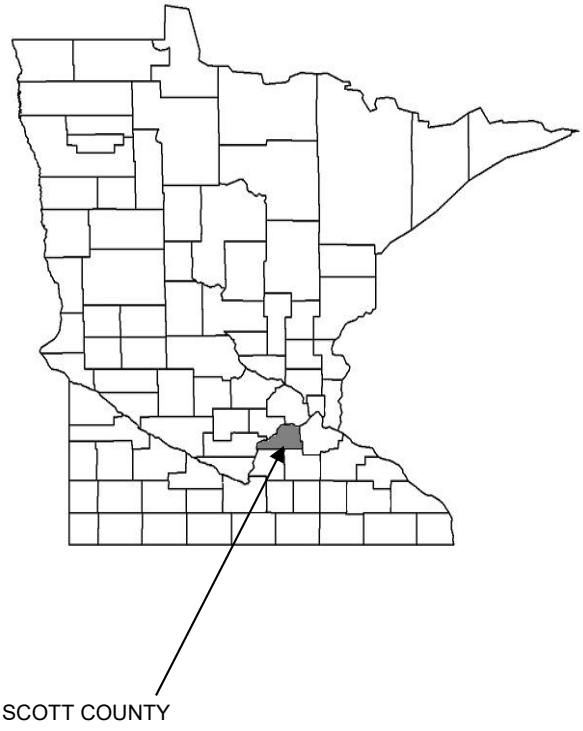
# FLOOD INSURANCE STUDY

# SCOTT COUNTY, MINNESOTA
## AND INCORPORATED AREAS

| *Community Name* | *Community Number* |
|---|---|
| BELLE PLAINE, CITY OF | 270429 |
| ELKO NEW MARKET, CITY OF | 270643 |
| JORDAN, CITY OF | 270430 |
| *NEW PRAGUE, CITY OF | 270249 |
| PRIOR LAKE, CITY OF | 270432 |
| SAVAGE, CITY OF | 270433 |
| SCOTT COUNTY (UNINCORPORATED AREAS) | 270428 |
| SHAKOPEE, CITY OF | 275434 |
| *SHAKOPEE MEDEWAKANTON SIOUX COMMUNITY OF MINNESOTA | 270274 |

***NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED**




**Revised Preliminary: July 13, 2018**

Effective: TBD

Federal Emergency Management Agency

**FLOOD INSURANCE STUDY NUMBER**
**27139CV000A**

# 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) report may not contain all data available within the Community Map Repository. Please contact the Community Map Repository for any additional data.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this FIS report at any time. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult with community officials and check the Community Map Repository to obtain the most current FIS report 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, cross-sections). In addition, former flood hazard designations have been changed as follows:

| Old Zones | New Zone |
|---|---|
| A18 and A20 | AE |
| B | X |
| C | X |

Initial Countywide FIS Effective Date: TBD

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FLOOD INSURANCE STUDY
SCOTT COUNTY, MINNESOTA AND INCORPORATED AREAS

# 1.0 INTRODUCTION

## 1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and supersedes the FIS reports and/or Flood Insurance Rate Maps (FIRMs)/Flood Boundary and Floodway Maps in the geographic area of Scott County, Minnesota, including the Cities of Belle Plaine, Elko New Market, Jordan, Prior Lake, Savage, and Shakopee, Shakopee Mdewakanton Sioux Community of Minnesota, and unincorporated areas of Scott County (hereinafter referred to collectively as Scott County) and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates. This information will also be used by Scott County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and 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.

Please note that the City of New Prague is located in both Scott County and Le Sueur County. New Prague is shown in its entirety in the Le Sueur County FIS and FIRM. Also note no special flood hazard areas have been identified in the Shakopee Mdewakanton Sioux Community of Minnesota.

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 Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The countywide FIS was prepared by combining data from the Cities of Belle Plaine, Jordan, Prior Lake, Savage, and Shakopee, and the Unincorporated Areas within Scott County. Information on the authority and acknowledgements for each jurisdiction included in the countywide FIS, as compiled from their previously printed individual FIS reports is shown below.

*City of Belle Plaine*
The hydrologic and hydraulic analyses for the original December 18, 1986 FIS for the City of Belle Plaine were obtained from the Flood Insurance Study for the Unincorporated Areas of Scott County.

*City of Jordan*
The hydrologic and hydraulic analyses for the original July 6, 1981 FIS for the City of Jordan were performed by the U.S. Geological Survey (USGS), Water Resources Division, Minnesota District, for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. IAA-H-8-76, Project Order No. 36, Amendment No. 1. The study was completed in March 1980.

*City of Prior Lake*
For the original March 1978 FIS and the September 29, 1978 FIRM (hereinafter referred to as the 1978 FIS), the hydrologic and hydraulic analyses were prepared by Barr Engineering Company for FEMA, under Contract No. H-3799. That work was completed in June 1977.

For the revision, the hydrologic analyses were prepared by the U.S. Army Corps of Engineers (USACE), St. Paul District, for FEMA, under Inter-Agency Agreement No. EMW-93-E-4115, Project Order No. 7. That work was completed in March 1995.

*City of Savage*
The hydrologic and hydraulic analyses for the original December 1979 FIS were performed by the USGS, Water Resources Division, for FEMA, under Inter-Agency Agreement No. IAA-H-8-76, Project Order No. 10. The study was completed in October 1976.

*City of Shakopee*
The hydrologic and hydraulic analyses for the original March 1978 FIS were performed by the USGS, Water Resources Division, for FEMA, under Inter-Agency Agreement No. IAA-H-8-76, Project Order No. 10. That work was completed in March 1977.

*Scott County (Unincorporated Areas)*
The hydrologic and hydraulic analyses for the original February 19, 1987 FIS were performed by the USACE, St. Paul District, For FEMA, under Inter-Agency Agreement No. EMW-E-0941, Project Order No. 11. The study was completed in July 1985.

There were no previously printed Flood Insurance Studies for the City of Elko New Market or the Shakopee Mdewakanton Sioux Community of Minnesota. The City of New Prague can be found in its entirety in the Le Sueur County FIS.

For this initial countywide FIS, revised hydrologic and hydraulic analyses for Credit River, Porter Creek, Raven Creek, Robert Creek, Sand Creek, and Vermillion River were performed by Tetra Tech EM Inc. for Scott County Natural Resource Department. This work was completed in 2008 and 2010.

The digital base mapping information was provided by the USDA Data Gateway, Federal Center, 501 W. Felix St., Bldg. 23, P.O. Box 6567, Fort Worth, Texas. It was downloaded from their website, www.datagateway.nrcs.usda.gov. These files were compiled by remote-sensing methods and meet or exceed National Map Accuracy Standards at the original compilation scale of 1:12,000. The primary digital orthophotoquad (DOQ) is a 1-meter ground resolution, quarter-quadrangle (3.75-minute of latitude and 3.75-minute of longitude) image cast on the Universal Transverse Mercator Projection (UTM) on the North American Datum of 1983 (NAD83).

## 1.3 Coordination

For the countywide FIS, the initial Consultation Coordination Officer (CCO) meeting was held on June 14, 2002, and attended by representatives of FEMA, the Minnesota Department of Natural Resources (MDNR), and Scott County.

The results of the revised study were reviewed at the final CCO meeting held on TBD, and attended by representatives of FEMA, CWCB, the communities, and the study contractor. All issues raised at that meeting have been addressed.

The countywide FIS was prepared by combining data from the Cities of Belle Plaine, Jordan, Prior Lake, Savage, and Shakopee, and the Unincorporated Areas within Scott County. Information on the coordination of the original studies for each jurisdiction included in the countywide FIS, as compiled from their previously printed individual FIS reports is shown below.

*City of Belle Plaine*
On January 27, 1986, the results of the original study were reviewed and accepted at a final coordination meeting attended by representatives of the community and FEMA.

*City of Jordan*
The flood problems of the City of Jordan were reviewed at as meeting held on November 17, 1975 with city officials and representatives from FEMA, the MDNR, and the USGS.

The discharge estimate of the 1-percent annual chance flood event for Sand Creek was coordinated with the USACE and the Soil Conservation Service (SCS) to eliminate the possibility of future conflicts. The City of Jordan, the USACE, the SCS, and the DNR were contacted during the study to obtain information.

An additional meeting was held with city officials on March 27, 1979 to inform them of progress on the study and to answer questions. Maps showing the delineation of the 1-percent annual chance floodplain and a maximum encroached floodway were provided to the city for the purpose of selecting a floodway configuration. Liaison was also maintained with the MDNR, who will be reviewing the community's land-use controls for flood-prone areas under the requirements of the State Flood Plain Management Act.

On December 9, 1980, the results of the work by the Study Contractor were reviewed and accepted at a final coordination meeting attended by local officials, and representatives from the USGS and FEMA.

*City of Prior Lake*
For the 1978 FIS, an initial CCO meeting was held in February 1975, and was attended by representatives of Barr Engineering Company, the MDNR, the city and FEMA. A final CCO meeting was held on September 7, 1977, and was attended by representatives of Barr Engineering Company, the MDNR, the city and FEMA.

The hydrologic and hydraulic analyses for Prior Lake and Spring Lake were coordinated with the USGS, the SCS, The MDNR, and the USACE.

For the revision, a time and costs meeting was held on August 18, 1992, and was attended by representatives of the USACE, the MDNR, the city and FEMA. An initial CCO meeting was held on September 19, 1994.

The MDNR was contacted regarding existing Prior Lake hydrologic data.

*City of Savage*
The flood problems of Savage were reviewed at a meeting held in November 1975 with city officials and representatives of FEMA, the MDNR, and the USGS, in attendance. Areas chosen for study by detailed and approximate methods were discussed at the meeting. Discharge estimates for the 1-percent annual chance flood event for the Minnesota River and the Credit River were coordinated with the USACE and the SCS.

During the course of the study, a floodway meeting was held on May 15, 1978, with appropriate city officials in order to designate the floodway. Discussions were also held with the Board of Managers for the Lower Minnesota River Watershed District who are coordinating flood plain management practices in the study area and adjoining reaches of the Minnesota River.

The City of Savage, the USACE, and the MDNR, were contacted during the study to obtain information.

The USACE provided high water elevations for the 1965 and 1969 floods. Additional high water elevations for the 1965 and 1969 floods were provided by Northern States Power Co., the Minnesota Department of Highways, Itasca Engineering Incorporated, and local commercial and government interests.

On April 25, 1979, the results of the work by the study contractors were reviewed and accepted at a final coordination meeting attended by representatives of the community, the study contractor, and FEMA.

*City of Shakopee*
The flood problems of Shakopee were reviewed at a meeting held in November 1975, with city officials, and representatives of FEMA, the MDNR, and the USGS in attendance.

During the course of the study, additional meetings were held with appropriate city officials in addition to the initial contact. These discussions were intended to keep community officials informed as to the progress of the study and to answer questions.

During the course of the study, the MDNR and the Board of Managers for the Lower Minnesota River Watershed District were also contacted for information.

The final community coordination meeting was held on September 26, 1977. It was attended by local officials, and representatives of FEMA, the MDNR, the USGS, and local, financial, and insurances organizations. There were no objections to the study, and nothing was brought up that would require changes in this report.

*Scott County (Unincorporated Areas)*
Streams requiring detailed study were identified by representatives of the study contractor and FEMA during an August 16, 1982, telephone conversation. At a subsequent October 27, 1982, meeting held in the City of Shakopee the study limits were agreed upon by representatives of the study contractor, the MDNR, and Scott County.

A floodway coordination meeting was held on April 25, 1985, in the county offices. Attending the meeting were representatives of the county, the MDNR, and the study contractor.

On March 20, 1986, the results of the Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the study contractor, FEMA and the community.

## 2.0 AREA STUDIED

### 2.1 Scope of Study

This FIS covers the geographic area of Scott County, Minnesota including the Cities of Belle Plaine, Elko New Market, Jordan, Prior Lake, Savage, and Shakopee, and Shakopee Mdewakanton Sioux Community of Minnesota, and unincorporated areas of Scott County.

The streams studied by detailed methods are presented in Table 1. Prior Lake, Spring Lake, and Lower and Upper Prior Lakes were studied by detailed methods, for their entire shorelines.

The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction through 2010.

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 officials of Scott County.

Porter Creek Tributary North, Porter Creek Tributary South, Raven Creek County Ditch 10, Sand Creek Tributary, West Raven Creek, Vermillion River, and Vermillion River Tributary were studied by approximate methods. Also, Pike Lake and numerous small lakes, scattered throughout the county, were studied by approximate methods.

**Table 1 - Streams Studied by Detailed Methods**

| Stream | Limits of Detailed Study |
|---|---|
| Credit River | From its confluence with the Minnesota River to approximately 22.9 miles upstream |
| Minnesota River | From approximately 12.9 miles above its mouth to approximately 67.3 miles above its mouth |
| Porter Creek | From its confluence with Sand Creek to approximately 24.7 miles upstream |
| Raven Creek | From its confluence with Sand Creek to approximately 10.2 miles upstream |
| Robert Creek | From its confluence with the Minnesota River to approximately 10.2 miles upstream |
| Sand Creek | From its confluence with the Minnesota River to approximately 32.6 miles upstream |
| Sand Creek Wetland | From its confluence with Sand Creek to approximately 2.2 miles upstream |

This countywide FIS also incorporates the determination letters issued by FEMA resulting in map changes (Letter of Map Revision [LOMR], Special Response [SR], Letter of map Amendment [LOMA]), as shown in Table 2, "Letters of Map Change."

**Table 2 - Letters of Map Change**

| Type of LOMC | Case Number | Effective Date | Project Identifier |
|---|---|---|---|
| LOMR | 97-05-229P | October 23, 1997 | Minnesota River – Valleyfair Amusement Park |

## 2.2 Community Description

Scott County is located in east-central Minnesota about 20 miles southwest of the City of Minneapolis and 40 miles northeast of the City of Mankato. The Minnesota River, the major flooding source in the county, flows in a general northeasterly direction and forms

part of the northern border of the county. Scott County is also bounded on the north by the Cities of Eden Prairie and Bloomington, on the west by the Cities of Chanhassen, Chaska, and Carver, and the unincorporated areas of Carver and Sibley Counties, on the south by the unincorporated areas of Le Sueur and Rice Counties, and on the east by the Cities of Burnsville and Lakeville and the unincorporated areas of Dakota County. The population of Scott County increased from 32,423 in 1970 to 43,784 in 1980 (Reference 1).

Scott County supports a variety of industries, with agriculture being the largest. Out of the county's approximate 360 square miles, 68 percent is devoted to agriculture (Reference 2).

The population of Scott County and its incorporated communities in 2010 included in this Flood Insurance Study are listed below (Reference 3):

| Community | Population |
|---|---|
| Belle Plaine, City of | 6,661 |
| Elko New Market, City of | 4,110 |
| Jordan, City of | 5,470 |
| Prior Lake, City of | 22,796 |
| Savage, City of | 26,911 |
| Scott County | 129,928 |
| Shakopee, City of | 37,076 |
| Shakopee Mdewakanton Sioux Community of Minnesota | 33,236 |

Scott County has a humid continental climate characterized by cold winters and warm summers. Average monthly temperatures range from 12 degrees Fahrenheit (°F) in January to 72 °F in July, and the mean annual temperature is 45 °F. The annual precipitation averages 28 inches (Reference 4).

Most of the county consists of gently rolling hills with maximum elevations of 1,100 feet North American Vertical Datum of 1988 (NAVD88). However, the Minnesota River Valley along the northwestern edge of the county produces a 1- to 3-mile wide zone of swampy bottomlands, and drainage in the county is generally northwestward to the Minnesota River (Reference 5). The soils are generally loamy to sandy with upland areas moderately eroded. The underlying geology is glacial till in the hillsides and the area adjacent to the Minnesota River consists of alluvium washed down from the hillsides. Beds of shale, limestone, and sandstone underlie this glacial till (Reference 6). The bottomlands have rapid runoff, and the upland areas have medium surface runoff. Land use in the area is primarily agricultural with some forests and grasslands. Commercial and industrial areas can be found in the larger communities.

A 9-foot navigation channel on the Minnesota River is maintained by the USACE to River Mile 15. Private interests maintain the channel an additional 7 miles to River Mile 22 in Shakopee in spite of continual problems with siltation. Continuing economic development

within the study area is expected and pressures leading to intensified flood plain use will undoubtedly accompany such development.

Because the Minnesota River is navigable to Savage, there are several large industries based in the floodplain. They are the Cargill Inc. complex, Port Richards, and the Bunge grain elevator.

The Credit River has primarily residential development between State Highway 13 and the Minneapolis Northfield and Southern Railway. Otherwise there is little development along the Credit River.

Sand Creek flows in a northerly direction through the County and the City of Jordan. It drains intensely farmed agricultural land and wooded valley to the south. The drainage area upstream from U.S. Highway 169 in Jordan is 238 square miles. Jordan developed on a gently sloping plain adjacent to the creek with several residences and light industries located along the low streambanks within the floodplain. Areas subject to flooding in Jordan include residential and commercial buildings adjacent to the creek, the city park, part of a mobile home park, and undeveloped lowlands.

Prior Lake is located in the central portion of the City of Prior Lake. Spring Lake is located in the southwestern portion and outlets into Prior Lake. Pike Lake is in the north-central portion of the city. Lakeshore development around the central business district in Prior Lake is primarily single-family residential. Development in the outlying areas of the city is primarily agricultural. The floodplain is developed residentially to a limited extent.

## 2.3 Principal Flood Problems

Low-lying areas adjacent to the Minnesota River are subject to periodic flooding. The most severe flooding occurs in early spring as a result of heavy rain and snowmelt. The flood of record occurred in April 1965 and is considered approximately equal to the 1-percent annual chance flood data developed for this FIS.

The Minnesota River at the gaging station near Jordan has an average discharge of 3,380 cubic feet per second (cfs). The maximum flowrate of 117,000 cfs occurred on April 11, 1965 (Reference 7). Other severe floods were recorded at the Jordan gaging station in 1951, 1952, 1965, and 1969. The 1951 and 1952 floods were 64,100 cfs (5-percent annual chance) and 60,600 cfs (6.25-percent annual chance), respectively. Discharge for the 1969 flood was 84,600 cfs (2.5-percent annual chance). Minor floods estimated to be less than 10-percent annual chance events were recorded in 1943, 1949, 1957, 1960, 1962, and 1979.

Areas adjacent to Sand Creek are subject to frequent flooding which usually occurs in the spring, when snowmelt combines with spring rain. Heavy spring and summer thunderstorms have also caused flooding in the City of Jordan, as in May 1960, when a peak stage of 749.50 feet was recorded on the downstream side of the U.S. Highway 169 bridge. The discharge for that flood was determined as 8/650 cfs from discharge

measurements made near the peak. The recurrence interval for that flow is slightly more than the 1-percent annual chance flood event.

Because the losses to evaporation and ground water are minor compared with the losses on lakes with natural or artificial surface outlets, Prior Lake has a wide range of water-surface fluctuations. High flood levels occur during extended periods of above average runoff, and low lake levels occur during extended periods of below normal runoff. The highest recorded lake level elevations were 907.6 feet in 1906, 905.7 feet in 1983, 904.8 feet in 1945, and 903.7 feet in 1969. The lowest recorded elevations were 883.7 feet for Lower Prior Lake and 889.4 feet for Upper Prior Lake, measured in the 1930s.

Land use in the watershed tributary to Prior Lake has changed appreciably over the years and has, therefore, heavily influenced the long-term watershed yield. The loss of upland march areas and other small depressions due to the increase in impervious surfaces has decreased evaporation losses and increased runoff. The sealing of Candy Cove in the 1950s reduced seepage losses from the lake. These changes tend to increase flood stages.

Spring Lake has not experienced flooding problems because the lake has an adequate surface outlet to control flood levels.

## 2.4 Flood Protection Measures

The City of Prior Lake has constructed an outlet structure near Martinson Island, at the western edge of Prior Lake. The structure was designed to allow excess water to drain from Prior Lake during periods of high lake levels to minimize the effects on structures around Prior Lake (Reference 8). The structure reduces the peak Prior Lake 1-percent annual chance flood elevations. However, channel capacity downstream of the control structure and legal constraints with the adjoining communities limit the discharge the city can pass through the control structure.

The City of Prior Lake has also constructed an outlet for Spring Lake. Although not a flood control structure, it provides adequate outlet during high-water periods, and thereby reduces the possibility of flooding on Spring Lake.

In the City of Savage, four large areas on the Minnesota River floodplain have earthfill dikes which provide a limited amount of protection to enclosed properties. These are Cargill, Inc., the Bunge Corporation, and the Continental Grain Company, and the barge facilities of Richards Oil Company.

In the City of Shakopee, diking around the Peavey grain terminal and one other business provides a limited amount of protection to those properties.

Black & Veatch on behalf of the Metropolitan Council of Environmental Services formed the Blue Lake Levee System that provides 1-percent-annual-chance flood protection from overflow from the Minnesota River. The levee system is designed to protect the Blue Lake Waste Water Treatment Plant in the City of Shakopee.

Of greater benefit to areas along the Minnesota River are the State Floodplain Regulations (Reference 9) and their application with data of the Lower Minnesota River Flood Plain Study (Reference 10). It is known that unregulated encroachments in the floodplain caused backwater. The regulations incorporate a floodway throughout the downstream 36 miles of the Minnesota River valley and limits encroachment to that which would result in 0.5 foot of backwater on the profile for conditions at the time of the study. Without the application of those regulations and the data provided by the Lower Minnesota River Floodplain Study, unregulated encroachment would have continued and flood stages along the Minnesota River would have continually increased for any flow rate.

## 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 are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, and 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 annual 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 the peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

*Minnesota River*

For the Minnesota River, data for the flow-frequency analysis and corresponding river stages were derived from two gaging station records collected by the USGS (Reference 11). One station is located on the Mississippi River at St. Paul (gage no. 05331000), below the confluence of the Minnesota and Mississippi Rivers, for which 101 years of records were used. The other is on the Minnesota River near Jordan (gage no. 05330000), for which 36 years of record were available.

Owing to the prevailing flat slope of the Lower Minnesota River, it is necessary to consider the flood characteristics of the Mississippi and Minnesota Rivers at their confluence, as the combined flows at this point will influence flood-frequency profiles throughout the reach

extending through Scott County. Therefore, a flow-frequency analysis based on the record for the Mississippi River at St. Paul was used to derive the elevations of the 1-percent annual chance flood at the mouth of the Minnesota River. The flood-frequency analysis of the records for the Minnesota River near Jordan provided the flow rates of the Minnesota River for the various frequency floods.

Flood-frequency analyses for both gaging station records were made using the standard log-Pearson Type III method (Reference 12). In both cases, a log-normal distribution provided the best fit to the data. The peak flows associated with the 1-percent annual chance flood were then coordinated with the USACE, under an inter-agency agreement for Minnesota, which provides for a mutually acceptable flood-frequency estimate to be used for studies or projects under the jurisdiction of Federal or state agencies. Comparison of the estimates for the 1-percent annual chance flood revealed only minor discrepancies, which were reconciled by an administrative decision. The adopted compromise flow estimates for the 1-percent annual chance flood are 160,000 cfs for the Mississippi River at St. Paul and 115,000 cfs for the Minnesota River at Jordan. Frequency curves at both sites were then adjusted to fit the agreed upon flow estimates at the 1-percent annual chance intervals.

*Prior Lake/Spring Lake*

The elevation-frequencies for Prior Lake and Spring Lake were determined using the USACE HEC-1 rainfall-runoff model (Reference 13). Two hydrologic conditions were simulated to determine the most critical 1-percent annual flood elevations. One condition was the –percent annual chance flood, 10-day runoff of 7.1 inches which was based on the SCS Minnesota Hydrology Guide (Reference 14). The second condition was the 1-percent annual chance flood, 10-day rainfall of 9.1 inches which was based on precipitation presented in Bulletin 71 (Reference 15). The starting water-surface elevation for Prior Lake for the runoff model was 902.14 feet (NAVD), and for the rainfall model, 902.64 feet (NAVD). Both simulations resulted in approximately the same 1-percent annual chance flood elevation for Prior Lake, therefore, the HEC-1 rainfall simulation model was adopted for determinations of the other frequencies.

The SCS curve number method was used for infiltration loss rates. Curve numbers were based on a Geographic Information System (GIS) analysis of SCS hydrologic soil type and land use. Soil type was determined from the Scott County Soil Survey (Reference 6). Land use was based on the Metropolitan Council's analysis of 1990 aerial photos. The USACE computer program, GRASS, was used for the GIS analysis. (Reference 16).

The SCS dimensionless unit hydrograph was used to transform rainfall runoff. The Prior Lake elevation-storage relationship was based on 2-foot contour interval topographic maps. The simulations were made with a 30-minute computation interval for the 10-, 2-, and 1-percent annual chance flood events, and a 60-minute time interval for the 0.2-percent annual chance flood event. These simulations were checked with a 15-minute time interval for a concurrent period of 2,000 and found to be identical. Because of the long runoff duration, Prior Lake's peak elevations were determined when the evaporation rate on the lake equaled inflow. These elevations were then reduced by the amount of evaporation that had occurred during that period after the 10-day rain event.

The elevations for Spring Lake were determined based on the Prior Lake model. Spring Lake's elevations were not reduced for evaporation because of the short time it took the lake to reach its peak elevation.

Detailed hydrologic analyses for Blue Lake Wastewater Treatment Plant Levee Ponding Areas 1, 2, 3, 4, 5, and 6 were provided by AECOM as part of their levee accreditation submittal. Runoff volume calculations for the six drainage areas behind the levee were used to establish the Base Flood Elevations (BFEs) for the ponding areas. There is no mapped flooding associated with Ponding Area 1.

The stillwater elevations for the 10-, 2-, 1-, and 0.2-percent annual chance floods Ponding Areas, Prior Lake and Spring Lake and can be found in Table 3.

**Table 3 - Summary of Stillwater Elevations**

| Flooding Source and Location | Elevation (feet NAVD) 10-Percent Annual Chance | 2-Percent Annual Chance | 1-Percent Annual Chance | 0.2-Percent Annual Chance |
|---|---|---|---|---|
| Blue Lake Wastewater Treatment Plant Levee | | | | |
| Ponding Area 2 | * | * | 717.6 | * |
| Ponding Area 3 | * | * | 715.7 | * |
| Ponding Area 4 | * | * | 725.2 | * |
| Ponding Area 5 | * | * | 710.4 | * |
| Ponding Area 6 | * | * | 712.7 | * |
| Prior Lake | | | | |
| Entire shoreline | 906.4 | 908.4 | 909.0 | 910.9 |
| Spring Lake | | | | |
| Entire shoreline | 913.1 | 914.1 | 914.5 | 915.7 |

*Data not available

*Sand Creek (Downstream Portion), Sand Creek Wetland*
For Sand Creek (from the confluence with Minnesota River to approximately 450 feet upstream of Sawmill Road), and Sand Creek Wetland, the USACE's HEC-HMS computer program Version 4.0 was used to calculate flood discharges (Reference 39).

*Sand Creek (Upstream Portion)/Porter Creek/Raven Creek*
For the Sand Creek (from approximately 460 feet upstream of Sawmill Road to the Scott/Le Sueur County boundary), Porter Creek, and Raven Creek Watersheds, the USACE's HEC-HMS computer program Version 2.2.2 (Reference 17) was used to calculate flood discharges.

*Credit River/Robert Creek/Vermillion River*

For the Credit River, Robert Creek and Vermillion River Watersheds, the USACE's HEC-HMS computer program Version 3.0.0 (Reference 17) was used to calculate flood discharges.

For all the watersheds, the Clark unit hydrograph (UH) method was used in conjunction with the regional regression equation (Reference 18) to calculate the 10-, 2-, 1-, and 0.2-percent-annual-chance flood discharges for flooding sources in each watershed. Watershed and sub-basin delineation were based on 2-foot contour topographic data (References 19 and 20). Watershed and sub-basins were delineated and stream centerlines were established automatically using USACE's HEC-GeoHMS routine.

NRCS curve numbers were assigned for each pair of land use category and hydrologic soil group (References 19 and 20). Composite curve numbers were calculated for each sub-basin based on the area of each pair of land use category and hydrologic soil group. Time of concentration and storage coefficient were initially estimated using the regional regression equations, which estimates the two parameters based on watershed characteristics such as drainage area and impervious percentage (References 19 and 20) and calibrated based on observed flow data.

The storage of offline lakes is taken into account implicitly through Clark UH storage coefficient R. The Modified Puls routing method was used to route the hydrograph from upstream to downstream junctions. The hydraulic HEC-RAS model for Sand Creek and its tributaries was used to establish storage and outflow discharge between two channel cross sections.

Peak discharge-drainage area relationships for streams studied in detail are shown in Table 4.

**Table 4 - Summary of Discharges**

| Flooding Source and Location | Drainage Area (Square Miles) | Peak Discharges (cfs) 10-Percent Annual Chance | 2-Percent Annual Chance | 1-Percent Annual Chance | 0.2-Percent Annual Chance |
|---|---|---|---|---|---|
| Credit River | | | | | |
| At confluence with the Minnesota River | 43.782 | 1,160.3 | 1,592.5 | 1,776.7 | 2,233.3 |
| At Highway 42 | 41.399 | 1,124.7 | 1,542.1 | 1,720.3 | 2,145.4 |
| At Bridgewater Drive | 38.463 | 1,070.9 | 1,469.7 | 1,639.1 | 2,045.3 |
| At confluence of West Tributary | 35.591 | 1,003.0 | 1,405.6 | 1,570.9 | 1,956.3 |
| At outlet of Watershed No. 5 | 22.115 | 609.8 | 813.6 | 894.9 | 1,114.2 |
| At Highway 21 | 13.797 | 321.6 | 443.0 | 491.1 | 608.5 |
| At Route 68 | 9.923 | 226.8 | 314.5 | 350.9 | 438.2 |
| At County Highway 27 | 5.495 | 174.8 | 237.2 | 260.8 | 319.1 |
| At 217th Street | 2.849 | 48.0 | 65.8 | 73.2 | 91.1 |
| Minnesota River | | | | | |
| At Jordan (USGS gage) | 16,200 | 48,500 | 85,300 | 103,000 | 148,000 |
| At Belle Plaine | 16,010 | 48,100 | 90,300 | 114,000 | 179,000 |
| At Scott and Leseur Counties Boundary | 15,740 | 47,800 | 88,800 | 111,000 | 176,000 |
| Porter Creek | | | | | |
| At confluence with Sand Creek | 64.1 | 1,526 | 2,182 | 2,474 | 3,010 |
| At Redwing Avenue | 60.4 | 1,362 | 1,959 | 2,227 | 2,625 |
| At 260th Street East | 23.8 | 726 | 996 | 1,108 | 1,472 |
| At highway 86 | 13.2 | 374 | 512 | 569 | 904 |
| Raven Creek | | | | | |
| At confluence with Sand Creek | 66.7 | 2,060 | 2,863 | 3,192 | 4,023 |
| At confluence of West Raven Creek | 60.8 | 1,860 | 2,586 | 2,880 | 3,457 |
| At Highway 19 | 8.8 | 286 | 391 | 435 | 458 |
| Robert Creek | | | | | |
| At confluence with the Minnesota River | 11.987 | 418.5 | 648.9 | 775.9 | 1,004.7 |
| At County Highway 6 | 11.75 | 446.1 | 682.9 | 810.6 | 1,049.0 |
| At outlet of Watershed No. 18 | 10.987 | 427.4 | 636.0 | 749.2 | 973.8 |
| At Highway 169 | 10.189 | 378.4 | 566.0 | 680.2 | 888.5 |
| At confluence with West Branch | 9.891 | 360.6 | 554.9 | 669.1 | 879.3 |
| At confluence with South Branch | 5.347 | 183.6 | 242.3 | 275.3 | 327.2 |
| At Pony Road | 1.617 | 84.4 | 130.7 | 155.4 | 198.4 |
| At 270th Street | 0.835 | 61.0 | 98.8 | 119.1 | 154.3 |

**Table 4 – Summary of Discharges (Continued)**

| Flooding Source and Location | Drainage Area (Square Miles) | Peak Discharges (cfs) 10-Percent Annual Chance | 2-Percent Annual Chance | 1-Percent Annual Chance | 0.2-Percent Annual Chance |
|---|---|---|---|---|---|
| Sand Creek | | | | | |
| At confluence with the Minnesota River | 274.3 | 6,640 | 9,436 | 10,621 | 11,326 |
| At Jordan, near Highway 169 | 236.3 | 6,077 | 8,642 | 9,716 | 10,398 |
| At confluence of Porter Creek | 226.4 | 5,623 | 7,988 | 8,981 | 9,808 |
| At confluence of Raven Creek | 161.1 | 4,241 | 5,900 | 6,607 | 7,060 |
| At Highway 19 | 62.5 | 1,798 | 2,445 | 2,717 | 2,945 |
| Sand Creek Wetland | * | * | * | * | * |

* Data not available

## 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 Flood Insurance Rate Map (FIRM) represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data table 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 report in conjunction with the data shown on the FIRM.

*Minnesota River*

Cross-section data for the backwater analyses of the Minnesota River were obtained by aerial photogrammetric methods from aerial photographs taken in 1983 (Reference 21). The below-water sections were obtained by field measurement. All bridges were field surveyed to obtain elevation data and structural geometry.

River mile mark locations shown on the maps for the Minnesota River are from the USACE published Navigation Charts (Reference 22). These charts were developed several years ago and are still in use but mile mark locations continued through the channel may have changed. Currently, distances between river mile marks may be slightly different than one mile. Cross sections are located on the profile plot using the river mile scale. Since the profiles are quite flat, cross sections are shown only to the nearest tenth of the distance between river mile marks.

Water-surface elevations of floods of the selected recurrence intervals were computed using the USACE HEC-RAS Version 4.1 (Reference 38).

Roughness factors (Manning's "n") used in the hydraulic computations for the Minnesota River were by engineering judgment and based on an unpublished report on "n" values in the Minnesota River by Joanna Larson (1983). Manning's "n" values can be found in Table 5.

The starting water-surface elevation corresponding to the various flow frequencies at the mouth of the Minnesota River were furnished by the MDNR (Reference 26). These elevations were determined by their step-backwater analysis of flood frequency profiles for the Mississippi River, starting from the St. Paul gaging station and continuing up the Mississippi River to the mouth of the Minnesota River.

*Sand Creek (Downstream Portion), Sand Creek Wetland*

For Sand Creek (from the confluence with Minnesota River to approximately 450 feet upstream of Sawmill Road), and Sand Creek Wetland, water-surface elevations were computed using the HEC-RAS, Version 4.1, computer program (Reference 38).

*Credit River/Porter Creek/Raven Creek/Robert Creek/Sand Creek (Upstream Portion)*
Cross sections for Credit River, Porter Creek, Raven Creek, Robert Creek, and Sand Creek (from approximately 460 feet upstream of Sawmill Road to the Scott/Le Sueur County boundary) were obtained from field survey and 2-foot topographic maps compiled from Light Detection and Ranging (LiDAR) data. Below-water sections were obtained by field surveys. To obtain better definition of water-surface profile along the streams, additional cross sections were interpolated using the HEC-GeoRAS computer program Version 3.1.1 based on field surveyed cross sections and 2-foot topographic map (Reference 23). All bridges and culverts were surveyed to obtain elevation data and structural geometry.

Water-surface elevations of floods of the selected recurrence intervals were computed using the HEC-RAS step-backwater program (Reference 25).

Channel and overbank roughness factors (Manning's "n" values) used in the hydraulic computations were chosen by engineering judgment and were based on field observations of the stream and floodplain areas and land use data. Channel and overbank roughness coefficients (Manning's "n") can be found in Table 5.

A single HEC-RAS model was developed for Sand Creek watershed, with Porter Creek and Raven Creek as tributaries to Sand Creek. Starting water-surface elevations for the Credit River, Robert Creek, and Sand Creek were determined using normal depth (References 27 and 28).

*Prior Lake/Spring Lake*
A hydraulic analysis using the USACE HEC-2 step-backwater computer program was conducted on the stream flowing between Spring Lake and Prior Lake to determine the stage-discharge relationship at the Spring Lake outlet (Reference 24). Cross sections for the analysis were located at close intervals upstream and downstream of the outlet weir, bridges, and culverts to allow computations of significant backwater effects of these structures. Additional cross sections were located to reflect significant variations in the topography of the stream valley. Data for dry and underwater portions of the cross sections, and elevations of bridges, culverts, and other obstructions were obtained by field survey.

**Table 5 - Manning's "n" Values**

| Flooding Source | Channel | Overbanks |
|---|---|---|
| Credit River | 0.025 – 0.150 | 0.035 – 0.150 |
| Minnesota River | 0.032 – 0.054 | 0.045 – 0.132 |
| Porter Creek | 0.030 – 0.100 | 0.035 – 0.150 |
| Raven Creek | 0.035 – 0.100 | 0.040 – 0.150 |
| Robert Creek | 0.035 – 0.150 | 0.035 – 0.150 |
| Sand Creek | 0.025 – 0.100 | 0.035 – 0.150 |
| Sand Creek Wetland | 0.032 | 0.06 |

Approximate 1-percent annual chance flood elevations for Pike Lake were based on an estimate of the effect on the lake level of snowmelt runoff from the tributary watershed.

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.

Locations of selected cross sections used in the hydraulic analyses are shown on the flood profiles (Exhibit 1) and on the Flood Insurance Rate Map (Exhibit 2).

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1).

## 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 in use for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the finalization of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are being prepared using the NAVD88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Elevation Reference Marks (ERMs) shown on the FIRM represent those used during the preparation of this and previous FIS reports. Users should be aware that these ERM elevations may have changed since the publication of this FIS report. To obtain up-to-date elevation information on National Geodetic Survey (NGS) ERMs 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. Map users should seek verification of non-NGS ERM monument elevations when using these elevations for construction or floodplain management purposes. It is important to note that adjacent communities may be referenced to NGVD. This may result in differences in BFEs across the corporate limits between communities.

For this revision, a vertical datum conversion was completed for the entire county. The Profile Panel and FDT conversion from NGVD29 to NAVD88 was carried out in accordance to the procedure outlined in the FEMA document Map Modernization – Guidelines and Specifications for Flood Hazard Mapping Partners Appendix B: Guidance for Converting to the North American Vertical Datum of 1988. The datum conversion from NGVD 29 to NAVD 88 for Scott County was plus 0.14 foot.

For the recently studied reaches, Credit River, Porter Creek, Raven Creek, Robert Creek and Sand Creek a datum conversion was not necessary since the studies were completed in the NAVD88 datum.

For more information on NAVD88, see the FEMA publication entitled *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988* (FEMA, June 1992), or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address http://www.ngs.noaa.gov).

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 this data.

## 4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance flood elevations and delineations of the 1- and 0.2-percent-annual-chance floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles and Floodway Data Table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local map repository before making flood elevation and/or floodplain boundary determinations.

### 4.1 Flood 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 maps at scales of 1:6,000, and 1:24,000, with contour intervals of 2 and 10 feet (References 29 and 30).

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 and AE); 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

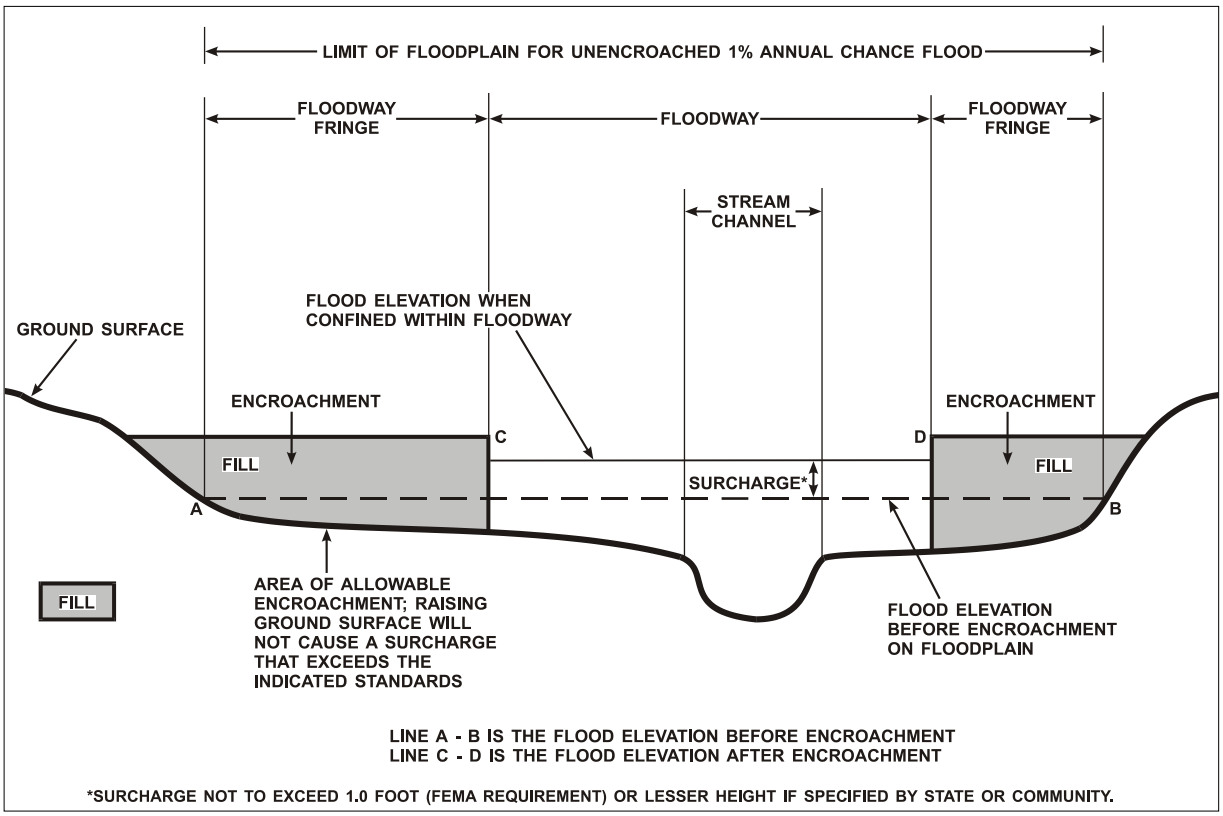
Encroachment on flood plains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development 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 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. In Minnesota, however, floodplain encroachment is limited by Minnesota Regulations to that which would cause a 0.5-foot increase in flood heights above pre-floodway conditions at any point (Reference 31). Floodways having no more than a 0.5-foot surcharge were delineated for this study. Under this concept, a community which exercises control on only one side of the Minnesota River, should generally be restricted to a maximum increase of 0.25 foot along that stream. The remaining 0.25 foot is reserved for the community on the opposite side of the river.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the floodplain. The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 6).

As shown on the Flood Insurance Rate Map (Exhibit 2), the floodway boundaries were computed at cross sections. Between cross sections, the boundaries were interpolated. In cases where the floodway and 1-percent-annual-chance flood plain boundaries are either close together or collinear, only the floodway boundary has been shown. Portions of the floodway for the Minnesota River lie outside of the county boundary.

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 water-surface elevation of the 1-percent annual chance flood by more than 1.0 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 | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| CREDIT RIVER | | | | | | | | |
| A | 3,074 | 166 | 272 | 6.3 | 719.1 | 713.3[2] | 713.3 | 0.0 |
| B | 3,218 | 1,155 | 1,920 | 0.9 | 719.1 | 717.6[2] | 718.3 | 0.7 |
| C | 3,325 | 1,125 | 1,701 | 1.0 | 719.5 | 719.5 | 719.7 | 0.2 |
| D | 3,548 | 1,047 | 1,604 | 1.1 | 721.2 | 721.2 | 721.6 | 0.4 |
| E | 3,796 | 705 | 523 | 3.3 | 722.6 | 722.6 | 722.6 | 0.0 |
| F | 4,101 | 288 | 602 | 2.9 | 725.8 | 725.8 | 725.9 | 0.1 |
| G | 4,339 | 300 | 612 | 2.8 | 727.6 | 727.6 | 727.9 | 0.3 |
| H | 4,391 | 285 | 668 | 2.6 | 728.4 | 728.4 | 728.6 | 0.2 |
| I | 4,867 | 50 | 167 | 10.3 | 730.5 | 730.5 | 730.5 | 0.0 |
| J | 6,749 | 337 | 950 | 1.8 | 741.3 | 741.3 | 741.4 | 0.1 |
| K | 6,996 | 114 | 346 | 5.0 | 741.5 | 741.5 | 741.6 | 0.1 |
| L | 11,779 | 208 | 346 | 5.0 | 773.7 | 773.7 | 773.7 | 0.0 |
| M | 12,114 | 213 | 312 | 5.5 | 777.1 | 777.1 | 777.3 | 0.2 |
| N | 12,391 | 230 | 764 | 2.3 | 779.7 | 779.7 | 780.2 | 0.5 |
| O | 14,504 | 110 | 250 | 6.9 | 788.5 | 788.5 | 788.5 | 0.0 |
| P | 18,761 | 145 | 373 | 4.6 | 808.6 | 808.6 | 809.1 | 0.5 |
| Q | 22,187 | 100 | 338 | 5.1 | 823.5 | 823.5 | 824.0 | 0.5 |
| R | 22,663 | 344 | 4,411 | 0.4 | 837.5 | 837.5 | 837.5 | 0.0 |
| S | 27,769 | 79 | 365 | 4.5 | 843.6 | 843.6 | 843.7 | 0.1 |
| T | 32,476 | 130 | 442 | 3.7 | 850.0 | 850.0 | 850.4 | 0.4 |
| U | 35,747 | 105 | 421 | 3.9 | 861.1 | 861.1 | 861.1 | 0.0 |
| V | 36,114 | 132 | 628 | 2.6 | 863.2 | 863.2 | 863.3 | 0.1 |

[1]Feet above confluence with the Minnesota River

[2]Elevation computed without consideration of backwater effects from the Minnesota River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

# CREDIT RIVER

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| CREDIT RIVER (CONTINUED) | | | | | | | | |
| W | 40,461 | 192 | 761 | 2.2 | 871.4 | 871.4 | 871.8 | 0.4 |
| X | 40,813 | 267 | 1,199 | 1.4 | 873.2 | 873.2 | 873.4 | 0.2 |
| Y | 43,955 | 618 | 2,650 | 0.6 | 873.6 | 873.6 | 874.0 | 0.4 |
| Z | 47,633 | 700 | 2,862 | 0.6 | 874.1 | 874.1 | 874.5 | 0.4 |
| AA | 51,666 | 617 | 2,650 | 0.6 | 877.0 | 877.0 | 877.2 | 0.2 |
| AB | 54,890 | 96 | 375 | 4.2 | 879.6 | 879.6 | 880.0 | 0.4 |
| AC | 55,215 | 190 | 1,921 | 0.8 | 886.8 | 886.8 | 887.1 | 0.3 |
| AD | 57,667 | 500 | 3,444 | 0.3 | 886.8 | 886.8 | 887.2 | 0.4 |
| AE | 60,553 | 250 | 1,240 | 0.7 | 886.9 | 886.9 | 887.2 | 0.3 |
| AF | 60,942 | 250 | 1,008 | 0.9 | 887.2 | 887.2 | 887.6 | 0.4 |
| AG | 61,911 | 182 | 993 | 0.9 | 888.5 | 888.5 | 888.9 | 0.4 |
| AH | 65,148 | 430 | 276 | 3.3 | 890.2 | 890.2 | 890.2 | 0.0 |
| AI | 67,969 | 52 | 121 | 7.4 | 904.4 | 904.4 | 904.4 | 0.0 |
| AJ | 68,251 | 69 | 468 | 1.9 | 912.5 | 912.5 | 912.5 | 0.0 |
| AK | 72,388 | 40 | 253 | 3.6 | 928.8 | 928.8 | 928.8 | 0.0 |
| AL | 74,693 | 44 | 326 | 2.8 | 930.1 | 930.1 | 930.2 | 0.1 |
| AM | 74,996 | 768 | 2,876 | 0.2 | 930.5 | 930.5 | 930.6 | 0.1 |
| AN | 77,682 | 83 | 392 | 1.3 | 930.9 | 930.9 | 931.1 | 0.2 |
| AO | 80,564 | 49 | 242 | 2.1 | 931.2 | 931.2 | 931.3 | 0.1 |
| AP | 80,979 | 223 | 864 | 0.6 | 931.6 | 931.6 | 931.8 | 0.2 |
| AQ | 82,681 | 123 | 495 | 0.7 | 933.0 | 933.0 | 933.0 | 0.0 |

[1]Feet above confluence with the Minnesota River

TABLE 6

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

# SCOTT COUNTY, MN
## AND INCORPORATED AREAS

# FLOODWAY DATA

# CREDIT RIVER

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| CREDIT RIVER (CONTINUED) | | | | | | | | |
| AR | 85,040 | 109 | 283 | 1.3 | 933.4 | 933.4 | 933.7 | 0.3 |
| AS | 87,369 | 25 | 46 | 7.8 | 934.6 | 934.6 | 934.6 | 0.0 |
| AT | 87,632 | 24 | 129 | 2.8 | 937.7 | 937.7 | 937.8 | 0.1 |
| AU | 90,806 | 1,058 | 3,733 | 0.1 | 938.1 | 938.1 | 938.2 | 0.1 |
| AV | 93,552 | 238 | 574 | 0.5 | 938.1 | 938.1 | 938.2 | 0.1 |
| AW | 95,102 | 28 | 40 | 6.7 | 939.5 | 939.5 | 939.5 | 0.0 |
| AX | 95,281 | 21 | 63 | 4.2 | 941.1 | 941.1 | 941.1 | 0.0 |
| AY | 95,569 | 18 | 60 | 4.4 | 941.8 | 941.8 | 941.9 | 0.1 |
| AZ | 95,814 | 35 | 91 | 0.9 | 942.2 | 942.2 | 942.5 | 0.3 |
| BA | 96,080 | 19 | 82 | 0.9 | 942.9 | 942.9 | 943.1 | 0.2 |
| BB | 97,092 | 107 | 211 | 0.4 | 943.5 | 943.5 | 943.8 | 0.3 |
| BC | 99,137 | 14 | 27 | 2.9 | 951.4 | 951.4 | 951.4 | 0.0 |
| BD | 101,408 | 13 | 15 | 5.1 | 966.5 | 966.5 | 966.5 | 0.0 |
| BE | 101,725 | 25 | 39 | 2.0 | 968.3 | 968.3 | 968.3 | 0.0 |
| BF | 104,224 | 23 | 35 | 2.2 | 972.9 | 972.9 | 972.9 | 0.0 |
| BG | 106,731 | 12 | 14 | 5.6 | 989.4 | 989.4 | 989.4 | 0.0 |
| BH | 107,052 | 17 | 30 | 2.6 | 994.1 | 994.1 | 994.1 | 0.0 |
| BI | 110,186 | 6 | 3 | 1.5 | 1,008.4 | 1,008.4 | 1,008.4 | 0.0 |
| BJ | 111,905 | 3 | 1 | 0.9 | 1,015.0 | 1,015.0 | 1,015.0 | 0.0 |
| BK | 112,143 | 3 | 1 | 1.0 | 1,016.6 | 1,016.6 | 1,016.6 | 0.0 |
| BL | 113,904 | 8 | 1 | 0.6 | 1,021.6 | 1,021.6 | 1,021.6 | 0.0 |

[1]Feet above confluence with the Minnesota River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

# SCOTT COUNTY, MN
## AND INCORPORATED AREAS

# FLOODWAY DATA

# CREDIT RIVER

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| CREDIT RIVER (CONTINUED) | | | | | | | | |
| BM | 114,171 | 7 | 3 | 0.3 | 1,022.0 | 1,022.0 | 1,022.0 | 0.0 |
| BN | 117,131 | 7 | 2 | 0.5 | 1,025.3 | 1,025.3 | 1,025.3 | 0.0 |
| BO | 120,921 | 17 | 2 | 0.4 | 1,029.2 | 1,029.2 | 1,029.2 | 0.0 |

[1]Feet above confluence with the Minnesota River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

# CREDIT RIVER

| LOCATION | | FLOODWAY | | | 1% ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET)[2] | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| MINNESOTA RIVER | | | | | | | | |
| A | 59,141 | 2,356/292 | 49,071 | 2.1 | 717.2 | 717.2 | 717.4 | 0.2 |
| B | 60,083 | 2,897/330 | 55,296 | 1.9 | 717.3 | 717.3 | 717.5 | 0.2 |
| C | 61,207 | 3,557/759 | 64,459 | 1.6 | 717.4 | 717.4 | 717.6 | 0.2 |
| D | 62,855 | 3,412/1,427 | 52,831 | 2.0 | 717.5 | 717.5 | 717.7 | 0.2 |
| E | 64,663 | 2,575/2,127 | 50,987 | 2.0 | 717.7 | 717.7 | 717.9 | 0.2 |
| F | 65,564 | 2,760/1,928 | 53,852 | 1.9 | 717.7 | 717.7 | 718.0 | 0.3 |
| G | 65,741 | 2,778/1,628 | 53,488 | 1.9 | 718.5 | 718.5 | 718.7 | 0.2 |
| H | 66,234 | 2,328/977 | 42,732 | 2.4 | 718.5 | 718.5 | 718.7 | 0.2 |
| I | 67,806 | 2,541/440 | 52,031 | 2.0 | 718.9 | 718.9 | 718.9 | 0.0 |
| J | 68,935 | 2,507/1,111 | 47,619 | 2.2 | 718.9 | 718.9 | 719.0 | 0.1 |
| K | 70,145 | 2,543/2,086 | 48,945 | 2.1 | 719.1 | 719.1 | 719.2 | 0.1 |
| L | 72,250 | 4,075/2,356 | 84,237 | 1.2 | 719.2 | 719.2 | 719.5 | 0.3 |
| M | 74,566 | 4,484/1,251 | 83,618 | 1.2 | 719.3 | 719.3 | 719.6 | 0.3 |
| N | 77,273 | 4,923/3,226 | 101,213 | 1.0 | 719.4 | 719.4 | 719.7 | 0.3 |
| O | 80,179 | 5,037/4,968 | 118,129 | 0.9 | 719.5 | 719.5 | 719.8 | 0.3 |
| P | 81,369 | 5,392/4,188 | 116,338 | 0.9 | 719.5 | 719.5 | 719.8 | 0.3 |
| Q | 82,772 | 5,309/3,237 | 93,317 | 1.1 | 719.5 | 719.5 | 719.8 | 0.3 |
| R | 84,368 | 5,892/4,275 | 124,251 | 0.8 | 719.6 | 719.6 | 719.9 | 0.3 |
| S | 86,037 | 5,671/4,772 | 119,776 | 0.9 | 719.6 | 719.6 | 719.9 | 0.3 |
| T | 88,628 | 5,314/4,807 | 111,505 | 0.9 | 719.7 | 719.7 | 720.0 | 0.3 |
| U | 91,838 | 4,130/3,782 | 76,961 | 1.3 | 719.7 | 719.7 | 720.0 | 0.3 |

[1]Feet above Mississippi River

[2]Total width/width within Scott County

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## MINNESOTA RIVER

| LOCATION | | FLOODWAY | | | 1% ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET)[2] | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| CONTINUED | | | | | | | | |
| V | 93,642 | 4,494/4,340 | 102,609 | 1.0 | 719.9 | 719.9 | 720.2 | 0.3 |
| W | 95,687 | 5,366/5,171 | 107,088 | 1.0 | 719.9 | 719.9 | 720.2 | 0.3 |
| X | 99,847 | 5,767/1,835 | 98,891 | 1.0 | 720.0 | 720.0 | 720.3 | 0.3 |
| Y | 102,118 | 5,724/435 | 122,946 | 0.8 | 720.1 | 720.1 | 720.4 | 0.3 |
| Z | 105,500 | 5,541/1,189 | 118,446 | 0.9 | 720.2 | 720.2 | 720.4 | 0.2 |
| AA | 109,241 | 5,125/360 | 103,505 | 1.0 | 720.2 | 720.2 | 720.5 | 0.3 |
| AB | 112,218 | 5,062/682 | 87,459 | 1.2 | 720.3 | 720.3 | 720.6 | 0.3 |
| AC | 116,413 | 5,609/2,557 | 102,644 | 1.0 | 720.5 | 720.5 | 720.8 | 0.3 |
| AD | 119,954 | 6,190/976 | 116,119 | 0.9 | 720.6 | 720.6 | 720.9 | 0.3 |
| AE | 122,290 | 5,798/943 | 125,336 | 0.8 | 720.7 | 720.7 | 720.9 | 0.2 |
| AF | 124,702 | 5,634/2,010 | 101,113 | 1.0 | 720.7 | 720.7 | 721.0 | 0.3 |
| AG | 125,489 | 5,385/2,152 | 95,834 | 1.1 | 720.7 | 720.7 | 721.0 | 0.3 |
| AH | 125,724 | 5,406/2,303 | 99,250 | 1.0 | 720.8 | 720.8 | 721.1 | 0.3 |
| AI | 128,678 | 4,564/2,498 | 73,360 | 1.4 | 720.9 | 720.9 | 721.1 | 0.2 |
| AJ | 130,356 | 5,323/299 | 84,327 | 1.2 | 721.1 | 721.1 | 721.3 | 0.2 |
| AK | 134,483 | 5,355/2,601 | 84,927 | 1.2 | 721.4 | 721.4 | 721.6 | 0.2 |
| AL | 136,493 | 5,892/2,981 | 105,333 | 1.0 | 721.5 | 721.5 | 721.7 | 0.2 |
| AM | 138,965 | 5,651/4,067 | 100,579 | 1.0 | 721.6 | 721.6 | 721.8 | 0.2 |
| AN | 144,435 | 4,066/1,602 | 71,744 | 1.4 | 721.8 | 721.8 | 722.0 | 0.2 |
| AO | 148,712 | 3,742/3,328 | 71,562 | 1.4 | 722.4 | 722.4 | 722.6 | 0.2 |
| AP | 150,323 | 4,388/4,306 | 76,502 | 1.4 | 722.7 | 722.7 | 722.9 | 0.2 |

[1]Feet above Mississippi River

[2]Total width/width within Scott County

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## MINNESOTA RIVER

| LOCATION | | FLOODWAY | | | 1% ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET)[2] | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| CONTINUED | | | | | | | | |
| AQ | 157,662 | 6,478/2,564 | 124,204 | 0.8 | 723.0 | 723.0 | 723.2 | 0.2 |
| AR | 160,737 | 6,809/5,034 | 128,704 | 0.8 | 723.0 | 723.0 | 723.2 | 0.2 |
| AS | 162,466 | 6,593/6,149 | 95,760 | 1.1 | 723.1 | 723.1 | 723.3 | 0.2 |
| AT | 167,912 | 6,352/1,010 | 106,971 | 1.0 | 723.4 | 723.4 | 723.5 | 0.1 |
| AU | 168,754 | 5,583/313 | 81,899 | 1.3 | 723.4 | 723.4 | 723.6 | 0.2 |
| AV | 175,178 | 5,469/1,869 | 88,055 | 1.2 | 723.6 | 723.6 | 723.8 | 0.2 |
| AW | 178,305 | 4,605/3,001 | 89,862 | 1.2 | 723.8 | 723.8 | 723.9 | 0.1 |
| AX | 181,595 | 6,967/1,661 | 116,037 | 0.9 | 723.9 | 723.9 | 724.1 | 0.2 |
| AY | 184,070 | 8,466/6,031 | 147,786 | 0.7 | 724.0 | 724.0 | 724.1 | 0.1 |
| AZ | 187,290 | 6,443/5,056 | 90,162 | 1.1 | 724.1 | 724.1 | 724.2 | 0.1 |
| BA | 189,700 | 8,259/7,832 | 118,164 | 0.9 | 724.2 | 724.2 | 724.3 | 0.1 |
| BB | 191,135 | 7,219/5,480 | 105,746 | 1.0 | 724.2 | 724.2 | 724.4 | 0.2 |
| BC | 194,735 | 7,934/4,404 | 114,324 | 0.9 | 724.3 | 724.3 | 724.5 | 0.2 |
| BD | 196,835 | 5,817/2,741 | 81,272 | 1.3 | 724.4 | 724.4 | 724.6 | 0.2 |
| BE | 199,710 | 7,214/3,452 | 106,592 | 1.0 | 724.5 | 724.5 | 724.7 | 0.2 |
| BF | 202,435 | 5,461/785 | 77,870 | 1.3 | 724.6 | 724.6 | 724.8 | 0.2 |
| BG | 204,500 | 4,562/1,084 | 63,031 | 1.6 | 725.3 | 725.3 | 725.4 | 0.1 |
| BH | 207,360 | 3,693/298 | 52,781 | 2.0 | 725.6 | 725.6 | 725.7 | 0.1 |
| BI | 212,090 | 3,544/3,176 | 49,810 | 2.1 | 726.2 | 726.2 | 726.3 | 0.1 |
| BJ | 214,620 | 3,600/3,397 | 50,361 | 2.1 | 726.4 | 726.4 | 726.5 | 0.1 |
| BK | 216,620 | 4,533/3,109 | 65,747 | 1.6 | 726.6 | 726.6 | 726.8 | 0.2 |

[1]Feet above Mississippi River

[2]Total width/width within Scott County

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## MINNESOTA RIVER

| LOCATION | | FLOODWAY | | | 1% ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET)[2] | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| CONTINUED | | | | | | | | |
| BL | 219,445 | 3,422/1,823 | 48,333 | 2.1 | 726.8 | 726.8 | 726.9 | 0.1 |
| BM | 222,395 | 3,382/973 | 47,965 | 2.2 | 727.1 | 727.1 | 727.2 | 0.1 |
| BN | 224,705 | 3,495/937 | 46,907 | 2.2 | 727.3 | 727.3 | 727.4 | 0.1 |
| BO | 227,325 | 3,461/1,614 | 52,463 | 2.0 | 727.7 | 727.7 | 727.8 | 0.1 |
| BP | 229,410 | 3,349/2,766 | 51,304 | 2.0 | 727.9 | 727.9 | 728.0 | 0.1 |
| BQ | 231,585 | 3,559/3,303 | 56,346 | 1.8 | 728.3 | 728.3 | 728.4 | 0.1 |
| BR | 236,305 | 3,864/792 | 58,129 | 1.7 | 728.5 | 728.5 | 728.5 | 0.0 |
| BS | 238,370 | 3,770/1,701 | 55,401 | 1.8 | 728.6 | 728.6 | 728.6 | 0.0 |
| BT | 240,860 | 4,122/2,439 | 56,218 | 1.8 | 728.7 | 728.7 | 728.8 | 0.1 |
| BU | 243,420 | 5,050/3,072 | 69,472 | 1.5 | 728.9 | 728.9 | 728.9 | 0.0 |
| BV | 246,075 | 4,818/3,493 | 66,782 | 1.5 | 729.0 | 729.0 | 729.1 | 0.1 |
| BW | 248,635 | 4,350/3,209 | 56,859 | 1.8 | 729.2 | 729.2 | 729.3 | 0.1 |
| BX | 255,145 | 2,303/1,193 | 32,839 | 3.1 | 729.5 | 729.5 | 729.6 | 0.1 |
| BY | 256,265 | 745/722 | 15,608 | 6.5 | 729.4 | 729.4 | 729.5 | 0.1 |
| BZ | 257,280 | 785/592 | 17,159 | 5.9 | 730.4 | 730.4 | 730.5 | 0.1 |
| CA | 258,305 | 3,708/806 | 57,823 | 1.8 | 731.3 | 731.3 | 731.4 | 0.1 |
| CB | 263,225 | 4,910/3,097 | 76,742 | 1.3 | 731.4 | 731.4 | 731.5 | 0.1 |
| CC | 265,205 | 4,643/1,627 | 72,263 | 1.4 | 731.5 | 731.5 | 731.6 | 0.1 |
| CD | 267,205 | 4,850/1,468 | 63,850 | 1.6 | 731.6 | 731.6 | 731.6 | 0.1 |
| CE | 270,585 | 3,280/2,054 | 47,615 | 2.1 | 731.7 | 731.7 | 731.8 | 0.1 |
| CF | 272,245 | 2,798/2,380 | 45,261 | 2.2 | 731.9 | 731.9 | 732.0 | 0.1 |

[1]Feet above Mississippi River

[2]Total width/width within Scott County

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## MINNESOTA RIVER

| LOCATION | | FLOODWAY | | | 1% ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION (FEET NAVD88) | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET)[2] | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| CONTINUED | | | | | | | | |
| CG | 274,485 | 2,400/1,568 | 38,504 | 2.6 | 732.1 | 732.1 | 732.3 | 0.2 |
| CH | 278,505 | 4,148/1,617 | 58,798 | 1.7 | 732.5 | 732.5 | 732.9 | 0.4 |
| CI | 280,265 | 4,047/849 | 60,814 | 1.7 | 732.7 | 732.7 | 733.1 | 0.4 |
| CJ | 282,345 | 3,859/3,818 | 51,985 | 1.9 | 732.9 | 732.9 | 733.2 | 0.3 |
| CK | 285,005 | 3,843/3,355 | 58,898 | 1.7 | 733.2 | 733.2 | 733.5 | 0.3 |
| CL | 289,185 | 3,610/2,146 | 53,396 | 1.9 | 733.5 | 733.5 | 733.8 | 0.3 |
| CM | 292,865 | 3,982/1,103 | 59,554 | 1.7 | 733.8 | 733.8 | 734.1 | 0.3 |
| CN | 294,795 | 3,050/930 | 50,578 | 1.9 | 734.1 | 734.1 | 734.4 | 0.3 |
| CO | 296,115 | 4,000/336 | 56,634 | 1.7 | 734.3 | 734.3 | 734.6 | 0.3 |
| CP | 299,235 | 4,100/2,662 | 58,773 | 1.7 | 734.7 | 734.7 | 735.0 | 0.3 |
| CQ | 302,935 | 4,100/555 | 53,301 | 1.8 | 735.0 | 735.0 | 735.2 | 0.2 |
| CR | 306,315 | 3,713/943 | 43,685 | 2.2 | 735.3 | 735.3 | 735.6 | 0.3 |
| CS | 310,135 | 3,090/1,718 | 37,667 | 2.6 | 736.2 | 736.2 | 736.4 | 0.2 |
| CT | 314,055 | 3,012/2,305 | 39,629 | 2.5 | 737.1 | 737.1 | 737.3 | 0.2 |
| CU | 316,115 | 4,325/967 | 56,179 | 1.7 | 737.6 | 737.6 | 737.7 | 0.1 |
| CV | 325,215 | 7,000/941 | 81,434 | 1.2 | 738.1 | 738.1 | 738.3 | 0.2 |
| CW | 327,435 | 8,374/3,251 | 93,912 | 1.0 | 738.3 | 738.3 | 738.4 | 0.1 |
| CX | 330,815 | 8,541/1,095 | 109,566 | 0.9 | 738.5 | 738.5 | 738.6 | 0.1 |
| CY | 334,695 | 8,741/2,759 | 113,844 | 0.9 | 738.6 | 738.6 | 738.7 | 0.1 |
| CZ | 339,655 | 7,400/859 | 93,418 | 1.1 | 738.7 | 738.7 | 738.8 | 0.1 |

[1]Feet above Mississippi River

[2]Total width/width within Scott County

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## MINNESOTA RIVER

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| PORTER CREEK | | | | | | | | |
| A | 189 | 849 | 4,419 | 0.5 | 853.2 | 853.2 | 853.4 | 0.2 |
| B | 9,825 | 334 | 911 | 2.4 | 875.6 | 875.6 | 875.7 | 0.1 |
| C | 10,080 | 184 | 980 | 2.3 | 878.0 | 878.0 | 878.1 | 0.1 |
| D | 16,977 | 53 | 307 | 7.3 | 891.3 | 891.3 | 891.5 | 0.2 |
| E | 21,126 | 220 | 867 | 2.6 | 900.5 | 900.5 | 900.7 | 0.2 |
| F | 21,364 | 259 | 1,380 | 1.6 | 905.4 | 905.4 | 905.4 | 0.0 |
| G | 26,494 | 159 | 829 | 2.7 | 909.4 | 909.4 | 909.9 | 0.5 |
| H | 30,972 | 438 | 2,144 | 1.0 | 912.4 | 912.4 | 912.8 | 0.4 |
| I | 31,271 | 453 | 2,607 | 0.8 | 915.3 | 915.3 | 915.6 | 0.3 |
| J | 39,113 | 310 | 1,914 | 1.1 | 918.9 | 918.9 | 919.3 | 0.4 |
| K | 44,042 | 245 | 1,204 | 1.8 | 920.6 | 920.6 | 921.1 | 0.5 |
| L | 44,267 | 309 | 2,231 | 1.0 | 924.0 | 924.0 | 924.4 | 0.4 |
| M | 48,533 | 477 | 1,439 | 1.5 | 924.7 | 924.7 | 925.0 | 0.3 |
| N | 48,810 | 439 | 2,529 | 0.9 | 927.7 | 927.7 | 928.0 | 0.3 |
| O | 52,774 | 593 | 1,722 | 1.3 | 928.4 | 928.4 | 928.8 | 0.4 |
| P | 59,559 | 47 | 496 | 4.3 | 932.7 | 932.7 | 933.0 | 0.3 |
| Q | 59,929 | 98 | 954 | 2.3 | 935.3 | 935.3 | 935.6 | 0.3 |
| R | 64,217 | 827 | 6,208 | 0.4 | 935.8 | 935.8 | 936.1 | 0.3 |
| S | 69,519 | 514 | 4,714 | 0.3 | 935.8 | 935.8 | 936.2 | 0.4 |
| T | 69,776 | 433 | 3,351 | 0.4 | 936.0 | 936.0 | 936.3 | 0.3 |
| U | 74,017 | 914 | 8,214 | 0.2 | 936.0 | 936.0 | 936.3 | 0.3 |
| V | 74,325 | 707 | 6,255 | 0.2 | 936.0 | 936.0 | 936.3 | 0.3 |

[1]Feet above confluence with Sand Creek

TABLE 6

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

# SCOTT COUNTY, MN
## AND INCORPORATED AREAS

# FLOODWAY DATA

# PORTER CREEK

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| PORTER CREEK (CONTINUED) | | | | | | | | |
| W | 75,138 | 1,431 | 5,219 | 0.3 | 936.0 | 936.0 | 936.3 | 0.3 |
| X | 86,535 | 270 | 1,304 | 0.9 | 936.5 | 936.5 | 936.9 | 0.4 |
| Y | 86,849 | 239 | 2,285 | 0.5 | 942.3 | 942.3 | 942.3 | 0.0 |
| Z | 87,035 | 316 | 2,726 | 0.4 | 942.3 | 942.3 | 942.3 | 0.0 |
| AA | 87,295 | 451 | 4,602 | 0.2 | 942.9 | 942.9 | 943.0 | 0.1 |
| AB | 93,512 | 68 | 399 | 2.8 | 944.6 | 944.6 | 945.0 | 0.4 |
| AC | 96,496 | 327 | 1,388 | 0.8 | 946.8 | 946.8 | 947.1 | 0.3 |
| AD | 96,786 | 197 | 1,389 | 0.6 | 949.9 | 949.9 | 949.9 | 0.0 |
| AE | 104,674 | 56 | 244 | 3.2 | 955.7 | 955.7 | 956.1 | 0.4 |
| AF | 111,315 | 43 | 86 | 9.1 | 964.8 | 964.8 | 964.8 | 0.0 |
| AG | 111,535 | 142 | 355 | 1.6 | 968.8 | 968.8 | 968.8 | 0.0 |
| AH | 119,570 | 58 | 244 | 2.3 | 985.1 | 985.1 | 985.4 | 0.3 |
| AI | 125,239 | 149 | 487 | 1.2 | 998.8 | 998.8 | 999.0 | 0.2 |
| AJ | 125,460 | 34 | 140 | 4.1 | 999.6 | 999.6 | 999.7 | 0.1 |
| AK | 130,005 | 27 | 151 | 3.8 | 1,011.4 | 1,011.4 | 1,011.5 | 0.1 |

[1]Feet above confluence with Sand Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

# PORTER CREEK

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| RAVEN CREEK | | | | | | | | |
| A | 46 | 256 | 699 | 4.6 | 874.6 | 874.6 | 874.8 | 0.2 |
| B | 174 | 172 | 923 | 3.4 | 874.9 | 874.9 | 875.1 | 0.2 |
| C | 5,528 | 177 | 611 | 5.1 | 885.4 | 885.4 | 885.8 | 0.4 |
| D | 5,772 | 207 | 1,124 | 2.8 | 888.7 | 888.7 | 888.7 | 0.0 |
| E | 13,718 | 445 | 2,302 | 1.4 | 902.1 | 902.1 | 902.3 | 0.2 |
| F | 19,152 | 210 | 931 | 3.1 | 906.4 | 906.4 | 906.5 | 0.1 |
| G | 19,496 | 928 | 2,731 | 1.1 | 907.3 | 907.3 | 907.4 | 0.1 |
| H | 26,444 | 291 | 886 | 1.4 | 919.1 | 919.1 | 919.4 | 0.3 |
| I | 32,291 | 273 | 572 | 2.1 | 928.3 | 928.3 | 928.4 | 0.1 |
| J | 32,549 | 189 | 778 | 1.6 | 930.8 | 930.8 | 930.9 | 0.1 |
| K | 35,848 | 180 | 472 | 2.6 | 936.2 | 936.2 | 936.4 | 0.2 |
| L | 36,113 | 331 | 2,143 | 0.6 | 942.0 | 942.0 | 942.4 | 0.4 |
| M | 41,794 | 1,345 | 5,672 | 0.2 | 943.6 | 943.6 | 944.0 | 0.4 |
| N | 45,834 | 40 | 148 | 2.9 | 945.7 | 945.7 | 946.2 | 0.5 |
| O | 46,053 | 27 | 97 | 4.5 | 948.3 | 948.3 | 948.3 | 0.0 |
| P | 53,584 | 42 | 155 | 2.8 | 975.5 | 975.5 | 975.5 | 0.0 |

[1]Feet above confluence with Sand Creek

TABLE 6

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

# SCOTT COUNTY, MN
## AND INCORPORATED AREAS

# FLOODWAY DATA

# RAVEN CREEK

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| ROBERT CREEK | | | | | | | | |
| A | 4,838 | 264 | 799 | 0.9 | 733.6 | 733.6 | 734.0 | 0.4 |
| B | 9,049 | 60 | 192 | 3.9 | 754.0 | 754.0 | 754.3 | 0.3 |
| C | 12,645 | 20 | 99 | 7.6 | 779.2 | 779.2 | 779.3 | 0.1 |
| D | 16,175 | 87 | 167 | 4.5 | 797.8 | 797.8 | 798.1 | 0.3 |
| E | 19,995 | 64 | 158 | 4.3 | 821.8 | 821.8 | 821.8 | 0.0 |
| F | 20,310 | 51 | 192 | 3.5 | 824.6 | 824.6 | 824.6 | 0.0 |
| G | 22,631 | 78 | 225 | 3.0 | 835.8 | 835.8 | 836.1 | 0.3 |
| H | 23,304 | 140 | 802 | 0.8 | 849.7 | 849.7 | 849.7 | 0.0 |
| I | 27,931 | 37 | 103 | 6.5 | 872.3 | 872.3 | 872.3 | 0.0 |
| J | 32,683 | 28 | 87 | 3.2 | 895.1 | 895.1 | 895.1 | 0.0 |
| K | 32,933 | 59 | 139 | 2.0 | 898.5 | 898.5 | 898.7 | 0.2 |
| L | 36,716 | 34 | 166 | 1.7 | 919.9 | 919.9 | 920.1 | 0.2 |
| M | 41,268 | 26 | 74 | 3.7 | 935.9 | 935.9 | 935.9 | 0.0 |
| N | 41,552 | 78 | 284 | 0.6 | 940.3 | 940.3 | 940.6 | 0.3 |
| O | 42,729 | 46 | 189 | 0.8 | 940.4 | 940.4 | 940.6 | 0.2 |
| P | 42,852 | 38 | 160 | 1.0 | 940.4 | 940.4 | 940.7 | 0.3 |
| Q | 43,275 | 33 | 146 | 1.1 | 940.5 | 940.5 | 940.7 | 0.2 |
| R | 43,440 | 36 | 147 | 1.1 | 942.1 | 942.1 | 942.4 | 0.3 |
| S | 44,025 | 292 | 1,385 | 0.1 | 942.1 | 942.1 | 942.5 | 0.4 |
| T | 44,344 | 284 | 1,247 | 0.1 | 942.5 | 942.5 | 942.6 | 0.1 |
| U | 46,123 | 32 | 140 | 0.9 | 942.6 | 942.6 | 942.6 | 0.0 |
| V | 46,391 | 53 | 266 | 0.5 | 947.7 | 947.7 | 947.8 | 0.1 |

[1]Feet above confluence with the Minnesota River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

# SCOTT COUNTY, MN
## AND INCORPORATED AREAS

# FLOODWAY DATA

# ROBERT CREEK

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| ROBERT CREEK (CONTINUED) | | | | | | | | |
| W | 48,153 | 584 | 2,165 | 0.1 | 947.7 | 947.7 | 947.8 | 0.1 |
| X | 48,344 | 550 | 1,674 | 0.0 | 947.7 | 947.7 | 947.8 | 0.1 |
| Y | 50,476 | 1,054 | 6,379 | 0.0 | 947.7 | 947.7 | 947.8 | 0.1 |
| Z | 52,680 | 45 | 6 | 2.0 | 950.9 | 950.9 | 950.9 | 0.0 |
| AA | 52,998 | 83 | 68 | 0.2 | 959.0 | 959.0 | 959.0 | 0.0 |

[1]Feet above confluence with the Minnesota River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

# SCOTT COUNTY, MN
## AND INCORPORATED AREAS

# FLOODWAY DATA

# ROBERT CREEK

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE | WIDTH (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| SAND CREEK | | | | | | | | |
| A | 30,665 | 445 | 1,115 | 7.1 | 722.6 | 724.1[2] | 722.7 | 0.1 |
| B | 30,882 | 825 | 2,652 | 3.0 | 724.8 | 724.8 | 724.8 | 0.0 |
| C | 37,955 | 882 | 2,206 | 3.6 | 729.4 | 729.4 | 729.6 | 0.2 |
| D | 42,084 | 855 | 2,973 | 2.7 | 734.7 | 734.7 | 734.9 | 0.2 |
| E | 46,091 | 380 | 986 | 8.0 | 743.7 | 743.7 | 744.0 | 0.3 |
| F | 46,553 | 154 | 997 | 6.6 | 744.6 | 744.6 | 744.6 | 0.0 |
| G | 48,490 | 213[3] | 1,087 | 6.7 | 748.4 | 748.4 | 748.4 | 0.0 |
| H | 48,711 | 149[3] | 1,016 | 7.2 | 750.2 | 750.2 | 750.2 | 0.0 |
| I | 48,881 | 198[3] | 1,098 | 6.7 | 751.2 | 751.2 | 751.2 | 0.0 |
| J | 49,974 | 140[3] | 799 | 9.2 | 752.9 | 752.9 | 752.9 | 0.0 |
| K | 50,377 | 264[3] | 1,166 | 6.3 | 754.8 | 754.8 | 754.8 | 0.0 |
| L | 52,026 | 89[3] | 771 | 10.5 | 758.6 | 758.6 | 758.8 | 0.2 |
| M | 52,264 | 91[3] | 931 | 8.7 | 761.6 | 761.6 | 761.6 | 0.0 |
| N | 52,406 | 94[3] | 955 | 8.5 | 761.8 | 761.8 | 761.8 | 0.0 |
| O | 52,669 | 235[3] | 1,335 | 6.1 | 764.6 | 764.6 | 764.7 | 0.1 |
| P | 54,079 | 146[3] | 1,180 | 6.9 | 769.0 | 769.0 | 769.1 | 0.1 |
| Q | 54,307 | 213[3] | 1,970 | 4.1 | 771.7 | 771.7 | 771.7 | 0.0 |
| R | 56,277 | 123[3] | 826 | 9.8 | 784.8 | 784.8 | 784.9 | 0.1 |
| S | 56,494 | 199[3] | 1,528 | 4.7 | 789.1 | 789.1 | 789.1 | 0.0 |
| T | 57,443 | 322[3] | 2,866 | 2.8 | 792.3 | 792.3 | 792.3 | 0.0 |
| U | 58,566 | 224[3] | 1,314 | 6.2 | 793.7 | 793.7 | 793.8 | 0.1 |
| V | 58,843 | 252[3] | 1,323 | 6.1 | 797.1 | 797.1 | 797.1 | 0.0 |

[1]Feet above confluence with the Minnesota River

[2]Elevation computed without consideration of backwater effects from Minnesota River

[3]Administrative Floodway – Please see FIRM for regulatory width

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## SAND CREEK

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET)[2] | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| SAND CREEK (CONTINUED) | | | | | | | | |
| W | 60,566 | 166 | 992 | 8.7 | 805.8 | 805.8 | 805.8 | 0.0 |
| X | 60,761 | 305 | 2,356 | 3.7 | 809.7 | 809.7 | 809.7 | 0.0 |
| Y | 63,180 | 86 | 606 | 14.3 | 817.1 | 817.1 | 817.1 | 0.0 |
| Z | 65,088 | 164 | 1,151 | 7.5 | 827.9 | 827.9 | 828.2 | 0.3 |
| AA | 65,256 | 235 | 2,261 | 3.8 | 832.2 | 832.2 | 832.3 | 0.1 |
| AB | 66,873 | 212 | 1,631 | 5.3 | 834.3 | 834.3 | 834.5 | 0.2 |
| AC | 67,039 | 119 | 1,408 | 6.1 | 835.5 | 835.5 | 836.0 | 0.5 |
| AD | 69,354 | 104 | 1,012 | 8.6 | 837.5 | 837.5 | 837.8 | 0.3 |
| AE | 69,576 | 509 | 4,250 | 2.0 | 841.1 | 841.1 | 841.2 | 0.1 |
| AF | 72,503 | 527 | 2,097 | 4.1 | 845.1 | 845.1 | 845.2 | 0.1 |
| AG | 72,710 | 732 | 3,878 | 2.2 | 846.6 | 846.6 | 846.7 | 0.1 |
| AH | 75,706 | 341 | 1,331 | 6.5 | 850.2 | 850.2 | 850.8 | 0.6 |
| AI | 80,046 | 220 | 1,482 | 4.5 | 860.0 | 860.0 | 860.2 | 0.2 |
| AJ | 80,295 | 724 | 3,976 | 1.7 | 866.6 | 866.6 | 867.0 | 0.4 |
| AK | 82,855 | 478 | 1,402 | 4.7 | 868.5 | 868.5 | 868.7 | 0.2 |
| AL | 83,068 | 98 | 949 | 7.0 | 869.7 | 869.7 | 869.7 | 0.0 |
| AM | 85,650 | 366 | 1,551 | 4.3 | 874.2 | 874.2 | 874.3 | 0.1 |
| AN | 91,164 | 207 | 1,407 | 2.7 | 883.3 | 883.3 | 883.6 | 0.3 |
| AO | 97,939 | 707 | 1,383 | 2.7 | 889.7 | 889.7 | 889.7 | 0.0 |
| AP | 98,241 | 340 | 4,507 | 0.8 | 897.2 | 897.2 | 897.6 | 0.4 |
| AQ | 105,406 | 477 | 2,351 | 1.5 | 898.2 | 898.2 | 898.6 | 0.4 |

[1]Feet above confluence with the Minnesota River

[2]Administrative Floodway – Please see FIRM for regulatory width

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## SAND CREEK

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET)[2] | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| SAND CREEK (CONTINUED) | | | | | | | | |
| AR | 110,816 | 323 | 1,833 | 2.0 | 901.9 | 901.9 | 902.2 | 0.3 |
| AS | 111,185 | 461 | 1,963 | 1.8 | 902.3 | 902.3 | 902.7 | 0.4 |
| AT | 118,857 | 437 | 1,323 | 2.7 | 907.5 | 907.5 | 907.9 | 0.4 |
| AU | 119,079 | 278 | 1,800 | 2.0 | 911.4 | 911.4 | 911.6 | 0.2 |
| AV | 124,709 | 480 | 2,200 | 1.5 | 916.3 | 916.3 | 916.7 | 0.4 |
| AW | 130,134 | 303 | 1,314 | 2.6 | 923.3 | 923.3 | 923.8 | 0.5 |
| AX | 130,412 | 374 | 1,860 | 1.8 | 925.6 | 925.6 | 925.6 | 0.0 |
| AY | 136,598 | 255 | 1,495 | 2.3 | 935.8 | 935.8 | 936.3 | 0.5 |
| AZ | 141,993 | 562 | 1,682 | 1.7 | 940.3 | 940.3 | 940.6 | 0.3 |
| BA | 142,208 | 438 | 1,832 | 1.6 | 941.6 | 941.6 | 941.8 | 0.2 |
| BB | 146,817 | 674 | 1,727 | 1.7 | 944.0 | 944.0 | 944.5 | 0.5 |
| BC | 148,193 | 1,059 | 4,065 | 0.7 | 948.3 | 948.3 | 948.4 | 0.1 |
| BD | 153,831 | 305 | 1,566 | 1.8 | 956.4 | 956.4 | 956.8 | 0.4 |
| BE | 154,080 | 622 | 2,851 | 1.0 | 958.9 | 958.9 | 959.1 | 0.2 |
| BF | 161,219 | 383 | 1,481 | 1.8 | 967.6 | 967.6 | 967.8 | 0.2 |
| BG | 161,452 | 322 | 2,586 | 1.1 | 971.2 | 971.2 | 971.4 | 0.2 |
| BH | 166,307 | 362 | 1,078 | 2.5 | 973.6 | 973.6 | 974.1 | 0.5 |
| BI | 169,020 | 60 | 460 | 5.9 | 978.5 | 978.5 | 978.9 | 0.4 |
| BJ | 169,247 | 388 | 1,979 | 1.4 | 982.3 | 982.3 | 982.3 | 0.0 |
| BK | 171,617 | 62 | 519 | 5.2 | 984.7 | 984.7 | 985.2 | 0.5 |

[1]Feet above confluence with the Minnesota River

[2]Administrative Floodway – Please see FIRM for regulatory width

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## SAND CREEK

| FLOODING SOURCE | | FLOODWAY | | | 1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FEET)[2] | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY (FEET NAVD) | WITHOUT FLOODWAY (FEET NAVD) | WITH FLOODWAY (FEET NAVD) | INCREASE (FEET) |
| SAND CREEK WETLAND | | | | | | | | |
| A | 14,599 | 537 | 1,739 | 0.4 | 748.1 | 748.1 | 748.2 | 0.1 |
| B | 16,583 | 911 | 5,025 | 0.1 | 749.5 | 749.5 | 749.8 | 0.3 |
| C | 22,428 | 1,910 | 5,522 | 0.0 | 749.5 | 749.5 | 749.9 | 0.4 |

[1]Feet above confluence with Minnesota River

[2]Administrative Floodway – Please see FIRM for regulatory width

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SCOTT COUNTY, MN**
**AND INCORPORATED AREAS**

# FLOODWAY DATA

## SAND CREEK WETLAND

## 5.0 INSURANCE APPLICATIONS

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 risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no BFEs or base flood depths are shown within this zone.

Zone AE

Zone AE is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by detailed methods. In most instances, 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 risk 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, and areas protected from the 1-percent-annual-chance flood by levees. No BFEs or base flood 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 risk 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 the 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 current FIRM presents flooding information for the entire geographic area of Scott County. Previously, separate FIRMs were prepared for each identified flood prone incorporated community and for the unincorporated areas of the county. Historical data relating to the maps prepared for each community are presented in Table 7.

| COMMUNITY NAME | INITIAL IDENTIFICATION | FLOOD HAZARD BOUNDAY MAP REVISION DATE | INITIAL FIRM EFFECTIVE DATE | FIRM REVISION DATE |
|---|---|---|---|---|
| Belle Plaine, City of | March 8, 1974 | None | N/A | |
| [2]Elko New Market, City of | N/A | None | | |
| Jordan, City of | March 8, 1974 | None | N/A | |
| Prior Lake, City of | July 26, 1974 | None | N/A | November 19, 1997 |
| Savage, City of | March 29, 1974 | None | N/A | May 16, 1994 |
| Scott County (Unincorporated Areas) | December 20, 1974 | None | N/A | April 11, 1980<br>February 19, 1987 |
| Shakopee, City of | June 7, 1974 | None | N/A | |
| [1,2]Shakopee Mdewakanton Sioux Community of Minnesota | N/A | None | N/A | |

[1]No Special Flood Hazard Areas Identified
[2]This community does not have map history prior to the first countywide mapping

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

# SCOTT COUNTY, MN
## AND INCORPORATED AREAS

# COMMUNITY MAP HISTORY

## 7.0 OTHER STUDIES

The hydrologic and hydraulic analyses for Credit River, Robert Creek and Vermillion Creek were performed by Tetra Tech EM Inc. for the Scott County Natural Resources Department (Reference 28). The study was completed in 2008. The information from the study has been incorporated into the FIS.

The hydrologic and hydraulic analyses for the Sand Creek Watershed, including Porter Creek and Raven Creek, were performed by Tetra Tech EM Inc. for the Scott County Natural Resources Department (Reference 27). The study was completed in 2010. The information from the study has been incorporated into the FIS.

Flood Insurance Studies were previously completed for the Cities of Belle Plaine, Jordan, Prior Lake, Savage, and Shakopee, and the unincorporated areas of Scott County (References 29 through 37, respectively). This Flood Insurance Study supersedes the previous individual Flood Insurance Studies.

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

## 8.0 LOCATION OF DATA

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

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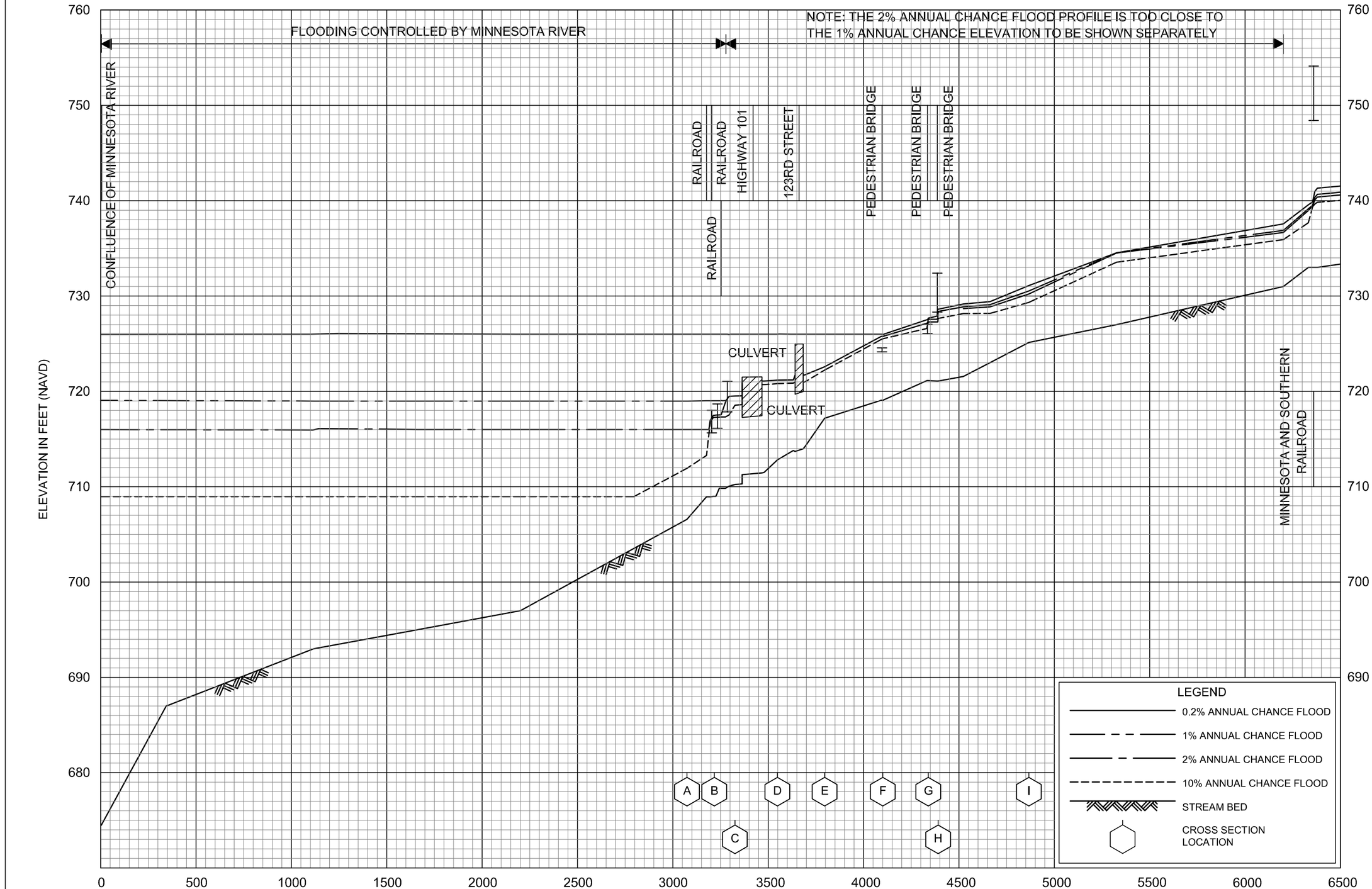



FLOOD PROFILES

CREDIT RIVER

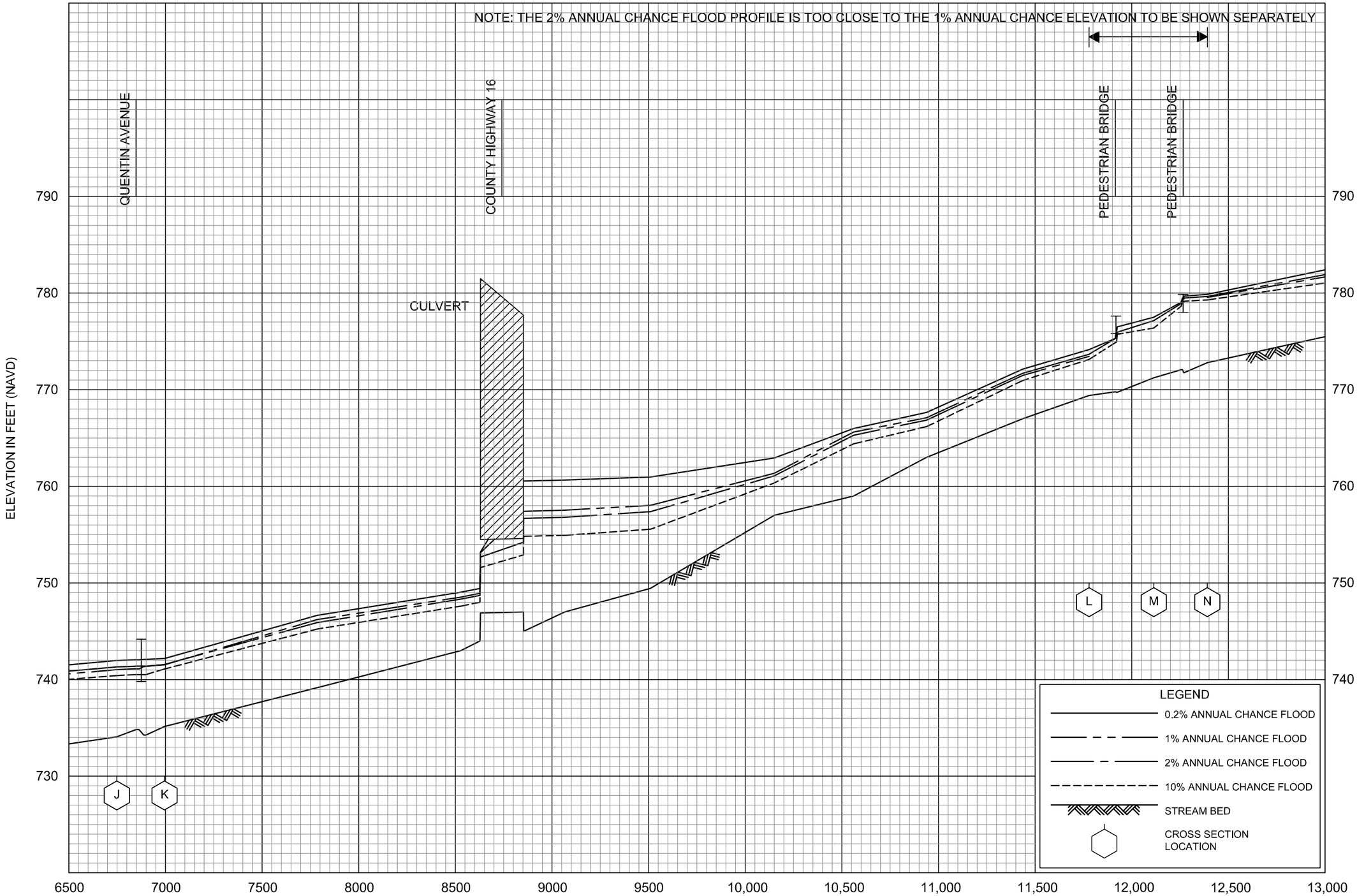
FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

01P

NOTE: THE 2% ANNUAL CHANCE FLOOD PROFILE IS TOO CLOSE TO THE 1% ANNUAL CHANCE ELEVATION TO BE SHOWN SEPARATELY




ELEVATION IN FEET (NAVD)

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

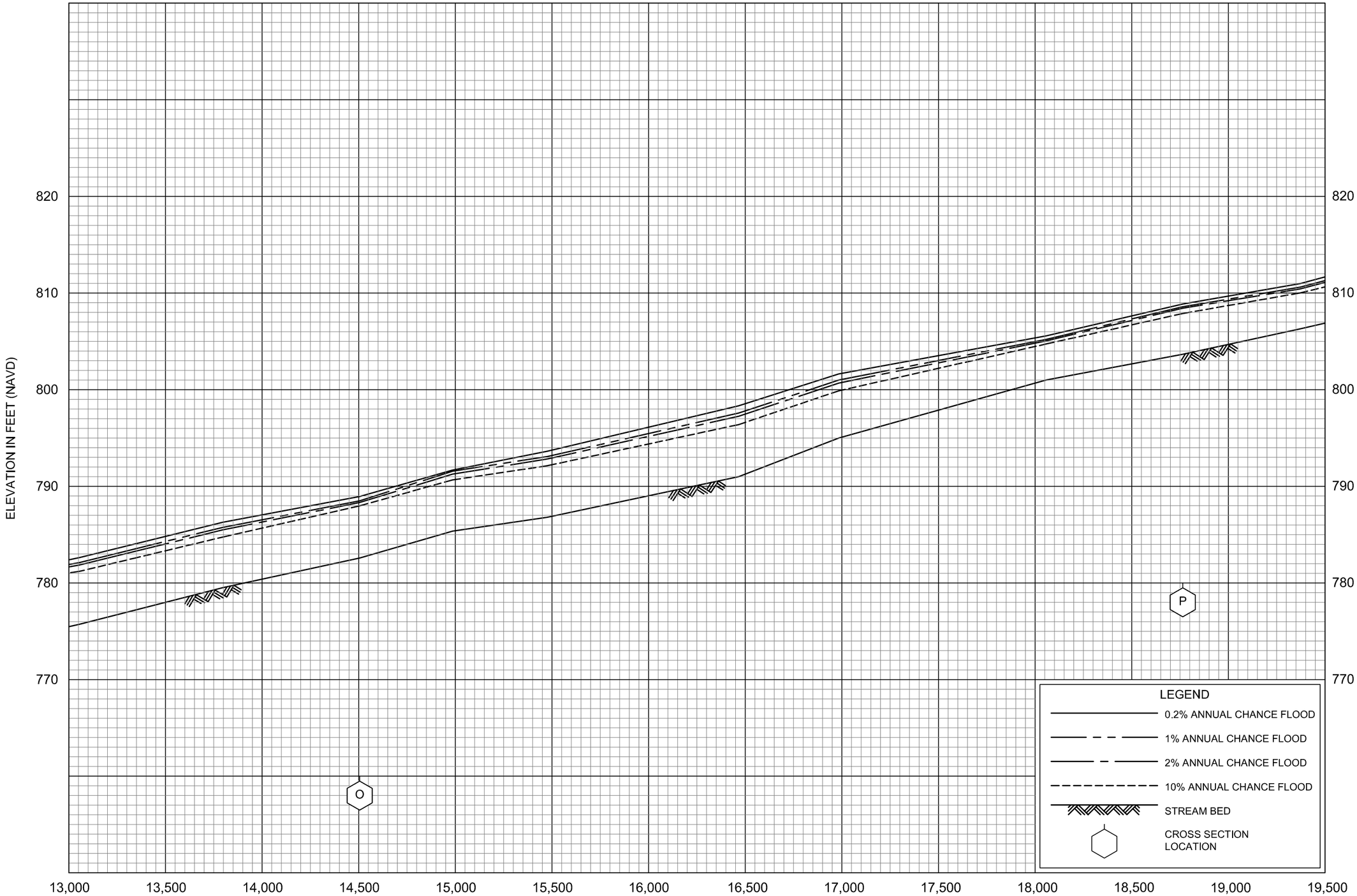
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

02P




FLOOD PROFILES

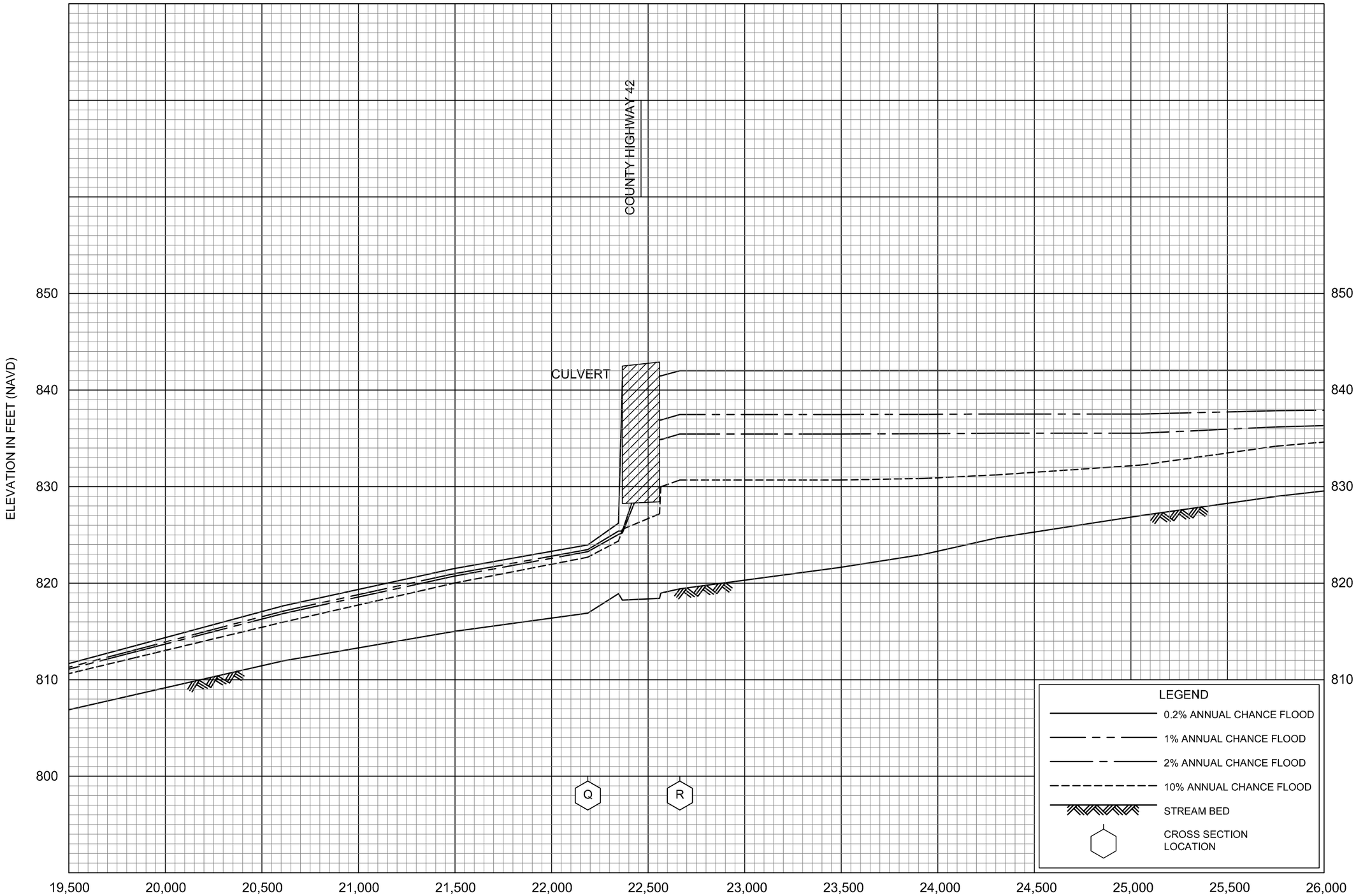
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

03P




FLOOD PROFILES

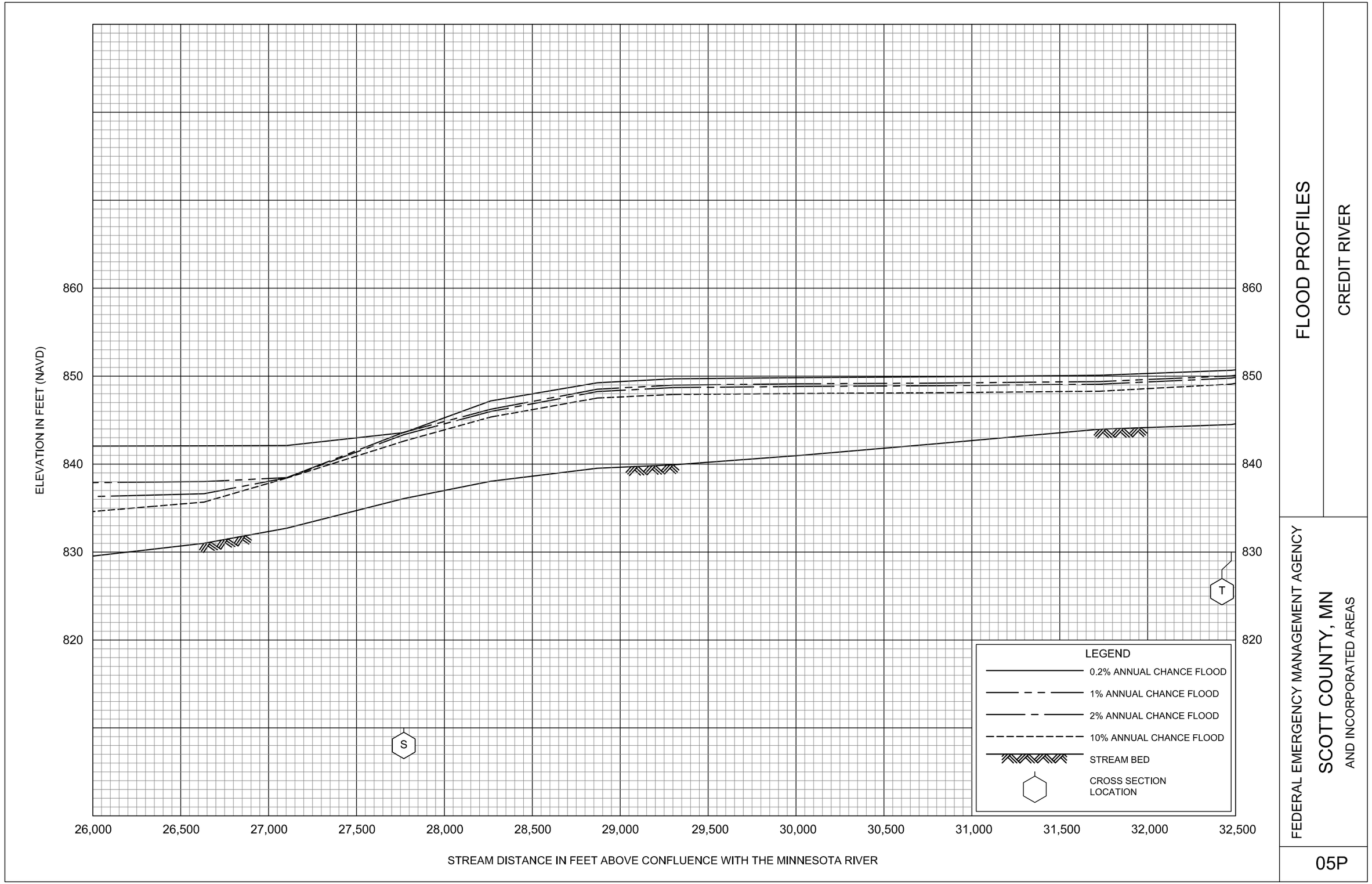
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

04P




FLOOD PROFILES

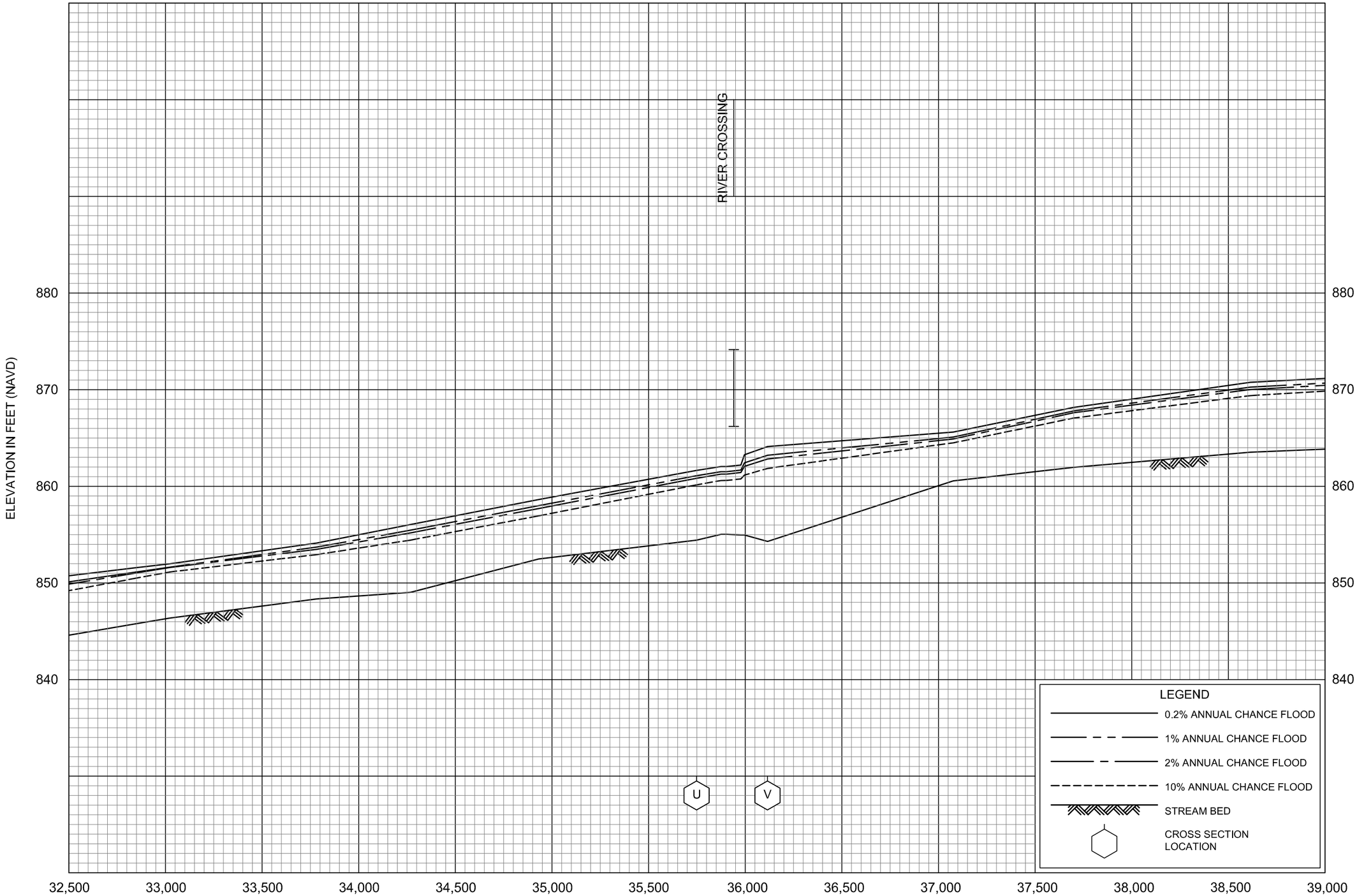
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

05P




# FLOOD PROFILES

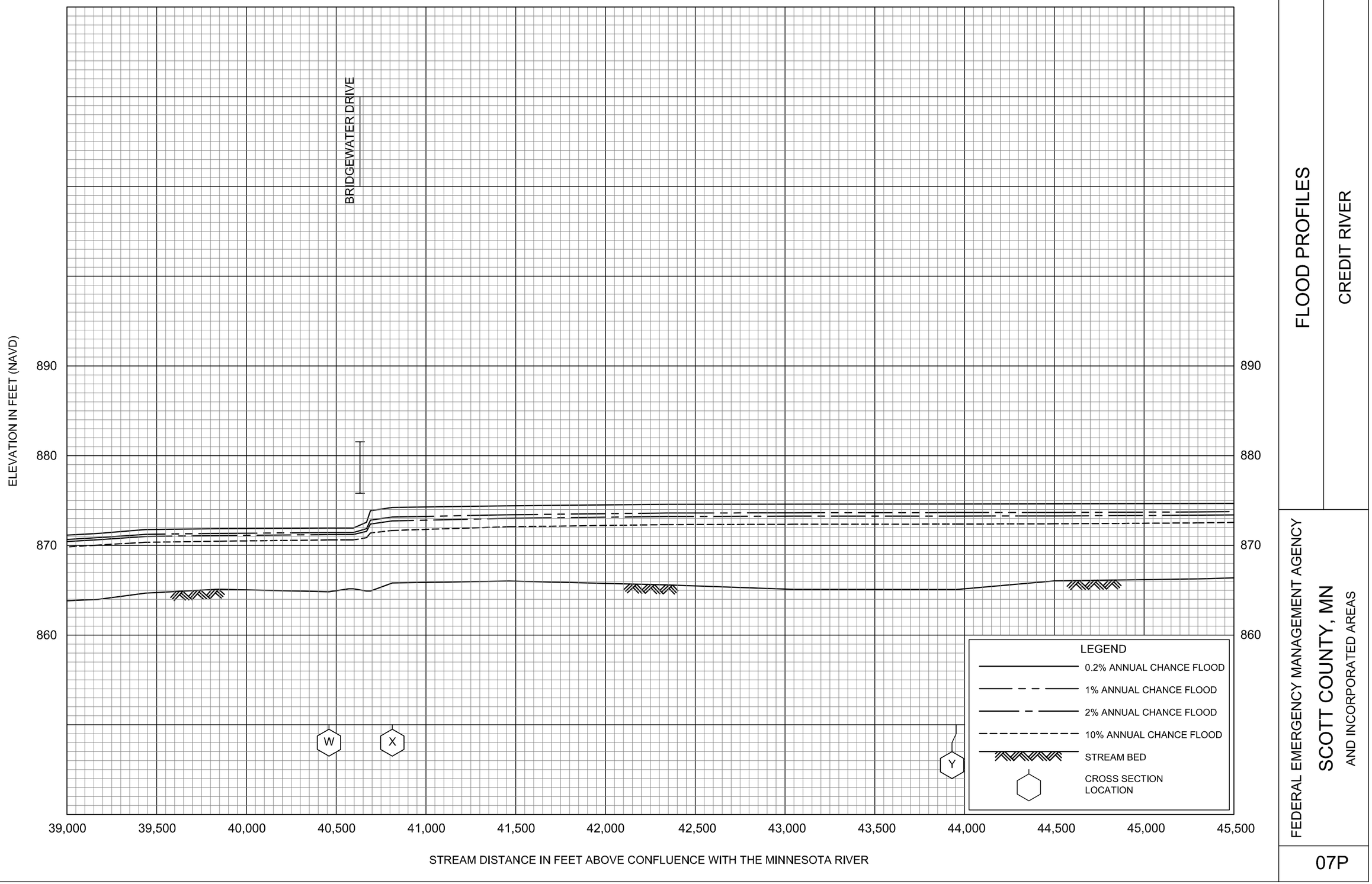
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

06P




FLOOD PROFILES

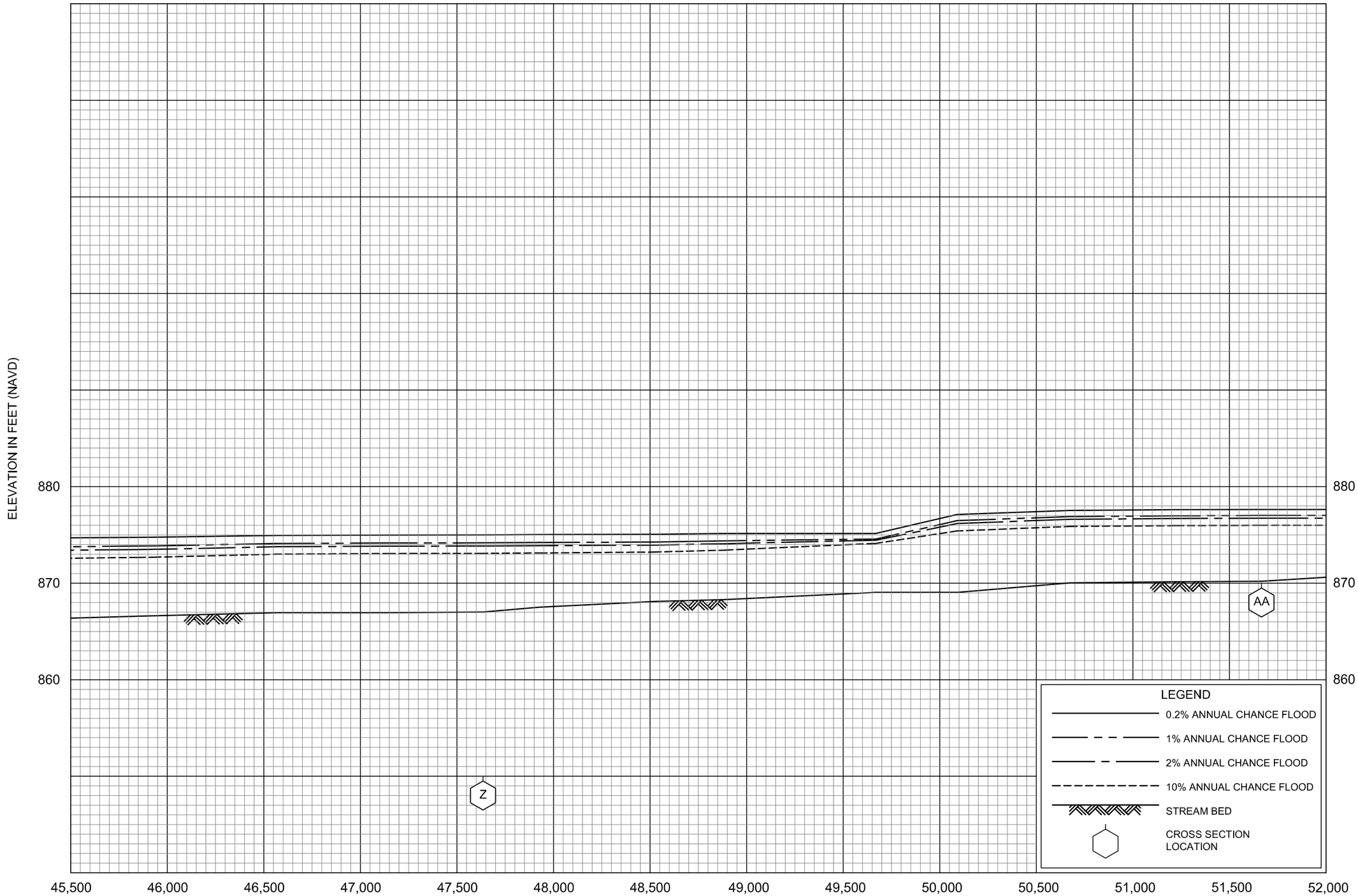
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

07P




FLOOD PROFILES

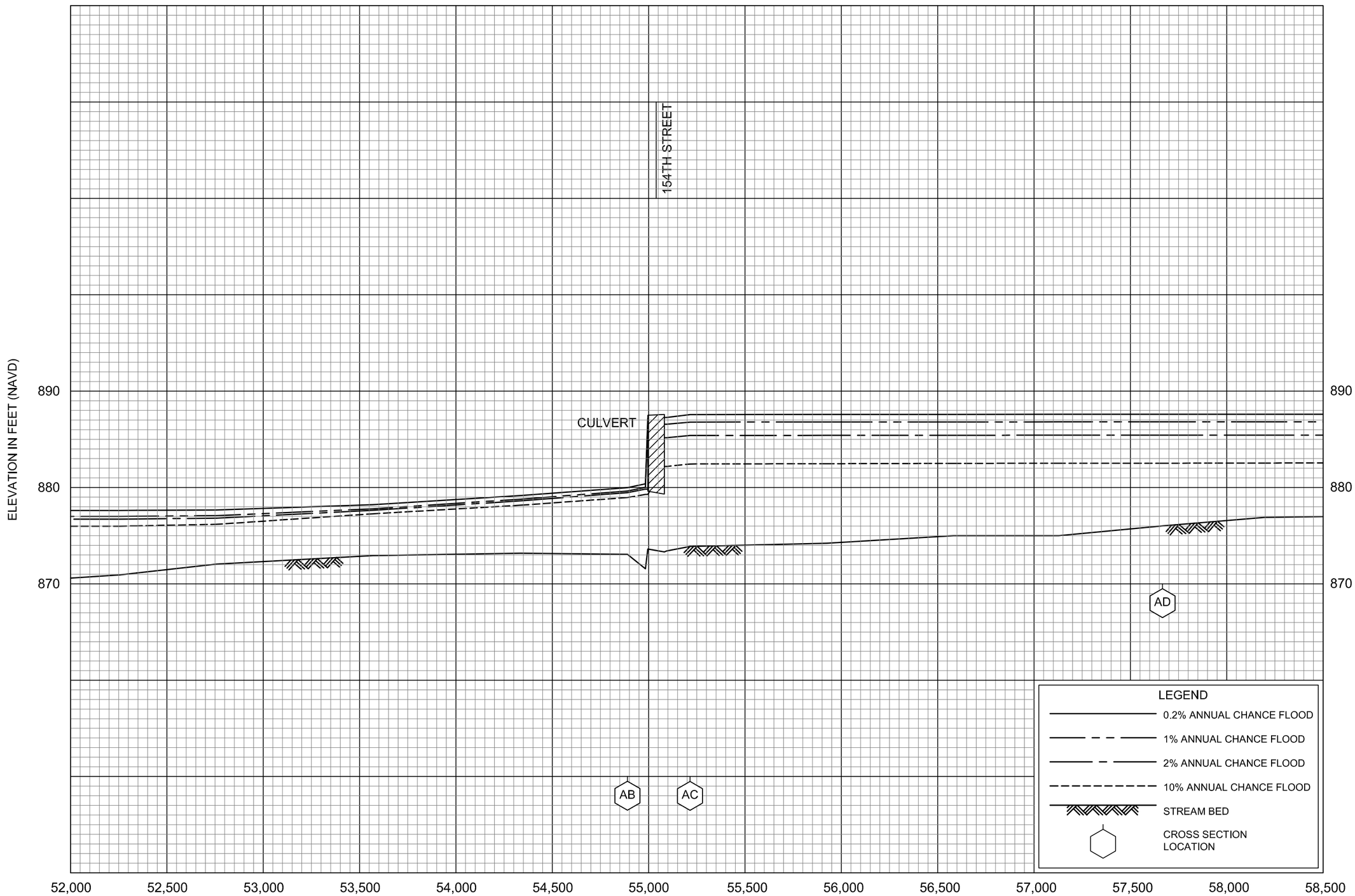
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

08P




FLOOD PROFILES

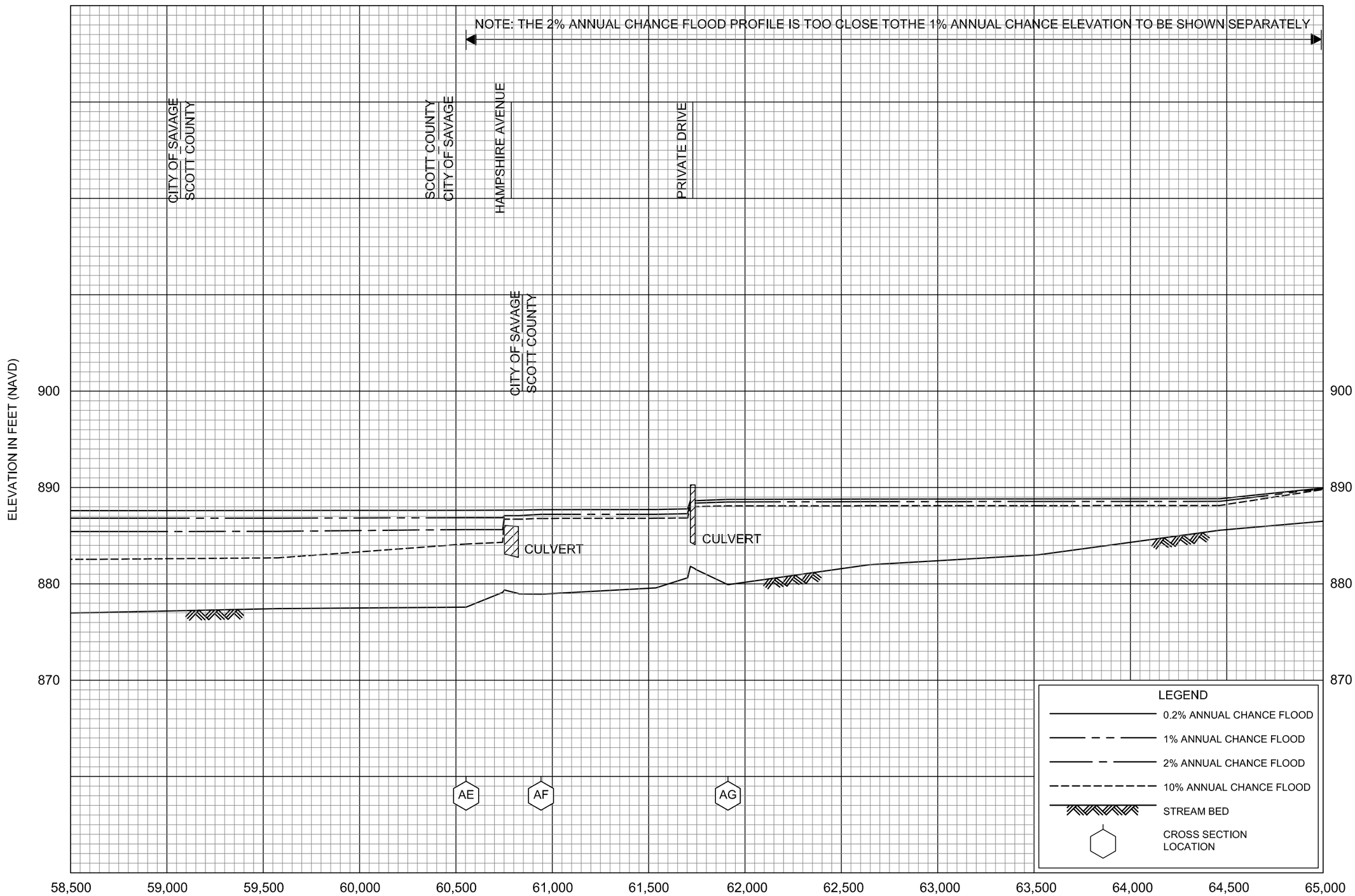
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

09P




FLOOD PROFILES

CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

10P

NOTE: THE 10%-, 2%- AND 0.2%-ANNUAL CHANCE FLOOD PROFILE IS TOO CLOSE TO THE 1% ANNUAL CHANCE ELEVATION TO BE SHOWN SEPARATELY

COUNTY ROAD 75

CULVERT

ELEVATION IN FEET (NAVD)

930
920
910
900
890
880

AH
AI
AJ

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

65,000 65,500 66,000 66,500 67,000 67,500 68,000 68,500 69,000 69,500 70,000 70,500 71,000 71,500

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

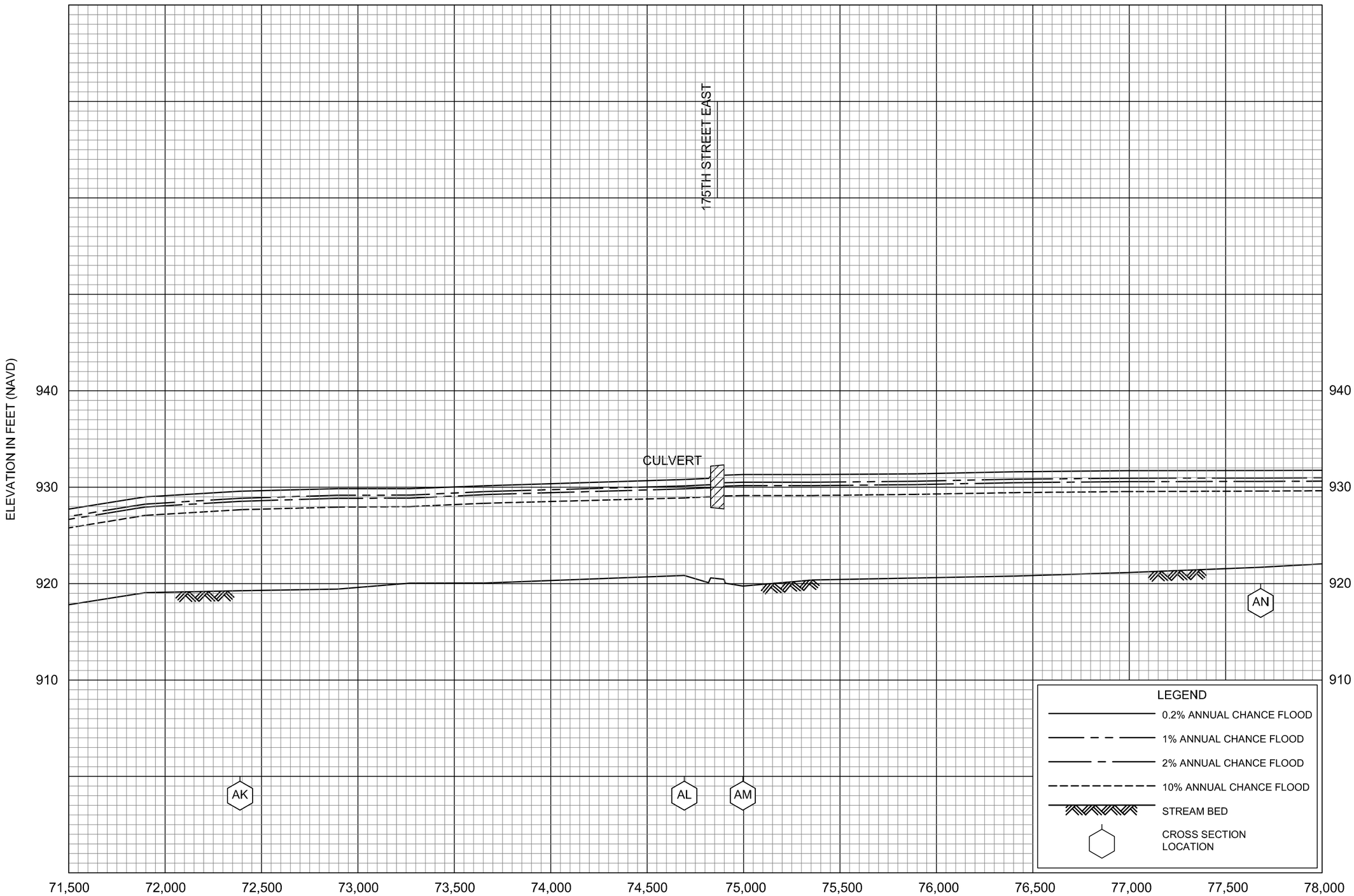
FLOOD PROFILES

CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS




FLOOD PROFILES

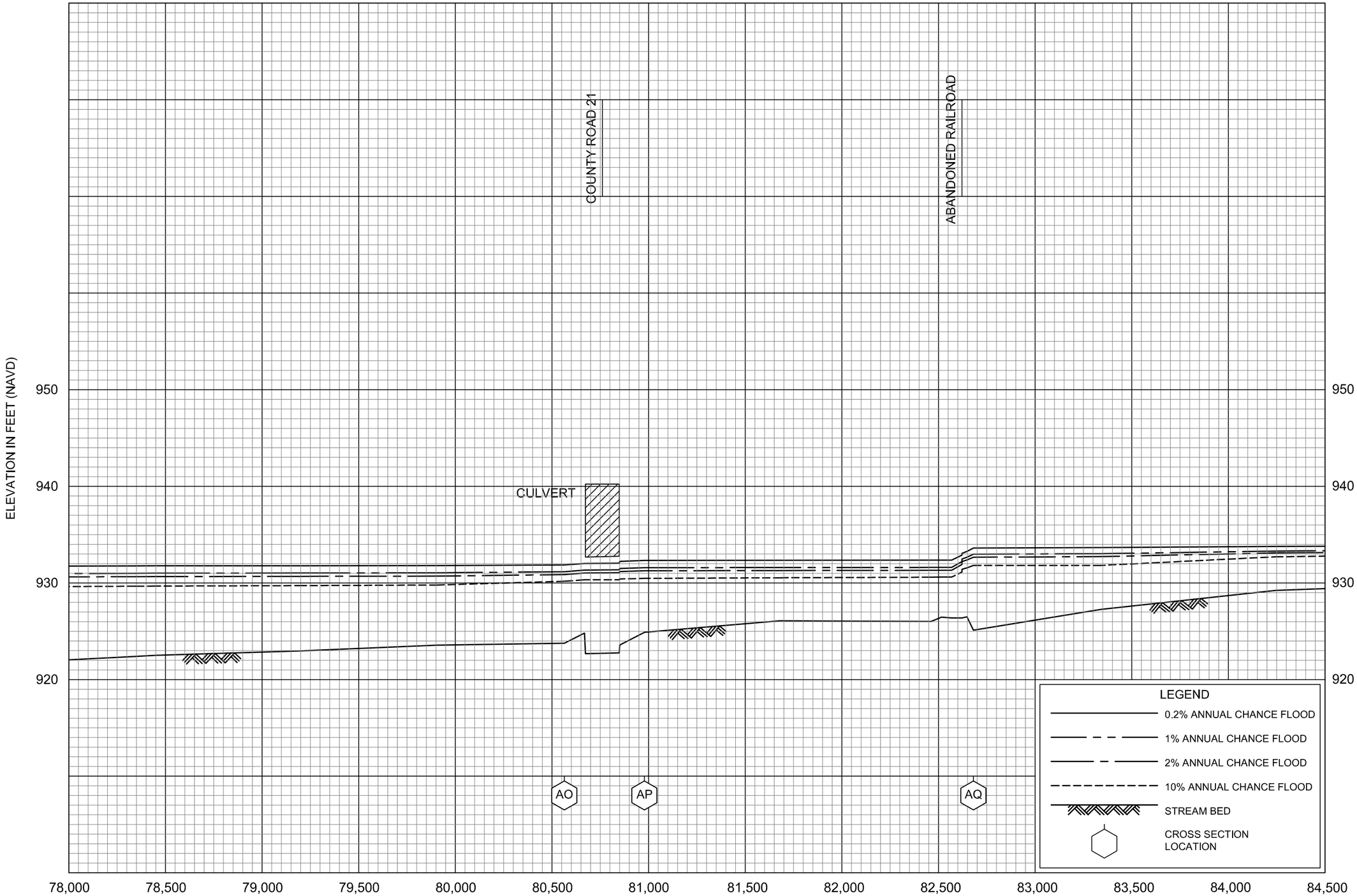
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

12P




FLOOD PROFILES

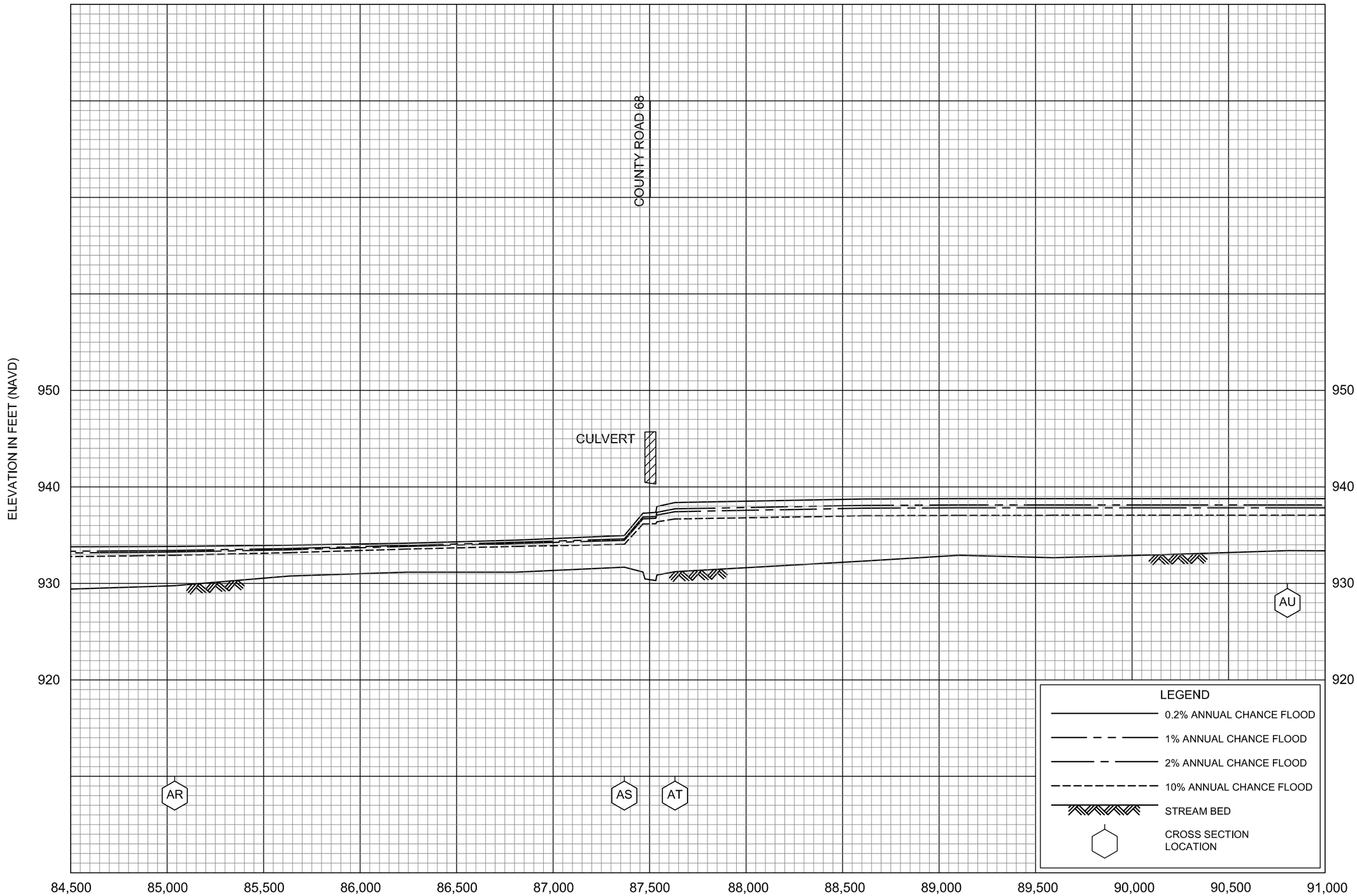
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

13P




FLOOD PROFILES

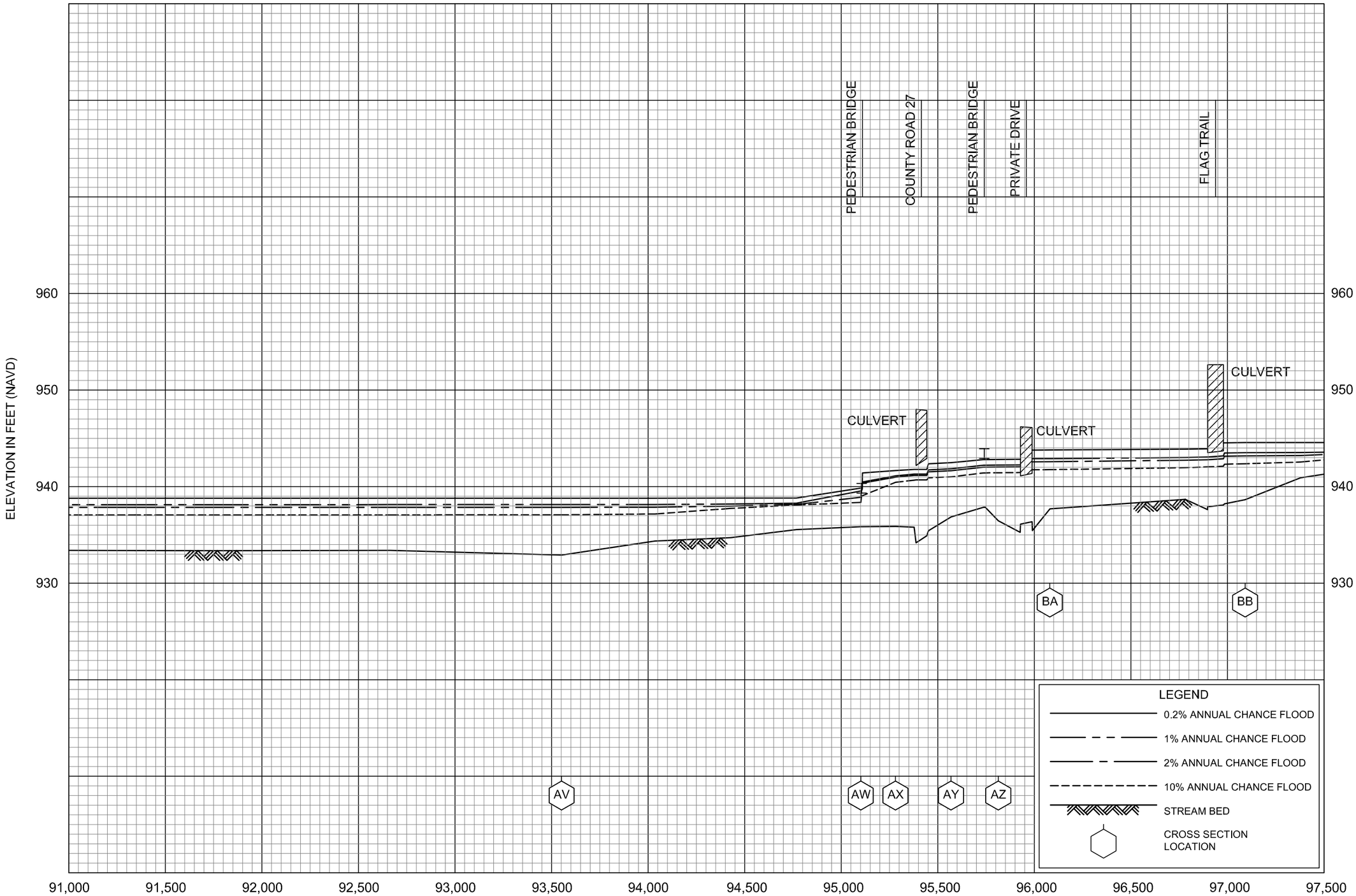
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

14P




FLOOD PROFILES

CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

15P

NOTE: THE 10% AND 2% ANNUAL CHANCE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANCE ELEVATION TO BE SHOWN SEPARATELY

NOTE: THE 2% ANNUAL CHANCE FLOOD PROFILE IS TOO TO THE 1% ANNUAL CHANCE ELEVATION TO BE SHOWN SEPARATELY

COUNTY ROAD 27

CULVERT

ELEVATION IN FEET (NAVD)

980
970
960
950
940

BC
BD
BE

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

97,500 98,000 98,500 99,000 99,500 100,000 100,500 101,000 101,500 102,000 102,500 103,000 103,500 104,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

16P

NOTE: THE 2% ANNUAL CHANCE FLOOD PROFILE IS TOO CLOSE TO THE 1% ANNUAL CHANCE ELEVATION TO BE SHOWN SEPARATELY

NOTE: THE 10%, 2%, AND 0.2% ANNUAL CHANCE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANCE ELEVATION TO BE SHOWN SEPARATELY

COUNTY ROAD 8

CULVERT

ELEVATION IN FEET (NAVD)

1020
1010
1000
990
980
970
960

BF
BG
BH
BI

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

104,000 104,500 105,000 105,500 106,000 106,500 107,000 107,500 108,000 108,500 109,000 109,500 110,000 110,500

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

17P

NOTE: THE 10%, 2%, AND 0.2% ANNUAL CHANCE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANCE ELEVATION TO BE SHOWN SEPARATELY

PRIVATE DRIVE

230TH STREET EAST

ELEVATION IN FEET (NAVD)

1030

1020

1010

1000

CULVERT

CULVERT

BJ

BK

BL

BM

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

110,500 111,000 111,500 112,000 112,500 113,000 113,500 114,000 114,500 115,000 115,500 116,000 116,500 117,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

18P

NOTE: THE 10%, 2%, AND 0.2% ANNUAL CHANCE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANCE ELEVATION TO BE SHOWN SEPARATELY

LIMIT OF DETAILED STUDY

ELEVATION IN FEET (NAVD)

1030

1020

BN

BO

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

117,000 117,500 118,000 118,500 119,000 119,500 120,000 120,500 121,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

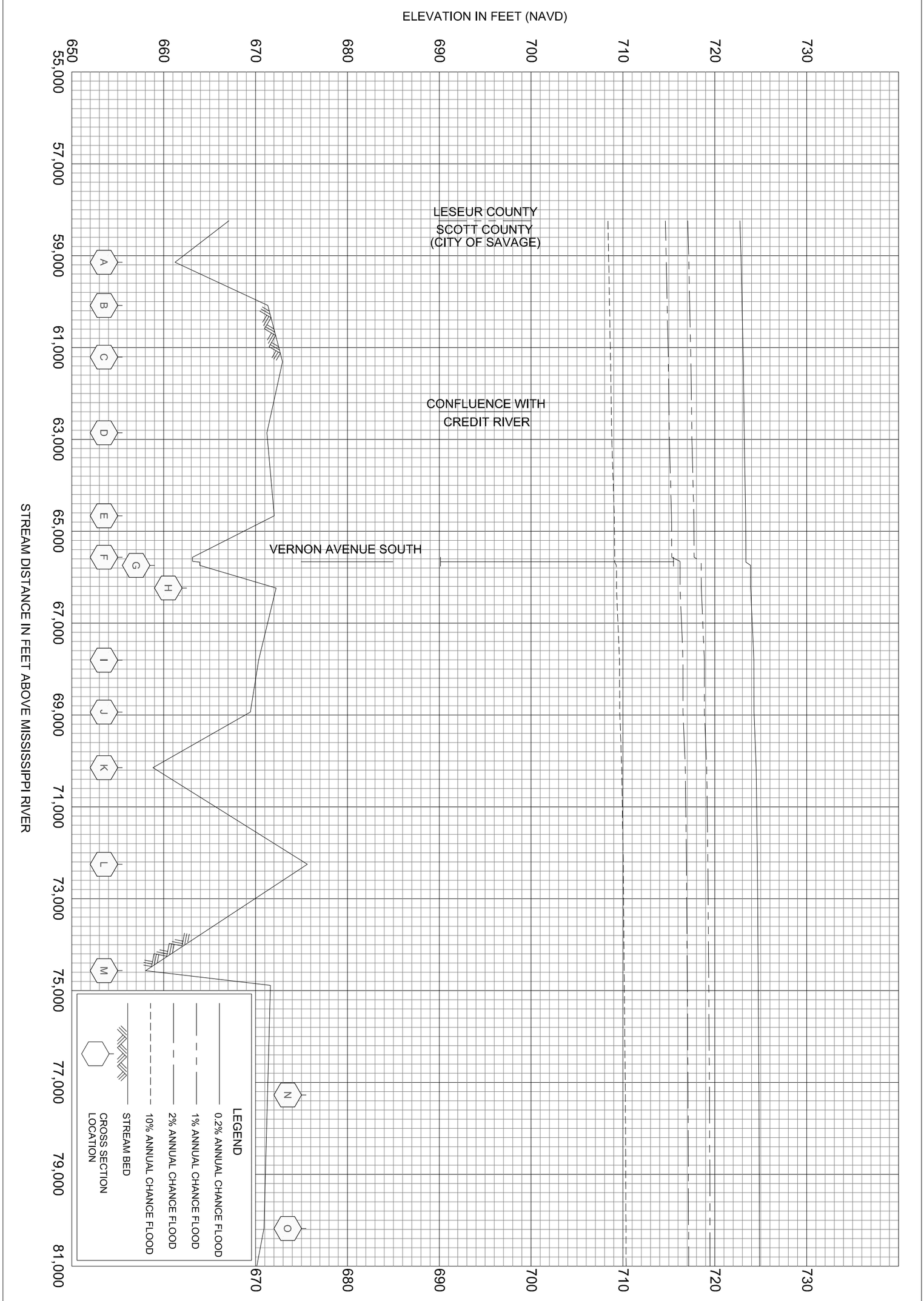
CREDIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

19P




20P

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

FLOOD PROFILES

MINNESOTA RIVER

ELEVATION IN FEET (NAVD)

730
720
710
700
690
680
670

CITY OF SAVAGE
CITY OF SHAKOPEE

P Q R S T U V W X Y Z

81,000 83,000 85,000 87,000 89,000 91,000 93,000 95,000 97,000 99,000 101,000 103,000 105,000 107,000

STREAM DISTANCE IN FEET ABOVE MISSISSIPPI RIVER

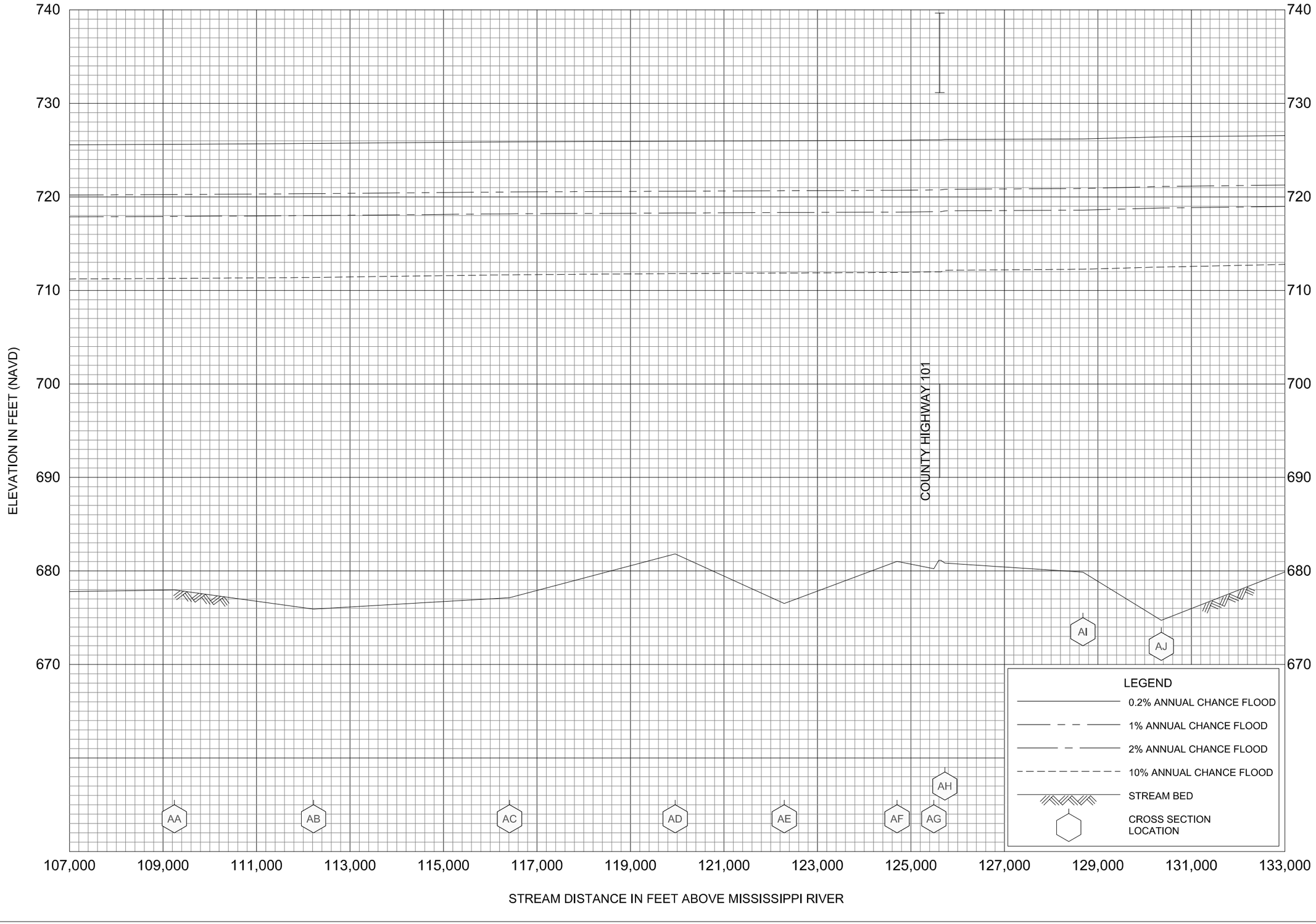
LEGEND
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

# FLOOD PROFILES

## MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN
AND INCORPORATED AREAS




FLOOD PROFILES

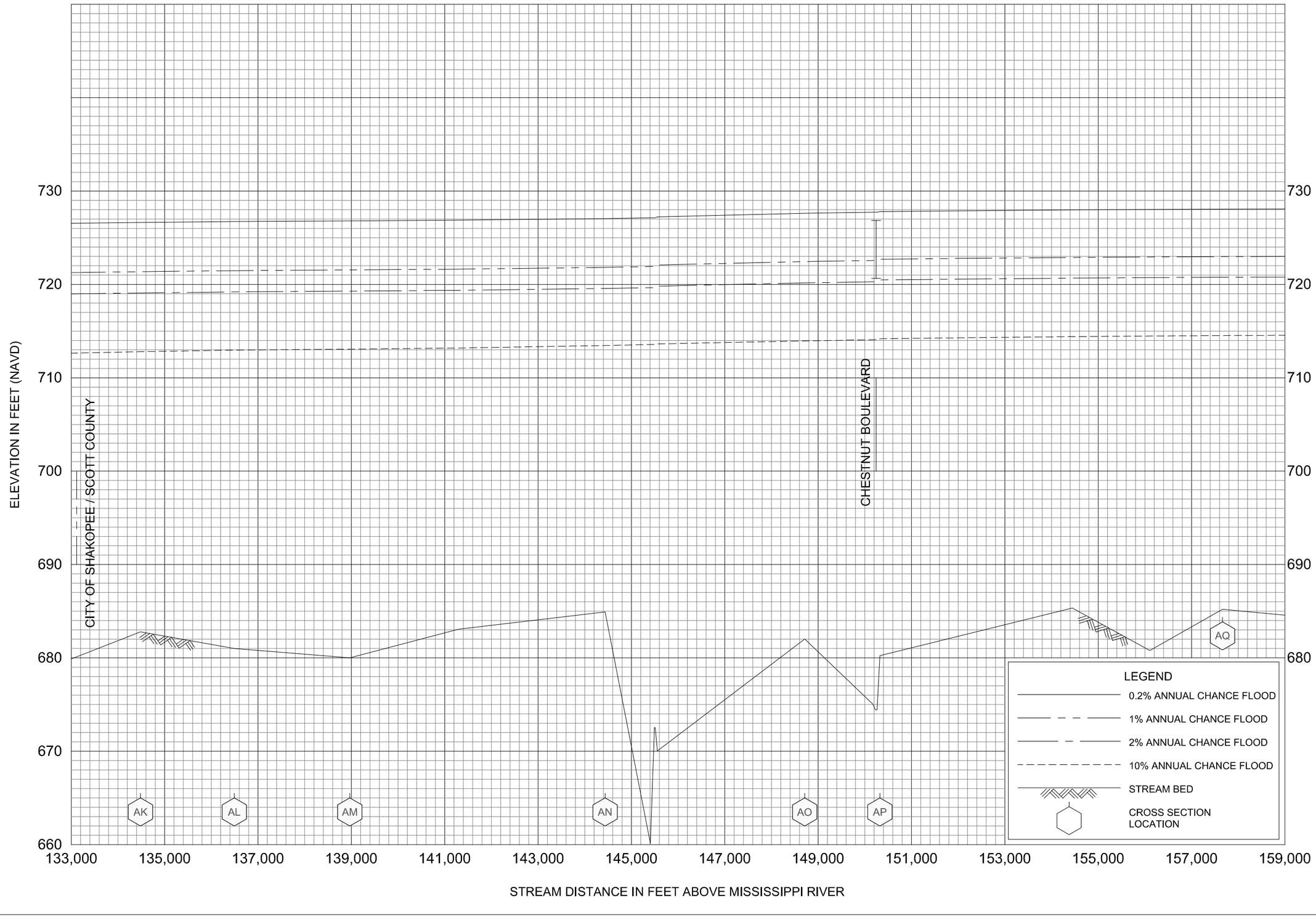
MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

22P



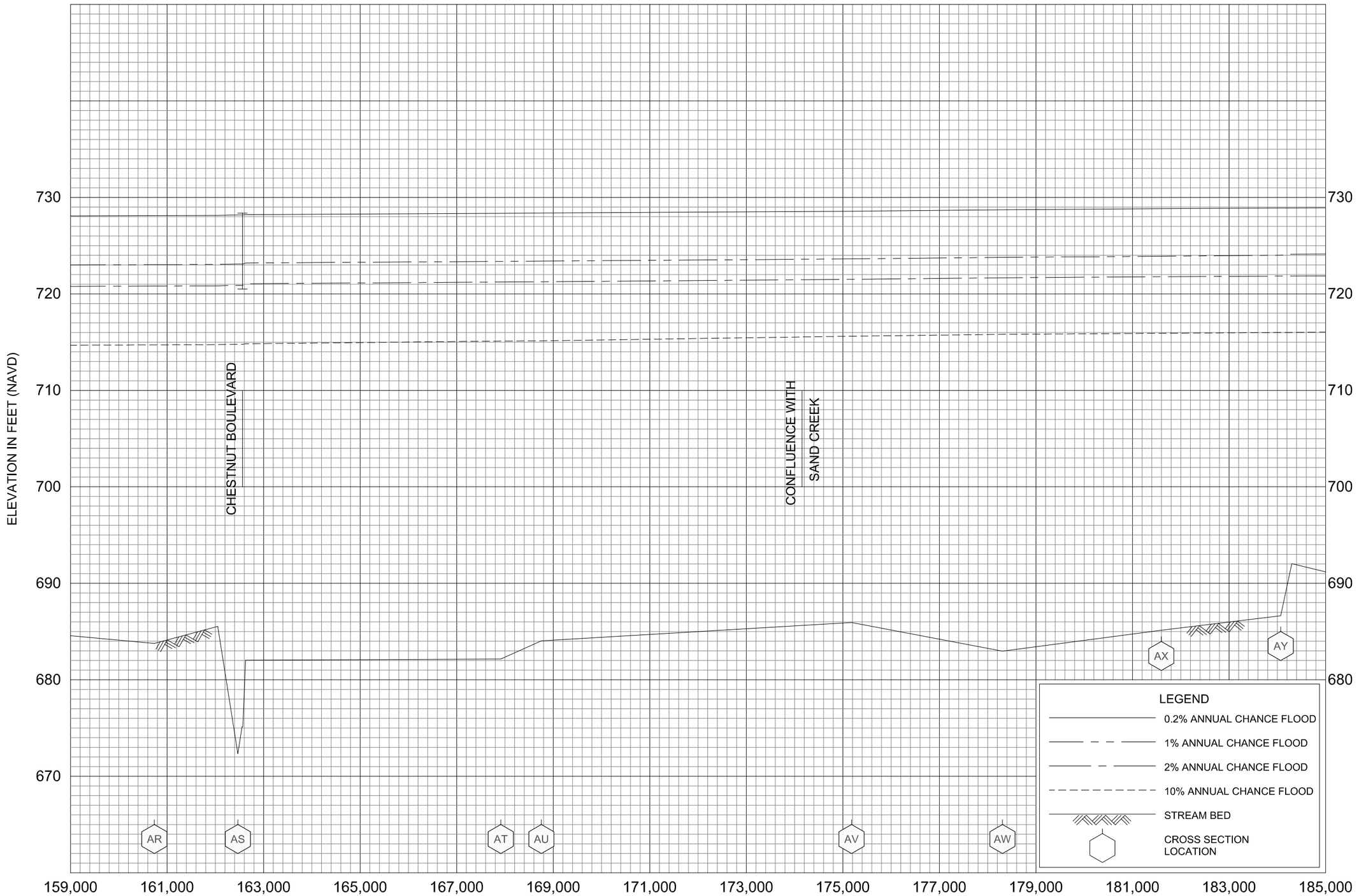

# FLOOD PROFILES

## MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS




# FLOOD PROFILES

## MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS


FLOOD PROFILES

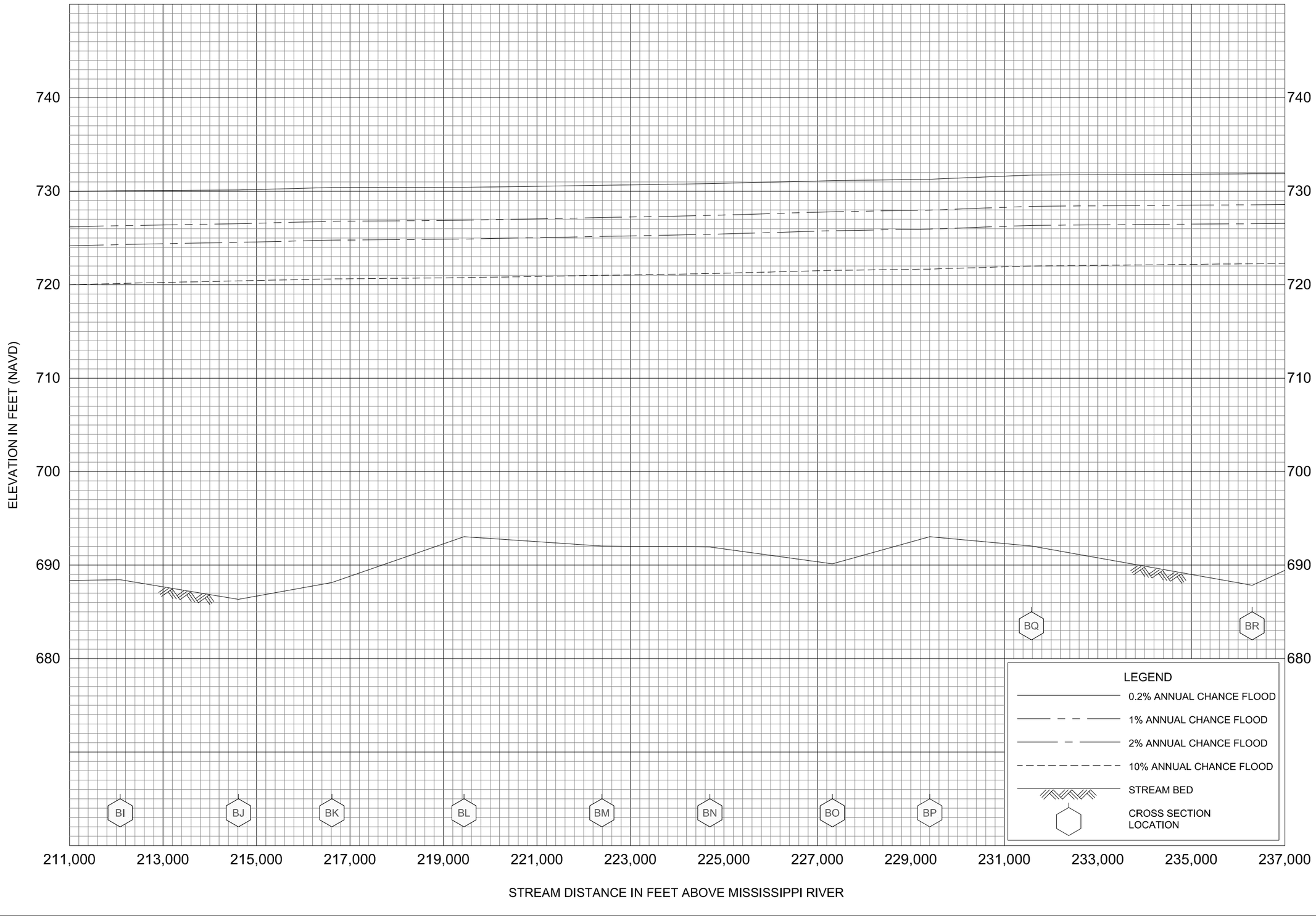
MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

25P




FLOOD PROFILES

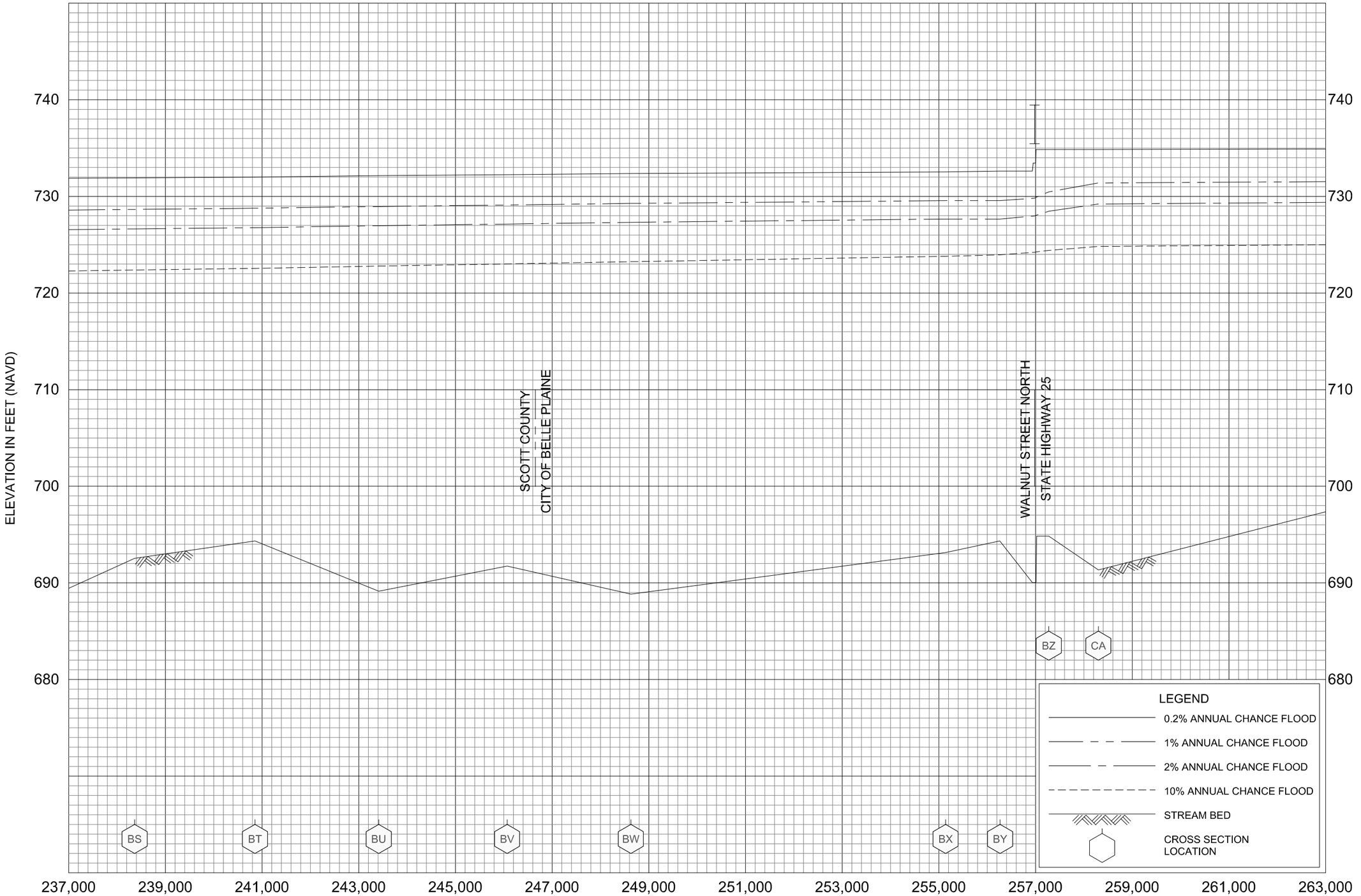
MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

26P



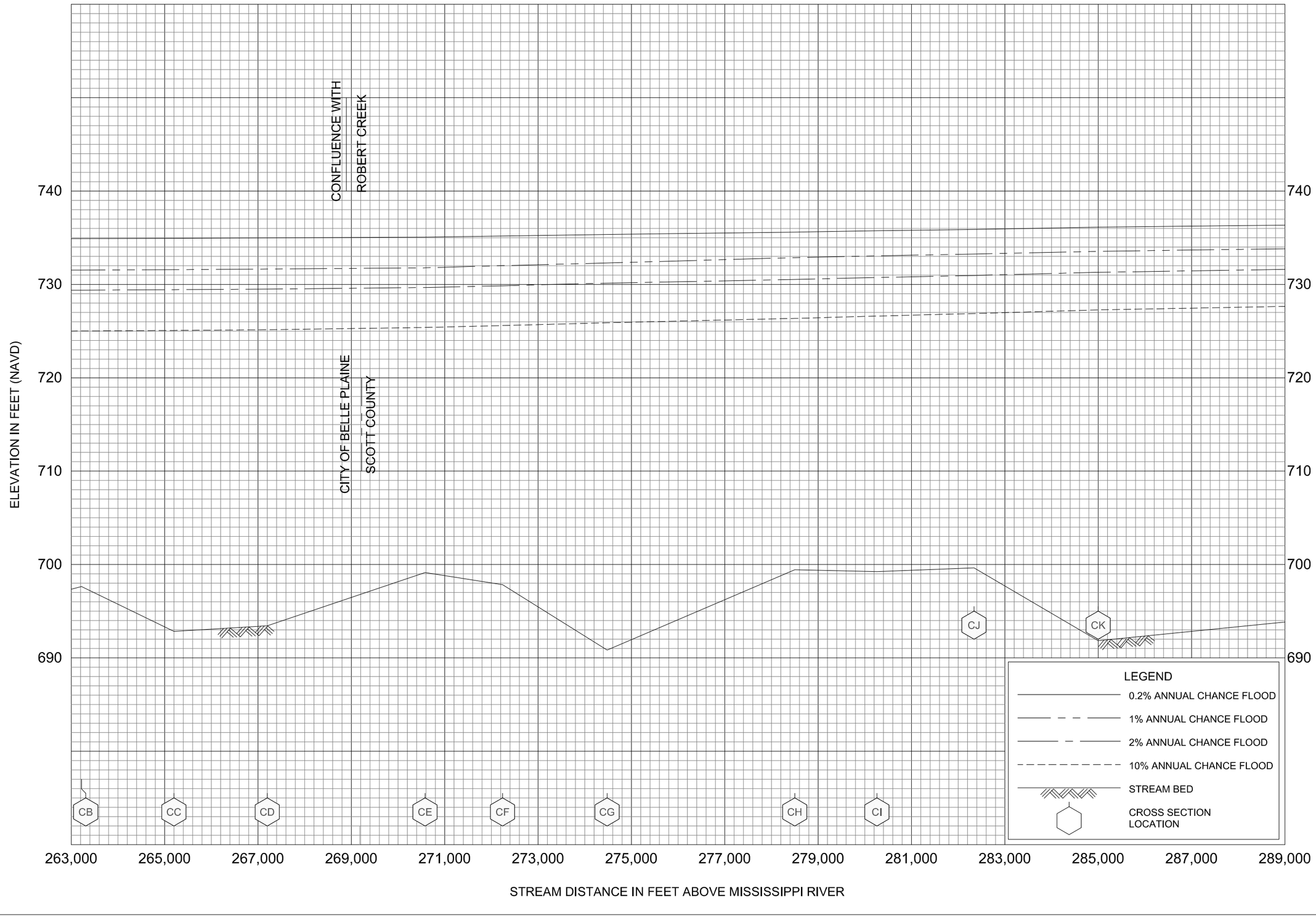

FLOOD PROFILES

MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS




FLOOD PROFILES

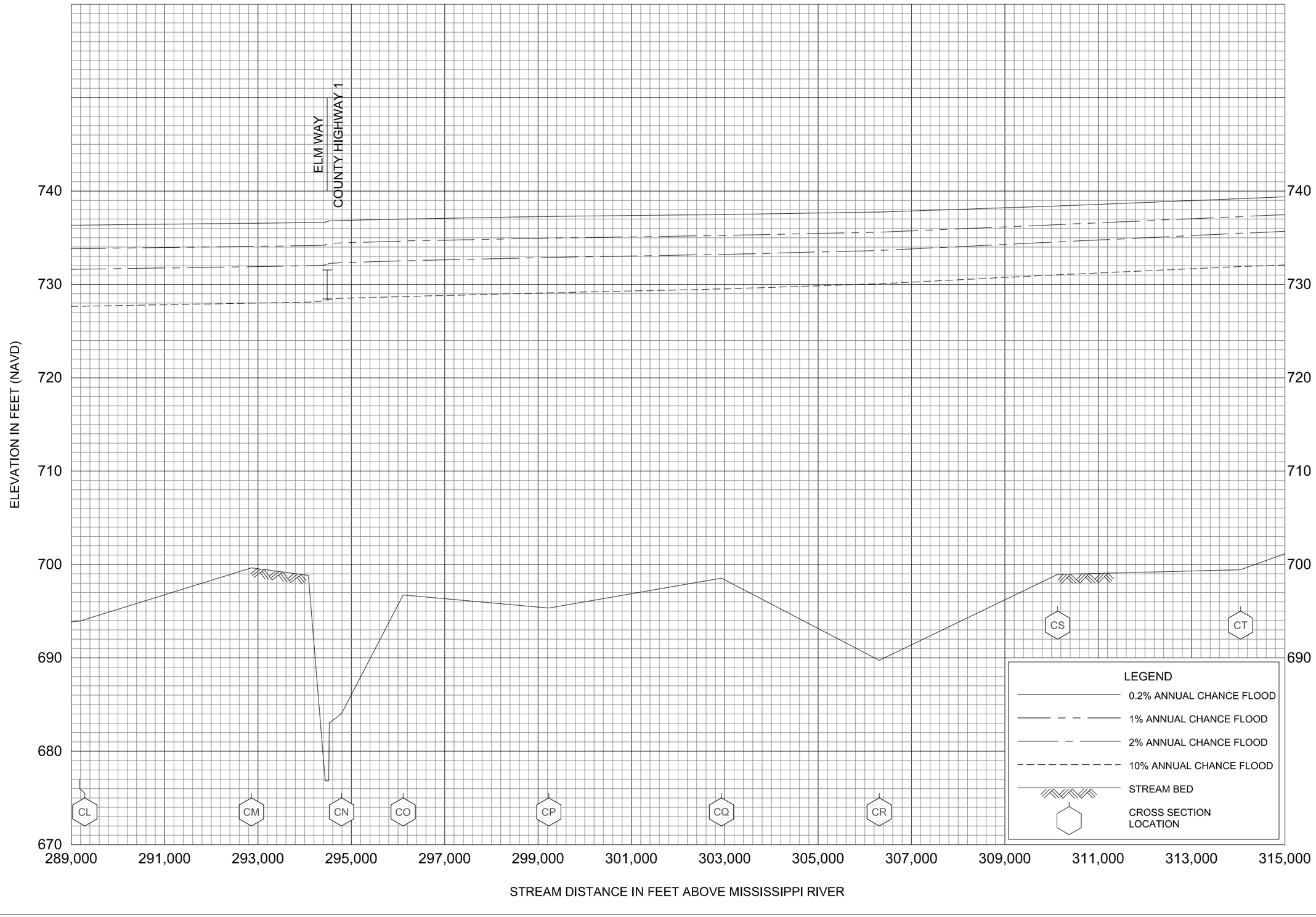
MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

28P




FLOOD PROFILES

MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

29P

ELEVATION IN FEET (NAVD)

750
740
730
720
710
700

315,000 317,000 319,000 321,000 323,000 325,000 327,000 329,000 331,000 333,000 335,000 337,000 339,000 341,000

STREAM DISTANCE IN FEET ABOVE MISSISSIPPI RIVER

CU CV CW CX CY CZ

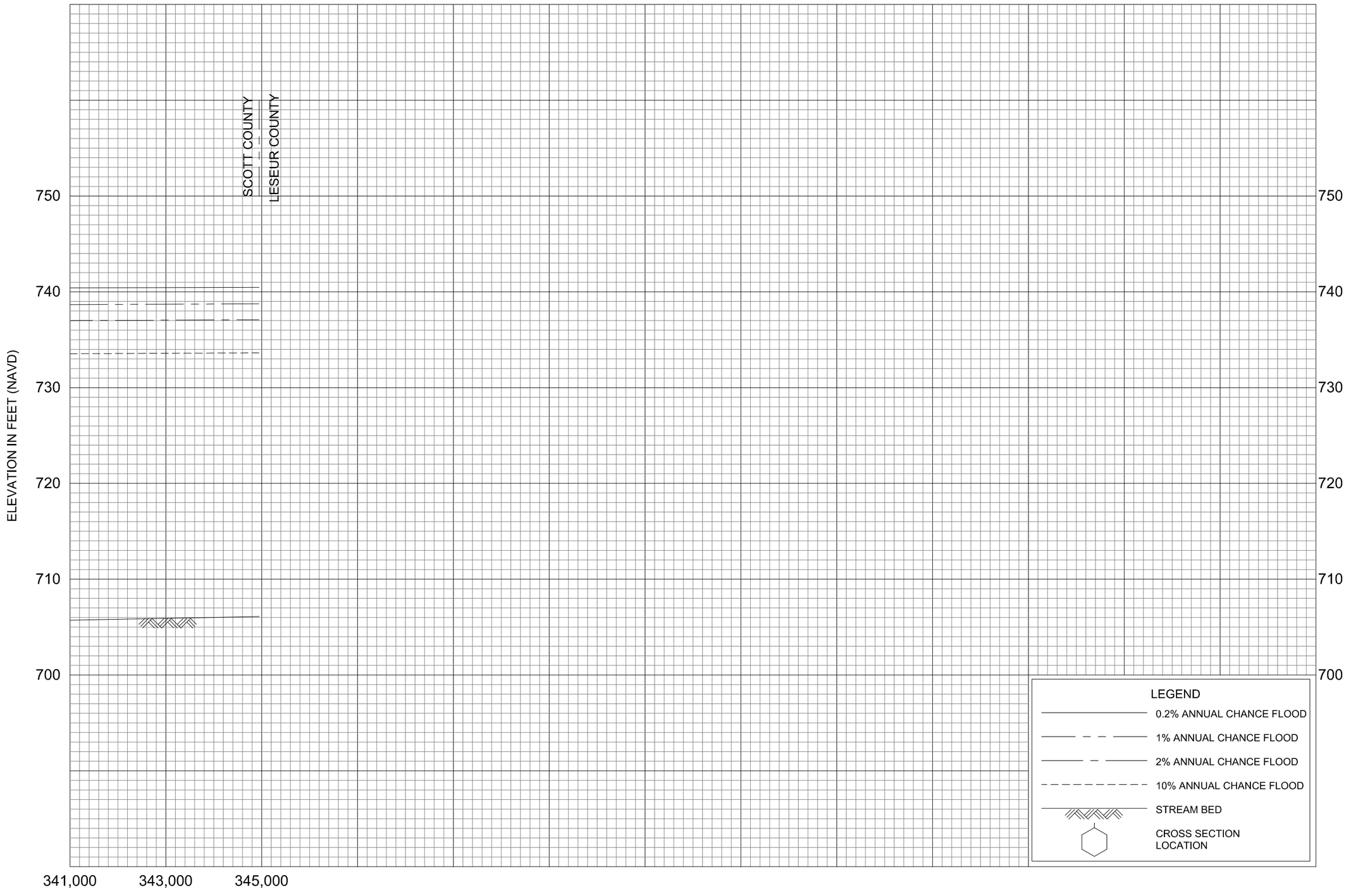
LEGEND
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

# FLOOD PROFILES

## MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN
AND INCORPORATED AREAS



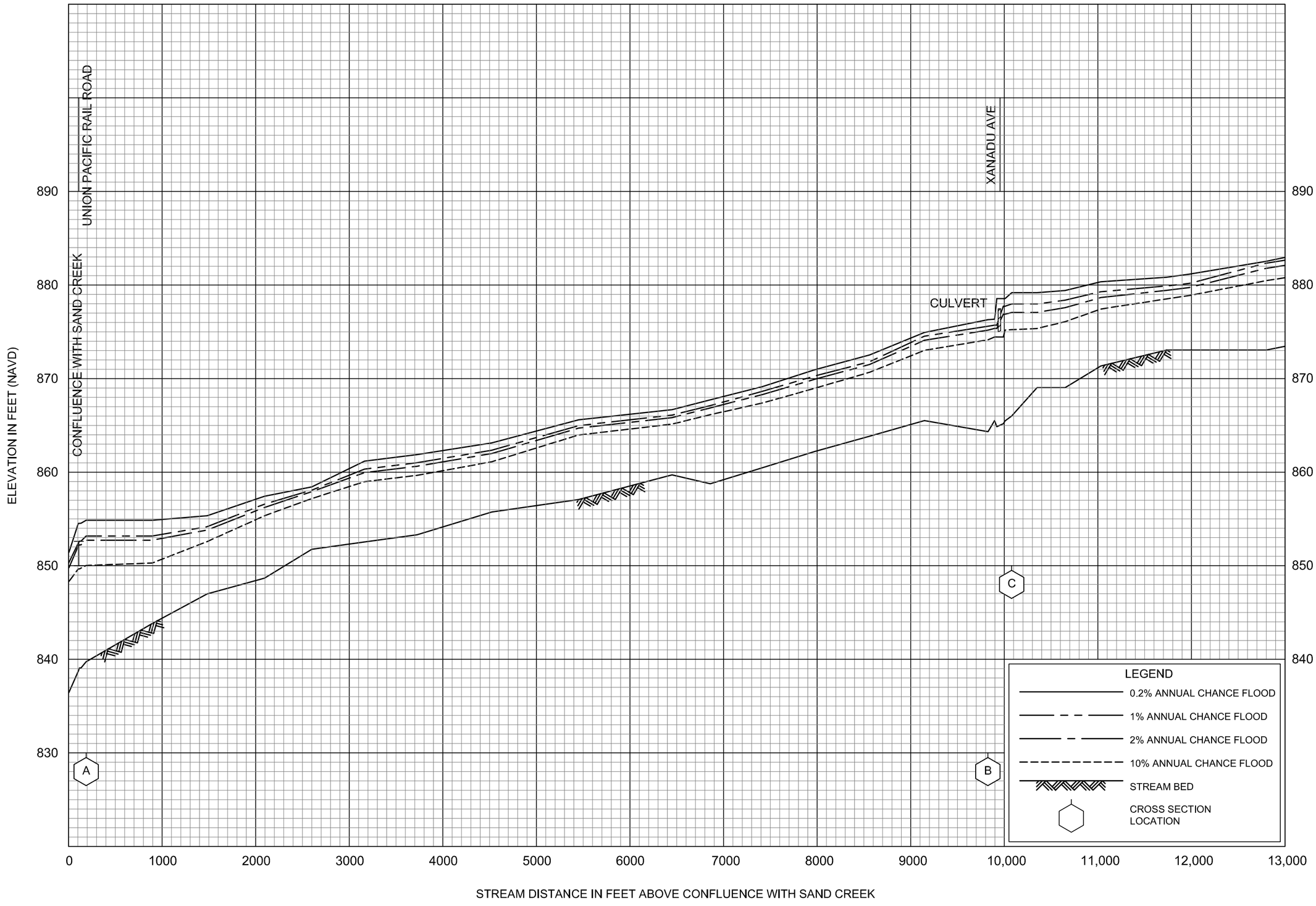

FLOOD PROFILES

MINNESOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS




# FLOOD PROFILES

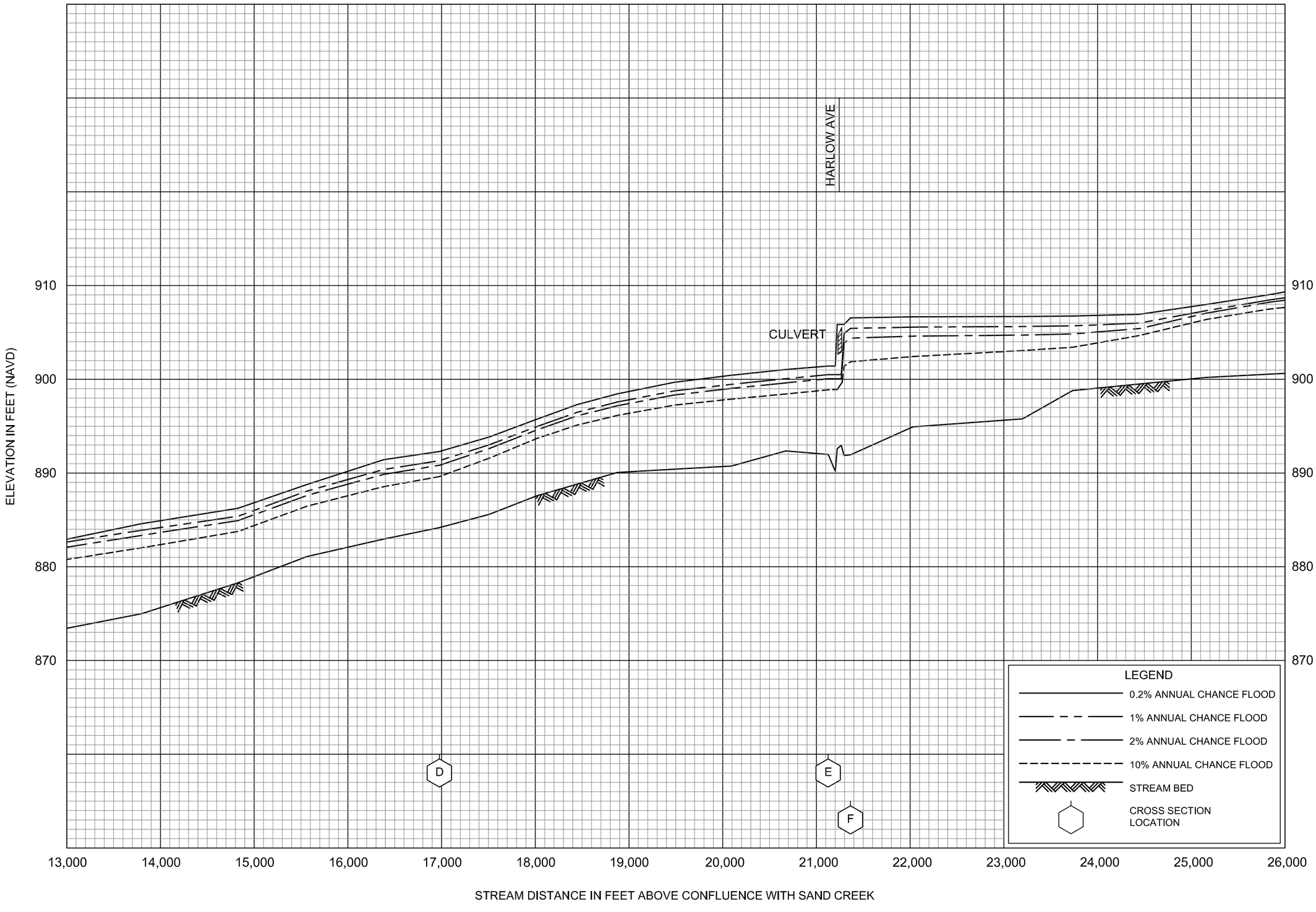
## PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

32P




FLOOD PROFILES

PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

33P

ELEVATION IN FEET (NAVD)

REDWING AVE

CULVERT

920
910
900

G
H
I

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

26,000 27,000 28,000 29,000 30,000 31,000 32,000 33,000 34,000 35,000 36,000 37,000 38,000 39,000

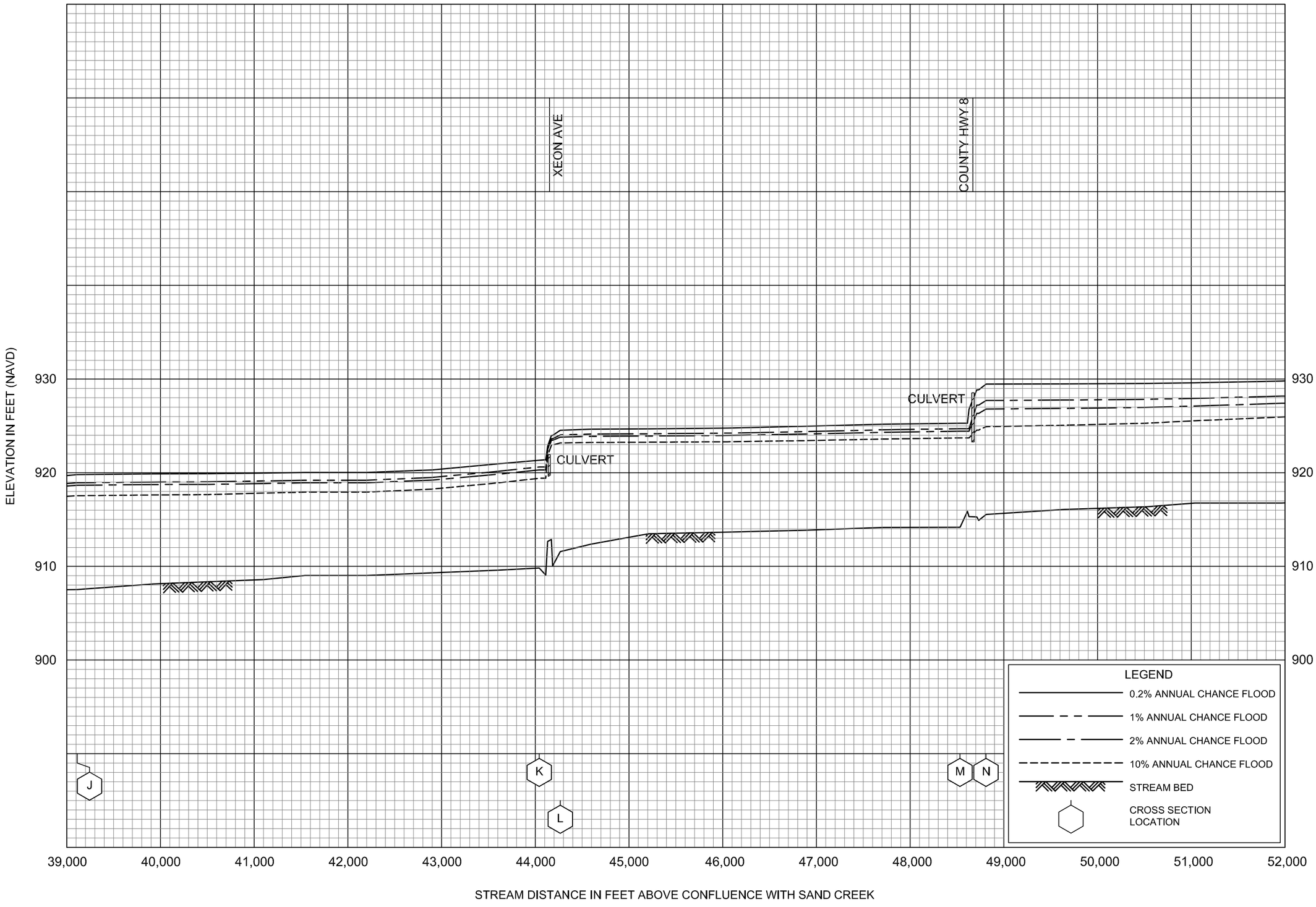
STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SAND CREEK

FLOOD PROFILES

PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
SCOTT COUNTY, MN
AND INCORPORATED AREAS

34P




# FLOOD PROFILES

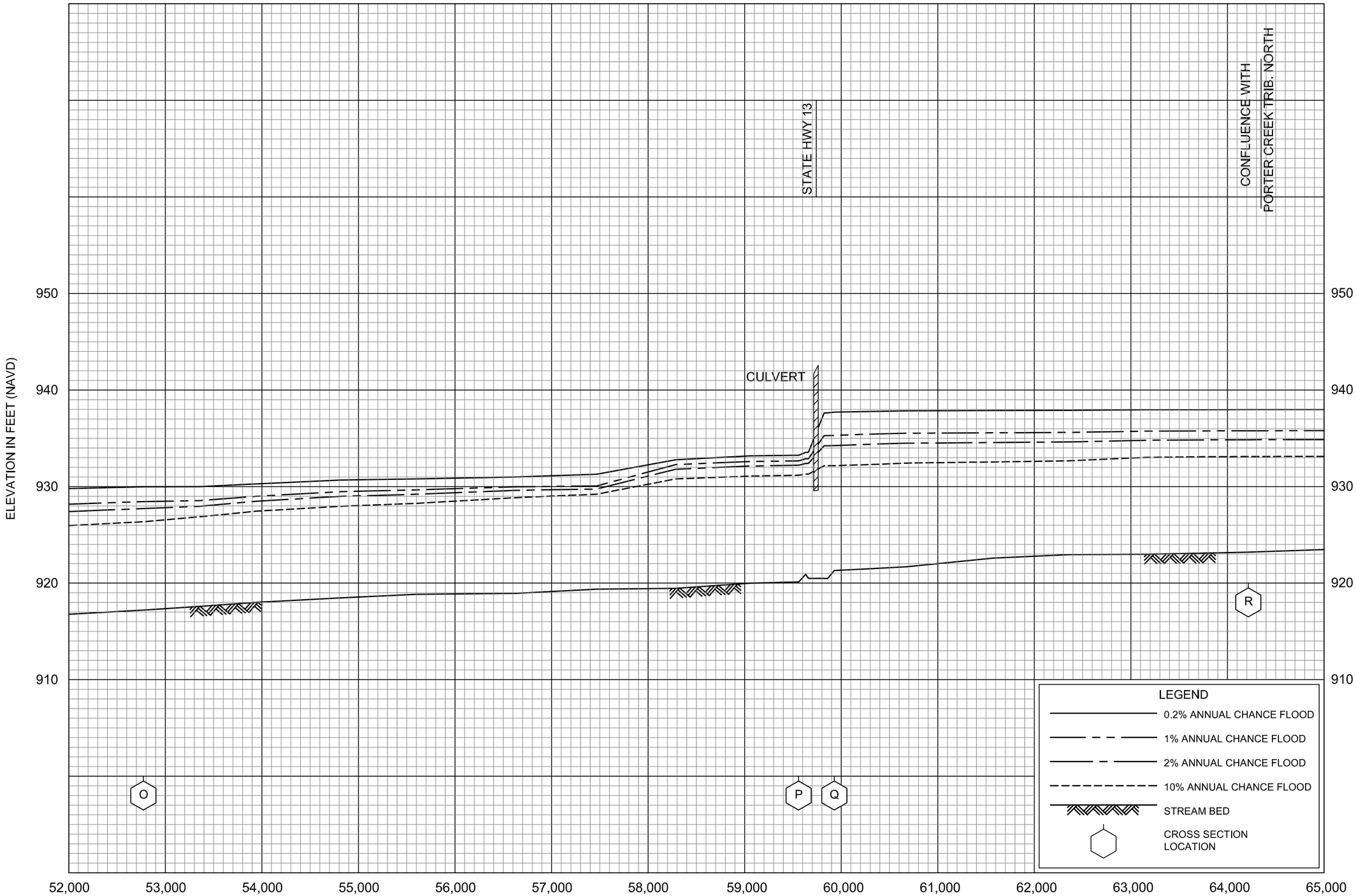
## PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

35P




FLOOD PROFILES

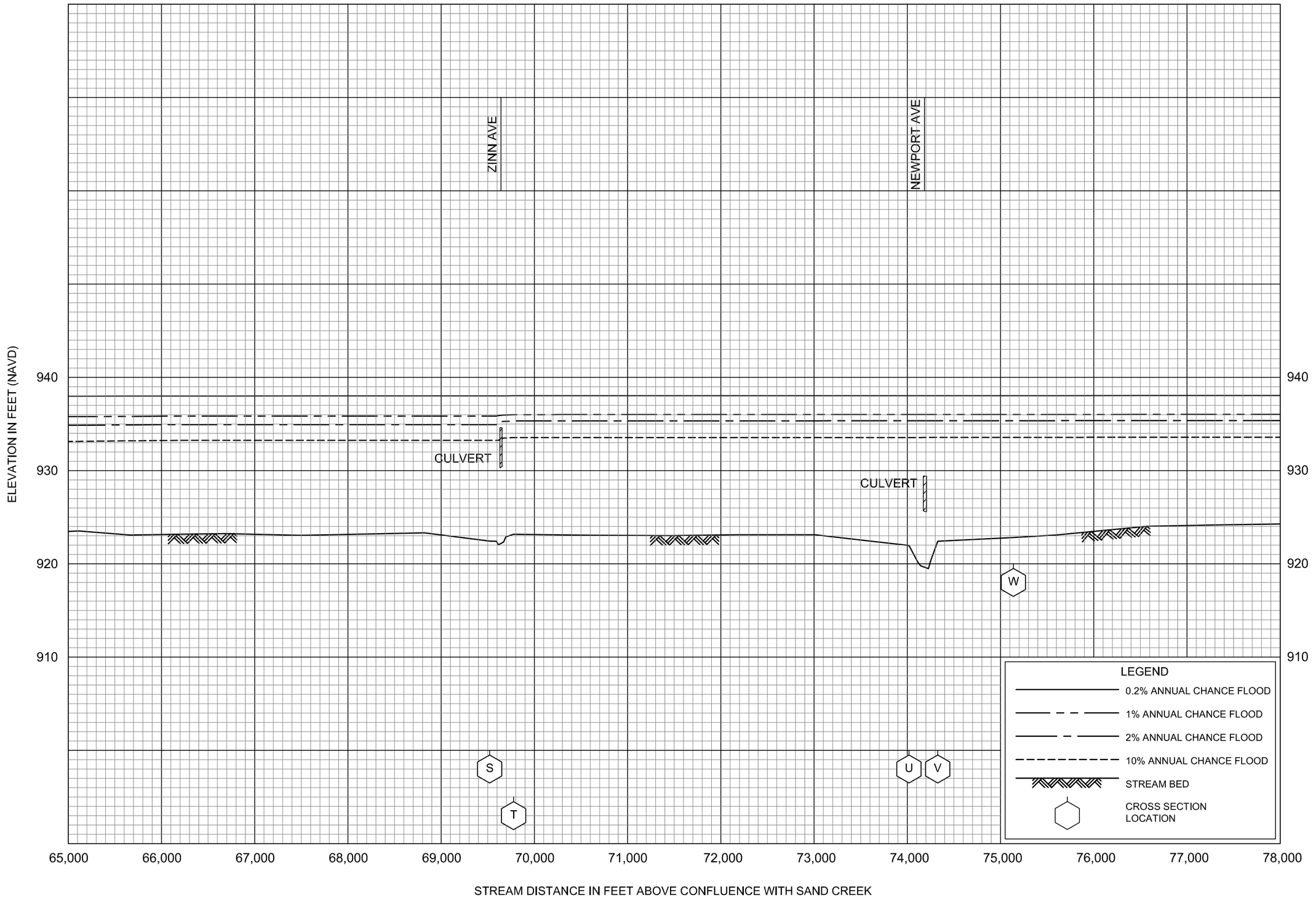
PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

36P




FLOOD PROFILES

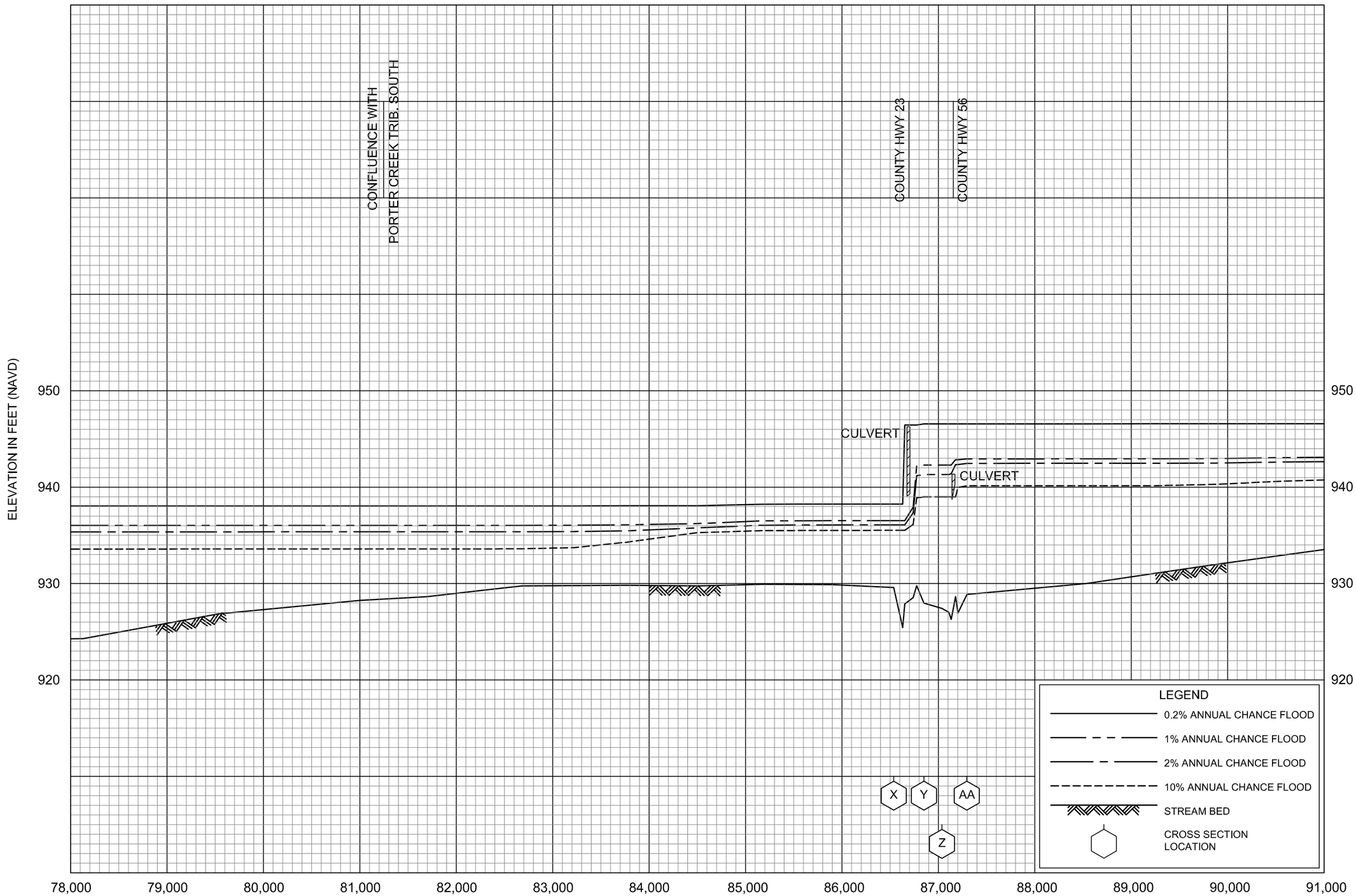
PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

37P




# FLOOD PROFILES

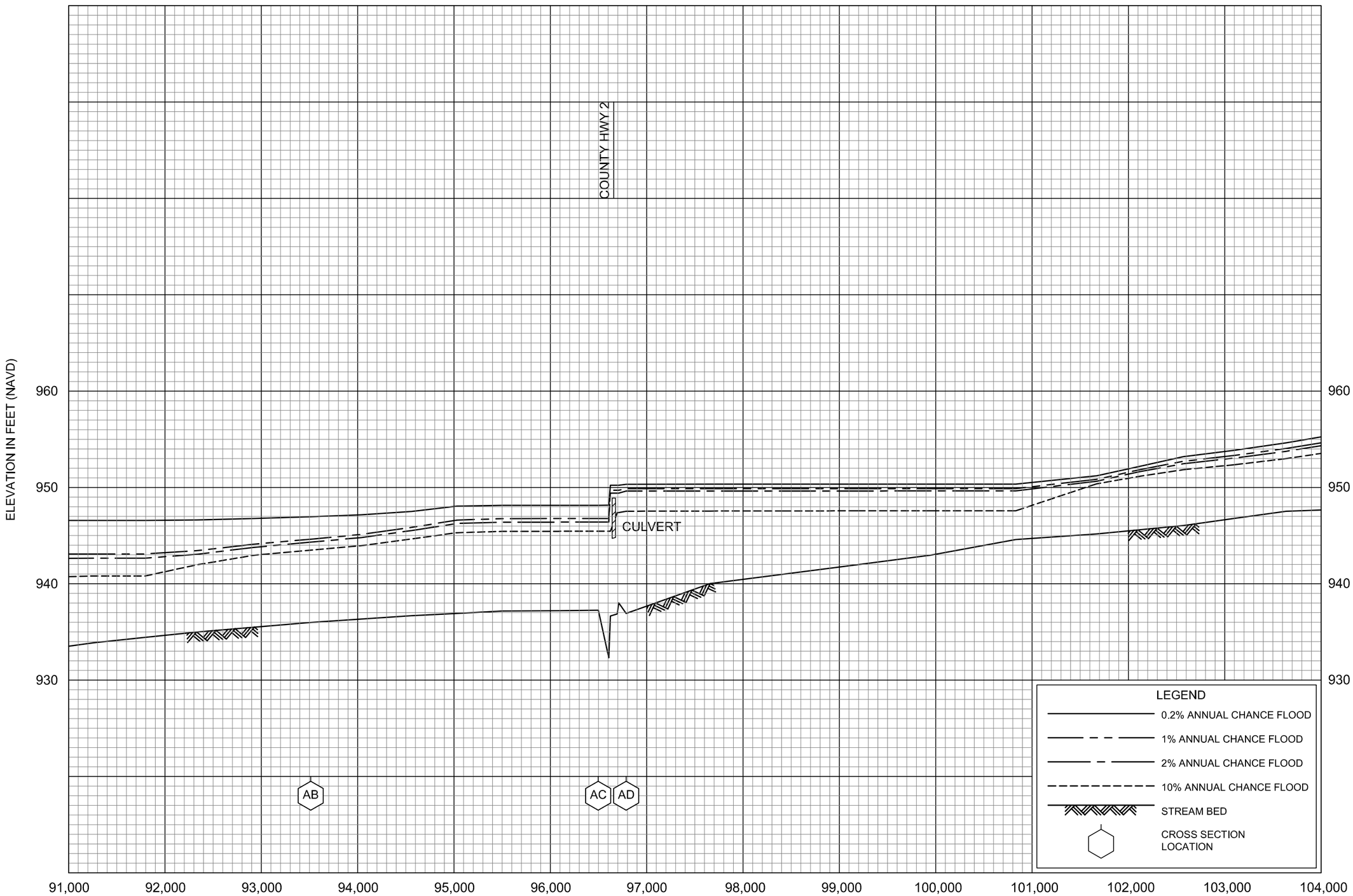
## PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

38P




FLOOD PROFILES

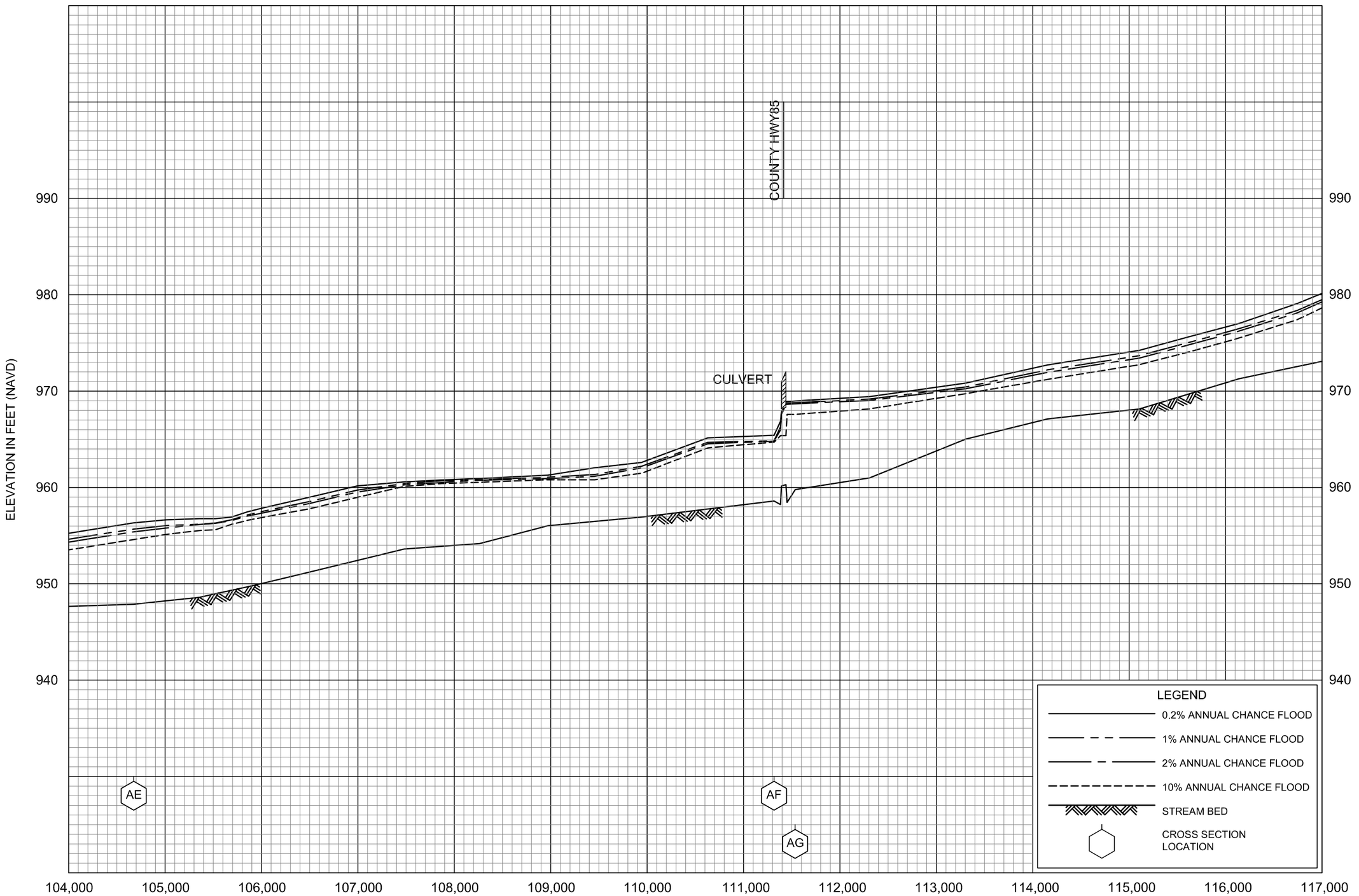
PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

39P




FLOOD PROFILES

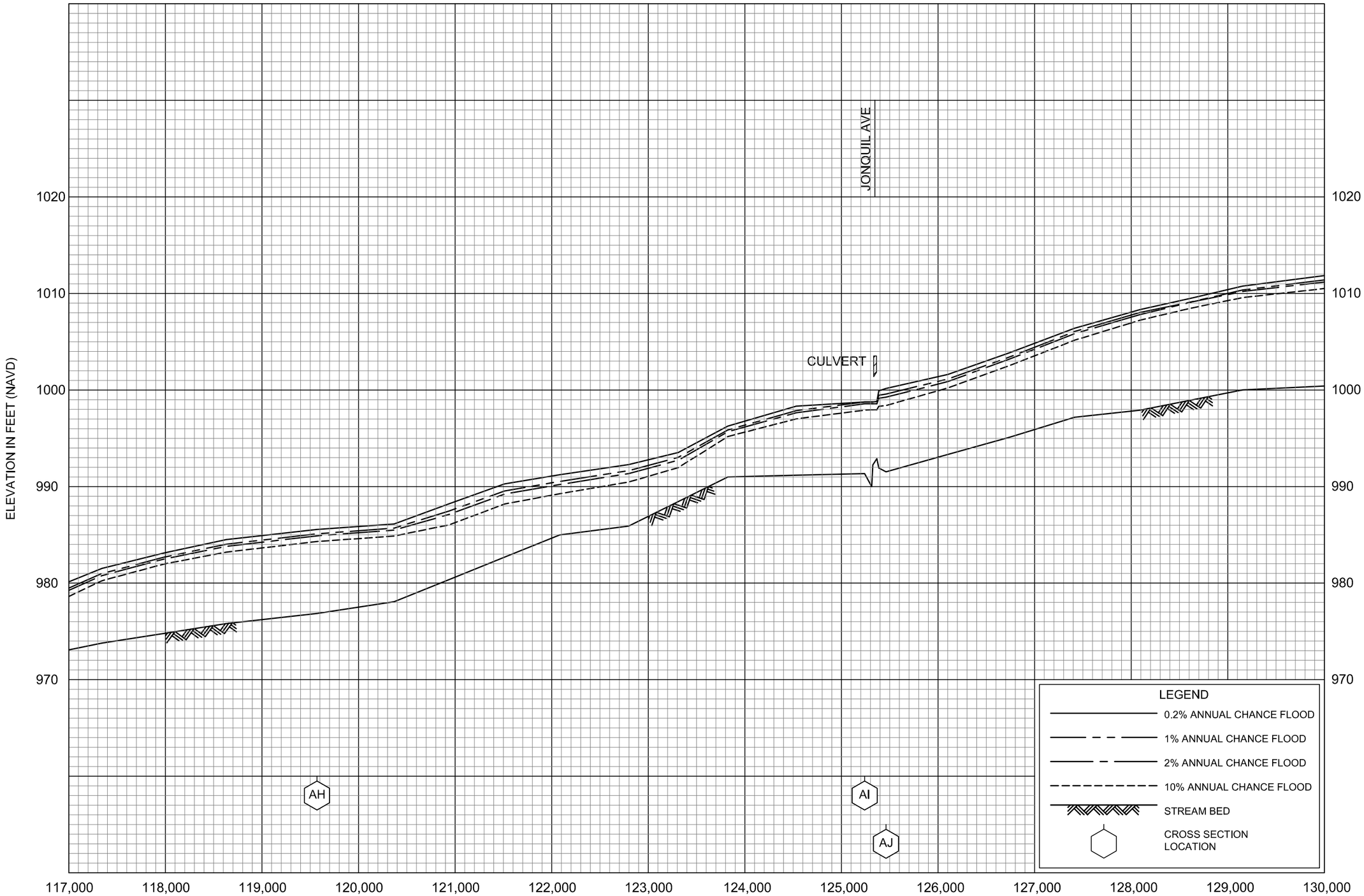
PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

40P




FLOOD PROFILES

PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

41P

ELEVATION IN FEET (NAVD)

1050
1040
1030
1020
1010
1000

COUNTY HWY 86
COUNTY BOUNDARY
CULVERT
LIMIT OF DETAILED STUDY
AK

130,000
131,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SAND CREEK

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

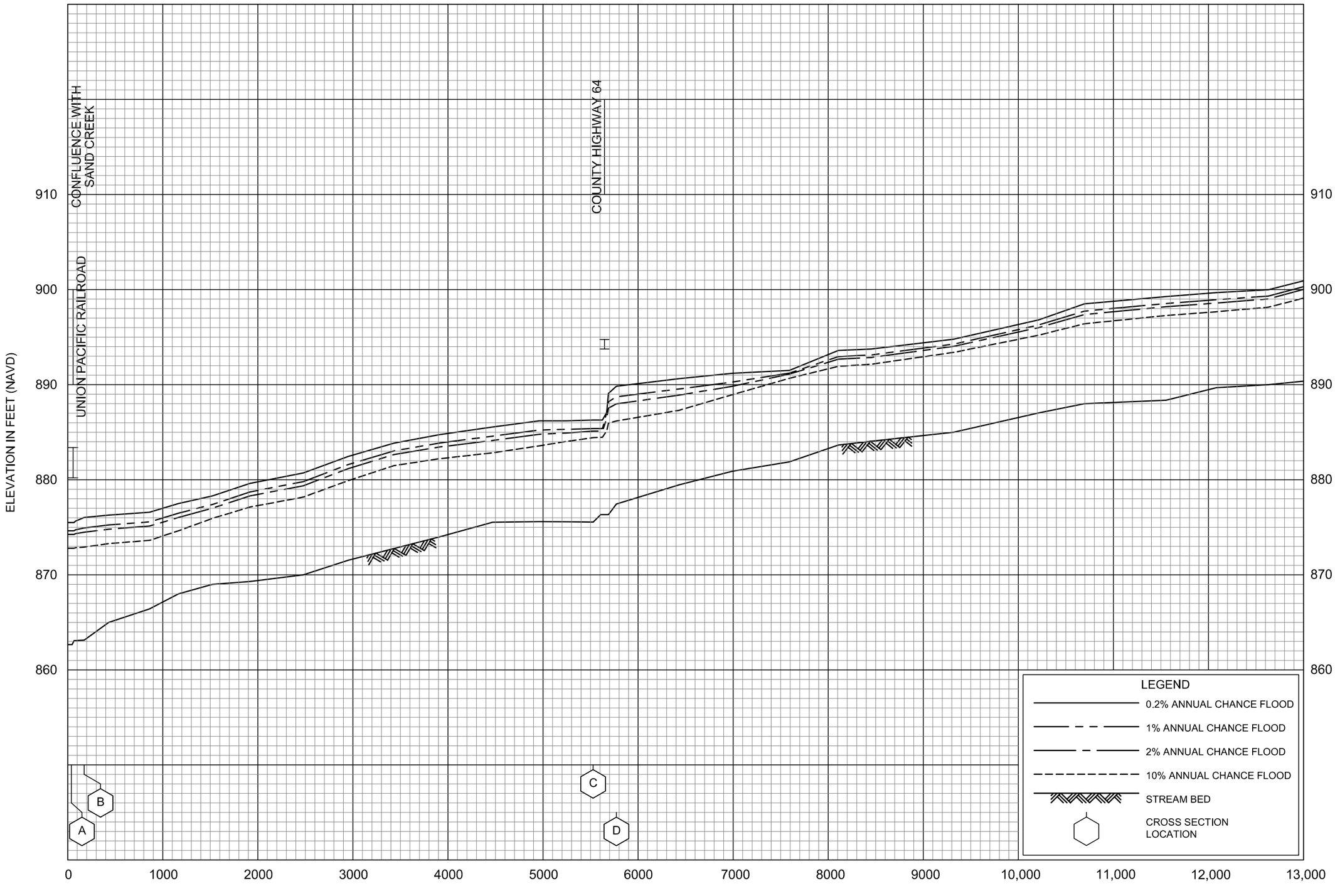
## PORTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

42P




FLOOD PROFILES

RAVEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

43P

NOTE: THE 0.2% ANNUAL CHANCE FLOOD PROFILE IS TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD ELEVATION TO BE SHOWN SEPERATELY

NOTE: THE 2% ANNUAL CHANCE FLOOD PROFILE IS TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD ELEVATION TO BE SHOWN SEPERATELY

COUNTY HIGHWAY 21

ELEVATION IN FEET (NAVD)

920
910
900
890

13,000 14,000 15,000 16,000 17,000 18,000 19,000 20,000 21,000 22,000 23,000 24,000 25,000 26,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SAND CREEK

E F G

LEGEND

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

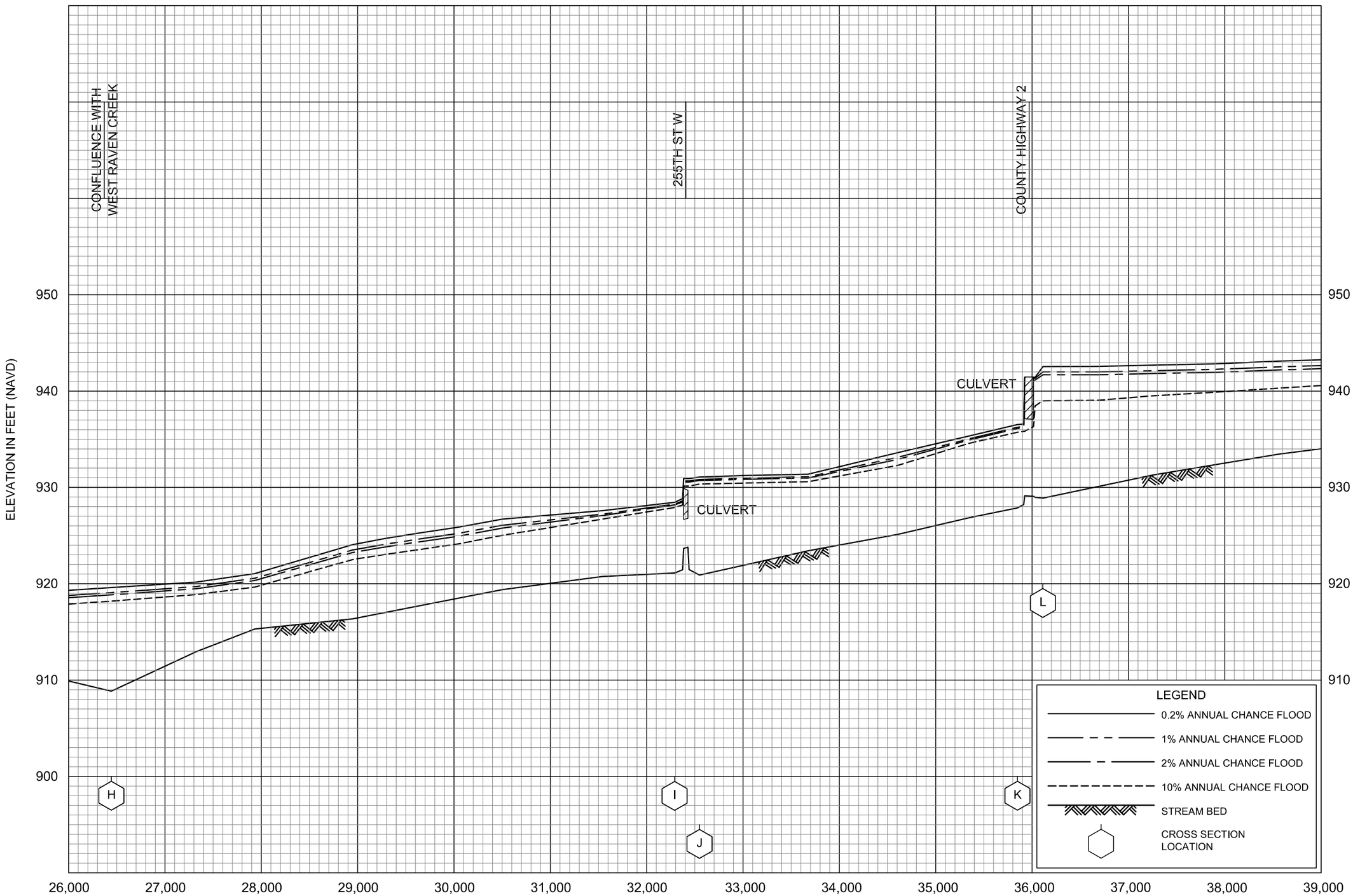
# FLOOD PROFILES

## RAVEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS




FLOOD PROFILES

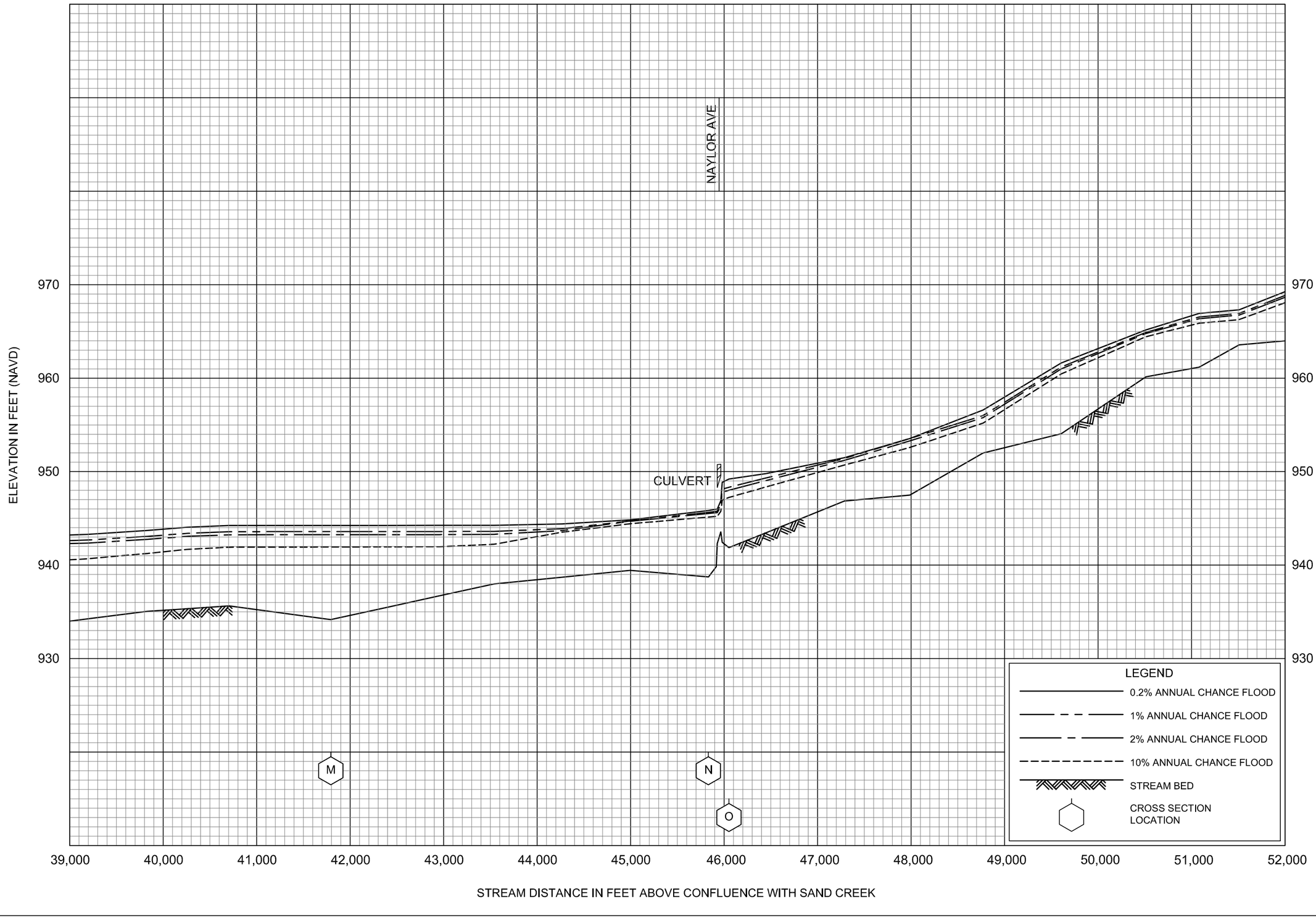
RAVEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

45P




FLOOD PROFILES

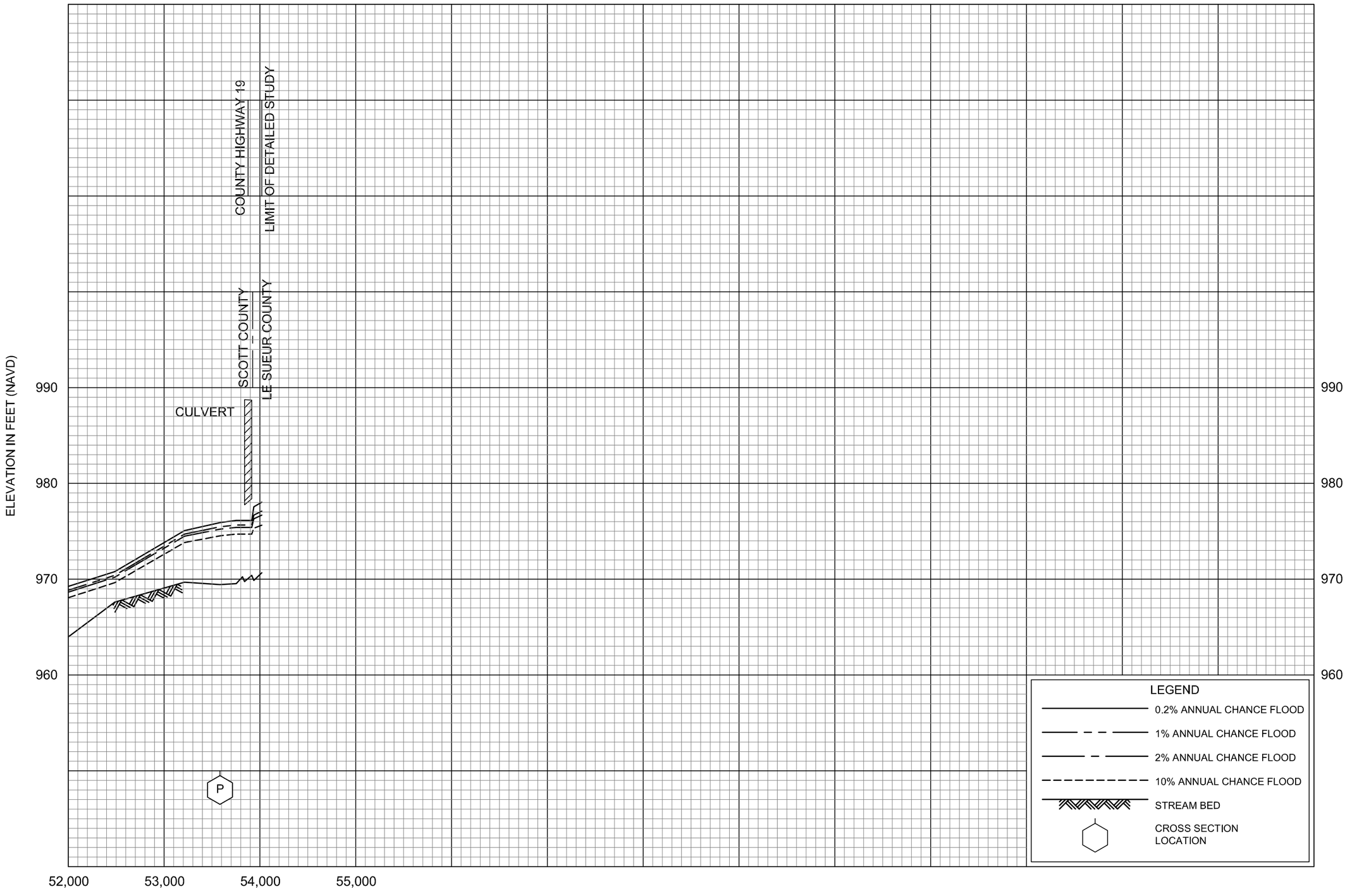
RAVEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

46P




# FLOOD PROFILES

## RAVEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

47P

FLOODING CONTROLLED BY MINNESOTA RIVER

CONFLUENCE WITH MINNESOTA RIVER

PRIVATE DRIVE

RAILROAD

UNION TRAIL ROAD

CULVERT

CULVERT

ELEVATION IN FEET (NAVD)

750
740
730
720
710
700

0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

A

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

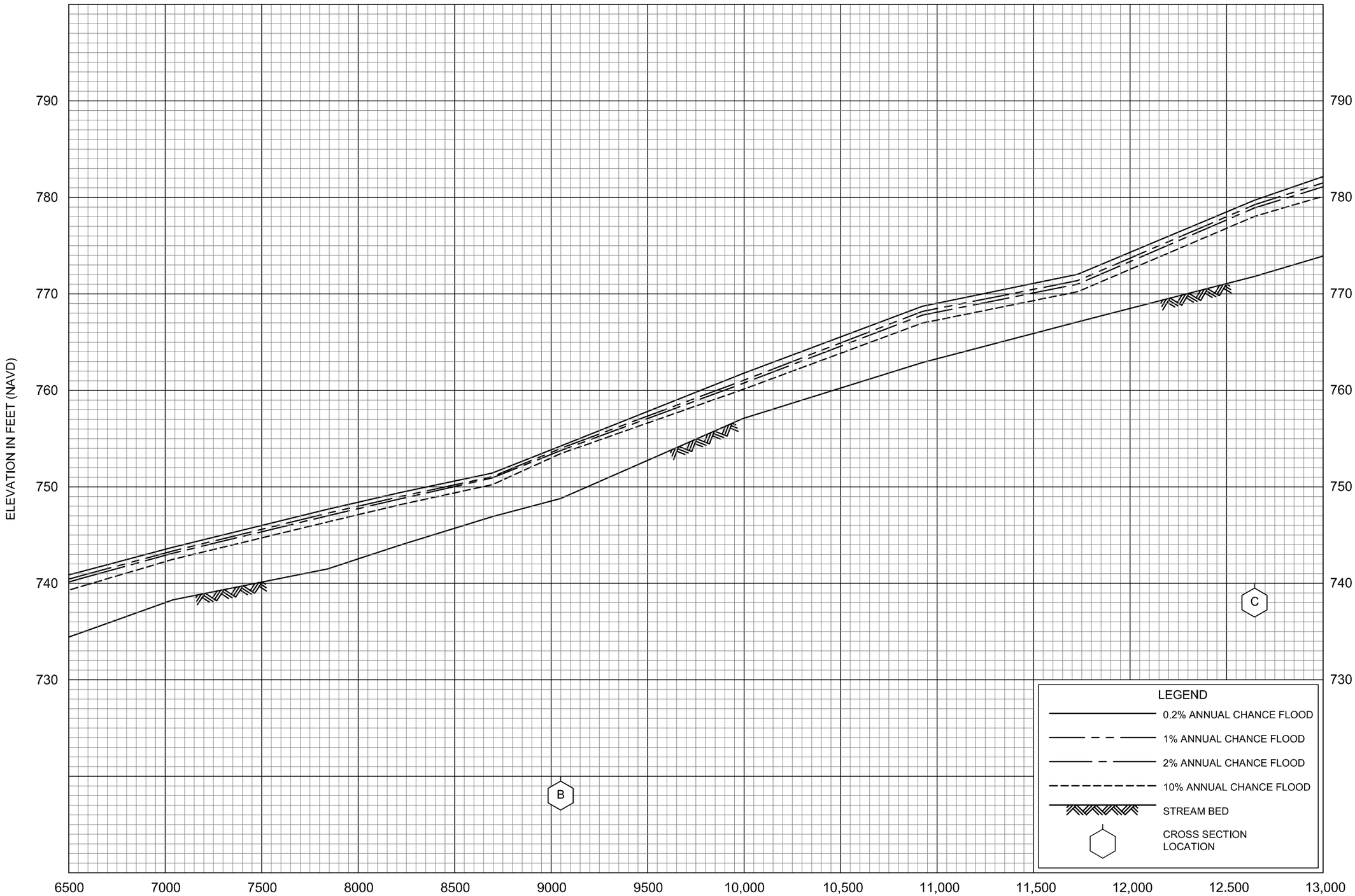
ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

48P




FLOOD PROFILES

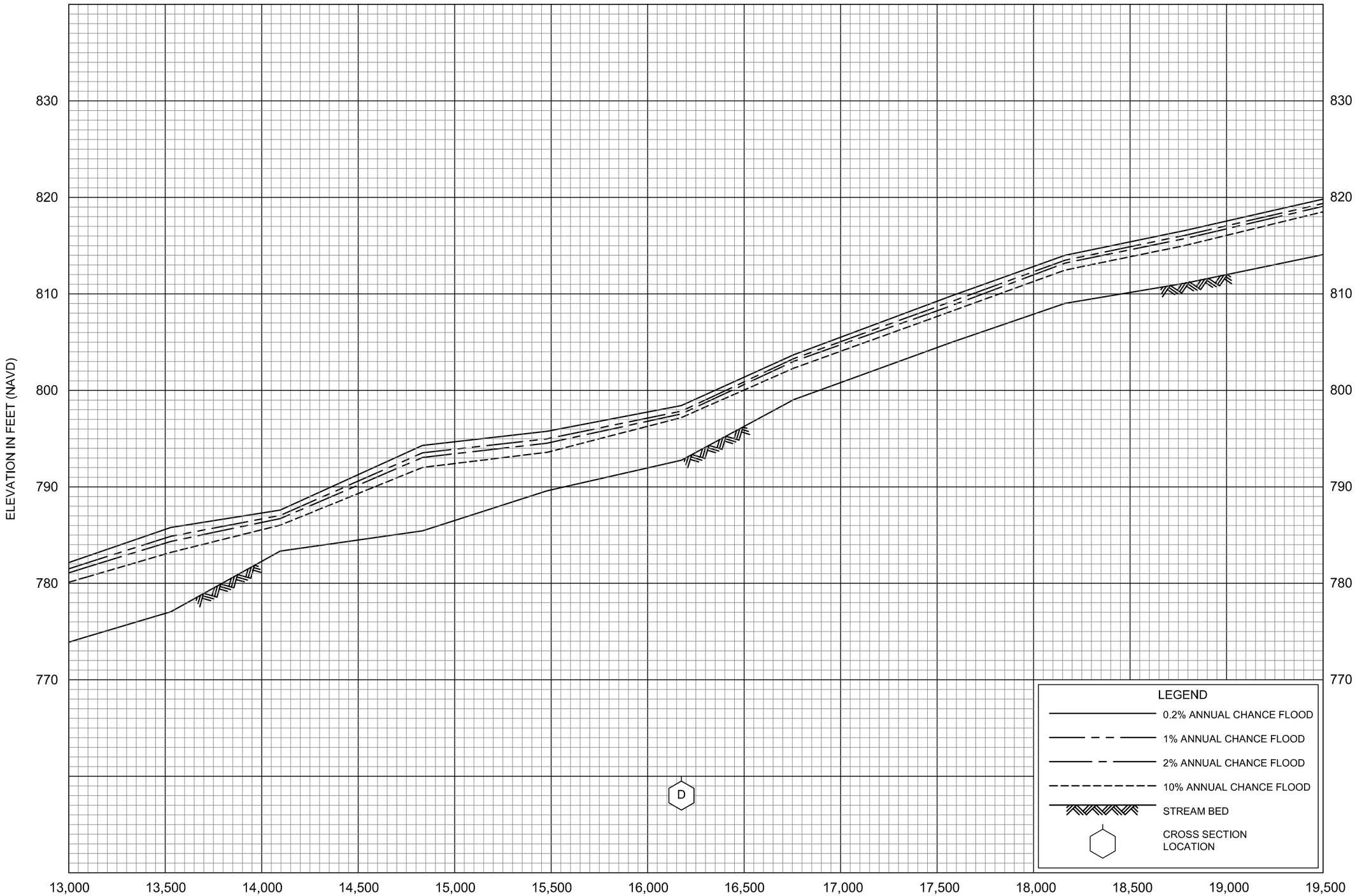
ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

49P




FLOOD PROFILES

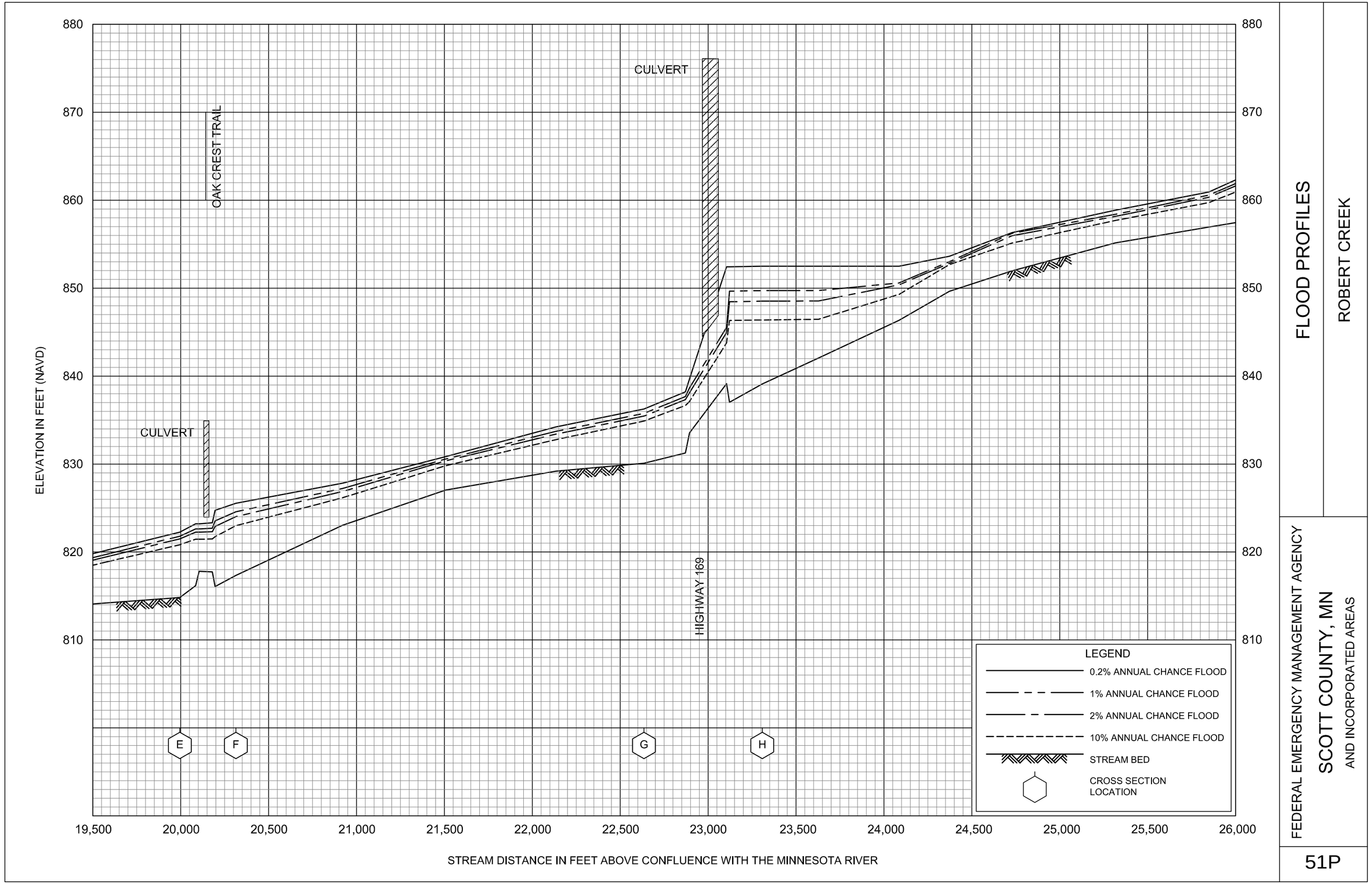
ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

50P



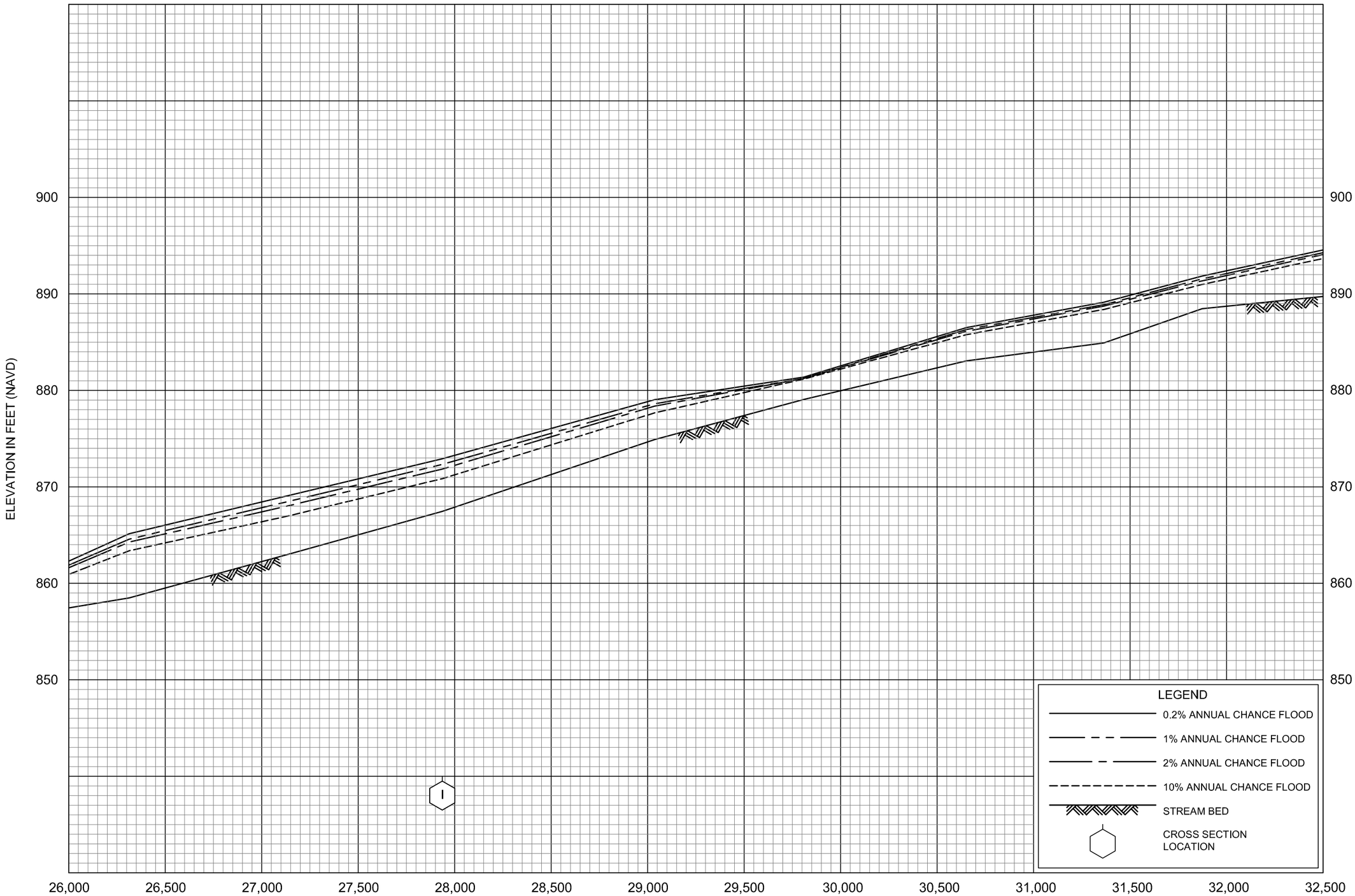

FLOOD PROFILES

ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS




FLOOD PROFILES

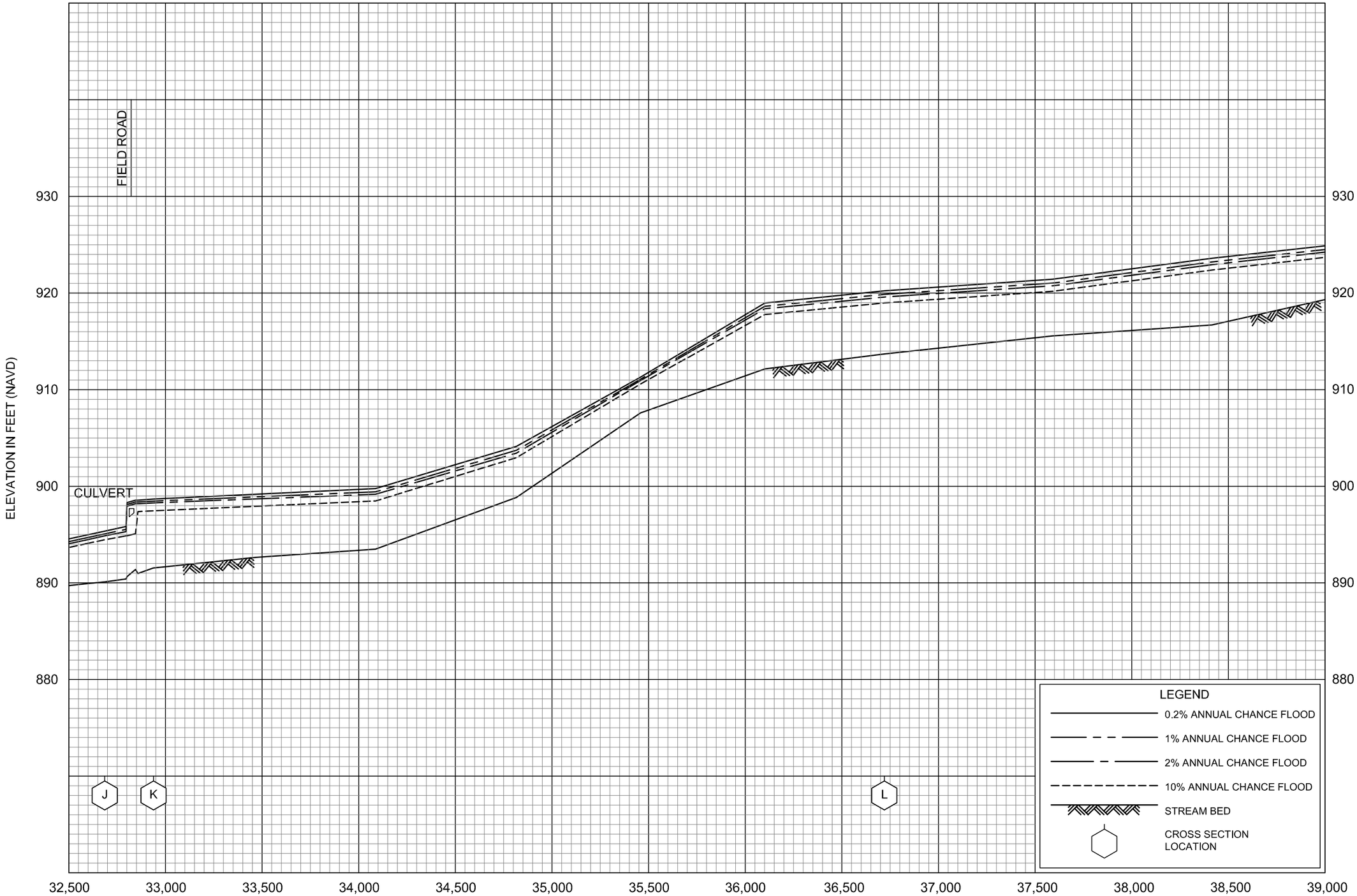
ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

52P




FLOOD PROFILES

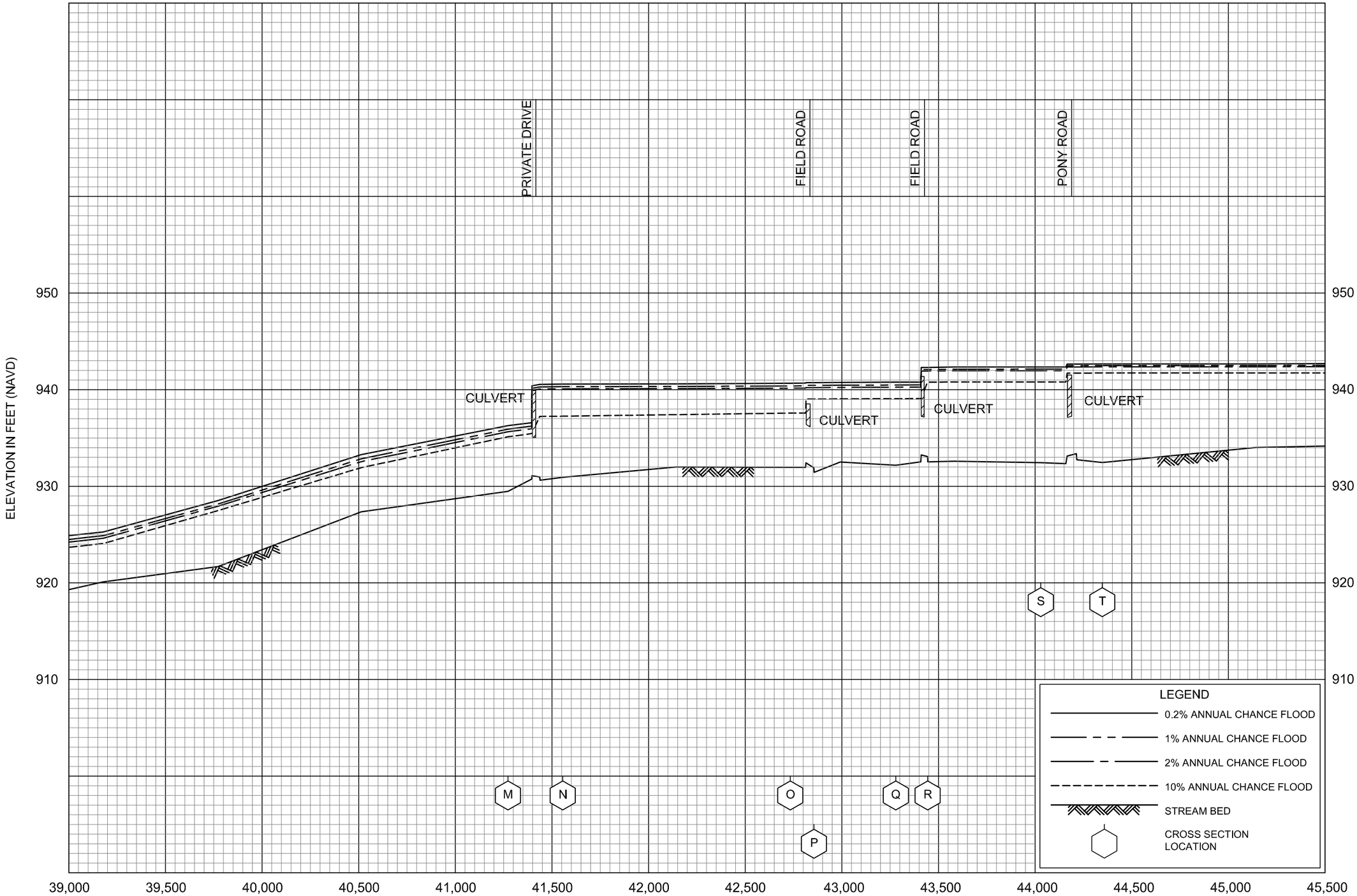
ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

53P




FLOOD PROFILES

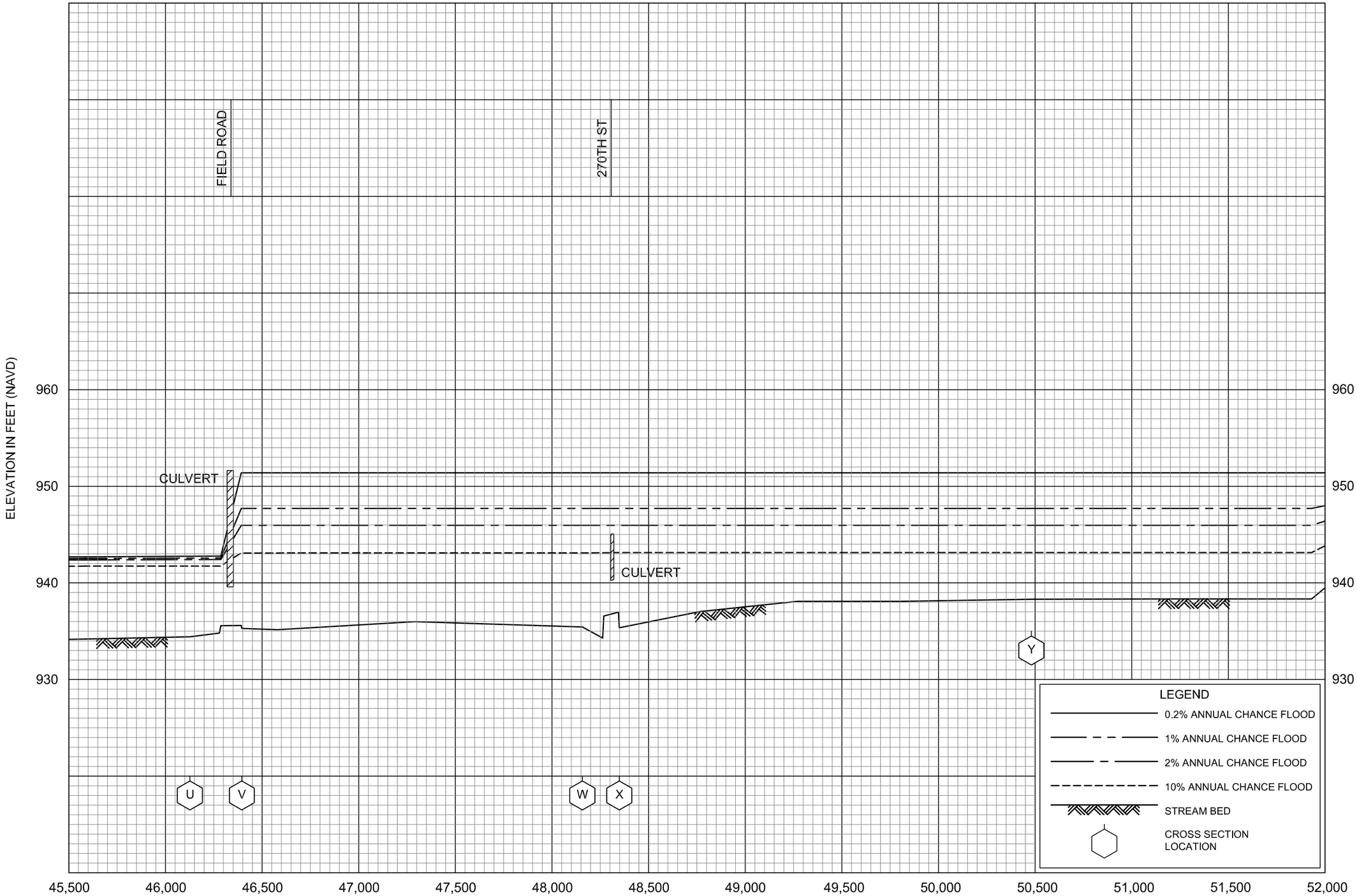
ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

54P




FLOOD PROFILES

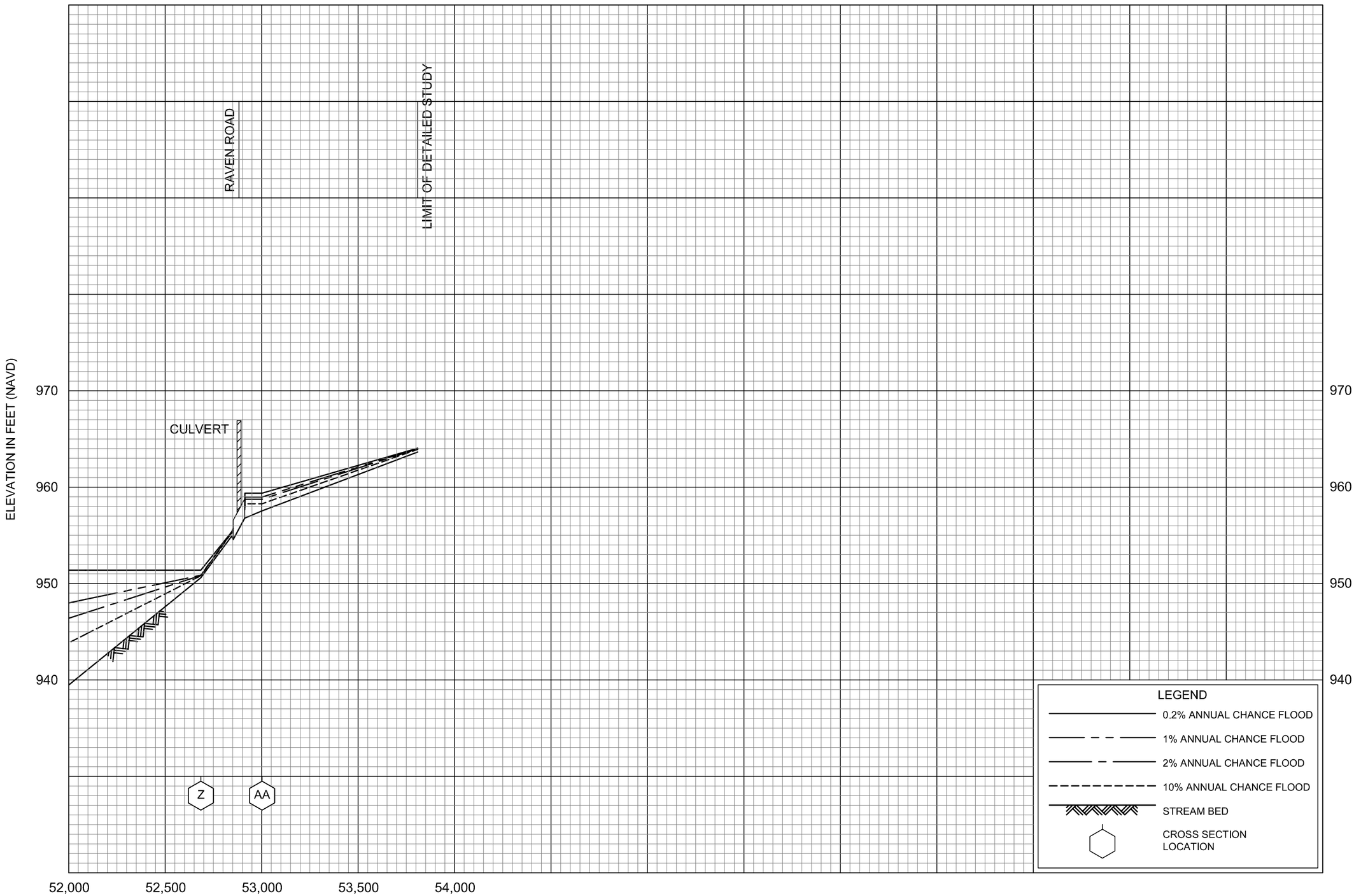
ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

55P




ELEVATION IN FEET (NAVD)

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

ROBERT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

56P

FLOODING CONTROLLED BY MINNESOTA RIVER

CONFLUENCE WITH MINNESOTA RIVER

DAM

ELEVATION IN FEET (NAVD)

730
720
710
700
690

0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10,000 11,000 12,000 13,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

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

SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

57P

FLOODING CONTROLLED BY MINNESOTA RIVER

WALKING PATH

ELEVATION IN FEET (NAVD)

730
720
710
700
690

LEGEND

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

13,000 14,000 15,000 16,000 17,000 18,000 19,000 20,000 21,000 22,000 23,000 24,000 25,000 26,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

58P

FLOODING CONTROLLED BY MINNESOTA RIVER

UNION PACIFIC RAILROAD

173RD STREET WEST

ELEVATION IN FEET (NAVD)

740
730
720
710
700

A
B
C

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

26,000 27,000 28,000 29,000 30,000 31,000 32,000 33,000 34,000 35,000 36,000 37,000 38,000 39,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

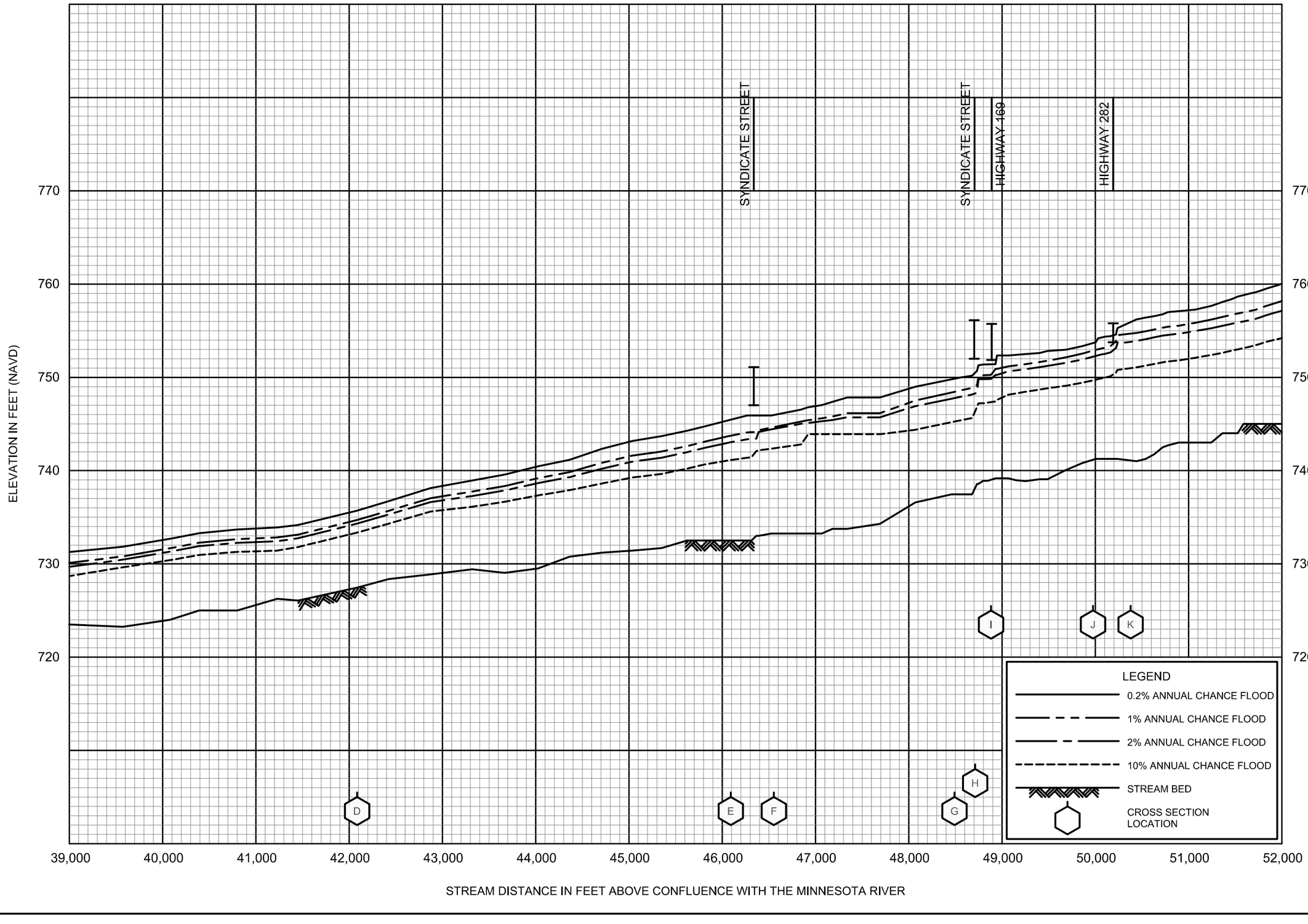
SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

59P




FLOOD PROFILES

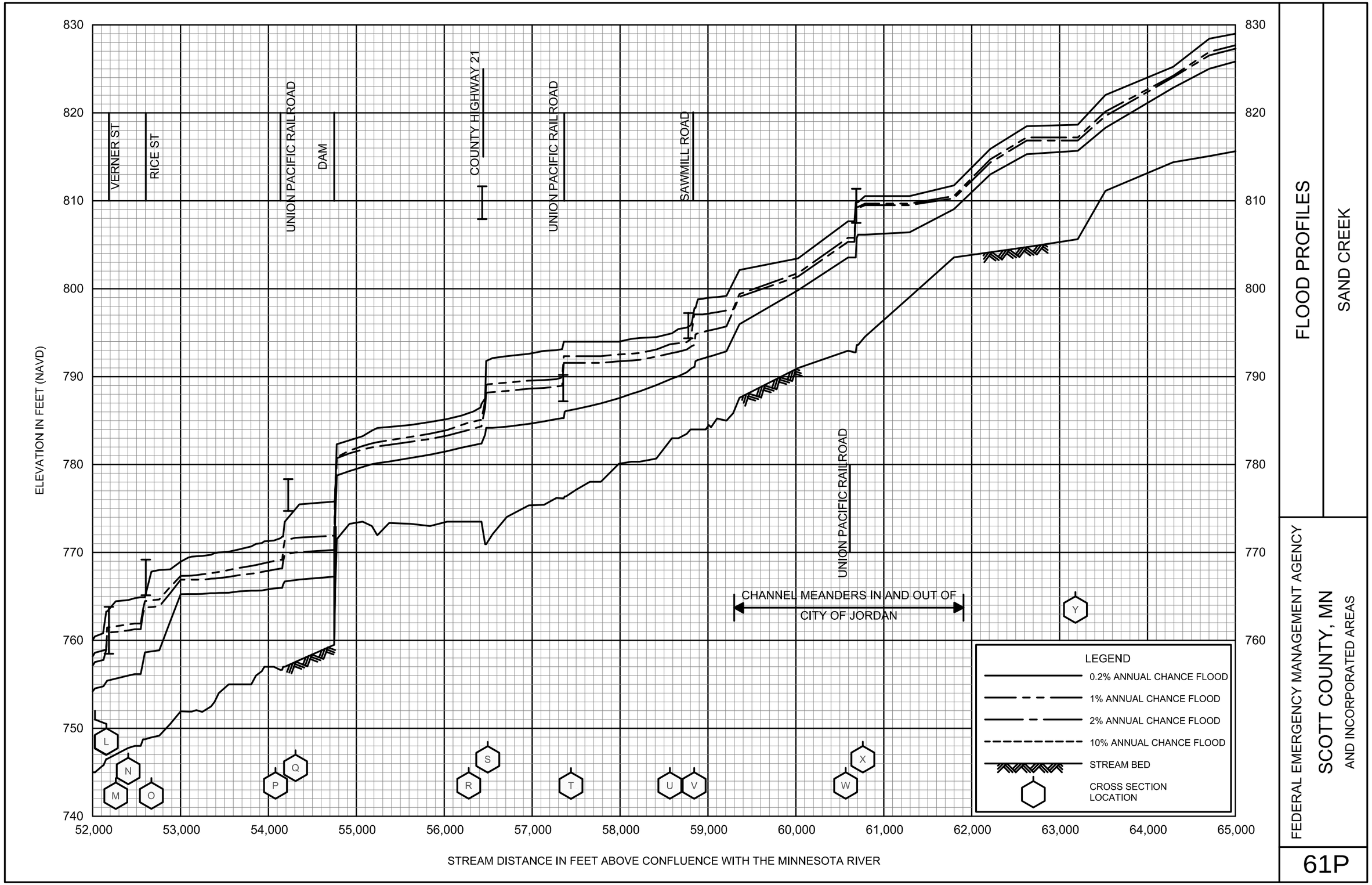
SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

60P




# FLOOD PROFILES

## SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

61P

NOTE: THE 2% ANNUAL CHANCE FLOOD PROFILE IS TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD PROFILE TO BE SHOWN SEPERATELY

UNION PACIFIC RAILROAD

UNION PACIFIC RAILROAD

UNION PACIFIC RAILROAD

UNION PACIFIC RAILROAD

CONFLUENCE WITH PORTER CREEK

ELEVATION IN FEET (NAVD)

860
850
840
830
820
810

Z
AA
AB
AC
AD
AE
AF
AG
AH

LEGEND

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

65,000 66,000 67,000 68,000 69,000 70,000 71,000 72,000 73,000 74,000 75,000 76,000 77,000 78,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

62P

NOTE: THE 2% ANNUAL CHANCE FLOOD PROFILE IS TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD PROFILE TO BE SHOWN SEPERATELY

COUNTY HIGHWAY 8

UNION PACIFIC RAILROAD

CONFLUENCE WITH RAVEN CREEK

CULVERT

ELEVATION IN FEET (NAVD)

890
880
870
860
850
840

AI
AJ
AK
AL
AM

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

78,000 79,000 80,000 81,000 82,000 83,000 84,000 85,000 86,000 87,000 88,000 89,000 90,000 91,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

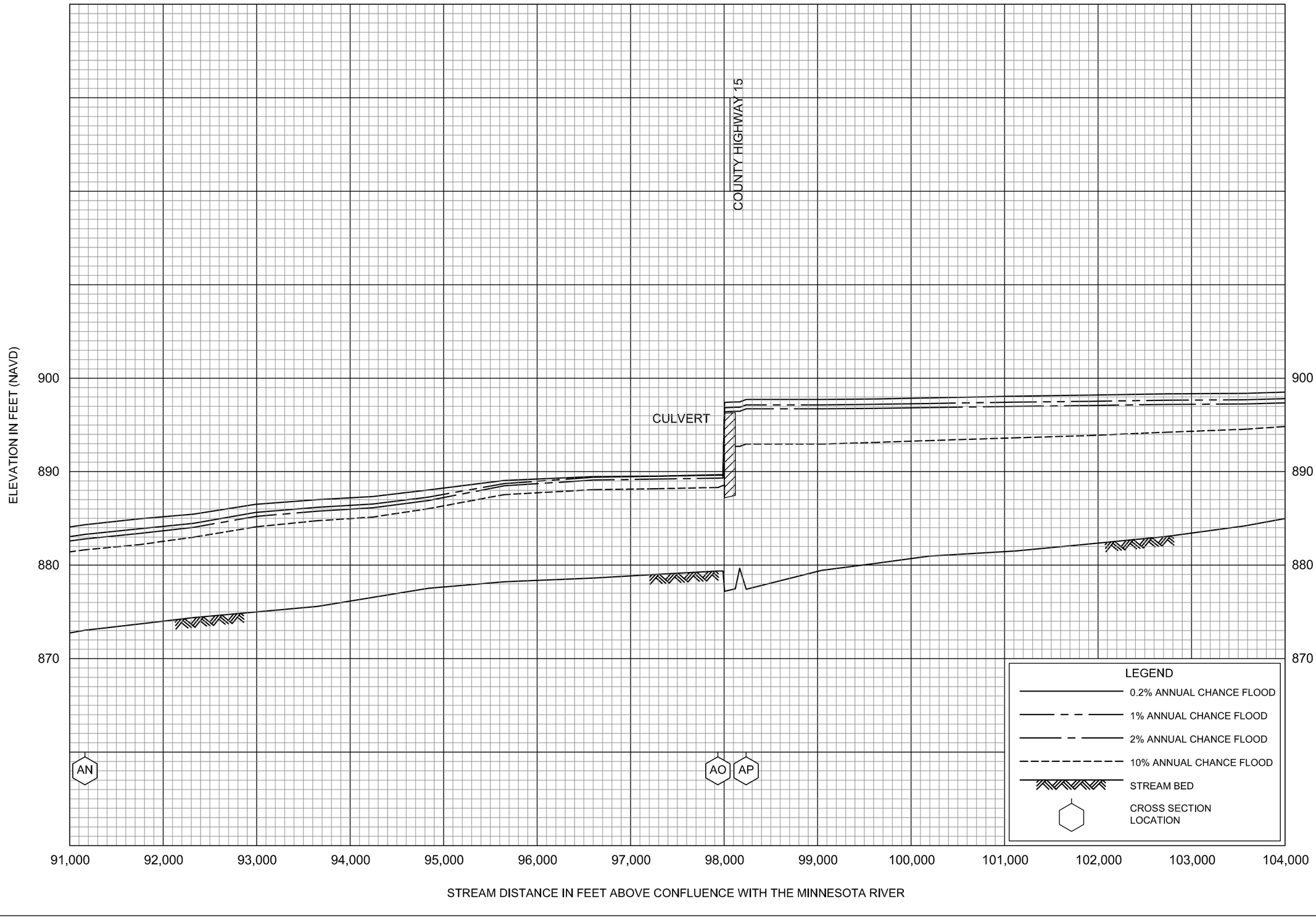
SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

63P



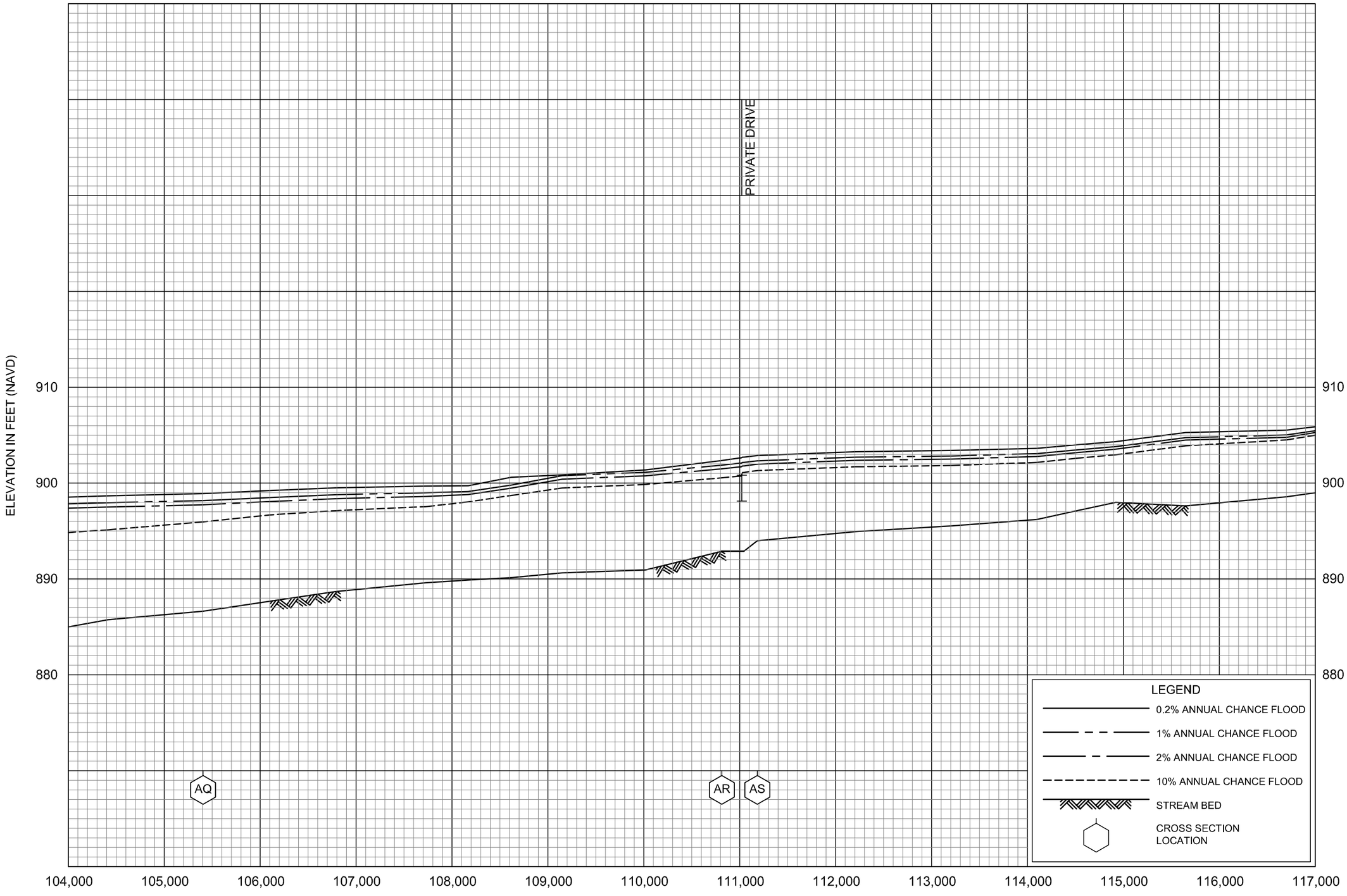

# FLOOD PROFILES

## SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS




FLOOD PROFILES

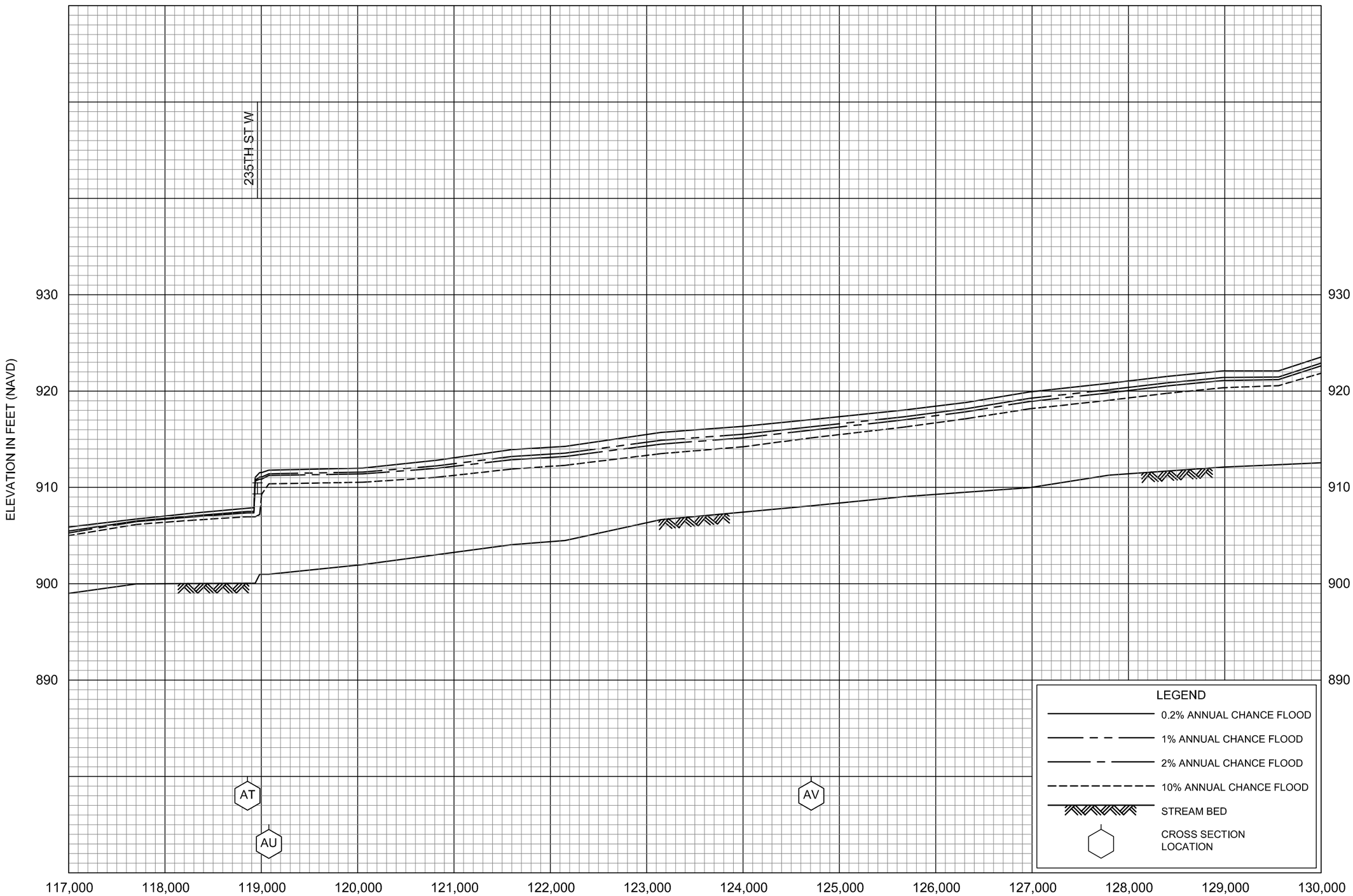
SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

65P




FLOOD PROFILES

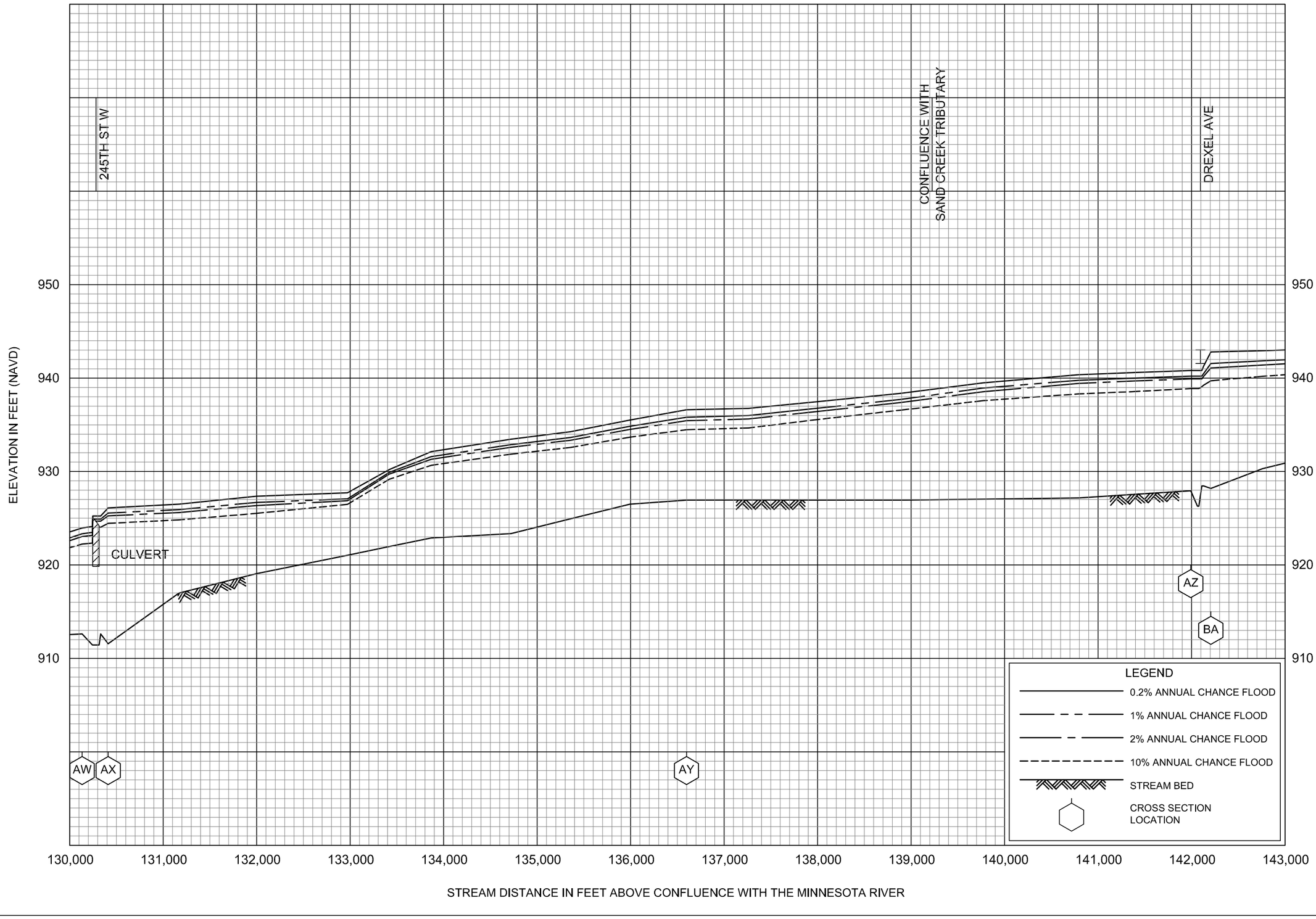
SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

66P




FLOOD PROFILES

SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

67P

NOTE: THE 2% ANNUAL CHANCE FLOOD PROFILE
IS TOO CLOSE TO THE 1% ANNUAL CHANGE
FLOOD PROFILE TO BE SHOWN SEPERATELY

260TH ST W

DREXEL AVE

CULVERT

BB

BC

BD

BE

LEGEND

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

ELEVATION IN FEET (NAVD)

970
960
950
940
930

143,000 144,000 145,000 146,000 147,000 148,000 149,000 150,000 151,000 152,000 153,000 154,000 155,000 156,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH THE MINNESOTA RIVER

FLOOD PROFILES

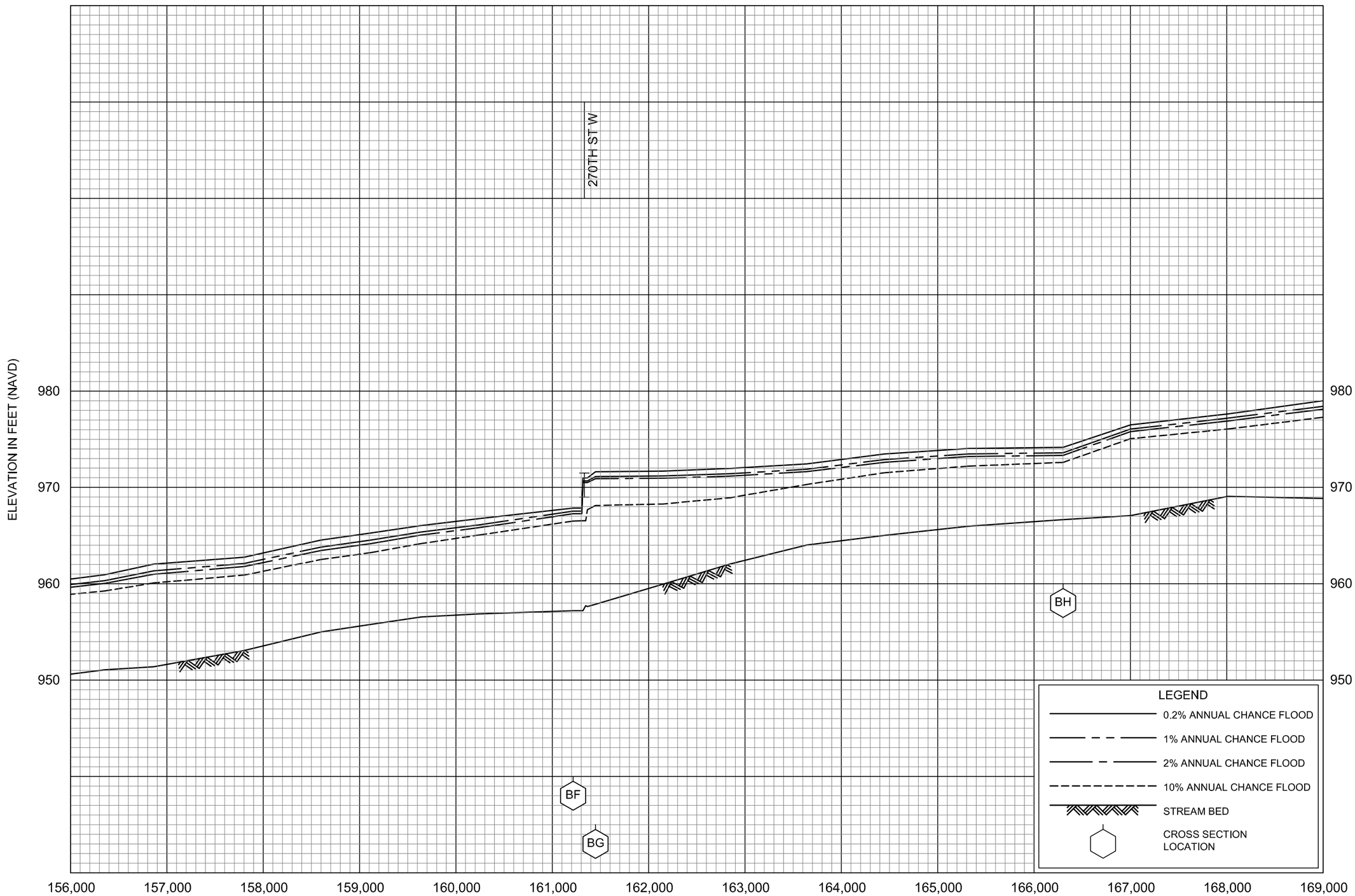
SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

68P




FLOOD PROFILES

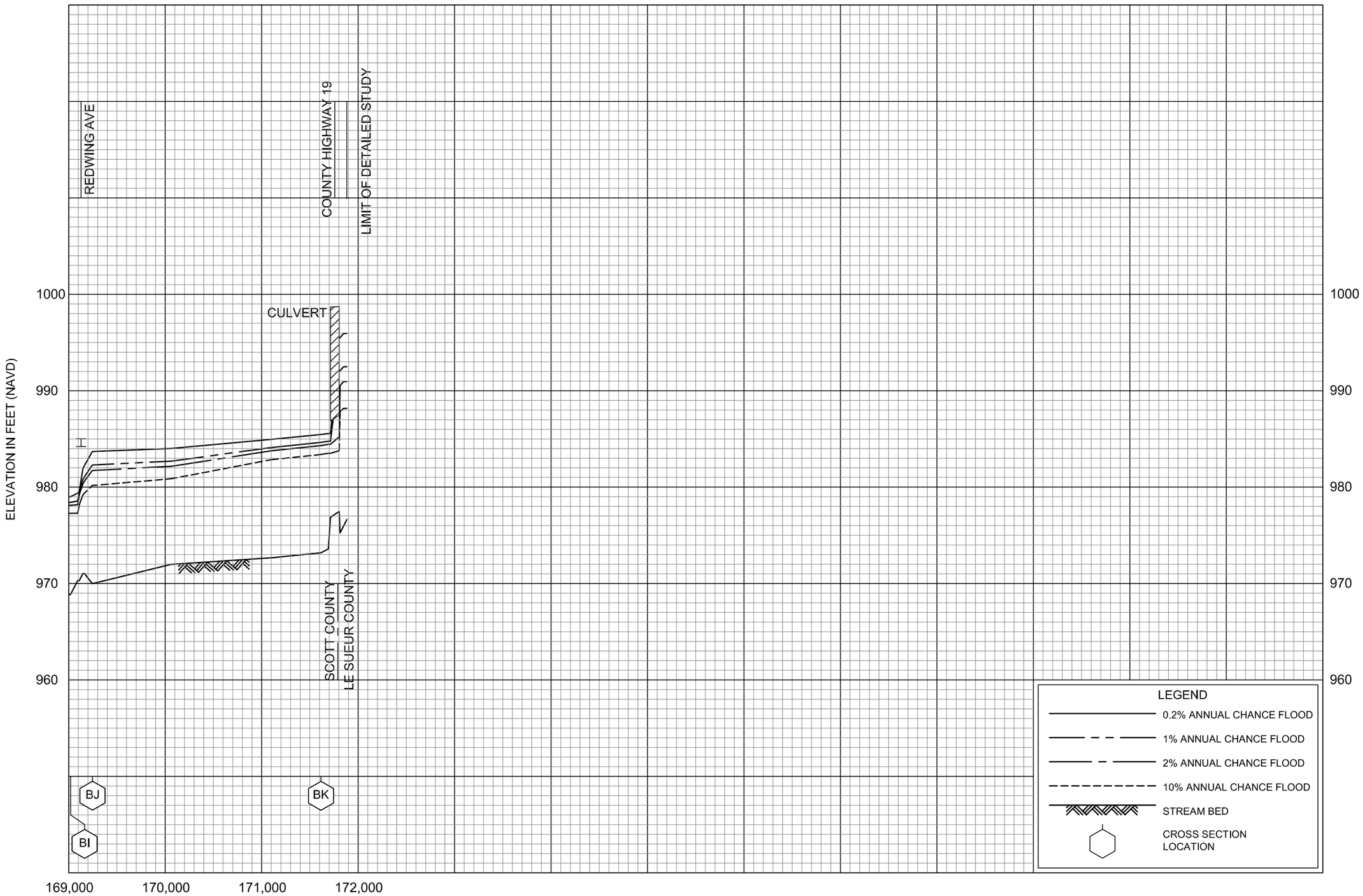
SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

69P




FLOOD PROFILES

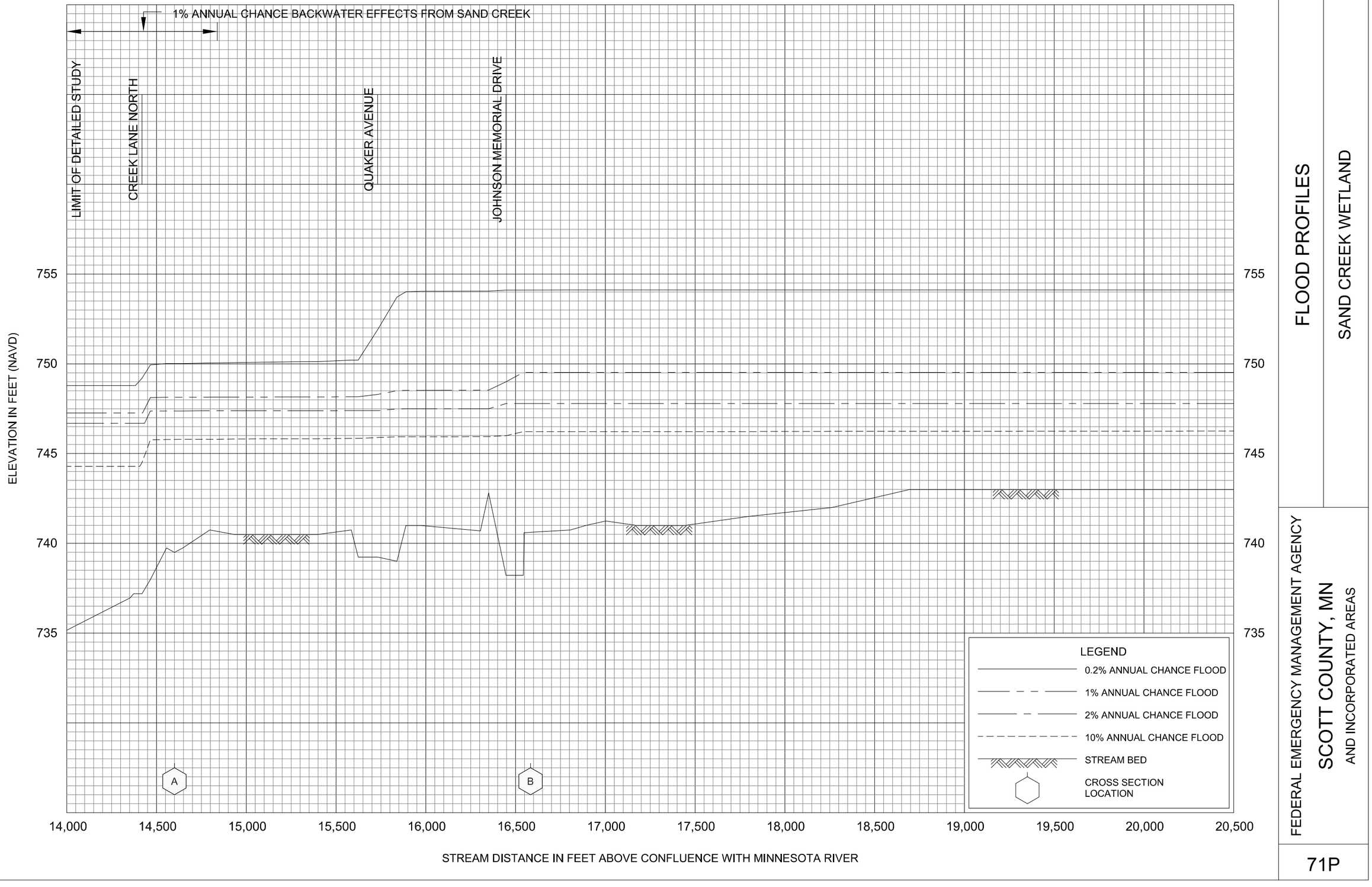
SAND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

70P




FLOOD PROFILES

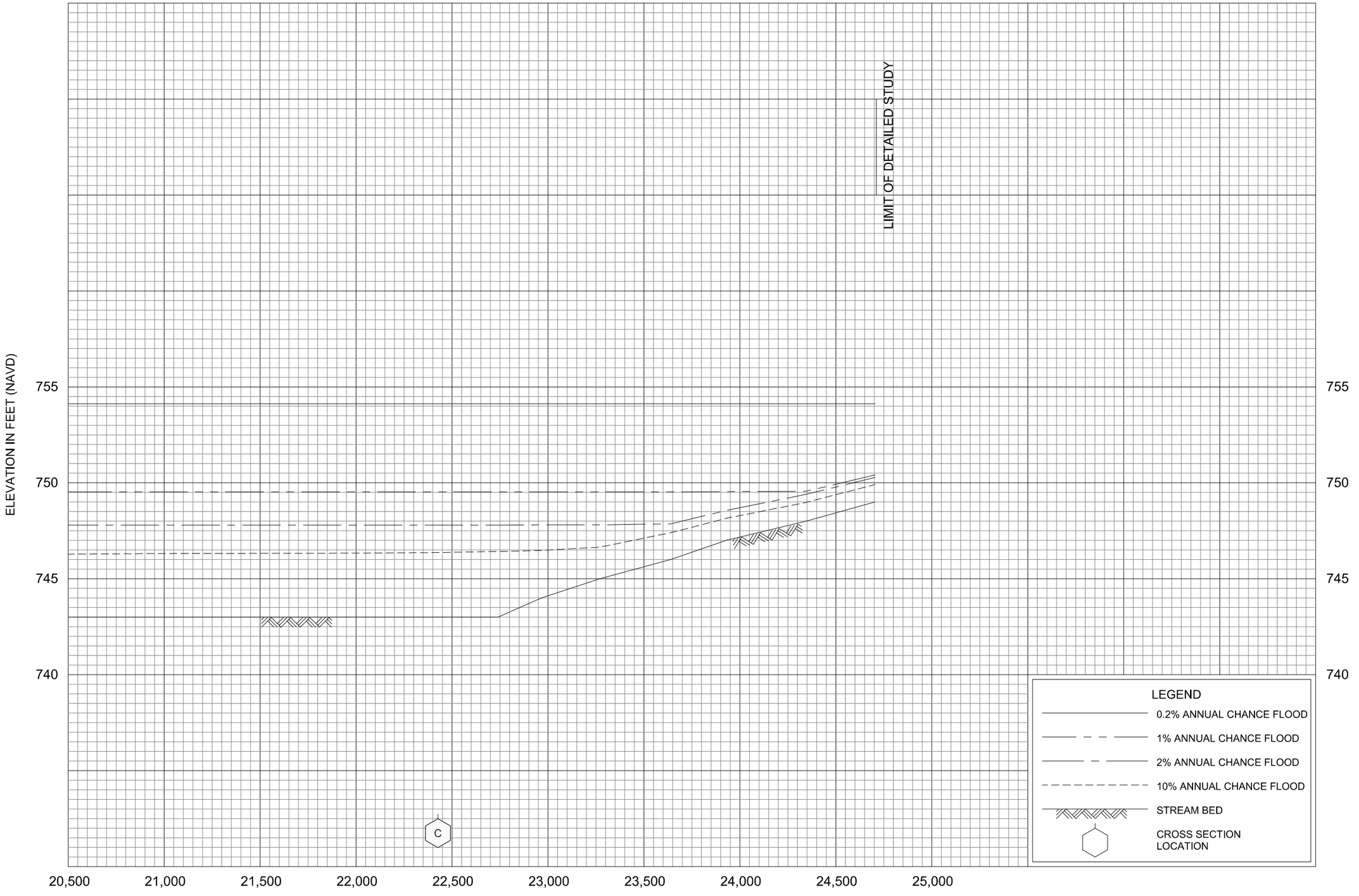
SAND CREEK WETLAND

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

71P




FLOOD PROFILES

SAND CREEK WETLAND

FEDERAL EMERGENCY MANAGEMENT AGENCY

SCOTT COUNTY, MN

AND INCORPORATED AREAS

72P