.7		5068.8		5069.1	
	11	66330	5070.4	5072.3		5072.8		5072.9		5073.1	
Taft Hill Road	D/S 10	66520	5078.5	5079.4	90	5079.7	160	5079.8	180	5079.9	220
	U/S 9	66700	5083.1	5085.3	120	5087.5	260	5088.2	350	5089.9	610
	8	67085	5090.2	5091.2		5091.7		5091.9		5092.5	
	7	67350	5093.0	5094.9		5095.5		5095.8		5096.4	
	6	67660	5097.4	5098.7		5099.3		5099.6		5100.3	
Upstream Limit of Study	5	67860	5101.4	5103.7	120	5104.8	260	5105.1	350	5105.7	610

[1] Discharges are prorated between stations.

Table 3
Flood Plain Reference Data
Stream A

Identification		Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Crest Elev. (ft msl)	10-Year Peak Discharge 1/ (cfs)	50-Year Crest Elev. (ft msl)	50-Year Peak Discharge 1/ (cfs)	100-Year Crest Elev. (ft msl)	100-Year Peak Discharge 1/ (cfs)	500-Year Crest Elev. (ft msl)	500-Year Peak Discharge 1/ (cfs)
Mouth - Confluence with Fossil Creek			0			430		660		780		1330
		135.5	115	4955.8	4960.6	430	4962.0	660	4962.8	780	4964.9	1330
		135	260	4957.3	4961.5		4962.5		4963.1		4965.0	
		134	700	4959.5	4964.1		4964.9		4965.1		4966.5	
Colorado & Southern Railroad	D/S	133	945	4960.3	4964.5	430	4965.5	660	4965.9	780	4967.5	1330
	U/S	132	1150	4961.9	4968.0	430	4970.0	660	4971.0	7[illegible]	4975.0	1340
		131	1390	4964.4	4968.5		4970.2		4971.2		4975.0	
		130	1880	4970.2	4973.4		4974.0		4974.2		4975.6	
Weir	D/S	129.5	2260	4971.8	4975.9		4976.7		4977.0		4977.9	
	Crest	129	2270	4975.9	4977.4		4977.9		4978.1		4978.8	
	U/S	128.7	2280	4973.8	4978.1		4978.6		4978.9		4979.7	
Private Road	D/S	128.5	2715	4978.4	4980.7		4981.4		4981.7		4983.1	
	U/S	128.2	2750	4978.9	4988.2		4988.4		4988.6		4988.9	
		128	2915	4979.0	4988.3		4988.5		4988.8		4989.3	
		127	3225	4979.1	4988.3		4988.5		4988.8		4989.3	
		126	3550	4981.5	4988.3		4988.6		4988.8		4989.4	
		125	3980	4982.7	4988.4		4988.7		4989.0		4989.9	
Colorado & Southern Railroad	D/S	124.7	4335	4984.2	4988.4	430	4988.9	660	4989.2	790	4990.8	1340
	U/S	124.5	4405	4984.8	4990.1	430	4991.8	660	4992.8	790	4995.0	1470
		124	4810	4986.5	4991.2		4992.1		4992.9		4995.0	
		123	5350	4989.6	4994.3		4995.3		4995.6		4997.2	
		122	5710	4993.5	4996.8		4997.3		4997.6		4998.5	
		121	6750	4996.8	5001.3		5001.8		5002.1		5002.7	
		120	7050	4998.4	5002.4		5003.1		5003.5		5004.0	
		119	7450	5001.2	5004.3		5004.7		5005.0		5005.9	
Stream B	D/S	118	7830	5003.1	5006.1	410	5006.5	570	5006.8	730	5007.6	1400
	U/S					210		300		430		850

1/ Discharges are prorated between stations.

Table 3 (Cont'd)
Flood Plain Reference Data
Stream A

Identification		Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Crest Elev. (ft msl)	10-Year Peak Discharge [1] (cfs)	50-Year Crest Elev. (ft msl)	50-Year Peak Discharge [1] (cfs)	100-Year Crest Elev. (ft msl)	100-Year Peak Discharge [1] (cfs)	500-Year Crest Elev. (ft msl)	500-Year Peak Discharge [1] (cfs)
		103	8290	5005.1	5008.0		5008.4		5008.9		5009.8	
		102	8560	5008.3	5011.1		5011.5		5011.9		5012.7	
		101	8900	5009.3	5012.6		5013.0		5013.4		5014.2	
County Road	D/S	100	9520	5015.6	5016.5	210	5016.6	280	5016.8	410	5017.3	840
	U/S	99	9700	5016.3	5023.1	210	5025.2	330	5026.7	430	5027.3	890
		98	9865	5017.0	5023.1		5025.2		5026.7		5027.3	
Colorado & Southern Railroad	D/S	97.5	9995	5017.0	5023.1	210	5025.2	330	5026.7	430	5027.3	890
	U/S	97	10080	5017.0	5023.8	210	5025.2	330	5026.7	430	5027.3	890
		96	10450	5021.4	5024.2		5025.2		5026.7		5027.3	
		95	10725	5022.9	5025.5		5025.7		5026.8		5027.6	
		94	11005	5023.0	5026.1		5026.5		5027.1		5028.0	
		93	11270	5027.9	5029.3		5029.5		5029.6		5030.2	
		92	11505	5027.7	5030.1		5030.3		5030.7		5031.3	
		91	11860	5028.9	5031.2		5031.4		5031.6		5032.4	
		90	12175	5030.9	5033.5		5033.7		5034.0		5034.6	
		89	12510	5033.1	5035.4		5035.6		5036.0		5036.7	
Colorado & Southern Railroad	D/S	88	12920	5033.8	5036.1	190	5036.3	240	5036.8	440	5037.7	960
	U/S	87	13105	5034.7	5038.2	190	5039.7	470	5041.6	460	5042.7	1000
		86	13455	5035.4	5039.7		5040.0		5041.6		5042.7	
Shields Street	D/S	85	13785	5039.0	5040.6	190	5040.9	270	5041.8	450	5042.8	970
	U/S	84	13915	5040.0	5049.1	320	5051.4	770	5051.8	1010	5052.5	1550
		83	14615	5046.5	5049.1		5051.4		5051.8		5052.5	
Right Bank Tributary	D/S	82.5	14650			280		650		870		1320
	U/S					160		380		500		740
		82	14930	5049.0	5050.2		5051.4		5051.8		5052.5	
		81	15235	5050.8	5052.1		5052.2		5052.3		5052.7	
		80	15590	5052.7	5054.9		5055.7		5055.9		5056.0	

[1] Discharges are prorated between stations.

Table 3 (Cont'd)
Flood Plain Reference Data
Stream A

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Crest Elev. (ft msl)	10-Year Peak Discharge 1/ (cfs)	50-Year Crest Elev. (ft msl)	50-Year Peak Discharge 1/ (cfs)	100-Year Crest Elev. (ft msl)	100-Year Peak Discharge 1/ (cfs)	500-Year Crest Elev. (ft msl)	500-Year Peak Discharge 1/ (cfs)
	79	15830	5054.8	5057.3		5057.7		5057.9		5058.0	
	78	16310	5059.0	5060.7		5061.2		5061.3		5061.6	
	77	16520	5062.0	5063.7		5064.1		5064.2		5064.5	
	76	16810	5064.3	5066.1		5066.5		5066.7		5066.9	
	75	17120	5066.6	5068.5		5069.1		5069.4		5069.6	
	74	17480	5069.0	5071.1		5071.8		5071.9		5072.2	
	73	18070	5071.7	5074.0		5074.9		5075.2		5075.7	
	72	18495	5076.0	5077.5		5078.5		5078.7		5078.9	
	71	19015	5079.8	5082.1		5082.3		5082.5		5082.9	
	70	19325	5083.8	5084.8		5085.3		5085.5		5085.6	
	69	19665	5087.0	5088.2		5088.3		5088.4		5088.5	
	68	19930	5088.6	5089.6		5089.8		5089.9		5090.0	
	67	20370	5090.8	5092.7		5092.9		5093.0		5093.3	
Upstream Limit of Study	66	20670	5093.0	5094.5	50	5095.2	100	5095.4	115	5095.6	150

1/ Discharges are prorated between stations.

Table 4
Flood Plain Reference Data
Stream C

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Crest Elev. (ft msl)	10-Year Peak Discharge 1/ (cfs)	50-Year Crest Elev. (ft msl)	50-Year Peak Discharge 1/ (cfs)	100-Year Crest Elev. (ft msl)	100-Year Peak Discharge 1/ (cfs)	500-Year Crest Elev. (ft msl)	500-Year Peak Discharge 1/ (cfs)
Mouth - Confluence with Fossil Creek	53.5	0	4974.4	4981.9	210	4983.0	330	4983.6	360	4984.4	420
	53	80	4976.6	4981.9		4983.0		4983.6		4984.4	
	52	360	4980.0	4982.7		4983.4		4983.8		4984.5	
	51	840	4985.0	4987.5		4987.6		4987.7		4987.9	
	50	1110	4986.0	4989.0		4989.7		4989.9		4990.0	
	49	1460	4988.2	4989.8		4990.3		4990.4		4990.6	
Shields Street	D/S 48	1740	4989.3	4991.0	200	4991.3	310	4991.4	350	4991.6	390
	U/S 46.5	1940	4991.8	4998.3	220	5002.0	460	5003.6	580	5005.4	850
	46	2010	4992.6	4998.3		5002.0		5003.6		5005.4	
	45	2380	4995.5	4998.4		5002.0		5003.6		5005.4	
	44	2795	4996.8	4999.0		5002.1		5003.6		5005.4	
	43	3320	4999.6	5001.5		5002.6		5003.8		5005.5	
	42	3670	5001.5	5004.3		5004.9		5005.2		5006.3	
	41	4055	5003.9	5006.9		5008.0		5008.3		5008.6	
	40	4285	5006.3	5008.6		5009.3		5009.5		5010.1	
	39	4700	5009.6	5011.9		5012.4		5012.5		5012.9	
	38	5410	5013.3	5015.4		5016.1		5016.4		5016.9	
	37	5720	5014.8	5017.2		5017.8		5018.0		5018.5	
Left Bank Tributary	D/S 36.5				170		320		400		600
	U/S				110		190		230		320
	36	6225	5019.3	5020.7		5021.6		5021.8		5022.2	
	35	6695	5022.5	5023.9		5024.0		5024.1		5024.4	
Upstream Limit of Study	34	7050	5025.0	5026.0	110	5026.4	185	5026.5	225	5026.7	310

1/ Discharges are prorated between stations.

Table 5
Flood Plain Reference Data
Stream B

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	10-Year Crest Elev. (ft msl)	10-Year Peak Discharge [1] (cfs)	50-Year Crest Elev. (ft msl)	50-Year Peak Discharge [1] (cfs)	100-Year Crest Elev. (ft msl)	100-Year Peak Discharge [1] (cfs)	500-Year Crest Elev. (ft msl)	500-Year Peak Discharge [1] (cfs)
Mouth - Confluence with Major Tributary	118.5	0	5003.1	5006.1	190	5006.5	280	5006.7	320	5007.6	550
	117.7	380	5007.0	5008.3		5008.5		5008.6		5009.0	
	117.5	745	5009.4	5011.1		5011.2		5011.3		5011.7	
	117	1050	5011.1	5013.5		5013.9		5014.2		5014.9	
	116	1385	5014.5	5017.2		5017.6		5017.7		5017.8	
	115	1590	5015.5	5017.9		5018.3		5018.5		5019.0	
	114	1940	5018.5	5019.8		5020.0		5020.1		5020.6	
Shields Street D/S	113	2290	5020.4	5022.1	190	5022.3	280	5022.4	310	5022.8	540
U/S	112	2460	5021.4	5025.1	280	5026.1	580	5026.4	740	5028.9	1080
	111	2890	5023.2	5025.3		5026.2		5026.5		5028.9	
	110	3220	5024.4	5026.6		5027.2		5027.4		5029.0	
	109	3870	5028.0	5031.1		5031.5		5031.6		5031.7	
	108	4190	5032.6	5034.1		5034.3		5034.5		5034.8	
	107	4565	5035.9	5037.7		5038.1		5038.2		5038.4	
Right Bank Tributary D/S	106.5	4730			250		510		640		940
U/S					190		350		440		620
	106	4900	5038.4	5039.8		5040.1		5040.3		5040.6	
	105	5260	5041.4	5042.9		5043.2		5043.3		5043.4	
Upstream Limit of Study	104	5680	5045.9	5047.0	190	5047.3	350	5047.4	440	5047.6	620

[1] Dischaiges are prorated between stations.

Table 6
Effect of Land Use On
Flood Elevations and Discharges
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
Mouth - Confluence with Cache La Poudre		0			780		870		980
	278	140	4793.0	4794.7		4794.8		4794.9	
	277	460	4795.0	4797.9		4798.1		4798.2	
County Road	D/S 276	860	4798.0	4801.4		4801.7		4801.9	
	U/S 275	930	4798.4	4806.6		4806.7		4806.8	
	274	1220	4801.4	4806.6		4806.7		4806.8	
	273	1620	4803.2	4807.3		4807.4		4807.5	
	272	1970	4803.8	4808.6		4808.7		4808.8	
	271	2490	4805.0	4809.3		4809.5		4809.7	
	270	2855	4805.4	4810.7		4810.9		4811.1	
	269	3145	4806.1	4811.2		4811.3		4811.5	
	268	3470	4806.9	4812.4		4812.5		4812.7	
	267	3720	4807.6	4813.4		4813.7		4813.9	
	266	4140	4808.5	4813.9		4814.1		4814.3	
	265	4500	4810.0	4814.7		4814.8		4815.0	
	264	4800	4810.8	4815.5		4815.6		4815.8	
	263	5050	4811.5	4816.0		4816.1		4816.2	
	262	5425	4813.3	4817.7		4817.8		4818.0	
	261	5650	4814.5	4819.0		4819.1		4819.3	
County Road	D/S 260	6005	4815.0	4819.3		4819.5		4819.7	
	U/S 259	6085	4815.6	4819.4		4819.6		4819.7	
	258	6195	4816.3	4819.6		4819.8		4819.9	
	257	6670	4816.3	4820.2		4820.3		4820.4	
County Road 5	D/S 256.5	6760	4816.7	4820.2		4820.3		4820.4	
	U/S 256	6800	4817.0	4820.9		4821.0		4821.1	
	255	6930	4817.4	4820.9		4821.0		4821.1	
	254	7570	4818.6	4821.8	780	4821.8	870	4821.9	980
Spillway Outlet	253.5	7750							
Fossil Creek Reservoir Dam		12620							

1/ Discharges are prorated between stations.

Flood Profile

A graph showing the relationship of water surface elevation to location, the latter generally expressed as the distance upstream from the mouth for a stream of water flowing in an open channel. A flood profile is generally drawn to show surface elevation for the crest of a specific flood but may also be prepared for conditions at a given time or stage.

Flood Reconstitution

In hydrologic studies, this is an attempt to reproduce a historic flood's discharges using a hydrologic model and known historic rainfall and watershed data. In hydraulic studies, this is an attempt to recreate a past flood's water levels using recorded discharges.

Frequency

(See "Probability")

Future Conditions

In this report, this refers to the potential future extent of urban development in the Fossil Creek basin. Under this condition, the irrigation canals, small irrigation dams, and roadways were assumed to remain in place.

Hydraulic Analysis

This refers to the determination of stream water surface elevations using discharges of specified probabilities, cross sections, channel and overbank roughness, and the geometry of obstructions.

Hydrologic Analysis

This refers to the determination of discharge-probability relationships at various locations.

Imperviousness

The degree to which an area will shed water and not allow rainfall to penetrate. For example, paved areas are essentially impervious, while sandy areas are very pervious.

Infiltration

Precipitation soaking into the ground. For example, a sandy soil may absorb a great deal of rainfall without leaving an excess for surface runoff. This may be expressed as the total proportion of rainfall absorbed or as an infiltration rate in inches per hour (see "Runoff").

Manning's "n"

A measure of the resistance to flow offered by a channel or flood plain. A low value indicates less resistance to the passage of water. For example, clean, straight, concrete or earth channels might have "n" values of 0.013 and 0.025, respectively. A shallow, weedy channel

Discharge-Probability Relationship

The chances (see "Probability") of floods of different magnitudes occurring at a given location. Smaller floods are likely to occur more often, while greater floods are less common.

Existing Conditions

In this report, this refers to the present extent of urbanization in the Sheep Draw basin. Under this condition the irrigation canals, small irrigation dams, and roadways were assumed to be in place.

Expected Probability

An adjustment for the skewed distribution of the sample error around the true population.

Flood

An overflow on lands that are not normally covered by water and that can be used by man. Floods have two essential characteristics: the inundation of land is temporary; and the land is adjacent to and inundated by overflow from a river, stream, ocean, lake, or other body of standing water.

Flood Boundaries

The outer limits of the flooded area for a particular flood, as seen on an aerial photograph or a map. The flood may be an assumed flood of a given discharge or a given chance of occurrence. It may also be drawn for a flood that has already taken place.

Flood Crest

The maximum stage or elevation reached by the waters of a flood at a given location.

Flood Hazard Areas

Generally refers to the area subject to floods up to some specified magnitude.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) has identified flood-prone communities and administers the National Flood Insurance Program (NFIP). Communities that agree to join the NFIP adopt minimum standards to mitigate flood losses. In return, the Federal Government makes flood insurance available to property owners at subsidized rates. Loans or guarantees by Federal agencies for construction are not available in flood hazard areas that are in non-NFIP flood-prone communities.

Flood Plain

The relatively flat area or lowlands adjoining the channel of a river, stream, watercourse, ocean, lake, or other body of standing water which has been or may be covered by floodwater.

APPENDIX A

GLOSSARY

Basin Characteristics

Characteristics of a watershed that affect the relationship between rainfall and runoff. Characteristics taken from a topographic map might include size and shape of the basin, overland slopes, stream slopes, and the arrangement of tributaries. Other characteristics might include soil and vegetation.

Coincident Flow

The water level on a stream being studied may be affected by the flow on another stream which joins the study stream. An assumption must be made of the flow occurring in the other stream when the study stream is delivering its peak discharge.

Confluence

The point where two or more streams join.

Contributing Area

That portion of a drainage area that contributes to runoff at a given point. Runoff may not occur from parts of a drainage area due to dams, pothole areas that have no outlet, or pervious soils with high infiltration rates.

Cross Section

A surveyed line that is generally perpendicular to the direction of the stream flow. It is used to show the topography of the flood plain and the channel.

Detention Storage

The amount of rainfall and/or rainfall runoff which is intercepted by ditches, ponds, or natural depressions and is therefore removed from the normal surface-runoff pattern.

APPENDIX A

GLOSSARY

Table 9
Effect of Land Use On Flood Elevations and Discharges
Stream B

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
Mouth - Confluence with Major Tributary	118.5	0	5003.1	5006.7	320	5006.9	390	5007.4	450
	117.7	380	5007.0	5008.6		5008.7		5008.8	
	117.7	745	5009.4	5011.3		5011.4		5011.5	
	117	1050	5011.1	5014.2		5014.5		5014.6	
	116	1385	5014.5	5017.6		5018.2		5018.5	
	115	1590	5015.5	5018.5		5019.5		5019.9	
	114	1940	5018.5	5020.1		5020.3		5020.6	
Shields Street	D/S 113	2290	5020.4	5022.4	310	5022.5	390	5022.6	450
	U/S 112	2460	5021.4	5026.4	740	5027.3	970	5027.9	1090
	111	2890	5023.2	5026.7		5027.5		5028.1	
	110	3220	5024.4	5027.4		5027.9		5028.3	
	109	3870	5028.0	5031.6		5031.6		5031.7	
	108	4190	5032.6	5034.5		5034.8		5034.9	
	107	4565	5035.9	5038.1		5038.2		5038.3	
Right Bank Tributary	D/S 106.5	4730			640		840		960
	U/S				440		600		650
	106	4900	5038.4	5040.3		5040.6		5040.7	
	105	5260	5041.4	5043.3		5043.4		5043.4	
Upstream Limit of Study	104	5680	5045.9	5047.4	440	5047.6	600	5047.7	650

[1] Discharges are prorated between stations.

Table 8
Effect of Land Use On Flood Elevations and Discharges
Stream C

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
Mouth - Confluence with Fossil Creek	53.5	0	4974.4	4983.6	360	4984.2	410	4984.4	420
	53	80	4976.6	4983.6		4984.2		4984.4	
	52	360	4980.0	4983.8		4984.4		4984.5	
	51	840	4985.0	4987.7		4987.9		4987.9	
	50	1110	4986.0	4989.9		4990.0		4990.0	
	49	1460	4988.2	4990.4		4990.5		4990.5	
Shields Street	D/S 48	1740	4989.3	4991.4	350	4991.4	370	4991.4	370
	U/S 46.5	1940	4991.8	5003.6	580	5004.5	830	5004.5	850
	46	2010	4992.6	5003.6		5004.5		5004.5	
	45	2380	4995.5	5003.6		5004.5		5004.5	
	44	2795	4996.8	5003.6		5004.5		5004.6	
	43	3320	4999.6	5003.8		5004.7		5004.8	
	42	3670	5001.5	5005.2		5005.9		5006.0	
	41	4055	5003.9	5008.3		5008.8		5008.9	
	40	4285	5006.3	5009.5		5010.0		5010.0	
	39	4700	5009.6	5012.5		5012.9		5012.9	
	38	5410	5013.8	5016.5		5016.9		5016.9	
	37	5720	5014.8	5018.0		5018.4		5018.5	
Left Bank Tributary	D/S 36.5	5820			400		580		600
	U/S				230		280		300
	36	6225	5019.3	5021.7		5022.1		5022.2	
	35	6695	5022.5	5024.1		5024.3		5024.3	
Upstream Limit of Study	34	7050	5025.0	5026.5	225	5026.6	270	5026.6	290

[1] Discharges are prorated between stations.

Table 7 (Cont'd)
Effect of Land Use On Flood Elevations and Discharges
Stream A

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
	77	16520	5062.0	5064.2		5064.2		5064.5	
	76	16810	5064.3	5066.7		5066.6		5066.8	
	75	17120	5066.6	5069.4		5069.3		5069.6	
	74	17480	5069.0	5071.9		5071.9		5072.1	
	73	18070	5071.7	5075.2		5075.2		5075.6	
	72	18495	5076.0	5078.7		5078.7		5078.9	
	71	19015	5079.8	5082.5		5082.5		5082.8	
	70	19325	5083.8	5085.5		5085.5		5085.6	
	69	19665	5087.0	5088.4		5088.4		5088.5	
	68	19930	5088.6	5089.9		5089.9		5090.0	
	67	20370	5090.8	5093.0		5093.0		5093.2	
Upstream Limit of Study	66	20670	5093.0	5095.4	115	5095.4	115	5095.6	140

[1] Discharges are prorated between stations.

Table 7 (Cont'd)
Effect of Land Use On Flood Elevations and Discharges
Stream A

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Floo		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
	101	8900	5009.3	5013.4		5013.5		5014.0	
County Road	D/S 100	9520	5015.6	5016.8	410	5016.9	450	5017.2	700
	U/S 99	9700	5016.3	5026.7	430	5026.9	520	5027.2	720
	98	9865	5017.0	5026.7		5026.9		5027.2	
Colorado & Southern Railroad	D/S 97.5	9995	5017.0	5026.7	430	5026.9	520	5027.2	720
	U/S 97	10080	5017.0	5026.7	430	5026.9	520	5027.2	720
	96	10450	5021.4	5026.7		5026.9		5027.2	
	95	10725	5022.9	5026.8		5027.0		5027.4	
	94	11005	5023.0	5027.1		5027.3		5027.7	
	93	11270	5027.9	5029.6		5029.5		5029.7	
	92	11505	5027.7	5030.7		5030.9		5031.3	
	91	11860	5028.9	5031.6		5031.8		5032.1	
	90	12175	5030.9	5034.0		5034.1		5034.4	
	89	12510	5033.1	5036.0		5036.1		5036.5	
Colorado & Southern Railroad	D/S 88	12920	5033.8	5036.8	440	5036.9	460	5037.4	740
	U/S 87	13105	5034.7	5041.6	460	5041.7	470	5042.1	750
	86	13455	5035.4	5041.6		5041.7		5042.1	
Shields Street	D/S 85	13785	5039.0	5041.8	450	5041.8	450	5042.2	720
	U/S 84	13915	5040.0	5051.8	1010	5051.8	1010	5052.2	1500
	83	14615	5046.5	5051.8		5051.8		5052.2	
Right Bank Tributary	D/S 82.5	14650			870		860		1270
	U/S				500		490		680
	82	14930	5048.5	5051.8		5051.8		5052.2	
	81	15235	5050.8	5052.3		5052.3		5052.5	
	80	15590	5052.7	5055.9		5055.8		5056.1	
	79	15830	5054.8	5057.9		5057.9		5058.0	
	78	16310	5059.0	5061.3		5061.3		5061.6	

[1] Discharges are prorated between stations.

Table 7
Effect of Land Use On Flood Elevations and Discharges
Stream A

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood Crest Elev. (ft msl)	Existing Conditions 100-Year Flood Peak Discharge[1] (cfs)	Projected Urbanization 100-Year Flood Crest Elev. (ft msl)	Projected Urbanization 100-Year Flood Peak Discharge[1] (cfs)	Total Urbanization 100-Year Flood Crest Elev. (ft msl)	Total Urbanization 100-Year Flood Peak Discharge[1] (cfs)
Mouth - Confluence with Fossil Creek		0			780		1140		1150
	135.5	115	4955.8	4962.8		4965.6		4965.8	
	135	260	4957.3	4963.1		4965.6		4965.8	
	134	700	4959.5	4965.1		4966.4		4966.5	
Colorado & Southern Railroad	D/S 133	945	4960.3	4965.9	780	4967.2	1140	4967.3	1150
	U/S 132	1150	4961.9	4971.0	780	4973.7	1150	4973.8	1160
	131	1390	4964.4	4971.2		4973.8		4973.8	
	130	1880	4970.2	4974.2		4974.9		4974.9	
Weir	D/S 129.5	2260	4971.8	4977.0		4977.9		4977.9	
	Crest 129	2270	4975.9	4978.1		4978.6		4978.6	
	U/S 128.7	2280	4973.8	4978.9		4979.4		4979.4	
Private Road	D/S 128.5	2715	4978.4	4981.7		4982.7		4982.7	
	U/S 128.2	2750	4978.9	4988.6		4988.8		4988.8	
	128	2915	4979.0	4988.8		4989.1		4989.1	
	127	3225	4979.1	4988.8		4989.1		4989.1	
	126	3550	4981.5	4988.8		4989.2		4989.2	
	125	3980	4982.7	4989.0		4989.6		4989.6	
Colorado & Southern Railroad	D/S 124.7	4335	4984.2	4989.2	790	4990.5	1130	4990.5	1150
	U/S 124.5	4405	4984.8	4992.8	790	4995.6	1210	4995.8	1220
	124	4810	4986.5	4992.9		4995.6		4995.8	
	123	5350	4989.6	4995.6		4996.9		4997.0	
	122	5710	4993.5	4997.6		4998.1		4998.2	
	121	6750	4996.8	5002.1		5002.5		5002.5	
	120	7050	4998.4	5003.5		5003.7		5003.9	
	119	7450	5001.2	5005.0		5005.1		5005.6	
Stream B	D/S 118	7830	5003.1	5006.8	730	5006.9	780	5007.3	1140
	U/S				420		470		700
	103	8290	5005.1	5008.9		5009.0		5009.5	
	102	8560	5008.3	5011.9		5012.0		5012.5	

Table 6 (Cont'd)
Effect of Land Use On
Flood Elevations and Discharges
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
	26	61160	5008.1	5010.6		5010.8		5010.9	
	25	61600	5012.6	5015.0		5015.2		5015.3	
	24	61890	5016.5	5019.5		5019.7		5019.8	
	23	62240	5021.8	5023.5		5023.8		5023.9	
	22	62500	5023.9	5026.4		5026.7		5026.8	
	21	62925	5025.8	5030.4		5030.8		5030.9	
	20	63395	5032.1	5035.4		5035.6		5035.7	
	19	63600	5033.5	5037.4		5037.7		5037.8	
	18	63810	5036.3	5039.6		5039.9		5040.0	
	17	64335	5042.3	5045.3		5045.5		5045.6	
	16	64640	5045.8	5049.0		5049.3		5049.4	
	15	64990	5050.9	5054.1		5054.3		5054.4	
	14	65190	5055.2	5057.5		5057.6		5057.7	
	13	65730	5063.3	5065.0		5065.0		5065.1	
	12	65945	5067.0	5068.8		5068.9		5069.0	
	11	66330	5070.4	5072.9		5072.9		5073.1	
Taft Hill Road	D/S 10	66520	5078.5	5079.8	180	5079.8	180	5079.9	210
	U/S 9	66700	5083.1	5088.2	350	5088.2	350	5089.1	540
	8	67085	5090.2	5091.9		5091.9		5092.3	
	7	67350	5093.0	5095.8		5095.8		5096.3	
	6	67660	5097.4	5099.6		5099.6		5100.2	
Upstream Limit of Study	5	67860	5101.4	5105.1	350	5105.1	350	5105.5	540

[1] Discharges are prorated between stations.

Table 6 (Cont'd)
Effect of Land Use On
Flood Elevations and Discharges
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
Colorado & Southern Railroad	D/S 140	53770	4950.0	4955.0	1660	4956.0	2300	4956.1	2350
	U/S 138	53980	4950.3	4960.9	1660	4964.6	2380	4964.8	2430
	137	54595	4951.5	4961.3		4964.8		4965.1	
	136	54970	4953.6	4961.8		4964.9		4965.1	
Stream A	D/S 65.5	55300			1640		2330		2390
	U/S				910		1180		1280
	65	55415	4956.1	4963.1		4965.3		4965.5	
	64.5	55780	4958.6	4964.2		4965.6		4965.8	
Fossil Creek Drive	D/S 64	55810	4959.4	4964.4		4965.6		4965.8	
	U/S 63	55900	4963.8	4968.5		4968.7		4968.8	
	62	56005	4966.0	4968.5		4968.7		4968.8	
	61	56250	4965.8	4968.8		4969.1		4969.2	
	60	56580	4965.8	4969.6		4969.9		4970.0	
	59	56900	4966.3	4971.9		4972.6		4972.7	
	58	57200	4968.4	4973.5		4974.0		4974.2	
	57	57630	4968.9	4974.7		4975.3		4975.4	
	56	57850	4970.6	4975.7		4976.3		4976.4	
	55	58250	4973.6	4979.4		4979.8		4979.9	
	54	58725	4976.0	4982.3		4983.0		4983.1	
Stream C	D/S 53.5	58910			930		1200		1260
	U/S				570		800		850
	33	59180	4981.0	4985.2		4985.7		4985.8	
Shields Street	D/S 32	59610	4984.5	4988.8	540	4989.4	740	4989.5	790
	U/S 31	59740	4989.0	5002.7	590	5002.9	800	5003.0	850
	30	59950	4993.3	5002.7		5002.9		5003.0	
	29	60195	4996.0	5002.7		5002.9		5003.0	
	28	60595	5000.0	5003.2		5003.5		5003.6	
	27	60890	5004.7	5006.7		5006.9		5007.0	

[1] Discharges are prorated between stations.

Table 6 (Cont'd)
Effect of Land Use On
Flood Elevations and Discharges
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
	190	41380	4900.8	4910.7		4911.7		4911.8	
	189	41720	4900.3	4911.5		4912.5		4912.6	
	188	42190	4904.3	4912.7		4913.9		4914.0	
	187	42745	4905.2	4914.7		4915.9		4915.9	
	186	43730	4907.8	4918.6		4919.5		4919.5	
	185	44210	4909.5	4919.6		4920.1		4920.2	
	184	45175	4912.4	4921.8		4922.6		4922.7	
	183	46390	4916.5	4925.6		4926.3		4926.3	
	182	47265	4920.1	4928.0		4928.5		4928.6	
	181	48200	4921.9	4930.5		4931.1		4931.2	
	180	48445	4922.7	4931.3		4931.7		4931.7	
	179	48890	4924.2	4932.5		4933.2		4933.2	
	178	49845	4929.0	4936.2		4936.7		4936.8	
	153	50150	4930.2	4937.1		4937.8		4937.8	
	152	50435	4931.7	4938.6		4939.2		4939.2	
Fossil Ridge Drive	D/S 151	50485	4932.2	4938.7		4939.2		4939.2	
	U/S 150.5	50585	4933.2	4939.2		4939.6		4939.7	
	150	50775	4934.7	4939.7		4940.2		4940.3	
	149	50965	4935.6	4940.6		4941.2		4941.2	
College Road/ Hwy 287	D/S 148	51290	4936.9	4942.4	1650	4943.0	2280	4943.1	2330
	U/S 147	51580	4937.1	4944.1	1650	4945.2	2290	4945.2	2340
	146	51910	4937.2	4947.5		4948.8		4948.9	
	145	52120	4938.8	4947.8		4949.0		4949.1	
	144	52570	4941.6	4948.7		4949.7		4949.8	
	143	52860	4943.4	4950.3		4951.3		4951.3	
	142	53090	4945.3	4951.0		4951.9		4952.0	
	141	53380	4945.7	4954.1		4955.3		4955.3	

[1] Discharges are prorated between stations.

Table 6 (Cont'd)
Effect of Land Use On
Flood Elevations and Discharges
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
County Road 34	D/S 216	30620	4876.0	4894.8		4896.5		4896.8	
	U/S 215.1	30710	4878.0	4894.8		4896.5		4896.8	
	214	30910	4878.8	4894.8		4896.5		4896.8	
	213	31380	4879.5	4894.8		4896.5		4896.8	
	212	32240	4880.4	4894.8		4896.5		4896.8	
	211	32590	4880.0	4894.8		4896.5		4896.8	
	210	33085	4879.8	4894.8		4896.5		4896.8	
	209	33395	4881.4	4894.8		4896.5		4896.8	
	208	34030	4881.8	4894.9		4896.6		4896.9	
	207	34445	4882.6	4894.9		4896.6		4896.9	
	206	34865	4882.6	4895.0		4896.7		4896.9	
	205	35225	4884.8	4895.3		4896.9		4897.1	
	204	35740	4885.0	4895.6		4897.1		4897.4	
	203	36220	4885.9	4895.8		4897.3		4897.5	
	202	36535	4886.4	4896.1		4897.4		4897.6	
	201	36880	4887.8	4897.0		4898.4		4898.6	
	200	37290	4889.0	4897.7		4899.1		4899.2	
	199	37690	4891.5	4899.1		4900.6		4900.7	
	198	38195	4892.2	4900.7		4901.8		4901.8	
Hospital Road	D/S 197	38705	4892.7	4903.1	2240	4904.4	3190	4904.4	3230
	U/S 196	38840	4893.1	4908.1	2250	4908.2	3200	4908.3	3240
	195	39065	4893.5	4908.1		4908.3		4908.3	
	194	39445	4894.7	4908.1		4908.2		4908.3	
	193	40045	4896.8	4908.6		4909.0		4909.1	
	192	40490	4897.8	4909.8		4911.0		4911.1	
Mail Creek	D/S 191.5	40600			2240		3140		3230
	U/S				1850		2590		2630
	191	40755	4899.7	4909.8		4911.0		4911.2	

[1] Discharges are prorated between stations.

Table 6 (Cont'd)
Effect of Land Use On
Flood Elevations and Discharges
Fossil Creek

Identification	Reference Number	Distance From Mouth (ft)	Stream Bed Elev. (ft msl)	Existing Conditions 100-Year Flood		Projected Urbanization 100-Year Flood		Total Urbanization 100-Year Flood	
				Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)	Crest Elev. (ft msl)	Peak Discharge[1] (cfs)
	242	21040	4858.6	4864.5	1300	4864.5	1390	4864.5	1400
	241	21350	4859.6	4864.5		4864.5		4864.5	
	240	21915	4861.8	4865.2		4865.2		4865.2	
	239	22415	4863.5	4866.8		4866.8		4866.8	
	238	23120	4865.0	4867.2		4867.2		4867.2	
	237	23410	4865.8	4867.7		4867.8		4867.8	
	236	23675	4864.4	4867.9		4868.0		4868.0	
	235	23995	4866.6	4868.1		4868.2		4868.2	
	234	24310	4867.2	4869.0		4869.0		4869.0	
	233	24670	4867.7	4869.7		4869.7		4869.7	
County Road	D/S 232.1	24830	4867.7	4870.2	1300	4870.2	1390	4870.2	1400
	U/S 232.2	24940	4868.1	4876.5	1400	4876.5	1470	4876.5	1480
	231	25250	4868.6	4876.5		4876.5		4876.5	
	230	25770	4869.6	4876.5		4876.5		4876.5	
	229	26300	4870.1	4876.5		4876.5		4876.5	
	228	26810	4870.5	4876.5		4876.5		4876.5	
	227	27300	4870.7	4876.6		4876.6		4876.6	
	226	27730	4871.4	4877.2		4877.3		4877.3	
	225	28085	4870.9	4878.1		4878.2		4878.2	
	224	28510	4870.9	4878.9		4879.0		4879.0	
	223	28965	4871.0	4880.5		4880.6		4880.6	
	222	29275	4871.0	4881.3		4881.4		4881.4	
Union Pacific Railroad	220.1	29515	4871.6	4882.0	1340	4882.0	1420	4882.1	1430
	219	29720	4874.3	4894.8	3190	4896.5	5080	4896.8	5200
Right Bank Tributary	D/S 218.5	29900			3190		5080		5200
	U/S				2450		3550		3590
	218	30135	4875.3	4894.8		4896.5		4896.8	
	217	30375	4875.5	4894.8		4896.5		4896.8	

[1] Discharges are prorated between stations.

might have an "n" value in excess of 0.100. Factors other than roughness influence "n" values. Some other factors include vegetation, channel bends, sediment, and stream slope.

Peak Discharge

The maximum instantaneous discharge of a flood at a given location. It usually occurs at or near the time of the flood crest. In the graphical representation of flow versus time which is known as a flood hydrograph, the peak discharge occurs between the ascension limb and the recession limb.

Photogrammetric

Making topographic measurements by the use of aerial photographs.

Probability

The annual chance of occurrence of specific hydrologic events, such as rainfall, over a specified area or peak discharge at a specified location expressed in percent, e.g., 5 percent representing 1 chance in 20 of the event occurring in any year. The 10-, 50-, 100-, and 500-year floods are floods having a 10-, 2-, 1-, or .2-percent probability, respectively, of occurrence in any year or an average recurrence interval in the order of once in 10, 50, 100, or 500 years, respectively. It may be based on statistical analyses of streamflow records and/or analyses of rainfall and runoff characteristics in the general region of the watershed.

Rainfall Distribution

To more realistically define rainfall and estimate runoff, the total rainfall from an assumed storm of a certain duration may be subdivided into rain falling in shorter time increments. The rainfall may not be the same in all time increments.

Recurrence Interval

(See "Probability")

Reference Number

A numbered point along a stream channel identifying a specific location for correlating the data shown in various forms throughout a report.

Reservoir Routing

A study of the relationship between flood inflow to a reservoir and the resulting outflow from the reservoir. If there is insufficient storage volume and releases cannot be made fast enough through an outlet works or the emergency spillway, the dam embankment or structure will be overtopped.

Runoff

The quantity of rainfall which flows over the surface to enter the stream as discharge volume. The difference in quantity between rainfall

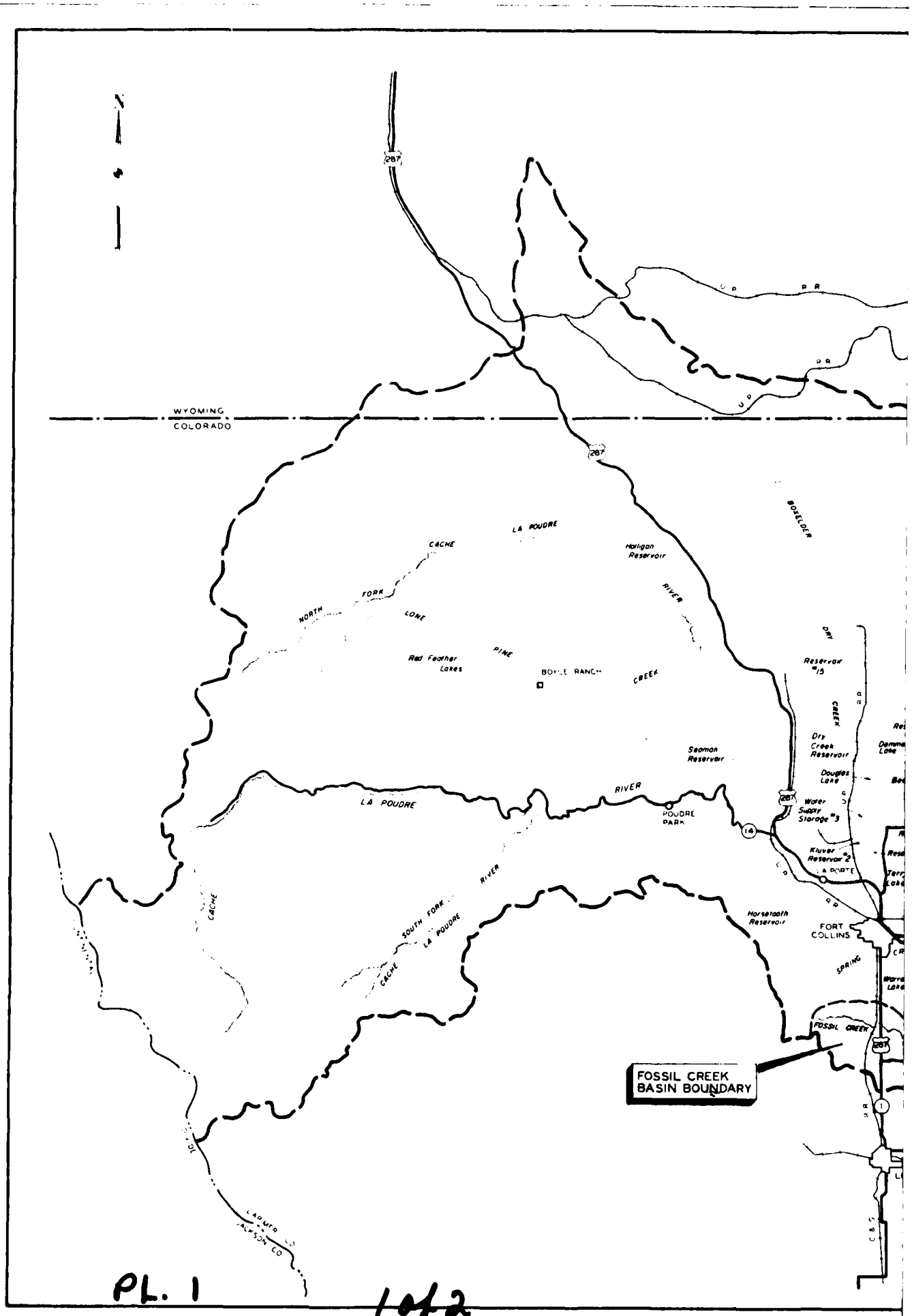
and runoff represents losses to infiltration, detention storage, and evapo-transpiration.

Stream Gage

A device to indicate the water depth of a stream at a gage site. The discharge at this location can be determined by using the stage or water level measured by the gage and comparing it to a stage-discharge relationship which has been established for that stream at the gage location.

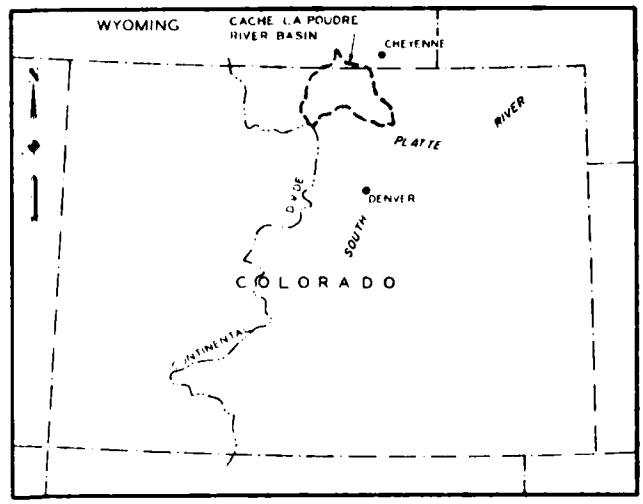
Stream Slope

This refers to the slope of a streambed in the downstream direction. This may be expressed in feet per mile or in feet per foot.



PL. 1

1 of 2



LOCATION MAP

CACHE LA POUDRE
RIVER BASIN BOUNDARY

SHEEP DRAW
BASIN BOUNDARY

SCALE IN MILES

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO
CACHE LA POUDRE RIVER
BASIN MAP

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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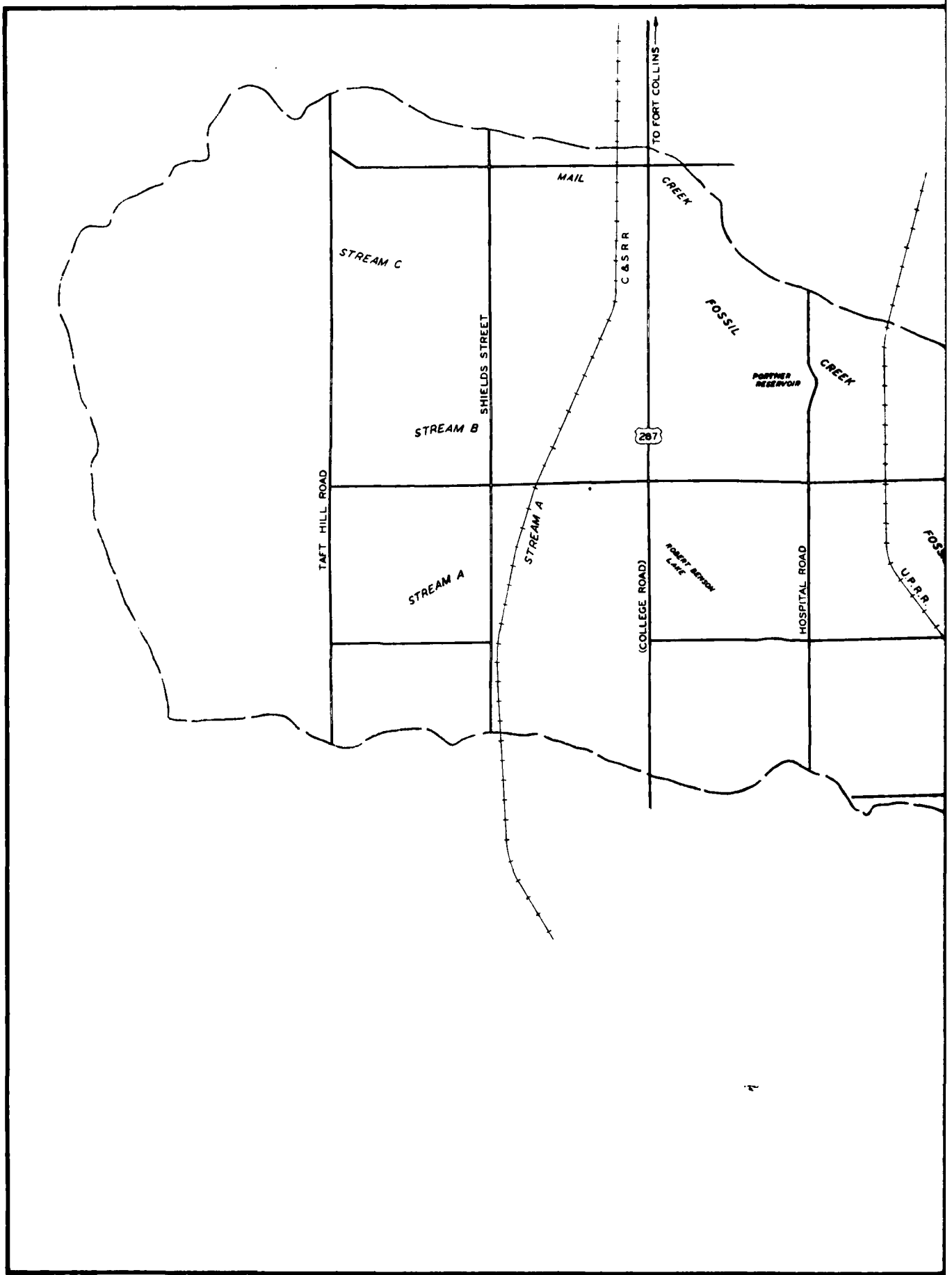
VOLUME IV

PLATE I



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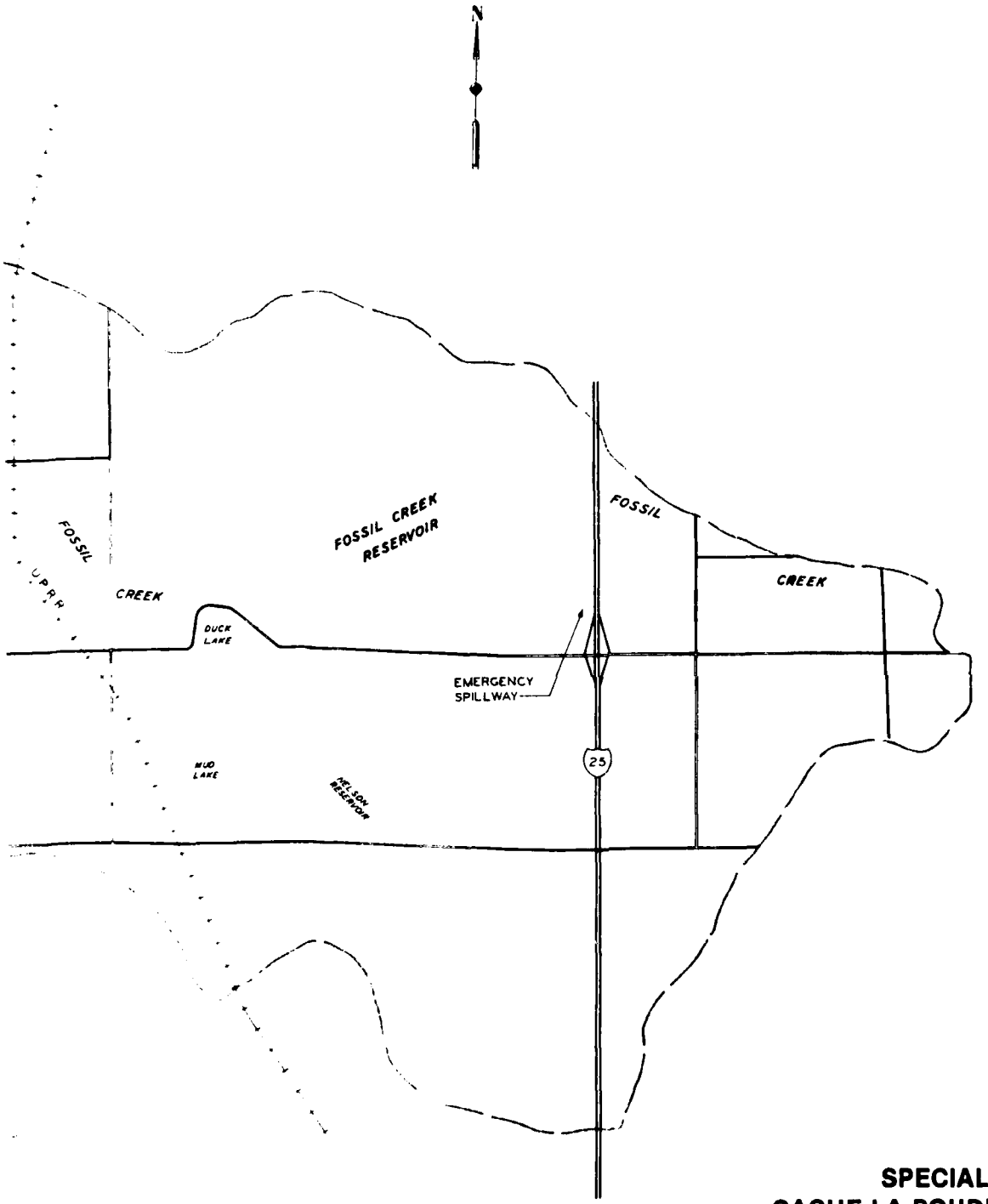

SCALE IN FEET
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SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
BASIN MAP

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

VOLUME IV PLATE 2

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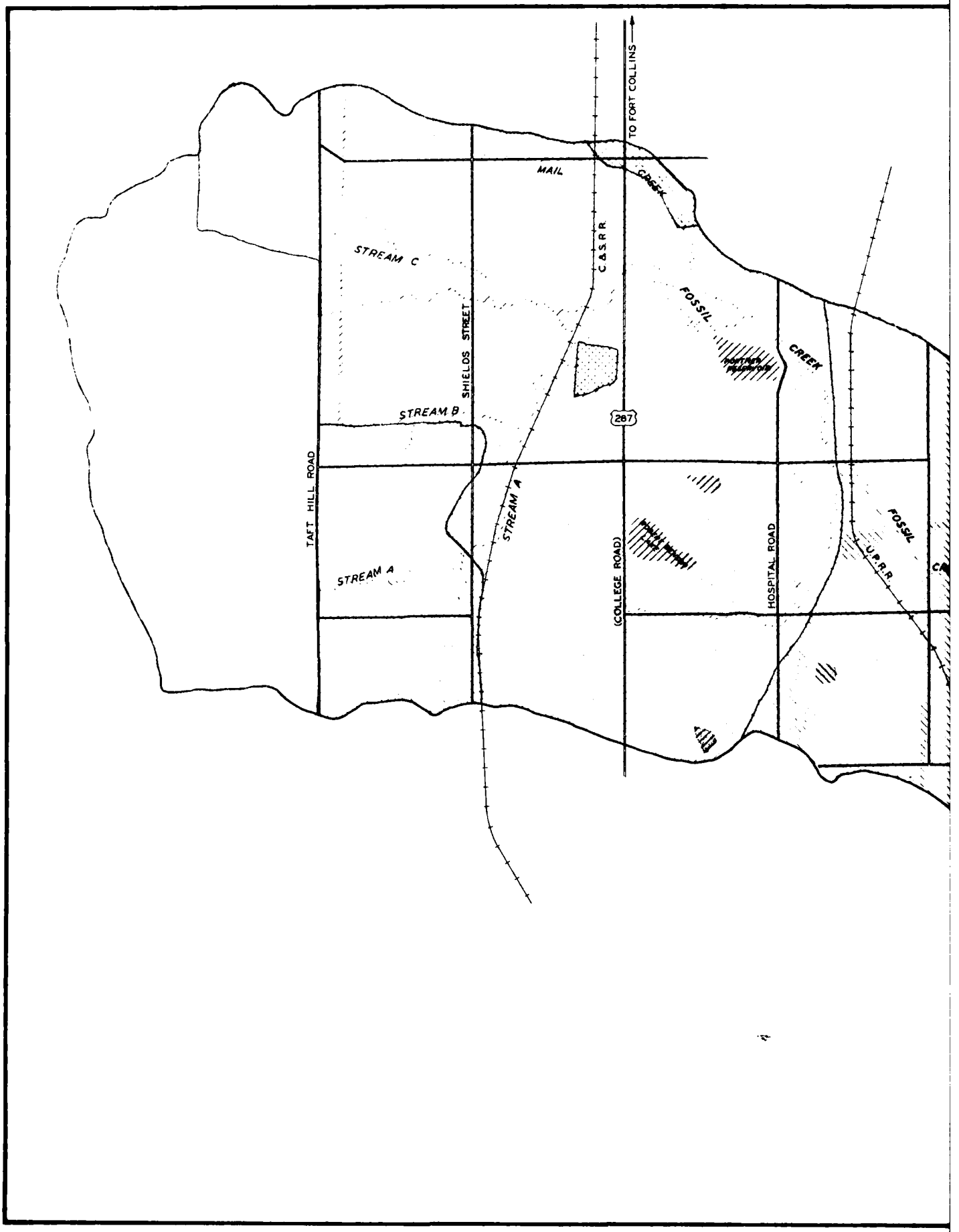
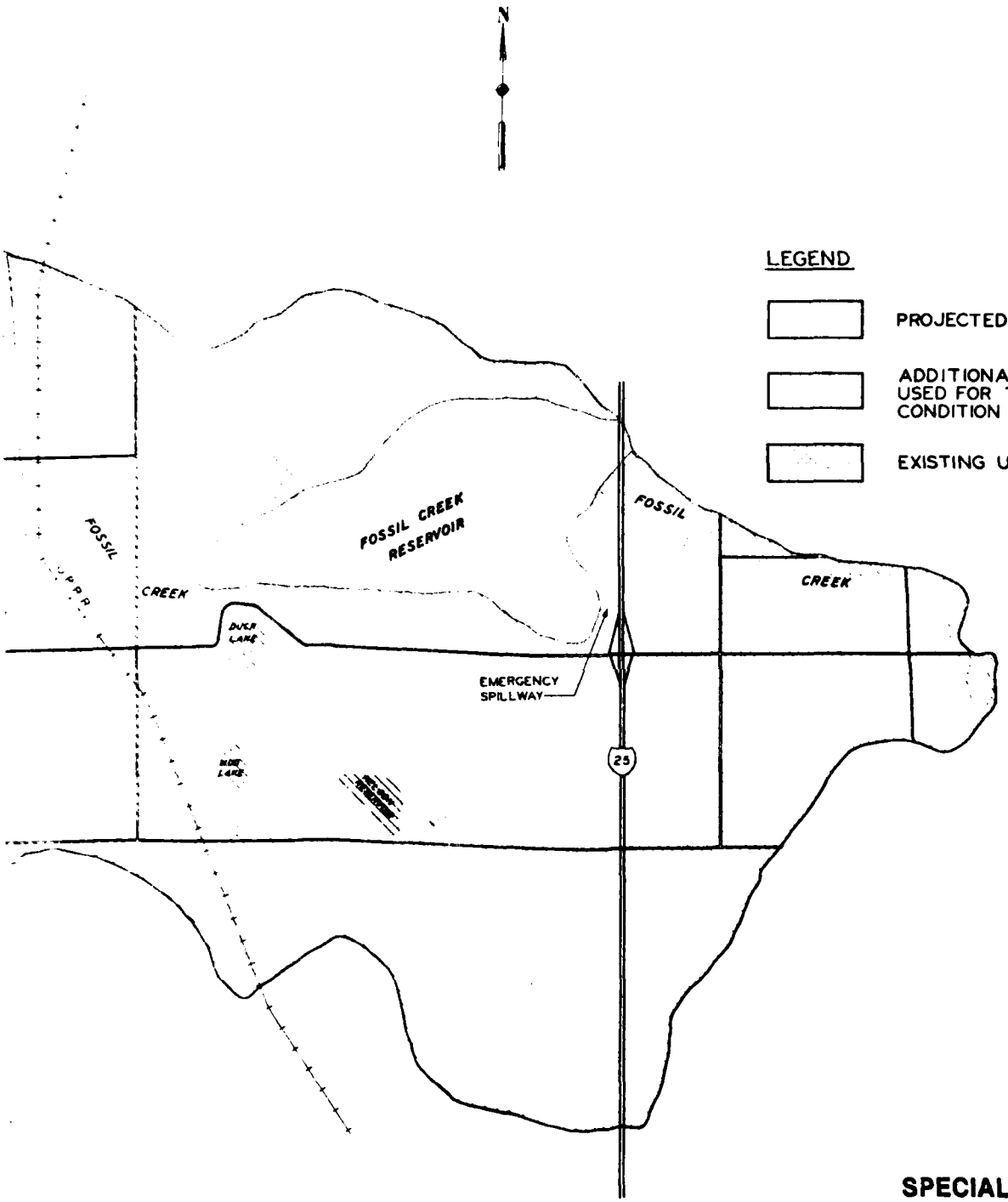


PL. 3 142



SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FUTURE URBANIZATION

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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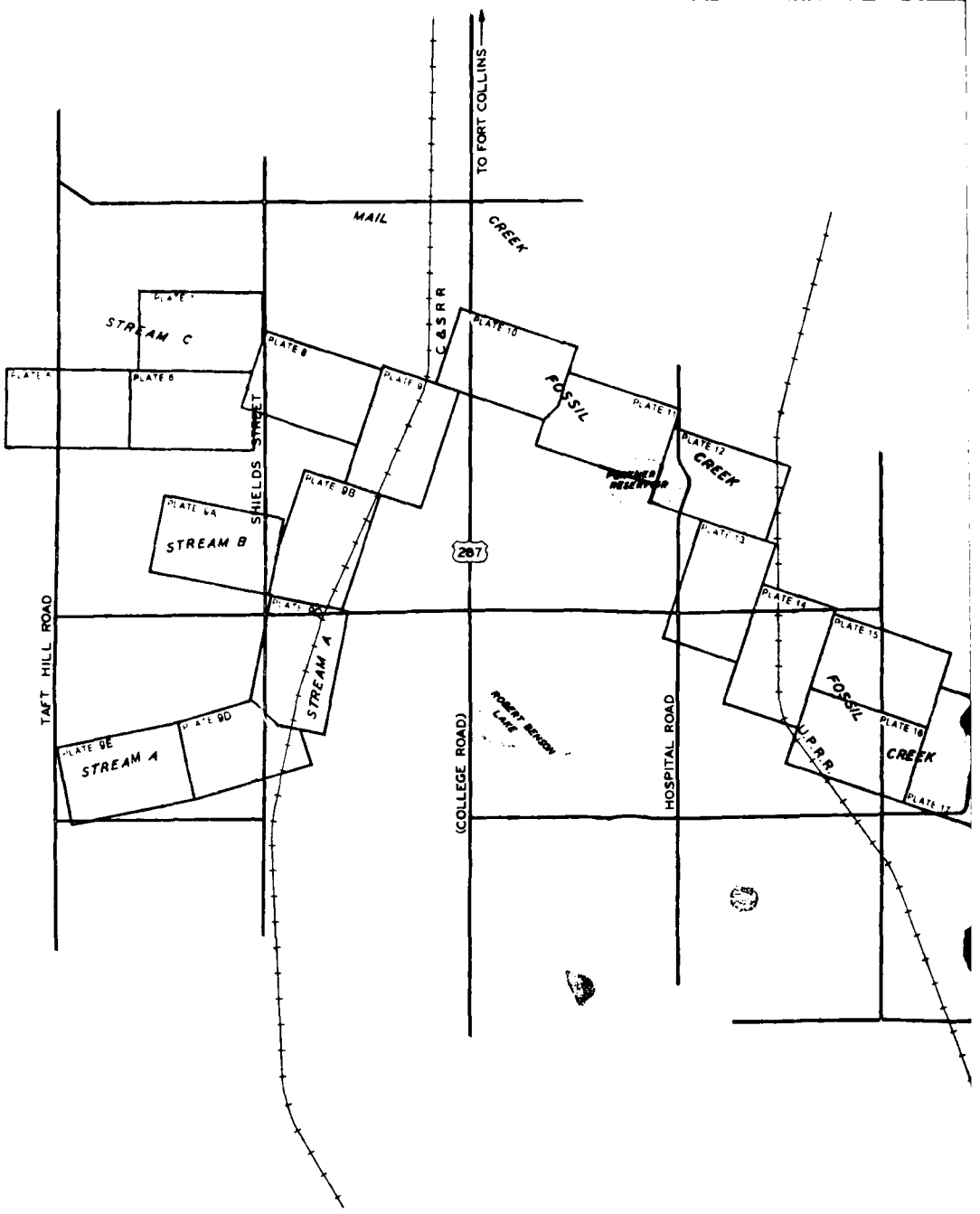

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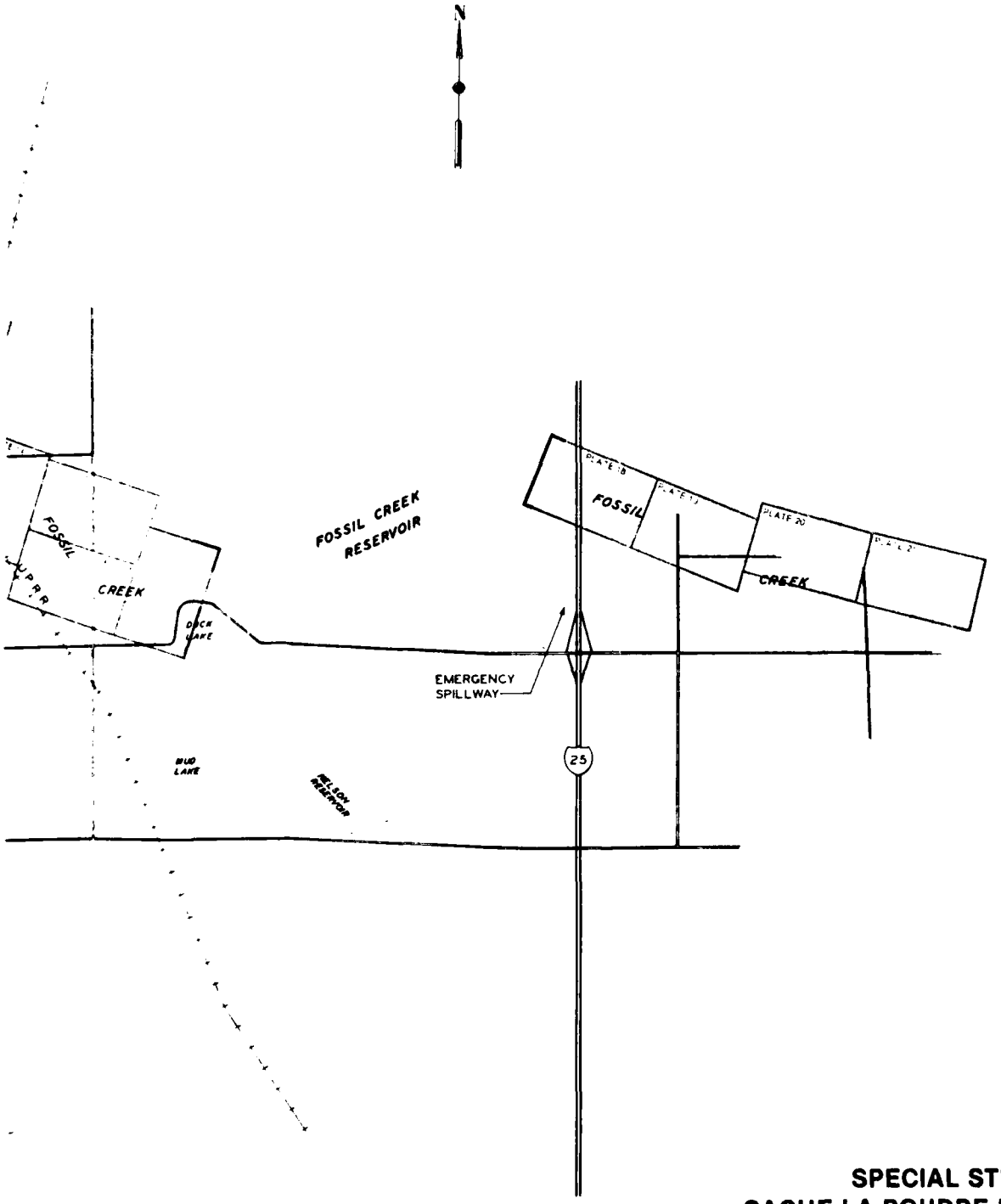

SCALE IN FEET
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SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO
FOSSIL CREEK

PLATE INDEX MAP

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
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PLATE 4

PL. 5 1 of 3

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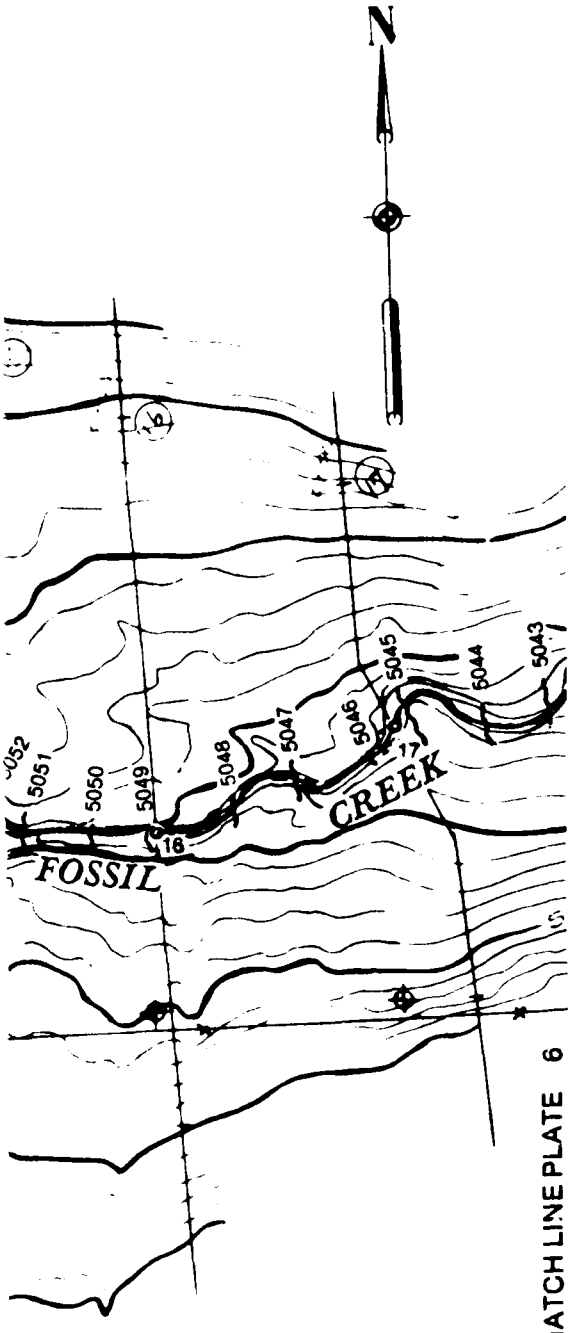

LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate. see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 2.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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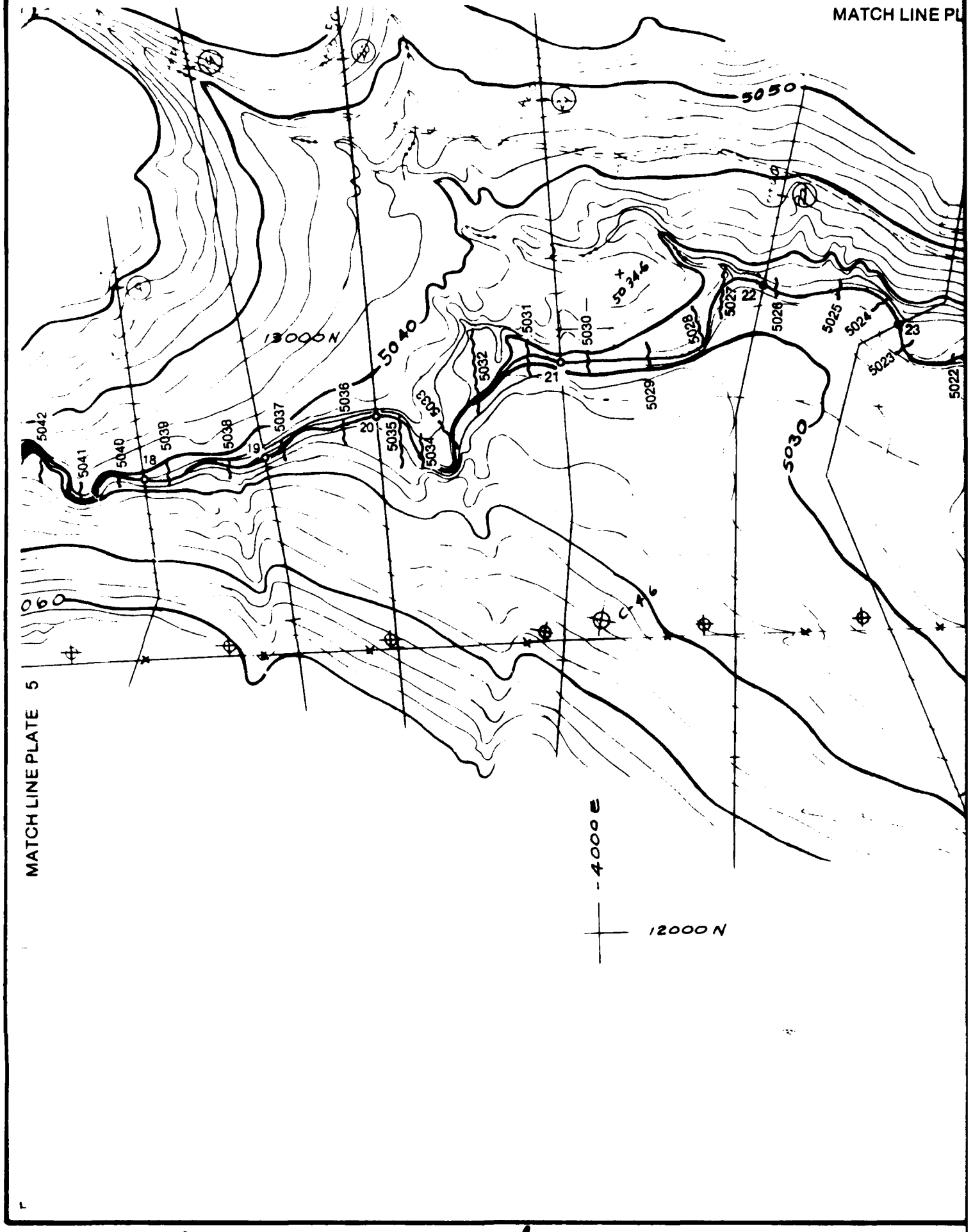
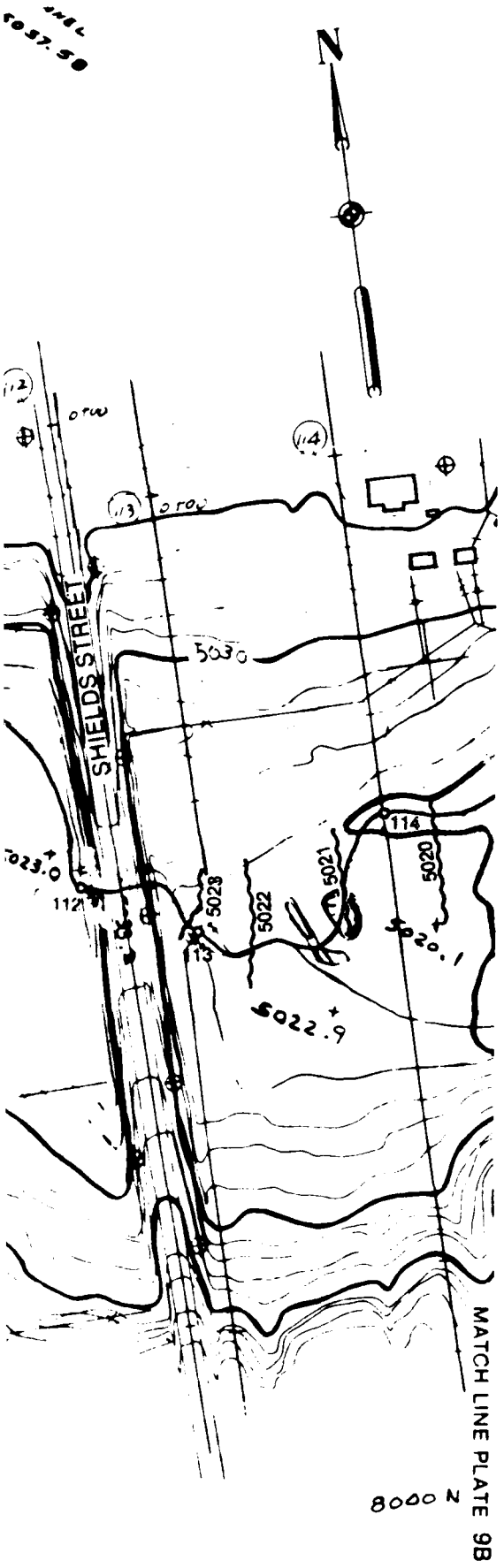


PL. 6

1 of 3



LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point - Also locations of surveyed cross sections

NOTES:

1. For the location of this plate, see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 5.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES STREAM B

FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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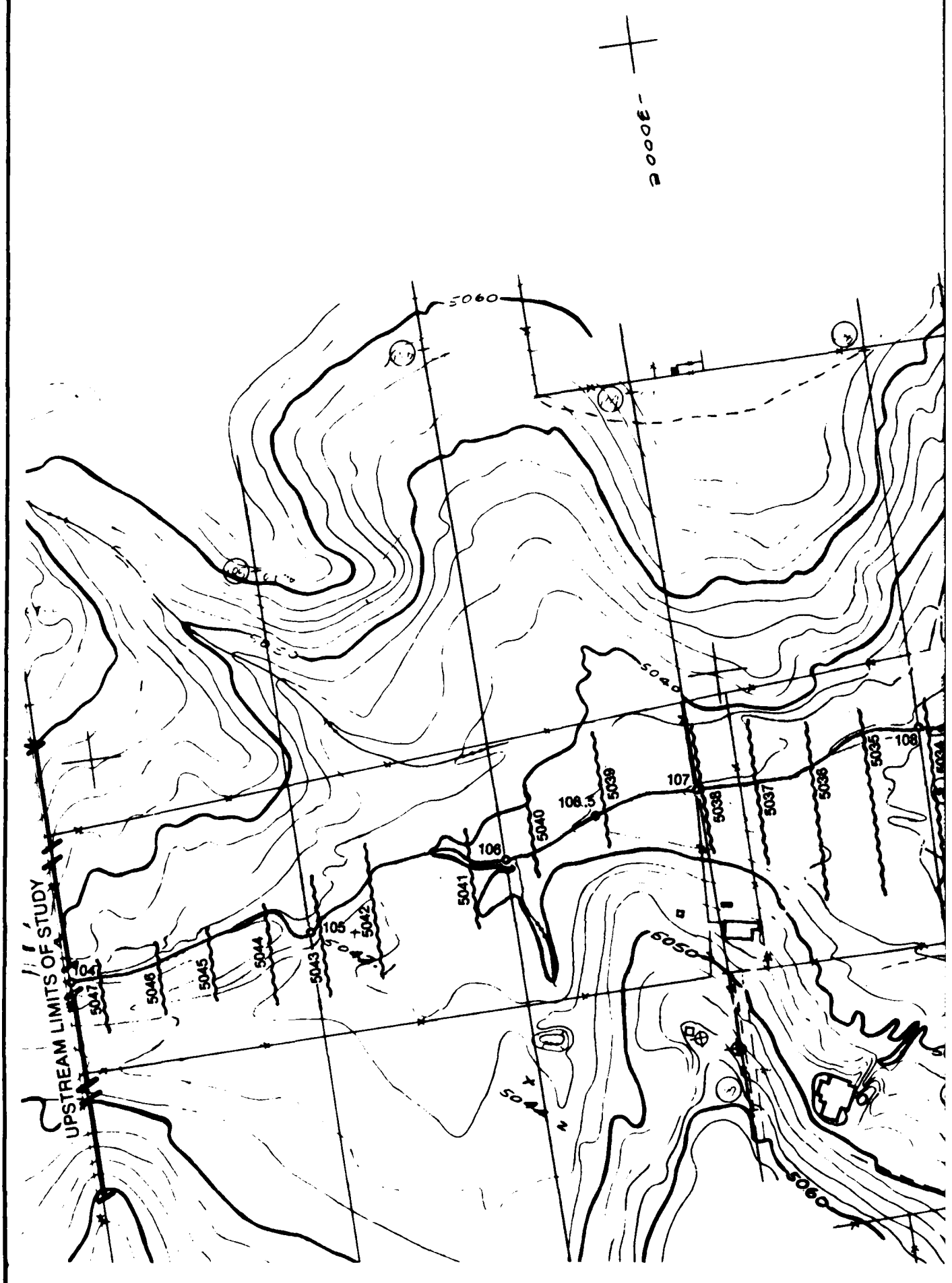
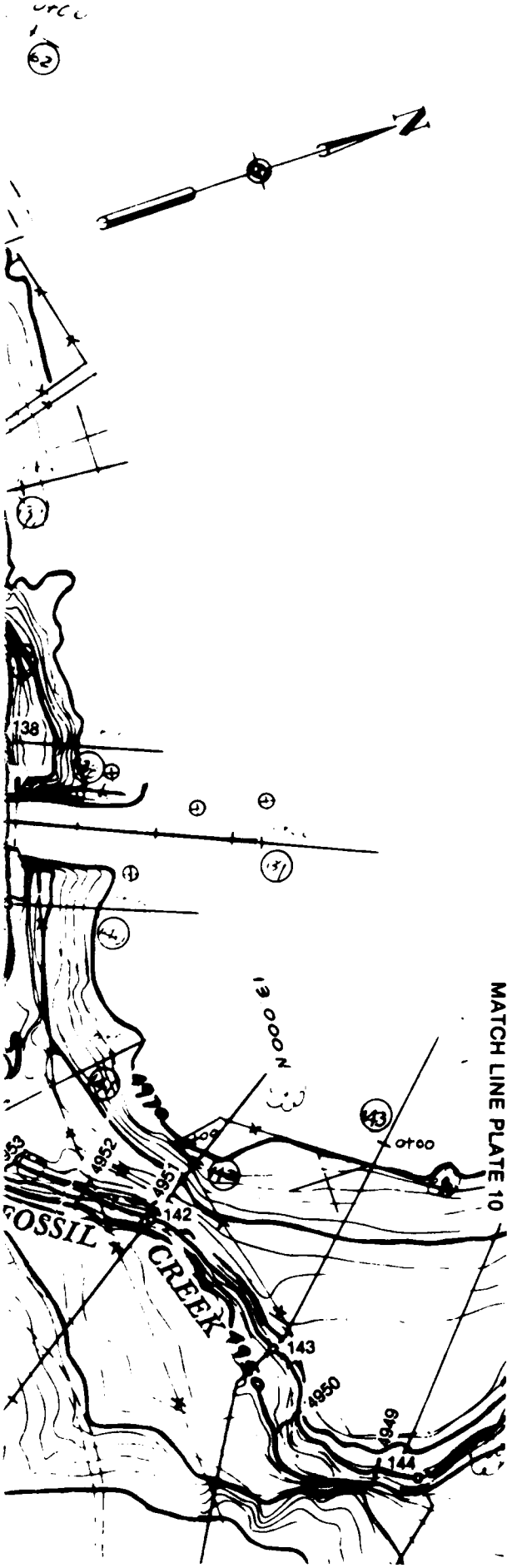


Pl. 9A



LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Tables 2 and 3.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK AND STREAM A

FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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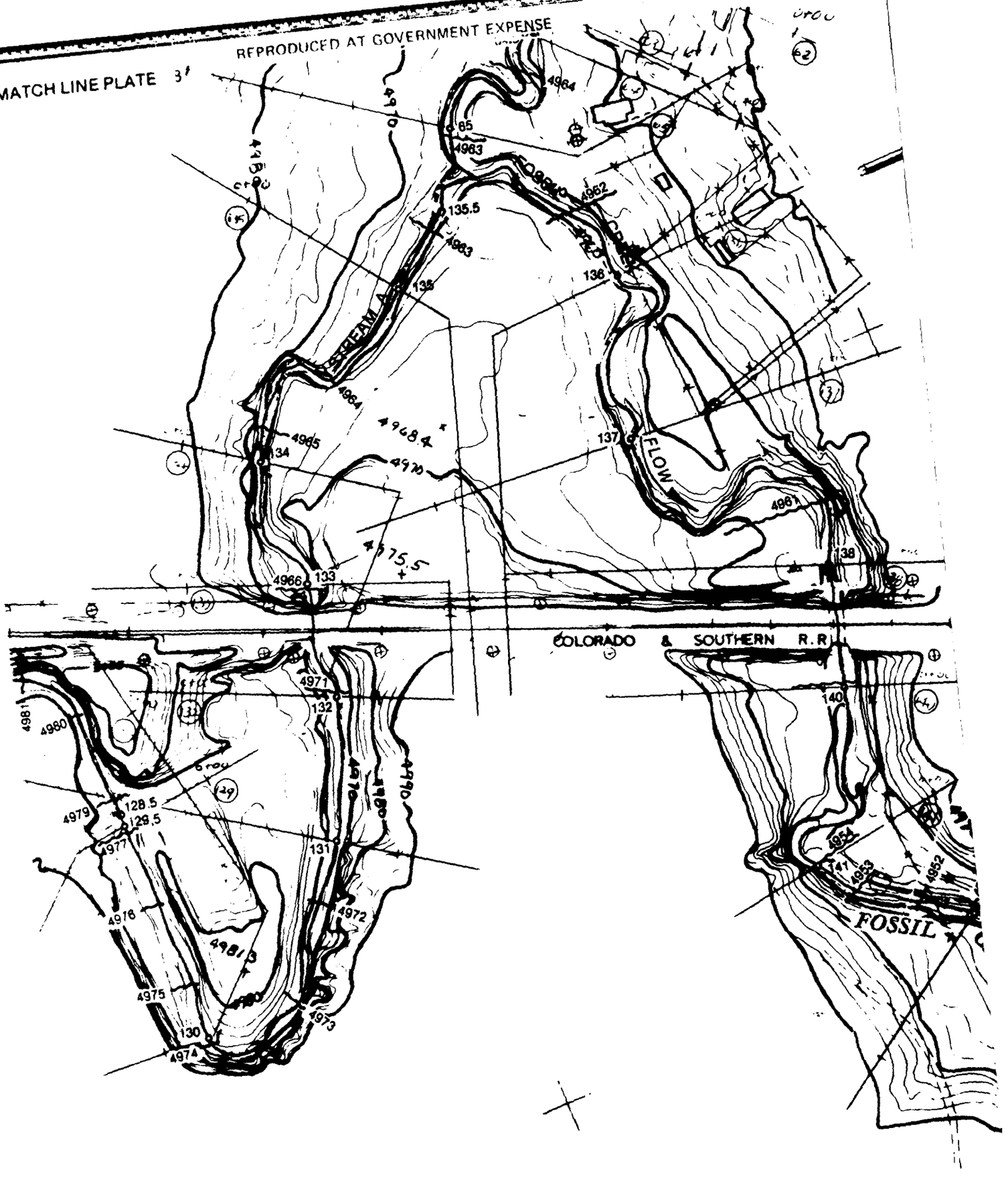
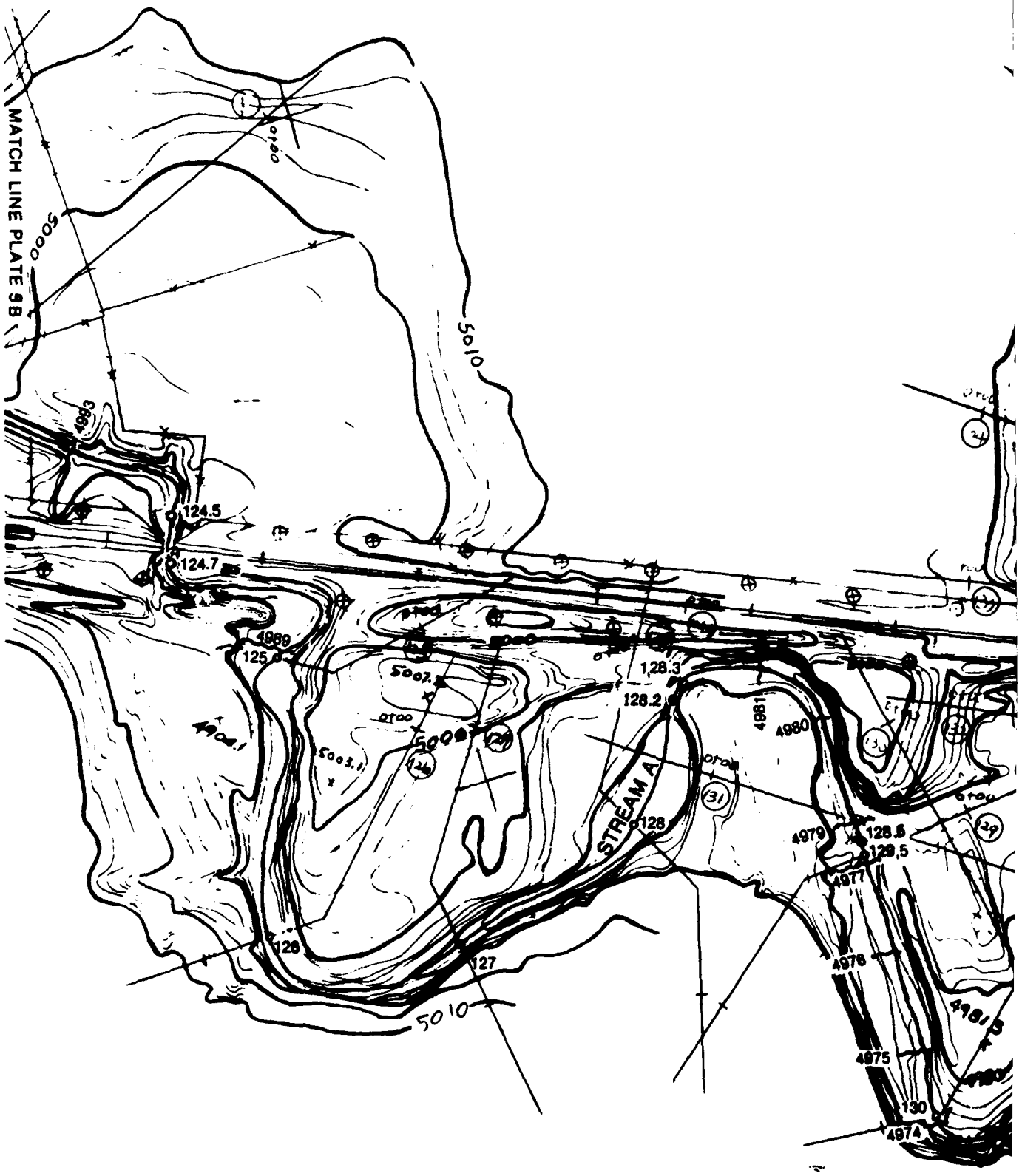
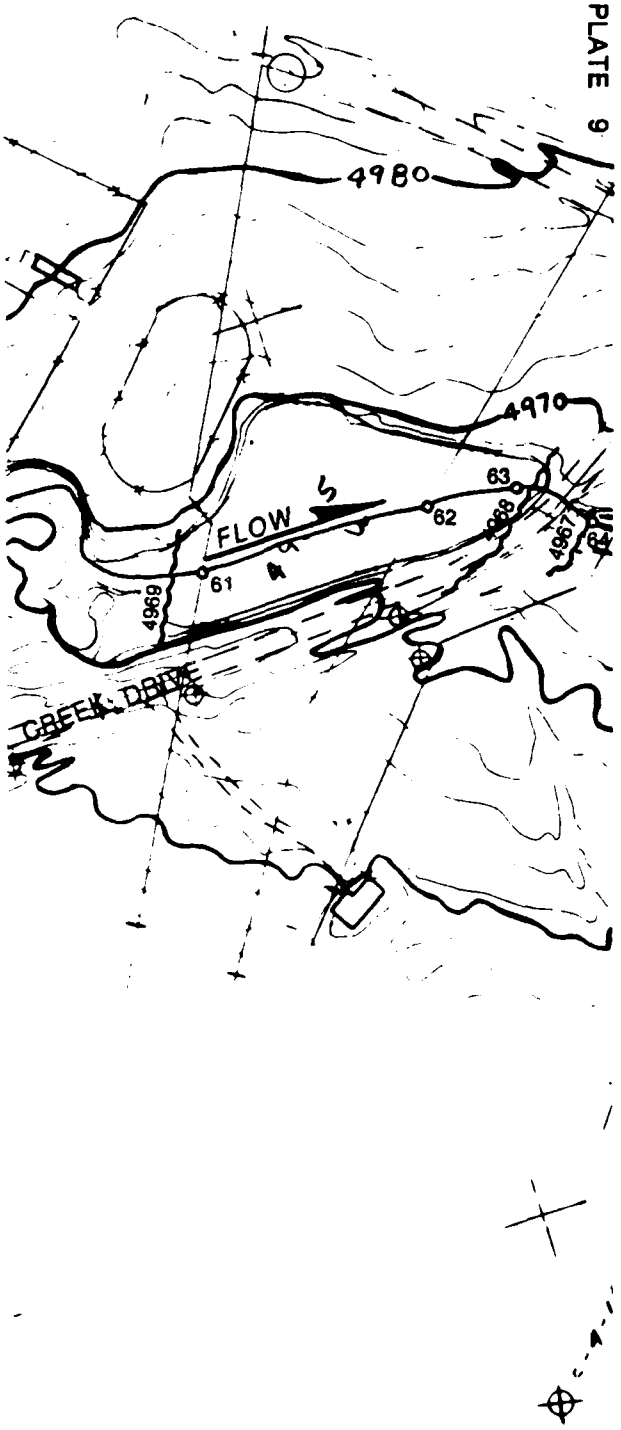




PL. 9



LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Tables 2 and 4.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK AND STREAM C

FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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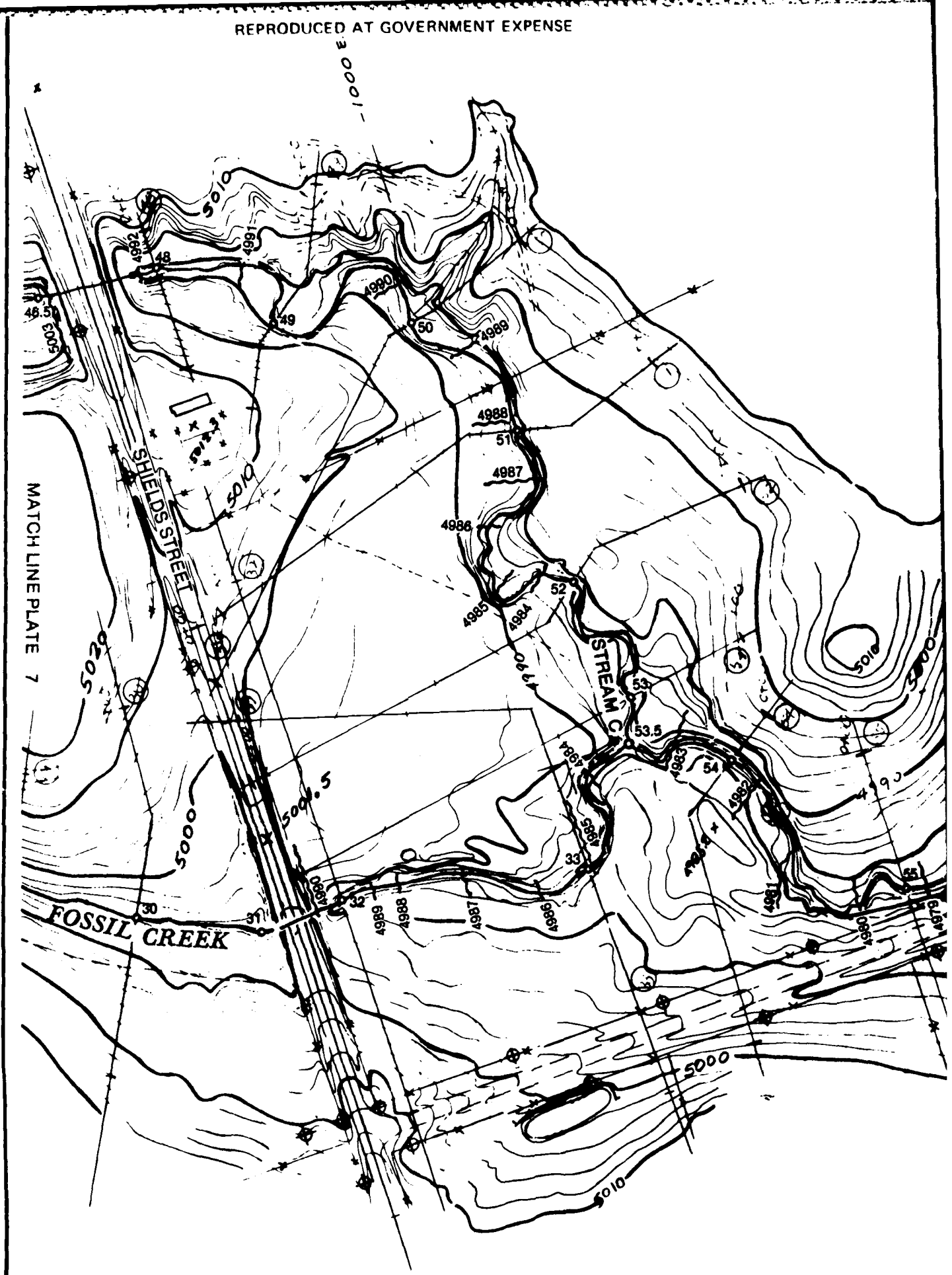
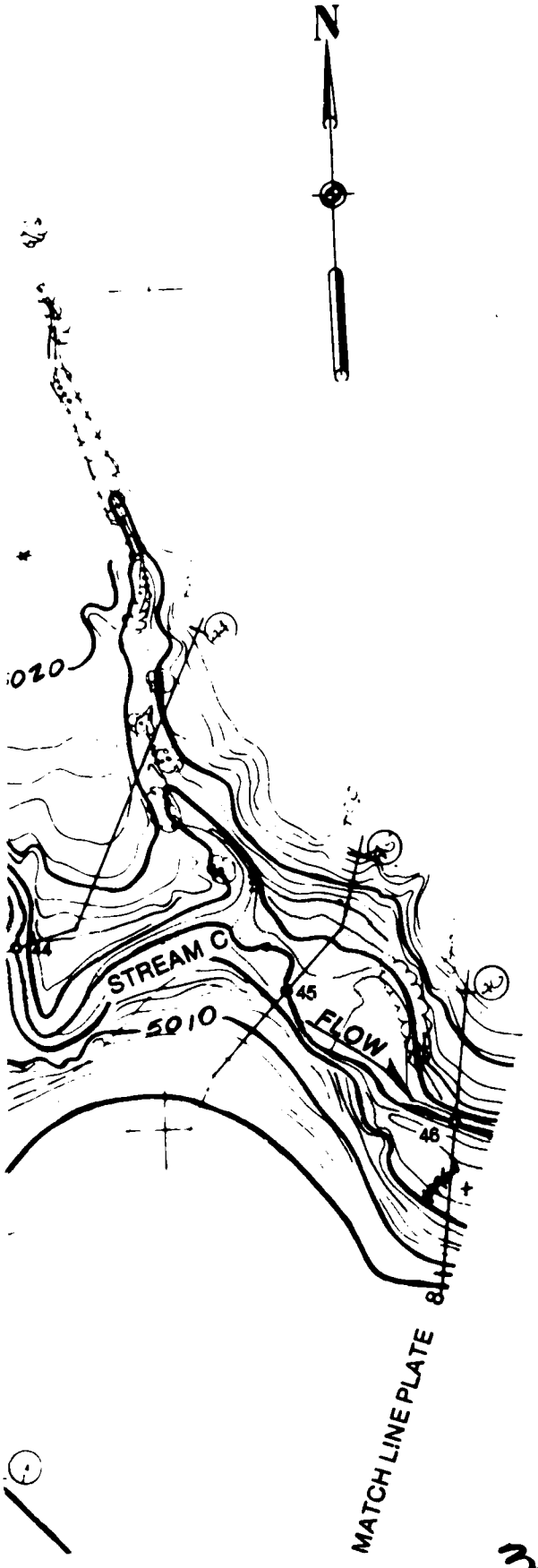


PL. 8

1 of 3



LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate, see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 4.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM C
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
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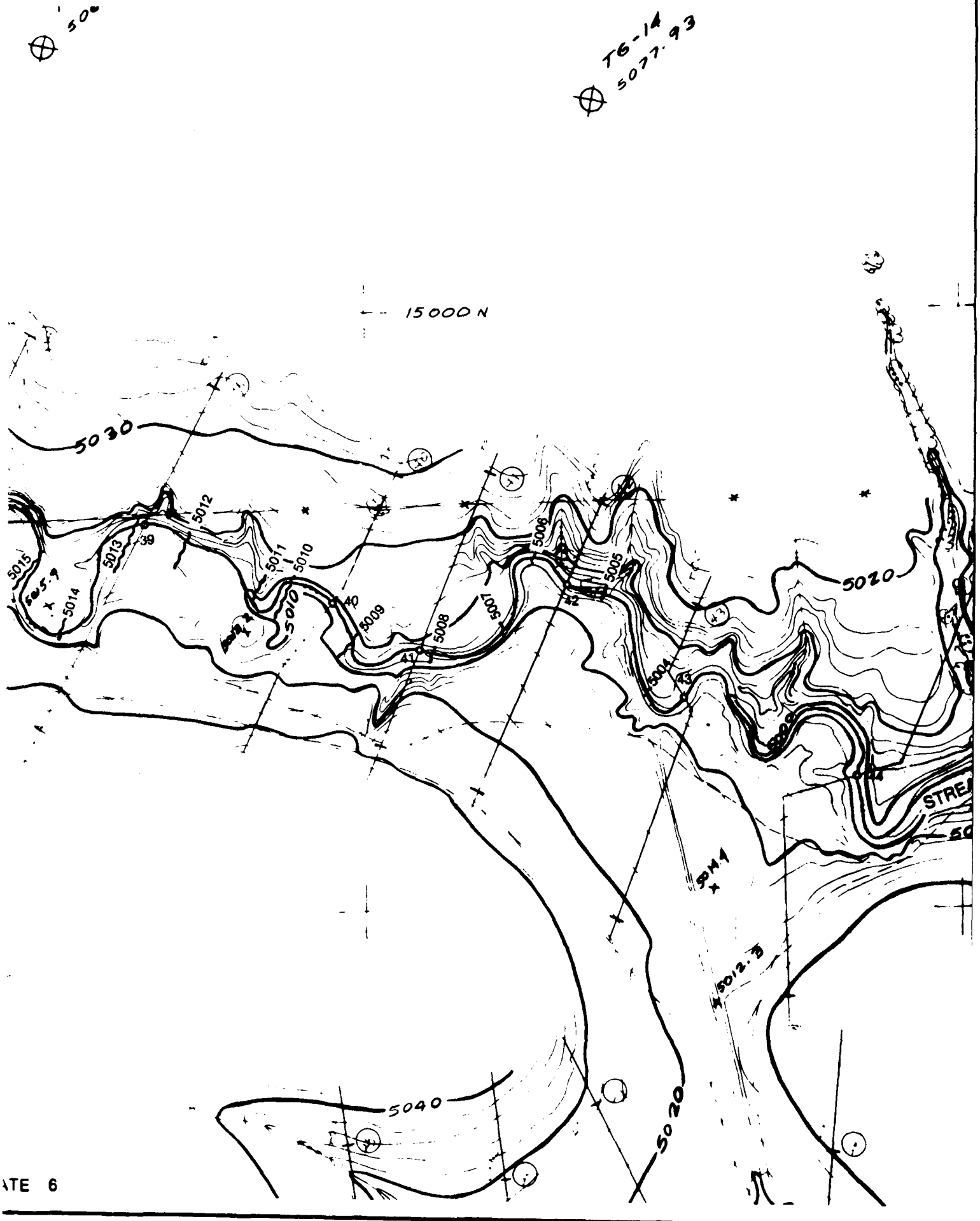

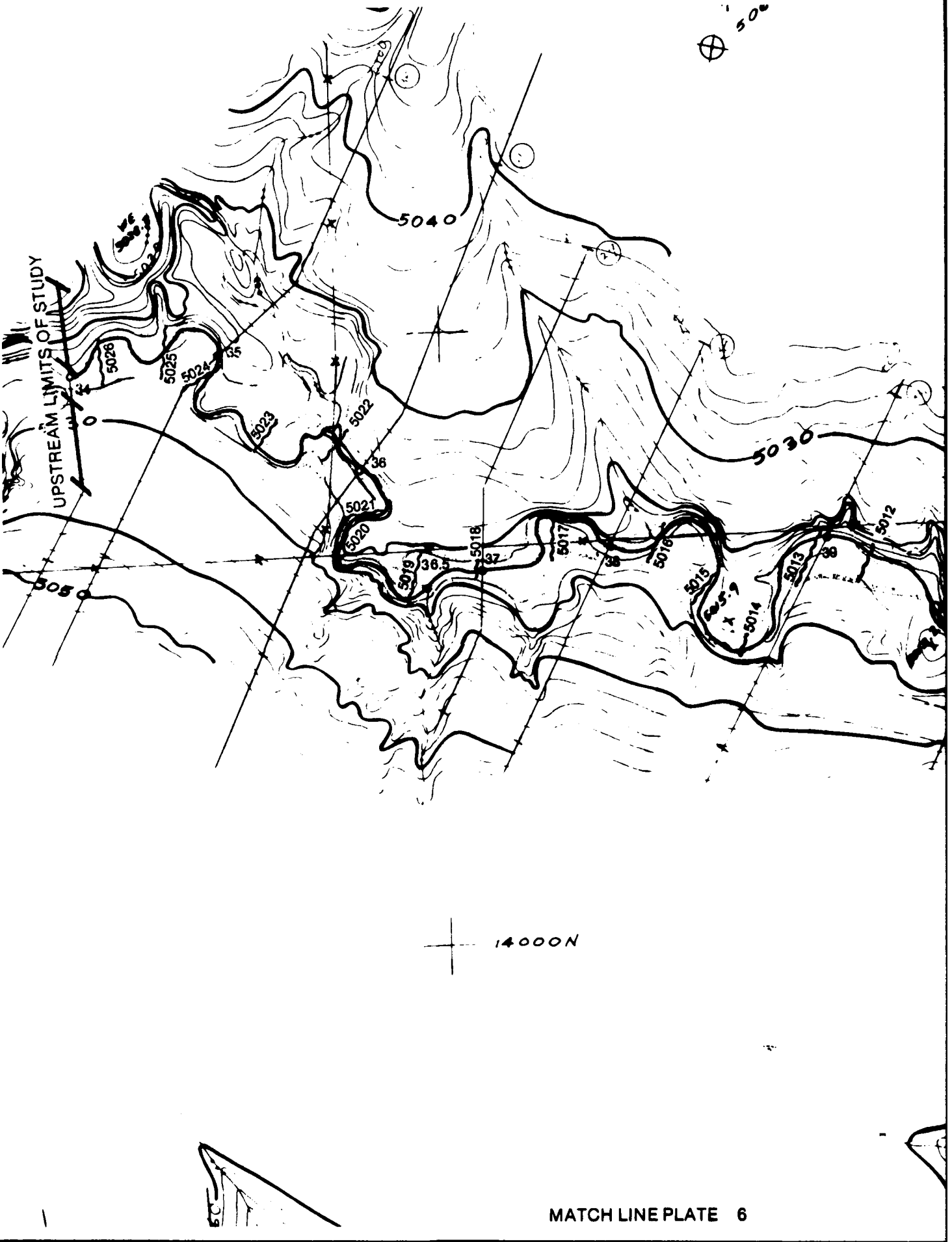

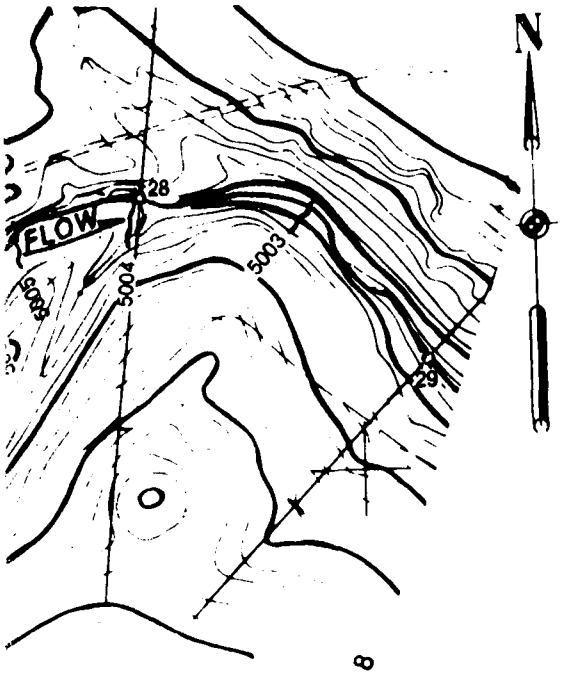

MATCH LINE PLATE 8

-2000 E

LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate, see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 2
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
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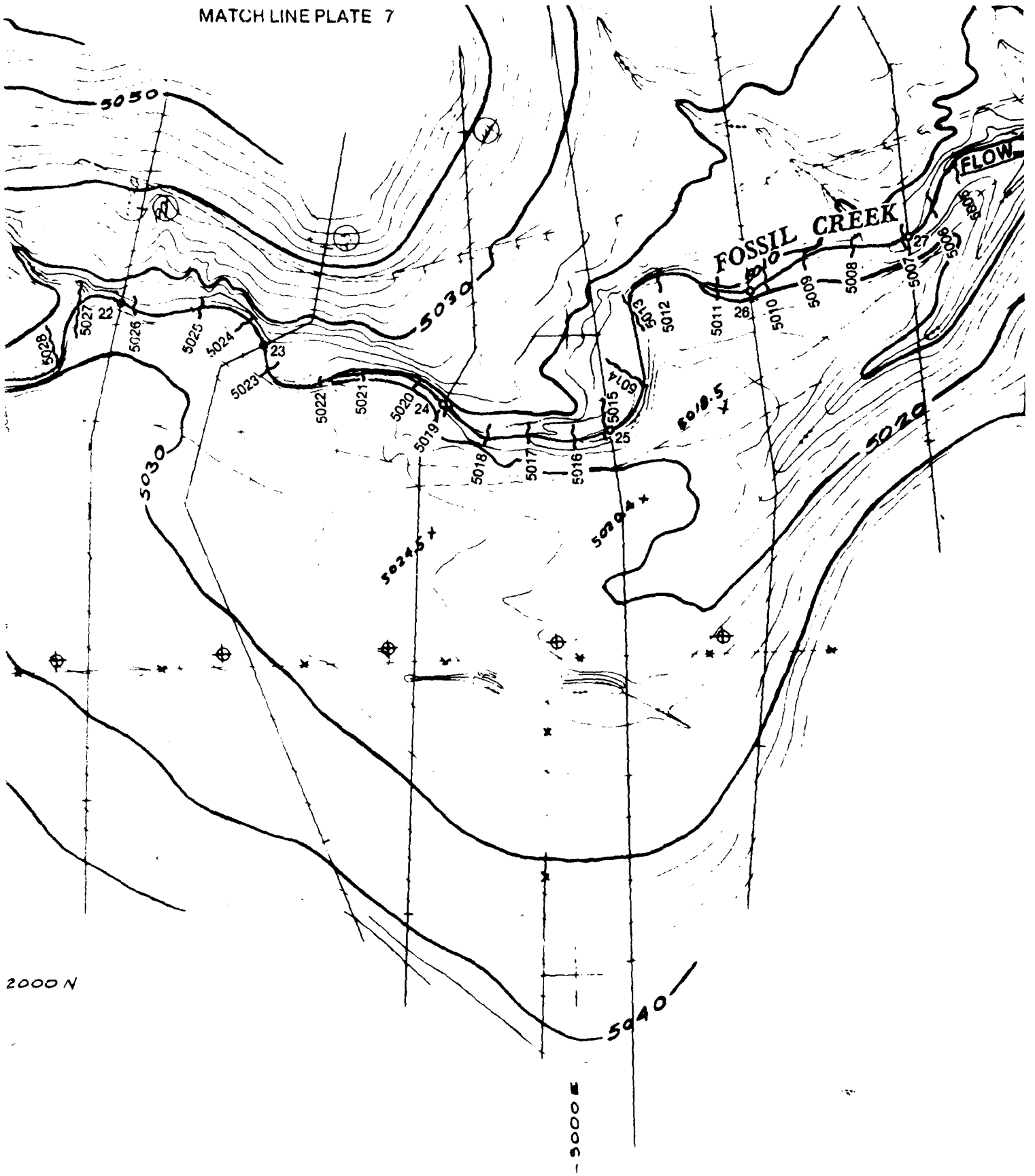
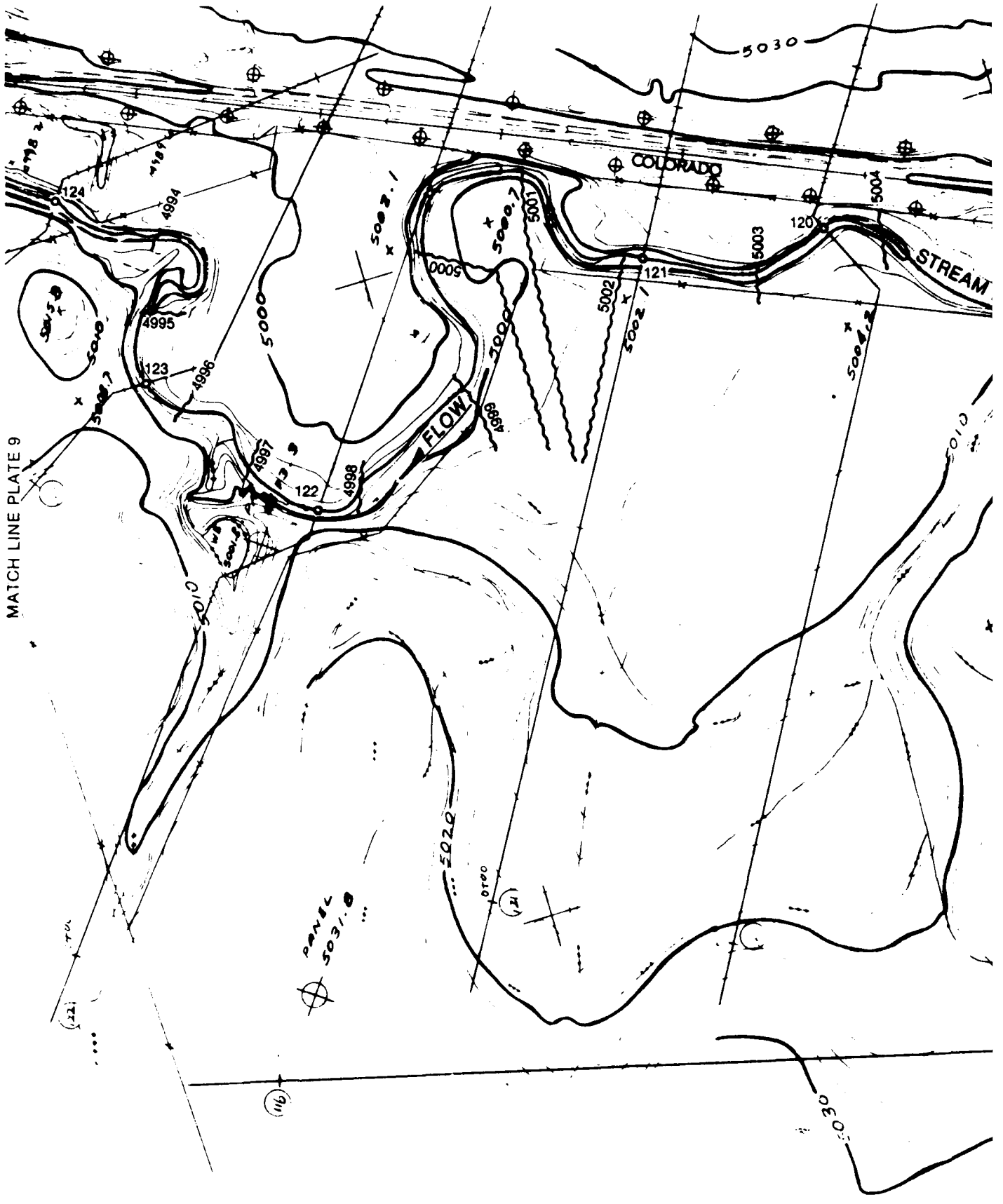
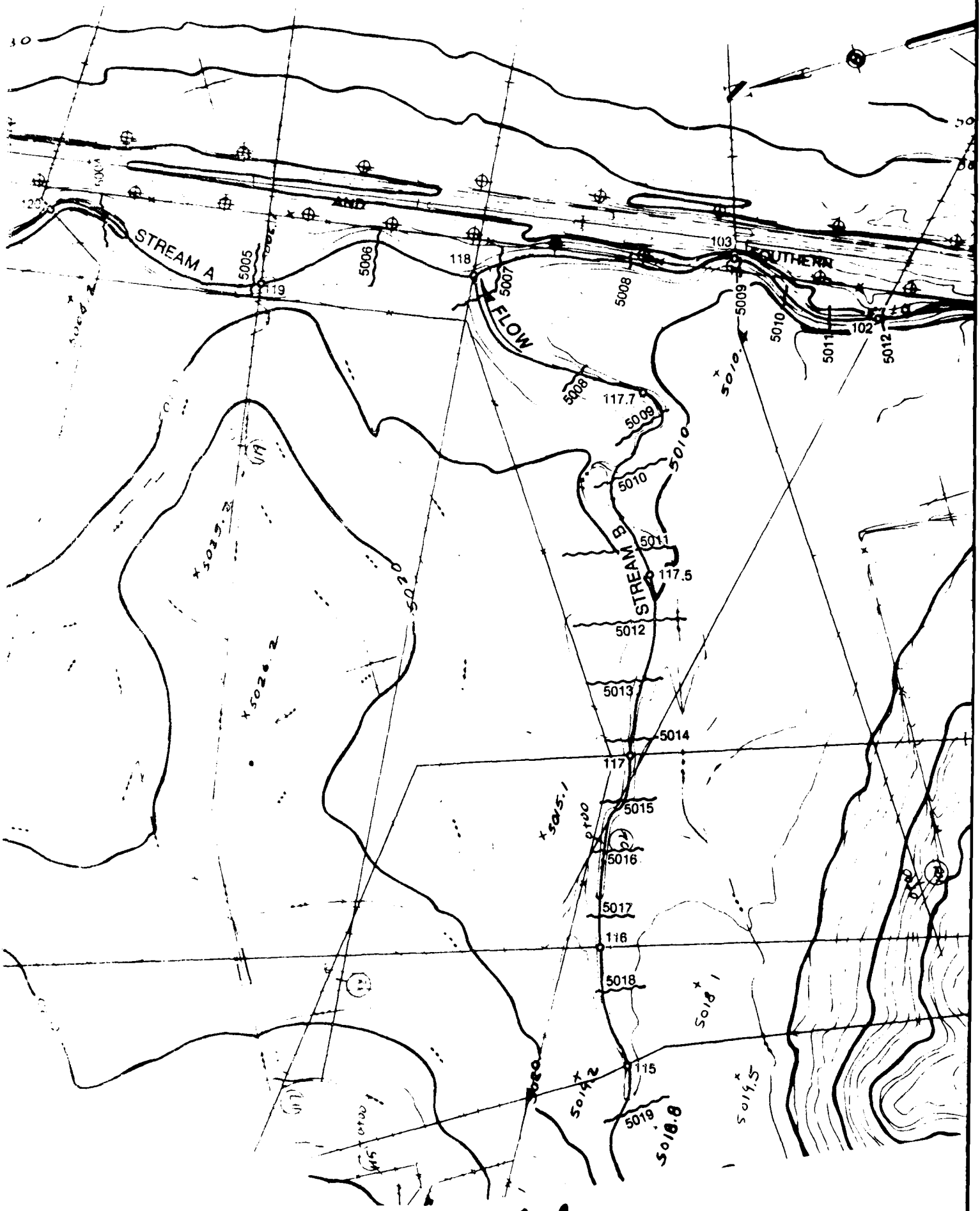




PL. 9B 1 of 3



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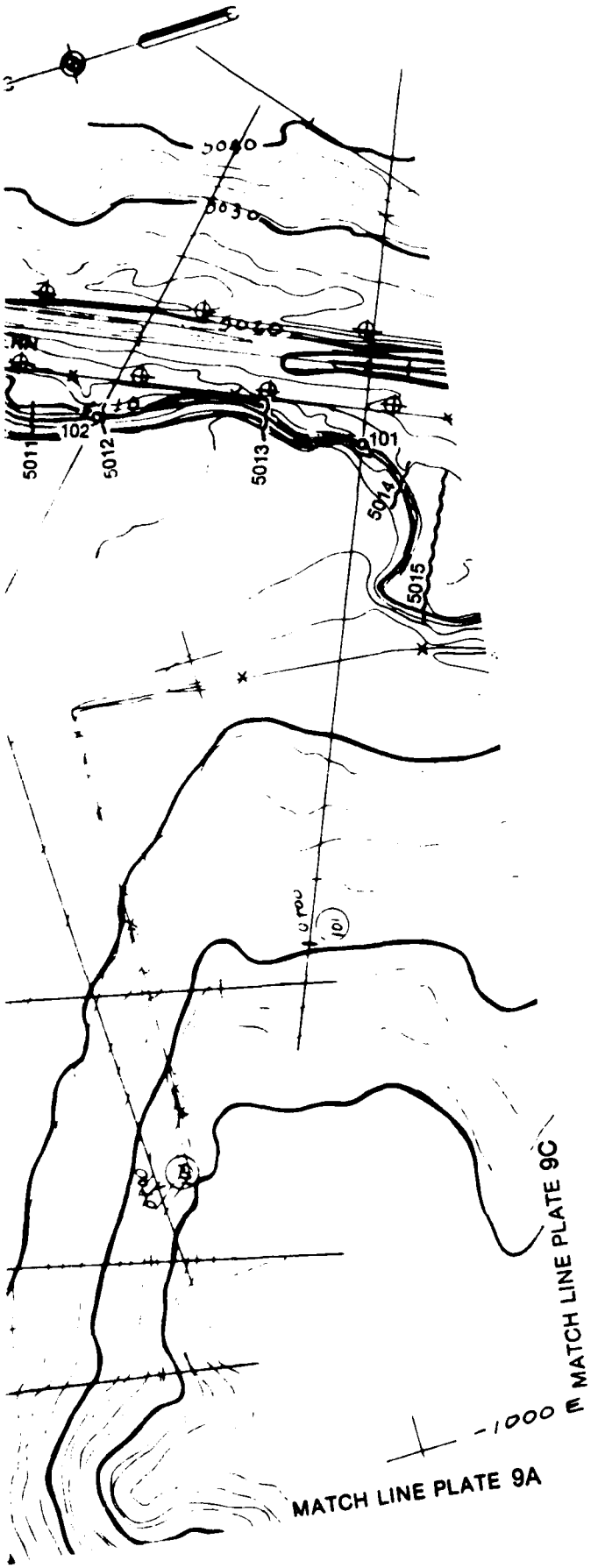

LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate. see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Tables 3 and 5.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES STREAM A AND B FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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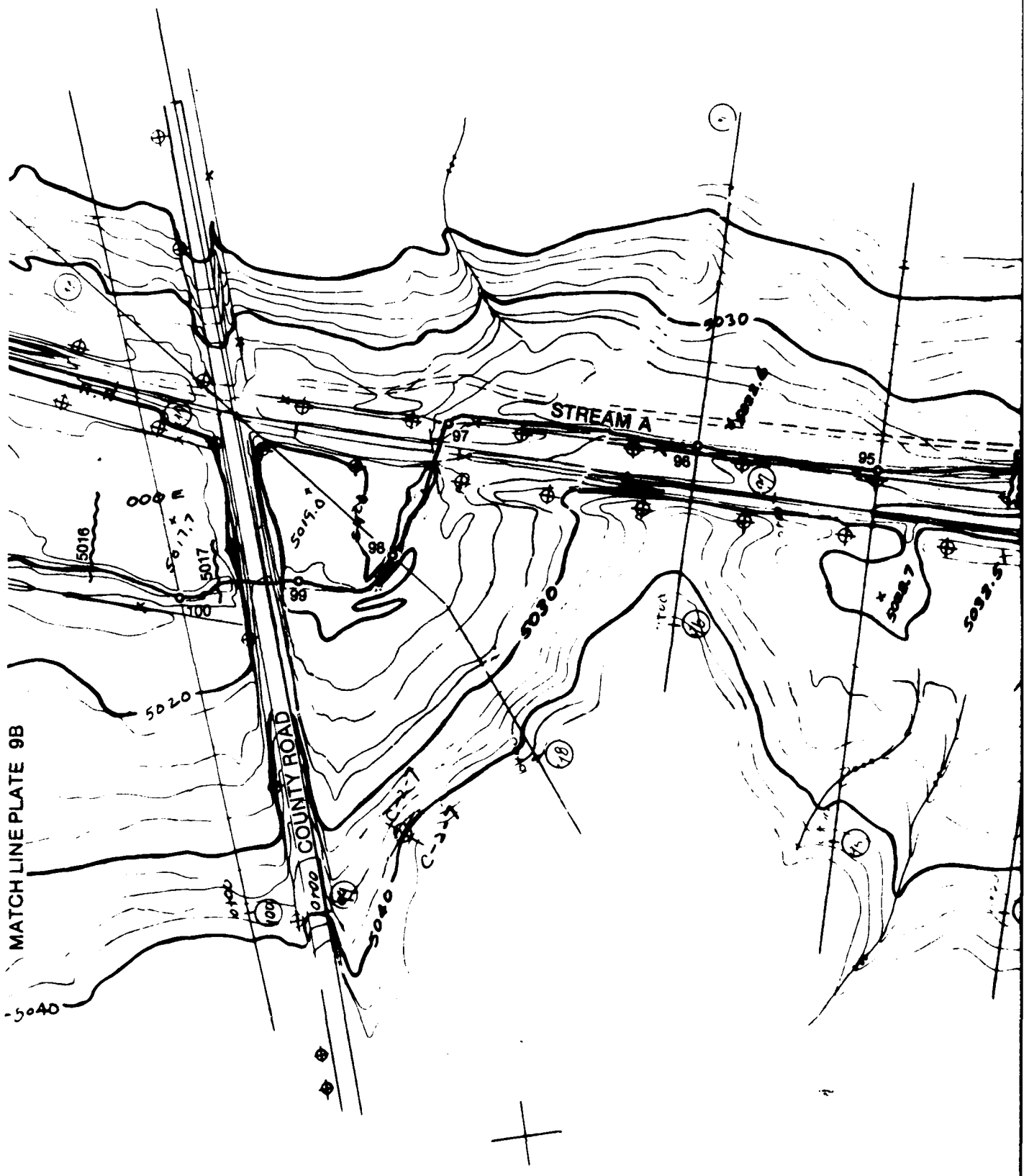

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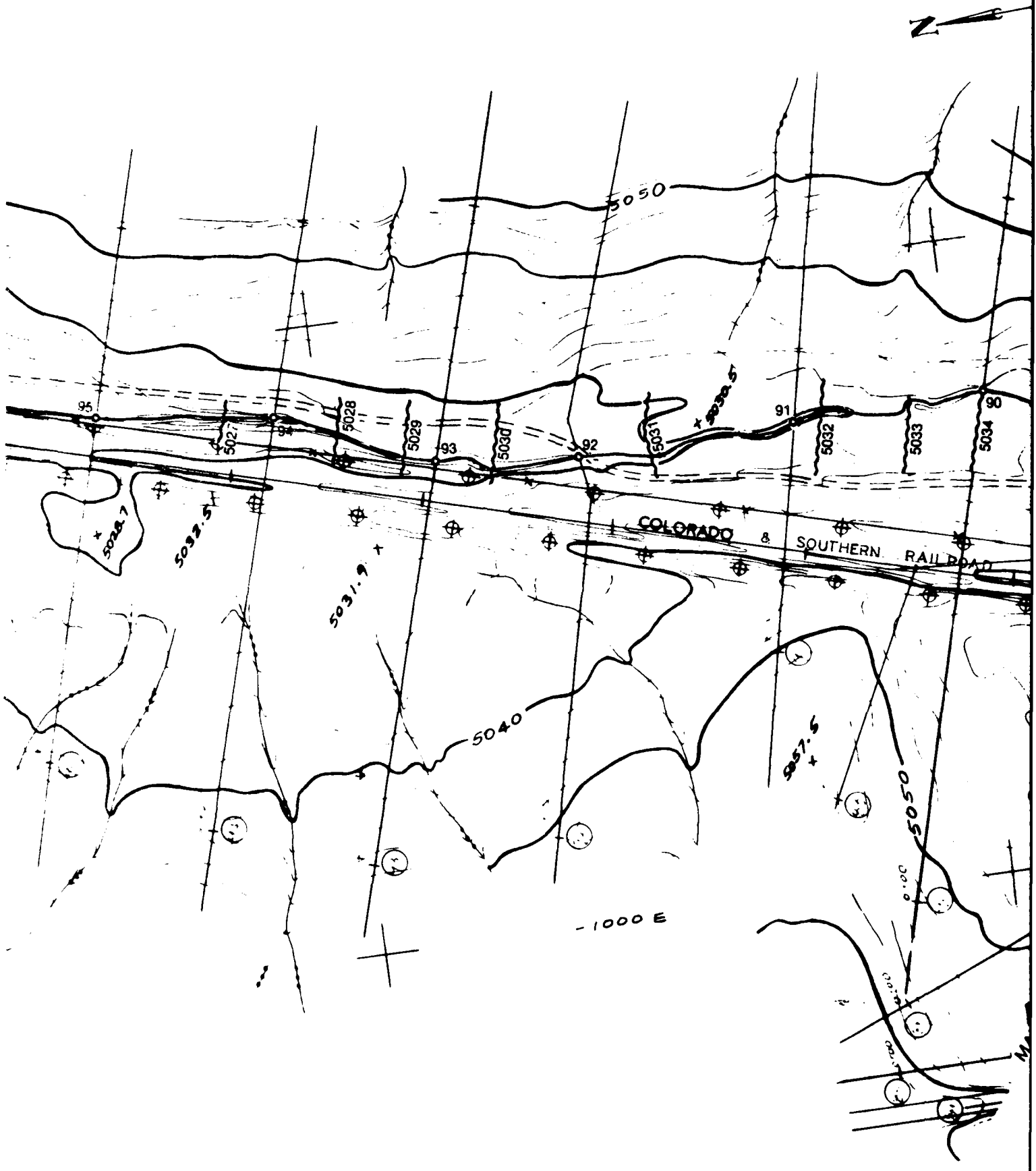
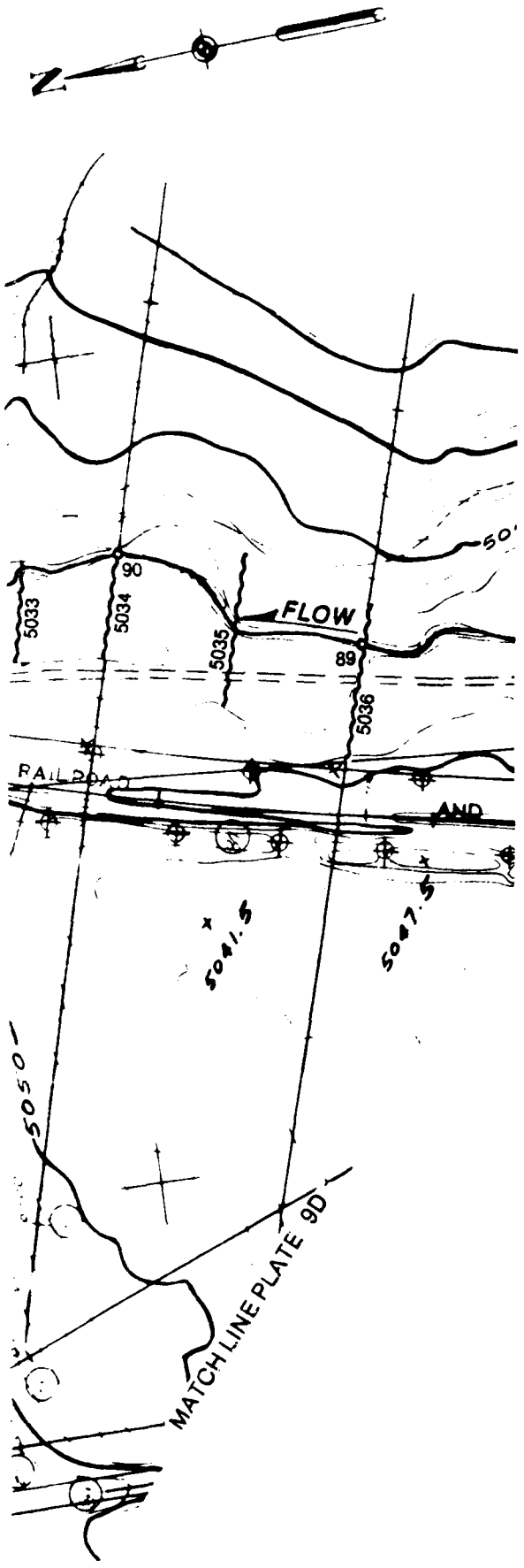




LEGEND:

500 YEAR FLOOD — 100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate, see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 3.
4. Flooded areas represent existing conditions

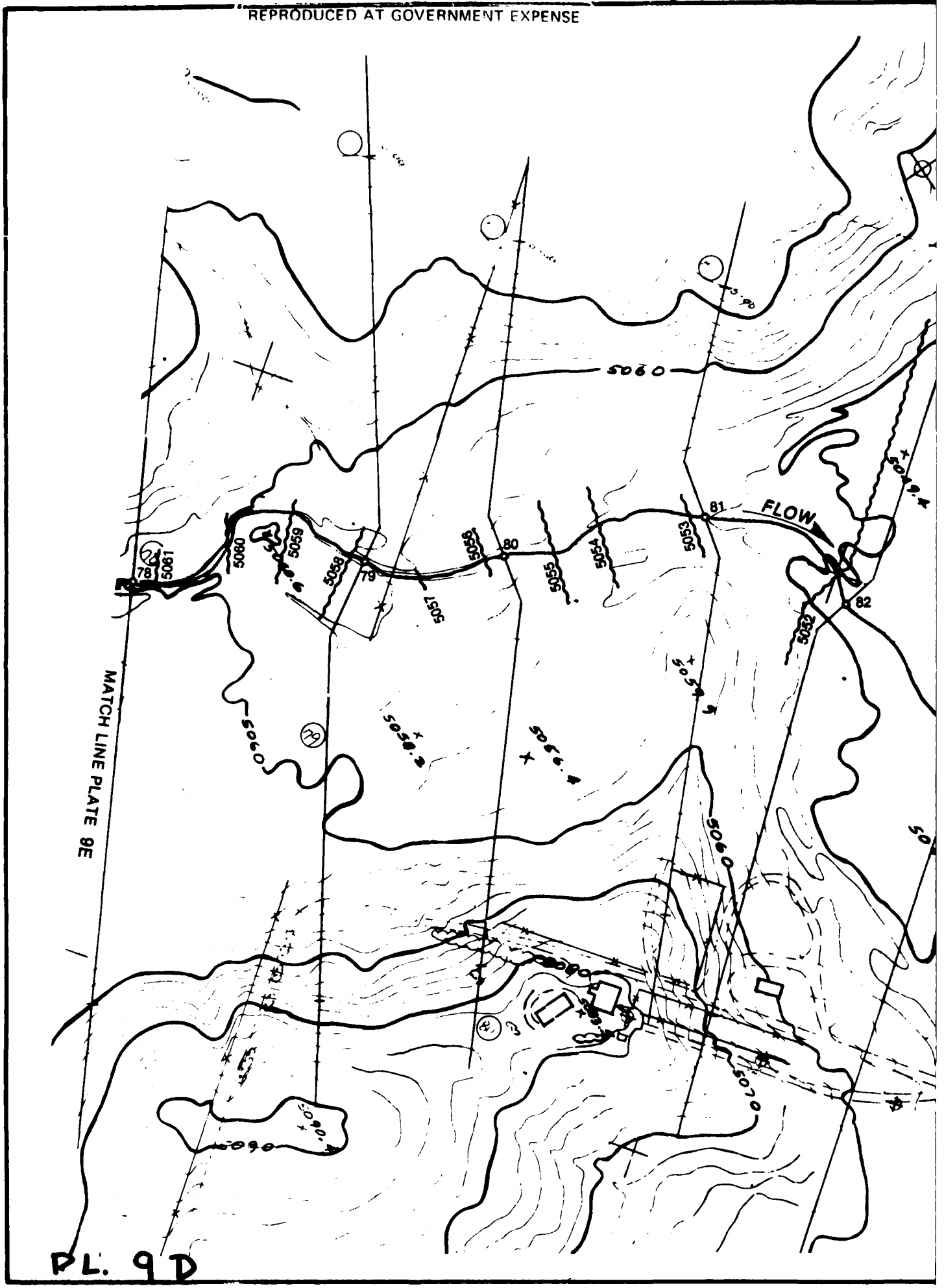
SCALE IN FEET

200 0 200 400

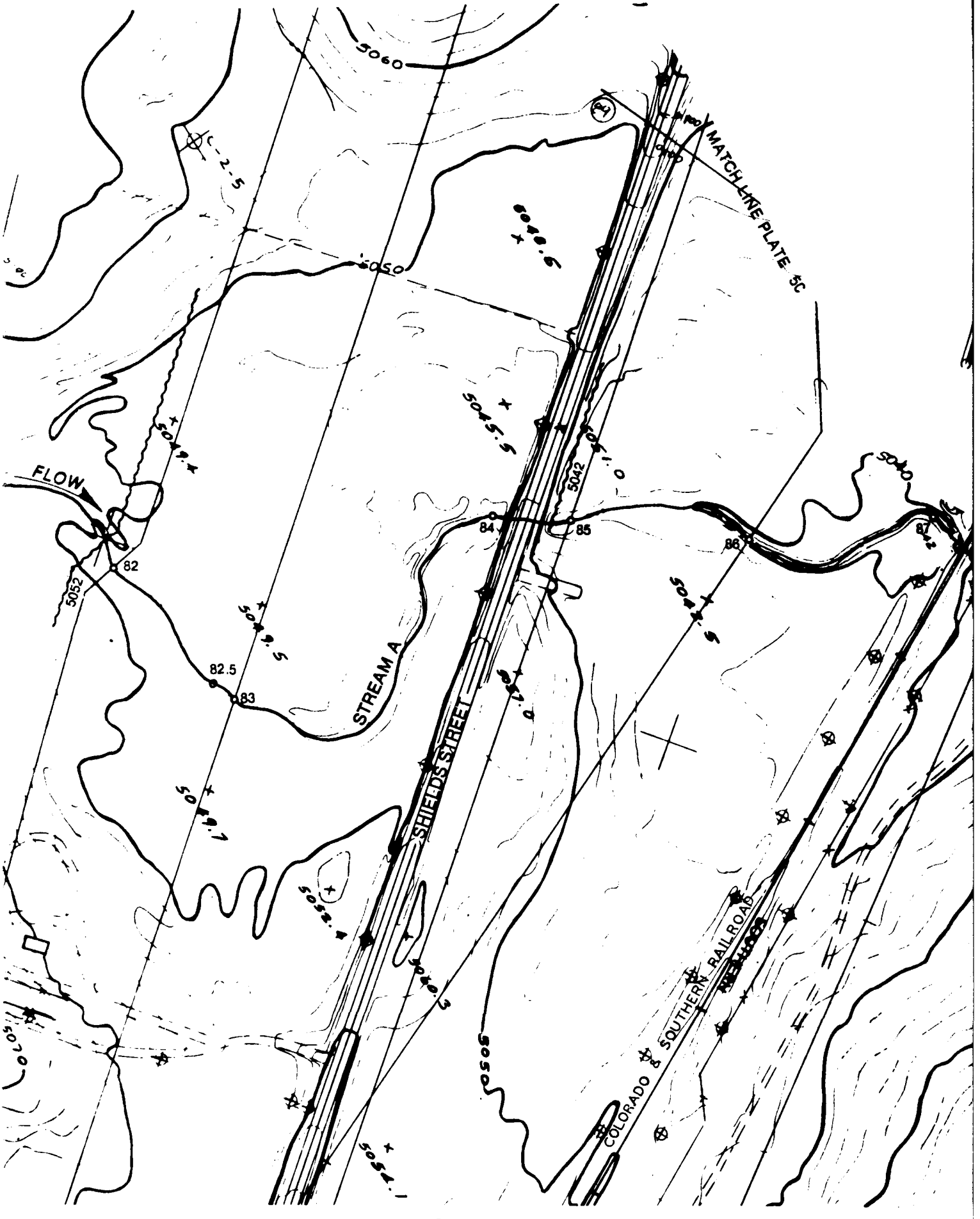
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



PL. 9D



LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate, see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 3.
4. Flooded areas represent existing conditions

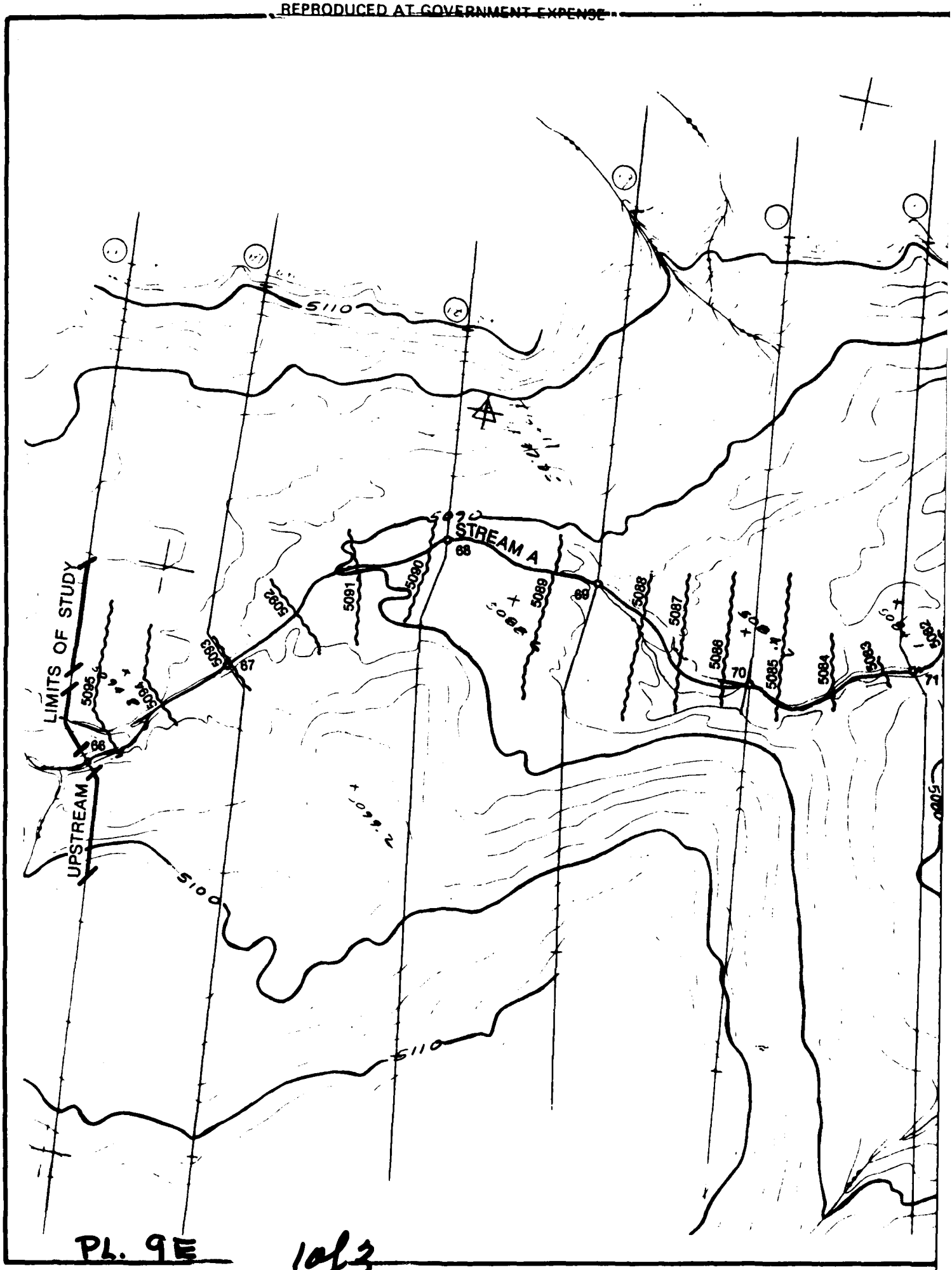
SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



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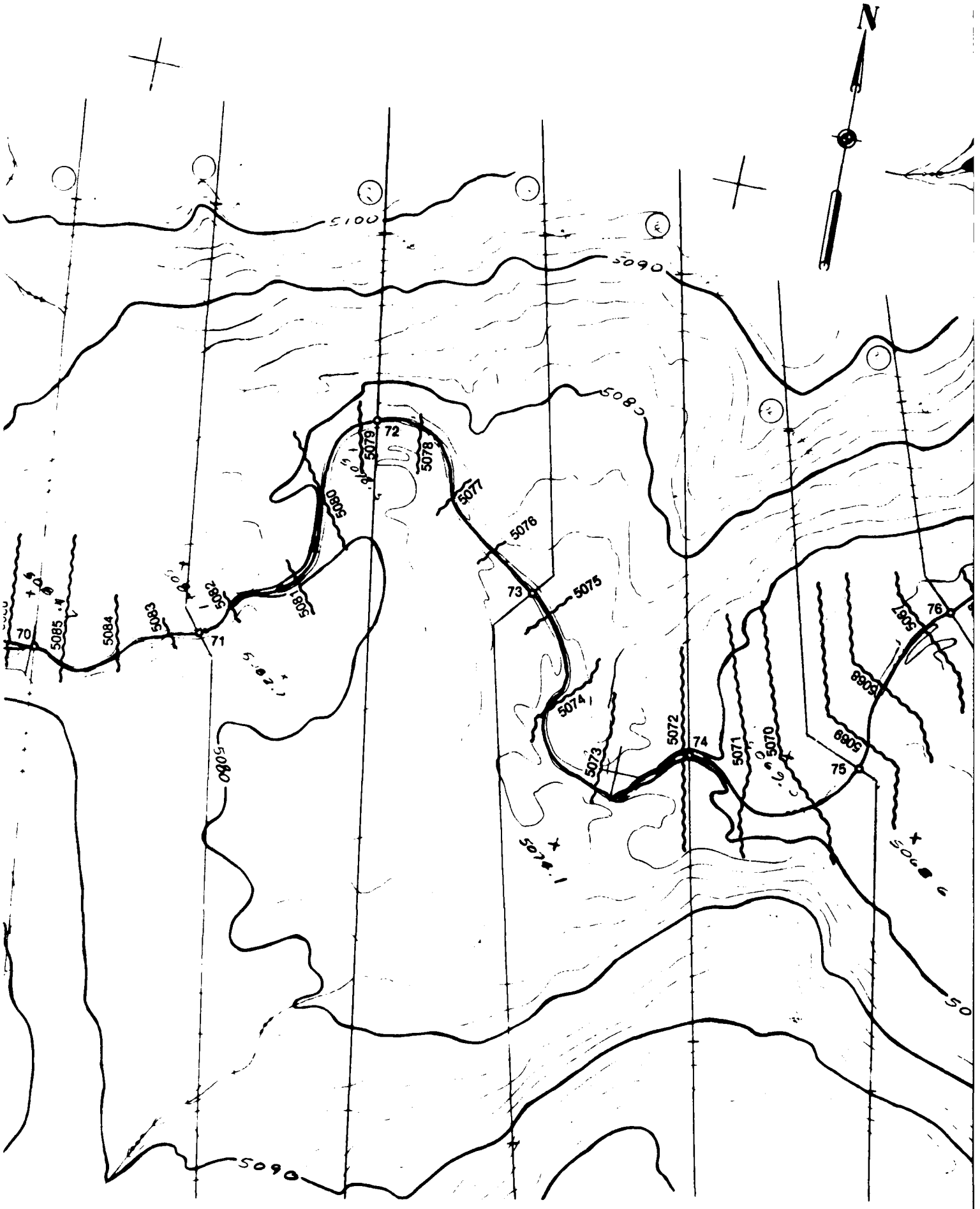

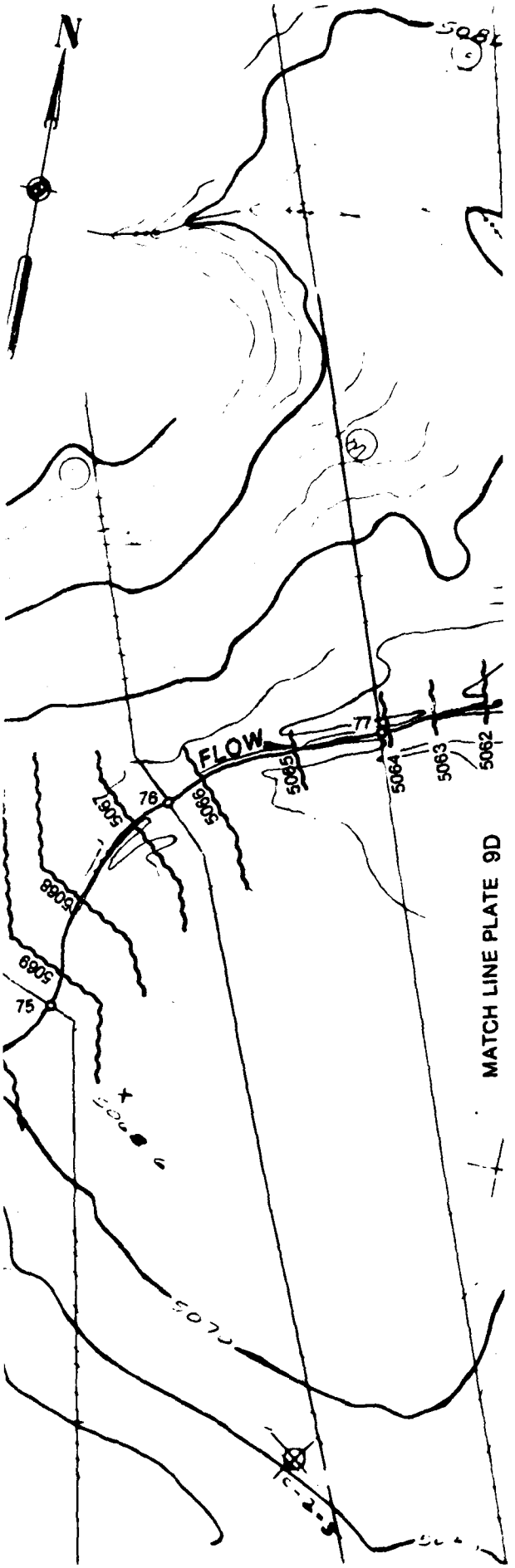

LEGEND:

500 YEAR FLOOD — 100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate, see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 3.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A

FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA

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AD-A151 769 CACHE LA POUDRE RIVER BASIN LARIMER - WELD COUNTIES COLORADO VOLUME 4 FLOOD PLAIN ANALYSIS FOSSIL CREEK(U) CORPS OF ENGINEERS OMAHA NE OCT 81 2/3

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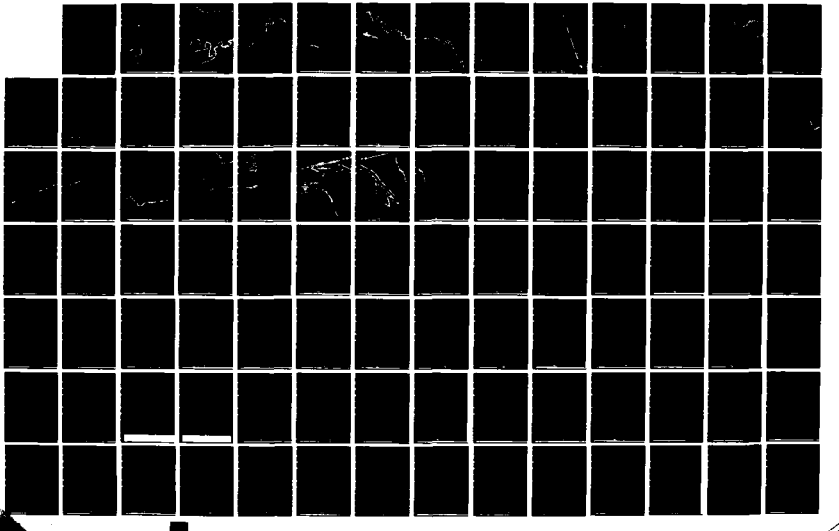

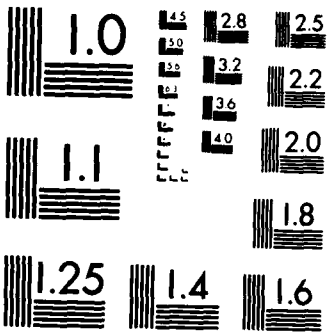

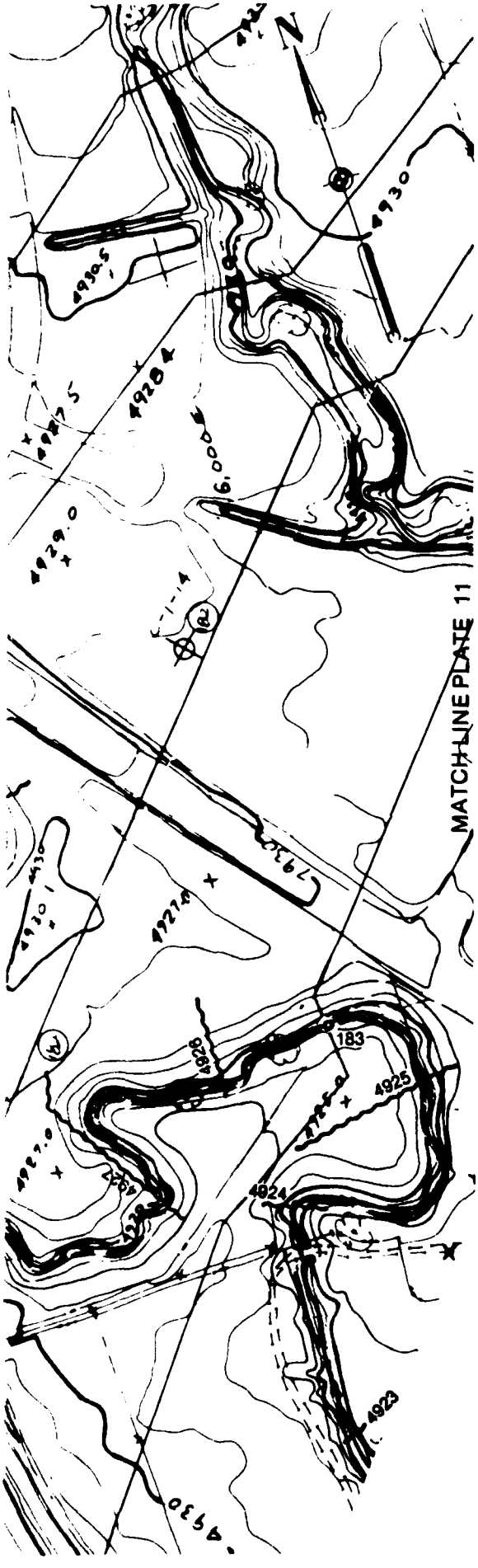

LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate. see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 2.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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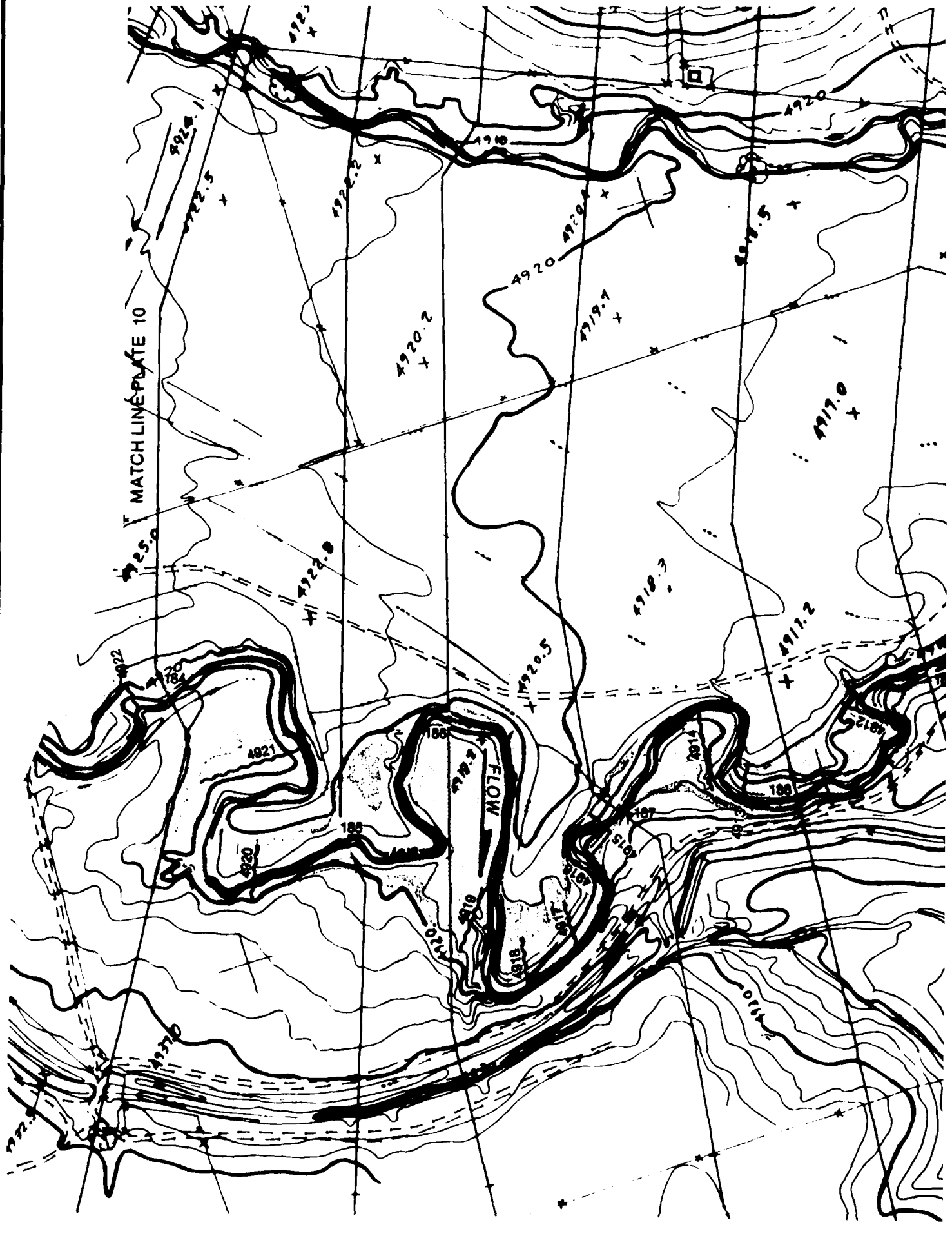

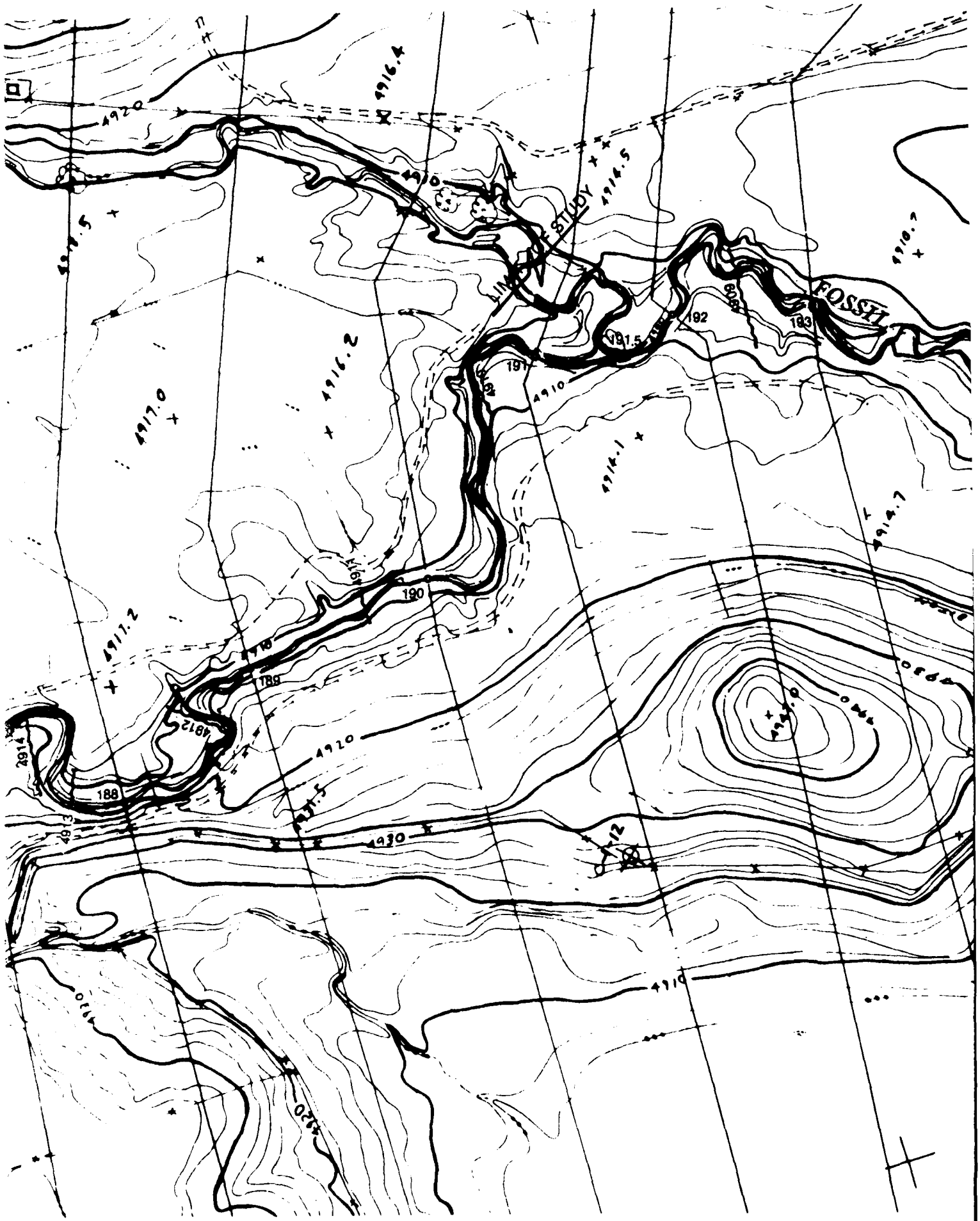

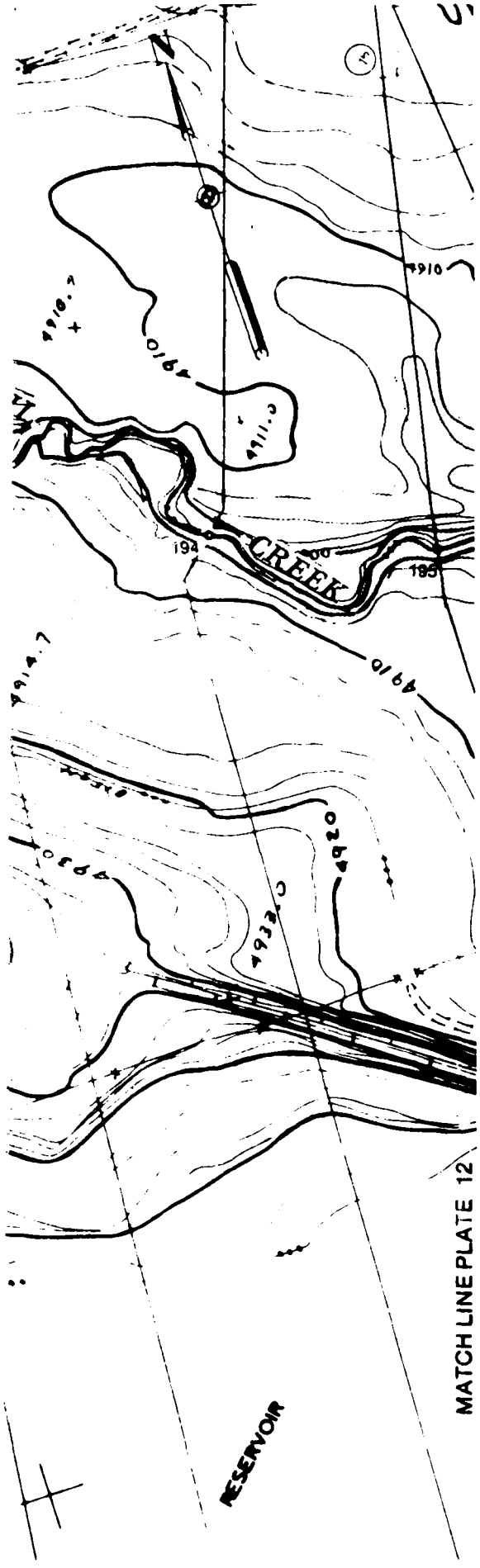

LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

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2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 2.
4. Flooded areas represent existing conditions

SCALE IN FEET

200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA

OCTOBER 1981

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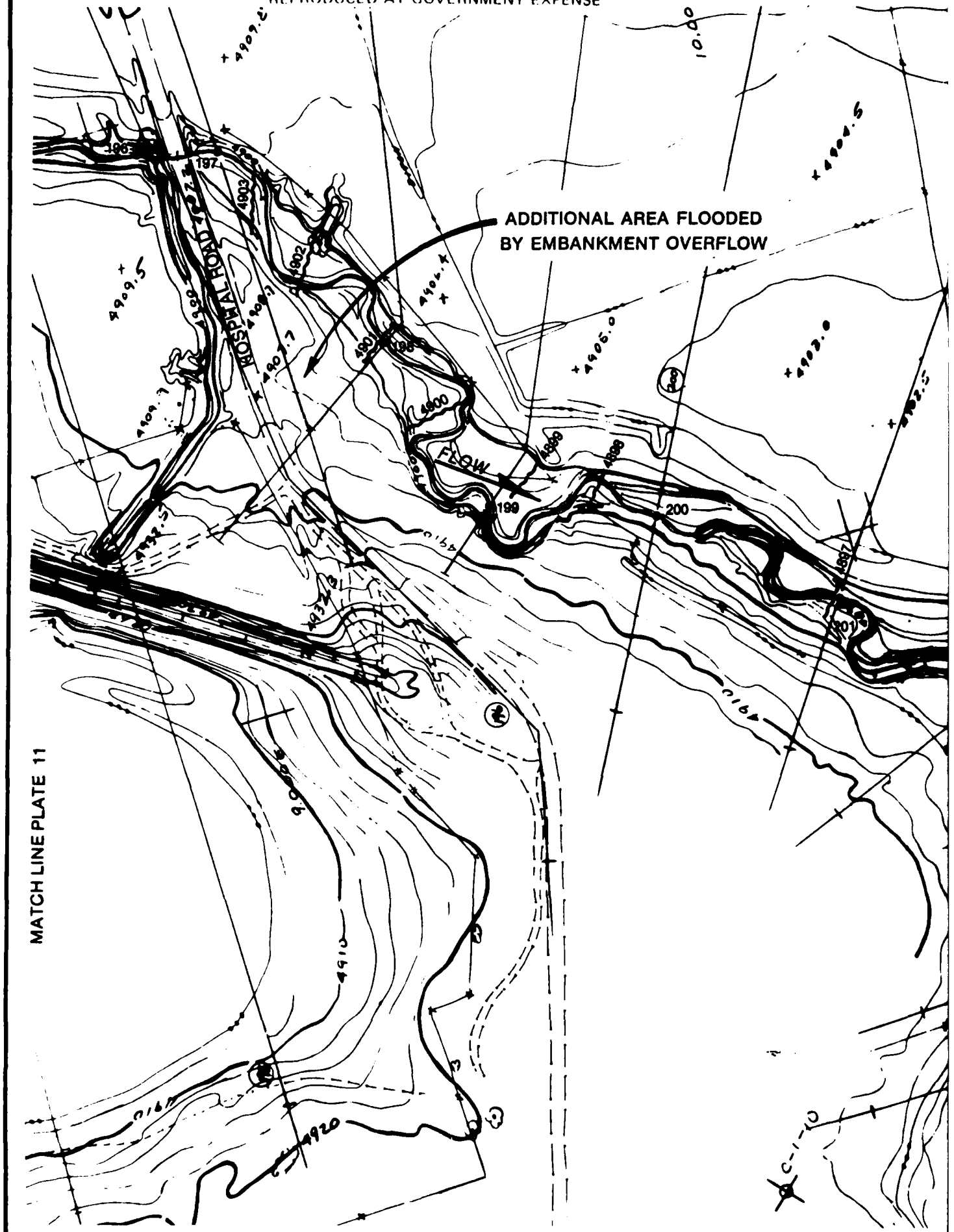
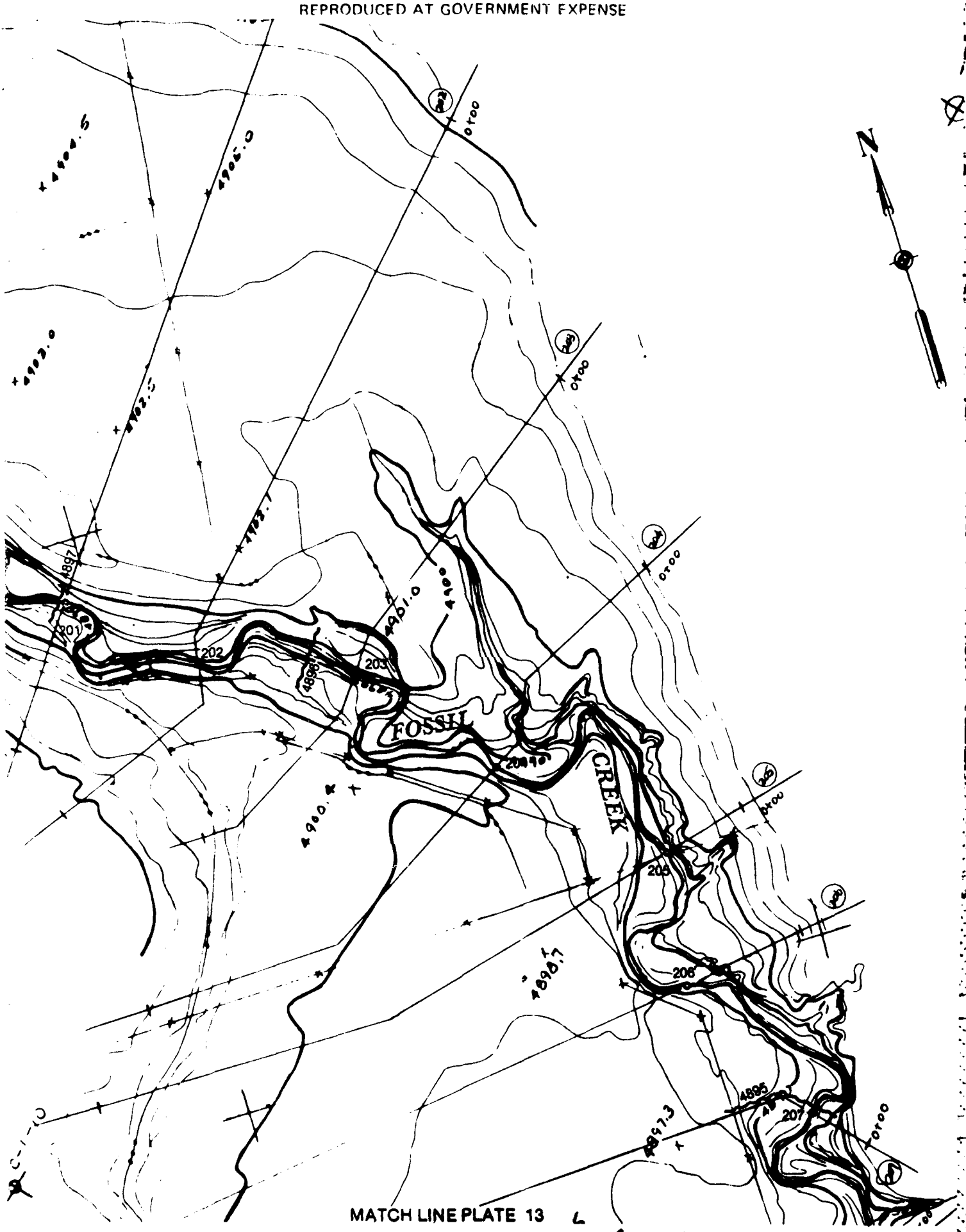
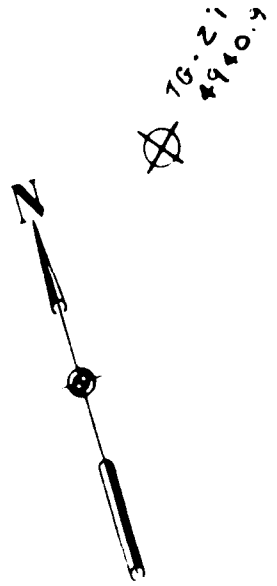


PL. 12 1 of 3

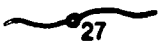


MATCH LINE PLATE 13



LEGEND:

100 Year Flood Elevation Line in Feet M.S.L.



Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate, see Plate Index Map (Plate 4).
2. For Profile, see Plates 22-39.
3. For flood elevations at the reference points, see Table 2.
4. Flooded areas represent existing conditions

SCALE IN FEET

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO
FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA

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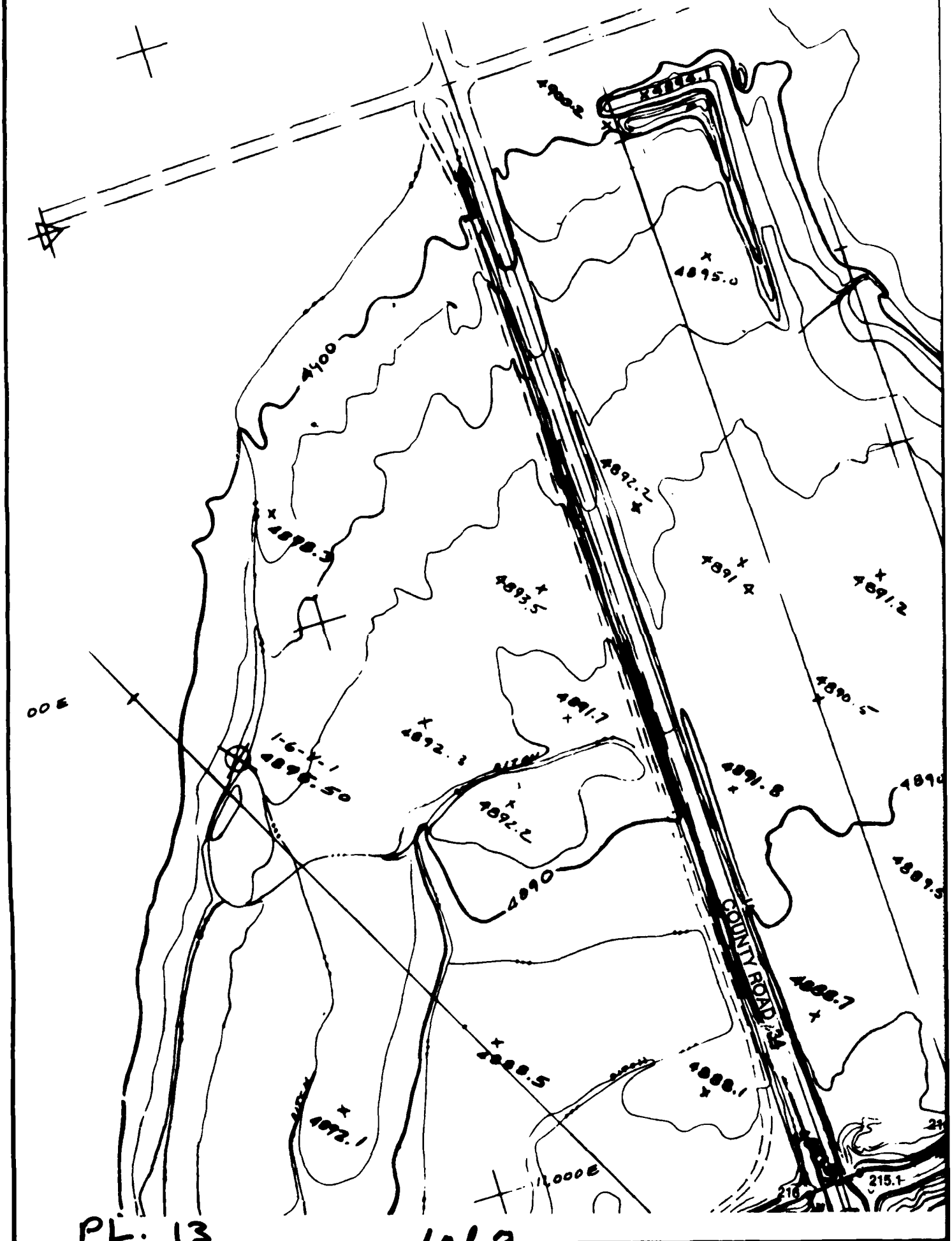
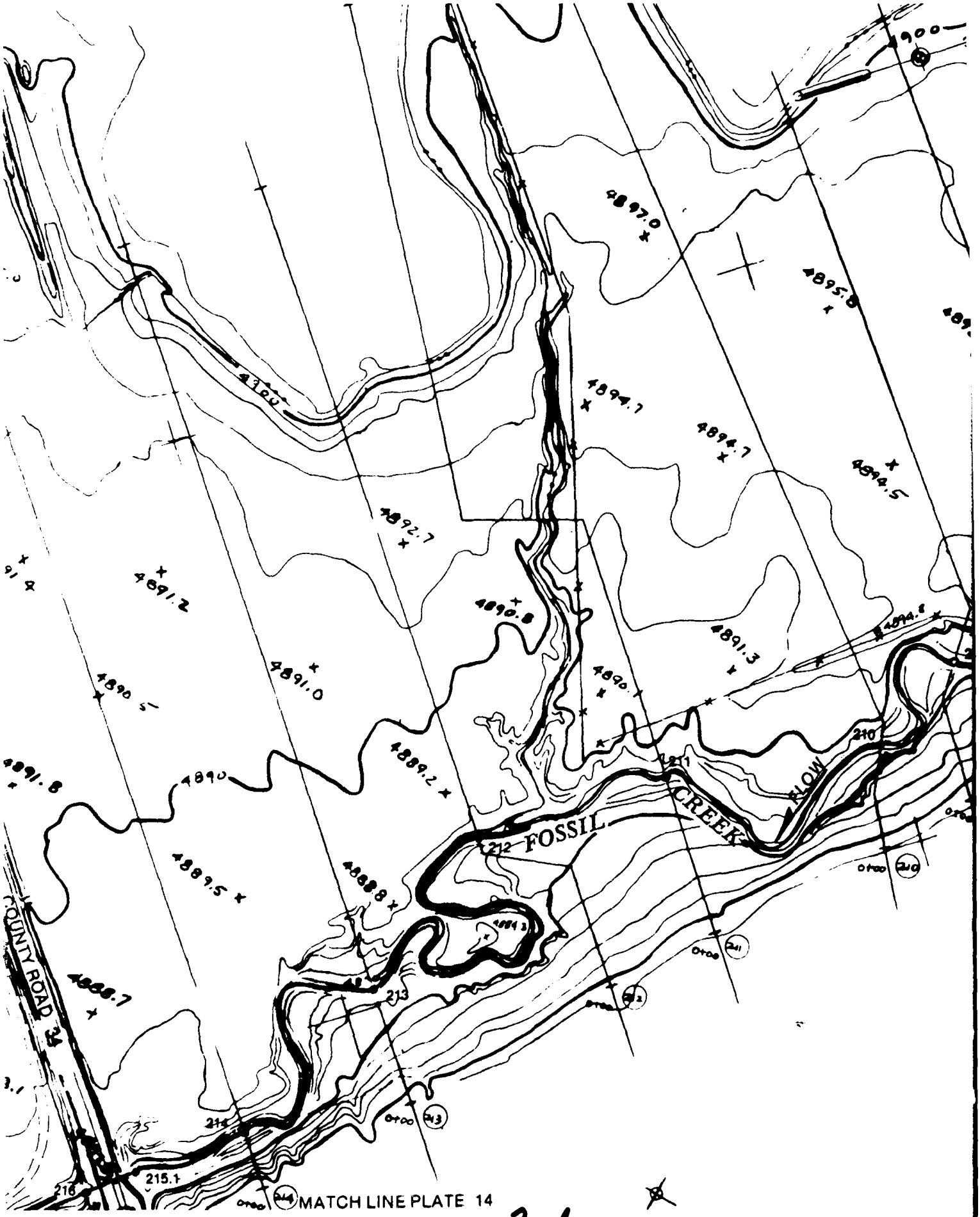
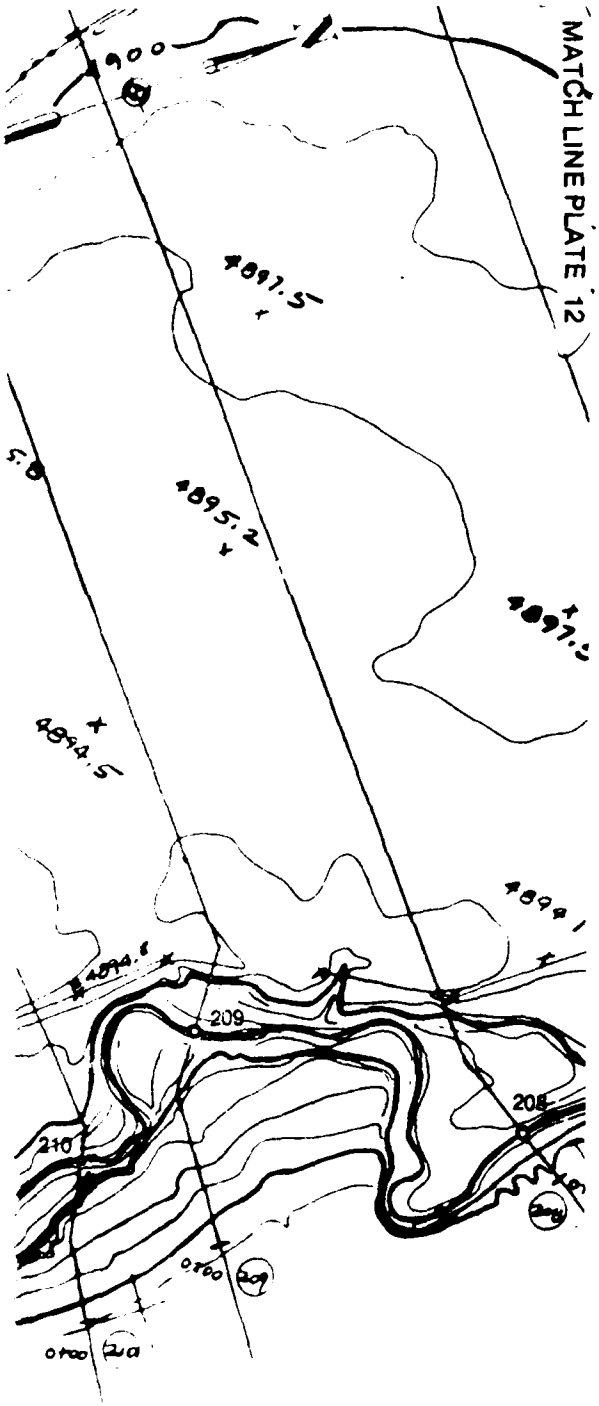
VOLUME IV

PLATE 12



PL. 13





LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

1. For the location of this plate see Plate Index Map (Plate 4).
2. For Profile, see Plates 22 - 39.
3. For flood elevations at the reference points, see Table 2.
4. Flooded areas represent existing conditions

SCALE IN FEET

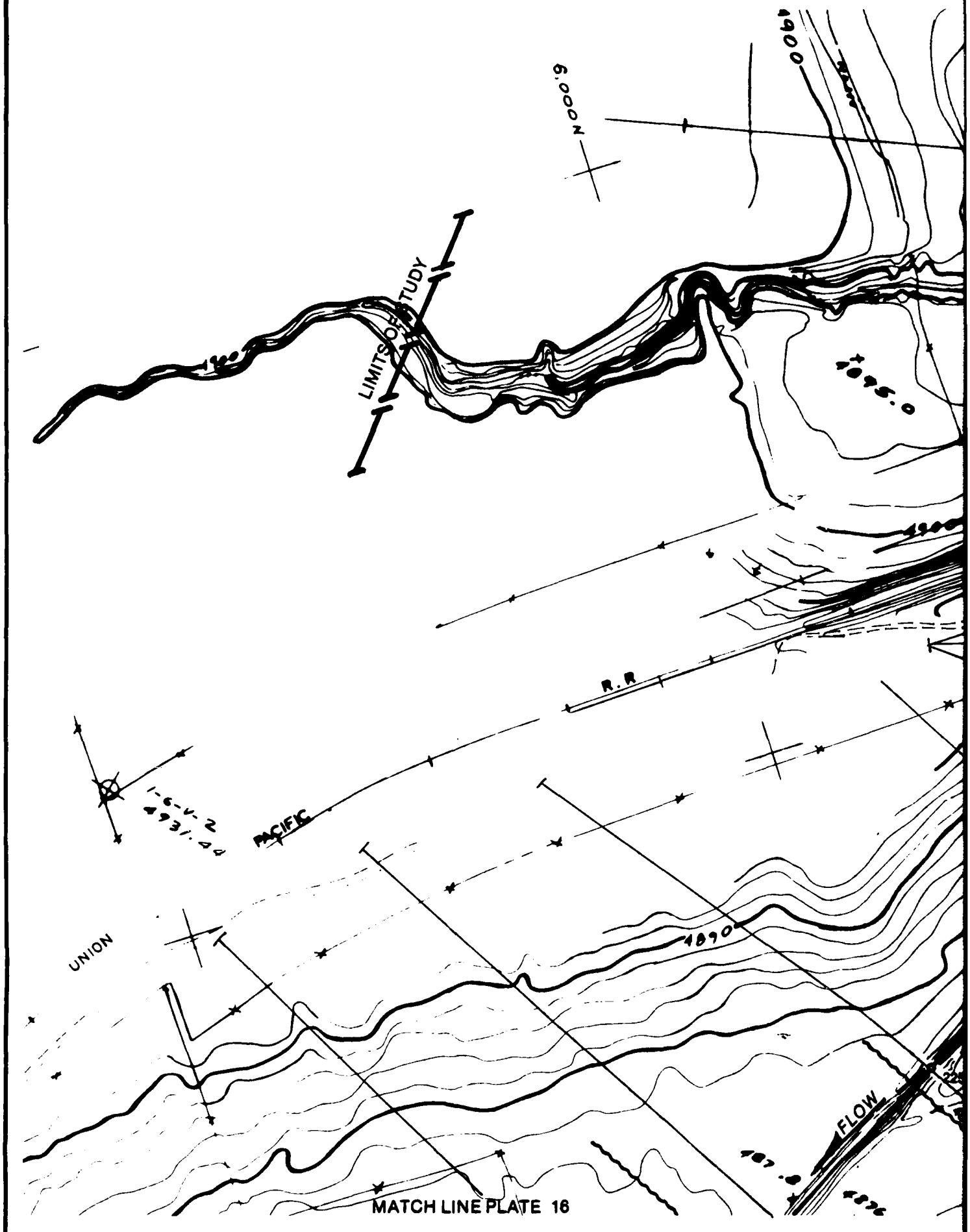
200 0 200 400

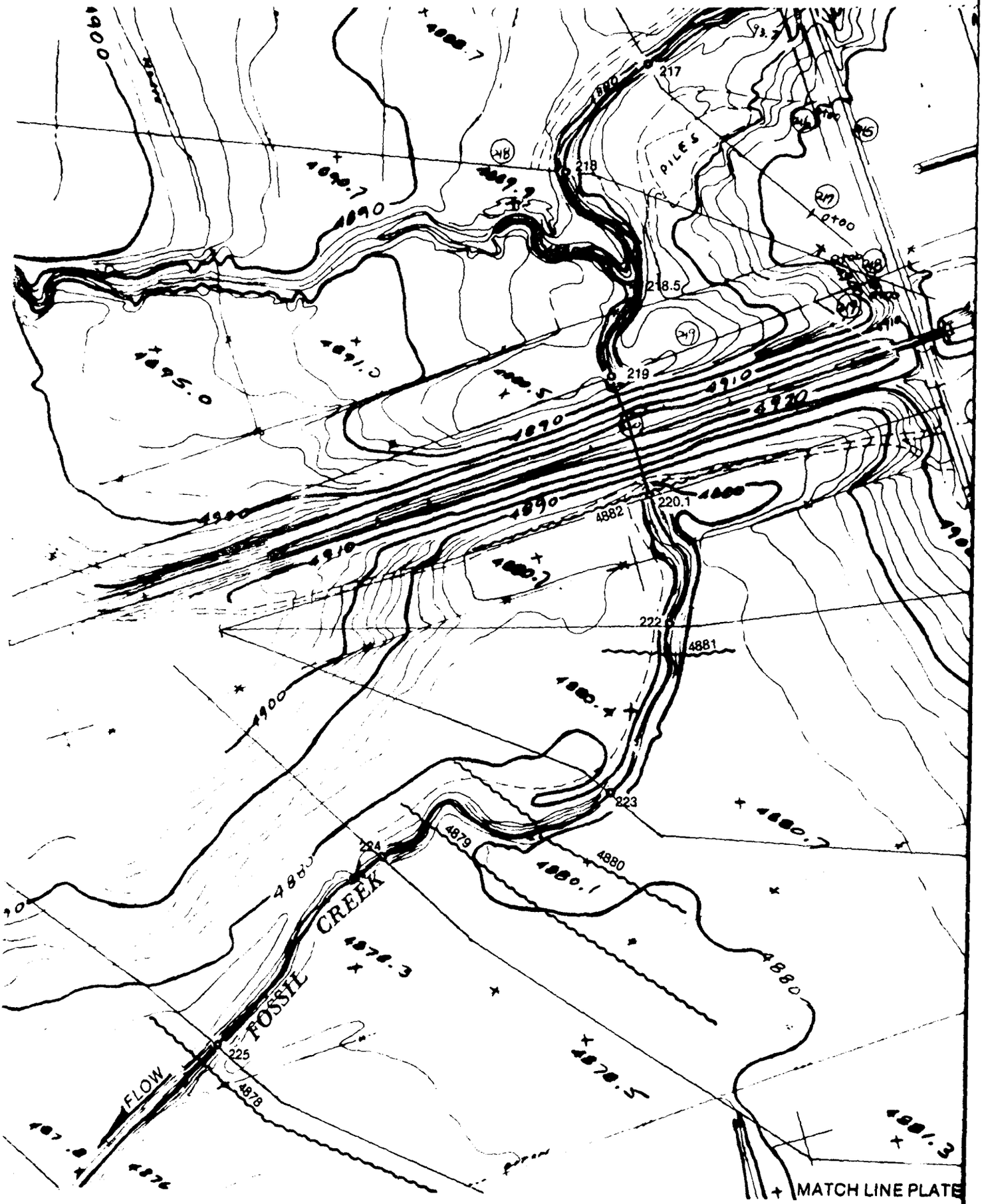
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

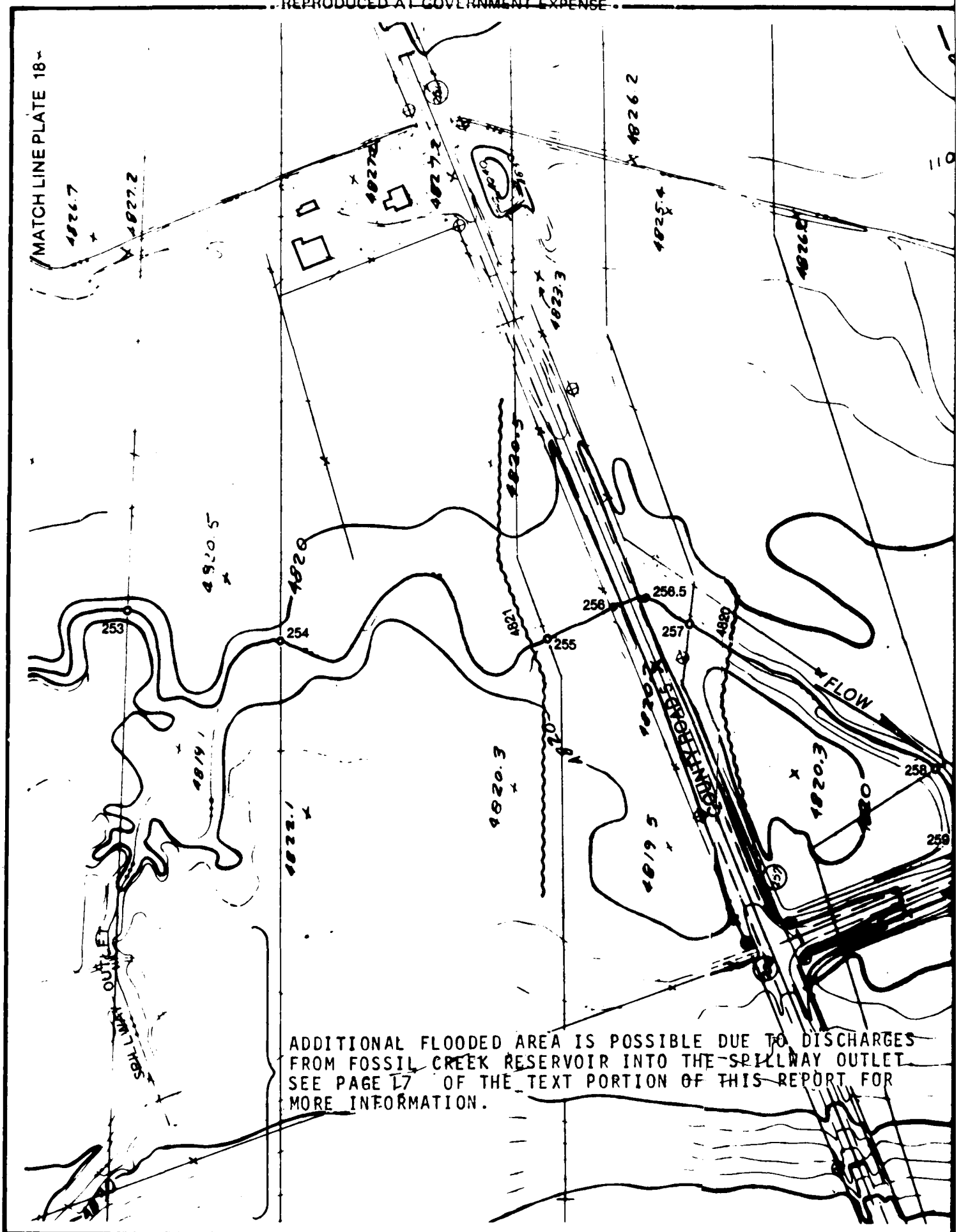
U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

3 of 3

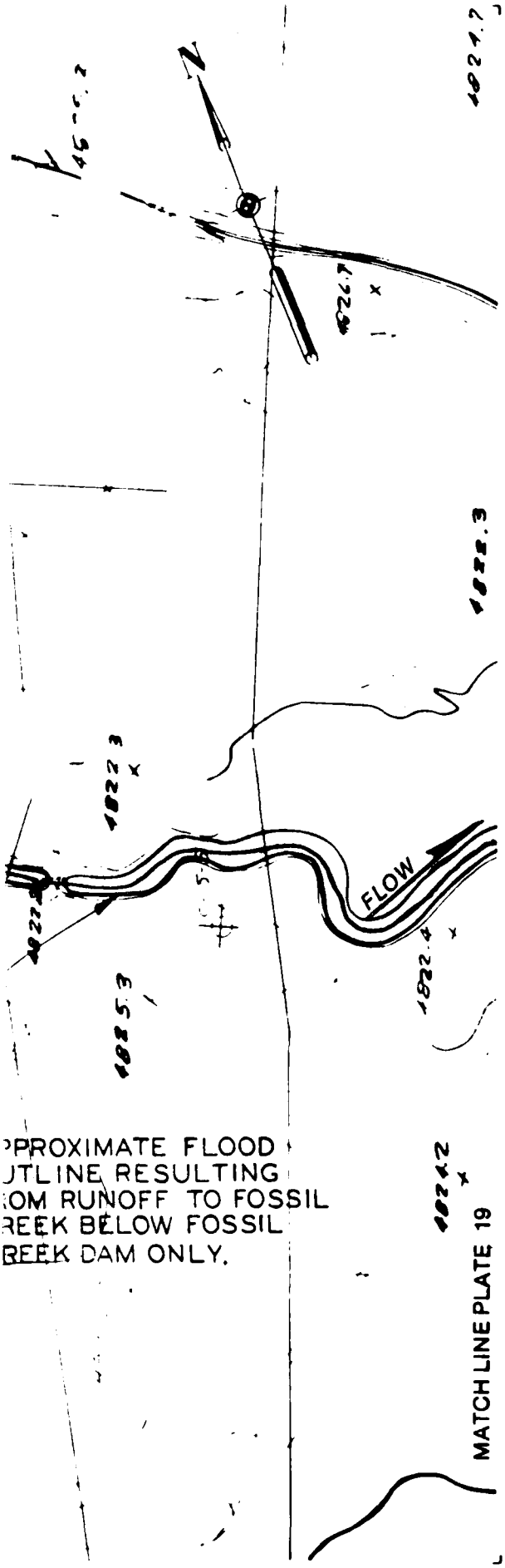




2 of 3



ADDITIONAL FLOODED AREA IS POSSIBLE DUE TO DISCHARGES FROM FOSSIL CREEK RESERVOIR INTO THE SPILLWAY OUTLET. SEE PAGE 17 OF THE TEXT PORTION OF THIS REPORT FOR MORE INFORMATION.



PPROXIMATE FLOOD
UTLINE RESULTING
OM RUNOFF TO FOSSIL
REEK BELOW FOSSIL
REEK DAM ONLY.

LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

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SCALE IN FEET

200 0 200 400

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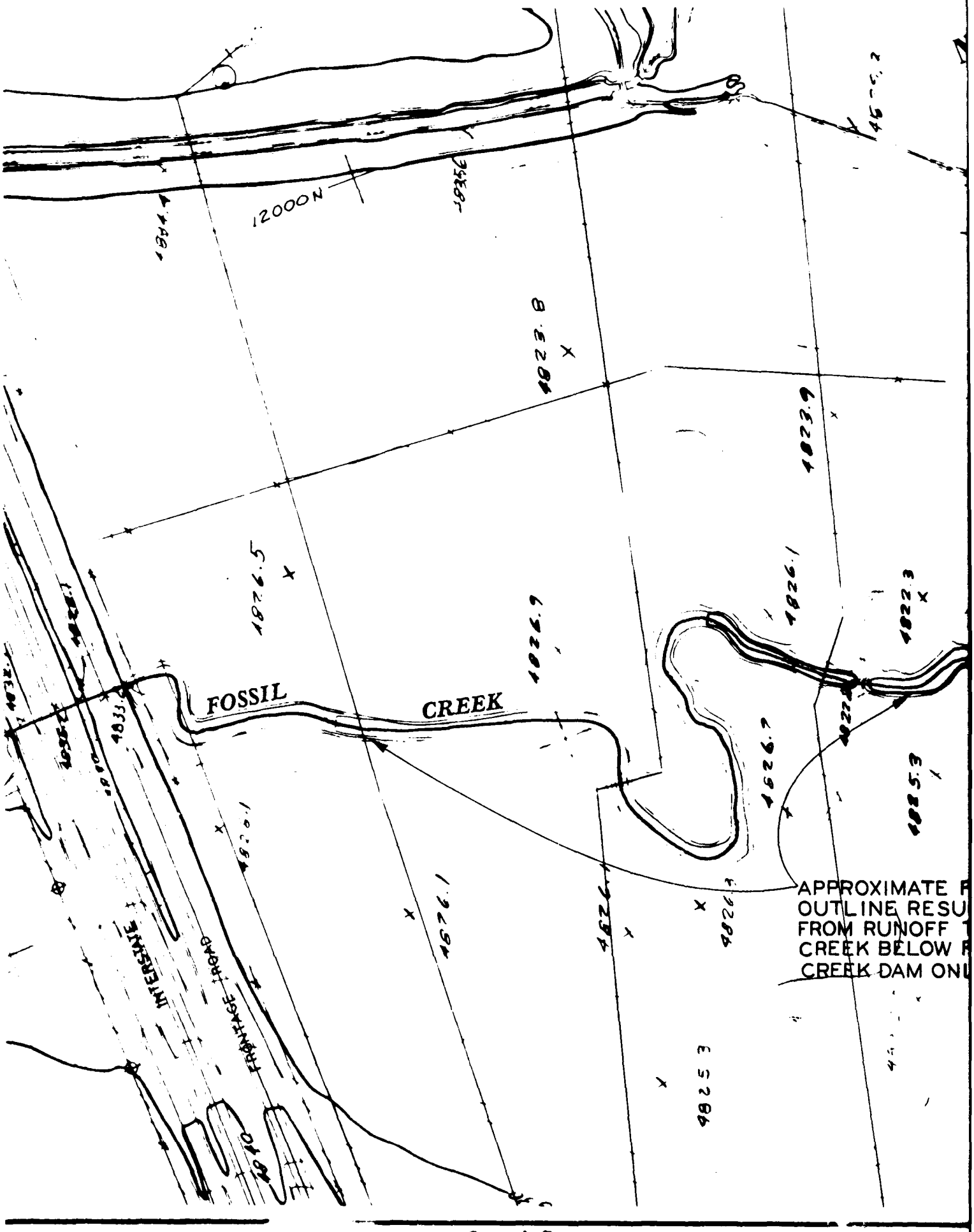
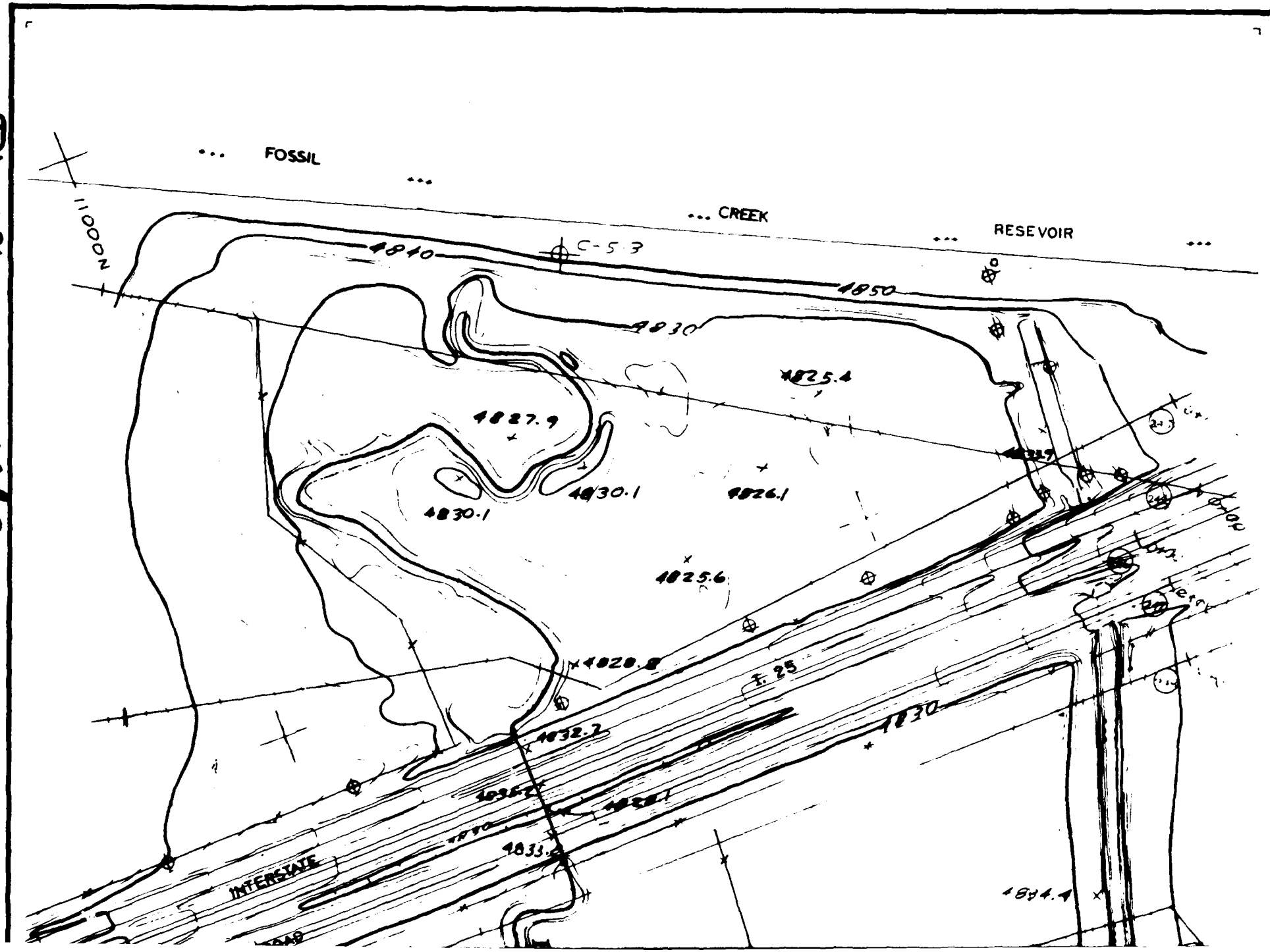
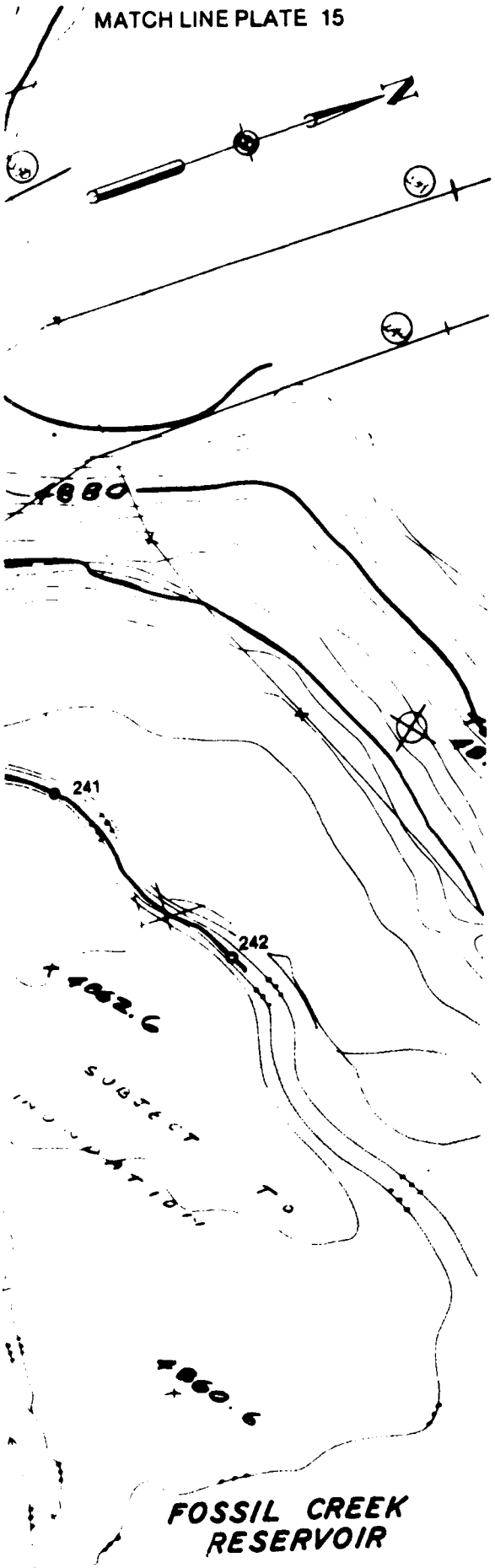
FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

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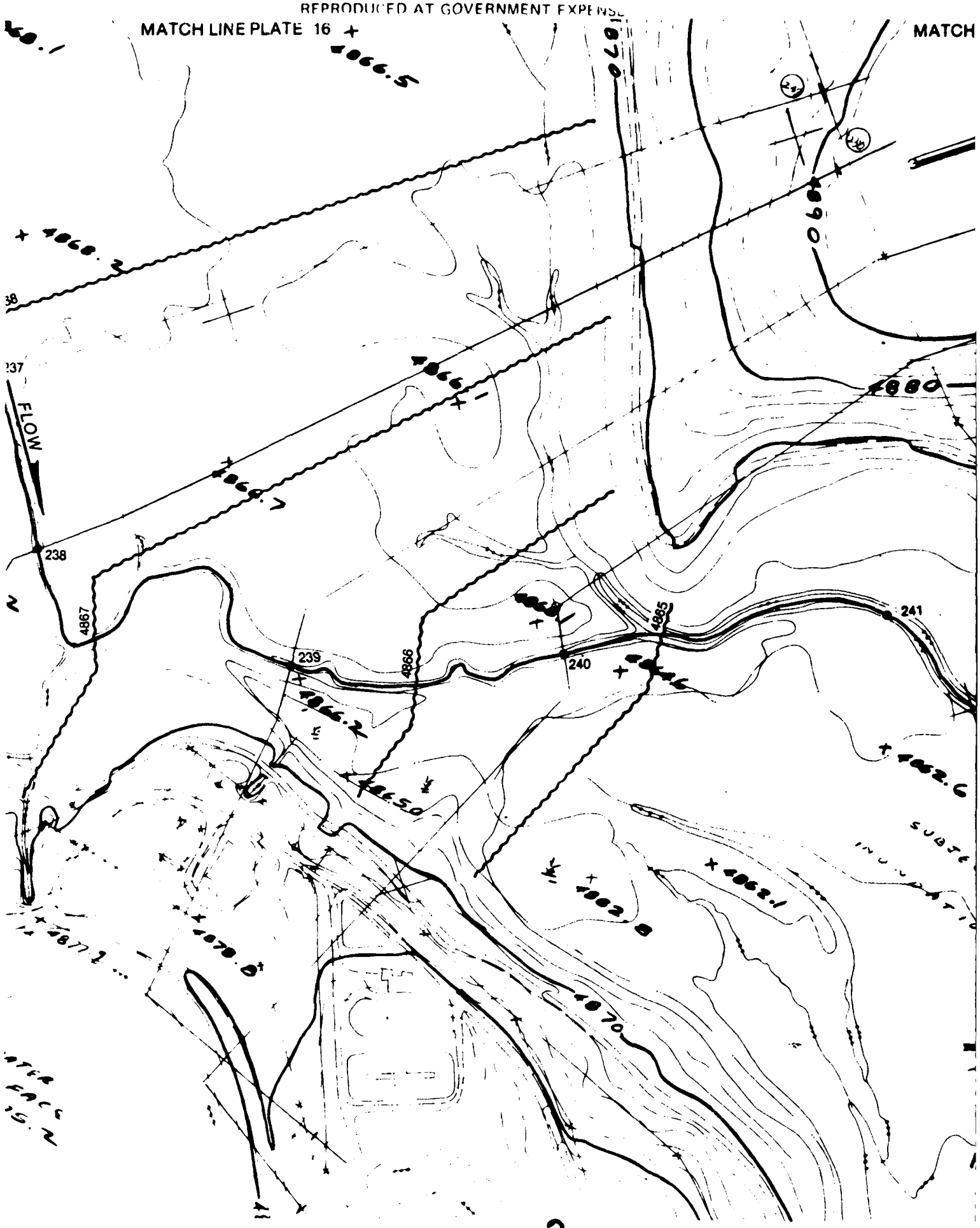
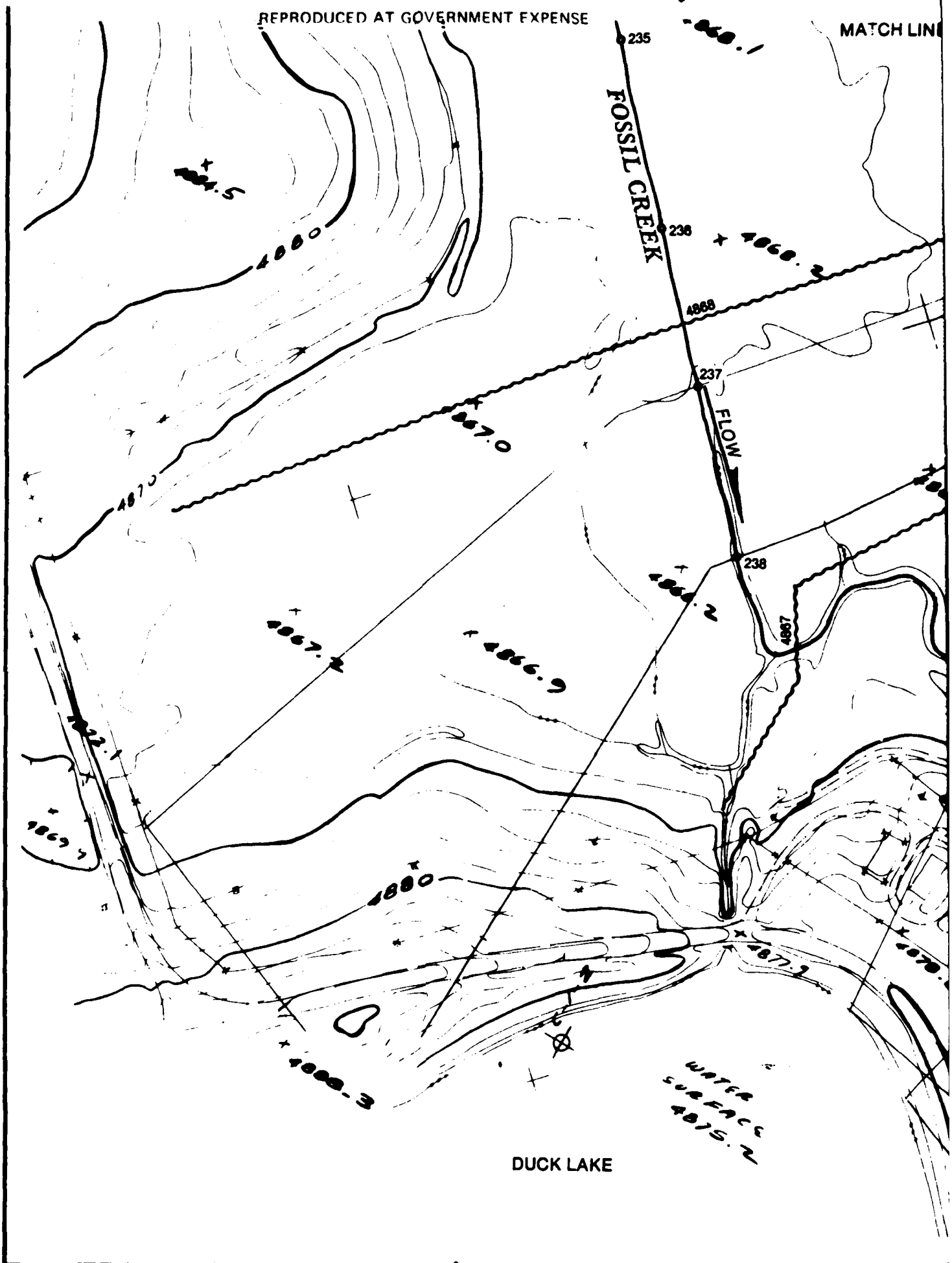
LARIMER-WELD COUNTIES, COLORADO

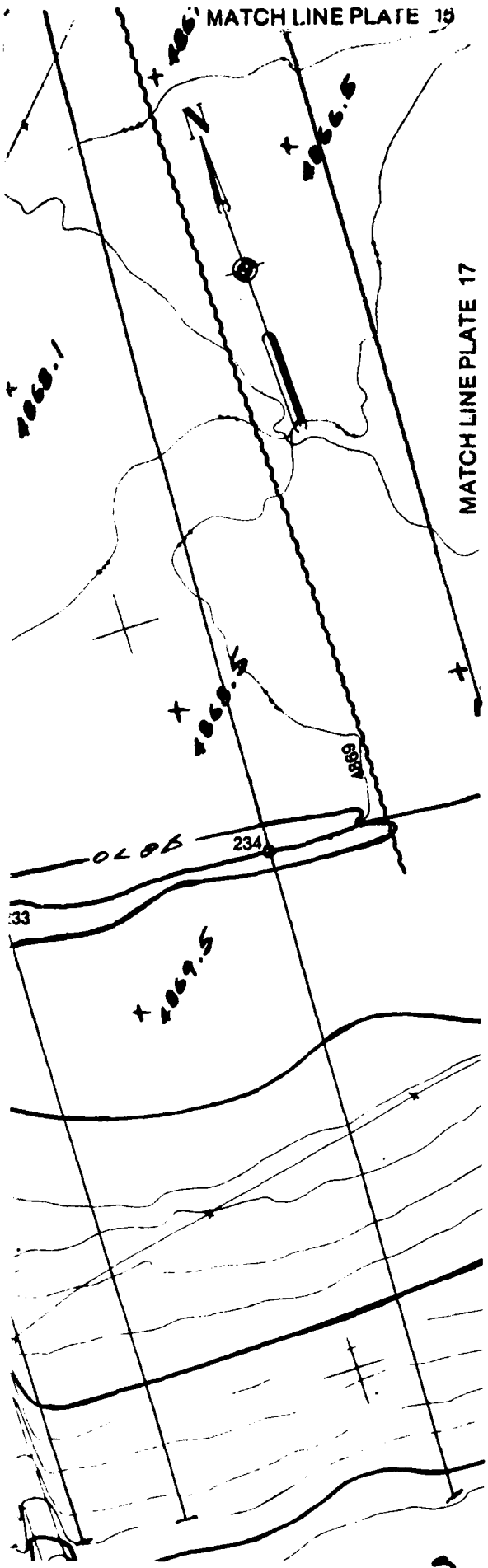
FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

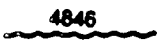
3 of 3







LEGEND:



100 Year Flood Elevation Line in Feet M.S.L.

Reference Point — Also locations of surveyed cross sections

NOTES:

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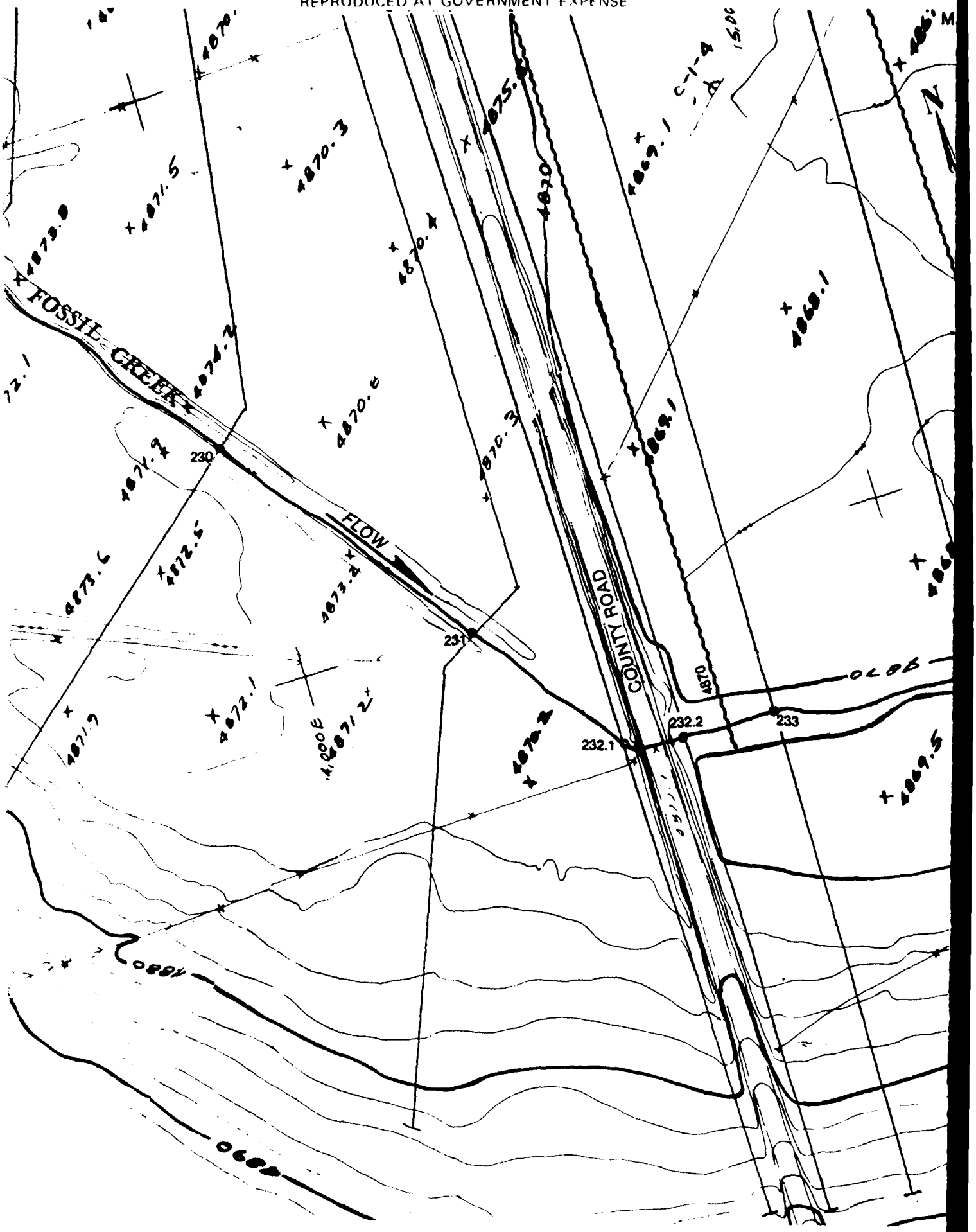
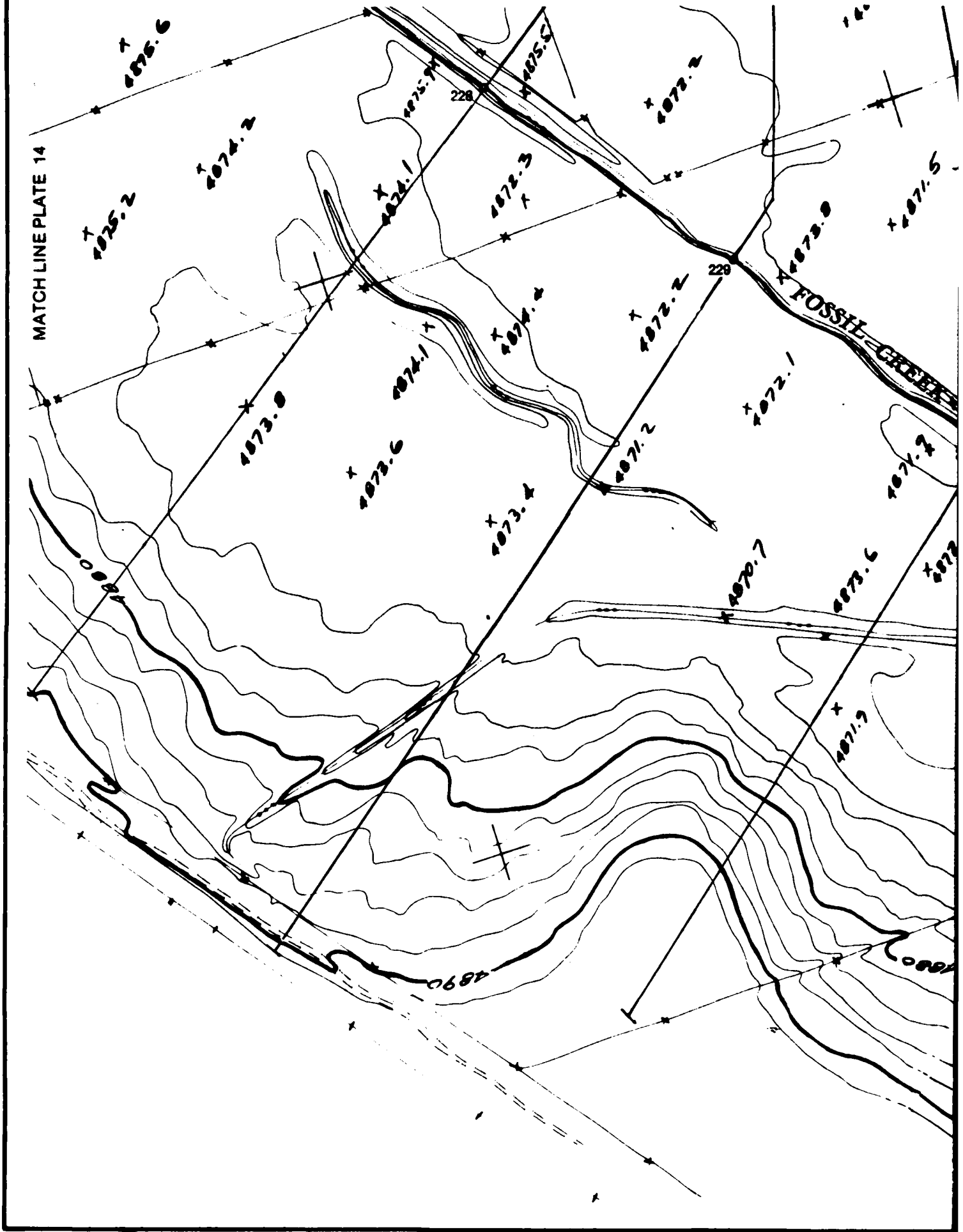
SCALE IN FEET

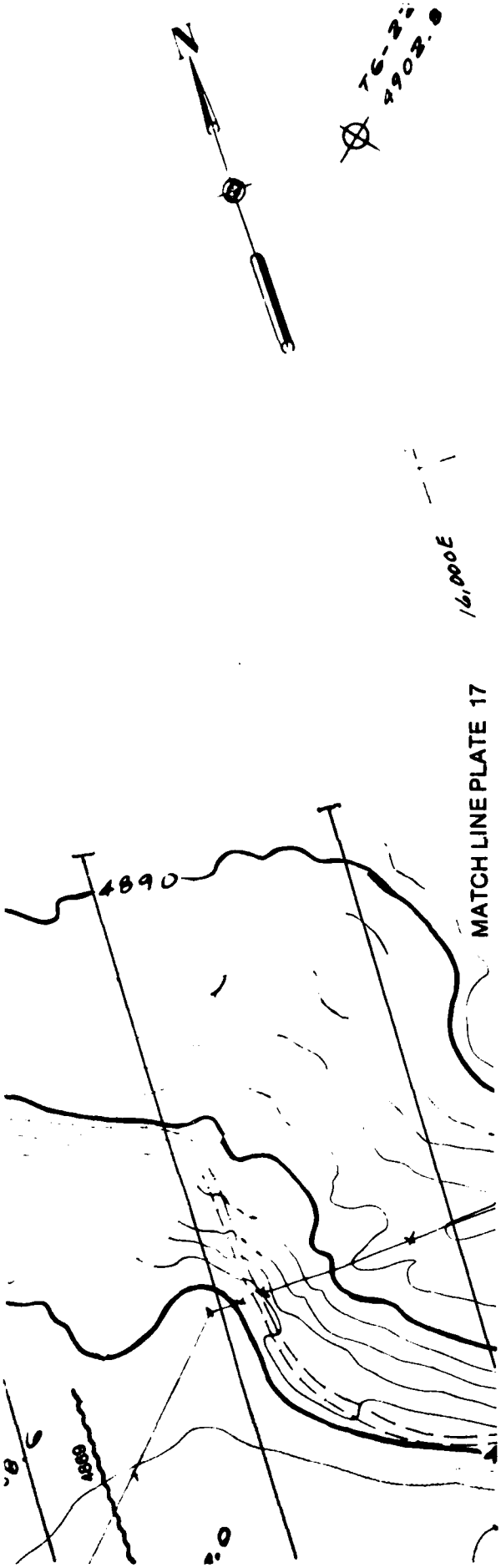
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

NOTES:

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200 0 200 400

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

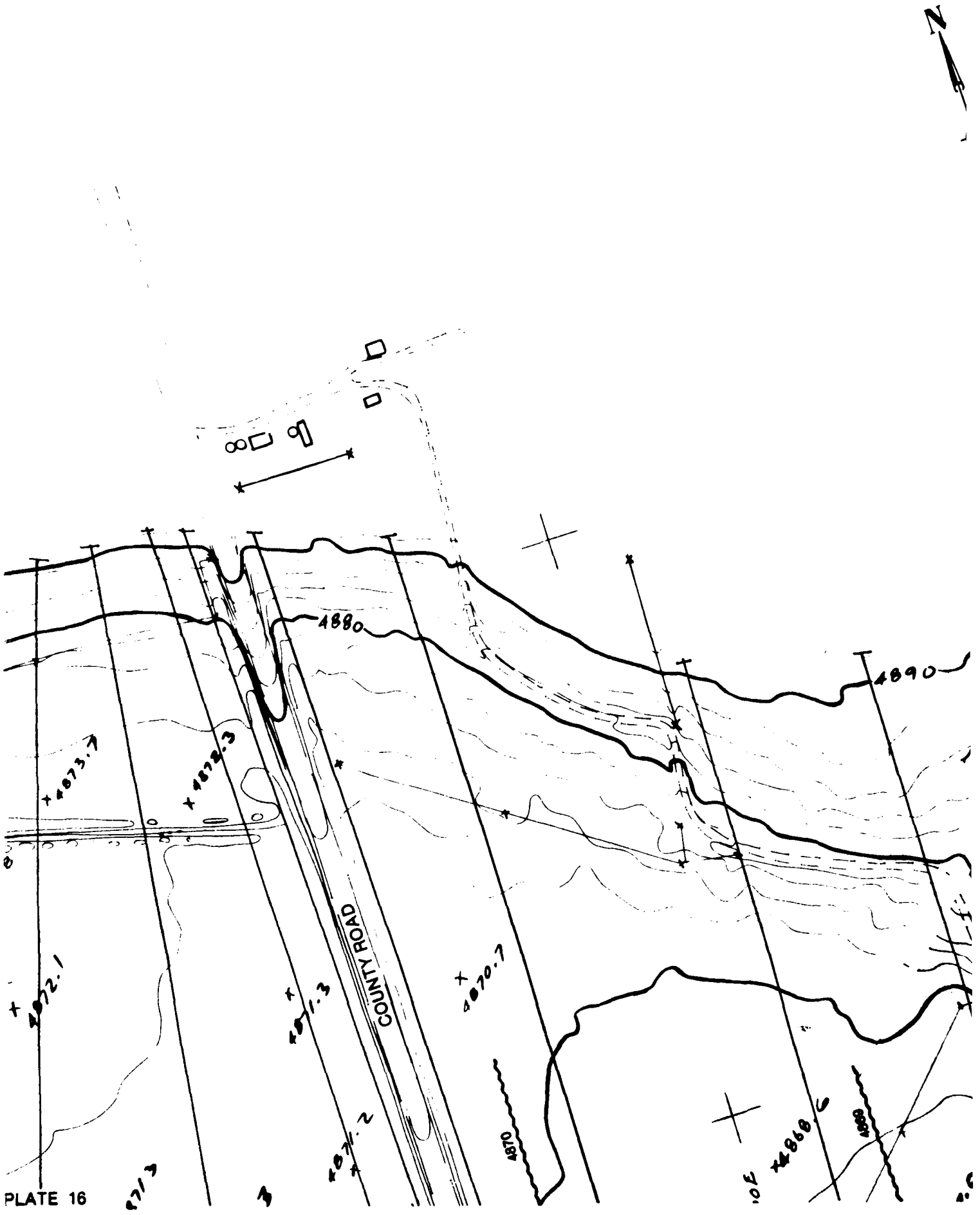
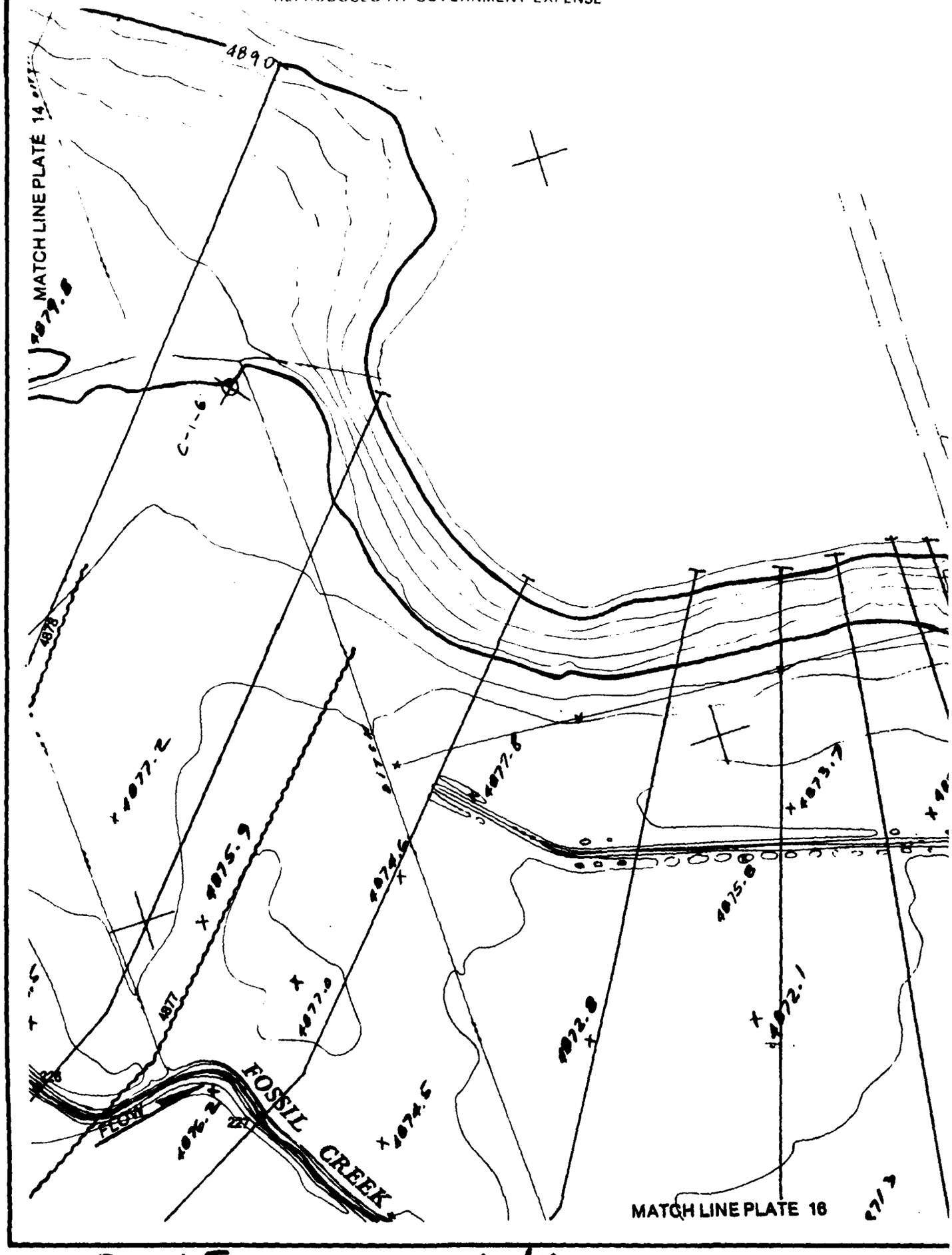
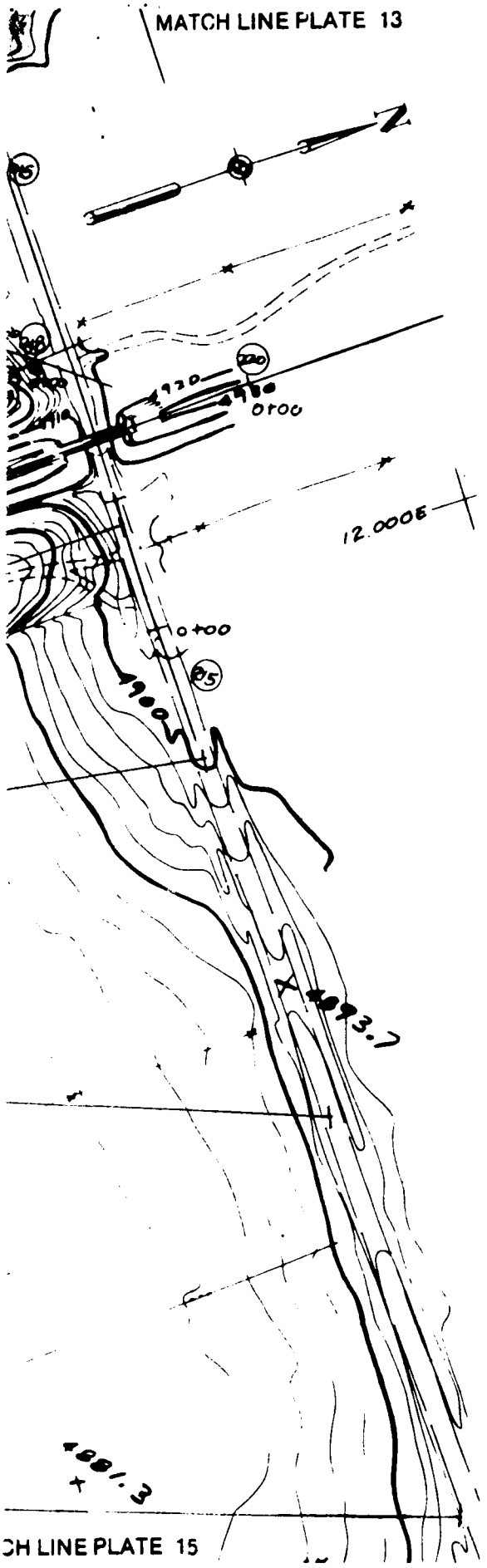


PLATE 16



PL. 15

1 of 3



LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

4846 — 100 Year Flood Elevation Line in Feet M.S.L.

27 — Reference Point — Also locations of surveyed cross sections

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SPECIAL STUDY
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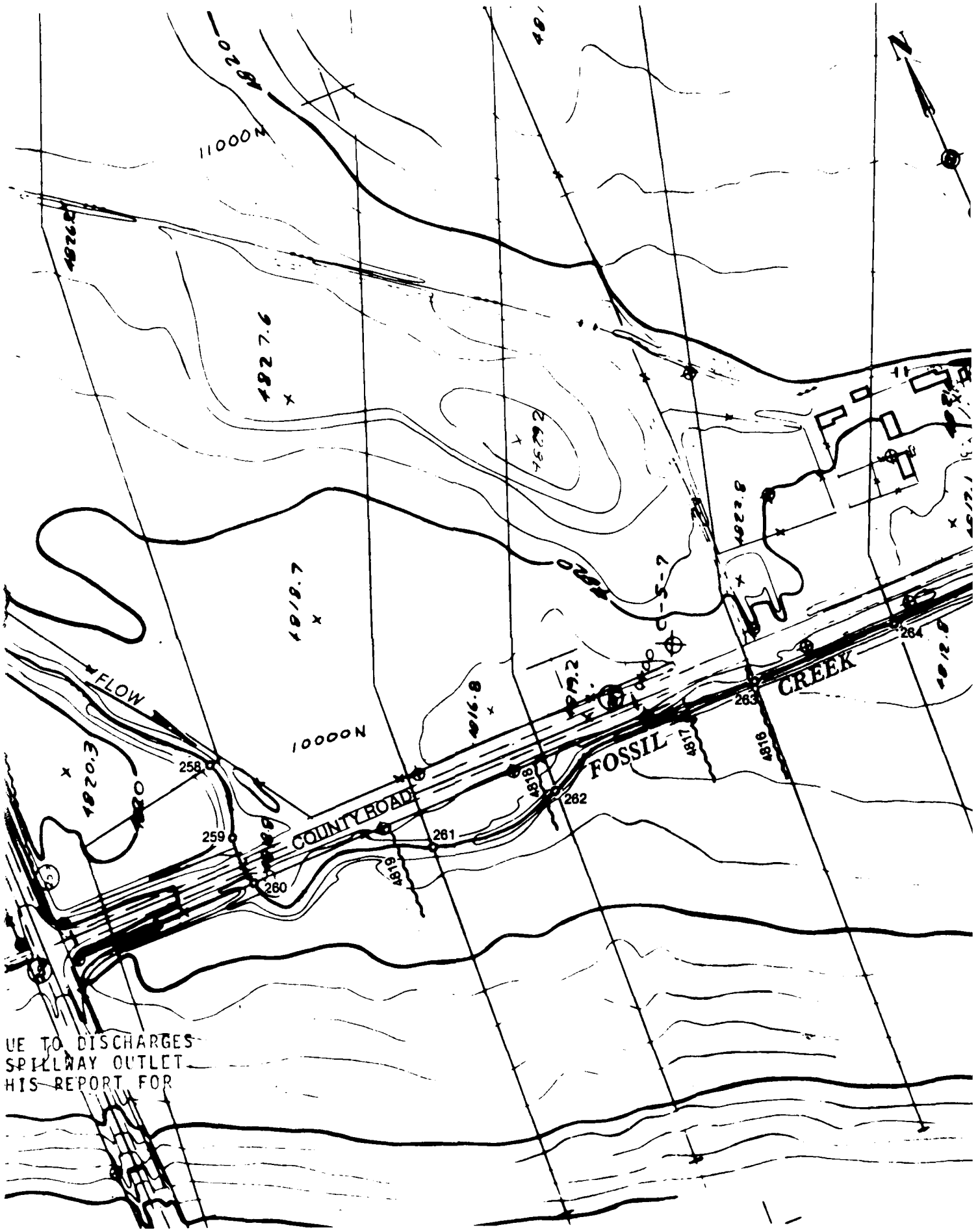
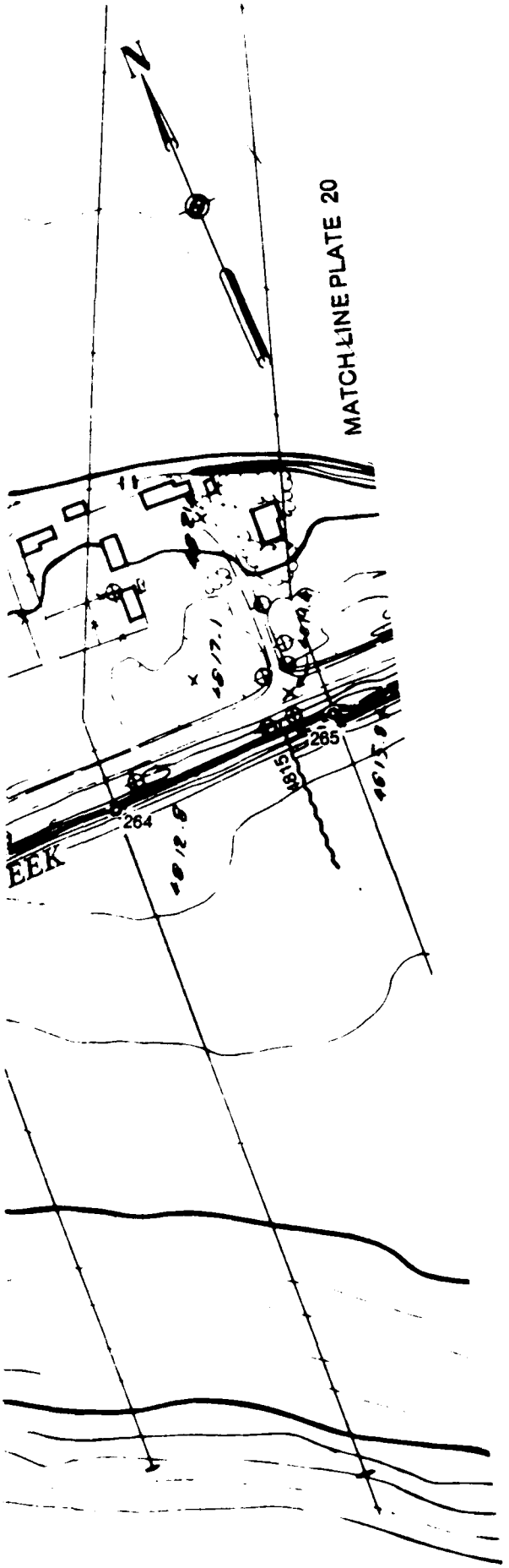
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



UE TO DISCHARGES
SPILLWAY OUTLET
HIS REPORT FOR



LEGEND:

100 Year Flood Elevation Line in Feet M.S.L.

Reference Point — Also locations of surveyed cross sections

NOTES:

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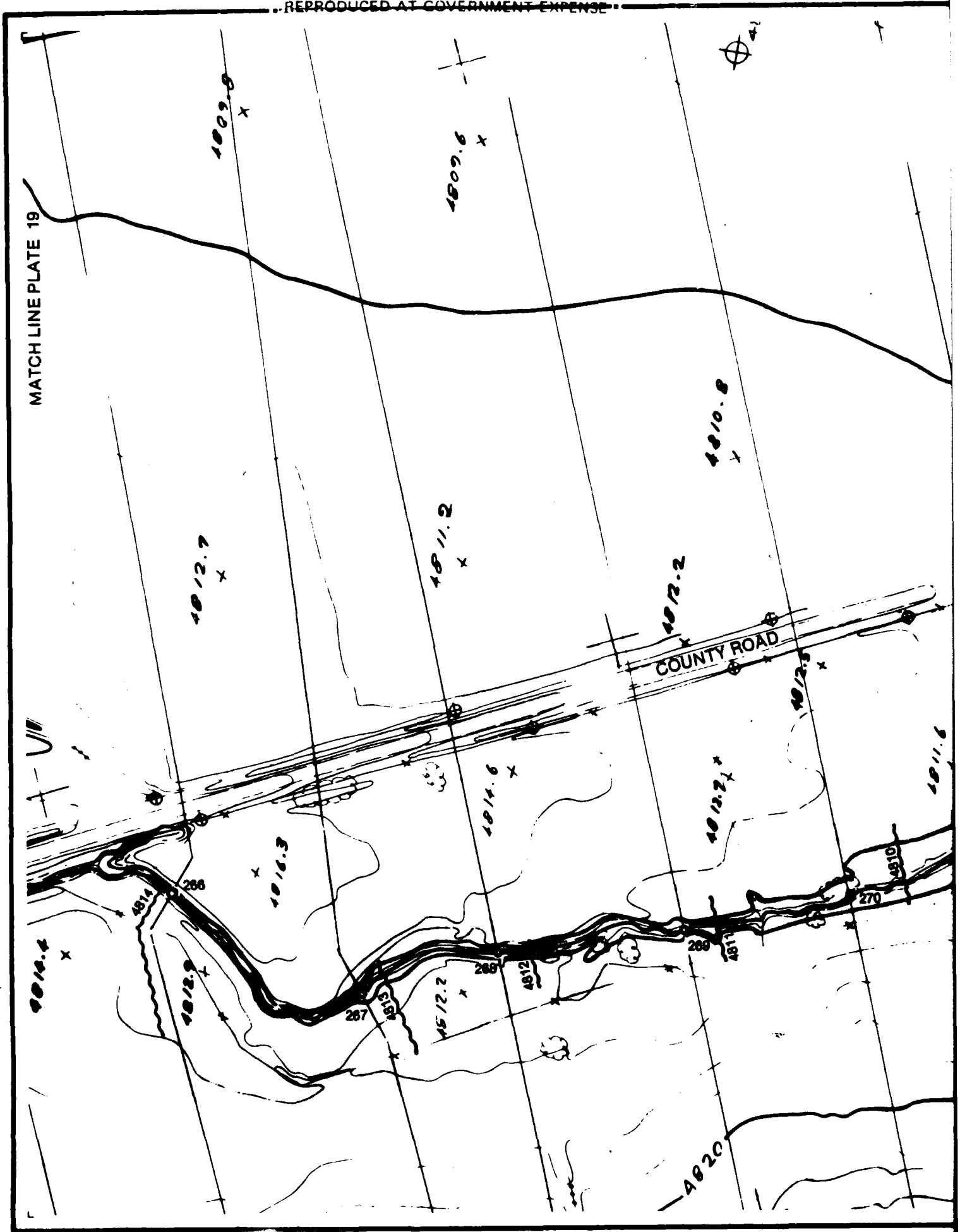
SCALE IN FEET

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

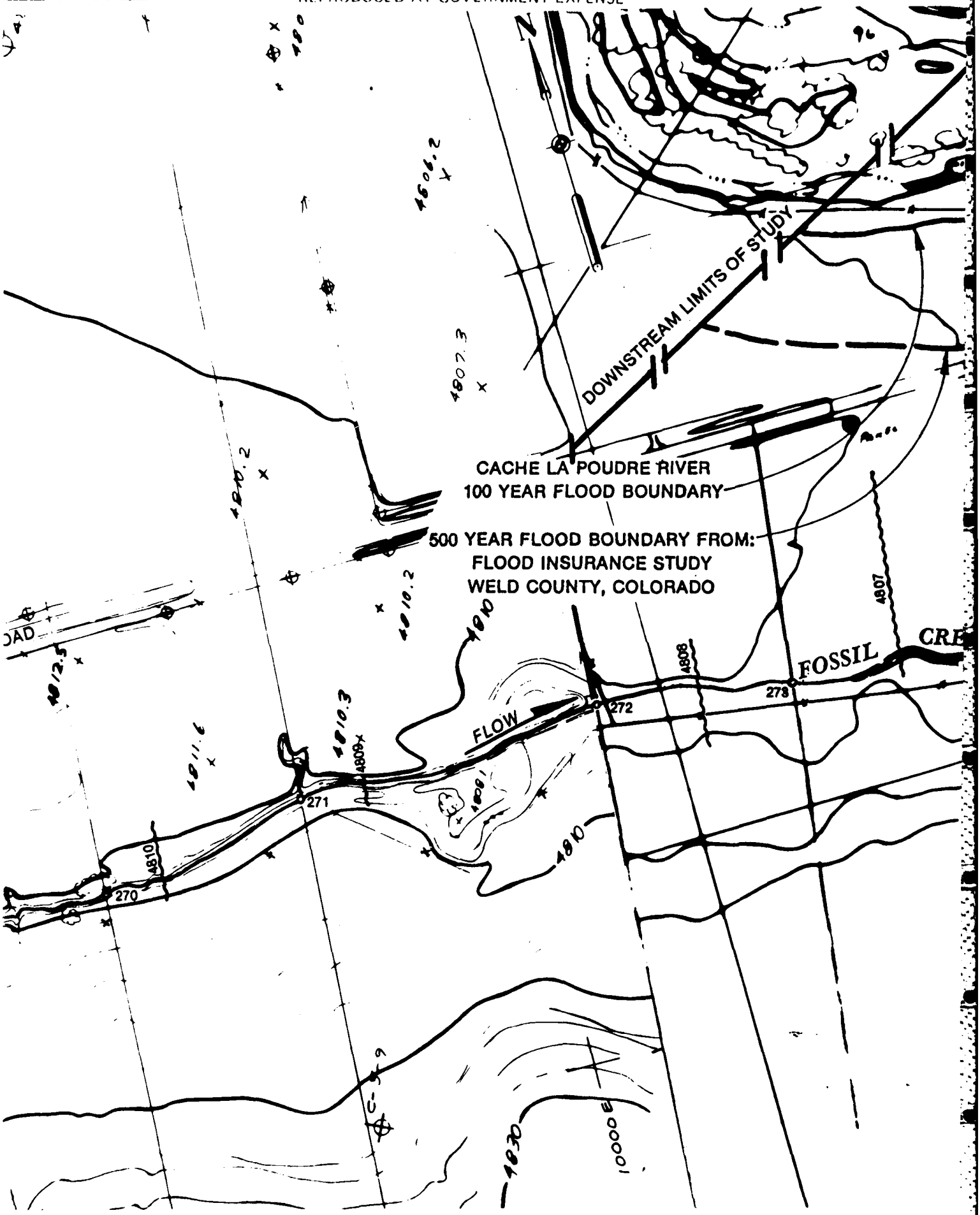
FOSSIL CREEK
FLOODED AREAS

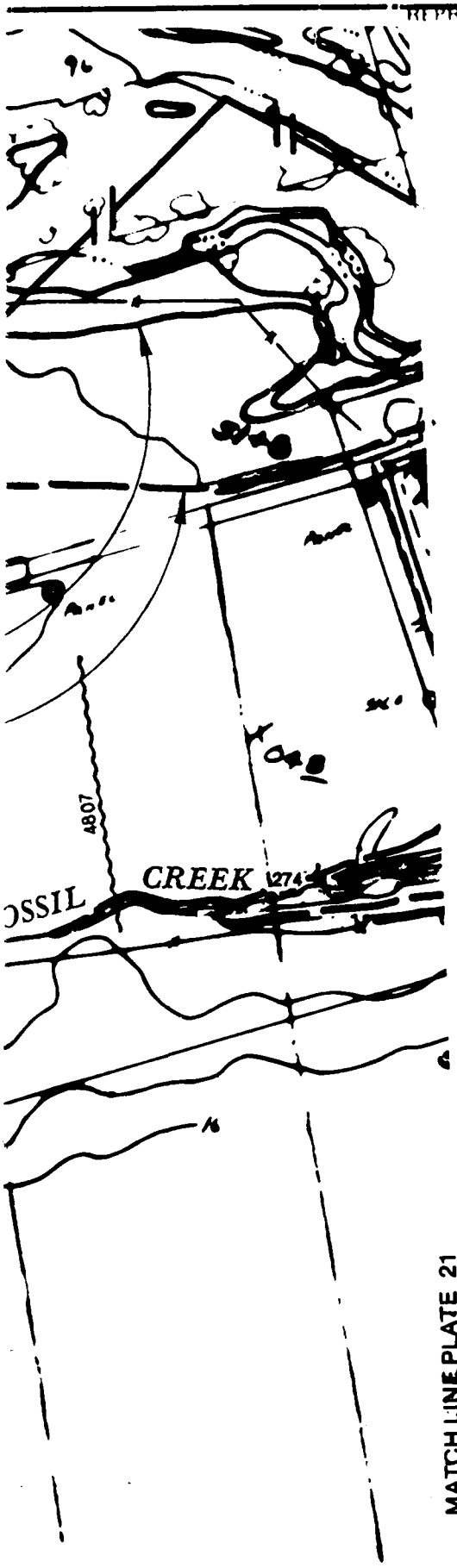
U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

3 of 3



PL. 20 1 of 3





LEGEND:

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100 YEAR FLOOD

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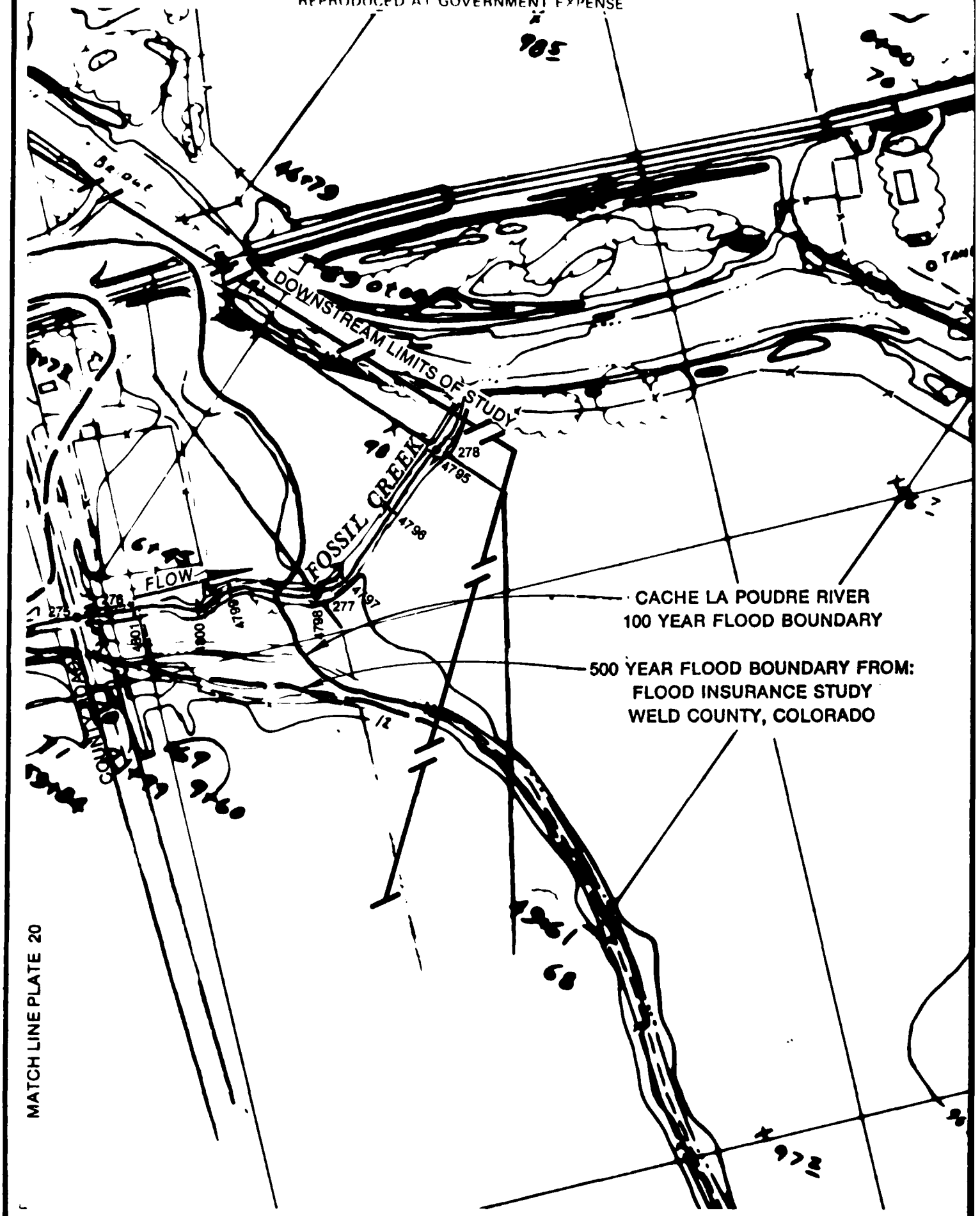
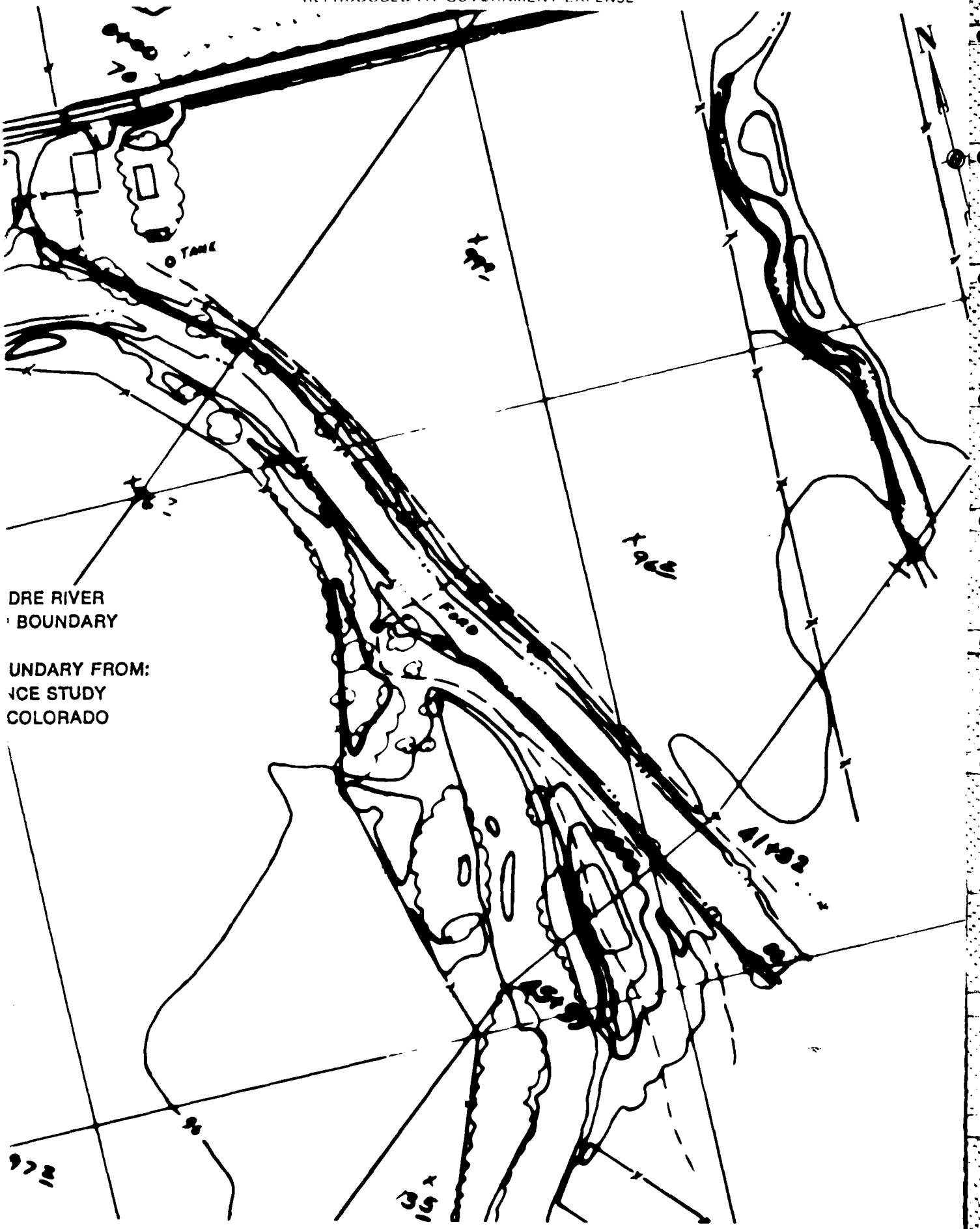
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOODED AREAS

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



PL. 21 10f3



LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD

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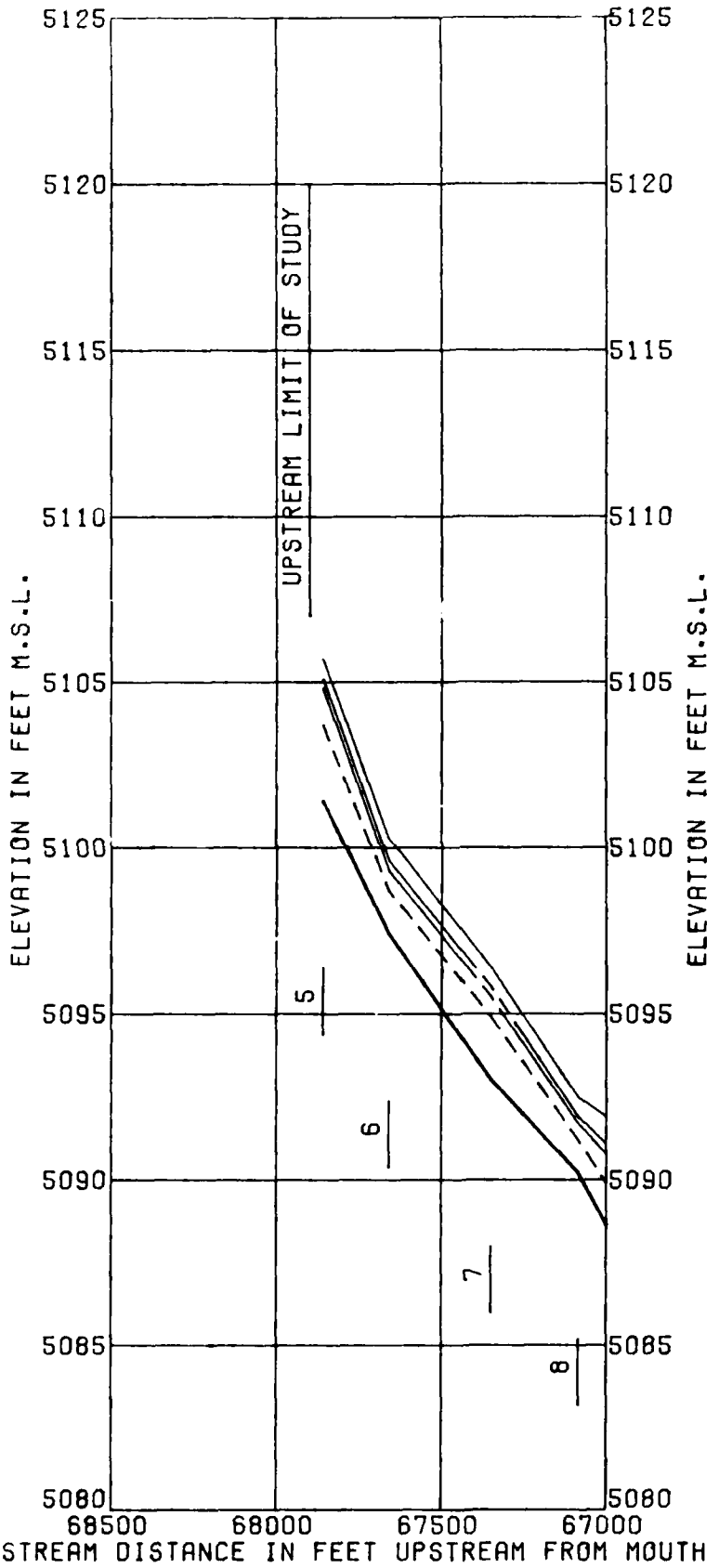
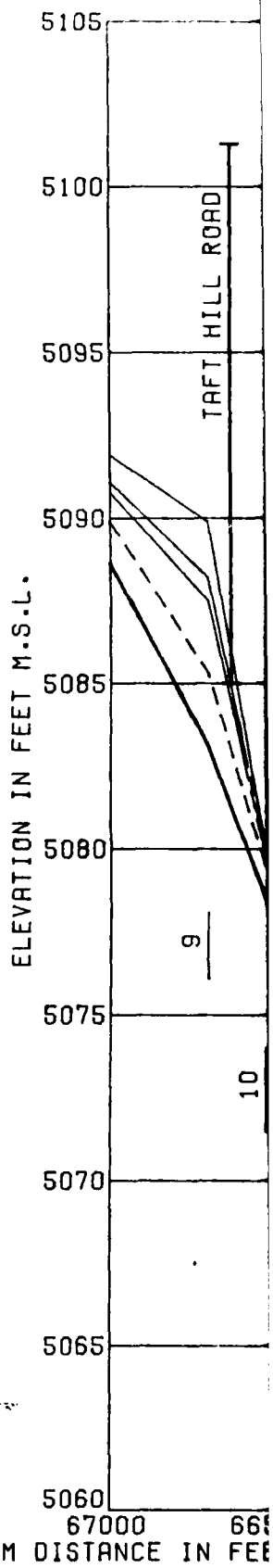
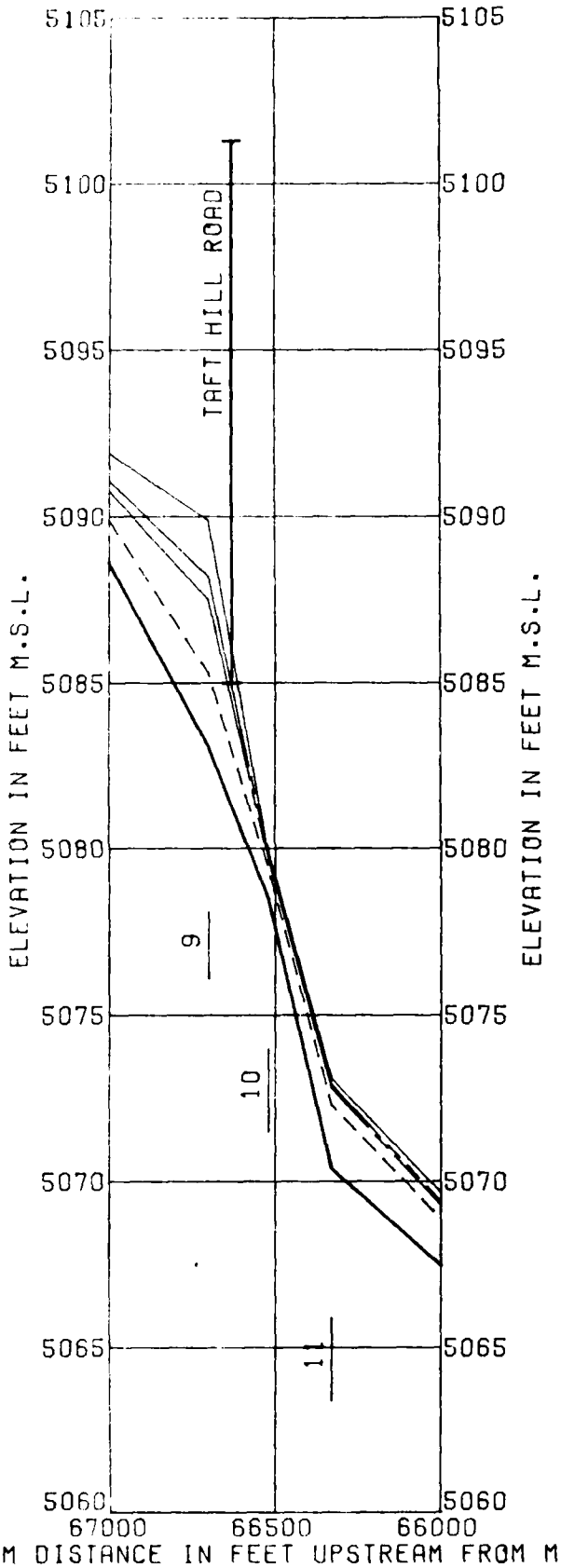
FOSSIL CREEK
FLOODED AREAS

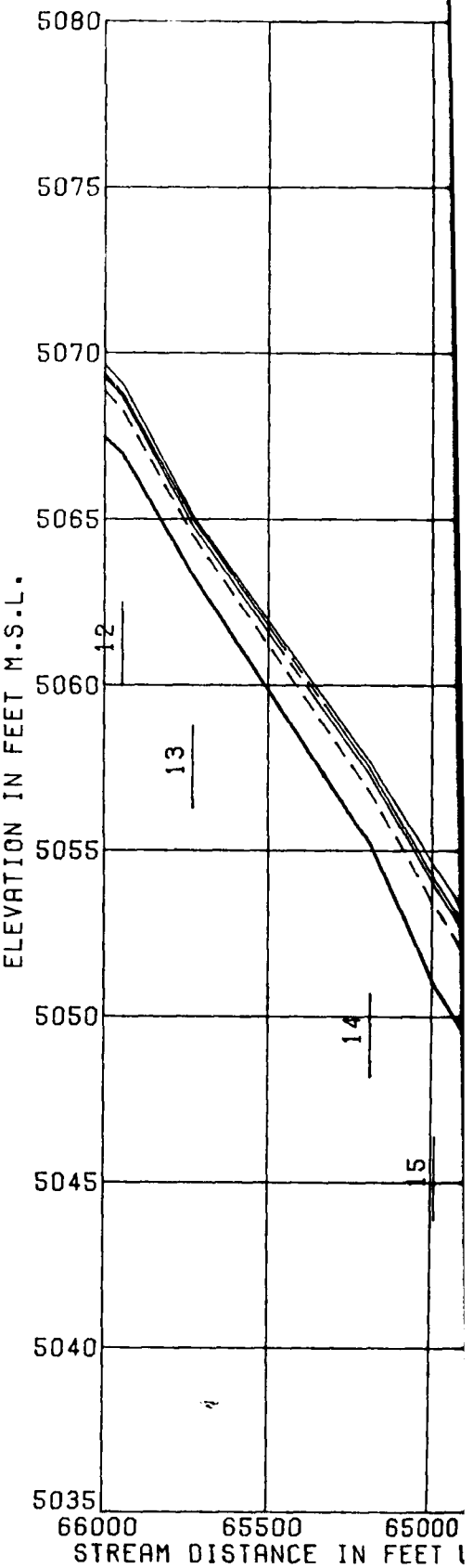
U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

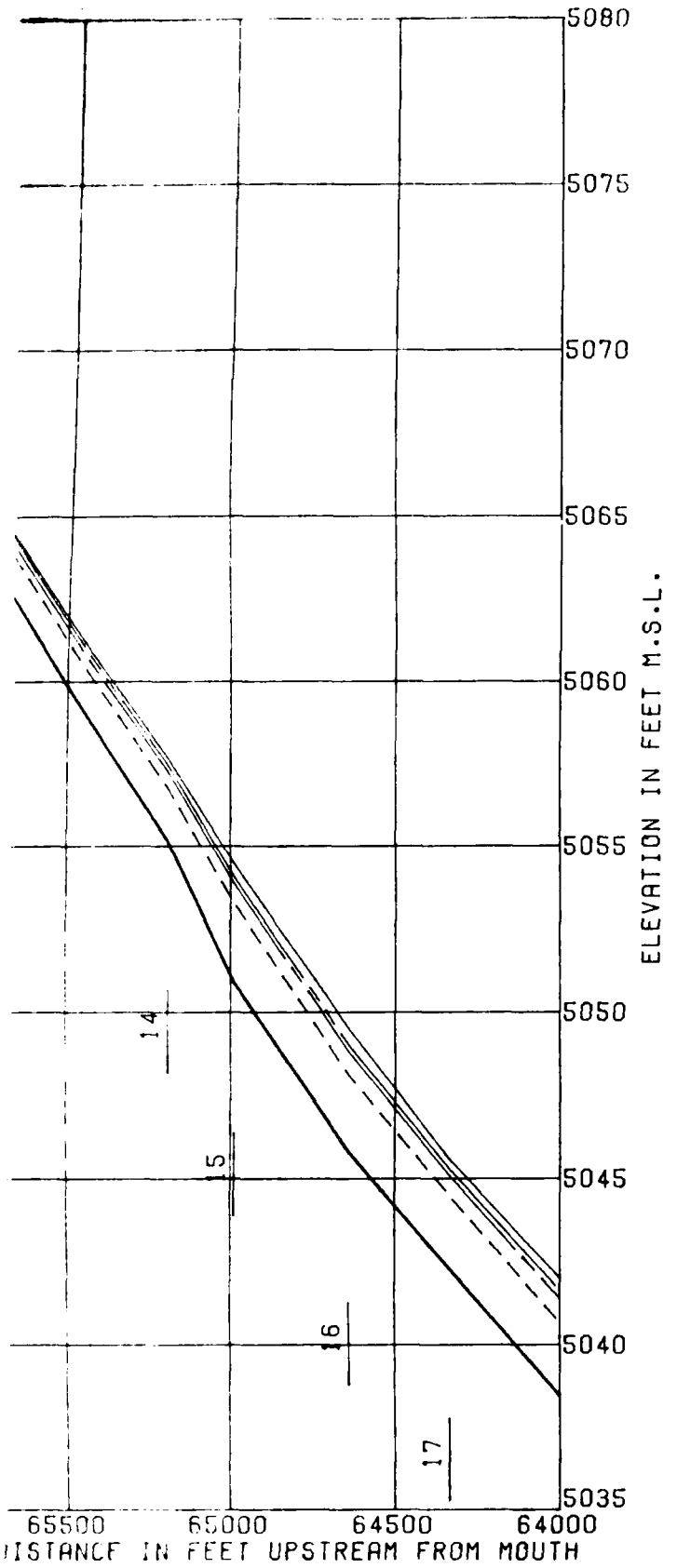




PL. 22 1043







LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- Reference Point

NOTES:

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SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
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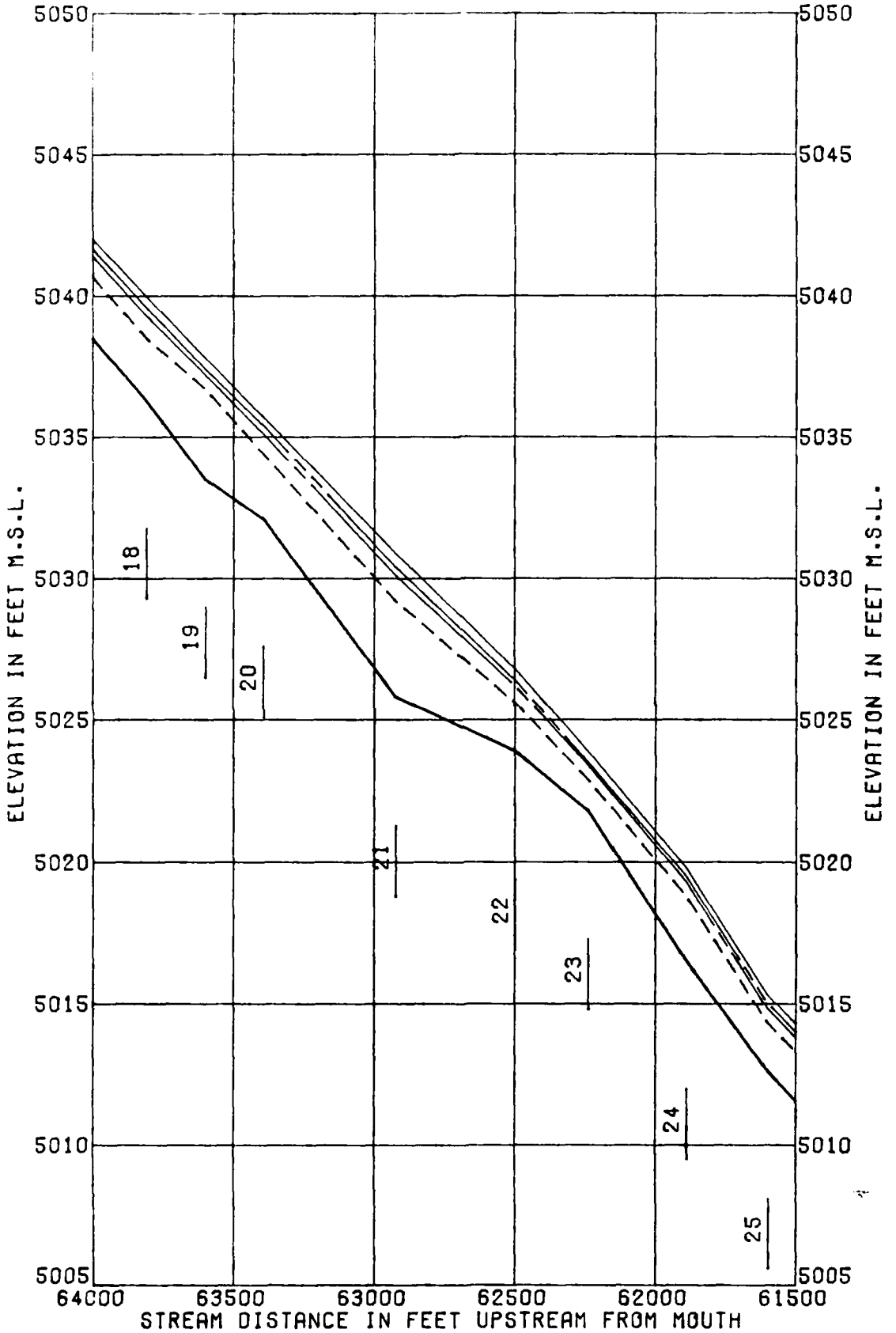
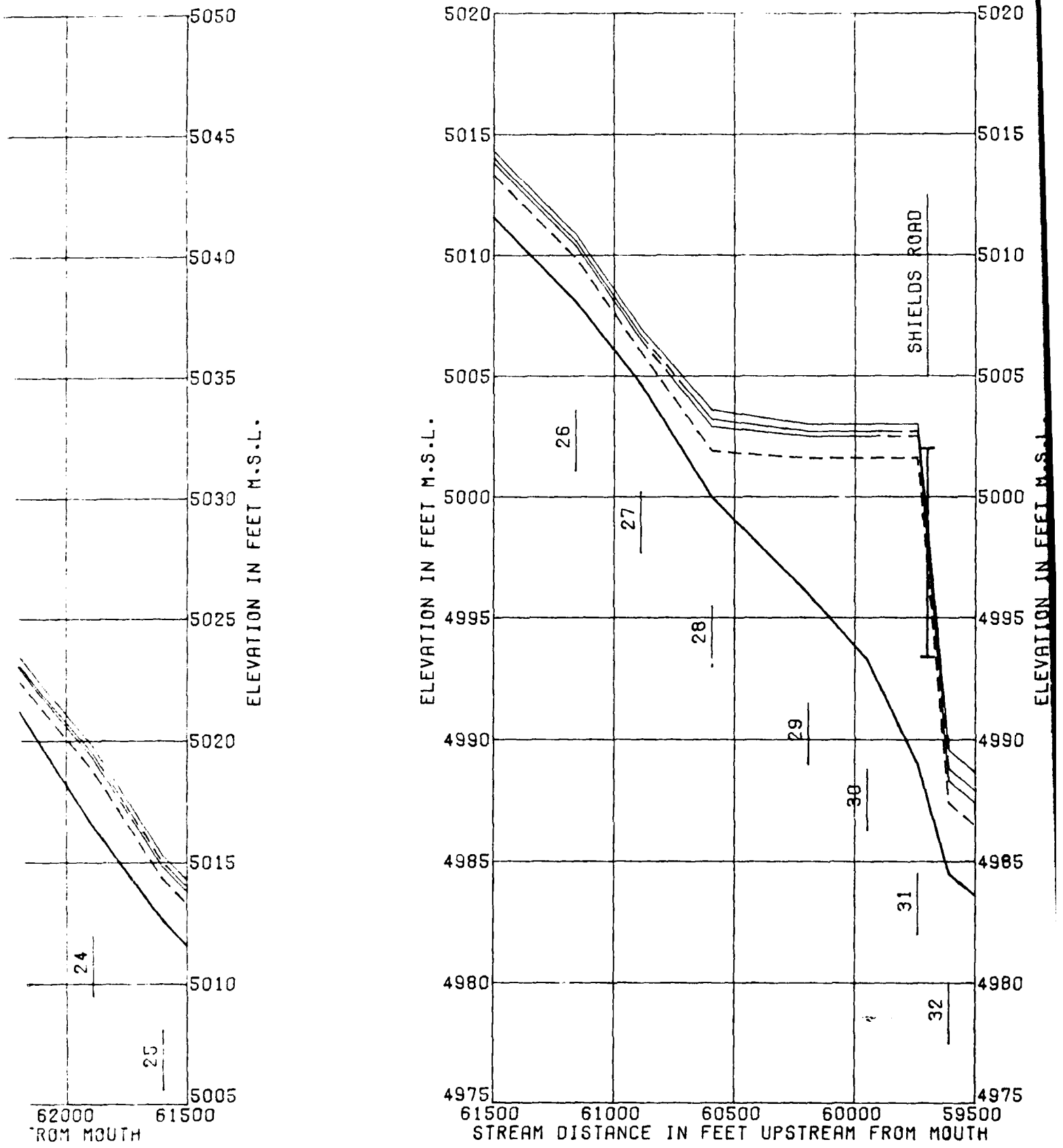
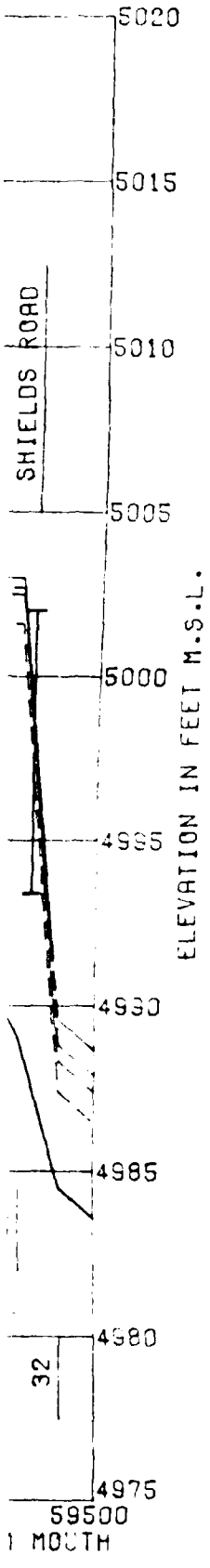


Pl. 23 1 of 3





LEGEND:

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- 100 YEAR FLOOD
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- 10 YEAR FLOOD
- Deck
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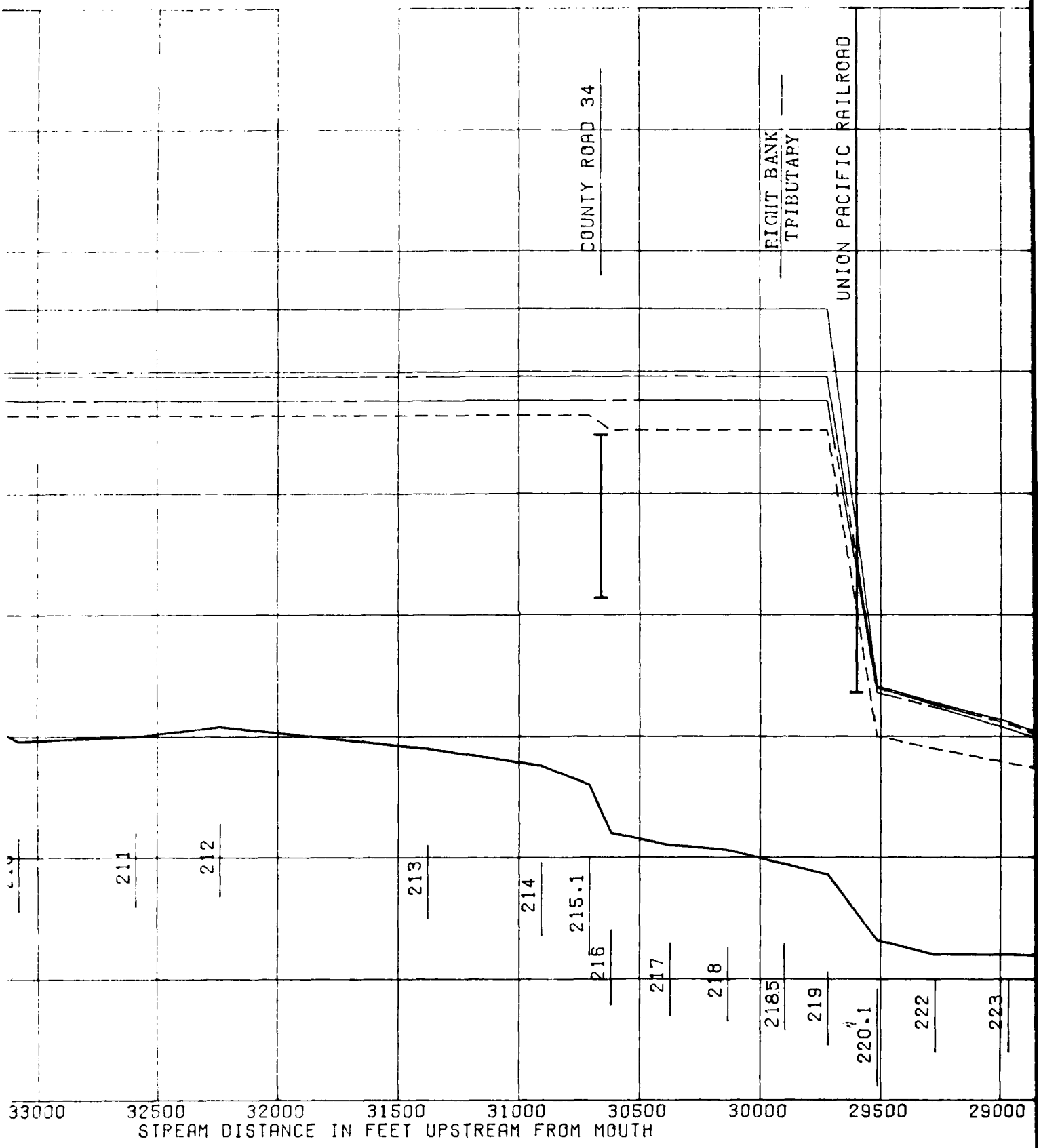
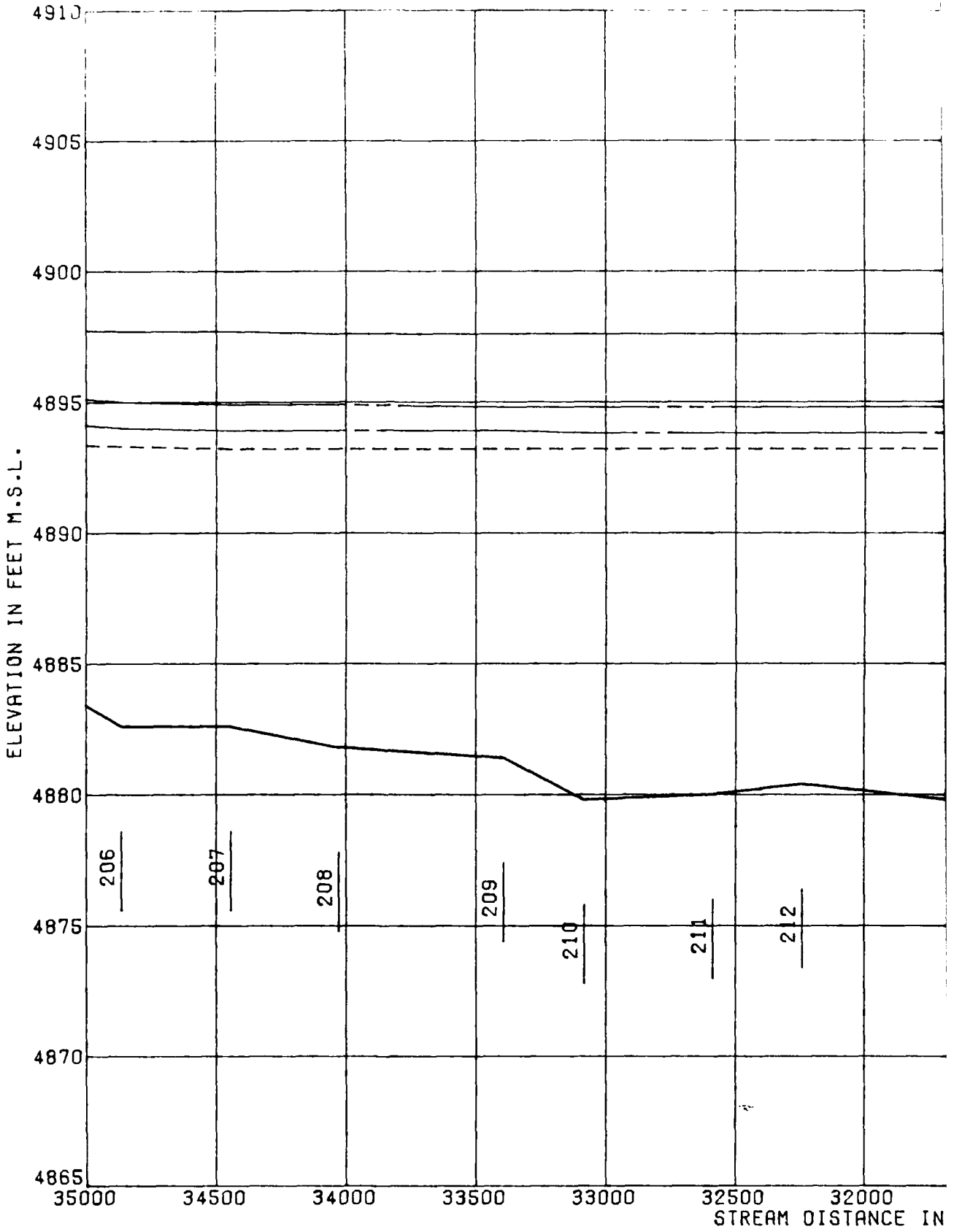
FLOOD PROFILES

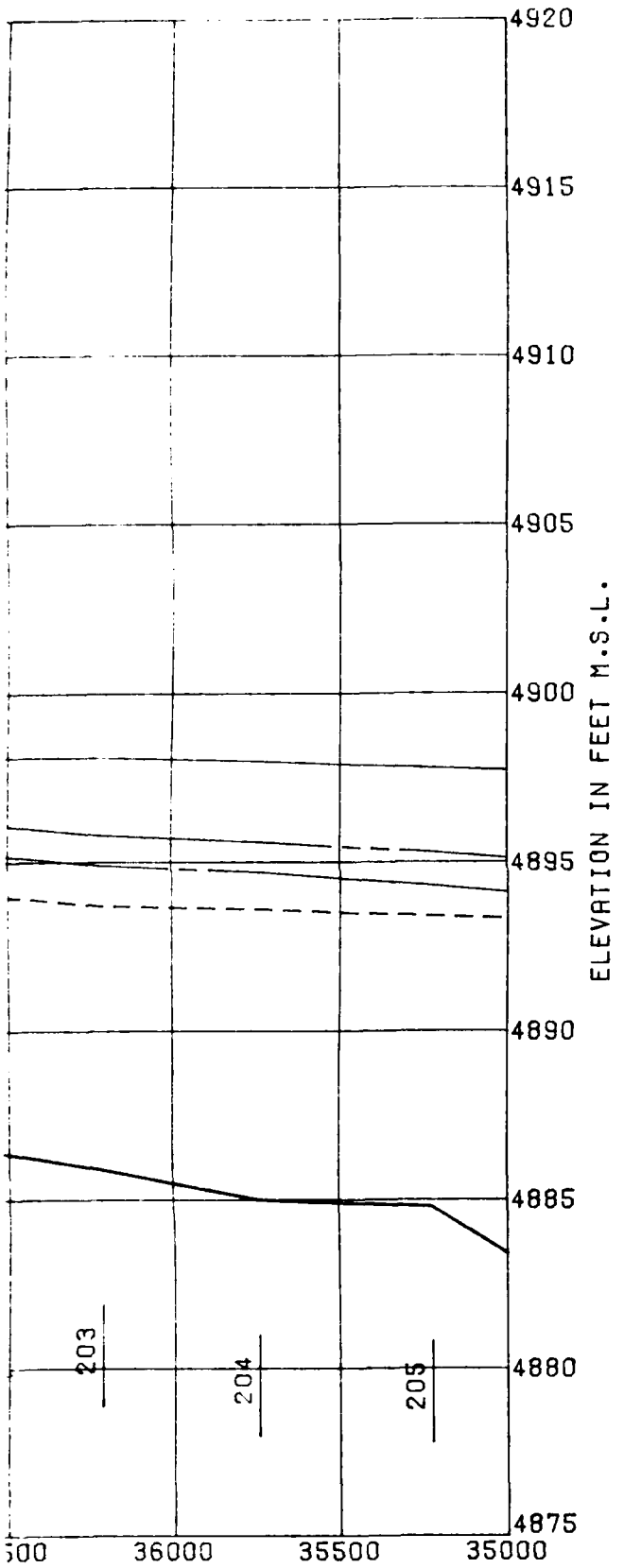
U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981





Pl. #28

1 of 3



LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- 2 — Reference Point

NOTES:

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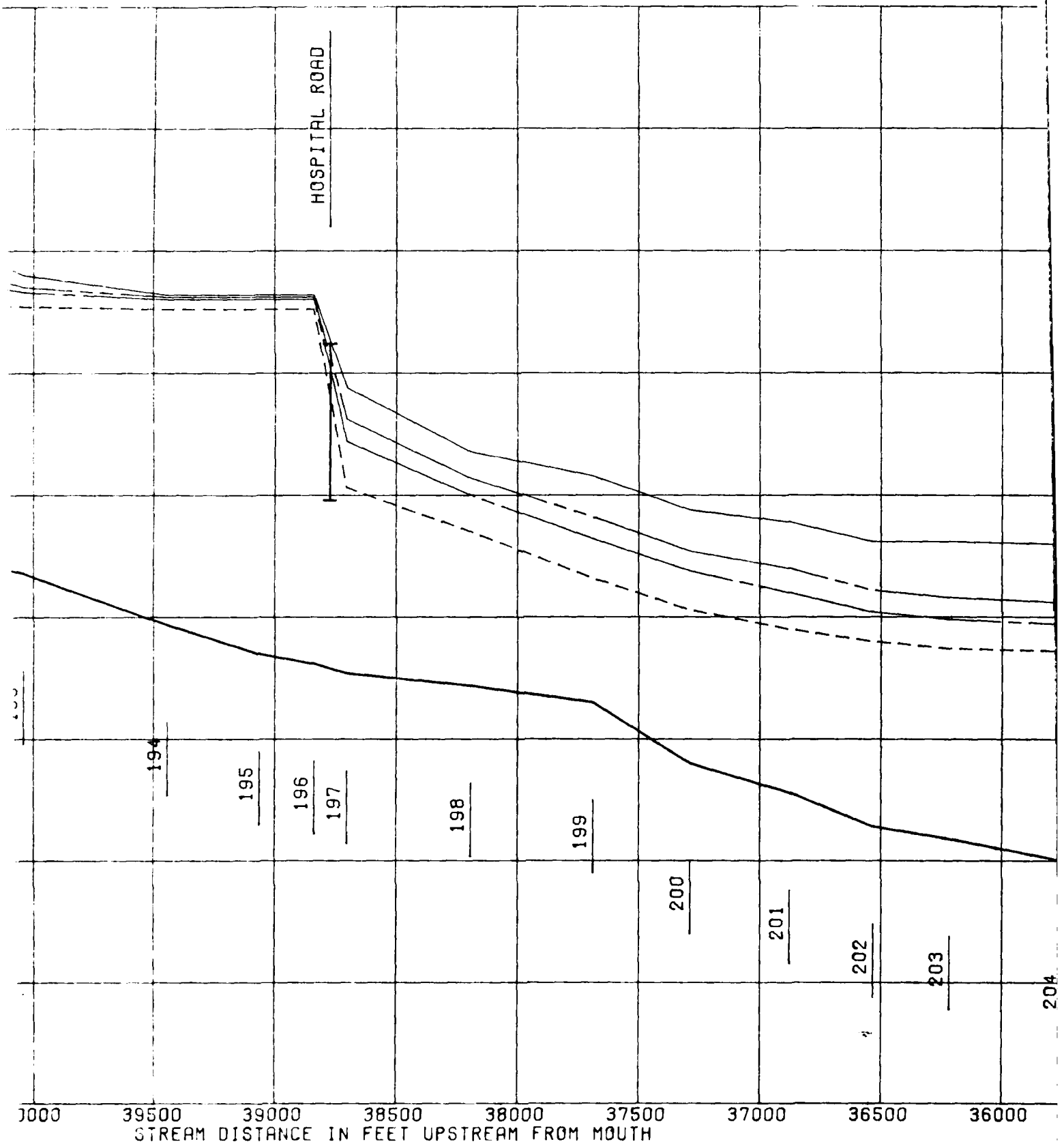
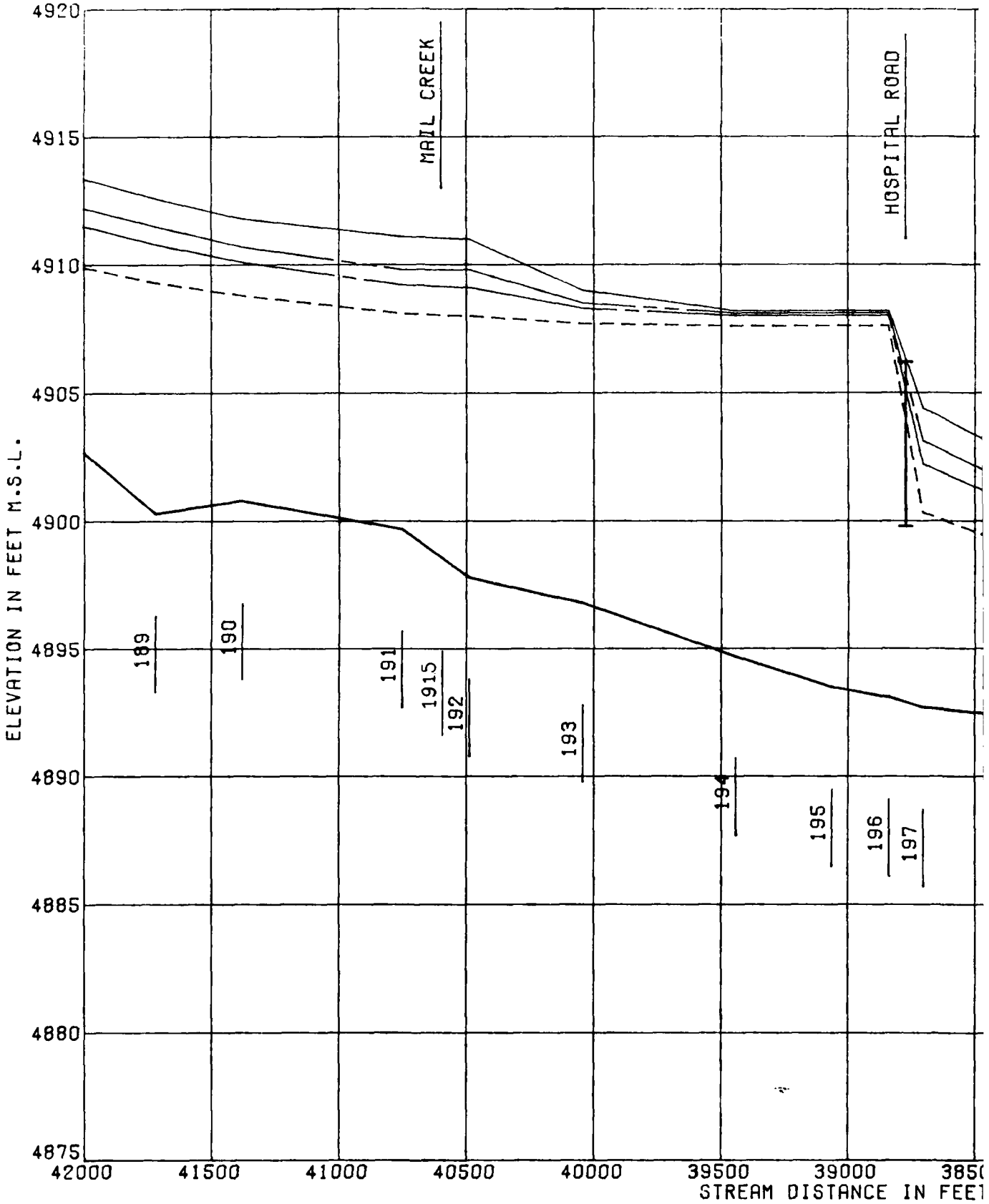
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOOD PROFILES

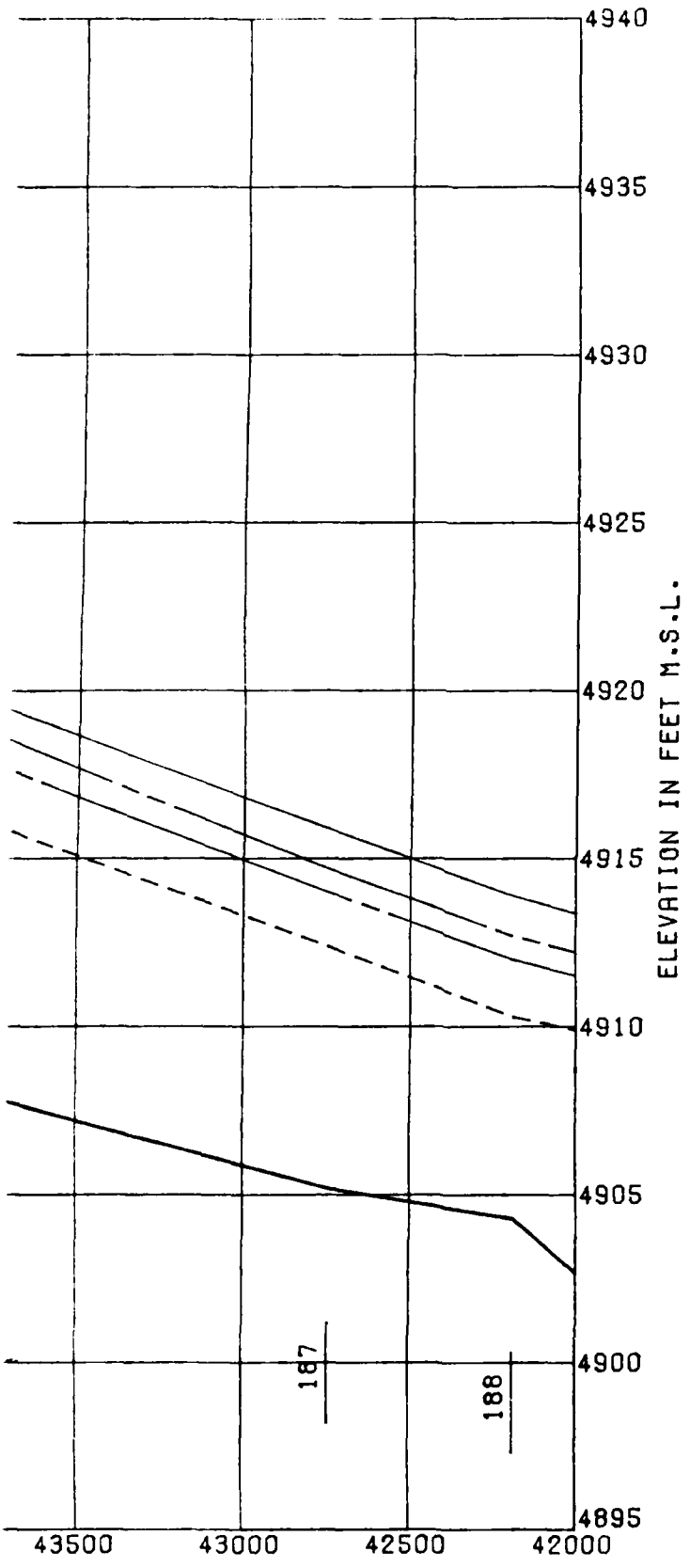
U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981





PL. 27

1 of 3



LEGEND:

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- 100 YEAR FLOOD
- 50 YEAR FLOOD
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- Bridge
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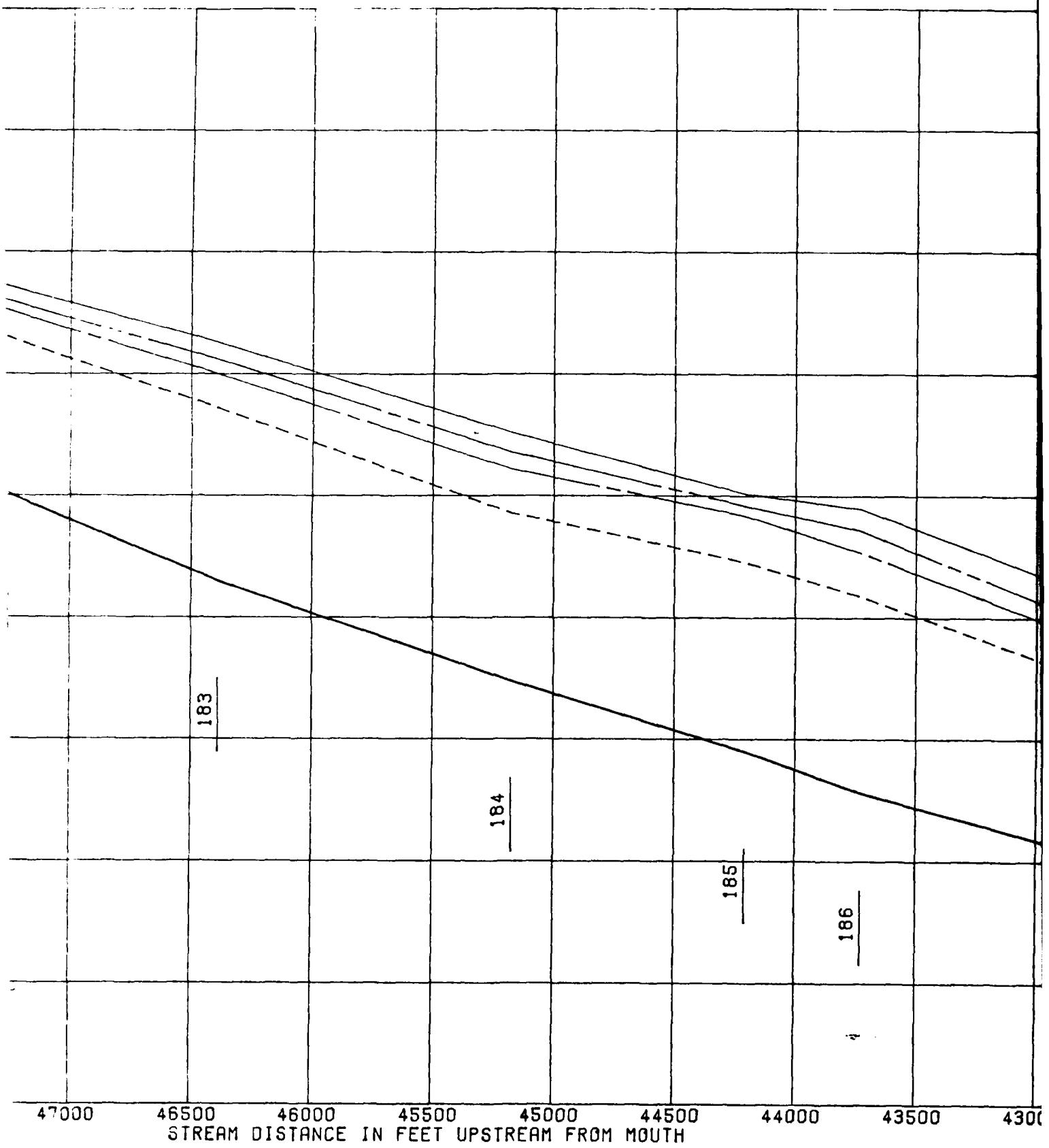
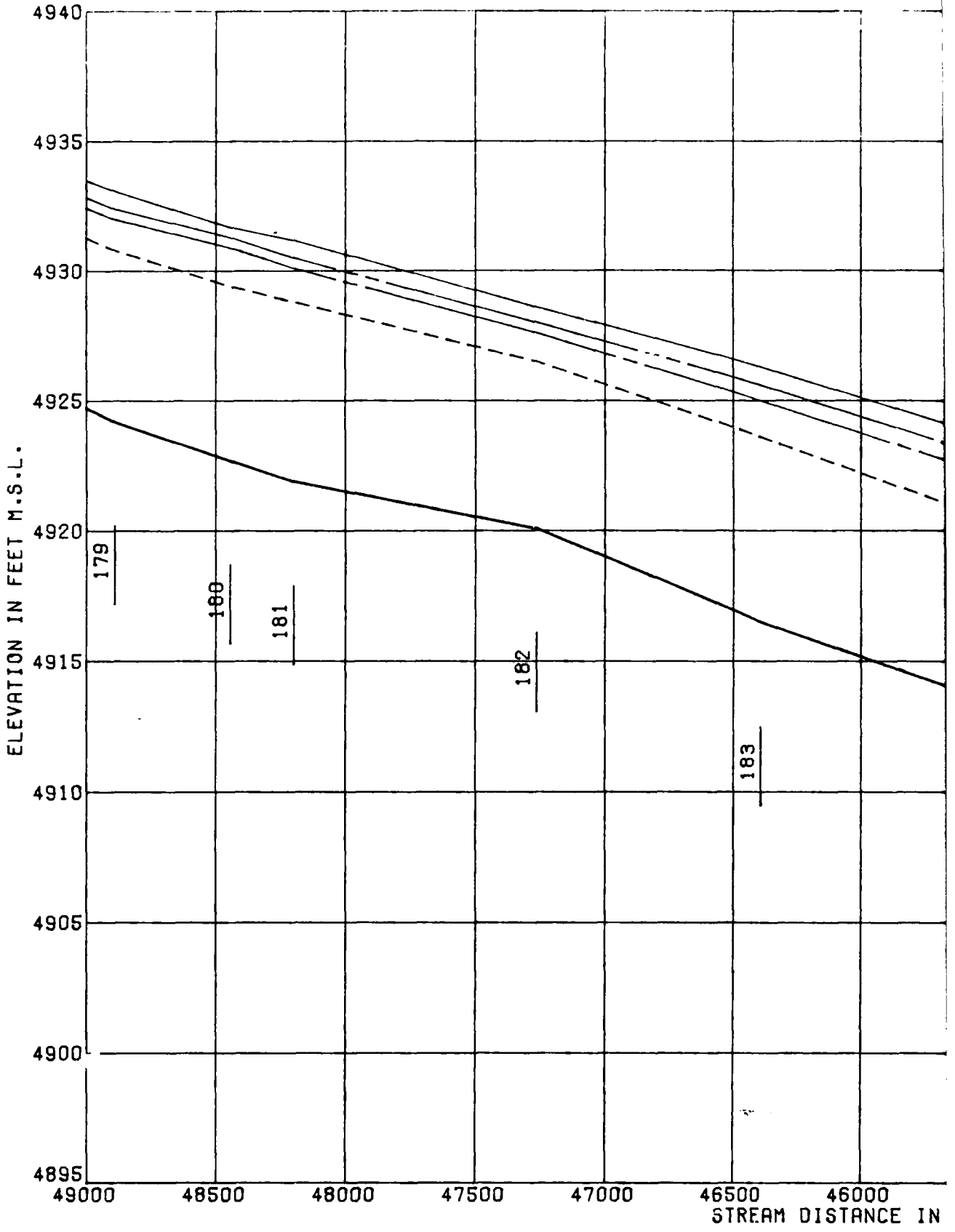
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOOD PROFILES

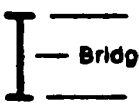
U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981





LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD
50 YEAR FLOOD
10 YEAR FLOOD



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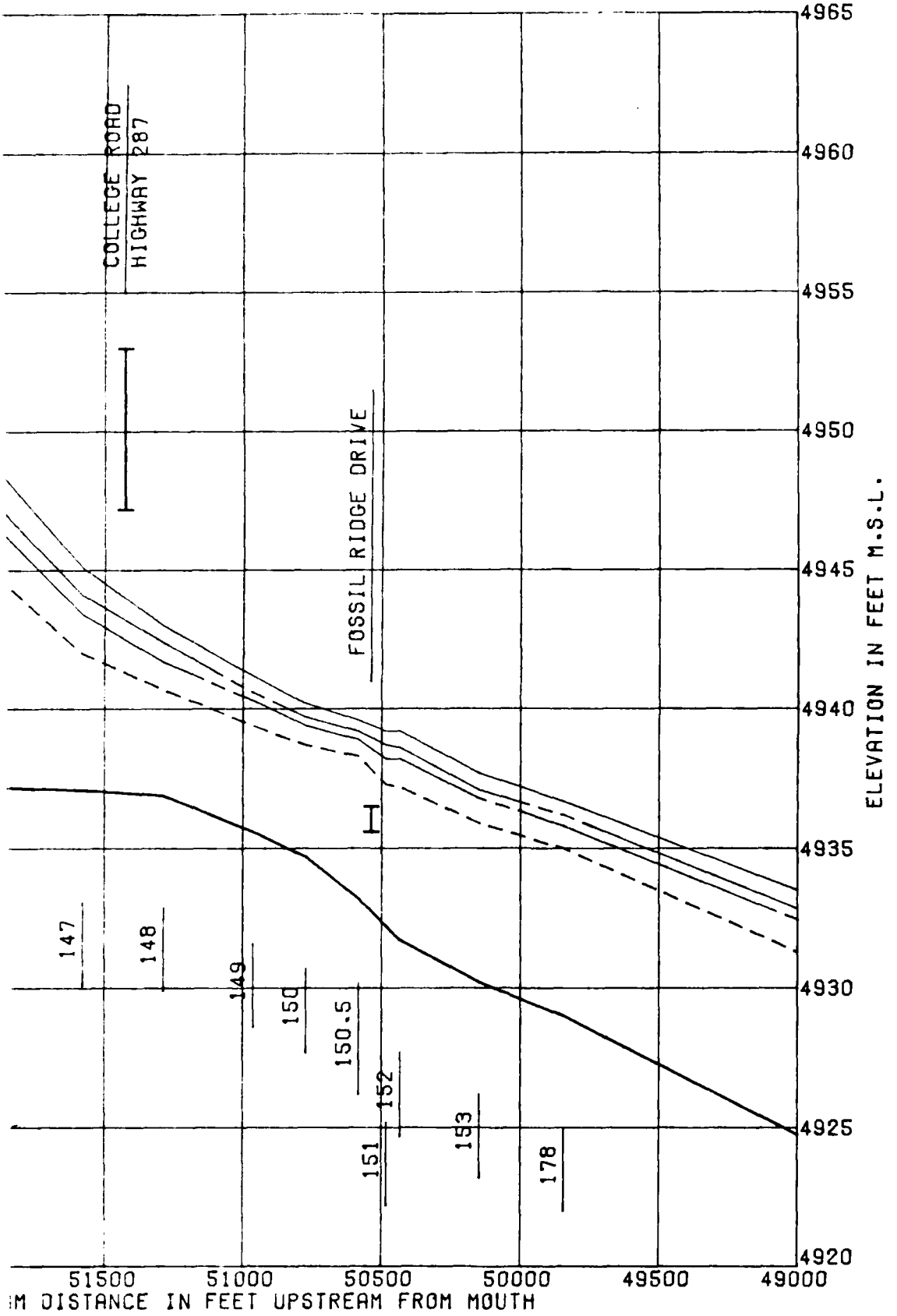
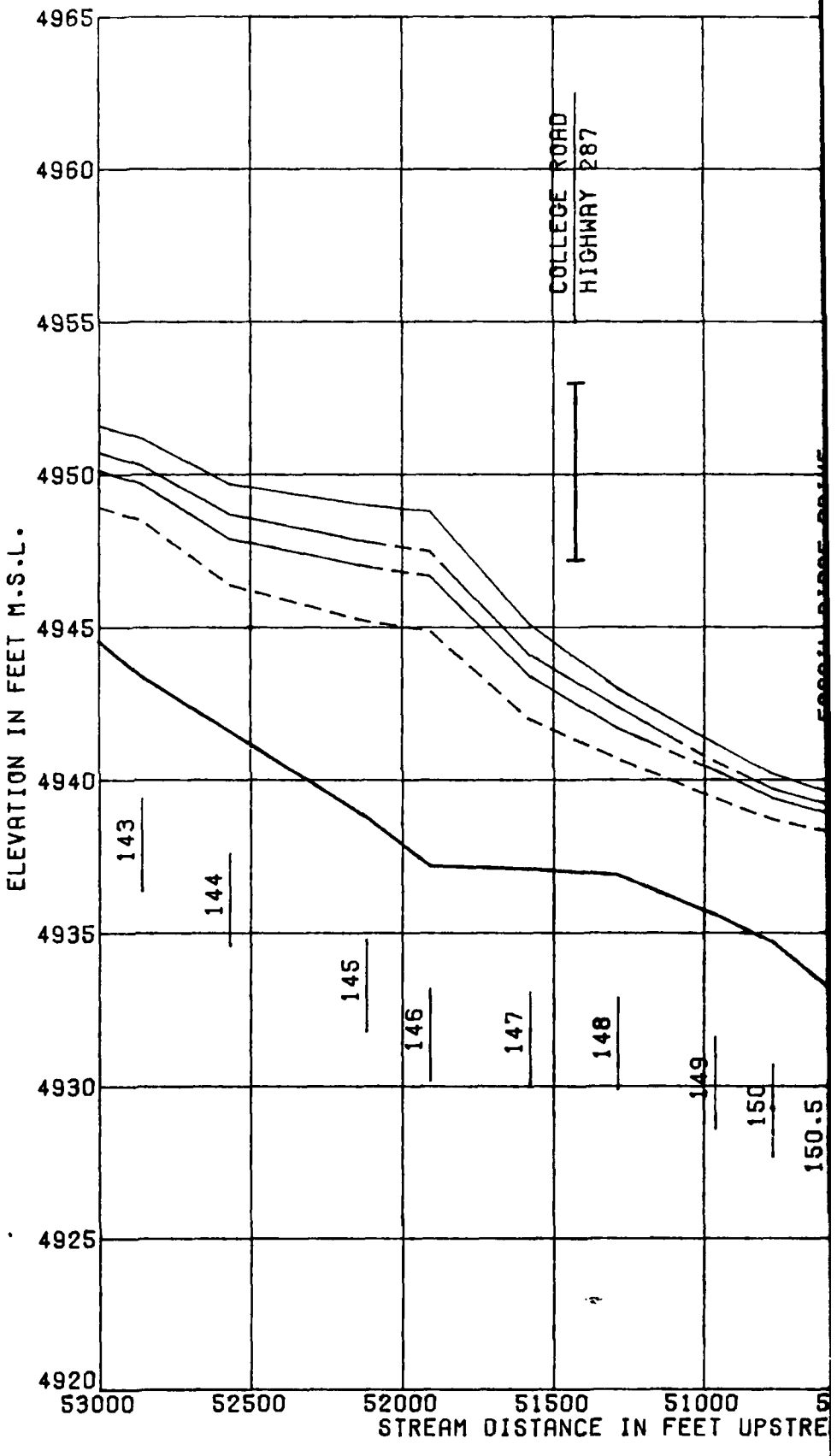
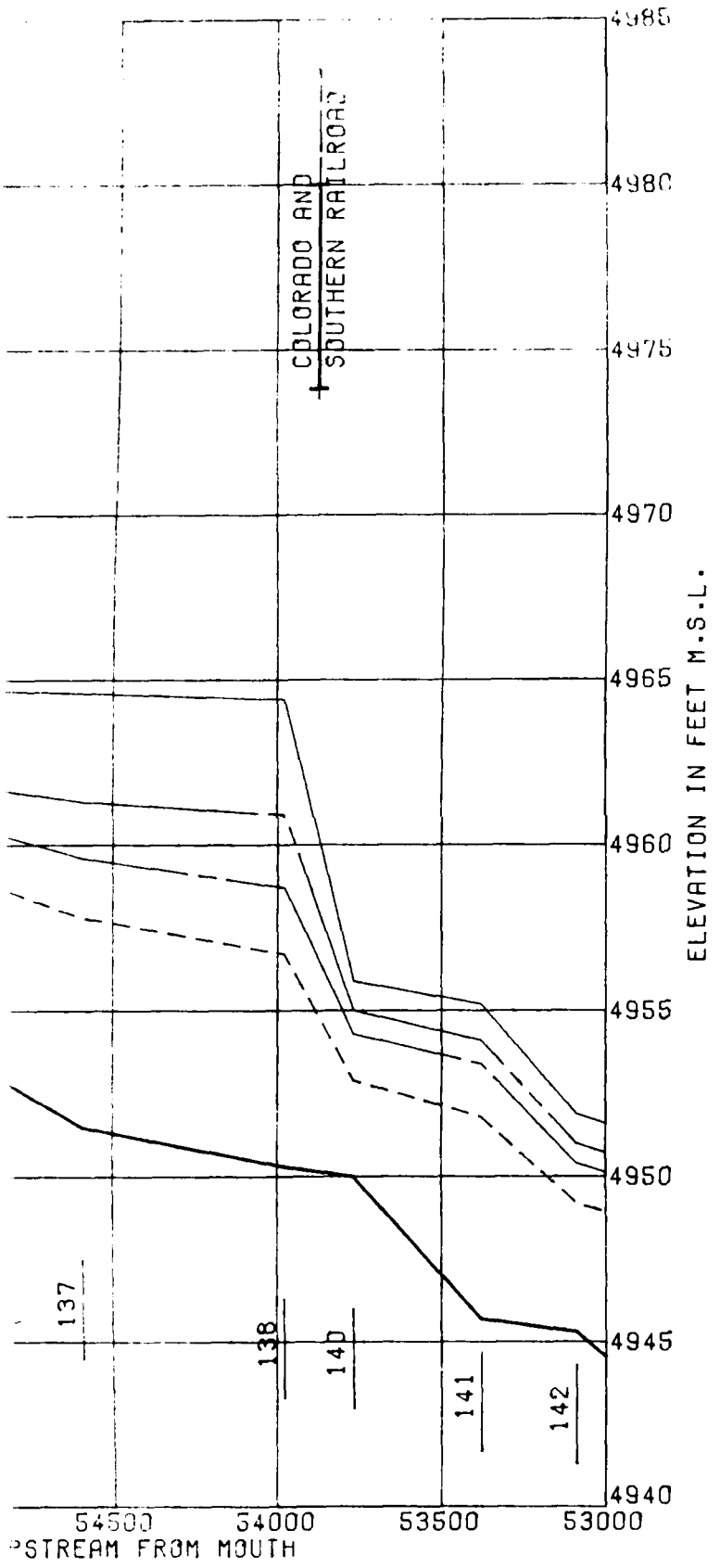
FOSSIL CREEK
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981





PL. 25. 143



LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- Reference Point

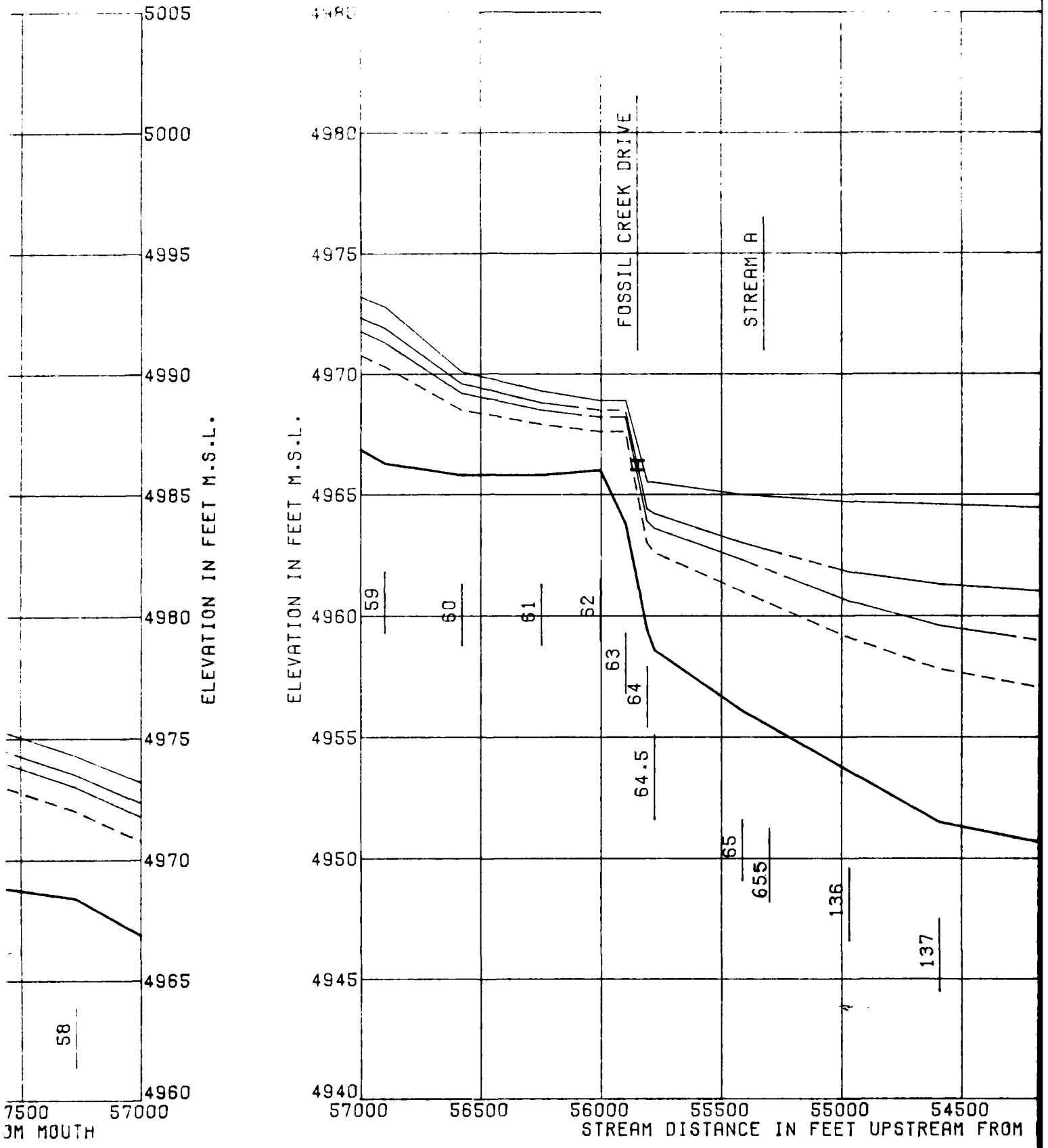
NOTES:

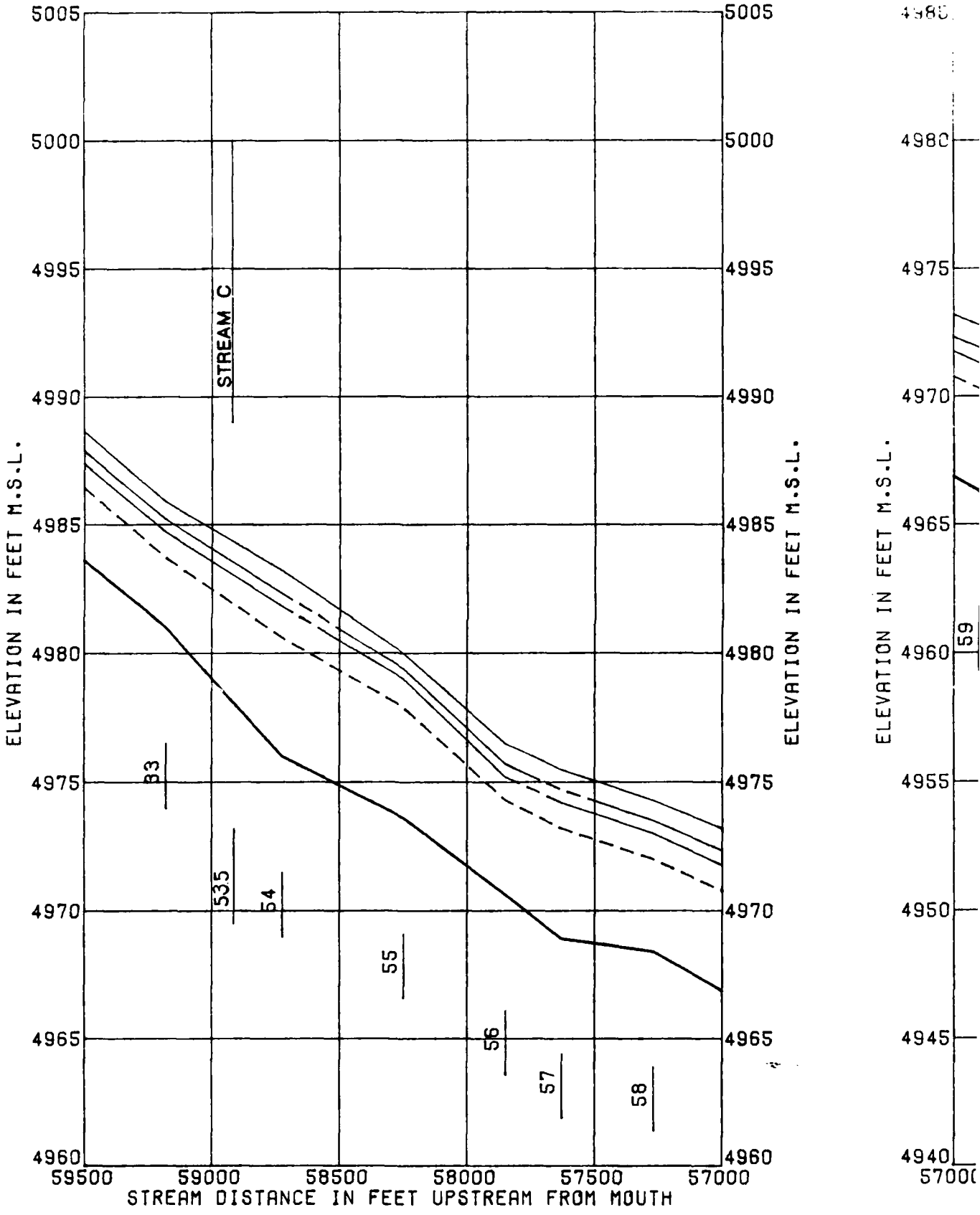
1. For flood elevations at the reference points, see Table 2.

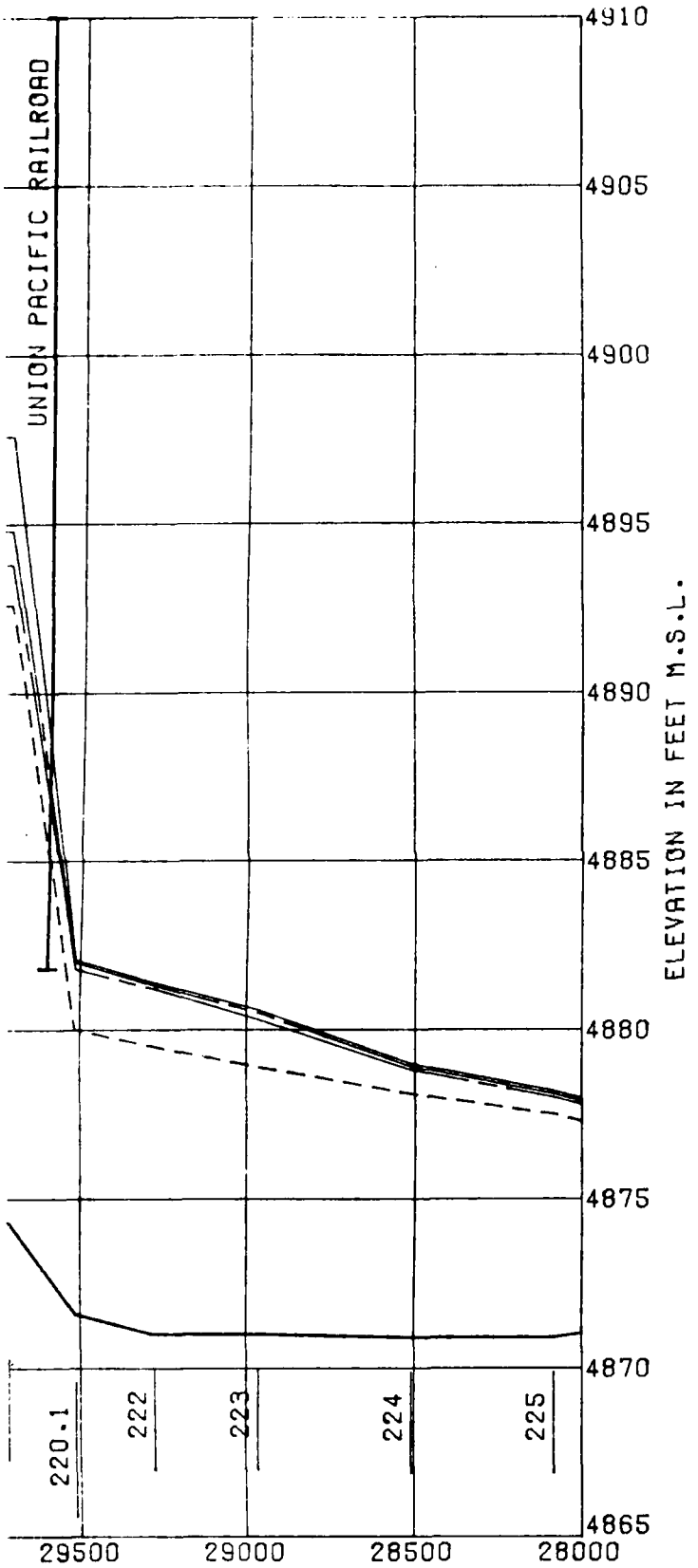
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- 2 Reference Point

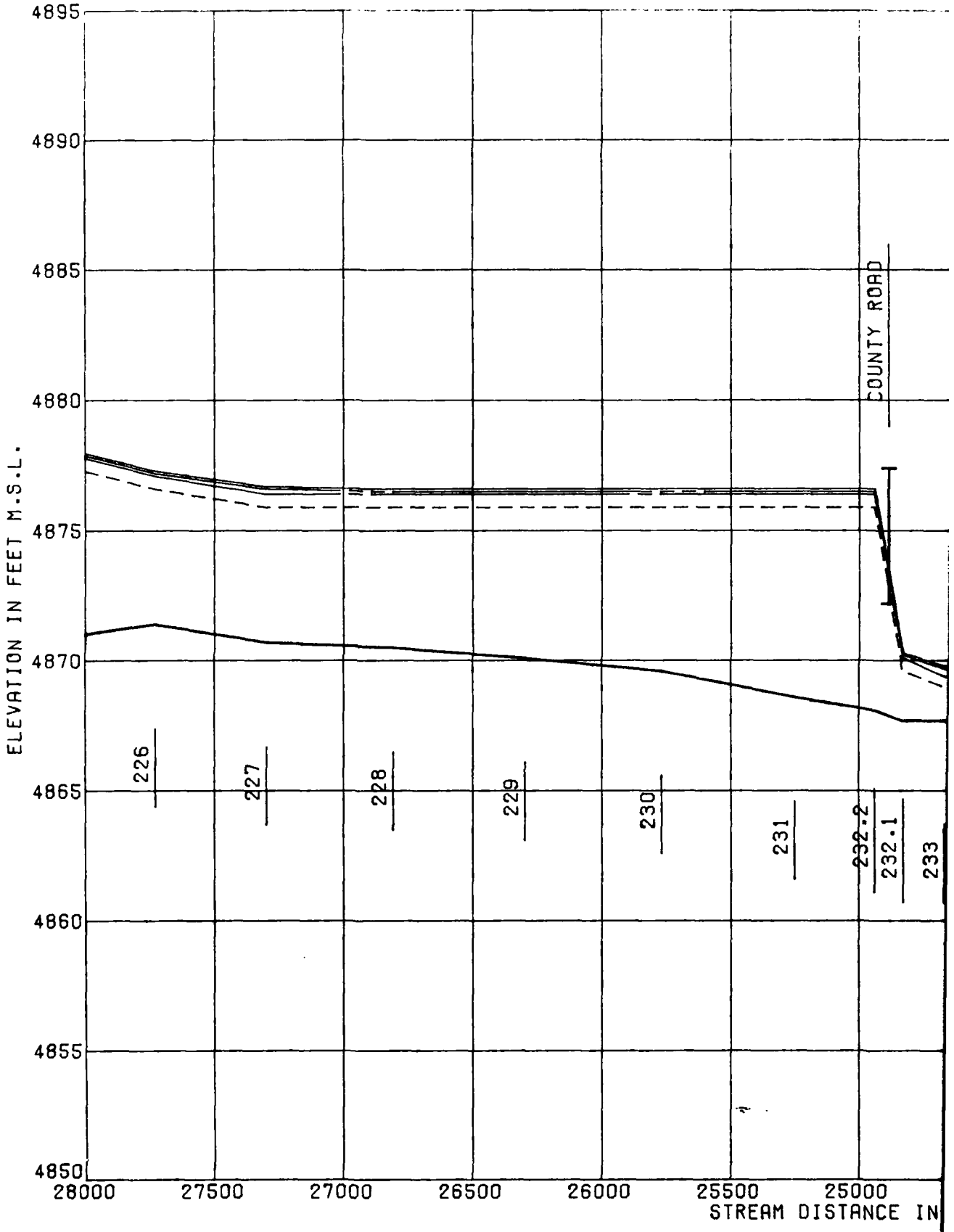
NOTES:

1. For flood elevations at the reference points, see Table 2.

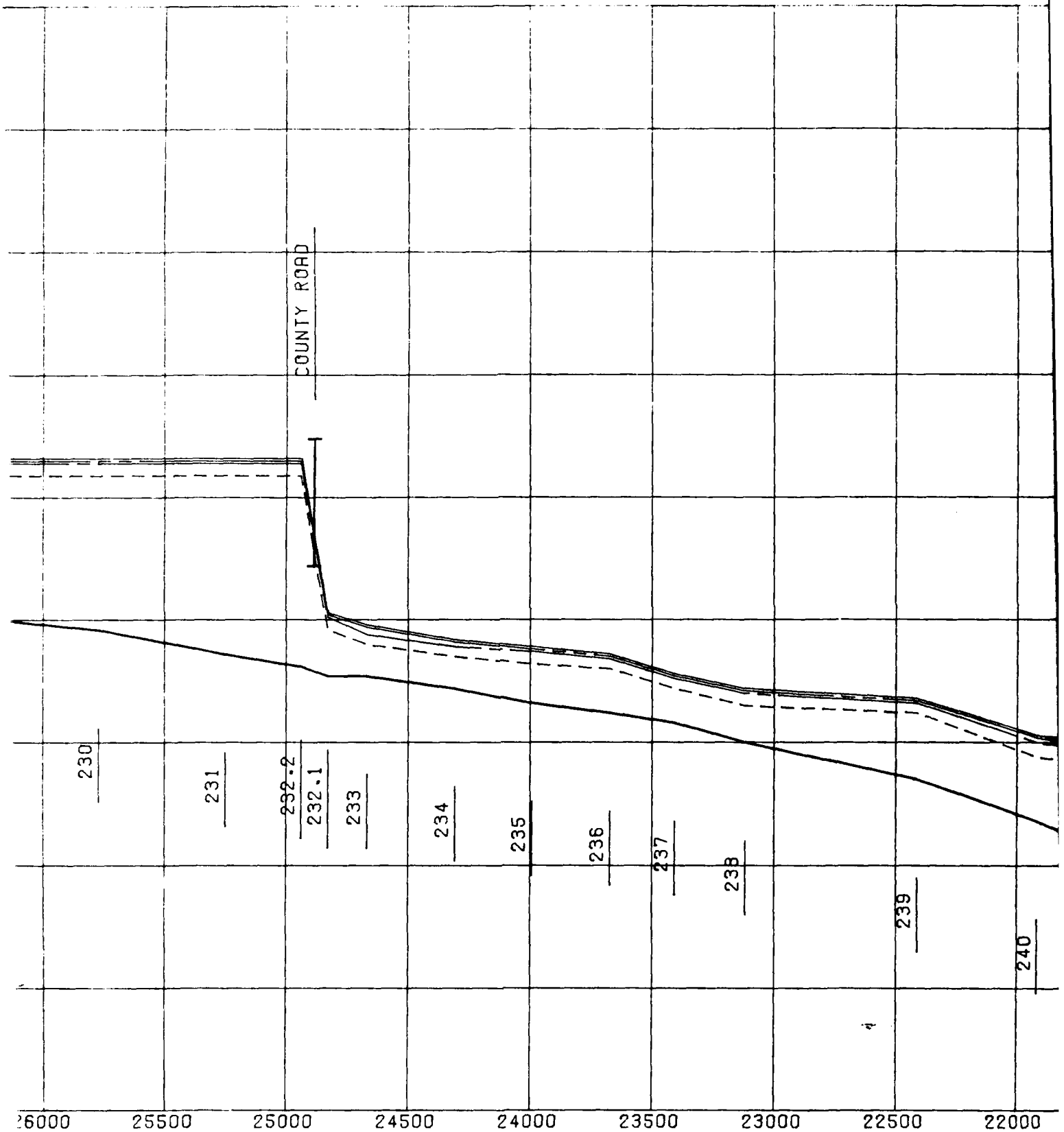
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

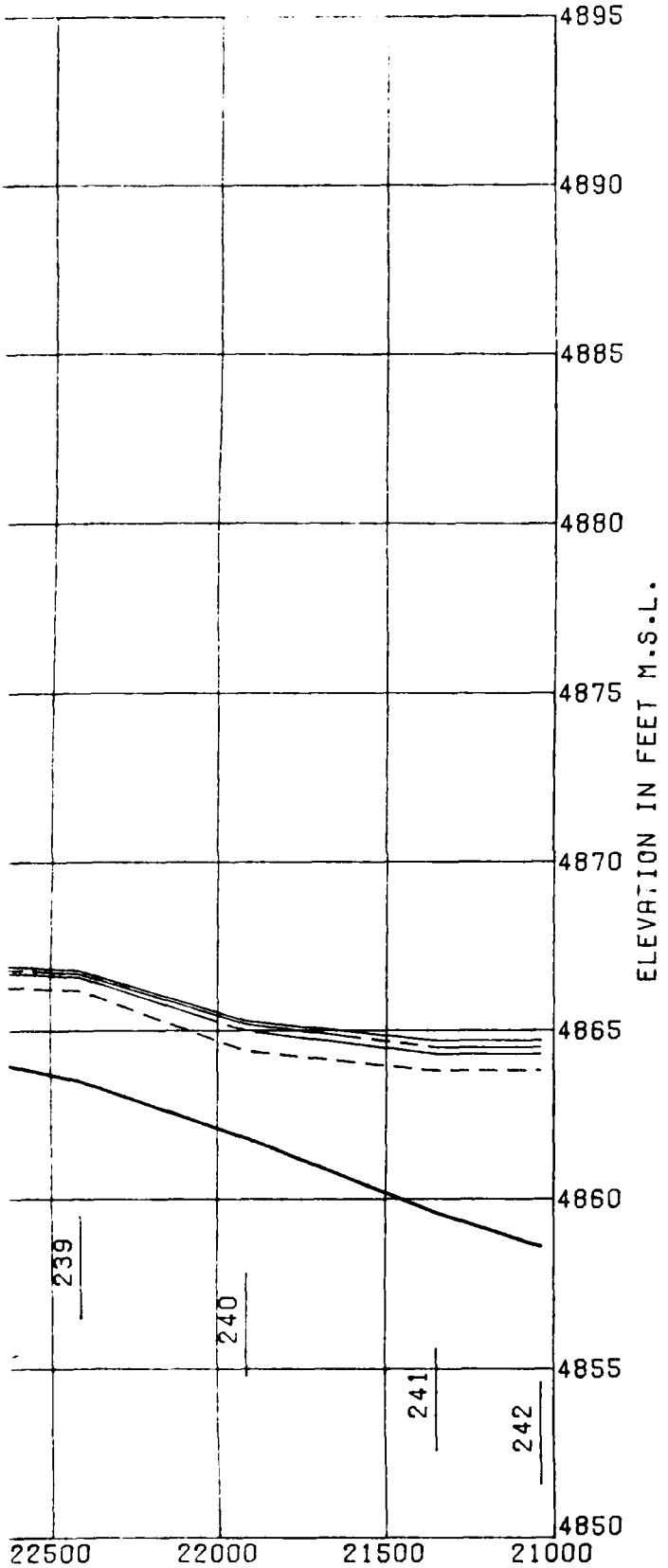
FOSSIL CREEK
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



Pl. 29 1 of 3





LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- Reference Point

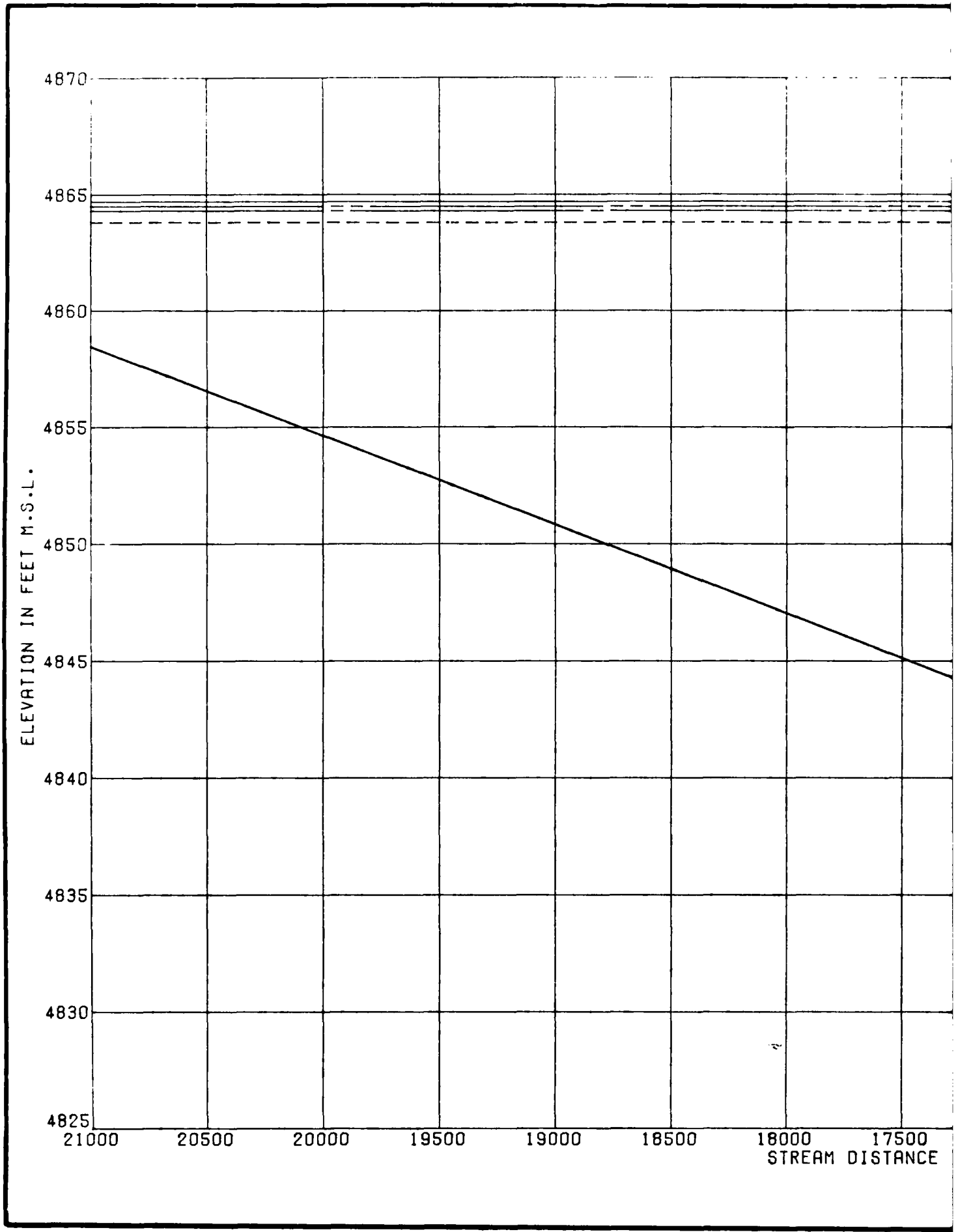
NOTES:

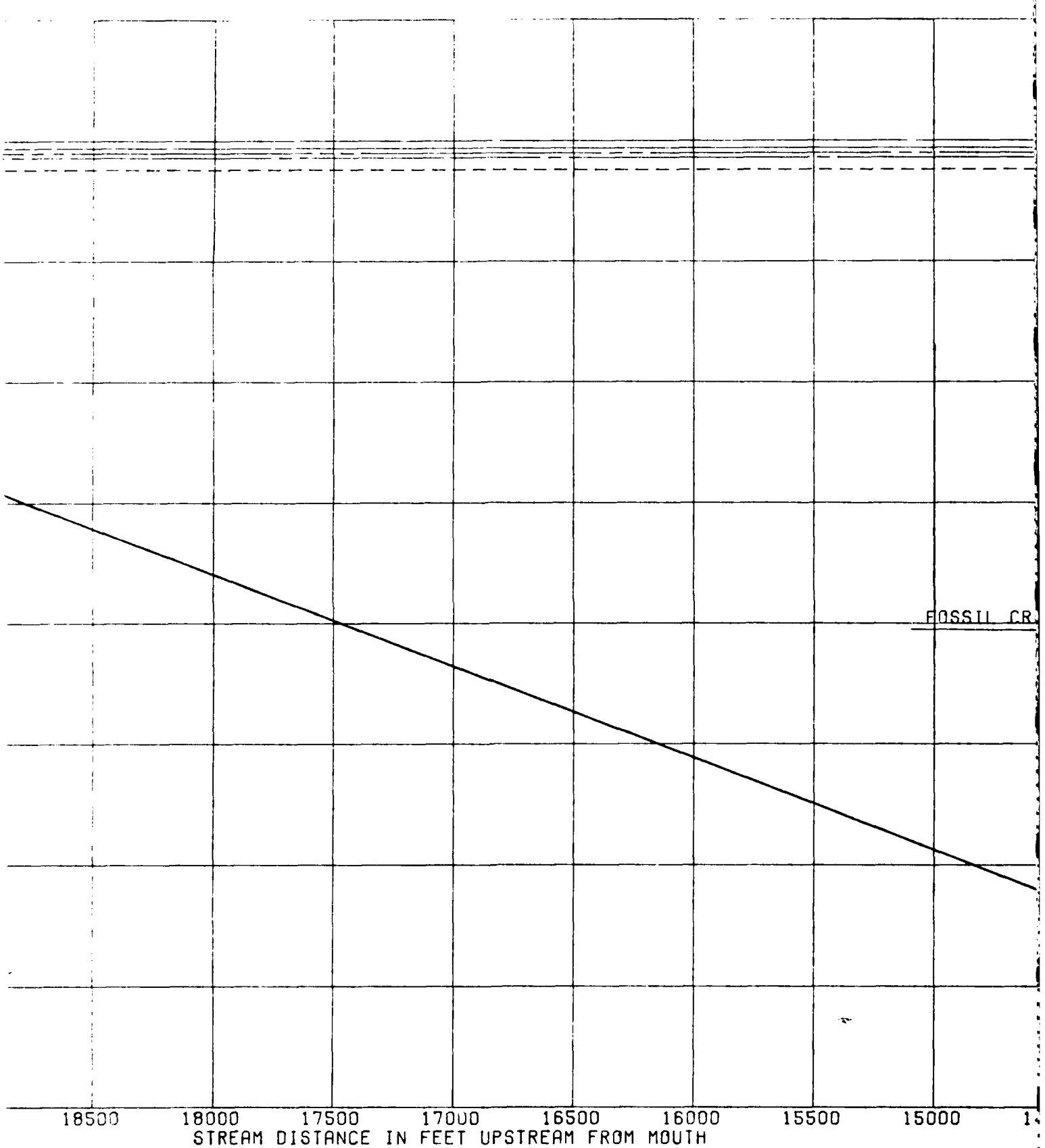
1. For flood elevations at the reference points, see Table 2.

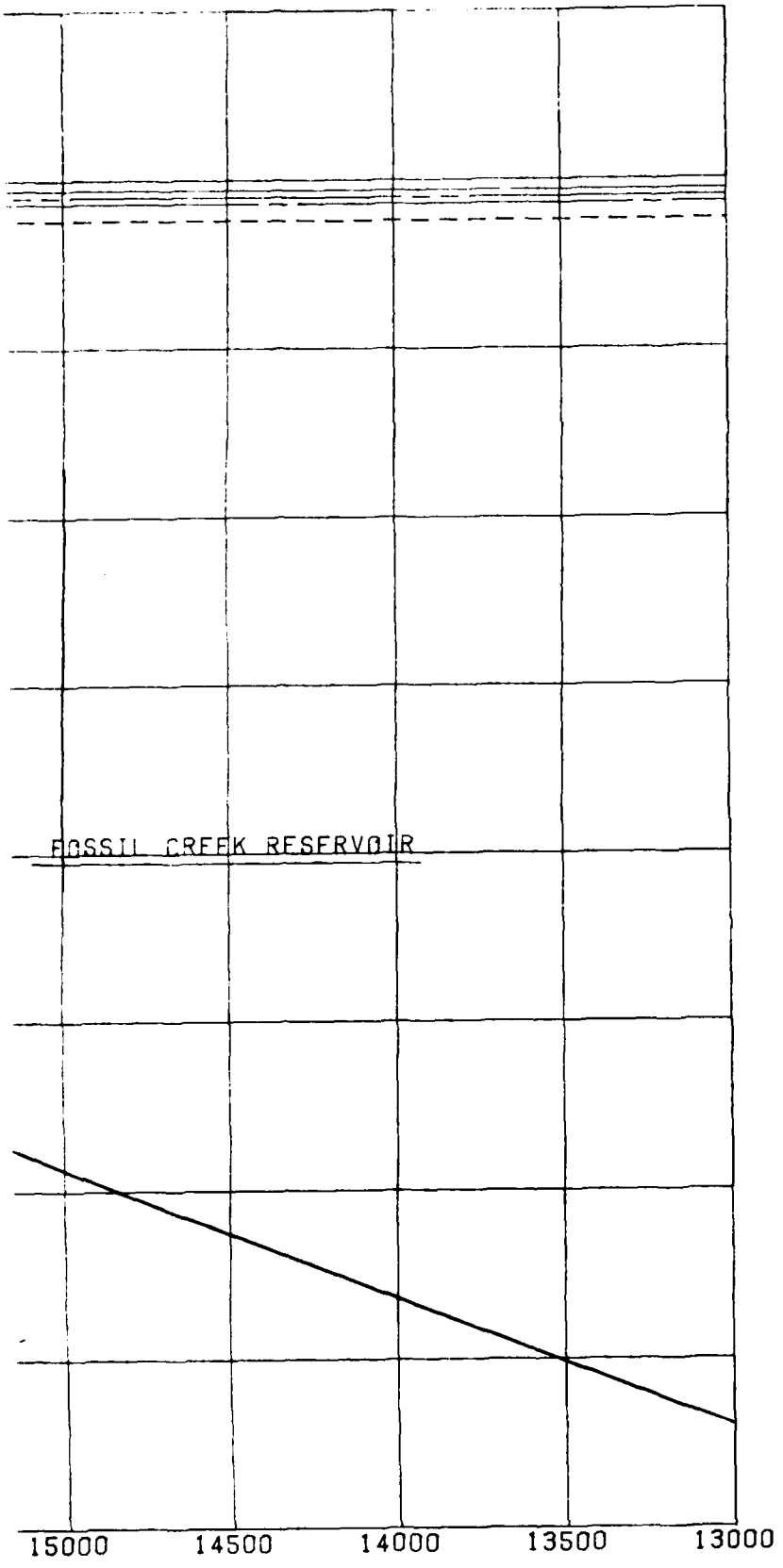
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- Reference Point

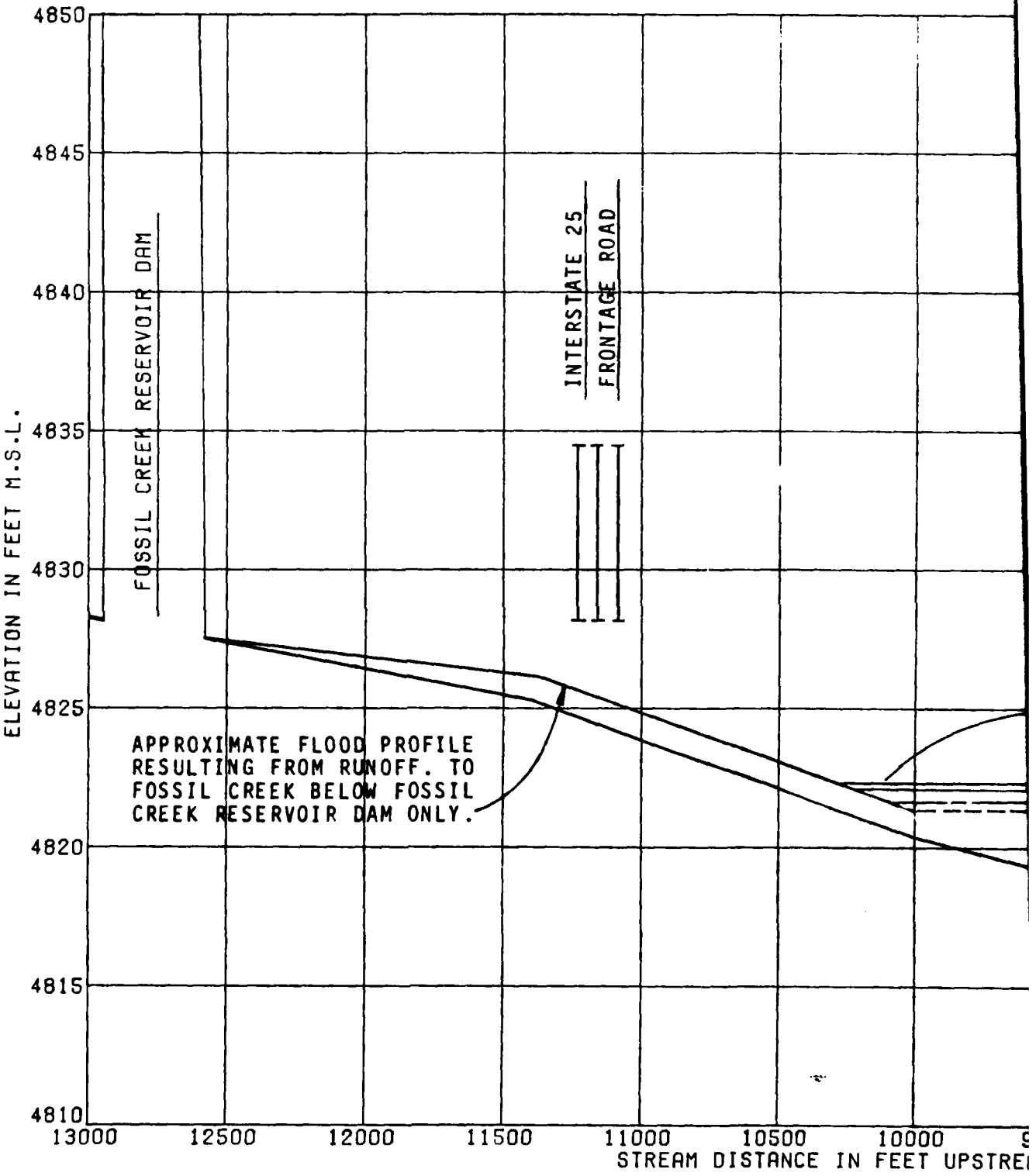
NOTES:

1. For flood elevations at the reference points, see Table 2.

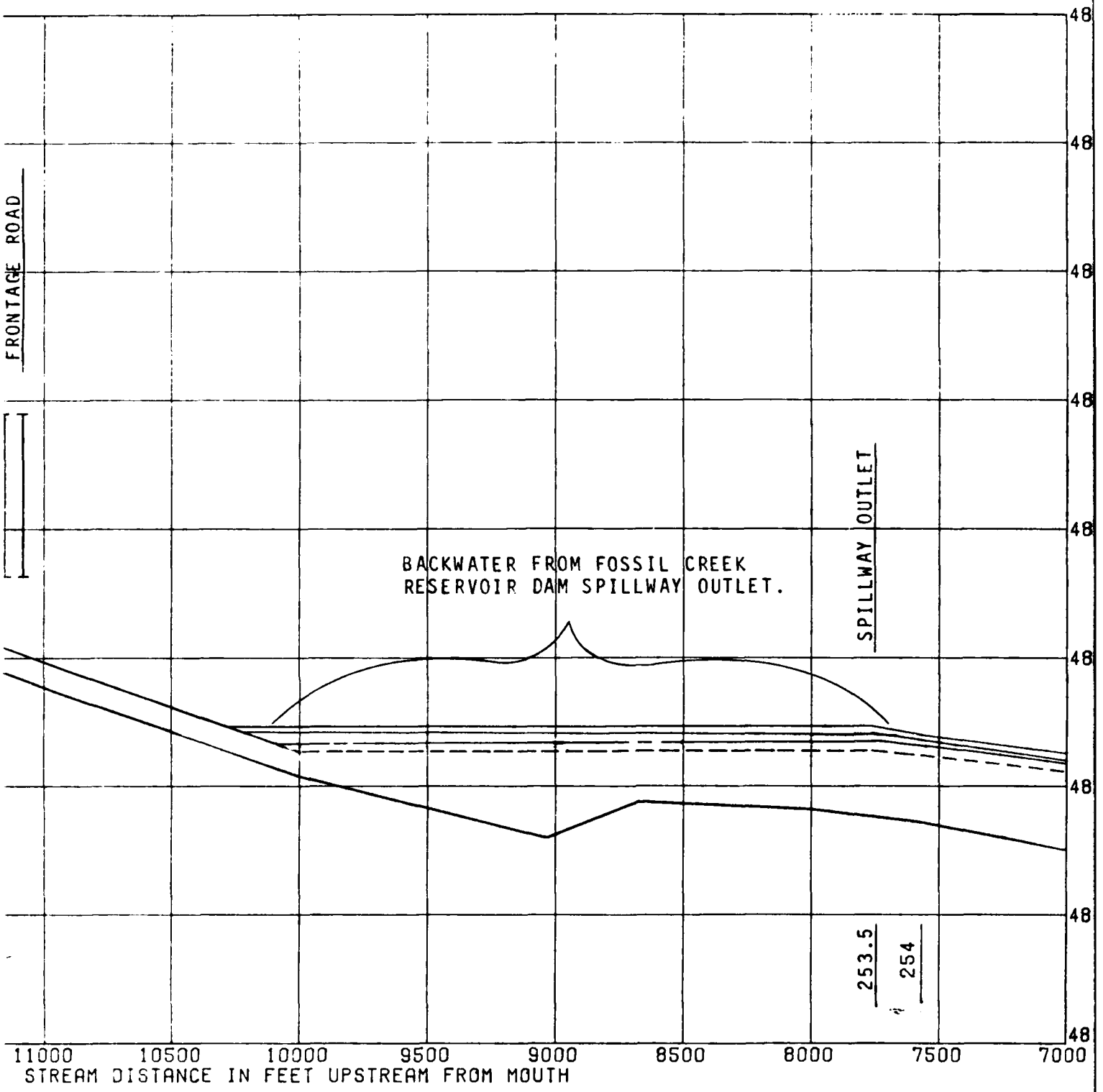
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

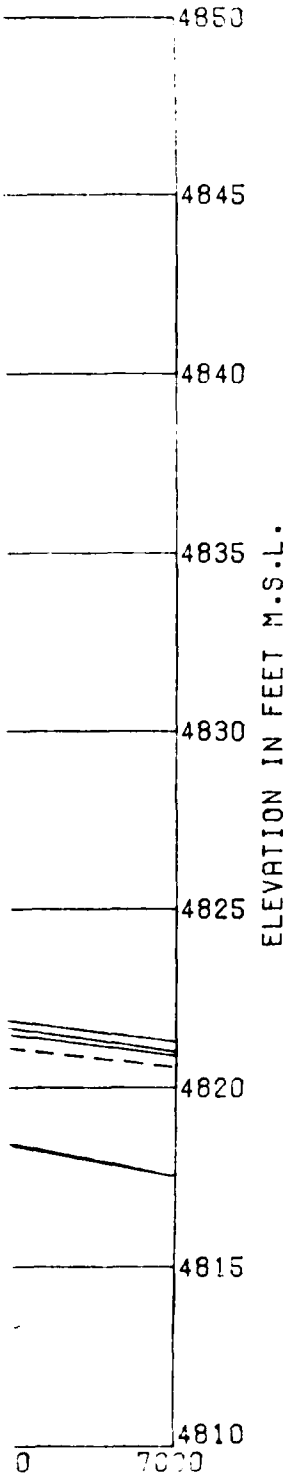
FOSSIL CREEK
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



PL. 31. 1 of 3





LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- 2 — Reference Point

NOTES:

1. For flood elevations at the reference points, see Table 2.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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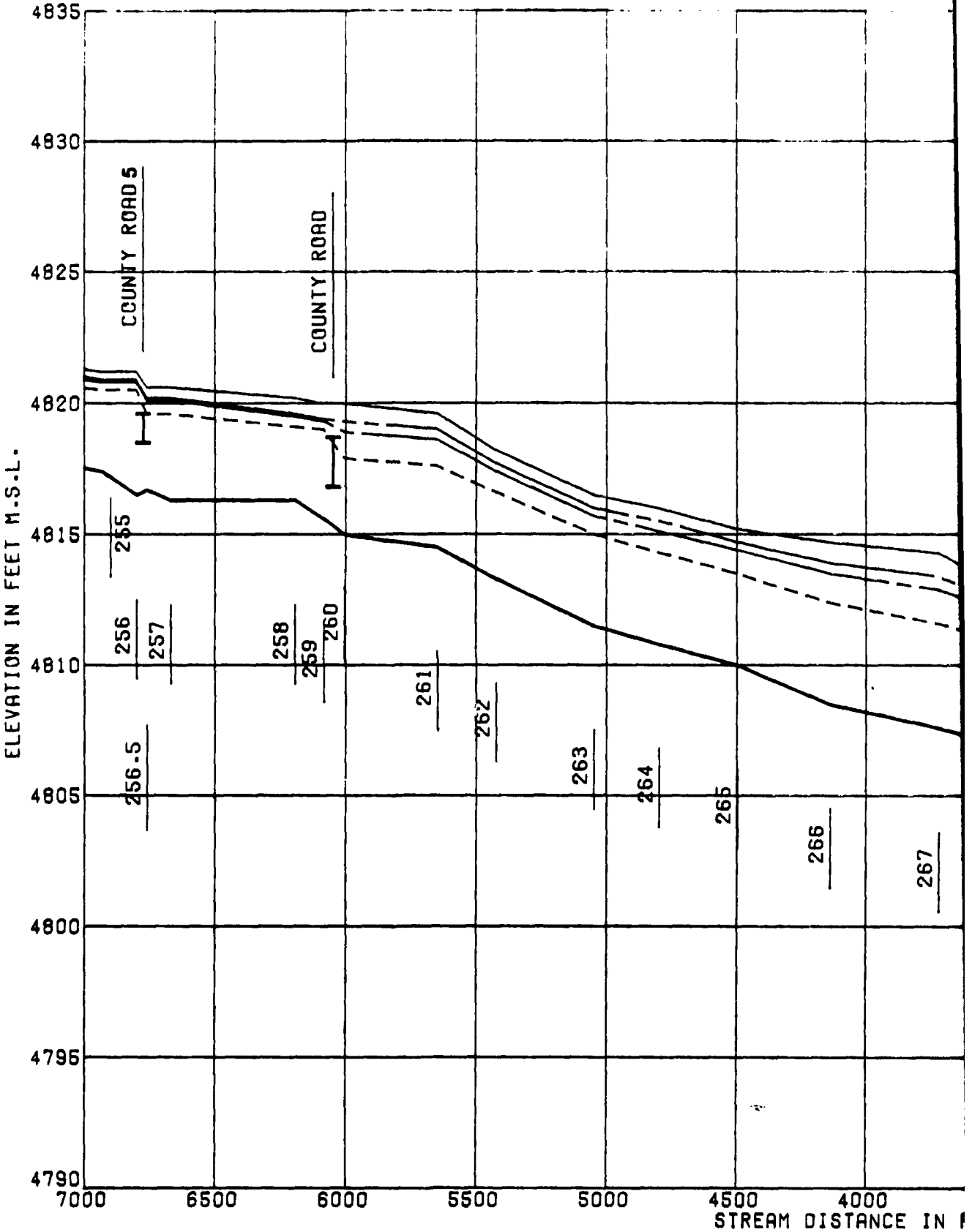
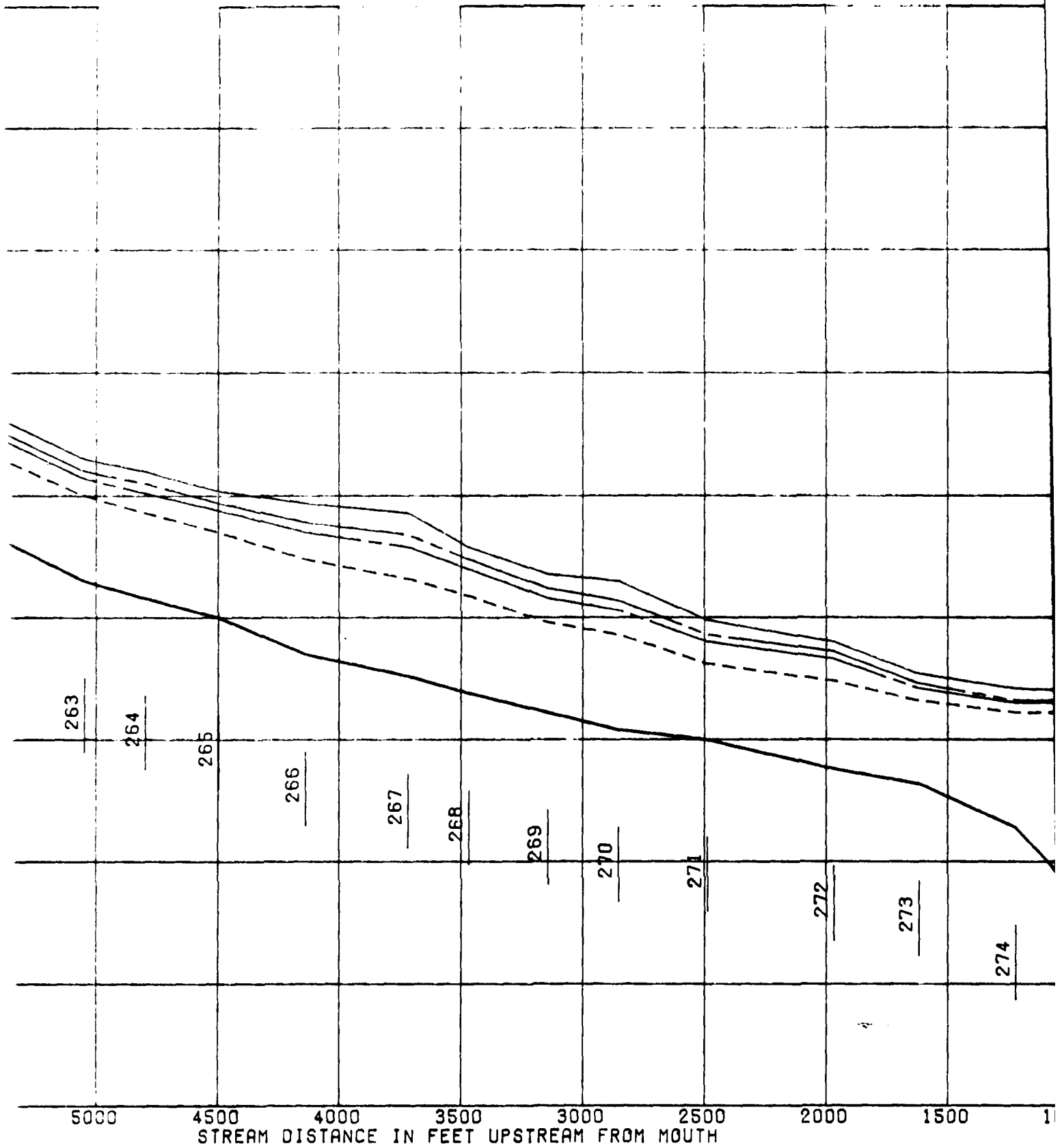
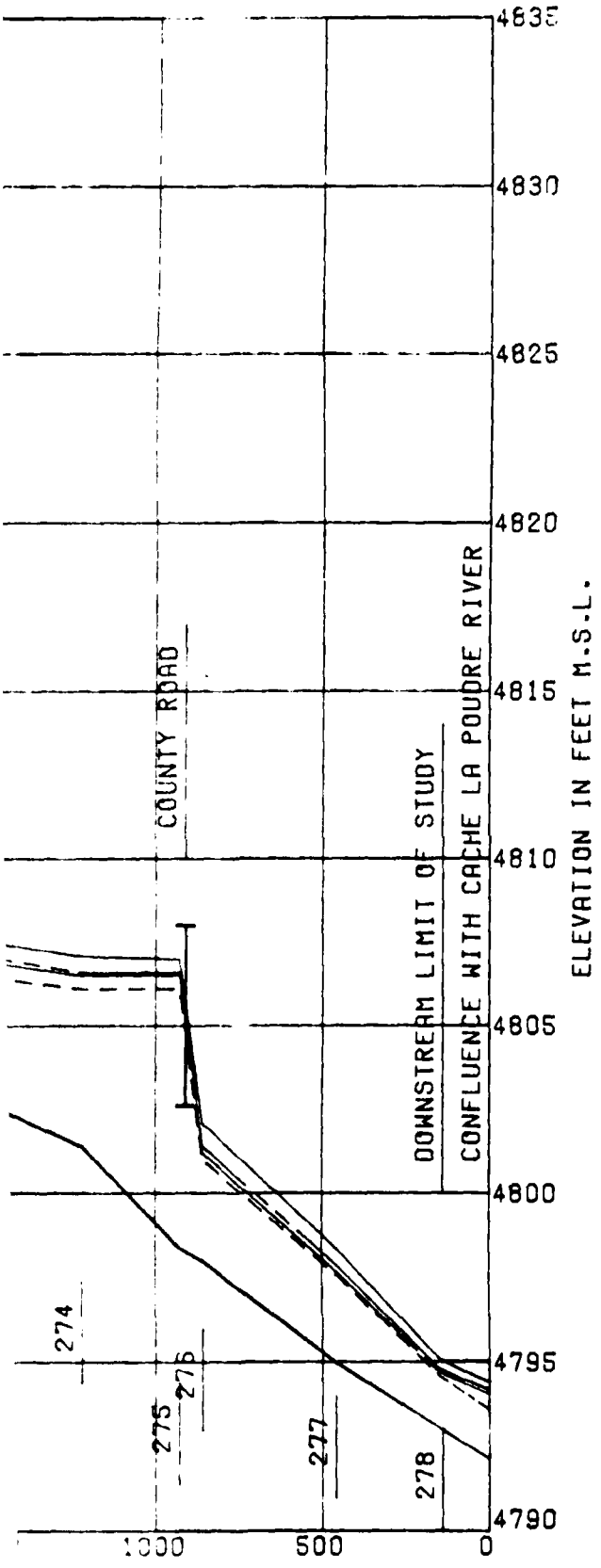






LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- 2 — Reference Point

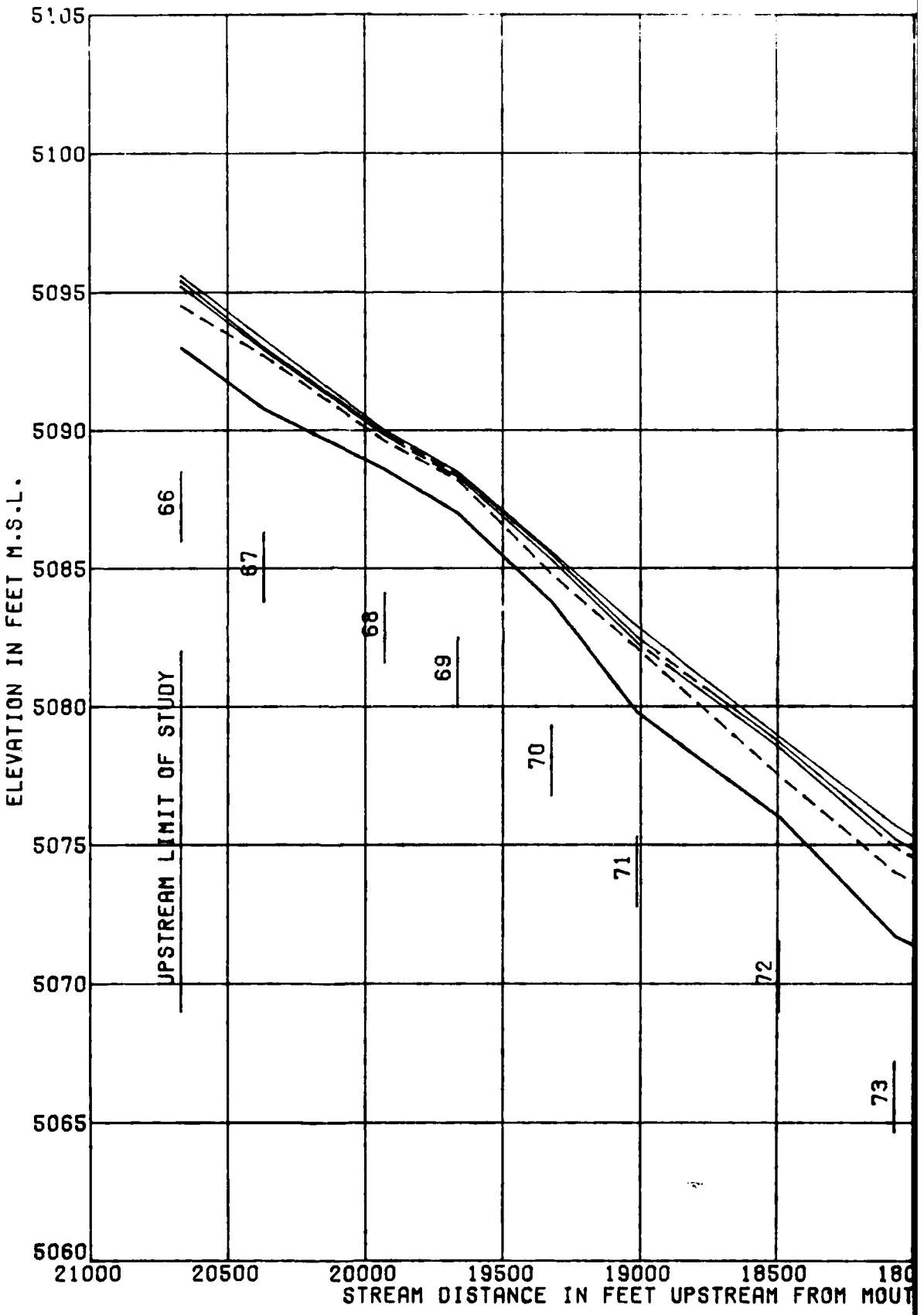
NOTES:

1. For flood elevations at the reference points, see Table 2.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

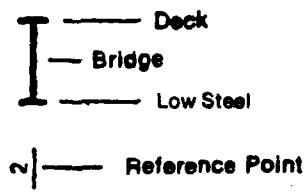
FOSSIL CREEK
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD



NOTES:

1. For flood elevations at the reference points, see Table 4.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM C
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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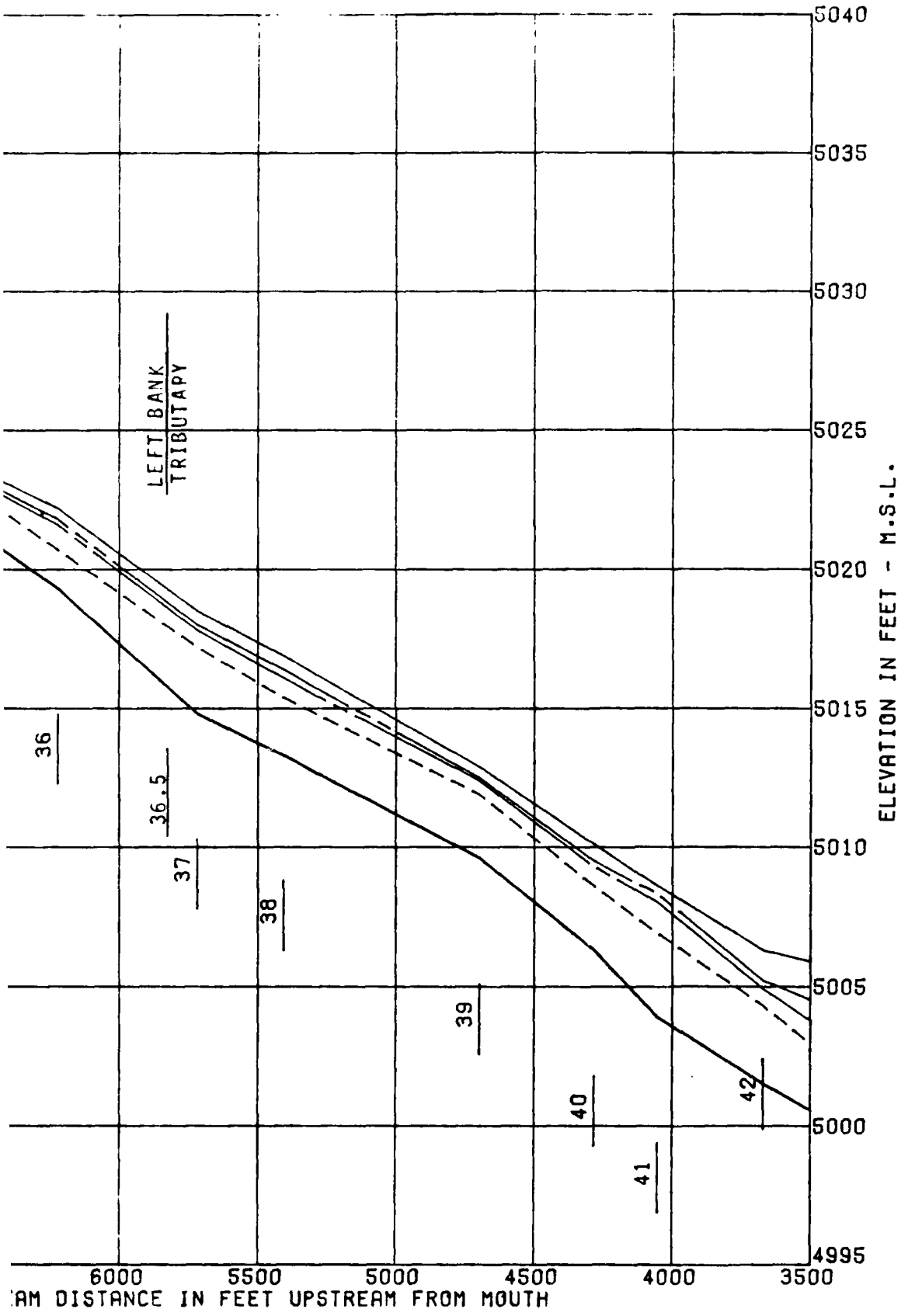
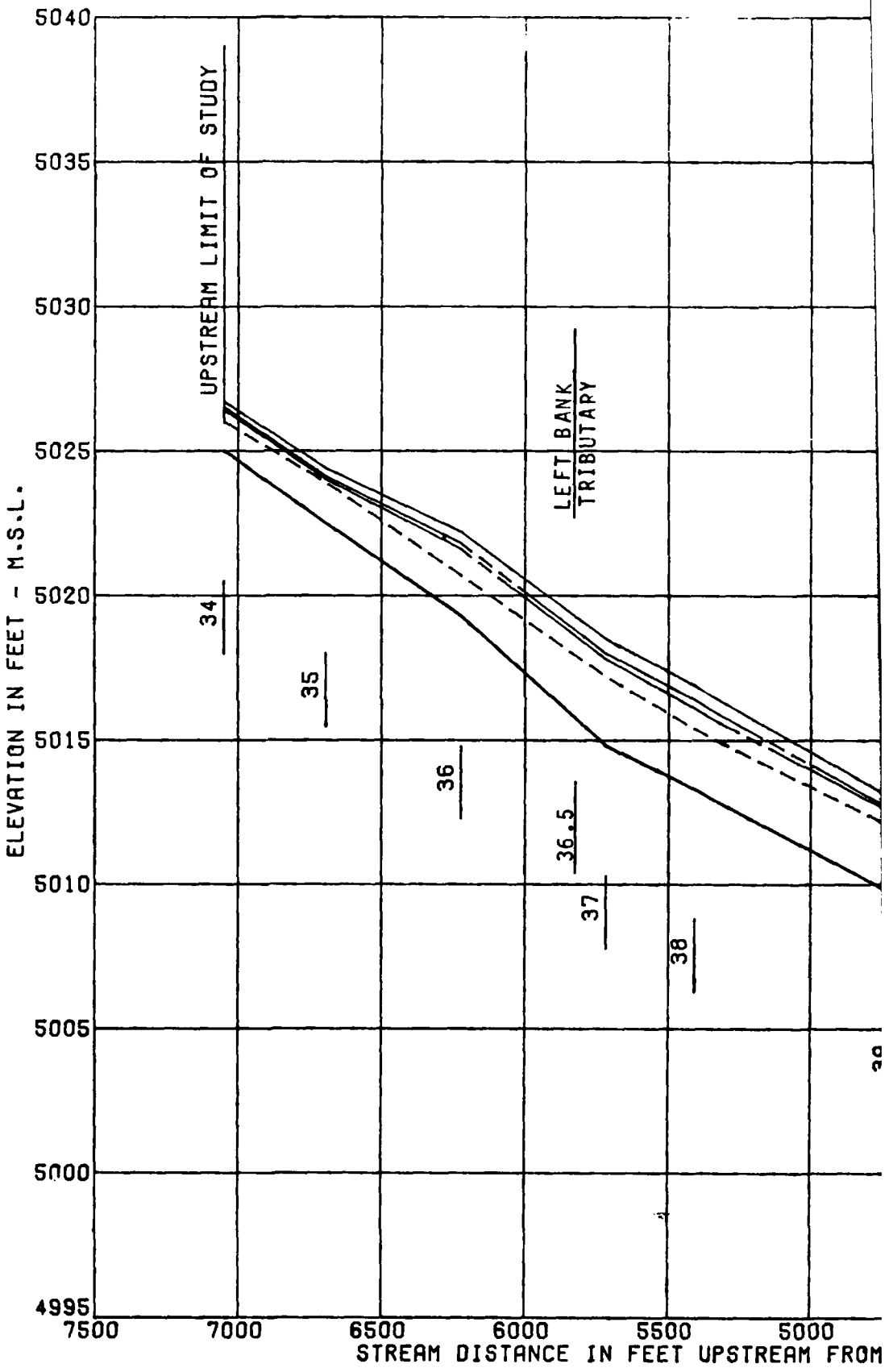
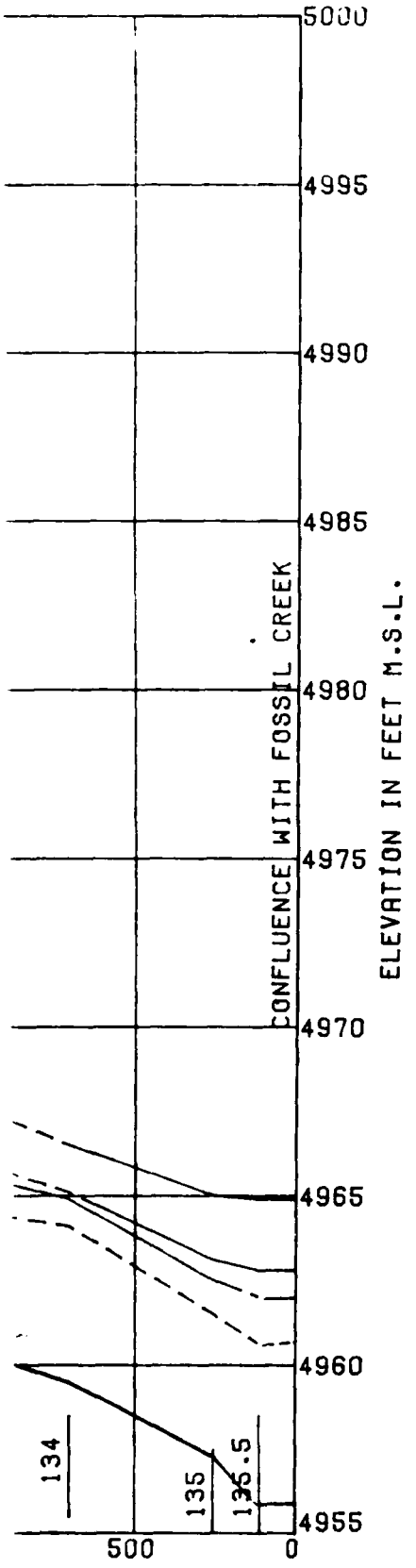




Pl. 37 1 of 3



LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD

- Deck
- Bridge
- Low Steel

2 — Reference Point

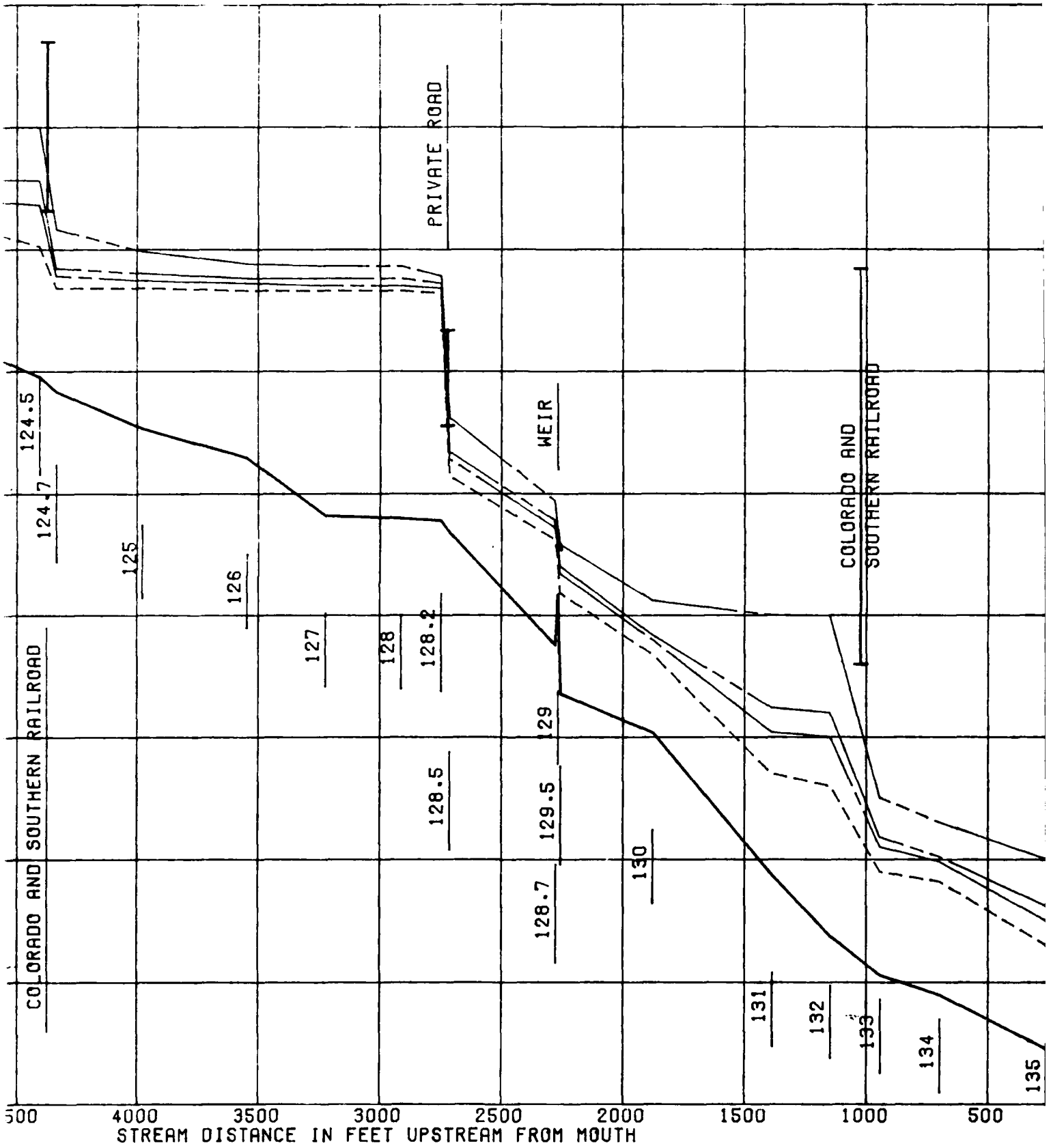
NOTES:

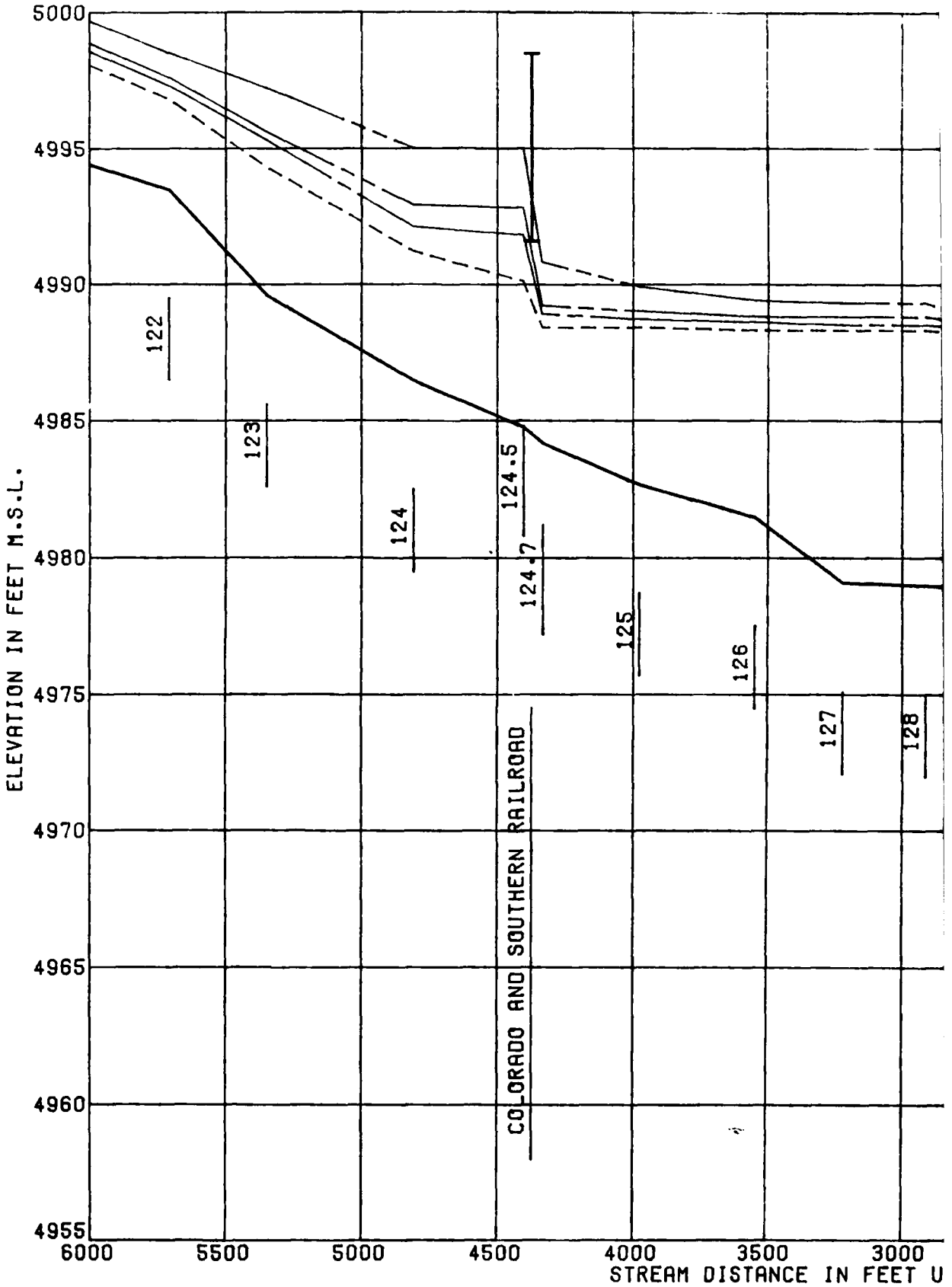
1. For flood elevations at the reference points, see Table 3.

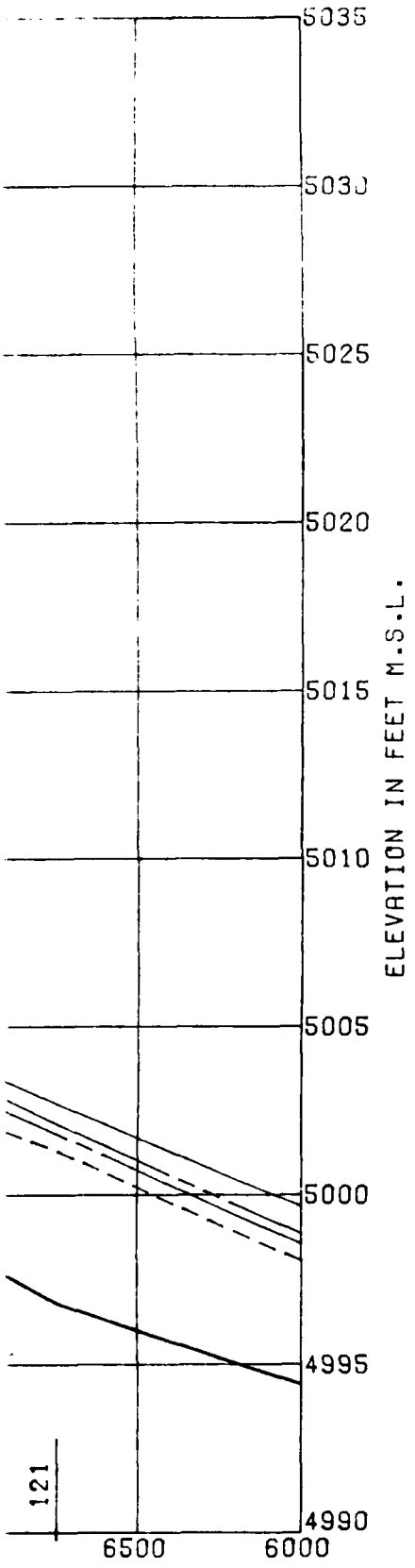
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD

- Deck
- Bridge
- Low Steel
- Reference Point

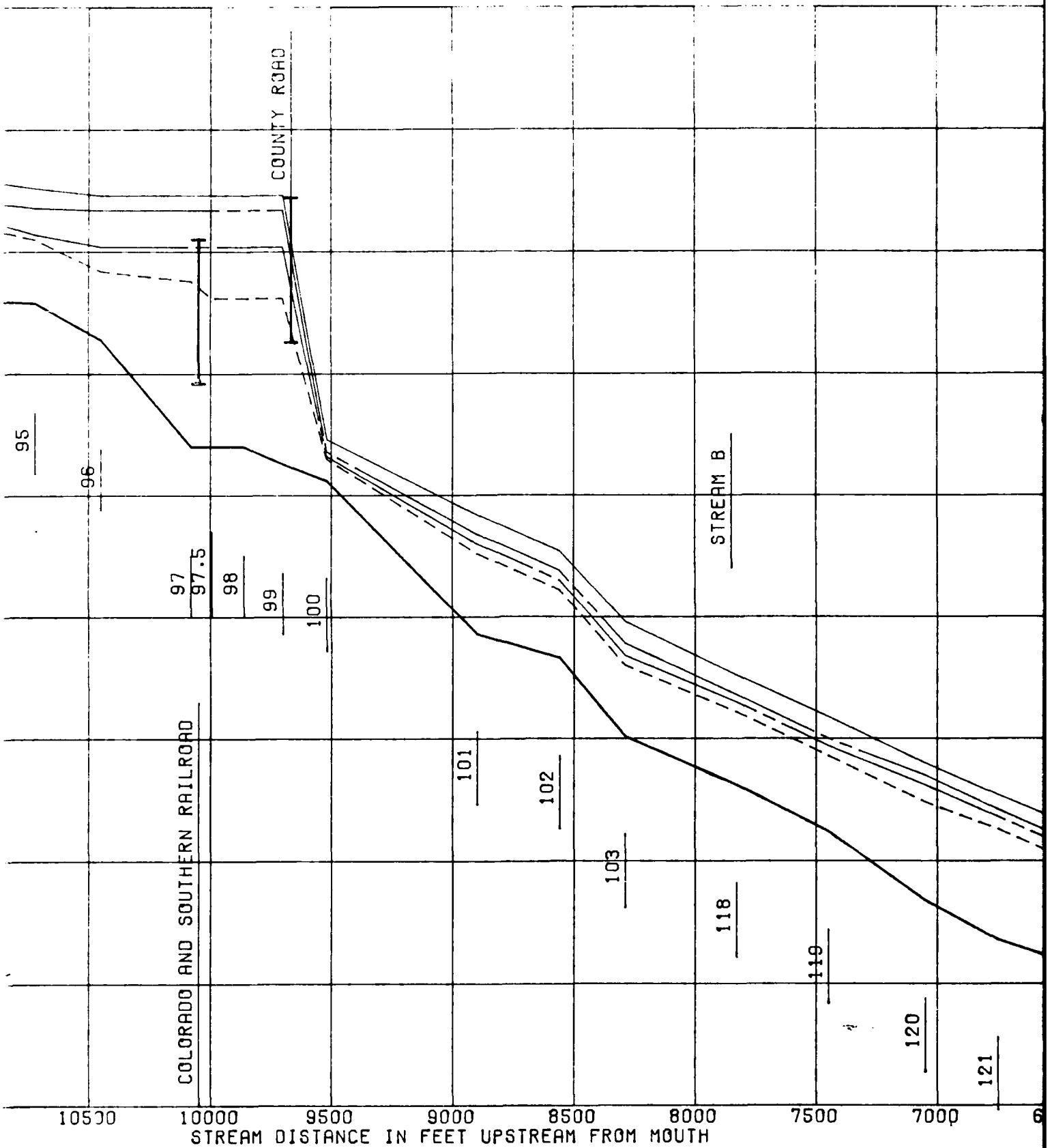
NOTES:

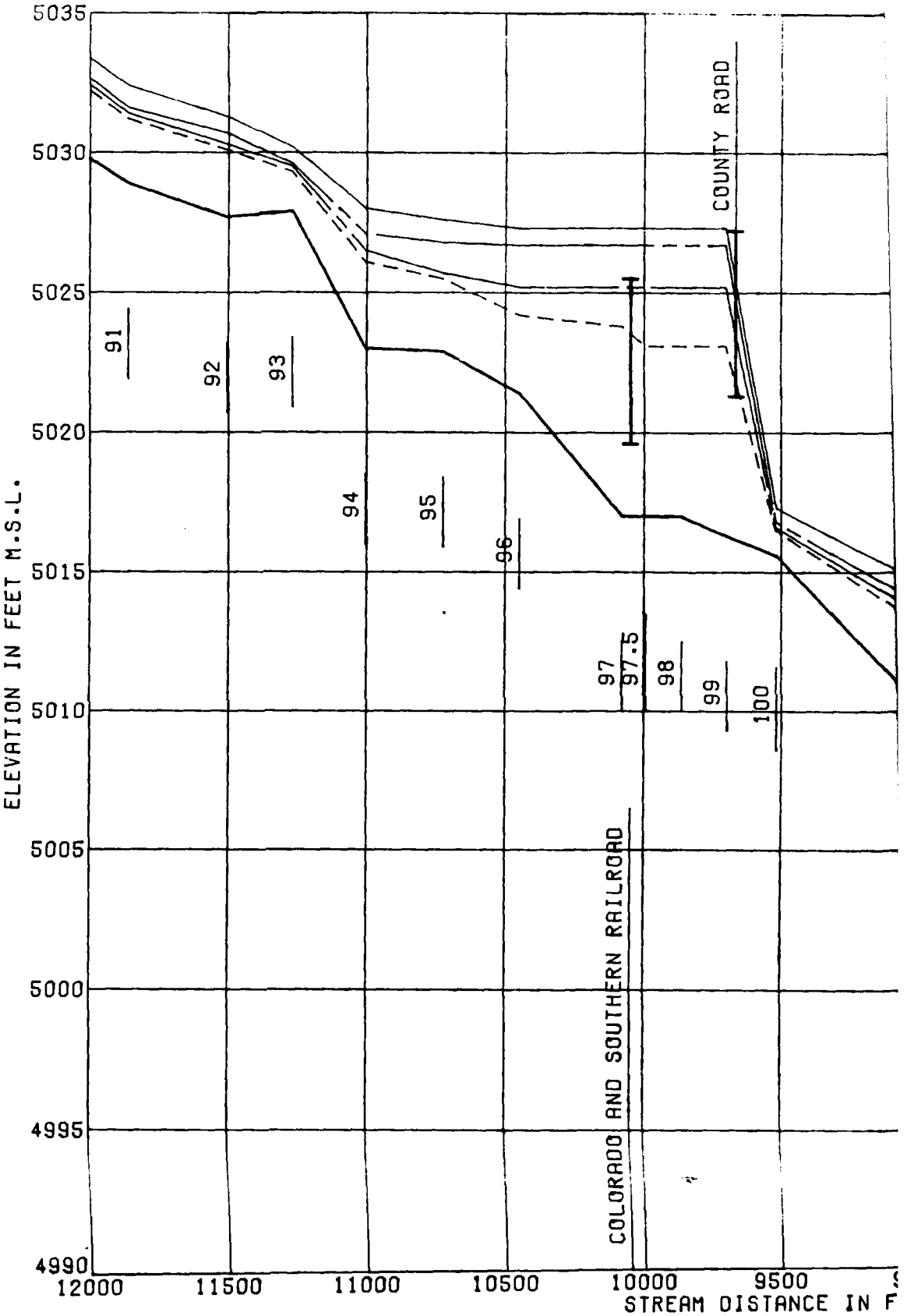
1. For flood elevations at the reference points, see Table 3.

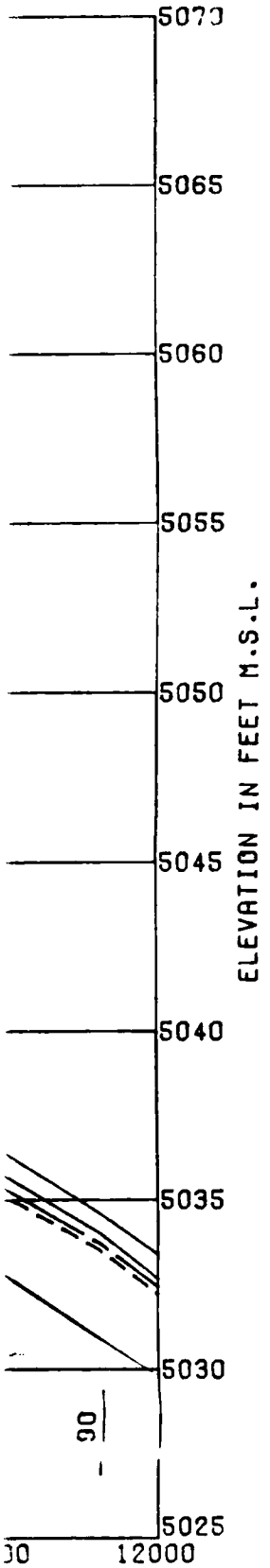
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- Deck
- Bridge
- Low Steel
- 2 — Reference Point

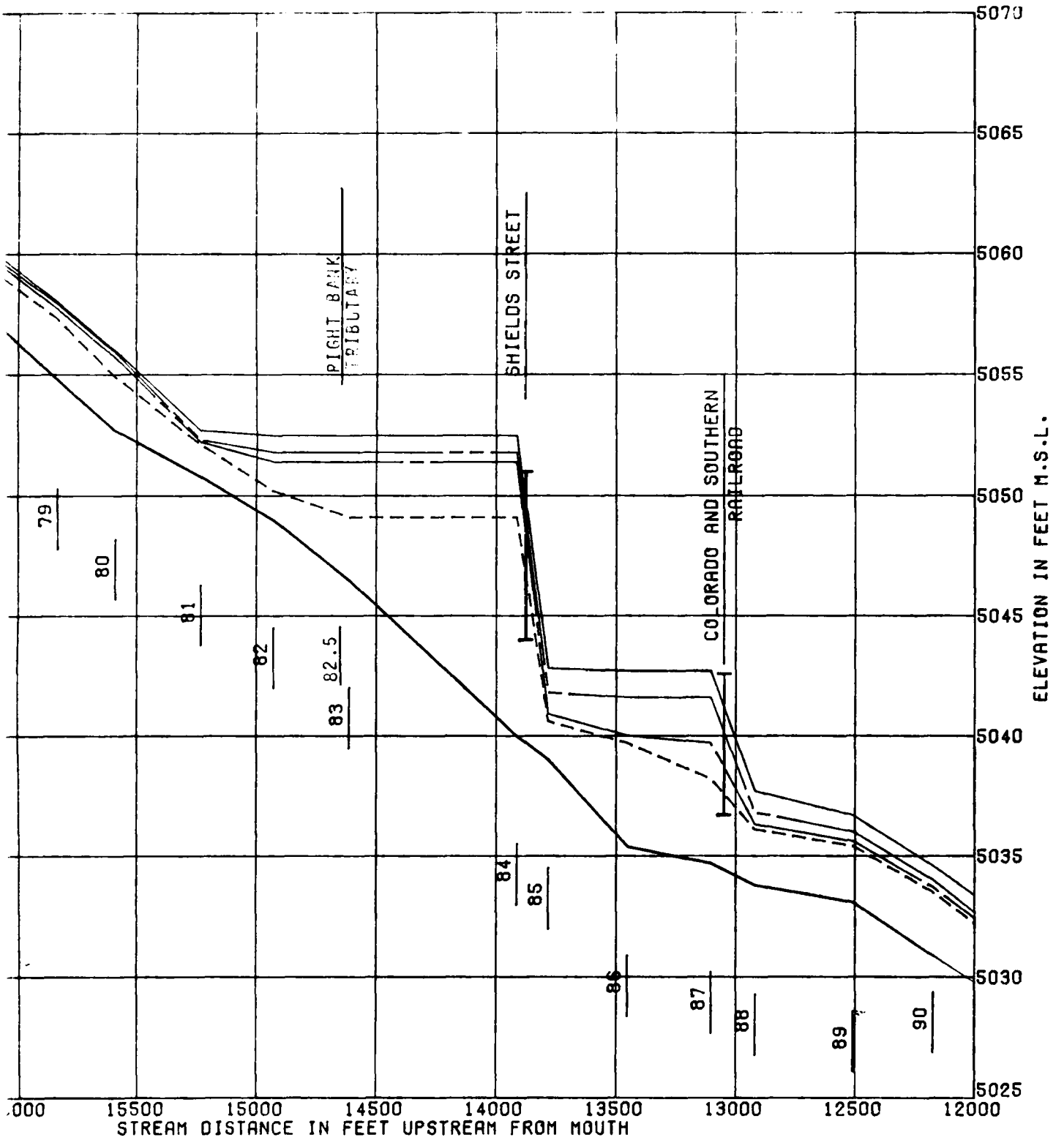
NOTES:

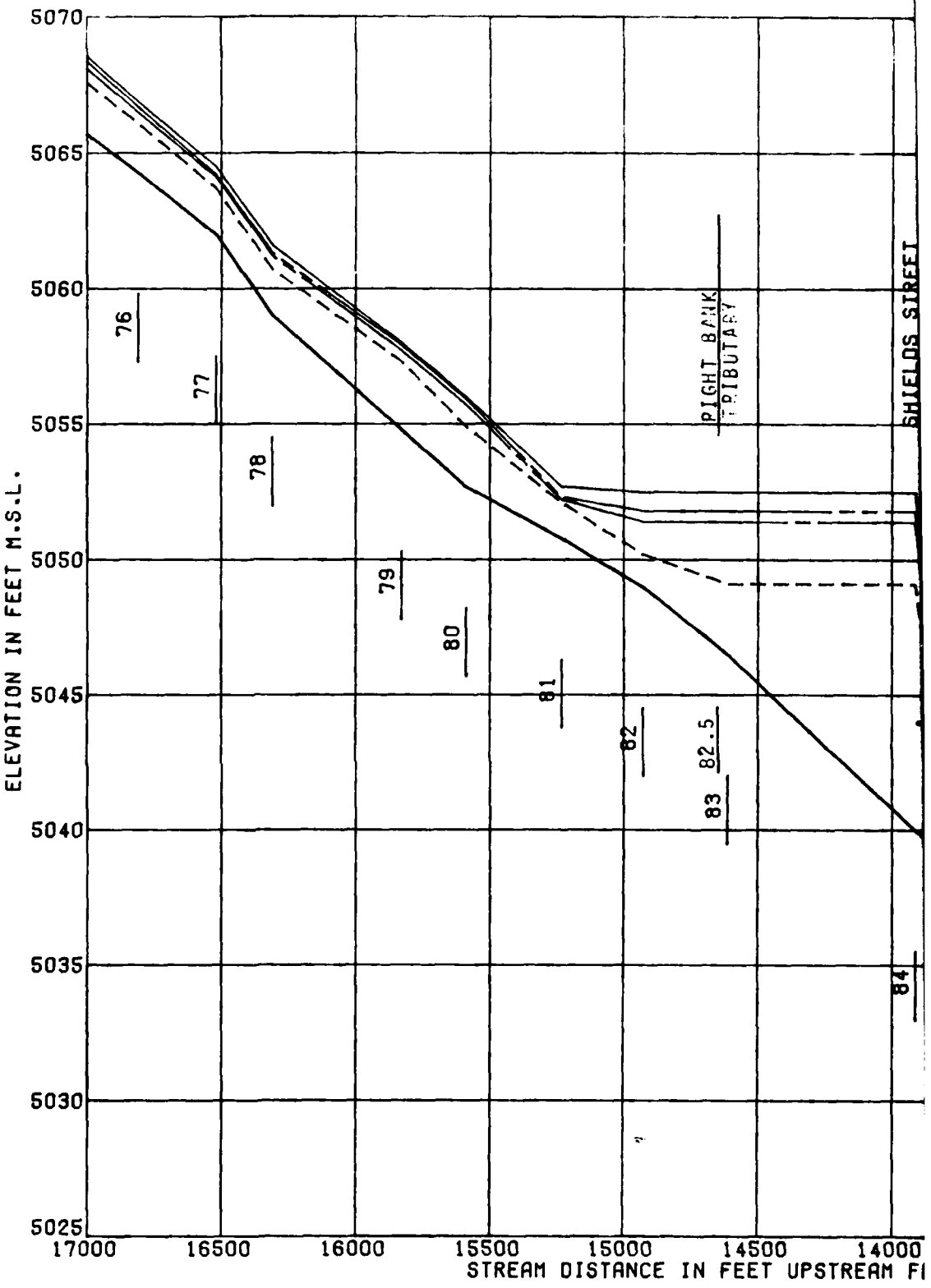
1. For flood elevations at the reference points, see Table 3.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981





PL. 34 1 of 3

LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD
50 YEAR FLOOD
10 YEAR FLOOD

Deck
Bridge
Low Steel

Reference Point

NOTES:

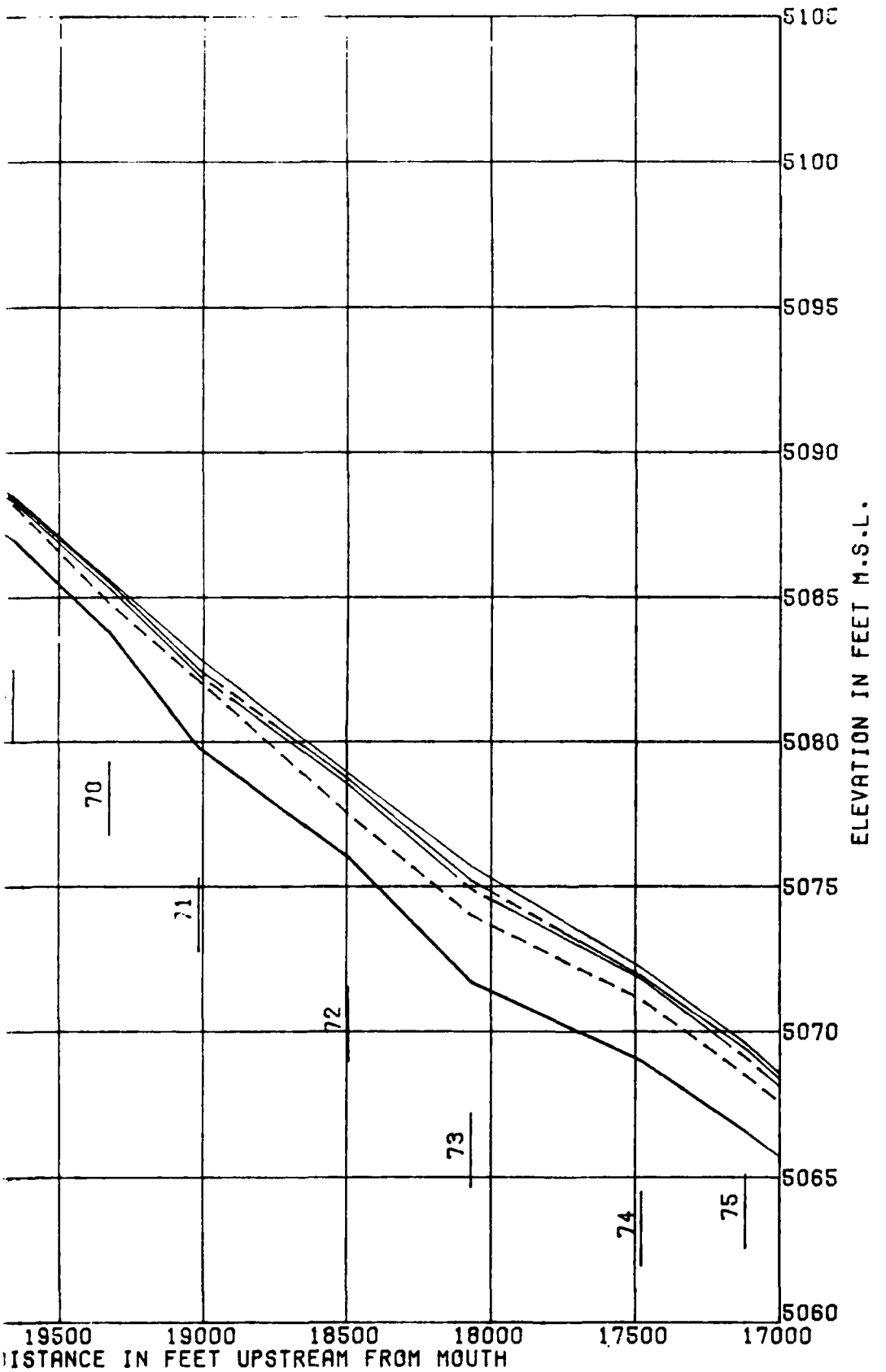
1. For flood elevations at the reference points, see Table 3.

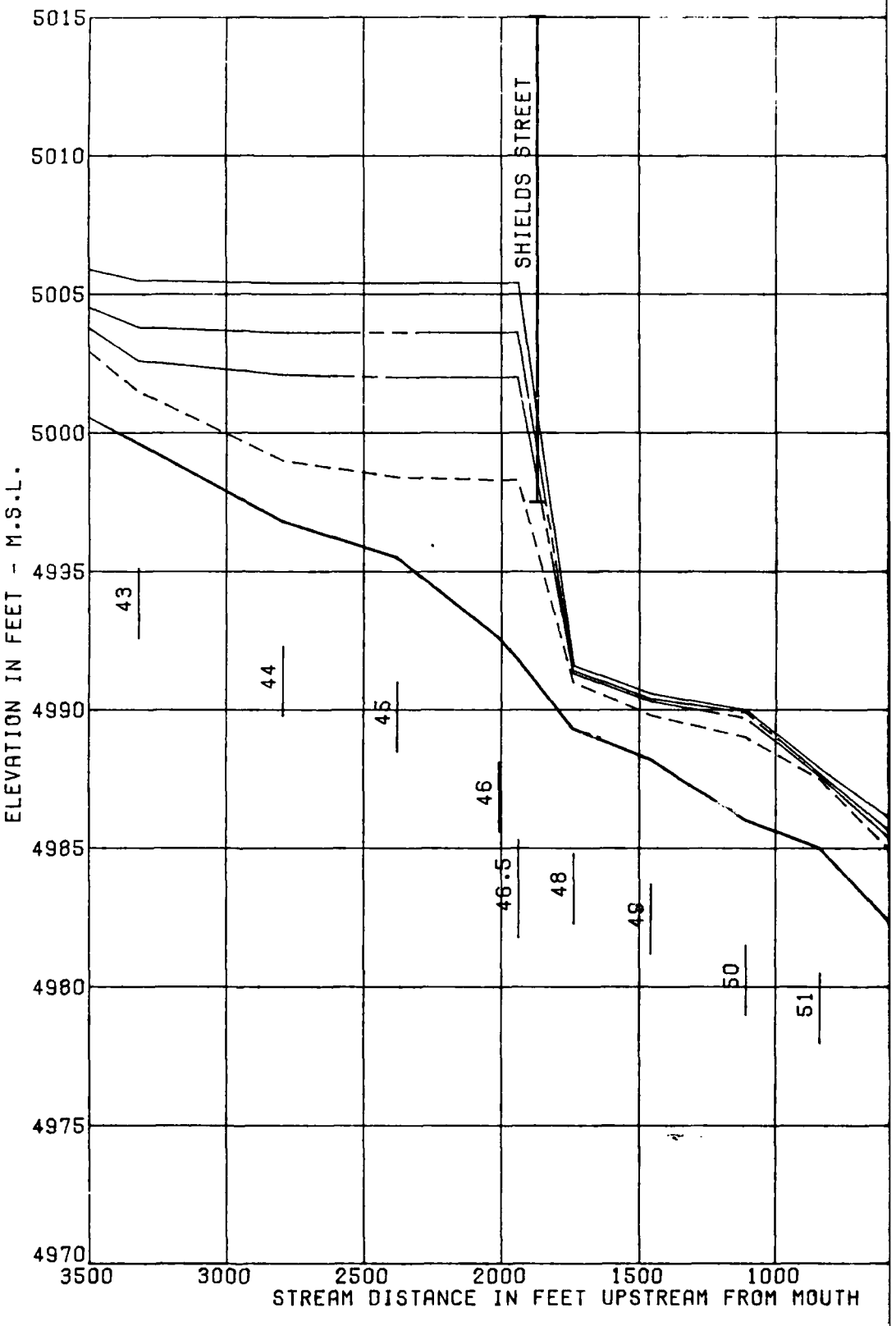
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A
FLOOD PROFILES

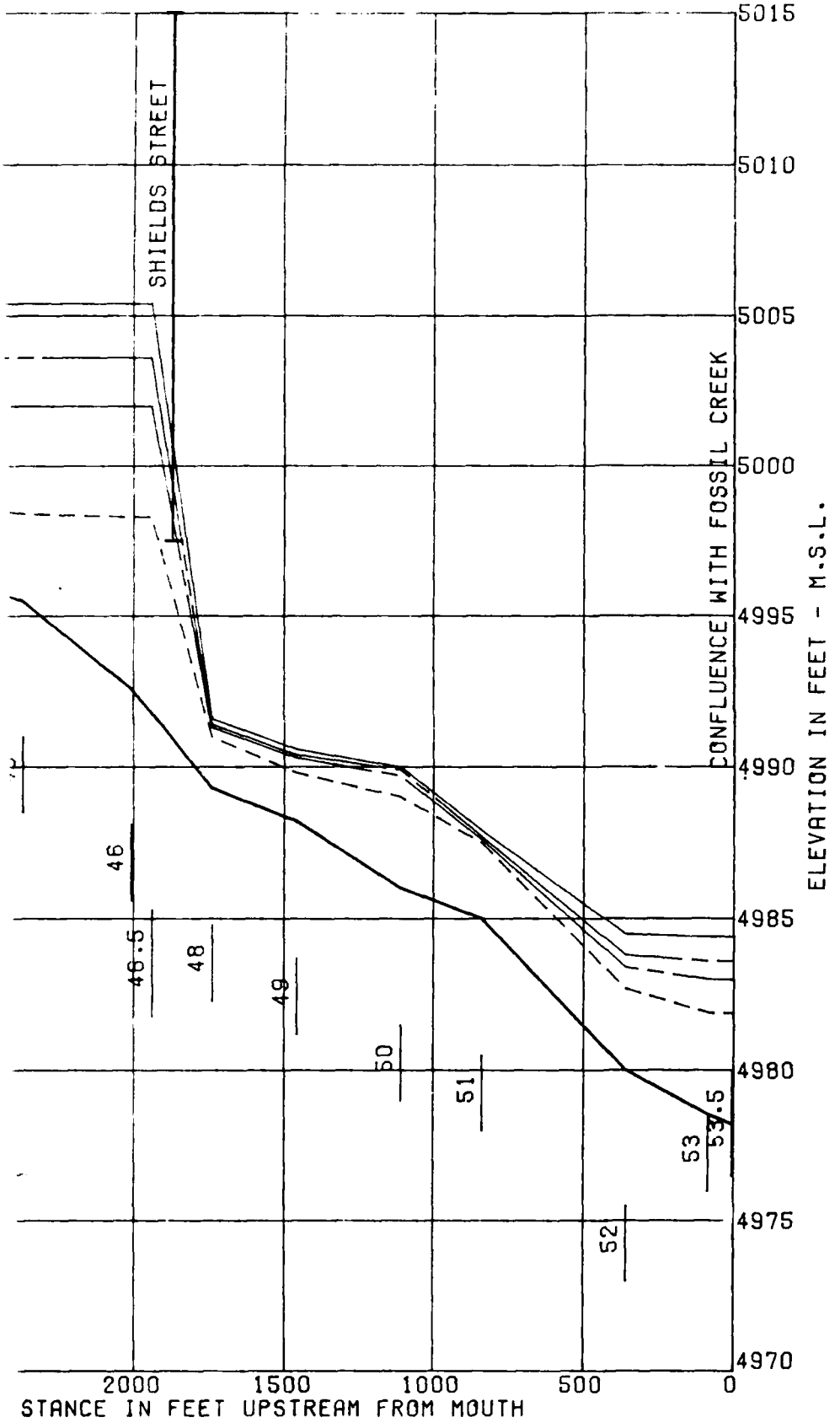
U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

3473





PL. 38 1 of 3



LEGEND:

500 YEAR FLOOD
100 YEAR FLOOD
50 YEAR FLOOD
10 YEAR FLOOD

Deck
Bridge
Low Steel

Reference Point

NOTES:

1. For flood elevations at the reference points, see Table 4.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM C
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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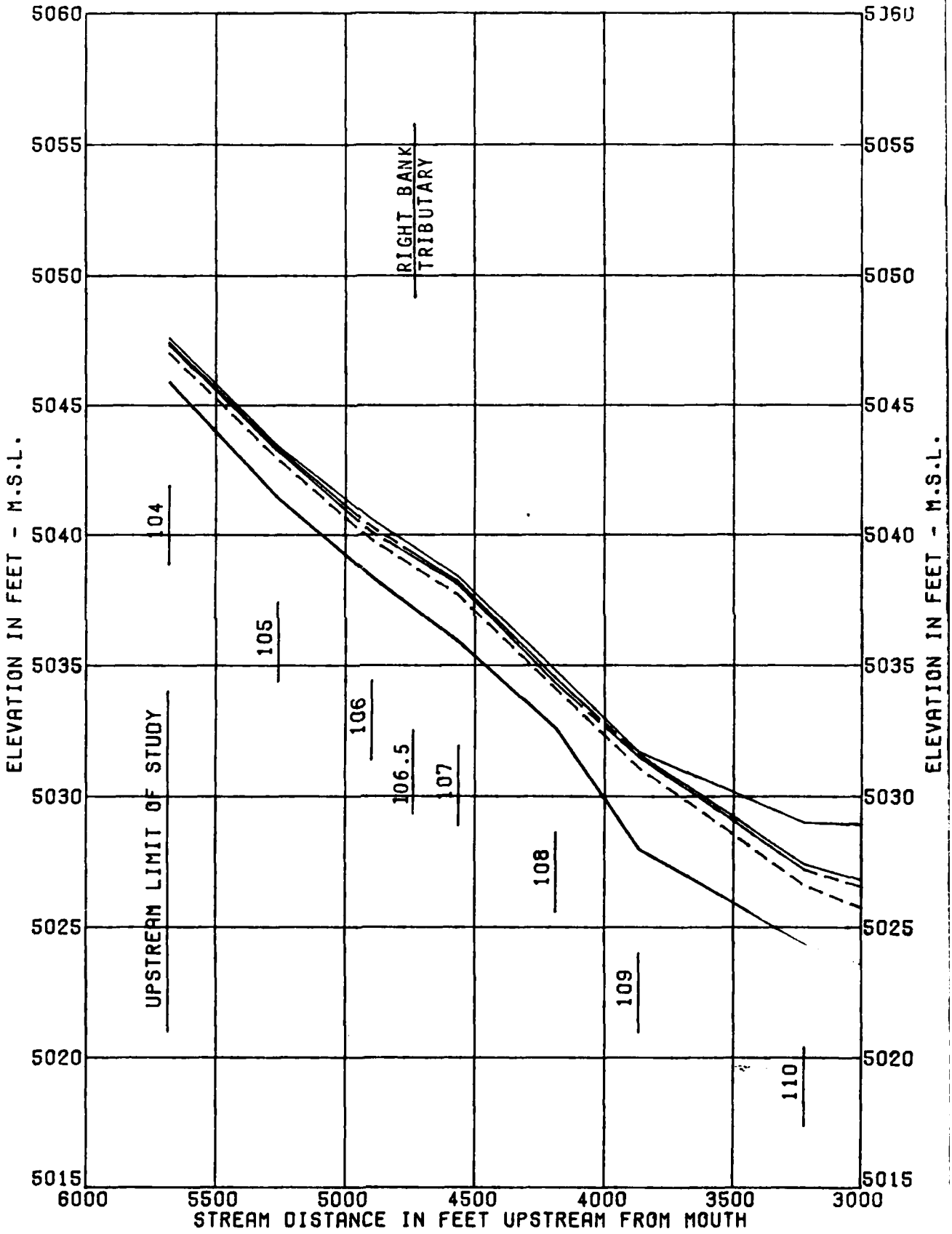

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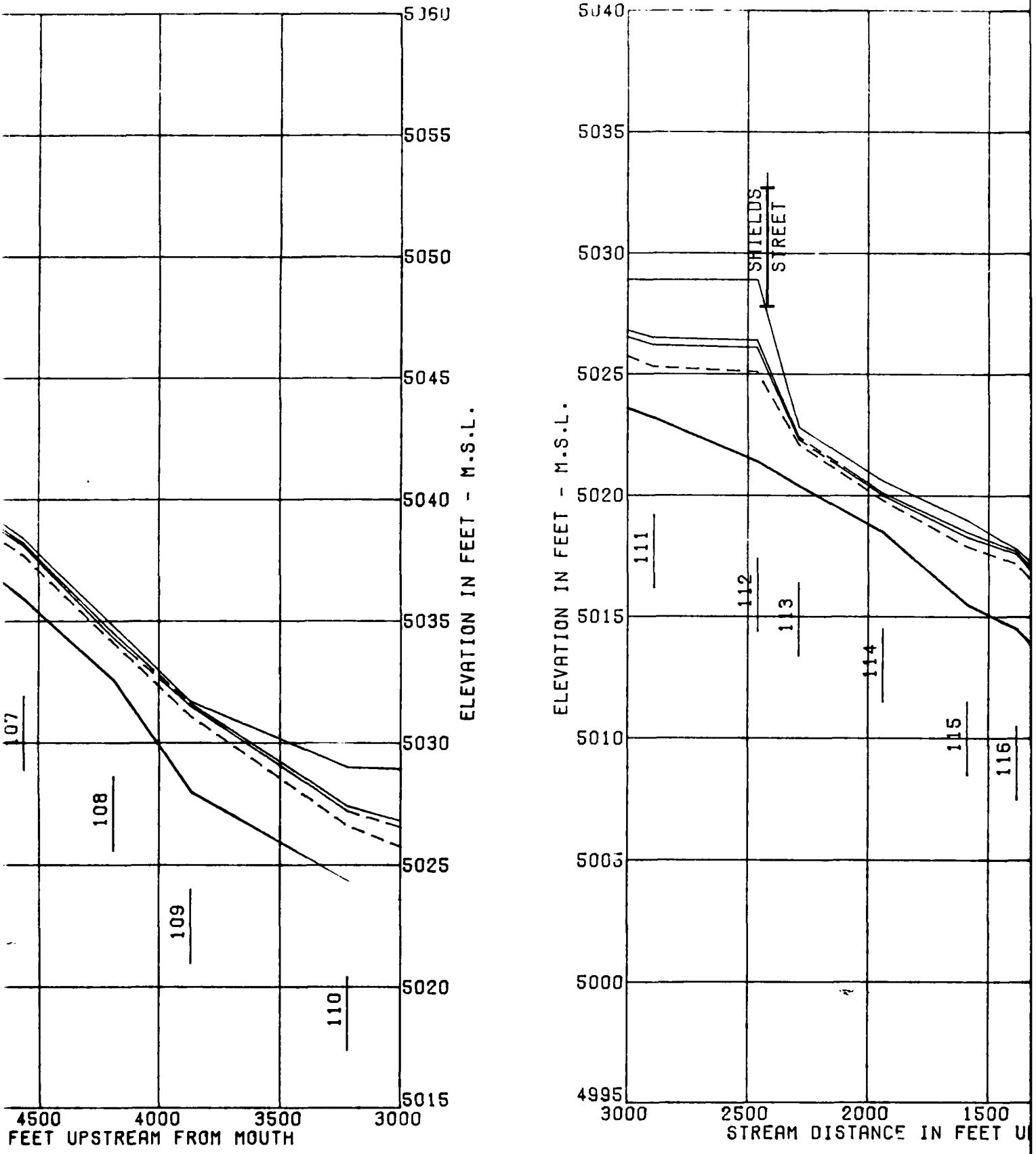
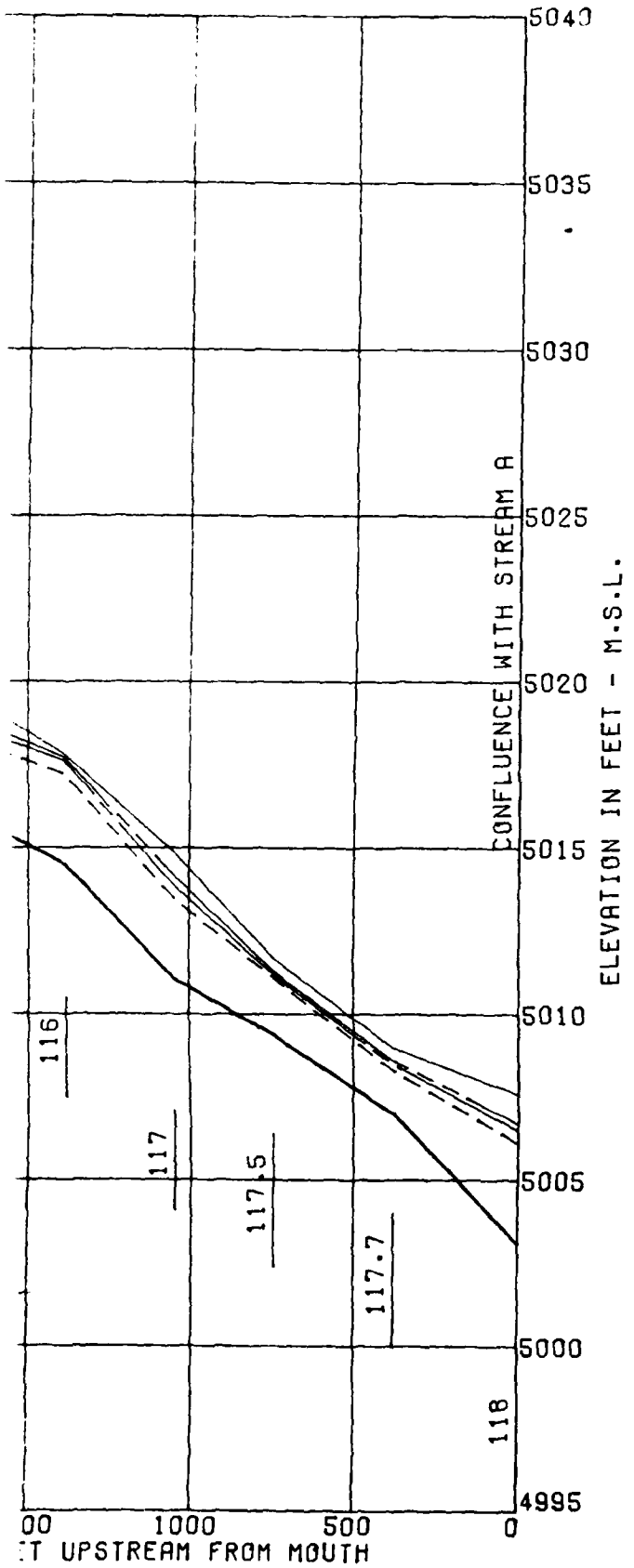
1 of 3





LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD

- Deck
- Bridge
- Low Steel

2 — Reference Point

NOTES:

1. For flood elevations at the reference points, see Table 5.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM B
FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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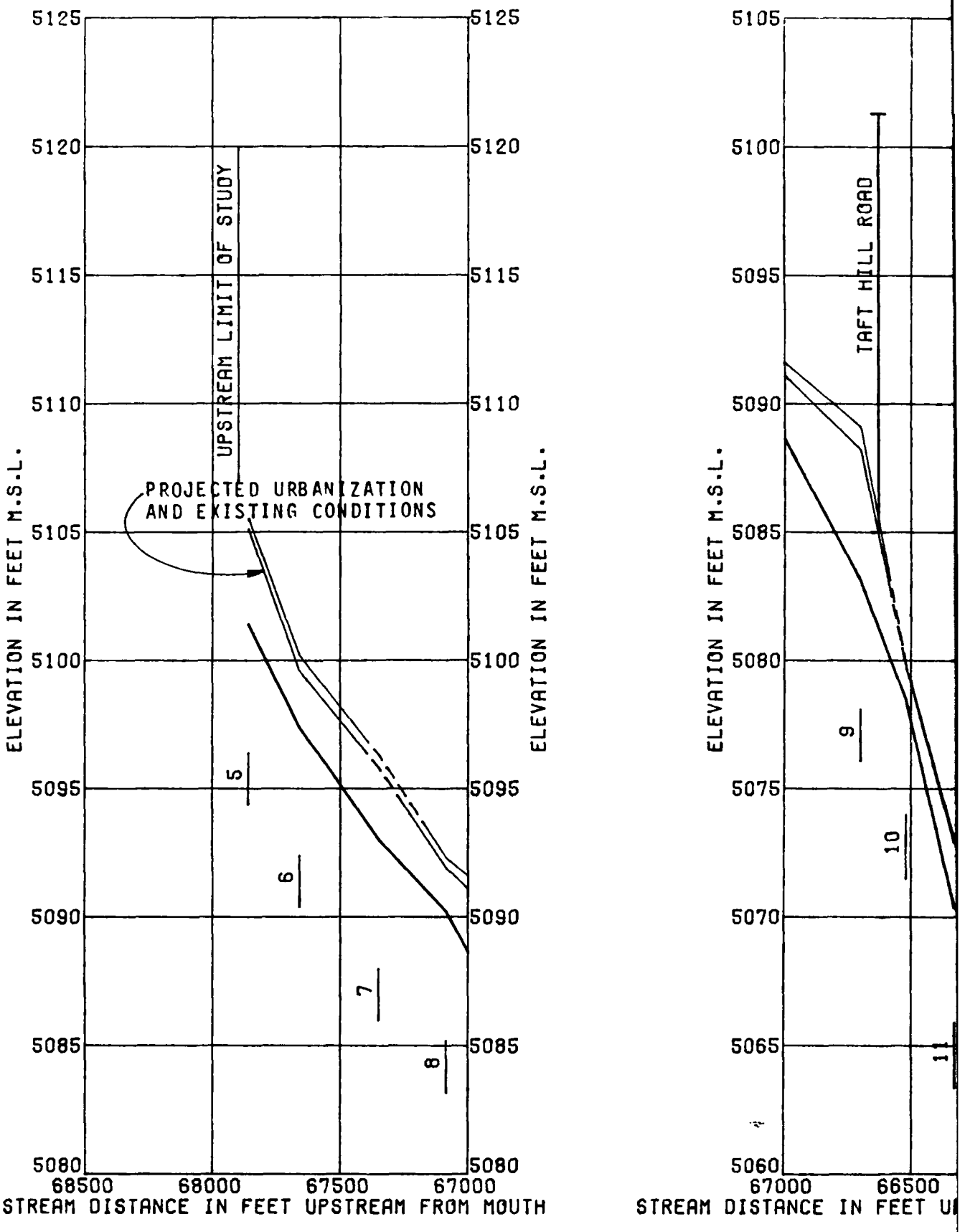
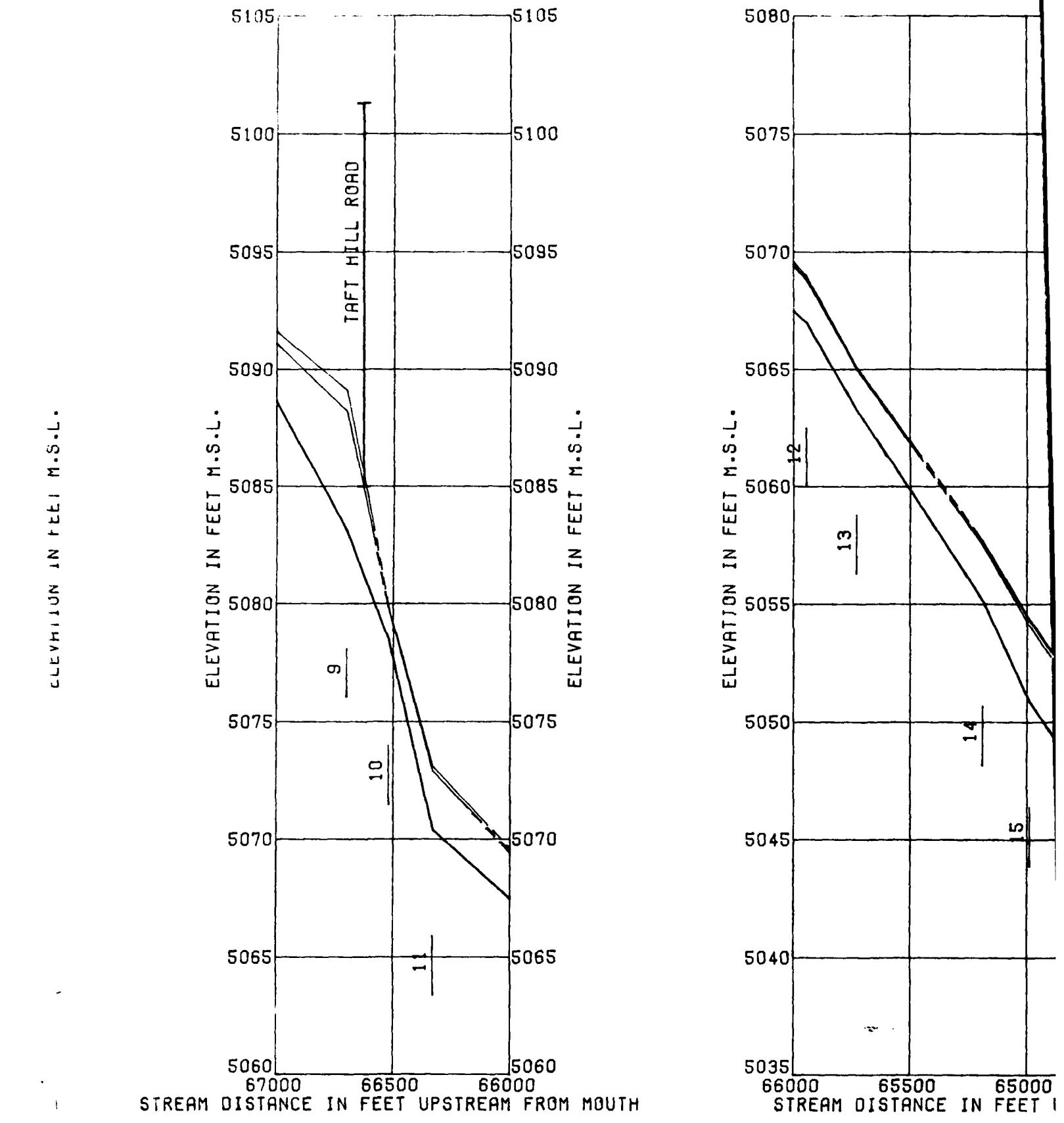
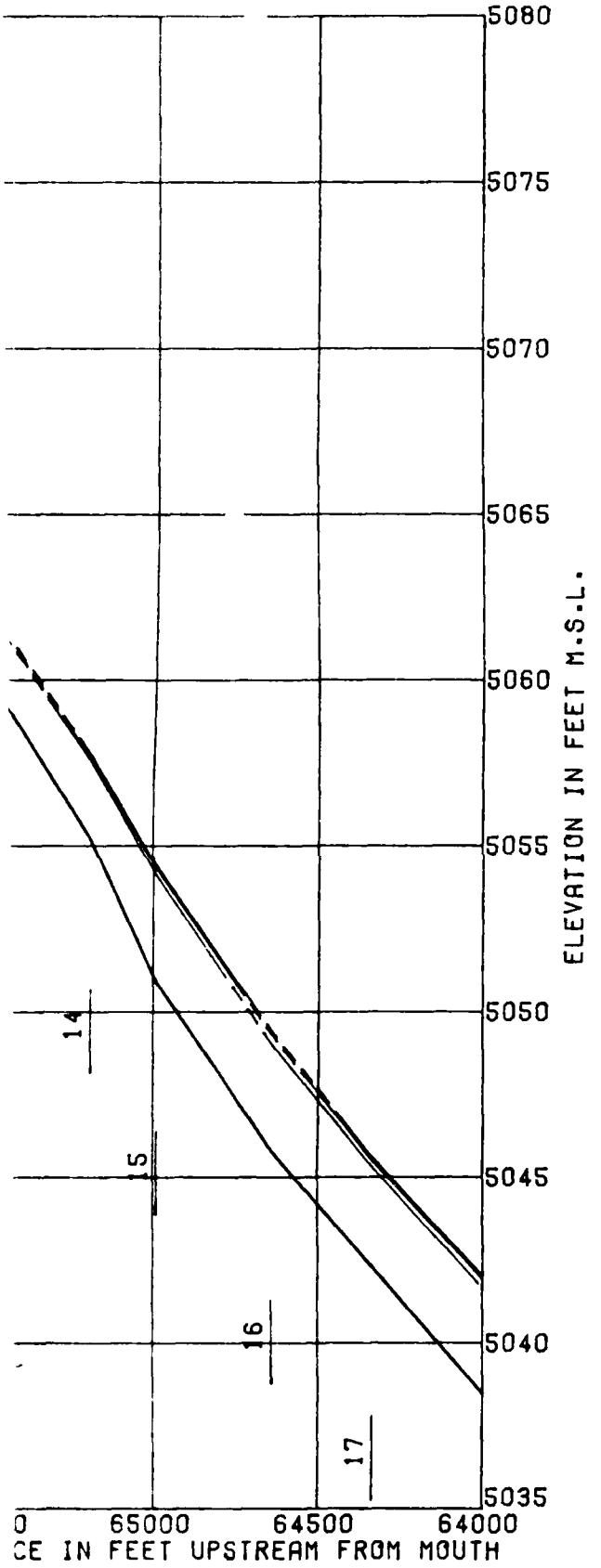


PL. 40 1 of 3



2 of 3



LEGEND:

100 YEAR FLOOD
TOTAL URBANIZATION

100 YEAR FLOOD
PROJECTED URBANIZATION

100 YEAR FLOOD
EXISTING CONDITIONS

Deck
Bridge
Low Steel

Reference Point

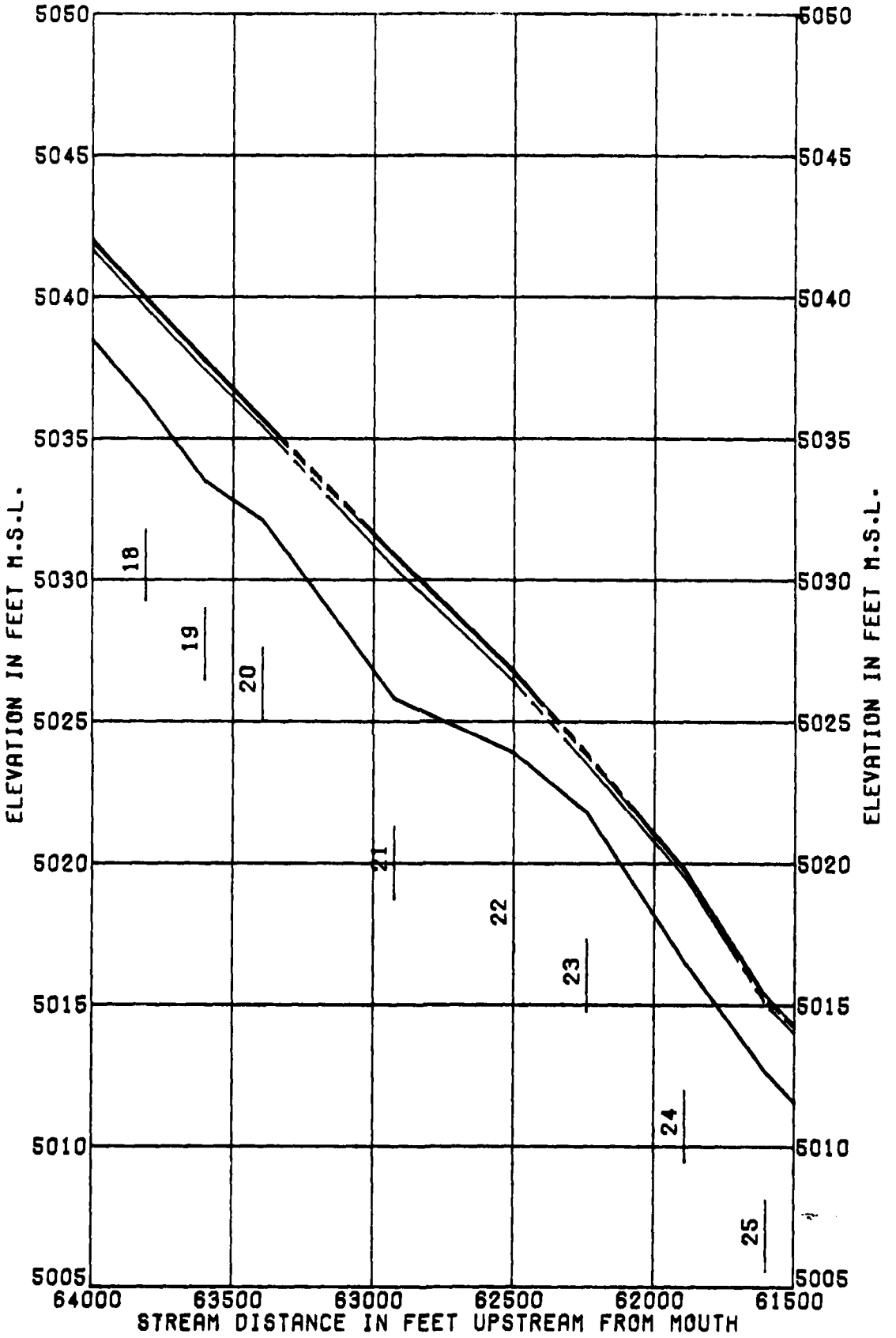
NOTES:

1. For flood elevations at the reference points, see Table 6.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



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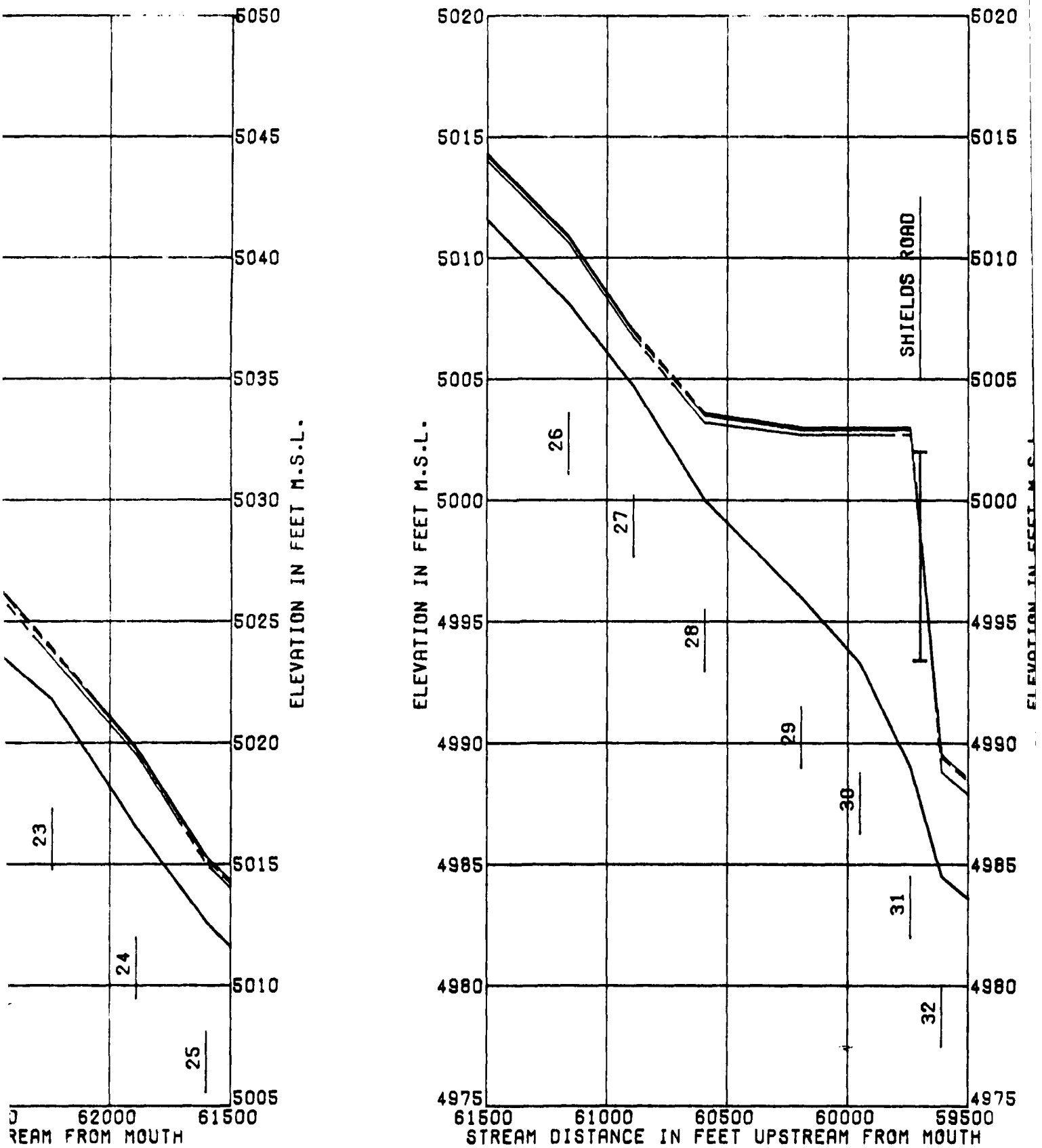
1 of 3



020

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010

005

100

095

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085

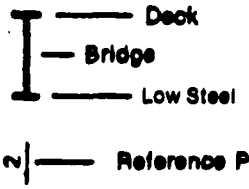
080

075

ELEVATION IN FEET M.S.L.

LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS



NOTES:

1. For flood elevations at the reference points, see Table 6.

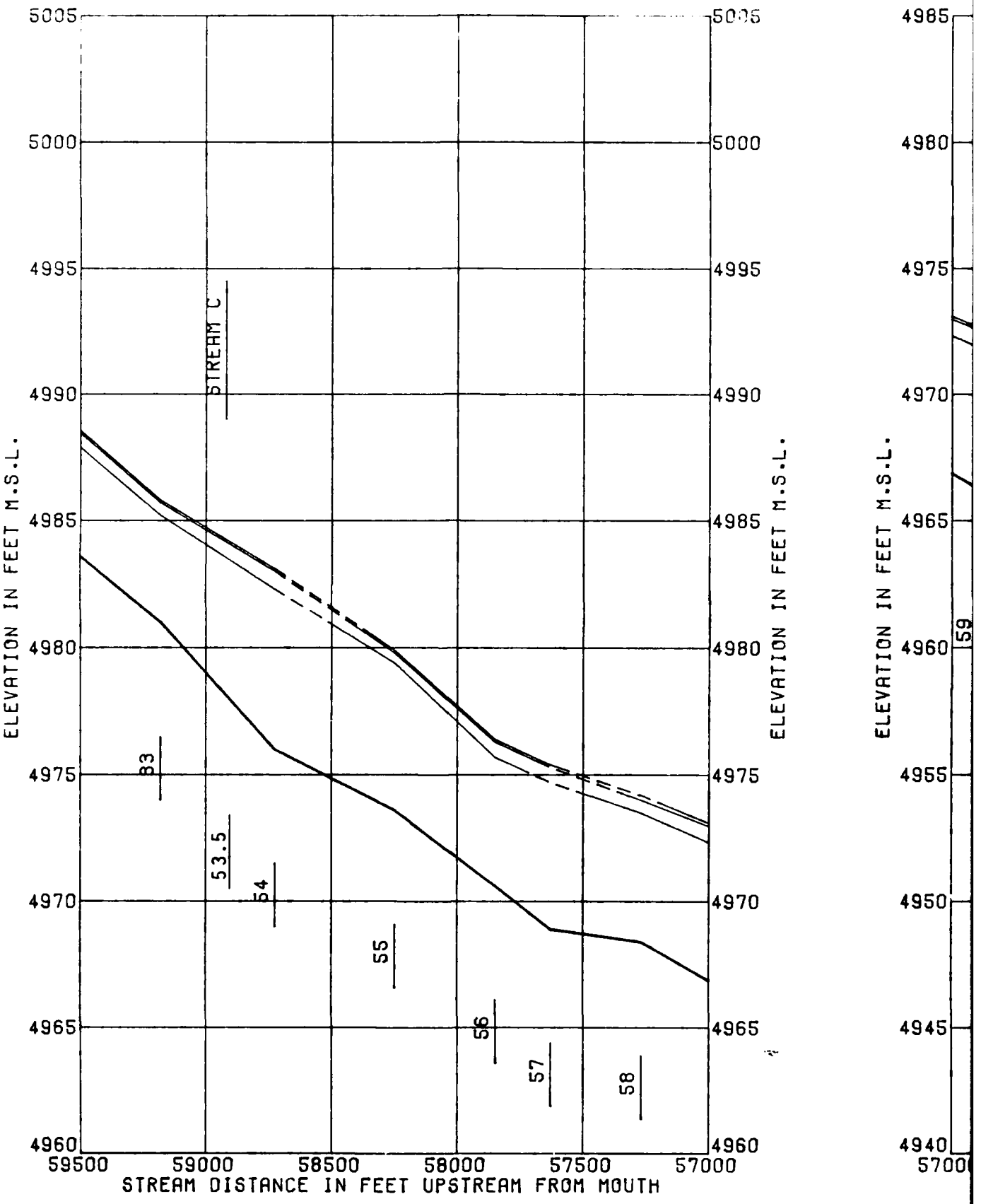
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

VOLUME IV PLATE 41

3 of 3


5005
5000
4995
4990
4985
4980
4975
4970
4965
4960
ELEVATION IN FEET M.S.L.
STREAM C
53
53.5
54
55
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59500
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58500
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57000
STREAM DISTANCE IN FEET UPSTREAM FROM MOUTH
4985
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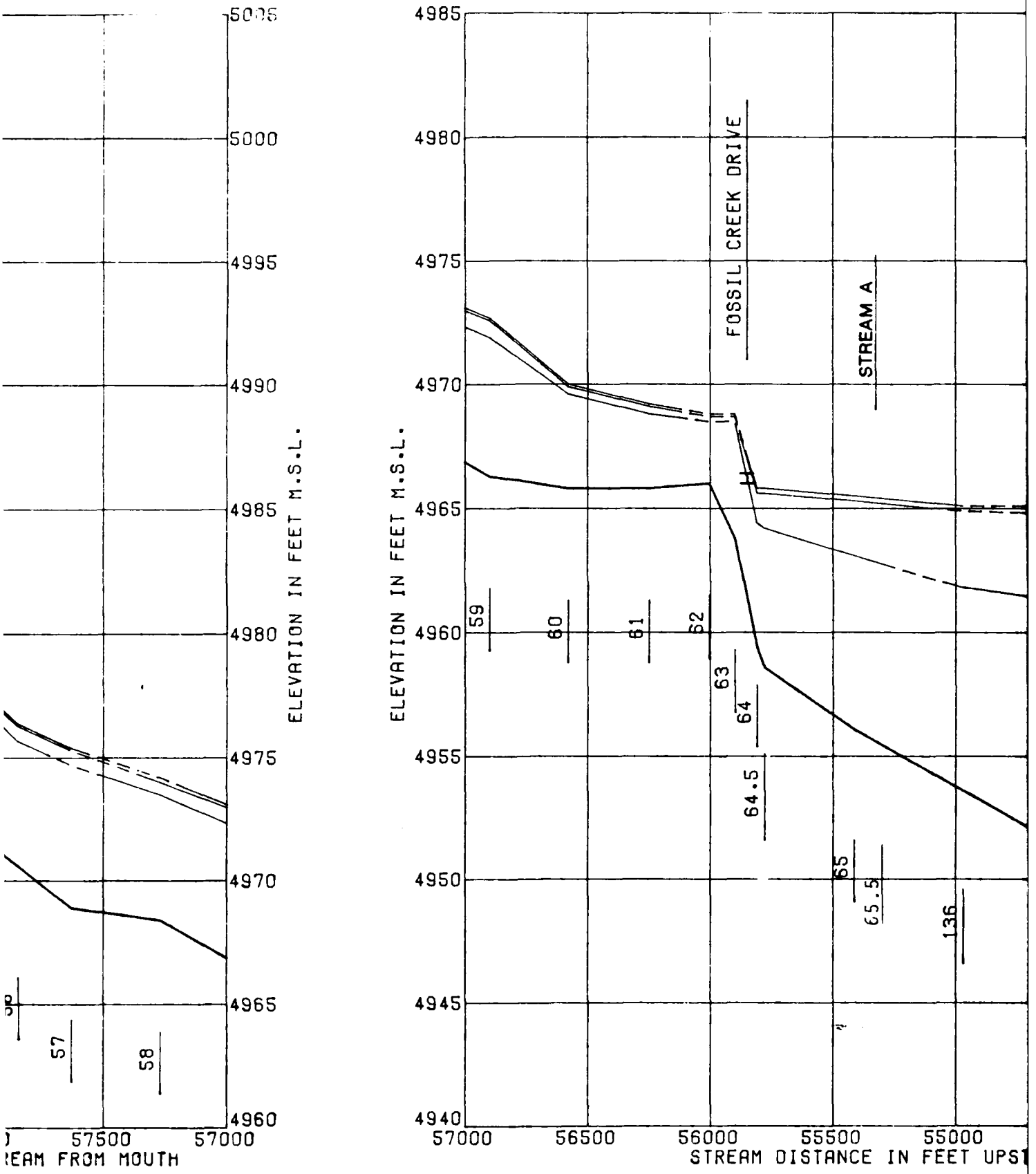
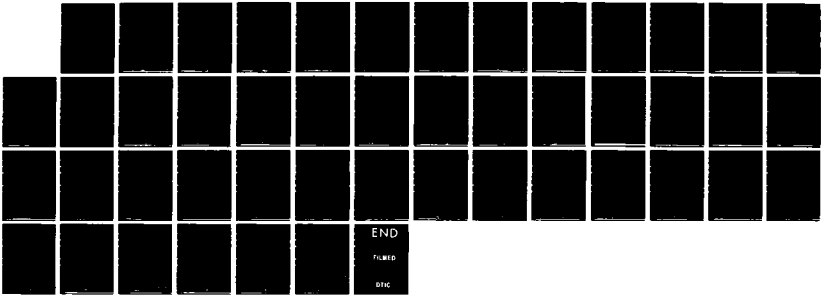
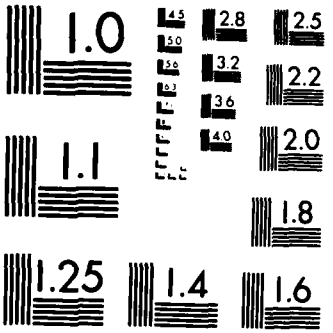
PL. 42



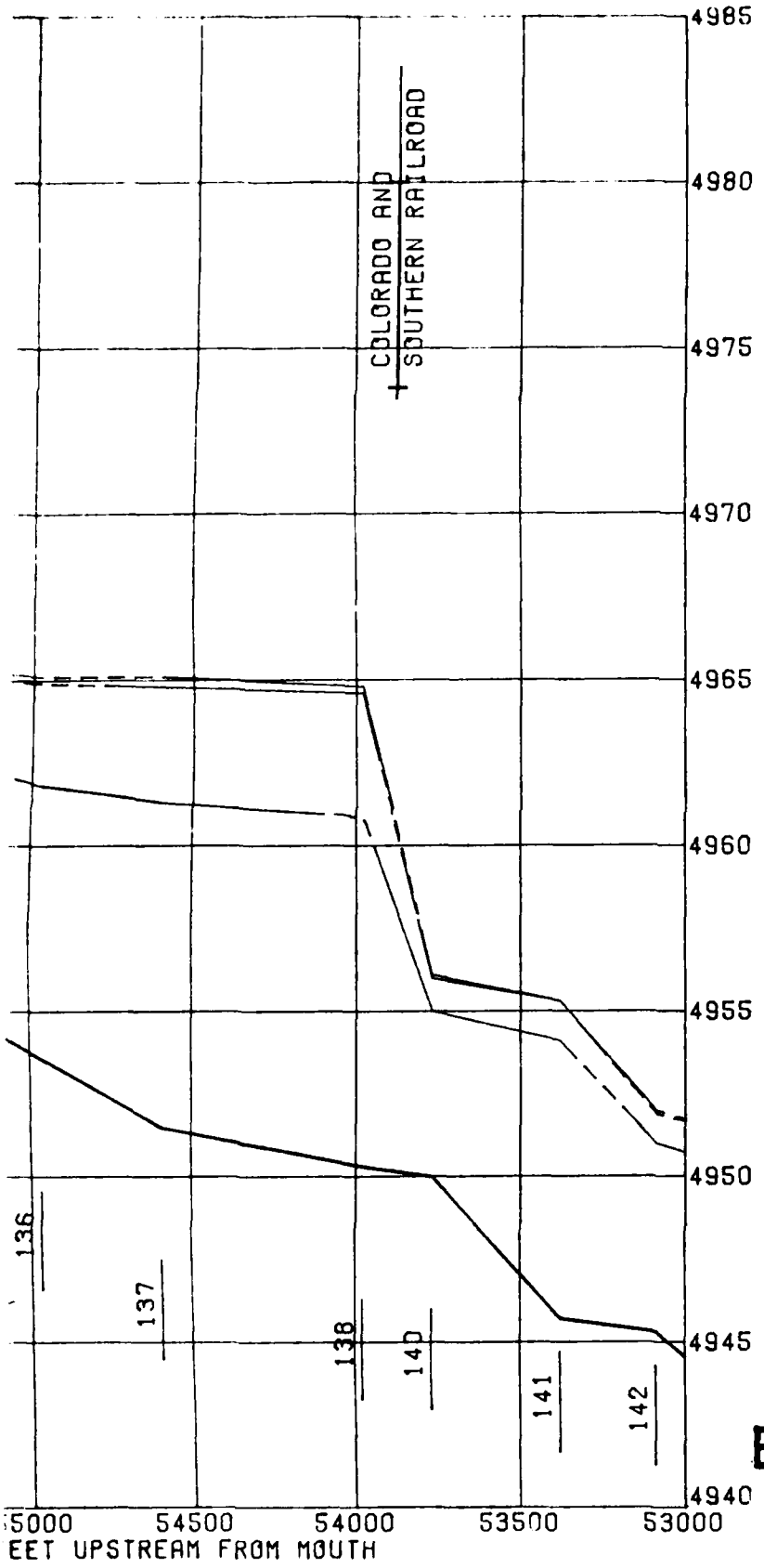
AD-A151 769 CACHE LA POUDRE RIVER BASIN LARIMER - WELD COUNTIES COLORADO VOLUME 4 FLOOD PLAIN ANALYSIS FOSSIL CREEK(U) CORPS OF ENGINEERS OMAHA NE OCT 81 3/3

UNCLASSIFIED F/G 13/2 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge
Low Steel

2 — Reference Point

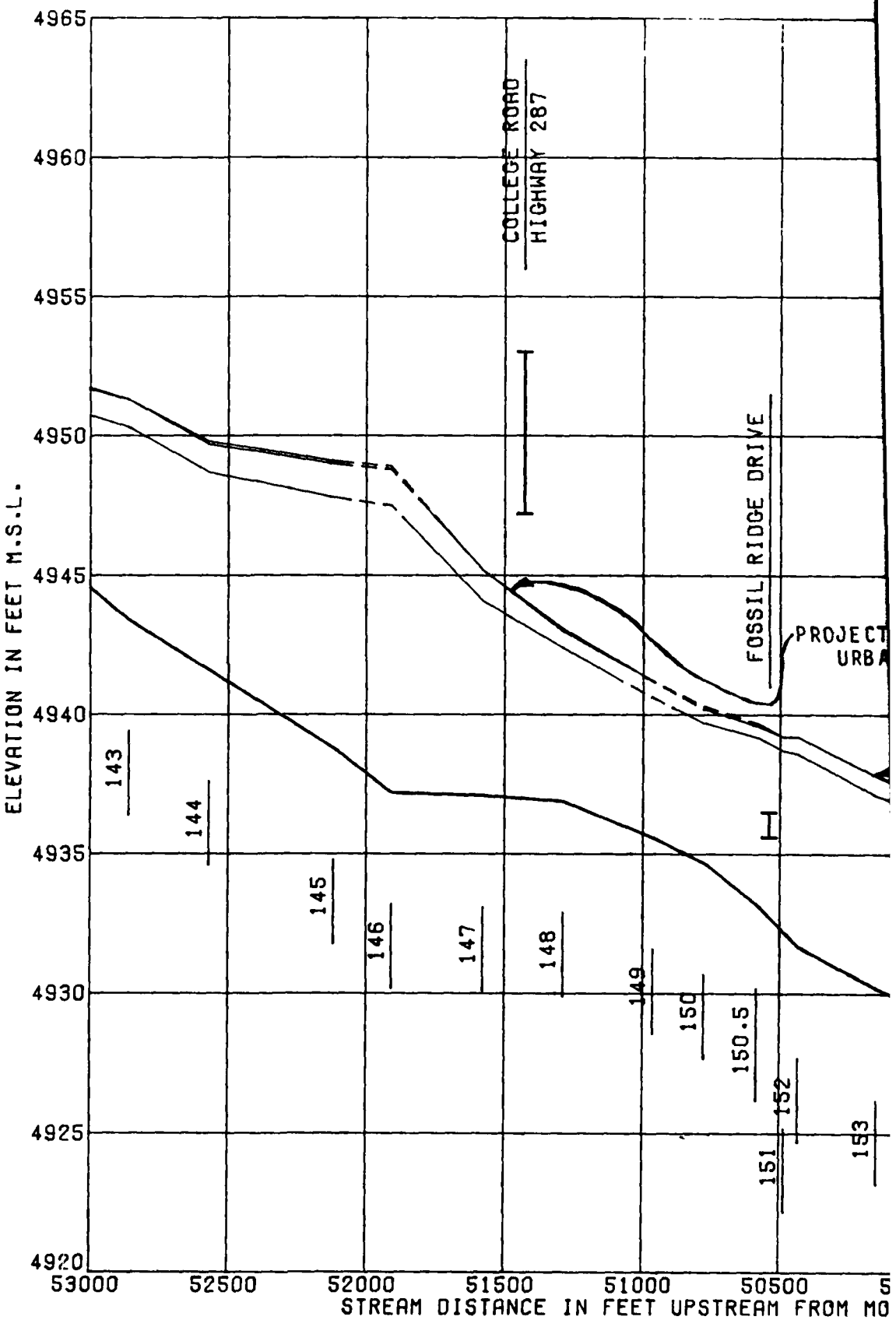
NOTES:

1. For flood elevations at the reference points, see Table 6.

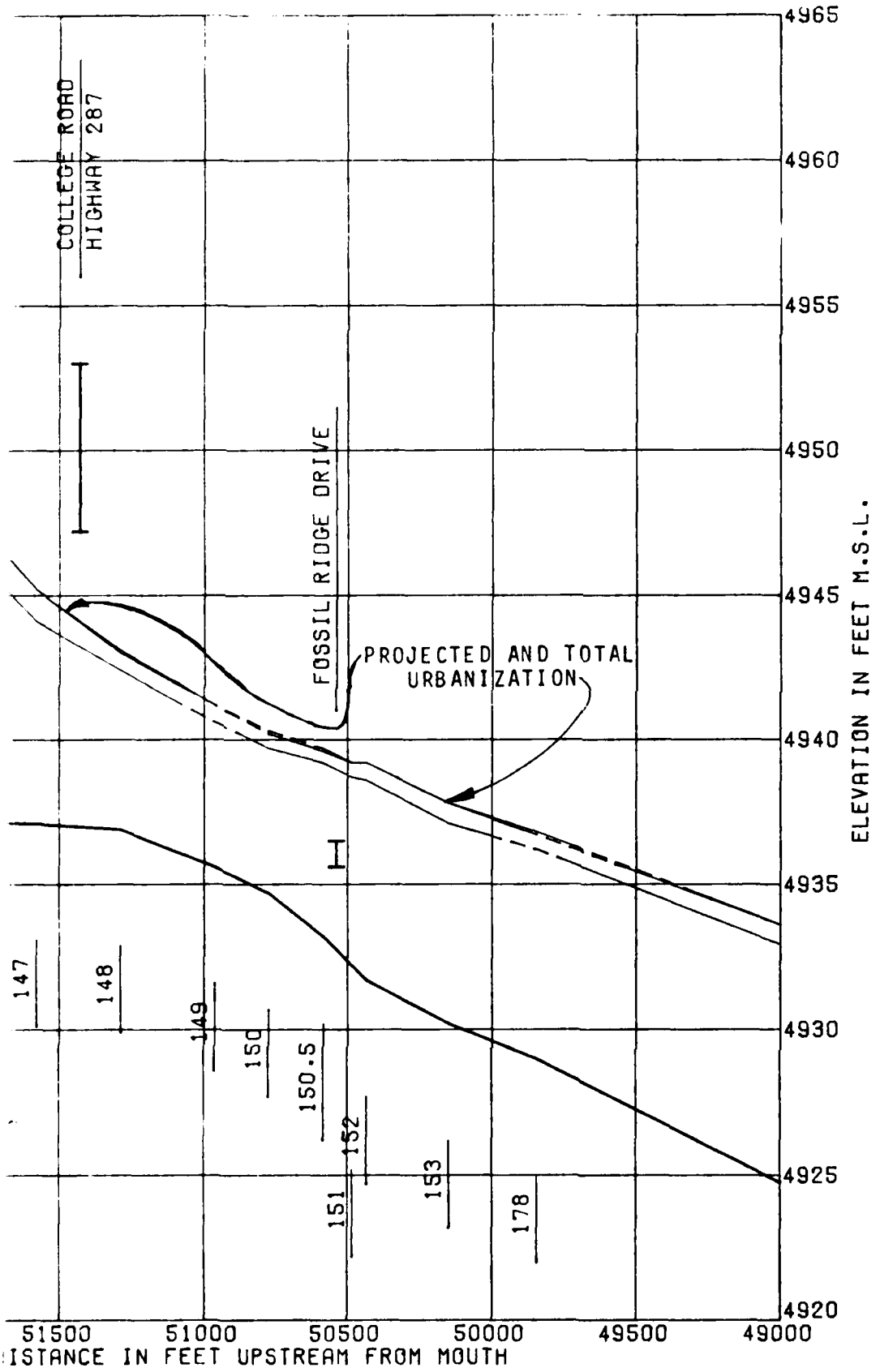
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

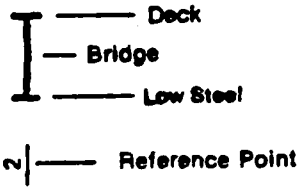


PL. 43



LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS



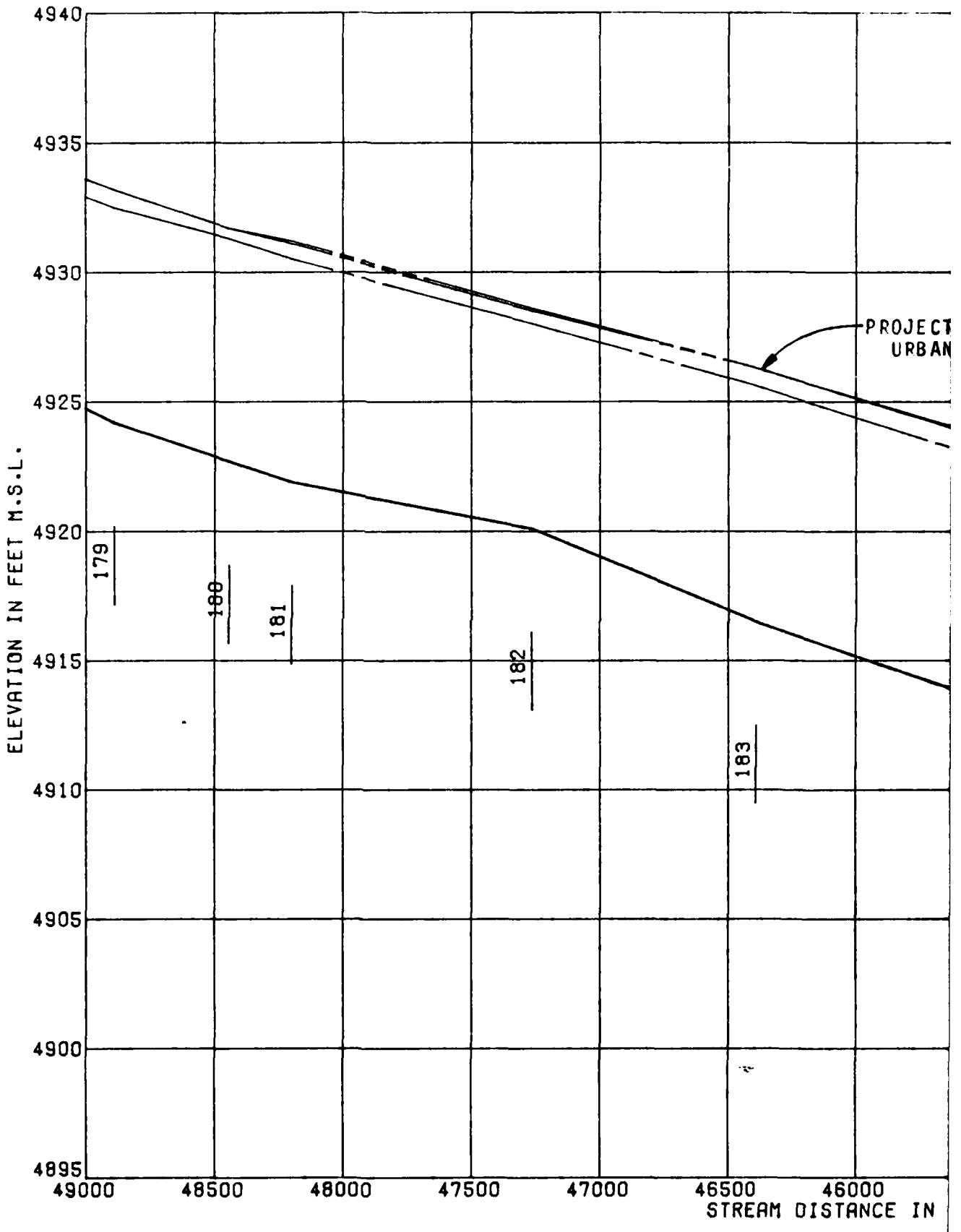
NOTES:

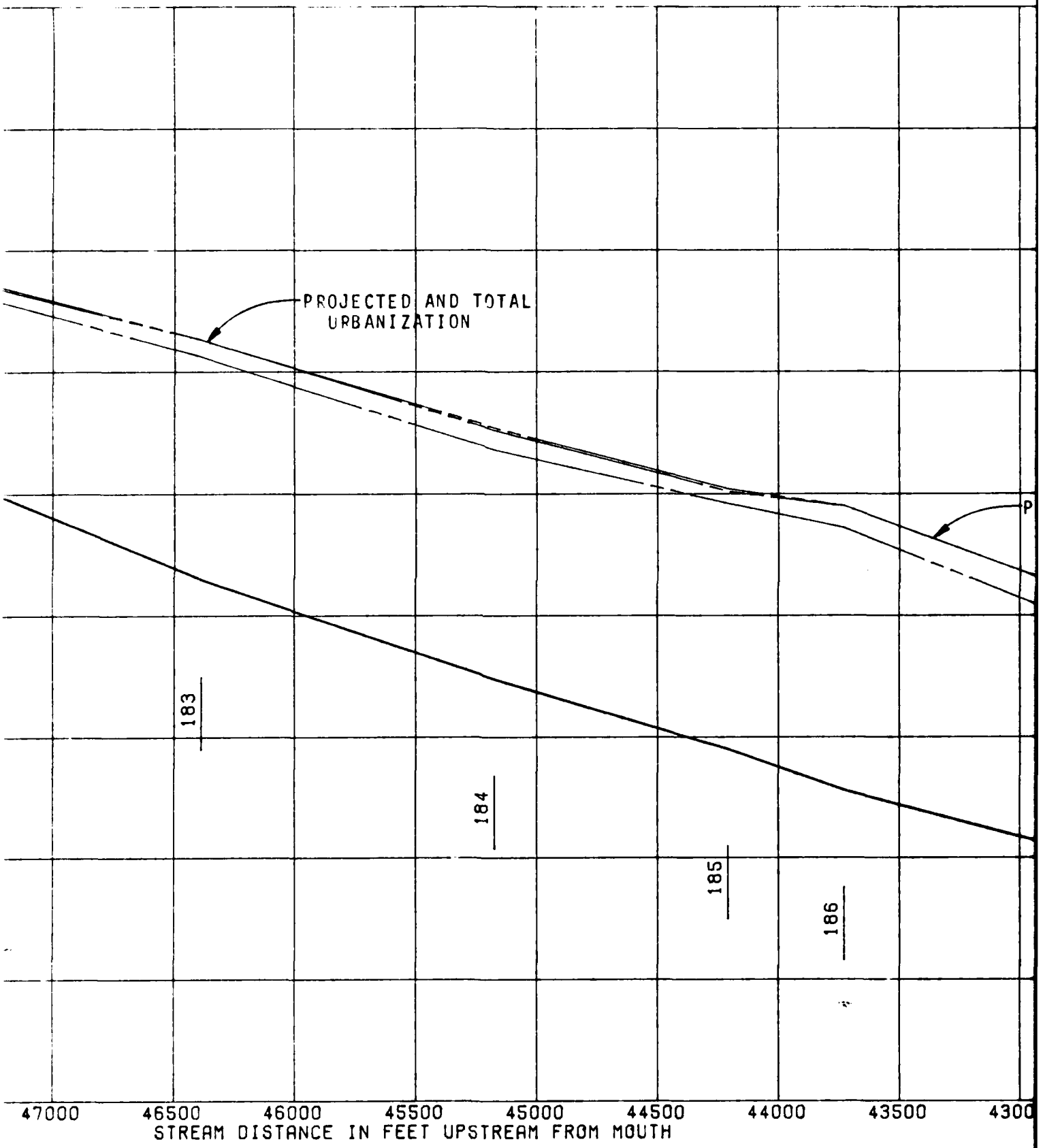
1. For flood elevations at the reference points, see Table 6.

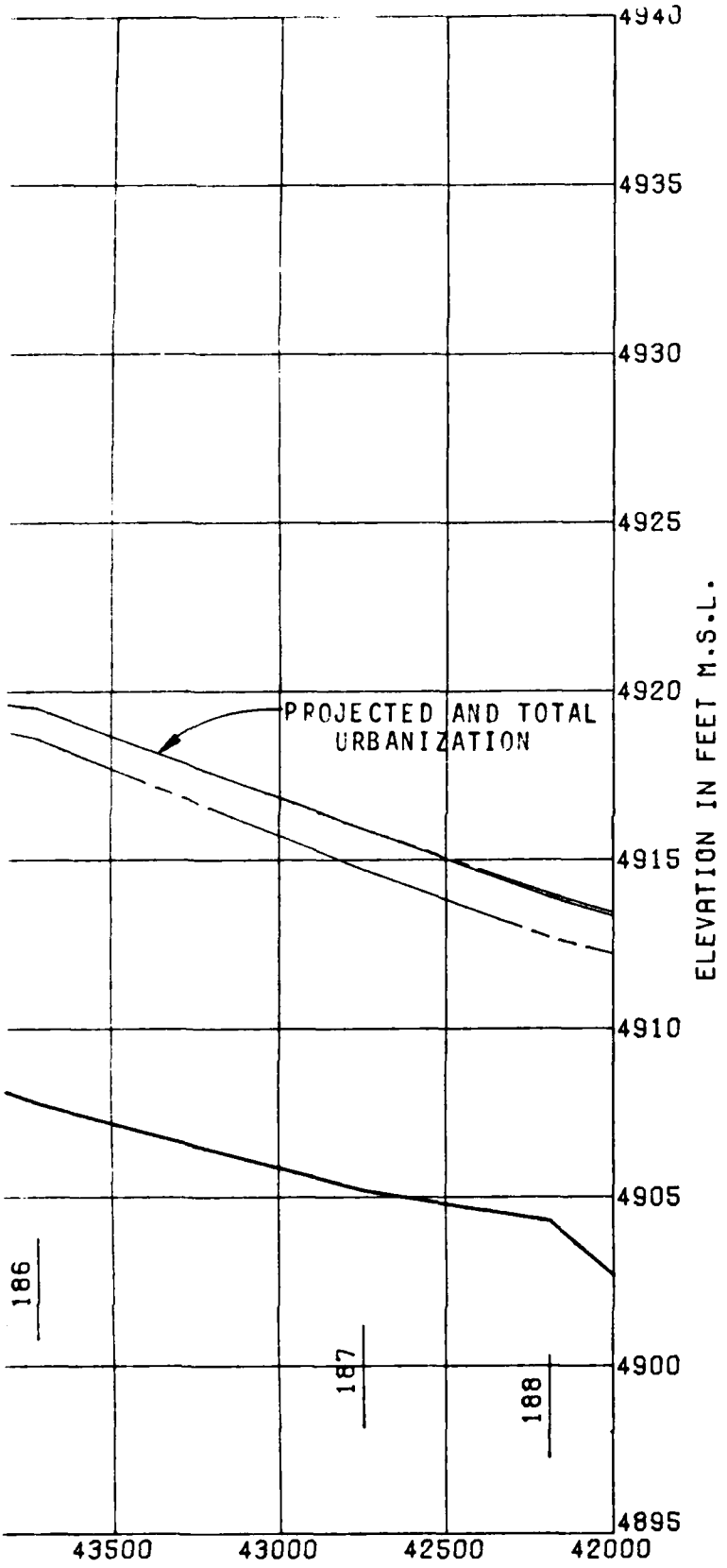
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WLED COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge
Low Steel

Reference Point

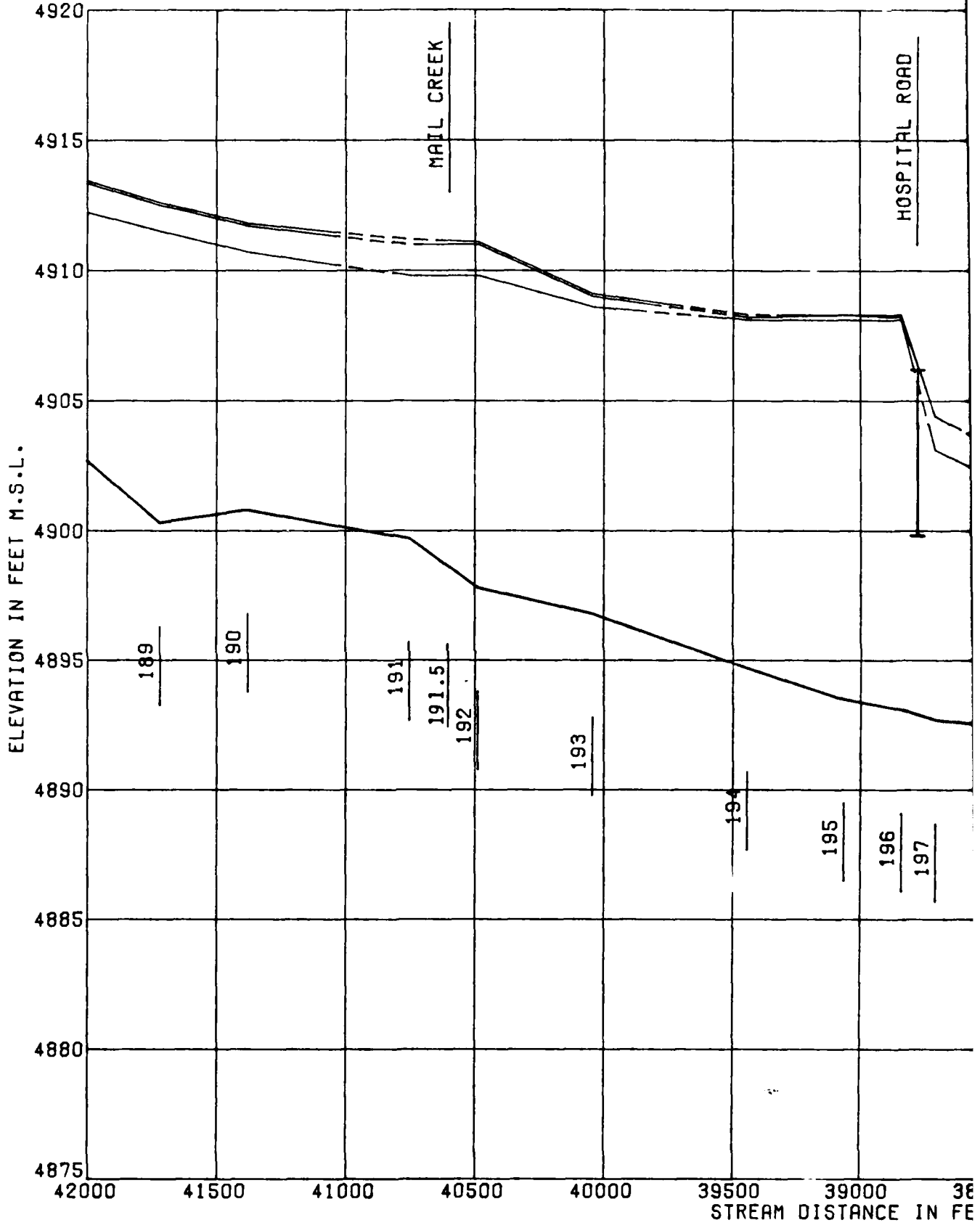
NOTES:

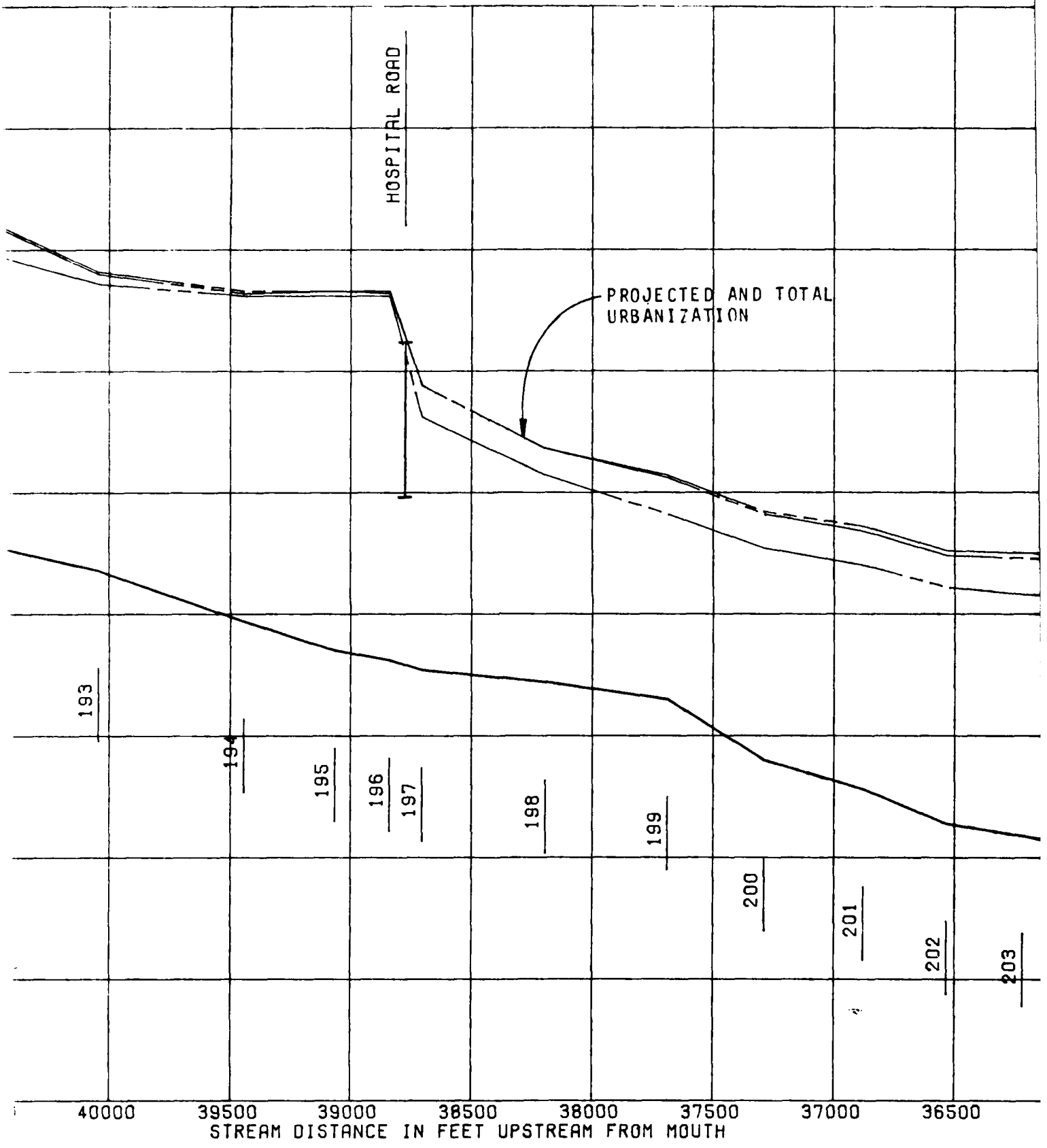
1. For flood elevations at the reference points, see Table 6.

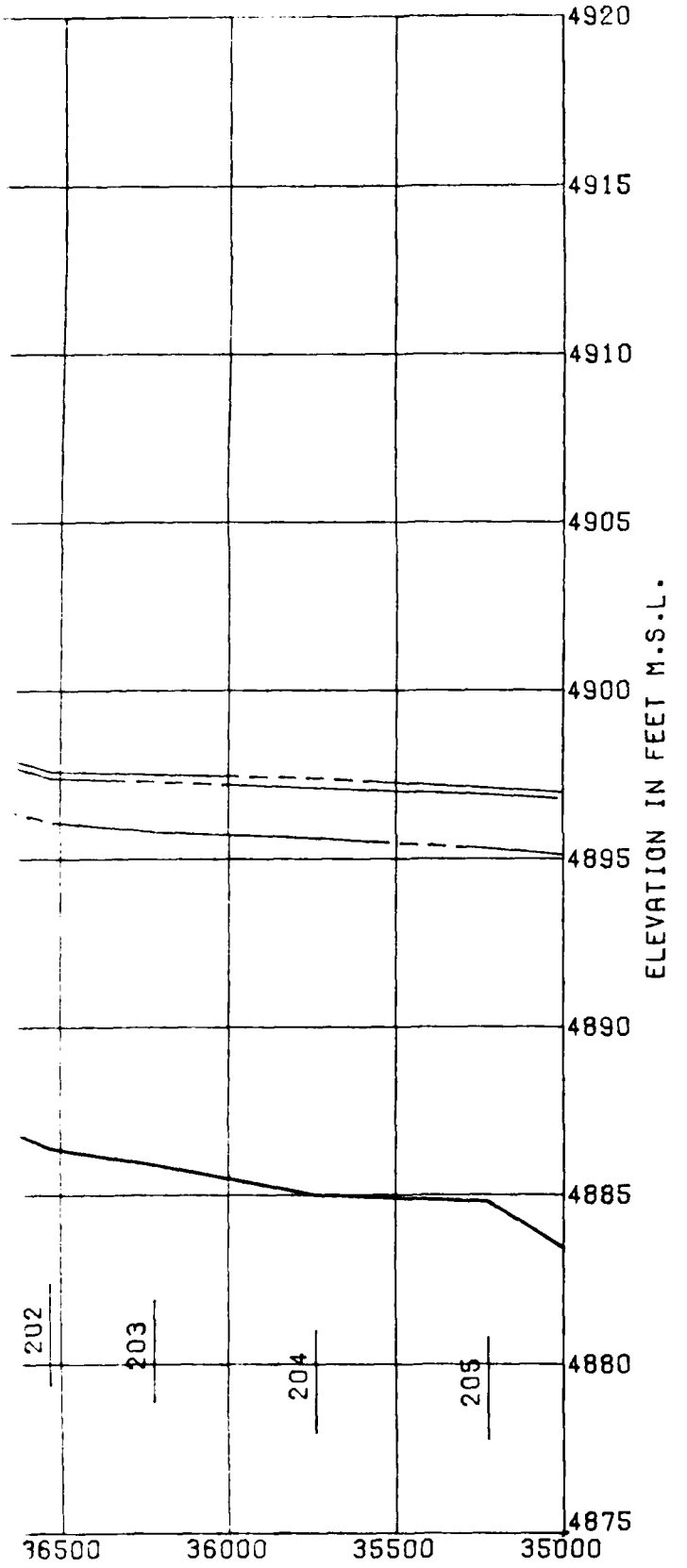
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge
Low Steel

Reference Point

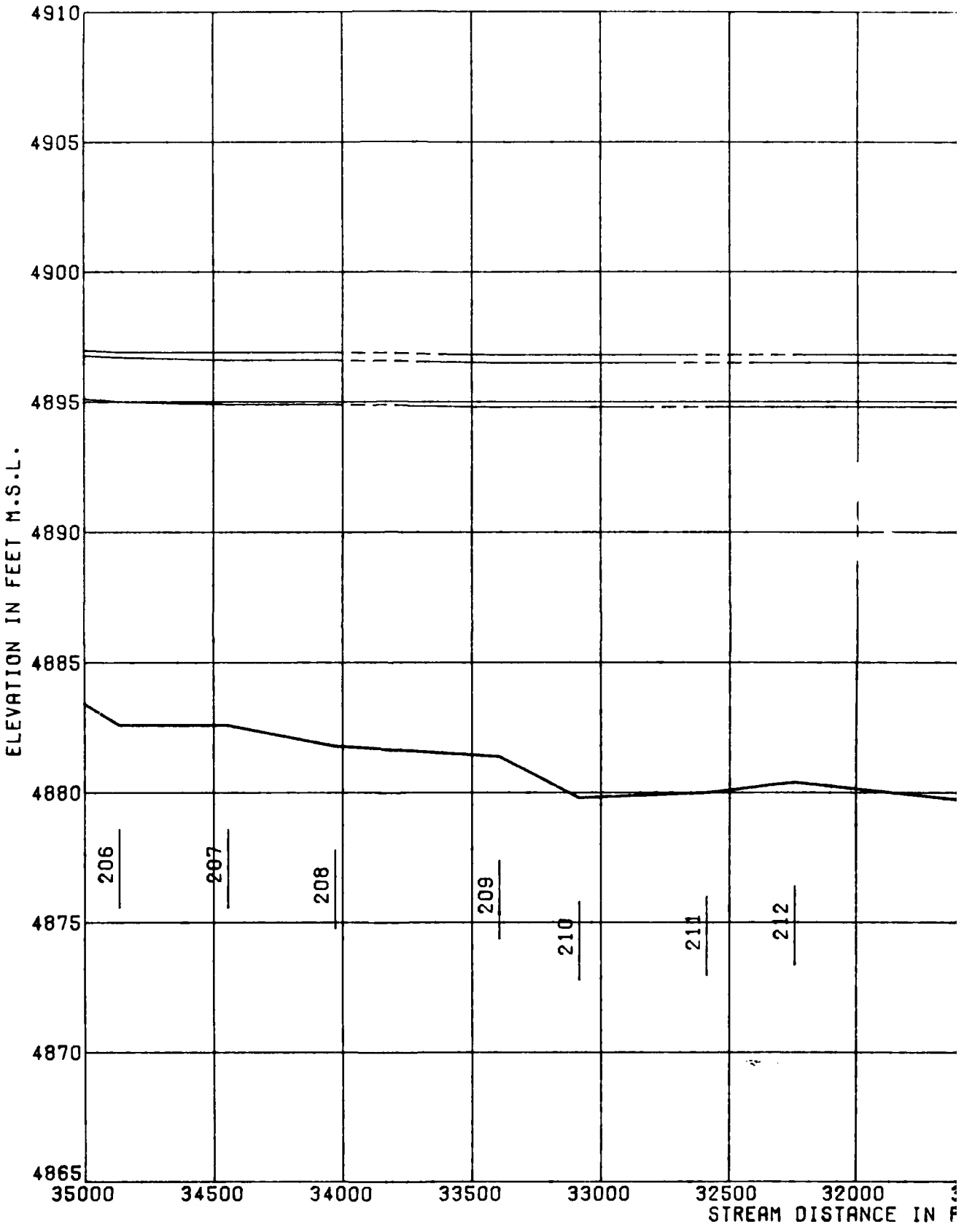
NOTES:

1. For flood elevations at the reference points, see Table 6.

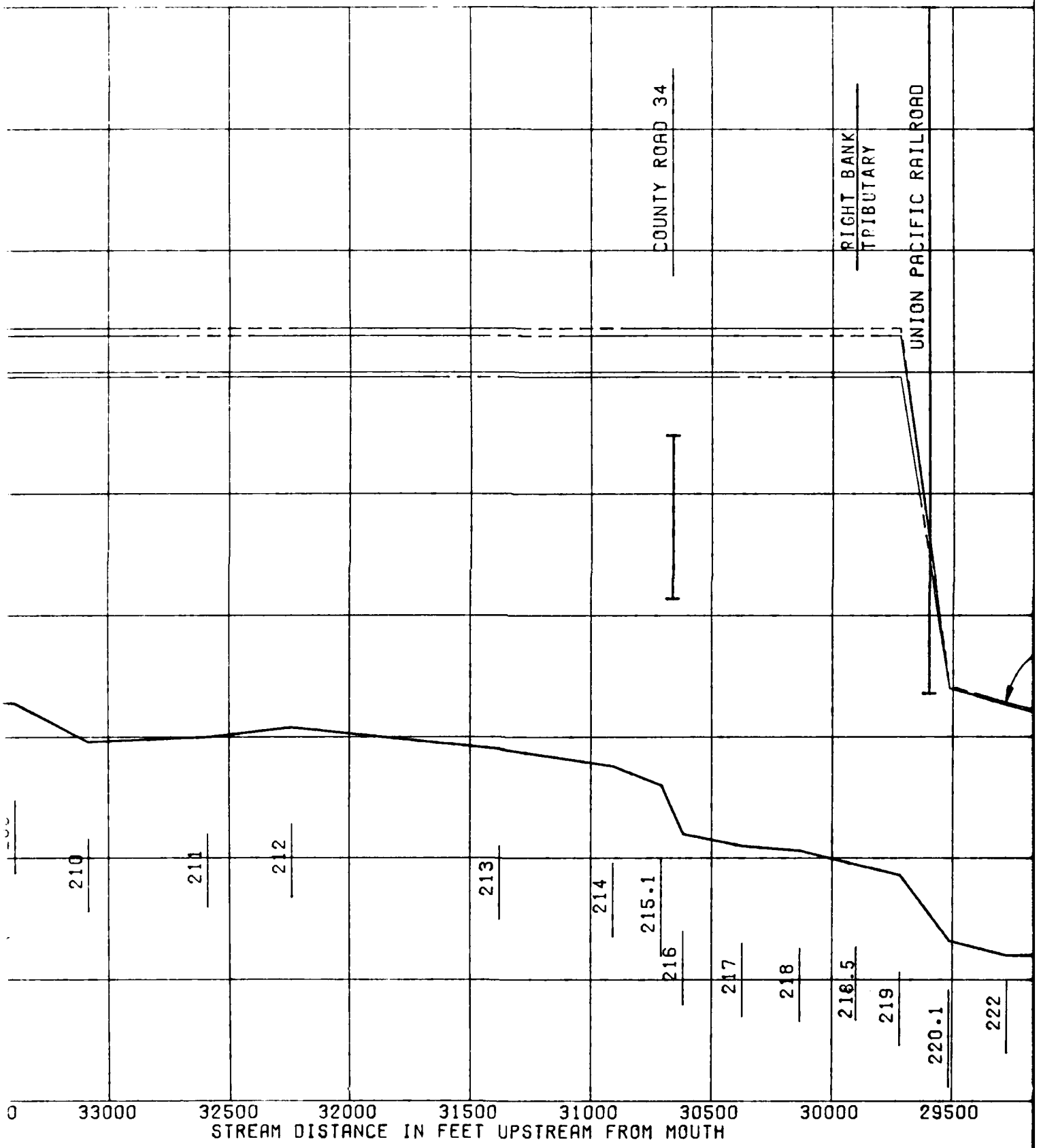
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

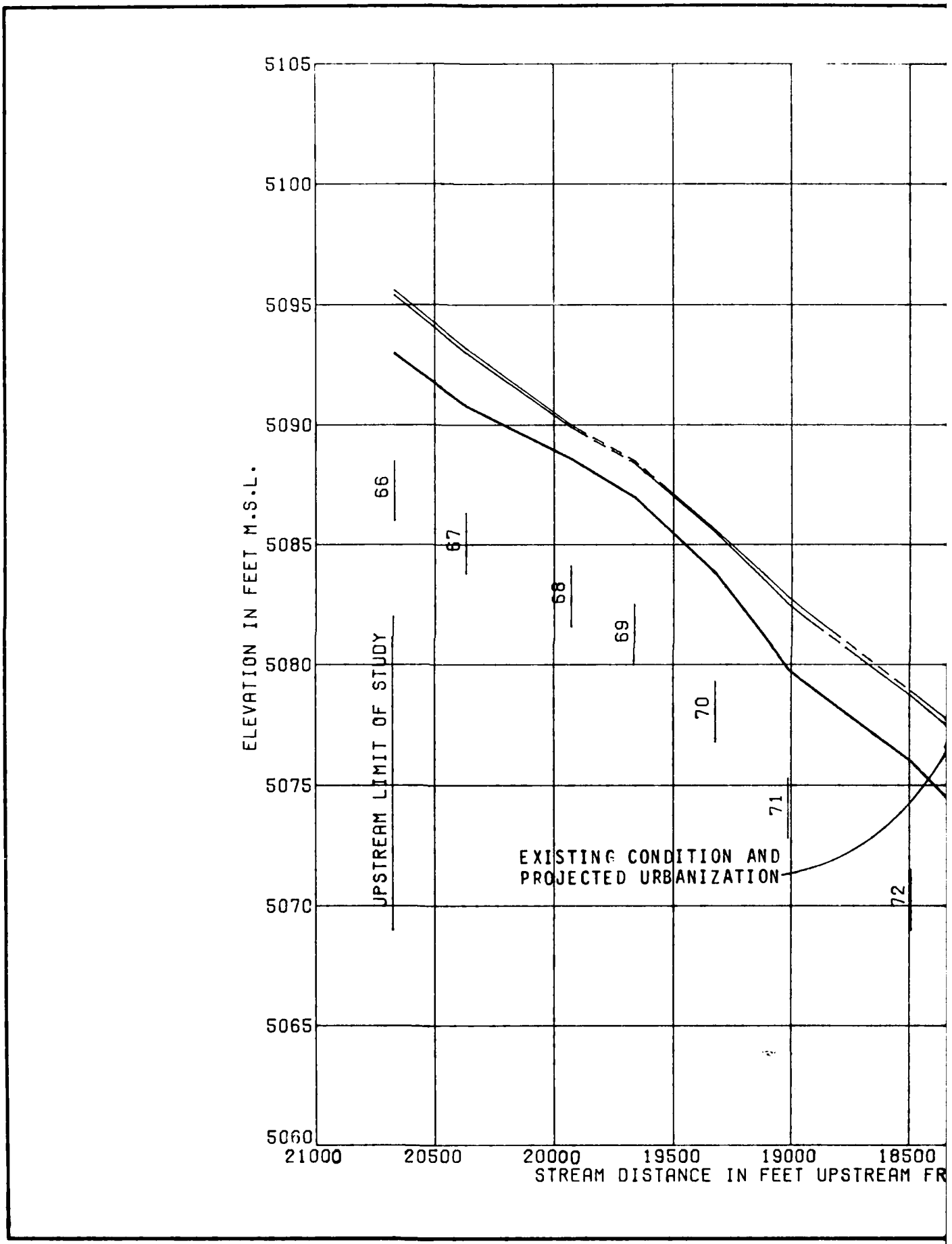
FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



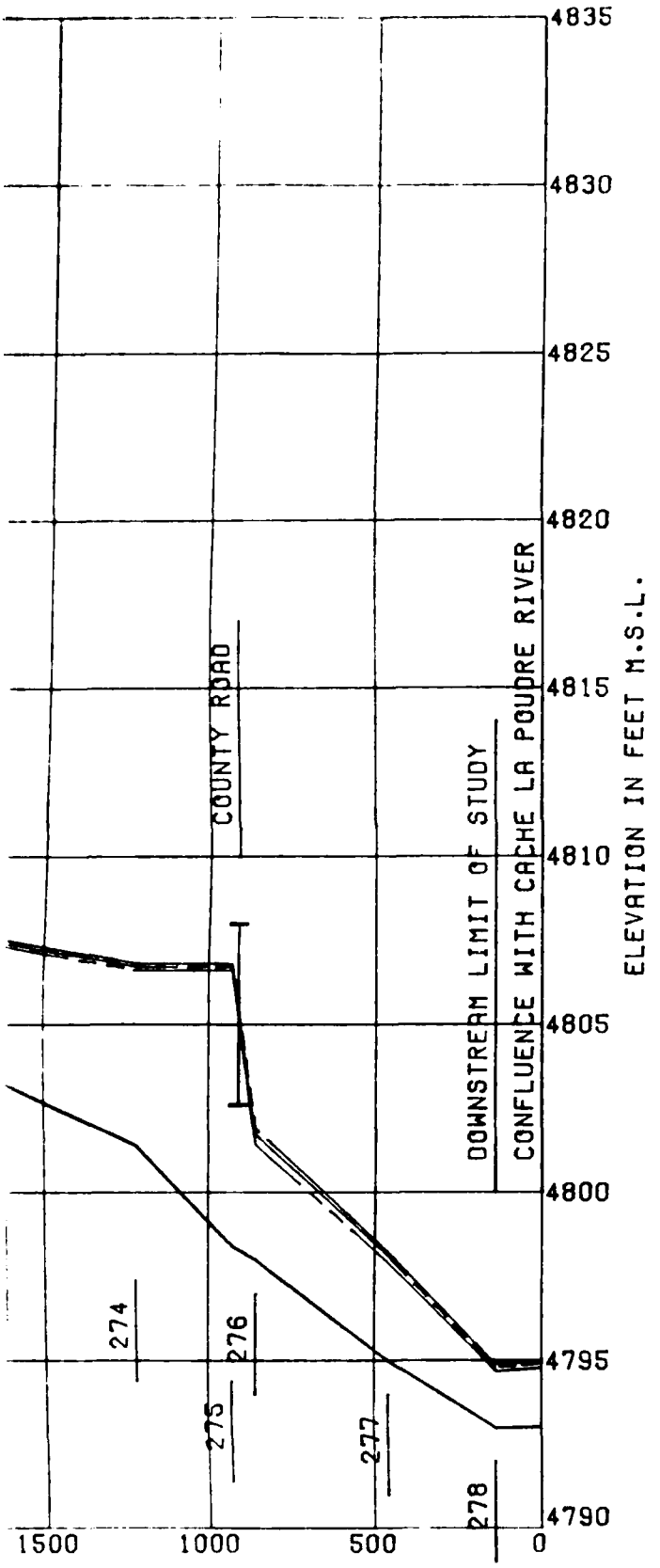
PL 46 1 of 3





PL.51

1 of 3



LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS
- Deck
- Bridge
- Low Steel
- 2 — Reference Point

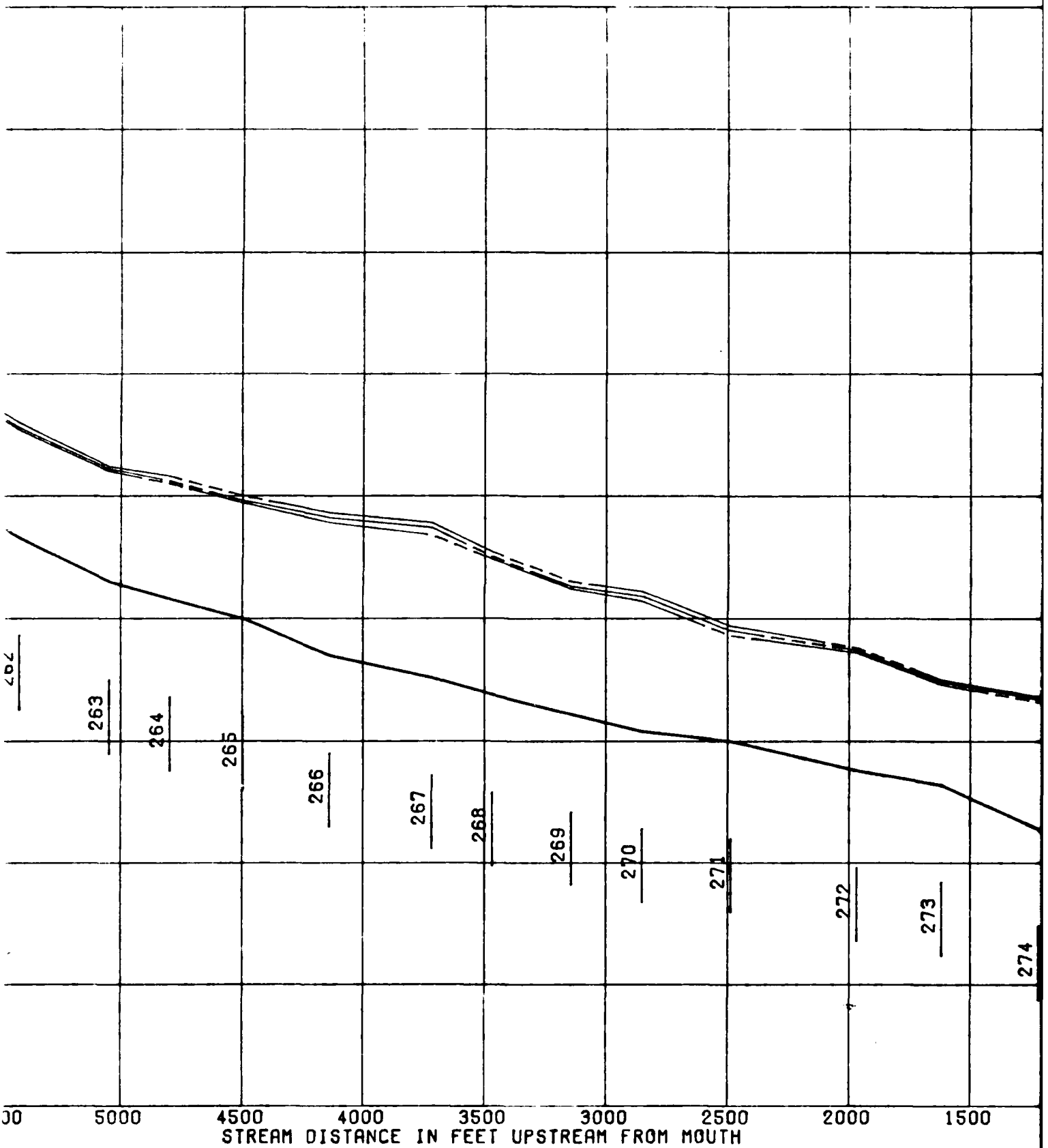
NOTES:

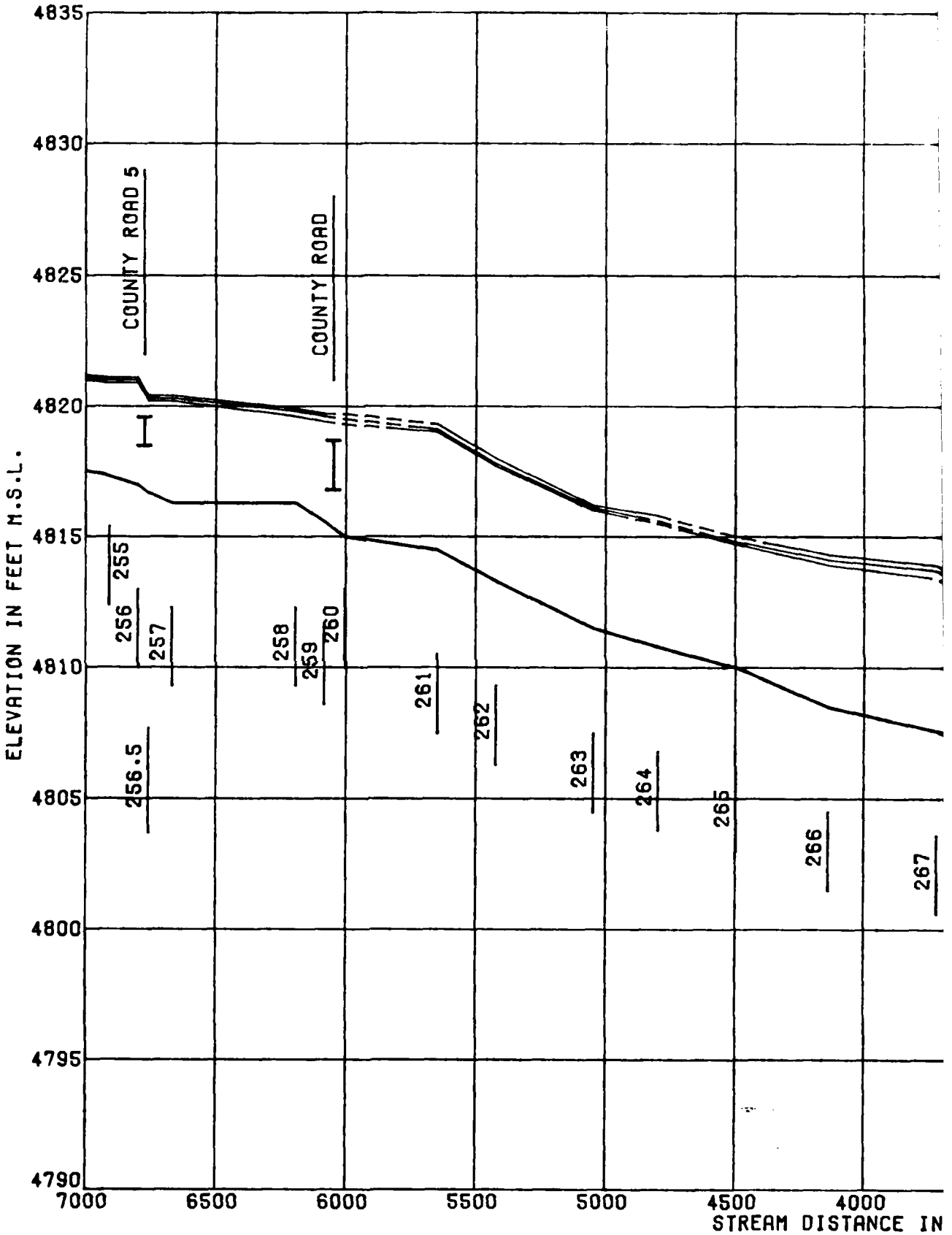
1. For flood elevations at the reference points, see Table 6.

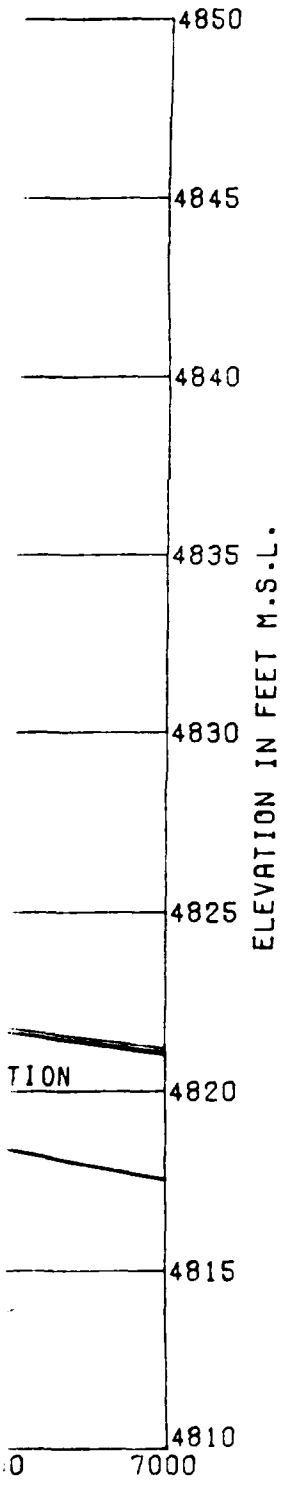
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge

2 Reference Point

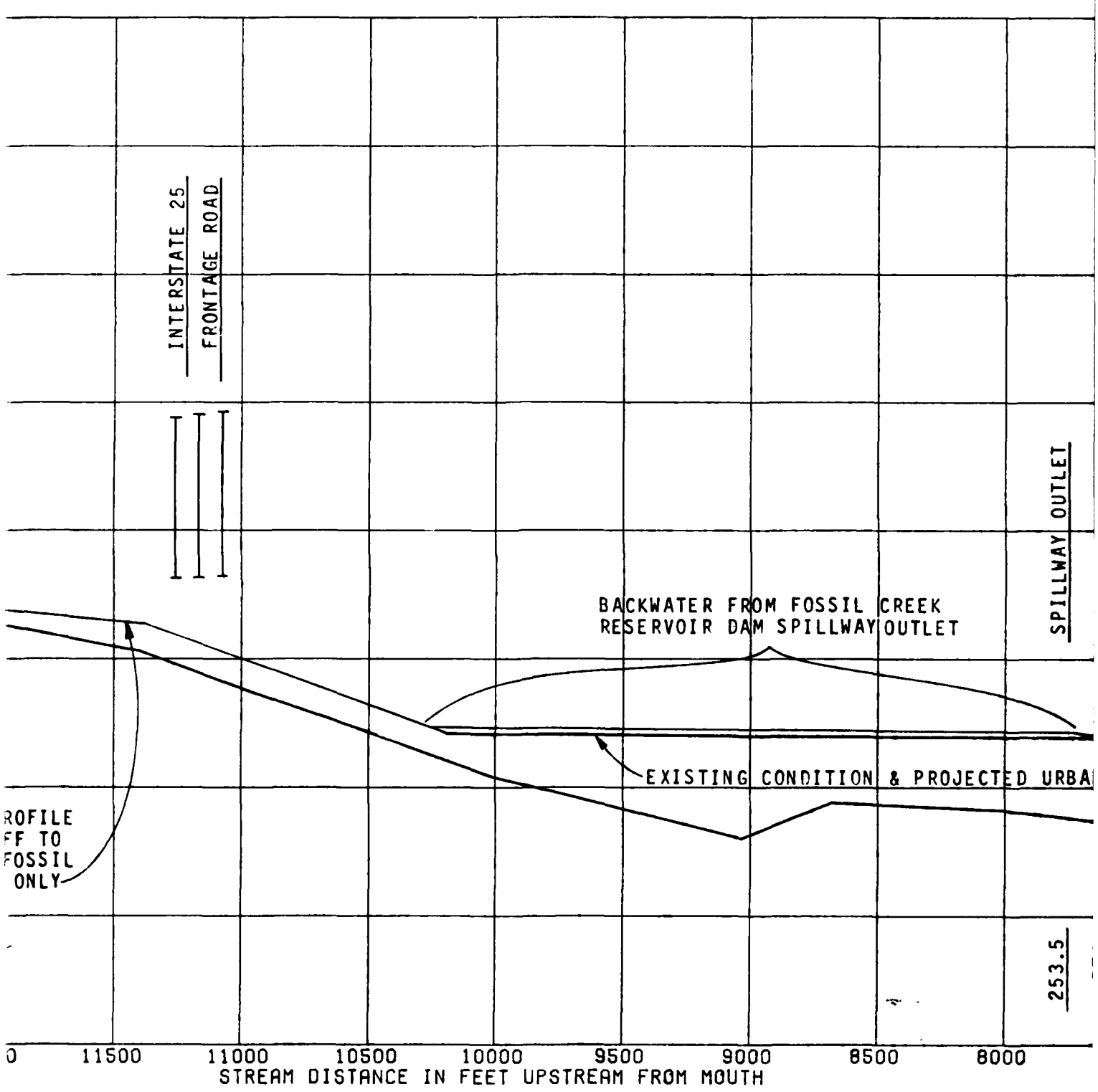
NOTES:

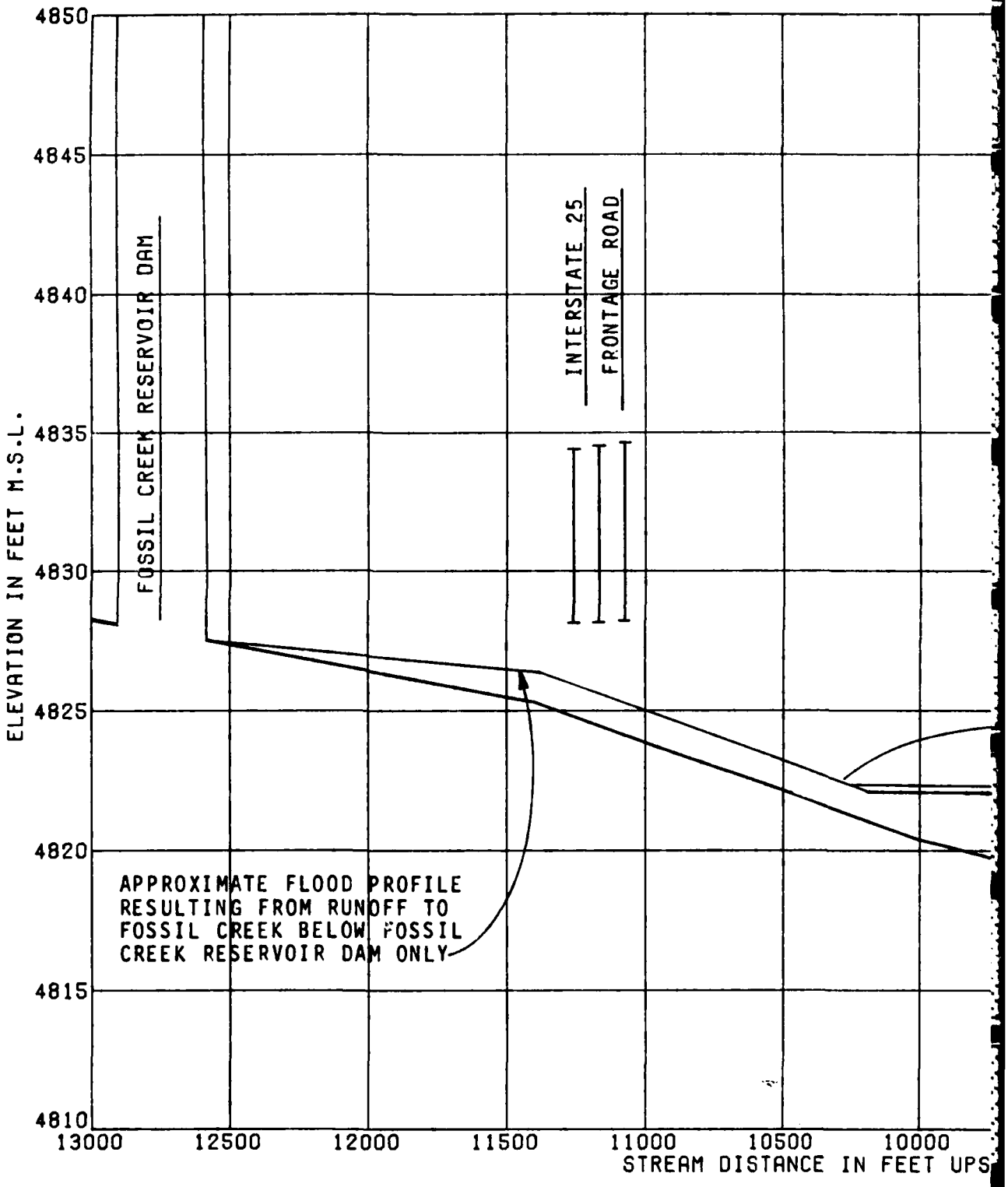
1. For flood elevations at the reference points, see Table 6.

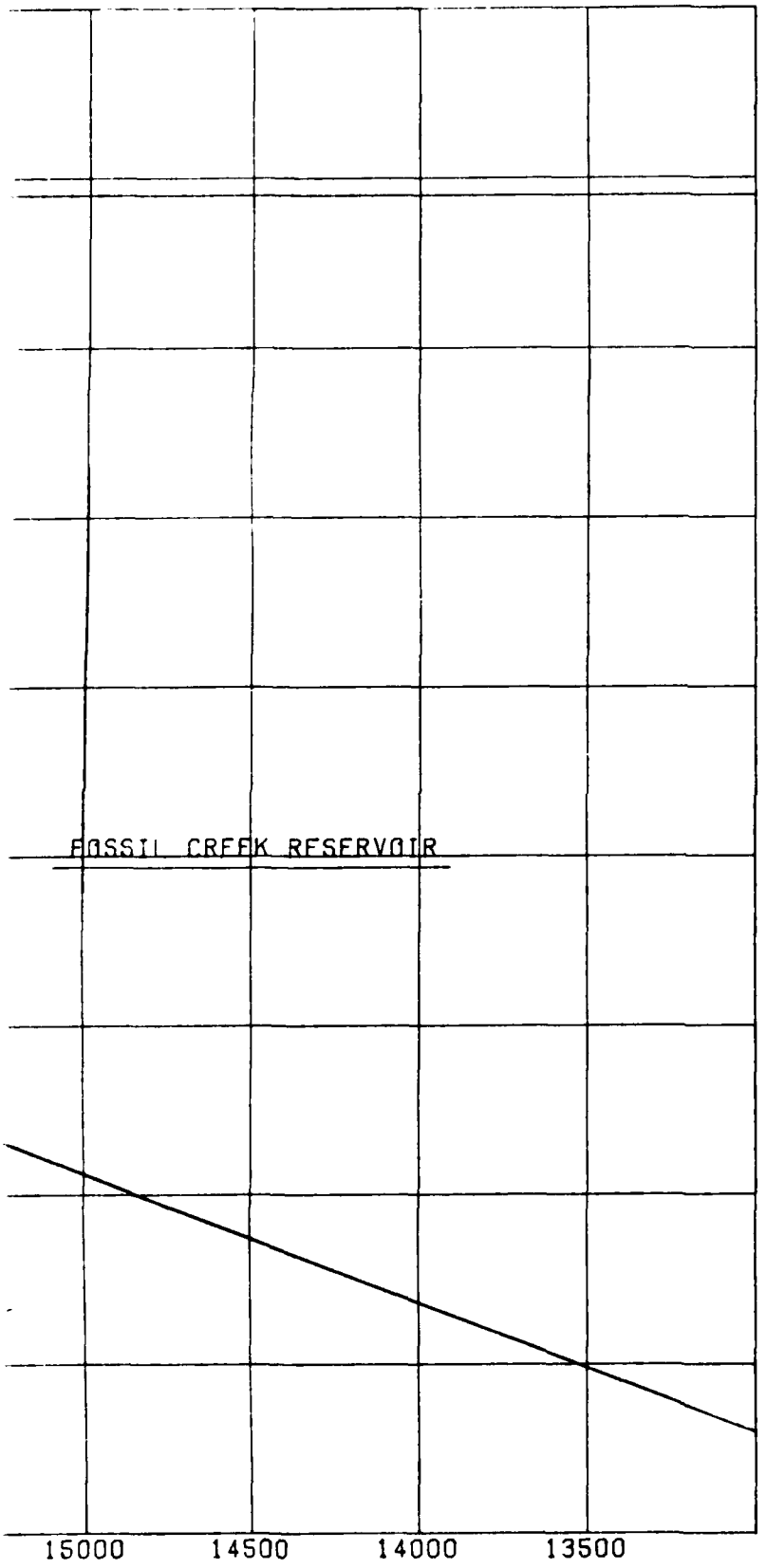
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

100 YEAR FLOOD
TOTAL URBANIZATION

100 YEAR FLOOD
PROJECTED URBANIZATION

100 YEAR FLOOD
EXISTING CONDITIONS

Deck
Bridge
Low Steel

Reference Point

NOTES:

1. For flood elevations at the reference points, see Table 6.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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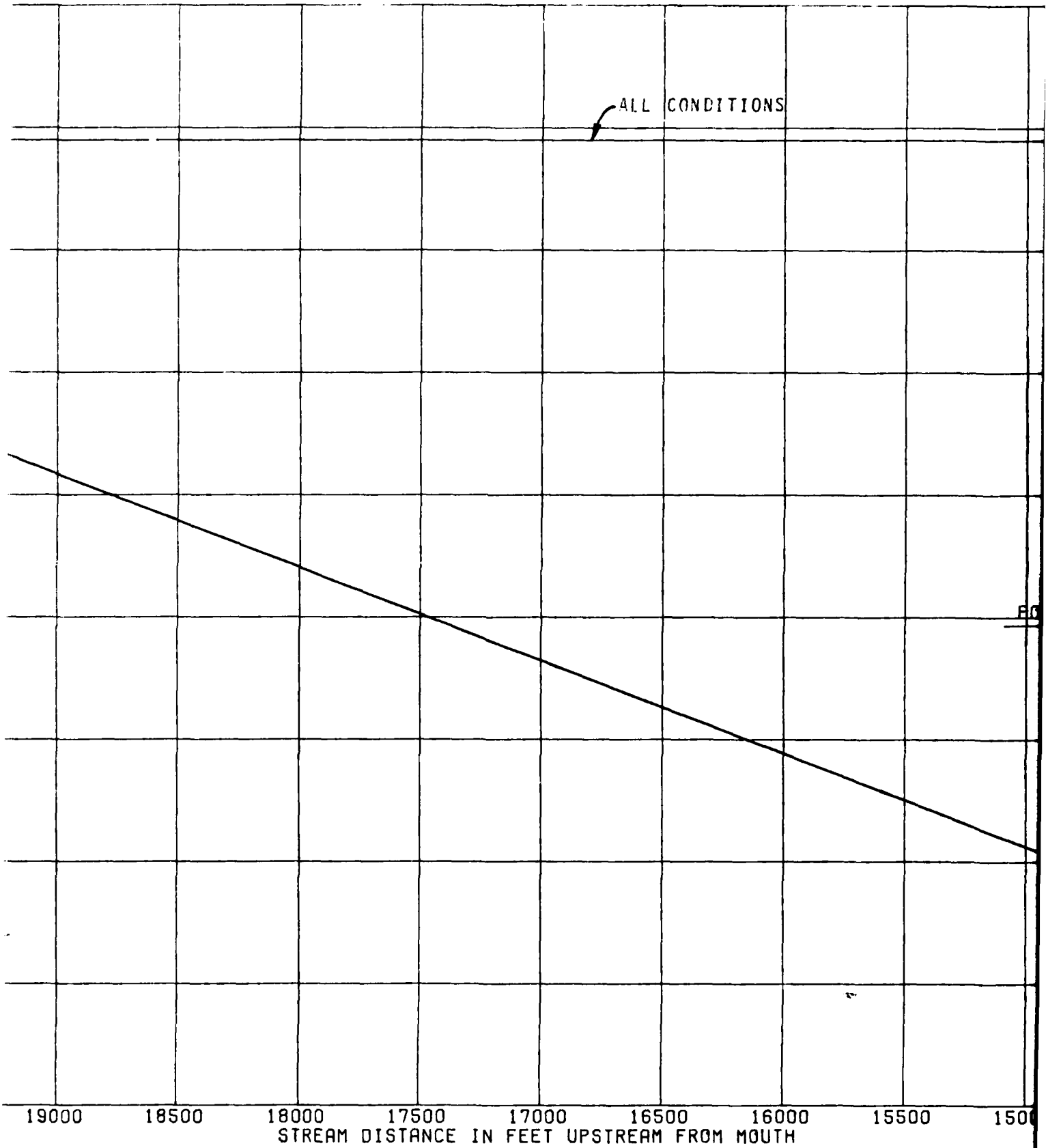
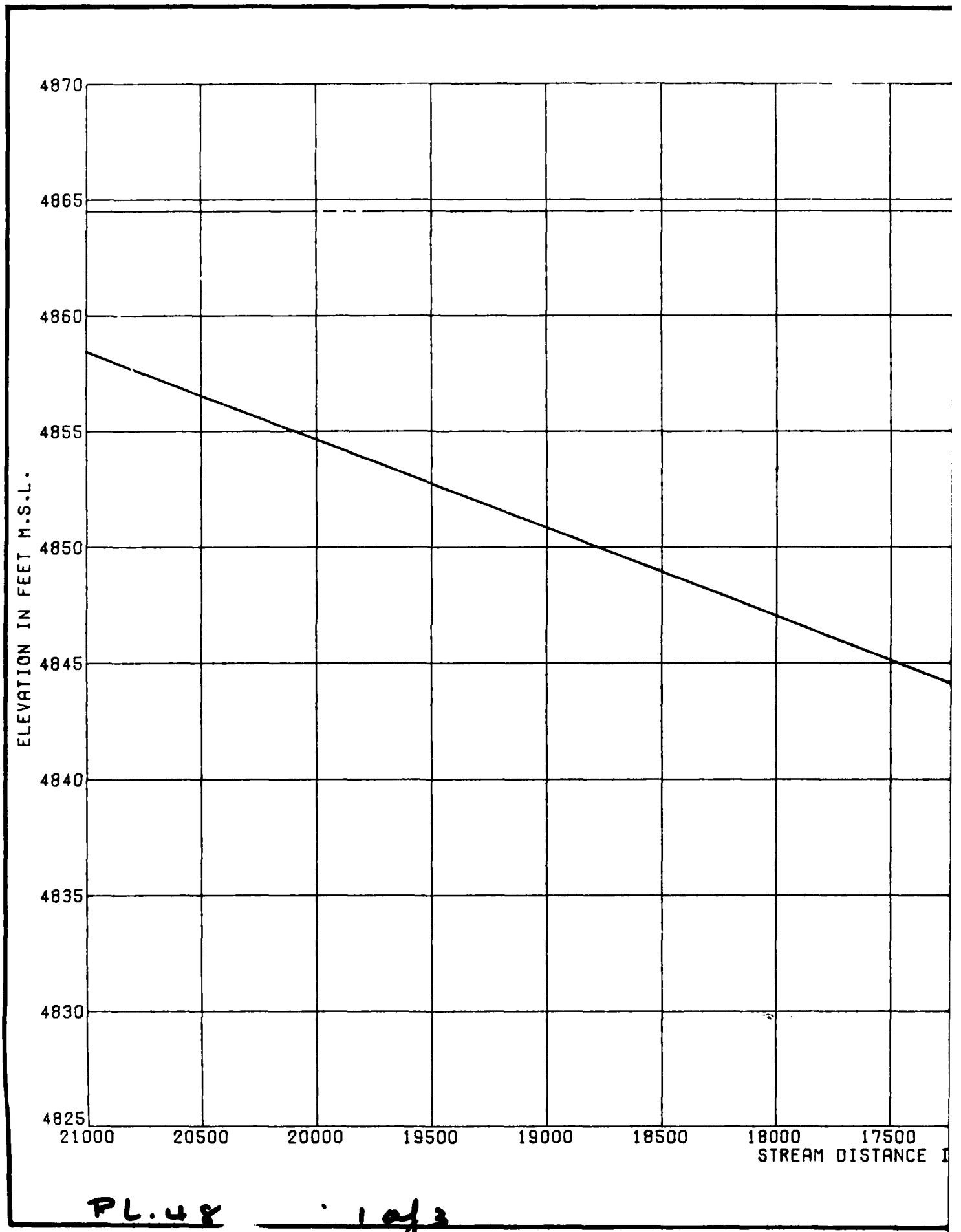
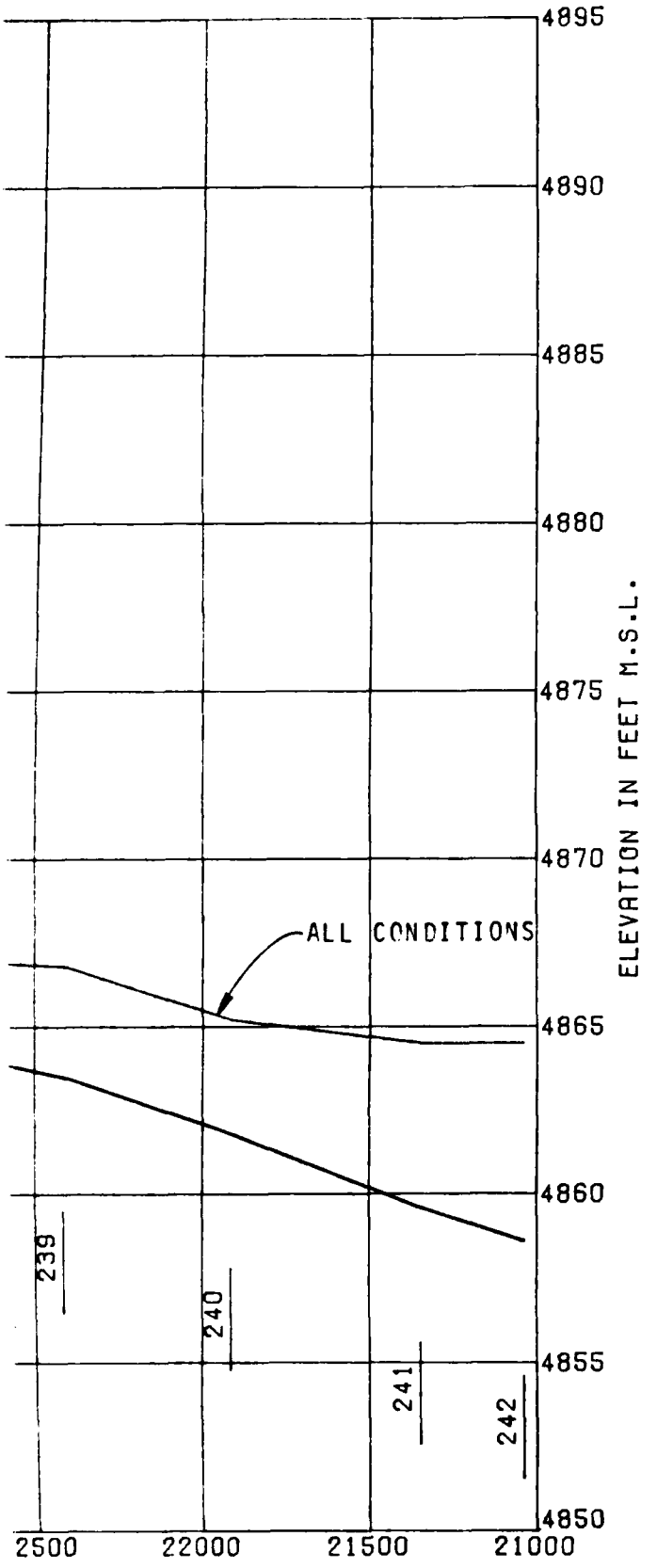




PL. 48 1 of 3



LEGEND:

100 YEAR FLOOD
TOTAL URBANIZATION

100 YEAR FLOOD
PROJECTED URBANIZATION

100 YEAR FLOOD
EXISTING CONDITIONS

Deck
Bridge
Low Steel

2 Reference Point

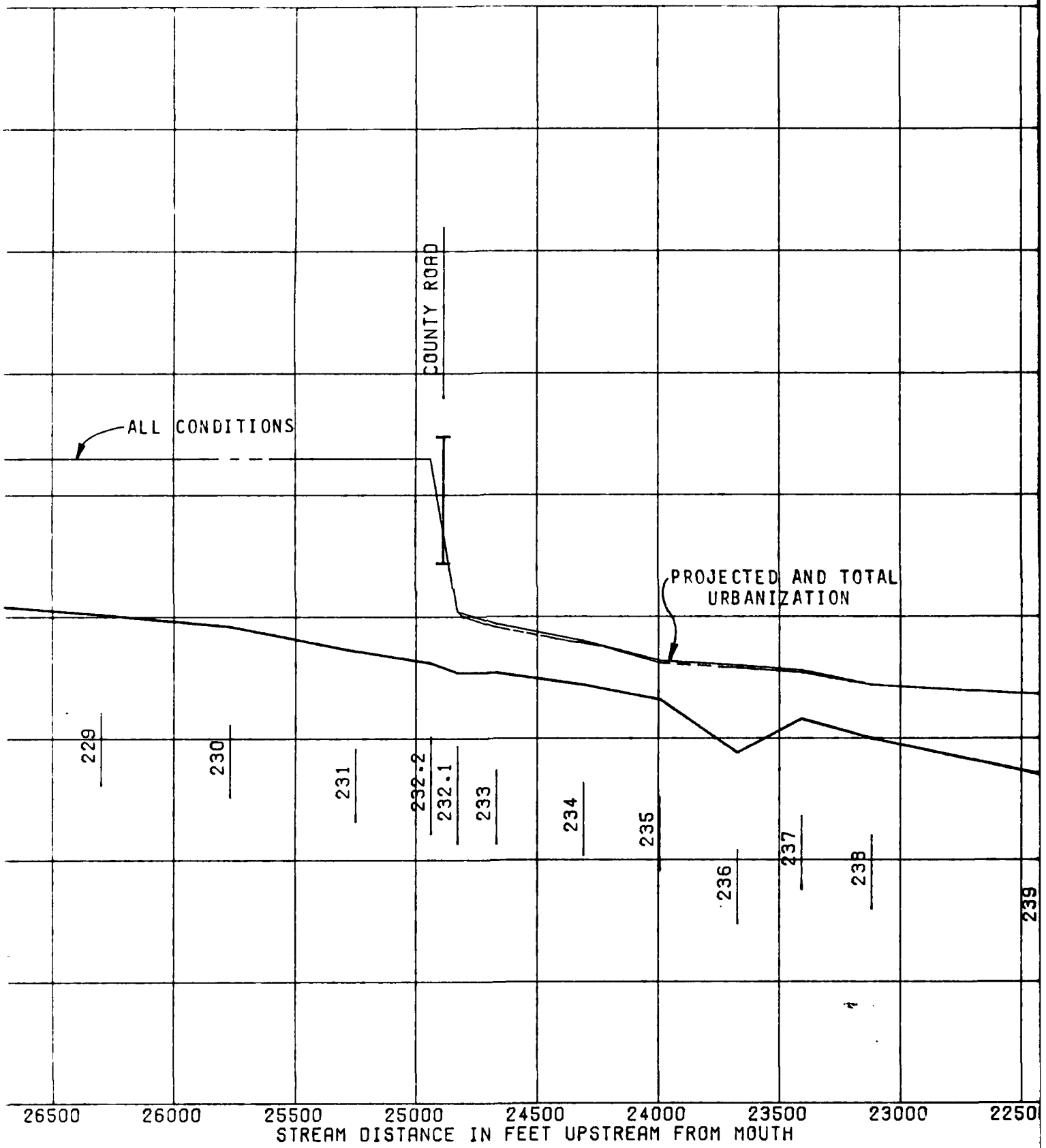
NOTES:

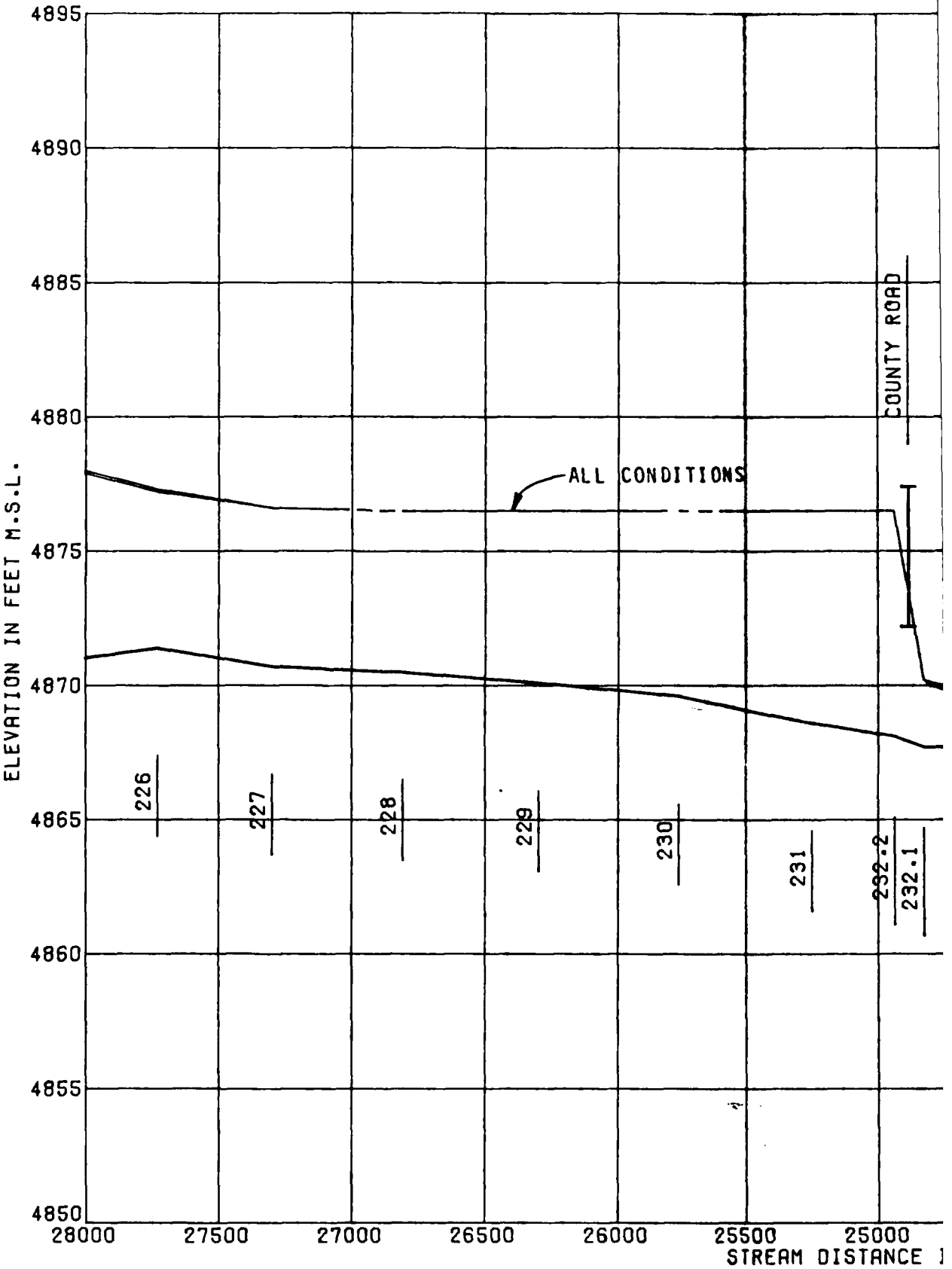
1. For flood elevations at the reference points, see Table 6.

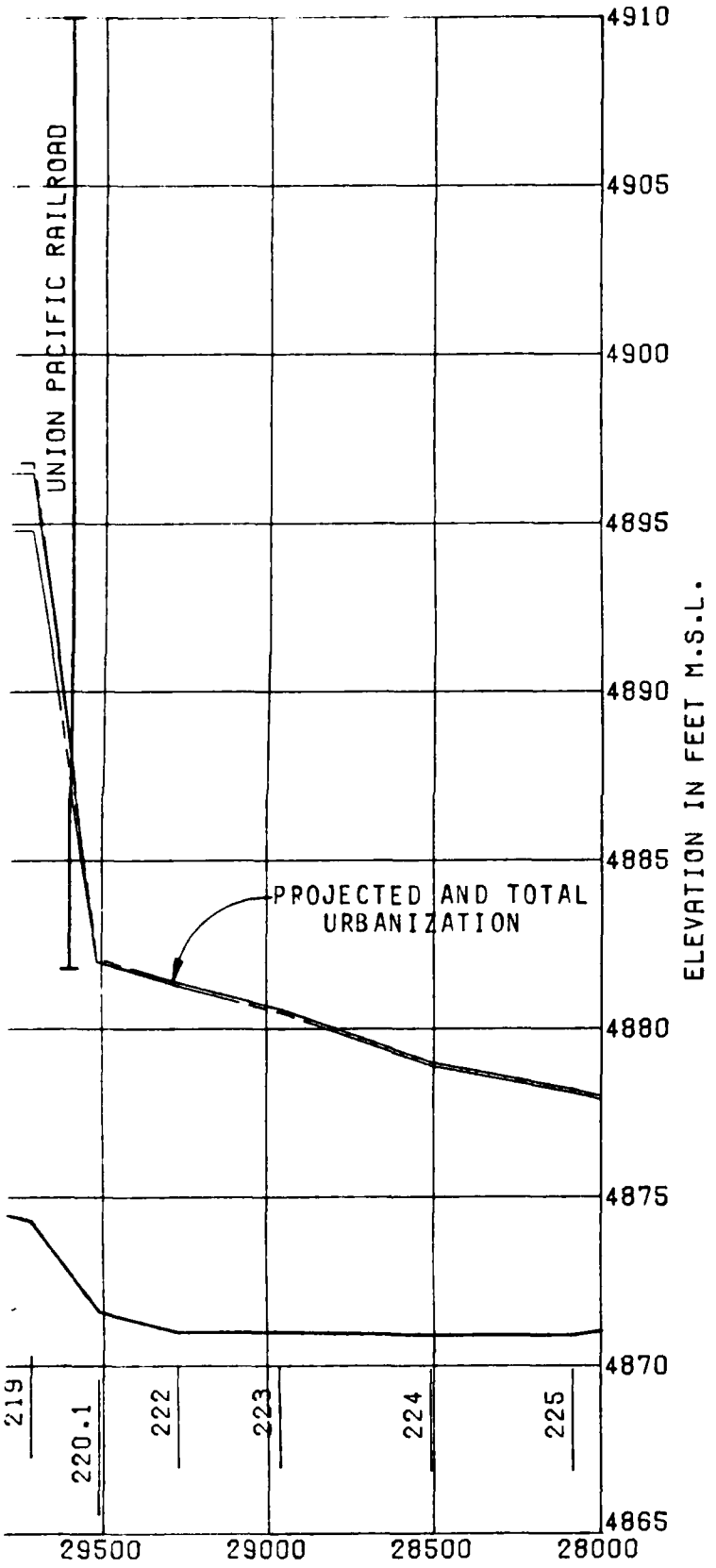
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981







LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge
Low Steel

2 Reference Point

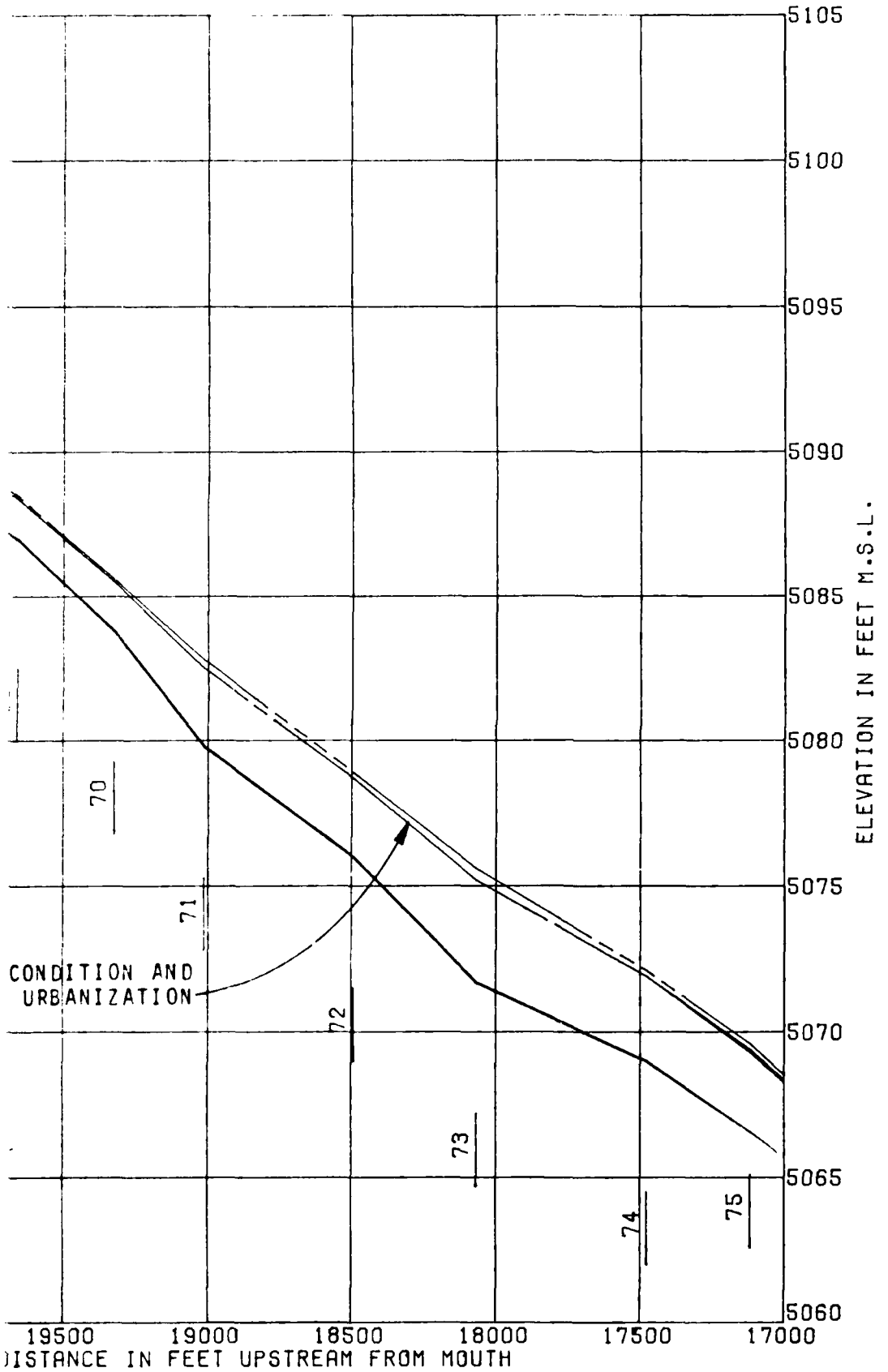
NOTES:

1. For flood elevations at the reference points, see Table 6.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

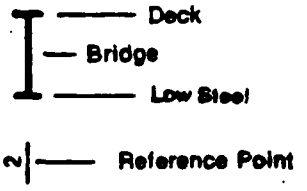


LEGEND:

100 YEAR FLOOD
TOTAL URBANIZATION

100 YEAR FLOOD
PROJECTED URBANIZATION

100 YEAR FLOOD
EXISTING CONDITIONS



NOTES:

1. For flood elevations at the reference points, see Table 7.

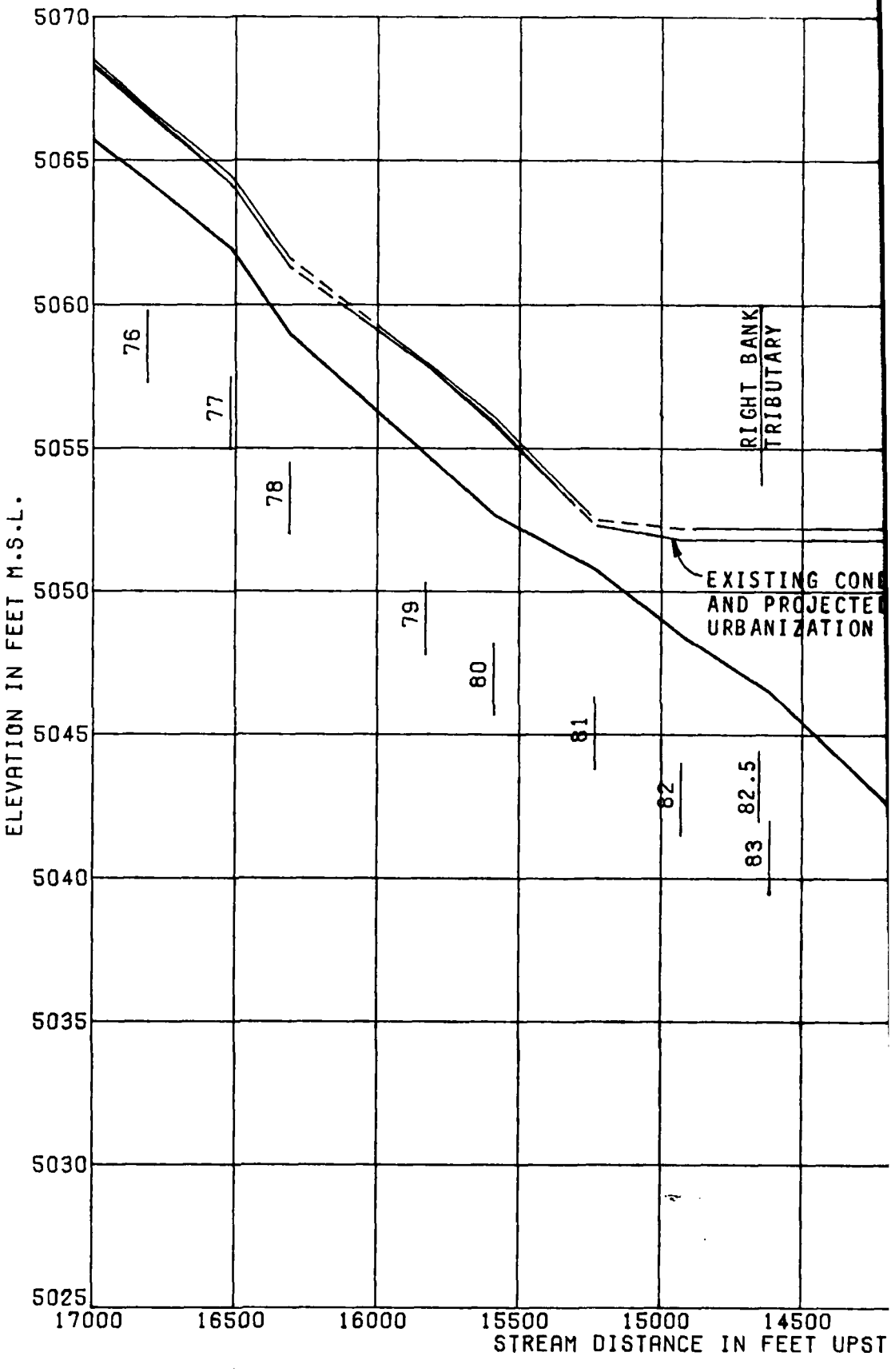
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

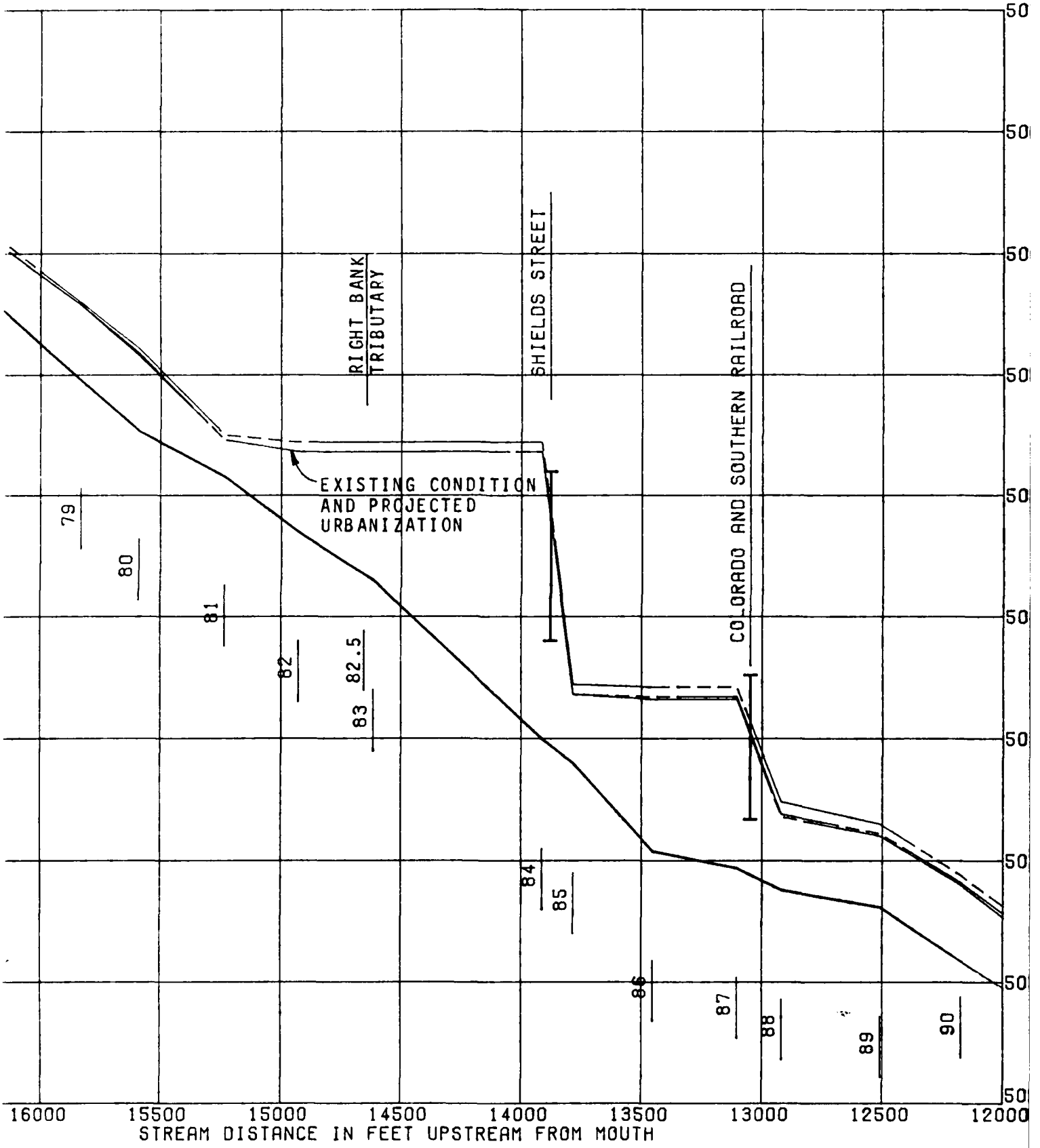
FOSSIL CREEK TRIBUTARIES
STREAM A

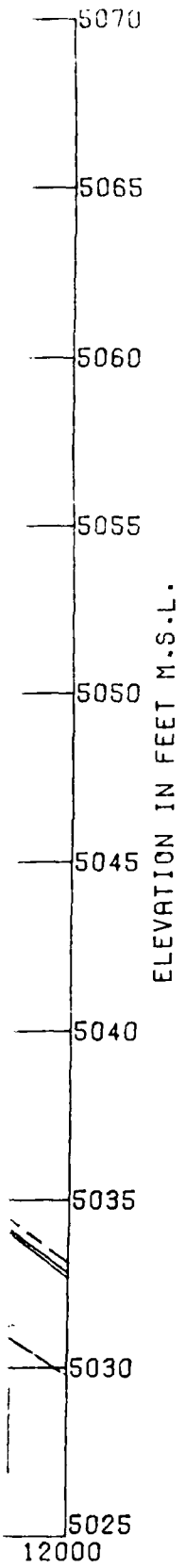
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

Set 3







LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge
Low Steel

2 Reference Point

NOTES:

1. For flood elevations at the reference points, see Table 7.

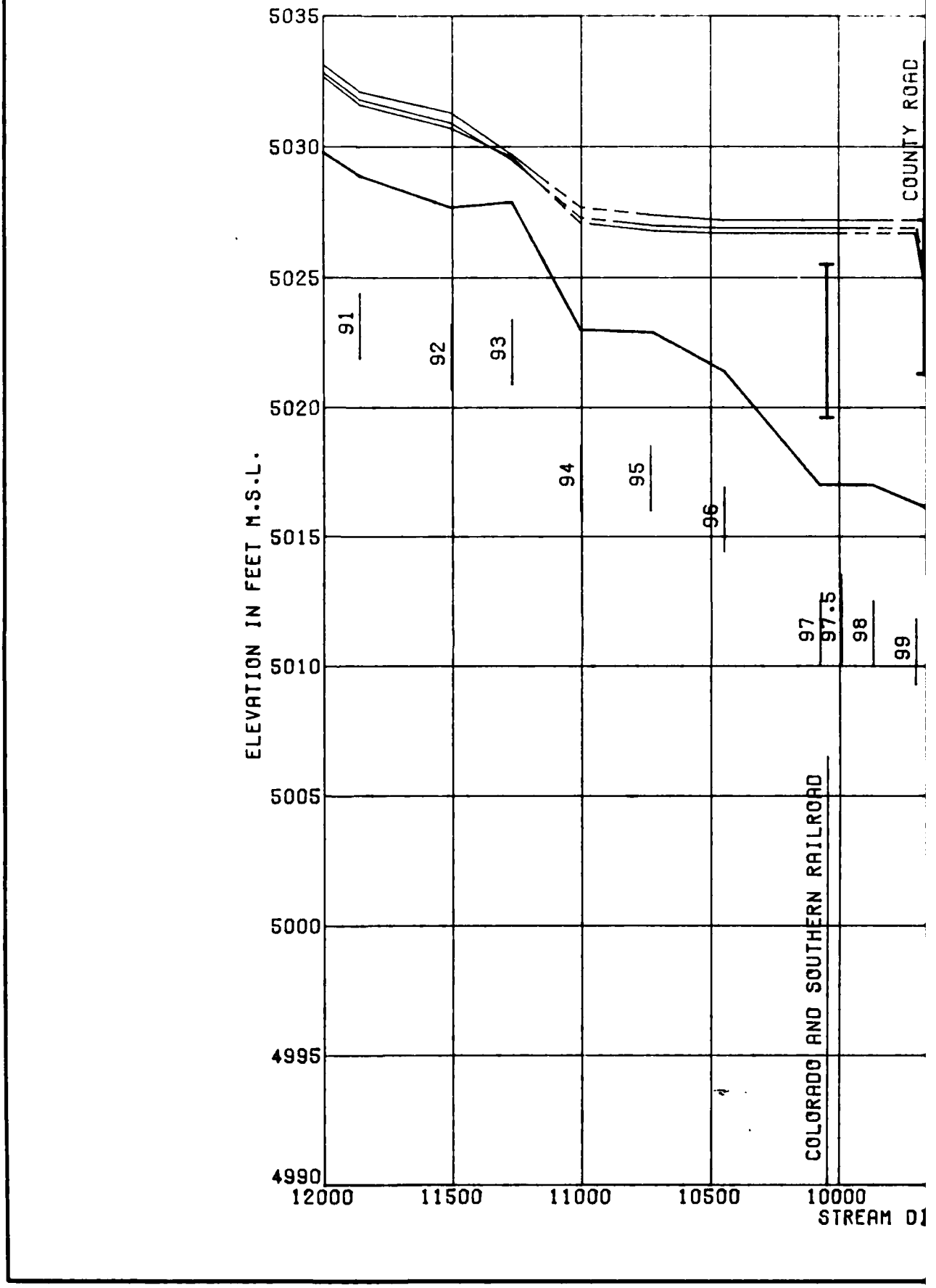
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A

EFFECT OF LAND USE ON FLOOD PROFILES

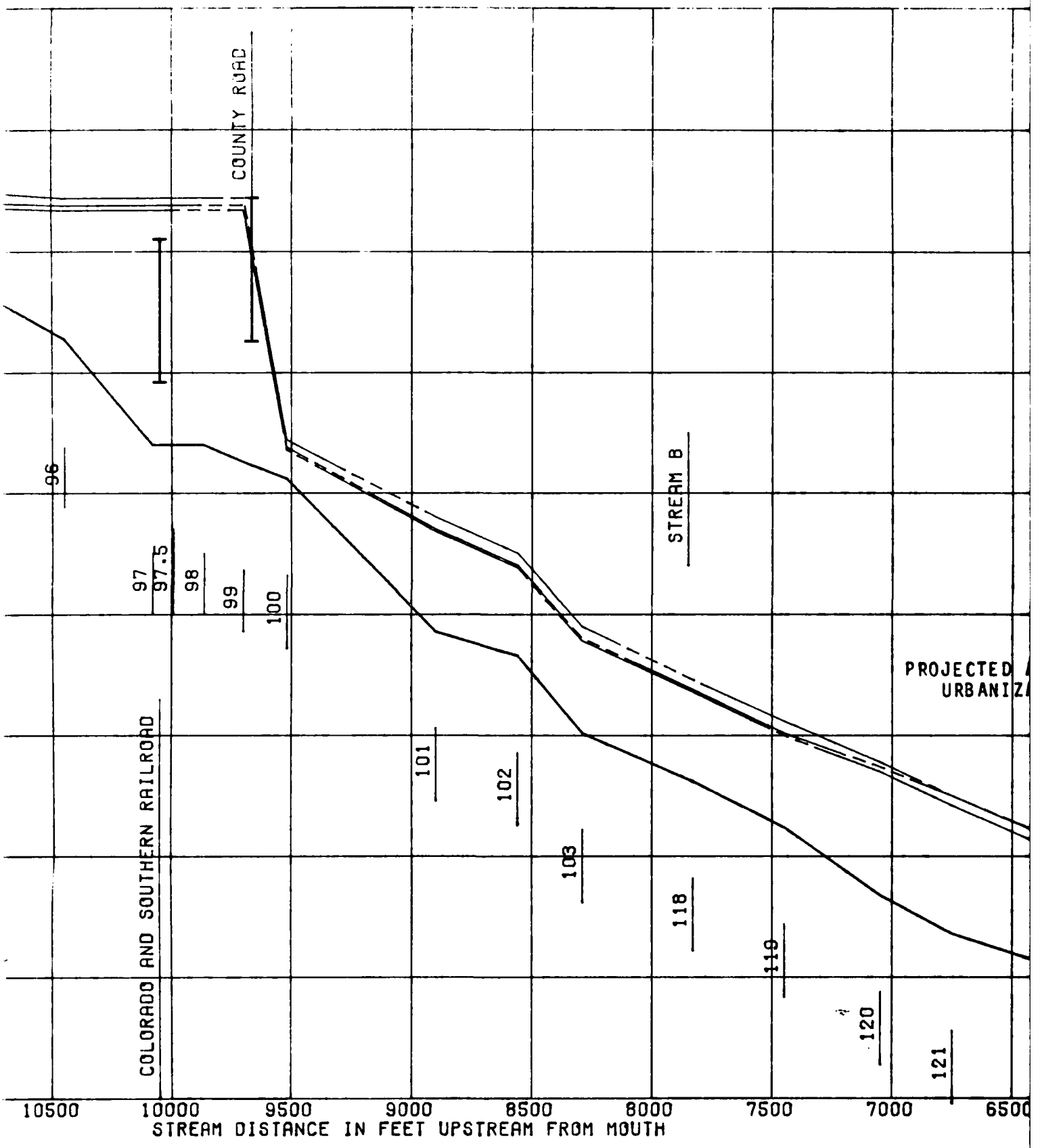
U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

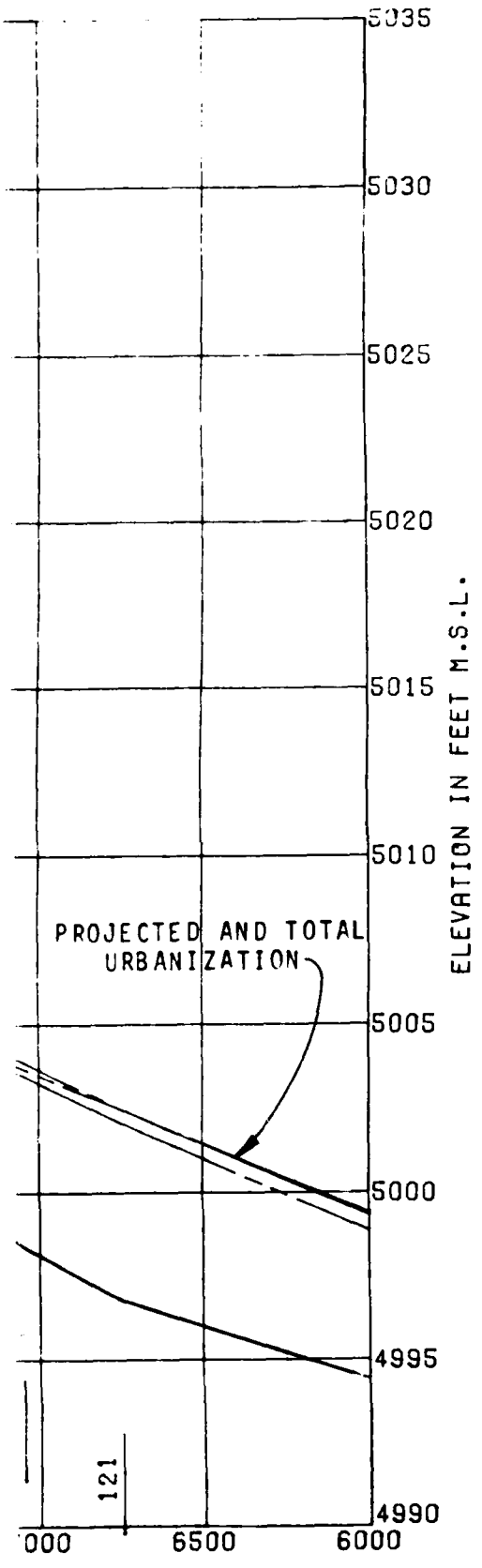
3 of 3



PL. 53

1 of 3





LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge
Low Steel

Reference Point

NOTES:

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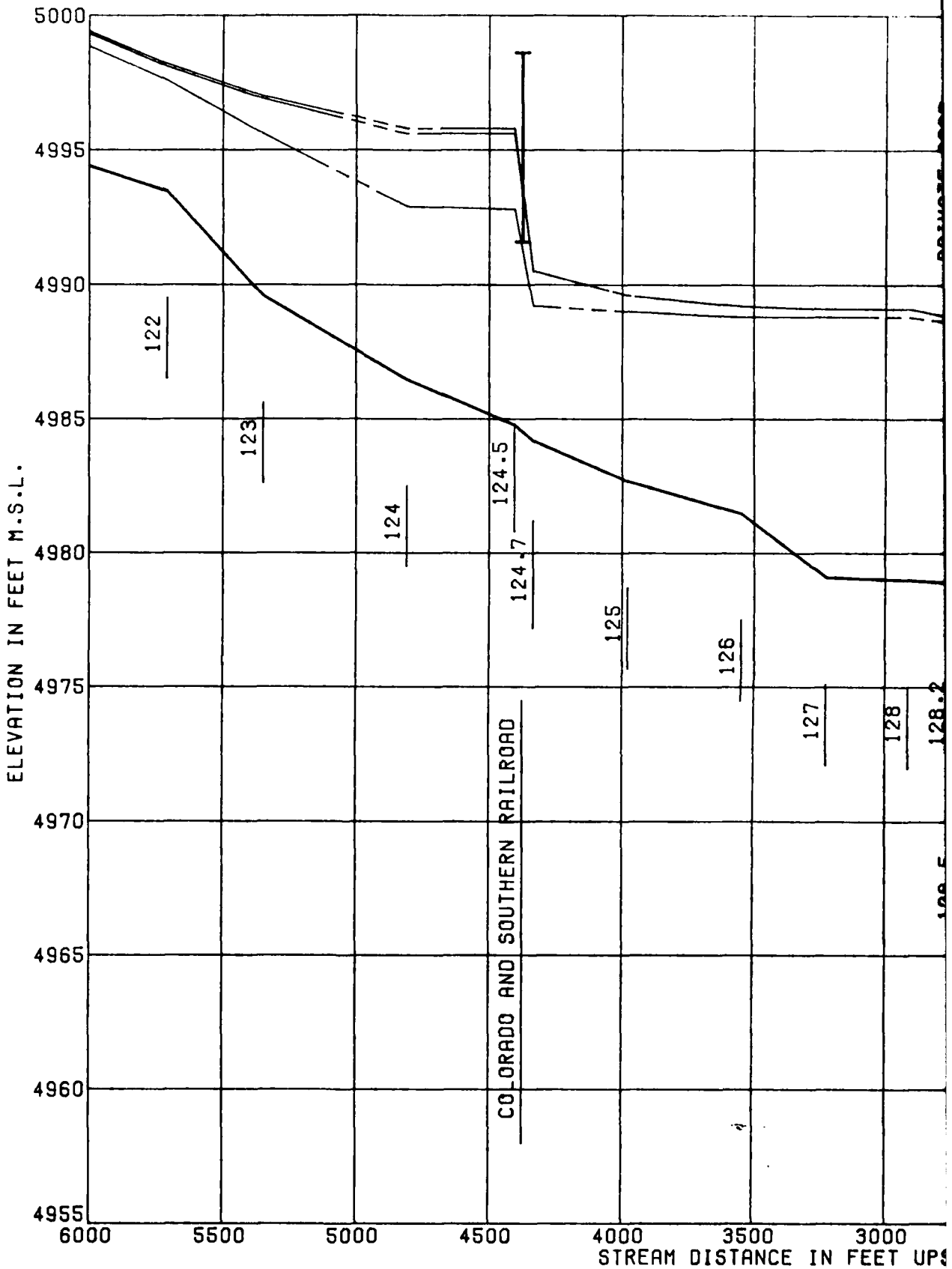
SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM A
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



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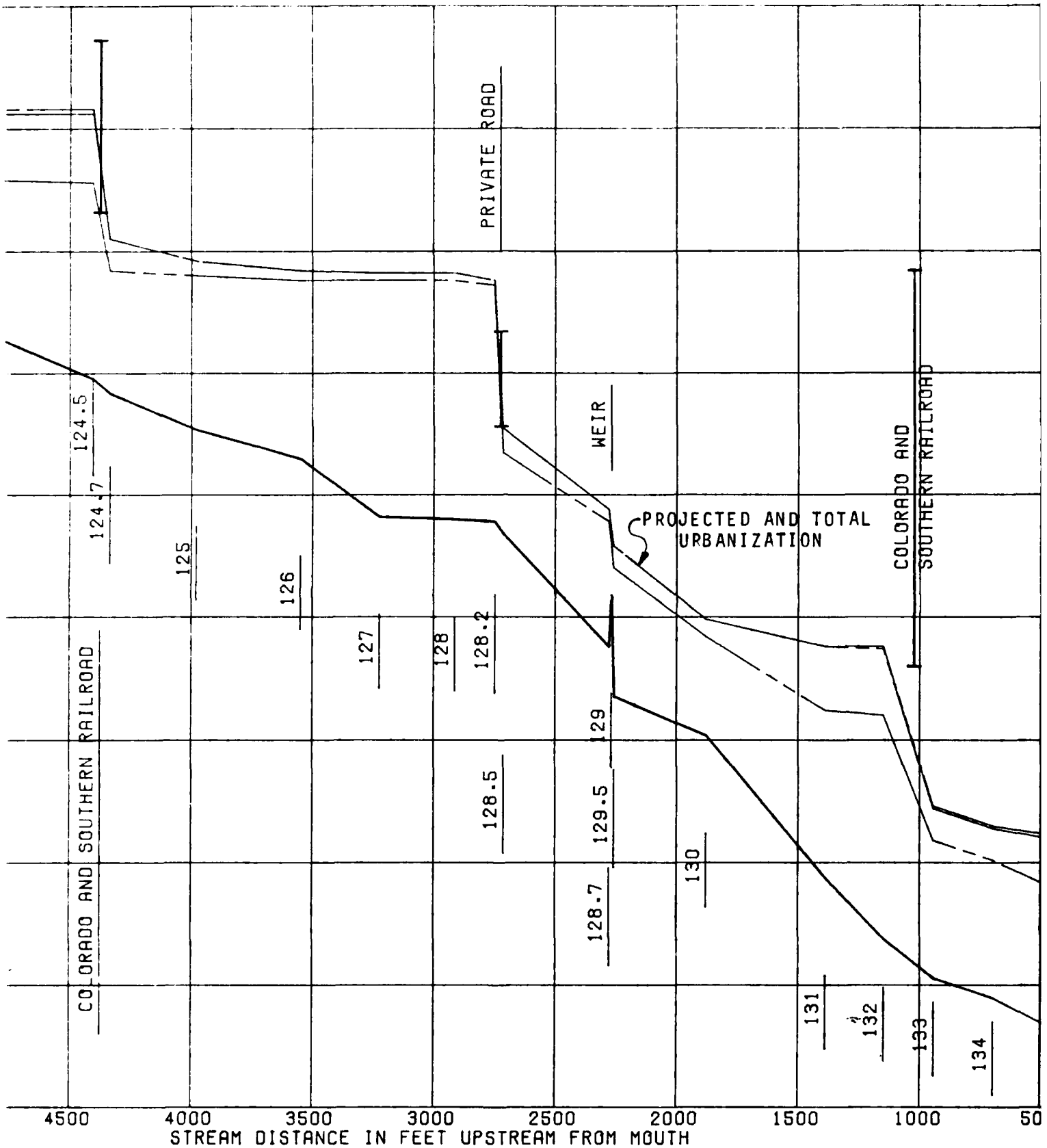
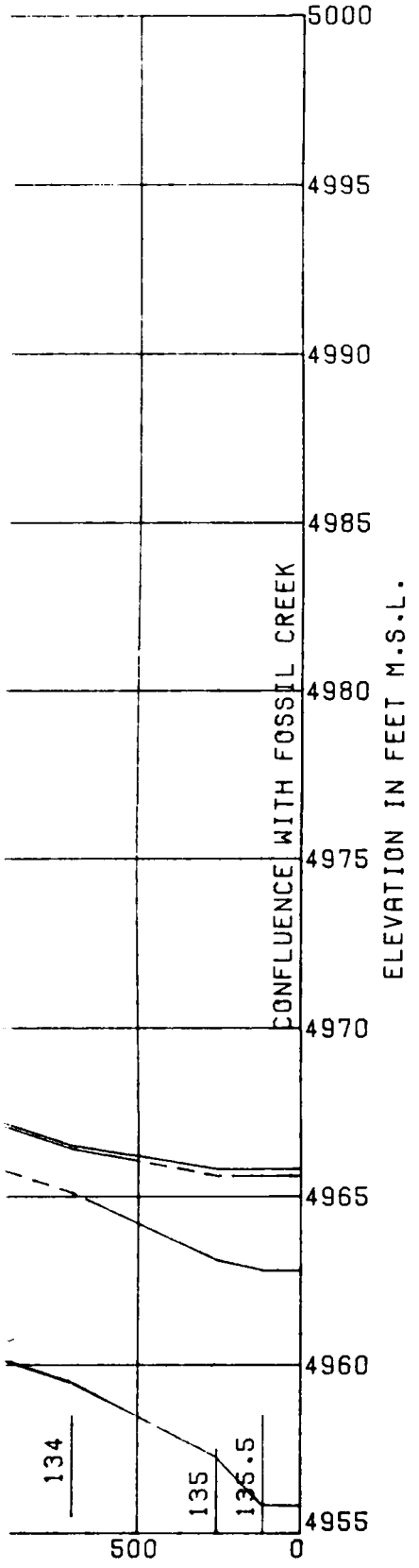
1 of 3





LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge
Low Steel

Reference Point

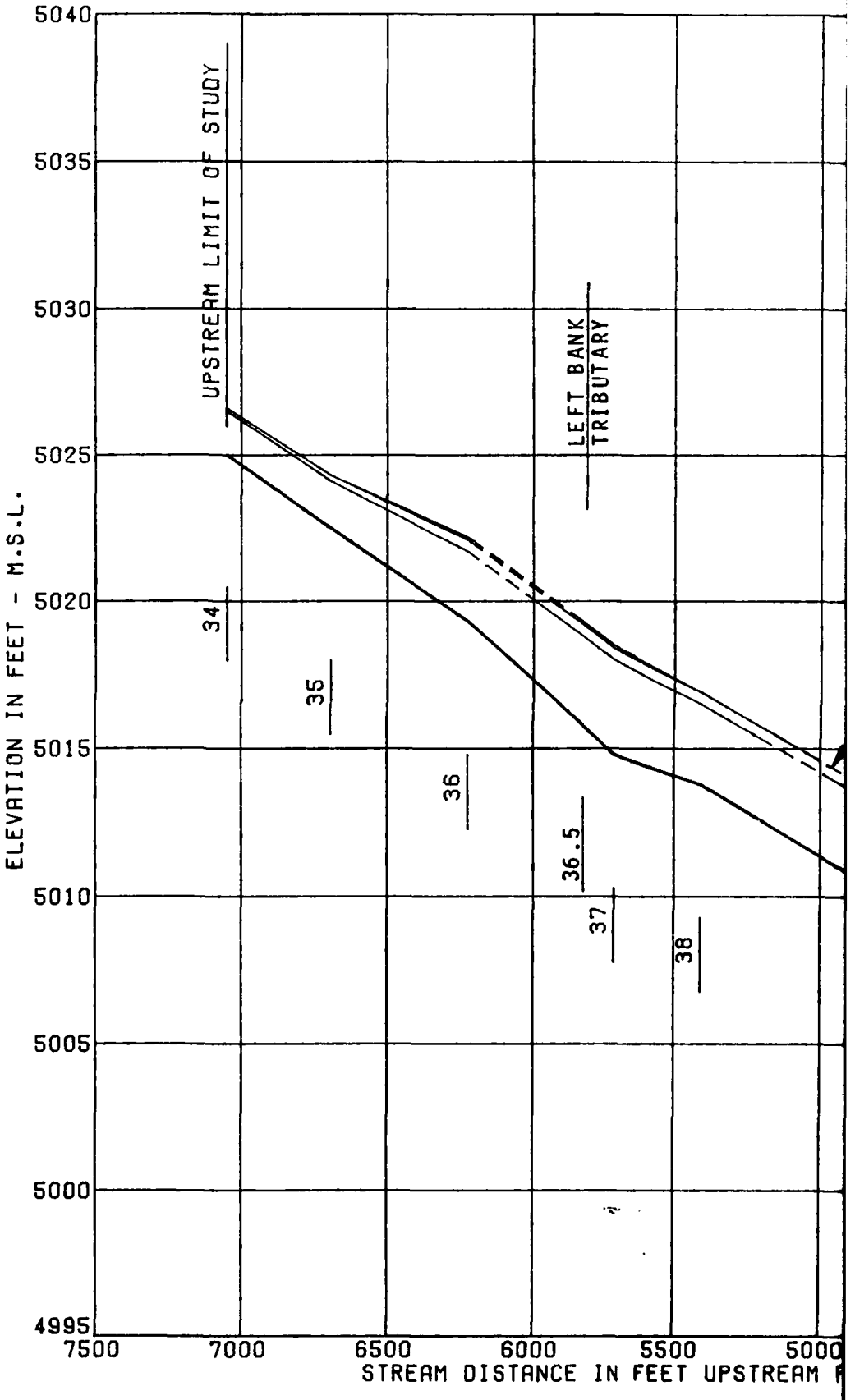
NOTES:

1. For flood elevations at the reference points, see Table 7.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

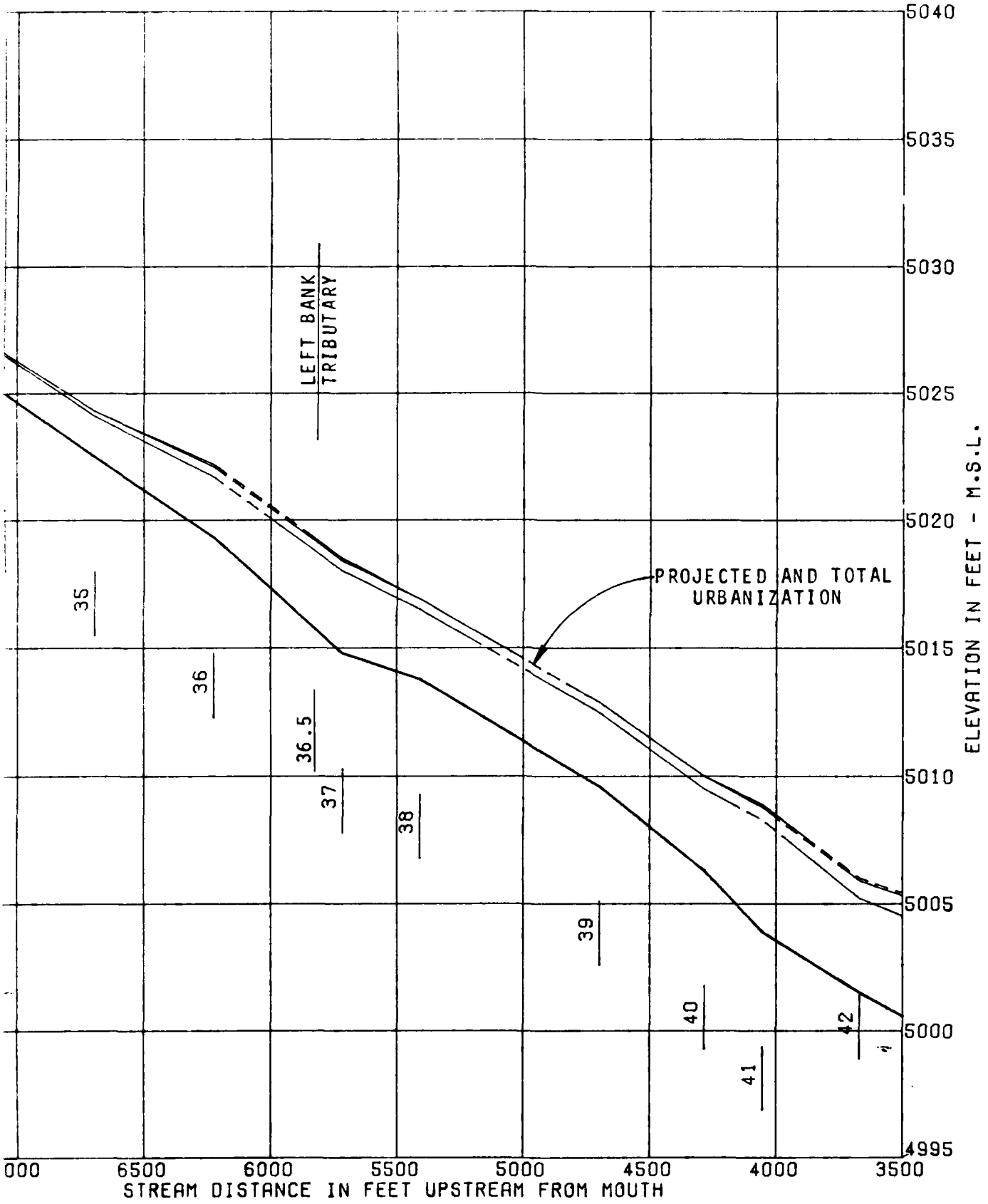
FOSSIL CREEK TRIBUTARIES
STREAM A
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981



PL.55

1 of 3



LEGEND:

100 YEAR FLOOD
TOTAL URBANIZATION

100 YEAR FLOOD
PROJECTED URBANIZATION

100 YEAR FLOOD
EXISTING CONDITIONS

Deck
Bridge
Low Steel

Reference Point

NOTES:

1. For flood elevations at the reference points, see Table 8.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM C

EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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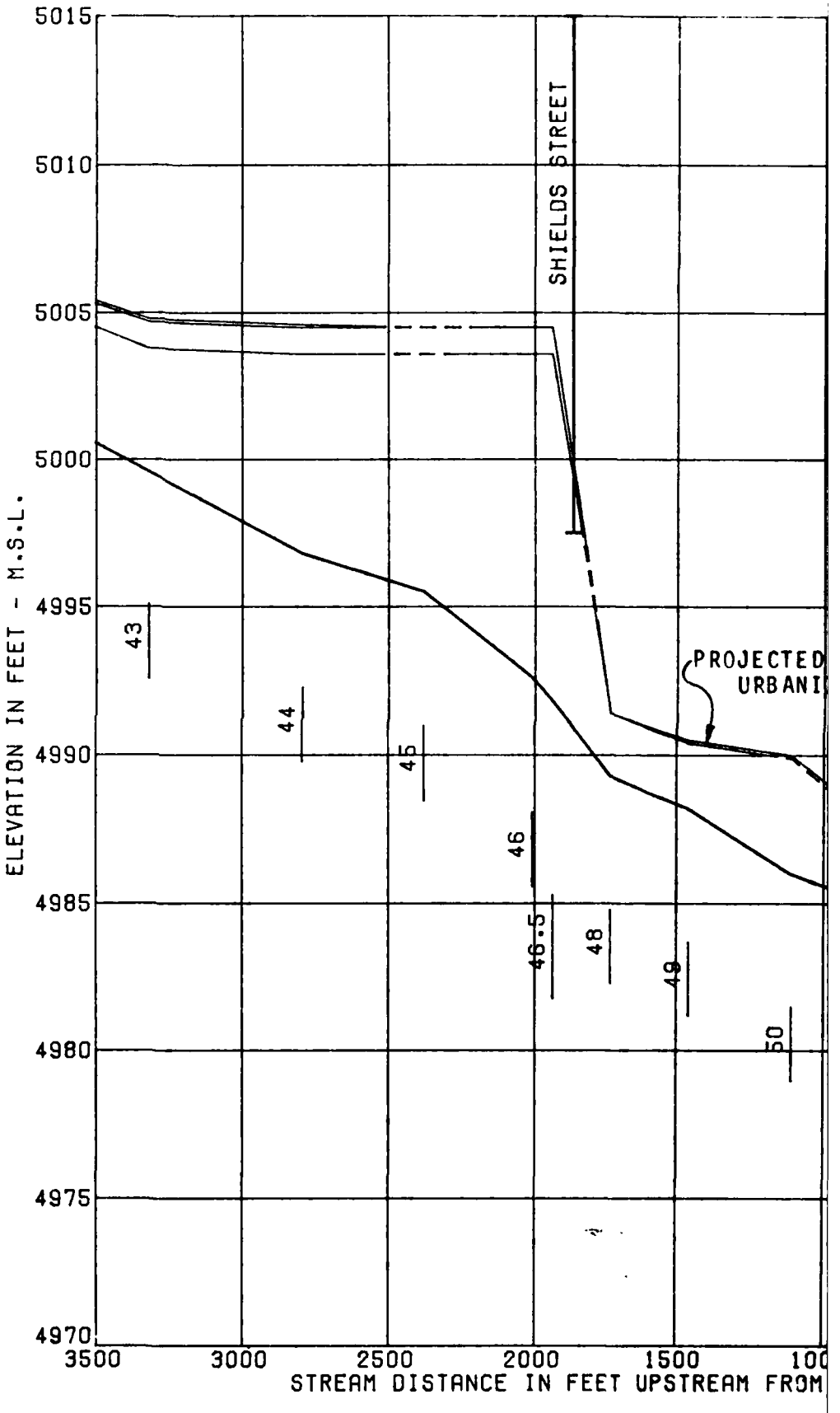
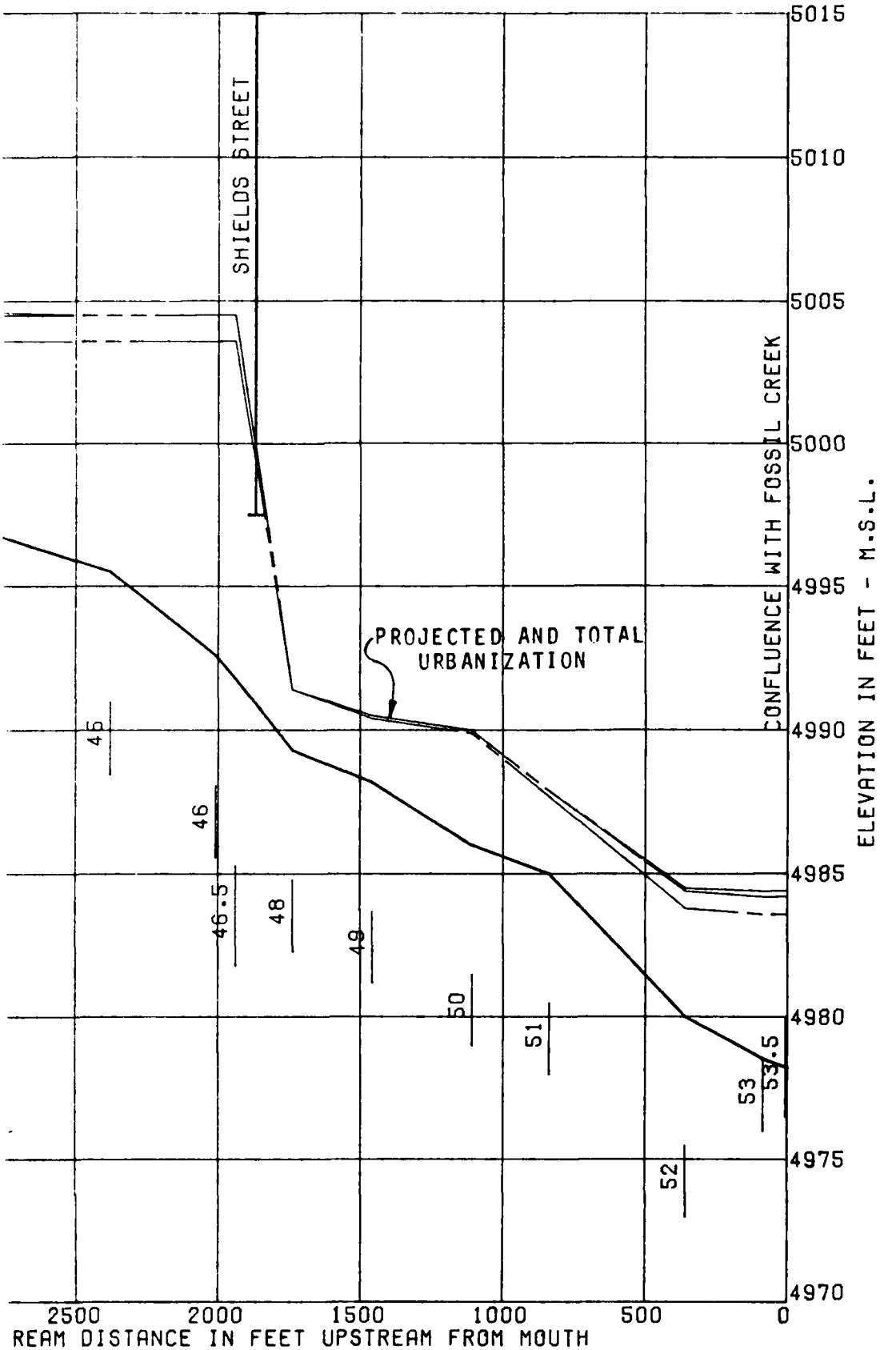


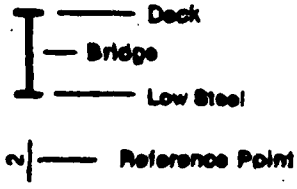
PL.56

1 of 3



LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS



NOTES:

1. For flood elevations at the reference points, see Table 8.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM C
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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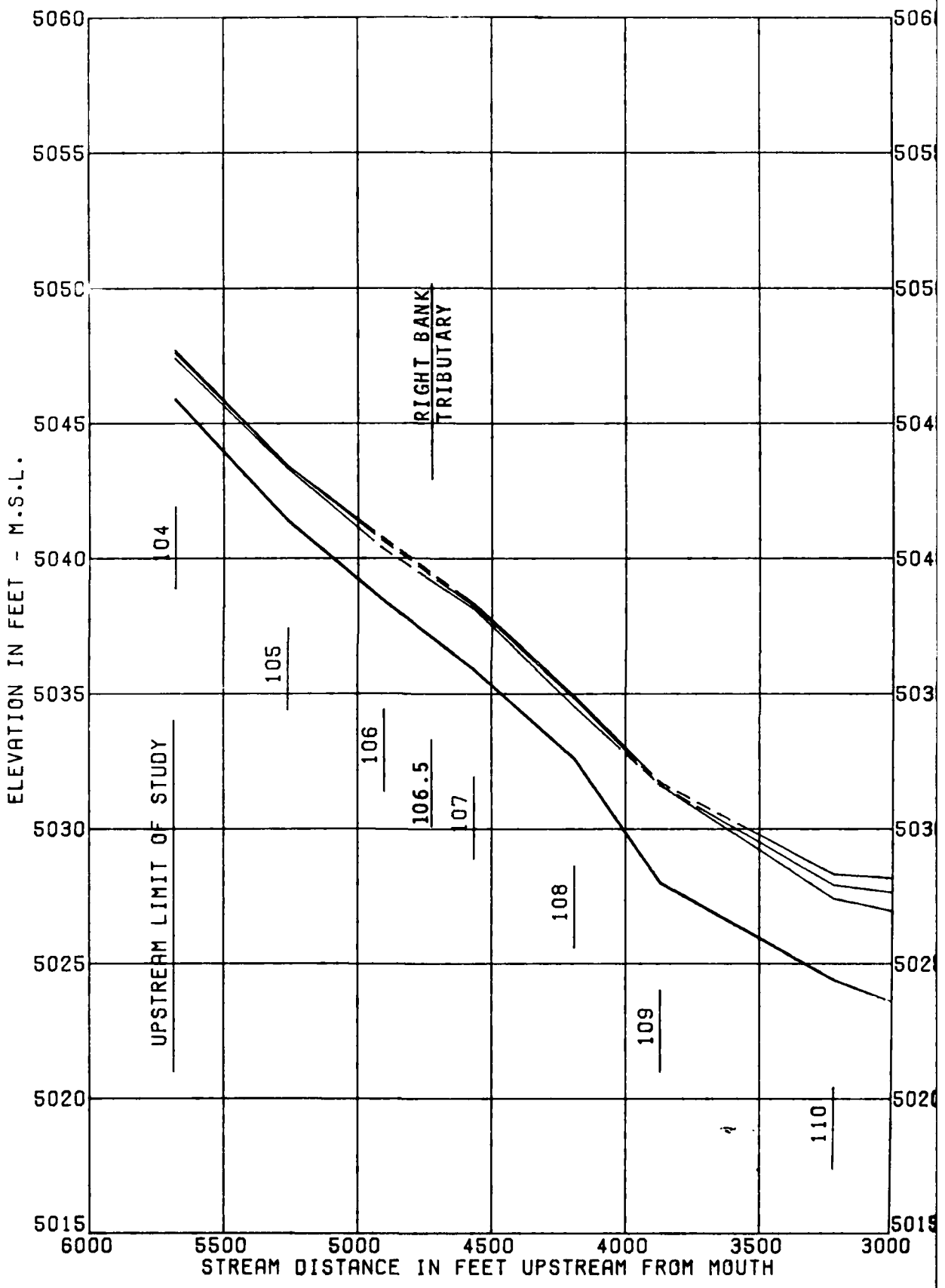
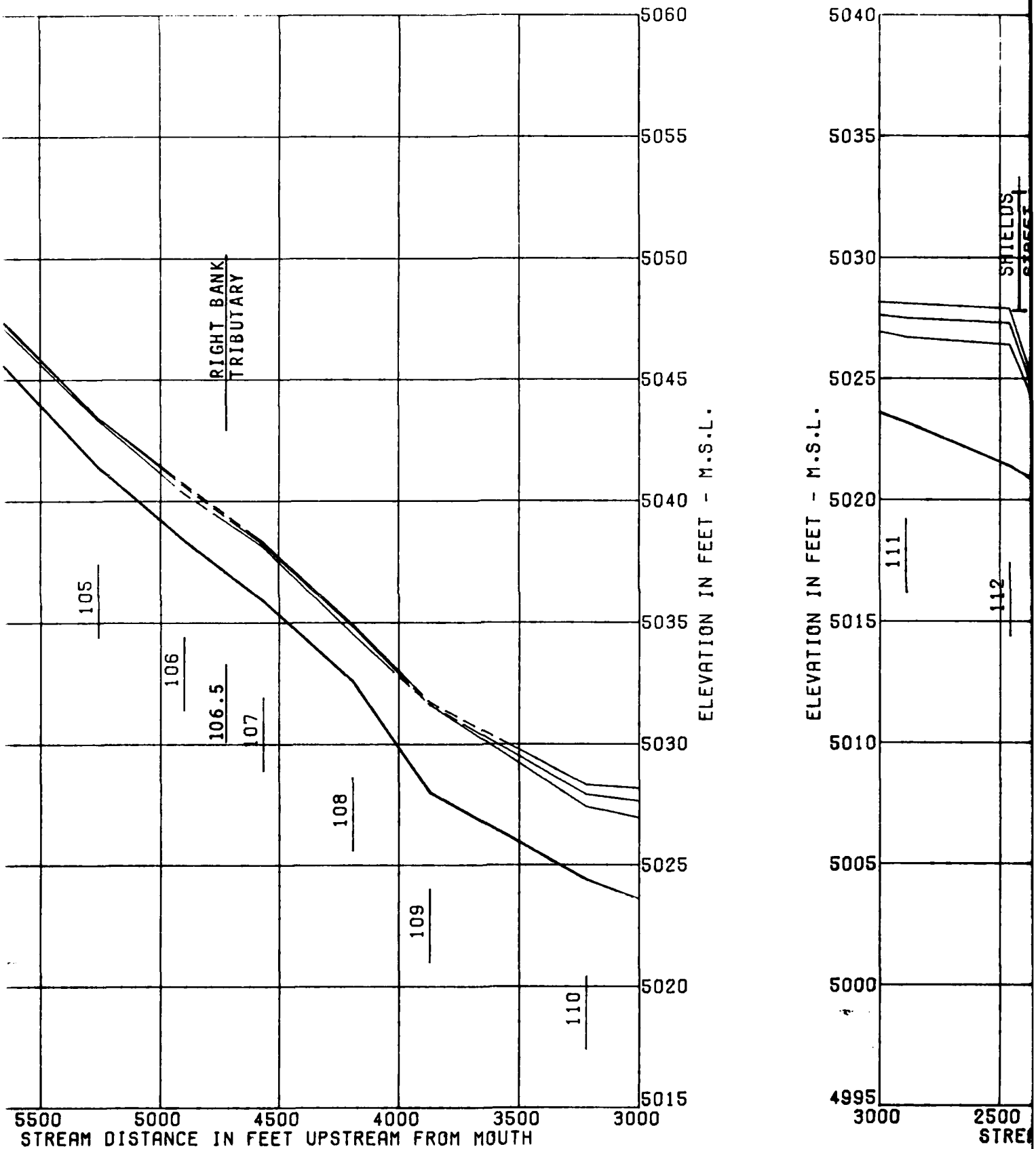
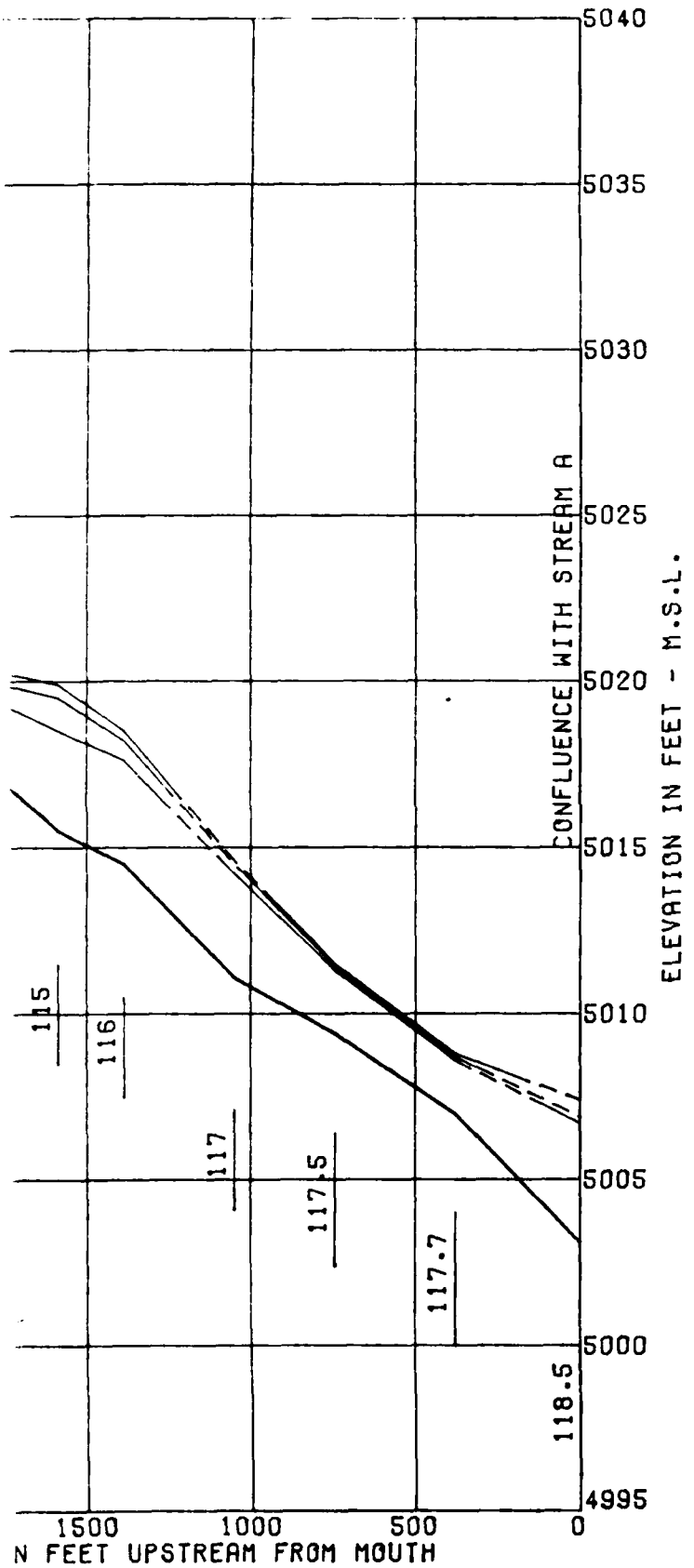

5060
5055
5050
5045
5040
5035
5030
5025
5020
5015
6000
5500
5000
4500
4000
3500
3000
ELEVATION IN FEET - M.S.L.
STREAM DISTANCE IN FEET UPSTREAM FROM MOUTH
RIGHT BANK TRIBUTARY
UPSTREAM LIMIT OF STUDY
104
105
106
106.5
107
108
109
110

PL. 57

1 of 3





LEGEND:

- 100 YEAR FLOOD TOTAL URBANIZATION
- 100 YEAR FLOOD PROJECTED URBANIZATION
- 100 YEAR FLOOD EXISTING CONDITIONS

Deck
Bridge
Low Steel

Reference Point

NOTES:

1. For flood elevations at the reference points, see Table 9.

SPECIAL STUDY
CACHE LA POUDRE RIVER BASIN
LARIMER-WELD COUNTIES, COLORADO

FOSSIL CREEK TRIBUTARIES
STREAM B
EFFECT OF LAND USE ON FLOOD PROFILES

U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS OMAHA, NEBRASKA
OCTOBER 1981

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