FLOOD INSURANCE STUDY

LINCOLN COUNTY, WISCONSIN
AND INCORPORATED AREAS

Community Name	Community Number
Lincoln County (Unincorporated Areas)	550585
Merrill, City of	555565
Tomahawk, City of	550235

August 16, 2011

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
55069CV000A

Lincoln County, Wisconsin
And Incorporated Areas

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this Preliminary FIS report at any time. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision (LOMR) process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult community officials and check the Community Map Repository to obtain the most current FIS components. Selected Flood Insurance Rate Map panels for this community contain information that was previously shown separately on the corresponding Flood Boundary and Floodway Map panels (e.g., floodways and cross sections). In addition, former flood hazard zone designations have been changed as follows.

Old Zone(s)	New Zone
A1 through A30	AE
B	X
C	X

Initial Countywide FIS Effective Date: August 16, 2011

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FLOOD INSURANCE STUDY
LINCOLN COUNTY AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Lincoln County, including the cities of Merrill and Tomahawk; and the unincorporated areas of Lincoln County (referred to collectively herein as Lincoln County).

This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This FIS has developed flood-risk data for various areas of the county that will be used to establish actuarial flood insurance rates. This information will also be used by the communities of Lincoln County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and will also be used by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some States or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence, and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS report are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This FIS was prepared to include the unincorporated areas of, and incorporated communities within, Lincoln County in a countywide format. Information on the authority and acknowledgments for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports, is shown below.

Lincoln County (Unincorporated Areas):	For the February 19, 1986 FIS, the hydrologic and hydraulic analyses were prepared by the U.S. Army Corps of Engineers (USACE) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-E-0941, Project Order No. 3. That work was completed in March 1984. For the March 3, 2003 revision, the hydrologic and hydraulic analyses were prepared by the U.S Geological Survey (USGS), for FEMA,

Lincoln County (Unincorporated Areas): (continued)	under Inter-Agency Agreement No. EMW-92-E-3848, completed in May 1994 (Reference 1).
Merrill, City of:	For the July 20, 1998 FIS, the hydrologic and hydraulic analyses were prepared by the USGS, for FEMA, under Inter-Agency Agreement No. EMW-92-E-3848. This work was completed in May 1994. Hydrologic and hydraulic analyses for a portion of the Prairie River were taken from the original FIS for the Lincoln County, Unincorporated Areas (Reference 2).
Tomahawk, City of	For the September 4, 1985 FIS, the hydrologic and hydraulic analyses for this study were performed by the USACE for FEMA, under Inter-Agency Agreement No. EMW-E-0941, Project Order No. 3. This study was completed in March 1984 (Reference 3).

For this countywide FIS, detailed hydrologic and hydraulic analyses for portions of the Copper, Prairie and Wisconsin Rivers, new approximate hydrologic and hydraulic analyses and redelineation of special flood hazard areas were performed by the Wisconsin Department of Natural Resources (WDNR) and CDM Federal Programs Corporation (CDM). This work was performed for FEMA under Contract No. NMI00000649 and completed in October 2009.

The digital base mapping information was provided in digital format by Lincoln County. This information was derived from data compiled in 2008. These data meet or exceed National Mapping Accuracy Standards. Users of this FIS should be aware that minor adjustments may have been made to specific FIRM base map features.

The coordinate system used for the production of this FIRM is Universal Transverse Mercator (UTM) Zone 16 North, North American Datum of 1983 (NAD 83), GRS 80 spheroid. Differences in the datum and spheroid used in the production of FIRMs for adjacent counties may result in slight positional differences in map features at the county boundaries. These differences do not affect the accuracy of information shown on the FIRM.

1.3 Coordination

An initial Consultation Coordination Officer (CCO) meeting is held typically with representatives of FEMA, WDNR, USACE and the community to explain the nature and purpose of a FIS and to identify the streams to be studied by detailed methods. A final CCO meeting is held typically with representatives of FEMA, WDNR, USACE and the community to review the results of the FIS.

The dates of the initial and final CCO meetings held for previous FIS jurisdictions within Lincoln County are shown in Table 1, "Initial and Final CCO Meetings."

TABLE 1 – INITIAL AND FINAL CCO MEETINGS

Community	Initial CCO Date	Final CCO Date
Lincoln County, Unincorporated Areas (1986 FIS)	May 20, 1982	April 8, 1985
Merrill, City of (1998 FIS)	*	September 18, 1995
Tomahawk, City of	May 20, 1982	October 25, 1984

* Information Not Available

For this countywide FIS, the initial Scoping meeting was held on August 15, 2008, and attended by representatives of FEMA, WDNR, and the communities in Lincoln County.

The results of the study were reviewed at the final open house meeting held on March 18, 2010, and attended by representatives of FEMA, WDNR, and the communities in Lincoln County. All problems raised at that meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS report covers the geographic area of Lincoln County, Wisconsin, including the incorporated communities listed in Section 1.1. The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction.

All or portions of the flooding sources listed in Table 2, "Flooding Sources Studied by Detailed Methods," were studied by detailed methods. The limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2).

TABLE 2 – FLOODING SOURCES STUDIED BY DETAILED METHODS

Flooding Source	Limits of Detailed Study
Copper River	From County Highway E to the confluence with the Wisconsin River.
Devil Creek	From the City of Merrill Corporate Limits to the confluence with the Wisconsin River.
Prairie River	From approximately 3 miles upstream of Bachelors Avenue to 2,000 feet downstream of Town Hall Road.
	From Prairie Dell Dam* to the confluence with the Wisconsin River.
Prairie River Overflow	From the divergence from the Prairie River at approximately 900 feet upstream of Town Hall Road to the confluence with the Prairie River at approximately 850 feet downstream of Town Hall Road.
Somo River	From the confluence with the Little Somo River to the confluence with the Wisconsin River.
Little Somo River	From U.S. Highway 8 to the confluence with the Little Somo River.
Spirit River	From approximately 2 miles upstream of Faust Road (County Highway O) to the confluence with the Wisconsin River.
Tomahawk River	From the county boundary with Oneida County to Lake Mohawksin.
Wisconsin River	From the county boundary with Oneida County to the county boundary with Marathon County.

* Dam Removed in 1992

As part of this countywide FIS, new studies were included for the Copper and Prairie Rivers, and portions of the Wisconsin River. The Copper River was studied between County Highway E to the confluence with the Wisconsin River, and the Prairie River was studied from approximately 3 miles upstream of Bachelors Avenue to 2,000 feet downstream of Town Hall Road. The new study reaches on the Wisconsin River were from Tomahawk Dam to approximately 1.5 miles downstream of Thomas Road, from Grandmothers Dam to County Highway E, and from County Highway K to the county boundary with Marathon County. These updated analyses superseded any areas previously studied by limited detail or approximate methods.

This FIS also incorporates the determinations of letters issued by FEMA resulting in map changes (Letter of Map Revision [LOMR], Letter of Map Revision-based on Fill [LOMR-F], and Letter of Map Amendment [LOMA]) as shown in Table 3, "Letters of Map Correction."

TABLE 3 – LETTERS OF MAP CHANGE

Community	Flooding Source/ Project Identifier	Date Issued	Type
Lincoln County, (Uninc. Areas)	Alexander Lake / 06-05-B877P	June 29, 2006	LOMR
Merrill, City of	Prairie River / 02-05-3293P*	November 18, 2002	LOMR-102

* The case number of this LOMR was initially issued in 2002 with the study number of 02-05-023XS. FEMA's current database shows a case number of 02-05-3293P. Both of these case numbers reference the same LOMR, which was issued for the removal of the Ward Paper Mill Dam.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon, by FEMA and the WDNR. All or portions of Averill Creek, Big Hay Meadow Creek, Big Pine Creek, Brant Creek, Center Fork New Wood River, Coffee Creek, Copper River, Devil Creek, East Fork New Wood River, Green Meadow Creek, Landwehr Creek, Little Pine Creek and Tributaries, Manacke Creek, Marheime Creek, McGinnis Creek, Middle Fork Copper River and Tributary, New Wood River, Noisy Creek, North Branch Prairie River and Tributary, North Fork Copper River, North Fork Spirit River, Pickerel Creek, Pine River, Prairie River, Ritchie Creek, Scott Creek, Silver Creek, Skanawan Creek, Somo River, South Fork Copper River, Spirit River, Squaw Creek, and the Wisconsin River were studied by approximate methods.

2.2 Community Description

Lincoln County is located in north-central Wisconsin and bordered by Oneida County on the north, Langlade County on the east, Marathon County on the south and Taylor and Price counties on the west. The county is situated approximately 180 miles north of Madison, Wisconsin, approximately 80 miles northwest of Green Bay, Wisconsin, approximately 12 miles north of Wausau, Wisconsin, and approximately 160 miles east of St. Paul, Minnesota. The population of the county was 29,641 in 2000, 22,235 in 1990 and 22,536 in 1980 (Reference 4).

The most prominent topographic feature of Lincoln County is a glacial terminal moraine that crosses the southern portion of the county. The moraine belt, varying

in width from a few miles to eight miles wide, consists of a series of hills, ridges, steep slopes, kettle holes, and depressions. The surface of the glaciated area varies from level to rolling and hilly and contains a number of marshes, lakes, and kettle holes. In the unglaciated areas of the county, the surface is mainly rolling with rounded hilltops and long, gentle slopes. Deep channels have been cut by streams. Throughout the unglaciated region, the drainage is typically good within the morainic belt (Reference 5).

The climate of Lincoln County is characterized by moderate summers, with temperatures averaging 68 degrees Fahrenheit (°F) in July, and cold winters, with temperatures averaging 13.2 °F, in January. The average annual temperature is about 40 °F. Average annual precipitation over the area is 31 inches, while annual snow accumulation averages 50 inches (Reference 6).

Most of Lincoln County drains into the Wisconsin River. The river flows in a southerly direction through Lincoln County and the drainage area at the USGS gage (located just downstream of the confluence of the Prairie River with the Wisconsin River) is 2,780 square miles (Reference 7). The Wisconsin River has been regulated for a number of years by a series of dams. The Tomahawk Dam, about 0.75 mile downstream of the southern Tomahawk corporate limits, has created Lake Mohawksin, a Wisconsin River impoundment. Lake Mohawksin starts at the dam, proceeds upstream along the western City of Tomahawk corporate limits, takes a sharp easterly turn, and proceeds toward the eastern Tomahawk corporate limits. Near the eastern city corporate limits, the dam influence lessens and the lake begins to assume Wisconsin River characteristics. The actual point where the lake ends and the river begins is not identifiable.

Development in the floodplain throughout Lincoln County is mainly agricultural, with isolated residential and vacation-type housing developments. There is some commercial and retail development near the U.S. Highway 51 Bridge in the City of Tomahawk. The only other commercial development in Lincoln County is the Ward Paper Company on the Prairie River.

2.3 Principal Flood Problems

In Lincoln County, flooding may occur during any season of the year. However, most major floods have occurred during early spring and are usually the result of spring rains and/or snowmelt. The USGS operates three stream gaging stations on the Wisconsin River: the Whirlpool Rapids gage, No. 05392000; the Rothschild gage, No. 05398000; and the Merrill gage, No. 05395000. There are gaging stations located at Highway C on the Prairie River (No. 05394500) and at County Highway Trunk F on Devil Creek (No. 05394200).

Low-lying lands adjacent to the Wisconsin River are subject to periodic flooding. A number of major floods have occurred on the Wisconsin River; most notably in 1912, 1941, 1942, and 1967. Estimated peak discharges of July 24, 1912 and

August 31, 1941 floods at the Merrill gage were 45,000 and 49,400 cubic feet per second (cfs) respectively. But the construction of the Alexander, Grandfather, Grandmother, Kings, Merrill and Tomahawk dams in the early 1940s substantially altered the hydrologic characteristics of the river.

A number of floods have also occurred on the Prairie River, most notably in 1926, 1941 and 1959. The estimated peak discharge for the 1941 flood at the Prairie River USGS gage was 5,800 cfs. The 1926 and 1959 flood discharges at the USGS gage were 3,780 and 3,000 cfs with an estimated recurrence interval of 45 and 18 years, respectively. The major flooding events on the Tomahawk River were in 1943, 1959, 1960, 1968 and 1973. The 1960 and 1968 flood discharges at the Tomahawk River USGS gage were 2,690 and 2,540 cfs with an estimated recurrence interval of 35 and 25 years. The major flooding events on the Spirit River were in 1942 and 1946 with discharges of 4,180 and 3,540 cfs at the Spirit Falls USGS gage. Estimated recurrence intervals for these two flood events are 20 and 10 years, respectively. Low-lying lands adjacent to the Little Somo River are also subject to periodic flooding. There are no gaging stations on the river; therefore, historic floods have not been recorded. Evidence indicates, however, that flooding has occurred on the river.

Flooding problems in the City of Merrill are due to the overflow of the Wisconsin and Prairie Rivers, and the Devil Creek. Damaging floods are reported to have occurred in the City of Merrill vicinity as early as 1884. Floods above a stage of 11.0 feet at the USGS gage on the Wisconsin River at Merrill occurred in 1903, 1904, 1905, 1912, 1916, 1920, 1922, 1923, 1928, 1929, 1940, 1941, 1942, 1946, 1950, 1951, 1959, 1960, 1967, and 1971 (Reference 8).

On April 19, 1996, Lincoln County and adjacent areas observed a major flood event. Numerous roads and culverts were washed out and the Wisconsin River at Merrill rose to a river stage of 12.94 feet on April 21, nearly 2 feet above the flood stage of 11.00 feet. Water backed up behind a dam on the Prairie River at Merrill, resulting in the flooding of the 1200 block of East 14th Street and a nearby park. Area basements were filled with up to 3 feet of water. Eight homes suffered damage. There were minor flood events in 2002, 2003 and 2005 due to snow melt (Reference 9).

2.4 Flood Protection Measures

There are no formal state, local or federal flood control projects in existence in, or proposed for, Lincoln County. Although the numerous dams located on the various watercourses throughout the county afford a minor degree of floodwater retention, the dams are designed and operated for conservation and power generation purposes only.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood-hazard data required for this study. Flood events of a magnitude that is expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance flood in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed affecting the county.

Each incorporated community within, and the unincorporated areas of, Lincoln County, have a previously printed FIS report. The hydrologic analyses described in those reports have been compiled and summarized below.

Pre-Countywide Analysis:

For the original Lincoln County, Unincorporated Areas study, flood discharges for the Wisconsin River are based on a daily simulation of streamflow data (for Water Years 1915-1976) presented in the USGS report "Streamflow Model of Wisconsin River for Determining Flood Frequency and Volume" (Reference 10). Simulation was necessary to make streamflow values homogenous for the period of record since the three large hydroelectric projects constructed on the river after 1940 substantially altered watershed characteristics.

The USGS report presented discharge data for the Whirlpool Rapids USGS gage No. 05392000, the Merrill USGS gage No. 05395000, and the Rothschild USGS gage No. 05398000 (Reference 7). Discharges for the three gages, along with the corresponding drainage areas, were plotted on log-log paper. A straight line relationship was assumed to exist between the plotted points. Discharges for other locations along the Wisconsin River were taken from the straight line plots.

Flood discharges for the Tomahawk River are based on data recorded at the Bradley USGS gage No. 05393000 (Reference 7). Since the river is regulated, a Beards plotting position analysis on the gage data was performed (Reference 11).

The Somo River is ungaged. Lake Somo, a part of the Somo River-Little Somo River system, has a significant storage potential. Therefore, a USACE HEC-1 computer model of the river system was developed to determine Little Somo River discharges (Reference 12).

Prairie River discharges were based on data recorded at the Prairie River USGS gage No. 05394500 (Reference 7). The gage began operation in 1914, was discontinued in 1931, resumed operation in 1939, and is currently still in operation. A log- Pearson Type III analysis was performed on the gaging station data (Reference 13). The resulting frequency data were distributed throughout the study reach by drainage area versus flow relationships.

Spirit River discharges were based on data recorded at the Spirit Falls USGS gage No. 05393500 (Reference 7). The gage began operation in 1942. A log-Pearson Type III analysis was performed on the gage data to determine theoretical discharges. The frequency curve developed for the Spirit Falls gage was then adjusted slightly by a correlation analysis with the Wisconsin River, Merrill USGS gage No. 05395000. The resulting adjusted flows at the Spirit Falls gage were then distributed to other locations along the river by drainage area relationships.

The flood discharges for Devil Creek were determined using a log-Pearson Type III analysis for 30 years of record at USGS gage No. 05394200, upstream of the City of Merrill corporate limits (Reference 13). The resulting frequency data were distributed to the mouth using a drainage area versus flow technique.

This Countywide Analysis:

New hydrologic analyses were performed by the WDNR in 2008 for the Copper River and the Upper Prairie River (upstream of Town Hall Road) watersheds. Discharges were computed using the USACE Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) computer software, version 3.1.0 (Reference 14). For each subbasin, runoff Curve Numbers (CNs) were estimated using SSURGO soils data and the 1992 WISCLAND landuse data. Times of concentration were estimated using the TR-55 flowpath segment method. The rainfall distribution used was developed by the WDNR and is based on recorded storms 2 inches and larger from 1975 to 2003 at the Madison NWS gage (474961). Floodplain storage was taken into account where permanent water bodies existed, such as ponds, lakes, or manmade detention structures, or where there were significant wetlands identified in the Wisconsin Wetland Inventory. It is assumed that no major construction or filling will occur in these areas that would reduce the amount of available storage volume.

For the Wisconsin River, discharges were taken from the 2003 Lincoln County, Unincorporated Areas FIS (Reference 1). Only the 10-percent and 1-percent-annual-chance flood discharges were reported in this FIS at the confluence of the Pine River, Grandfather Dam, and Grandmother Dam. The WDNR determined the 2-percent and 0.2-percent-annual-chance flood discharges at these three locations using a log-log plot of discharge vs. frequency at each location.

Peak discharge-drainage area relationships for streams studied by detailed methods are shown in Table 4, Summary of Discharges.

TABLE 4 – SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES(cfs) 10-PERCENT ANNUAL-CHANCE	2-PERCENT ANNUAL-CHANCE	1-PERCENT ANNUAL-CHANCE	0.2-PERCENT ANNUAL-CHANCE
COPPER RIVER					
At County Highway E	95.4	2,570	4,360	5,210	7,290
DEVIL CREEK					
At Confluence with the Wisconsin River	27.6	1,420	2,260	2,670	3,765
LITTLE SOMO RIVER					
At Confluence with Somo River	134.5	2,830	4,743	5,787	8,106
At downstream end of Somo Lake at Dam Drive	39.7	255	405	489	817
At upstream end of Somo Lake	24.1	257	506	645	994
At US Highway 8	17.3	220	438	565	863
PRAIRIE RIVER					
At Confluence with the Wisconsin River	231	3,191	4,760	5,481	7,295
At Confluence of Barnes Creek	222	3,169	4,721	5,444	7,245
At Confluence of Meadow Creek	211	3,049	4,548	5,238	6,970
At Confluence of Black Alder Creek	*	183	2,748	4,099	4,720

TABLE 4 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES(cfs) 10-PERCENT ANNUAL-CHANCE	2-PERCENT ANNUAL-CHANCE	1-PERCENT ANNUAL-CHANCE	0.2-PERCENT ANNUAL-CHANCE
PRAIRIE RIVER (CONTINUED)					
At Confluence of Spring Creek	171	2,599	3,877	4,464	5,941
At Prairie Dell Dam**	162	2,494	3,721	4,285	5,702
At Confluence of overflow approximately 1,000 feet downstream of Town Hall Road	68.6	1,180	2,370	2,980	4,470
At Town Hall Road	68.4	1,051	2,014	2,439	3,373
Downstream of the Divergence of overflow at approximately 2,000 feet upstream of Town Hall Road	68.2	1,051	2,014	2,439	3,373
At approximately 2,500 feet upstream of divergence	68.0	1,180	2,370	2,970	4,460
At State Highway 17	61.7	1,110	2,230	2,810	4,210
PRAIRIE RIVER OVERFLOW					
Downstream of the divergence from Prairie River at approximately 2,000 feet upstream of Town Hall Road	68.2	129	356	531	1,087
SOMO RIVER					
At railroad trestle, near Confluence with Lake Mohawksin	139.2	2,830	4,743	5,787	8,106

TABLE 4 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES(cfs) 10-PERCENT ANNUAL-CHANCE	2-PERCENT ANNUAL-CHANCE	1-PERCENT ANNUAL-CHANCE	0.2-PERCENT ANNUAL-CHANCE
SPIRIT RIVER					
At mouth	160	4,564	8,601	7,864	9,359
At Spirit River Dam	158	4,521	6,737	7,789	9,260
At Confluence of Armstrong Creek	*	139	4,101	6,111	7,067
At Faust Road	125	3,783	5,638	6,519	8,668
At New Wood Road	122	3,714	5,535	6,399	8,509
At upstream study limit	115	3,551	5,292	6,118	8,135
TOMAHAWK RIVER					
At Confluence with Lake Mohawksin	555	2,200	2,810	3,000	3,380
At Jersey City Dam	544	2,200	2,810	3,000	3,380
At Rice Dam	544	2,200	2,810	3,000	3,380
WISCONSIN RIVER					
At Confluence with Pine River	2,881	24,000	31,000	34,000	43,000
At USGS Gage No. 05395000	2,760	22,000	29,000	32,000	38,000
Upstream of Confluence of Prairie River	2,529	19,250	25,000	28,000	32,500
At Alexander Dam	2,490	18,000	23,000	26,000	30,000
At Grandfather Dam	2,270	15,500	20,000	22,000	28,000
At Grandmother Dam	2,250	14,500	19,000	21,000	27,000
At Tomahawk Dam	2,030	12,000	15,000	17,000	20,000
At Kings Dam	1,320	5,400	6,900	7,400	8,900

* Data not available
**Dam Removed in 1992

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected

recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Each incorporated community within, and the unincorporated areas of Lincoln County have a previously printed FIS report. The hydraulic analyses described in those reports have been compiled and summarized below.

Pre-Countywide Analysis:

For the original Lincoln County, Unincorporated Areas study, two detailed and three limited detailed Wisconsin River hydraulic computer simulation models were developed to address Wisconsin River flooding: Reach1, Reach2, Reach3, Reach4, and Reach5.

Model Reach1, a limited detailed study reach, extended from approximately 0.92 mile downstream of the confluence of the Pine River with the Wisconsin River to approximately 1.25 miles downstream of Merrill Dam. Flood profiles for the 1- and 10-percent-annual-chance Reach1 flood events were computed using the USACE HEC-2 step-backwater computer program (Reference 15). Starting water-surface elevations (WSELs) were calculated using the HEC-2 slope-area method. No floodway was developed for Reach1.

Model Reach2, a detailed study reach, started at Lake Alexander Dam and proceeded upstream to the confluence of the New Wood River with the Wisconsin River. The first Model Reach2 HEC-2 cross section (lettered A in the original study), was located approximately 3 miles upstream of Alexander Dam. The flood profiles between the dam and Cross Section A were based on a rating curve developed for the dam and reflect pool elevations (Reference 16). No floodway was developed for the pool. Flood profiles for the 0.2-, 1-. 2-, 10- percent-annual-chance Reach2 (above Cross Section A) flood events were computed using the USACE HEC-2 computer program (Reference 15). Model Reach2 starting WSELs at Cross Section A were based on pool elevations. A floodway was developed for the area upstream of Cross Section A.

Model Reach3, a limited detailed study reach, extended from the confluence of the New Wood River with the Wisconsin River upstream to Tomahawk Dam. Flood profiles for the 1- and 10-percent-annual-chance Reach3 flood events were computed using the USACE HEC-2 computer program (Reference 15). Starting WSELs were taken from Model Reach2 computations. No floodway was developed for Model Reach3. Wisconsin River Model Reach3 ended at Tomahawk Dam. From Tomahawk Dam upstream to the start of Wisconsin River

Model Reach4, flood profiles were based on dam rating curves (Reference 16). No floodway was developed for this area.

Model Reach4, a detailed study reach, extended from the confluence of the Wisconsin River with Lake Alice upstream to about 425 feet upstream of the confluence of Spring Creek with the Wisconsin River. The first Model Reach4 cross section was located approximately 0.3 mile downstream of County Highway A. Flood profiles for the 0.2-, 1-. 2-, 10- percent-annual-chance Reach4 flood events were computed using the USACE HEC-2 computer program (Reference 15). Model Reach4 starting WSELs were based on Lake Alice pool elevations (Reference 16). A floodway was developed for Model Reach4.

Model Reach5, a limited detailed study reach, extends from about 425 feet upstream of the confluence of Spring Creek to about 2 miles upstream of the confluence of Trout Creek with the Wisconsin River. Flood profiles for 1- and 10-percent-annual-chance Reach5 flood events were computed using the USACE HEC-2 computer program (Reference 15). Starting WSELs were taken from Model Reach4 computations. No floodway was developed for Model Reach5.

For the March 3, 2003 revision, the new hydraulic analyses of the Wisconsin and Prairie Rivers were taken from the 1986 FIS and extended to cover the entire reach within the county. WSELs of floods of the selected recurrence intervals were computed using the USACE HEC-2 step-backwater computer program (Reference 15). For the Wisconsin River, elevations above the Merrill hydroelectric dam were obtained from a rating curve developed by Mead & Hunt, Inc., for their 1992 report on inspection (Reference 17). This rating curve is based on the standard operating procedures for the dam. This procedure states that, under normal operating conditions, all gates are closed and all river flows discharge through the powerhouses. Gates are opened as needed to discharge flows greater than the capacity of the turbines. All gates are currently working, and an adequate operation plan for flooding events has been written and is being implemented; therefore, the flood elevations upstream of the dam may be determined based on this plan (Reference 18).

For Devil Creek in the City of Merrill, the 1-percent-annual-chance starting WSEL was taken from the 10-percent-annual-chance WSEL for the Wisconsin River. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Spirit River was studied in detail from Spirit River Dam upstream to near the Faust Road Bridge. A hydraulic model was not developed for the reach from Spirit River Dam upstream to approximately 2 miles downstream of Faust Road. The flood profiles in this reach of the river were based on a rating curve developed for the dam (Reference 16). A hydraulic model was developed for the reach of the river from about 2 miles downstream of Faust Road upstream to about 2.13 miles upstream of Faust Road. Flood profiles for this reach of the river

were computed using the USACE HEC-2 computer program (Reference 15). Starting WSELs are based on pool elevations. A floodway was developed for this reach of the Spirit River.

Somo River-Little Somo River was studied in detail from the mouth upstream to the county boundary. Water-surface profiles for the 0.2-, 1- 2-, 10- percent-annual-chance floods were computed with the USACE HEC-2 computer program (Reference 15). The HEC-2 computer model started at the Marinette, Tomahawk and Western railroad trestle and proceeded upstream to the county boundary. Starting WSELS are based on Lake Mohawksin pool elevations. A floodway was developed for the Somo River-Little Somo River.

The Prairie River was studied in detail from the previously existing Ward Paper Company Dam upstream to the currently removed Prairie Dell Pond Dam. Water surface profiles for the 0.2-, 1- 2-, 10- percent-annual-chance floods were computed using the USACE HEC-2 computer program (Reference 15). Starting WSELs were based on a rating curve developed for the Ward Paper Company Dam. The dam was located just downstream of the first HEC-2 model cross section. A floodway was developed for the Prairie River. For the March 3, 2003 revision, the hydraulic analysis on the Prairie River was revised to reflect the removal of the Ward Paper Company Dam and the bridge replacement as Business Highway 51.

The Tomahawk River was studied in detail from approximately 3.57 miles downstream of U.S. Highway 8 upstream to Rice Dam. Water surface profiles for 0.2-, 1- 2-, 10- percent-annual-chance floods were computed using the USACE HEC-2 computer program (Reference 15). Starting WSELs were based on Lake Mohawksin pool elevations. A floodway was developed for the Tomahawk River upstream of Jersey City Flowage. In the City of Tomahawk, the Tomahawk River was studied in detail from the confluence with Lake Mohawksin upstream to the northern corporate limit. Water surface profiles for the 0.2-, 1- 2-, 10- percent-annual-chance floods were computed using the USACE HEC-2 computer program (Reference 15). Starting WSELs are based on Lake Mohawksin pool elevations. Cross-section overbank data and sounding data for the Tomahawk River HEC-2 analyses were obtained by the USGS (Reference 19). All bridges and dams were either field surveyed or "as-built" drawings procured to obtain elevation and structural geometry (Reference 16).

Flood elevations on Lake Mohawksin, Lake Alice, and Lake Nokomis are based on historic events and rating curves developed for the dams creating the lakes (Reference 16).

Cross-section overbank data and sounding data for all above detailed analyses were obtained by the USGS (Reference 19). All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry.

This Countywide Analysis:

For this countywide study, portions of the Copper, Prairie and Wisconsin Rivers were studied by detailed analyses. The Copper River was studied by detailed analysis from County Highway E to the confluence with the Wisconsin River. The new detailed study reach on the Prairie River was from State Highway 17 to 2,000 feet downstream of Town Hall Road. Three reaches on the Wisconsin River were studied with new detailed analyses. These reaches were from Tomahawk Dam to approximately 1.5 miles downstream of Thomas Road, from Grandmothers Dam to County Highway E, and from County Highway K to the county boundary with Marathon County. These updated analyses supersede any areas previously studied by limited detailed or approximate methods.

Cross sections and hydraulic structure geometry for the new detailed analyses were obtained by field surveys. HEC-GeoRAS (Reference 20) was used to convert centerline and additional cross section data created in ArcGIS (Reference 21) for use in the HEC-RAS v. 4.0 hydraulic model (Reference 22). HEC-GeoRAS utilized a model developed from a 4 feet resolution Digital Elevation Model (DEM) with a vertical and horizontal accuracy of 0.66 foot and sub-foot respectively. This data was provided by the Lincoln County Land Information Office and was used to develop the additional model cross sections. The same DEM was used for floodplain mapping. Normal depth and known starting WSELs from the original Lincoln County, Unincorporated Areas study were used as the downstream boundary condition for reaches in this study (Reference 1). For the new Wisconsin River analyses, known starting WSELs for the 1- and 10-percent-annual-chance, and normal depth for the 0.2- and 2-percent-annual-chance were used. The downstream boundary condition for the Copper River was a known WSEL of the Wisconsin River (Alexander Lake flood elevation). The Prairie River downstream boundary condition was normal depth. The slope was calculated using the channel invert profile between the five most downstream cross sections (approximately the most downstream mile of channel).

Roughness factors (Manning's "n" values) used in the hydraulic computations were chosen by engineering judgment and were based on field observations. Roughness factors for all streams studied by detailed methods are shown in Table 5, "Manning's "n" Values."

TABLE 5 – MANNING'S "N" VALUES

Stream	Channel "n"	Overbank "n"
Copper River	0.030-0.035	0.035-0.120
Devil Creek	0.040-0.065	0.060-0.080
Prairie River	0.030-0.045	0.035-0.120
Somo River-Little Somo River	0.030-0.070	0.060-0.070
Spirit River	0.040	0.060
Tomahawk River	0.040	0.060
Wisconsin River	0.030-0.046	0.035-0.120

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the FIRM.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD). With the completion of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are now prepared using NAVD as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to the NAVD. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. Some of the data used in this revision were taken from the prior effective FIS reports and FIRMs and adjusted to NAVD88. To determine the conversion factor, locations at all quadrangle corners within the county and quadrangle corners within 2.5 miles of the county were evaluated using the WISCON v2.2 (06/01/2003) datum conversion software. The results of the conversion analysis are contained in Table 6. The datum

conversion factor from NGVD29 to NAVD88 in Lincoln County is 0.01 feet. This translates to (NGVD + 0.0) = NAVD.

TABLE 6 – VERTICAL DATUM CONVERSION FACTORS

Quad Name	Corner	Latitude	Longitude	Conversion from NGVD29 to NAVD88 (ft)
Tripoli	SW	45.500	90.000	0.02
Bradley	SW	45.500	89.875	-0.02
Heafford Junction	SW	45.500	89.750	-0.01
Woodboro	SW	45.500	89.625	0.01
Lake Julia	SW	45.500	89.500	0.03
Lake Julia	SE	45.500	89.375	0.06
Spirit Falls	SW	45.375	90.000	0.03
Coffee Creek	SW	45.375	89.875	0.02
Tomahawk	SW	45.375	89.750	0.00
Harrison	SW	45.375	89.625	0.02
Parrish	SW	45.375	89.500	0.06
Parrish	SE	45.375	89.375	0.05
Natzke Camp	SW	45.250	90.000	-0.02
Grandfather Falls	SW	45.250	89.875	-0.01
Irma	SW	45.250	89.750	0.01
Bloomville	SW	45.250	89.625	-0.01
Gleason	SW	45.250	89.500	0.02
Gleason	SE	45.250	89.375	0.01
Fromm Lookout Tower	SW	45.125	90.000	-0.02
Alexander Lake	SW	45.125	89.875	0.00
Merrill	SW	45.125	89.750	0.01
Pine Dells	SW	45.125	89.625	-0.02
Doering	SW	45.125	89.500	-0.01
Doering	SE	45.125	89.375	0.00

For additional information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS report provides 1-percent-annual-chance floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations; delineations of the 1- and 0.2-percent-annual-chance floodplains; and a 1-percent-annual-chance floodway. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section.

Between cross sections, the boundaries were interpolated using topographic information with a contour interval of 2-feet, produced in June, 2008 and provided by Lincoln County.

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM. On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones [A, AE, and X]), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations, but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. However, Wisconsin has established a more strict policy and does not allow any increase in the regional flood height for flood fringe developments (Reference 23). The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

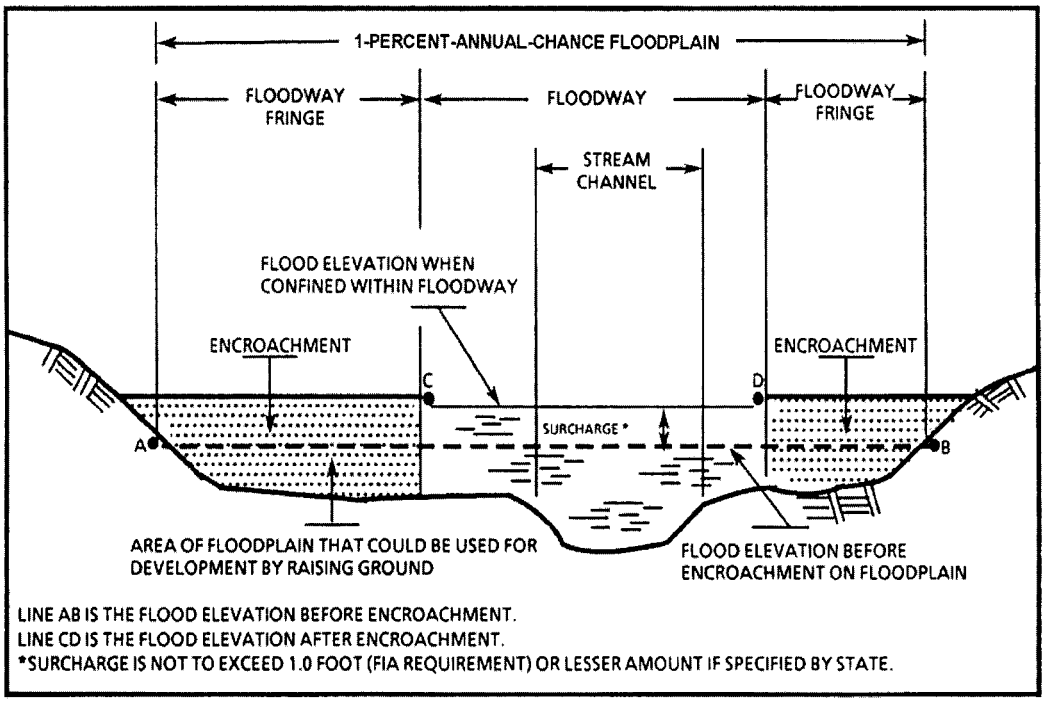
Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 7, Floodway Data). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown. No floodways are shown for the following reaches because floodways are not applicable to areas of non-conveyant flow: the Copper River from the confluence with the Wisconsin River upstream to approximately 1,000 feet downstream of cross section A; the Somo River-Little Somo River from the confluence with the Wisconsin River upstream to cross section A; and from cross section M upstream to cross section N; the Spirit River from the confluence with the Wisconsin River upstream to cross section A; the Tomahawk River from the Mouth at Lake Mohawksin upstream to approximately 2,000 feet downstream of cross section A; and from Rice Dam upstream to the northern county boundary; and the Wisconsin River from Alexander Dam upstream to cross section AA; from cross section AF upstream to cross section AG; from Grandmother Dam upstream to approximately 1,800 feet downstream of cross section AN; from cross section AU upstream to cross section AV; and from cross section BD to the northern county boundary with Oneida County.

In the redelineation efforts, the floodways were not recalculated. As a result, there were areas where the previous floodway did not fit within the boundaries of the redelineated 1-percent annual chance floodplain. In these areas, the floodway was

reduced. Water surface elevations, with and without a floodway, the mean velocity in the floodway, and the location and area at each surveyed cross section as determined by the hydraulic methods can be seen in Table 7. The width of the floodway depicted by the FIRM panels and the amount of reduction to fit the floodway inside the 1-percent annual chance floodplain, if necessary, is also listed.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the WSEL of the base flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

FIGURE 1 – FLOODWAY SCHEMATIC



FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
COPPER RIVER									
A	4,737	226	1,025	5.1	0	1,287.1	1,287.1	1,287.1	0.0
B	5,655	91	496	10.5	0	1,293.3	1,293.3	1,293.3	0.0
C	6,868	80	585	8.9	0	1,302.1	1,302.1	1,302.1	0.0
D	8,184	252	1,322	4.2	0	1,308.7	1,308.7	1,308.7	0.0
E	9,017	104	530	9.8	0	1,308.9	1,308.9	1,308.9	0.0
F	9,578	116	872	9.0	0	1,311.4	1,311.4	1,311.4	0.0
G	11,031	437	1,443	3.6	0	1,314.4	1,314.4	1,314.4	0.0
H	11,967	133	2,636	5.9	0	1,316.1	1,316.1	1,316.1	0.0
DEVIL CREEK									
A	0	621	1,053	2.5	0	1,253.6	1,251.5[2]	1,251.5	0.0
B	1,496	425	712	3.8	0	1,254.2	1,254.2	1,254.2	0.0
C	2,353	152	835	3.2	0	1,258.4	1,258.4	1,258.4	0.0
D	3,908	160	678	3.9	0	1,260.4	1,260.4	1,260.4	0.0
E	5,513	223	1,220	2.2	117	1,265.8	1,265.8	1,265.8	0.0
PRAIRIE RIVER									
A	1,449	165	965	5.7	0	1,251.9	1,251.0[2]	1,251.0	0.0
B	2,811	132	925	5.9	0	1,253.6	1,253.6	1,253.6	0.0
C	4,377	236	1,075	5.1	0	1,255.9	1,255.9	1,255.9	0.0
D	5,217	410	2,268	2.4	0	1,257.1	1,257.1	1,257.1	0.0
E	6,328	267	1,548	3.5	0	1,258.2	1,258.2	1,258.2	0.0
F	8,092	792	2,935	1.9	0	1,259.1	1,259.1	1,259.1	0.0
G	9,510	234	1,098	5.0	0	1,259.9	1,259.9	1,259.9	0.0
H	10,520	179	1,296	4.2	0	1,261.4	1,261.4	1,261.4	0.0
I	11,238	704	3,058	1.8	0	1,262.4	1,262.4	1,262.4	0.0

[1]FEET ABOVE CONFLUENCE WITH WISCONSIN RIVER, [2]ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM WISCONSIN RIVER

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

COPPER RIVER - DEVIL CREEK - PRAIRIE RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
PRAIRIE RIVER (CONTINUED)									
J	12,670	343	2,179	2.5	0	1,263.2	1,263.2	1,263.2	0.0
K	13,033	428	7,508	0.7	322	1,263.2	1,263.2	1,263.2	0.0
L	14,675	640	5,870	0.9	167	1,268.0	1,268.0	1,268.0	0.0
M	15,497	66	841	6.5	0	1,268.2	1,268.2	1,268.2	0.0
N	18,095	476	3,239	1.7	87	1,270.9	1,270.9	1,270.9	0.0
O	21,818	904	1,897	2.9	0	1,274.5	1,274.5	1,274.5	0.0
P	24,491	524	2,136	2.5	0	1,277.2	1,277.2	1,277.2	0.0
Q	26,788	467	1,822	3.0	0	1,279.4	1,279.4	1,279.4	0.0
R	29,216	115	1,025	5.3	0	1,283.8	1,283.8	1,283.8	0.0
S	31,623	655	2,343	2.3	0	1,286.0	1,286.0	1,286.0	0.0
T	34,620	882	3,533	1.5	0	1,287.2	1,287.2	1,287.2	0.0
U	37,275	1,020	2,474	2.1	0	1,288.1	1,288.1	1,288.1	0.0
V	40,844	323	1,019	5.1	47	1,290.9	1,290.9	1,290.9	0.0
W	45,357	381	2,457	1.9	159	1,295.2	1,295.2	1,295.2	0.0
X	47,404	221	1,462	3.2	180	1,297.0	1,297.0	1,297.0	0.0
Y	48,626	370	1,475	3.2	0	1,300.2	1,300.2	1,300.2	0.0
Z	50,851	458	1,680	2.8	32	1,303.5	1,303.5	1,303.5	0.0
AA	52,487	70	600	7.9	0	1,306.9	1,306.9	1,306.9	0.0
AB	52,809	330	1,400	3.2	0	1,308.4	1,308.4	1,308.4	0.0
AC	55,289	790	3,060	1.5	0	1,310.4	1,310.4	1,310.4	0.0
AD	58,275	440	2,050	2.2	0	1,312.2	1,312.2	1,312.2	0.0
AE	59,793	320	1,310	3.4	0	1,314.0	1,314.0	1,314.0	0.0
AF	61,410	504	1,680	2.7	46	1,316.9	1,316.9	1,316.9	0.0
AG	63,745	620	1,950	2.3	210	1,321.1	1,321.1	1,321.1	0.0
AH	66,314	410	1,340	3.2	0	1,325.8	1,325.8	1,325.8	0.0

[1]FEET ABOVE CONFLUENCE WITH WISCONSIN RIVER

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

PRAIRIE RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
PRAIRIE RIVER (CONTINUED)									
AI	69,418[1]	170	770	5.6	0	1,333.8	1,333.8	1,333.8	0.0
AJ	72,005[1]	361	1,470	2.9	49	1,339.5	1,339.5	1,339.5	0.0
AK	75,322[1]	250	1,270	3.4	0	1,343.8	1,343.8	1,343.8	0.0
AL	82,579[1]	140	780	5.5	0	1,354.7	1,354.7	1,354.7	0.0
AM	118,733[1]	403	1,350	2.3	0	1,437.3	1,437.3	1,437.3	0.0
AN	120,058[1]	250	1,212	2.3	0	1,440.8	1,440.8	1,440.8	0.0
AO	121,134[1]	171	1,420	2.7	0	1,442.6	1,442.6	1,442.6	0.0
AP	122,395[1]	265	1,571	2.7	0	1,445.1	1,445.1	1,445.1	0.0
AQ	126,563[1]	639	1,413	2.9	0	1,450.2	1,450.2	1,450.2	0.0
AR	129,573[1]	1,055	2,273	1.5	0	1,454.6	1,454.6	1,454.6	0.0
AS	131,425[1]	527	2,351	1.4	0	1,458.4	1,458.4	1,458.4	0.0
AT	133,302[1]	261	959	2.9	0	1,460.1	1,460.1	1,460.1	0.0
AU	135,934[1]	555	1,177	2.4	0	1,463.9	1,463.9	1,463.9	0.0
AV	139,741[1]	672	2,074	2.7	0	1,469.0	1,469.0	1,469.0	0.0
AW	144,301[1]	291	1,113	2.6	0	1,474.9	1,474.9	1,474.9	0.0
AX	145,172[1]	205	1,308	2.2	0	1,475.6	1,475.6	1,475.6	0.0
AY	146,020[1]	237	1,215	2.3	0	1,476.1	1,476.1	1,476.1	0.0
PRAIRIE RIVER OVERFLOW									
A	376[2]	146	133	4.3	0	1,438.9	1,438.9	1,438.9	0.0
B	964[2]	416	1,011	0.7	0	1,440.8	1,440.8	1,440.8	0.0
C	1,702[2]	407	1,247	0.7	0	1,444.3	1,444.3	1,444.3	0.0

[1]FEET ABOVE CONFLUENCE WITH WISCONSIN RIVER, [2]FEET ABOVE CONFLUENCE WITH PRAIRIE RIVER

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

PRAIRIE RIVER - PRAIRIE RIVER OVERFLOW

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
SOMO RIVER									
A	14,029	470	1,920	3.0	0	1,438.0	1,438.0	1,438.0	0.0
B	18,256	390	1,650	3.5	0	1,439.4	1,439.4	1,439.4	0.0
LITTLE SOMO RIVER									
C	23,356	521	4,300	0.1	89	1,439.9	1,439.9	1,439.9	0.0
D	24,924	370	2,210	0.2	0	1,439.9	1,439.9	1,439.9	0.0
E	28,013	349	140	3.4	151	1,439.9	1,439.9	1,439.9	0.0
F	29,188	48	150	3.3	77	1,442.5	1,442.5	1,442.5	0.0
G	30,419	76	120	3.9	74	1,446.7	1,446.7	1,446.7	0.0
H	30,868	35	80	6.3	0	1,449.4	1,449.4	1,449.4	0.0
I	31,271	391	380	1.7	159	1,450.2	1,450.2	1,450.2	0.0
J	32,791	407	1,160	0.6	53	1,450.5	1,450.5	1,450.5	0.0
K	33,767	620	3,190	0.2	70	1,450.5	1,450.5	1,450.5	0.0
L	34,567	164	580	1.1	136	1,450.5	1,450.5	1,450.5	0.0
M	36,717	236	1,040	0.6	314	1,450.7	1,450.7	1,450.7	0.0
N	50,024	807	5,790	0.1	93	1,450.9	1,450.9	1,450.9	0.0
O	52,826	358	1,640	0.3	412	1,451.1	1,451.1	1,451.1	0.0
P	54,544	270	660	0.9	0	1,451.1	1,451.1	1,451.1	0.0
Q	59,747	480	415	1.4	0	1,452.4	1,452.4	1,452.4	0.0
R	64,777	50	150	3.7	0	1,456.9	1,456.9	1,456.9	0.0
SPIRIT RIVER									
A	33,543	250	2,100	3.4	0	1,437.9	1,437.9	1,437.9	0.0
B	38,976	430	120	2.1	0	1,439.6	1,439.6	1,439.6	0.0
C	43,580	580	4,310	1.5	0	1,440.2	1,440.2	1,440.2	0.0
D	44,409	110	1,060	6.0	0	1,440.3	1,440.3	1,440.3	0.0

[1]FEET ABOVE CONFLUENCE WITH WISCONSIN RIVER,

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

SOMO RIVER - LITTLE SOMO RIVER - SPIRIT RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
SPIRIT RIVER (CONTINUED)									
E	45,130[1]	610	4,690	1.4	0	1,441.1	1,441.1	1,441.1	0.0
F	55,807[1]	490	3,790	1.6	0	1,441.9	1,441.9	1,441.9	0.0
TOMAHAWK RIVER									
A	7,599[2]	402	2,650	1.2	88	1,450.7	1,450.7	1,450.7	0.0
B	16,734[2]	840	4,070	0.8	0	1,451.3	1,451.3	1,451.3	0.0
C	18,757[2]	400	2,145	1.5	0	1,451.5	1,451.5	1,451.5	0.0
D	22,981[2]	100	650	4.9	0	1,452.3	1,452.3	1,452.3	0.0
E	23,506[2]	400	1,670	1.9	0	1,452.9	1,452.9	1,452.9	0.0
F	24,887[2]	520	3,100	1.0	0	1,453.4	1,453.4	1,453.4	0.0
WISCONSIN RIVER									
A	909[3]	673	5,372	6.3	0	1,224.5	1,224.5	1,224.5	0.0
B	2,287[3]	699	7,270	4.7	0	1,226.0	1,226.0	1,226.0	0.0
C	4,793[3]	882	8,355	4.1	0	1,226.8	1,226.8	1,226.8	0.0
D	6,291[3]	416	7,982	6.6	0	1,227.1	1,227.1	1,227.1	0.0
E	8,009[3]	987	7,356	4.4	0	1,228.1	1,228.1	1,228.1	0.0
F	10,114[3]	458	4,555	7.0	0	1,230.0	1,230.0	1,230.0	0.0
G	12,148[3]	505	4,903	6.5	0	1,231.1	1,231.1	1,231.1	0.0
H	14,537[3]	516	5,425	5.9	0	1,233.1	1,233.1	1,233.1	0.0
I	18,223[3]	883	6,335	5.1	0	1,235.8	1,235.8	1,235.8	0.0
J	21,585[3]	896	7,879	4.1	0	1,237.4	1,237.4	1,237.4	0.0
K	25,042[3]	532	5,944	5.4	0	1,238.7	1,238.7	1,238.7	0.0
L	26,054[3]	806	7,482	4.3	0	1,241.2	1,241.2	1,241.2	0.0
M	28,154[3]	596	6,467	5.0	0	1,242.2	1,242.2	1,242.2	0.0

[1]FEET ABOVE CONFLUENCE WITH WISCONSIN RIVER, [2]FEET ABOVE MOUTH AT LAKE MOHAWKSIN, [3]FEET ABOVE COUNTY BOUNDARY WITH MARATHON COUNTY

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

SPIRIT RIVER - TOMAHAWK RIVER - WISCONSIN RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
WISCONSIN RIVER (CONTINUED)									
N	31,761	628	6,512	4.9	0	1,243.5	1,243.5	1,243.5	0.0
O	33,105	386	4,707	6.8	0	1,244.1	1,244.1	1,244.1	0.0
P	33,491	405	5,094	6.3	114	1,244.6	1,244.6	1,244.6	0.0
Q	34,312	743	7,044	4.5	0	1,251.3	1,251.3	1,251.3	0.0
R	35,595	895	7,868	3.6	0	1,251.8	1,251.8	1,251.8	0.0
S	39,043	319	4,828	5.8	210	1,252.7	1,252.7	1,252.7	0.0
T	41,106	726	5,861	4.4	0	1,254.2	1,254.2	1,254.2	0.0
U	43,921	975	7,983	3.3	0	1,255.3	1,255.3	1,255.3	0.0
V	45,855	570	6,421	4.0	141	1,255.7	1,255.7	1,255.7	0.0
W	48,707	1,570	9,896	2.6	27	1,257.1	1,257.1	1,257.1	0.0
X	51,178	837	8,141	3.2	0	1,258.0	1,258.0	1,258.0	0.0
Y	53,898	464	4,864	5.3	192	1,258.9	1,258.9	1,258.9	0.0
Z	55,473	1,001	7,083	3.7	0	1,260.2	1,260.2	1,260.2	0.0
AA	74,820	927	5,940	4.4	93	1,276.1	1,276.1	1,276.1	0.0
AB	75,687	500	4,400	5.9	0	1,276.5	1,276.5	1,276.5	0.0
AC	78,093	400	4,520	5.7	0	1,278.2	1,278.2	1,278.2	0.0
AD	80,109	700	6,830	3.8	0	1,279.3	1,279.3	1,279.3	0.0
AE	82,067	470	4,150	6.3	0	1,279.9	1,279.9	1,279.9	0.0
AF	84,110	458	3,440	7.6	82	1,281.6	1,281.6	1,281.6	0.0
AG	118,268	417	6,107	4.0	0	1,400.1	1,400.1	1,400.1	0.0
AH	118,582	488	7,961	3.1	0	1,400.5	1,400.5	1,400.5	0.0
AI	122,819	876	11,106	1.9	0	1,400.8	1,400.8	1,400.8	0.0
AJ	127,721	720	4,466	4.7	0	1,401.3	1,401.3	1,401.3	0.0
AK	133,217	671	7,611	3.5	0	1,403.5	1,403.5	1,403.5	0.0
AL	139,528	777	6,506	3.2	0	1,405.2	1,405.2	1,405.2	0.0

[1]FEET ABOVE COUNTY BOUNDARY WITH MARATHON COUNTY

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

WISCONSIN RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
WISCONSIN RIVER (CONTINUED)									
AM	141,908	543	4,637	4.5	0	1,405.7	1,405.7	1,405.7	0.0
AN	159,090	731	6,513	3.2	0	1,421.9	1,421.9	1,421.9	0.0
AO	160,530	391	4,089	5.1	0	1,422.2	1,422.2	1,422.2	0.0
AP	163,066	376	3,648	5.8	0	1,423.4	1,423.4	1,423.4	0.0
AQ	166,298	309	2,851	7.4	0	1,425.6	1,425.6	1,425.6	0.0
AR	167,875	501	5,457	3.9	0	1,427.5	1,427.5	1,427.5	0.0
AS	170,538	1,676	9,936	2.1	0	1,427.9	1,427.9	1,427.9	0.0
AT	174,786	892	18,632	2.9	0	1,428.5	1,428.5	1,428.5	0.0
AU	179,499	864	9,024	1.9	0	1,429.3	1,429.3	1,429.3	0.0
AV	242,030	447	4,160	1.5	33	1,458.4	1,458.4	1,458.4	0.0
AW	243,735	190	2,740	2.3	0	1,458.5	1,458.5	1,458.5	0.0
AX	243,947	570	4,140	1.5	0	1,458.6	1,458.6	1,458.6	0.0
AY	247,174	589	4,400	1.4	81	1,458.9	1,458.9	1,458.9	0.0
AZ	248,723	320	3,160	2.0	0	1,459.1	1,459.1	1,459.1	0.0
BA	251,711	278	2,750	2.3	72	1,459.6	1,459.6	1,459.6	0.0
BB	254,041	346	2,740	2.3	124	1,460.2	1,460.2	1,460.2	0.0
BC	256,142	430	2,520	2.5	0	1,460.8	1,460.8	1,460.8	0.0
BD	257,339	420	3,650	1.7	0	1,461.0	1,461.0	1,461.0	0.0

[1]FEET ABOVE COUNTY BOUNDARY WITH MARATHON COUNTY

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

WISCONSIN RIVER

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1-percent-annual-chance) flood elevations (BFEs) or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by detailed methods. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 0.2-percent-annual-chance floodplain, areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile (sq. mi.), and areas protected from the base flood by levees. No BFEs or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot BFEs or average depths. Insurance agents use zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplains, floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

The countywide FIRM presents flooding information for the entire geographic area of Lincoln County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM

also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table 8, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Lincoln County (Unincorporated Areas)	September 22, 1978	None	February 19, 1986	March 3, 2003
Merrill, City of	July 20, 1973	None	November 28, 1975	July 20, 1998
Tomahawk, City of	September 4, 1985	None	September 4, 1985	None

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY
LINCOLN COUNTY, WI
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

This FIS report supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the NFIP.

The countywide study for Marathon County in Wisconsin is in progress and might impact the information presented in this countywide FIS report.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting Federal Insurance and Mitigation Division, FEMA Region V, 536 South Clark Street, Sixth Floor, Chicago, IL 60605.

9.0 BIBLIOGRAPHY AND REFERENCES

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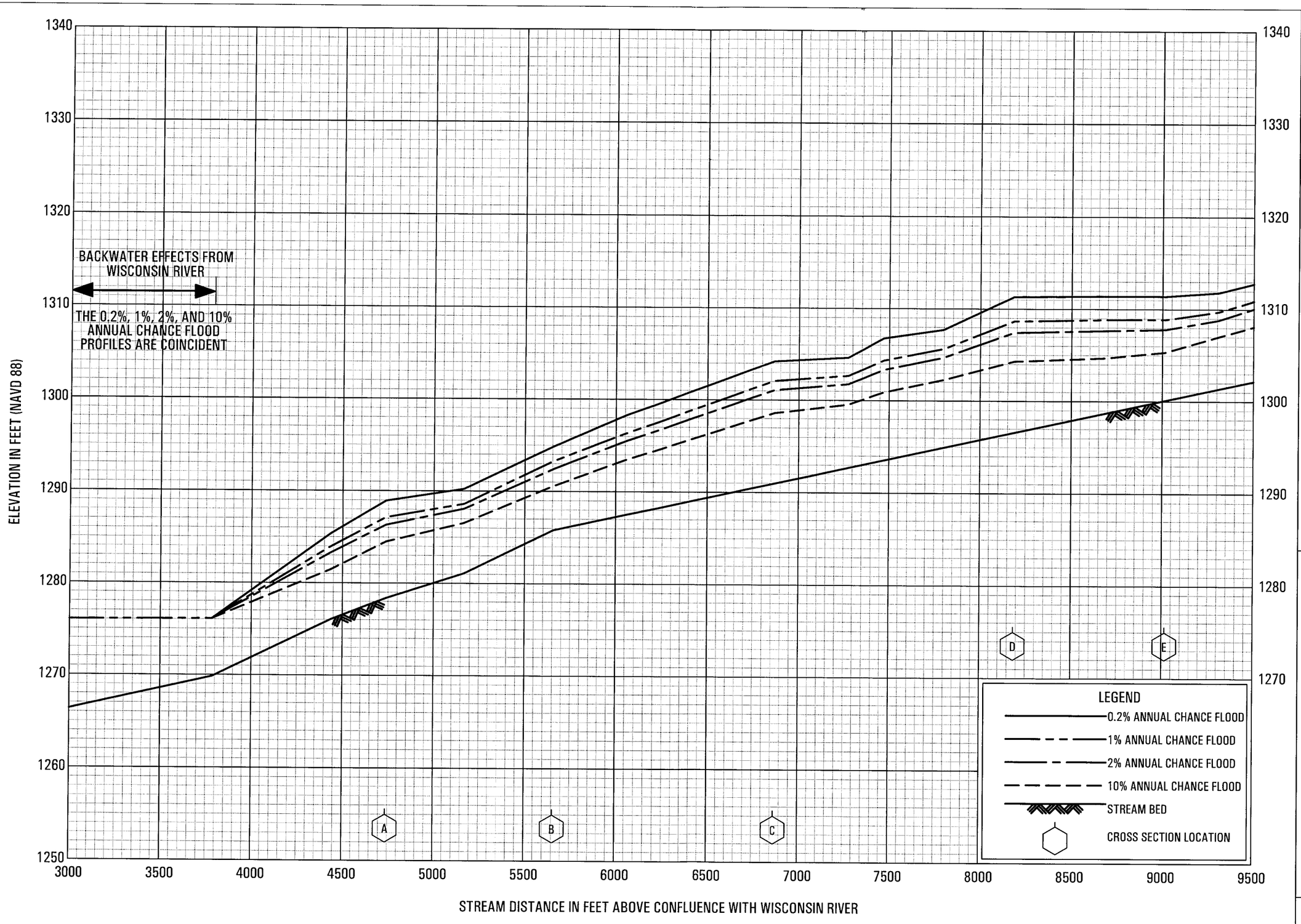


FLOOD PROFILES

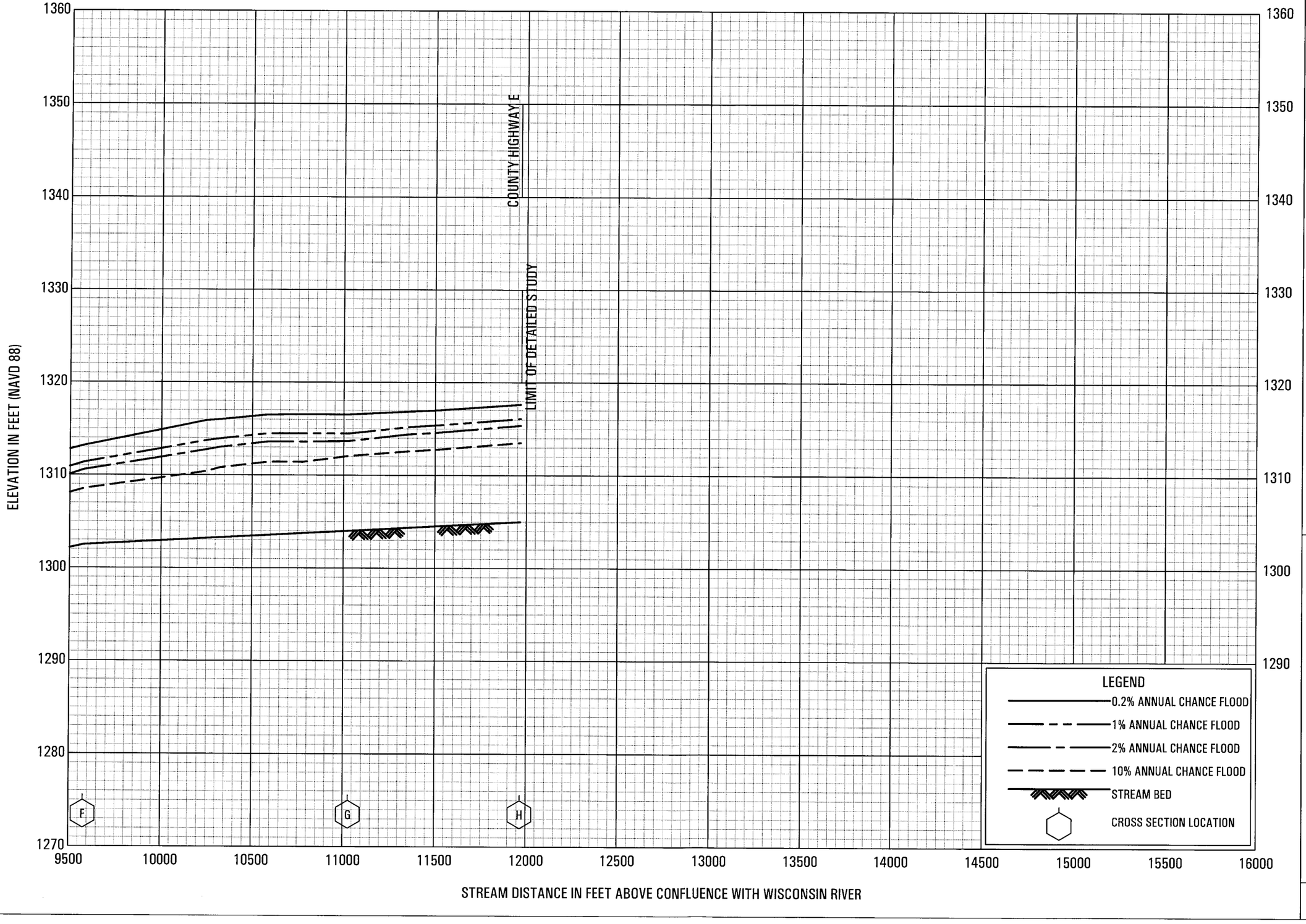
COPPER RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

01P



FLOOD PROFILES

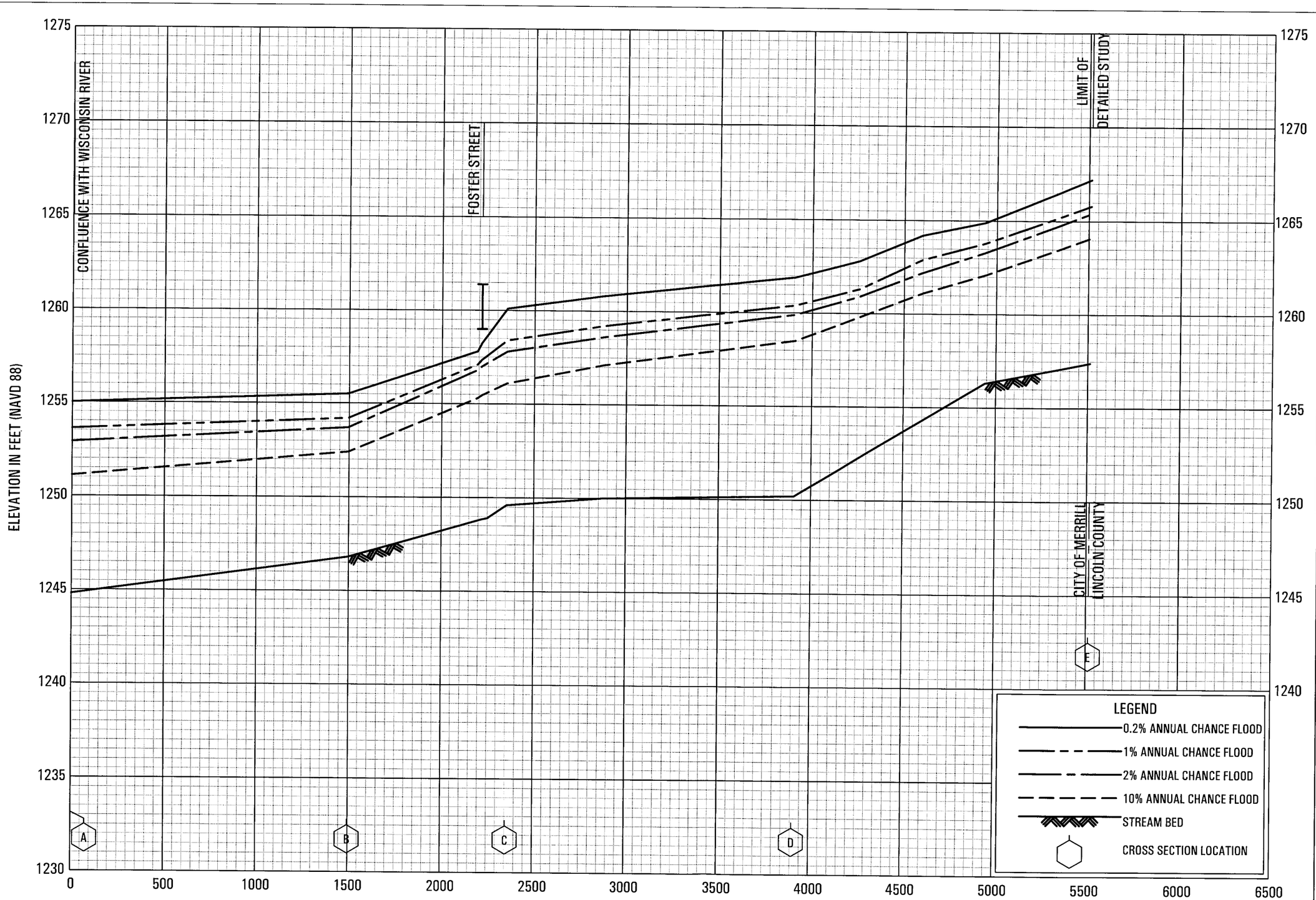
COPPER RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

02P



FLOOD PROFILES

DEVIL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

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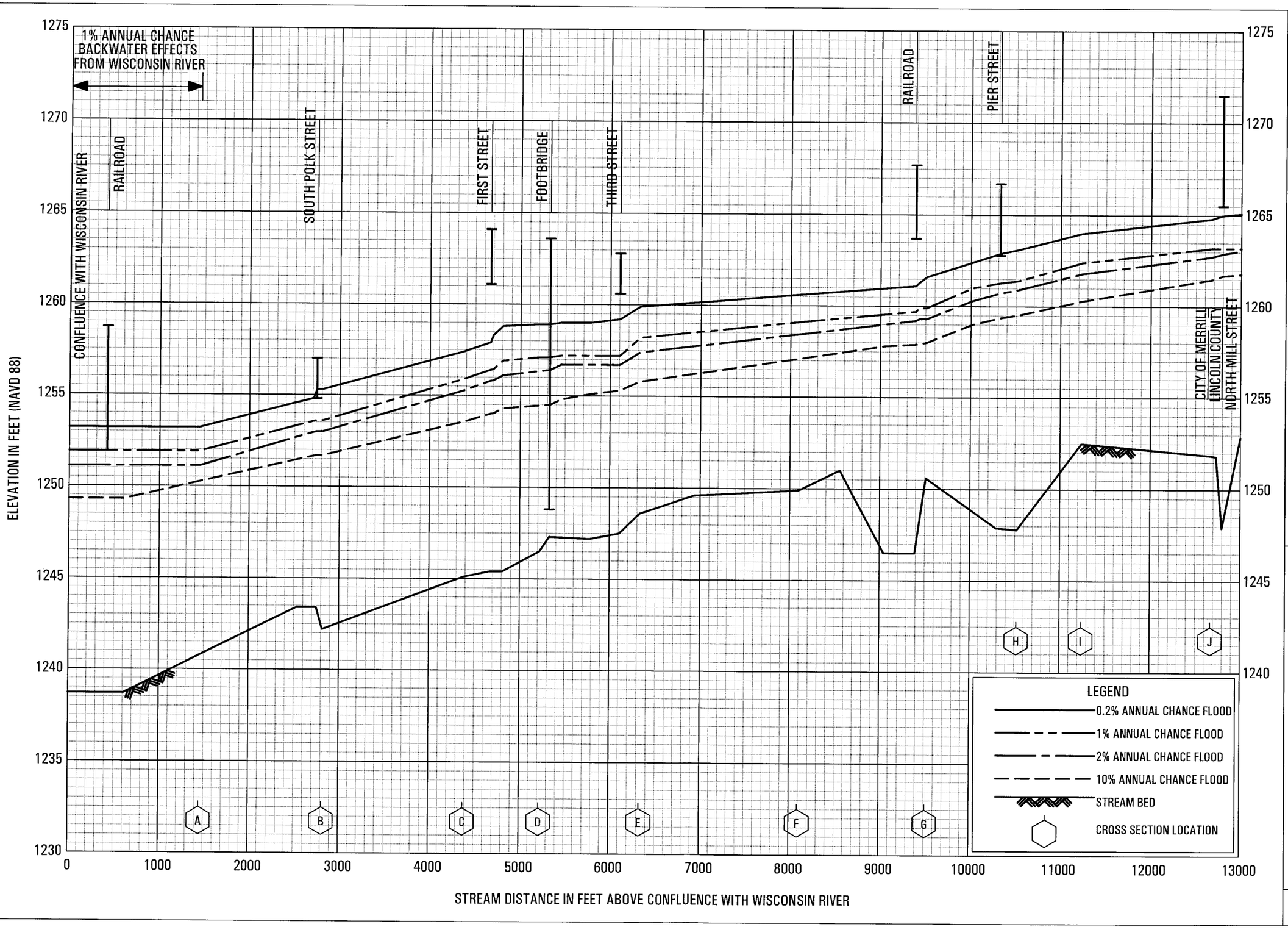


FLOOD PROFILES

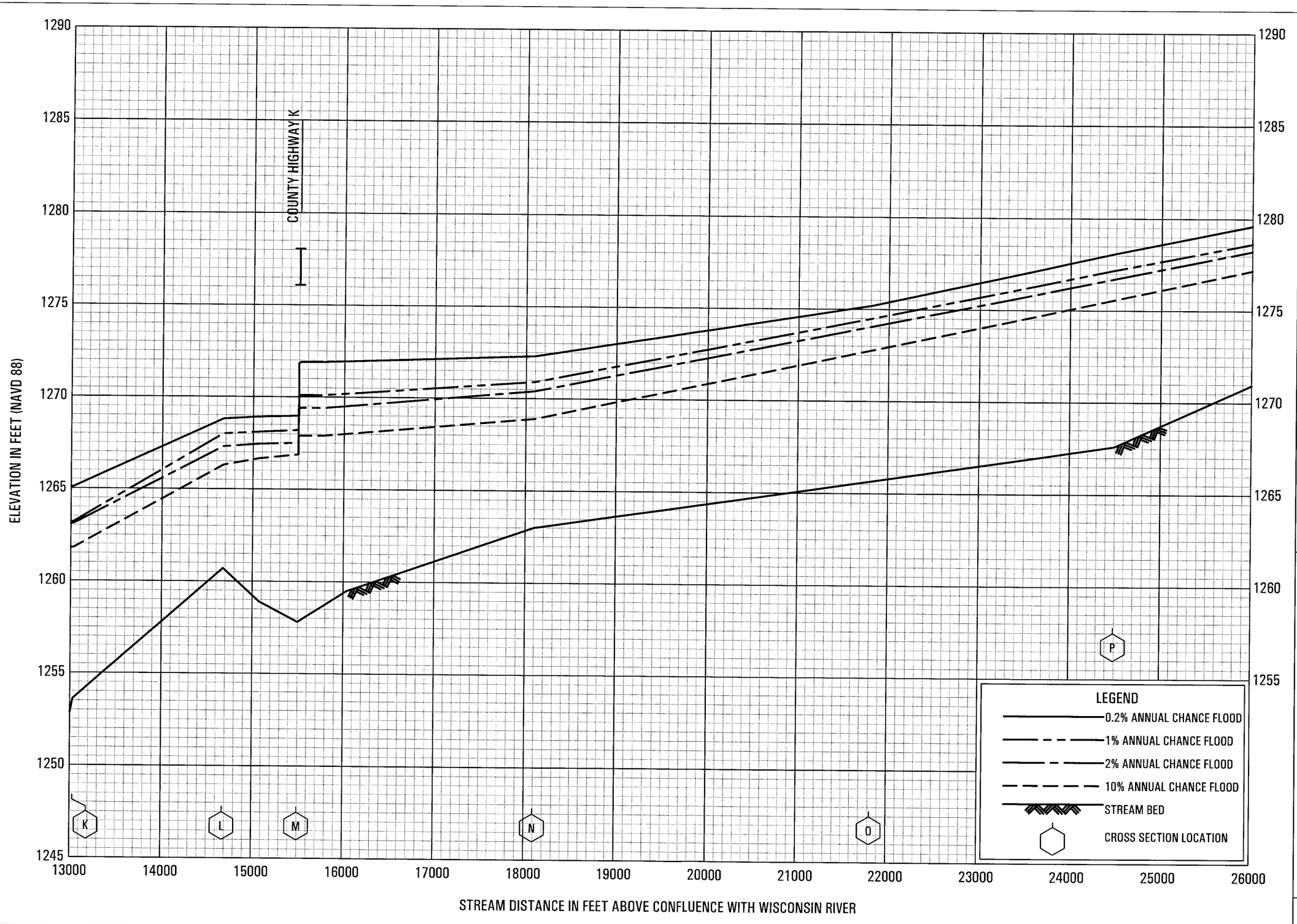
PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

04P



FLOOD PROFILES

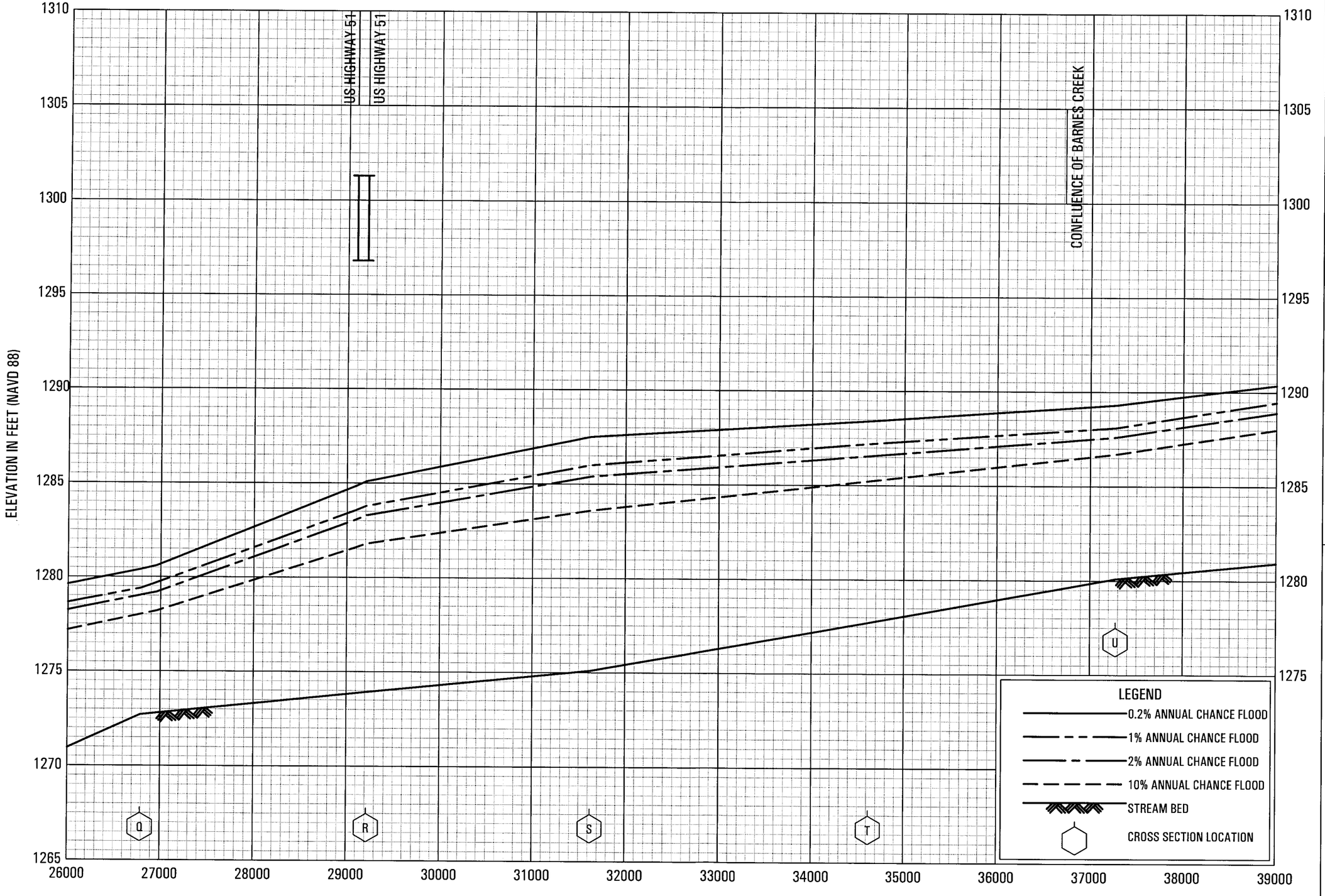
PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

05P



FLOOD PROFILES

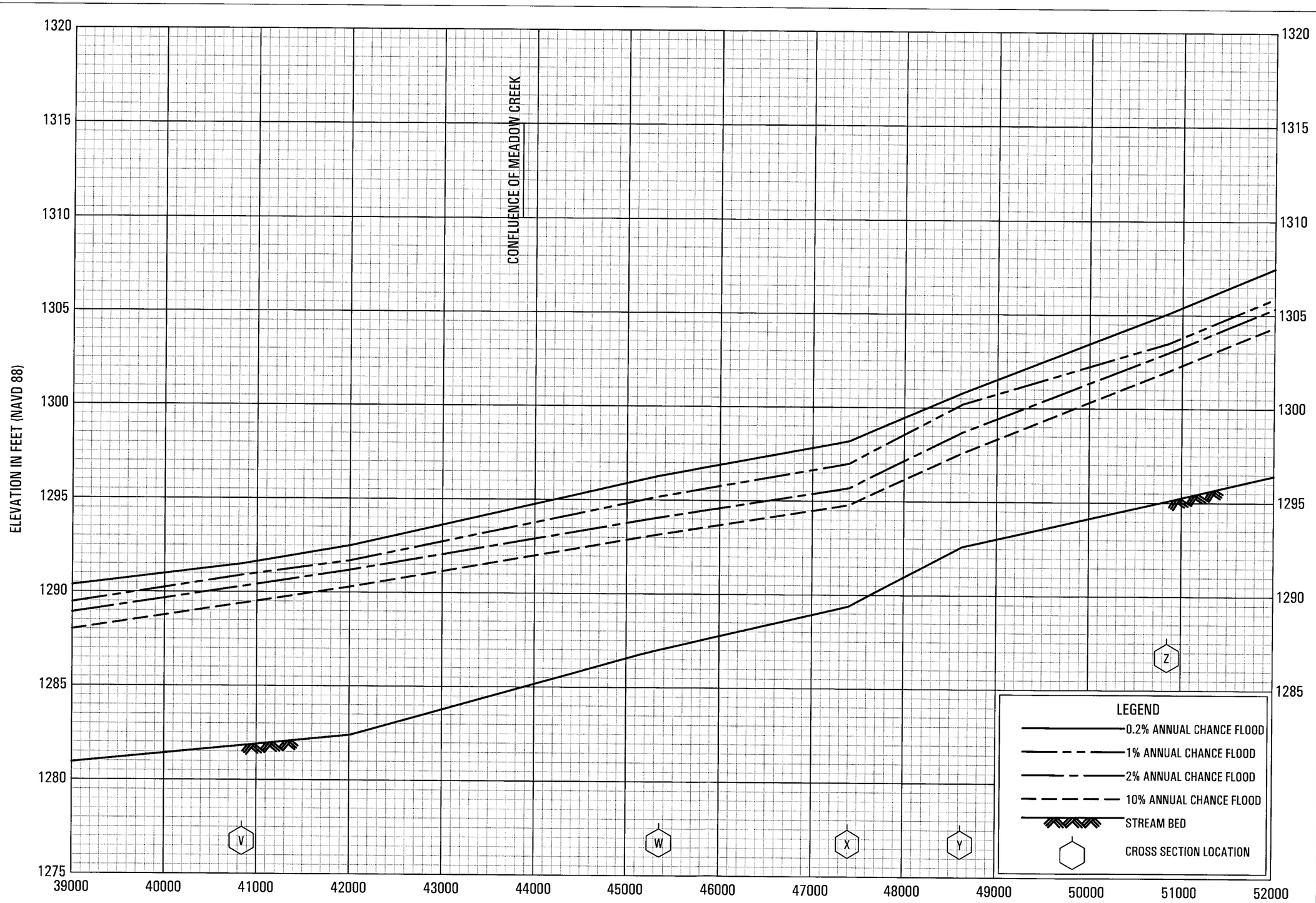
PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

06P



FLOOD PROFILES

PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

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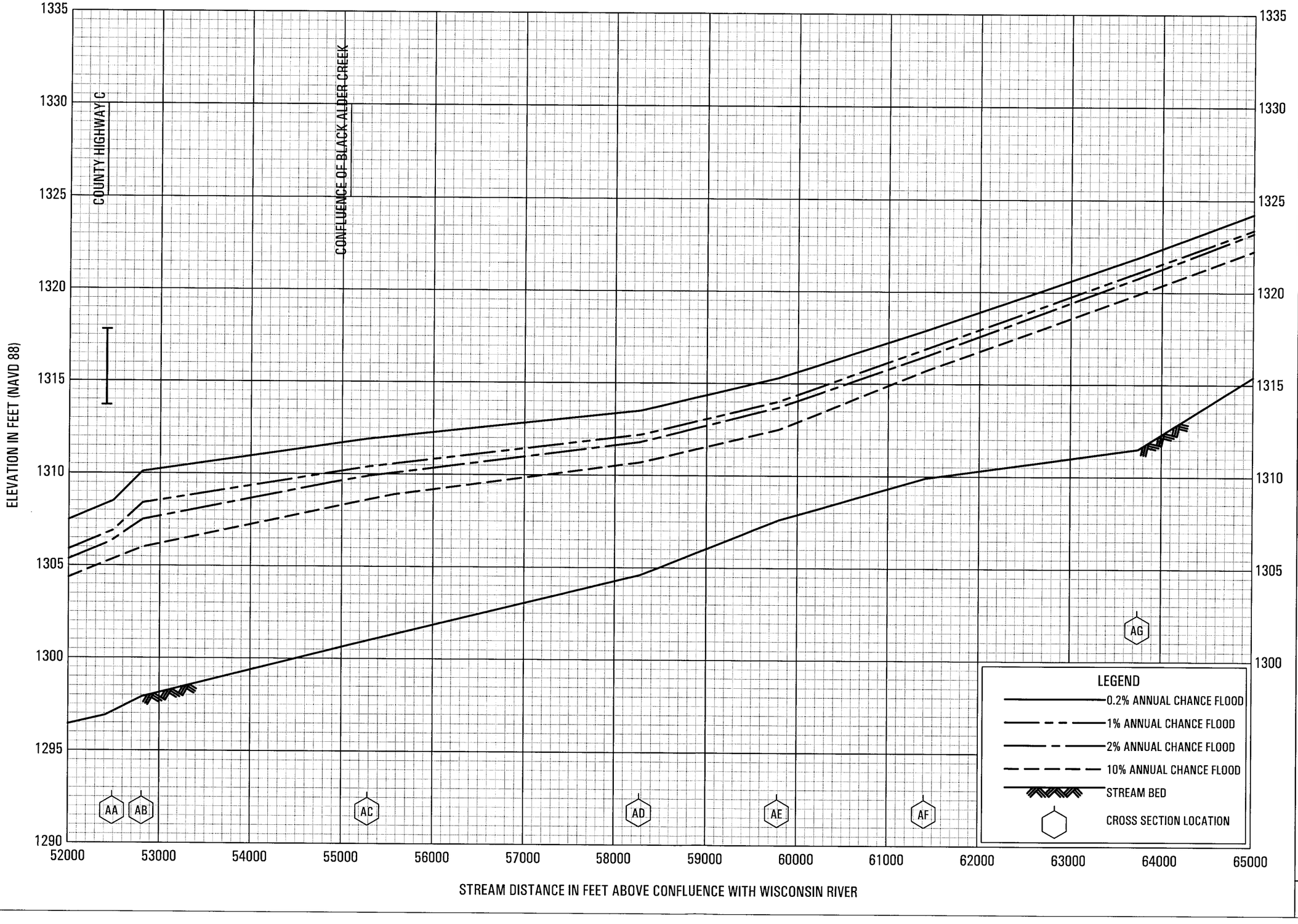

FLOOD PROFILES

PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

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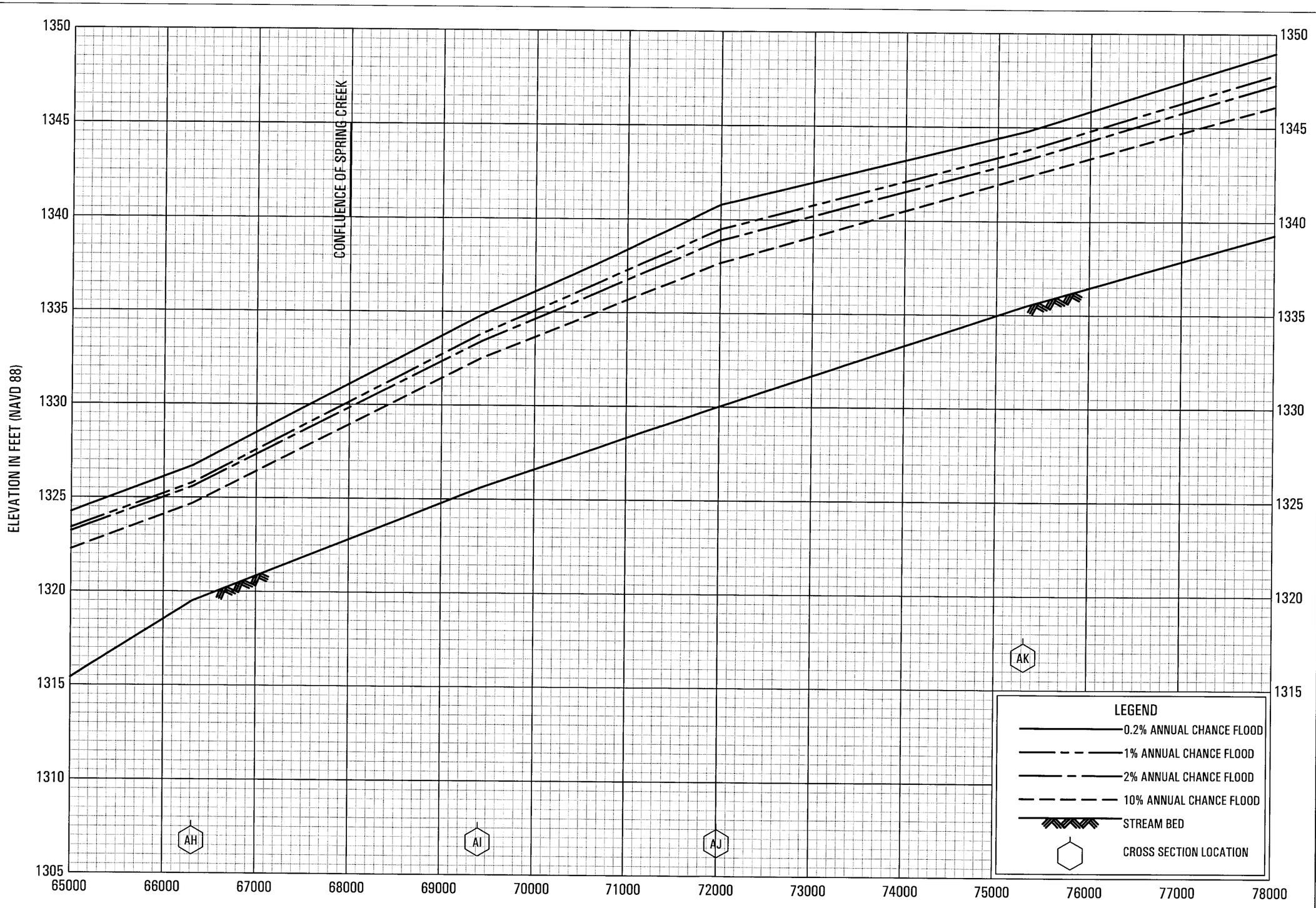

FLOOD PROFILES

PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

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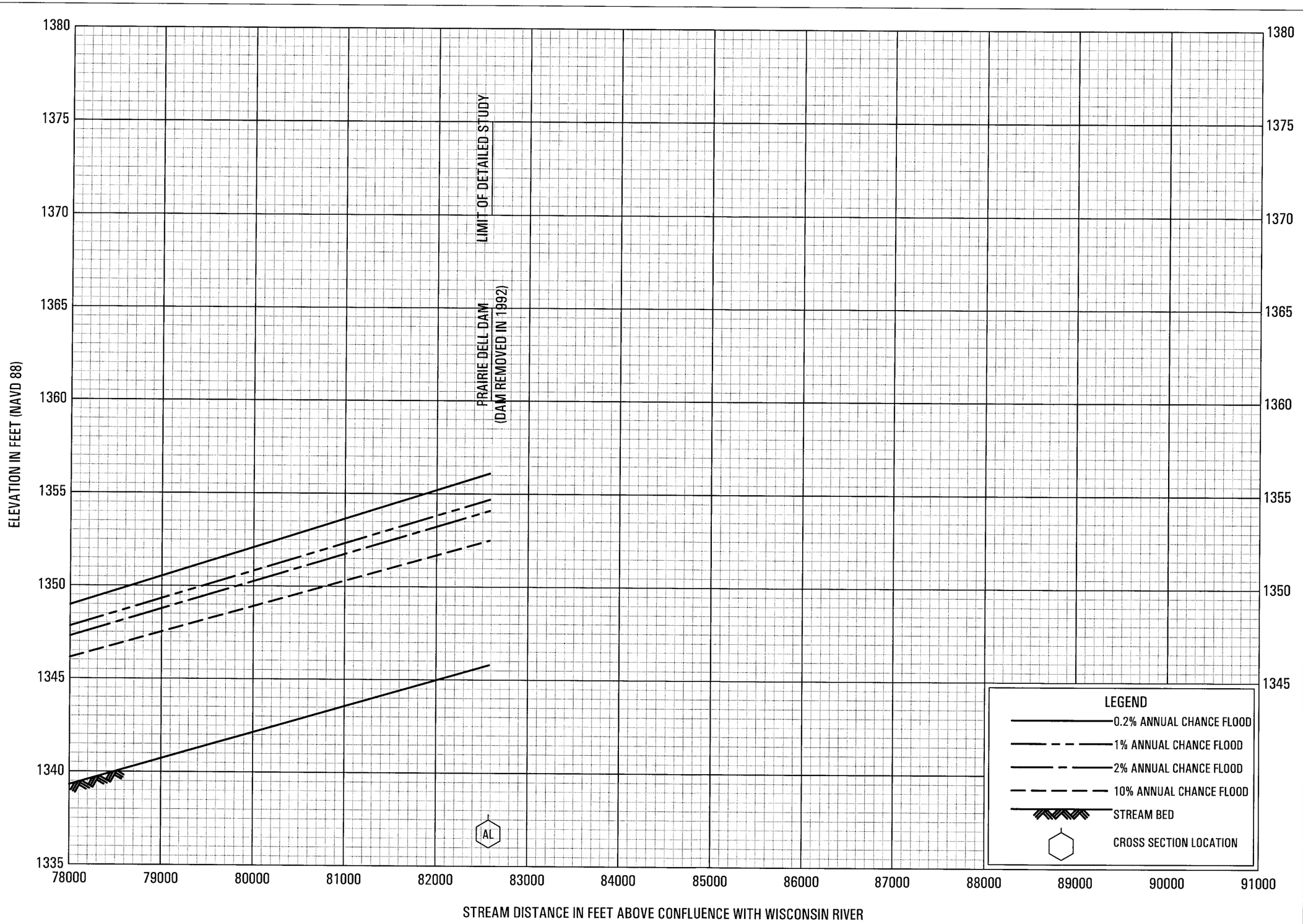

FLOOD PROFILES

PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

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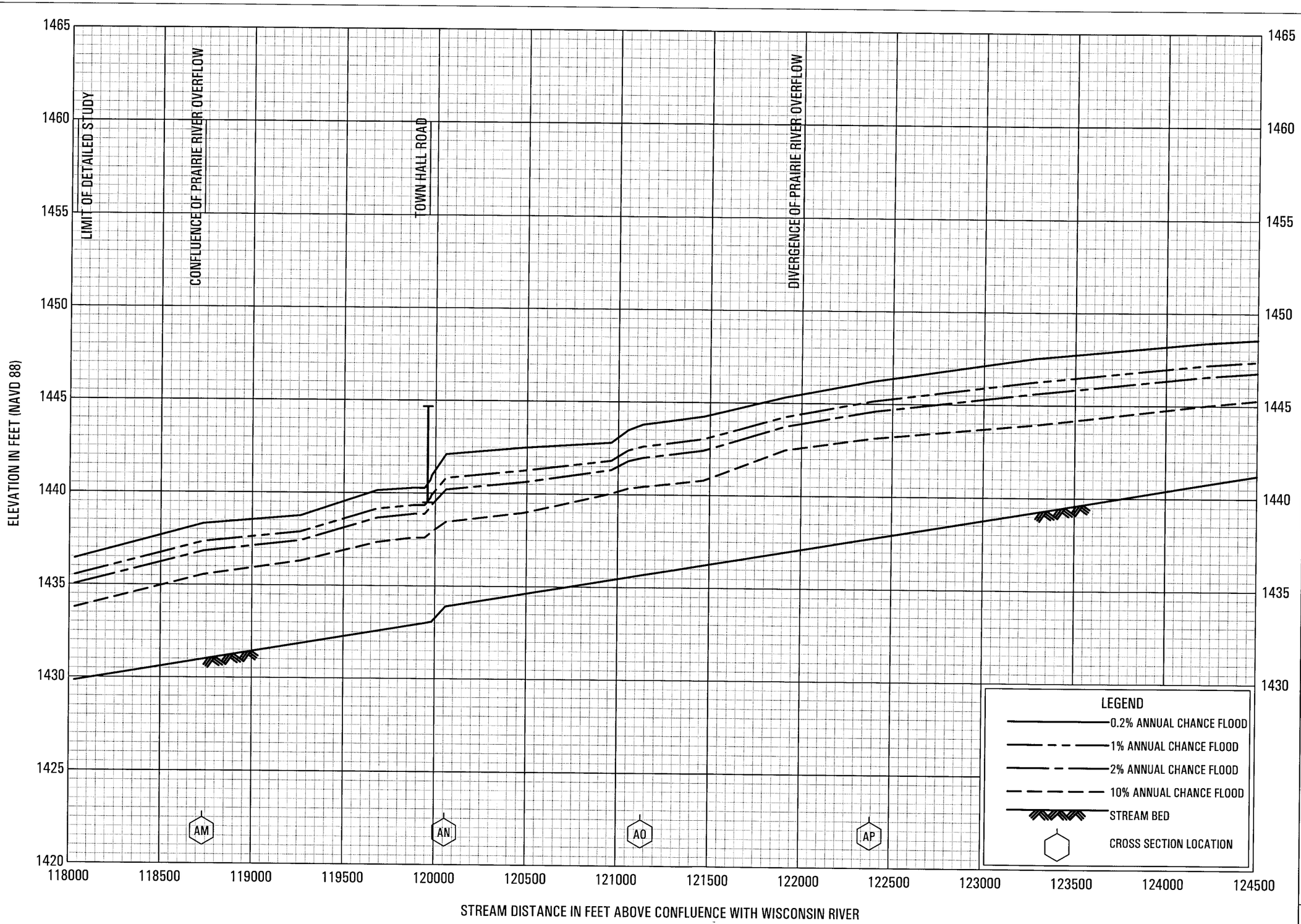

FLOOD PROFILES

PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

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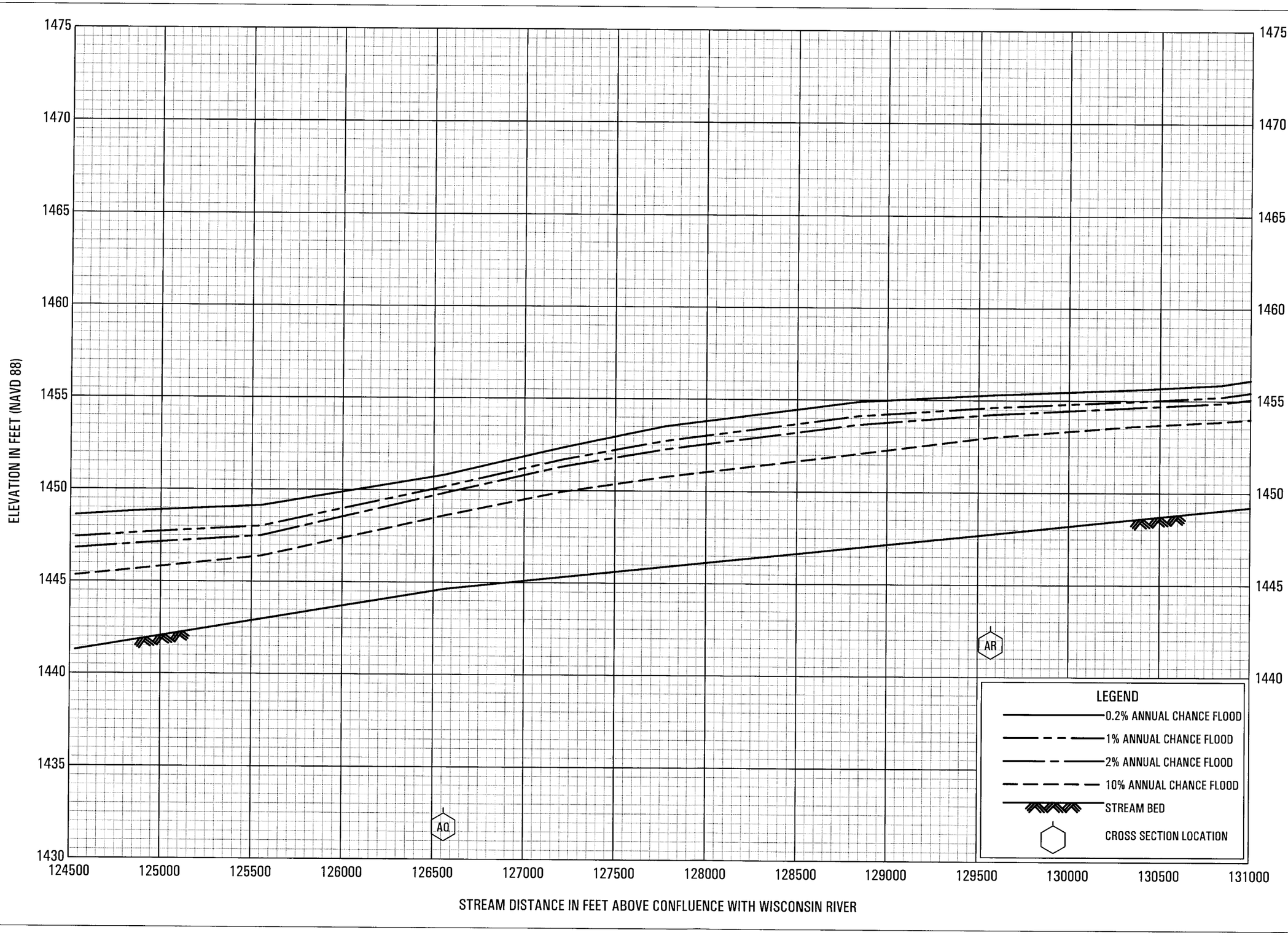


FLOOD PROFILES

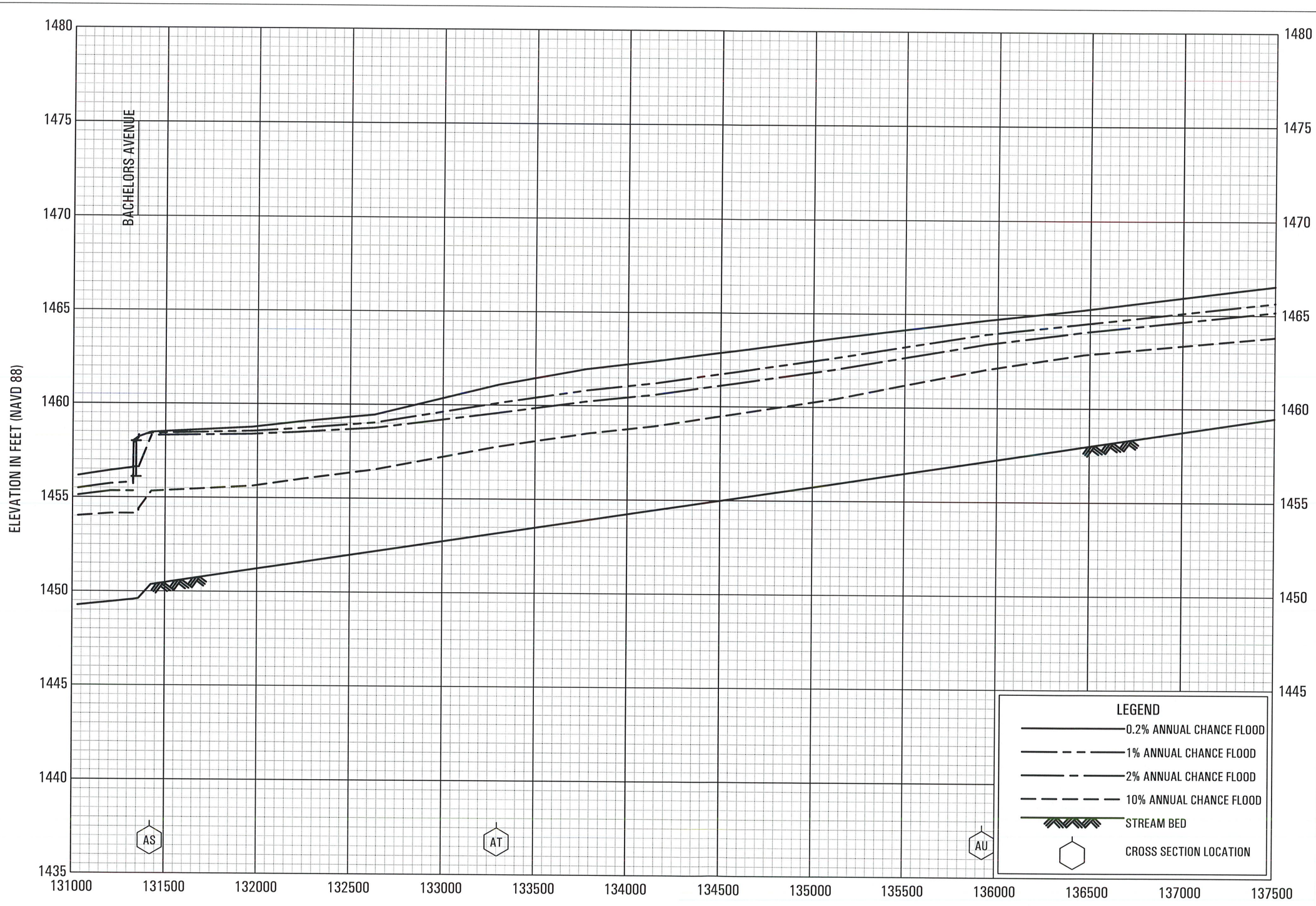
PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

12P



FLOOD PROFILES

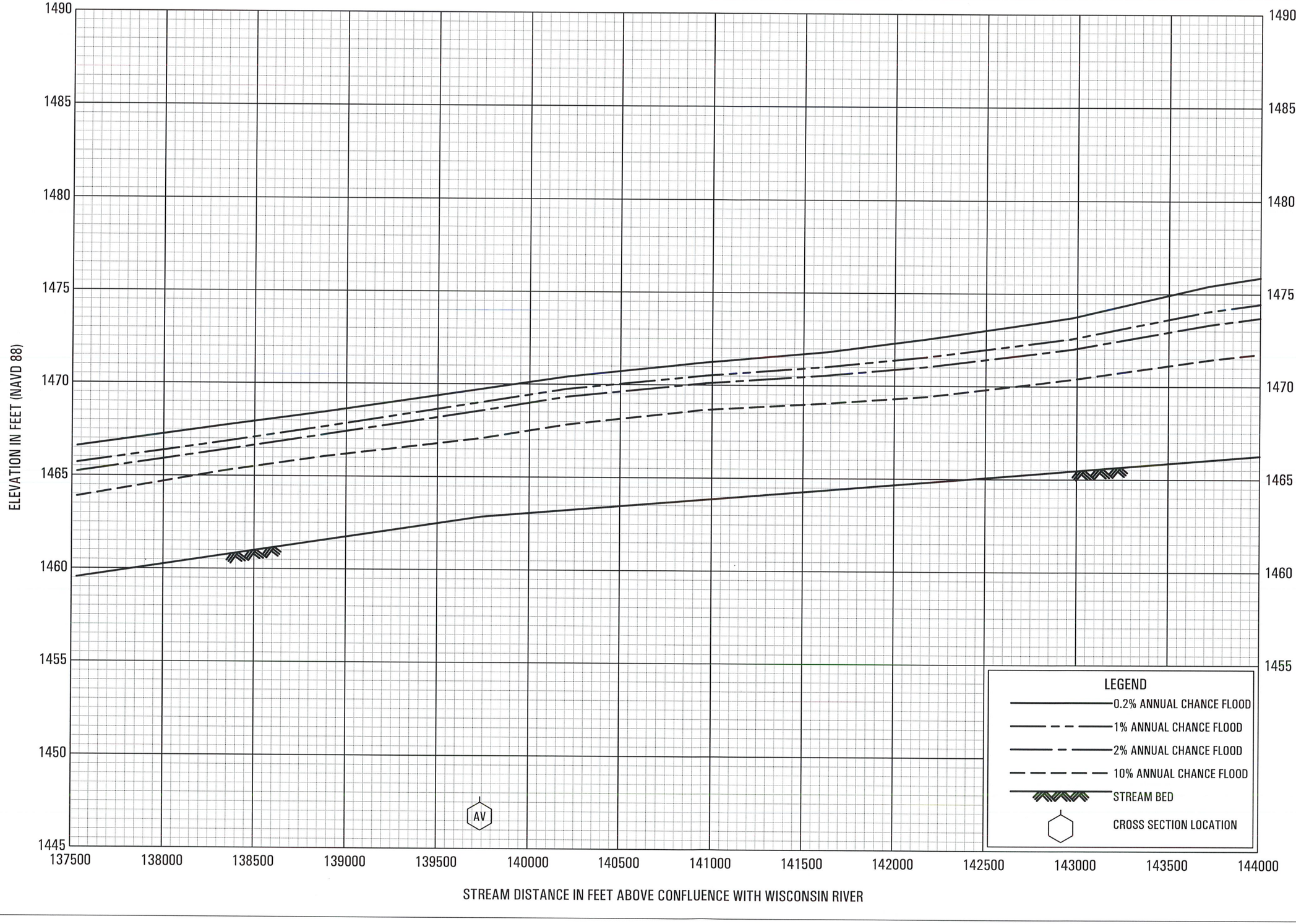
PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

13P



FLOOD PROFILES

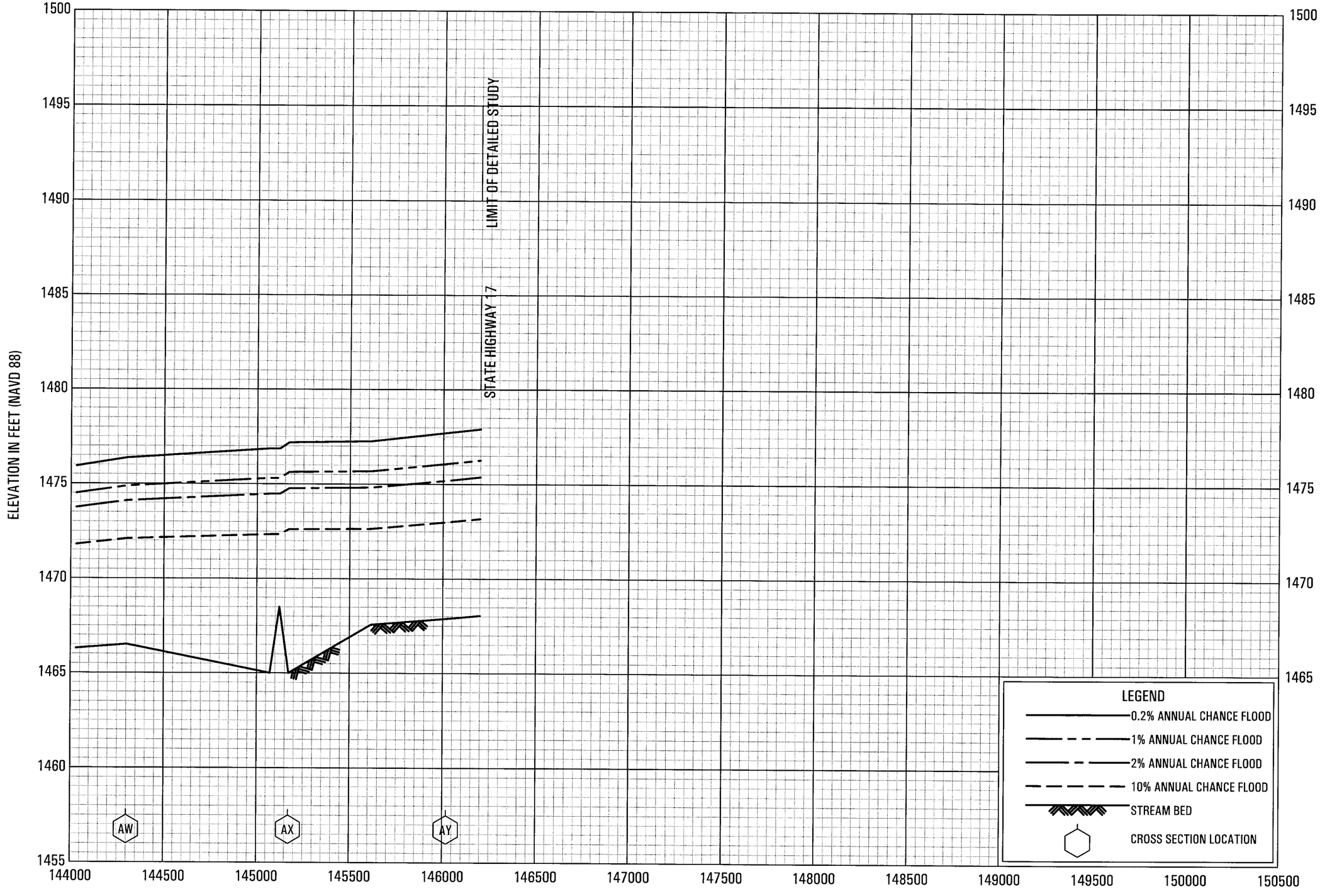
PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

14P



FLOOD PROFILES

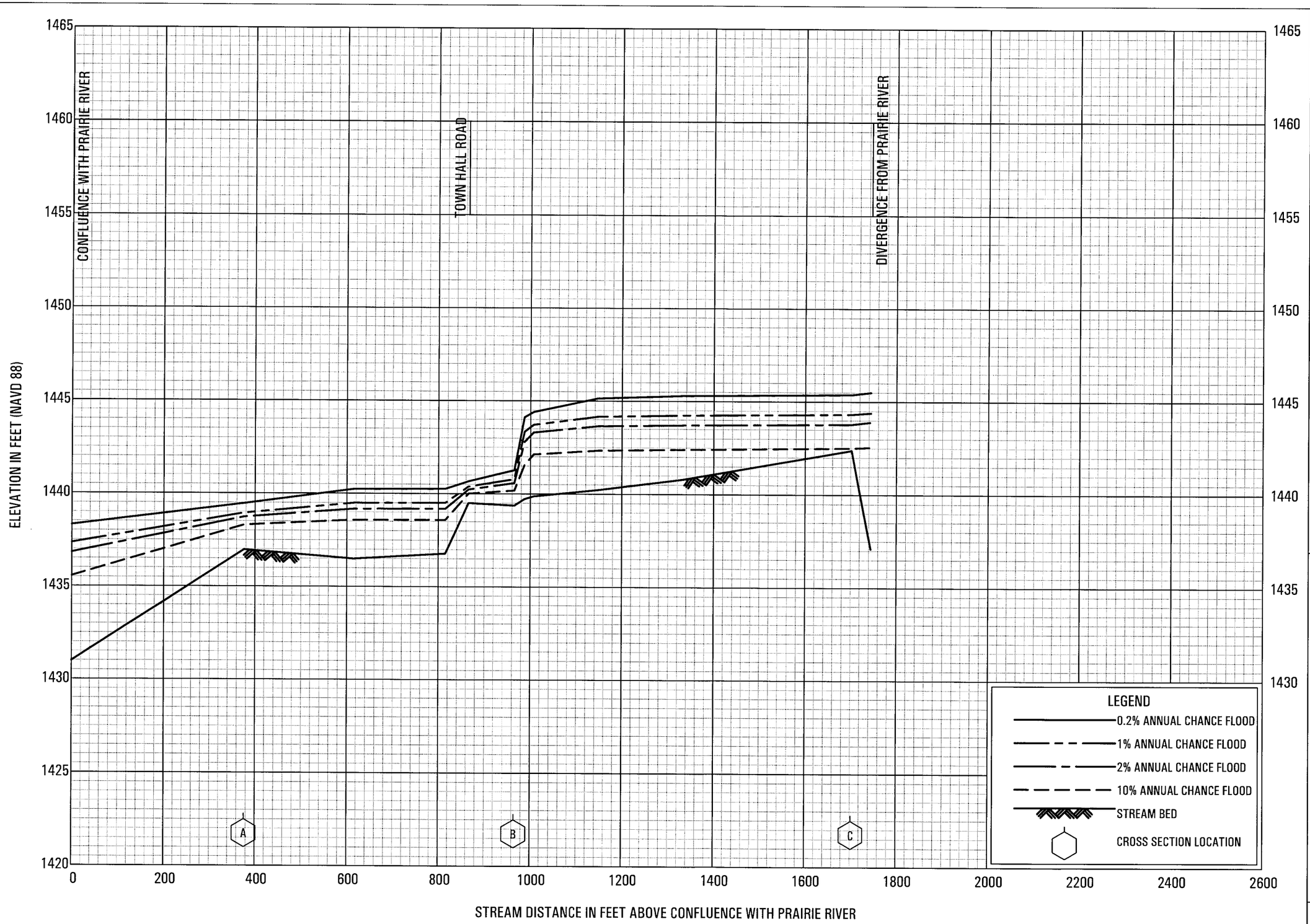
PRAIRIE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

15P



FLOOD PROFILES

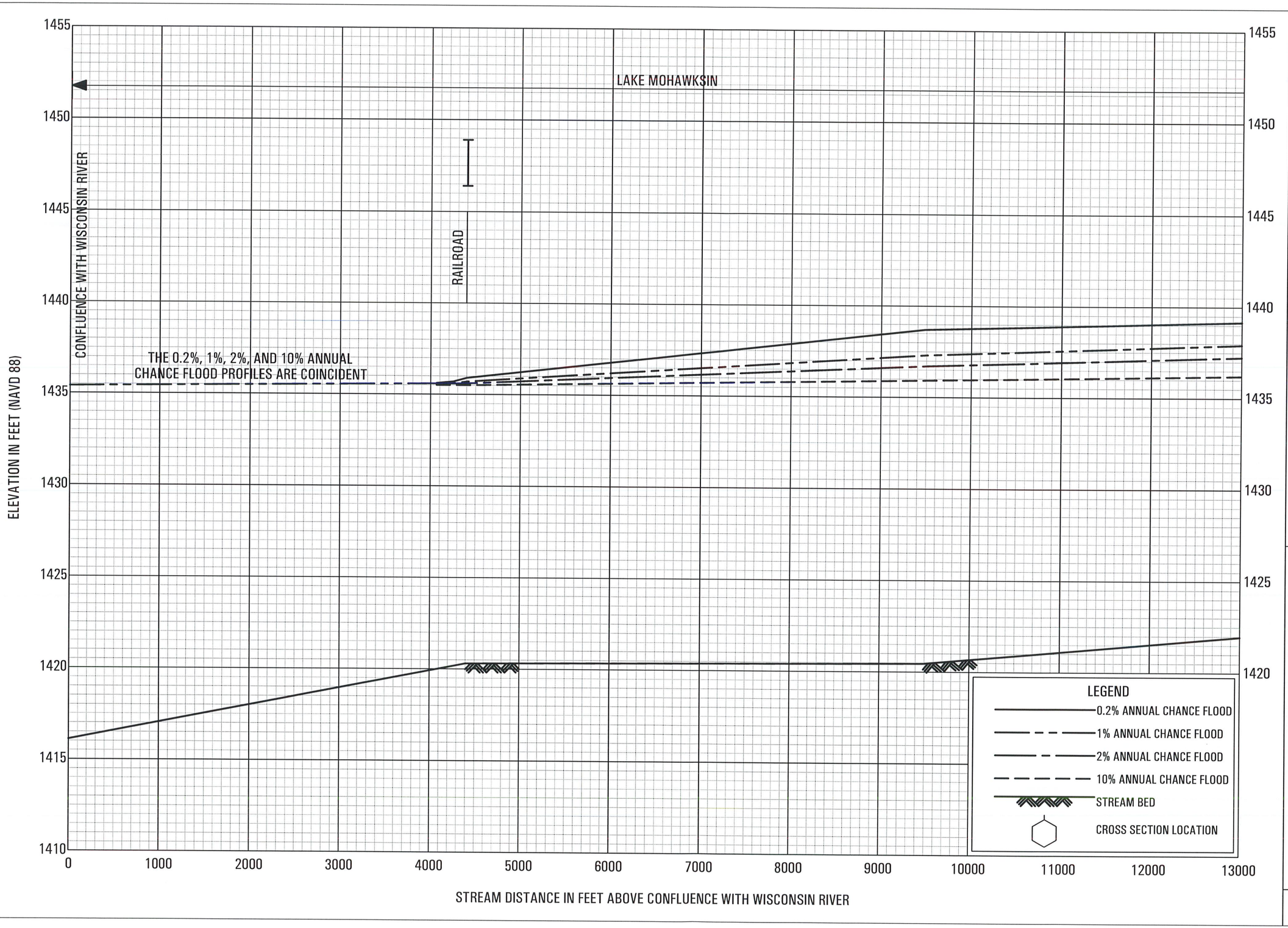
PRAIRIE RIVER OVERFLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

16P



FLOOD PROFILES

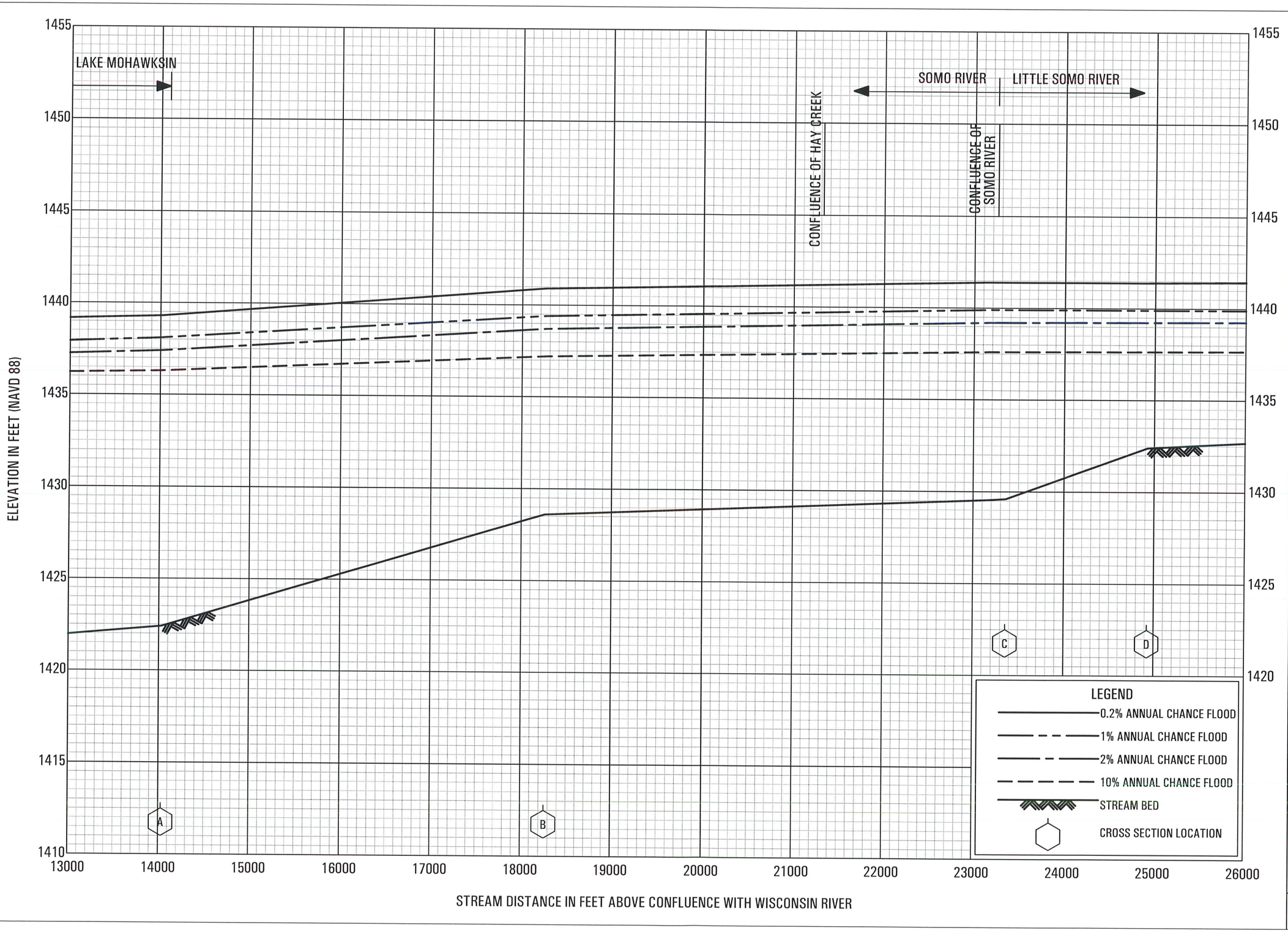
SOMO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

17P



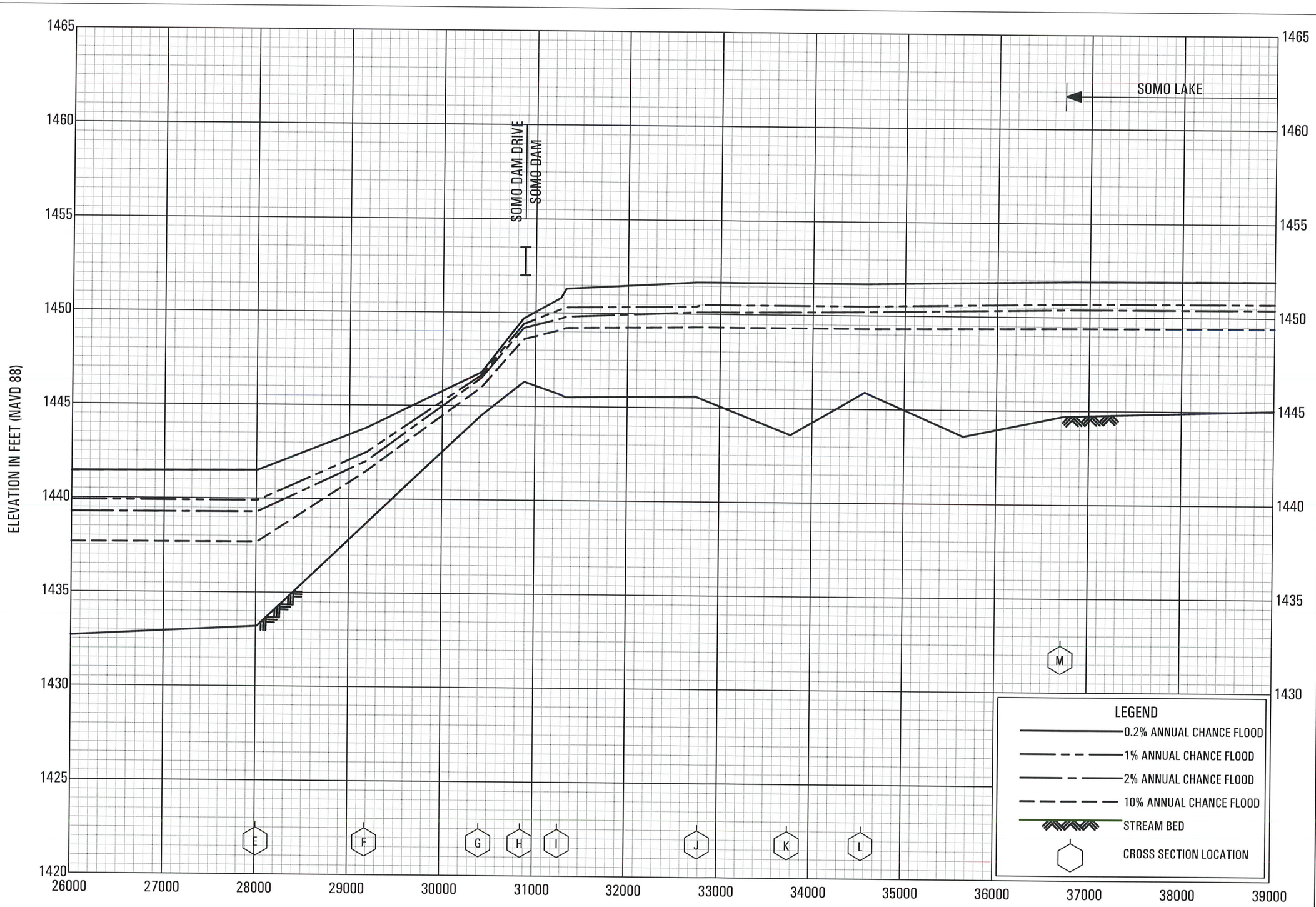
FLOOD PROFILES

SOMO RIVER - LITTLE SOMO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS



FLOOD PROFILES

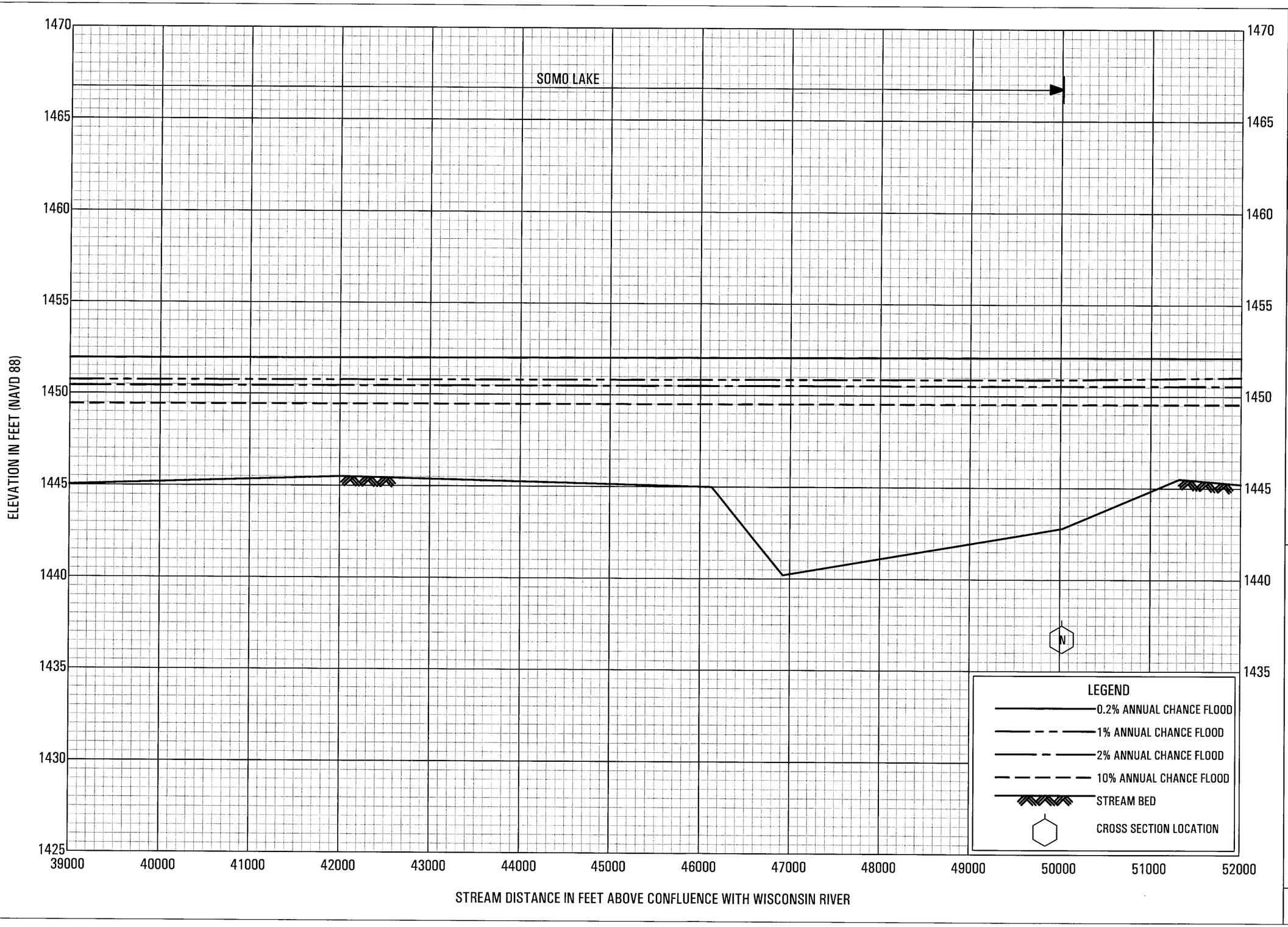
LITTLE SOMO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

19P



FLOOD PROFILES

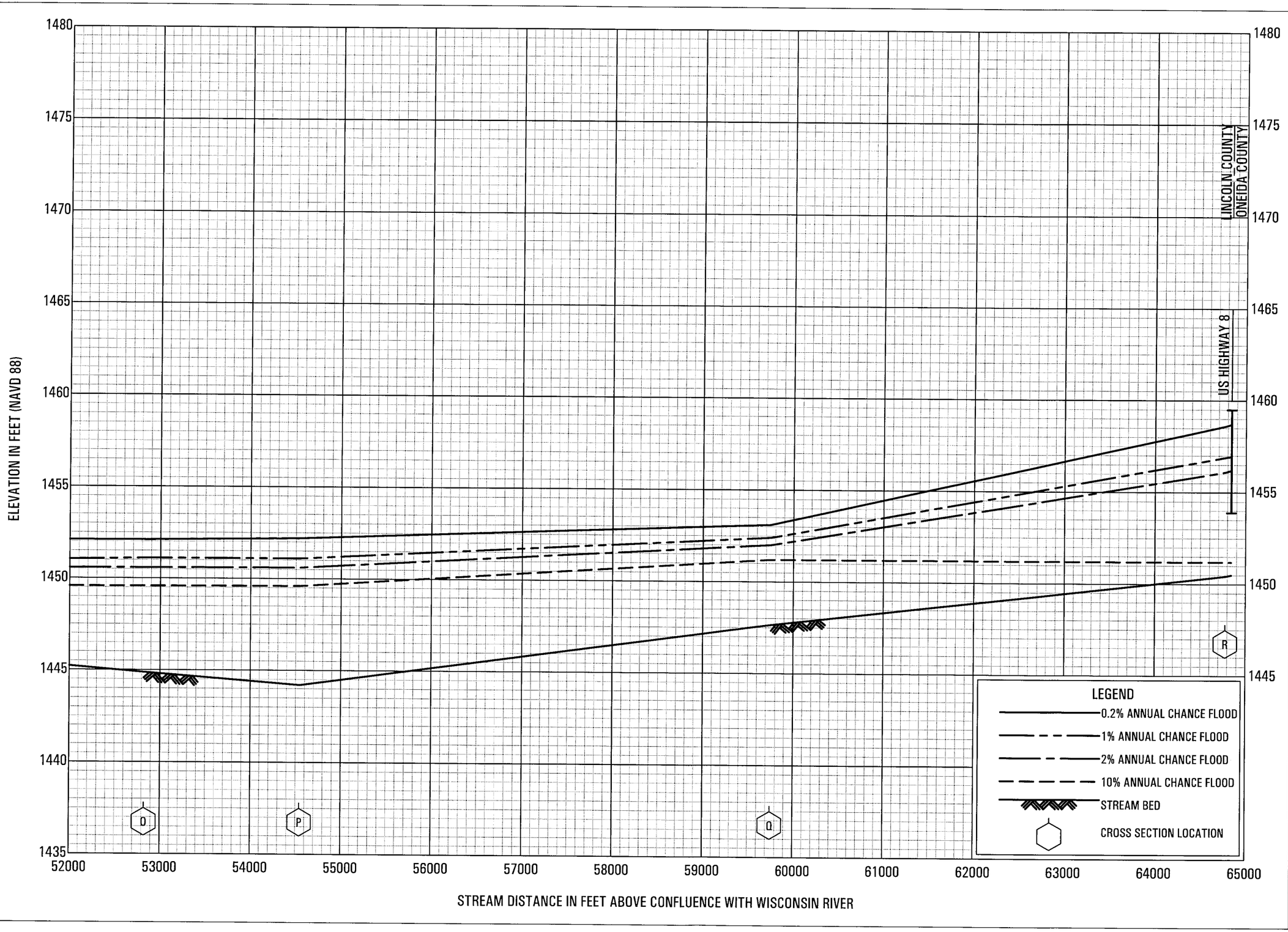
LITTLE SOMO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

20P



FLOOD PROFILES

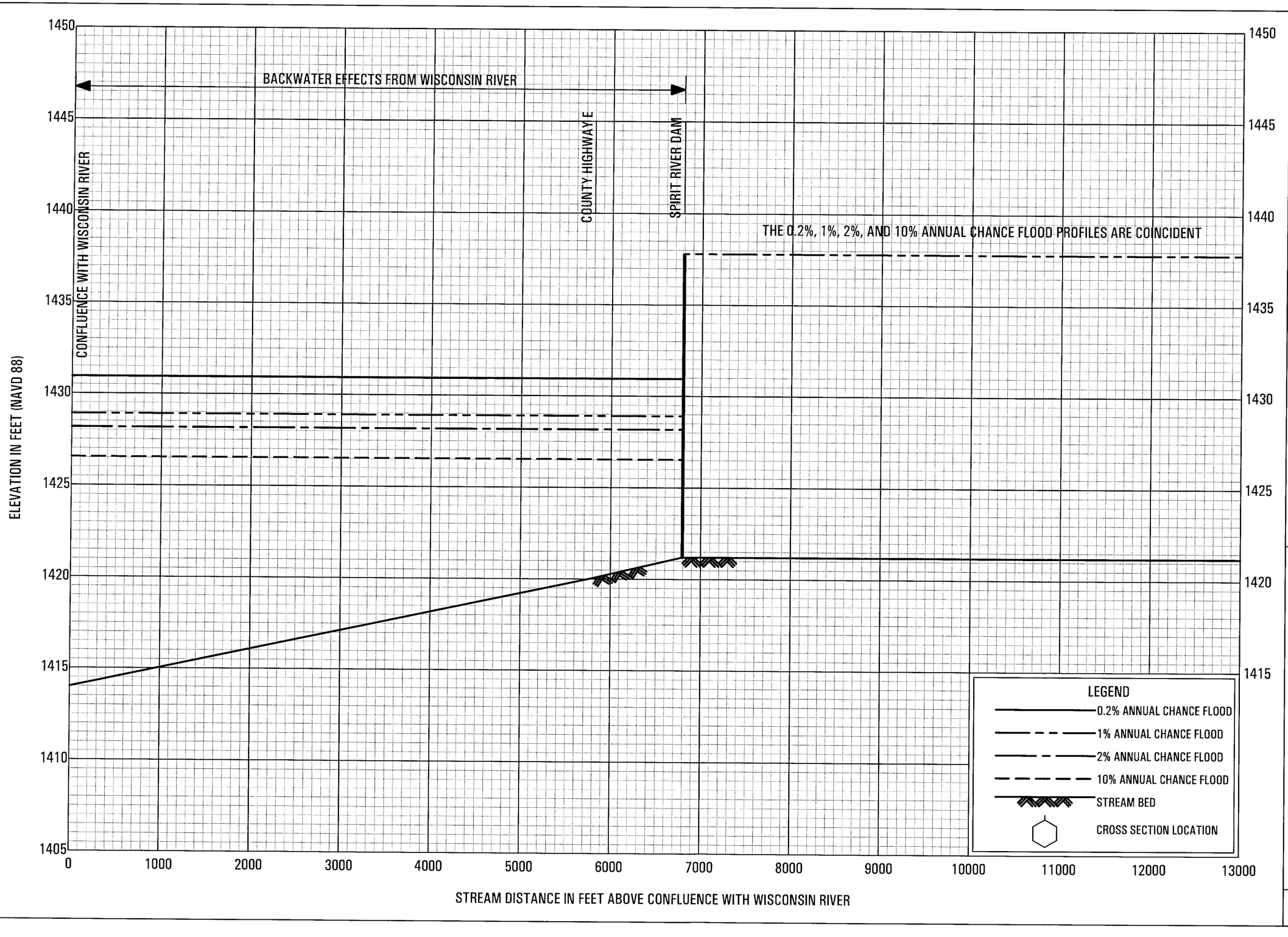
LITTLE SOMO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

21P



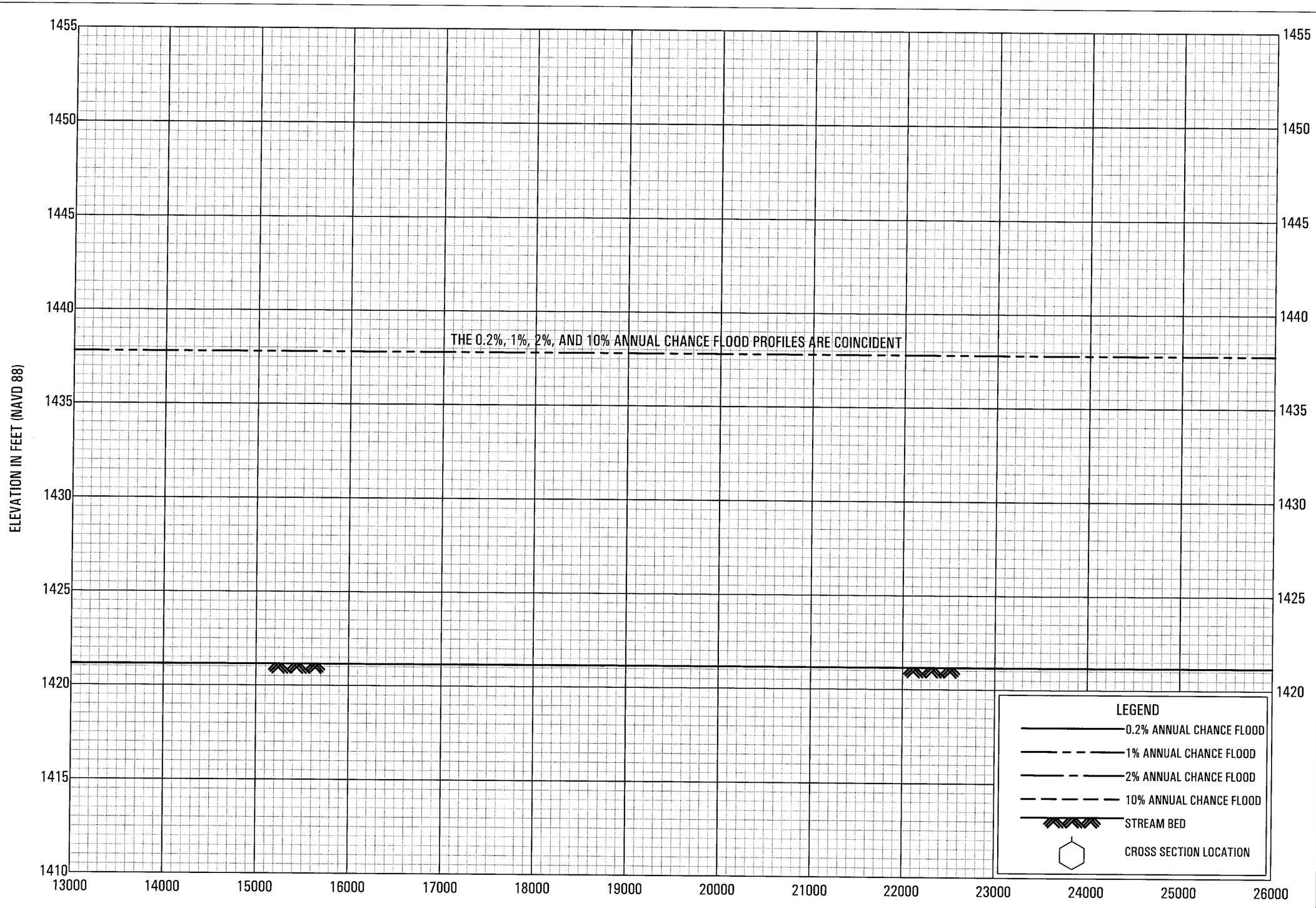
FLOOD PROFILES

SPIRIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS



FLOOD PROFILES

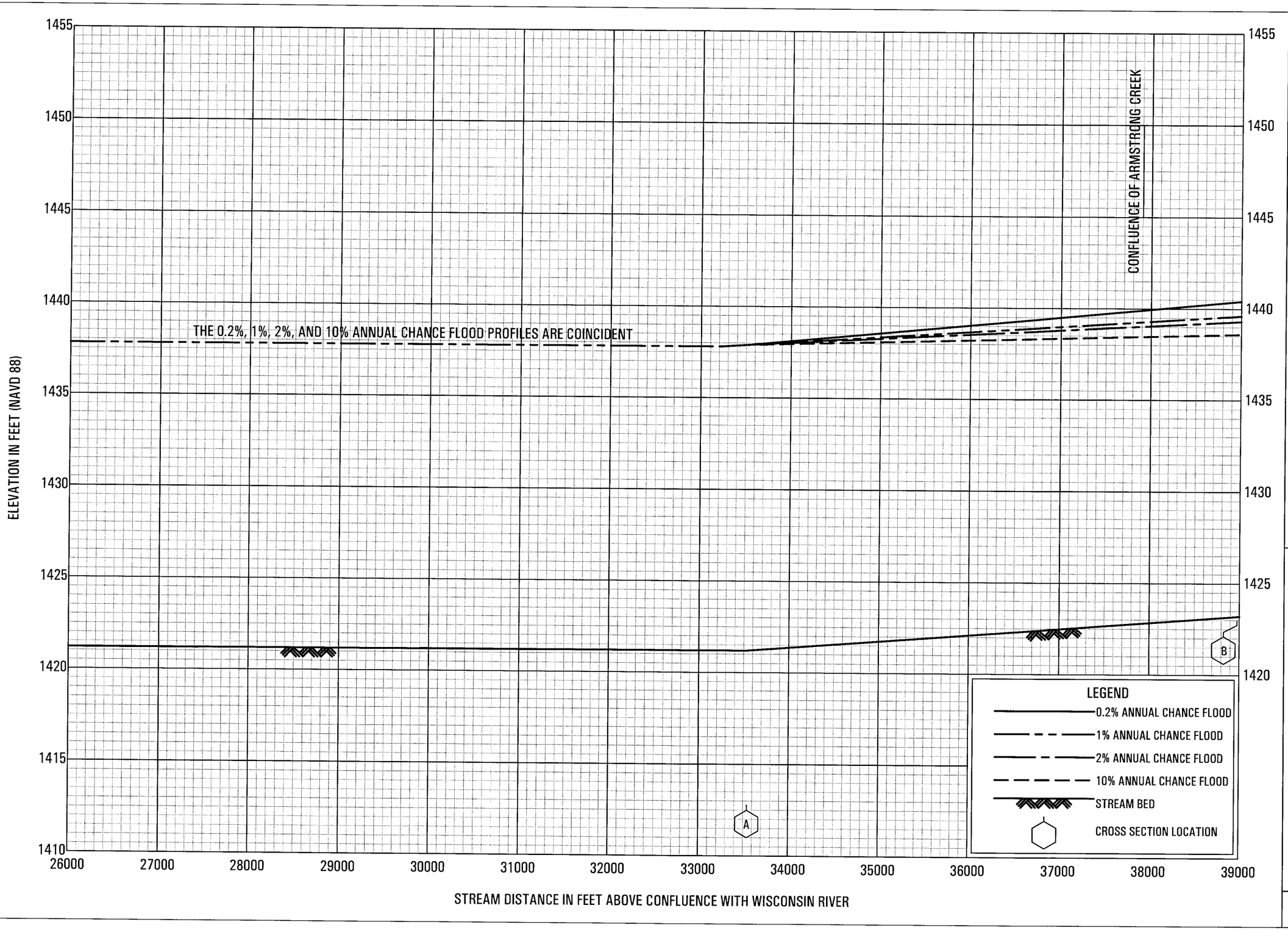
SPIRIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

23P



FLOOD PROFILES

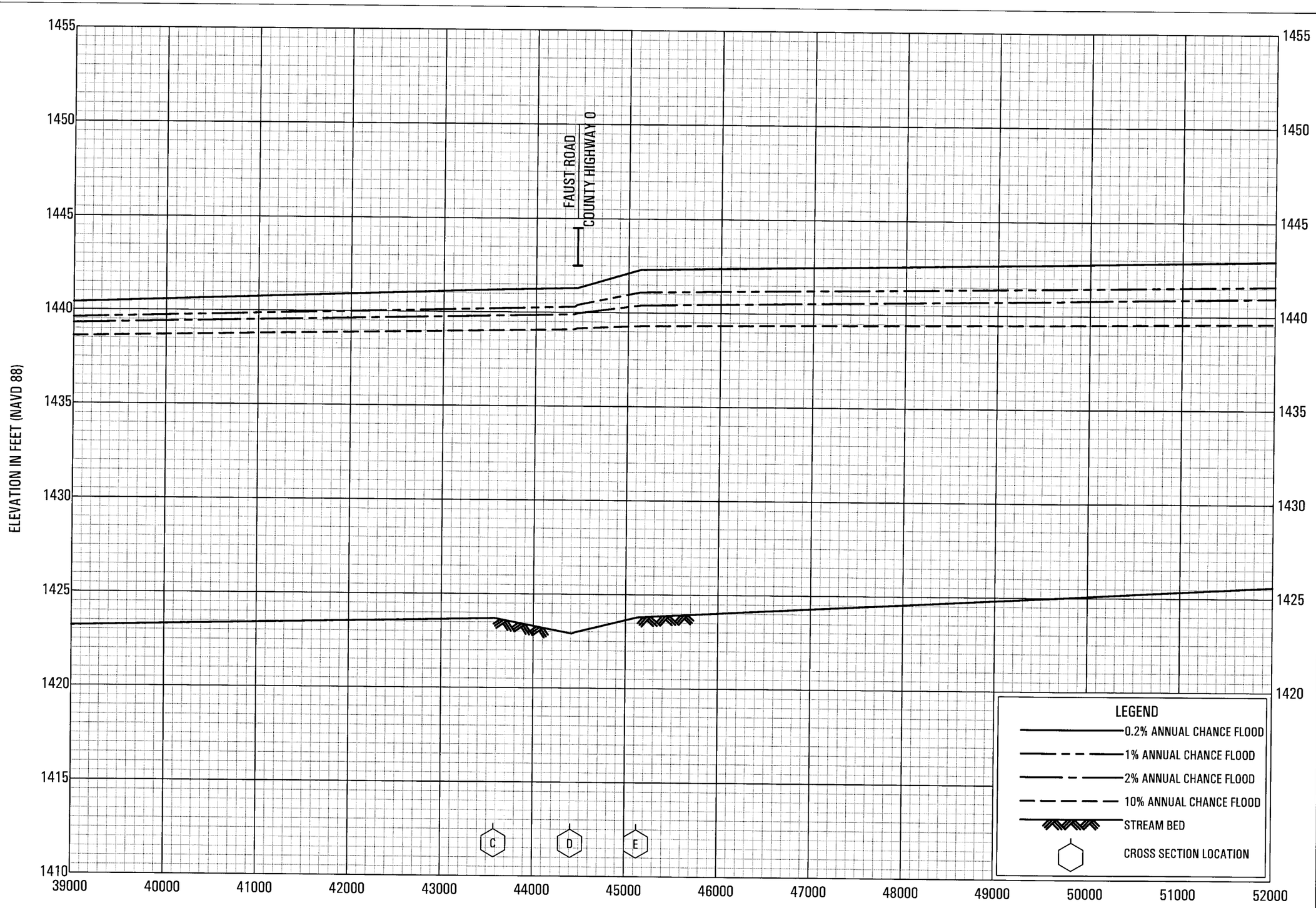
SPIRIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

24P



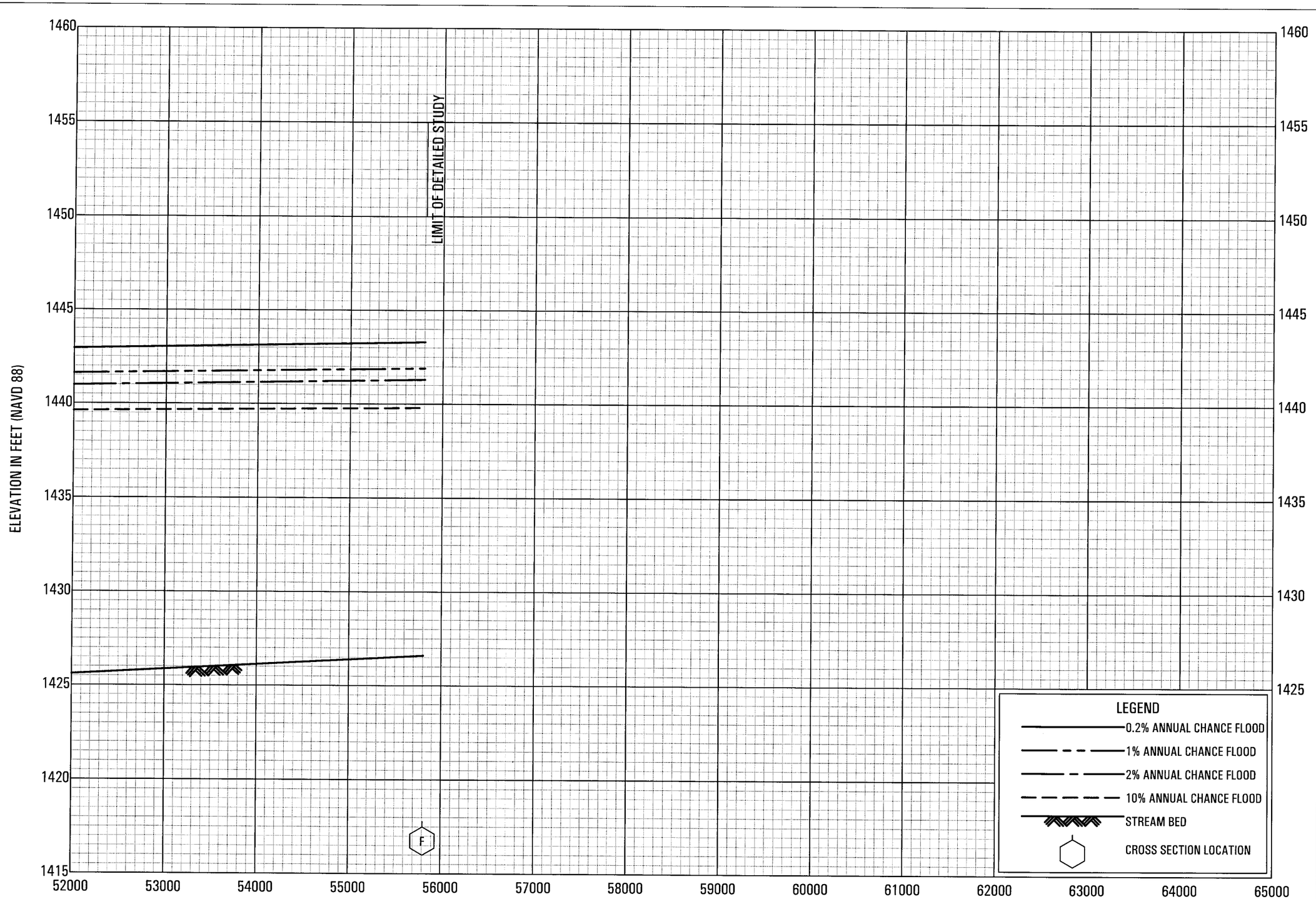
FLOOD PROFILES

SPIRIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS



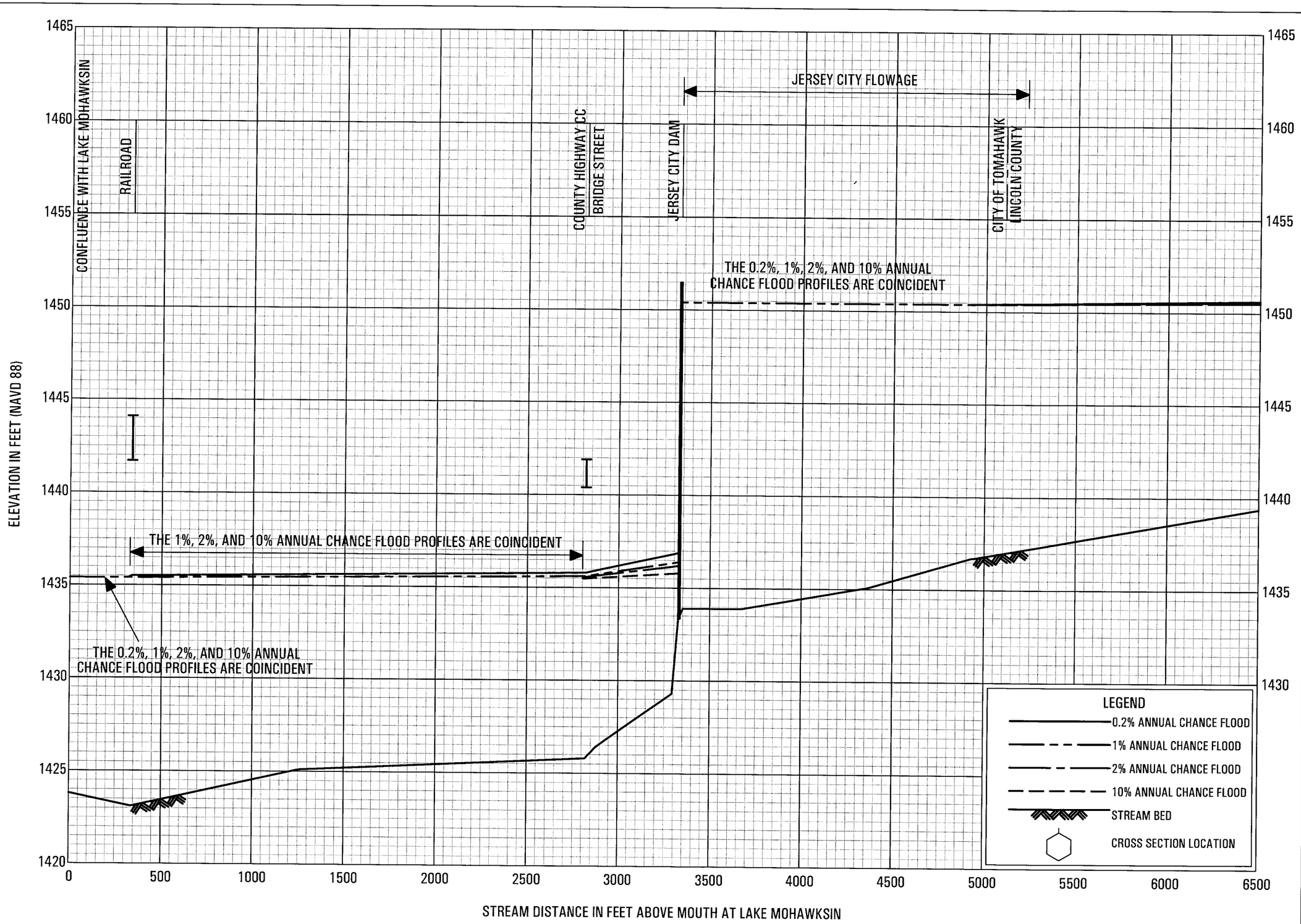
FLOOD PROFILES

SPIRIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS



FLOOD PROFILES

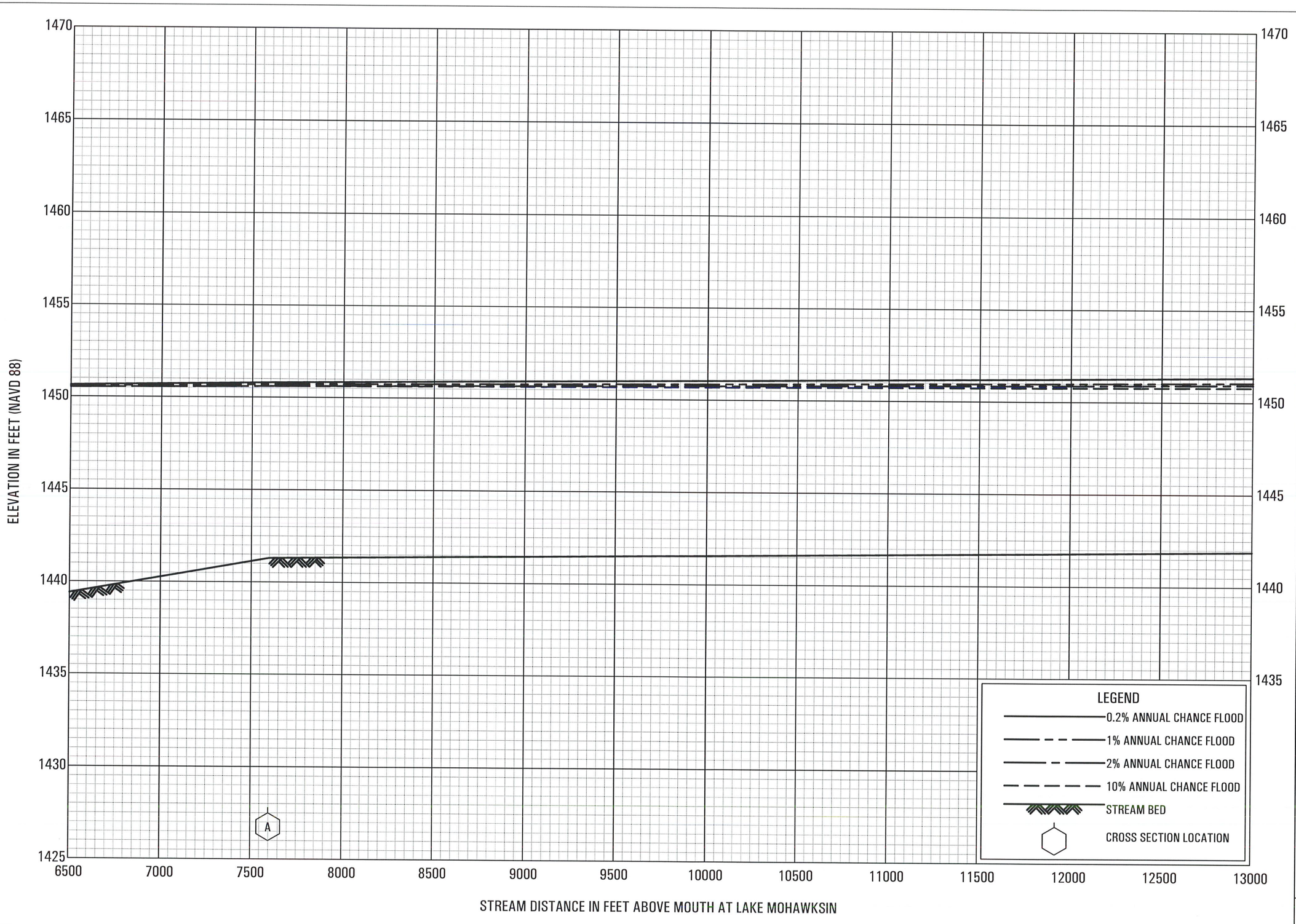
TOMAHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

27P



FLOOD PROFILES

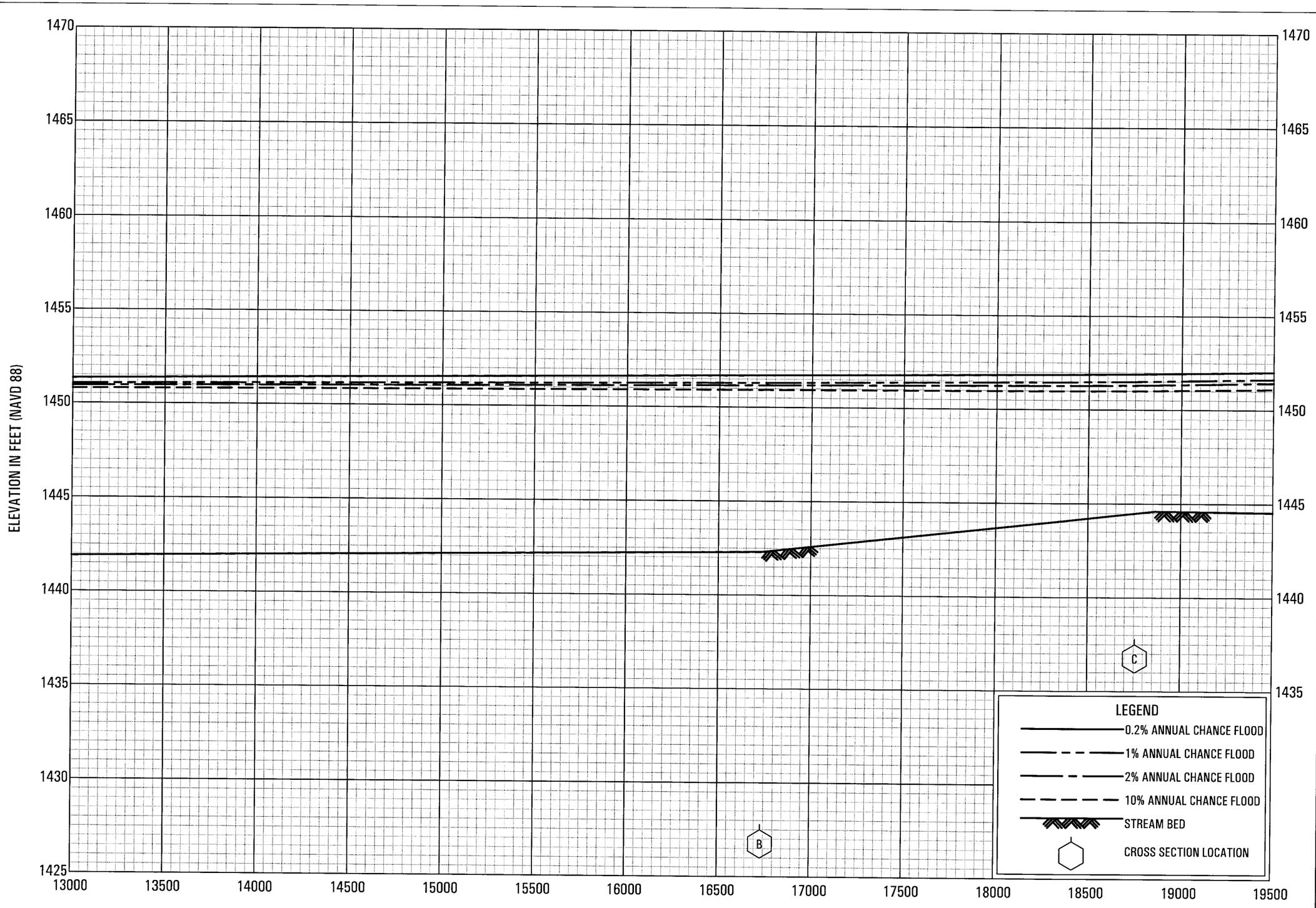
TOMAHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

28P



FLOOD PROFILES

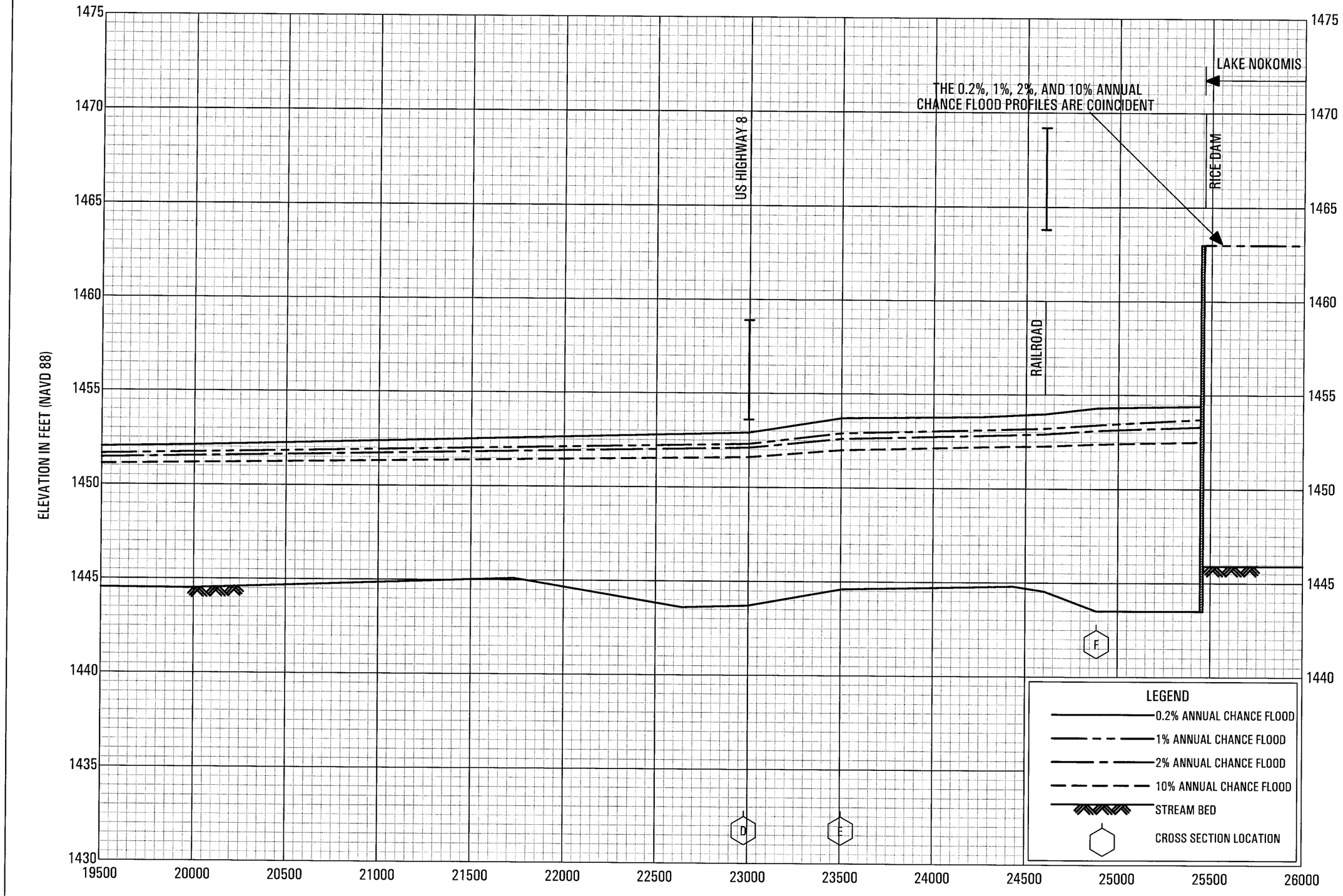
TOMAHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

29P



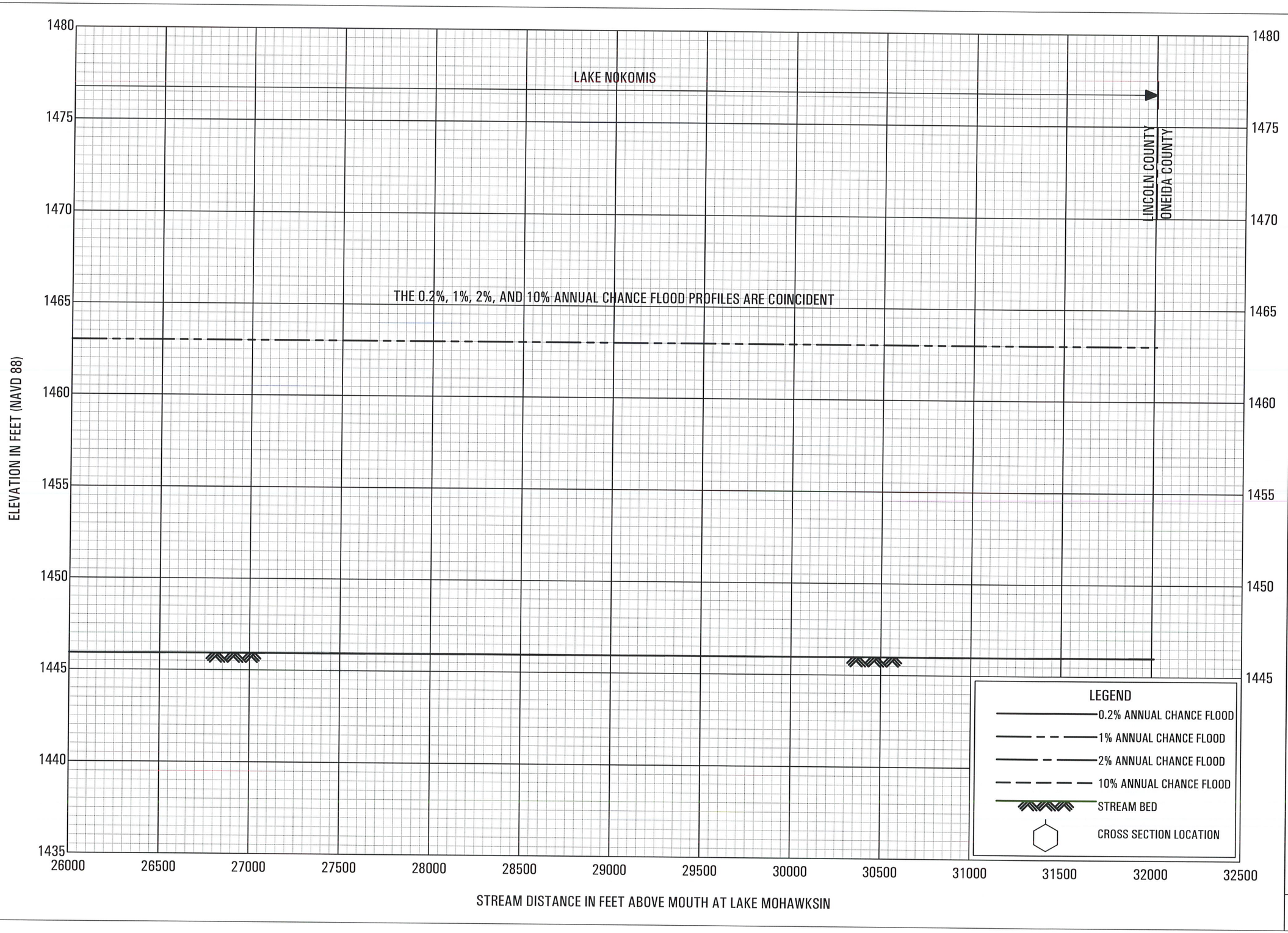
FLOOD PROFILES

TOMAHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS



FLOOD PROFILES

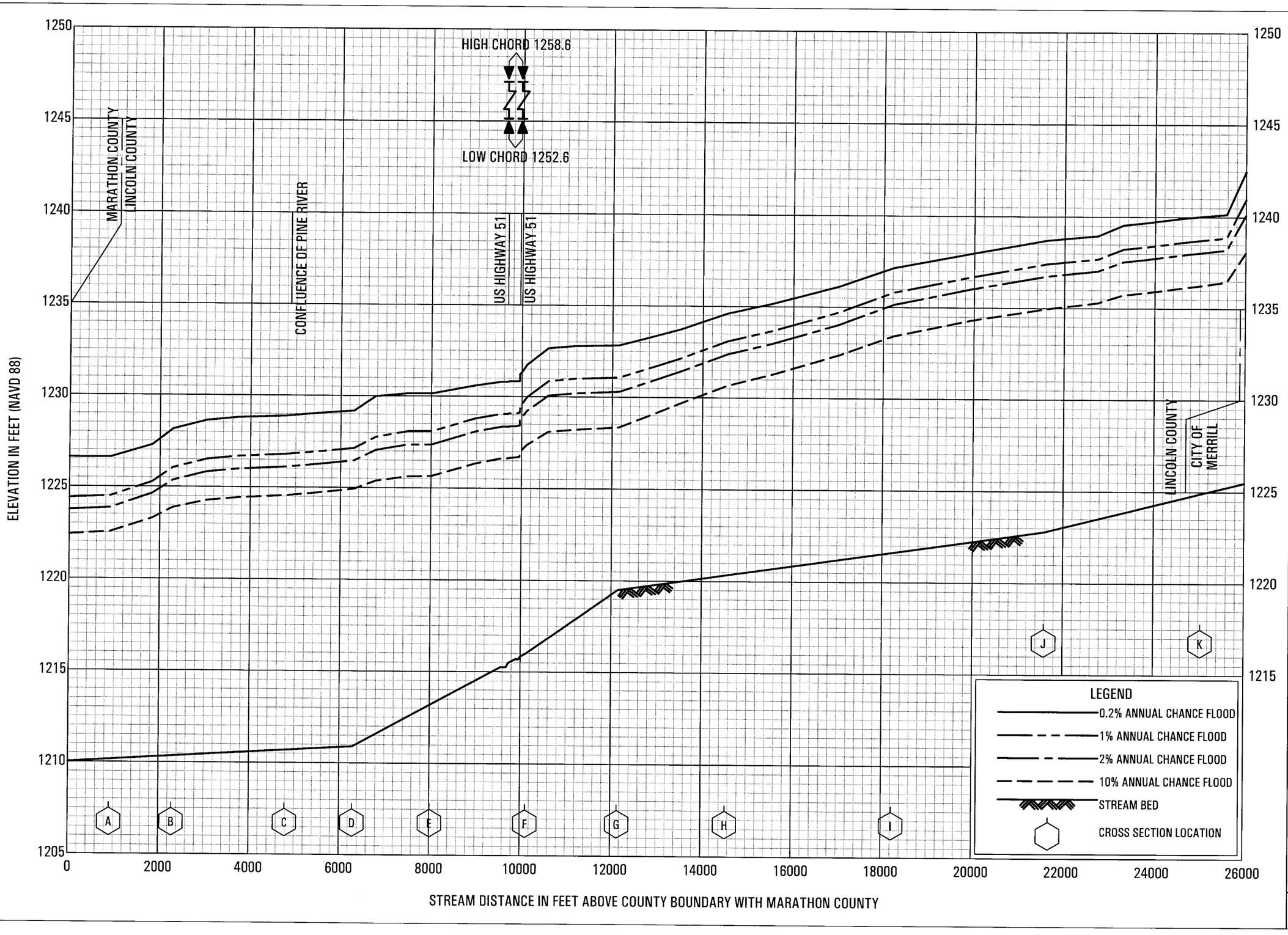
TOMAHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

31P



FLOOD PROFILES

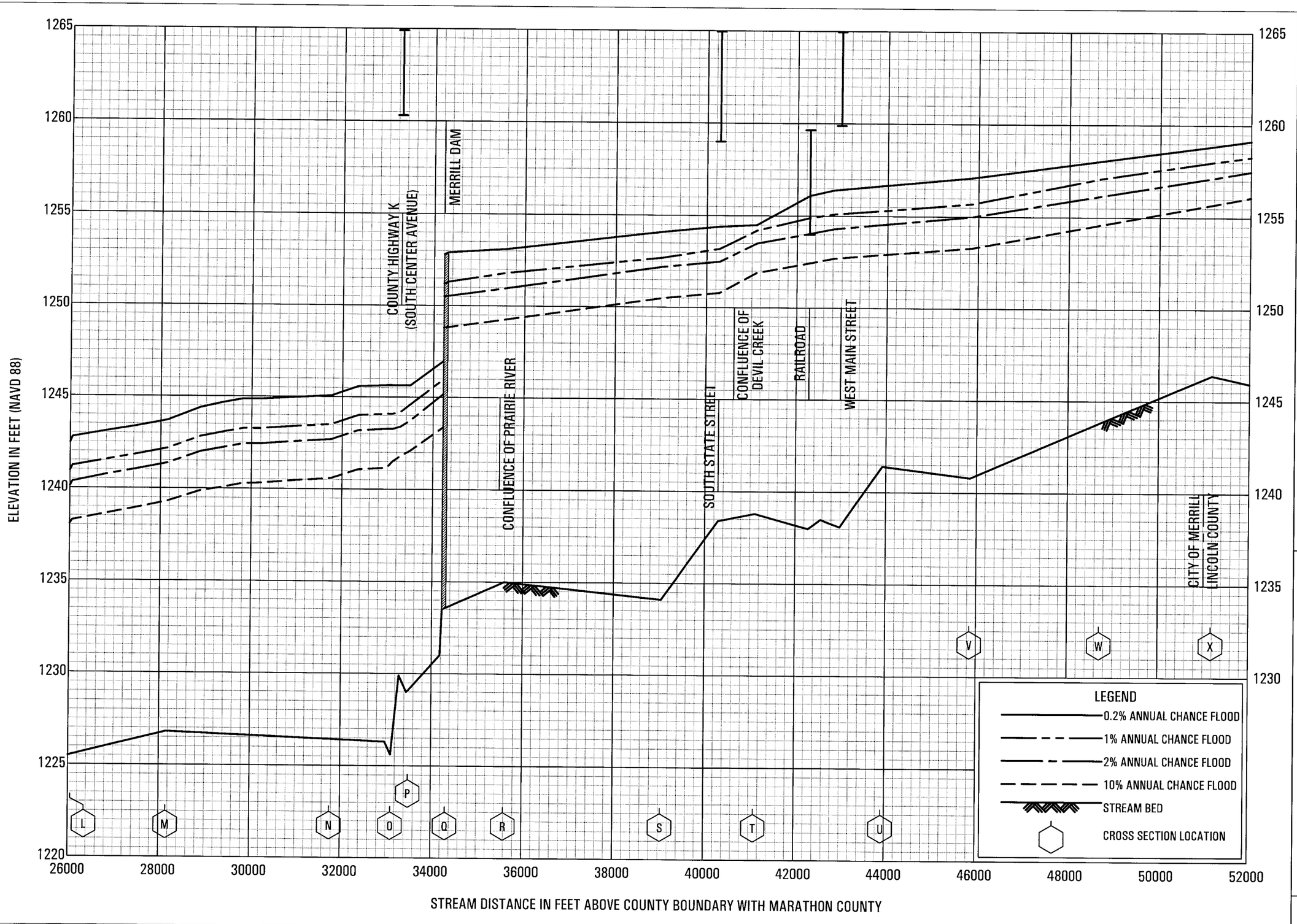
WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

32P



FLOOD PROFILES

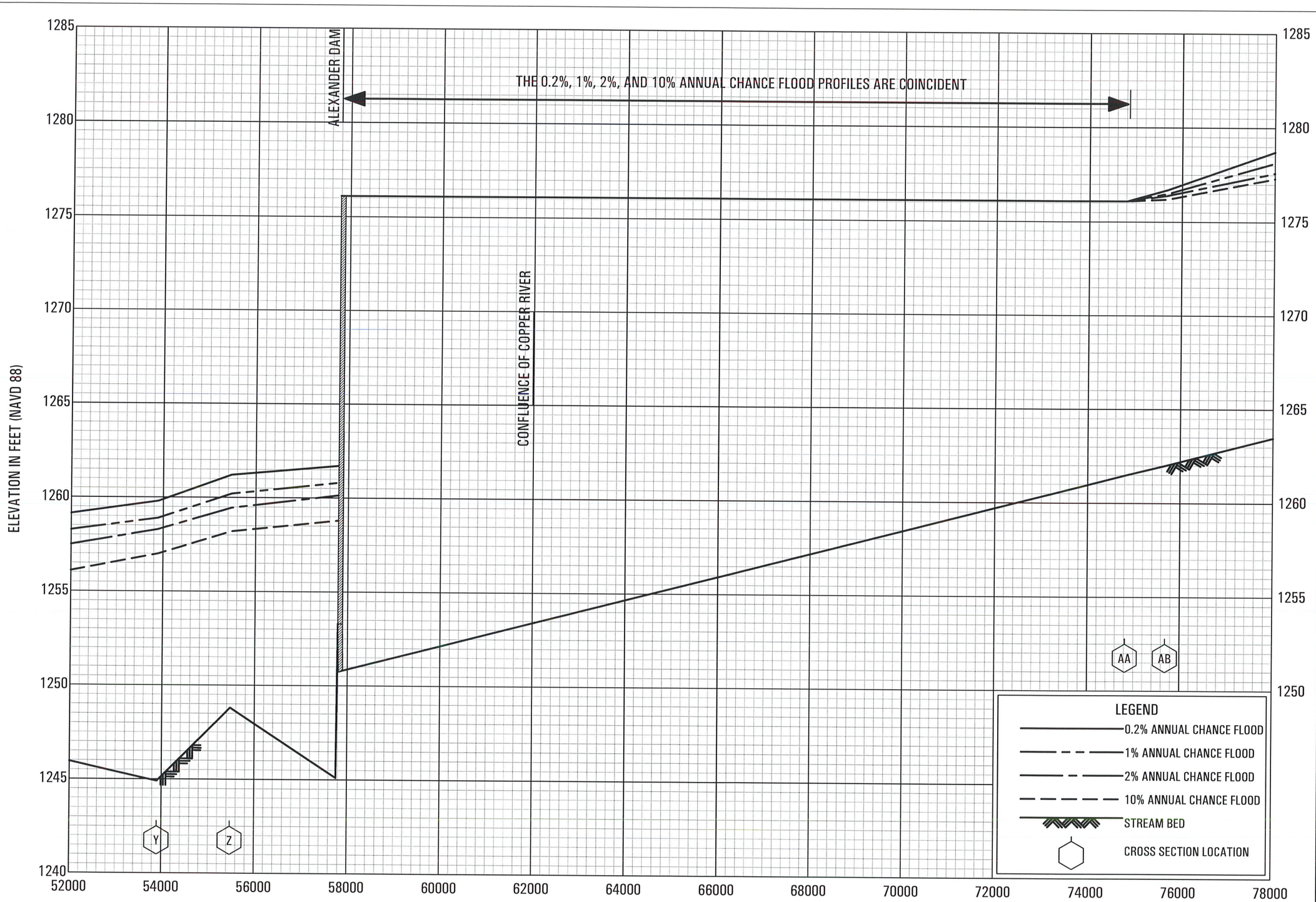
WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

33P



FLOOD PROFILES

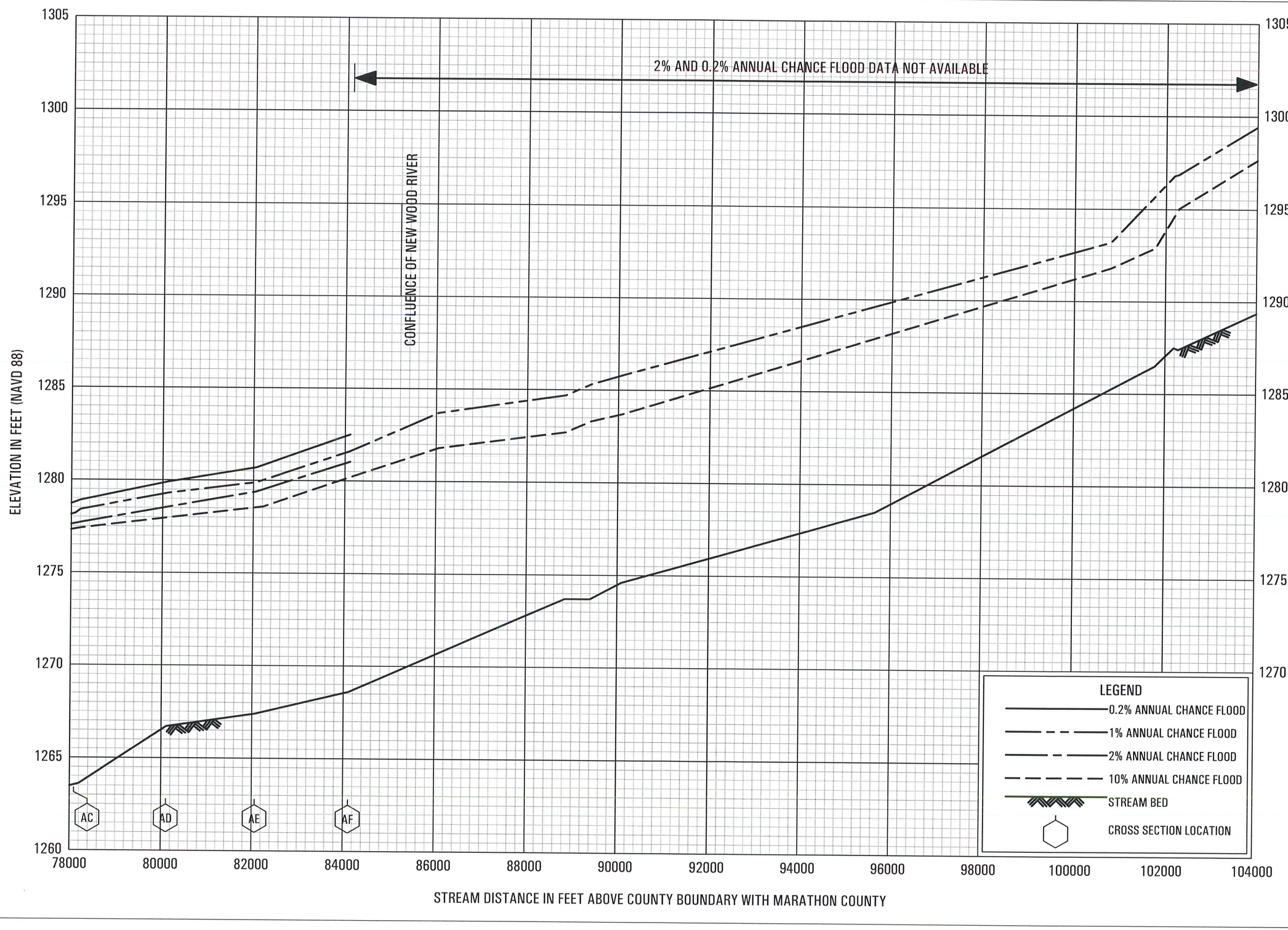
WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

34P



FLOOD PROFILES

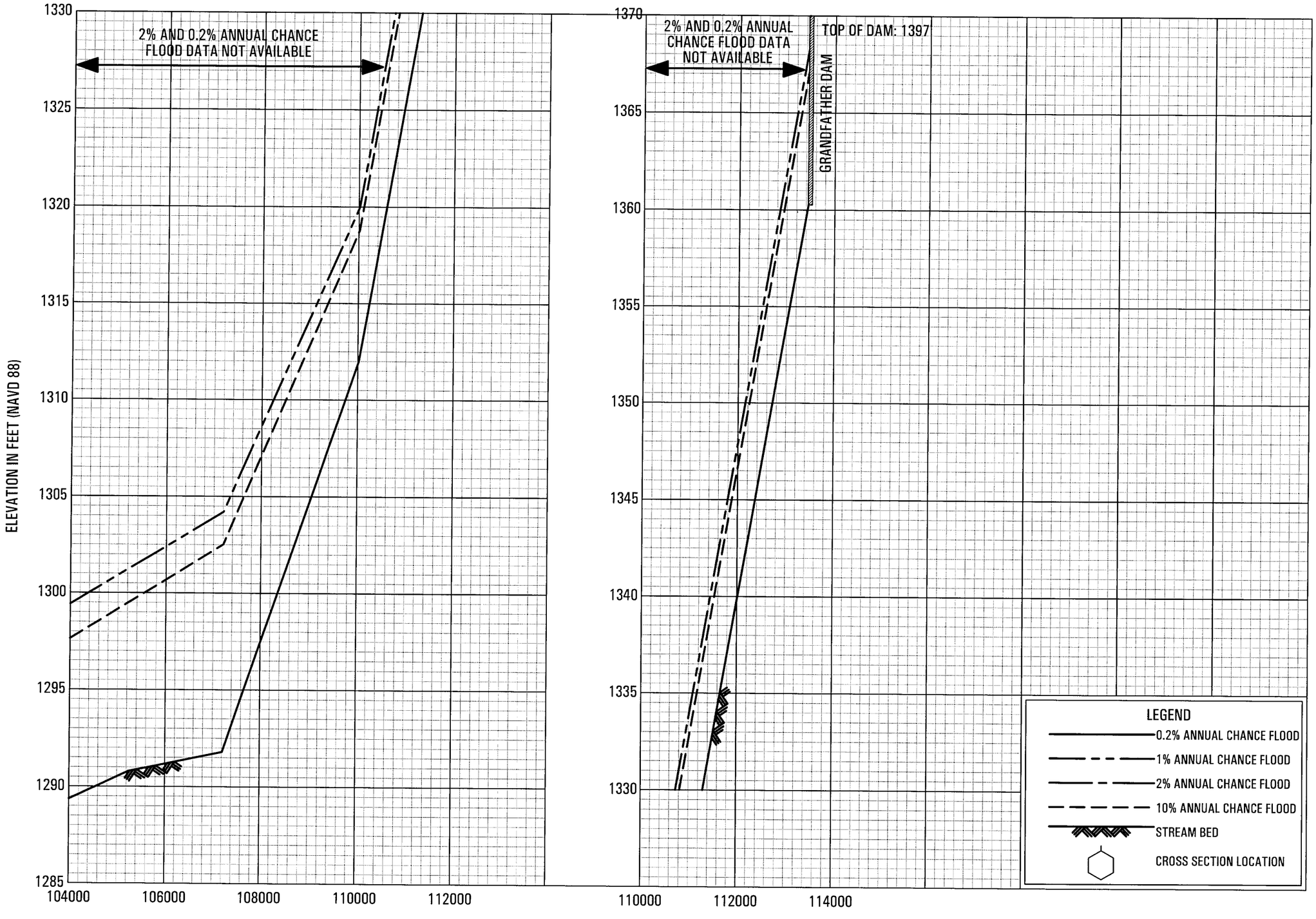
WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

35P



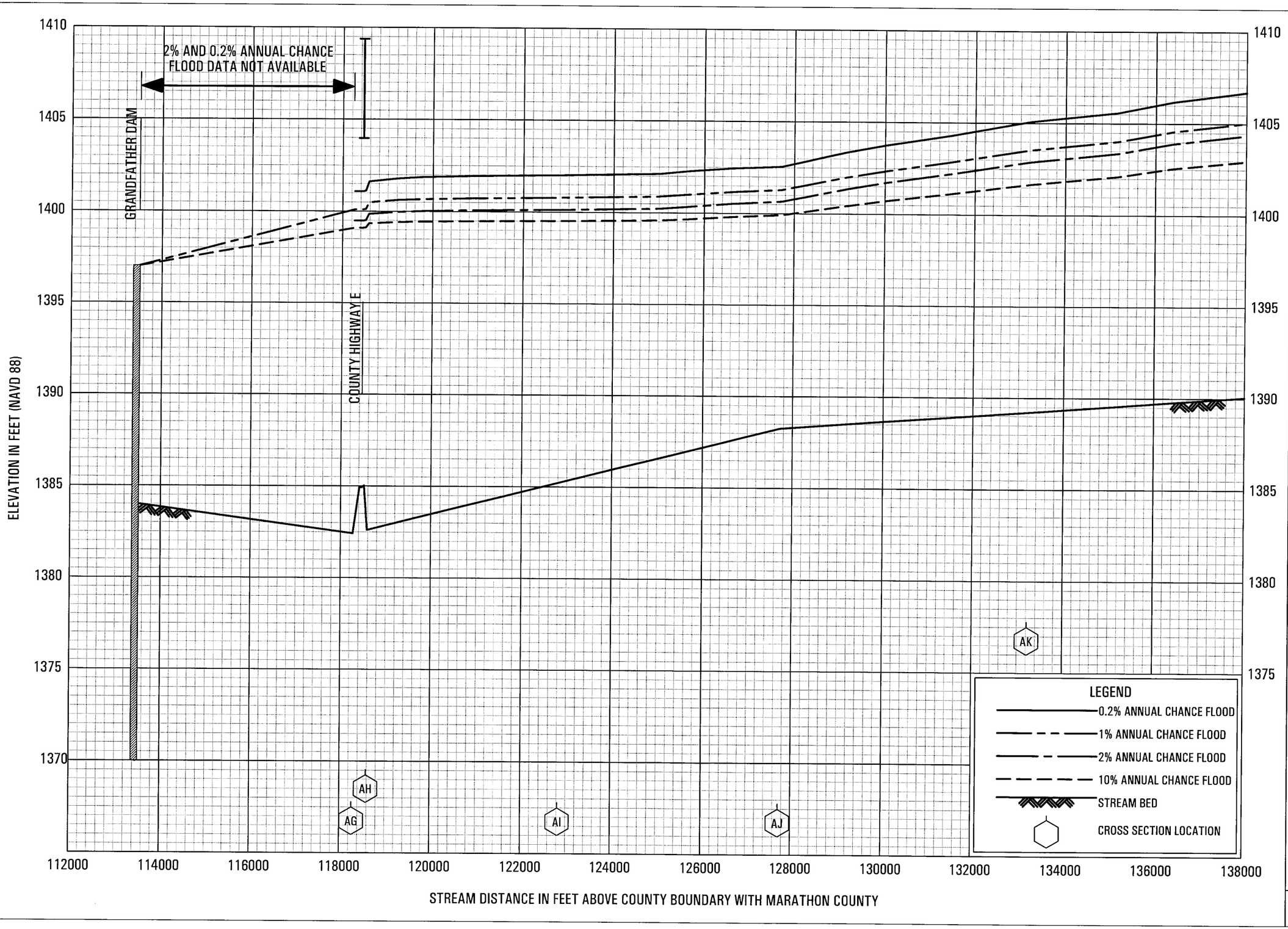
FLOOD PROFILES

WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS



FLOOD PROFILES

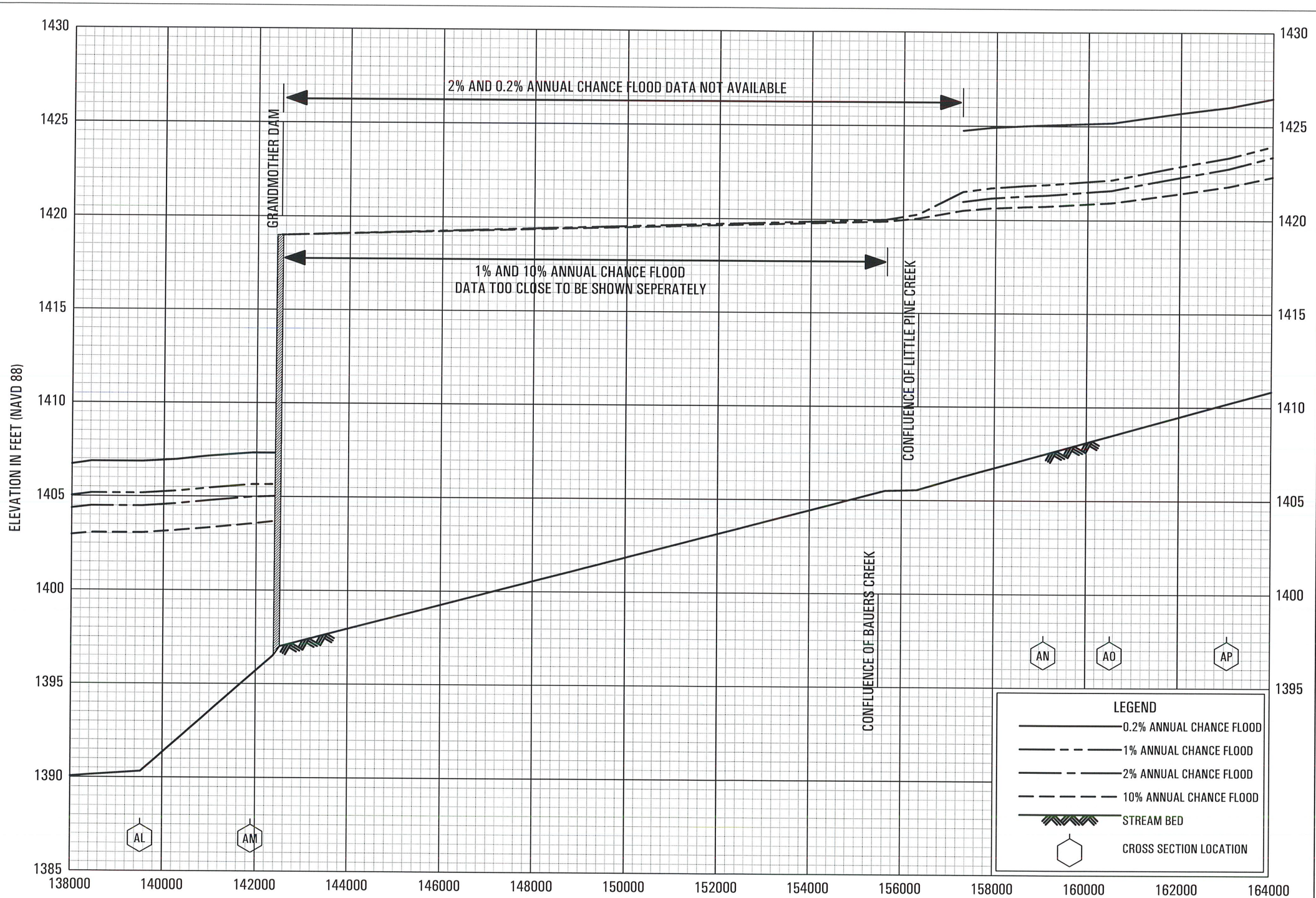
WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

37P



FLOOD PROFILES

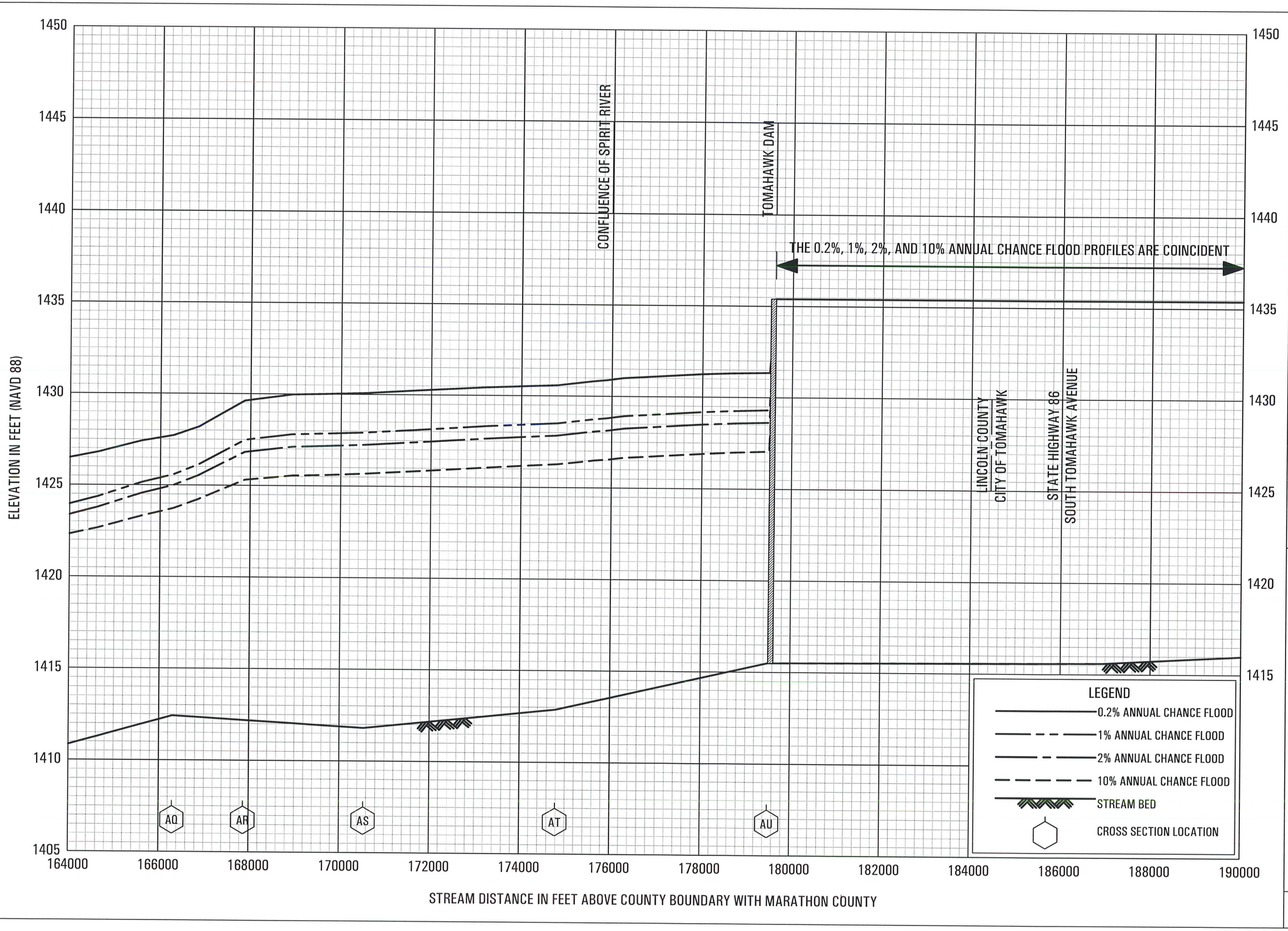
WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

38P



FLOOD PROFILES

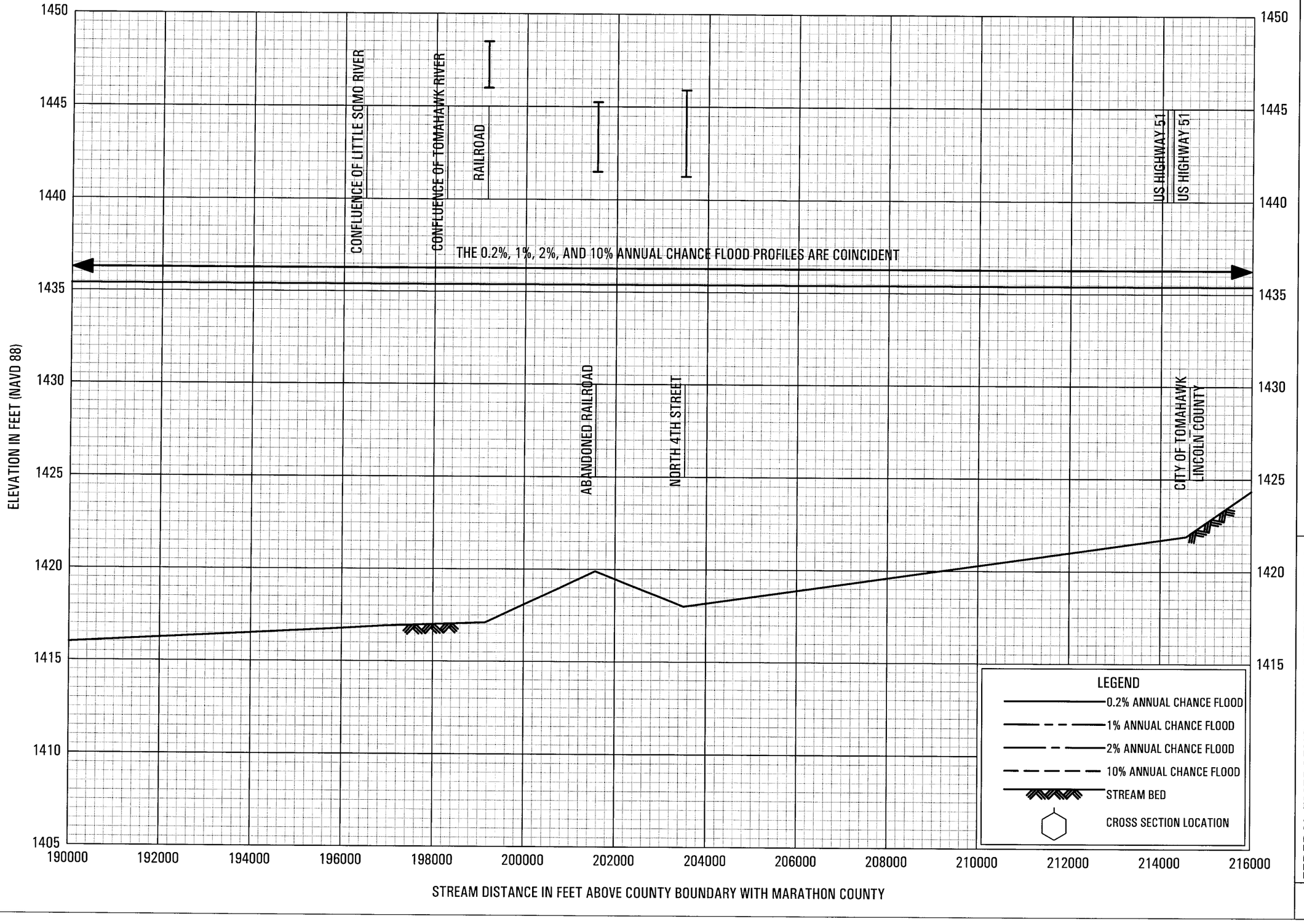
WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

39P



FLOOD PROFILES

WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

THE 0.2%, 1%, 2%, AND 10% ANNUAL CHANCE FLOOD PROFILES ARE COINCIDENT

KINGS DAM POWER PLANT

ELEVATION IN FEET (NAVD 88)

1465
1460
1455
1450
1445
1440
1435
1430
1425
1420

216000 218000 220000 222000 224000 226000 228000 230000 232000 234000 236000 238000 240000 242000

STREAM DISTANCE IN FEET ABOVE COUNTY BOUNDARY WITH MARATHON COUNTY

LEGEND
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

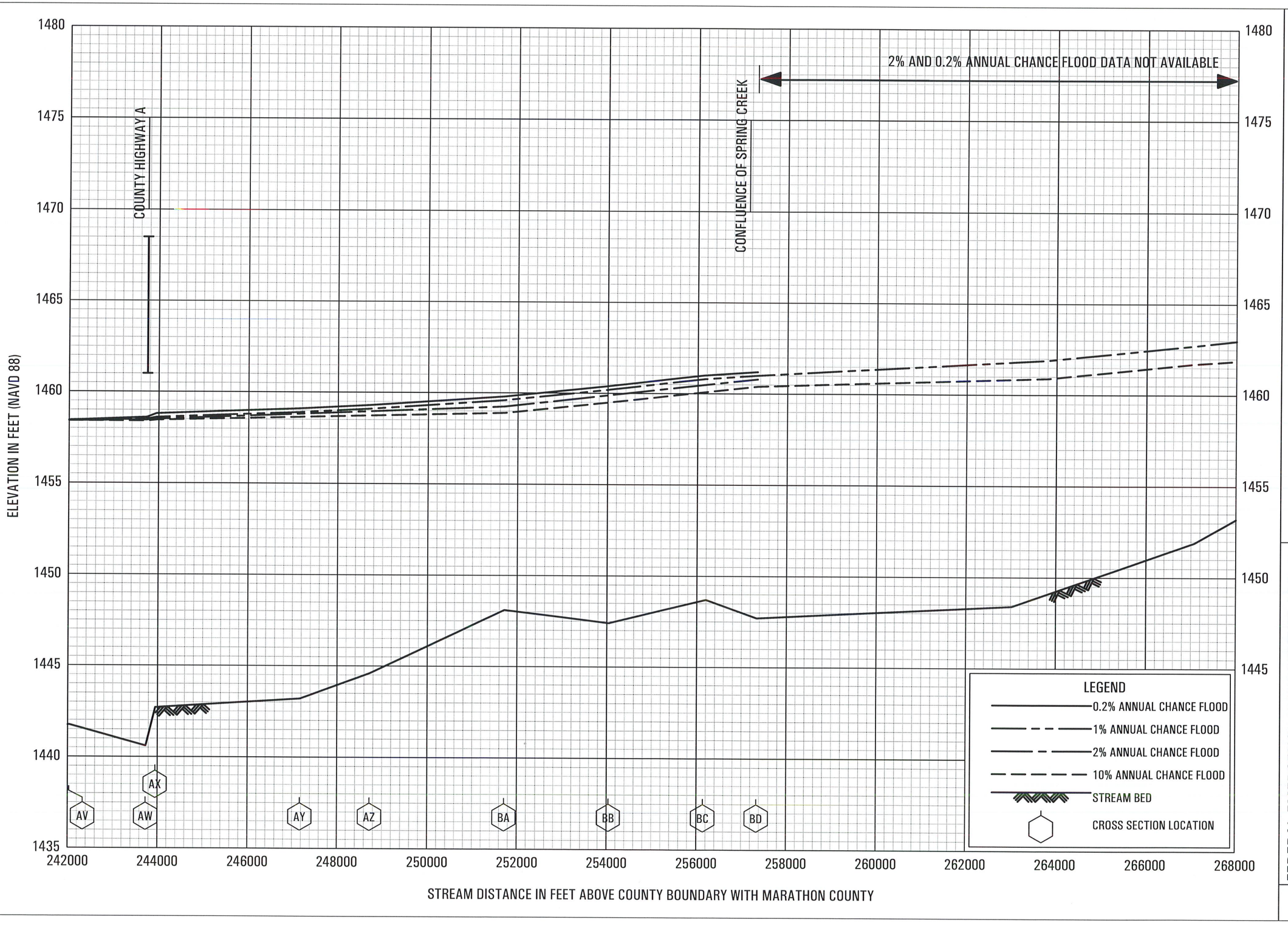
FLOOD PROFILES

WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI
AND INCORPORATED AREAS

41P



FLOOD PROFILES

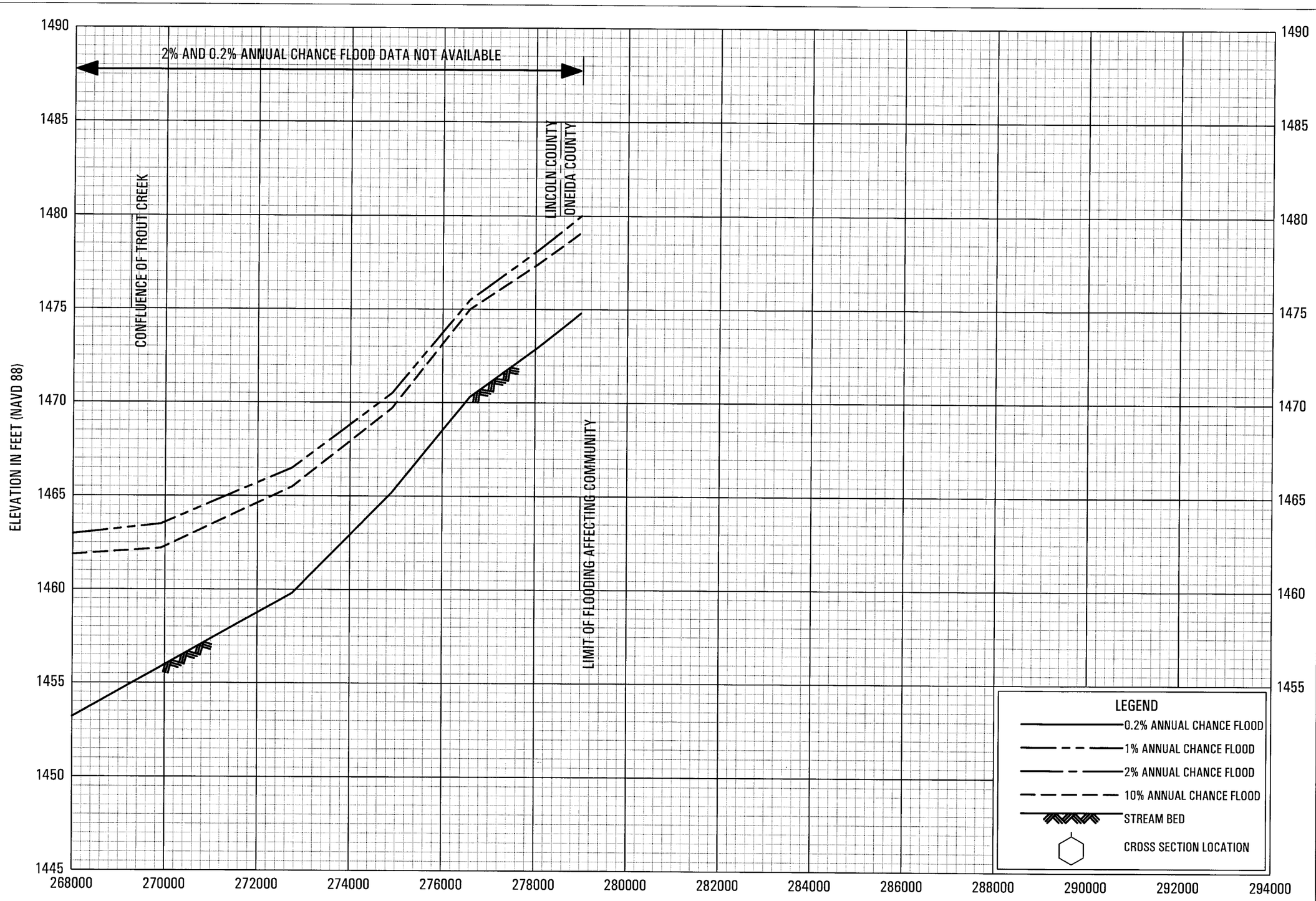
WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS

42P



FLOOD PROFILES

WISCONSIN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN COUNTY, WI

AND INCORPORATED AREAS