

Spillway Capacity Report

Wambold Dam

Kroll Dam

Prepared for:

Eagle Spring Lake Management District

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Spillway Capacity Report

Eagle Spring Lake Eagle, Wisconsin

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1.0 Introduction

Eagle Spring Lake is approximately 311 acres with a maximum depth of 12 feet and a mean depth of about 4 feet. The Mukwonago River enters the lake from the south and is the major inflow into the lake. Lake level and outflow is controlled by two outlet structures – the Wambold Dam operated by control gate and a former mill race (regarded as Kroll Dam), located in the northeast corner of Eagle Spring Lake, Town of Eagle, Waukesha County, Wisconsin.



Wambold Dam



Kroll Dam

In July 1997, the Department of Natural Resources (DNR) completed an inspection of the Wambold Dam to identify its hazard class rating. The Dam Safety Inspection Report indicates the dam hazard rating for the Wambold Dam as Class III or high hazard. This is based on preliminary flood flow estimates and map surveillance. The hazard rating was completed as required by Wisconsin Administrative Code NR 333.04 and reflects the downstream development that could be affected by a failure of the dam and floodplain zoning in place below the dam. The report indicated that a dam failure analysis be performed by an engineer to verify the above rating by DNR.

In late 2000, Eagle Springs Lake Management District retained Graef, Anhalt, Schlomemer & Associates, Inc. (GAS) to perform a Dam Failure Analysis and develop an Emergency Action Plan (EAP) for the Wambold and Kroll Dams. The results of the analysis confirmed the dam is a high hazard.

The DNR approved the dam failure analysis and assigned the dam a high hazard rating in August 2002. The high hazard rating was set due to the lack of zoning within the dam failure floodplain (hydraulic shadow) downstream of the dam. As a dam with a high hazard, the dam must be capable of passing the 1000-year flood without overtopping. Currently, the dam is unable to safely pass the 1000-year flood.

There are two residences within the hydraulic shadow downstream of the dam that would be inundated should the dam fail. However, the two homes are not inundated to a depth greater than 2 feet. According to the DNR approval letter, the dam could be assigned a significant hazard rating upon written request and proof of zoning within the hydraulic shadow and a demonstration that the dam structure is capable of passing the 500-year flood without overtopping. In early 2004, new zoning maps amended the FEMA approved 100-year floodplain boundary to include the dam failure analysis.

The Eagle Spring Lake Management District has retained Ayres Associates to evaluate the 500-year flood spillway capacity of the Wambold and Kroll Dams to complete the process necessary to move the dam from a high hazard rating to a significant hazard rating.

Project contacts are:

Eagle Springs Lake Management District		Wisconsin DNR		Ayres Associates
Tom Day, Chairman		William Sturtavant		Kristine Anderson, PE
		Michelle Schneider		Matthew Maederer, EIT

Table 1 Project Contacts

2.0 Existing Hydrologic Information

The hydrology used for the Eagle Spring Lake spillway capacity analysis was the adopted hydrology from the November 19th, 2008 Flood Insurance Study (FIS) for Waukesha County, WI and Incorporated Areas.

A copy of the FIS is included in Appendix A.

2.1 Inflow Analysis

The actual inflow into Eagle Spring Lake is not reported in the FIS. The HEC-HMS Model used for the hydrology was obtained from the Wisconsin Department of Natural Resources. The results for the 100-yr event inflow and the 500-year event inflow are also included in Appendix A. The summary of results is provided below in Table 2.

The following table is a breakdown of all the existing inflow data for the Eagle Springs Lake.

PEAK INFLOW INTO EAGLE SPRINGS LAKE	
	FIS
Q ₁₀₀ (cfs)	1446
Q ₅₀₀ (cfs)	2001

(cfs) cubic feet per second

Table 2 Peak Inflow Results

3.0 Hydraulic Analysis

3.1 Outflow Analysis

To perform the outflow analysis, the proposed modification was modeled using HEC-HMS v.3.0.1. A rating table was developed for the proposed modification. Eagle Springs Lake water surface elevation was assumed to be at 820.68, which is where the lake elevation is normally kept. The proposed modification was modeled at the 500-year rainfall event. In order to be assigned a Dam Hazard Rating of "Significant," the dam must safely pass the 500-year event. Since the Eagle Springs Lake Management District would like the Dam Hazard Rating of significant, we will focus on safely passing the 500-year event.

For our outflow analysis, we used the stage-storage information for Eagle Springs Lake developed and provided by SEWRPC. In all scenarios we ran for the project, the top of dam is at elevation 821.80 above which water will run over the road and possibly breach the dam.

Several scenarios were modeled in the previous spillway capacity report from November 2006. The scenarios that were modeled represented different operating combinations for the Wambold & Kroll Dams. This report only addresses the proposed modification to safely pass the 500-yr rainfall event from the adopted FIS.

4.0 Proposed Modifications

Several proposed modifications (i.e. three alternatives) were previously discussed and modeling in the “Spillway Capacity” report for Wambold and Kroll Dams dated November 2006.

Using the new inflow data from the November 19th, 2008 FIS another proposed modification has been modeled to check for safe passage of the 500-yr event. The proposed modification is discussed below in section 4.1.

4.1 Add Pipe Capacity to Kroll Dam

The proposed modification addresses the option of adding additional spillway capacity at Kroll Dam. Kroll Dam spillway is controlled by a 30” RCP running underneath CTH E. Adding a 48” RCP pipe in the vicinity of the Kroll Dam, increases the spillway capacity and safely passes a 500-year storm event.

	Q ₅₀₀ & W.S Elev. (cfs) (ft)
No Modification	441 (822.15)
With Modification	1174 (821.00)

Table 3 Proposed Results

Advantages

- Eagle Springs Lake level may remain at current operating level of 820.68.
- The 500-year storm event is safely passed through the dam.

Disadvantages

- Adding a 48” RCP to the Kroll Dam will be a significant construction project due to crossing CTH E.
- The Lake Management District will need to obtain County approval and permits.
- Plans and specifications will need to be completed by an Engineering Firm.
- Property acquisition may be necessary – but not expected.

5.0 Recommendations

A hydrologic and hydraulic analysis was performed to determine if the two outlet structures, Wambold and Kroll Dam, on Eagle Springs Lake could safely pass the 500-year storm event. HEC-HMS was used to compute the peak inflow hydrograph using information provided by SEWRPC and the WDNR. The resulting peak inflow was used from the November 19th, 2008 FIS, which shows the peak inflow into Eagle Spring Lake to be 2001 cfs.

The hydraulic analysis was performed for the 500-year storm event by routing the inflow hydrograph through Eagle Springs Lake with both Wambold and Kroll Dams fully functioning. Rating tables developed in 1967 and provided by SEWRPC were used and modified to meet the current conditions of Wambold and Kroll Dams. Stage storage curves for Eagle Springs Lake were also provided by SEWRPC and used during the hydraulic analysis. Linear interpolation and extrapolation were performed to compute stage-storage above the spillway elevation of Wambold Dam. The current operating level of Eagle Springs Lake is 820.68-ft and was used as the initial Lake Elevation during HEC-HMS modeling.

The resulting peak outflow and peak lake elevation were 441 cfs and 822.15-ft, respectively, for the 500-yr event. This resulted in a dam breach of 0.35-ft.

In the previous spillway capacity report from November 2006 three alternatives were modeled to either increase lake storage or construct additional spillway capacity at Wambold and Kroll Dams. All of the alternatives presented will safely pass the 500-year storm event.

The previous spillway capacity report suggested that the most economical way to pass the 500-yr storm event is to lower the lake level by 0.60-ft to an elevation 820.08. This will increase storage in the lake allowing the current outlet structures at Wambold and Kroll Dams to pass the 500-yr event without significant costs to the Lake Management District.

The proposed modification of adding pipe capacity at Kroll Dam (48" RCP) will be the second most economical way to safely pass the 500-yr event through increasing the orifice diameter at Kroll Dam. The added pipe capacity will allow the stop-logs to be the controlling feature. The stop logs in the head-works of the Kroll Dam mill race can be pulled to allow both pipes to flow full. . This will increase spillway capacity allowing the Dam to safely pass the 500-yr event without having to increase lake storage.

Increasing Kroll Dam spillway capacity or increasing lake storage will allow the dam hazard rating to be "significant."

It was been brought to the attention of Ayres Associates that the ESLMD is against lowering their lake level. This will have adverse affects for recreational purposes on the already shallow lake.

Adding pipe capacity (48" RCP) is the alternative that the ESLMD wants to pursue. This involves modifications to Kroll Dam through adding pipe capacity (48" RCP) , which will safely pass the 500-year event.

Appendix A

Flood Insurance Study & Excerpts from HEC-HMS Model

FLOOD INSURANCE STUDY



WAUKESHA COUNTY, AND INCORPORATED AREAS VOLUME 1 OF 3

Community Name

BIG BEND, VILLAGE OF
BROOKFIELD, CITY OF
BUTLER, VILLAGE OF
CHENEQUA, VILLAGE OF
DELAFIELD, CITY OF
DOUSMAN, VILLAGE OF
*EAGLE, VILLAGE OF
ELM GROVE, VILLAGE OF
HARTLAND, VILLAGE OF
LAC LA BELLE, VILLAGE OF
LANNON, VILLAGE OF
MENOMONEE FALLS, VILLAGE OF
MERTON, VILLAGE OF
MILWAUKEE, CITY OF
MUKWONAGO, VILLAGE OF
MUSKEGO, CITY OF
NASHOTAH, VILLAGE OF
NEW BERLIN, CITY OF
*NORTH PRAIRIE, VILLAGE OF
OCONOMOWOC LAKE, VILLAGE OF
OCONOMOWOC, CITY OF
PEWAUKEE, CITY OF
PEWAUKEE, VILLAGE OF
SUSSEX, VILLAGE OF
WALES, VILLAGE OF
WAUKESHA, CITY OF
WAUKESHA COUNTY
(UNINCORPORATED AREAS)

Community Number

550477
550478
550536
550125
550479
550480
550144
550578
550481
550565
550482
550483
550484
550278
550485
550486
550149
550487
550175
550582
550488
550192
550489
550490
550183
550491
550476



* No Special Flood Hazard Areas
Identified Within Community

November 19, 2008



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
55133CV001A

**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.

Effective Date: November 19, 2008

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Fox River	39P–57P

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Poplar Creek	121P–125P
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Exhibit 2 - Flood Insurance Rate Map Index
Flood Insurance Rate Map

FLOOD INSURANCE STUDY WAUKESHA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Waukesha County, including the Cities of Brookfield, Delafield, Milwaukee, Muskego, New Berlin, Oconomowoc, Pewaukee and Waukesha; the Villages of: Big Bend, Butler, Chenequa, Dousman, Eagle, Elm Grove, Hartland, Lac La Belle, Lannon, Menomonee Falls, Merton, Mukwonago, Nashotah, North Prairie, Oconomowoc Lake, Pewaukee, Sussex and Wales; and the unincorporated areas of Waukesha County (referred to collectively herein as Waukesha 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 and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the City of Milwaukee is geographically located in Milwaukee and Waukesha Counties. The Waukesha County part of Milwaukee is included in this FIS report. Please note that the Village of Lac La Belle is geographically located in Jefferson and Waukesha Counties. The Waukesha County part of Lac La Belle is included in this FIS report. The Jefferson County part of Lac La Belle is included in the Jefferson County FIS report. Please note that the Village of Mukwonago is geographically located in Walworth and Waukesha Counties. The Waukesha County part of Mukwonago is included in this FIS report. The Walworth County part of Mukwonago is included in the Walworth County FIS report.

Please note that the Villages of Eagle and North Prairie are non-floodprone.

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

1.2 Authority and Acknowledgments

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

Information on the authority and acknowledgments for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports, is shown on the following pages.

City of Big Bend:

The hydrologic and hydraulic analyses for the FIS report dated September 1, 1983 were obtained from the Flood Insurance Study for the County of Waukesha, Unincorporated Areas, Wisconsin (Reference 7).

City of Brookfield:

The hydraulic analyses for the FIS Report dated August 18, 1986 for all streams studied except South Branch Underwood Creek and Butler Ditch South Branch, were performed by Foth & Van Dyke of Madison, Inc. (the Study Contractor) for FEMA, under Contract No. EMW-83-C-1177. This study was completed in December 1984. The hydrologic analysis for all streams studied in detail and the hydraulic analyses for South Branch Underwood Creek and Butler Ditch South Branch were performed by Owen Ayres and Associates, Inc.

Village of Butler:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated November 15, 1977 were performed by the U.S. Geological Survey, for the Federal Insurance Administration, under Inter-Agency Agreement No. IAA-H-8-76 Project Order No.1. This work, which was completed in April 1977, covered all significant flooding sources affecting the Village of Butler.

City of Delafield:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated August 15, 1983 were performed by Donohue & Associates, Inc. , for the Federal Emergency Management Agency (FEMA) , under contract No. EMW-C-0287. This study, completed in September, 1981, included all significant flooding sources affecting the City of Delafield.

Village of Dousman:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated April 17, 1987 were obtained from the Flood Insurance Study for the Unincorporated Areas of Waukesha County, Wisconsin (Reference 7), and a Flood Hazard Study for Bark River, Village of Dousman and Vicinity, by the U.S. Department of Agriculture, Soil Conservation Service (SCS) (Reference 8). The hydraulic analysis was supplied to FEMA by the Southeastern Wisconsin Regional Planning Commission..

Village of Elm Grove:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated January 19, 1982 were performed by Donohue and Associates, Inc. for the Federal Emergency Management Agency, under Contract No. H-4726. The hydrologic and hydraulic analysis for Dousman Ditch was performed by Owen Ayres and Associates, Inc. This study was completed in January 1980.

Village of Hartland:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated June 1, 1982 were performed by Donohue & Associates, Inc., for the Federal Emergency Management Agency, under contract No. EMW- C-0287. This study, completed in

February, 1981, included all significant flooding sources affecting the Village of Hartland.

Village of Lac La Belle:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated July 18, 1983 were obtained from the Flood Insurance Study for the County of Waukesha, Unincorporated Areas, Wisconsin (Reference 7).

Village of Lannon:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated June 1, 1982 were performed by Carl C. Crane, Inc. for the Federal Emergency Management Agency under Contract No. EMW-C-0065. This study was completed in March 1981.

Village of Menomonee Falls:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated March 15, 1978 were performed by the U.S. Geological Survey, Water Resources Division, for the Federal Insurance Administration, under Inter-Agency Agreement No. IAA-H-17-75, Project Order No. 11. This work, which was completed in March 1977, covered all significant flooding sources affecting the Village of Menomonee Falls.

Village of Merton:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated August 3, 1989 were performed by the U.S. Geological Survey (the Study Contractor) for the Federal Emergency Management Agency (FEMA), under Intel-Agency Agreement No. EMW-85-E-1823. This study was completed in June 1986.

Village of Mukwonago:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated January 5, 1982 were performed by Carl C. Crane, Inc. for the Federal Emergency Management Agency under Contract No. EMU-C-0065. This study was completed in December 1980.

City of Muskego:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated June 1, 1982 were performed by Carl C. Crane, Inc. for the Federal Emergency Management Agency under Contract No. EMW-C-0065. This study was completed in October 1980.

City of New Berlin:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated November 6, 1996 were performed by Foth and Van Dyke of Madison, Incorporated (the Study Contractor) for FEMA, under Contract No. EMW-83-C-1177. This study was completed in December 1984. The hydraulic analyses for the revision to Upper Kelly Lake and Upper Kelly Lake Tributary were obtained from

the Southeastern Wisconsin Regional Planning Commission (SEWRPC), Community Assistance Planning Report No. 121, "A Stormwater Management Plan for the Village of Hales Corners, Milwaukee County, Wisconsin" (Reference 9). The hydrologic and hydraulic analyses for Poplar Creek were performed by the U.S.Army Corps of Engineers (USACE), Detroit District, as part of the Limited Map Maintenance Program under Inter-Agency Agreement No. EMW-89-E-2994, Project Order No. 4. For Poplar Creek, however, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) revised the original USACE hydraulic analyses and performed new hydrologic analyses. The Federal Emergency Management Agency (FEMA) reviewed and accepted these data for purposes of this revision.

Village of Oconomowoc Lake:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated April 16, 1984 were obtained from the Flood Insurance Study for Waukesha County, Unincorporated Areas, Wisconsin (Reference 7).

City of Oconomowoc:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated September 1, 1983 were performed by Donohue & Associates, Inc. , for the Federal Emergency Management Agency under contract No. EMW-C-0287. This study, completed in October 1981, included all significant flooding sources affecting the City of Oconomowoc.

Village of Pewaukee:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated April 17, 1987 were transferred directly from the Floodland Information Report for the Pewaukee River by the Southeastern Wisconsin Regional Planning Commission (Reference 10). This transfer was completed by Carl C. Crane, Inc. for the Federal Emergency Management Agency under Contract No. Em-C-0065. This study was completed in February 1980.

Village of Sussex:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated June 19, 1989 were obtained from the Flood Insurance Study for Waukesha County, Wisconsin (Reference 7). Additional analyses for Sussex Creek, East Branch Sussex Creek, South Branch Sussex Creek, and Willow Springs Creek were obtained from the Floodland Information Report for the Village of Sussex, Wisconsin (Reference 11).

City of Waukesha:

The hydrologic and hydraulic analyses for the Flood Insurance Study dated March 2, 1982 were performed by Carl C. Crane, Inc.

for the Federal Emergency Management Agency under Contract No. EMW-C-0065. This study was completed in February 1981.

Waukesha County:

The hydrologic and hydraulic analyses for the FIS Report dated December 18, 1986 were performed by Carl C. Crane, Inc. for the Federal Emergency Management Agency (FEMA) under Contract No. EMW-C-0065. This study was completed in October 1981. The hydrologic and hydraulic analyses for this Revisions Description were performed by the Southeastern Wisconsin Regional Planning Commission and completed by December 18, 1986. The Federal Emergency Management Agency (FEMA) reviewed and accepted these data for purposes of this revision.

The hydrologic and hydraulic analyses for: Ashippun, Bark, Mukwonago, and Pewaukee Rivers, and: Pewaukee Trib 3, Quietwood, Rosenow, Sussex, Sussex South Branch, and Sussex Trib 1 Creeks were studied by detailed methods by The Wisconsin Department of Natural Resources, and Gannett Fleming, Inc., for the Federal Emergency Management Agency (FEMA), under Contract No EMC-2004-GR-0212. This study was completed in June, 2006.

The hydrologic and hydraulic analyses for the: Butler Ditch, South Branch Butler Ditch, Deer Creek, Dousman Ditch, Fox River, North Branch Underwood Creek, Poplar Creek, South Branch Underwood Creek, and Underwood Creek were developed by the Southeastern Wisconsin Regional Planning Commission under a contract with the City of Brookfield, completed in March, 2004 and submitted to FEMA under the LOMR submittal process. The results were reviewed and approved by the Wisconsin Department of Natural Resources on behalf of the FEMA.

The Fox River, through the community of Menomonee Falls, was revised from the original hydraulic models to match the upstream limit of the study done by SEWRPC through the City of Brookfield, by the Wisconsin Dept. of Natural Resources, under this study.

The hydrologic and hydraulic analysis for Deer Creek, through the City of New Berlin, was performed by Bonestroo, Rosene, Anderlik & Associates, Inc. under Project No. 809-00-103 Completed on January 22, 2002. This study was approved by WDNR on behalf of the FEMA.

The projection used in the preparation of this map is NAD_1927_StatePlane_Wisconsin_South. The Datum is GCS_North_American_1927 SPHEROID. This is the chosen projection and datum for the seven (7) County areas including: Ozaukee, Washington, Waukesha, Milwaukee, Walworth, Racine, and Kenosha.

1.3 Coordination

The initial Consultation Coordination Officer (CCO) meeting was held on October 09, 2003, and attended by representatives of: FEMA, WDNR, SEWRPC, City of New Berlin, Village of Merton, Waukesha County, Menomonee Falls, Nashotah, Village of Oconomowoc Lake, City of Waukesha, City of Brookfield, Village of Hartland, City of Muskego, Village of Sussex, and the Village of Elm Grove .

The dates of the initial and final CCO meetings held for the incorporated communities within

the boundaries of Waukesha County are shown in Table 1, "CCO Meeting Dates."

Table 1 –CCO Meeting Dates

<u>Community Name</u>	<u>Initial CCO Date</u>	<u>Final CCO Date</u>
Big Bend, Village of	*	April 7, 1983
Brookfield, City of	September 19, 1984	September 24, 1985
Butler, Village of	*	May 12, 1977
Delafield, Village of	November 29, 1978	May 26, 1982
Dousman, Village of	*	May 29, 1986
Elm Grove, Village of	March 14, 1978	December 15, 1980
Hartland, Village of	November 30, 1978	August 12, 1981
Lac La Belle, Village of	*	February 17, 1983
Lannon, Village of	June 5, 1979	November 17, 1981
Menomonee Falls, Village of	January 7, 1975	August 23, 1977
Merton, Village of	*	September 27, 1988

Table 1 –CCO Meeting Dates (cont.)

<u>Community Name</u>	<u>Initial CCO Date</u>	<u>Final CCO Date</u>
Mukwonago, Village of	June 5, 1979	June 2, 1981
Muskego, City of	June 5, 1979	June 3, 1981
New Berlin, City of	September 13, 1984	September 23, 1985
Oconomowoc Lake, Village of	*	October 19, 1983
Oconomowoc, City of	November 30, 1978	March 2, 1981
Pewaukee, Village of	June 5, 1979	May 14, 1981
Sussex, Village of	*	November 3, 1987
Waukesha, City of	June 5, 1979	August 11, 1981
Waukesha County, (Unincorporated Areas)	June 5, 1979	June 3, 1982
* Data not available		

The results of the study were reviewed at the final CCO meeting held on December 6, 2007, and attended by representatives of the study contractor, the communities and county, the State of Wisconsin, and FEMA.

Prior to the meeting the Village of Elm Grove requested to have proposed maps identifying a revised SFHA once a locally funded flood control project is completed. The request was to have a revised SFHA map was denied however, the Village was encouraged to have a display with project information and the area of the project. The reason for the denial of a revised SFHA map was 1) the project is not yet complete and it was felt that the introduction of another map showing SFHA would cause confusion; 2) the project design was based on the preliminary flood data which has not yet gone through a 90-day appeal period and as such it is unclear what impact the project has on the current effective FIS (i.e. unclear whether or not the project would have required a CLOMR prior to construction), and 3) FEMA has not received any of the project data or other technical details confirm the actual impact against either the preliminary info or the current effective info (see number 2

above). The Village did have a display and staff to address questions about the project and was very understanding of the concerns to have another map showing proposed SFHA at the meeting.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS report covers the geographic area of Waukesha County, Wisconsin, including the incorporated communities listed in Section 1.1

The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through Year 2020. Following the CCO meeting on October 09, 2003; all communities in the County were asked to provide information on 1) changed conditions, such as new or modified hydraulic structures and/or topographic changes; 2) local floodplain studies conducted since the FEMA study; 3) streams with approximate or no floodplain delineations along which development is anticipated; 4) problems related to the existing floodplain maps; and 5) community willingness to provide in-kind services for field surveying of hydraulic structures. Following the meeting, information was provided by the Cities of New Berlin; the Villages of Hartland, Sussex, Wales; and the Town of Delafield. In addition, on December 30, 2002, following a meeting of land information officers in the Southeastern Wisconsin Region that was called by SEWRPC in part for the purpose of soliciting local information on floodplain mapping needs, Waukesha County identified detailed floodplain mapping priorities along streams in the Cities of Oconomowoc and Pewaukee; the Villages of Dousman, Merton, and Sussex; and the Towns of Delafield, Eagle, Genesee, Mukwonago, Oconomowoc, Ottawa, Summit, and Vernon. The list of candidate streams was expanded to include all of those identified by the communities.

WDNR and SEWRPC established the following criteria and point system to provide a systematic approach to assigning revised priorities:

6 Points: *Population At-Risk. Streams in areas of relatively high population and population growth (growth in residential development) and/or high urban growth other than residential. These areas were identified using planned sewer service areas, community knowledge, the 2020 SEWRPC land use plan, and 1990/2000 U.S. Census data.*

5 Points: Local priorities as indicated by County/communities in formal responses to DNR request to communities.

4 Points: Reaches where bridges or culverts have been modified, constructed, or removed; where the stream channel or overbanks have been significantly altered; and/or the 100-year flood profile would be significantly affected by land use changes or dam removals/dam failure analyses.

3 Points: Streams or stream reaches where a local cost share was offered.

2 Points: Streams for which there is an existing new or updated WDNR-approved hydrologic and hydraulic study for floodplain delineation.

1 Point: A tributary stream, or a reach of a stream, in a subwatershed where a hydrologic analysis was, or will be, developed and used in delineation of floodplains along other streams, or stream reaches. This criterion assumes that the tributary stream or reach would receive a higher priority assignment than if no study was available, based on the assignment of a higher priority to the "other stream(s)."

The number of miles of detailed study was eventually determined by: 1. the County and the community's ability to pay for channel and structure opening survey, and 2ft. accurate digital

terrain data, and 2. FEMA budget to pay for Hydrologic and Hydraulic analysis and mapping. The following waterways were studied in detail:

Table 2 – Studies done by detailed methods

Waterway name	Length in miles
Bark River (Upper & Lower Nemahbin Lakes, Crooked Lake, Bowron Lake, Duck Lake, Nagawicka Lake)	33
Ashipin River	11.8
Rosenow Creek	3.8
Mukwonago River (Phantom Lake, Upper Phantom Lake, Eagle Spring Lake)	13.5
Pewaukee River (Pewaukee Lake)	10.9
Sussex Creek	9.3
Unnamed Tributary to Sussex Creek	1.8
South Branch of Sussex Creek	3.3
Quietwood Creek	2.1
Total =	89.5 miles

Waterways that were previously studied in detail were ‘re-delineated’ on 2005 2.ft. accurate terrain data that was supplied by the County: Brandy Brook, Butler Ditch, Butler Ditch South Branch, Butler Ditch Trib, Calhoun Creek, Dakota St. Trib, Dousman Ditch, East Branch Sussex Creek, Fox River (South of New Berlin), Fox River Trib 2, Genesee Creek, Jericho Creek, Jewel Creek, Lilly Creek, Mason Creek, Menomonee River, Muskego Canal, Muskego Canal Unnamed Trib, NorXway Channel, Oconomowoc River, Pebble Brook, Pebble Brook Trib, Pebble Creek, Root River, S130 St. Trib, South Branch Underwood Creek, Tributary to the South Branch Underwood Creek (New Berlin branch of Underwood Creek previously named the ‘South Branch Underwood Creek’), Tess Corners Creek, Tess Corners Creek North Branch, Upper Kelly Lake Trib, West Branch Pewaukee Lake Trib, West Branch Root River, Willow Springs Creek.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards, and were shown as Zone A on the current map for the following waterways: Artesian Brook, Battle Creek, Brandy Brook, Calhoun Creek, Lower, Middle, and Upper Genesee Lakes, Genesee Creek, Golden Lake, Jericho Creek, Little Oconomowoc River, Mason Creek, Mill Creek, Mukwonago River, Pebble Creek, Pewaukee Lake Tributary, West Branch Pewaukee Lake Tributary, Scuppernong Creek, Silver Lake, South 130th Street Tributary, Spring Brook, Tess Corners Creek, West Branch Root River, Willow Springs Creek, and numerous unnamed streams. These floodplains were ‘re-delineated’ using the County 2ft. terrain data, similar to the remapping done from the existing detailed studies. The scope and methods of study were proposed to, and agreed upon, by FEMA and Wisconsin DNR.

This countywide FIS also incorporates the FEMA issued determination Letter of Map Revision (LOMR), Letter of Map Amendment (LOMA), and Special Response (SR), as shown in Table 3 , "Letters of Map Change."

Table 3 – Letter of Map Change

<u>Community</u>	<u>Flooding Source(s) / Project Identifier</u>	<u>Date Issued</u>	<u>Type</u>
Muskego, City of	Unnamed Trib to Muskego Canal/ Plum Creek Addn.	December 3, 1997	LOMR

2.2 Community Description

Waukesha County is located in southeastern Wisconsin and is bordered by Dodge and Washington Counties on the north, Milwaukee County on the east, Racine and Walworth Counties on the south and Jefferson County on the west. The total land area contained within the county limits is approximately 554 square miles . Waukesha County was created in 1846. In 1980 its population was listed as 280,326. Urban population centers within the county include the cities of Waukesha, Brookfield, New Berlin, Muskego, Oconomowoc and Delafield . The County is divided into two distinct drainage basins. The western portion o f the county is drained into the Rock River Basin. Principal rivers in this area include the Oconomowoc River, Mason Creek and the Bark River. The eastern portion o f the County is drained by the Fox River Basin. All remaining rivers studied by detailed methods for this report contribute to the Fox River Basin. The climate in southeastern Wisconsin is characterized by wide variations in temperatures. Average summer and winter temperatures for the years 1973 to 1977 ranged from 74 degrees F. to 3 degrees F., respectively. Annual average precipitation of the region is 32.0 inches, with an average recorded snowfall of 42 inches. Precipitation is normally higher in the spring and summer months (References 1 and 2).The surface o f the county is a gently undulating plain mainly sloping southward. There are only a few points of prominent relief and these are located in the western part. A belt of hummocky drift hills , the Kettle Moraine, associated with numerous lakes, lies across the western part o f the county. In the eastern part, the valleys are broad and the uplands gently sloping. In the western part, the topography is more abrupt. There are numerous lakes in the county, the principal ones being Muskego Lake in the southeastern part, and the large group of lakes in the northwestern part between the Village o f Pewaukee and the City of Oconomowoc. The upland ridges in the eastern part reach altitudes of 950 to 1,050 feet, while the uplands in the western part often reach 1,050 to 1,150 feet. The highest point in the county, Government Hill , reaches an altitude of 1,230 feet, 343 feet above Pewaukee Lake, two miles to the north. While the range in elevation in the county is nearly 500 feet, the usual difference in elevation between valley bottom and adjacent upland is less than 150 feet and rarely exceeds 250 feet . The Niagara limestone is the bedrock formation in the eastern three-fourths of the county. Along the western border is a belt 5 to 10 miles wide o f the Cincinnati shale and the Galena-Platteville (Trenton) limestone. The glacial drift o f variable thickness overlying the rock forms a well -defined belt of terminal moraine extended north and south in the western part of the county. The thickness of the Niagara limestone is variable on account of the extensive erosion of t h is formation. A t Waukesha it has a known thickness of 230 feet, but the probable maximum thickness on ridges thinly covered with drift may reach 350 to 400 feet. The total thickness o f the Cincinnati shale is probably 150 to 200 feet, and of the Galena-Platteville (Trenton) l limestone 250 to 300 feet. I

n the western part o f the county where these formations outcrop or underlie the drift , the entire formations are not present on account of erosion. The thickness of the St. Peter sandstone and Lower Magnesian limestone formations combined is about 250 feet, and of the Upper Cambrian (Potsdam) sandstone 800 to 900 feet.

2.3 Principal Flood Problems

The past history of flooding within Waukesha County indicates that floods may occur during any season o f the year. The majority of major floods on the Fox River, the Bark River, the Mukwonago River, and the Oconomowoc River have occurred n the early spring and are usually the result of spring rains and/or snowmelt. All other rivers in this study are smaller basins and, therefore, are more responsive to locally heavy rains. Floods usually occur on these creeks during any of the warmer months o f the year. There are three gaging stations within the county, one each on the Fox River (No. 05-5438.3), the Mukwonago River (No. 05-5443), and Scuppernong Creek (No. 05-4261). The drainage areas of the latter two are quite small and, therefore, flooding conditions at the gages would not have to be indicative of general flooding conditions within the county. The Fox River Gage is located in the City of Waukesha and has a contributing drainage area of 124 square miles. The gage has been in operation since 1963 and has recorded major flood in 1965, 1973, 1974 and 1979. Frequencies for these floods were set at once every 5, 20, 6 and 5 years respectively.

JUNE 26, 1940 FLOOD

Runoff created by a violent thunderstorm resulted in several flooding problemis in and near the Village of Pewaukee, including inundation of State Trunk Highway 16 east and west o f Pewaukee and State Trunk Highway 19 west of Pewaukee. Pewaukee Lake levels rose such that the water threatened to top Wisconsin Avenue in the Village area east of the lake and as a result , sandbagging operations were initiated along Wisconsin Avenue. Six pumps were operated to eliminate surcharging in the Village sewer system.

APRIL 1 , 1960 FLOOD

Flooding occurred i n Waukesha County on April 1, 1960. The only problem reported in the Village of Pewaukee was the need for sandbagging to protect the Sentry Store located immediately adjacent to the Pewaukee River near the intersection of Oakton Avenue and Elm Street.

SEPTEMBER 19, 1972 FLOOD

This flood event was characterized by a combination o f lightning, thunder, high winds and driving rain and a one foot rise in the level of Pewaukee Lake. A total of three inches of rainfall was recorded in Pewaukee. Sandbagging operations were required at the Sentry Store parking lot in order to prevent flood damage to the store. Basement flooding was reported and portions of local streets were inundated .

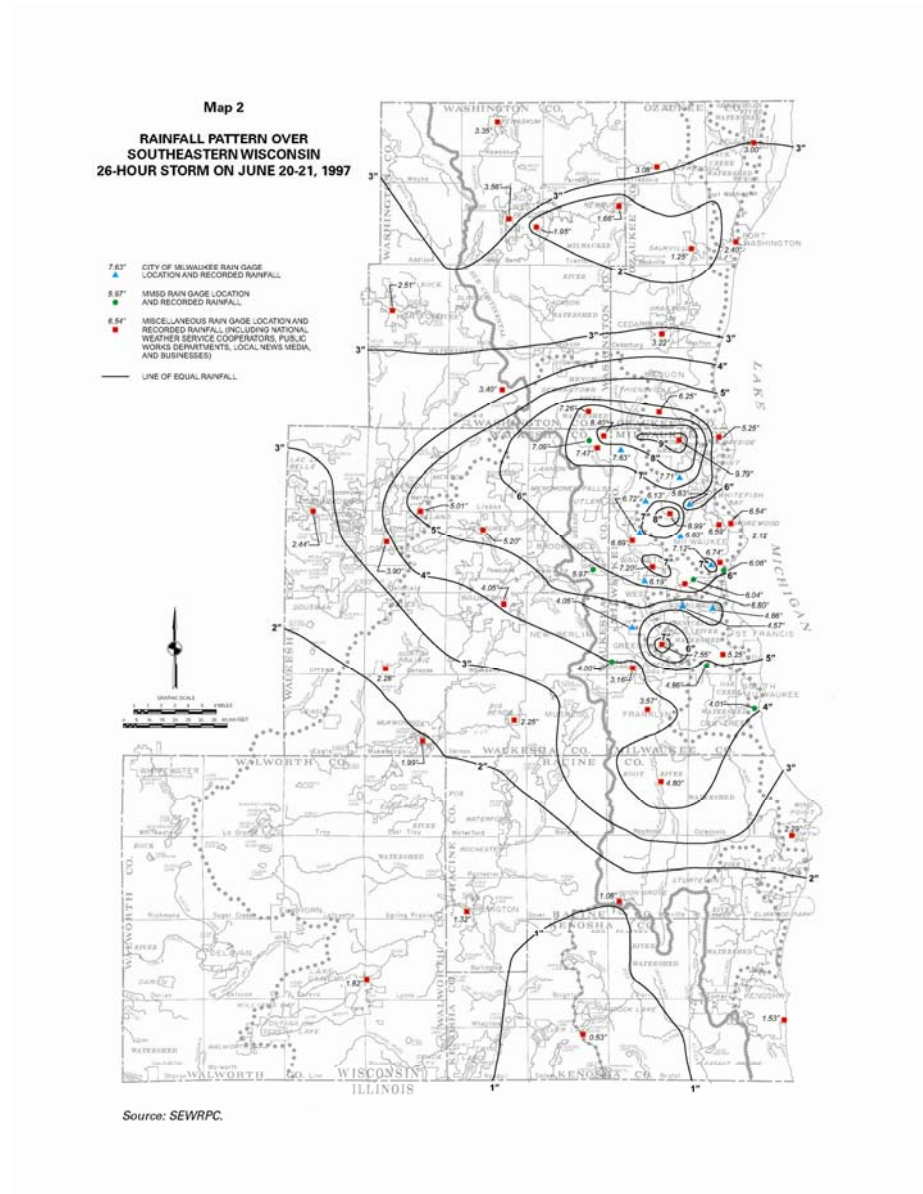
APRIL 21 -22, 1973 FLOOD

Heavy spring rains falling on an unusually wet ground caused extensive flooding an flood damage in southeastern Wisconsin in April 1973. The level of Pewaukee Lak rose almost one foot and, as a result of high winds, waves moved easterly across the lake and water flowed over Wisconsin Avenue and into the commercial area of the Village at the east end of the lake. Wisconsin Avenue was closed temporarily until a sandbagging operation could be completed, and sandbags were also placed along the rear of commercial buildings located along the east edge of Wisconsin Avenue in order to prevent flood damage from high waters on the Pewaukee Lake outlet and the Pewaukee River. The Pewaukee River and the Pewaukee Lake

outlet were well out of their channels throughout the Village area, and basement flooding and backup from the sanitary sewers, with some basements reporting as much as eight feet of water, were reported throughout the Village with the most serious problems being in the vicinity of Wisconsin Avenue and Park Avenue. Fire department pumping trucks were used to prevent flooding at the Sentry Store. It was reported that almost every business in the downtown commercial section suffered some form of water damage. The Pewaukee River beneath the Capitol Drive bridge was intentionally blocked in order to make maximum utilization of the floodwater storage area immediately upstream in the Village park. (Reference 10) .

MARCH, 1960 AND APRIL, 1973 FLOODS. The past history of flooding on the streams within the City of Waukesha indicates that flooding may occur during any season of the year. The majority of major floods on the Fox River have occurred in the early spring and are usually the result of spring rains and/or snowmelt. The most recent flooding within the City of Waukesha occurred in March of 1960, and April of 1973. A USGS gage (543803) was established in 1963, and has recorded flood peaks on the Fox River since that time. It registered a peak discharge for the 1973 flood of 2160 CFS, which would have an expected frequency of once every 25 years. Highwater marks from this flood were used to verify the hydraulic model used in this study.

JUNE 21, 1997 FLOOD -Flash flooding occurred primarily in eastern Waukesha County as a result of heavy rainfall amounts in excess of 5 to over 8 inches in a 30 hour period ending about 1000CST. (see Figure 1, below). This flash flooding was greater than a "100 year rainfall" based on rainfall frequency maps. No one was injured or killed by the flood waters, thanks to superb rescue efforts by local law enforcement officials and firefighters. Besides public sector damage in county/city parks, there was private and business damages. The hardest hit area was the city of Menomonee Falls, followed by New Berlin, Lannon, Sussex, and the town of Lisbon. Spotty flash flooding was noted in the cities of Oconomowoc, Hartland, Delafield, and Pewaukee. (On July 7th, Waukesha County was officially declared a Federal Disaster Area, making county residents and business owners eligible for Federal disaster aid). Areas along and near the Menomonee River experienced moderate to major flooding to nearby roads, homes, and businesses. In Menomonee Falls, several homes had significant structural damage, while about 50 homes and basements had significant loss of personal property. Some car dealerships and repair shops suffered damage to new and used vehicles. Hundreds of homes and businesses lost their electrical, natural gas, or telephone service. Many traffic lights were also inoperative. Several roads and underpasses across the eastern half of the county were flooded with several feet of water, resulting in road closures. Some drivers had to be rescued after their vehicles were swept away by deep, fast water currents over roads. Sections of asphalt paving were washed away on several roads in the eastern part of the county. Many farm fields in the eastern half of the county suffered soil erosion, or had enough standing water leftover to completely damage this year's crops. Nearly all golf courses in the county were closed due to high water levels. A 12-foot sinkhole developed in the backyard of a Hartland residence as the ground collapsed. Rainfall totals for the 30-hour period ending 1200CST were 8.40 inches in the city of Menomonee Falls, about 6.50 inches in Sussex, 5.95 inches in Elm Grove, 5.20 inches in Pewaukee and Waukesha, 5.01 inches in Hartland, 3.90 inches in Delafield, and 2.44 inches in Oconomowoc. Due to runoff, the Fox River throughout the county rose to 1 to 2 feet above flood stage, resulting in minor to moderate flooding along the river. At some locations along this river, this would be a 5 to 10 year frequency flood. Flood gates on dams at Pewaukee and Nagawicka Lakes were opened to lower lake levels and relieve pressure. Properties and businesses along and near these lakes sustained flooding damage.

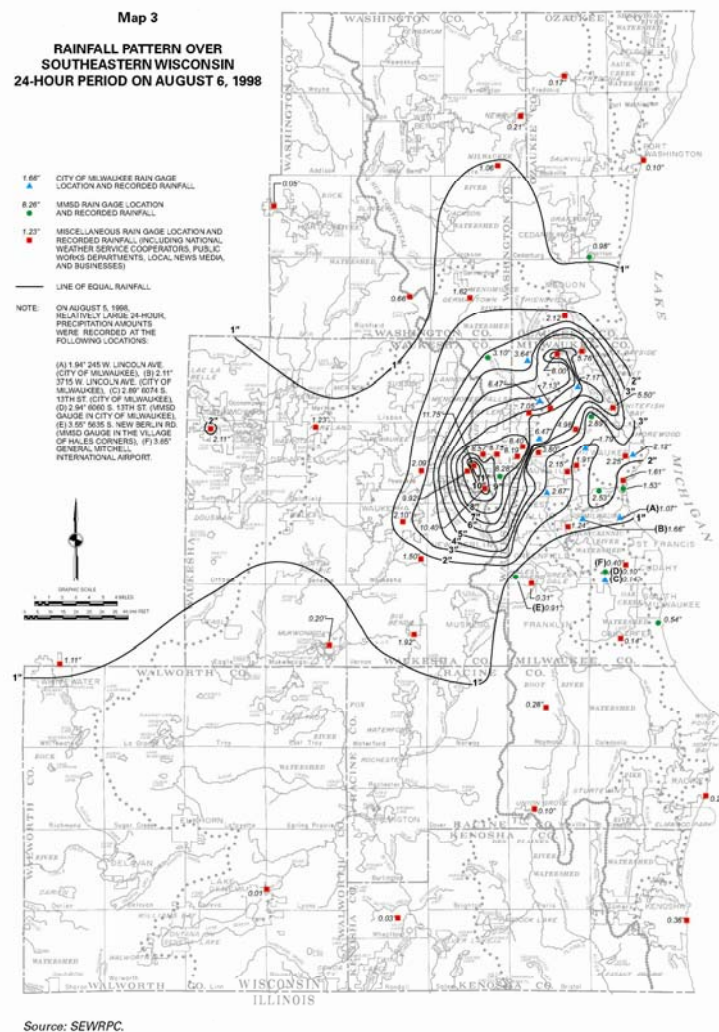


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Rainfall for June 20-21, 1997 Figure 1

These lakes were at the highest levels ever remembered by local residents. In the southeast part of the county, a small earthen dam on Jewel Creek just north of Little Muskego Lake was in danger of failing due to high water levels and water pressure. A small portion of the dam was breached. However, later in the day on June 21st and on the 22nd, DNR officials gradually lowered the lake in a controlled manner, to avoid any serious flooding.

AUGUST 6, 1998 FLOOD: The worst flash flooding of the 1900's struck eastern Waukesha Co. , resulting in large monetary loses, and forcing some residents to decide to move out of flood plains. The worst flash flooding occurred from Brookfield through Elm Grove into New Berlin, and was the result of 6 to almost 12 inches of rain between 1230CST (130pm) and 2000CST (9pm), falling on top of 1 to 2 inches that fell in the previous two days. Maximum storm rainfall was 11.75 inches in Elm Grove at the intersection of North and Calhoun. There was an 11.50 inch report out of Brookfield, while the Brookfield High School registered 8.75 inches. (see Figure 2, below). Tragically, 2 teenage boys, ages 10 and 14, died when swirling flood waters swept them into a drainage ditch at 1710CST (610pm) which flowed into Underwood Creek in Elm Grove at Watertown Plank and Sunnyslope Roads.



Rainfall on August 6, 1998 Figure 2.

Rescue workers had to put on scuba diving gear to locate one of the boys. Flood waters of 4 to 5 feet covered much of New Berlin, half of Brookfield's roads were submerged, and water to a

depth of 4 to 7 feet settled in over Elm Grove. In fact, The Mill Place Shopping Center in Elm Grove still had standing water on August 7th. Flooding was so bad at the I-94 and Moreland Rd. interchange that local officials closed that intersection. Rescue workers in boats had to pluck people out of their stalled vehicles in that area. Compounding the flooding problem was the accumulation of raw sewage which backed into many basements. Overall, 2680 residential homes sustained minor flood damage, while 10 had major damage. Thirty businesses suffered minor damage, 20 had major damage, and 2 were destroyed. One utility building sustained minor damage. There was nearly a half-million dollars in damage in the public sector to road systems, buildings, etc. Many roads suffered gravel washouts on the shoulders, while a portion of Blackwolf Run golf course washed away. Many streams and creeks had high water levels for days after the bulk of the flash flood. The Fox River in Pewaukee crested at 12.08 feet at 0100CST (2am) on August 8th, or 2.08 feet over flood stage, and would stay above flood stage through the 10th.

2.4 Flood Protection Measures

There are numerous dams within Waukesha County. Most were built for recreational purposes. The chain of lakes on the Oconomowoc River, the Nemahbin Lakes and Nagawicka Lake on the Bark River, Phantom Lake on the Mukwonago River, and Saylesville Pond on Genesee Creek all provide substantial attenuation of peak discharges on the watercourses where they are located. Most other lakes studied by detailed methods provided little to no attenuation of peaks and, therefore, provided little in the way of flood protection.

The Village of Butler has no flood protection structures. However, the village has retained most of the Menomonee River flood plain in public ownership as a municipal park. This effectively prevents development of flood-damageable structures in the flood-prone areas.

Within the City of Delafield there is a dam on the Bark River to maintain water levels on Nagawicka Lake. Operation of the gates at this dam will reduce flooding downstream by about 1.0 ft., for a distance of several miles. Several small structures have been placed along the river banks and lake shorelines to protect buildings and the land from high water damage. Conservancy districts which restrict development have been established along the Bark River upstream and downstream of Nagawicka Lake.

In the Village of Elm Grove, a dam on Underwood Creek at Wall Street is used to retain water for fire protection. However, this dam does not significantly alter the water surface elevations in the event of high water. The village has dredged, widened and straightened portions of the Underwood Creek channel since the 1973 flood.

The Village of Menomonee Falls, in cooperation with the Southeastern Water Resources Planning Commission, has considered potential flood problems in the Village. Preventive flood protection measures have been adopted. Major and minor channelization has taken place along reaches of the Menomonee River, Lilly Creek, and Nor-X-Way Channel. Also, most marsh and flood plain areas in the Menomonee and Fox River basins have been preserved as open space for floodwater storage.

In the Village of Merton, the flow of the Bark River is regulated by the Mill Pond Dam. If the tainter gate is operated properly, the dam embankment will not be overtopped during a 100-year flood.

In the Village of Mukwonago, the Lower Phantom Lake Dam is the only effective flood control structure within or upstream of the Village. The dam and its resulting storage capacity causes an attenuation of the peak 100-year discharge of approximately 25 per cent. This reduction of peak does result in lower flooding elevations downstream of the structure.

Although the dams within the City of Muskego were constructed to create recreational lakes, the storage capacity behind these structures does cause considerable attenuation of peak discharges and, therefore, helps minimize flood damages.

In the Village of Oconomowoc Lake, there are numerous dams along the Oconomowoc River. Most were built for recreational purposes. The chain of lakes on the Oconomowoc River provide substantial attenuation of peak discharges on the water courses where they are located.

In the Village of Pewaukee, there is only one hydraulically significant dam located on the stream system within the Pewaukee River subwatershed and that is the control structure at the east end of Pewaukee Lake. The Pewaukee Lake outlet control structure is equipped with a sluice gate that facilitates drawing down the level of Pewaukee Lake about 1.5 feet below the dam crest. Based on Wisconsin Department of Natural Resources operating regulations, this dam is to be operated so as to maintain the level of Pewaukee Lake at an elevation of 852.8 feet above Mean Sea Level Datum during the period May 15 through October 1. During the October 1 to October 15 period, the lake is to be drawdown to an elevation of 852.2 feet above Mean Sea Level Datum, and is to be maintained at that level for the period from October 15 through May 1. During the period from May 1 to May 15, the lake is to be gradually raised back to elevation 852.8 feet. Therefore, the lake level is to be maintained within a very narrow range of only 0.6 foot. For the purpose of the hydrologic-hydraulic modeling, the Pewaukee Lake was maintained at the 852.2 level.

Within the City of Waukesha, there are no known flood control structures along Pebble Creek or Pebble Brook Tributary within or upstream of the study area. There is a dam, on the Fox River, within the corporate limits of Waukesha. Its primary use at this time is recreational. It is ineffective in attenuating peak flows, therefore offers little flood protection.

3.0 ENGINEERING METHODS

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

3.1 Hydrologic Analyses

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

New hydrologic analyses were performed by the Wisconsin DNR (WDNR) in 2005 on the following waterways: Ashippun River, Bark River, Mukwonago River, Pewaukee River, Quietwood Creek, Rosenow Creek, Sussex Creek. Discharges were computed using the Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) computer software, version 2.2.2 (USACE, 2003). For each subbasin, runoff Curve Numbers (CNs) were estimated using Waukesha County's 2000 landuse data and SSURGO soils data. Times of concentration were estimated using the TR-55 flowpath segment method. The rainfall distribution used was developed jointly by the WDNR and the Southeastern Wisconsin Regional Planning Commission (SEWRPC). Rainfall time distributions were developed for 3-hour through 48-hour rain storms recorded at selected gauges in the Region (Reference 12). Those distributions were plotted as percent of total rainfall (y-axis) versus percent of total time (x-axis). The data were used to develop a representative storm/flooding distribution in Southeastern Wisconsin.

Background: Hourly data from the following gauges and periods of record were analyzed to determine when storms occurred:

- MMSD/City of Milwaukee gauges **WS 1204** (3/1/1993 to 6/30/2004), **WS1205** (3/1/1995 to 6/30/2004), **WS1209** (8/5/1986 to 8/6/1986 and 9/9/1986 to 9/11/1986), **WS1210** (8/5/1986 to 8/6/1986 and 3/1/1993 to 6/30/2004), **WS1212** (3/1/1993 to 6/30/2004), **WS1218** (3/1/1993 to 6/30/2004), and **WS1219** (3/1/1993 to 6/30/2004)
- Hartford 2W (3/1/1983 to 4/1/2004)
- Kenosha Airport (11/1/1997 to 10/5/2004)
- General Mitchell International Airport (3/1/1986 to 5/31/2004)

For each gauge, storms with recurrence intervals of 10- years or longer were initially selected for analysis. In order to obtain an adequate sample size, the thresholds were subsequently reduced to depths in the two- to five-year recurrence interval range as indicated below.

- 3-hour storm: 10-year depth=2.40", final threshold depth=1.50"
- 6-hour storm 10-year depth=2.79", final threshold depth=2.00"
- 12-hour storm 10-year depth=3.17", final threshold depth=2.50"
- 24-hour storm 10-year depth=3.62", final threshold depth=3.00"
- 48-hour storm 10-year depth=4.20", final threshold depth=3.50"

The time and rainfall depths were converted to percent of total time (x-axis) and percent of total rainfall (y-axis) for each storm and plotted. After the storms were selected based on the minimum rainfall criteria as stated above, each event was reviewed graphically to determine what the true duration of the storm was. For example, a 6-hour time period with 2.2' of rain met the minimum criteria for a 6-hour storm. However, if rainfall only occurred over a 4-hour period, the storm was analyzed as a four-hour storm. As another example, if a 48-hour time period met the minimum depth criterion, the rainfall record was investigated

to determine if it should be divided up into more storms of shorter lengths or if it should be considered as one long storm.

After all of the final storms and their durations were determined, all individual data points (percent period verses percent rainfall) were plotted and statistically analyzed to determine the best fit (average curve) for the data. (See Figure 3.) (Ref. 12)

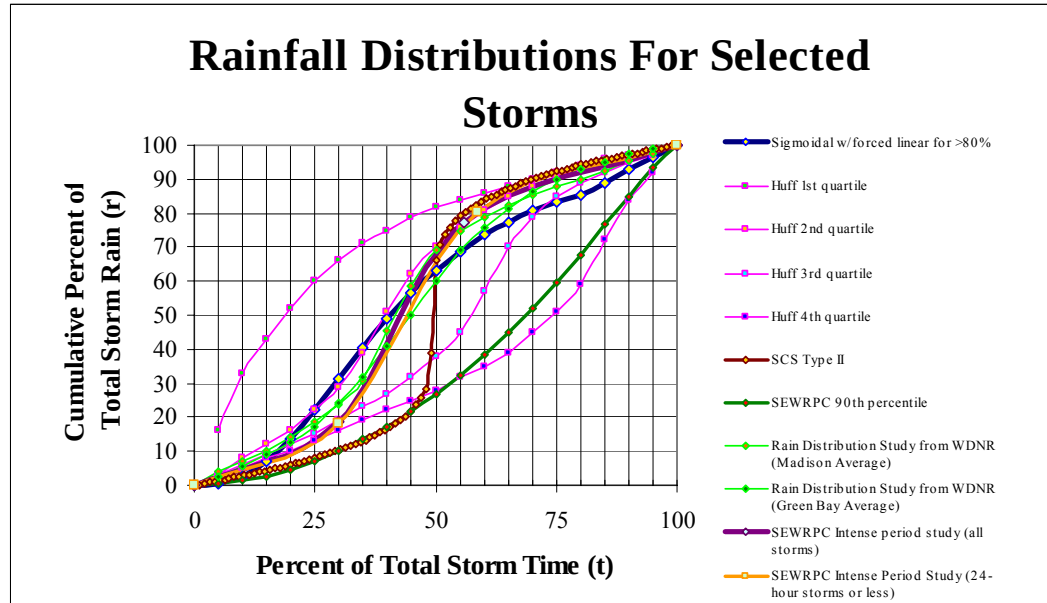


Figure 3

This rainfall distribution was used in the HMS built for each basin, and run for the 6, 12, 24, and 48 hour durations for each storm frequency, (10%, 2%, 1%, and 0.2%) as required by FEMA specifications, to determine the critical duration storm for each sub-basin. Rainfall depth was provided by the SEWRPC, as shown in Figure 4, below, (from the SEWRPC Technical Report No. 40, "Rainfall Frequency in the Southeastern Wisconsin Region, April 2000") The largest peak discharge for each sub-basin was selected as the 'design storm' for the purpose of determining the peak discharge at key points in each watershed, and then used in the hydraulic model to determine the highest possible peak elevation at all points along the mapped floodplain.

Storm Duration	Recurrence Interval			
	10 Years	50 Years	100 Years	500 Years*
6 Hours	2.79	4.03	4.70	---
12 Hours	3.17	4.53	5.25	---
24 Hours	3.62	5.11	5.88	7.07
48 Hours	4.20	5.53	6.13	---

* 500 year rainfall depths extrapolated from 2 through 100 year rainfall depths.

SEWRPC Design Rainfall Depths for Southeastern Wisconsin (inches) Figure 4

For all models, storage was taken into account at all significant lakes and dams. In addition, floodplain storage was taken into account throughout each watershed for designated areas on the Wisconsin Wetland Inventory (WWI). The storage-discharge curves were developed by extracting cross sections from the TIN using HEC-GeoRAS, and running a series of discharges through the HEC-RAS models.

Ashippun River Specific storage areas: Druid Lake in Washington County, the Alderly dam in Dodge County, and the Monterey dam and Ashippun Lake in Waukesha County. Druid Lake storage calculations are based upon the DTM provided by SEWRPC. Rating curves for the Alderly and Monterey dams were derived from the DNR dam field files.

Bark River Stage-Storage-Discharge curves were obtained from DNR dam field files. Rating curves for Bark and Amy Bell Lakes (Washington County) and for the Merton Millpond were obtained from the Black & Veatch HEC-HMS model referenced above. If no rating curve existed, a new discharge rating curve was computed based on the outlet structure and weir flow over the embankment (where appropriate). Storage curves were derived from the 2000 TIN, where the storage volume reflects the amount of available storage above the water surface elevation of the TIN. Floodplain storage was taken into account through a large wetland in subbasin R90W90W. This wetland is located in Washington County, north of CTH Q and south of Willow Creek Road. Additional wetlands were taken into account in subbasins R20W20, R70W70, and R80W80 in Waukesha County. In all cases, storage was included only from areas covered by the Wisconsin Wetland Inventory, to ensure the storage is maintained through County regulation of these wetlands.

Mukwonago River Storage areas included: Eagle Spring Lake, Lake Beulah, and Phantom Lake. The rating curve for Lake Beulah was taken from the DNR field file. Discharge rating curves for Eagle Spring and Phantom Lakes were computed based upon DNR inspection surveys from the field files. Storage rating curves for these two lakes are based upon lake survey maps and the 2000 TIN.

Pewaukee River At Pewaukee Lake, the discharge rating curve is based upon the 1981 DNR calculations in the DNR dam field file. Lengths used for weir flow calculations overtopping Wisconsin Ave. were updated to reflect more recent field survey provided by SEWRPC and the 2000 TIN. A new stage-storage curve was computed by calculating the available storage volume above the water surface of the 2000 TIN at each elevation. Storage was taken into account for Salow and Pewaukee Lake.

Quietwood Creek Floodplain storage was taken into account for the designated wetland in subbasin R50W50.

Rosenow Creek Subbasin R80W80 contains a 16-acre reservoir that was taken into account in both models.

Sussex Creek Storage was taken into account through the pond at the outlet of subbasin R170W180 in both models.

The following paragraphs are excerpts from the effective FIS Reports for each community in Waukesha County that describe the methods used to derive estimates for each waterway previously studied in detail, where this information was used in this study.

The hydrologic analysis for most waterways in the Fox River Basin, including Brandy Brook, Fox River, Genesee Creek, Jericho Creek, Muskego Canal, Poplar Creek, Pebble Brook, and Pebble Creek, were taken directly from the publication "A Comprehensive Plan for the Fox River Watershed" (Reference 2). The nearest recording stream gage (Reference 6) on the Fox River is located at Prairie Street (drainage area 127 square miles) in Waukesha a distance of about 10 miles from Brookfield. This gage has been in operation from 1963 to the present. The discharges for the various flood-frequency recurrence events on this river were evaluated according to a log-Pearson Type III analysis as prescribed in Bulletin No. 17. The discharges at various locations along the Fox River within the city were obtained from discharge versus drainage area curves for the river based on the upstream and downstream data.

The discharges for reaches of these stream covered by the Menomonee River Watershed study –(Butler Ditch South Branch) were obtained using the method described in SCS Technical Release No. 20 (Reference 3). Discharges for Calhoun Creek were determined using the peak discharge frequency analysis.

The hydrologic analyses for the remaining rivers studied by detailed methods within Waukesha County, including **Mason Creek, West Branch Pewaukee Lake Tributary, and the Oconomowoc River** were carried out using a combination of two different methods. The first utilized the methodology outlined in the U.S. Department of Agriculture, Soil Conservation Service (SCS), National Engineering Handbook (Reference 6). Using this procedure, the time of concentration and the time of peak are computed for the basin and a unit hydrograph is developed. The expected 6-hour rainfall or the desired frequency event was obtained from Technical Paper 40 (Reference 1), and distributed into 30-minute amounts as described in the SCS criteria for design storms. A 6-hour duration storm was chosen since it was determined to be the "effective duration" for areas having an average annual precipitation of approximately 30 inches. Rainfall excess is computed from accumulated rainfall, using an SCS runoff equation which equates runoff as a function of soil type, antecedent moisture condition, and land use. Utilizing these precipitation data and the derived unit hydrograph, an outflow hydrograph is computed for the basin.

The second method involves the use of the State of Wisconsin's Multiple Regression Equations for ungaged basins. The derivation of these equations, the applicability, and the assumptions involved are described in "Estimating Magnitude and Frequency of Floods in Wisconsin" by Duane H. Conger (Reference 8). These equations use basin size, main channel slope, per cent lake and marsh, and an areal factor as independent variables. The discharges, derived by combining these two methods, were compared with discharge-frequency distributions developed for similar gaged basins and were found to be consistent.

The hydrographs developed for the Oconomowoc River were routed through Lac La Belle Lake, Fowler Lake, Oconomowoc Lake, Okauchee Lake and North Lake, utilizing the modified puls method of the U.S. Army Corps of Engineers HEC-1 computer program. The results of these routings were used as peak discharges for the river downstream of the respective lakes. Peak discharges for the 10, 50, 100 and 500-year events of each flooding source studied in detail are shown in Table 4.

Poplar Creek discharges were originally determined by the computer model HYDROCOMP, reported in the Fox River Watershed study, (Ref. 2) 1970. Poplar Creek was then restudied in 1996 by detailed methods from downstream of the corporate limits of New Berlin to a point approximately 1.59 miles upstream of Observatory Road. The new hydrologic model of the Poplar Creek subwatershed was developed by SEWRPC using the USACE HEC-1 computer program.

The hydrologic information for East BranchSussex Creek and Willow Spring Creek were taken from the Floodland Information Report for the Village of Sussex (Reference 11). The discharges in those reports were developed using the Hydrocomp computer model (Reference 5). The principal function of this model is to determine the volume and temporal distribution of runoff from the land to the stream segments.

Underwood Creek/Butler Ditch. In 2000, SEWRPC completed a further revision of the stormwater and floodland management plan for Underwood Creek and Dousman Ditch in the City of Brookfield and the Village of Elm Grove That plan was developed at the request of those two communities and represented a further refinement of the plan prepared in 1990 for the MMSD. As part of this latest study, the HSP model as refined in 1990 was converted to the U.S. Environmental Protection Agency Hydrologic Simulation Program - Fortran (HSPF) model. The conversion was made only for the Underwood Creek and Butler Ditch subwatersheds. In addition to the conversion to HSPF, the model was updated to reflect further physical changes within these subwatersheds. Butler Ditch was included in the converted model since it had been found that runoff from that basin can overflow to the Underwood Creek basin under heavy storm events. This interaction between the two basins was added to the model. The Regional Planning Commission staff updated the Underwood Creek/Butler Ditch HSPF model to account for the August 6, 1998 flood event as well, since that event alone is the most significant flooding event since the late 1800's for this watershed. The HSPF model has been updated to reflect current channel and floodplain conditions, including the incorporation of constructed stormwater detention basins in the Butler Ditch subwatershed. The model reflects planned year 2020 land use conditions. As noted, both subwatersheds are already near planned buildout conditions.

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

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
ASHIPPUN RIVER					
D/S county boundary	37.9	260	395	576	888
Pennsylvania St 2200' d/s	37.1	260	397	579	891
Monterey Dam	36.7	260	398	580	892
@Monterey Dam	35.8	260	398	580	892
3800' u/s					
Monterey Dam	35.6	141	398	580	893
Confluence w/ Ashippun Lake	33.3	302	620	786	1081
@CTH P	31.8	375	780	1014	1408
Confluence	28.8	324	671	876	1237

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
~2700' u/s Norwegian Rd U/S county boundary	26.4	306	655	876	1260
BARK RIVER					
d/s county boundary	68.5	474	941	1226	1791
~2800' d/s railroad	67.2	505	955	1229	1807
d/s railroad	66.5	504	943	1219	1816
d/s confluence with Scuppernong Creek	65.5	483	897	1155	1787
u/s confluence with Scuppernong Creek	50.8	327	579	720	953
~4000 ' u/s USH 18	50.4	340	598	740	970
~1300' u/s Main St	46.5	117	362	591	948
STH 67	46.4	117	362	591	948
Crooked Lake outlet	45.2	123	366	594	956
Lower Nemahbin Lake outlet	44.5	210	600	1088	1700
Crooked Lake inlet	44.5	160	400	604	1000
Upper Nemahbin Lake	40.7	190	564	1073	1688
Nemahbin roller mill	40.5	133	566	1083	1703
Nagawicka Lake outlet	39.6	439	1131	1456	2117
Nagawicka Lake inlet	30.4	439	1131	1510	2117
Bark River Dam	27.8	431	1066	1391	1937
CTH K	26.7	429	1012	1322	1867

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
~1300' d/s Rybeck Rd	26.1	422	984	1292	1828
Merton millpond outlet	22.6	385	807	1063	1495
u/s Merton millpond	21.7	371	766	1001	1394
d/s railroad	20.9	413	834	1073	1463
~ 5300' u/s Plain View Rd	18.5	395	772	981	1319
~ 900' u/s STH 164	17.6	355	680	857	1140
~ 2300' u/s STH 164	14.3	353	664	835	1115
u/s county boundary	10.4	242	487	621	835
BRANDY BROOK					
mouth	4.8	615	980	1170	1700
BUTLER DITCH					
at Lisbon Avenue	6.6	453	915	1213	2267
just upstream of the confluence with Butler Ditch South Branch	3.5	310	620	820	1540
BUTLER DITCH SOUTH BRANCH					
at Capitol Drive	1.3	170	345	455	850
BUTLER DITCH TRIBUTARY					
mouth	1.0	42	81	103	168
CALHOUN CREEK					
just upstream of College Avenue	8.1	1150	1760	2060	2800
about 200 feet upstream of Martin Road	3.8	570	870	1000	1360

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
just upstream of Beres Road	2.3	550	840	960	1300
just upstream of Beloit Road	1.0	240	360	420	570
DAKOTA STREET TRIBUTARY					
At mouth	0.3	50	90	125	900
DEER CREEK					
At the mouth	8.1	570	880	1050	1510
At Brookfield Rd.	7.5	470	780	930	1340
at Calhoun Road	7.5	420	700	840	1200
Greenfield Ave.	4.0	380	610	611.	1080
400 ft. d.s. of Lincoln Ave.	3.	340	560	454	972
200 ft. d.s. of James St.	1.9	280	470	304	800
900 ft. d.s. of National Ave.	1.4	220	380	198	660
SP-2 Storage Pond	0.8	150	240	68	430
300 ft. u.p.s. of SP-2 Pond	0.8	150	240	300	430
Upstream limit of study	0.6	120	175	220	310
DOUSMAN DITCH					
at the mouth	3.0	370	700	900	1520
about 4,000 feet downstream of Calhoun Road	1.9	295	555	715	1210
FOX RIVER					
Racine- Waukesha County Line	358.9	2050	2950	3330	4250
Upstream of State Highway	314.6	1980	2860	3290	4290

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
Upstream of Confluence of Mukwonago River	223.4	1480	2080	2370	3030
National Ave.	220.0	1470	2070	2360	3020
Upstream of River Rd.	181.1	1880	2560	2850	3550
Upstream of County Highway H	154.2	2060	3060	3500	4625
Waukesha South Corporate Limits	131.6	1720	2790	3220	4490
Waukesha North Corporate Limits	125.9	1700	2710	3190	3840
Downstream of Confluence of Pewaukee River	82.5	1630	2650	3110	3750
Upstream of Soo Line Railroad	75.0	1400	2110	2410	3000
Brookfield West Corp. Limits	50.5	1420	2130	2450	3150
Brookfield North Corp. Limits	45.0	1020	1600	1840	2450
Upstream of State Hwy. 190	26.5	1100	1700	1950	2650
Corporate Limits	23.2	700	1220	1500	2200
Upstream of Mill Road	5.4	330	660	850	1370
Menomonee Avenue	3.0	230	490	640	1070
Main St.	1.9	105	220	290	500
TRIB NO. 2 TO FOX RIVER mouth	5.21	160	300	380	590
GENESSEE CREEK @ mouth	32.0	845	1400	1675	2400
Upstream end of Saylesville Mill Pond	14.7	540	830	970	1300
Limit of detailed study	3.0	325	475	550	750

Table 4. Summary of Discharges

<u>Flooding Source and Location</u>	<u>Drainage Area (sq. mi.)</u>	<u>Peak Discharges (cfs)</u>			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
JERICHO CREEK					
mouth	18.9	700	960	1,100	1780
Upstream of County Highway LO	16.1	700	1,200	1,440	2200
JEWEL CREEK					
Mouth at Little Muskego Lake	11.3	775	1250	1450	2000
LAKE DENOON TRIBUTARY					
Mouth at Lake Denoon	0.6	115	200	240	360
Kelsey Drive	0.3	70	125	150	225
LILLY CREEK					
Mouth	6.0	510	970	1200	2100
Lilly Road	3.2	190	400	540	1000
MASON CREEK					
Upstream of North Lake	8	165	375	430	710
Upstream of Peterson Rd.	7.5	165	375	480	810
MENOMONEE RIVER					
124th Street	60.6	1700	2700	3100	4500
124th Street	45.0	1300	1900	2200	2900
Confluence With Lilly Creek					
	41.9	950	1300	1500	1900
Pilgrim Road	34.5	720	1010	1100	1400
County Line Road	32.0	530	790	910	1200
MUKWONAGO RIVER					
Mouth at Fox River	64.2	567	1398	2029	3123

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
Lower Phantom Lake Outlet	60.6	470	1439	2076	3205
Lower Phantom Lake Inlet	55.6	778	1768	2433	3691
D/S confluence w/ Lake Beulah	51.5	1065	2334	3133	4526
~2000' u/s Beulah Rd	38	978	2215	2994	4342
Confluence of Eagle Spring Lake and Jericho Creek	35.8	1022	2237	2945	4241
MUSKEGO CANAL					
South Corporate Limits	34.5	290	340	350	365
Woods Road	14.0	250	310	340	405
UNAMED TRIBUTARY TO MUSKEGO CANAL					
Mouth at Muskego Canal	1.4	175	300	350	500
NOR-X-WAY CHANNEL					
Mouth	5.3	430	660	770	1000
Fond du Lac Ave.	3.4	140	240	290	430
OCONOMOWO C RIVER					
Jefferson- Waukesha County Line Upstream of County Highway BB	111.0	480	700	790	1000
Oconomowoc East Corp. Limits	109.0	420	595	670	850
Outlet of Fowler Lake	87.0	400	530	600	720
	85.0	270	325	345	390

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
Oconomowoc Lake Corp. Limits	81.0	80	180	230	400
Upstream o f Okauchee Lake	71.0	275	550	680	1150
Upstream o f North Lake	44.0	600	1050	1150	1900
Chgo and NW RR	35.0	540	730	790	900
PEBBLE BROOK					
mouth	19.0	790	1,385	1,695	2,500
Wisconsin Central Ltd. RR	18.0	790	1,350	1,655	2,400
Upstream of Glendal e Avenue	17.0	775	1,300	1,580	2,300
Wisconsin Central Ltd. RR	15.2	760	7,290	1,550	2,250
Upstream of County Highway I	7.9	405	690	835	1,200
Les Paul Parkway	4.2	210	340	400	570
Sunset Dr.	1.4	75	120	150	250
PEBBLE BROOK TRIBUTARY					
Les Paul Parkway	0.8	100	175	210	250
Southwest Avenue	0.4	95	155	180	240
PEBBLE CREEK					
mouth	18.0	933	1,470	1,710	2,380
Sunset Dr.	17.0	940	1,490	1,750	2,400
Wisconsin and Calumet RR Co.	16.0	950	1,510	1,800	2,450
Merrill Hills Rd.	15.8	935	1,480	1,765	2,410
PEWAUKEE RIVER					
Mouth at Fox River	38.0	154	360	532	893

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
I-94	37.1	155	362	534	895
8000' upstream of I94	36.2	177	386	554	926
E Wisconsin Ave	32.1	242	492	739	1375
d/s confluence w/ Pewaukee Lake	30.8	224	496	726	1377
u/s confluence w/ Pewaukee Lake	5.5	157	317	401	446
2000' upstream of STH 16	4.0	231	330	585	565
CTH K	1.8	52	81	94	122
PEWAUKEE TRIB 3 Pewaukee Lake Outlet	25.2	75	311	488	958
PEWAUKEE LAKE TRIBUTARY Upstream of Pewaukee Lake	8.2	570	1,060	1,300	2,050
Upstream of U.S. Highway 16	2.8	230	460	590	950
WEST PEWAUKEE LAKE TRIBUTARY Upstream of Pewaukee Lake Tributary	4.8	350	660	820	1300
POPLAR CREEK at the mouth	25.6	750	1200	1400	1950
Bluemound Rd.	22.8	840	1310	1530	2100
at Davidson Road	14.4	500	740	850	1130
at South Barker Road	13.9	520	750	860	1150
just downstream	8.1	770	1140	1330	1740

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
of Lincoln Avenue just downstream of Cleveland Ave.	5.0	320	390	400	430
Just downstream of Observatory Road	2.7	140	260	300	370
QUIETWOOD CREEK					
limit of detailed study	0.5	138	260	331	436
Knolwood Ct.	1.1	272	511	648	855
Woods Rd	1.6	103	273	388	555
Mouth (Muskego Lake)	1.7	103	278	396	566
ROOT RIVER					
eastern County limits	1.6	325	500	600	900
ROSENOW CREEK					
Mouth (Lac La Belle)	4.7	98	287	405	654
Downstream of STH 67	3.3	180	402	551	782
Mouth of North Branch	1.6	79	173	233	331
SOUTH BRANCH SUSSEX CREEK					
Confluence w/ Sussex Creek	3.1	174	312	398	829
State Road 164	2.6	175	313	398	853
Mary Hill Road	1.3	165	370	536	900
Limit of detailed study	0.3	19	75	148	251
SUSSEX CREEK					
D/S of confluence w/	4.4	311	597	765	1132

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
South Branch Confluence near Locust Street D/S of	5.5	254	477	654	1082
confluence w/ East Branch	6.6	351	751	990	1343
~1,250 feet d/s of Clover Drive	6.8	305	673	907	1334
County Highway K	7.0	366	702	920	1332
Beaver Ct.	8.5	405	799	1046	1506
Redford Blvd.	9.0	384	634	780	1027
Duplainville Road	9.8	381	658	817	1079
D/S of confluence w/ Sussex Creek	12.5	421	748	931	1237
Tributary 1 Mouth at Fox R.	12.9	384	698	875	1169
EAST BRANCH SUSSEX CREEK					
at Waukesha Avenue	0.7	159	185	193	211
SUSSEX CREEK TRIBUTARY 1					
Mouth (Sussex Creek)	2.2	220	516	705	1006
Limit of detaled study	1.2	228	447	577	773
SOUTH 130TH STREET TRIBUTARY					
Just upstream of mouth	0.5	100	200	250	400
TESS CORNERS CREEK					

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
East County limits	6.3	560	880	1030	1430
Just below confluence of: Tess Corners Creek Tributary	5.2	420	670	770	1040
At Tess Corners Road	3.5	310	480	530	750
About 400 feet upstream of Janesville Road	3.1	320	530	620	870
NORTH BRANCH UNDERWOOD CREEK					
at Burleigh Road	1.1	50	90	120	210
SOUTH BRANCH UNDERWOOD CREEK					
at Bluemound Rd.	5.0	1700	2340	2630	3340
at Interstate 94	4.7	1090	1500	1690	2160
UNDERWOOD CREEK					
Upstream of confluence with South Branch Underwood Creek (County line)	10.7	2800	4140	4760	6350
at Watertown Plank Rd.	9.7	928	1480	1750	2470
at North Ave.	7.4	630	1070	1310	1990
Just upstream of confluence with North Branch Underwood Crk.	5.7	549	943	1160	1800
At Pilgrim Rd.	5.1	396	628	748	1090
Limit of detailed study	1.1	68	74	76	82

Table 4. Summary of Discharges

Flooding Source and Location	Drainage Area (sq. mi.)	Peak Discharges (cfs)			
		<u>10-Percent- Annual- Chance</u>	<u>2-Percent- Annual- Chance</u>	<u>1-Percent- Annual- Chance</u>	<u>0.2-Percent- Annual- Chance</u>
UPPER KELLY LAKE TRIBUTARY					
just upstream of Upper Kelly Lake	1.2	250	400	500	720
just downstream of West. Balboa Drive	0.5	150	250	300	450
WEST BRANCH ROOT RIVER					
just upstream of the east county boundary	1.7	580	840	950	1200
just upstream of South 128th Street	0.9	340	550	650	995
just upstream of Dakota St.	0.4	210	340	400	575
WILLOW SPRINGS CREEK					
Mouth	5.4	330	710	940	1600
Town Line Road about 1,650 feet upstream of Good Hope Road	2.2	160	340	460	800
	1.3	56	66	69	76

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM [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 tables in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the

flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

The cross sections used for the detailed studies on: Ashippun River, Bark River, Mukwonago River, Pewaukee River, Quietwood Creek, Rosenow Creek, and Sussex Creek were obtained from the terrain data developed by Waukesha County from aerial photography taken in the spring of 2005. All bridge opening data and structural geometry for the backwater analyses of each flooding source studied were obtained by field surveys by the SEWRPC, under contract with Waukesha County. The channel soundings were also obtained by field measurement. Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles. For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the FIRM.

Cross Sections on: Butler Ditch, South Branch Butler Ditch, Deer Crk, Dousman Ditch, Fox River, North Branch Underwood Creek, Poplar Creek, South Branch Underwood Creek, and Underwood Creek were developed by the Southeastern Wisconsin Regional Planning Commission under a contract with the City of Brookfield, completed in March, 2004.

The cross sections used for the effective detailed studies on: Brandy Brook, Butler Ditch Trib, Calhoun Creek, Dakota St. Trib, East Branch Sussex Creek, Fox River (South of New Berlin), Fox River Trib 2, Genesee Creek, Jericho Creek, Jewel Creek, Lilly Creek, Mason Creek, Menomonee River, Muskego Canal, Muskego Canal Unnamed Trib, NorXway Channel, Oconomowoc River, Pebble Brook, Pebble Brook Trib, Pebble Creek, Root River, S130 St. Trib, Tributary to the South Branch Underwood Creek, (New Berlin Branch of the South Branch Underwood Creek), Tess Corners Creek, Upper Kelly Lake Trib, West Branch Pewaukee Lake Trib, West Branch Root River, Willow Springs Creek were developed by photogrammetric techniques and contour maps generated for the previous FIS for the Unincorporated Areas (Reference 13). All bridge elevation data and structural geometry for the backwater analyses of each flooding source studied were obtained by field surveys performed by the Study Contractor, (Donahue and Assoc.) in 1979. The channel soundings were also obtained by field measurement.

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.

Channel roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgement and based on field observations of the streams and flood plain areas. The Manning's "n" values are shown in Table 5. The acceptability of assumed hydraulic factors, cross sections, and hydraulic structure data was checked by computations that duplicated historic floodwater profiles whenever possible.

TABLE 5 - MANNING'S "N" VALUES

STREAM	CHANNEL	OVERBANKS
Ashippun River	0.04	0.06 to 0.08
Bark River	0.04 to 0.045	0.05 to 0.07
Brandy Brook	0.045	.075 to .08
Butler Ditch	0.035 to 0.040	0.04 to 0.05

Deer Creek	0.03 to 0.045	0.06 to 0.12
Dousman Ditch	0.03 to 0.06	0.04 to 0.2
Fox River	0.03 to 0.035	.075 to 0.1
Genesee Creek	0.02 to 0.04	0.07 to 0.1
Jericho Creek	0.04 to 0.045	0.08 to 0.13
Mason Creek	0.03 to 0.035	.05 to 0.1
Mukwonago River	0.035 to 0.057	.08 to 0.09
Oconomowoc River	0.025 to 0.045	0.09 to 0.11
Pebble Brook	0.04 to 0.045	0.09 to 0.11
Pebble Creek	0.045	0.075 to 0.95
Pewaukee Lake Tributary	0.035	0.06 to 0.07
West Branch Pewaukee Lake Tributary	0.045	0.11 to 0.13
Pewaukee River	0.025 to 0.08	0.045 to 0.12
Poplar Creek	0.035 to 0.04	0.06 to 0.11
Quietwood Creek	.035 to 0.04	0.04 to 0.05
Rosenow Creek	0.03 to 0.035	0.035 to 0.04
Sussex Creek	0.035 to 0.04	0.045 to 0.07
Sussex Creek Trib 1	0.035	0.05 to 0.06
South Branch Sussex Creek	0.035 to 0.04	0.045 to 0.07
Underwood Creek	0.015 to 0.04	0.03 to 0.1
South Branch Underwood Creek	0.015 to 0.04	0.03 to 0.1

Lake stages for Lac LaBelle, North Lake and Okauchee Lake were determined utilizing the HEC-1 Hydrologic Computer Program. Stages for Upper and Lower Nemahbin Lakes, Upper Phantom Lake and Pewaukee Lake were set using the Computer Model HEC-HMS. The summary of elevations for lakes studied in detail are shown in Table 6.

Table 6
Summary of Lake Elevations

<u>Location</u>	Elevation (NGVD)			
	<u>10 YEAR</u>	<u>50 YEAR</u>	<u>100 YEAR</u>	<u>500 YEAR</u>
Ashippun Lake – R.S. 30335	869.2	870.1	870.6	871.2
Lac La Belle	852.4	853.2	853.8	854.4
Oconomowoc Lake	862.0	862.4	862.4	863.0
Okauchee Lake	874.5	874.9	875.1	875.7
North Lake	898.4	899.4	899.9	901.1
Duck Lake / Crooked Lake – RS 60587	869.1	869.9	870.4	871.2
Bowron Lake - RS 62914	869.3	870.2	870.7	871.5
Upper Nemahbin Lake	872.4	873.8	874.8	877.1
Lower Nashotah Lake	870.8	872.6	874.1	877.0
Lower Nemahbin Lake	870.4	871.9	873.7	875.6
Nagawicka Lake - RS 81292	891.5	892.2	892.5	892.8
Eagle Springs Lake	821.6	821.8	822.0	822.0
Upper Phantom Lake – R.S. 15110	792.5	793.7	794.3	795.3
Pewaukee Lake	853.7	854.2	854.6	854.8
Lake Denoon	780.7	781 .1	781.2	781 .5
Little Muskego Lake	792.6	793	793.5	794
Muskego Lake	773 .5	773.8	774.1	774.2
Upper Kelly Lake	807.5	808.1	808.4	810.0

3.3 Vertical Datum

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

many FIS reports and FIRMs are now prepared using NAVD as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to the NGVD. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

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

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

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

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

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, and for all waterways ‘re-delineated’ with existing BFE’s, 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 a scale of 1:1200 with a contour interval of 2.0 feet (Reference 6).

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 (Zone[s] [A, AE, AH, AO, A99, V, and VE]), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations, but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

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

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards based on the requirements of Wisconsin Administrative Code, NR 116.

The floodways presented in this study were computed for certain stream segments on the basis of 'natural' conveyance on each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 8 Floodway Data). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

In the redelineation efforts, the floodway was not recalculated. As a result, there were areas where the previous floodway did not fit within the boundaries of the revised 1-percent-annual-chance floodplain. Therefore, in these areas, the floodway was reduced. Table 8, "Floodway Data" lists the water surface elevations, *with* and *without* a floodway, the mean velocity in the floodway, and the location and area at each surveyed cross section as determined by hydraulic methods. The width of the floodway depicted by the FIRM panels and the amount of reduction to fit the floodway inside the 1-percent-annual-chance floodplain, if necessary, is also listed.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 8, "Floodway Data." To reduce the risk of property damage in areas where the stream velocities are high, the community may wish to

restrict development in areas outside the floodway.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 6 for certain downstream cross sections studied in detail are lower than the regulatory flood elevations in that area, which must take into account the 100-year flooding due to backwater from other sources.

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 (WSEL) of the base flood at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 5.

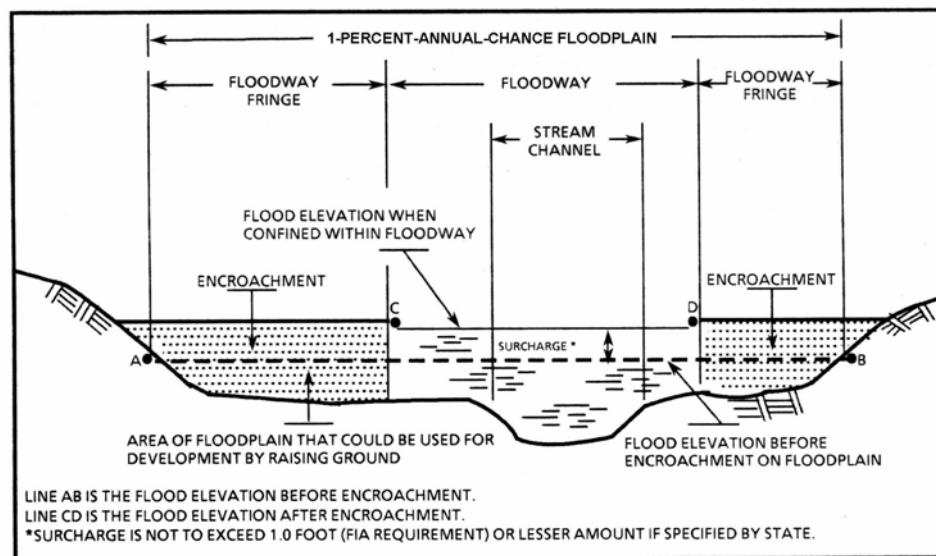


Figure 5 Floodway Schematic

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
Ashippun River									
A	10	235	616	1.5	0.0	848.0	848.0	848.0	0.0
B	622	44	478	3.2	0.0	848.3	848.3	848.3	0.0
C	713	60	585	2.3	0.0	848.5	848.5	848.5	0.0
D	1499	359	643	0.9	0.0	848.8	848.8	848.8	0.0
E	2023	784	1199	0.5	0.0	848.8	848.8	848.8	0.0
F	2957	829	1233	0.5	0.0	848.9	848.9	848.9	0.0
G	3888	891	987	0.6	0.0	848.9	848.9	848.9	0.0
H	3979	350	457	2.3	0.0	848.9	848.9	848.9	0.0
I	4322	63	434	3.4	0.0	849.4	849.4	849.4	0.0
J	4461	351	734	1.0	0.0	850.1	850.1	850.1	0.0
K	5288	339	493	1.2	0.0	850.4	850.4	850.4	0.0
L	6179	57	380	3.0	0.0	850.8	850.8	850.8	0.0
M	6220	77	558	2.2	0.0	851.0	851.0	851.0	0.0
N	7003	272	555	1.1	0.0	851.5	851.5	851.5	0.0
O	8286	226	508	1.2	0.0	852.0	852.0	852.0	0.0
P	9129	280	589	1.0	0.0	852.2	852.2	852.2	0.0
Q	9557	47	170	4.4	0.0	852.2	852.2	852.2	0.0
R	9620	53	414	2.6	0.0	853.4	853.4	853.4	0.0
S	10438	295	462	1.3	0.0	853.7	853.7	853.7	0.0
T	11061	480	864	0.7	0.0	853.9	853.9	853.9	0.0
U	11995	189	486	1.3	0.0	854.1	854.1	854.1	0.0

Notes: ¹Feet above County Boundary

TABLE 7	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	WAUKESHA COUNTY AND INCORPORATED AREAS	ASHIPPUN 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
U	11995	189	486	1.3	0.0	854.1	854.1	854.1	0.0
V	12039	180	516	1.3	0.0	854.1	854.1	854.1	0.0
W	12895	48	153	3.8	0.0	854.4	854.4	854.4	0.0
X	13009	38	137	4.3	0.0	854.7	854.7	854.7	0.0
Y	13156	34	114	5.1	0.0	855.0	855.0	855.0	0.0
Z	13280	55	193	3.2	0.0	855.6	855.6	855.6	0.0
AA	14042	234	622	0.9	0.0	856.1	856.1	856.1	0.0
AB	15425	233	556	1.0	0.0	856.3	856.3	856.3	0.0
AC	16936	106	175	3.3	0.0	857.0	857.0	857.0	0.0
AD	17857	53	275	3.6	0.0	859.9	859.9	859.9	0.0
AE	18413	49	198	3.0	0.0	860.6	860.6	860.6	0.0
AF	18427	43	131	4.5	0.0	868.0	868.0	868.0	0.0
AG	18486	76	895	1.2	0.0	868.4	868.4	868.4	0.0
AH	19369	320	354	1.6	0.0	868.6	868.6	868.6	0.0
AI	20468	204	232	2.5	0.0	868.8	868.8	868.8	0.0
AJ	21360	253	570	1.4	0.0	869.6	869.6	869.6	0.0
AK	22777	279	1802	1.2	0.0	870.2	870.2	870.2	0.0
AL	23702	181	2311	1.3	0.0	870.4	870.4	870.4	0.0
AM	24674	725	2375	0.5	0.0	870.5	870.5	870.5	0.0
AN	25481	1145	3071	0.3	0.0	870.5	870.5	870.5	0.0
AO	26329	1315	3450	0.3	0.0	870.6	870.6	870.6	0.0
AP	27161	2090	6405	0.2	0.0	870.6	870.6	870.6	0.0

Notes: ¹Feet above County Boundary

TABLE 7	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	WAUKESHA COUNTY AND INCORPORATED AREAS	ASHIPPUN 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AQ	28026	2211	8424	0.2	0.0	870.6	870.6	870.6	0.0
AR	29175	2263	14272	0.2	0.0	870.6	870.6	870.6	0.0
AS	30335	2546	8014	0.2	0.0	870.6	870.6	870.6	0.0
AT	31376	2287	6874	0.3	0.0	870.6	870.6	870.6	0.0
AU	32308	1123	2214	0.8	0.0	870.7	870.7	870.7	0.0
AV	32929	742	1360	1.1	0.0	870.9	870.9	870.9	0.0
AW	34099	1071	1587	0.9	0.0	871.5	871.5	871.5	0.0
AX	35023	1028	1563	1.0	0.0	872.1	872.1	872.1	0.0
AY	36390	365	419	2.5	0.0	873.1	873.1	873.1	0.0
AZ	36897	432	702	1.5	0.0	874.2	874.2	874.2	0.0
BA	37559	352	675	1.5	0.0	874.7	874.7	874.7	0.0
BB	38863	268	812	1.3	0.0	877.2	877.2	877.2	0.0
BC	39623	216	714	1.4	0.0	877.5	877.5	877.5	0.0
BD	40849	41	198	7.7	0.0	878.4	878.4	878.4	0.0
BE	40907	65	1638	4.2	0.0	879.7	879.7	879.7	0.0
BF	41394	548	2440	0.8	0.0	880.1	880.1	880.1	0.0
BG	42025	231	1224	4.5	0.0	882.0	882.0	882.0	0.0
BH	43040	64	8535	6.3	0.0	890.3	890.3	890.3	0.0
BI	43136	58	14774	4.9	0.0	891.2	891.2	891.2	0.0
BJ	44239	171	388	2.4	0.0	894.2	894.2	894.2	0.0
BK	45527	216	377	3.0	0.0	898.4	898.4	898.4	0.0
BL	46148	54	310	3.6	0.0	899.6	899.6	899.6	0.0

Notes: ¹Feet above County Boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

ASHIPPUN 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BM	46194	59	362	3.2	0.0	900.0	900.0	900.0	0.0
BN	46677	222	597	1.5	0.0	900.4	900.4	900.4	0.0
BO	47506	185	366	2.4	0.0	900.9	900.9	900.9	0.0
BP	48795	158	479	2.3	0.0	902.1	902.1	902.1	0.0
BQ	48905	46	322	6.0	0.0	901.9	901.9	901.9	0.0
BR	48960	46	475	4.8	0.0	902.6	902.6	902.6	0.0
BS	50166	307	711	1.3	0.0	903.3	903.3	903.3	0.0
BT	51029	436	2199	1.3	0.0	903.7	903.7	903.7	0.0
BU	51622	674	3731	0.8	0.0	904.0	904.0	904.0	0.0
BV	52313	661	2596	0.7	0.0	904.1	904.1	904.1	0.0
BW	52998	440	2119	1.4	0.0	904.4	904.4	904.4	0.0
BX	53996	321	856	1.8	0.0	905.1	905.1	905.1	0.0
BY	54983	263	378	2.3	0.0	906.3	906.3	906.3	0.0
BZ	55003	249	378	2.3	0.0	906.3	906.3	906.3	0.0
CA	55718	143	238	3.7	0.0	908.4	908.4	908.4	0.0
CB	56335	200	396	2.2	0.0	909.9	909.9	909.9	0.0
CC	57161	300	506	1.7	0.0	910.9	910.9	910.9	0.0
CD	57986	331	605	1.5	0.0	911.8	911.8	911.8	0.0
CE	58933	361	625	1.4	0.0	912.5	912.5	912.5	0.0
CF	59784	24	414	9.9	0.0	912.9	912.9	912.9	0.0
CG	59832	47	1281	3.8	0.0	914.7	914.7	914.7	0.0
CH	60506	341	891	1.0	0.0	915.2	915.2	915.2	0.0

Notes: ¹Feet above County Boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

ASHIPPUN 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CI	61612	283	546	1.6	0.0	915.6	915.6	915.6	0.0
CJ	62791	438	633	1.4	0.0	916.5	916.5	916.5	0.0

Notes: ¹Feet above County Boundary

TABLE 7	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	WAUKESHA COUNTY AND INCORPORATED AREAS	ASHIPPUN 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BARK RIVER									
A	36	294	23893	1.9	0.0	844.8	844.8	844.8	0.0
B	1061	60	27404	3.4	0.0	845.3	845.3	845.3	0.0
C	1968	132	37462	2.3	0.0	845.9	845.9	845.9	0.0
D	3173	127	38423	1.7	0.0	846.3	846.3	846.3	0.0
E	4058	126	38973	1.8	0.0	846.5	846.5	846.5	0.0
F	4919	128	37888	1.8	0.0	846.7	846.7	846.7	0.0
G	5924	153	34871	2.3	0.0	846.9	846.9	846.9	0.0
H	6931	134	26219	1.7	0.0	847.3	847.3	847.3	0.0
I	7896	139	20942	1.9	0.0	847.5	847.5	847.5	0.0
J	8904	157	7512	1.5	0.0	847.8	847.8	847.8	0.0
K	9835	147	4714	1.7	0.0	848.0	848.0	848.0	0.0
L	10816	146	4938	1.7	0.0	848.2	848.2	848.2	0.0
M	10895	529	34399	0.6	0.0	848.3	848.3	848.3	0.0
N	11279	1794	10282	0.2	0.0	848.3	848.3	848.3	0.0
O	12368	1933	5784	0.2	0.0	848.3	848.3	848.3	0.0
P	13511	2136	5944	0.2	0.0	848.4	848.4	848.4	0.0
Q	14072	1874	5778	0.3	0.0	848.4	848.4	848.4	0.0
R	15050	1521	3952	0.4	0.0	848.4	848.4	848.4	0.0
S	16099	1119	3053	0.4	0.0	848.5	848.5	848.5	0.0
T	16790	1228	2994	0.4	0.0	848.6	848.6	848.6	0.0
U	17742	982	2702	0.4	0.0	848.7	848.7	848.7	0.0
V	18524	627	4041	0.8	0.0	848.8	848.8	848.8	0.0
W	19241	528	2529	0.9	0.0	849.1	849.1	849.1	0.0
X	19803	81	4615	2.6	0.0	850.5	850.5	850.5	0.0
Y	19911	74	5246	3.0	0.0	850.8	850.8	850.8	0.0
Z	20938	933	4850	0.5	0.0	851.2	851.2	851.2	0.0

Notes: ¹Feet above County Boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BARK 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	21967	1156	4815	0.4	0.0	851.3	851.3	851.3	0.0
AB	22993	1153	3759	0.5	0.0	851.4	851.4	851.4	0.0
AC	24108	774	3524	0.9	0.0	851.7	851.7	851.7	0.0
AD	25106	587	3838	0.8	0.0	852.2	852.2	852.2	0.0
AE	25816	809	3747	0.6	0.0	852.4	852.4	852.4	0.0
AF	26524	452	3823	1.2	0.0	852.7	852.7	852.7	0.0
AG	26983	407	4283	1.1	0.0	853.1	853.1	853.1	0.0
AH	27809	740	5141	0.9	0.0	853.7	853.7	853.7	0.0
AI	28520	645	6109	0.7	0.0	854.0	854.0	854.0	0.0
AJ	28939	476	6019	1.3	0.0	854.2	854.2	854.2	0.0
AK	29060	63	5598	3.4	0.0	854.3	854.3	854.3	0.0
AL	29138	54	4873	4.0	0.0	854.6	854.6	854.6	0.0
AM	30432	243	398	1.7	0.0	855.6	855.6	855.6	0.0
AN	30973	595	1155	0.7	0.0	855.9	855.9	855.9	0.0
AO	31972	270	426	1.4	0.0	856.3	856.3	856.3	0.0
AP	33007	411	683	0.9	0.0	856.8	856.8	856.8	0.0
AQ	33964	81	255	2.3	0.0	857.2	857.2	857.2	0.0
AR	34041	52	183	4.0	0.0	857.3	857.3	857.3	0.0
AS	34251	100	444	1.9	0.0	857.7	857.7	857.7	0.0
AT	35346	207	321	1.8	0.0	858.4	858.4	858.4	0.0
AU	36339	543	487	1.3	0.0	859.3	859.3	859.3	0.0
AV	37260	79	160	3.6	0.0	860.3	860.3	860.3	0.0
AW	37300	78	198	2.9	0.0	860.5	860.5	860.5	0.0
AX	37644	71	159	3.6	0.0	860.8	860.8	860.8	0.0
AY	37723	108	459	1.9	0.0	861.3	861.3	861.3	0.0
AZ	38213	202	468	1.2	0.0	861.6	861.6	861.6	0.0

Notes: ¹Feet above County Boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BARK 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BA	38994	100	405	2.5	0.0	862.1	862.1	862.1	0.0
BB	39091	208	551	1.4	0.0	862.8	862.8	862.8	0.0
BC	39182	287	457	1.3	0.0	862.9	862.9	862.9	0.0
BD	40354	305	603	1.1	0.0	863.3	863.3	863.3	0.0
BE	40584	152	403	2.0	0.0	863.4	863.4	863.4	0.0
BF	40624	204	887	1.1	0.0	864.2	864.2	864.2	0.0
BG	41665	607	1357	0.4	0.0	864.4	864.4	864.4	0.0
BH	42425	342	1044	0.6	0.0	864.4	864.4	864.4	0.0
BI	43360	282	464	1.2	0.0	864.7	864.7	864.7	0.0
BJ	44353	354	675	1.2	0.0	865.3	865.3	865.3	0.0
BK	45398	462	681	1.0	0.0	865.8	865.8	865.8	0.0
BL	45970	494	454	1.3	0.0	866.1	866.1	866.1	0.0
BM	47121	42	607	3.9	0.0	866.5	866.5	866.5	0.0
BN	47145	41	755	3.1	0.0	867.0	867.0	867.0	0.0
BO	48246	419	853	0.7	0.0	867.3	867.3	867.3	0.0
BP	49018	321	982	0.8	0.0	867.4	867.4	867.4	0.0
BQ	49509	302	345	1.7	0.0	867.4	867.4	867.4	0.0
BR	49544	325	646	0.9	0.0	867.8	867.8	867.8	0.0
BS	49942	405	891	0.7	0.0	867.9	867.9	867.9	0.0
BT	50627	739	996	0.6	0.0	868.0	868.0	868.0	0.0
BU	50661	693	1166	0.5	0.0	868.0	868.0	868.0	0.0
BV	51595	700	980	0.6	0.0	868.1	868.1	868.1	0.0
BW	52286	540	834	0.7	0.0	868.2	868.2	868.2	0.0
BX	53217	342	490	1.3	0.0	868.6	868.6	868.6	0.0
BY	53792	242	673	1.0	0.0	868.8	868.8	868.8	0.0
BZ	54648	501	796	0.7	0.0	869.1	869.1	869.1	0.0

Notes: ¹Feet above County Boundary

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CA	55282	74	793	2.9	0.0	869.3	869.3	869.3	0.0
CB	55329	69	701	3.6	0.0	869.4	869.4	869.4	0.0
CC	56402	611	902	0.7	0.0	869.9	869.9	869.9	0.0
CD	57332	445	1795	0.9	0.0	870.1	870.1	870.1	0.0
CE	57352	448	1845	1.1	0.0	870.1	870.1	870.1	0.0
CF	58465	493	2931	0.6	0.0	870.3	870.3	870.3	0.0
CG	59606	937	9440	0.4	0.0	870.3	870.3	870.3	0.0
CH	60587	1139	3381	0.3	0.0	870.4	870.4	870.4	0.0
CI	61680	354	3021	0.8	0.0	870.7	870.7	870.7	0.0
CJ	62194	1132	4824	0.3	0.0	870.7	870.7	870.7	0.0
CK	63259	1236	3686	0.2	0.0	870.8	870.8	870.8	0.0
CL	64331	698	2888	0.6	0.0	870.8	870.8	870.8	0.0
CM	64363	619	2545	0.6	0.0	870.9	870.9	870.9	0.0
CN	65219	701	1702	0.5	0.0	871.0	871.0	871.0	0.0
CO	66119	57	263	3.9	0.0	871.1	871.1	871.1	0.0
CP	66160	270	924	1.2	0.0	873.6	873.6	873.6	0.0
CQ	66163	291	1103	1.0	0.0	873.6	873.6	873.6	0.0
CR	66170	302	1195	0.9	0.0	873.6	873.6	873.6	0.0
CS	66951	1011	4033	0.3	0.0	873.7	873.7	873.7	0.0
CT	67514	1561	17096	0.2	0.0	873.7	873.7	873.7	0.0
CU	68555	1153	16108	0.2	0.0	873.7	873.7	873.7	0.0
CV	69622	103	3522	2.0	0.0	873.7	873.7	873.7	0.0
CW	69699	37	178	6.3	0.0	873.5	873.5	873.5	0.0
CX	69708	28	134	8.1	0.0	873.7	873.7	873.7	0.0
CY	69816	42	2809	3.8	0.0	874.4	874.4	874.4	0.0
CZ	69928	52	2173	3.5	0.0	874.5	874.5	874.5	0.0

Notes: ¹Feet above County Boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BARK 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
DA	70857	793	5342	0.4	0.0	874.8	874.8	874.8	0.0
DB	71982	211	812	1.4	0.0	874.9	874.9	874.9	0.0
DC	72671	64	180	6.0	0.0	875.2	875.2	875.2	0.0
DD	72718	71	470	4.7	0.0	876.0	876.0	876.0	0.0
DE	72851	46	238	9.1	0.0	877.7	877.7	877.7	0.0
DF	72897	51	476	7.4	0.0	883.0	883.0	883.0	0.0
DG	73854	513	1138	1.0	0.0	884.5	884.5	884.5	0.0
DH	74523	218	829	1.3	0.0	884.6	884.6	884.6	0.0
DI	75466	54	700	4.3	0.0	885.3	885.3	885.3	0.0
DJ	75532	53	557	4.5	0.0	885.4	885.4	885.4	0.0
DK	76470	383	1486	0.7	0.0	885.9	885.9	885.9	0.0
DL	77288	211	714	1.5	0.0	886.1	886.1	886.1	0.0
DM	78050	72	326	3.4	0.0	886.4	886.4	886.4	0.0
DN	78061	75	334	3.3	0.0	886.4	886.4	886.4	0.0
DO	78906	42	423	5.1	0.0	888.4	888.4	888.4	0.0
DP	78969	124	1027	2.2	0.0	890.6	890.6	890.6	0.0
DQ	79115	502	2460	0.5	0.0	890.7	890.7	890.7	0.0
DR	79216	476	2298	0.5	0.0	890.7	890.7	890.7	0.0
DS	79239	521	2300	0.5	0.0	890.8	890.8	890.8	0.0
DT	79351	853	2270	0.6	0.0	892.2	892.2	892.2	0.0
DU	80409	546	1607	0.9	0.0	892.3	892.3	892.3	0.0
DV	81292	965	3926	0.5	0.0	892.3	892.3	892.3	0.0
DW	89700	433	3659	1.2	0.0	892.5	892.5	892.5	0.0
DX	90671	372	936	1.6	0.0	892.9	892.9	892.9	0.0
DY	91462	362	790	1.8	0.0	893.7	893.7	893.7	0.0
DZ	92459	59	347	7.9	0.0	895.6	895.6	895.6	0.0

Notes: ¹Feet above County Boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BARK 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
EA	92532	77	634	4.6	0.0	897.2	897.2	897.2	0.0
EB	93651	778	3089	0.6	0.0	898.4	898.4	898.4	0.0
EC	94705	794	2910	0.6	0.0	898.5	898.5	898.5	0.0
ED	95641	411	1099	1.4	0.0	899.0	899.0	899.0	0.0
EE	96655	144	1704	3.1	0.0	899.7	899.7	899.7	0.0
EF	96772	64	2157	4.7	0.0	900.3	900.3	900.3	0.0
EG	97855	1876	6453	0.2	0.0	900.7	900.7	900.7	0.0
EH	98858	1871	6501	0.2	0.0	900.7	900.7	900.7	0.0
EI	99857	1634	5295	0.3	0.0	900.7	900.7	900.7	0.0
EJ	100837	1647	5551	0.3	0.0	900.8	900.8	900.8	0.0
EK	101692	1711	5941	0.2	0.0	900.8	900.8	900.8	0.0
EL	102705	868	2174	0.7	0.0	900.9	900.9	900.9	0.0
EM	103556	1165	2723	0.6	0.0	900.9	900.9	900.9	0.0
EN	104200	920	1532	0.9	0.0	901.0	901.0	901.0	0.0
EO	104267	1152	2053	0.7	0.0	901.0	901.0	901.0	0.0
EP	105142	179	495	4.2	0.0	901.8	901.8	901.8	0.0
EQ	105213	275	1521	1.2	0.0	906.4	906.4	906.4	0.0
ER	105843	290	1111	1.3	0.0	906.7	906.7	906.7	0.0
ES	106628	45	666	6.8	0.0	907.1	907.1	907.1	0.0
ET	106742	56	1485	3.9	0.0	910.6	910.6	910.6	0.0
EU	106759	66	1486	3.6	0.0	910.7	910.7	910.7	0.0
EV	107179	311	911	1.5	0.0	911.1	911.1	911.1	0.0
EW	107644	35	179	7.4	0.0	911.4	911.4	911.4	0.0
EX	107688	56	261	5.1	0.0	912.6	912.6	912.6	0.0
EY	107845	68	277	4.8	0.0	913.0	913.0	913.0	0.0
EZ	107970	43	170	7.8	0.0	913.0	913.0	913.0	0.0

Notes: ¹Feet above County Boundary

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
FA	108122	45	235	5.7	0.0	914.3	914.3	914.3	0.0
FB	108169	36	222	6.2	0.0	914.4	914.4	914.4	0.0
FC	108242	44	232	7.1	0.0	914.7	914.7	914.7	0.0
FD	108371	17	142	9.3	0.0	916.8	916.8	916.8	0.0
FE	108454	15	140	10.1	0.0	918.0	918.0	918.0	0.0
FF	108651	105	1281	2.1	0.0	920.5	920.5	920.5	0.0
FG	108658	102	1378	2.2	0.0	920.6	920.6	920.6	0.0
FH	109551	629	1539	0.9	0.0	920.7	920.7	920.7	0.0
FI	109620	596	1383	1.0	0.0	920.7	920.7	920.7	0.0
FJ	110625	96	954	3.0	0.0	920.9	920.9	920.9	0.0
FK	110640	96	1295	3.1	0.0	920.9	920.9	920.9	0.0
FL	110994	30	3146	4.6	0.0	921.9	921.9	921.9	0.0
FM	111975	558	2391	0.6	0.0	922.3	922.3	922.3	0.0
FN	111989	549	2503	0.5	0.0	922.3	922.3	922.3	0.0
FO	112861	439	1858	0.7	0.0	922.4	922.4	922.4	0.0
FP	113506	416	1662	0.8	0.0	922.5	922.5	922.5	0.0
FQ	114144	401	1607	0.8	0.0	922.6	922.6	922.6	0.0
FR	114712	590	1658	0.8	0.0	922.7	922.7	922.7	0.0
FS	115705	89	1723	6.5	0.0	923.2	923.2	923.2	0.0
FT	115786	105	3546	2.8	0.0	924.9	924.9	924.9	0.0
FU	116793	652	1808	0.7	0.0	925.3	925.3	925.3	0.0
FV	117769	321	659	2.0	0.0	925.8	925.8	925.8	0.0
FW	118411	246	553	2.3	0.0	926.4	926.4	926.4	0.0
FX	119409	320	590	2.2	0.0	927.5	927.5	927.5	0.0
FY	119948	273	594	1.8	0.0	928.0	928.0	928.0	0.0
FZ	120803	37	391	5.5	0.0	928.4	928.4	928.4	0.0

Notes: ¹Feet above County Boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BARK 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
GA	120846	49	486	5.0	0.0	928.9	928.9	928.9	0.0
GB	121517	505	928	1.2	0.0	929.9	929.9	929.9	0.0
GC	122255	127	500	4.1	0.0	931.2	931.2	931.2	0.0
GD	123184	465	1198	0.9	0.0	932.4	932.4	932.4	0.0
GE	123809	406	987	1.1	0.0	932.5	932.5	932.5	0.0
GF	124405	311	799	1.3	0.0	932.7	932.7	932.7	0.0
GG	125092	336	820	1.5	0.0	933.3	933.3	933.3	0.0
GH	125960	182	483	3.4	0.0	934.3	934.3	934.3	0.0
GI	126012	255	892	1.4	0.0	936.2	936.2	936.2	0.0
GJ	126825	334	744	1.4	0.0	936.6	936.6	936.6	0.0
GK	127664	243	786	1.5	0.0	936.9	936.9	936.9	0.0
GL	128317	354	1055	1.0	0.0	937.2	937.2	937.2	0.0
GM	129343	438	991	1.1	0.0	937.4	937.4	937.4	0.0
GN	129424	500	1429	0.8	0.0	939.5	939.5	939.5	0.0
GO	130488	468	1481	0.7	0.0	939.6	939.6	939.6	0.0
GP	131700	345	829	1.3	0.0	939.9	939.9	939.9	0.0
GQ	132915	307	857	1.3	0.0	940.5	940.5	940.5	0.0
GR	133962	248	520	2.1	0.0	941.5	941.5	941.5	0.0
GS	135018	169	354	3.0	0.0	943.4	943.4	943.4	0.0
GT	135411	30	106	10.0	0.0	944.8	944.8	944.8	0.0
GU	135543	38	363	5.6	0.0	946.7	946.7	946.7	0.0
GV	135600	36	2999	4.6	0.0	953.5	953.5	953.5	0.0
GW	136606	524	4221	0.3	0.0	953.8	953.8	953.8	0.0
GX	137603	451	3666	0.3	0.0	953.8	953.8	953.8	0.0
GY	138582	518	3768	0.3	0.0	953.8	953.8	953.8	0.0
GZ	139470	451	2978	0.4	0.0	953.9	953.9	953.9	0.0

Notes: ¹Feet above County Boundary

**TABLE
7**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BARK 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
HA	140140	223	3389	0.7	0.0	953.9	953.9	953.9	0.0
HB	140447	147	3089	1.0	0.0	954.1	954.1	954.1	0.0
HC	140719	300	2279	0.7	0.0	954.6	954.6	954.6	0.0
HD	141433	794	5331	0.2	0.0	954.7	954.7	954.7	0.0
HE	142503	90	6210	1.5	0.0	954.7	954.7	954.7	0.0
HF	142618	124	3724	1.1	0.0	955.0	955.0	955.0	0.0
HG	143356	637	3044	0.3	0.0	955.0	955.0	955.0	0.0
HH	143814	418	2917	0.4	0.0	955.0	955.0	955.0	0.0
HI	143882	369	3276	0.4	0.0	955.7	955.7	955.7	0.0
HJ	144892	494	2669	0.4	0.0	955.7	955.7	955.7	0.0
HK	145812	599	3257	0.3	0.0	955.7	955.7	955.7	0.0
HL	146545	593	3329	0.3	0.0	955.7	955.7	955.7	0.0
HM	147446	536	3272	0.3	0.0	955.7	955.7	955.7	0.0
HN	148235	630	6059	0.3	0.0	955.7	955.7	955.7	0.0
HO	149152	627	6557	0.3	0.0	955.8	955.8	955.8	0.0
HP	149960	658	3690	0.2	0.0	955.8	955.8	955.8	0.0
HQ	151068	641	2577	0.3	0.0	955.8	955.8	955.8	0.0
HR	151990	598	2328	0.4	0.0	955.8	955.8	955.8	0.0
HS	152875	459	1814	0.5	0.0	955.9	955.9	955.9	0.0
HT	153964	460	1963	0.5	0.0	955.9	955.9	955.9	0.0
HU	154873	307	823	1.0	0.0	956.1	956.1	956.1	0.0
HV	155887	233	675	1.3	0.0	956.6	956.6	956.6	0.0
HW	156392	305	668	1.3	0.0	957.0	957.0	957.0	0.0
HX	157094	83	266	3.7	0.0	958.0	958.0	958.0	0.0
HY	157211	67	1124	2.5	0.0	960.3	960.3	960.3	0.0
HZ	157865	910	11133	0.2	0.0	960.5	960.5	960.5	0.0

Notes: ¹Feet above County Boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BARK 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
IA	158672	496	13355	0.6	0.0	960.5	960.5	960.5	0.0
IB	159689	437	1235	0.7	0.0	961.4	961.4	961.4	0.0
IC	160692	486	2060	0.5	0.0	961.5	961.5	961.5	0.0
ID	161720	258	469	1.3	0.0	961.9	961.9	961.9	0.0
IE	162789	162	288	2.2	0.0	963.0	963.0	963.0	0.0
IF	163783	232	315	2.0	0.0	964.7	964.7	964.7	0.0
IG	164862	390	665	0.9	0.0	965.6	965.6	965.6	0.0
IH	165773	459	1085	0.6	0.0	965.8	965.8	965.8	0.0
II	166841	50	195	4.6	0.0	966.7	966.7	966.7	0.0
IJ	166916	50	603	2.2	0.0	970.2	970.2	970.2	0.0
IK	167856	164	512	1.2	0.0	970.5	970.5	970.5	0.0
IL	168949	179	1861	0.8	0.0	970.6	970.6	970.6	0.0
IM	169829	651	3973	0.3	0.0	970.7	970.7	970.7	0.0
IN	170800	1428	5568	0.1	0.0	970.7	970.7	970.7	0.0
IO	171593	1097	4105	0.2	0.0	970.7	970.7	970.7	0.0
IP	172422	669	2900	0.5	0.0	970.7	970.7	970.7	0.0
IQ	173355	375	2279	0.8	0.0	970.8	970.8	970.8	0.0
IR	173885	70	2512	2.6	0.0	971.0	971.0	971.0	0.0
IS	173959	113	5990	1.0	0.0	973.1	973.1	973.1	0.0
IT	174574	537	4177	0.3	0.0	973.2	973.2	973.2	0.0

Notes: ¹Feet above County Boundary

TABLE 7	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	WAUKESHA COUNTY AND INCORPORATED AREAS	BARK 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BRANDY BROOK									
A	2027	1922	6605	0.3	235.0	808.3	808.3	808.3	0.0
B	3836	1701	3059	0.4	0.0	808.5	808.5	808.5	0.0
C	4724	570	737	1.6	0.0	810.1	810.1	810.1	0.0
D	6051	300	2491	0.5	0.0	823.1	823.1	823.1	0.0
E	7060	2165	13183	0.1	0.0	823.1	823.1	823.1	0.0
F	9332	1993	6845	0.2	0.0	823.1	823.1	823.1	0.0

Notes: ¹Feet above mouth

**TABLE
7**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BRANDY BROOK

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BUTLER DITCH									
A	864	123	213	3.8	0.0	727.2	727.2	727.2	0.0
B	1330	28	125	7.7	0.0	731.3	731.3	731.3	0.0
C	1557	42	109	7.4	0.0	734.6	734.6	734.6	0.0
D	2019	87	236	3.4	0.0	738.5	738.5	738.5	0.0
E	2584	103	301	2.7	0.0	740.6	740.6	740.6	0.0
F	2964	115	217	3.7	0.0	742.8	742.8	742.8	0.0
G	3414	128	418	2.1	0.0	745.8	745.8	745.8	0.0
H	4182	151	384	2.2	0.0	746.9	746.9	746.9	0.0
I	4662	87	316	3.5	0.0	747.7	747.7	747.7	0.0
J	5286	75	529	3.0	32.0	749.1	749.1	749.1	0.0
K	5314	49	236	4.9	63.0	749.1	749.1	749.1	0.0
L	5943	150	245	2.9	0.0	751.5	751.5	751.5	0.0
M	6499	200	381	1.9	47.0	752.5	752.5	752.5	0.0
N	7132	32	588	5.1	0.0	754.1	754.1	754.1	0.0
O	7219	121	1108	2.4	0.0	755.0	755.0	755.0	0.0
P	8036	396	736	1.0	0.0	755.6	755.6	755.6	0.0
Q	8798	517	1004	0.7	0.0	755.9	755.9	755.9	0.0
R	9587	100	1296	1.6	78.0	757.3	757.3	757.3	0.0
S	10349	266	415	1.5	0.0	757.6	757.6	757.6	0.0
T	11037	207	588	1.5	0.0	758.0	758.0	758.0	0.0
U	11566	430	502	1.2	0.0	758.6	758.6	758.6	0.0
V	12307	360	762	1.1	0.0	759.2	759.2	759.2	0.0
W	12992	434	681	0.9	0.0	759.6	759.6	759.6	0.0
X	16365	404	541	0.8	45.0	767.3	767.3	767.3	0.0
Y	16745	225	259	1.6	0.0	767.9	767.9	767.9	0.0
Z	18481	17	547	5.1	0.0	772.6	772.6	772.6	0.0

Notes: ¹Feet above confluence with the Menomonee River

TABLE 7

**FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BUTLER DITCH

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	18534	20	1409	3.4	0.0	774.3	774.3	774.3	0.0
AB	19295	230	311	0.7	0.0	774.7	774.7	774.7	0.0
AC	20534	102	109	0.5	130.0	776.7	776.7	776.7	0.0
AD	21319	31	86	0.6	127.0	777.0	777.0	777.0	0.0
AE	21529	10	29	1.8	29.0	777.8	777.8	777.8	0.0
BUTLER DITCH SOUTH BRANCH									
A	988 ²	28	272	1.4	352	760.2	760.2	760.2	0.0
B	1408	150	254	1.5		761.4	761.4	761.4	0.0
C	1573	24	48	8.0		763.5	763.5	763.5	0.0
D	1644	24	65	5.9		764.6	764.6	764.6	0.0
E	1724	24	141	1.7		766.0	766.0	766.0	0.0
F	1874	24	144	1.7		766.1	766.1	766.1	0.0
G	1950	68	196	1.5		766.1	766.1	766.1	0.0
H	2183	90	188	1.7		766.2	766.2	766.2	0.0
I	2795	28	49	8.5		766.9	766.9	766.9	0.0
J	3531	65	107	4.0		773.6	773.6	773.6	0.0
K	3993	97	88	6.9		780.5	780.5	780.5	0.0

Notes: ¹Feet above confluence with the Menomonee River

²Feet above confluence with Butler Ditch

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

BUTLER DITCH/BUTLER DITCH SOUTH BRANCH

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BUTLER DITCH TRIBUTARY									
A	312 ¹	38	29	3.7	0	756.0	754.1	754.1	0.0
B	389	35	35	4.5	0	756.0	755.4	755.4	0.0
C	419	17	35	3.0	0	756.0	755.8	755.8	0.0
D	802	127	223	0.7	0	759.5	759.5	759.5	0.0
E	1062	64	89	1.5	0	759.6	759.6	759.6	0.0
F	1230	23	33	3.2	0	760.0	760.0	760.0	0.0
G	1367	54	55	2.1	0	760.8	760.8	760.8	0.0
H	1644	13	31	3.3	0	762.0	762.0	762.0	0.0
I	1675	100	109	1.7	0	763.4	763.4	763.4	0.0
J	1902	18	33	3.1	0	763.6	763.6	763.6	0.0
K	1937	39	55	2.1	0	764.7	764.7	764.7	0.0
L	2006	61	53	2.8	0	764.9	764.9	764.9	0.0
M	2222	13	38	2.7	0	765.6	765.6	765.6	0.0
N	2332	15	83	1.2	0	768.9	768.9	768.9	0.0
O	3178	218	603	0.3	0	770.2	770.2	770.2	0.0
P	3393	308	671	0.3	0	770.2	770.2	770.2	0.0
Q	4018	44	27	2.3	0	770.2	770.2	770.2	0.0
R	4244	5	9	5.6	0	772.2	772.2	772.2	0.0
S	4260	42	25	3.1	0	773.8	773.8	773.8	0.0
T	4286	44	19	4.6	0	773.8	773.8	773.8	0.0
U	4388	90	278	0.2	0	774.1	774.1	774.1	0.0
V	4707	28	169	0.3	0	774.1	774.1	774.1	0.0
W	4760	28	171	0.3	0	774.2	774.2	774.2	0.0
X	5371	143	406	0.1	0	774.2	774.2	774.2	0.0

Notes: ¹Feet above confluence with Butler Ditch

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOODWAY DATA

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

BUTLER DITCH TRIBUTARY

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CALHOUN CREEK									
A	29	15	210	9.6	0.0	815.6	815.6	815.6	0.0
B	114	210	1480	1.4	0.0	821.0	821.0	821.0	0.0
C	293	330	2860	0.7	0.0	821.0	821.0	821.0	0.0
D	516	345	2700	0.8	0.0	821.0	821.0	821.0	0.0
E	981	290	1620	1.3	0.0	821.1	821.1	821.1	0.0
F	2458	570	1780	0.7	0.0	821.2	821.2	821.2	0.0
G	3666	110	450	2.8	0.0	821.4	821.4	821.4	0.0
H	3837	50	260	4.8	0.0	821.4	821.4	821.4	0.0
I	3949	140	520	2.4	0.0	821.9	821.9	821.9	0.0
J	4664	310	850	1.2	0.0	822.6	822.6	822.6	0.0
K	6518	560	1480	0.7	0.0	823.2	823.2	823.2	0.0
L	8023	25	170	5.9	0.0	824.1	824.1	824.1	0.0
M	8401	300	560	1.8	0.0	825.5	825.5	825.5	0.0
N	10213	410	620	1.6	0.0	827.8	827.8	827.8	0.0
O	11134	220	510	2.0	0.0	828.9	828.9	828.9	0.0
P	11228	195	640	1.6	0.0	830.7	830.7	830.7	0.0
Q	11310	285	830	1.2	0.0	830.7	830.7	830.7	0.0
R	12088	260	450	2.1	0.0	831.2	831.2	831.2	0.0
S	12794	215	250	3.2	0.0	833.4	833.4	833.4	0.0
T	12937	260	1080	0.8	0.0	835.0	835.0	835.0	0.0
U	13157	190	490	1.7	0.0	836.4	836.4	836.4	0.0
V	13649	200	440	1.9	0.0	836.9	836.9	836.9	0.0
W	14364	167	350	2.3	28.0	838.2	838.2	838.2	0.0
X	15864	125	250	3.3	0.0	843.1	843.1	843.1	0.0
Y	16081	130	500	1.6	0.0	845.8	845.8	845.8	0.0
Z	16372	270	540	1.5	55.0	845.9	845.9	845.9	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

CALHOUN 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	17875	470	960	0.9	0.0	846.9	846.9	846.9	0.0
AB	20444	210	140	2.9	200.0	854.5	854.5	854.5	0.0
AC	21352	70	130	3.2	0.0	863.6	863.6	863.6	0.0
AD	21525	100	500	0.8	0.0	866.7	866.7	866.7	0.0
AE	21581	230	770	0.5	57.0	866.7	866.7	866.7	0.0
AF	22236	290	470	0.9	0.0	866.8	866.8	866.8	0.0
AG	22749	10	80	5.1	0.0	870.3	870.3	870.3	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

CALHOUN 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
DAKOTA ST TRIBUTARY									
A	76	51	92	1.4	0.0	785.8	785.8	785.8	0.0
B	278	30	53	2.4	0.0	786.1	786.1	786.1	0.0
C	577	28	41	3.0	14.0	789.7	789.7	789.7	0.0
D	849	40	66	1.9	25.0	792.8	792.8	792.8	0.0
E	1030	41	35	3.6	0.0	796.1	796.1	796.1	0.0
F	1448	37	57	2.2	28.0	801.6	801.6	801.6	0.0
G	1757	65	56	2.2	0.0	805.0	805.0	805.0	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

DAKOTA STREET TRIBUTARY

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
DEER CREEK									
A ²	1974	396	2390	0.5	0	828.4	828.4	828.4	0.0
B	2498	49	2155	2.3	0	828.4	828.4	828.4	0.0
C	4243	55	1584	0.7	305	829.6	829.6	829.6	0.0
D	5075	550	1630	0.6	0	829.8	829.8	829.8	0.0
E	5957	616	2281	0.4	54	829.8	829.8	829.8	0.0
F	6521	187	1200	1.3	0	830.7	830.7	830.7	0.0
G	7860	164	483	2.0	0	831.1	831.1	831.1	0.0
H	8415	212	1028	1.2	0	831.5	831.5	831.5	0.0
I	9722	63	1403	1.0	147	832.8	832.8	832.8	0.0
J	10276	250	603	1.4	0.0	833.0	833.0	833.0	0.0
K	11193	180	978	1.5	0.0	834.6	834.6	834.6	0.0
L	11933	206	1089	1.6	0.0	835.4	835.4	835.4	0.0
M	13563	251	666	1.3	0.0	836.6	836.6	836.6	0.0
N	14645	85	1046	2.0	0.0	836.7	836.7	836.7	0.0
O	15762	410	2350	0.5	0.0	837.3	837.3	837.3	0.0
P	16381	280	1741	0.8	0.0	837.3	837.3	837.3	0.0
Q	17103	107	1008	0.9	0.0	839.5	839.5	839.5	0.0
R	18193	151	1038	0.7	0.0	839.6	839.6	839.6	0.0
S ³	18615	37	1002	0.5	167	842.2	842.2	842.2	0.0
T	20069	340	1657	0.3	0.0	842.2	842.2	842.2	0.0
U	20595	240	1350	0.4	0.0	842.2	842.2	842.2	0.0
V	20969	310	1094	0.5	0.0	842.2	842.2	842.2	0.0
W	21542	44	475	1.0	0.0	843.4	843.4	843.4	0.0
X	21955	122	509	1.0	0.0	843.4	843.4	843.4	0.0
Y	22343	206	528	1.0	0.0	843.5	843.5	843.5	0.0
Z	23033	108	434	1.2	0.0	843.8	843.8	843.8	0.0

Notes: ¹Feet above mouth ²Data from City of Brookfield - SEWRPC model, letters 'A' through R' ³Data from City of New Berlin FIS 11/6/1996, letters 'S' through 'AZ' (end)

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOODWAY DATA

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

DEER 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	23780	100	329	1.4	0	844.0	844.0	844.0	0.0
AB	24217	23	120	3.8	0	844.4	844.4	844.4	0.0
AC	24770	83	218	2.1	0	844.8	844.8	844.8	0.0
AD	25790	66	255	1.8	0	845.9	845.9	845.9	0.0
AE	26204	25	181	4.1	20	846.3	846.3	846.3	0.0
AF	26978	34	76	6.0	0	847.9	847.9	847.9	0.0
AG	27836	65	212	1.8	0	854.8	854.8	854.8	0.0
AH	29176	84	144	2.1	0	856.0	856.0	856.0	0.0
AI	29647	82	105	2.9	27	856.2	856.2	856.2	0.0
AJ	30328	42	93	3.3	0	858.2	858.2	858.2	0.0
AK	31022	300	404	0.8	50	860.5	860.5	860.5	0.0
AL	31739	77	131	2.3	0	861.9	861.9	861.9	0.0
AM	32254	23	79	3.0	0	863.1	863.1	863.1	0.0
AN	32693	43	74	3.3	0	864.3	864.3	864.3	0.0
AO	33115	26	74	3.3	0	865.9	865.9	865.9	0.0
AP	33592	48	154	1.6	0	866.3	866.3	866.3	0.0
AQ	33876	52	163	1.2	0	866.4	866.4	866.4	0.0
AR	35067	38	131	1.5	0	867.9	867.9	867.9	0.0
AS	36286	45	145	1.4	0	868.4	868.4	868.4	0.0
AT	36903	46	174	1.1	0	868.6	868.6	868.6	0.0
AU	37359	60	221	0.9	112	868.8	868.8	868.8	0.0
AV	37769	87	2391	0.2	36	868.8	868.8	868.8	0.0
AW	38435	55	1600	0.3	0	868.8	868.8	868.8	0.0
AX	39090	70	191	1.6	0	869.3	869.3	869.3	0.0
AY	39941	24	52	4.2	0	869.7	869.7	869.7	0.0
AZ	40716	37	94	2.4	0	873.2	873.2	873.2	0.0

Notes: ¹Feet above mouth

TABLE 7	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	WAUKESHA COUNTY AND INCORPORATED AREAS	DEER 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
DOUSMAN DITCH									
A	244	57	189	3.6	0.0	822.9	822.3 ²	822.3 ²	0.0
B	417	56	300	2.1	0.0	822.9	822.9	822.9	0.0
C	1016	43	204	2.8	27.0	823.3	823.3	823.3	0.0
D	1662	42	210	2.7	21.0	823.9	823.9	823.9	0.0
E	2362	48	306	1.8	30.0	824.3	824.3	824.3	0.0
F	3187	43	250	2.2	0.0	824.6	824.6	824.6	0.0
G	3372	42	263	2.1	0.0	824.8	824.8	824.8	0.0
H	3733	95	353	1.1	18.0	825.0	825.0	825.0	0.0
I	4422	225	1329	0.8	0.0	825.3	825.3	825.3	0.0
J	4866	405	1950	0.6	0.0	825.4	825.4	825.4	0.0
K	7084	136	5367	0.7	30.0	827.0	827.0	827.0	0.0
L	8640	242	3595	0.5	487.0	827.4	827.4	827.4	0.0
M	9884	20	1143	0.7	770.0	827.8	827.8	827.8	0.0
N	10840	233	157	3.1	0.0	828.9	828.9	828.9	0.0
O	12634	40	149	6.9	0.0	829.3	829.3	829.3	0.0
P	13032	87	373	1.3	0.0	831.0	831.0	831.0	0.0

Notes: ¹Feet above mouth

²Elevation without considering backwater effect from Underwood Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

DOUSMAN DITCH

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
EAST BRANCH SUSSEX CREEK									
A	1575	85	N/A ²	N/A ²	215	901.0	901.0	901.0	0.0
B	2200	200	N/A	N/A	0	906.2	906.2	906.2	0.0
C	3098	340	N/A	N/A	0	911.9	911.9	911.9	0.0
D	3884	5	N/A	N/A	115	914.7	914.7	914.7	0.0

Notes: ¹Feet above mouth

²Table values repeated from effective FIS for Village of Sussex

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

EAST BRANCH SUSSEX 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
FOX RIVER									
A	149.381	1771	4937	0.7	4	777.0	777.0	777.0	0.0
B	149.622	832	2568	1.3	3	777.3	777.3	777.3	0.0
C	150.190	1213	4411	0.8	0	778.3	778.3	778.3	0.0
D	150.485	1771	6241	0.5	35	778.4	778.4	778.4	0.0
E	151.102	1910	5198	0.6	26	778.7	778.7	778.7	0.0
F	151.483	1402	5789	0.6	0	778.9	778.9	778.9	0.0
G	151.850	2123	7785	0.4	23	779.0	779.0	779.0	0.0
H	152.178	570	2896	1.1	14	779.1	779.1	779.1	0.0
I	152.590	945	4010	0.8	46	779.3	779.3	779.3	0.0
J	152.987	469	2672	1.2	2	779.5	779.5	779.5	0.0
K	153.069	479	2933	1.1	169	779.6	779.6	779.6	0.0
L	153.168	457	2788	1.2	3	779.7	779.7	779.7	0.0
M	153.375	708	3619	0.9	16	779.8	779.8	779.8	0.0
N	153.736	142	1935	1.7	224	780.2	780.2	780.2	0.0
O	153.924	661	4289	0.8	314	780.4	780.4	780.4	0.0
P	154.344	1508	6279	0.5	32	780.6	780.6	780.6	0.0
Q	154.990	965	2923	1.1	13	780.9	780.9	780.9	0.0
R	155.805	153	1020	3.3	0	781.4	781.4	781.4	0.0
S	156.203	324	1939	1.7	1	781.8	781.8	781.8	0.0
T	156.359	1577	7981	0.4	63	782.0	782.0	782.0	0.0
U	156.993	1793	6285	0.5	0	782.2	782.2	782.2	0.0
V	157.394	1201	7160	0.5	2	782.3	782.3	782.3	0.0
W	157.808	1179	7170	0.5	10	782.3	782.3	782.3	0.0
X	158.056	840	5292	0.6	2	782.4	782.4	782.4	0.0
Y	159.296	2483	10246	0.3	37	782.5	782.5	782.5	0.0
Z	159.837	1360	6860	0.5	0	782.6	782.6	782.6	0.0

Notes: ¹ Distance in miles above the confluence with the Illinois River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

FOX RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUAR E FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATOR Y (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	160.394	294	2200	1.5	191	782.8	782.8	782.8	0.0
AB	160.960	461	2542	0.9	48	783.4	783.4	783.4	0.0
AC	161.208	156	1330	1.7	0	783.5	783.5	783.5	0.0
AD	161.778	303	1885	1.3	16	783.9	783.9	783.9	0.0
AE	162.004	288	1837	1.1	4	784.0	784.0	784.0	0.0
AF	162.073	193	1852	1.3	3	784.0	784.0	784.0	0.0
AG	162.095	195	1852	1.3	0	784.0	784.0	784.0	0.0
AH	162.283	1685	11813	0.2	16	784.1	784.1	784.1	0.0
AI	162.881	3975	19616	0.1	0	784.1	784.1	784.1	0.0
AJ	163.547	4626	20348	0.1	668	784.1	784.1	784.1	0.0
AK	164.098	4006	21027	0.1	894	784.1	784.1	784.1	0.0
AL	164.915	3650	16067	0.1	0	784.2	784.2	784.2	0.0
AM	165.594	2225	8818	0.3	93	784.2	784.2	784.2	0.0
AN	165.966	3557	13040	0.2	3	784.3	784.3	784.3	0.0
AO	166.541	3818	16284	0.1	701	784.3	784.3	784.3	0.0
AP	167.094	1795	4390	0.5	5	784.5	784.5	784.5	0.0
AQ	167.384	580	2359	1.0	30	784.7	784.7	784.7	0.0
AR	167.706	92	693	4.1	1	785.3	785.3	785.3	0.0
AS	168.467	1282	2569	1.1	6	786.6	786.6	786.6	0.0
AT	168.846	1336	5974	0.5	297	786.9	786.9	786.9	0.0
AU	169.523	1773	8099	0.4	27	787.0	787.0	787.0	0.0
AV	169.976	1759	5258	0.5	194	787.2	787.2	787.2	0.0
AW	170.732	1602	5312	0.5	0	787.5	787.5	787.5	0.0
AX	171.157	999	3014	0.9	54	787.8	787.8	787.8	0.0
AY	171.627	943	1790	1.6	0	788.5	788.5	788.5	0.0
AZ	172.076	880	3177	0.9	127	789.1	789.1	789.1	0.0

Notes: ¹ Distance in miles above the confluence with the Illinois River

² Total Width / Width Within Unincorporated Area

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

FOX 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATOR Y (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BA	172.507	75	1168	3.0	125	790.5	790.5	790.5	0.0
BB	173.000	1029	3685	0.9	0	791.5	791.5	791.5	0.0
BC	173.474	1171	4501	0.8	453	792.0	792.0	792.0	0.0
BD	173.858	865	3495	1.0	35	792.4	792.4	792.4	0.0
BE	174.118	3902	2329	1.5	0	792.9	792.9	792.9	0.0
BF	174.459	929	4755	0.7	21	793.2	793.2	793.2	0.0
BG	174.673	1049	5720	0.6	1	793.3	793.3	793.3	0.0
BH	175.141	84	786	4.5	0	794.3	794.3	794.3	0.0
BI	175.506	7300	3413	0.9	2	794.9	794.9	794.9	0.0
BJ	175.859	678	2968	1.1	1	795.2	795.2	795.2	0.0
BK	176.021	410	1644	2.0	5	795.4	795.4	795.4	0.0
BL	176.309	661	3180	1.0	0	795.7	795.7	795.7	0.0
BM	176.573	319	1581	2.0	32	796.4	796.4	796.4	0.0
BN	176.779	96	480	6.7	1	798.6	798.6	798.6	0.0
BO	176.904	193	1492	2.2	8	800.6	800.6	800.6	0.0
BP	177.094	255	1505	2.1	149	801.5	801.5	801.5	0.0
BQ	177.217	65	515	6.3	2	802.2	802.2	802.2	0.0
BR	177.253	100	833	3.9	3	803.2	803.2	803.2	0.0
BS	177.685	59	412	7.8	0	804.5	804.5	804.5	0.0
BT	178.009	50	379	8.5	1	809.3	809.3	809.3	0.0
BU	178.046	76	603	5.3	0	811.6	811.6	811.6	0.0
BV	178.164	102	702	4.5	0	813.7	813.7	813.7	0.0
BW	178.189	233	1389	2.3	30	814.1	814.1	814.1	0.0
BX	178.196	225	1259	2.5	62	814.7	814.7	814.7	0.0
BY	178.492	518	3381	0.9	23	815.0	815.0	815.0	0.0
BZ	178.784	482	2739	1.2	131	815.1	815.1	815.1	0.0

Notes: ¹ Distance in miles above the confluence with the Illinois River

²Total Width Outside Unincorporated Area

³Total Width / Width Within Unincorporated Area

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

FOX 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CA	178.919	181	1591	2.0	12	815.2	815.2	815.2	0.0
CB	179.014	259	1503	2.1	0	815.4	815.4	815.4	0.0
CC	179.251	173	2091	0.2	105	815.5	815.5	815.5	0.0
CD	179.414	200	1174	2.8	37	815.7	815.7	815.7	0.0
CE	179.625	100	1034	3.1	118	817.5	817.5	817.5	0.0
CF	179.801	3883	1722	1.9	169	818.0	818.0	818.0	0.0
CG	180.093	151	1457	2.2	285	819.1	819.1	819.1	0.0
CH	180.154	189	1107	2.9	138	819.3	819.3	819.3	0.0
CI	180.380	314	3204	1.0	312	820.6	820.6	820.6	0.0
CJ	180.559	645	4119	0.8	5	820.8	820.8	820.8	0.0
CK	180.835	143	1512	1.6	12	821.4	821.4	821.4	0.0
CL	181.079	215	2156	1.1	100	821.7	821.7	821.7	0.0
CM	181.123	457	2709	0.9	47	821.9	821.9	821.9	0.0
CN	181.476	295	2544	0.9	0	822.7	822.7	822.7	0.0
CO	181.684	439	2153	1.1	1	822.8	822.8	822.8	0.0
CP	181.846	336	1701	1.4	1	823.3	823.3	823.3	0.0
CQ	182.244	902	4740	0.5	17	823.5	823.5	823.5	0.0
CR	182.520	700	6813	0.4	0	823.7	823.7	823.7	0.0
CS	182.730	408	3147	0.9	0	823.7	823.7	823.7	0.0
CT	183.005	390	2847	1.0	0	824.3	824.3	824.3	0.0
CU	183.123	599	4264	0.6	0	824.4	824.4	824.4	0.0
CV	183.347	1028	6451	0.4	0	824.4	824.4	824.4	0.0
CW	183.538	1269	7217	0.3	0	824.4	824.4	824.4	0.0
CX	183.786	1062	6675	0.4	0	824.5	824.5	824.5	0.0
CY	184.198	991	7240	0.3	0	824.5	824.5	824.5	0.0
CZ	184.689	1172	6179	0.4	0	824.6	824.6	824.6	0.0

Notes: ¹Distance in miles above the confluence with the Illinois River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

FOX 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
DA	184.963	900	5600	0.4	0	824.7	824.7	824.7	0.0
DB	185.662	1531	5664	0.3	0	825.2	825.2	825.2	0.0
DC	185.993	541	5924	0.7	0	825.2	825.2	825.2	0.0
DD	186.117	214	4506	1.5	0	826.7	826.7	826.7	0.0
DE	186.292	1275	7281	0.3	0	826.9	826.9	826.9	0.0
DF	186.540	1500	8461	0.3	0	826.9	826.9	826.9	0.0
DG	186.831	1390	6868	0.4	0	826.9	826.9	826.9	0.0
DH	187.241	1436	7771	0.3	0	827.0	827.0	827.0	0.0
DI	187.422	1466	5342	0.4	0	827.0	827.0	827.0	0.0
DJ	187.800	393	1397	1.6	0	827.4	827.4	827.4	0.0
DK	188.334	2474	6785	0.3	0	827.7	827.7	827.7	0.0
DL	188.631	2948	8269	0.2	0	827.8	827.8	827.8	0.0
DM	188.779	3242	9247	0.2	0	827.8	827.8	827.8	0.0
DN	189.332	2272	6432	0.4	0	828.0	828.0	828.0	0.0
DO	189.584	1546	4465	0.5	0	828.3	828.3	828.3	0.0
DP	189.769	1242	4171	0.5	0	828.4	828.4	828.4	0.0
DQ	189.845	937	1107	1.4	0	828.5	828.5	828.5	0.0
DR	190.475	273	1075	0.8	0	831.6	831.6	831.6	0.0
DS	190.754	798	1263	0.7	0	832.2	832.2	832.2	0.0
DT	191.047	749	1682	0.5	0	832.6	832.6	832.6	0.0
DU	191.357	526	1205	0.7	0	833.0	833.0	833.0	0.0
DV	191.379	180	1431	0.6	0	833.3	833.3	833.3	0.0
DW	191.466	914	1824	0.5	0	833.4	833.4	833.4	0.0
DX	191.478	934	2503	0.3	0	834.1	834.1	834.1	0.0
DY	191.661	691	2443	0.3	26	834.2	834.2	834.2	0.0
DZ	191.884	639	1629	0.5	0	834.3	834.3	834.3	0.0

Notes: ¹ Distance in miles above the confluence with the Illinois River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

FOX 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
EA	192.187	946	2166	0.3	0	834.4	834.4	834.4	0.0
EB	192.533	106	1835	0.4	0	834.7	834.7	834.7	0.0
EC	192.561	157	272	3.1	0	834.6	834.6	834.6	0.0
ED	192.584	314	979	0.8	0	835.2	835.2	835.2	0.0
EE	192.607	440	787	1.0	0	835.2	835.2	835.2	0.0
EF	192.624	540	1503	0.5	0	835.3	835.3	835.3	0.0
EG	192.734	622	1424	0.6	0	835.5	835.5	835.5	0.0
EH	192.930	830	1535	0.5	0	835.7	835.7	835.7	0.0
EI	192.934	830	1176	0.7	0	835.8	835.8	835.8	0.0
EJ	193.059	842	965	0.8	0	836.0	836.0	836.0	0.0
EK	193.252	1072	1489	0.4	0	836.3	836.3	836.3	0.0
EL	193.271	1095	1202	0.5	0	836.3	836.3	836.3	0.0
EM	193.333	792	1012	0.6	0	836.4	836.4	836.4	0.0
EN	193.394	591	548	1.1	0	837.0	837.0	837.0	0.0
EO	193.498	480	503	1.2	0	837.9	837.9	837.9	0.0
EP	193.66	396	307	2.0	0	839.8	839.8	839.8	0.0
EQ	193.815	480	490	1.3	0	841.6	841.6	841.6	0.0
ER	194.10	337	2767	0.2	0	847.8	847.8	847.8	0.0
ES	194.215	501	1660	0.3	0	847.9	847.9	847.9	0.0
ET	194.318	414	990	0.6	0	848.0	848.0	848.0	0.0
EU	194.41	567	834	0.7	0	848.2	848.2	848.2	0.0
EV	194.732	342	449	1.4	0	850.9	850.9	850.9	0.0
EW	195.327	604	731	0.8	0	858.4	858.4	858.4	0.0
EX	195.715	180	423	1.5	0	859.3	859.3	859.3	0.0
EY	195.808	216	455	1.4	0	859.6	859.6	859.6	0.0
EZ	195.846	428	1492	0.4	0	860.5	860.5	860.5	0.0

Notes: ¹ Distance in miles above the confluence with the Illinois River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

FOX 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
FA	195.849	427	623	1.0	0	861.3	861.3	861.3	0.0
FB	195.870	359	1501	0.4	51	861.4	861.4	861.4	0.0
FC	195.880	345	1907	0.3	86	862.7	862.7	862.7	0.0
FD	196.050	521	2211	0.1	0	862.7	862.7	862.7	0.0
FE	196.196	821	3413	0.1	0	862.7	862.7	862.7	0.0
FF	196.233	855	3552	0.1	235	862.7	862.7	862.7	0.0
FG	196.270	990	3172	0.1	100	862.7	862.7	862.7	0.0
FH	196.307	1136	3216	0.1	0	862.7	862.7	862.7	0.0
FI	196.385	1009	2775	0.1	0	862.7	862.7	862.7	0.0
FJ	196.441	792	1829	0.2	60	862.7	862.7	862.7	0.0
FK	196.545	458	829	0.4	127	862.7	862.7	862.7	0.0
FL	196.714	744	644	0.5	0	862.8	862.8	862.8	0.0
FM	196.813	148	74	3.9	0	864.1	864.1	864.1	0.0
FN	196.899	207	214	1.4	0	866.4	866.4	866.4	0.0
FO	197.014	118	252	1.2	139	867.8	867.8	867.8	0.0
FP	197.073	154	200	1.5	0	869.0	869.0	869.0	0.0
FQ	197.154	79	78	3.7	0	872.7	872.7	872.7	0.0
FR	197.226	117	142	2.0	0	877.1	877.1	877.1	0.0
FS	197.311	37	69	4.2	0	881.1	881.1	881.1	0.0
FT	197.427	180	255	1.1	0	883.7	883.7	883.7	0.0
FU	197.538	311	423	0.7	0	884.2	884.2	884.2	0.0
FV	197.541	329	631	0.5	101	884.2	884.2	884.2	0.0
FW	197.750	369	1160	0.3	0	886.3	886.3	886.3	0.0
FX	197.919	559	1023	0.3	0	886.3	886.3	886.3	0.0
FY	197.960	364	477	0.6	0	886.3	886.3	886.3	0.0
FZ	198.011	156	91	3.2	0	886.7	886.7	886.7	0.0

Notes: ¹ Distance in miles above the confluence with the Illinois River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

FOX RIVER

[illegible]

Notes: ¹ Distance in miles above the confluence with the Illinois River

TABLE 7	FEDERAL EMERGENCY MANAGEMENT AGENCY	FLOODWAY DATA
	WAUKESHA COUNTY AND INCORPORATED AREAS	FOX 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
GENESEE CREEK									
A	1114	667	2028	0.8	13.0	786.9	785.7 ²	785.7	0.0
B	2011	1042	3152	0.5	39.0	786.9	786.0 ²	786.0	0.0
C	2850	1144	2665	0.6	11.0	786.9	786.2 ²	786.2	0.0
D	3955	1018	4465	0.4	232.0	786.9	786.3 ²	786.3	0.0
E	5182	489	3055	0.5	589.0	789.0	789.0	789.0	0.0
F	6487	585	1196	1.4	20.0	790.0	790.0	790.0	0.0
G	7429	370	2207	0.8	104.0	793.8	793.8	793.8	0.0
H	7586	347	1566	1.1	2.0	793.8	793.8	793.8	0.0
I	9556	655	2513	0.7	21.0	800.6	800.6	800.6	0.0
J	12080	804	1422	0.7	261.0	801.8	801.8	801.8	0.0
K	13847	43	872	1.1	608.0	804.4	804.4	804.4	0.0
L	15277	234	416	2.3	288.0	811.1	811.1	811.1	0.0
M	16790	335	584	1.7	57.0	818.7	818.7	818.7	0.0
N	18464	31	1157	0.8	660.0	838.0	838.0	838.0	0.0
O	19491	47	148	6.6	29.0	841.1	841.1	841.1	0.0
P	20638	37	164	5.9	0.0	848.1	848.1	848.1	0.0
Q	20870	0	319	3.0	260.0	851.0	851.0	851.0	0.0
R	21817	138	543	2.1	162.0	856.6	856.6	856.6	0.0
S	22587	51	444	2.2	265.0	860.5	860.5	860.5	0.0
T	23234	250	673	1.4	184.0	865.2	865.2	865.2	0.0
U	24152	25	510	1.9	216.0	867.6	867.6	867.6	0.0
V	25177	210	497	2.0	41.0	872.9	872.9	872.9	0.0
W	25882	17	72	7.6	0.0	883.0	883.0	883.0	0.0
X	26311	194	514	1.1	77.0	888.9	888.9	888.9	0.0
Y	26858	211	147	3.7	1.0	890.7	890.7	890.7	0.0
Z	27535	13	86	6.4	0.0	897.4	897.4	897.4	0.0

Notes: ¹Feet above mouth

²Elevations computed without consideration of backwater effects from Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY AND
INCORPORATED AREAS

FLOODWAY DATA

GENESEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
JERICHO CREEK									
A	883	110	344	3.2	62	818.1	818.1	818.1	0.0
B	1809	220	463	2.4	9	824.4	824.4	824.4	0.0
C	3844	390	519	2.8	0	836.7	836.7	836.7	0.0
D	5739	55	528	5.8	195	846.9	846.9	846.9	0.0
E	8143	141	506	2.8	147	861.1	861.1	861.1	0.0
F	10144	139	261	5.5	67	874.2	874.2	874.2	0.0
G	11569	48	223	6.5	0	878.9	878.9	878.9	0.0
H	12446	143	769	1.9	113	883.7	883.7	883.7	0.0
I	14734	563	615	2.3	0	897.3	897.3	897.3	0.0
J	16975	468	1609	0.9	478	902.4	902.4	902.4	0.0
K	19823	279	1449	1.0	475	905.8	905.8	905.8	0.0
L	22720	724	1504	1.0	178	909.4	909.4	909.4	0.0
M	26098	532	1039	1.4	267	917.2	917.2	917.2	0.0
N	28695	790	2743	0.5	0	925.2	925.2	925.2	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

JERICHO 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
JEWEL CREEK									
A	652	101	427	3.4	9	794.2	794.2	794.2	0.0
B	1490	31	289	5.0	6	796.6	796.6	796.6	0.0
C	2011	150	291	5.0	0	797.3	797.3	797.3	0.0
D	2243	147	531	2.7	44	798.3	798.3	798.3	0.0
E	2548	91	235	6.2	3	799.1	799.1	799.1	0.0
F	2794	96	335	4.3	1	801.1	801.1	801.1	0.0
G	3453	72	248	5.8	94	806.6	806.6	806.6	0.0
H	3834	229	1018	1.4	1	807.4	807.4	807.4	0.0
I	4494	18	106	13.7	0	809.7	809.7	809.7	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

JEWEL 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
LAKE DENOON TRIBUTARY									
A	260	30	84	2.9	17	781.2	781.2	781.2	0.0
B	770	131	119	2.0	0	783.6	783.6	783.6	0.0
C	1220	55	82	2.9	0	785.9	785.9	785.9	0.0
D	1825	204	186	1.3	0	787.9	787.9	787.9	0.0
E	2330	72	58	4.1	0	792.5	792.5	792.5	0.0
F	2830	113	121	2.0	0	795.5	795.5	795.5	0.0
G	3341	119	74	3.2	0	804.2	804.2	804.2	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

LAKE DENOON TRIBUTARY

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
LILLY CREEK									
A	231	338	662	1.9	22	747.7	747.1 ²	747.1 ²	0.0
B	693	239	565	2.2	11	749.1	749.1	749.1	0.0
C	931	170	314	3.9	20	749.9	749.9	749.9	0.0
D	1279	92	326	3.8	18	750.5	750.5	750.5	0.0
E	1655	70	252	4.9	20	751.3	751.3	751.3	0.0
F	1924	38	133	9.3	2	752.6	752.6	752.6	0.0
G	2060	39	174	7.1	1	754.4	754.4	754.4	0.0
H	2291	120	485	2.5	0	756.5	756.5	756.5	0.0
I	2485	223	694	1.8	67	757.4	757.4	757.4	0.0
J	2558	202	663	1.9	38	757.4	757.4	757.5	0.1
K	2964	271	641	1.9	39	757.5	757.5	757.6	0.1
L	3573	98	255	4.8	12	758.1	758.1	758.1	0.0
M	4151	39	223	5.5	1	759.3	759.3	759.3	0.0
N	4340	28	180	6.9	12	759.8	759.8	759.8	0.0
O	4521	109	1213	1.0	131	767.1	767.1	767.2	0.1
P	4761	221	1179	1.1	99	767.2	767.2	767.2	0.0
Q	4983	120	601	2.1	0	767.2	767.2	767.2	0.0
R	5230	169	553	2.2	11	767.2	767.2	767.2	0.0
S	5538	119	408	3.0	21	767.3	767.3	767.3	0.0
T	5664	184	513	2.4	6	768.0	768.0	768.0	0.0
U	6144	152	508	2.4	8	768.2	768.2	768.2	0.0
V	6466	117	244	5.1	3	768.3	768.3	768.3	0.0
W	6822	160	312	4.0	0	769.5	769.5	769.5	0.0
X	7293	180	368	3.4	0	770.2	770.2	770.2	0.0
Y	7594	100	414	3.0	150	770.7	770.7	770.7	0.0
Z	8048	196	352	3.5	54	771.5	771.5	771.5	0.0

Notes: ¹Feet above confluence with Menomonee River

² Elevation computed without considering backwater from the Menomonee River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

LILLY 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	8494	291	452	1.2	49	772.2	772.2	772.2	0.0
AB	9020	106	208	2.6	24	772.5	772.5	772.5	0.0
AC	9439	86	159	3.4	14	772.9	772.9	772.9	0.0
AD	9710	260	369	1.5	20	774.1	774.1	774.1	0.0
AE	9916	278	525	1.0	72	774.1	774.1	774.2	0.1
AF	10054	308	1145	0.5	102	775.5	775.5	775.5	0.0
AG	10365	431	1033	0.5	9	775.5	775.5	775.5	0.0
AH	10677	377	730	0.7	3	775.5	775.5	775.5	0.0
AI	11161	315	685	0.8	5	775.7	775.7	775.7	0.0
AJ	11251	291	559	1.0	9	775.7	775.7	775.7	0.0
AK	11585	226	540	1.0	14	775.9	775.9	775.9	0.0
AL	11698	269	406	1.3	1	776.0	776.0	776.0	0.0
AM	12069	315	883	0.6	185	776.1	776.1	776.1	0.0
AN	12535	77	540	1.0	283	776.1	776.1	776.2	0.1
AO	12779	162	747	0.7	118	776.2	776.2	776.2	0.0
AP	12923	160	534	1.0	50	776.2	776.2	776.3	0.1
AQ	13222	139	335	1.6	1	776.2	776.2	776.4	0.2
AR	13464	169	381	1.4	31	776.6	776.6	776.7	0.1
AS	13577	153	562	1.0	97	777.2	777.2	777.2	0.0
AT	13793	245	2019	0.3	515	778.3	778.3	778.3	0.0
AU	14023	496	1458	0.4	364	778.3	778.3	778.3	0.0
AV	14522	611	1746	0.3	269	778.3	778.3	778.3	0.0
AW	15055	541	1316	0.4	249	778.4	778.4	778.4	0.0
AX	15421	669	1269	0.4	251	778.4	778.4	778.4	0.0
AY	15655	817	1201	0.5	13	778.4	778.4	778.4	0.0
AZ	15864	879	1338	0.4	1	779.7	779.7	779.7	0.0

Notes: ¹Feet above confluence with Menomonee River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

LILLY 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BA	16344	887	1140	0.5	43	779.7	779.7	779.7	0.0
BB	16887	885	682	0.8	65	779.8	779.8	779.8	0.0
BC	17487	785	1010	0.5	95	779.9	779.9	779.9	0.0

Notes: ¹Feet above confluence with Menomonee River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

LILLY 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
MASON CREEK									
A	364	52	196	2.2	20	899.9	899.6 ²	899.6 ²	0.0
B	667	182	901	0.5	33	902.2	902.2	902.2	0.0
C	1488	92	260	1.8	40	906.5	906.5	906.5	0.0
D	2310	164	716	0.7	9	917.2	917.2	917.2	0.0
E	2840	46	374	1.3	125	920.1	920.1	920.1	0.0
F	4160	180	266	1.8	62	926.9	926.9	926.9	0.0
G	5382	168	304	1.6	5	929.4	929.4	929.4	0.0
H	6783	227	389	1.2	27	933.7	933.7	933.7	0.0
I	7989	83	276	1.7	131	936.1	936.1	936.1	0.0
J	9137	196	507	0.5	132	938.2	938.2	938.2	0.0
K	10373	115	518	0.5	188	938.6	938.6	938.6	0.0
L	11407	25	302	0.8	122	939.6	939.6	939.6	0.0
M	13423	255	282	0.8	26	942.1	942.1	942.1	0.0
N	14130	237	369	0.6	108	942.5	942.5	942.5	0.0

Notes: ¹Feet above mouth

²Elevation computed without consideration of backwater effect from North Lake

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MASON 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
MENOMONEE RIVER									
A ²	21	84	439	7.2	0	710.0	710.0	710.0	0.0
B	344	84	747	4.2	15	712.6	712.6	712.6	0.0
C	755	103	594	5.3	25	713.5	713.5	713.5	0.0
D	1122	263	3403	0.9	279	714.9	714.9	714.9	0.0
E	1593	387	2132	1.5	88	714.9	714.9	714.9	0.0
F	2413	881	3385	0.9	23	715.5	715.5	715.5	0.0
G	2852	776	2188	1.4	15	716.2	716.2	716.2	0.0
H	3697	332	1033	3.0	47	717.8	717.8	717.8	0.0
I	4062	215	947	3.3	115	718.9	718.9	718.9	0.0
J	4608	288	984	3.2	9	720.3	720.3	720.3	0.0
K	4895	120	672	3.4	28	721.3	721.3	721.3	0.0
L	5197	146	1081	2.1	177	722.3	722.3	722.3	0.0
M	5793	96	1488	1.5	188	723.0	723.0	723.0	0.0
N	6119	134	1110	2.0	126	723.2	723.2	723.2	0.0
O	6371	108	1149	2.0	162	723.4	723.4	723.4	0.0
P ³	6407	130	1610	1.4	90	723.6	723.6	723.6	0.0
Q	6887	317	1257	1.8	73	724.0	724.0	724.0	0.0
R	7447	215	1947	1.2	415	725.1	725.1	725.1	0.0
S	7757	371	1868	1.2	269	725.4	725.4	725.4	0.0
T	8151	393	1163	1.9	67	726.0	726.0	726.0	0.0
U	8655	338	1112	2.0	22	727.1	727.1	727.1	0.0
V	9252	347	1311	1.7	23	728.1	728.1	728.1	0.0
W	9848	427	1828	1.2	33	728.8	728.8	728.8	0.0
X	10337	395	1825	1.2	95	729.1	729.1	729.1	0.0
Y	10870	418	1495	1.5	52	729.5	729.5	729.5	0.0
Z	11359	497	1791	1.3	63	729.9	729.9	729.9	0.0

Notes: ¹Feet above county boundary
Village of Menomonee Falls 3/1978

²Cross Sections and Floodway Data from FIS - Village of Butler 11/1977

³Cross Sections and Floodway Data from FIS -

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MENOMONEE RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUAR E FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	11851	594	1872	1.2	56	730.3	730.3	730.3	0.0
AB	12390	650	2464	0.9	0	730.8	730.8	730.8	0.0
AC	12899	600	1426	1.6	0	731.3	731.3	731.3	0.0
AD	13077	412	1615	1.4	108	731.8	731.8	731.8	0.0
AE	13784	550	1902	1.2	0	732.7	732.7	732.7	0.0
AF	14215	610	2302	1.0	0	733.2	733.2	733.2	0.0
AG	14757	600	2078	1.1	0	733.7	733.7	733.7	0.0
AH	15323	680	2001	1.1	0	734.4	734.4	734.4	0.0
AI ²	15827	690 ²	2929	0.8	0	735.0	735.0	735.0	0.0
AJ	24437	810	2650	0.8	66	741.7	741.7	741.7	0.0
AK	24829	759	2818	0.8	41	742.1	742.1	742.1	0.0
AL	25228	748	2588	0.9	52	742.4	742.4	742.4	0.0
AM	25367	704	2022	1.1	76	742.6	742.6	742.6	0.0
AN	25790	608	2667	0.8	92	743.1	743.1	743.1	0.0
AO	26239	355	1600	1.4	15	743.5	743.5	743.5	0.0
AP	26372	364	1698	1.3	36	743.7	743.7	743.7	0.0
AQ	26783	417	1944	1.1	53	744.3	744.3	744.3	0.0
AR	27197	316	1446	1.5	44	744.9	744.9	744.9	0.0
AS	27476	423	1476	1.5	17	745.5	745.5	745.5	0.0
AT	27652	545	1544	1.4	15	745.7	745.7	745.7	0.0
AU	27997	629	1924	1.1	21	746.2	746.2	746.2	0.0
AV	28111	616	1830	1.2	44	746.4	746.4	746.4	0.0
AW	28157	593	1494	1.5	27	746.4	746.4	746.4	0.0
AX	28284	509	930	2.4	1	746.4	746.4	746.4	0.0
AY	28429	537	1740	1.3	13	746.9	746.9	746.9	0.0
AZ	28532	591	2066	1.1	9	747.1	747.1	747.1	0.0

Notes: ¹ Feet above county boundary

² Floodway located outside corporate limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MENOMONEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BA	28650	608	2013	1.1	2	747.2	747.2	747.2	0.0
BB	28773	572	2457	0.9	8	747.3	747.3	747.3	0.0
BC	29151	630	1641	1.3	0	747.5	747.5	747.5	0.0
BD	29233	595	2072	1.1	25	747.7	747.7	747.7	0.0
BE	29738	339	1743	0.9	1	747.9	747.9	748.0	0.1
BF	30415	215	1688	0.9	25	748.1	748.1	748.2	0.1
BG	30926	160	1258	1.2	0	748.5	748.5	748.6	0.1
BH	31618	359	1843	0.8	11	749.0	749.0	749.0	0.0
BI	32730	444	2071	0.7	106	749.4	749.4	749.4	0.0
BJ	33065	439	1855	0.8	61	749.5	749.5	749.6	0.1
BK	33396	242	2307	0.7	418	749.7	749.7	749.8	0.1
BL	33548	138	716	2.1	42	749.9	749.9	750.0	0.1
BM	34040	253	874	1.7	7	750.8	750.8	750.9	0.1
BN	34627	448	1503	1.0	2	751.6	751.6	751.6	0.0
BO	34817	413	1879	0.8	107	751.9	751.9	751.9	0.0
BP	35171	855	3292	0.5	105	752.0	752.0	752.0	0.0
BQ	35574	784	2500	0.6	46	752.1	752.1	752.1	0.0
BR	36002	446	1610	0.9	94	752.3	752.3	752.3	0.0
BS	36088	396	1273	1.2	44	752.4	752.4	752.4	0.0
BT	36525	270	1326	1.1	30	752.7	752.7	752.8	0.1
BU	36943	222	986	1.1	38	752.9	752.9	752.9	0.0
BV	37112	174	666	1.7	36	752.9	752.9	752.9	0.0
BW	37463	120	422	2.7	0	752.9	752.9	752.9	0.0
BX	37918	187	409	2.8	123	753.3	753.3	753.3	0.0
BY	38301	70	315	3.6	0	753.9	753.9	753.9	0.0
BZ	38714	66	216	5.2	4	755.0	755.0	755.0	0.0

Notes: ¹Feet above county boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MENOMONEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CA	39038	71	167	6.8	29	756.8	756.8	756.8	0.0
CB	39359	50	195	5.8	0	759.2	759.2	759.2	0.0
CC	39688	100	275	4.1	0	760.6	760.6	760.6	0.0
CD	39973	184	288	3.9	36	761.3	761.3	761.3	0.0
CE	40159	76	240	4.7	34	761.3	761.3	761.3	0.0
CF	40316	39	209	5.4	31	761.8	761.8	761.8	0.0
CG	40428	49	189	6.0	1	763.1	763.1	763.1	0.0
CH	40739	124	218	5.2	6	764.5	764.5	764.5	0.0
CI	41107	60	195	5.8	0	766.5	766.5	766.5	0.0
CJ	41463	58	287	3.9	22	768.4	768.4	768.4	0.0
CK	41609	59	228	5.0	11	768.7	768.7	768.7	0.0
CL	41807	39	119	9.5	1	769.7	769.7	769.7	0.0
CM	41928	48	233	4.8	2	772.0	772.0	772.0	0.0
CN	42030	68	169	6.7	2	772.3	772.3	772.3	0.0
CO	42143	59	228	5.0	1	773.4	773.4	773.4	0.0
CP	42399	58	120	9.4	2	776.8	776.8	776.8	0.0
CQ	42510	105	297	3.8	45	780.5	780.5	780.5	0.0
CR	42641	80	232	4.9	0	782.4	782.4	782.4	0.0
CS	42925	33	61	18.5	17	786.7	786.7	786.7	0.0
CT	43168	40	77	14.7	0	798.6	798.6	798.6	0.0
CU	43354	49	75	15.0	1	800.0	800.0	800.0	0.0
CV	43515	29	76	14.8	1	804.1	804.1	804.1	0.0
CW	43586	20	88	12.8	0	808.6	808.6	808.6	0.0
CX	43724	48	66	17.1	2	811.4	811.4	811.4	0.0
CY	43937	49	123	9.2	1	814.7	814.7	814.7	0.0
CZ	44074	39	97	11.6	21	817.1	817.1	817.1	0.0

Notes: ¹Feet above county boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MENOMONEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
DA	44155	96	1790	0.5	74	834.7	834.7	834.7	0.0
DB	44541	101	676	1.3	9	834.8	834.8	834.8	0.0
DC	44859	58	228	4.0	12	834.9	834.9	834.9	0.0
DD	45020	60	192	4.7	0	835.4	835.4	835.6	0.2
DE	45185	35	176	5.2	5	836.6	836.6	836.6	0.0
DF	45326	40	207	4.4	0	838.9	838.9	839.0	0.1
DG	45572	122	864	1.1	58	839.7	839.7	839.7	0.0
DH	45691	99	561	1.6	1	840.1	840.1	840.2	0.1
DI	46152	79	441	2.1	1	840.2	840.2	840.3	0.1
DJ	46447	237	1093	0.8	33	840.3	840.3	840.4	0.1
DK	46749	315	1150	0.8	5	840.4	840.4	840.4	0.0
DL	47031	317	971	0.9	3	840.4	840.4	840.4	0.0
DM	47644	117	341	2.7	113	840.5	840.5	840.6	0.1
DN	47795	61	616	1.5	159	840.9	840.9	840.9	0.0
DO	48638	227	1186	0.8	143	841.2	841.2	841.2	0.0
DP	49612	370/130 ²	946	1.0	0	841.3	841.3	841.3	0.0
DQ	49970	531/290 ²	1357	0.7	39	841.4	841.4	841.4	0.0
DR	50202	610/225 ²	1739	0.5	0	841.4	841.4	841.4	0.0
DS	50713	650/235 ²	2091	0.4	0	841.4	841.4	841.4	0.0
DT	51285	860/65 ²	1373	0.7	0	841.4	841.4	841.5	0.1

Notes: ¹Feet above mouth

² Width/Width Within Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MENOMONEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
MUKWONAGO RIVER									
A	7	2293	9584	0.3	0.0	781.3	781.3	781.3	0.0
B	884	1976	3593	0.7	0.0	781.4	781.4	781.4	0.0
C	1263	1672	2727	0.9	0.0	781.5	781.5	781.5	0.0
D	2285	1229	3285	0.8	0.0	781.7	781.7	781.7	0.0
E	3228	569	1529	1.4	0.0	782.1	782.1	782.1	0.0
F	4201	837	2803	0.8	0.0	782.4	782.4	782.4	0.0
G	5363	477	1669	1.3	0.0	782.7	782.7	782.7	0.0
H	5891	126	1227	3.0	0.0	783.2	783.2	783.2	0.0
I	6035	208	1769	2.0	0.0	783.3	783.3	783.3	0.0
J	6984	354	1048	2.0	0.0	783.7	783.7	783.7	0.0
K	7780	521	1151	1.8	0.0	784.2	784.2	784.2	0.0
L	8773	749	2863	0.8	0.0	784.7	784.7	784.7	0.0
M	9899	672	1923	1.1	0.0	785.1	785.1	785.1	0.0
N	10785	324	1212	1.9	0.0	785.5	785.5	785.5	0.0
O	11045	80	736	6.0	0.0	785.5	785.5	785.5	0.0
P	11111	74	506	6.0	0.0	786.0	786.0	786.0	0.0
Q	11285	81	986	3.8	0.0	786.9	786.9	786.9	0.0
R	11412	90	1084	3.3	0.0	787.2	787.2	787.2	0.0
S	11742	37	353	7.6	0.0	787.3	787.3	787.3	0.0
T	11829	56	188	11.0	0.0	788.3	788.3	788.3	0.0
U	11862	340	604	4.2	0.0	792.5	792.5	792.5	0.0
V	12152	464	1639	1.5	0.0	793.5	793.5	793.5	0.0
W	12501	676	3396	0.5	0.0	793.9	793.9	793.9	0.0
X	23446	325	1864	1.5	0.0	795.2	795.2	795.2	0.0
Y	23544	336	2034	1.3	0.0	796.1	796.1	796.1	0.0
Z	23822	346	1784	1.8	0.0	796.3	796.3	796.3	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MUKWONAGO 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	24784	767	4001	0.8	0.0	796.7	796.7	796.7	0.0
AB	25772	700	5137	0.9	0.0	796.8	796.8	796.8	0.0
AC	26629	317	1855	1.7	0.0	797.1	797.1	797.1	0.0
AD	27573	1425	22882	0.4	0.0	797.4	797.4	797.4	0.0
AE	28593	1449	16696	0.4	0.0	797.4	797.4	797.4	0.0
AF	29467	891	6432	0.8	0.0	797.5	797.5	797.5	0.0
AG	30176	745	4183	0.9	0.0	797.7	797.7	797.7	0.0
AH	30999	463	3054	1.2	0.0	798.3	798.3	798.3	0.0
AI	32019	1559	8117	0.4	0.0	798.6	798.6	798.6	0.0
AJ	32780	1397	10797	0.4	0.0	798.6	798.6	798.6	0.0
AK	33725	1078	9790	0.5	0.0	798.7	798.7	798.7	0.0
AL	34090	939	7237	0.7	0.0	798.7	798.7	798.7	0.0
AM	35155	731	4422	1.3	0.0	799.1	799.1	799.1	0.0
AN	35874	619	5552	1.2	0.0	799.5	799.5	799.5	0.0
AO	36484	173	2659	4.5	0.0	800.8	800.8	800.8	0.0
AP	36545	192	1588	2.3	0.0	803.4	803.4	803.4	0.0
AQ	37672	516	3272	1.0	0.0	804.2	804.2	804.2	0.0
AR	38778	914	9256	0.6	0.0	804.3	804.3	804.3	0.0
AS	39874	712	4877	0.8	0.0	804.4	804.4	804.4	0.0
AT	40451	616	3990	1.5	0.0	804.7	804.7	804.7	0.0
AU	41135	942	5902	0.8	0.0	805.4	805.4	805.4	0.0
AV	41263	895	4524	1.1	0.0	805.4	805.4	805.4	0.0
AW	41691	934	6321	0.7	0.0	805.4	805.4	805.4	0.0
AX	43169	1277	4924	0.7	0.0	805.6	805.6	805.6	0.0
AY	43391	1234	5622	0.9	0.0	805.7	805.7	805.7	0.0
AZ	43449	1070	6584	0.9	0.0	805.7	805.7	805.7	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MUKWONAGO 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BA	44123	441	1836	3.0	0.0	806.0	806.0	806.0	0.0
BB	44357	364	2828	2.7	0.0	806.7	806.7	806.7	0.0
BC	44819	638	7758	1.5	0.0	807.0	807.0	807.0	0.0
BD	45728	472	3010	1.4	0.0	807.6	807.6	807.6	0.0
BE	46433	256	1515	2.4	0.0	808.1	808.1	808.1	0.0
BF	47111	894	5537	0.7	0.0	808.5	808.5	808.5	0.0
BG	48251	855	3895	0.9	0.0	808.6	808.6	808.6	0.0
BH	48713	936	2624	1.1	0.0	808.9	808.9	808.9	0.0
BI	49503	1088	2880	1.1	0.0	809.9	809.9	809.9	0.0
BJ	49611	1087	2964	1.1	0.0	809.9	809.9	809.9	0.0
BK	50590	508	5777	1.3	0.0	810.9	810.9	810.9	0.0
BL	51259	562	2105	1.4	0.0	811.2	811.2	811.2	0.0
BM	51957	714	2808	1.1	0.0	811.6	811.6	811.6	0.0
BN	52940	752	2981	1.0	0.0	812.0	812.0	812.0	0.0
BO	53645	319	1521	2.0	0.0	812.5	812.5	812.5	0.0
BP	54737	1068	6686	0.6	0.0	813.0	813.0	813.0	0.0
BQ	55298	909	3664	0.8	0.0	813.0	813.0	813.0	0.0
BR	56080	652	2529	1.2	0.0	813.3	813.3	813.3	0.0
BS	56765	322	1291	2.5	0.0	813.8	813.8	813.8	0.0
BT	56943	284	1100	2.7	0.0	814.2	814.2	814.2	0.0
BU	57020	244	1069	2.8	0.0	817.8	817.8	817.8	0.0
BV	57717	215	1771	2.7	0.0	818.8	818.8	818.8	0.0
BW	58127	137	1343	4.7	0.0	819.1	819.1	819.1	0.0
BX	58616	305	927	3.3	0.0	820.5	820.5	820.5	0.0

Notes: ¹Feet above confluence with Fox 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
MUSKEGO CANAL									
A	24	250	1360	0.3	0	773.8	773.8	773.8	0.0
B	1161	42	317	1.1	0	773.9	773.9	773.9	0.0
C	1903	20	433	0.8	132	773.9	773.9	773.9	0.0
D	2790	450	509	0.7	0	774.0	774.0	774.0	0.0
E	3333	236	822	0.4	134	774.1	774.1	774.1	0.0
F	3447	433	586	0.6	0	774.1	774.1	774.1	0.0
G	19876	1290	1633	0.2	0	774.1	774.1	774.1	0.0
H	21307	216	248	1.4	0	774.2	774.2	774.2	0.0
I	22450	74	241	1.4	0	774.5	774.5	774.5	0.0
J	23774	69	238	1.4	0	774.8	774.8	774.8	0.0
K	24433	-3	179	1.9	40	774.9	774.9	774.9	0.0
L	25725	3	100	3.4	45	776.1	776.1	776.1	0.0
M	26877	40	222	1.5	125	777.1	777.1	777.1	0.0
N	27401	75	183	1.9	27	778.9	778.9	778.9	0.0
O	27825	74	231	1.5	54	779.3	779.3	779.3	0.0
P	28294	41	246	1.4	129	779.5	779.5	779.5	0.0
Q	28534	69	204	1.7	47	779.7	779.7	779.7	0.0
R	29332	52	137	2.5	0	780.8	780.8	780.8	0.0
S	29536	131	135	2.5	0	781.4	781.4	781.4	0.0
T	29685	18	78	4.4	0	781.9	781.9	781.9	0.0
U	30486	97	197	1.7	0	783.7	783.7	783.7	0.0
V	31050	31	91	3.7	0	786.0	786.0	786.0	0.0
W	31329	36	95	3.6	0	786.8	786.8	786.8	0.0

Notes: ¹Feet above county boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

MUSKEGO CANAL

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
NOTH BRANCH UNDERWOOD CREEK									
A	378	143	137	1.4	0	753.3	752.0 ²	752.0 ²	0.0
B	955	148	203	0.9	0	753.3	752.5 ²	752.5 ²	0.0
C	1384	91	115	1.7	0	753.6	753.6	753.6	0.0
D	1903	266	540	0.6	0	754.1	754.1	754.1	0.0
E	2268	106	150	1.6	0	754.3	754.3	754.3	0.0
F	2575	145	647	0.5	0	757.9	757.9	757.9	0.0
G	3284	136	288	0.7	0	758.0	758.0	758.0	0.0
H	4269	422	1123	0.2	0	758.1	758.1	758.1	0.0
I	4809	497	972	0.2	0	758.1	758.1	758.1	0.0
J	5577	269	260	0.7	0	758.2	758.2	758.2	0.0
K	5858	304	145	1.3	0	758.5	758.5	758.5	0.0
L	6926	453	187	1.0	0	761.3	761.3	761.3	0.0
M	7439	470	385	0.6	0	762.0	762.0	762.0	0.0
N	7890	373	115	1.3	0	762.4	762.4	762.4	0.0
O	8074	382	154	1.0	16	763.1	763.1	763.1	0.0
P	8885	333	148	1.0	0	764.8	764.8	764.8	0.0

Notes: ¹Feet above confluence with Underwood Creek

²Elevation without considering backwater effect from Underwood Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

NORTH BRANCH UNDERWOOD 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
NOR-X-WAY CHANNEL									
A	269	359	1065	0.7	261	752.7	752.7	752.7	0.0
B	407	321	1728	0.4	239	754.1	754.1	754.1	0.0
C	670	410	1087	0.7	0	754.1	754.1	754.1	0.0
D	847	90	310	2.5	0	754.9	754.9	754.9	0.0
E	1023	120	410	1.9	0	754.9	754.9	754.9	0.0
F	1377	120	400	1.9	0	754.9	754.9	754.9	0.0
G	1512	110	404	1.9	0	756.2	756.2	756.2	0.0
H	1696	80	404	1.9	0	756.6	756.6	756.6	0.0
I	2207	120	343	2.2	0	756.6	756.6	756.6	0.0
J	2496	80	283	2.7	0	757.4	757.4	757.4	0.0
K	2861	50	207	3.7	0	757.4	757.4	757.4	0.0
L	3191	50	200	3.8	0	757.6	757.6	757.6	0.0
M	3499	60	203	3.8	0	757.8	757.8	757.8	0.0
N	3729	20	75	10.2	0	757.9	757.9	757.9	0.0
O	3917	60	172	4.4	0	760.4	760.4	760.4	0.0
P	4251	80	510	1.5	0	762.1	762.1	762.1	0.0
Q	4396	158	638	1.2	192	762.4	762.4	762.4	0.0
R	4857	80	221	3.5	0	762.3	762.3	762.3	0.0
S	5334	50	164	4.7	0	762.4	762.4	762.4	0.0
T	6073	63	144	5.3	137	762.8	762.8	762.8	0.0
U	6093	49	194	3.9	121	763.7	763.7	763.7	0.0
V	6391	210	304	2.5	0	765.0	765.0	765.0	0.0
W	6812	200	171	4.5	0	766.6	766.6	766.7	0.1
X	7020	300	560	0.5	0	767.6	767.6	767.6	0.0

Notes: ¹Feet above confluence with Menomonee River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

NOR-X-WAY CHANNEL

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCIT Y (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
OCONOMOWO C RIVER									
A	77	140	432	1.8	0	847.9	847.9	847.9	0.0
B	1641	632	1426	0.6	50	848.3	848.3	848.3	0.0
C	2828	431	1279	0.6	75	848.5	848.5	848.5	0.0
D	5383	1205	3283	0.2	0	848.5	848.5	848.5	0.0
E	7224	653	1383	0.6	15	848.6	848.6	848.6	0.0
F	9332	353	671	1.2	55	849.3	849.3	849.3	0.0
G	11431	629	1114	0.7	30	850.0	850.0	850.0	0.0
H ²	12630	71/60 ³	1475	0.5	450	850.4	850.4	850.4	0.0
I	12804	171	1475	0.5	350	850.9	850.9	850.9	0.0
J	14194	439	1213	0.6	65	851.1	851.1	851.1	0.0
K ²	14224	411/260 ³	1071	0.6	100	851.1	851.1	851.1	0.0
L ²	15316	583/300 ³	1153	0.6	30	851.2	851.2	851.2	0.0
M	15896	683/250 ³	2201	0.3	40	851.2	851.2	851.2	0.0
N	16638	627/480 ³	1762	1.1	0	851.2	851.2	851.2	0.0
O	18255	659/100 ³	1862	1.0	20	851.3	851.3	851.3	0.0
P ²	19079	129	1845	0.4	50	851.2	851.2	851.2	0.0
Q ²	20843	137	411	1.4	0	851.8	851.8	851.8	0.0
R ²	21182	115	520	0.9	10	852.1	852.1	852.1	0.0
S ²	23987	70	401	1.1	10	852.6	852.6	852.6	0.0
T ²	24809	122	438	1.0	40	852.8	852.8	852.8	0.0
U ²	25724	60	439	1.0	15	853.1	853.1	853.1	0.0
V ²	27028	125	217	1.1	0	853.2	853.2	853.2	0.0
W ²	36296	138	719	1.2	0	860.6	860.6	860.6	0.0
X ²	36451	236	947	0.9	30	860.6	860.6	860.6	0.0
Y ²	38205	242	377	2.2	0	861.1	861.1	861.1	0.0
Z ²	38309	129	714	1.2	0	861.1	861.1	861.1	0.0

Notes: ¹Feet above county boundry

² Cross Sections from FIS - City of Oconomowoc 3/1/1983, all others from FIS - Waukesha County 12/18/1986

³ Total Width/Width Within Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY AND
INCORPORATED AREAS

FLOODWAY DATA

OCONOMOWOC RIVER

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ²	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA ¹	39390	119	317	2.6	0.0	861.6	861.6	861.6	0.0
AB ¹	39724	37	197	3.0	0.0	861.7	861.7	861.7	0.0
AC	39780	94	330	1.8	0.0	861.8	861.8	861.8	0.0
AD	40631	203	633	0.9	0.0	862.1	862.1	862.1	0.0
AE	41978	421	1598	0.4	660.0	862.2	862.2	862.2	0.0
AF	43783	603	1469	0.4	0.0	862.3	862.3	862.3	0.0
AG	44994	785	3318	0.1	0.0	862.3	862.3	862.3	0.0
AH	46357	40	204	1.7	0.0	862.3	862.3	862.3	0.0
AI	57021	71	187	1.2	0.0	862.8	862.8	862.8	0.0
AJ	75494	269	558	1.2	0.0	875.1	875.1	875.1	0.0
AK	77182	120	294	2.3	15.0	879.5	879.5	879.5	0.0
AL	78687	25	273	2.5	230.0	888.8	888.8	888.8	0.0
AM	81187	74	237	2.9	145.0	895.5	895.5	895.5	0.0
AN	82451	189	525	1.3	0.0	898.3	898.3	898.3	0.0
AO	83487	441	954	0.7	50.0	898.7	898.7	898.7	0.0
AP	85103	450	1314	0.5	0.0	899.3	899.3	899.3	0.0
AQ	86315	204	436	1.6	0.0	899.9	899.9	899.9	0.0
AR	92545	495	1110	1.0	80.0	899.9	899.9	899.9	0.0
AS	93694	122	562	2.0	0.0	903.5	903.5	903.5	0.0
AT	95332	255	439	2.6	0.0	907.2	907.2	907.2	0.0
AU	96651	266	675	1.7	60.0	908.9	908.9	908.9	0.0
AV	97903	247	1370	0.8	40.0	913.0	913.0	913.0	0.0
AW	98948	42	387	3.0	35.0	913.5	913.5	913.5	0.0
AX	99078	122	116	9.9	0.0	913.5	913.5	913.5	0.0
AY	99448	400	293	3.9	0.0	918.3	918.3	918.3	0.0
AZ	100949	439	2363	0.3	200.0	918.7	918.7	918.7	0.0

Notes: ¹ Cross Sections from FIS - City of Oconomowoc 3/1/1983, all others from FIS - Waukesha County 12/18/1986 ²Feet above county boundry

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BA	102493	545	2044	0.4	60	918.7	918.7	918.7	0.0
BB	104711	405	1125	0.7	75	919.0	919.0	919.0	0.0
BC	106707	286	790	1.0	35	919.5	919.5	919.5	0.0
BD	108724	168	833	0.9	240	920.4	920.4	920.4	0.0
BE	110287	192	653	1.2	70	921.1	921.1	921.1	0.0
BF	111566	444	495	1.6	30	922.5	922.5	922.5	0.0
BG	112481	200	246	3.2	0	924.2	924.2	924.2	0.0

Notes: ¹Feet above county boundary

**TABLE
7**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

OCONOMOWOC RIVER

FLOOD INSURANCE STUDY



WAUKESHA COUNTY, AND INCORPORATED AREAS VOLUME 2 OF 3

Community Name

BIG BEND, VILLAGE OF
BROOKFIELD, CITY OF
BUTLER, VILLAGE OF
CHENEQUA, VILLAGE OF
DELAFIELD, CITY OF
DOUSMAN, VILLAGE OF
*EAGLE, VILLAGE OF
ELM GROVE, VILLAGE OF
HARTLAND, VILLAGE OF
LAC LA BELLE, VILLAGE OF
LANNON, VILLAGE OF
MENOMONEE FALLS, VILLAGE OF
MERTON, VILLAGE OF
MILWAUKEE, CITY OF
MUKWONAGO, VILLAGE OF
MUSKEGO, CITY OF
NASHOTAH, VILLAGE OF
NEW BERLIN, CITY OF
*NORTH PRAIRIE, VILLAGE OF
OCONOMOWOC LAKE, VILLAGE OF
OCONOMOWOC, CITY OF
PEWAUKEE, CITY OF
PEWAUKEE, VILLAGE OF
SUSSEX, VILLAGE OF
WALES, VILLAGE OF
WAUKESHA, CITY OF
WAUKESHA COUNTY
(UNINCORPORATED AREAS)

Community Number

550477
550478
550536
550125
550479
550480
550144
550578
550481
550565
550482
550483
550484
550278
550485
550486
550149
550487
550175
550582
550488
550192
550489
550490
550183
550491
550476



* No Special Flood Hazard Areas
Identified Within Community

November 19, 2008



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
55133CV002A

**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.

Effective Date: November 19, 2008

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Pewaukee Lake Tributary	114P
Pewaukee River	115P–119P
Pewaukee Tributary 3	120P
Poplar Creek	121P–125P
Quietwood Creek	126P–127P
Root River	128P–130P
Rosenow Creek	131P–132P
South 130 th Street Tributary	133P
South Branch Underwood Creek	134P
Sussex Creek/South Branch Sussex Creek	135P–139P
Sussex Creek Tributary 1	140P
Tess Corners Creek	141P–143P
Tributary 2 to Fox River	145P
Tributary to South Branch Underwood Creek	146P
Unnamed Tributary to Muskego Creek	147P
Underwood Creek	148P–152P
Upper Kelly Lake Tributary	153P–154P
West Branch Pewaukee Lake Tributary	155P
West Branch Root River	156P–158P
Willow Springs Creek	159P–162P

Exhibit 2 - Flood Insurance Rate Map Index
Flood Insurance Rate Map

FLOODING SOURCE		FLOODWAY				1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUAR E FEET)	MEAN VELOCITY (FEET PER SECOND)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
PEBBLE BROOK									
A	1212	2311	2869	0.6	0.0	785.3	785.3	785.3	0.0
B	5681	1289	2444	0.7	0.0	787.2	787.2	787.2	0.0
C	8737	583	1084	1.6	0.0	790.3	790.3	790.3	0.0
D	9615	722	1319	1.3	120.0	792.2	792.2	792.2	0.0
E	10691	720	1994	0.8	0.0	793.2	793.2	793.2	0.0
F	11873	979	3347	0.5	0.0	793.5	793.5	793.5	0.0
G	12469	60	397	4.2	0.0	796.6	796.6	796.6	0.0
H	12554	55	406	4.1	0.0	797.1	797.1	797.1	0.0
I	14200	343	1251	1.3	0.0	797.9	797.9	797.9	0.0
J	15618	535	2384	0.7	0.0	798.4	798.4	798.4	0.0
K	17539	476	1213	1.4	0.0	799.5	799.5	799.5	0.0
L	18796	224	582	1.9	0.0	802.7	802.7	802.7	0.0
M	19645	226	905	1.8	0.0	803.8	803.8	803.8	0.0
N	21107	387	1738	1.0	0.0	804.5	804.5	804.5	0.0
O	22062	262	904	1.8	0.0	804.9	804.9	804.9	0.0
P	23903	486	1839	0.9	0.0	806.0	806.0	806.0	0.0
Q	25290	423	1773	0.9	0.0	806.4	806.4	806.4	0.0
R	26965	304	1158	1.4	0.0	806.9	806.9	806.9	0.0
S	29186	77	427	3.6	0.0	808.1	808.1	808.1	0.0
T	32142	1090	3955	0.2	0.0	810.0	810.0	810.0	0.0
U	35343	688/500 ²	1785	0.5	0.0	811.5	811.5	811.5	0.0
V	37489	23	108	7.7	0.0	814.0	814.0	814.0	0.0
W	39093	270	973	0.9	0.0	820.1	820.1	820.1	0.0
X	40555	628	1493	0.6	0.0	820.7	820.7	820.7	0.0
Y	41886	603	1010	0.8	0.0	821.7	821.7	821.7	0.0
Z	43163	16	59	6.8	0.0	825.9	825.9	825.9	0.0

¹ Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEBBLE BROOK

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	44260	177	358	1.1	0.0	829.2	829.2	829.2	0.0
AB	46121	369	208	1.9	0.0	835.5	835.5	835.5	0.0
AC	48022	5	17	8.8	0.0	848.2	848.2	848.2	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEBBLE BROOK

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
PEBBLE BROOK TRIBUTARY									
A	1067	831	1115	0.2	0.0	811.5	811.5	811.5	0.0
B	2483	564	543	0.4	0.0	811.5	811.5	811.5	0.0
C	3643	188	196	1.1	85.0	812.0	812.0	812.0	0.0
D	4415	21	90	2.3	20.0	814.4	814.4	814.4	0.0
E	4570	672	1431	0.2	0.0	815.1	815.1	815.1	0.0
F	5190	282	472	0.4	80.0	815.1	815.1	815.1	0.0
G	5546	74	431	0.4	90.0	815.2	815.2	815.2	0.0
H	5842	67	249	0.7	85.0	815.2	815.2	815.2	0.0
I	6153	3	71	2.5	80.0	816.0	816.0	816.0	0.0

Notes: ¹Feet above confluence with Pebble Brook

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEBBLE BROOK TRIBUTARY

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
PEBBLE CREEK									
A	1374	500	1729	1.0	0.0	793.0	793.0	793.0	0.0
B	2988	256	1295	1.3	0.0	796.8	796.8	796.8	0.0
C	4562	322	1510	1.1	0.0	797.2	797.2	797.2	0.0
D	6949	90	5545	0.3	180.0	797.5	797.5	797.5	0.0
E	8855	863/800 ²	2203	0.8	0.0	797.7	797.7	797.7	0.0
F	12396	33	193	9.3	0.0	802.7	802.7	802.7	0.0
G ³	12665	100	665	2.7	0.0	804.6	804.6	804.6	0.0
H	14026	623	2236	0.8	0.0	805.4	805.4	805.4	0.0
I	15296	140	1580	1.1	130.0	807.3	807.3	807.3	0.0
J	16587	623	2526	0.7	0.0	807.6	807.6	807.6	0.0
K	18833	1017	3340	0.5	100.0	808.0	808.0	808.0	0.0
L	20206	1003	2143	0.8	0.0	808.3	808.3	808.3	0.0

¹Feet above confluence with the Fox River ²Total width/width within Unincorporated Area

³Data from City of Waukesha FIS 3/2/1982, all other data from Waukesha County FIS 12/18/1986

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEBBLE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
PEWAUKEE LAKE TRIBUTARY									
A	682	221	1338	1.0	0.0	858.6	858.6	858.6	0.0
B	1254	642	2742	0.5	0.0	859.7	859.7	859.7	0.0
C	1578	800	3572	0.4	0.0	859.7	859.7	859.7	0.0
D	2710	1000	3208	0.4	0.0	859.8	859.8	859.8	0.0
E	3472	1550	5496	0.2	0.0	859.8	859.8	859.8	0.0
F	4416	1123	3846	0.3	0.0	859.9	859.9	859.9	0.0
G	5099	1200	1533	0.8	0.0	860.0	860.0	860.0	0.0
H	6123	240	692	1.9	0.0	862.0	862.0	862.0	0.0
I	6736	545	605	2.1	0.0	862.4	862.4	862.4	0.0
J	8014	450	509	2.6	20.0	865.6	865.6	865.6	0.0

Notes: ¹Feet above confluence of Pewaukee Lake

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEWAUKEE LAKE TRIBUTARY

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
PEWAUKEE RIVER									
A	639	67	293	2.3	0.0	821.0	821.0	821.0	0.0
B	858	160	233	2.3	0.0	821.2	821.2	821.2	0.0
C	1225	82	165	3.6	0.0	822.2	822.2	822.2	0.0
D	1994	24	65	8.3	0.0	826.5	826.5	826.5	0.0
E	2112	43	176	3.2	0.0	828.3	828.3	828.3	0.0
F	2572	20	80	6.7	0.0	829.7	829.7	829.7	0.0
G	2871	179	305	2.1	0.0	831.1	831.1	831.1	0.0
H	3752	254	295	1.9	0.0	832.2	832.2	832.2	0.0
I	4588	121	193	3.1	0.0	834.0	834.0	834.0	0.0
J	5365	37	180	4.0	0.0	835.7	835.7	835.7	0.0
K	5428	47	166	3.7	0.0	835.9	835.9	835.9	0.0
L	6171	39	158	3.4	0.0	837.2	837.2	837.2	0.0
M	7393	184	306	1.8	0.0	838.6	838.6	838.6	0.0
N	8029	105	216	2.5	0.0	839.1	839.1	839.1	0.0
O	8826	148	350	1.5	0.0	839.9	839.9	839.9	0.0
P	9048	218	707	1.1	0.0	840.2	840.2	840.2	0.0
Q	9841	181	244	2.2	0.0	840.6	840.6	840.6	0.0
R	10863	322	735	0.7	0.0	841.2	841.2	841.2	0.0
S	11125	88	339	1.9	0.0	841.2	841.2	841.2	0.0
T	11576	125	297	1.9	0.0	841.5	841.5	841.5	0.0
U	12777	298	708	0.8	0.0	841.9	841.9	841.9	0.0
V	13568	455	814	0.7	0.0	842.1	842.1	842.1	0.0
W	14395	401	640	0.9	0.0	842.4	842.4	842.4	0.0
X	15344	491	939	0.6	0.0	842.7	842.7	842.7	0.0
Y	16226	364	652	0.9	0.0	842.9	842.9	842.9	0.0
Z	17196	591	939	0.6	0.0	843.1	843.1	843.1	0.0

Notes: ¹ Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEWAUKEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	18303	832	1338	0.4	0.0	843.3	843.3	843.3	0.0
AB	19358	1080	2094	0.3	0.0	843.4	843.4	843.4	0.0
AC	20293	1086	2192	0.6	0.0	843.5	843.5	843.5	0.0
AD	21138	809	751	1.0	0.0	844.0	844.0	844.0	0.0
AE	22420	583	977	0.8	0.0	844.7	844.7	844.7	0.0
AF	23177	818	1445	0.6	0.0	845.1	845.1	845.1	0.0
AG	24330	690	1760	0.5	0.0	845.3	845.3	845.3	0.0
AH	24886	508	1597	0.6	0.0	845.4	845.4	845.4	0.0
AI	26127	659	1952	0.5	0.0	845.5	845.5	845.5	0.0
AJ	27231	454	1195	0.6	0.0	845.6	845.6	845.6	0.0
AK	28189	45	725	3.9	0.0	846.2	846.2	846.2	0.0
AL	28268	81	1083	1.8	0.0	847.9	847.9	847.9	0.0
AM	29177	147	526	1.4	0.0	848.0	848.0	848.0	0.0
AN	29775	396	1380	0.6	0.0	848.2	848.2	848.2	0.0
AO	30662	86	2254	1.6	0.0	848.5	848.5	848.5	0.0
AP	30993	43	213	3.4	0.0	848.6	848.6	848.6	0.0
AQ	31517	288	2199	0.5	0.0	848.9	848.9	848.9	0.0
AR	32139	289	1223	0.9	0.0	849.0	849.0	849.0	0.0
AS	33184	246	425	1.7	0.0	849.0	849.0	849.0	0.0
AT	33480	44	274	3.3	0.0	849.0	849.0	849.0	0.0
AU	33597	40	188	3.9	0.0	849.1	849.1	849.1	0.0
AV	34212	246	1028	0.7	0.0	849.5	849.5	849.5	0.0
AW	34511	142	348	2.7	0.0	849.4	849.4	849.4	0.0
AX	34750	124	582	1.3	0.0	849.7	849.7	849.7	0.0
AY	35268	52	1476	2.6	0.0	850.2	850.2	850.2	0.0
AZ	35381	93	1638	1.0	0.0	850.6	850.6	850.6	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEWAUKEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BA	36318	902	3419	0.2	0.0	850.6	850.6	850.6	0.0
BB	36677	842	4865	0.2	0.0	850.7	850.7	850.7	0.0
BC	37700	857	5865	0.2	0.0	850.7	850.7	850.7	0.0
BD	38408	82	3880	1.8	0.0	850.7	850.7	850.7	0.0
BE	38594	68	703	1.2	0.0	851.6	851.6	851.6	0.0
BF	39306	305	5620	0.6	0.0	851.7	851.7	851.7	0.0
BG	39712	52	1073	2.2	0.0	851.8	851.8	851.8	0.0
BH	39855	75	2004	1.1	0.0	854.7	854.7	854.7	0.0
BI	40321	477	2970	0.2	0.0	854.8	854.8	854.8	0.0
BJ	41194	660	3355	0.2	0.0	854.8	854.8	854.8	0.0
BK	42146	842	4313	0.2	0.0	854.8	854.8	854.8	0.0
BL	42963	642	2203	0.1	0.0	854.8	854.8	854.8	0.0
BM	43479	587	2485	0.2	0.0	854.8	854.8	854.8	0.0
BN	44135	197	640	0.6	0.0	854.8	854.8	854.8	0.0
BO	44820	220	262	1.1	0.0	855.4	855.4	855.4	0.0
BP	45775	289	441	0.7	0.0	857.6	857.6	857.6	0.0
BQ	46097	52	333	2.2	0.0	858.2	858.2	858.2	0.0
BR	46190	150	501	1.4	0.0	860.1	860.1	860.1	0.0
BS	46998	38	798	3.2	0.0	862.9	862.9	862.9	0.0
BT	47119	46	158	2.4	0.0	863.4	863.4	863.4	0.0
BU	48054	403	445	0.8	0.0	866.2	866.2	866.2	0.0
BV	48986	605	533	0.6	0.0	869.8	869.8	869.8	0.0
BW	50062	461	458	0.7	0.0	875.3	875.3	875.3	0.0
BX	51090	352	324	0.9	0.0	879.0	879.0	879.0	0.0
BY	51759	47	840	1.4	0.0	884.0	884.0	884.0	0.0
BZ	52382	150	289	0.6	0.0	885.2	885.2	885.2	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEWAUKEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CA	52931	196	755	0.5	0.0	886.1	886.1	886.1	0.0
CB	53946	299	1027	0.4	0.0	886.9	886.9	886.9	0.0
CC	54874	333	205	0.5	0.0	888.7	888.7	888.7	0.0
CD	55365	202	109	0.9	0.0	891.0	891.0	891.0	0.0
CE	55726	72	566	0.9	0.0	891.9	891.9	891.9	0.0
CF	56528	249	228	0.5	0.0	893.7	893.7	893.7	0.0
CG	57222	20	372	2.7	0.0	894.5	894.5	894.5	0.0
CH	57350	30	490	1.1	0.0	895.6	895.6	895.6	0.0
CI	57926	124	96	1.1	0.0	896.5	896.5	896.5	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEWAUKEE 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
PEWAUKEE RIVER TIRBUTARY 3									
A	12	113	769	1.3	0.0	849.8	846.8 ²	846.8 ²	0.0
B	460	26	94	6.8	0.0	849.8	847.5 ²	847.5 ²	0.0

Notes: ¹Feet above confluence with Pewaukee River

² Elevation without considering backwater effects from Pewaukee River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

PEWAUKEE RIVER TRIBUTARY 3

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
POPLAR CREEK									
A	395	187	1230	1.4	0	824.4	822.9 ²	822.9 ²	0.0
B	599	45	821	3.4	60	824.4	823.8 ²	823.8 ²	0.0
C	953	304	1180	1.2	15	824.4	824.0 ²	824.0 ²	0.0
D	1806	483	2566	0.6	0	824.4	824.2 ²	824.2 ²	0.0
E	2628	495	2335	0.6	0	824.4	824.2 ²	824.2 ²	0.0
F	3126	460	1737	0.8	36	824.5	824.5	824.5	0.0
G	5272	345	1902	0.8	0	825.6	825.6	825.6	0.0
H	6315	362	4850	0.4	455	825.7	825.7	825.7	0.0
I	7161	652	3170	0.6	0	825.8	825.8	825.8	0.0
J	7644	465	3827	0.7	0	825.9	825.9	825.9	0.0
K	9580	260	1010	1.6	30	827.1	827.1	827.1	0.0
L	10871	306	1321	1.4	0	828.1	828.1	828.1	0.0
M	11817	373	1368	1.3	0	828.5	828.5	828.5	0.0
N	13128	49	761	1.9	0	829.4	829.4	829.4	0.0
O	13535	201	876	1.0	0	829.5	829.5	829.5	0.0
P	14067	356	1701	0.5	0	829.6	829.6	829.6	0.0
Q	15001	304	2100	0.6	180	829.7	829.7	829.7	0.0
R	15641	56	1046	1.4	120	829.9	829.9	829.9	0.0
S	15964	592	2811	0.3	0	830.0	830.0	830.0	0.0
T	16733	902	3211	0.3	0	830.0	830.0	830.0	0.0
U	17783	566	3402	0.6	0	830.4	830.4	830.4	0.0
V	18864	104	434	2.0	0	830.5	830.5	830.5	0.0
W	19778	306	2201	0.8	10	830.7	830.7	830.7	0.0
X	19880	76	155	5.7	0	830.7	830.7	830.7	0.0
Y	20420	506	2813	0.3	39	831.4	831.4	831.4	0.0
Z	20460	78	278	2.7	0	831.5	831.5	831.5	0.0

Notes: ¹Feet above confluence with Fox River

² Elevation without considering backwater effects from Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

POPLAR 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	25132	955	4965	0.3	0	831.8	831.8	831.8	0.0
AB	27270	480	3988	0.4	393	831.8	831.8	831.8	0.0
AC	29199	121	1860	1.7	484	832.8	832.8	832.8	0.0
AD	30519	42	981	3.1	693	833.6	833.6	833.6	0.0
AE	32056	388	815	3.6	0	835.7	835.7	835.7	0.0
AF	33497	250	470	5.5	10	838.8	838.8	838.8	0.0
AG	34543	382	544	2.5	21	841.2	841.2	841.2	0.0
AH	37338	45	163	5.3	93	848.4	848.4	848.4	0.0
AI	38786	190	2824	0.3	0	866.3	866.3	866.3	0.0
AJ	42657	190	572	1.5	0	866.4	866.4	866.4	0.0
AK	43940	225	503	1.3	67	866.5	866.5	866.5	0.0
AL	47562	282	255	5.1	73	872.3	872.3	872.3	0.0
AM	48902	28	170	3.9	42	877.3	877.3	877.3	0.0
AN	50202	252	611	0.8	73	882.9	882.9	882.9	0.0
AO	52844	1210	942	0.8	0	883.5	883.5	883.5	0.0
AP	57181	387	968	0.9	205	885.1	885.1	885.1	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

POPLAR 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
QUIETWOOD CREEK									
A	25	291	395	1.4	0.0	773.5	773.5	773.5	0.0
B	196	131	122	3.2	0.0	773.6	773.6	773.6	0.0
C	556	44	129	3.2	0.0	774.7	774.7	774.7	0.0
D	601	18	339	3.1	0.0	780.0	780.0	780.0	0.0
E	661	27	520	1.8	0.0	780.6	780.6	780.6	0.0
F	1384	51	427	1.3	0.0	780.7	780.7	780.7	0.0
G	1475	29	925	1.5	0.0	782.2	782.2	782.2	0.0
H	2010	203	1263	0.4	0.0	782.3	782.3	782.3	0.0
I	2458	47	937	0.9	0.0	782.3	782.3	782.3	0.0
J	2584	37	1446	1.0	0.0	782.8	782.8	782.8	0.0
K	3340	732	7688	0.1	0.0	782.8	782.8	782.8	0.0
L	4310	369	2863	0.2	0.0	782.8	782.8	782.8	0.0
M	5029	78	432	2.7	0.0	782.7	782.7	782.7	0.0
N	5533	53	142	5.9	0.0	784.3	784.3	784.3	0.0
O	5601	90	377	2.8	0.0	785.3	785.3	785.3	0.0
P	5942	320	1095	0.6	0.0	785.6	785.6	785.6	0.0
Q	6611	176	288	1.9	0.0	786.1	786.1	786.1	0.0
R	6954	158	206	2.9	0.0	787.9	787.9	787.9	0.0
S	7712	19	89	4.6	0.0	792.6	792.6	792.6	0.0
T	8505	55	514	2.6	0.0	795.4	795.4	795.4	0.0
U	9219	32	383	3.6	0.0	797.5	797.5	797.5	0.0
V	9432	60	194	1.7	0.0	800.4	800.4	800.4	0.0
W	9569	16	752	2.4	0.0	804.7	804.7	804.7	0.0
X	10019	19	123	4.8	0.0	804.7	804.7	804.7	0.0
Y	10192	15	43	2.3	0.0	805.3	805.3	805.3	0.0
Z	10610	9	14	7.0	0.0	807.3	807.3	807.3	0.0

Notes: ¹Feet above confluence with Bass Bay

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

QUIETWOOD 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	10627	12	22	4.6	0.0	807.9	807.9	807.9	0.0
AB	10662	14	47	2.2	0.0	810.7	810.7	810.7	0.0
AC	10680	14	42	2.4	0.0	810.7	810.7	810.7	0.0
AD	11593	26	24	4.1	0.0	814.5	814.5	814.5	0.0

Notes: ¹Feet above confluence with Bass Bay

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

QUIETWOOD 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
ROOT RIVER									
A	70	252	324	1.9	15	761.1	761.1	761.1	0.0
B	562	125	305	2.0	115	763.3	763.3	763.3	0.0
C	1479	302	233	2.6	0	768.1	768.1	768.1	0.0
D	2303	172	216	2.8	0	773.3	773.3	773.3	0.0
E	3022	249	310	1.7	65	778.3	778.3	778.3	0.0
F	3204	173	191	2.7	0	779.9	779.9	779.9	0.0
G	3771	80	161	3.3	0	784.3	784.3	784.3	0.0
H	4311	153	249	2.1	40	788.9	788.9	788.9	0.0
I	4886	78	153	3.4	15	793.4	793.4	793.4	0.0
J	5064	120	373	1.4	70	795.2	795.2	795.2	0.0
K	5576	78	165	3.2	0	797.0	797.0	797.0	0.0
L	6077	85	185	2.8	70	803.3	803.3	803.3	0.0
M	6505	90	180	2.5	0	807.9	807.9	807.9	0.0
N	7138	26	50	3.6	25	821.0	821.0	821.0	0.0

Notes: ¹Feet above county boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

ROOT 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
ROSENOW CREEK									
A	4	85	261	5.4	0.0	853.8	852.4 ²	852.4 ²	0.0
B	672	130	2738	2.0	0.0	855.4	855.4	855.4	0.0
C	791	145	9916	0.8	0.0	857.0	857.0	857.0	0.0
D	1335	381	3006	0.3	0.0	857.0	857.0	857.0	0.0
E	1398	429	2445	0.4	0.0	857.1	857.1	857.1	0.0
F	2430	201	836	1.1	0.0	857.2	857.2	857.2	0.0
G	2746	138	501	2.6	0.0	857.3	857.3	857.3	0.0
H	2842	165	2672	0.6	0.0	860.9	860.9	860.9	0.0
I	3480	287	3489	0.4	0.0	860.9	860.9	860.9	0.0
J	3964	386	3723	0.3	0.0	860.9	860.9	860.9	0.0
K	4028	466	4982	0.4	0.0	860.9	860.9	860.9	0.0
L	4311	502	4449	0.3	0.0	860.9	860.9	860.9	0.0
M	4364	494	3980	0.4	0.0	860.9	860.9	860.9	0.0
N	4510	441	4387	0.4	0.0	860.9	860.9	860.9	0.0
O	4544	427	4333	0.4	0.0	861.0	861.0	861.0	0.0
P	5230	241	2259	0.9	0.0	861.0	861.0	861.0	0.0
Q	5279	120	2270	1.3	0.0	862.0	862.0	862.0	0.0
R	6342	275	997	0.6	0.0	862.0	862.0	862.0	0.0
S	7272	248	518	1.2	0.0	862.1	862.1	862.1	0.0
T	8015	98	192	3.2	0.0	862.9	862.9	862.9	0.0
U	8049	105	674	1.7	0.0	864.3	864.3	864.3	0.0
V	8143	158	487	2.1	0.0	864.4	864.4	864.4	0.0
W	8752	197	475	1.5	0.0	865.2	865.2	865.2	0.0
X	9428	260	530	1.2	0.0	865.6	865.6	865.6	0.0
Y	9496	243	1965	0.4	0.0	865.7	865.7	865.7	0.0
Z	9718	77	234	1.8	0.0	865.7	865.7	865.7	0.0

Notes: ¹Feet above mouth

²Elevation without considering backwater from Lac La Belle

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

ROSENOW 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	9936	78	243	1.9	0.0	865.9	865.9	865.9	0.0
AB	10746	200	291	1.5	0.0	866.3	866.3	866.3	0.0
AC	11302	11	233	0.4	0.0	866.6	866.6	866.6	0.0
AD	11348	140	589	0.1	0.0	866.7	866.7	866.7	0.0
AE	11925	31	43	0.3	0.0	866.7	866.7	866.7	0.0
AF	12855	34	28	0.5	0.0	866.8	866.8	866.8	0.0
AG	12961	18	19	0.8	0.0	867.0	867.0	867.0	0.0
AH	13569	20	15	0.9	0.0	867.2	867.2	867.2	0.0
AI	13993	14	14	1.0	0.0	867.6	867.6	867.6	0.0
AJ	14020	26	88	0.4	0.0	868.0	868.0	868.0	0.0
AK	14084	32	37	0.4	0.0	868.2	868.2	868.2	0.0
AL	15104	33	30	0.5	0.0	868.3	868.3	868.3	0.0
AM	15890	23	12	1.1	0.0	868.5	868.5	868.5	0.0
AN	16007	7	4	3.9	0.0	868.8	868.8	868.8	0.0
AO	16074	6	76	2.0	0.0	870.4	870.4	870.4	0.0
AP	16155	48	63	0.5	0.0	870.6	870.6	870.6	0.0
AQ	16723	11	13	1.3	0.0	871.7	871.7	871.7	0.0
AR	16884	6	11	1.8	0.0	872.1	872.1	872.1	0.0
AS	17553	215	94	0.2	0.0	872.9	872.9	872.9	0.0
AT	18395	314	136	0.1	0.0	873.1	873.1	873.1	0.0
AU	18663	183	88	0.3	0.0	873.1	873.1	873.1	0.0
AV	18865	146	234	0.1	0.0	873.7	873.7	873.7	0.0
AW	20773	165	189	0.1	0.0	873.7	873.7	873.7	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

ROSENOW 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SOUTH 130TH STREET TRIBUTARY									
A	67	170	369	0.7	0	764.5	764.5	764.5	0.0
B	345	36	115	2.2	120	765.2	765.2	765.2	0.0
C	423	55	129	1.9	0	766.4	766.4	766.4	0.0
D	734	110	126	2.0	0	767.8	767.8	767.8	0.0
E	932	97	103	2.4	0	771.3	771.3	771.3	0.0
F	1285	69	113	2.2	0	773.9	773.9	773.9	0.0
G	1529	30	50	5.0	0	776.3	776.3	776.3	0.0
H	1755	95	118	2.1	0	778.3	778.3	778.3	0.0
I	2014	73	86	2.9	0	782.7	782.7	782.7	0.0

Notes: ¹Feet above confluence with West Branch Root River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

SOUTH 130TH STREET TRIBUTARY

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SOUTH BRANCH UNDERWOOD CREEK									
A	481	127	481	5.5	0	719.9	719.9	719.9	0.0
B	711	102	584	5.7	0	720.2	720.2	720.2	0.0
C	823	112	499	5.6	0	720.4	720.4	720.4	0.0
D	1774	165	532	5.0	0	721.5	721.5	721.5	0.0
E	2774	78	436	6.0	0	722.6	722.6	722.6	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

SOUTH BRANCH UNDERWOOD CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION ⁴			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SUSSEX CREEK								
A	5924	25	2723	9.2	830.7	830.7	830.7	0.0
B	6758	178	4250	1.3	832.6	832.6	832.6	0.0
C	7684	125	895	4.9	832.9	832.9	832.9	0.0
D	7844	106	1017	3.6	834.1	834.1	834.1	0.0
E	8163	36	395	5.1	834.5	834.5	834.5	0.0
F	8245	37	281	4.9	835.1	835.1	835.1	0.0
G	8753	111	130	6.0	835.9	835.9	835.9	0.0
H	9412	308	1312	0.9	837.0	837.0	837.0	0.0
I	10105	376	633	1.2	837.1	837.1	837.1	0.0
J	11056	413	563	1.4	837.5	837.5	837.5	0.0
K	11859	302	384	2.1	838.3	838.3	838.3	0.0
L	12596	22	1870	6.3	840.3	840.3	840.3	0.0
M	12795	22	1356	5.4	841.6	841.6	841.6	0.0
N	13672	735	3499	0.4	842.2	842.2	842.2	0.0
O	14125	998	3942	0.3	842.2	842.2	842.2	0.0
P	14899	1037	3292	0.4	842.2	842.2	842.2	0.0
Q	15652	851	1528	0.9	842.2	842.2	842.2	0.0
R	16178	518	540	2.7	842.3	842.3	842.3	0.0
S	18336	258	342	2.7	846.8	846.8	846.8	0.0
T	19072	243	333	2.8	848.3	848.3	848.3	0.0
U	20003	372	965	1.5	849.3	849.3	849.3	0.0
V	20689	30	297	8.0	851.7	851.7	851.7	0.0
W	20779	67	3110	1.7	857.8	857.8	857.8	0.0
X	21783	175	337	3.0	858.1	858.1	858.1	0.0
Y	22178	182	348	3.5	859.6	859.6	859.6	0.0
Z	22297	135	349	5.7	860.9	860.9	860.9	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

SUSSEX CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION ⁴			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SUSSEX CREEK								
AA	23019	174	219	4.5	866.9	866.9	866.9	0.0
AB	23633	285	311	3.2	870.8	870.8	870.8	0.0
AC	24323	186	602	2.3	874.5	874.5	874.5	0.0
AD	24405	255	656	1.7	877.0	877.0	877.0	0.0
AE	25009	470	783	1.2	877.2	877.2	877.2	0.0
AF	25566	327	1729	0.9	877.3	877.3	877.3	0.0
AG	25664	228	645	1.9	877.6	877.6	877.6	0.0
AH	25837	127	931	1.8	878.5	878.5	878.5	0.0
AI	26454	106	358	2.7	878.9	878.9	878.9	0.0
AJ	27177	143	408	2.4	879.6	879.6	879.6	0.0
AK	27798	87	249	3.7	880.3	880.3	880.3	0.0
AL	28576	49	155	7.3	885.2	885.2	885.2	0.0
AM	29170	49	177	5.1	888.5	888.5	888.5	0.0
AN	29791	57	258	4.2	890.1	890.1	890.1	0.0
AO	30414	171	491	2.4	891.1	891.1	891.1	0.0
AP	31042	67	599	3.5	891.8	891.8	891.8	0.00
AQ	31154	104	1654	2.0	894.1	894.1	894.1	0.00
AR	31690	436	2405	0.5	894.3	894.3	894.3	0.00
AS	32320	360	1413	0.7	894.3	894.3	894.3	0.00
AT	33117	49	309	3.3	896.0	896.0	896.0	0.00
AU	33201	46	395	3.3	897.2	897.2	897.2	0.00
AV	33808	305	682	1.1	897.6	897.6	897.6	0.00
AW	34654	47	85	7.5	905.9	905.9	905.9	0.00
AX	34676	62	311	2.7	908.5	908.5	908.5	0.00
AY	34913	49	209	3.1	909.4	909.4	909.4	0.00
AZ	35013	74	235	2.7	909.8	909.8	909.8	0.00

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

SUSSEX CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION ⁴			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SUSSEX CREEK								
BA	35159	95	122	5.8	911.4	911.4	911.4	0.00
BB	35451	39	799	7.5	915.1	915.1	915.1	0.00
BC	35509	57	1177	3.4	916.8	916.8	916.8	0.00
BD	35727	21	66	9.7	919.1	919.1	919.1	0.00
BE	35838	34	556	4.5	922.9	922.9	922.9	0.00
BF	35927	23	474	4.8	923.3	923.3	923.3	0.00
BG	36137	42	241	3.0	923.9	923.9	923.9	0.00
BH	36708	24	930	3.0	930.1	930.1	930.1	0.00
BI	37142	149	851	0.7	930.3	930.3	930.3	0.00
BJ	37970	61	232	3.5	930.8	930.8	930.8	0.00
BK	38015	56	340	2.7	931.8	931.8	931.8	0.00
BL	38451	27	87	7.1	933.9	933.9	933.9	0.00
BM	38536	32	115	5.5	935.7	935.7	935.7	0.00
BN	39187	123	496	1.9	937.1	937.1	937.1	0.00
BO	39223	123	592	1.8	937.2	937.2	937.2	0.00
BP	39951	109	643	1.6	937.5	937.5	937.5	0.00
BQ	40787	569	2440	0.3	937.6	937.6	937.6	0.00
BR	41697	382	340	2.5	938.0	938.0	938.0	0.00
SOUTH BRANCH								
BS	42608	266	322	1.3	939.6	939.6	939.6	0.00
BT	43311	34	523	2.3	940.5	940.5	940.5	0.00
BU	43364	44	508	2.0	940.6	940.6	940.6	0.00
BV	44310	34	223	1.7	941.5	941.5	941.5	0.00
BW	44433	15	687	2.8	942.1	942.1	942.1	0.00
BX	45400	33	138	2.4	942.5	942.5	942.5	0.00

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

SUSSEX CREEK AND SOUTH BRANCH SUSSEX CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION ⁴			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SOUTH BRANCH								
BY	46255	268	1381	0.5	942.7	942.7	942.7	0.00
BZ	46363	425	6657	0.3	945.2	945.2	945.2	0.00
CA	47273	1418	6148	0.1	945.2	945.2	945.2	0.00
CB	47336	1613	7978	0.1	945.2	945.2	945.2	0.00
CC	48238	1254	6855	0.1	945.2	945.2	945.2	0.00
CD	48961	730	3781	0.3	945.2	945.2	945.2	0.00
CE	49606	254	1386	0.9	945.2	945.2	945.2	0.00
CF	50178	33	117	5.4	945.1	945.1	945.1	0.00
CG	50281	123	862	1.7	948.2	948.2	948.2	0.00
CH	51209	287	1302	0.9	948.3	948.3	948.3	0.00
CI	51548	105	281	3.8	948.4	948.4	948.4	0.00
CJ	51745	51	104	5.9	948.7	948.7	948.7	0.00
CK	51797	31	105	5.5	949.4	949.4	949.4	0.00
CL	52377	28	2293	3.5	952.5	952.5	952.5	0.00
CM	52439	20	491	4.5	952.9	952.9	952.9	0.00
CN	52892	14	708	3.0	955.0	955.0	955.0	0.00
CO	53237	8	32	5.4	957.3	957.3	957.3	0.00
CP	53586	6	31	6.9	959.7	959.7	959.7	0.00
CQ	54187	27	99	3.0	961.7	961.7	961.7	0.00
CR	54714	89	928	2.3	963.4	963.4	963.4	0.00
CS	55020	22	1944	4.9	966.5	966.5	966.5	0.00
CT	55094	27	1104	5.3	973.3	973.3	973.3	0.00
CU	55486	25	3671	1.9	975.8	975.8	975.8	0.00
CV	56024	17	109	6.4	988.7	988.7	988.7	0.00
CW	56230	21	27	5.6	999.4	999.4	999.4	0.00
CX	56324	20	32	4.6	1001.7	1001.7	1001.7	0.00

Notes: ¹Feet above confluence with Fox River

TABLE 7	FEDERAL EMERGENCY MANAGEMENT AGENCY WAUKESHA COUNTY AND INCORPORATED AREAS	FLOODWAY DATA
		SOUTH BRANCH SUSSEX CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION ⁴			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SOUTH BRANCH								
CY	56991	24	59	3.1	1012.7	1012.7	1012.7	0.00
CZ	57103	15	22	6.9	1013.0	1013.0	1013.0	0.00
DA	57134	30	141	1.6	1015.7	1015.7	1015.7	0.00
DB	57691	18	312	5.4	1016.2	1016.2	1016.2	0.00
DC	58086	11	20	7.5	1018.2	1018.2	1018.2	0.00
DD	58118	33	224	2.4	1020.8	1020.8	1020.8	0.00
DE	58482	48	37	4.0	1025.0	1025.0	1025.0	0.00
DF	58628	19	159	6.3	1029.4	1029.4	1029.4	0.00
DG	58832	45	34	4.4	1039.8	1039.8	1039.8	0.00
DH	59197	28	45	5.3	1041.1	1041.1	1041.1	0.00
DI	59696	36	206	1.0	1043.3	1043.3	1043.3	0.00
DJ	60669	24	59	3.1	1012.7	1012.7	1012.7	0.00

Notes: ¹Feet above confluence with Fox River

TABLE 7	FEDERAL EMERGENCY MANAGEMENT AGENCY WAUKESHA COUNTY AND INCORPORATED AREAS	FLOODWAY DATA
		SOUTH BRANCH SUSSEX 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SUSSEX CREEK TRIBUTARY 1									
A	2243	344	347	1.7	0.0	829.2	829.2	829.2	0.0
B	2468	345	370	1.6	0.0	829.6	829.6	829.6	0.0
C	3066	339	630	1.6	0.0	830.2	830.2	830.2	0.0
D	4055	103	198	3.4	0.0	831.9	831.9	831.9	0.0
E	4802	65	203	4.9	0.0	836.1	836.1	836.1	0.0
F	5457	202	255	2.4	0.0	839.6	839.6	839.6	0.0
G	6096	237	283	2.1	0.0	841.7	841.7	841.7	0.0
H	6855	216	267	2.4	0.0	843.1	843.1	843.1	0.0
I	6903	238	892	1.2	0.0	845.2	845.2	845.2	0.0
J	7762	98	226	3.3	0.0	846.4	846.4	846.4	0.0
K	8030	56	132	6.5	0.0	848.6	848.6	848.6	0.0
L	8805	353	453	1.5	0.0	851.3	851.3	851.3	0.0
M	9643	9	288	12.8	0.0	853.5	853.5	853.5	0.0
N	9879	293	3908	0.2	0.0	859.2	859.2	859.2	0.0

Notes: ¹Feet above confluence with Sussex Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

SUSSEX CREEK TRIBUTARY 1

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TESS CORNERS CREEK									
A	4	121	424	2.4	0	771.7	771.7	771.7	0.0
B	402	433	1404	0.7	0	772.0	772.0	772.0	0.0
C	977	690	3062	0.3	0	772.0	772.0	772.0	0.0
D	1903	745	2424	0.4	0	772.1	772.1	772.1	0.0
E	2617	583	1776	0.4	0	772.2	772.2	772.2	0.0
F	3381	473	433	1.8	0	772.8	772.8	772.8	0.0
G	4685	78	313	2.5	40	774.3	774.3	774.3	0.0
H	5753	14	190	4.1	0	778.6	778.6	778.6	0.0
I	6527	125	304	2.5	25	780.7	780.7	780.7	0.0
J	7018	194	442	1.7	160	781.6	781.6	781.6	0.0
K	7685	45	144	5.3	0	784.0	784.0	784.0	0.0
L	8423	91	154	5.0	0	789.0	789.0	789.0	0.0
M	8947	264	562	1.4	0	790.4	790.4	790.4	0.0
N	9821	221	321	2.4	0	794.3	794.3	794.3	0.0
O	10489	260	903	0.9	0	794.8	794.8	794.8	0.0
P	11103	130	327	1.7	0	795.2	795.2	795.2	0.0
Q	11668	165	153	3.5	0	796.9	796.9	796.9	0.0
R	11800	180	416	1.3	0	798.0	798.0	798.0	0.0
S	12287	89	255	2.1	0	799.8	799.8	799.8	0.0
T	12695	134	70	7.6	15	803.6	803.6	803.6	0.0
U	12780	92	66	8.0	57	804.1	804.1	804.1	0.0
V	13778	16	110	5.6	30	805.5	805.5	805.5	0.0
W	14080	15	89	7.0	20	807.0	807.0	807.0	0.0
X	14283	22	102	6.1	15	808.3	808.3	808.3	0.0
Y	14685	68	151	4.1	15	810.2	810.2	810.2	0.0
Z	14937	120	359	1.7	0	813.0	813.0	813.0	0.0
AA	15259	9	57	10.9	0	815.1	815.1	815.1	0.0

Notes: ¹Feet above county boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

TESS CORNERS 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
TRIBUTARY TO SOUTH BRANCH UNDERWOOD CREEK									
A	6200	12	63	6.3	7	761.3	761.3	761.3	0.0
B	6670	95	122	3.3	12	768.4	768.4	768.4	0.0
C	7110	131	205	2.0	0	771.5	771.5	771.5	0.0
D	7470	79	78	5.1	0	774.3	774.3	774.3	0.0
E	7730	85	238	1.7	7	776.3	776.3	776.3	0.0
F	7890	73	62	6.5	7	780.2	780.2	780.2	0.0
G	8032	140	295	1.4	0	782.6	782.6	782.6	0.0
H	8432	111	122	2.9	5	787.2	787.2	787.2	0.0
I	8744	100	300	1.2	21	795.8	795.8	795.8	0.0
J	9074	70	99	3.5	4	798.8	798.8	798.8	0.0
K	9394	82	140	2.5	0	802.5	802.5	802.5	0.0
L	9634	42	101	3.5	52	805.1	805.1	805.1	0.0
M	9964	25	51	6.9	0	809.4	809.4	809.4	0.0
N	10368	39	90	3.3	0	815.9	815.9	815.9	0.0
O	10578	35	50	6.0	0	817.3	817.3	817.3	0.0
P	10778	54	198	1.5	15	819.0	819.0	819.0	0.0
Q	10913	33	68	4.4	8	819.9	819.9	819.9	0.0
R	11143	26	59	5.1	11	825.5	825.5	825.5	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

TRIBUTARY TO SOUTH BRANCH UNDERWOOD 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
UNNAMED TRIBUTARY OF MUSKEGO CANAL									
A	506	250	187	1.9	34	778.9	778.9	778.9	0.0
B	945	217	436	0.8	116	779.8	779.8	779.8	0.0
C	1341	31	53	6.6	0	780.8	780.8	780.8	0.0
D	2063	109	261	1.3	0	785.0	785.0	785.0	0.0
E	2576	157	423	0.8	46	785.1	785.1	785.1	0.0
F	2931	80	389	0.9	69	785.2	785.2	785.2	0.0
G	3288	109	302	1.2	0	785.2	785.2	785.2	0.0
H	3879	415	295	0.4	0	785.4	785.4	785.4	0.0
I	4798	515	842	0.4	0	785.5	785.5	785.5	0.0
J	5372	316	626	0.6	0	785.7	785.7	785.7	0.0
K	5813	90	66	5.3	0	785.9	785.9	785.9	0.0
L	6680	34	67	5.2	23	791.2	791.2	791.2	0.0
M	7208	28	90	3.9	11	795.2	795.2	795.2	0.0
N	7477	150	73	4.8	0	796.8	796.8	796.8	0.0
O	7802	300	166	2.1	0	798.7	798.7	798.7	0.0

Notes: ¹Feet above confluence with Muskego Canal

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

UNNAMED TRIBUTARY OF MUSKEGO CANAL

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
UNDERWOOD CREEK									
A	13,800	25	340	5.2	0	720.4	720.4	720.4	0.0
B	13,913	268	839	2.1	0	724.2	724.2	724.2	0.0
C	14,229	328	1,220	1.6	0	724.6	724.6	724.6	0.0
D	14,543	225	633	3.6	0	725.7	725.7	725.7	0.0
E	14,736	110	782	3.7	0	727.4	727.4	727.4	0.0
F	15,066	91	856	4.9	0	728.3	728.3	728.3	0.0
G	15,267	262	1,008	1.9	0	730.2	730.2	730.2	0.0
H	16,412	102	412	4.3	0	732.7	732.7	732.7	0.0
I	16,536	152	608	5.0	0	733.7	733.7	733.7	0.0
J	16,662	215	1,169	1.7	0	736.2	736.2	736.2	0.0
K	17,247	93	232	7.5	0	736.3	736.3	736.3	0.0
L	17,386	107	427	6.4	0	737.7	737.7	737.7	0.0
M	17,581	62	285	6.2	0	737.9	737.9	737.9	0.0
N	18,226	74	210	8.3	0	742.8	742.8	742.8	0.0
O	18,339	132	286	6.3	0	744.2	744.2	744.2	0.0
P	18,450	124	410	4.3	0	745.2	745.2	745.2	0.0
Q	18,619	98	1,397	3.3	0	745.5	745.5	745.5	0.0
R	18,816	80	1,321	3.7	0	745.6	745.6	745.6	0.0
S	19,145	152	2,096	1.6	0	747.5	747.5	747.5	0.0
T	19,465	380	3,801	0.9	0	747.5	747.5	747.5	0.0
U	19,591	419	4,866	0.5	0	747.6	747.6	747.6	0.0
V	19,956	519	3,675	0.5	0	747.6	747.6	747.6	0.0
W	20,076	487	2,602	0.6	0	747.6	747.6	747.6	0.0
X	20,791	765	4,077	0.4	0	747.6	747.6	747.6	0.0
Y	21,916	605	3,582	0.5	0	747.6	747.6	747.6	0.0
Z	23,091	322	1,488	1.1	0	748.0	748.0	748.0	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

UNDERWOOD 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
AA	23,766	125	574	2.5	0	749.1	749.1	749.1	0.0
AB	23,908	75	496	3.8	0	749.7	749.7	749.7	0.0
AC	24,678	314	1,755	1.0	0	750.6	750.6	750.6	0.0
AD	25,583	217	507	3.3	0	750.9	750.9	750.9	0.0
AE	25,772	340	2,185	0.7	0	752.1	752.1	752.1	0.0
AF	27,387	281	946	1.3	0	752.3	752.3	752.3	0.0
AG	29,227	89	414	4.3	0	753.9	753.9	753.9	0.0
AH	29,476	160	2,704	1.5	0	757.4	757.4	757.4	0.0
AI	29,836	94	1,359	4.2	0	757.8	757.8	757.8	0.0
AJ	29,978	165	552	2.0	0	758.2	758.2	758.2	0.0
AK	31,238	258	346	2.6	0	760.2	760.2	760.2	0.0
AL	32,313	72	180	5.7	0	766.9	766.9	766.9	0.0
AM	32,459	66	174	5.2	0	770.2	770.2	770.2	0.0
AN	32,822	42	63	14.3	0	778.4	778.4	778.4	0.0
AO	32,934	67	544	2.1	0	787.6	787.6	787.6	0.0
AP	33,459	53	148	6.1	0	792.1	792.1	792.1	0.0
AQ	33,595	125	513	1.8	0	797.0	797.0	797.0	0.0
AR	34,165	106	249	4.9	0	799.6	799.6	799.6	0.0
AS	34,319	75	854	1.7	0	803.8	803.8	803.8	0.0
AT	35,110	109	189	4.0	0	806.5	806.5	806.5	0.0
AU	35,349	27	80	9.4	0	808.6	808.6	808.6	0.0
AV	35,894	36	89	9.4	0	817.9	817.9	817.9	0.0
AW	35,911	45	345	5.0	0	819.2	819.2	819.2	0.0
AX	36,156	34	110	9.6	0	820.0	820.0	820.0	0.0
AY	36,281	66	279	2.9	0	822.0	822.0	822.0	0.0
AZ	37,616	52	235	3.2	0	822.9	822.9	822.9	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

UNDERWOOD 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
BA	39,076	580	833	0.2	0	823.5	823.5	823.5	0.0
BB	39,108	604	831	0.2	0	823.5	823.5	823.5	0.0
BC	40,368	732	513	0.3	0	824.0	824.0	824.0	0.0
BD	41,414	14	13	6.0	0	824.5	824.5	824.5	0.0

Notes: ¹Feet above mouth

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

UNDERWOOD 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
UPPER KELLY LAKE TRIBUTARY									
A	329	212	136	3.7	0	809.2	808.6 ²	808.6 ²	0.0
B	695	93	197	2.5	0	810.0	810.0	810.0	0.0
C	1018	69	102	4.9	0	811.6	811.6	811.6	0.0
D	1256	87	119	4.2	0	814.6	814.6	814.6	0.0
E	1861	69	346	1.4	0	819.1	819.1	819.1	0.0
F	2227	35	82	6.1	0	819.9	819.9	819.9	0.0
G	2686	63	159	2.8	0	824.8	824.8	824.8	0.0
H	2990	72	127	3.5	0	826.3	826.3	826.3	0.0
I	3320	9	94	4.8	47	829.3	829.3	829.3	0.0
J	3751	29	136	3.3	31	834.4	834.4	834.4	0.0
K	4046	53	168	2.7	0	836.8	836.8	836.8	0.0
L	4481	55	121	2.5	0	843.2	843.2	843.2	0.0
M	4768	42	146	2.1	0	843.6	843.6	843.6	0.0
N	4998	13	76	3.9	33	844.0	844.0	844.0	0.0
O	5242	25	64	4.7	0	844.9	844.9	844.9	0.0
P	5666	47	213	1.4	53	848.0	848.0	848.0	0.0
Q	6177	-39	41	7.3	51	849.4	849.4	849.4	0.0
R	6495	23	99	3.0	46	851.9	851.9	851.9	0.0
S	6803	39	90	2.9	57	853.6	853.6	853.6	0.0
T	7153	-20	66	3.9	47	854.9	854.9	854.9	0.0

Notes: ¹Feet above mouth

² Elevations without considering backwater effect from Upper Kelly Lake

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY AND
INCORPORATED AREAS

FLOODWAY DATA

UPPER KELLY LAKE TRIBUTARY

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
WEST BRANCH PEWAUKEE LAKE TRIBUTARY									
A	304	22	2602	0.3	900	860.1	860.1	860.1	0.0
B	604	218	1538	0.5	570	860.2	860.2	860.2	0.0
C	1754	296	880	0.9	200	861.2	861.2	861.2	0.0

Notes: ¹Feet above Pewaukee Lake Tributary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

WEST BRANCH PEWAUKEE LAKE TRIBUTARY

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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
WEST BRANCH ROOT RIVER									
A	11	70	271	3.5	0	751.2	751.2	751.2	0.0
B	332	56	178	5.4	25	752.9	752.9	752.9	0.0
C	654	106	390	2.5	15	755.0	755.0	755.0	0.0
D	943	60	695	1.4	80	757.7	757.7	757.7	0.0
E	1205	167	491	2.0	20	757.9	757.9	757.9	0.0
F	1556	137	237	4.1	0	759.6	759.6	759.6	0.0
G	2020	0	130	7.4	25	763.1	763.1	763.1	0.0
H	2530	60	313	2.1	40	766.2	766.2	766.2	0.0
I	2700	139	363	1.8	0	767.8	767.8	767.8	0.0
J	3039	32	272	2.4	45	772.4	772.4	772.4	0.0
K	3420	158	409	1.6	10	772.9	772.9	772.9	0.0
L	3749	18	83	6.3	10	778.3	778.3	778.3	0.0
M	4056	45	292	1.8	90	781.8	781.8	781.8	0.0
N	4225	140	605	0.9	75	782.3	782.3	782.3	0.0
O	4682	-8	52	7.7	30	785.7	785.7	785.7	0.0
P	4961	60	104	3.8	0	789.5	789.5	789.5	0.0
Q	5317	37	121	3.3	50	793.9	793.9	793.9	0.0
R	5876	0	59	6.8	30	805.7	805.7	805.7	0.0
S	6387	24	65	6.2	0	810.5	810.5	810.5	0.0
T	6716	89	158	2.5	0	815.1	815.1	815.1	0.0
U	7242	3	69	4.7	30	821.5	821.5	821.5	0.0
V	7479	7	41	7.9	0	826.9	826.9	826.9	0.0

Notes: ¹Feet above county boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

WEST BRANCH ROOT 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)	WIDTH REDUCED FROM PRIOR STUDY (FEET)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
WILLOW SPRINGS CREEK									
A	23455	200	N/A	N/A	0	918.1	918.1	918.1	0.0
B	24697	300	N/A	N/A	0	921.8	921.8	921.8	0.0
C	26119	185	N/A	N/A	15	926.8	926.8	926.8	0.0
D	27851	60	N/A	N/A	0	939.8	939.8	939.8	0.0

Notes: ¹Feet above confluence with Fox River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

**WAUKESHA COUNTY AND
INCORPORATED AREAS**

FLOODWAY DATA

WILLOW SPRINGS CREEK

5.0 **INSURANCE APPLICATION**

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

Zone A

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

Zone AE

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

Zone AH

Zone AH is the flood insurance rate zone that corresponds to areas of 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to areas of 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within this zone.

Zone AR

Zone AR is the flood insurance risk zone that corresponds to an area of special flood hazard formerly protected from the base flood event by a flood-control system that was subsequently decertified. Zone AR indicates that the former flood-control system is being restored to provide protection from the 1-percent-annual-chance or greater flood event.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 1-percent-annual-chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No BFEs or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 1-percent-annual-chance coastal floodplains

that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no BFEs are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

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

6.0 FLOOD INSURANCE RATE MAP

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

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

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

The countywide FIRM presents flooding information for the entire geographic area of Waukesha County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table , “Community Map History.”

7.0 OTHER STUDIES

FIS's are being currently being prepared for: Ozaukee, Washington, Jefferson, Milwaukee, Racine, and Walworth Counties. Preparation of this FIS was compared to existing and/or proposed studies ongoing for these Counties to ensure compatibility with proposed BFE's at each County boundary.

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Waukesha County has been compiled into this FIS. This FIS report either supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the NFIP.

8.0 LOCATION OF DATA

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

COMMUNITY NAME		INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
BIG BEND, VILLAGE OF (550477)		November 30, 1973	April 16, 1976	March 1, 1984	None
BROOKFIELD, CITY OF (550478)		November 9, 1973	July 1, 1977	August 19, 1986	None
BUTLER, VILLAGE OF (550536)		October 18, 1974	None	May 15, 1978	None
CHENEQUA, VILLAGE OF (555626)		*	*	*	*
DELAFIELD, CITY OF (550479)		June 7, 1974	October 10, 1975	August 15, 1983	None
DOUSMAN, VILLAGE OF (550480)		September 6, 1974	June 11, 1976 February 12, 1982	April 17, 1987	None
EAGLE, VILLAGE OF (550144)		*	*	*	*
ELM GROVE, VILLAGE OF (550578)		December 23, 1977	None	July 19, 1982	None
* Not participating					
T A B L E 8	FEDERAL EMERGENCY MANAGEMENT AGENCY WAUKESHA COUNTY AND INCORPORATED AREAS		COMMUNITY MAP HISTORY		

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
HARTLAND, VILLAGE OF (550481)	November 30, 1973	May 14, 1976 April 15, 1977	December 1, 1982	None
LAC LA BELLE, VILLAGE OF (550565)	January 31, 1975	September 21, 1979	January 18, 1984	None
LANNON, VILLAGE OF (550482)	December 28, 1973	May 21, 1976	December 1, 1982	None
MENOMONEE FALLS, VILLAGE OF (550483)	September 13, 1974	August 27, 1976	September 15, 1978	October 9, 1981
MERTON, VILLAGE OF (550484)	December 17, 1973	May 21, 1976	August 3, 1989	None
MUKWONAGO, VILLAGE OF (550485)	December 17, 1973	May 28, 1976	July 5, 1982	None
MUSKEGO, CITY OF (550486)	June 21, 1974	August 6, 1976	December 1, 1982	None
NASHOTAH, VILLAGE OF (550149)	*	*	*	*
* not participating				

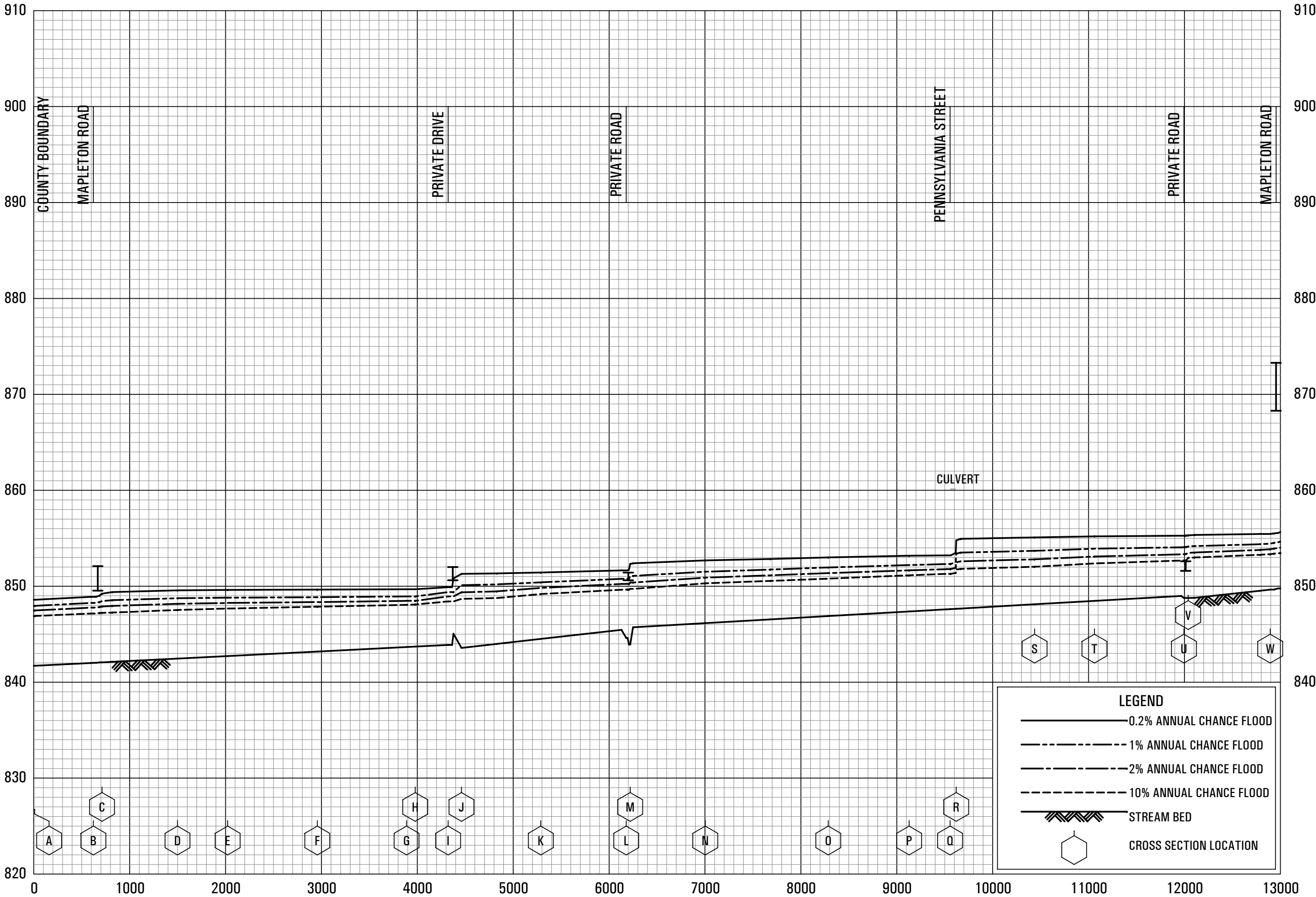
T A B L E 8	FEDERAL EMERGENCY MANAGEMENT AGENCY WAUKESHA COUNTY AND INCORPORATED AREAS		COMMUNITY MAP HISTORY	

COMMUNITY NAME		INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
NEW BERLIN, CITY OF (550487)		June 21, 1974	September 26, 1975 December 12, 1975	March 18, 1987	July 4, 1988 November 6, 1996
NORTH PRAIRIE, VILLAGE OF (550175)		*	*	*	*
OCONOMOWOC LAKE, VILLAGE OF (550582)		February 2, 1979	None	October 16, 1984	None
OCONOMOWOC, CITY OF (550488)		May 17, 1974	August 15, 1975	September 1, 1983	None
PEWAUKEE, VILLAGE OF (550489)		March 3, 1976	None	June 15, 1982	April 17, 1987
SUSSEX, VILLAGE OF (550490)		April 12, 1974	August 6, 1976 February 26, 1982	June 19, 1989	None
WALES, VILLAGE OF (550183)		*	*	*	*
WAUKESHA COUNTY* (550476)		June 17, 1977	None	August 1, 1983	December 18, 1986
WAUKESHA, CITY OF (550491)		February 8, 1974	May 28, 1976	September 2, 1982	None
* not participating					
T A B L E 8	FEDERAL EMERGENCY MANAGEMENT AGENCY		COMMUNITY MAP HISTORY		
	WAUKESHA COUNTY AND INCORPORATED AREAS				

9.0 **BIBLIOGRAPHY AND REFERENCES**

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6. Waukesha County 2005 Digital Terrain Model Files, created by: Aero-Metric, Inc., Sheboygan, Wisconsin, **Publication Date:** 2005 ; **Geospatial Data Presentation Form:** vector digital data
Publisher: Waukesha County Department of Parks and Land Use ;
Contact: Don Dittmar Land Information Systems Coordinator, - Waukesha County Land Information Office : Waukesha County Administration Center, Department of Parks and Land Use, 1320 Pewaukee Road, Room 260 : Waukesha, Wisconsin, 53188
7. Federal Emergency Management Agency. (December 18, 1986). Federal Insurance Administration. Flood Insurance Study, Waukesha County, Wisconsin. Washington, D.C.
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13. Aero-Metrics Engineering, Inc., Waukesha County, 2-foot contour maps, scale 1 : 2400, 1980

ELEVATION IN FEET (NGVD 29)

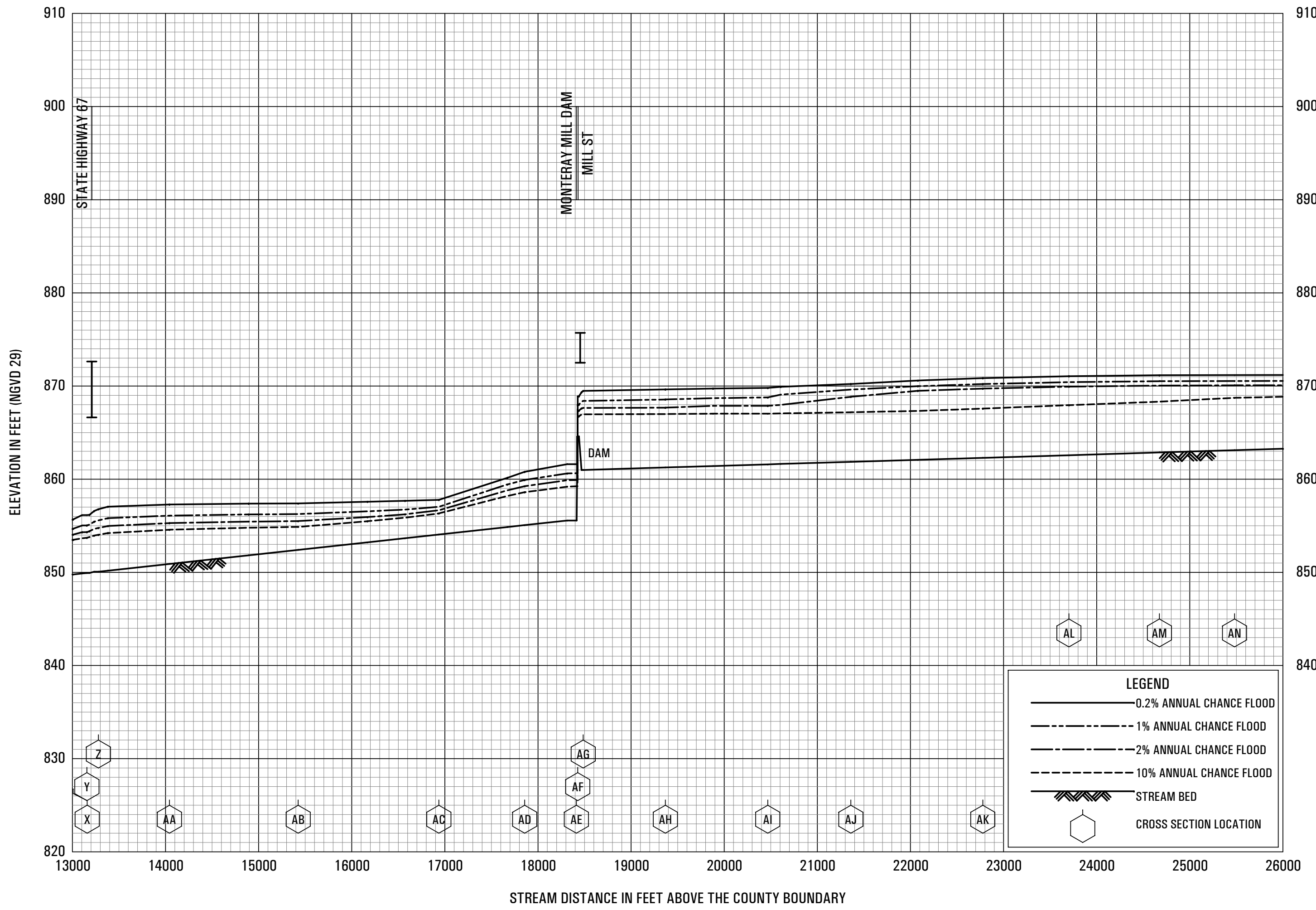


FLOOD PROFILES

ASHIPPUN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



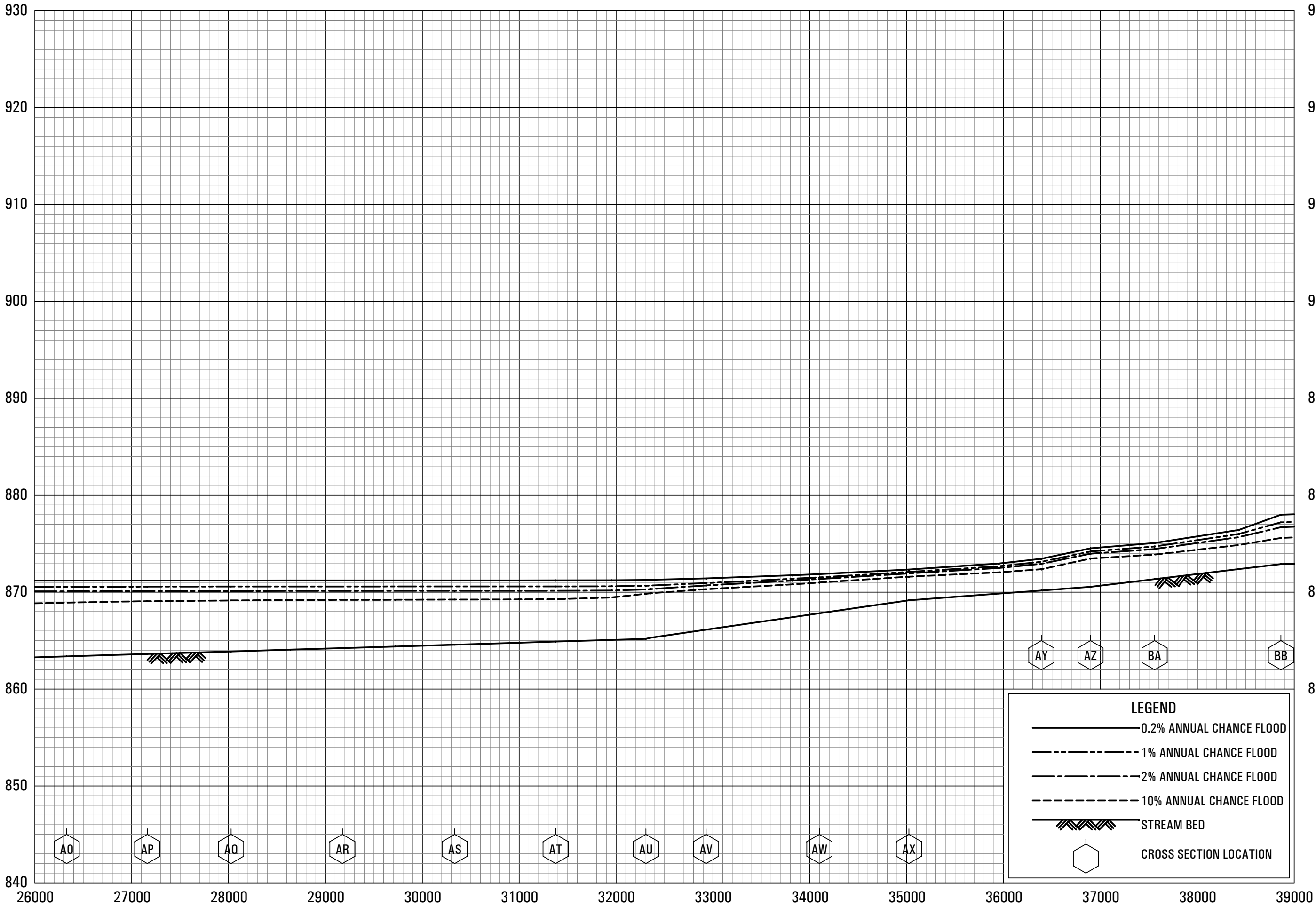
FLOOD PROFILES

ASHIPPUN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

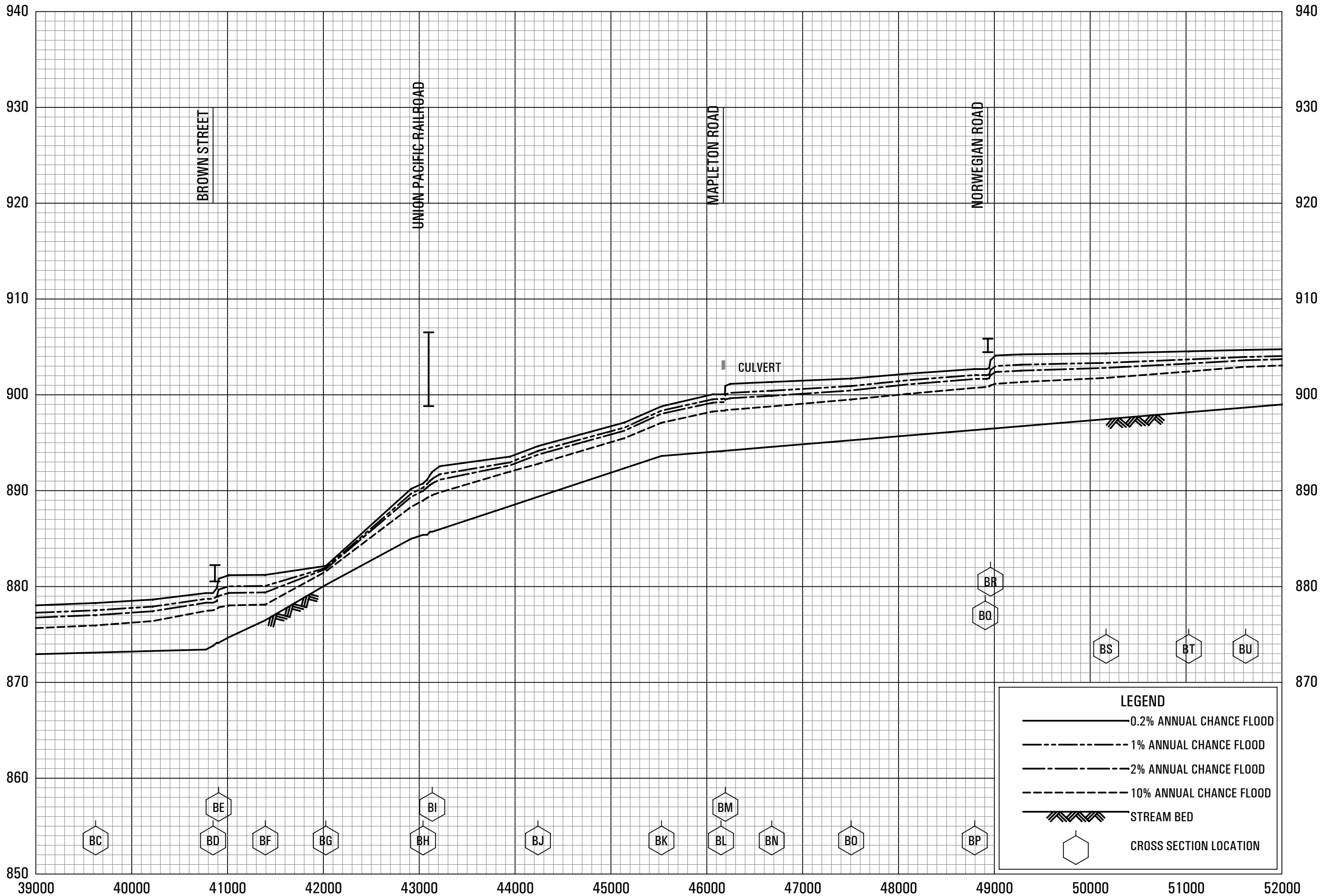
FLOOD PROFILES

ASHIPPUN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

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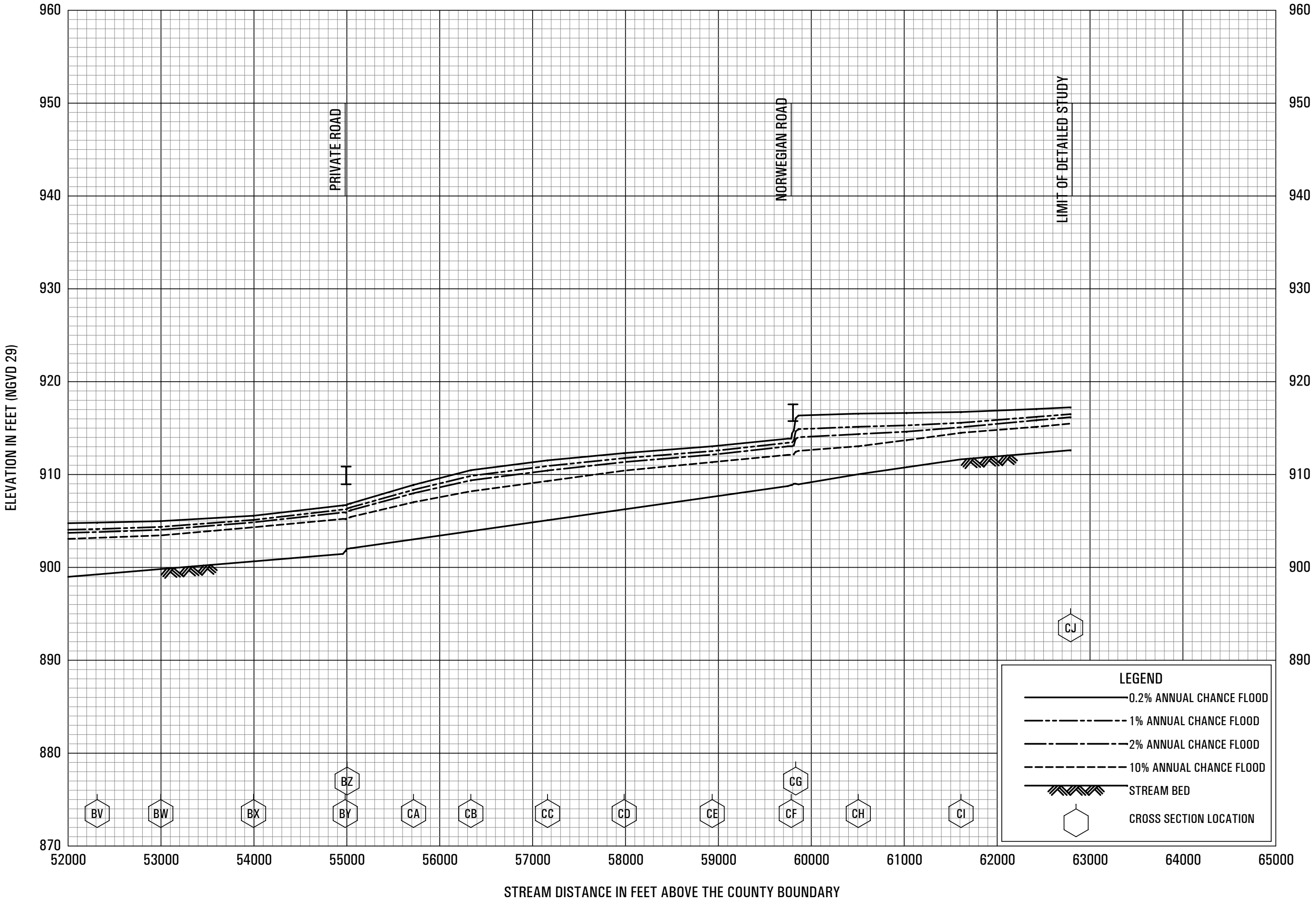
ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

ASHIPPUN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



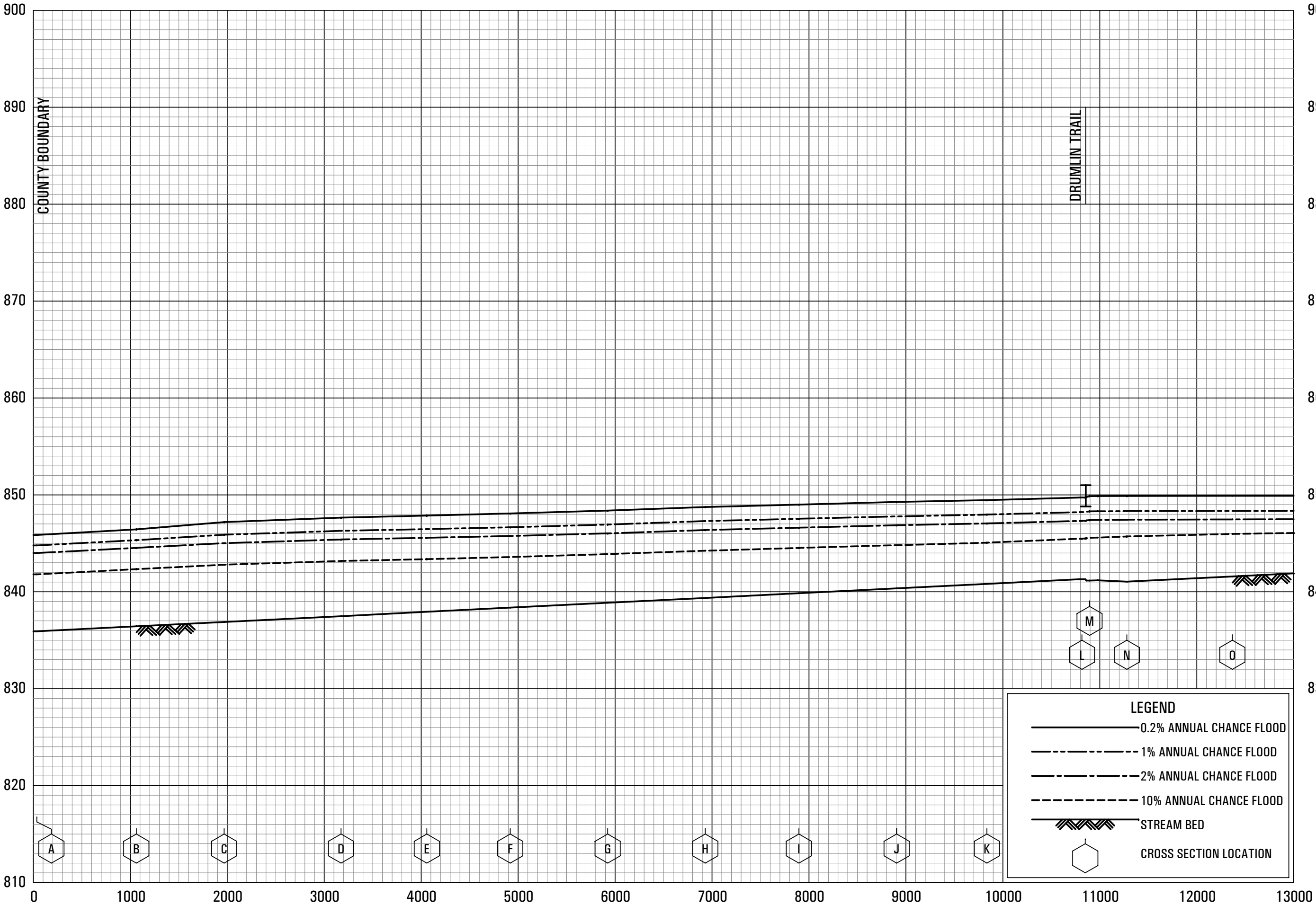
FLOOD PROFILES

ASHIPPUN RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

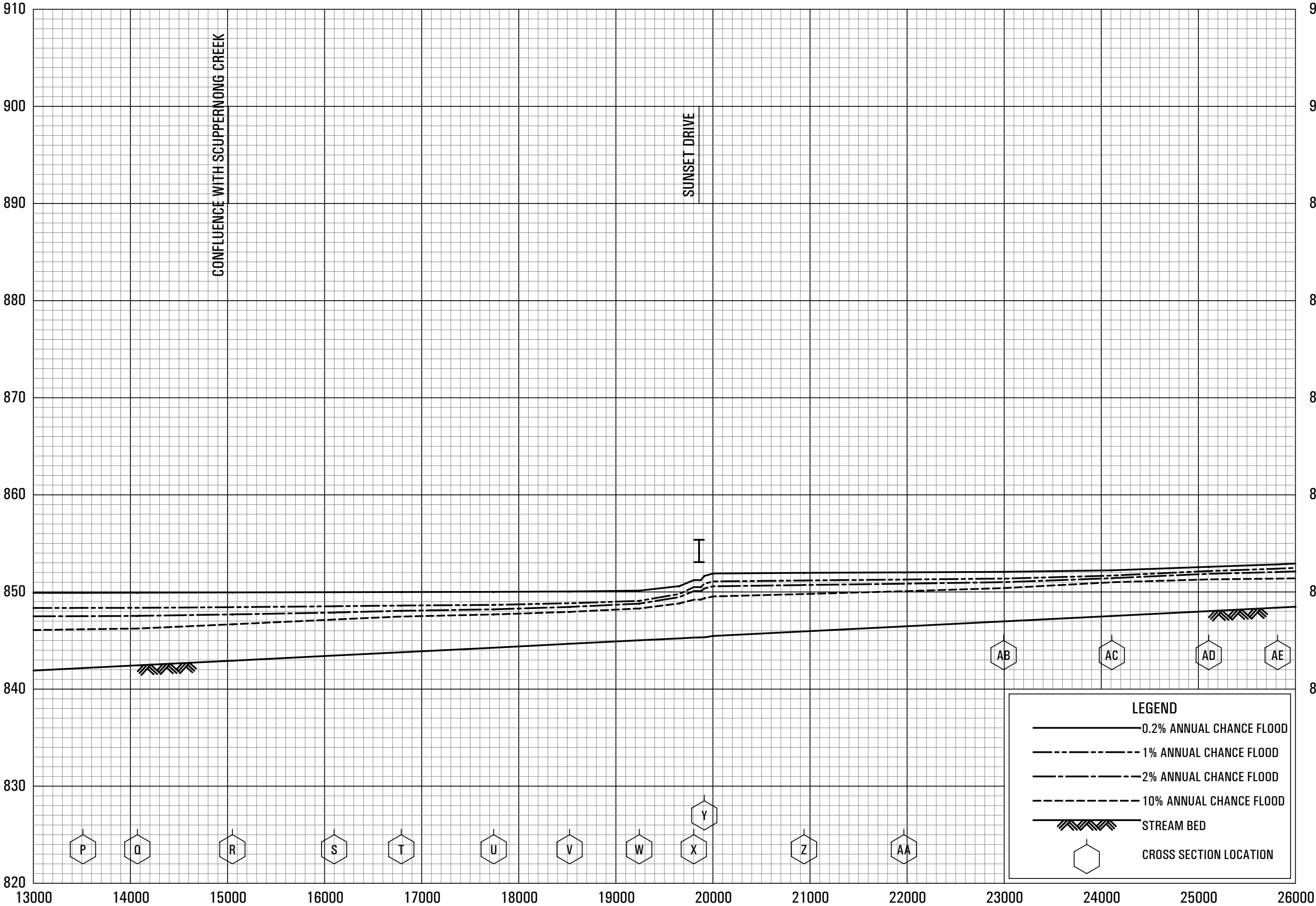
CROSS SECTION LOCATION

FLOOD PROFILES

BARK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

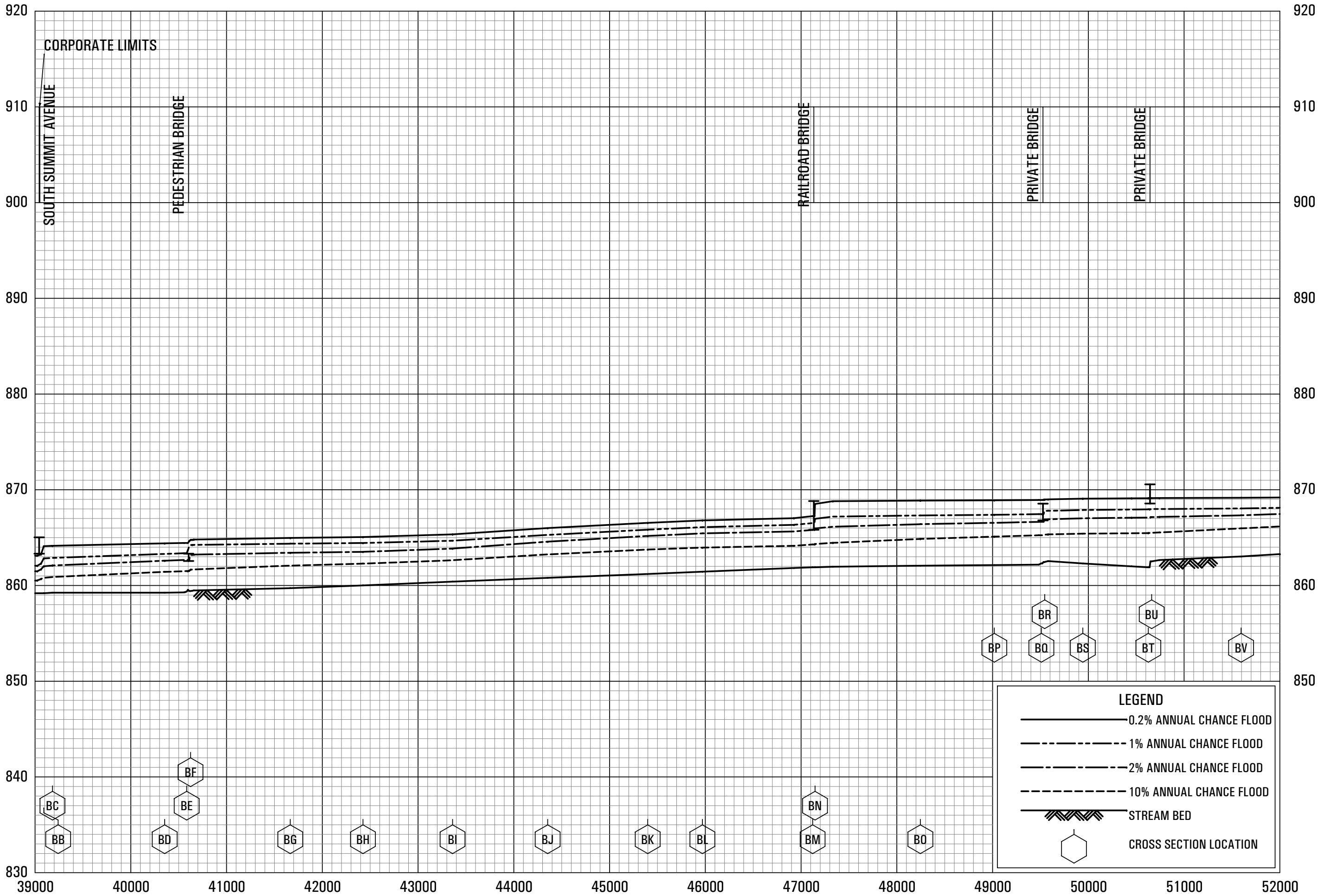


FLOOD PROFILES

BARK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

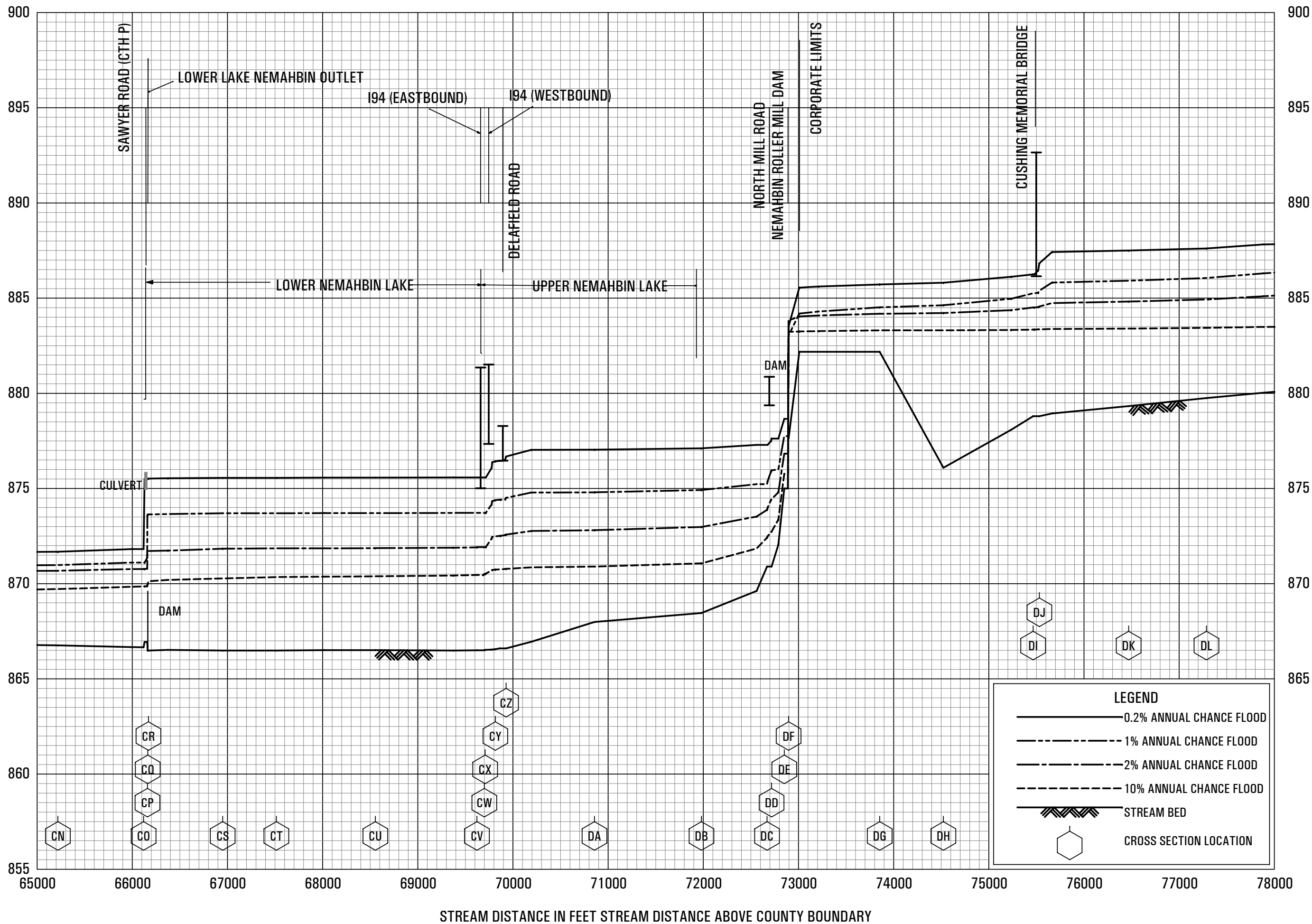


FLOOD PROFILES

BARK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

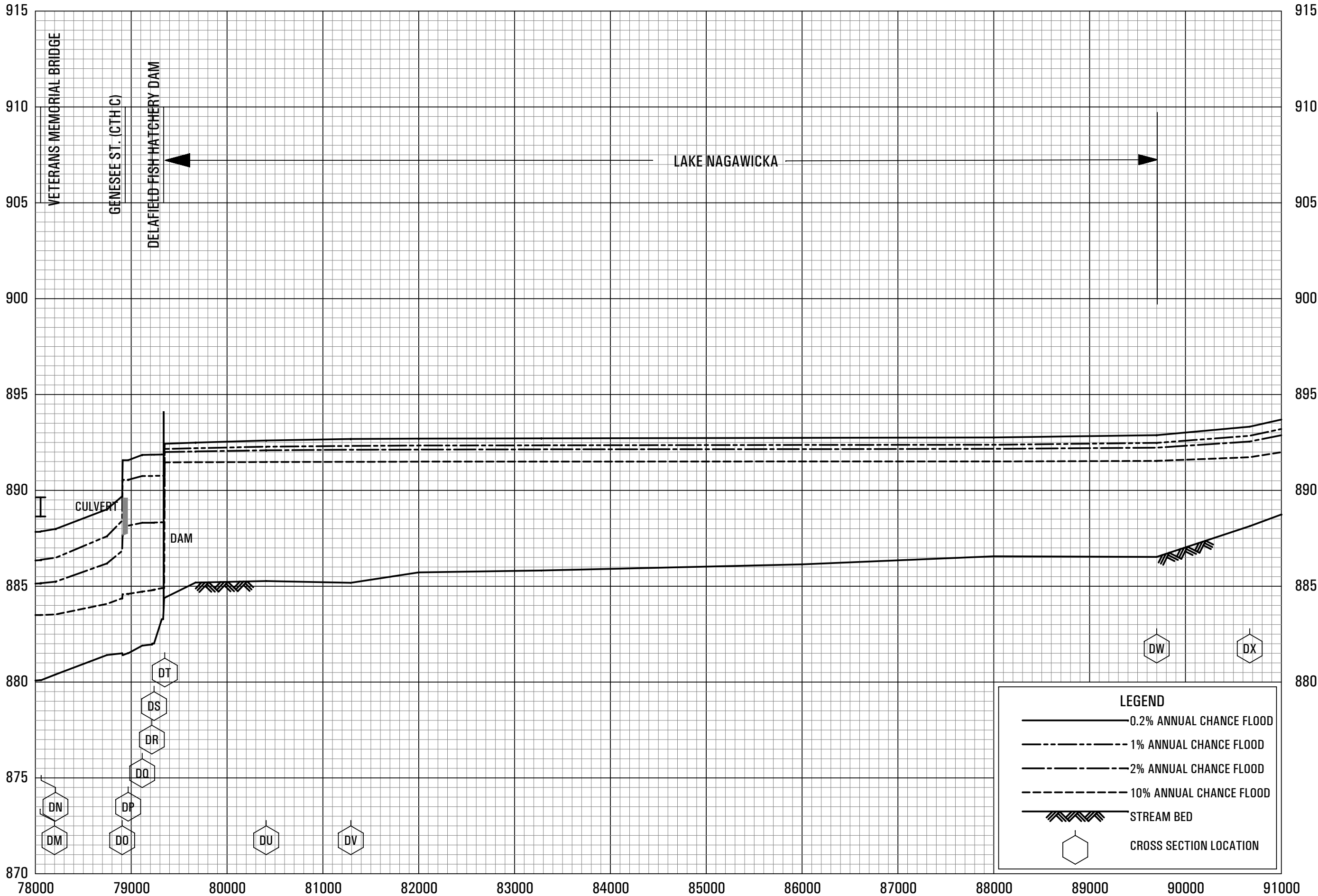


FLOOD PROFILES

BARK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



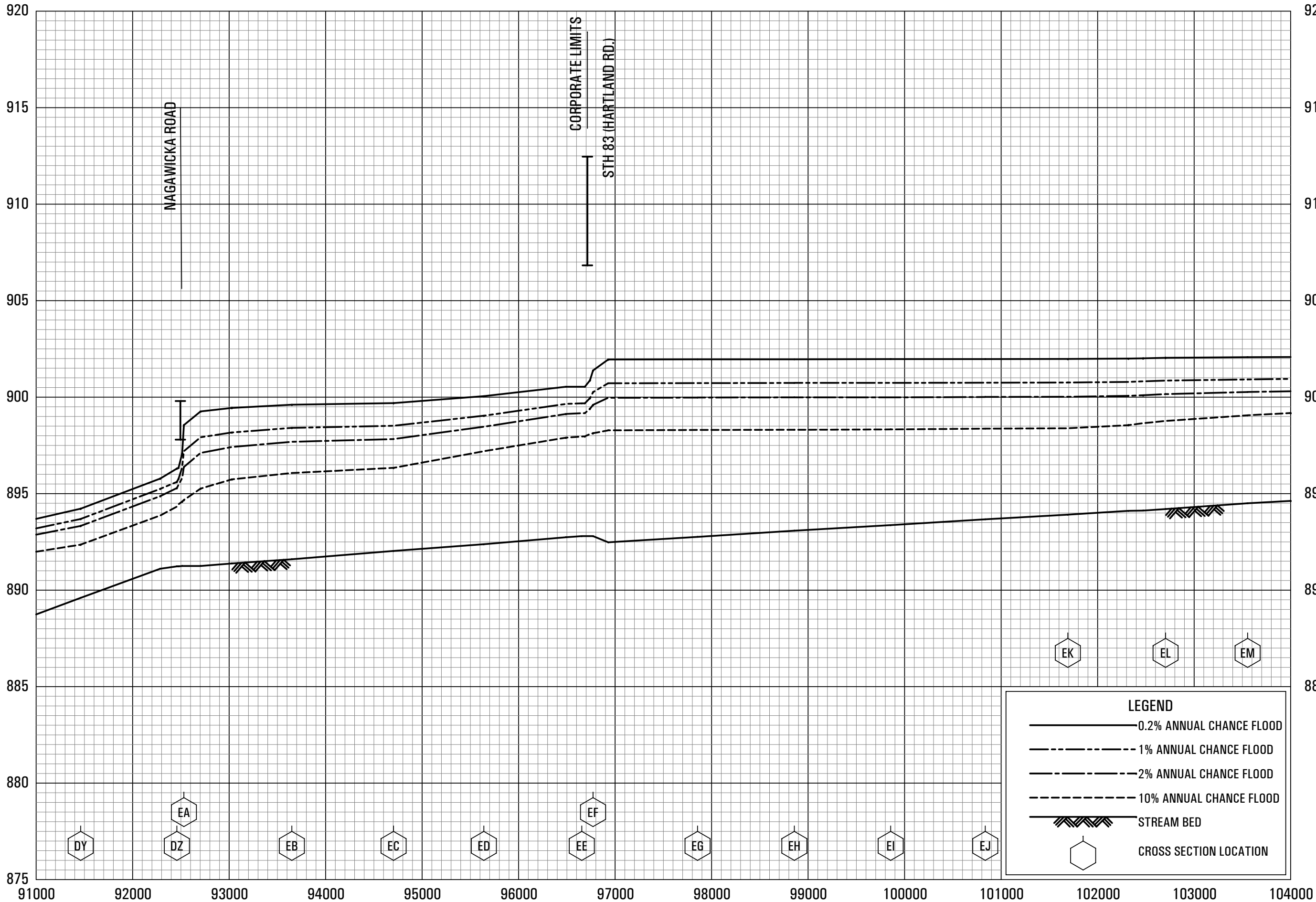
STREAM DISTANCE IN FEET STREAM DISTANCE ABOVE COUNTY BOUNDARY

FLOOD PROFILES

BARK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

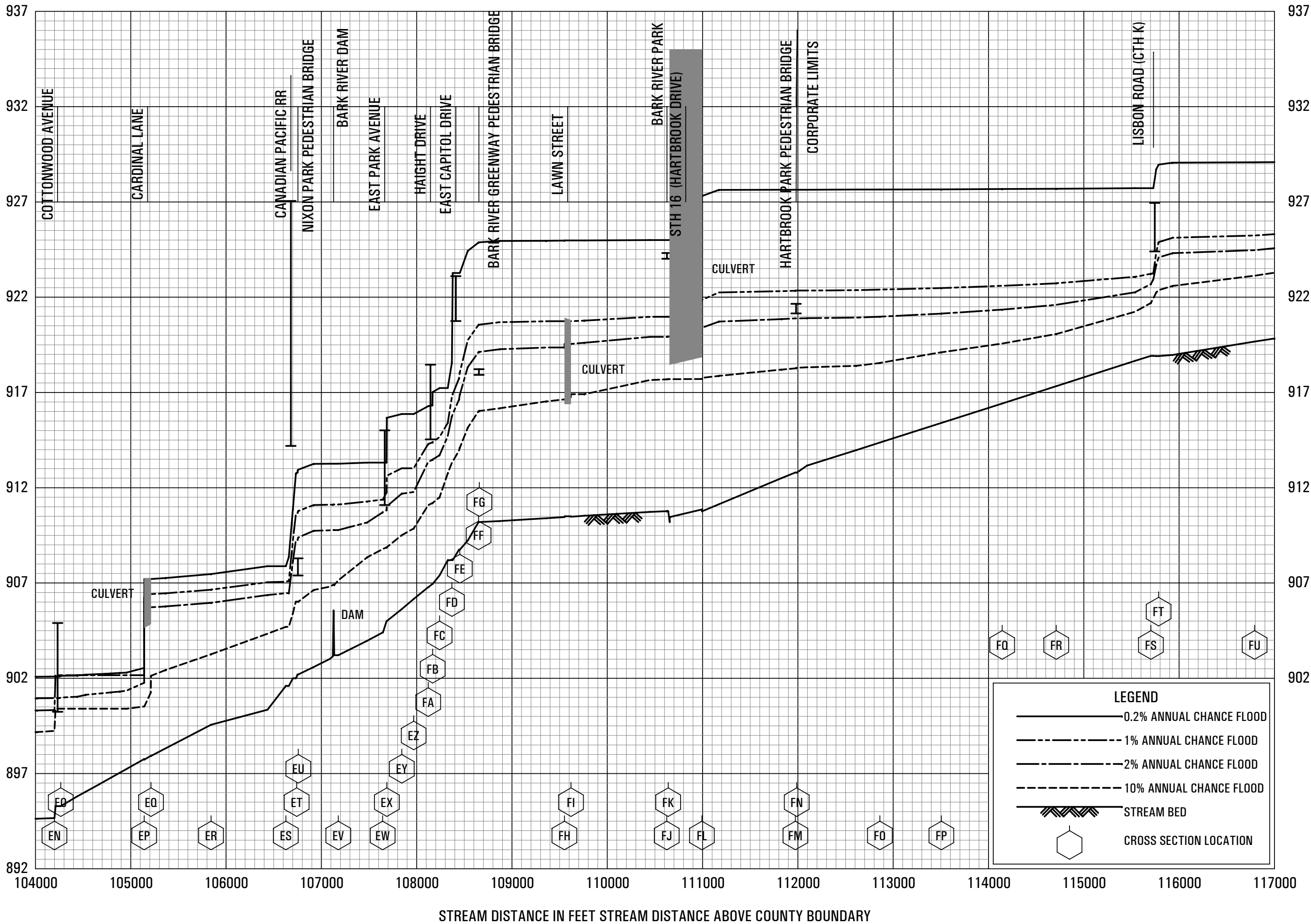


FLOOD PROFILES

BARK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

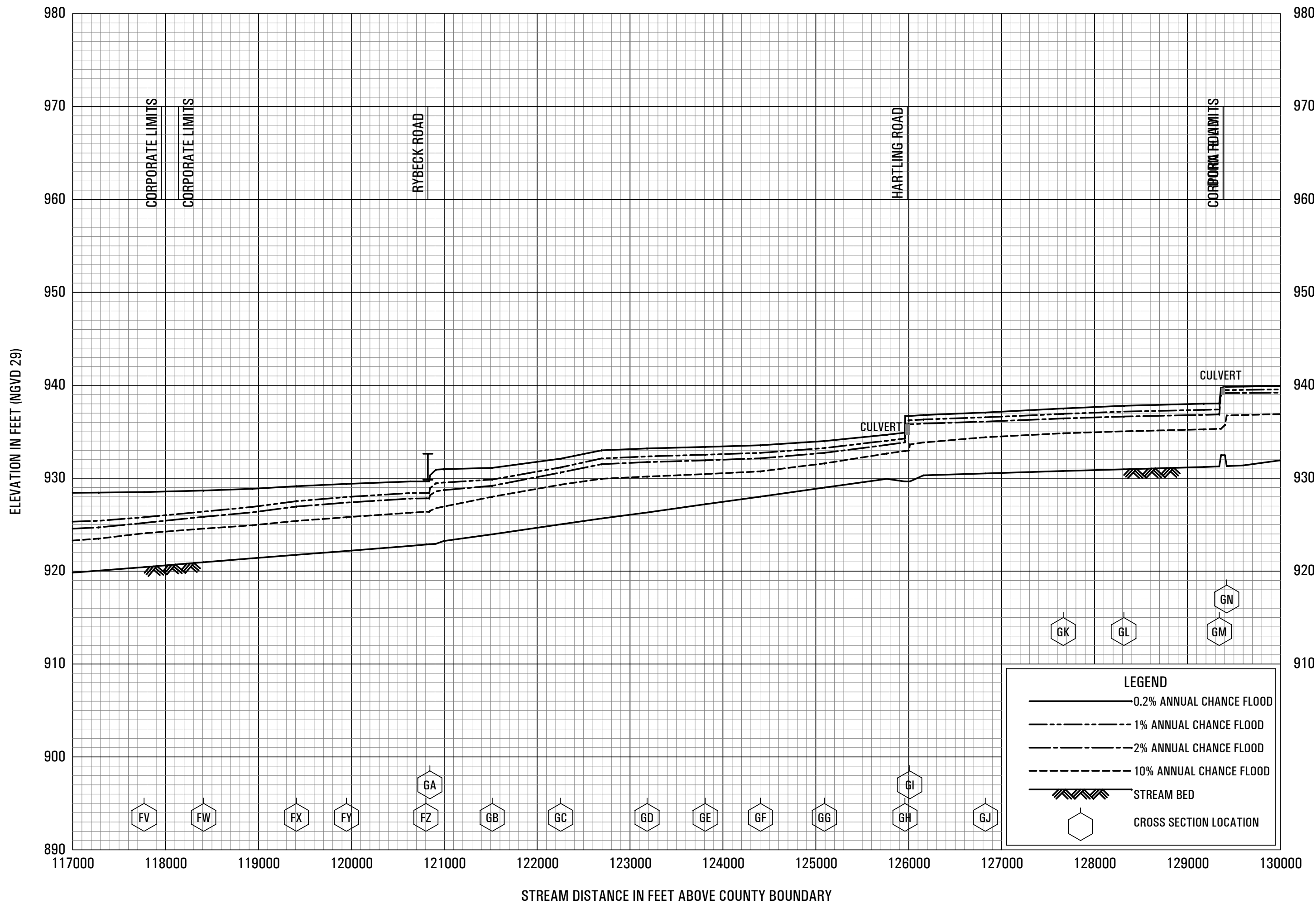
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FLOOD PROFILES

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AND INCORPORATED AREAS

BARK RIVER



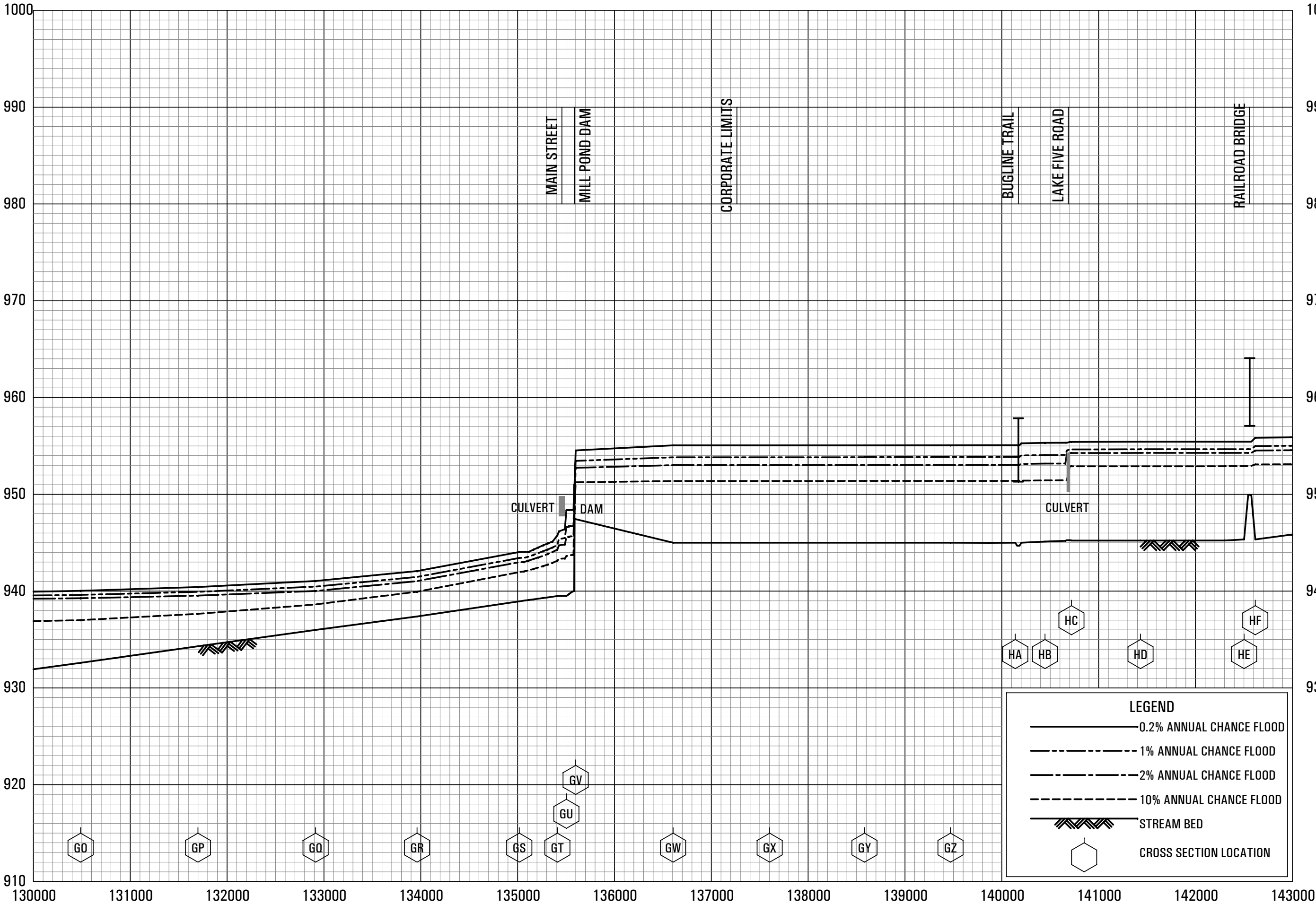
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BARK RIVER

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WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

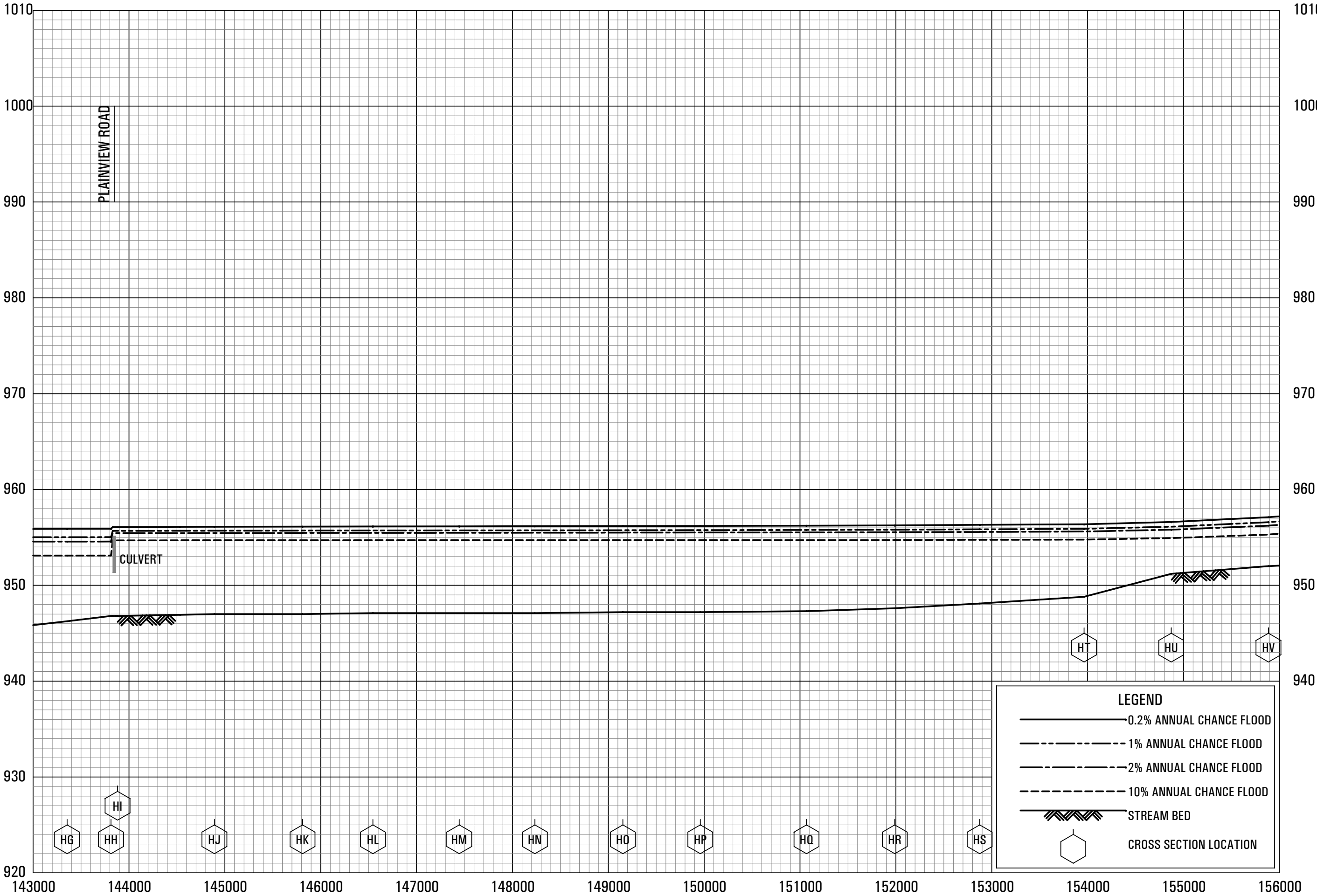


FLOOD PROFILES

BARK RIVER

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AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



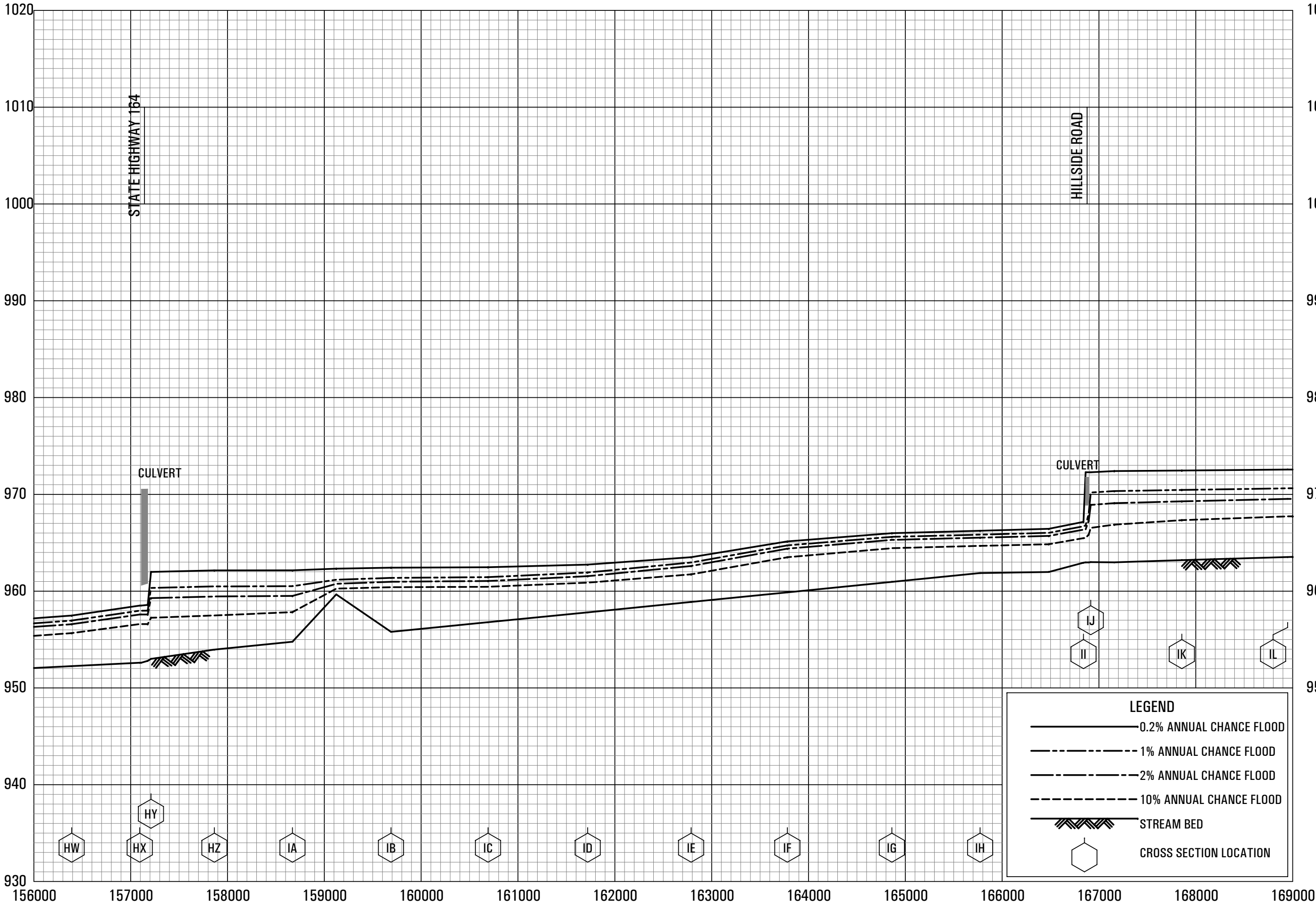
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WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FLOOD PROFILES

BARK RIVER

ELEVATION IN FEET (NGVD 29)



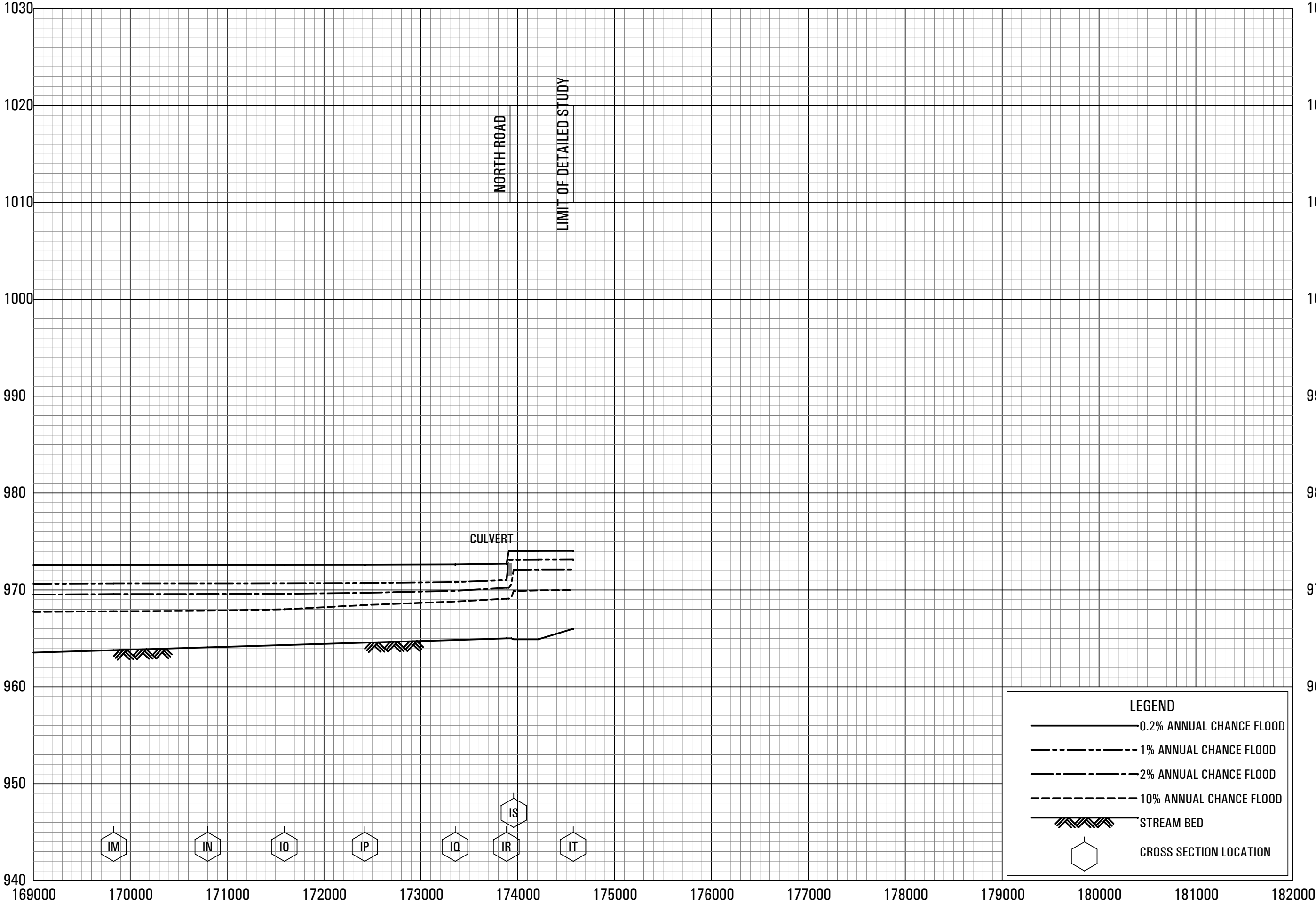
STREAM DISTANCE IN FEET ABOVE COUNTY BOUNDARY

FLOOD PROFILES

BARK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



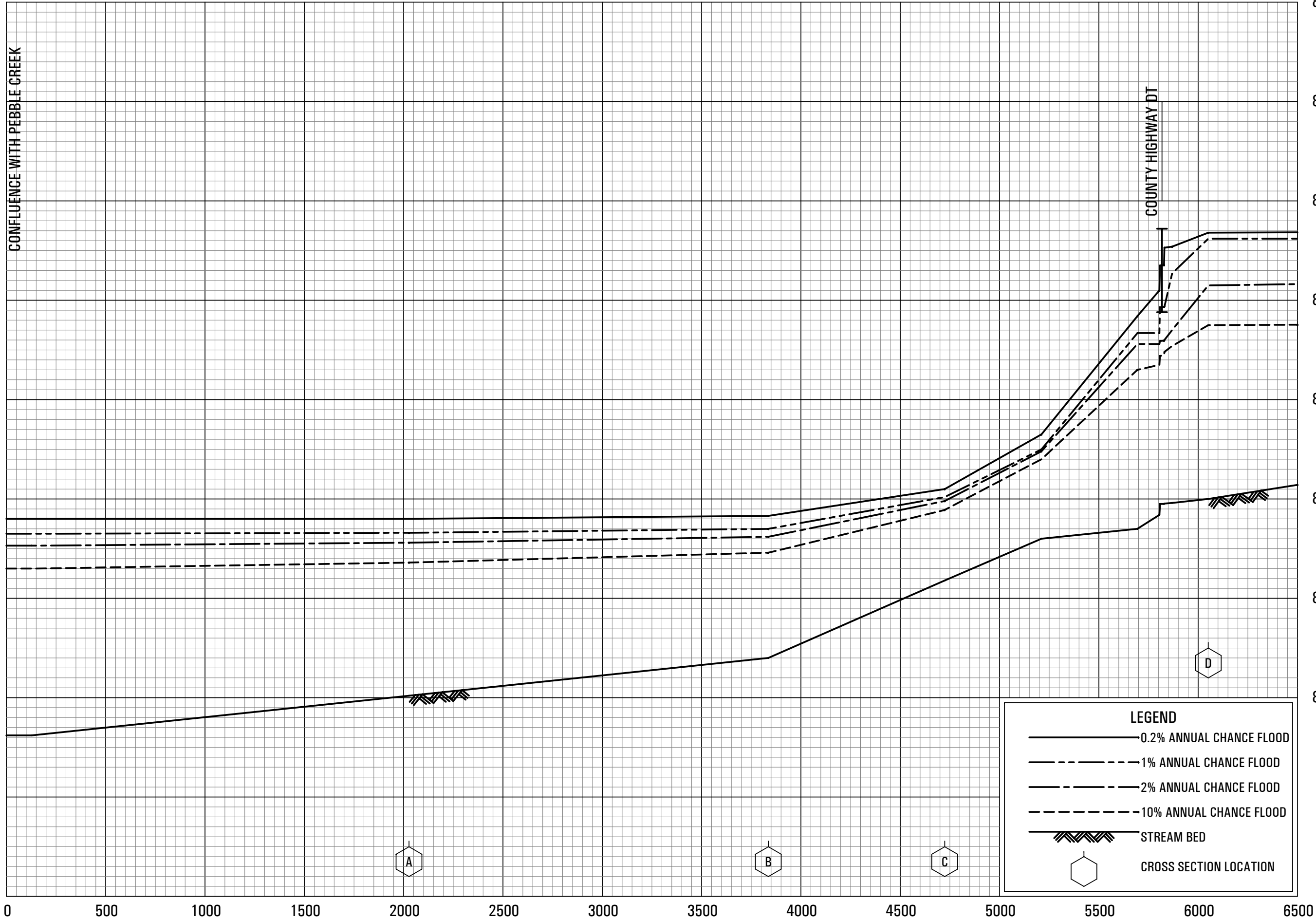
FLOOD PROFILES

BARK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

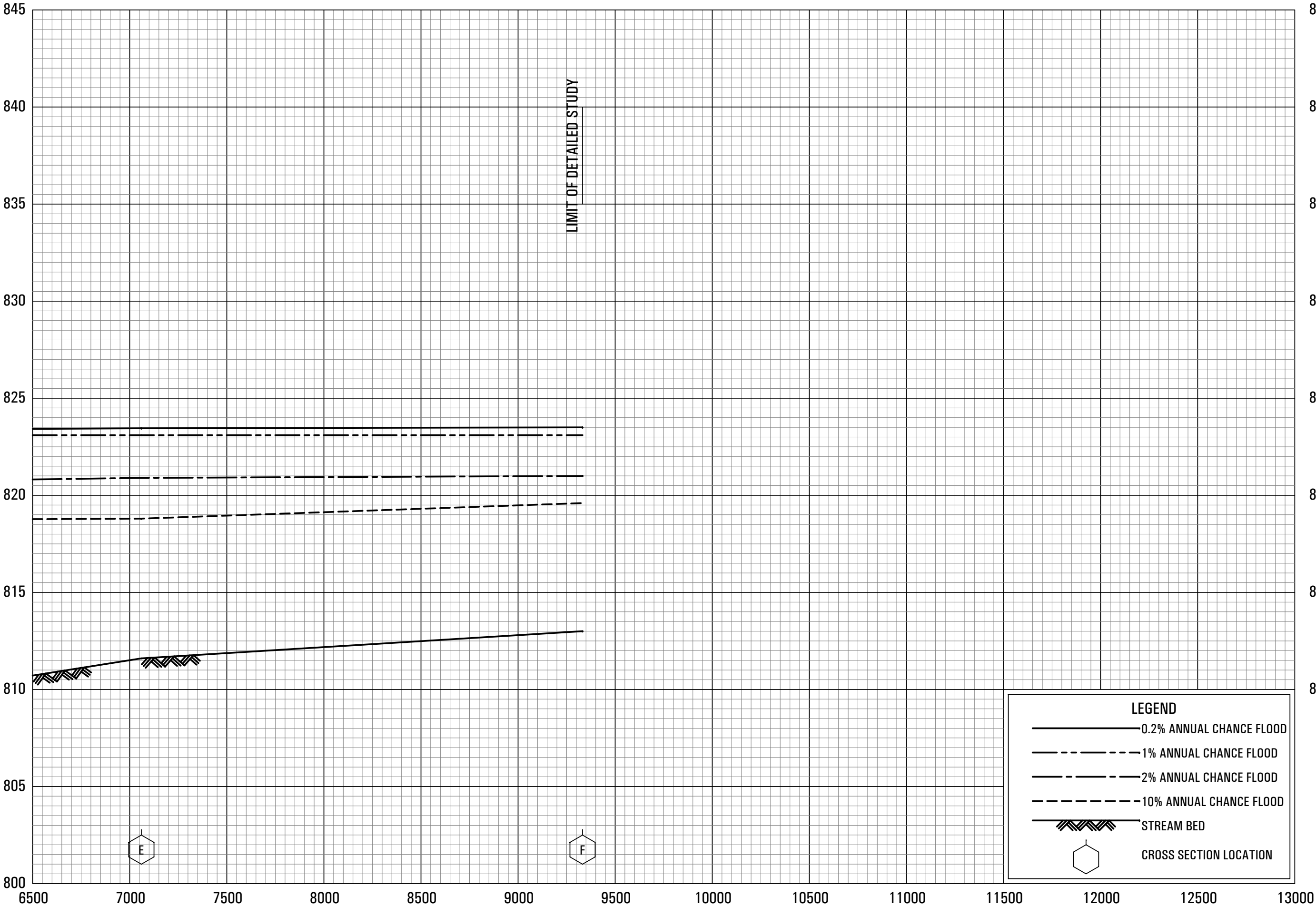
CROSS SECTION LOCATION

FLOOD PROFILES

BRANDY BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LIMIT OF DETAILED STUDY

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

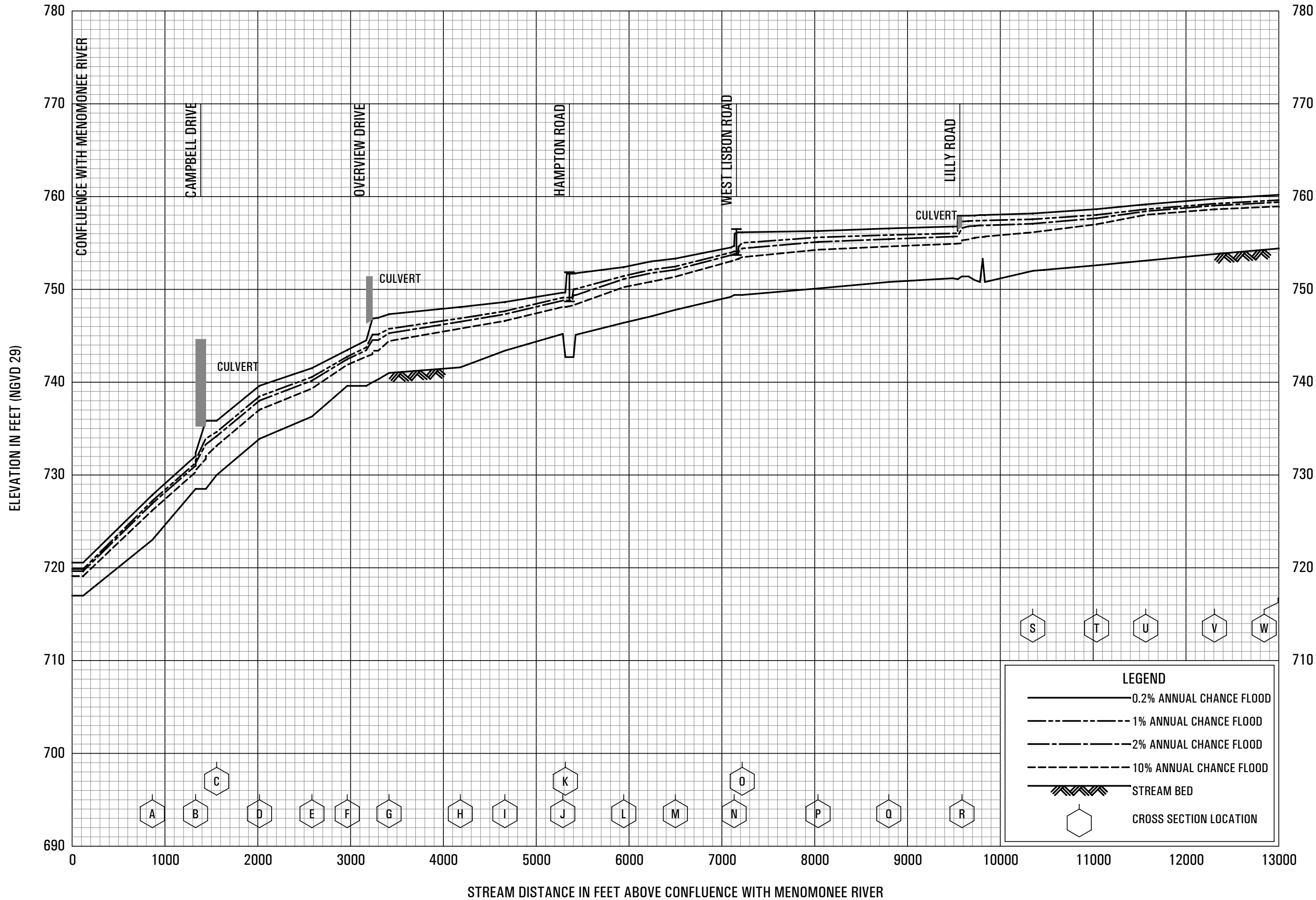
STREAM BED

CROSS SECTION LOCATION

FLOOD PROFILES

BRANDY BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

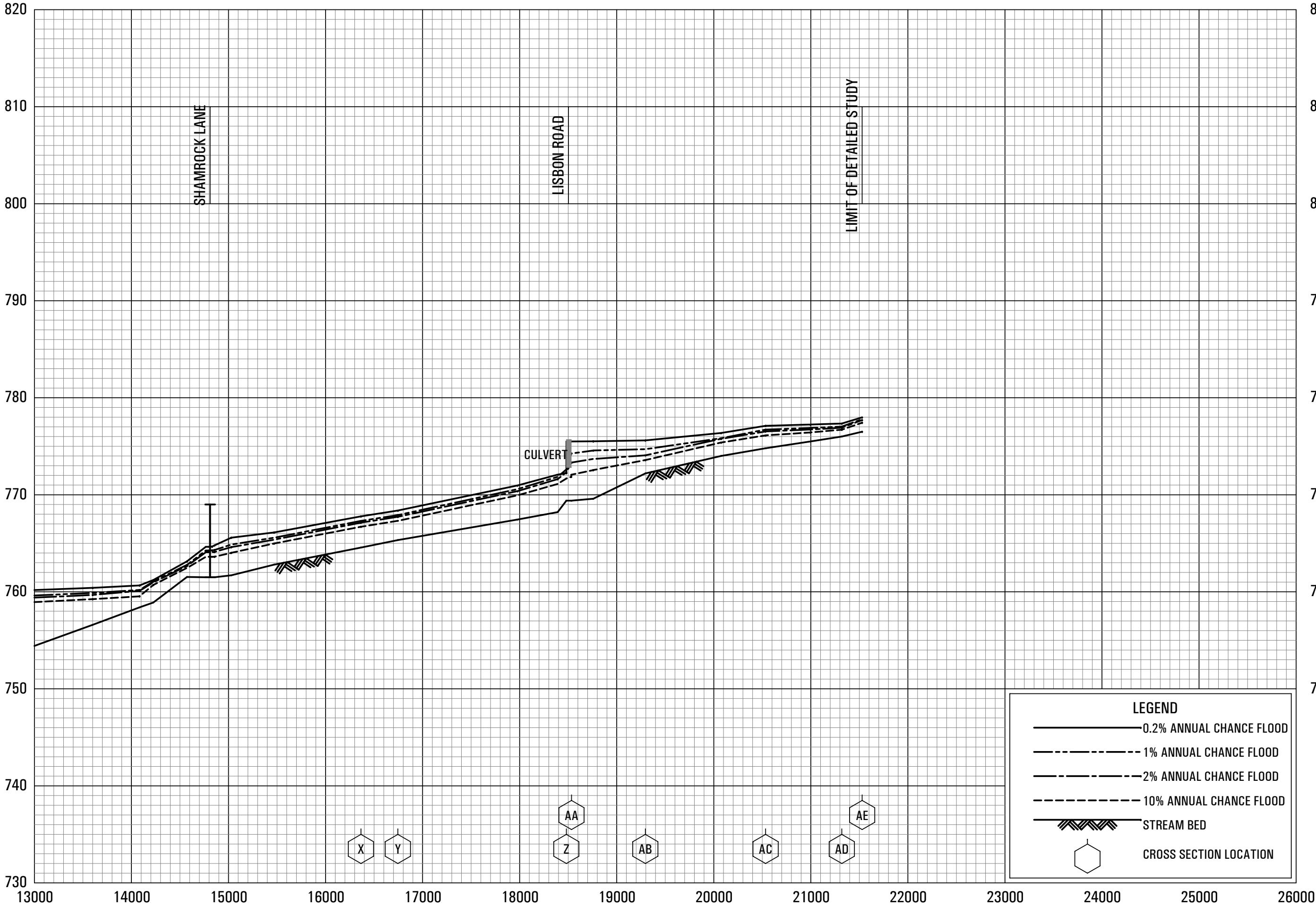


FLOOD PROFILES

BUTLER DITCH

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

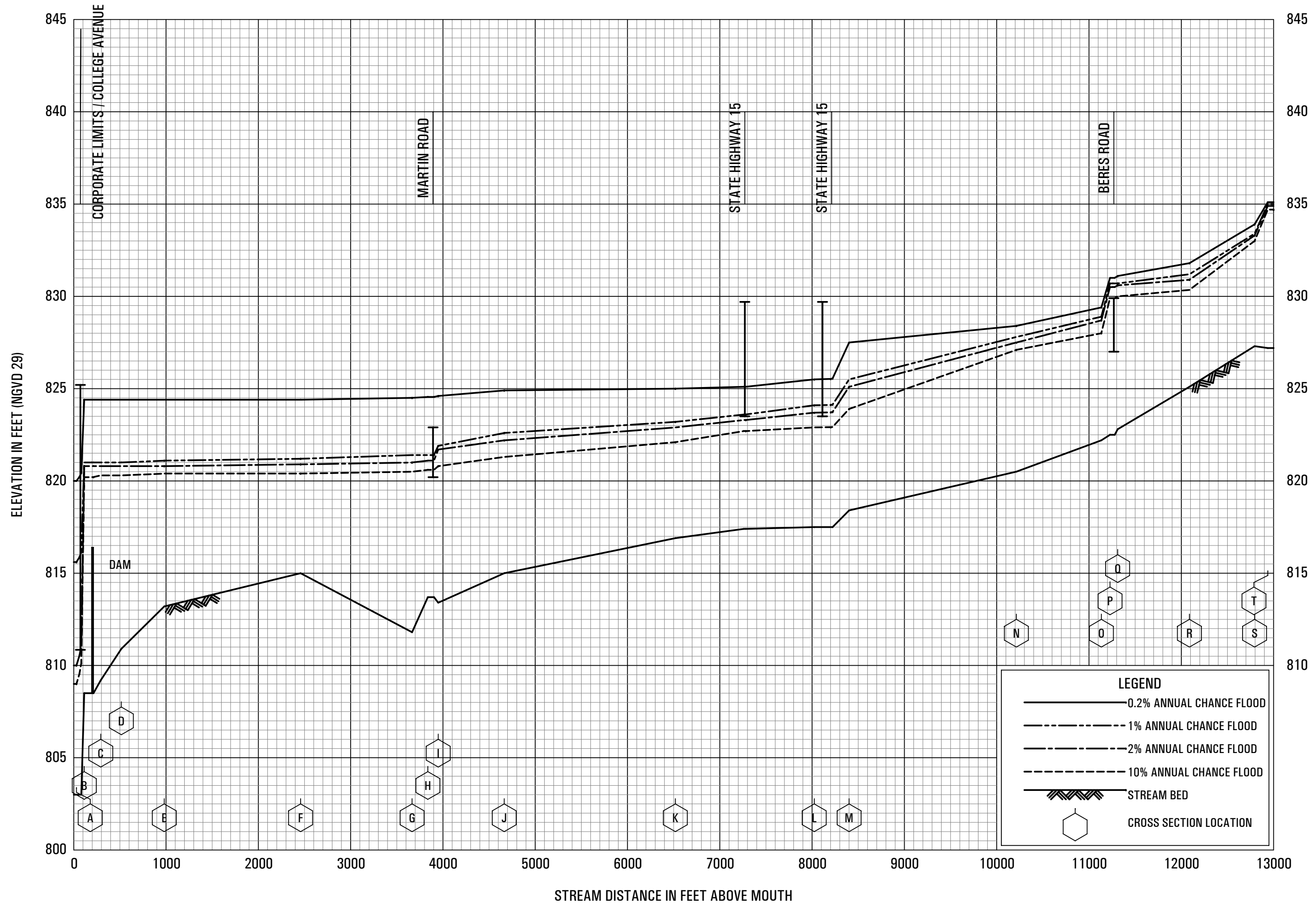


FLOOD PROFILES

BUTLER DITCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



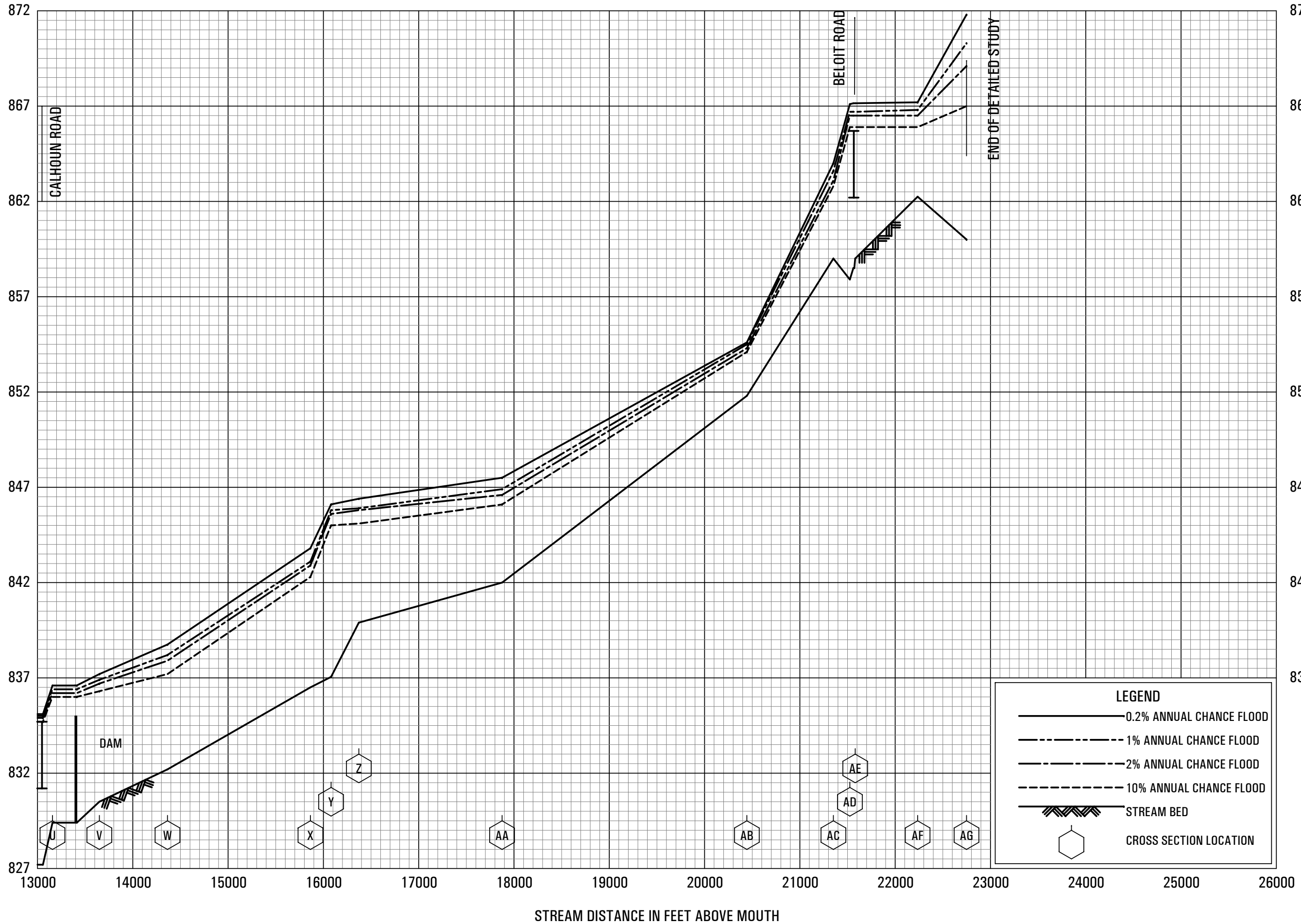
FLOOD PROFILES

CALHOUN CREEK

**FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS**

26P

ELEVATION IN FEET (NGVD 29)

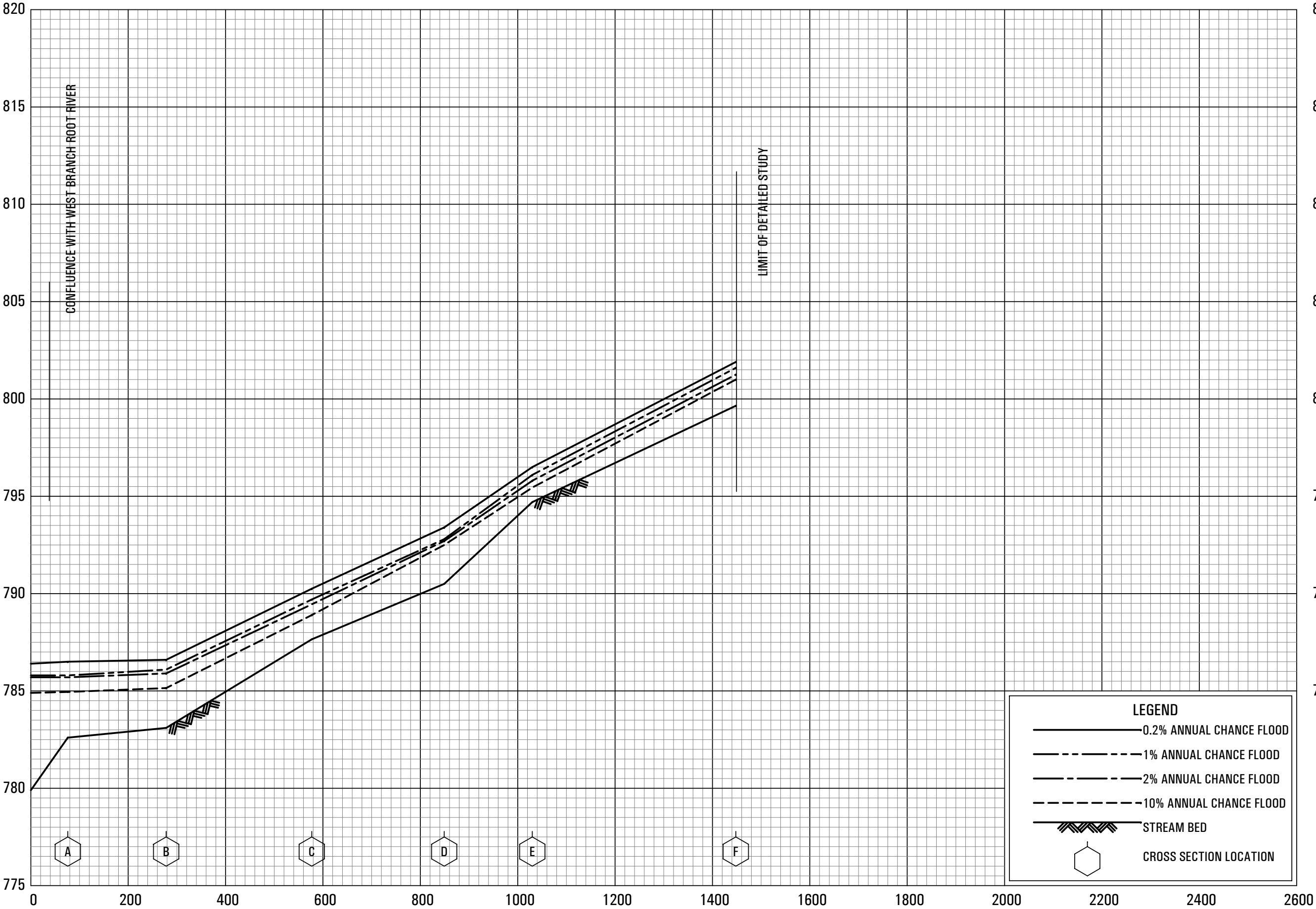


FLOOD PROFILES

CALHOUN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

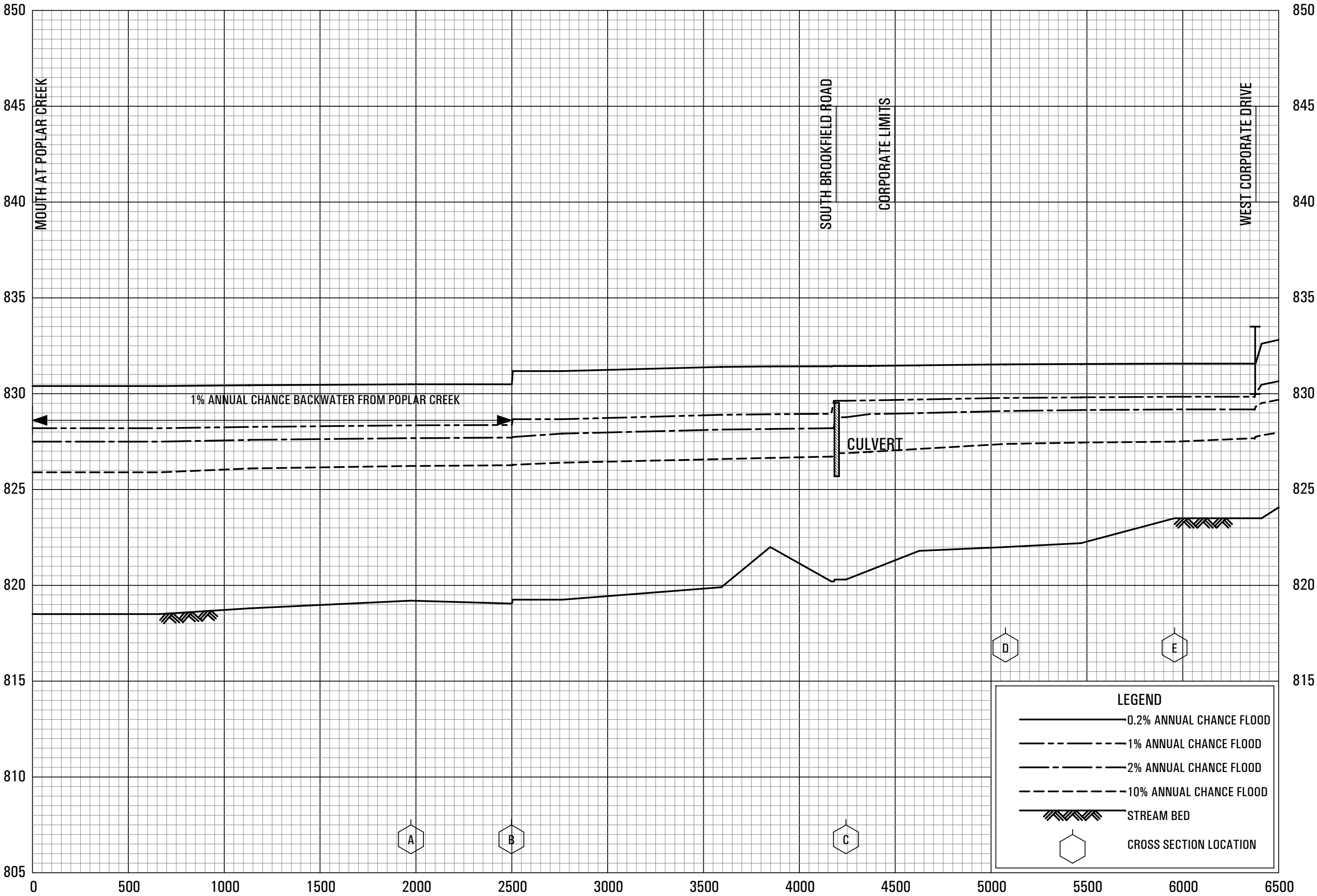
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FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF NEW BERLIN, WI

(WAUKESHA CO.)

ELEVATION IN FEET (NGVD 29)



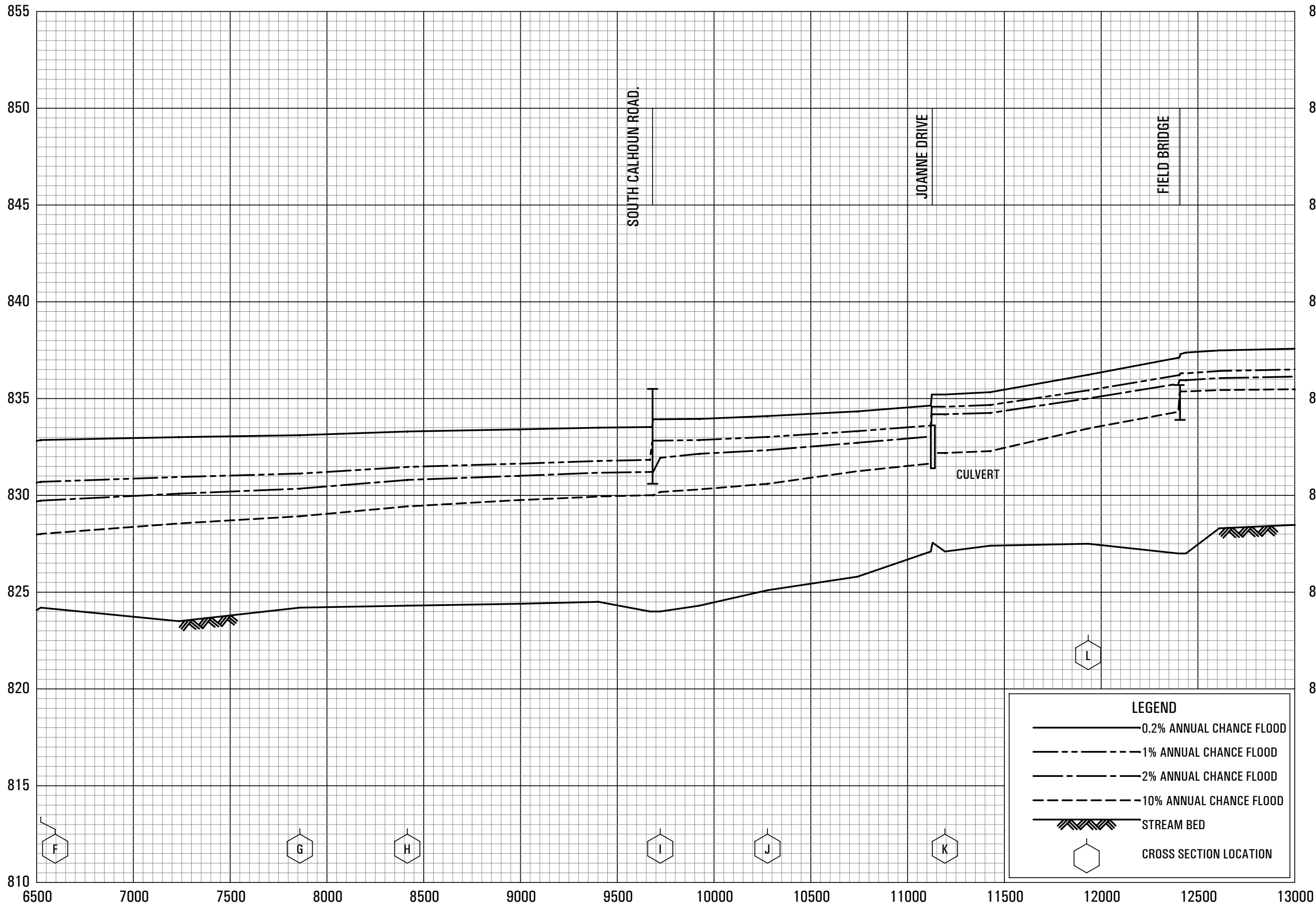
FLOOD PROFILES

DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



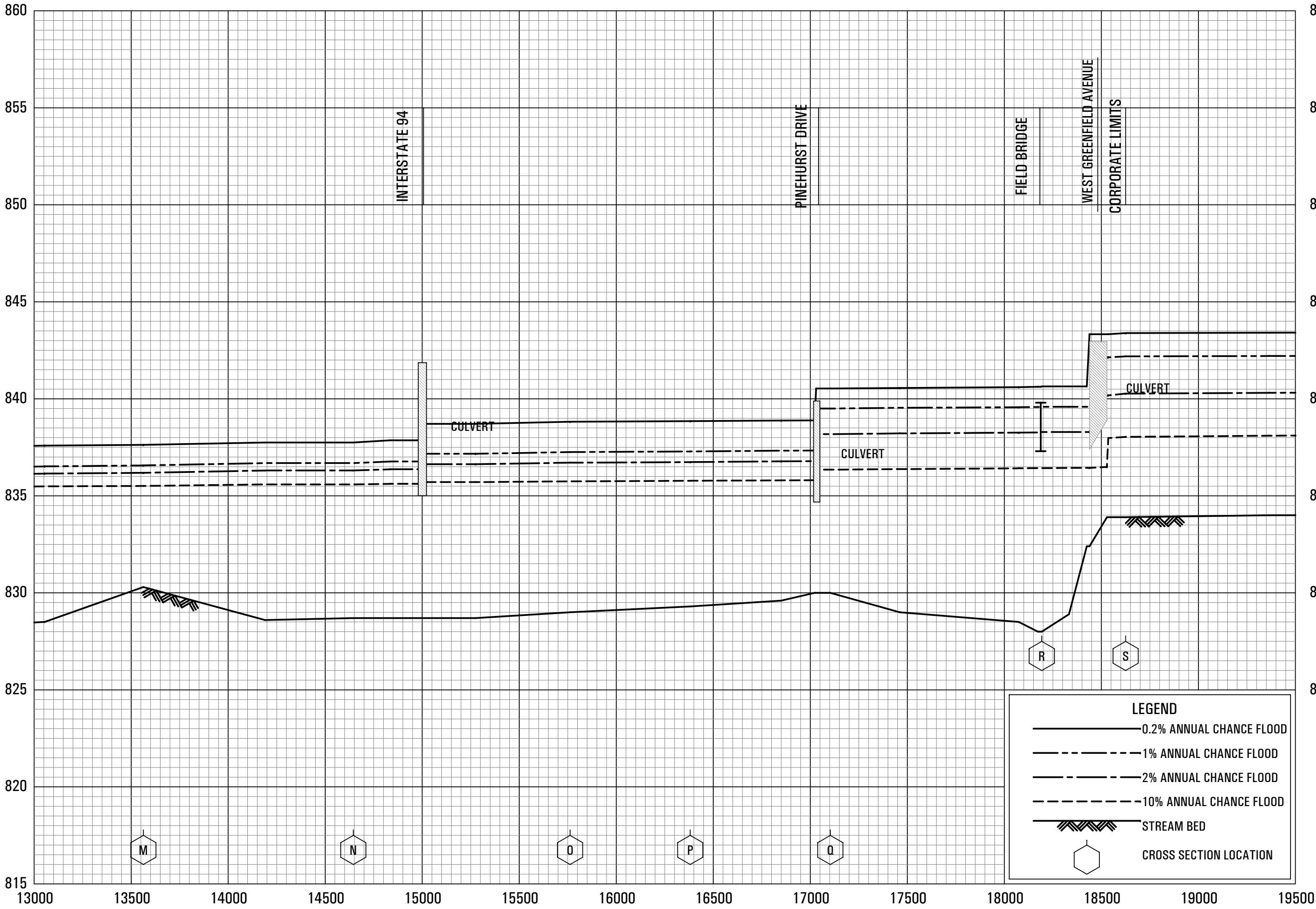
FLOOD PROFILES

DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

865
860
855
850
845
840
835
830
825
820

19500 20000 20500 21000 21500 22000 22500 23000 23500 24000 24500 25000 25500 26000

STREAM DISTANCE IN FEET ABOVE MOUTH WITH POPLAR CREEK

CHICAGO AND NORTH WESTERN RAILROAD

ROGERS DRIVE

LINCOLN AVENUE

CULVERT

LEGEND

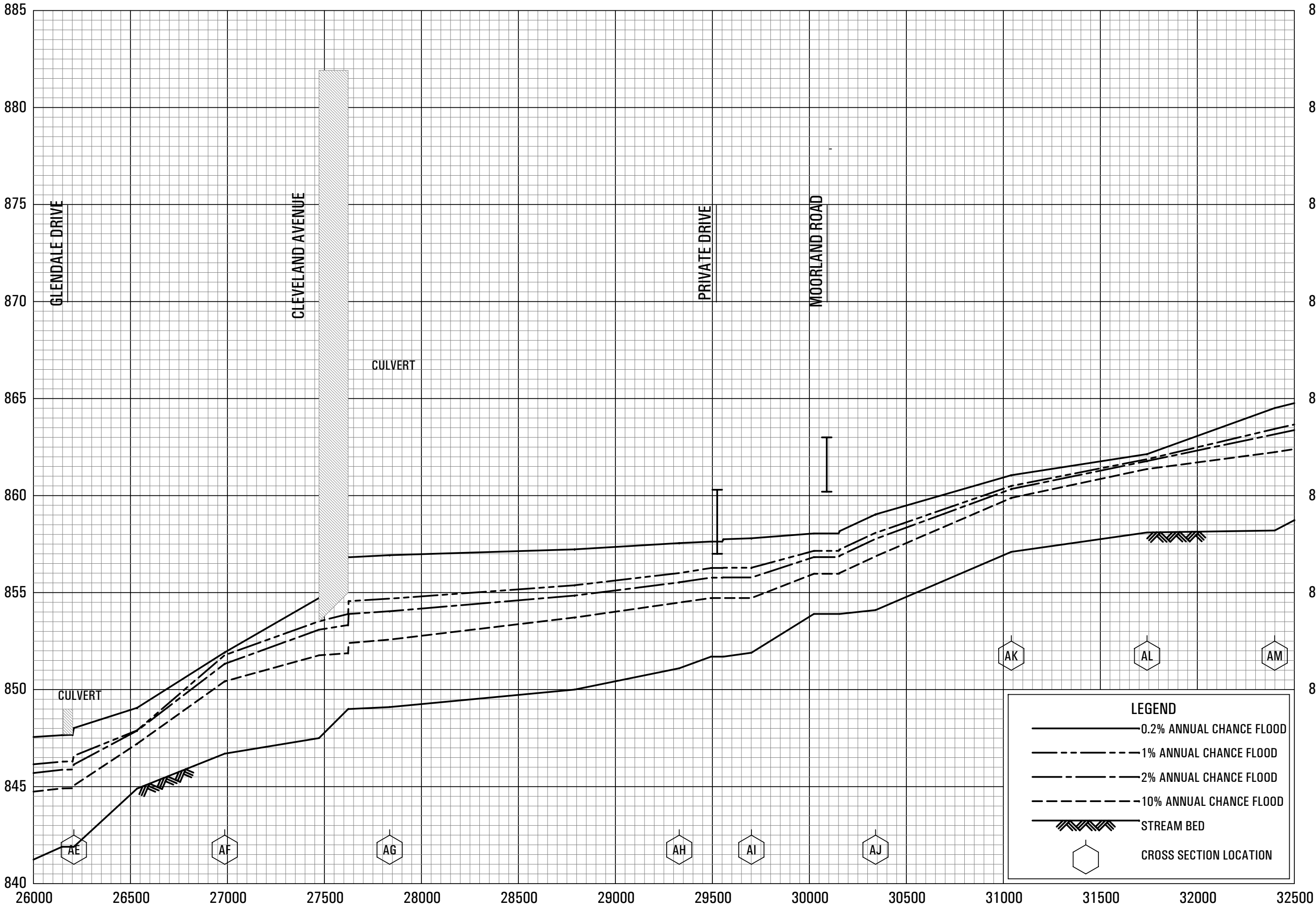
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- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

DEER CREEK

ELEVATION IN FEET (NGVD 29)

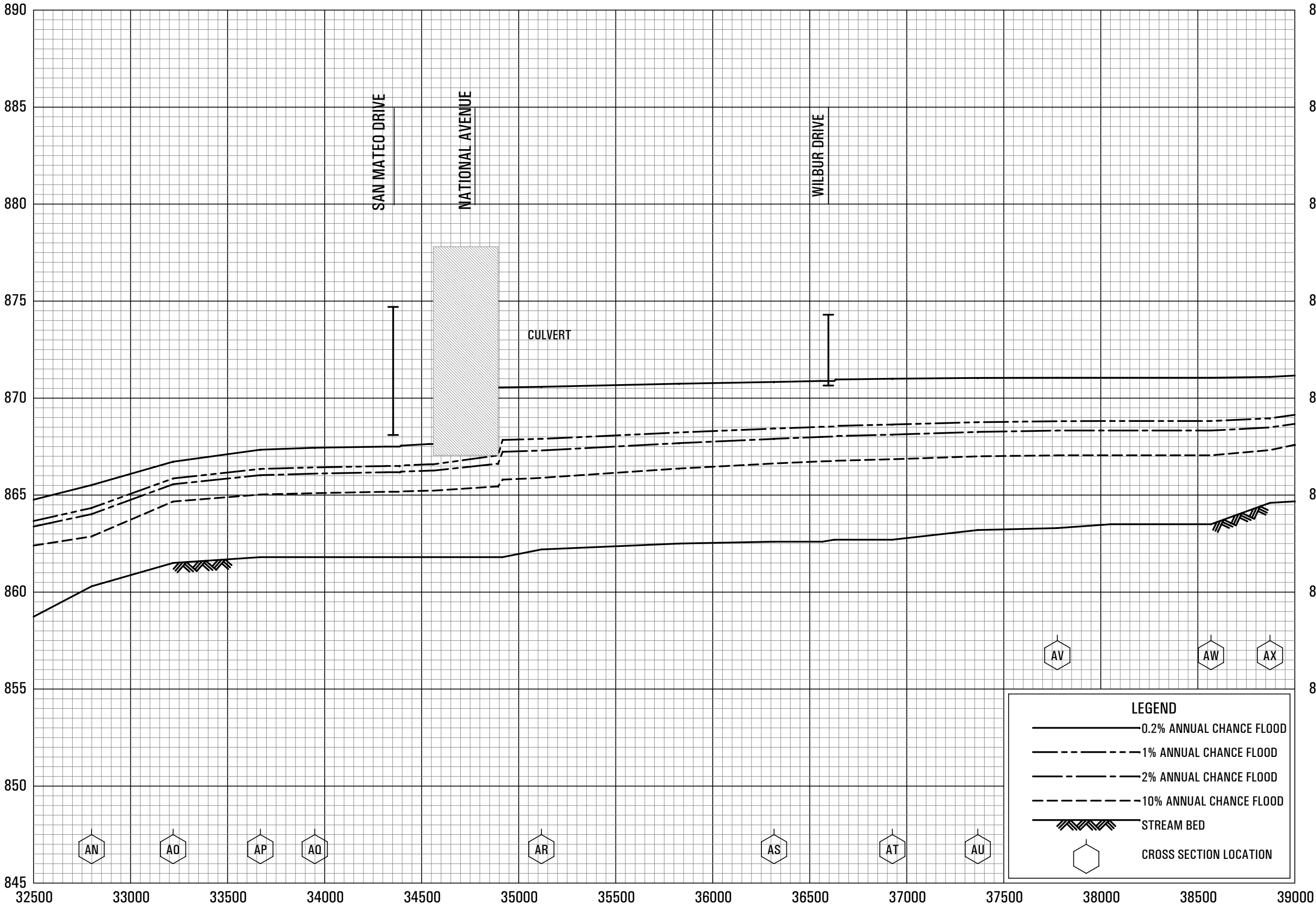


FLOOD PROFILES

DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

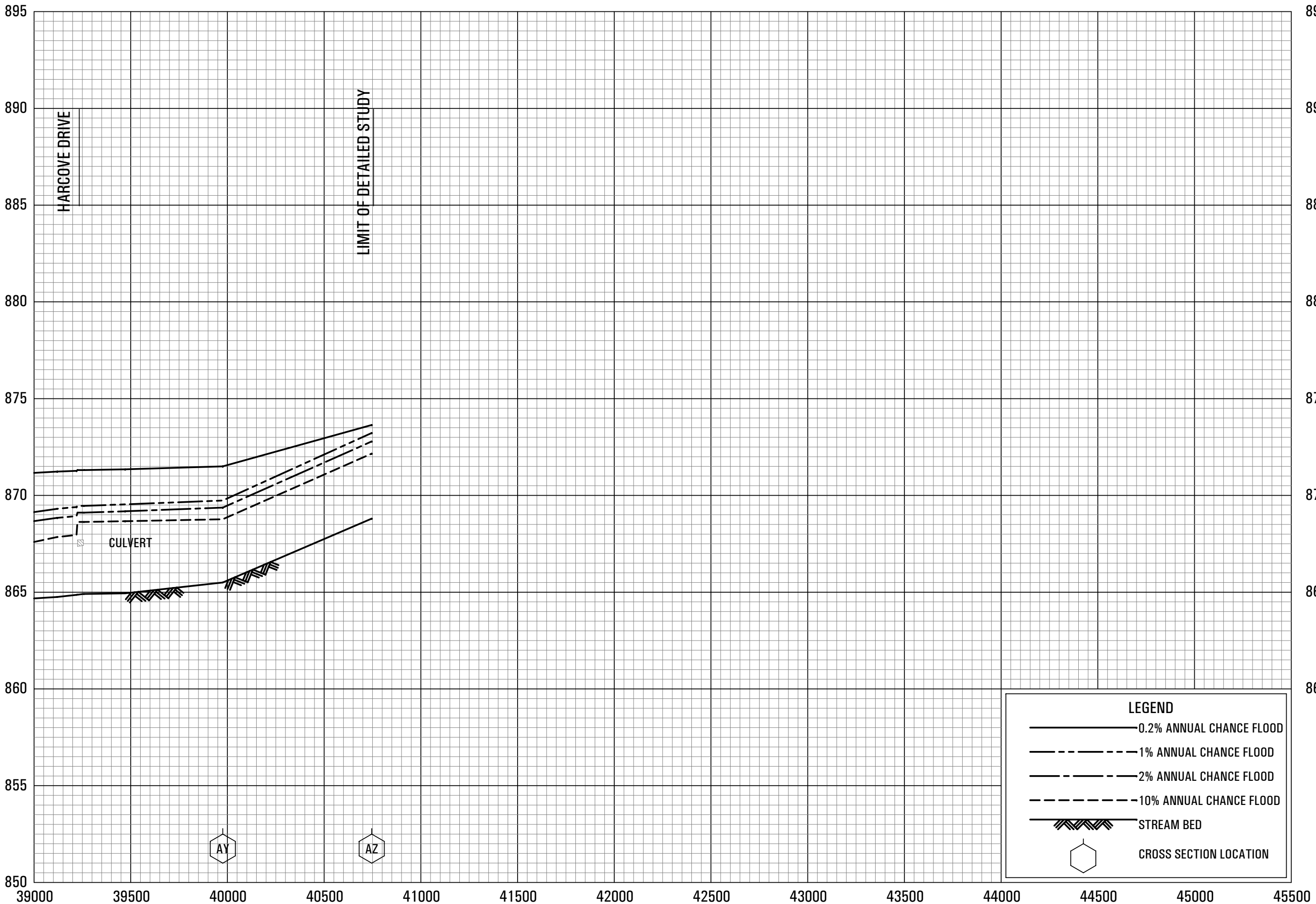


FLOOD PROFILES

DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



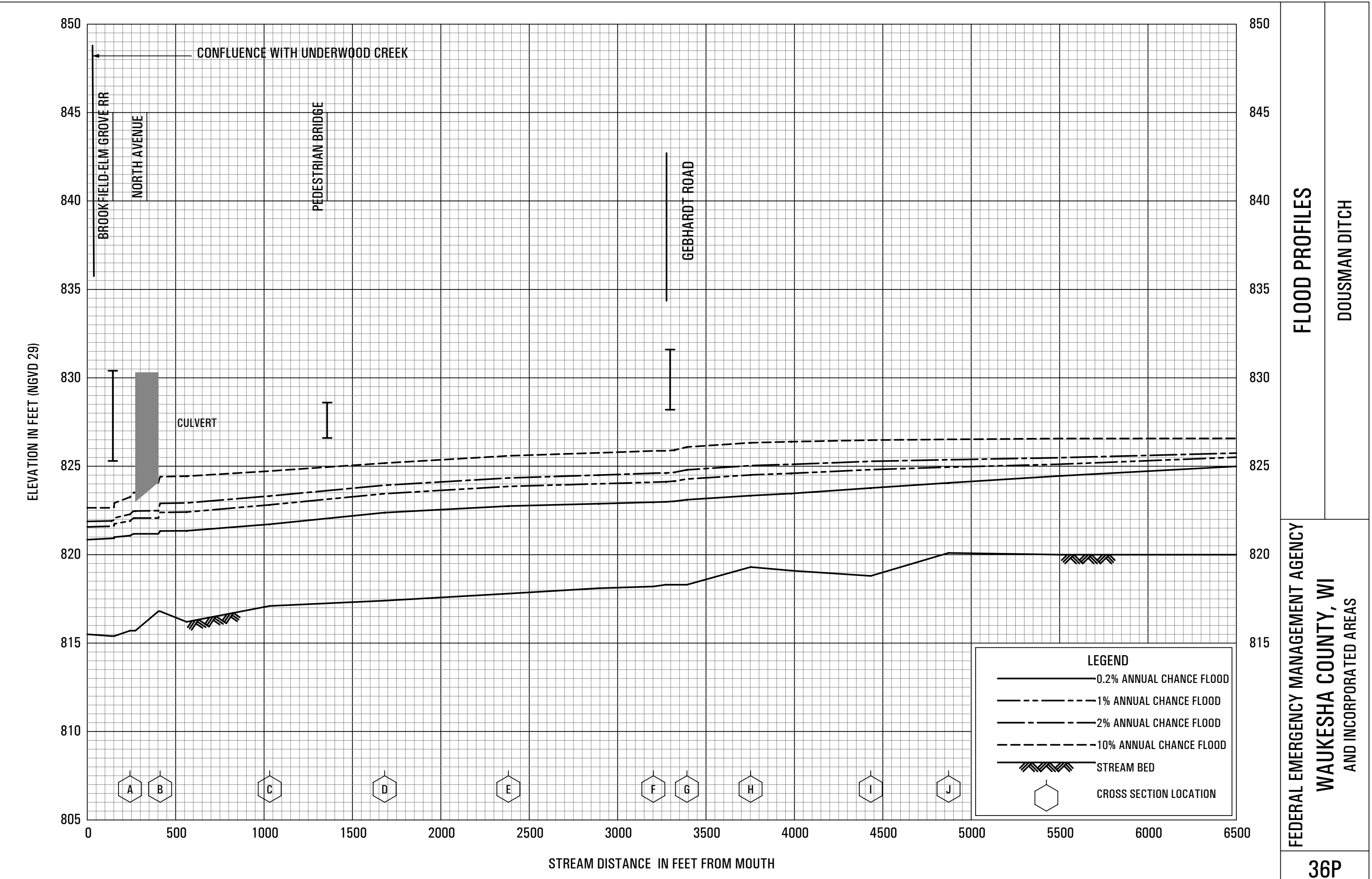
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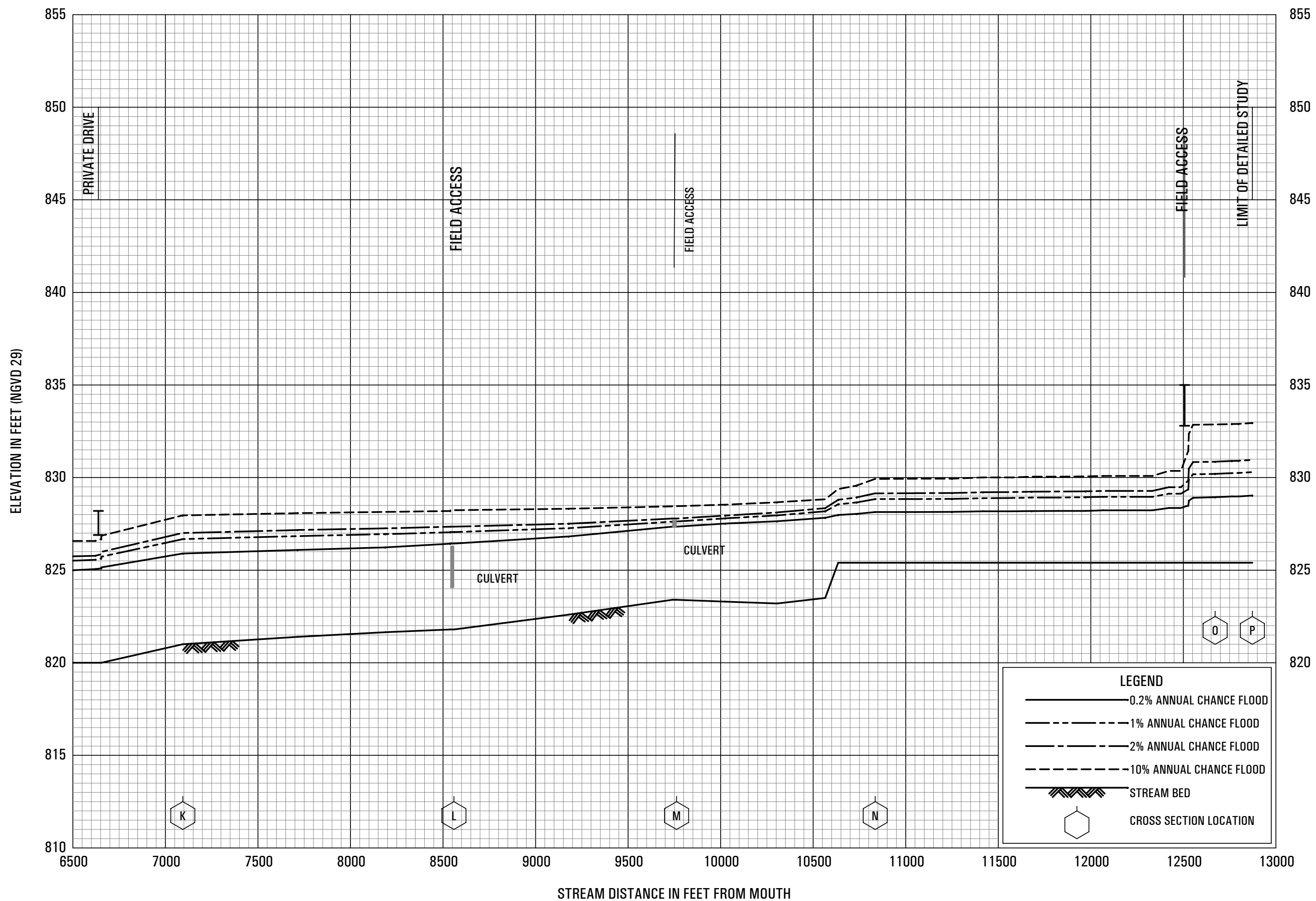
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- . - . 2% ANNUAL CHANCE FLOOD
- - - 10% ANNUAL CHANCE FLOOD
- ▨ STREAM BED
- ⬡ CROSS SECTION LOCATION

FLOOD PROFILES

DEER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS





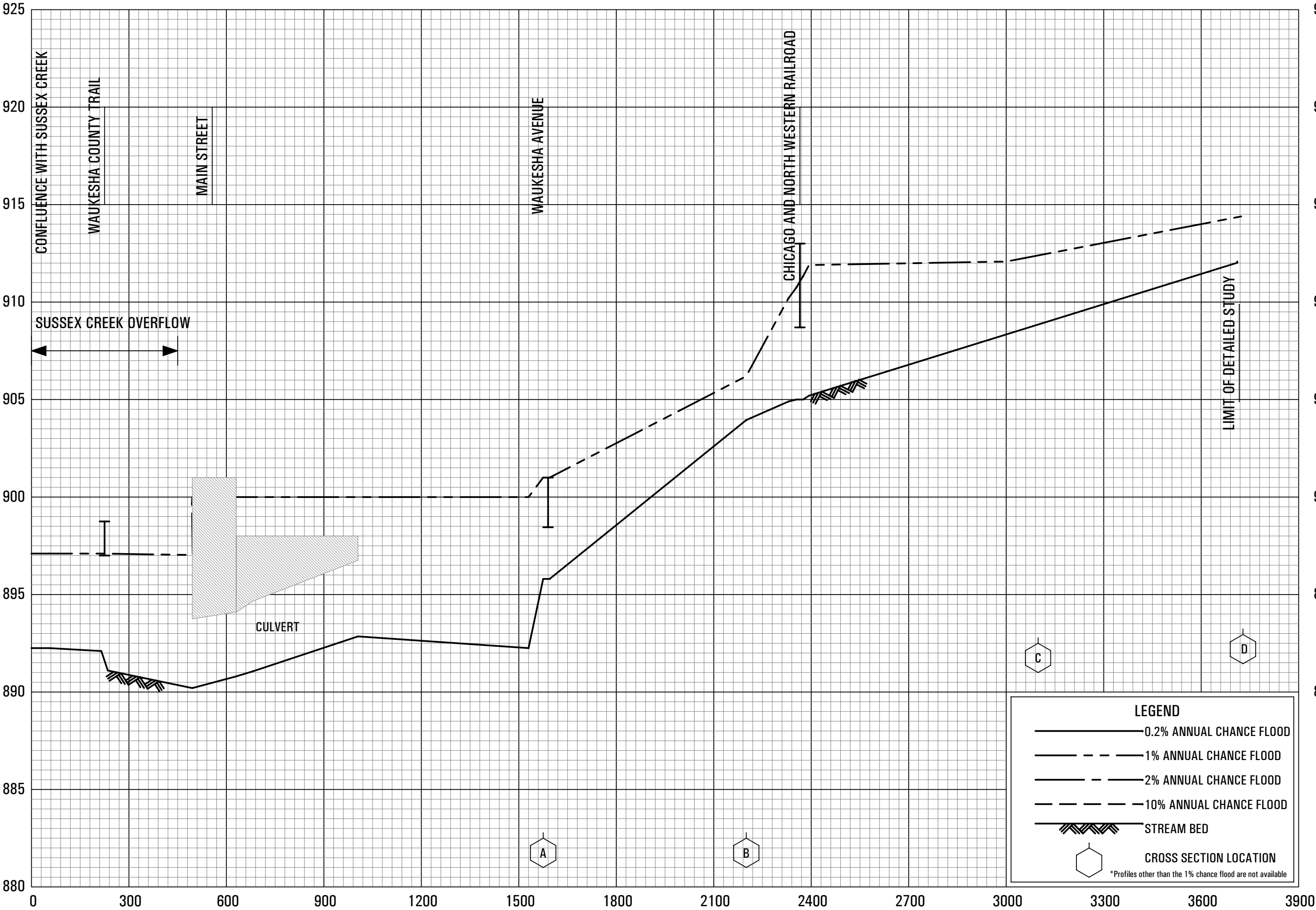
FLOOD PROFILES

DOUSMAN DITCH

**FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS**

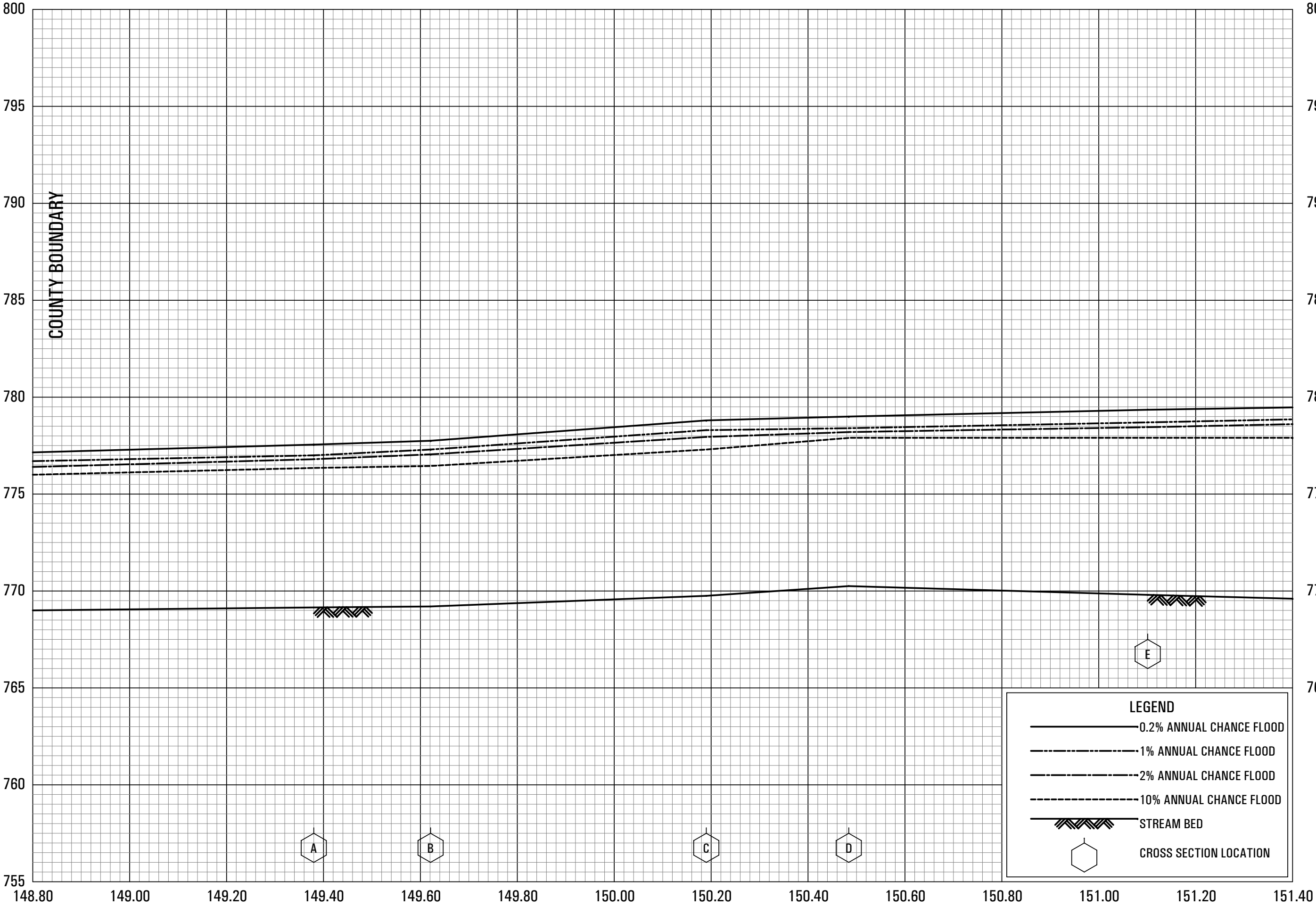
37P

ELEVATION IN FEET (NGVD 29)



ELEVATION IN FEET (NGVD 29)

COUNTY BOUNDARY



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

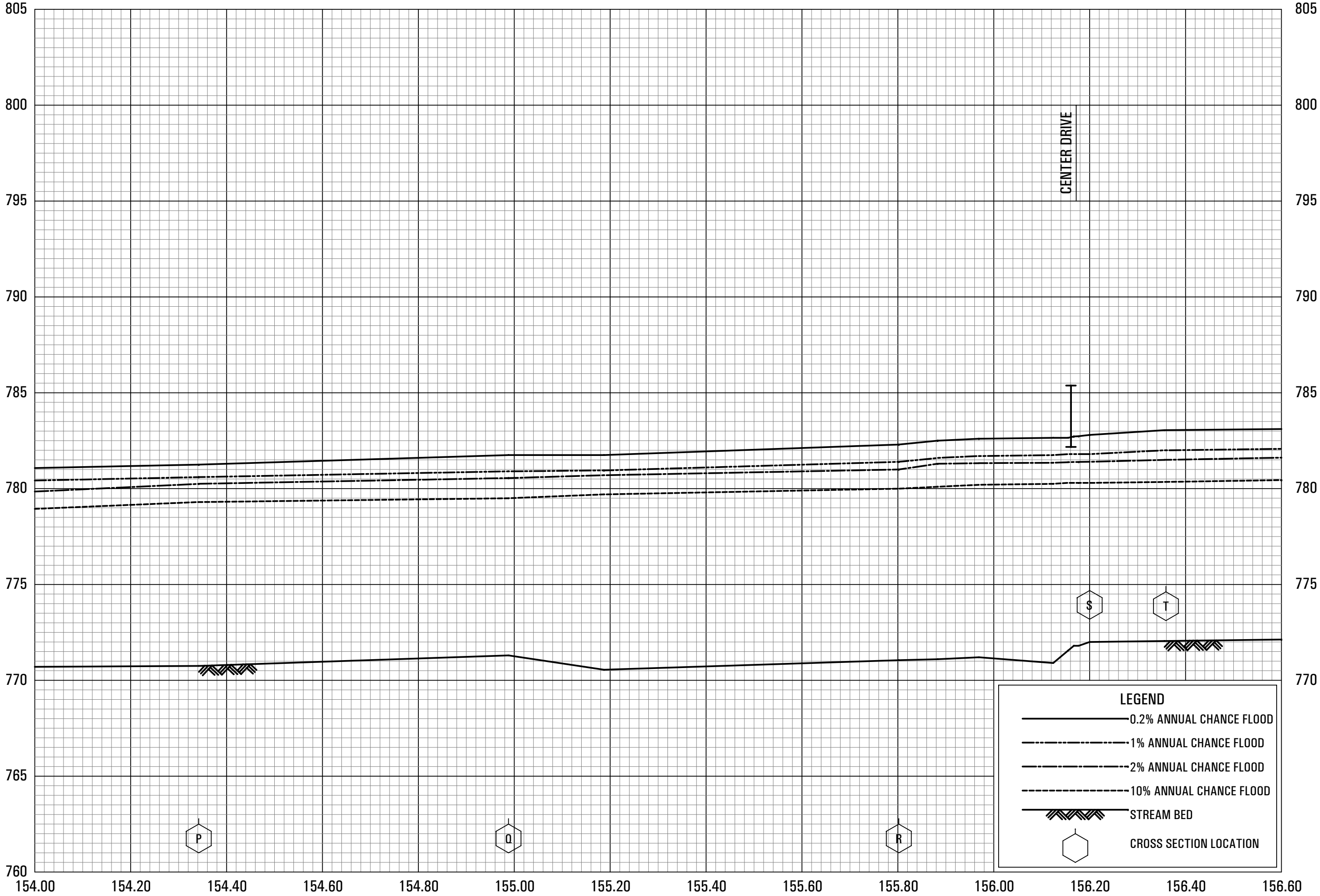
CROSS SECTION LOCATION

FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

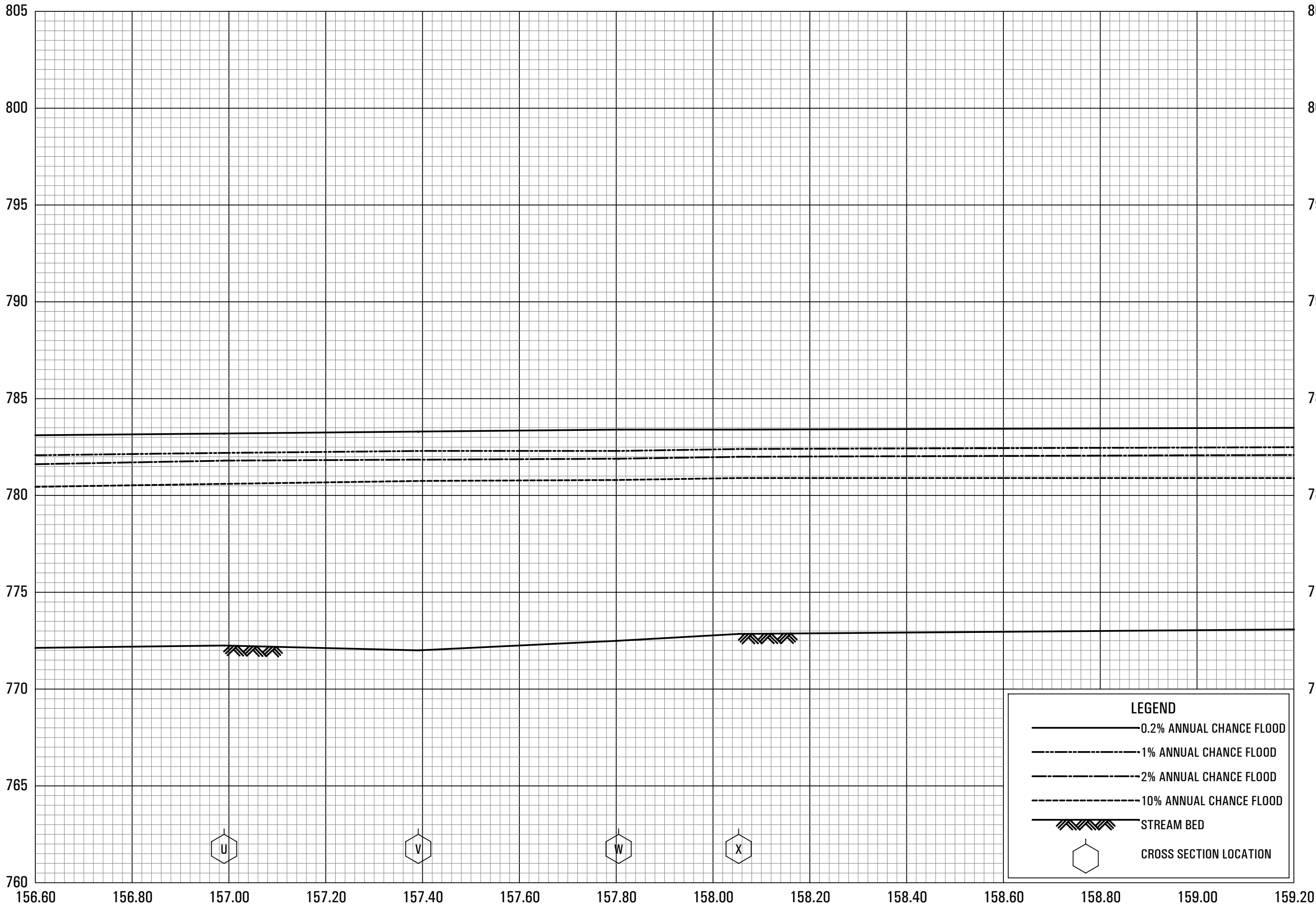
CROSS SECTION LOCATION

FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

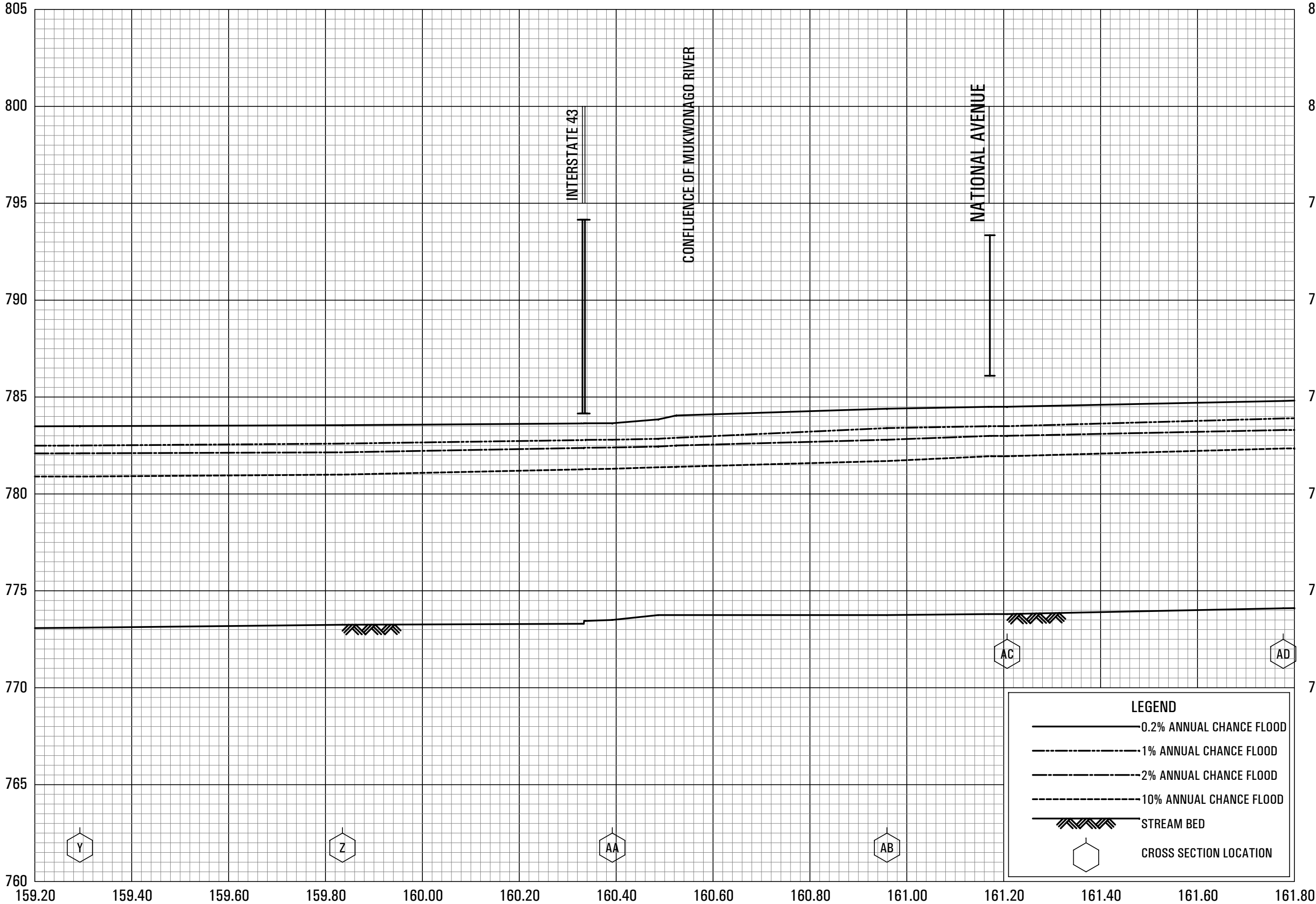


FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



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

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

805
800
795
790
785
780
775
770
765
760

161.80 162.00 162.20 162.40 162.60 162.80 163.00 163.20 163.40 163.60 163.80 164.00 164.20 164.40

STREAM DISTANCE IN MILES FROM MOUTH

CORPORATE LIMITS
SOO LINE RAILROAD

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

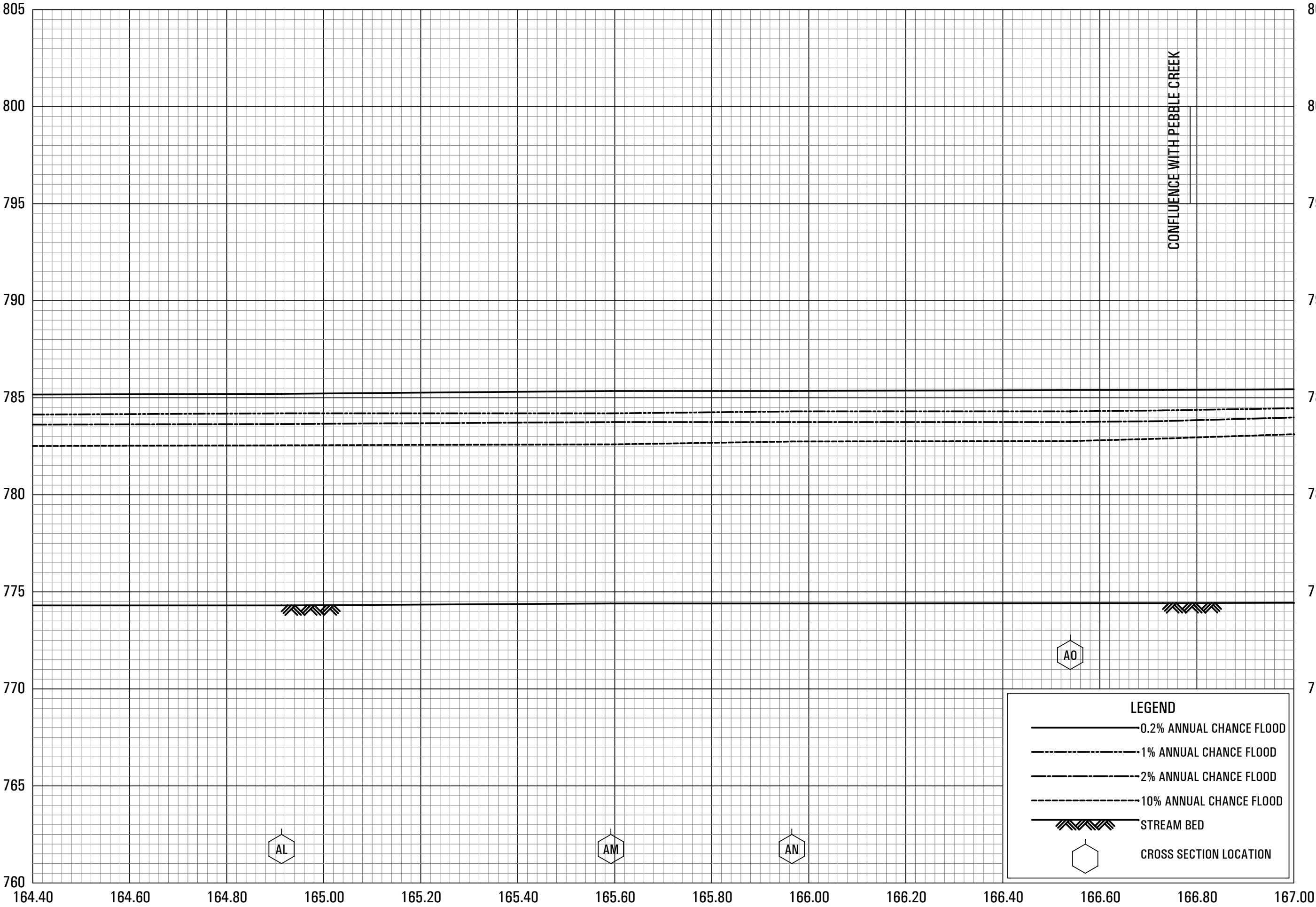
CROSS SECTION LOCATION

FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

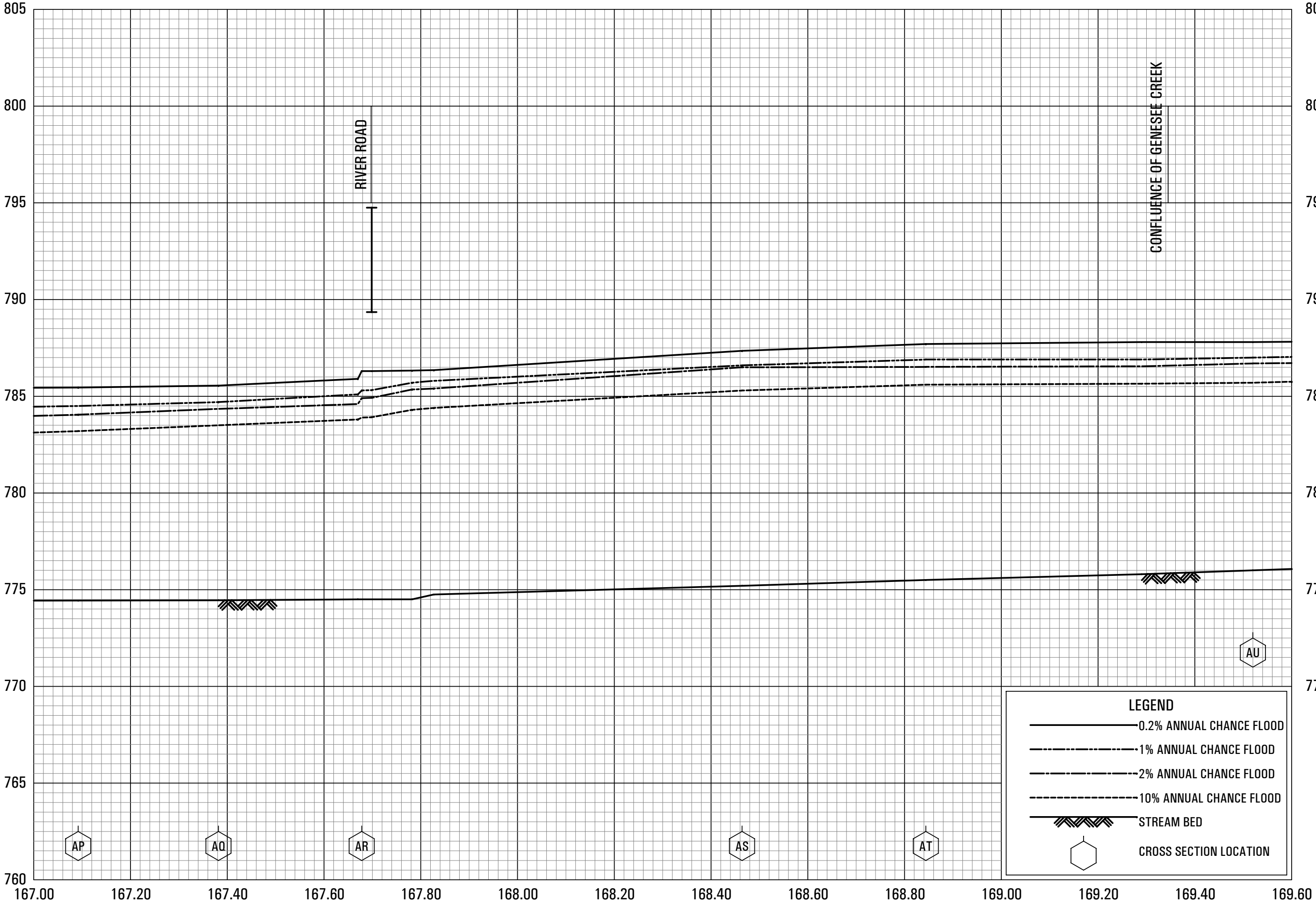


FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

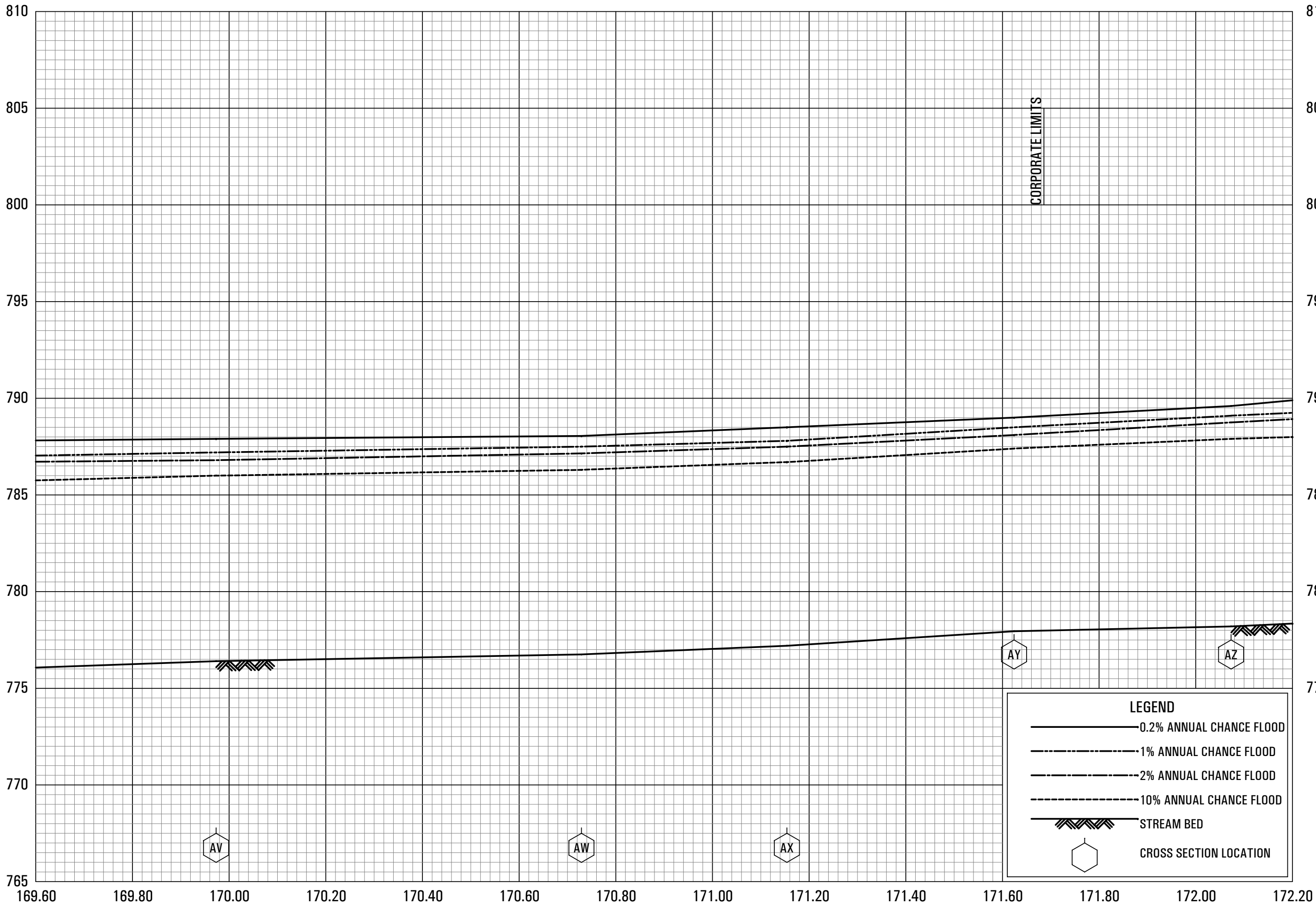


FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

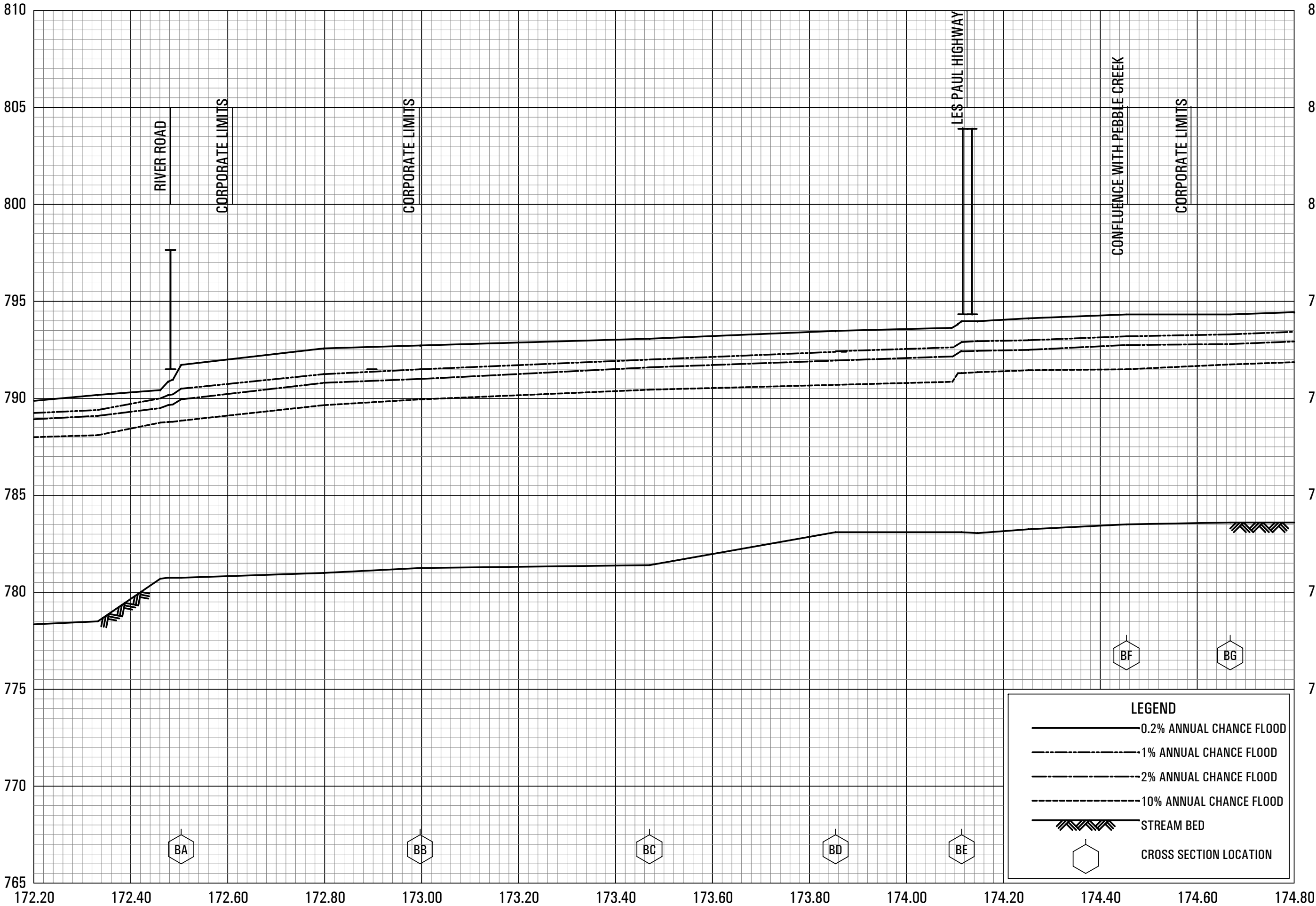
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- · - · - 2% ANNUAL CHANCE FLOOD
- · - · - 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

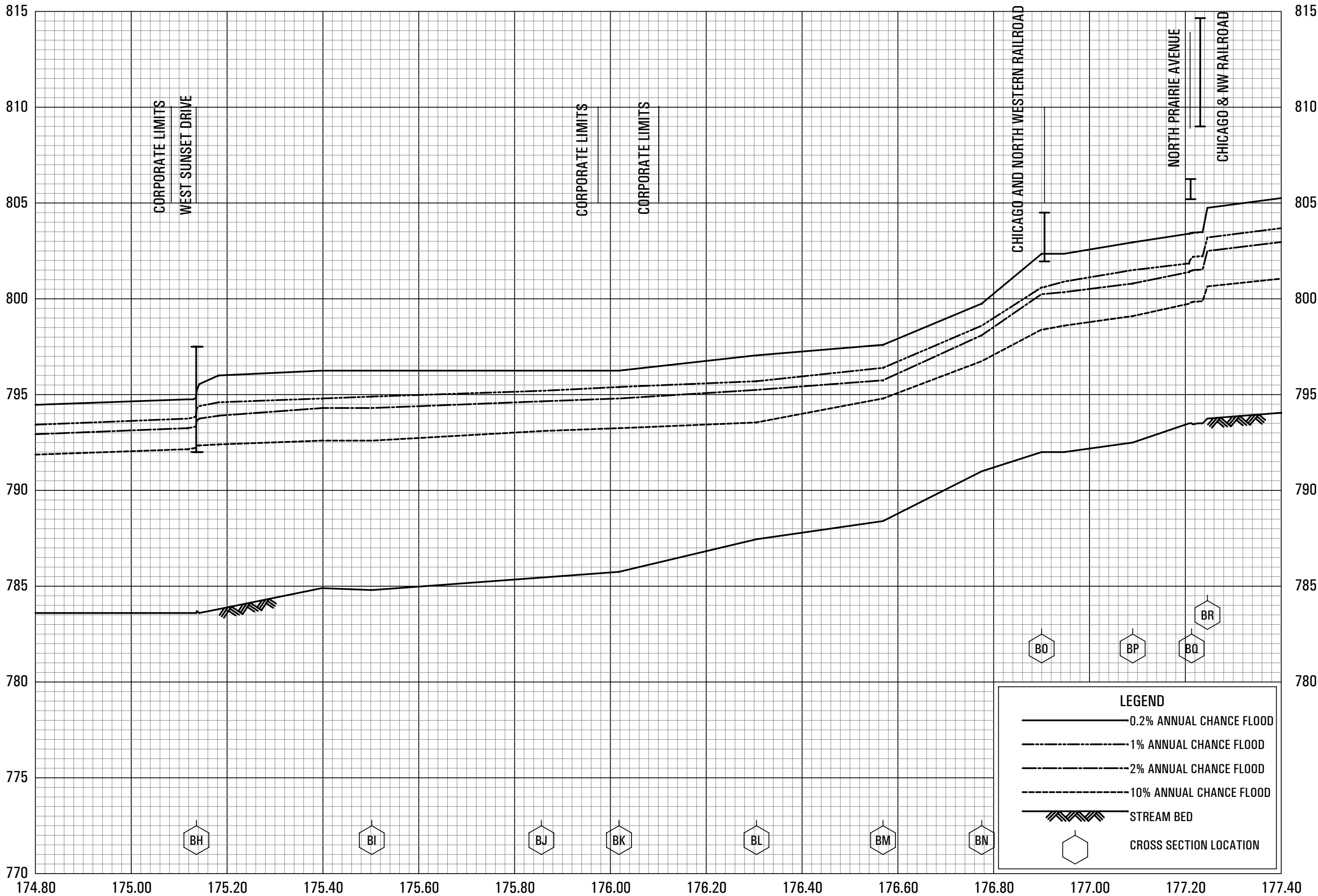
CROSS SECTION LOCATION

FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
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FOX RIVER

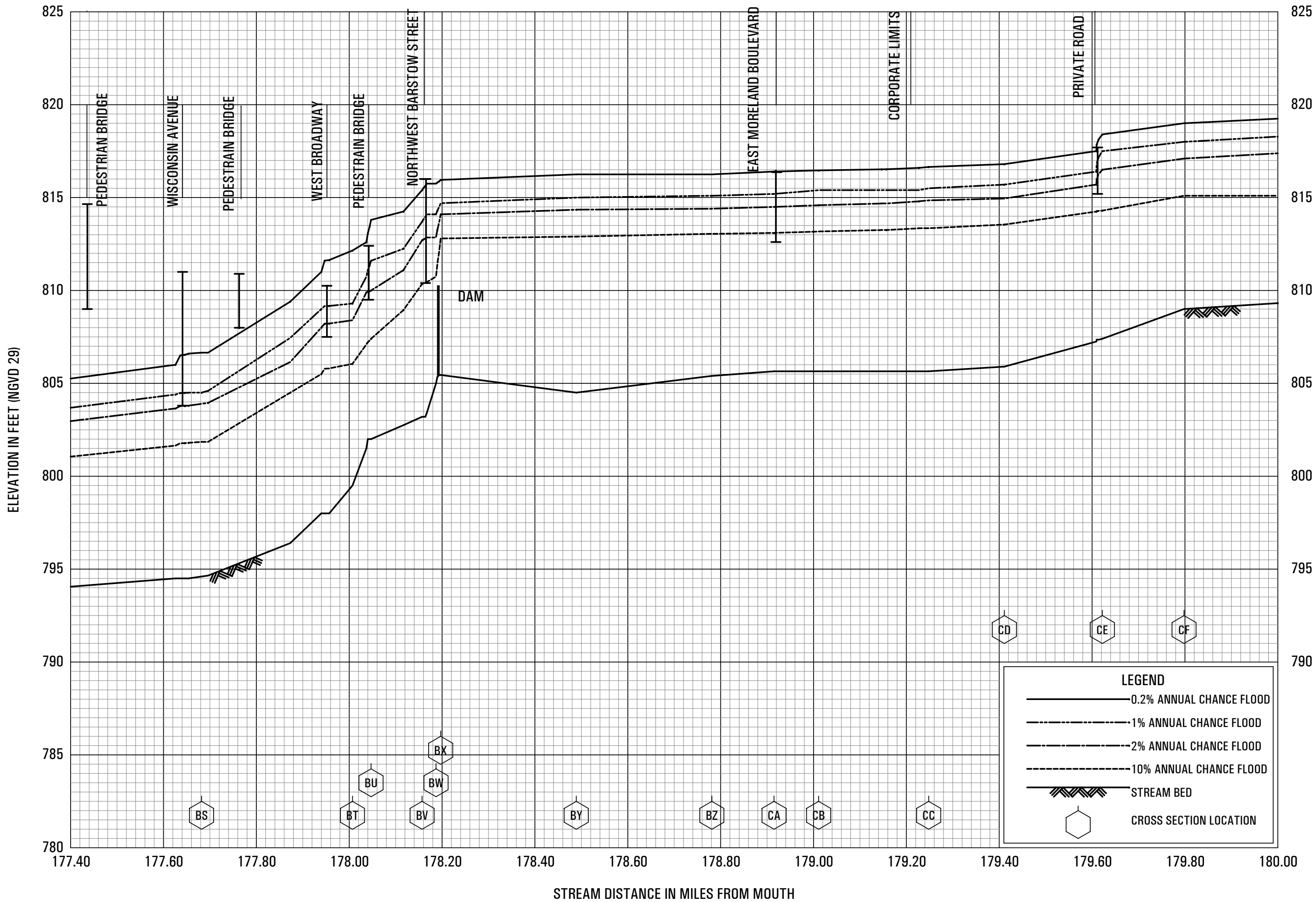
ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

FOX RIVER

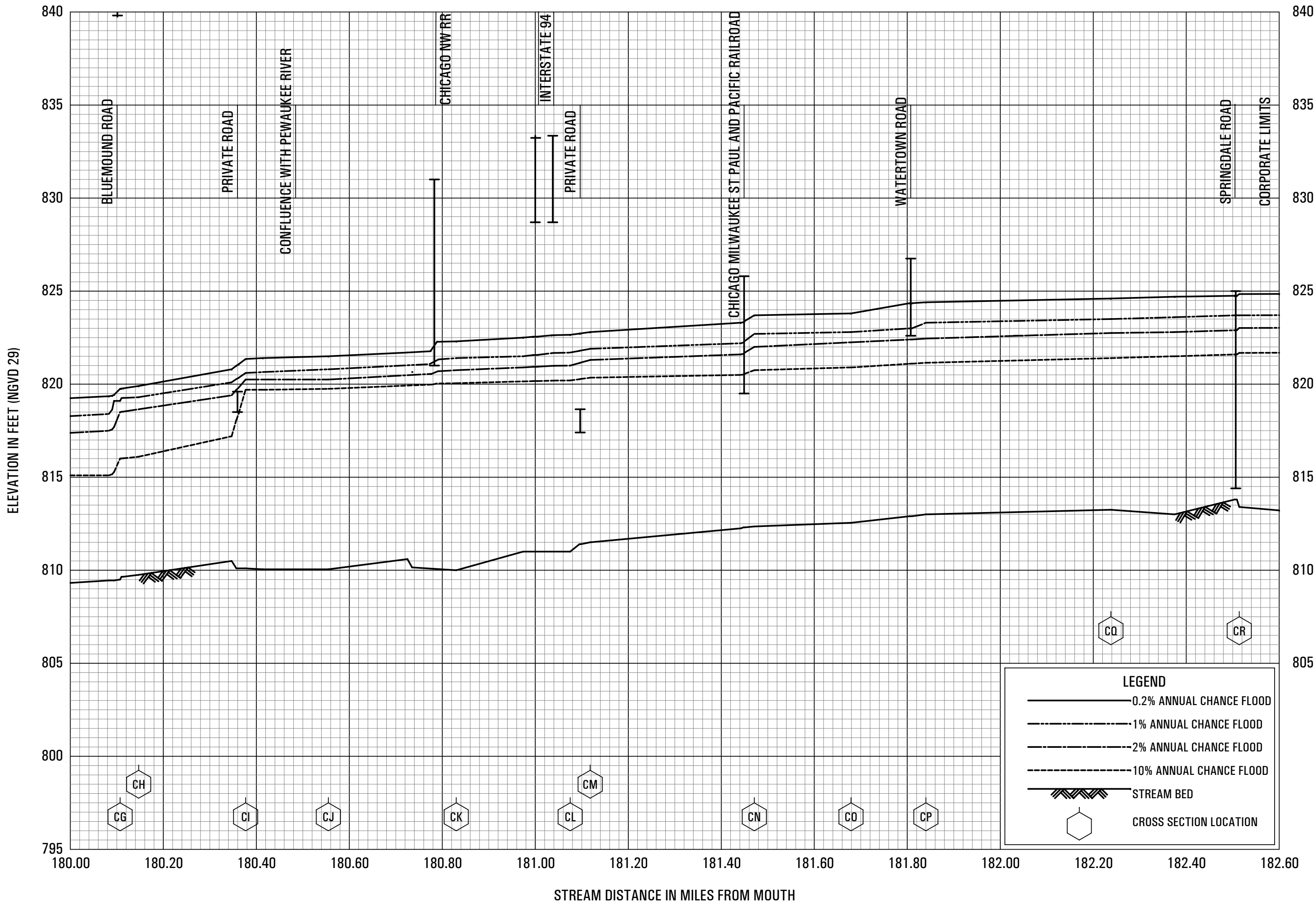
FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

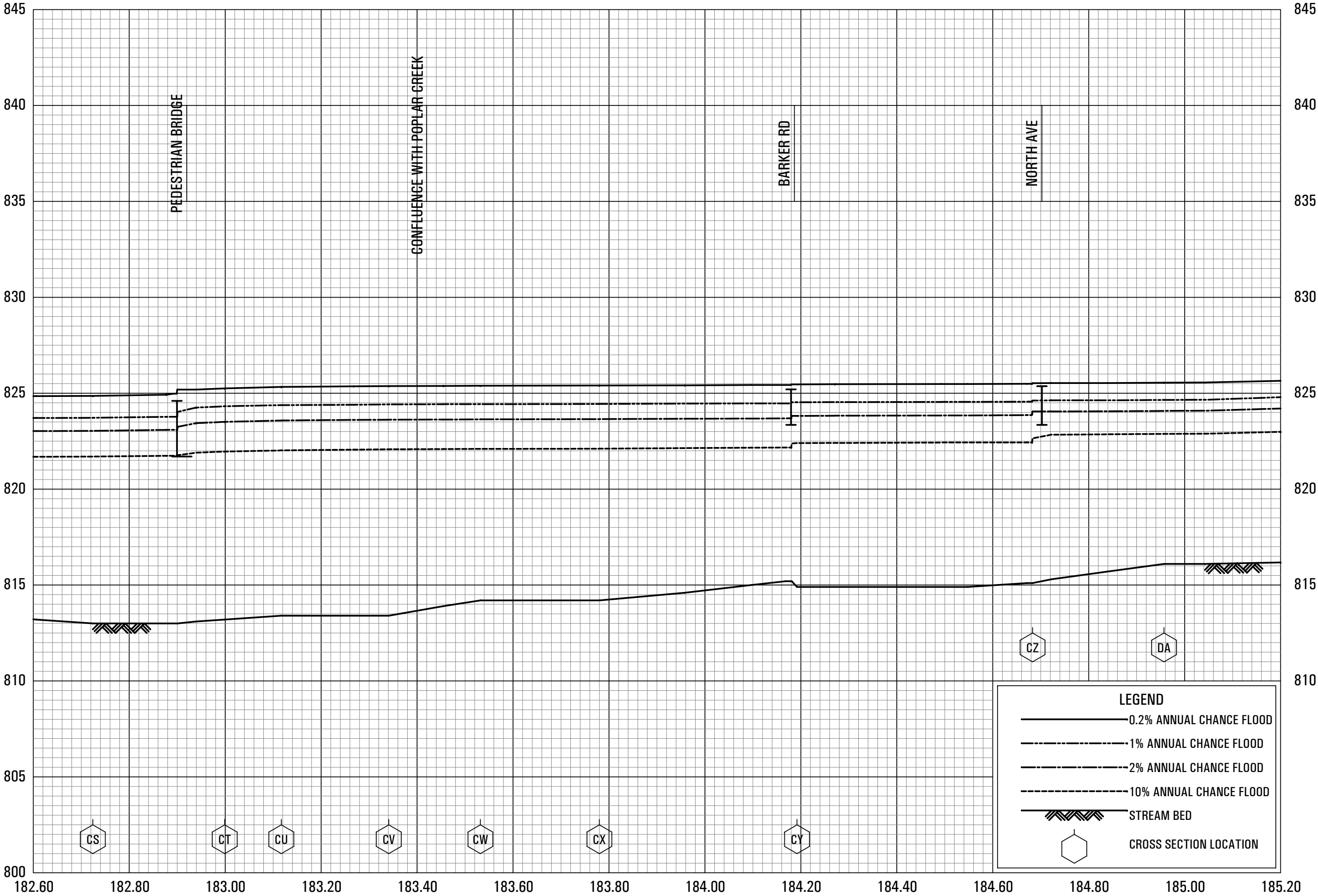


FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

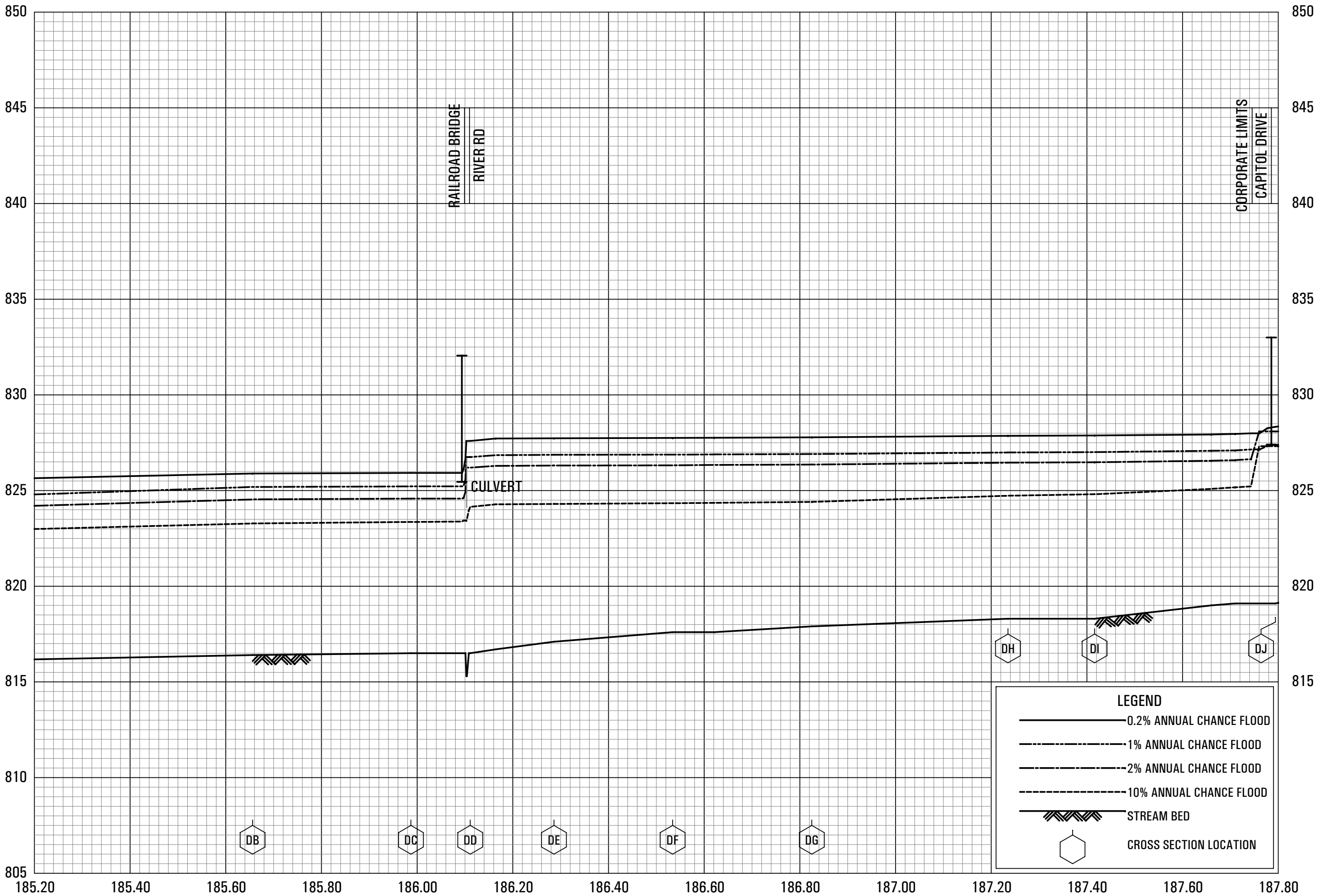
2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

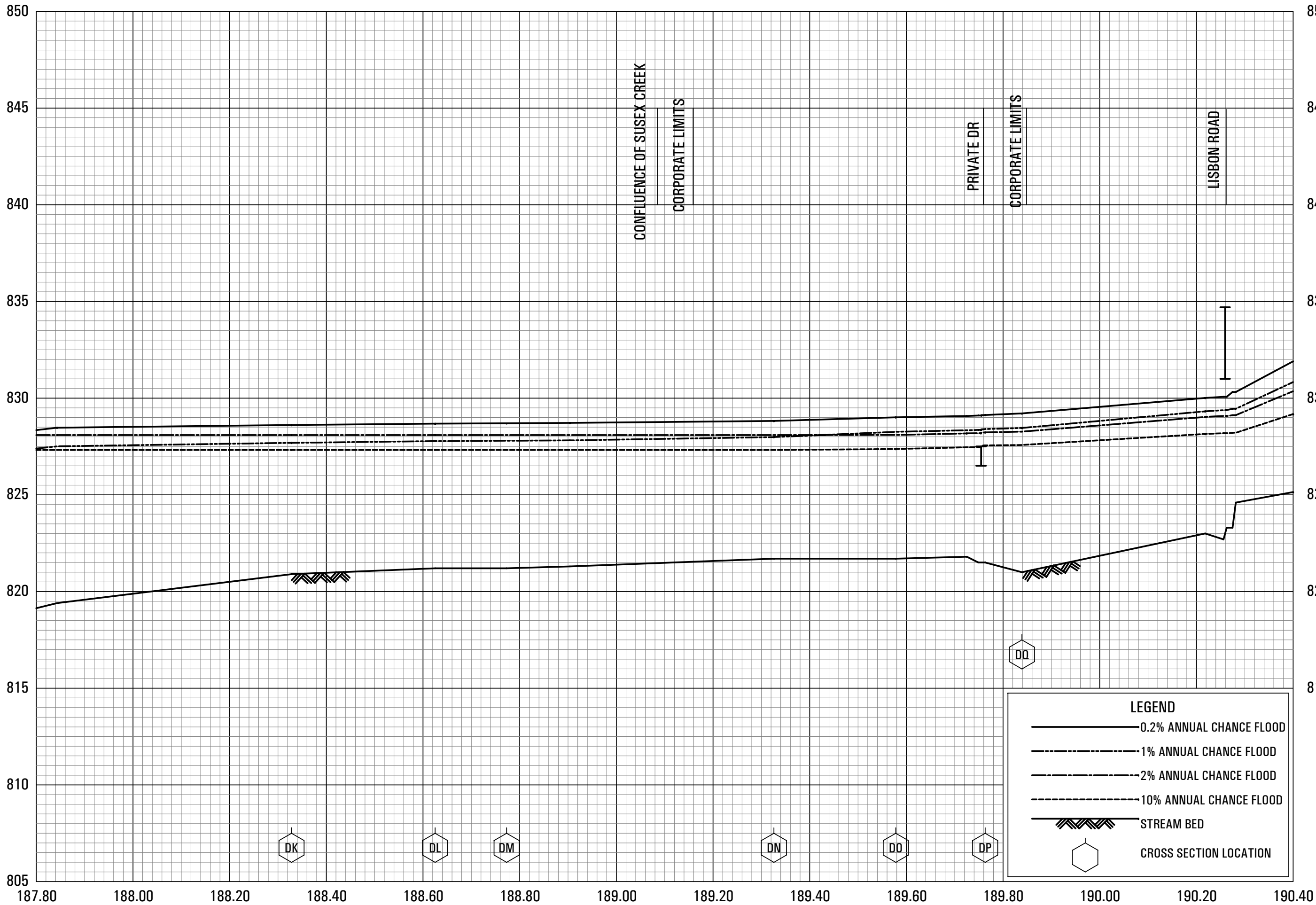
CROSS SECTION LOCATION

FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FOX RIVER

ELEVATION IN FEET (NGVD 29)

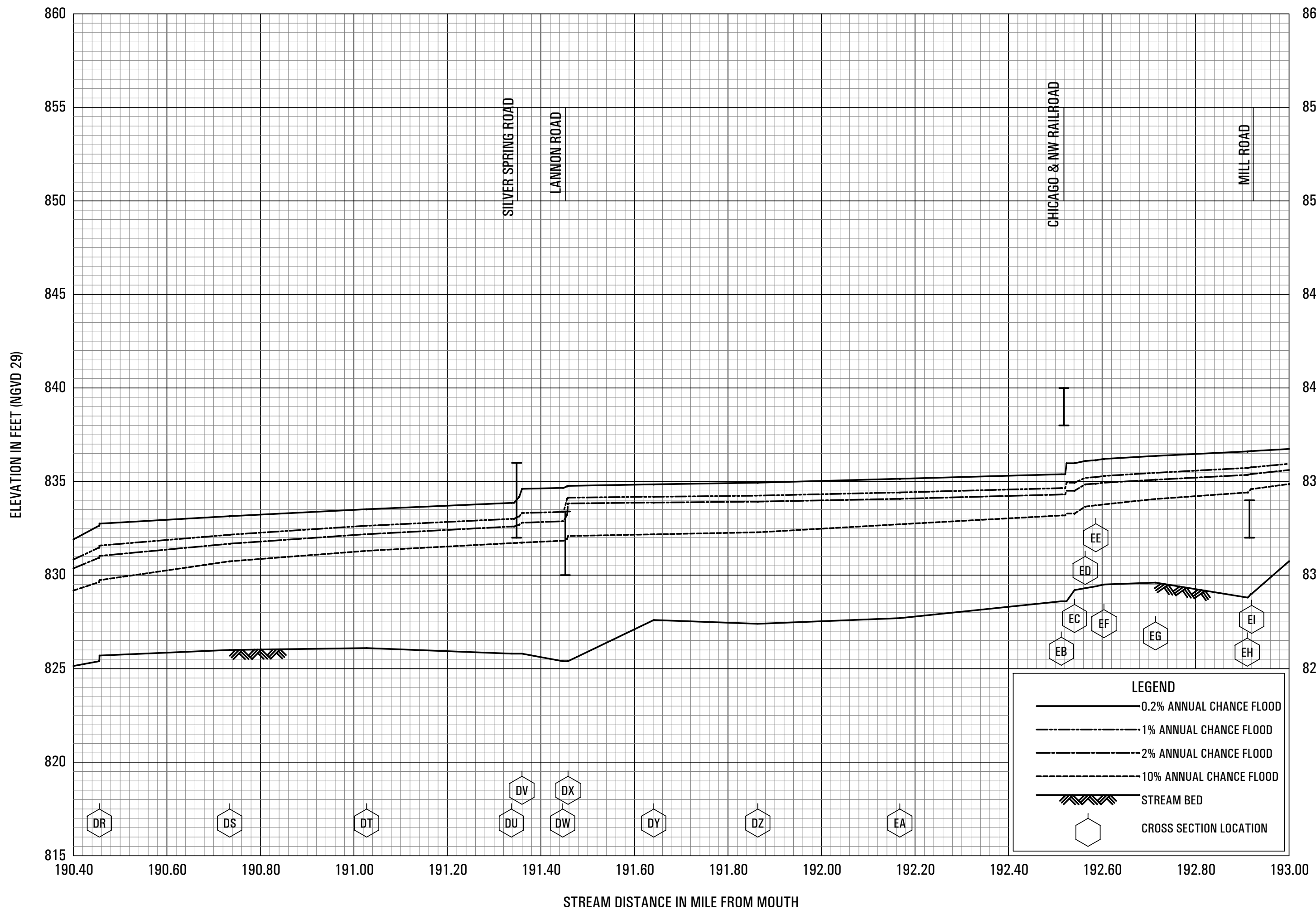


FLOOD PROFILES

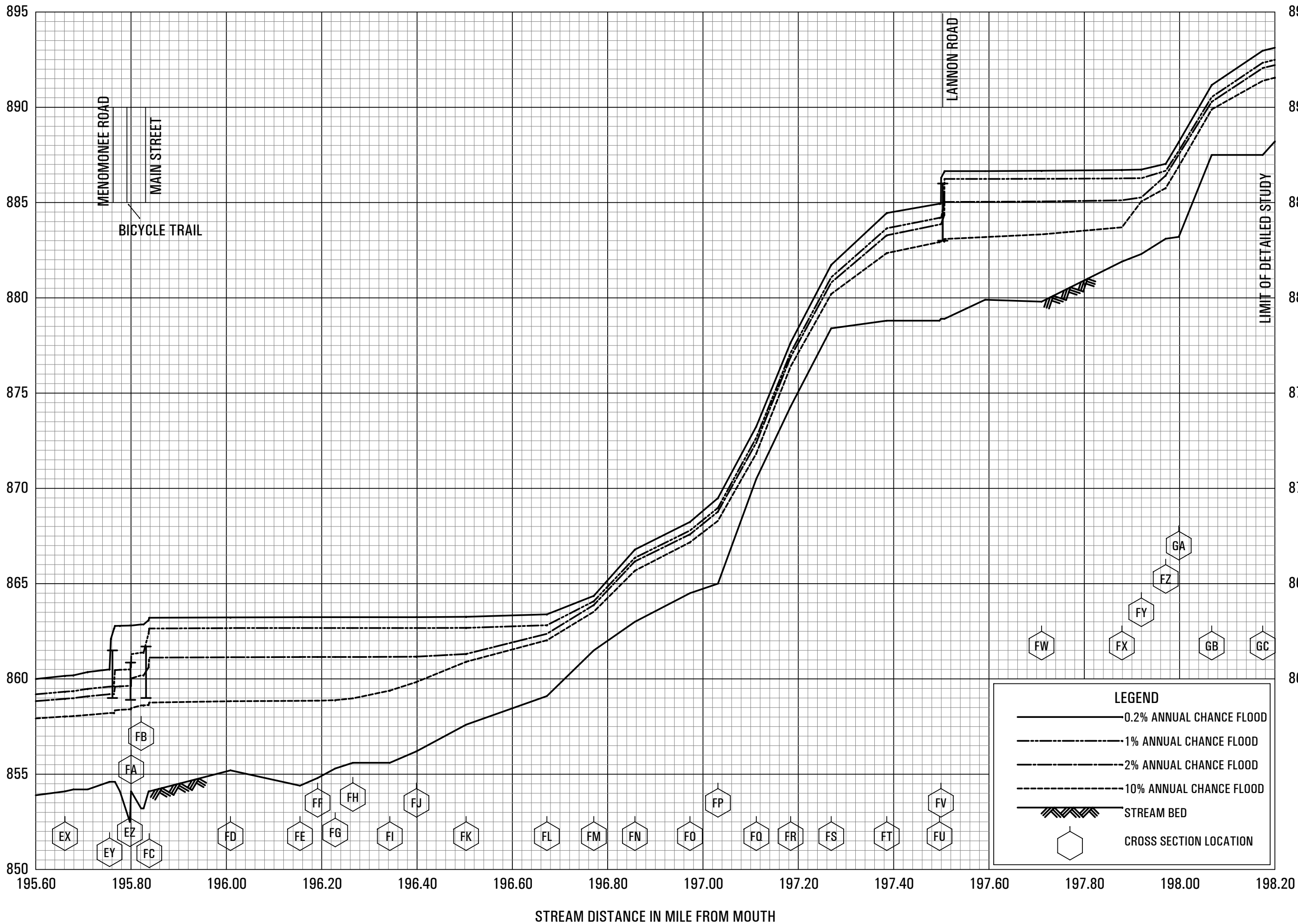
FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

FOX RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FLOOD INSURANCE STUDY



WAUKESHA COUNTY, AND INCORPORATED AREAS VOLUME 3 OF 3

Community Name

BIG BEND, VILLAGE OF
BROOKFIELD, CITY OF
BUTLER, VILLAGE OF
CHENEQUA, VILLAGE OF
DELAFIELD, CITY OF
DOUSMAN, VILLAGE OF
*EAGLE, VILLAGE OF
ELM GROVE, VILLAGE OF
HARTLAND, VILLAGE OF
LAC LA BELLE, VILLAGE OF
LANNON, VILLAGE OF
MENOMONEE FALLS, VILLAGE OF
MERTON, VILLAGE OF
MILWAUKEE, CITY OF
MUKWONAGO, VILLAGE OF
MUSKEGO, CITY OF
NASHOTAH, VILLAGE OF
NEW BERLIN, CITY OF
*NORTH PRAIRIE, VILLAGE OF
OCONOMOWOC LAKE, VILLAGE OF
OCONOMOWOC, CITY OF
PEWAUKEE, CITY OF
PEWAUKEE, VILLAGE OF
SUSSEX, VILLAGE OF
WALES, VILLAGE OF
WAUKESHA, CITY OF
WAUKESHA COUNTY
(UNINCORPORATED AREAS)

Community Number

550477
550478
550536
550125
550479
550480
550144
550578
550481
550565
550482
550483
550484
550278
550485
550486
550149
550487
550175
550582
550488
550192
550489
550490
550183
550491
550476



* No Special Flood Hazard Areas
Identified Within Community

November 19, 2008



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
55133CV003A

**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.

Effective Date: November 19, 2008

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Dousman Ditch	36P–37P
East Branch Sussex Creek	38P
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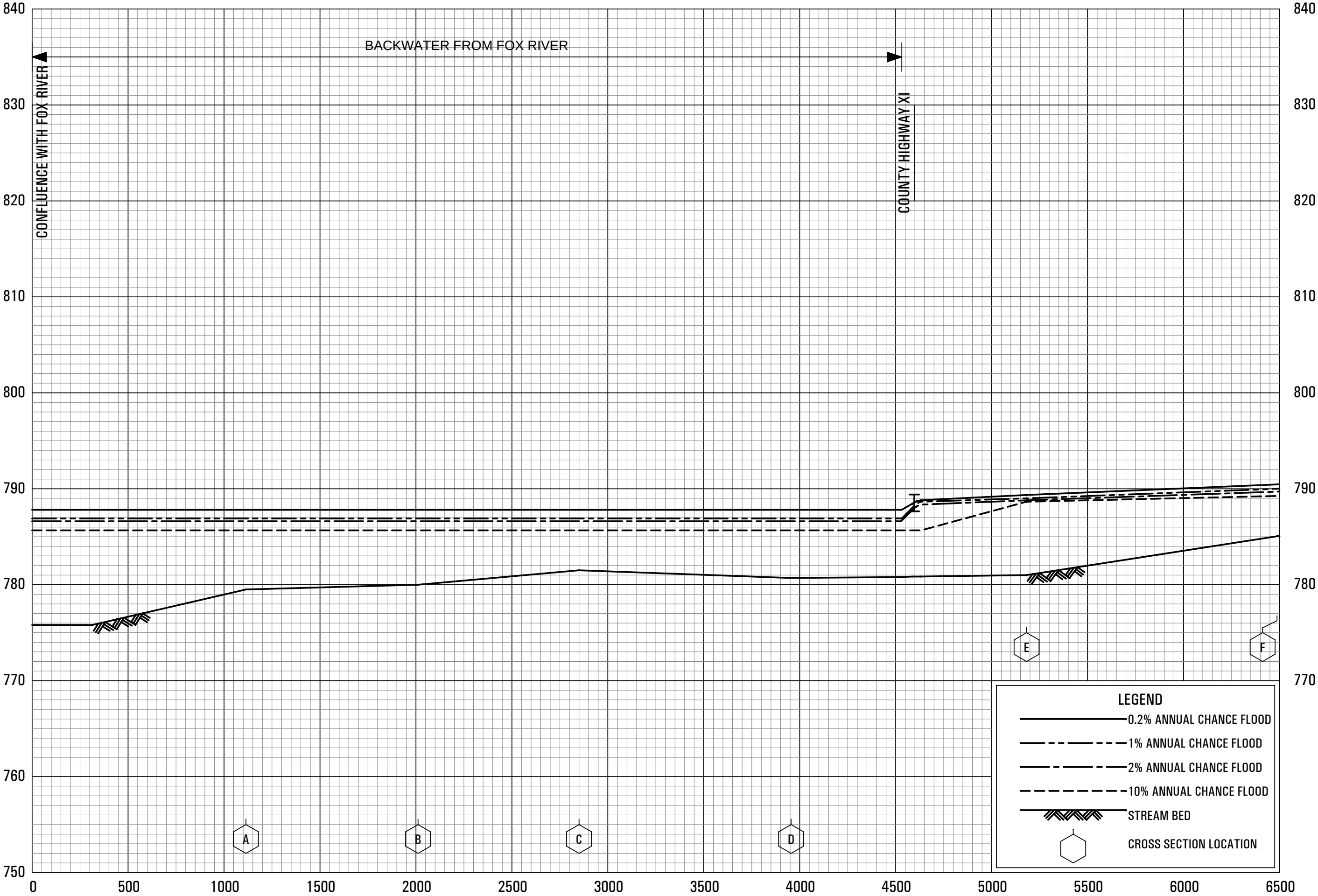
VOLUME 3

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Lilly Creek	70P–72P
Mason Creek	73P–75P
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Mukwonago River	84P –88P
Muskego Canal	89P –91P
North Branch Underwood Creek	92P –93P
Nor-X-Way Channel	94P –95P
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Pebble Brook Tributary	109P
Pebble Creek	110P –113P
Pewaukee Lake Tributary	114P
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Pewaukee River Tributary 3	120P
Poplar Creek	121P–125P
Quietwood Creek	126P–127P
Root River	128P–130P
Rosenow Creek	131P–132P
South 130 th Street Tributary	133P
South Branch Underwood Creek	134P
Sussex Creek/South Branch Sussex Creek	135P–139P
Sussex Creek Tributary 1	140P
Tess Corners Creek	141P–143P
Tess Corners Creek North Branch	144P
Tributary No. 2 to Fox River	145P
Tributary to South Branch Underwood Creek	146P
Unnamed Tributary to Muskego Canal	147P
Underwood Creek	148P–152P
Upper Kelly Lake Tributary	153P–154P
West Branch Pewaukee Lake Tributary	155P
West Branch Root River	156P–158P
Willow Springs Creek	159P–162P

Exhibit 2 - Flood Insurance Rate Map Index
Flood Insurance Rate Map

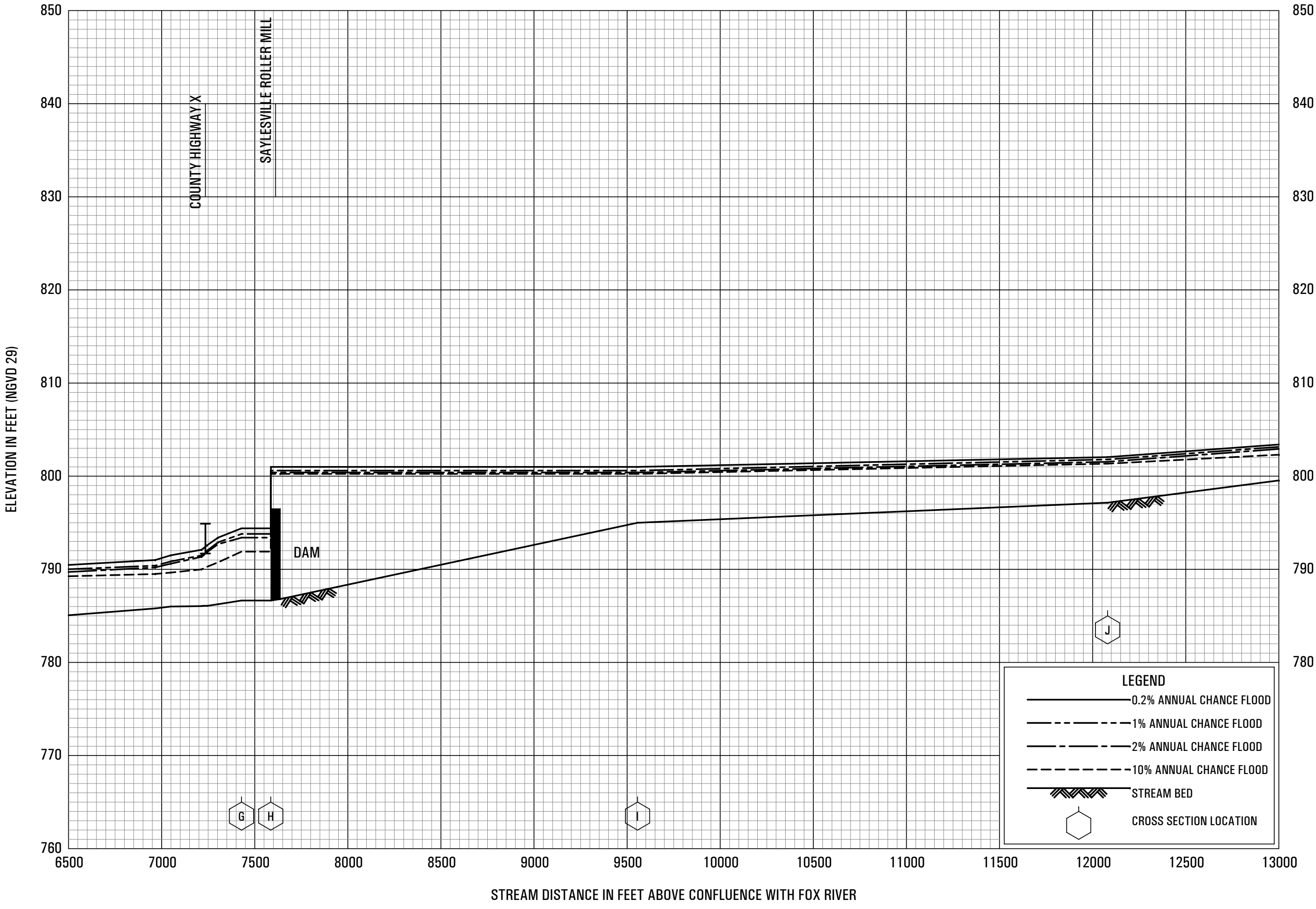
ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

GENESEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



FLOOD PROFILES

GENESEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

870
860
850
840
830
820
810
800
790
780

13000 13500 14000 14500 15000 15500 16000 16500 17000 17500 18000 18500 19000 19500

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

PRIVATE ROAD

OLD VILL ROAD

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FLOOD PROFILES

GENESEE CREEK

60P

ELEVATION IN FEET (NGVD 29)

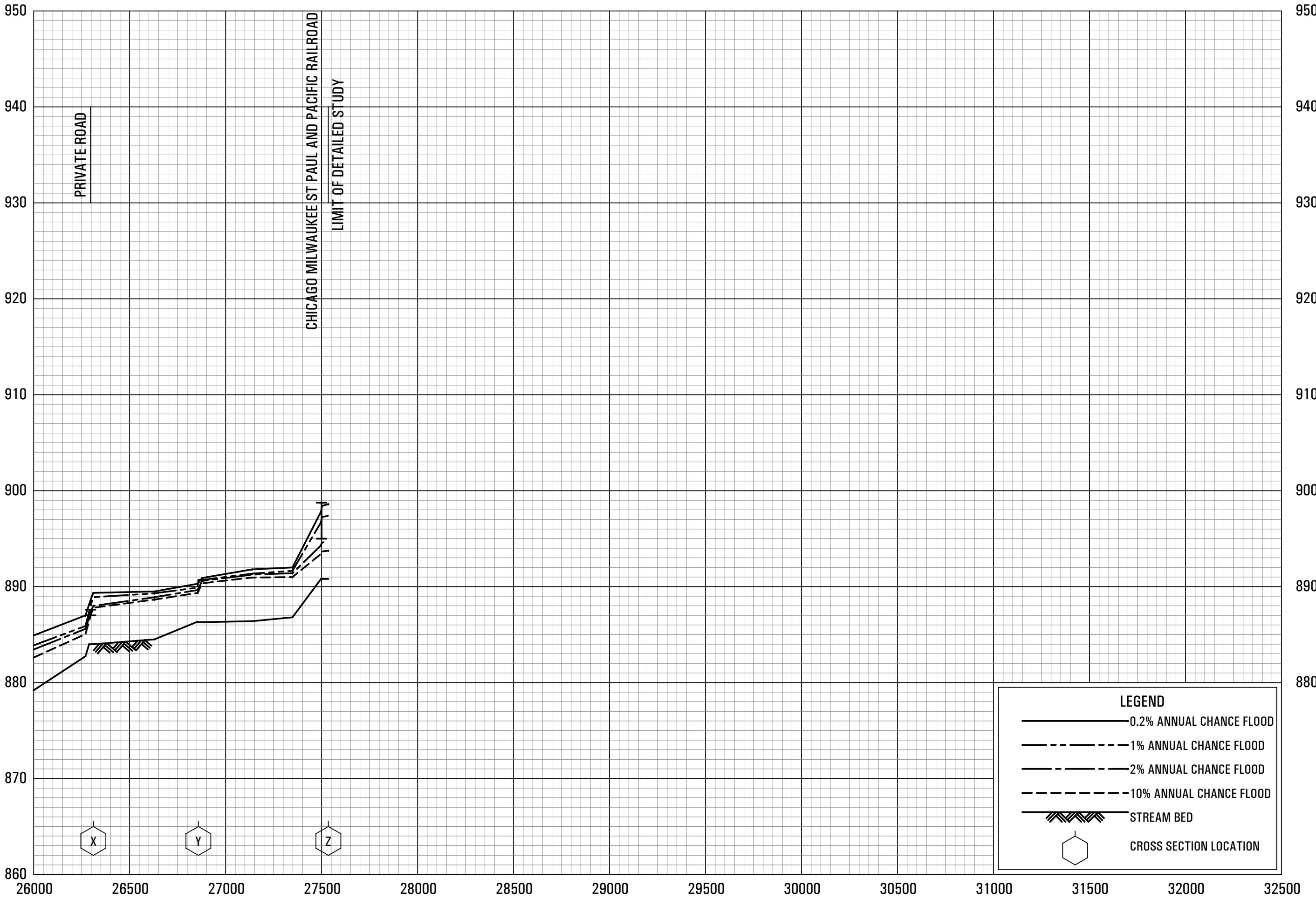


FLOOD PROFILES

GENESEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



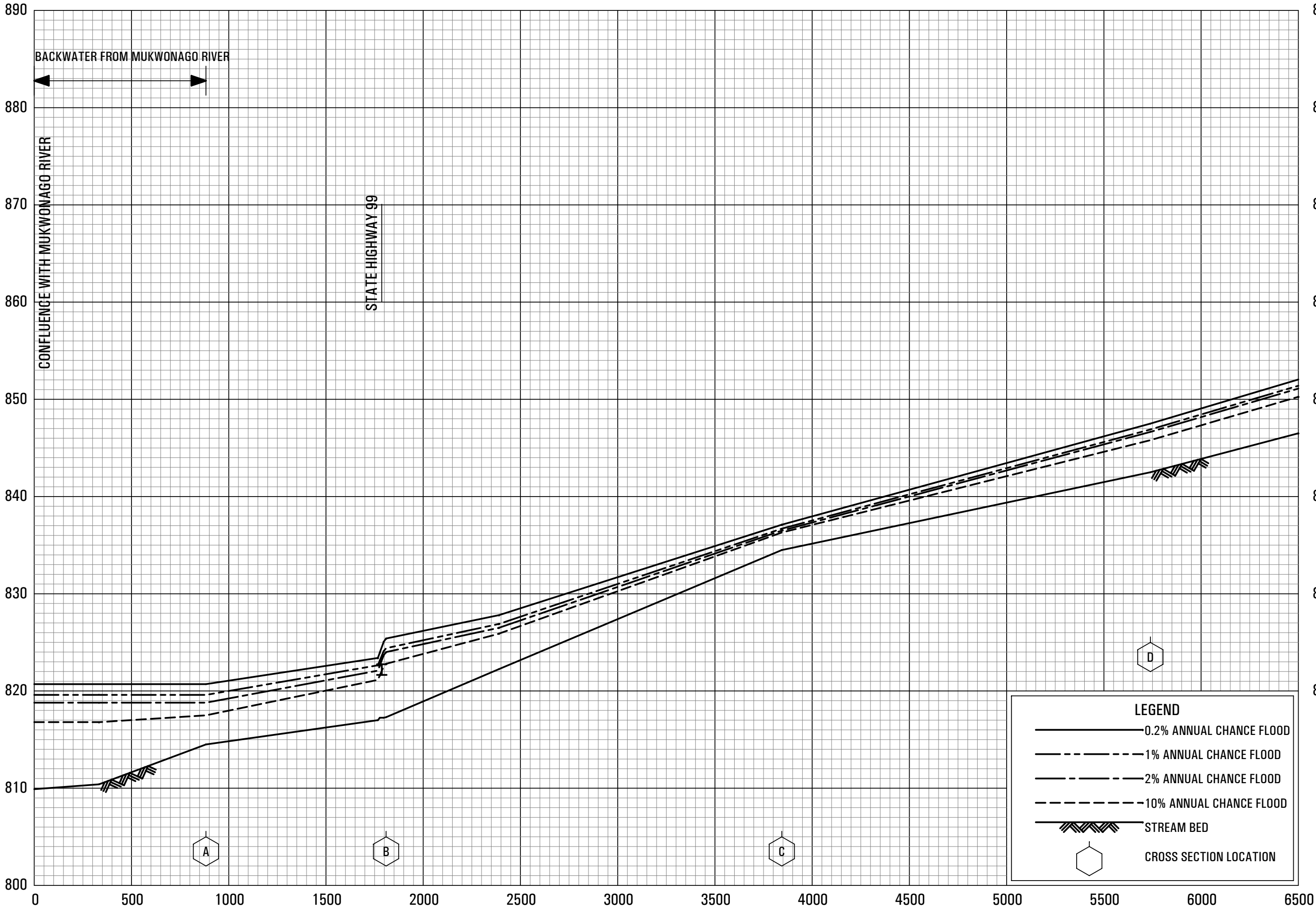
STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

GENESEE CREEK

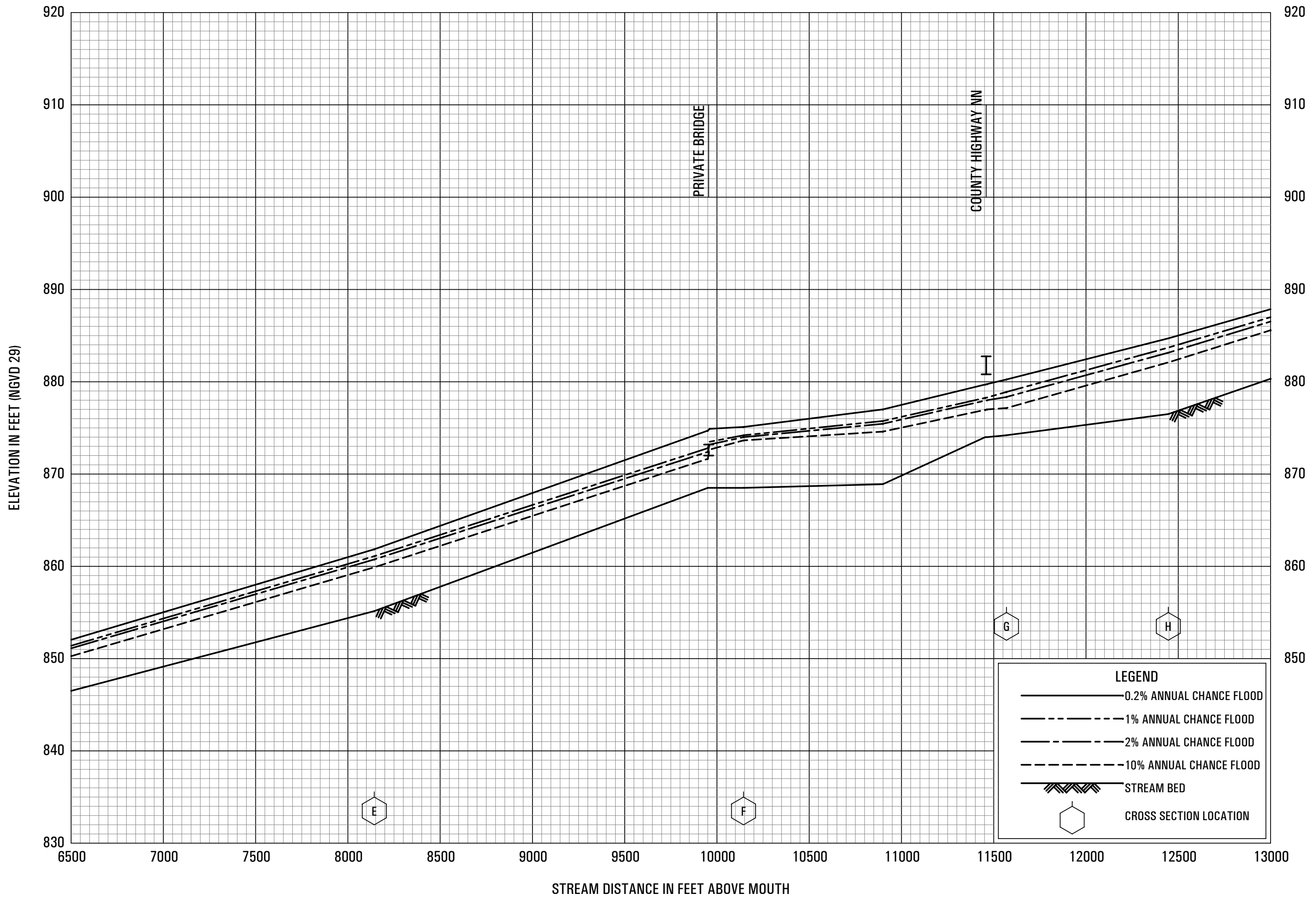
ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

JERICO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



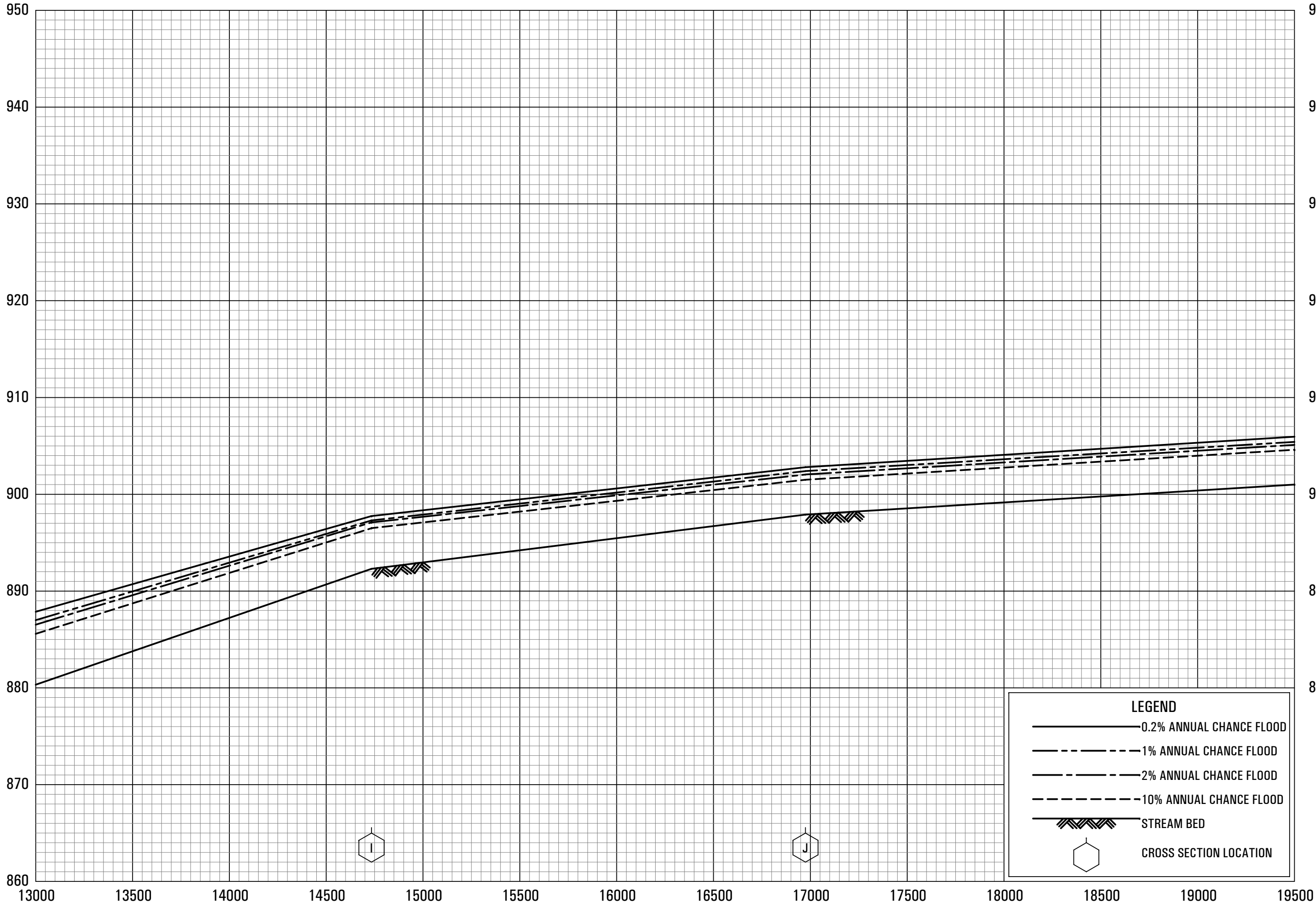
FLOOD PROFILES

JERICO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

JERICOH CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

980
970
960
950
940
930
920
910
900
890

26000 26500 27000 27500 28000 28500 29000 29500 30000 30500 31000 31500 32000 32500

STREAM DISTANCE IN FEET ABOVE MOUTH

COUNTY HIGHWAY X
LIMIT OF DETAILED STUDY

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

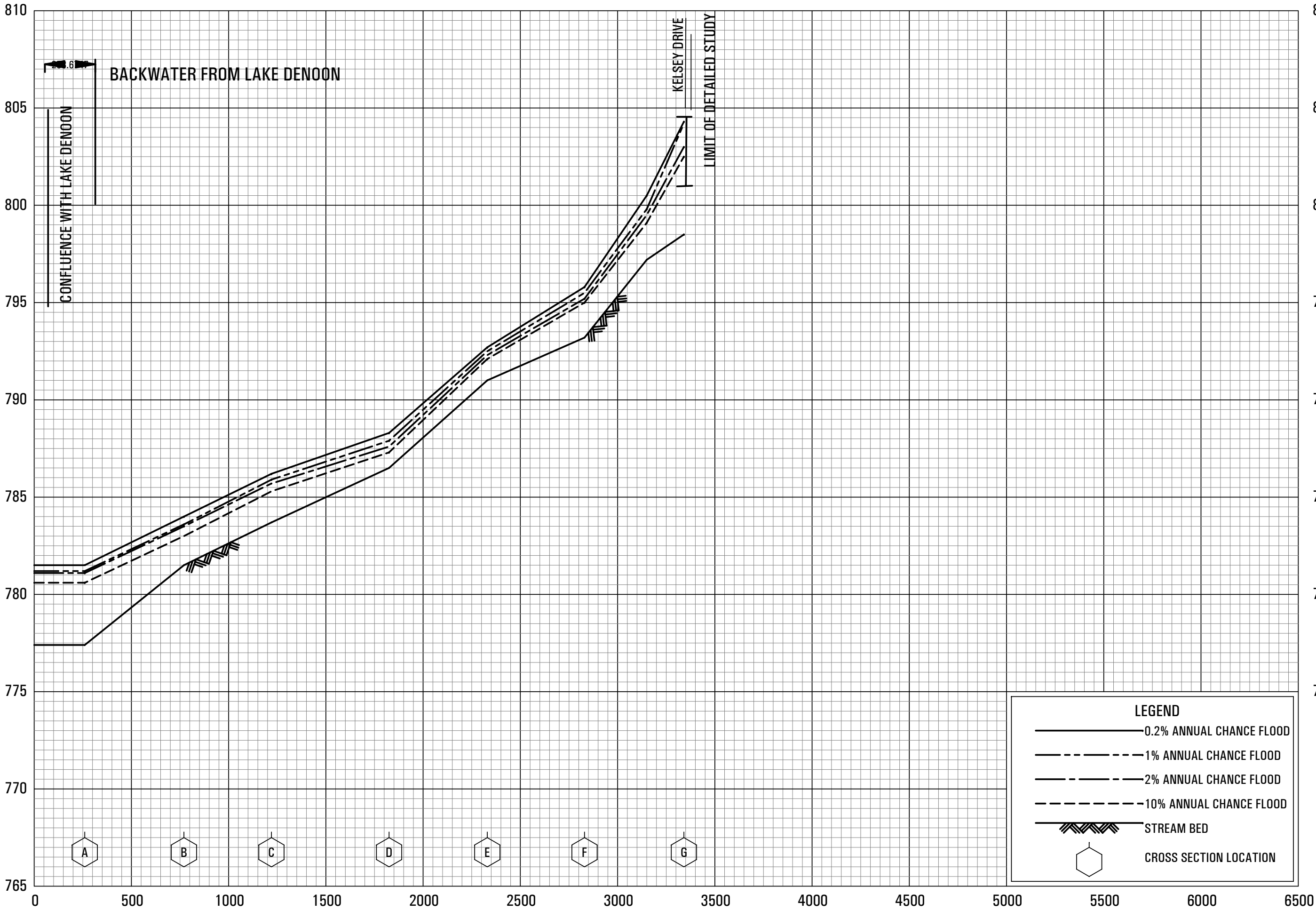
CROSS SECTION LOCATION

FLOOD PROFILES

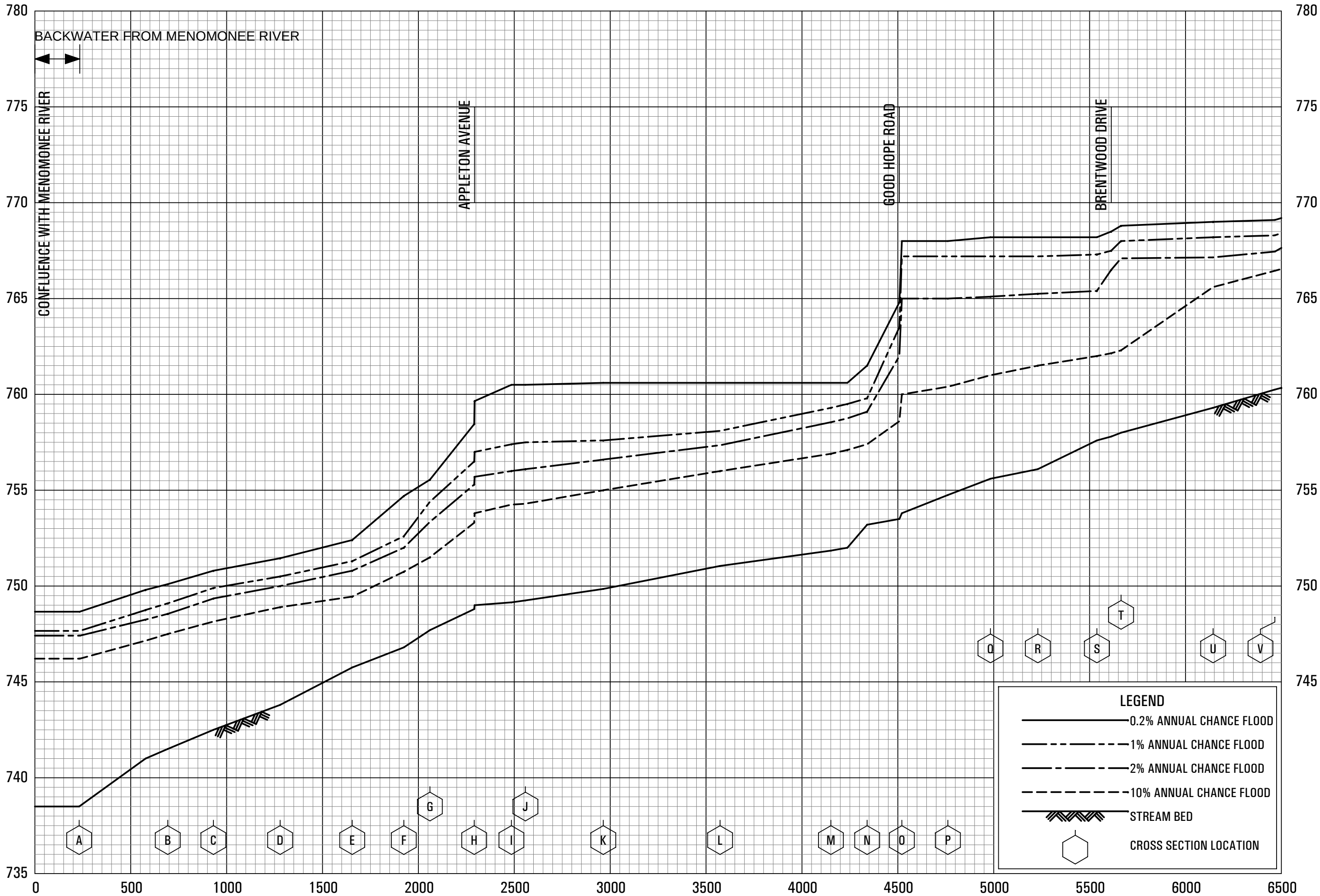
FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

JERICHO CREEK

ELEVATION IN FEET (NGVD 29)



ELEVATION IN FEET (NGVD 29)

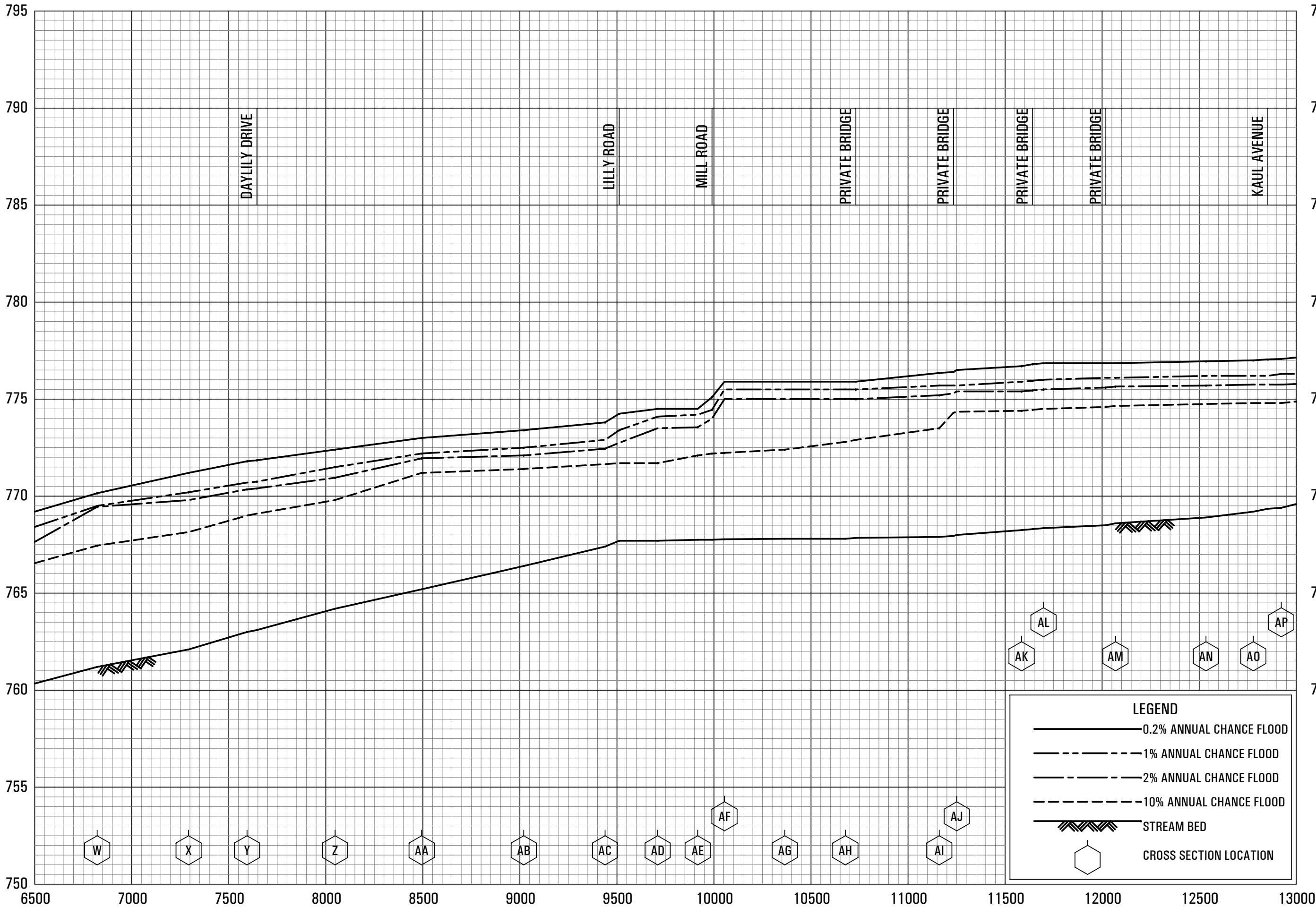


FLOOD PROFILES

LILLY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

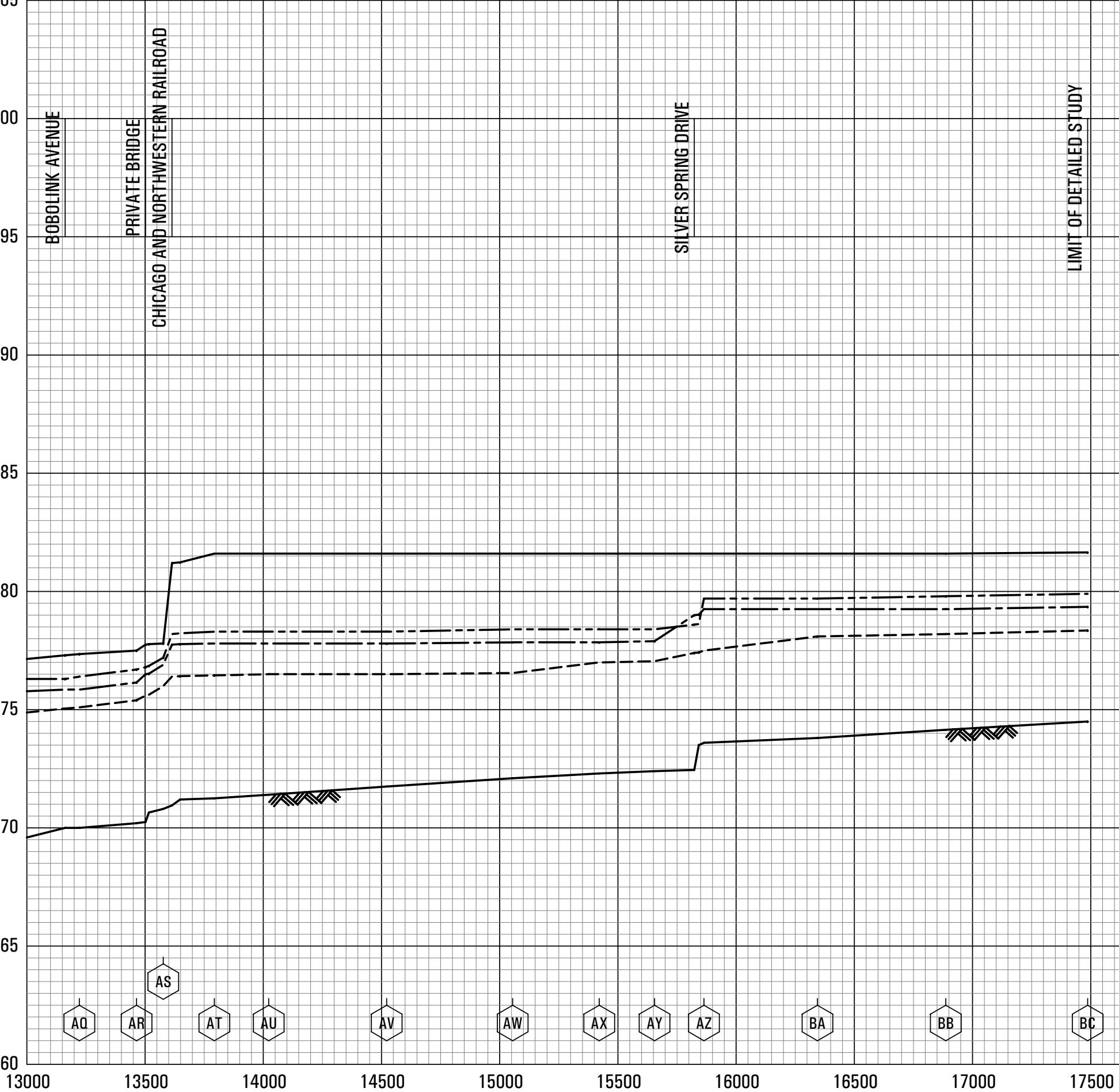
LILLY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

805
800
795
790
785
780
775
770
765
760



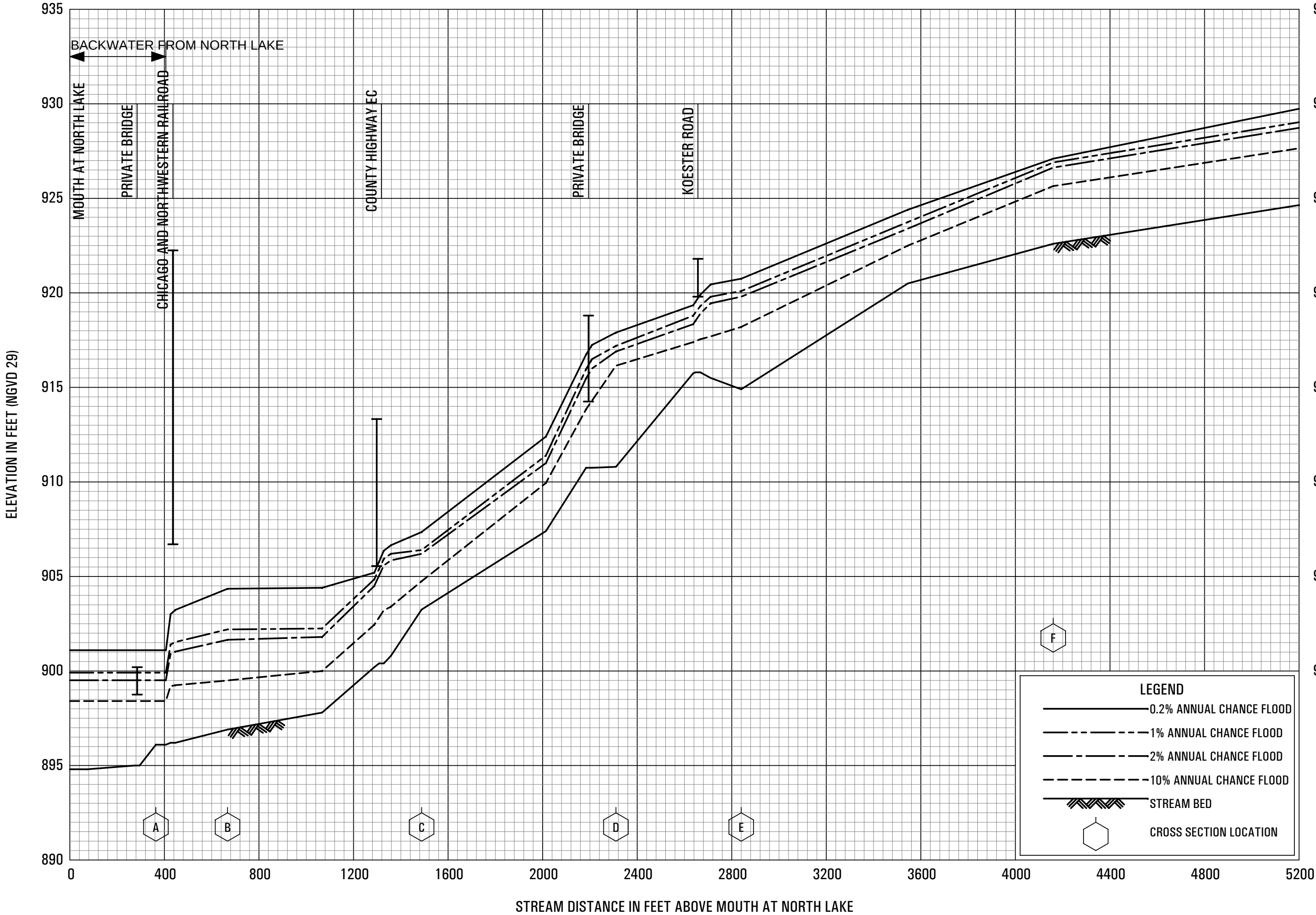
LEGEND

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

FLOOD PROFILES

LILLY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

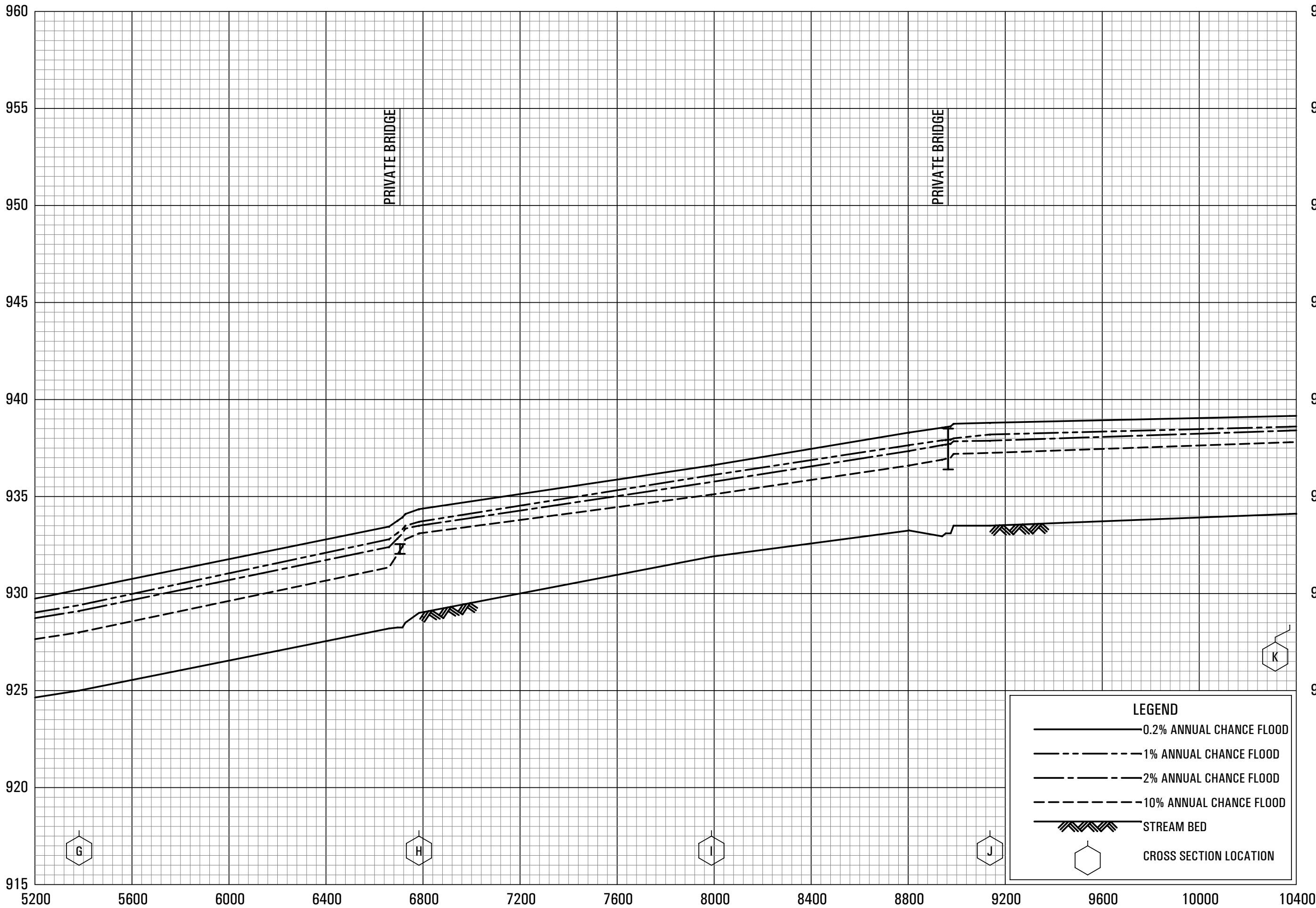


FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

MASON CREEK

ELEVATION IN FEET (NGVD 29)

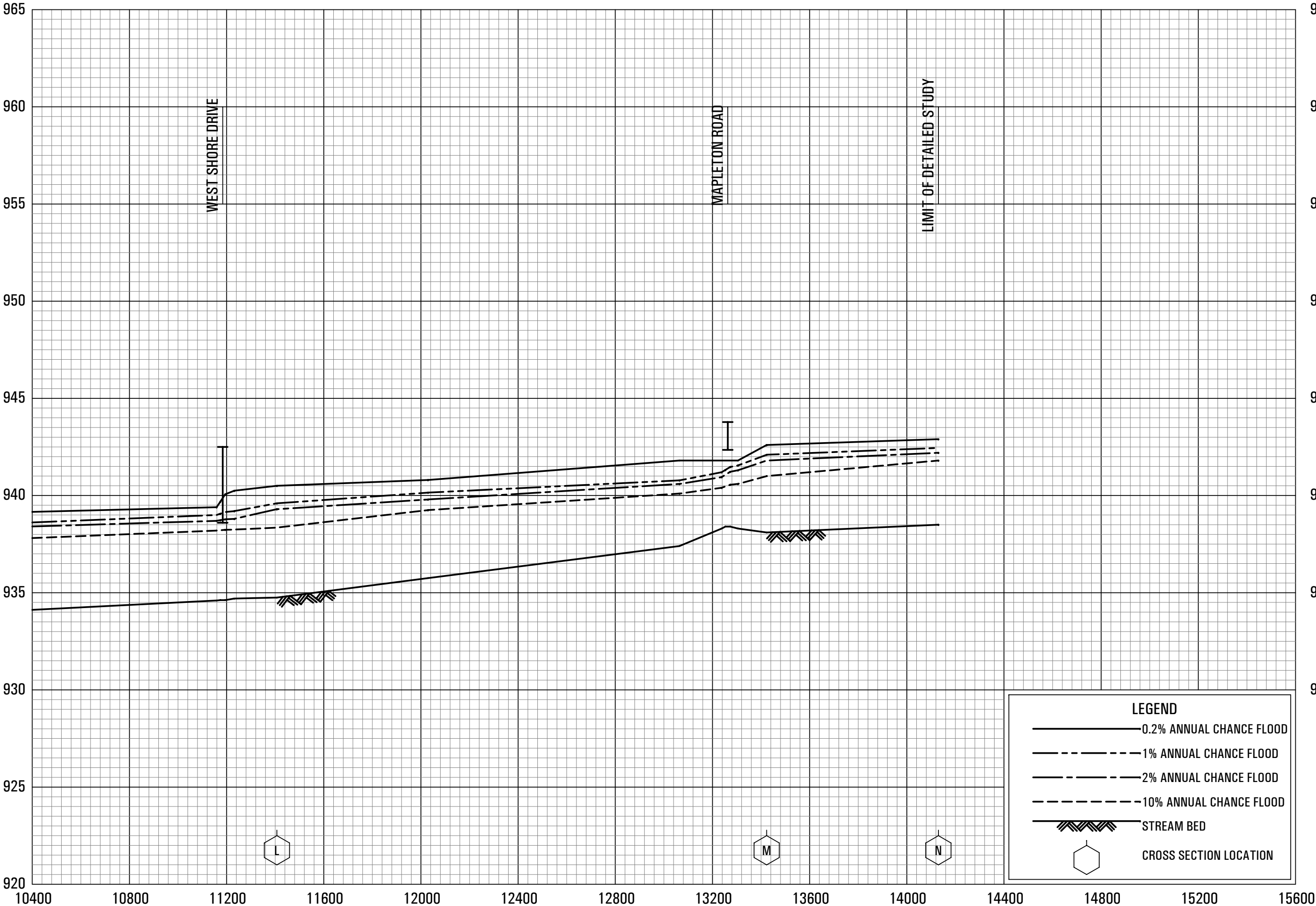


FLOOD PROFILES

MASON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

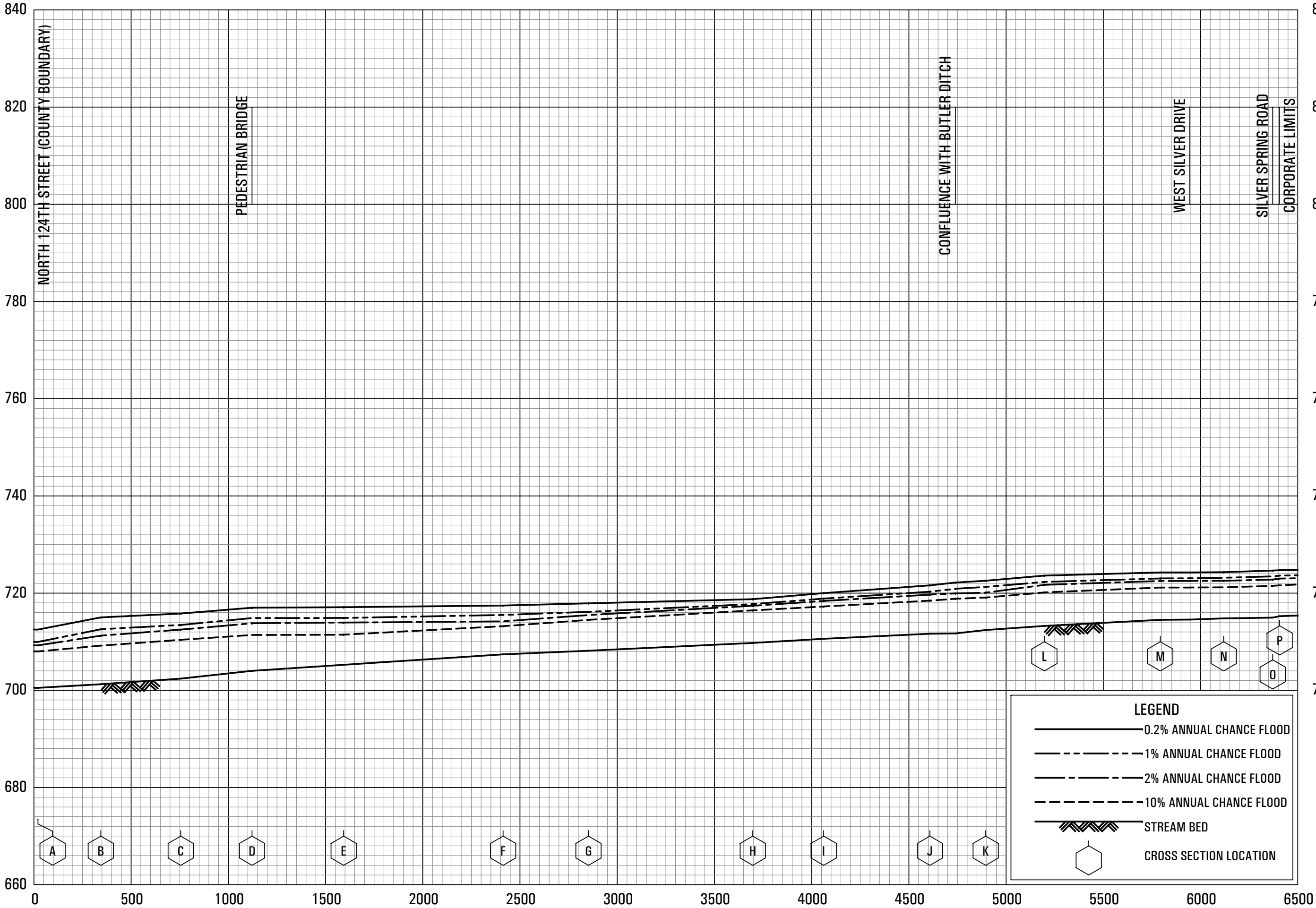
CROSS SECTION LOCATION

FLOOD PROFILES

MASON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



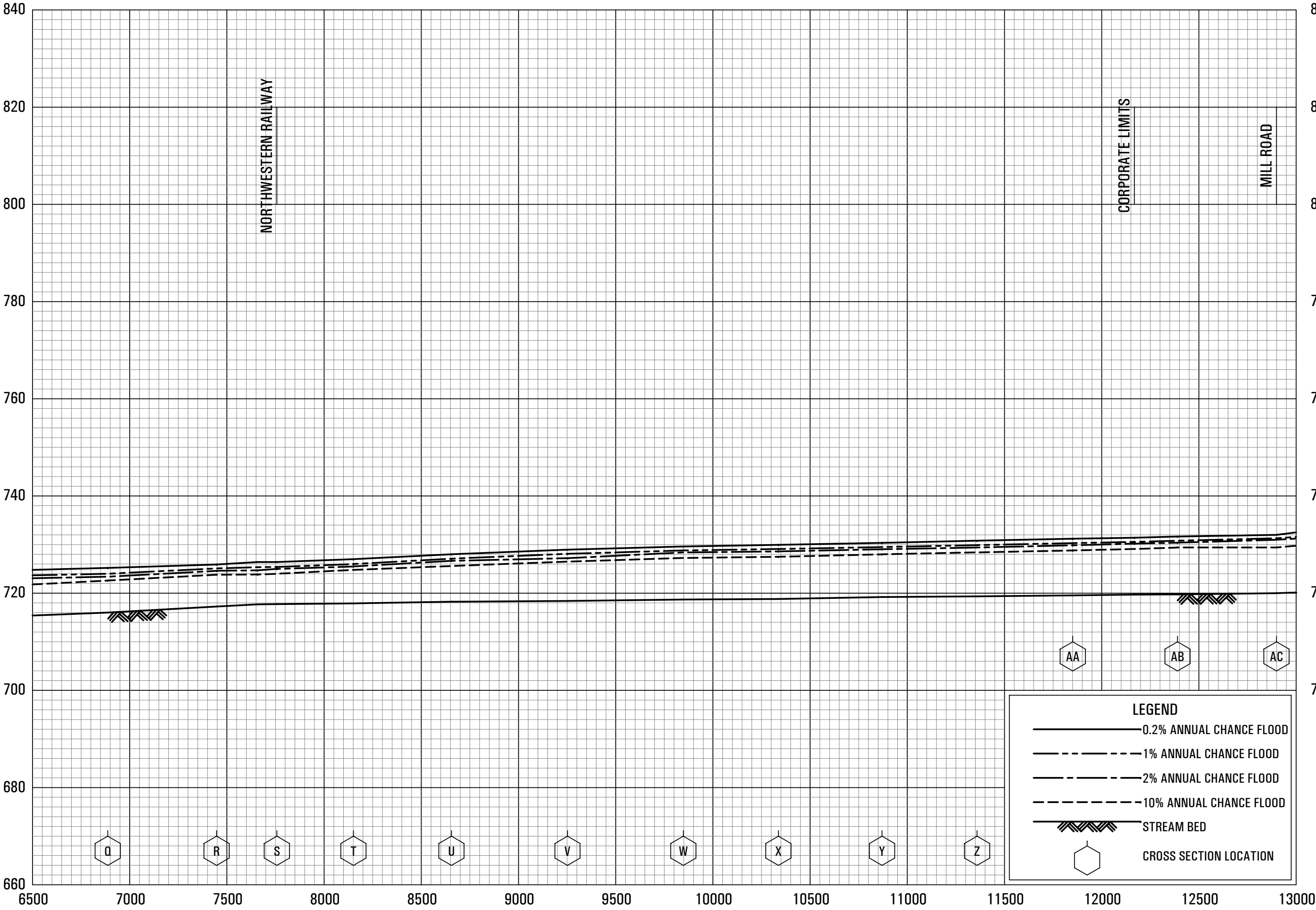
FLOOD PROFILES

MENOMONEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

MENOMONEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

860
840
820
800
780
760
740
720
700
680

13000 13500 14000 14500 15000 15500 16000 16500 17000 17500 18000 18500 19000 19500

STREAM DISTANCE IN FEET ABOVE COUNTY BOUNDARY

CORPORATE LIMITS

CORPORATE LIMITS

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

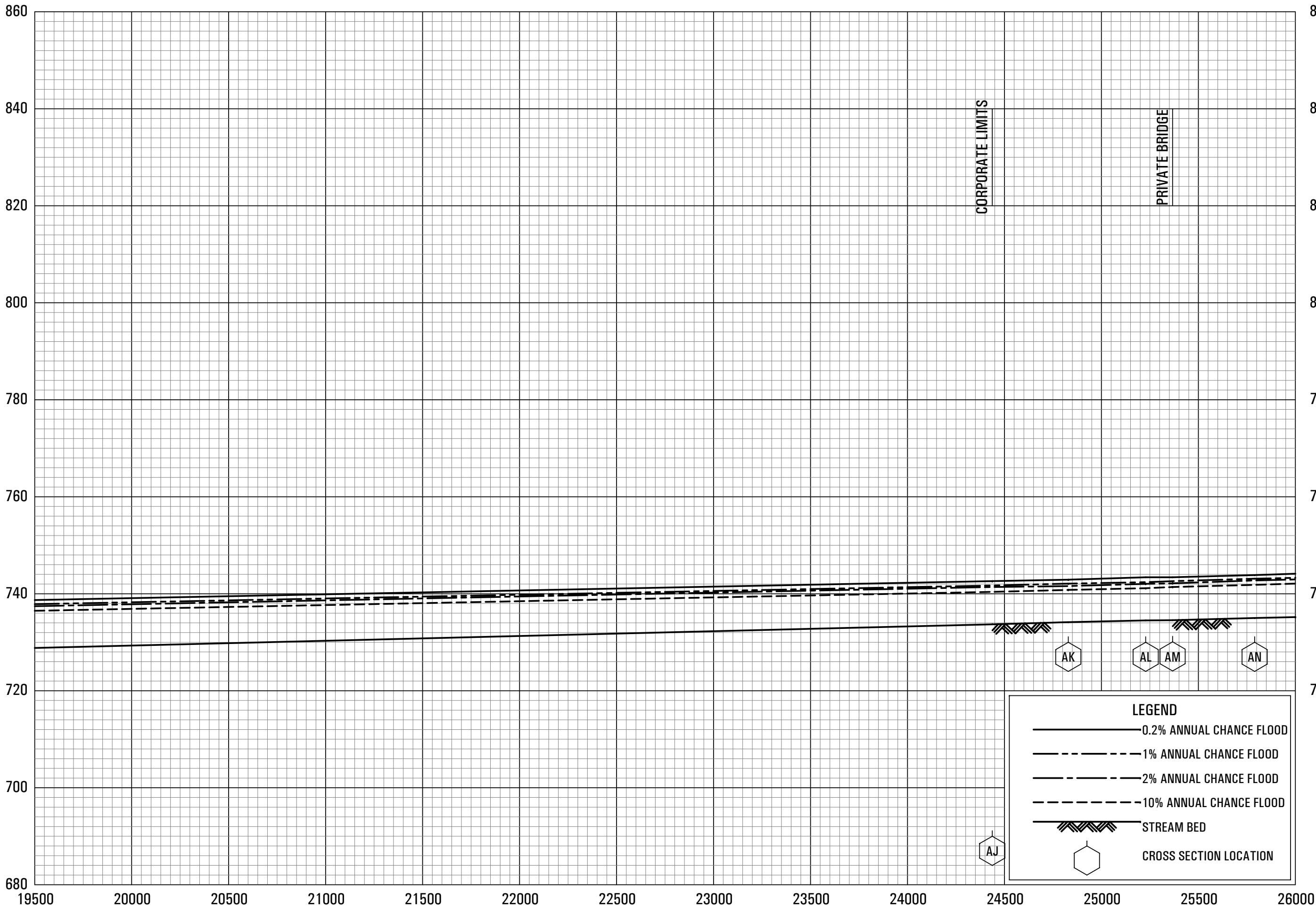
CROSS SECTION LOCATION

FLOOD PROFILES

MENOMONEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



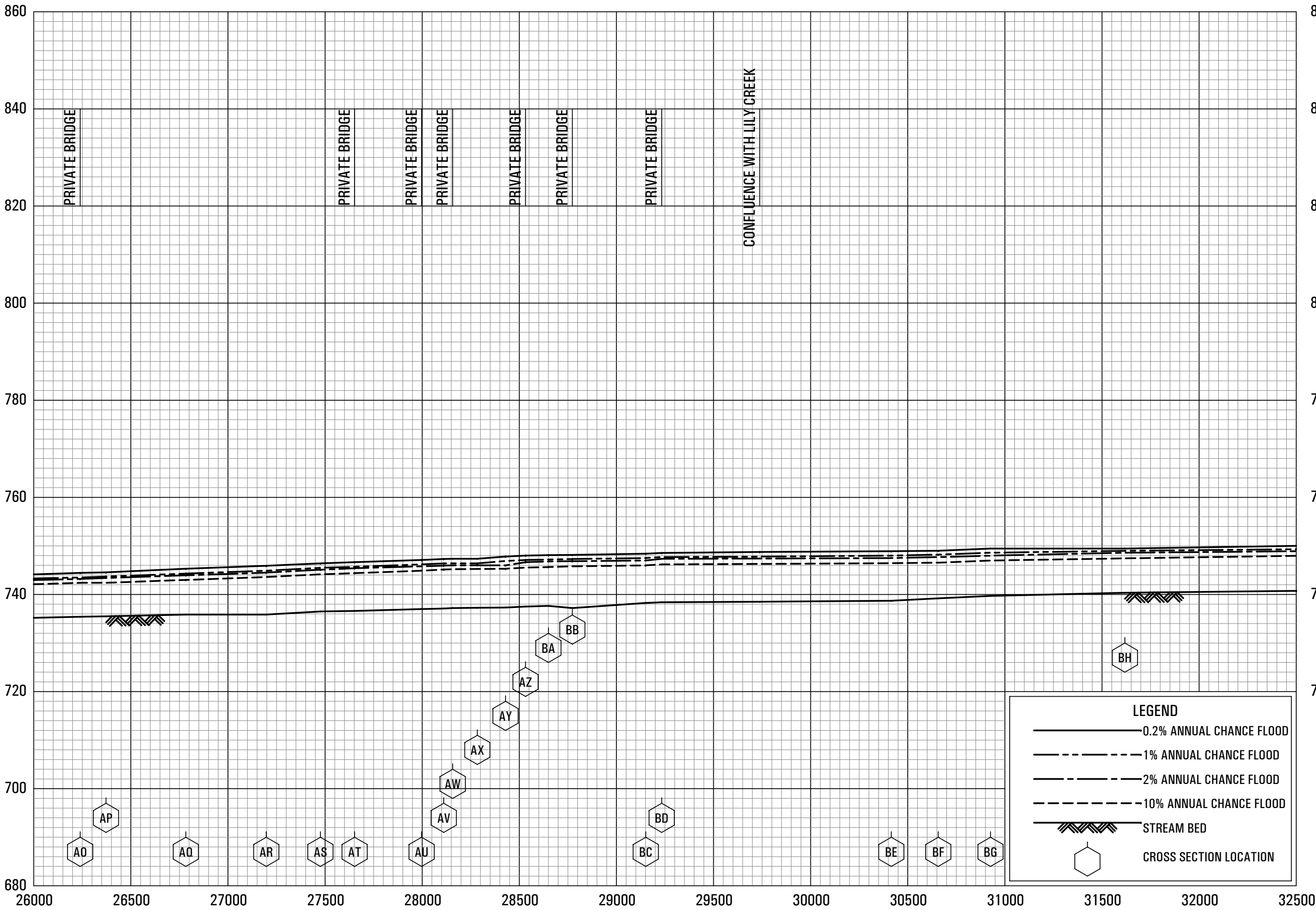
FLOOD PROFILES

MENOMONEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



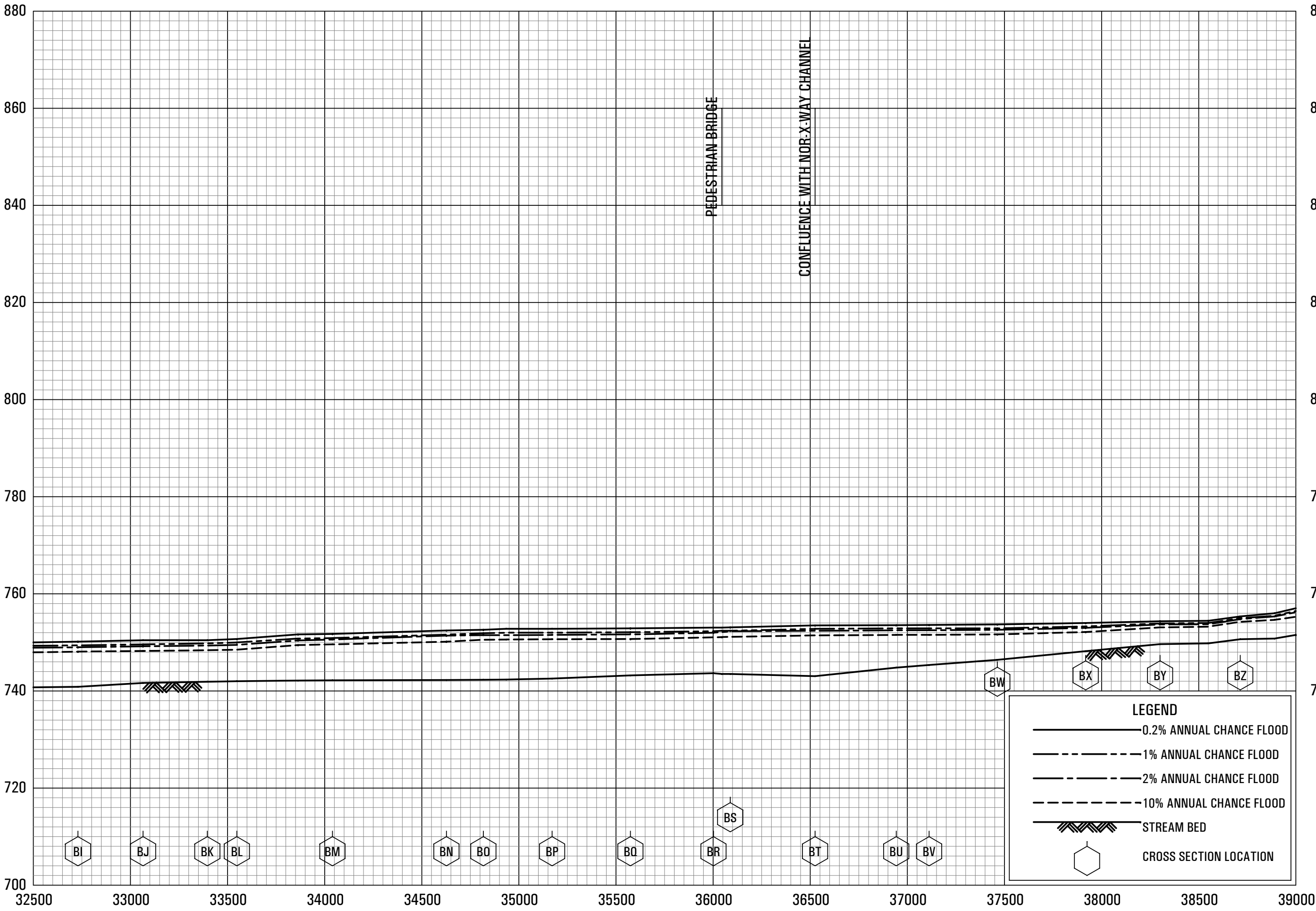
FLOOD PROFILES

MENOMONEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

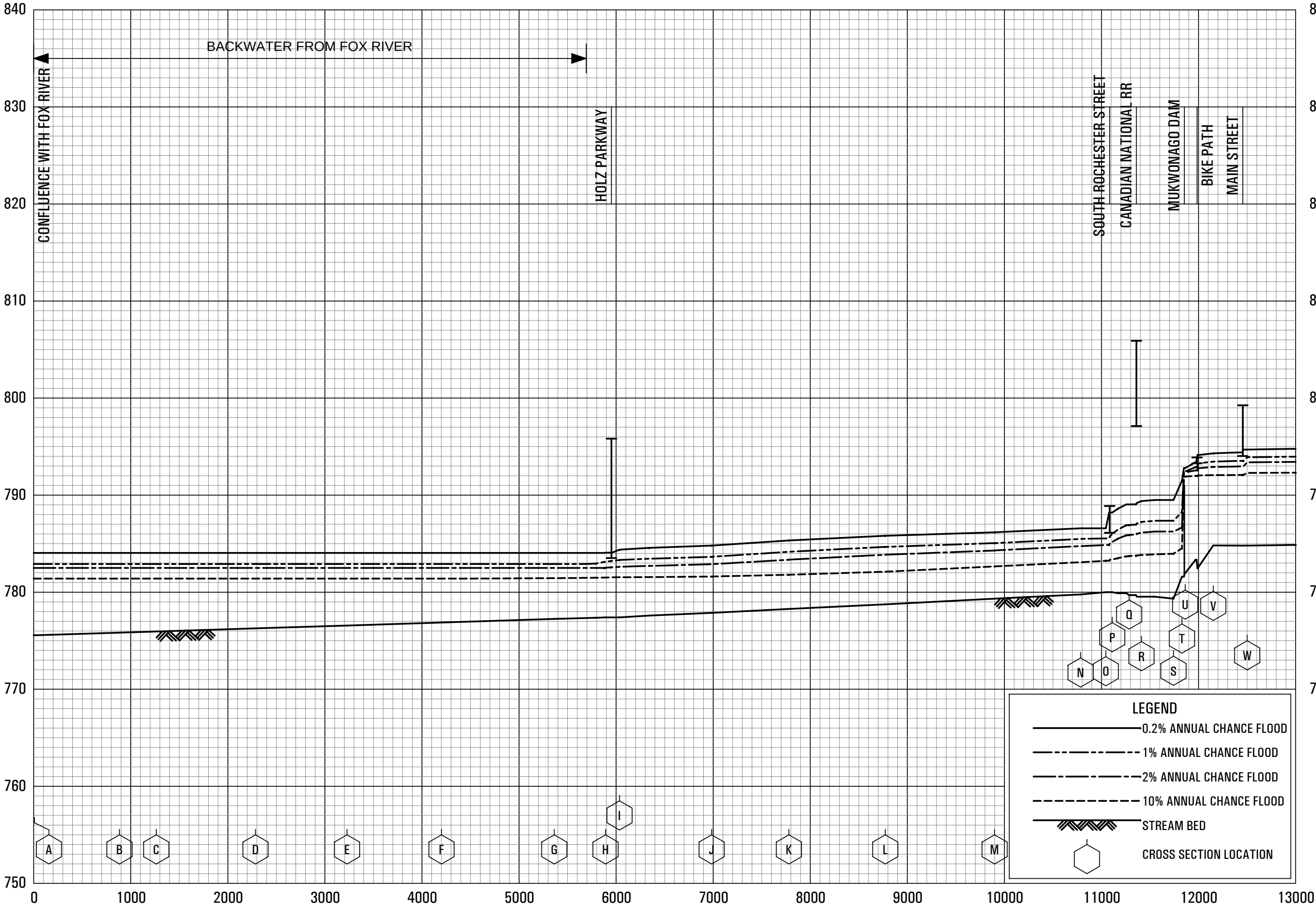


FLOOD PROFILES

MENOMONEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

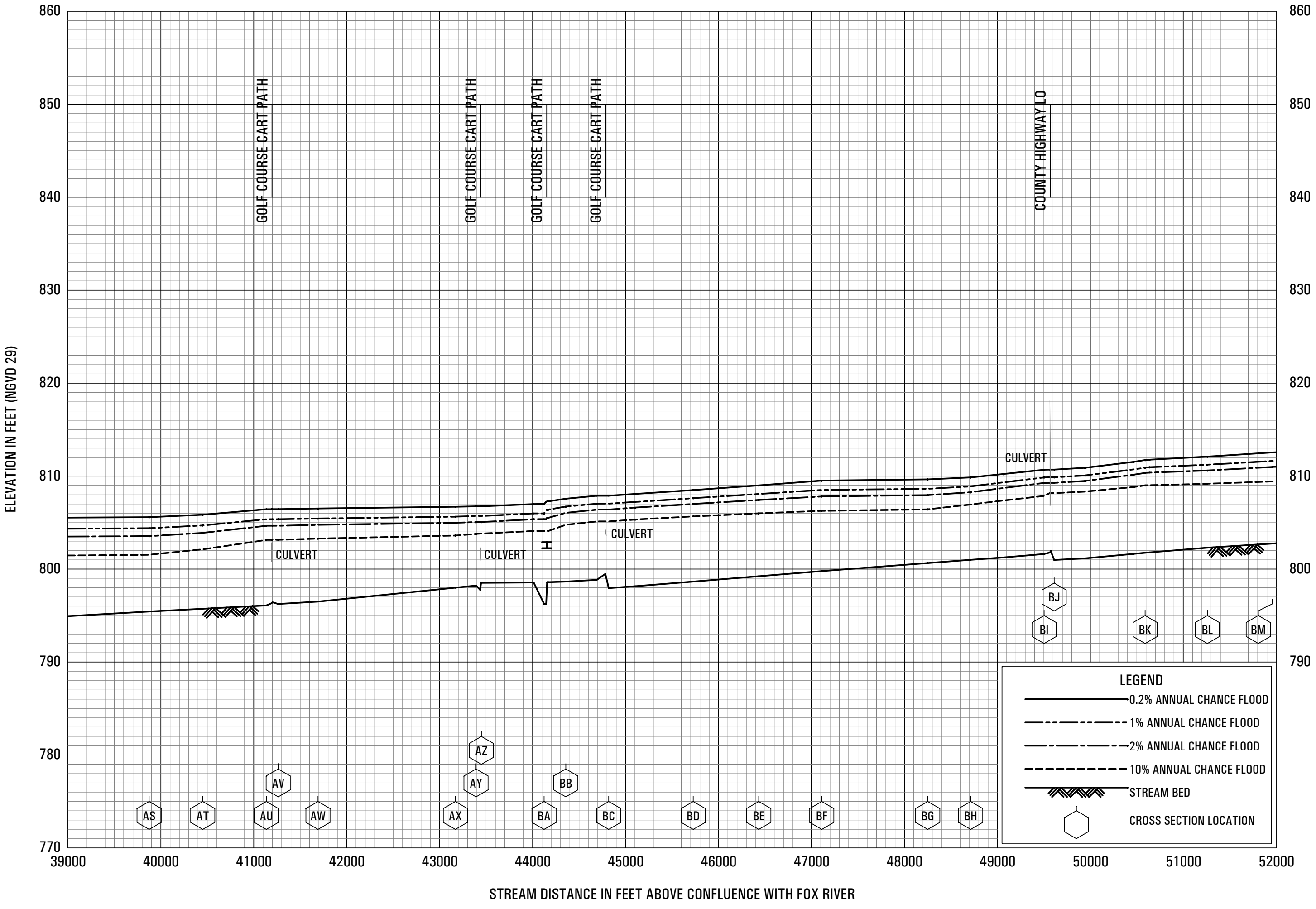


FLOOD PROFILES

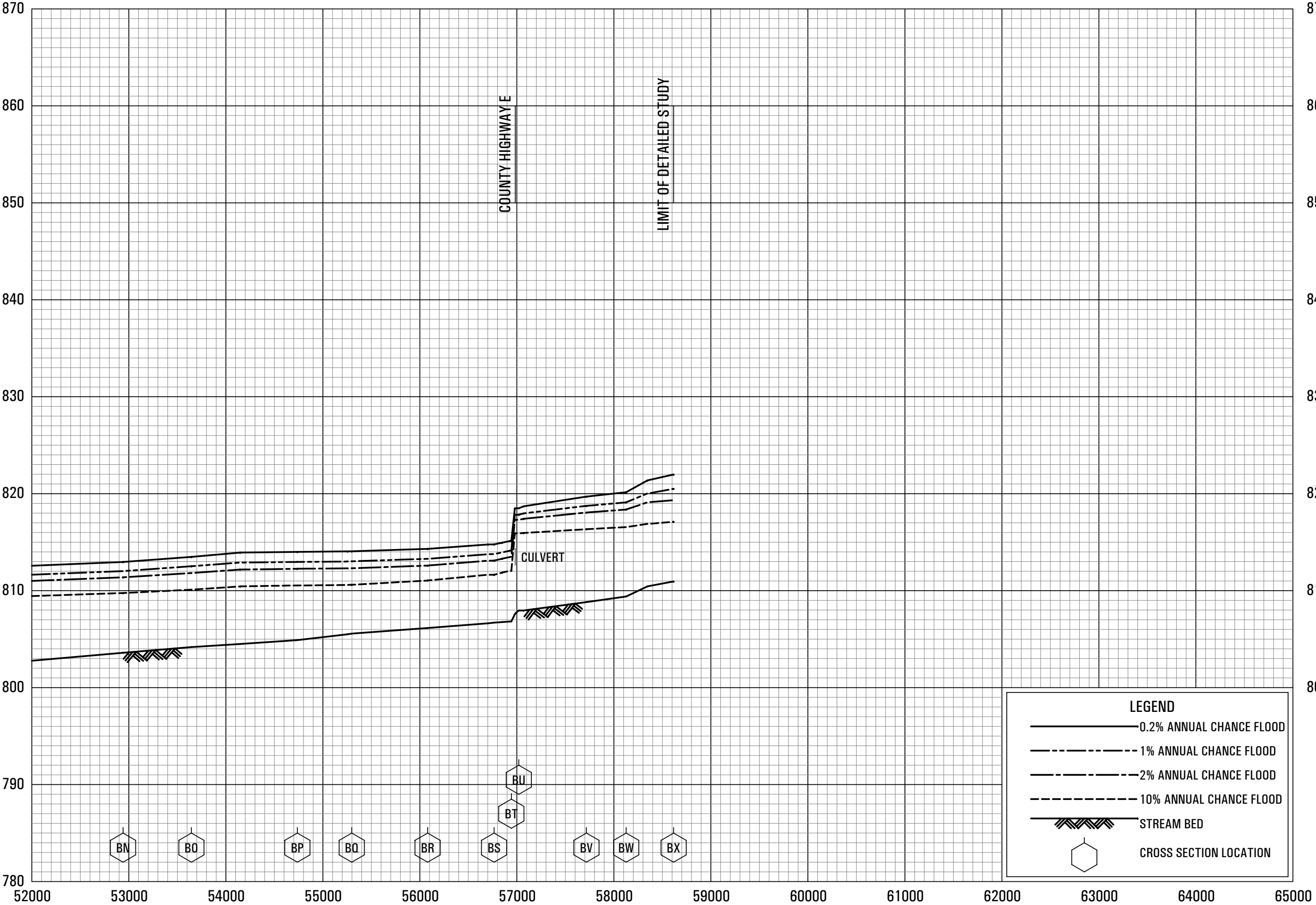
MUKWONAGO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

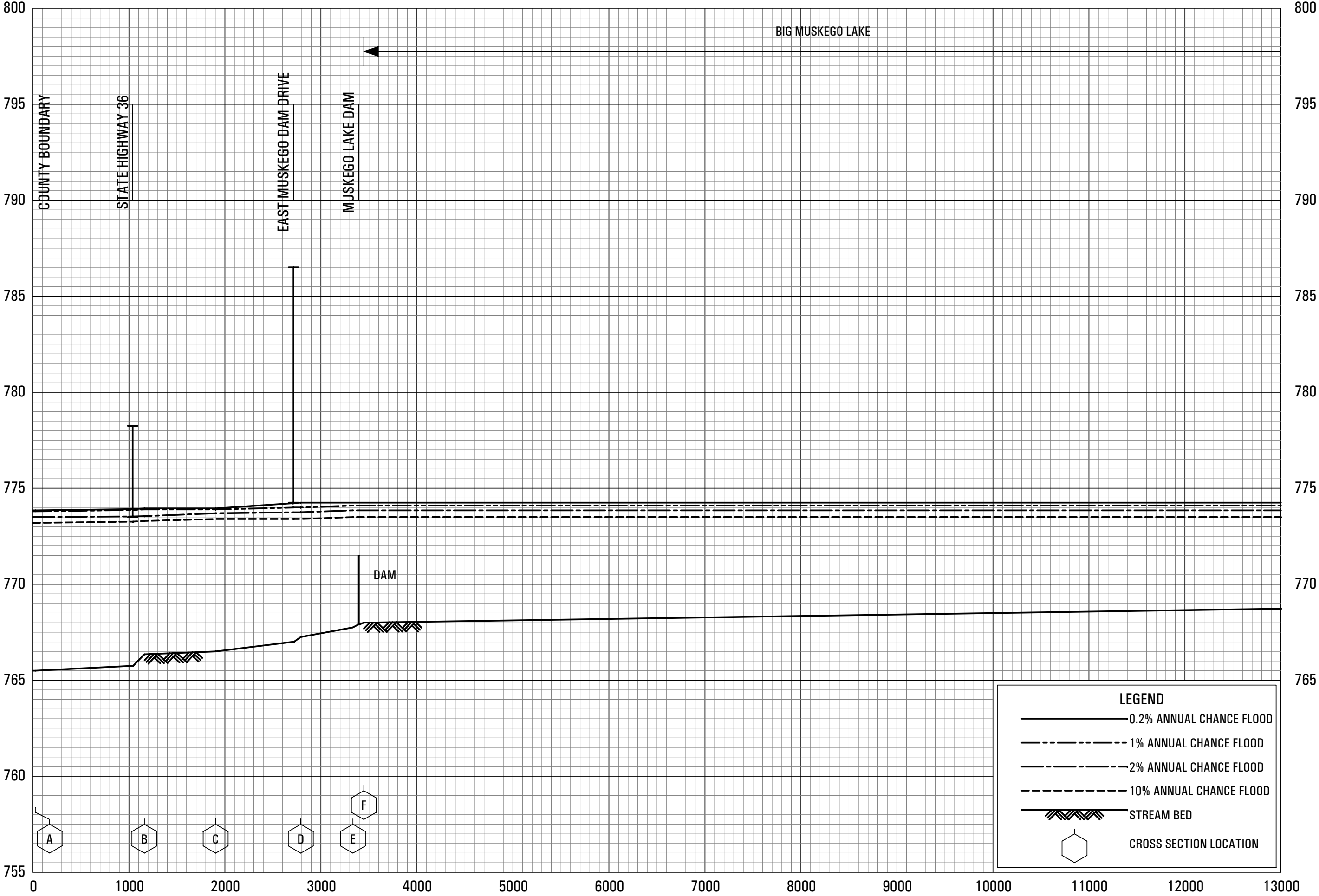
CROSS SECTION LOCATION

FLOOD PROFILES

MUKWONAGO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY , WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

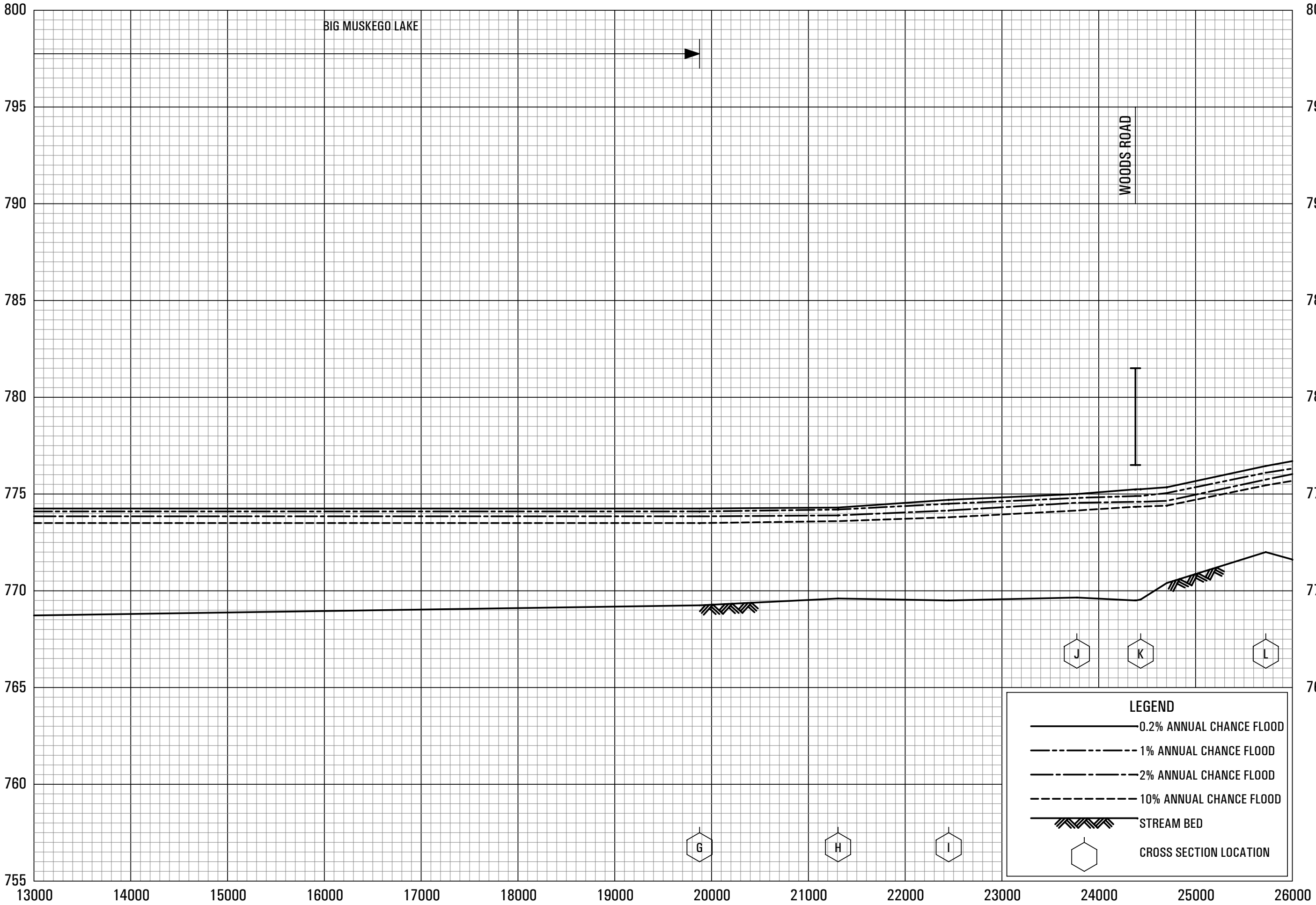


FLOOD PROFILES

MUSKEGO CANAL

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

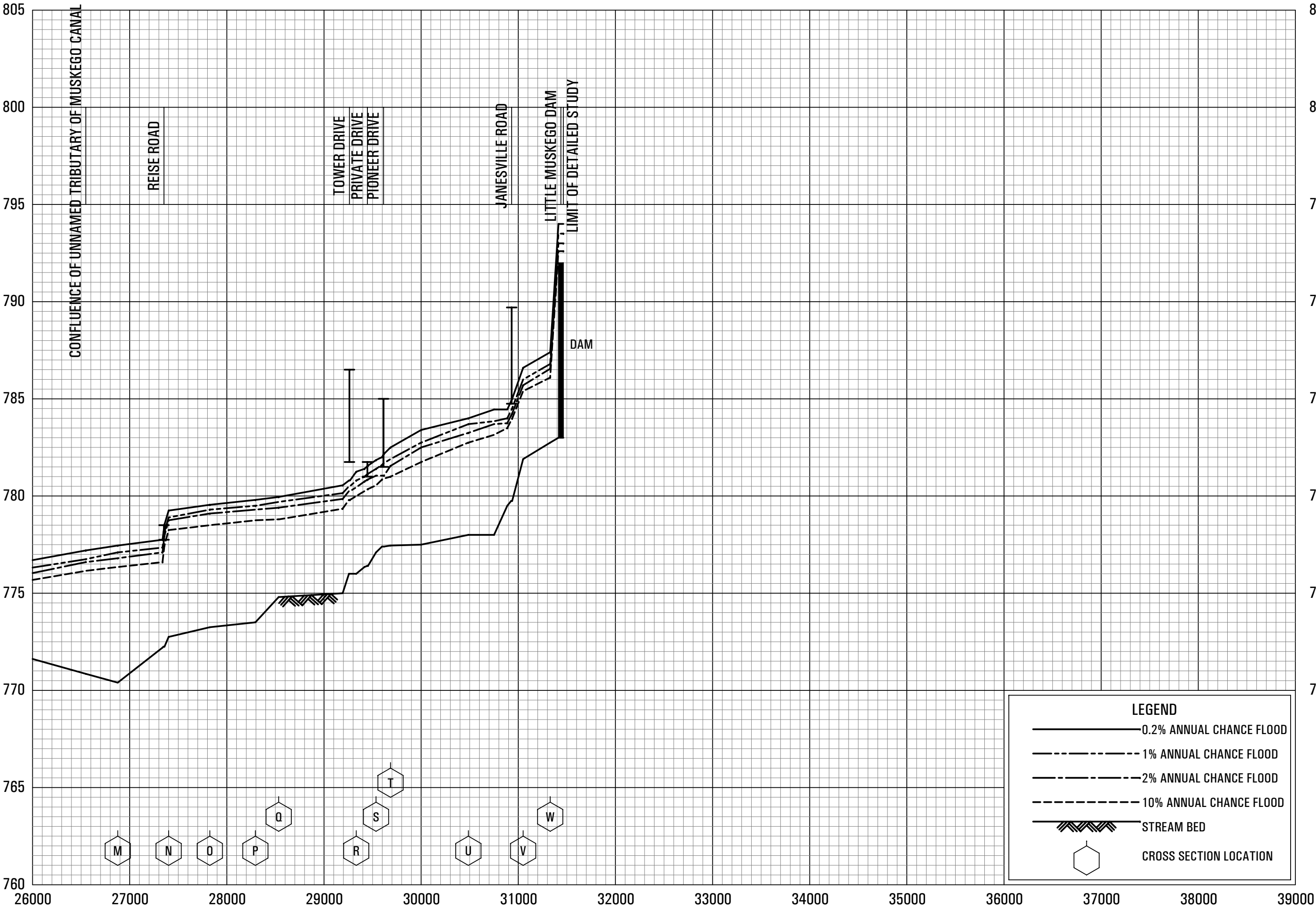


FLOOD PROFILES

MUSKEGO CANAL

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

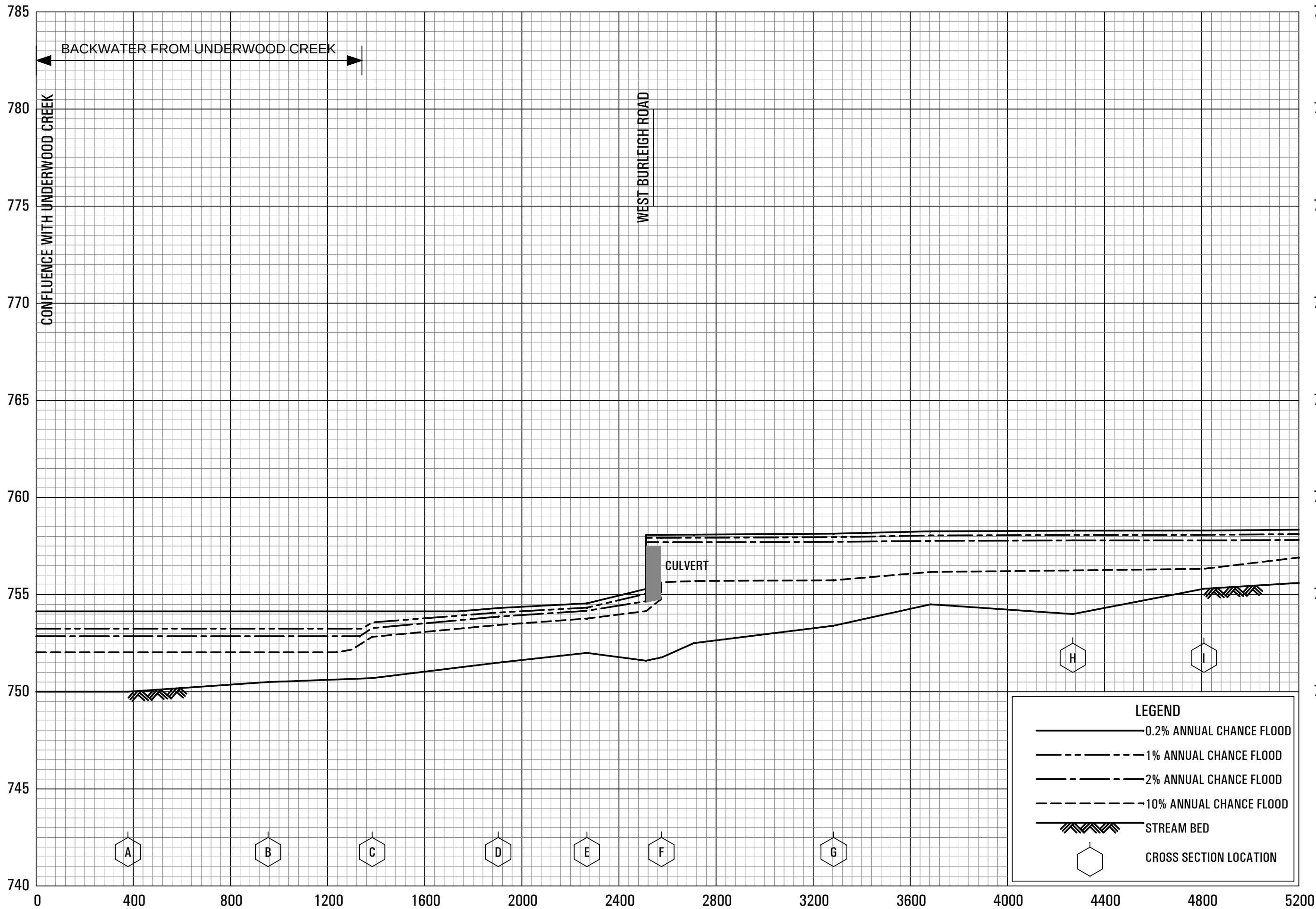
- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- . - 2% ANNUAL CHANCE FLOOD
- - - 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FLOOD PROFILES

MUSKEGO CANAL

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



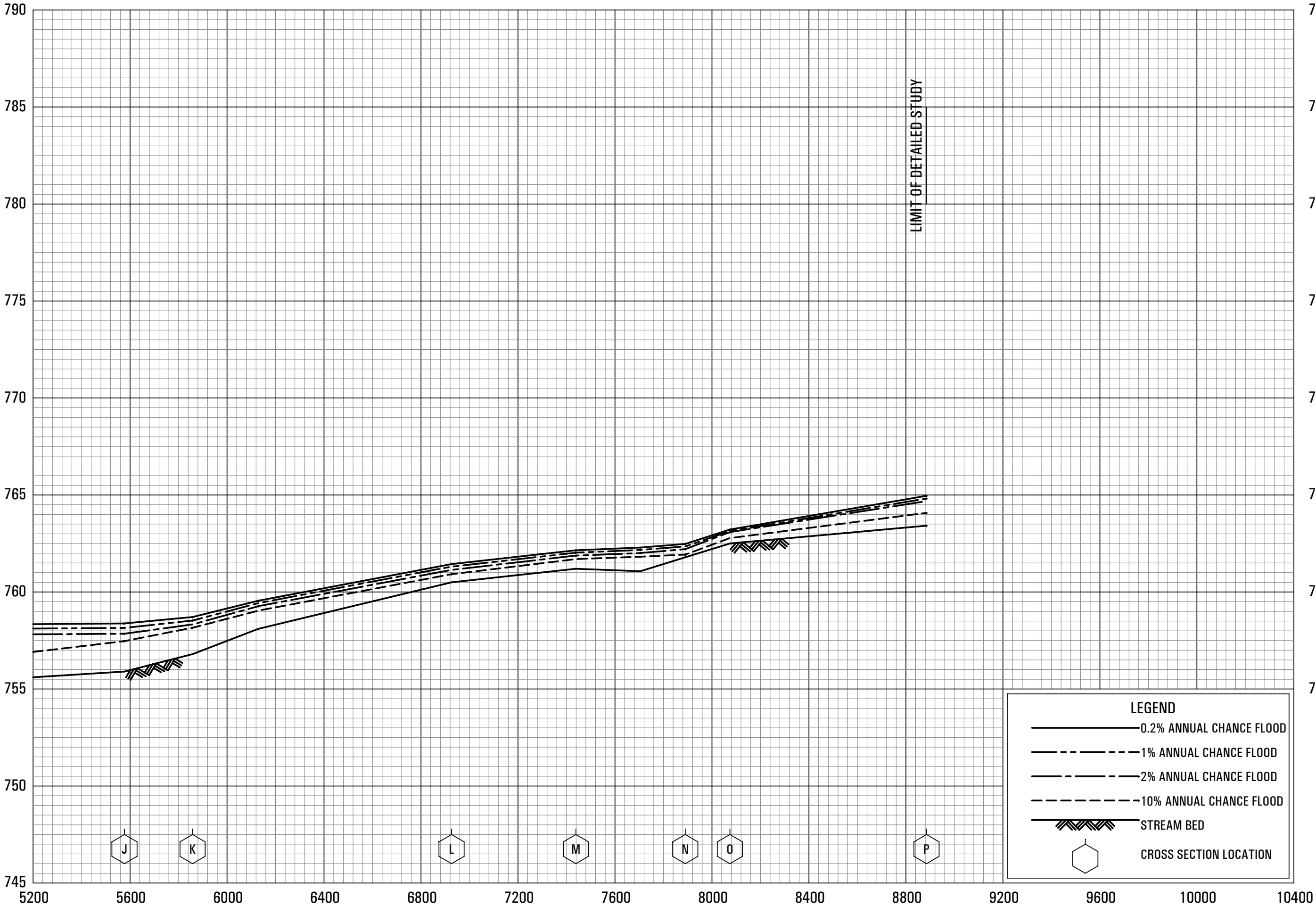
FLOOD PROFILES

NORTH BRANCH UNDERWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

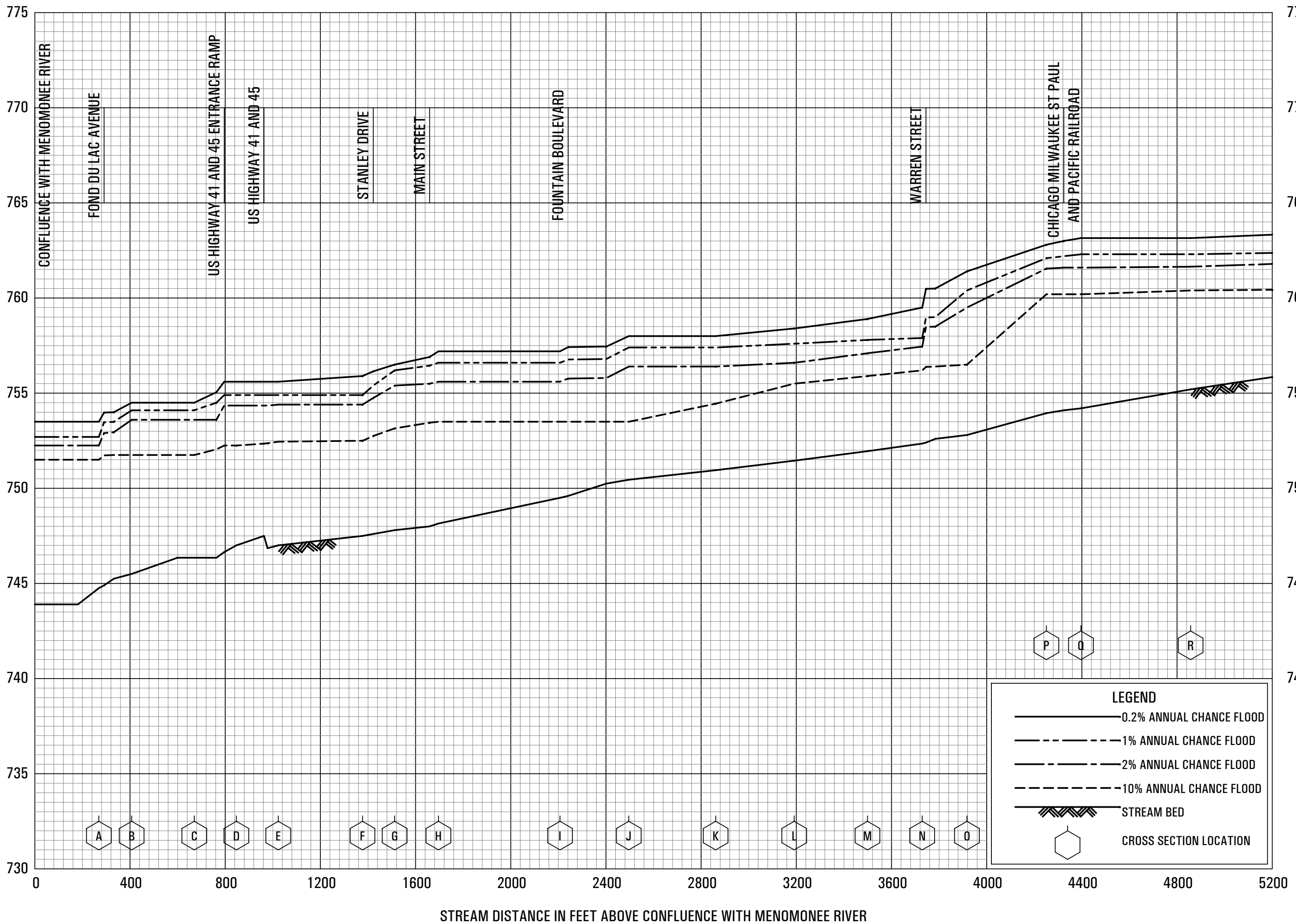
CROSS SECTION LOCATION

FLOOD PROFILES

NORTH BRANCH UNDERWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

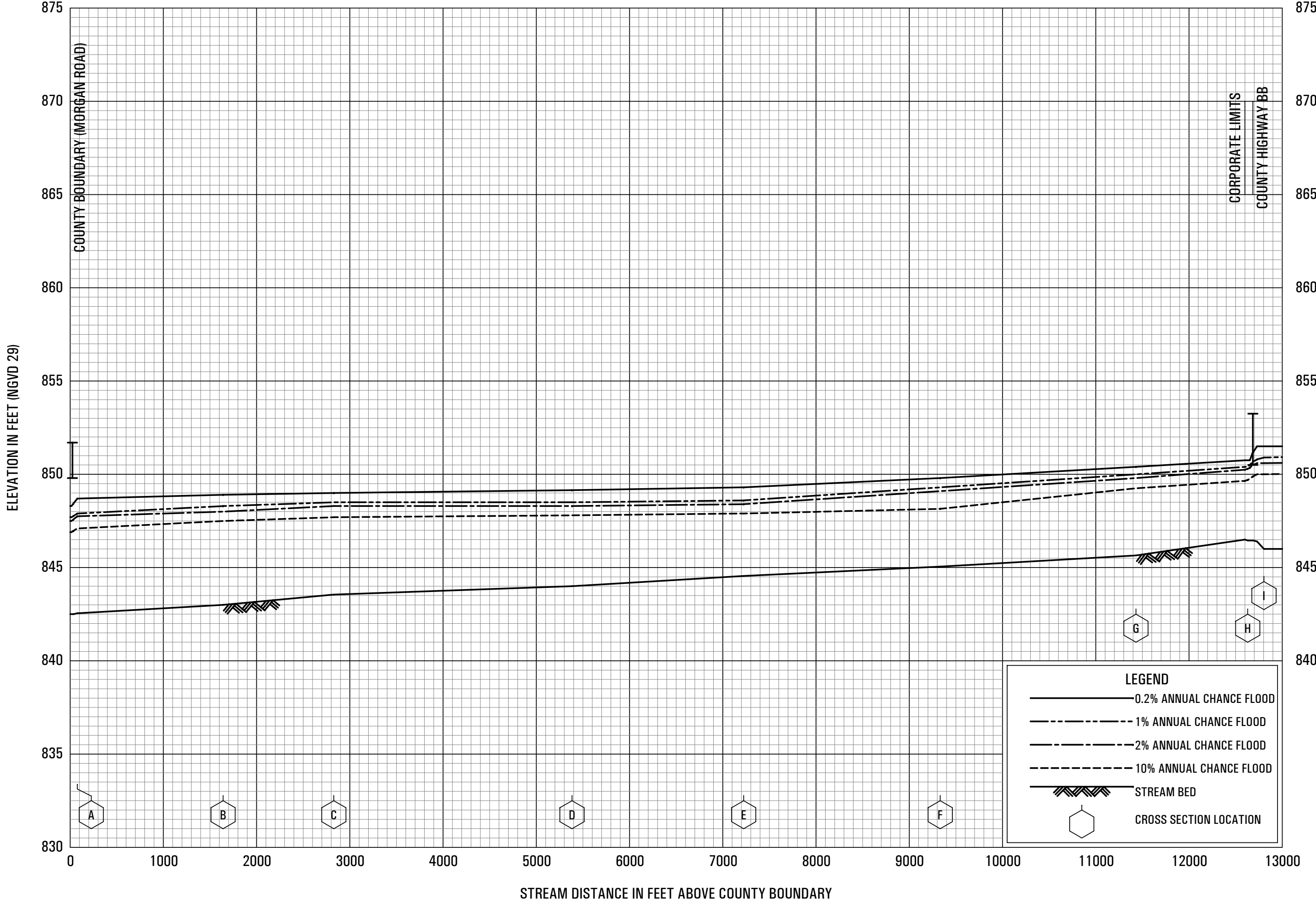


FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FLOOD PROFILES

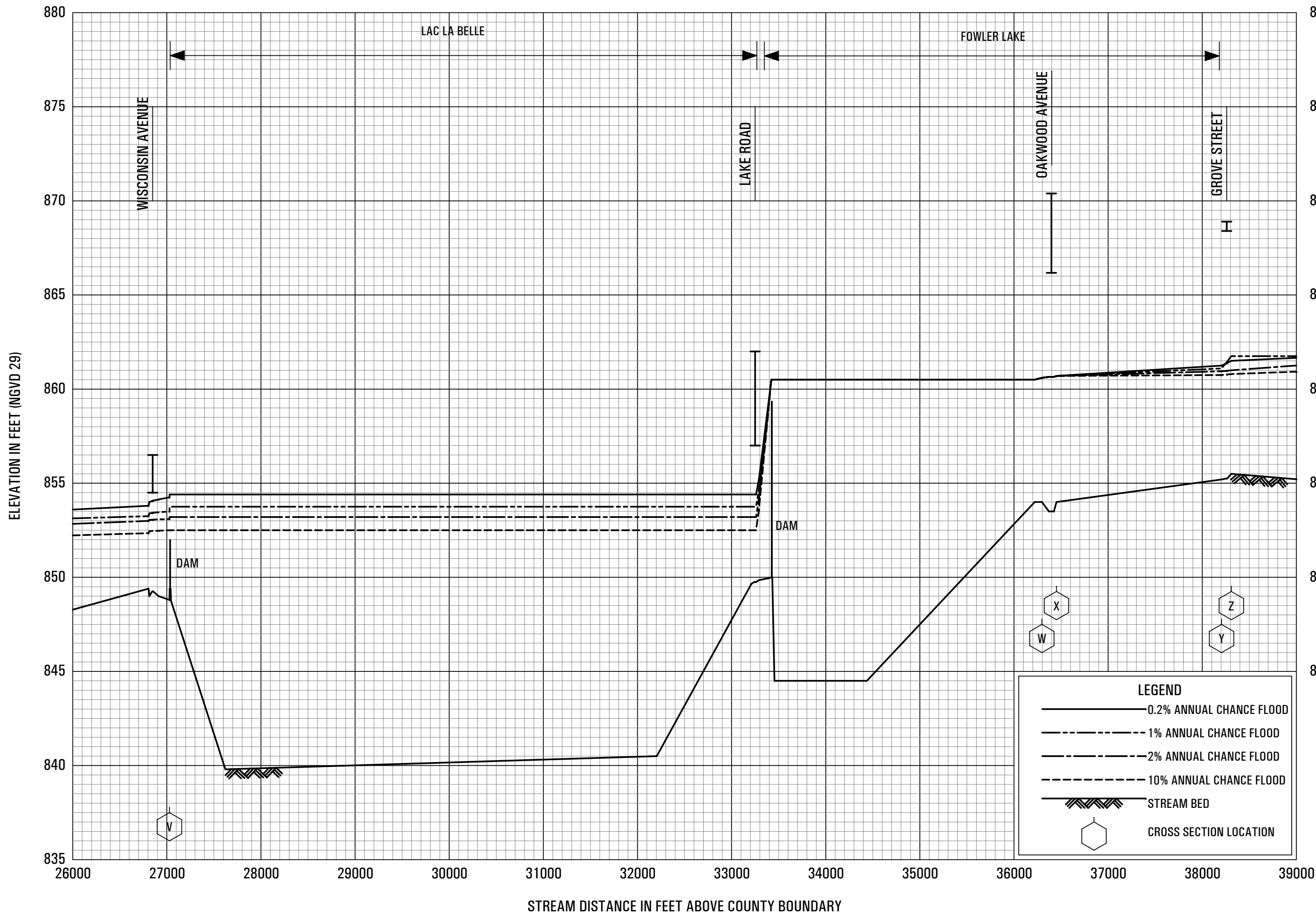
NOR-X-WAY CHANNEL



FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

OCONOMOWOC RIVER



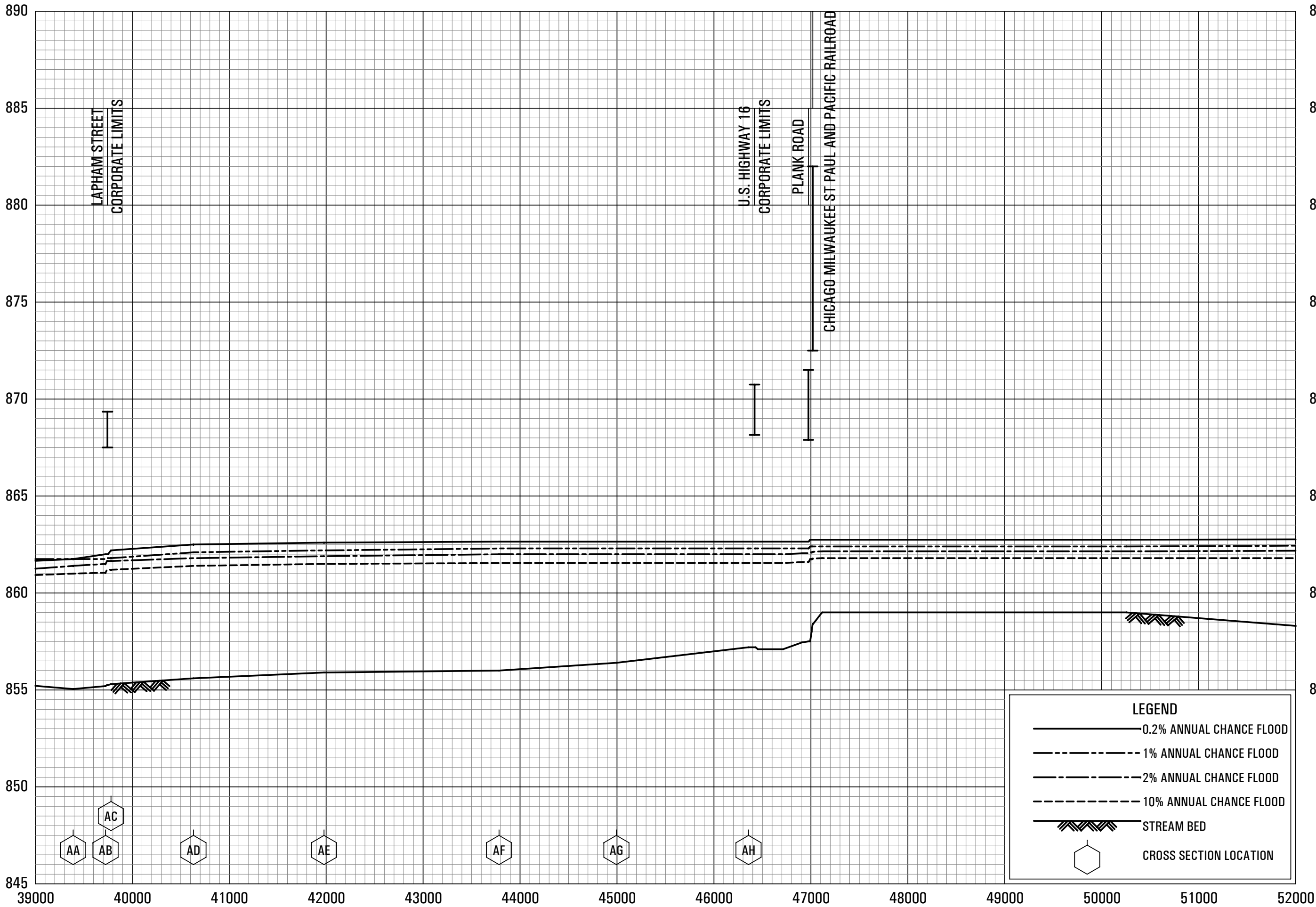
FLOOD PROFILES

OCONOMOWOC RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

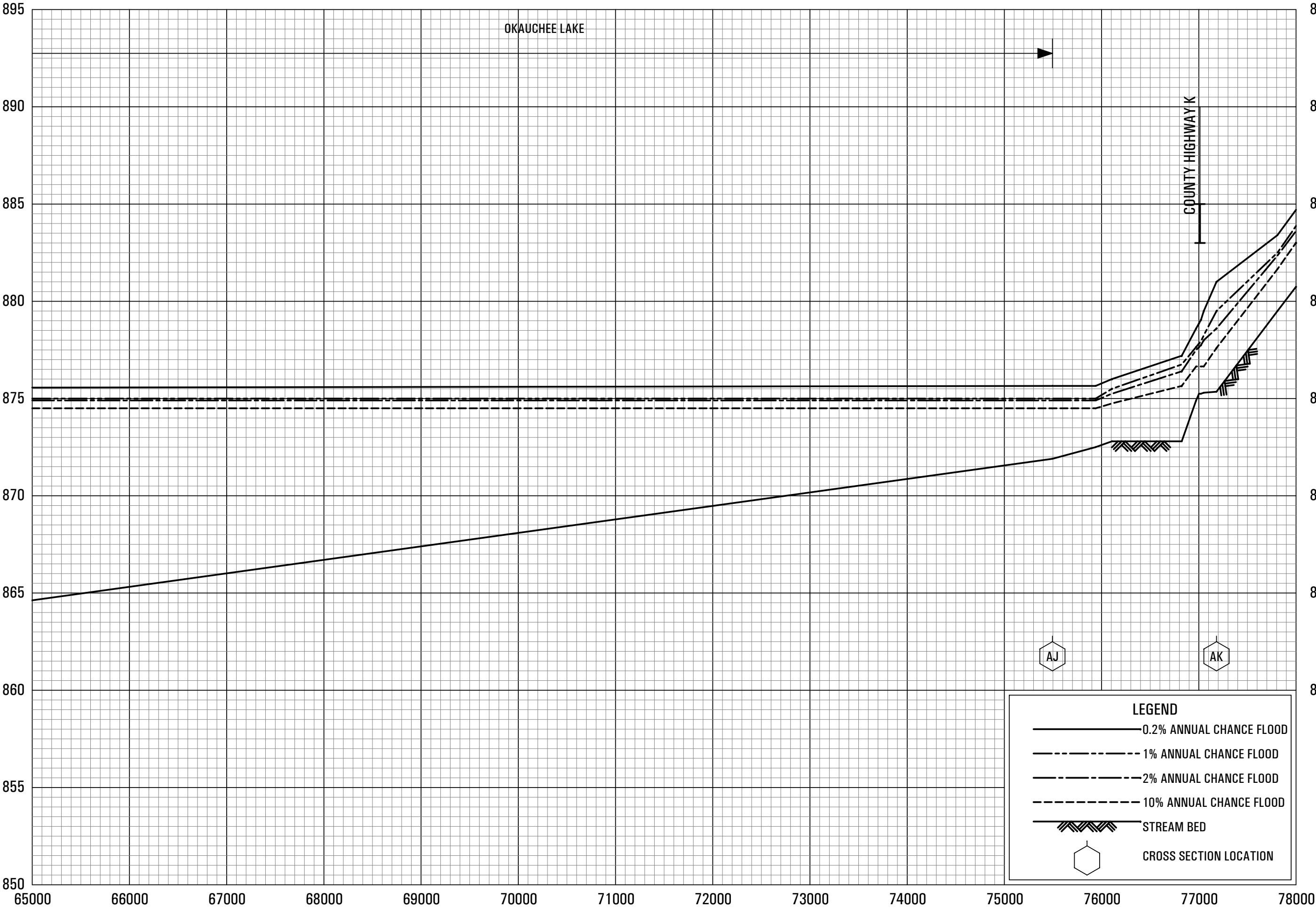
ELEVATION IN FEET (NGVD 29)



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 (NGVD 29)

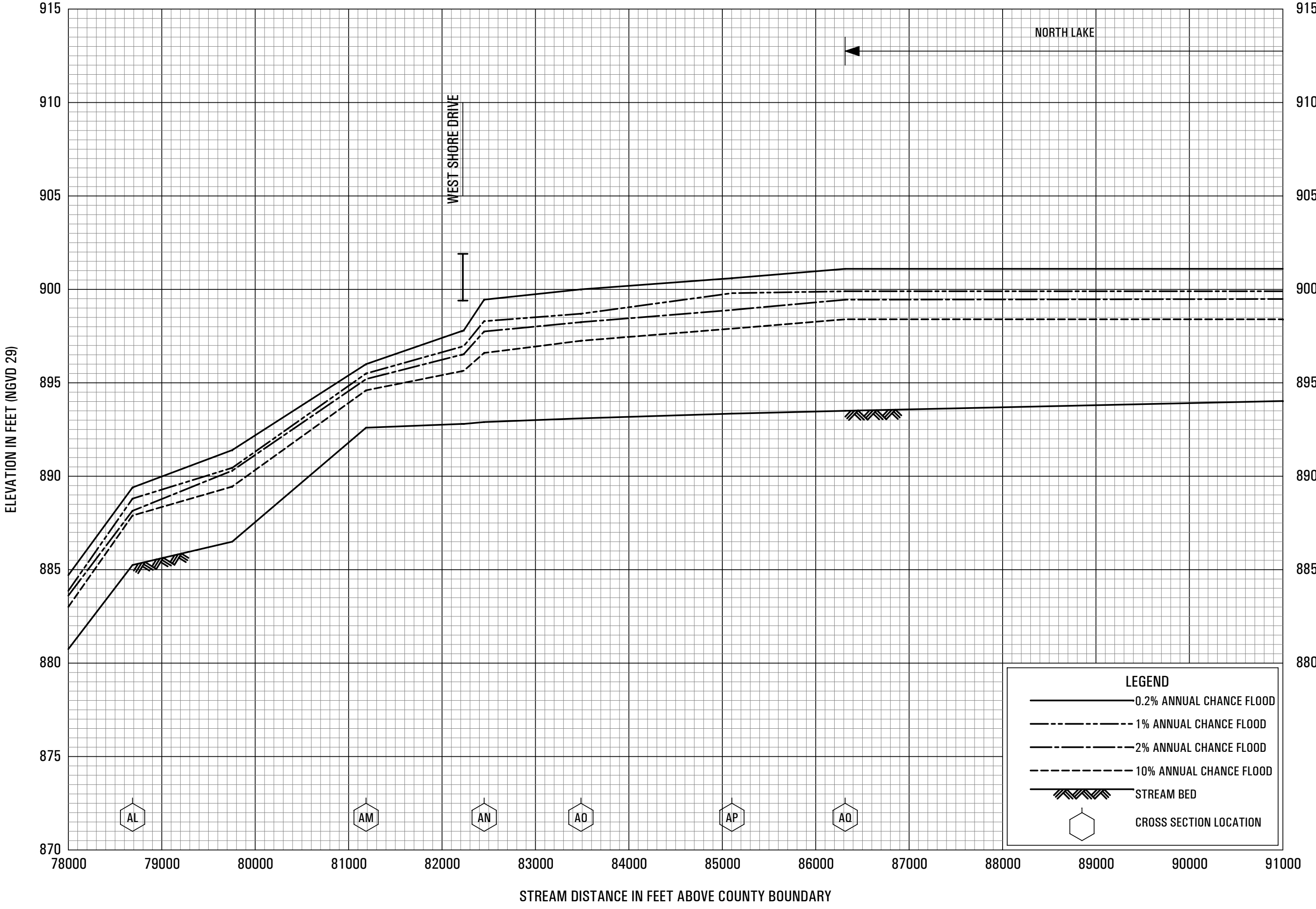


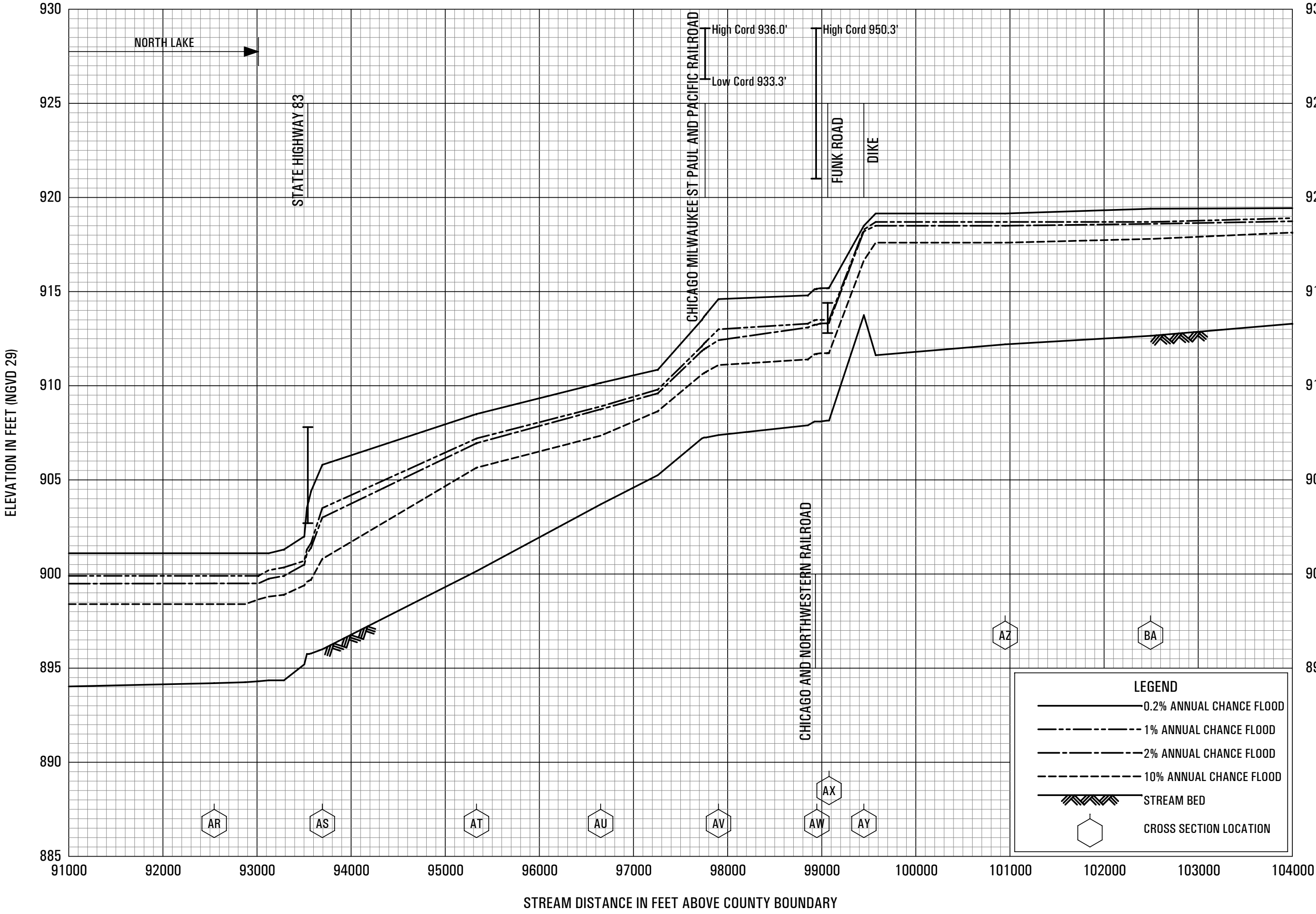
FLOOD PROFILES

OCONOMOWOC RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



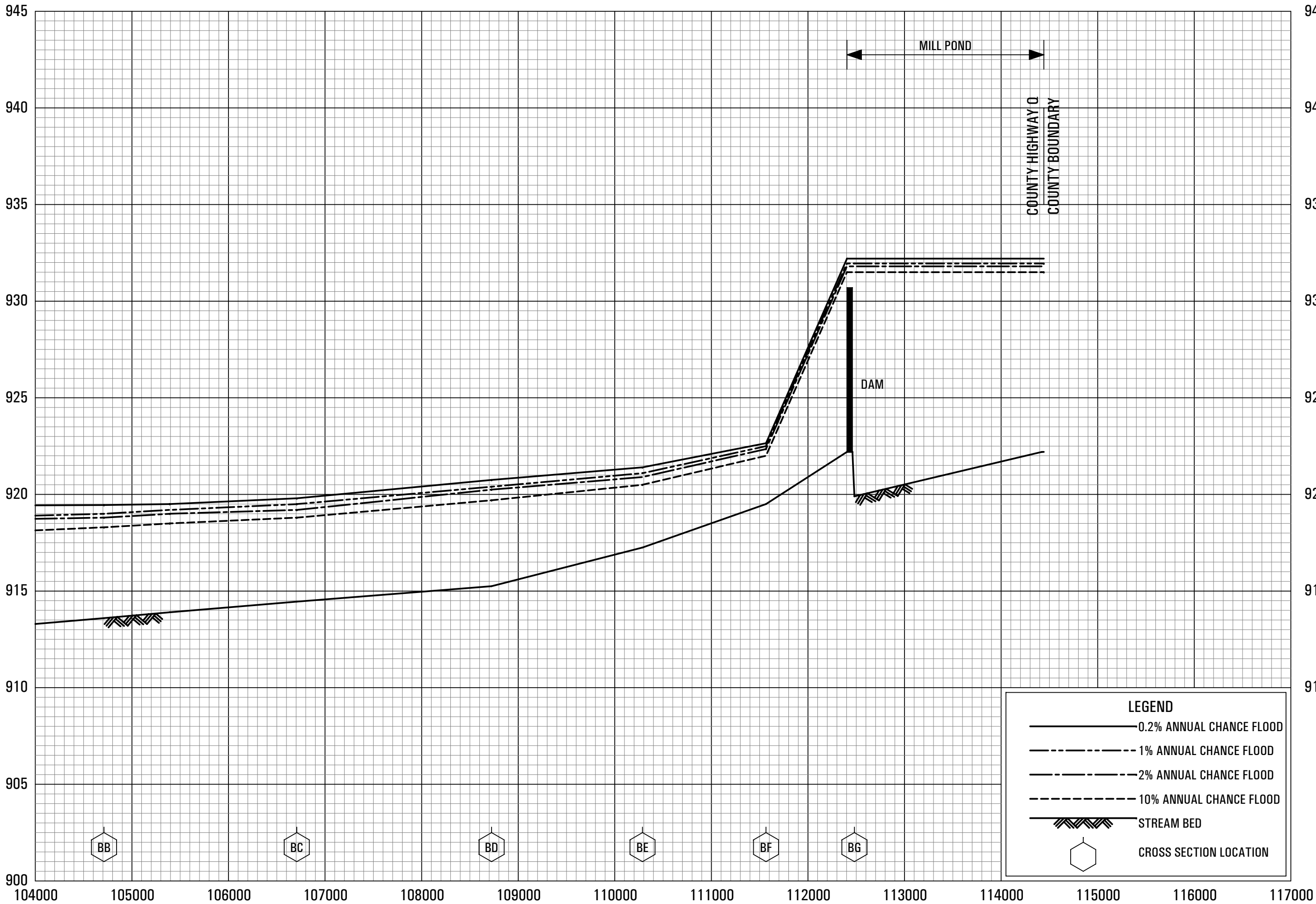


FLOOD PROFILES

OCONOMOWOC RIVER

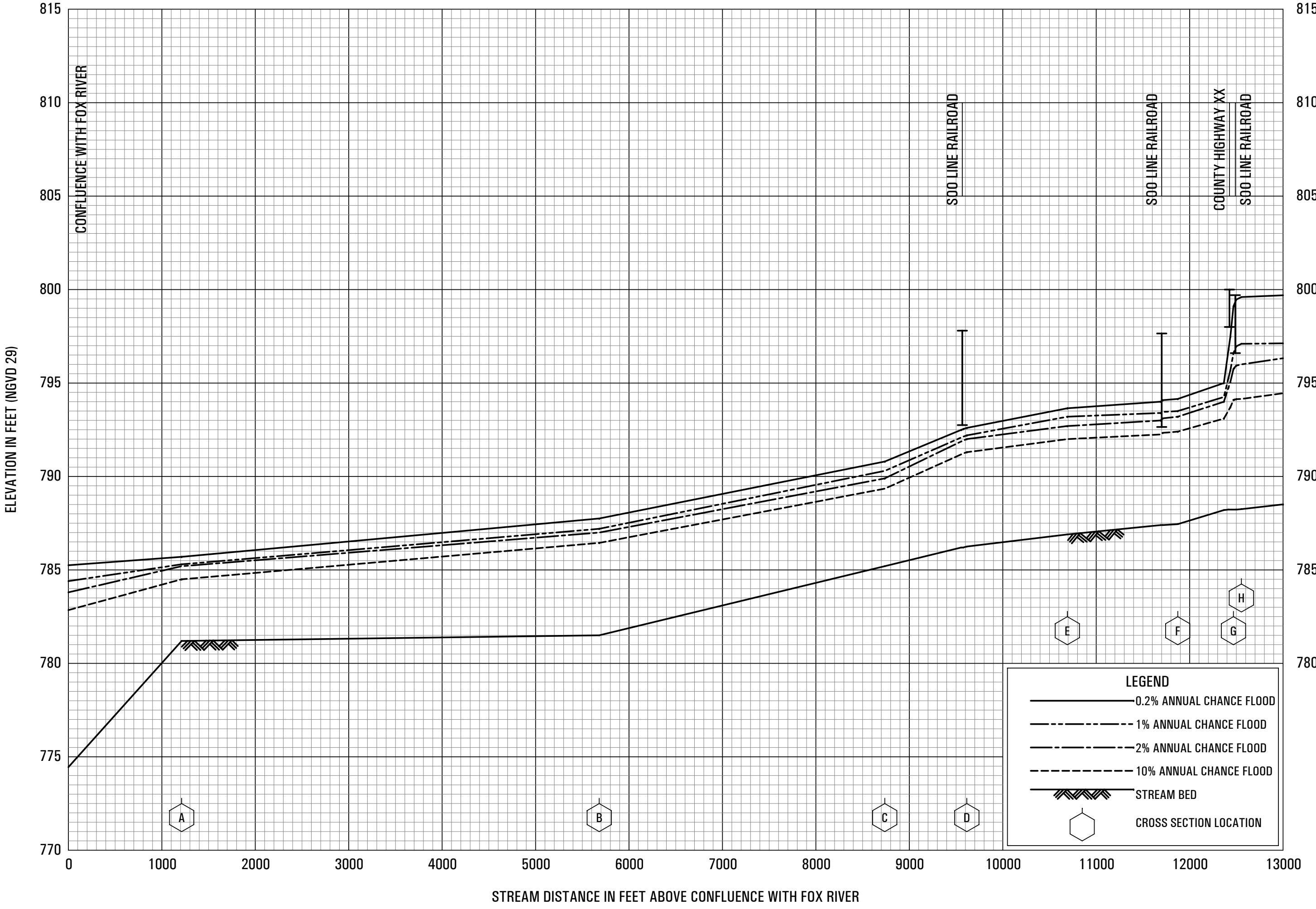
FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

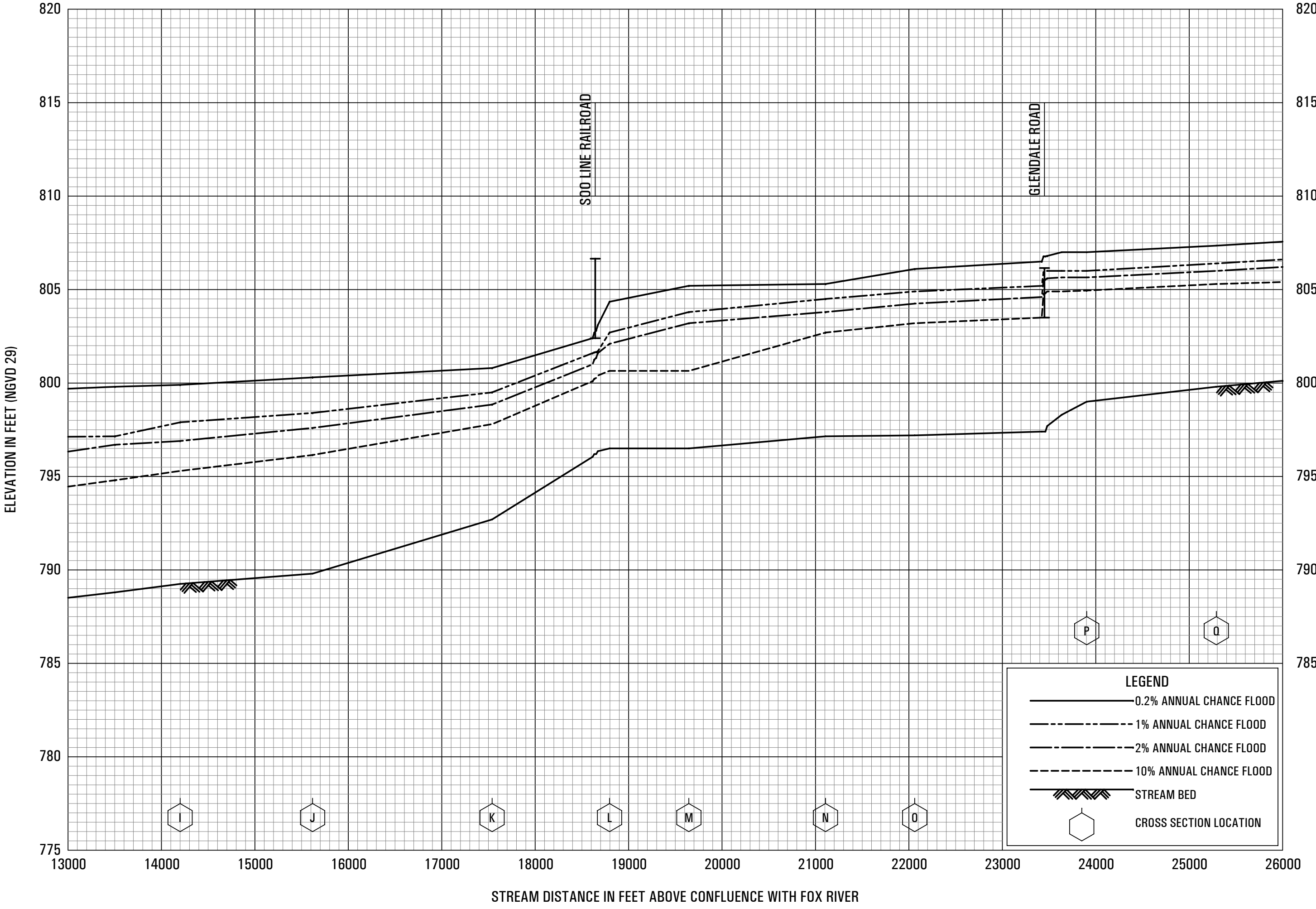
- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- . - 2% ANNUAL CHANCE FLOOD
- - - 10% ANNUAL CHANCE FLOOD
- / / / / / STREAM BED
- ⬡ CROSS SECTION LOCATION



FLOOD PROFILES

PEBBLE BROOK

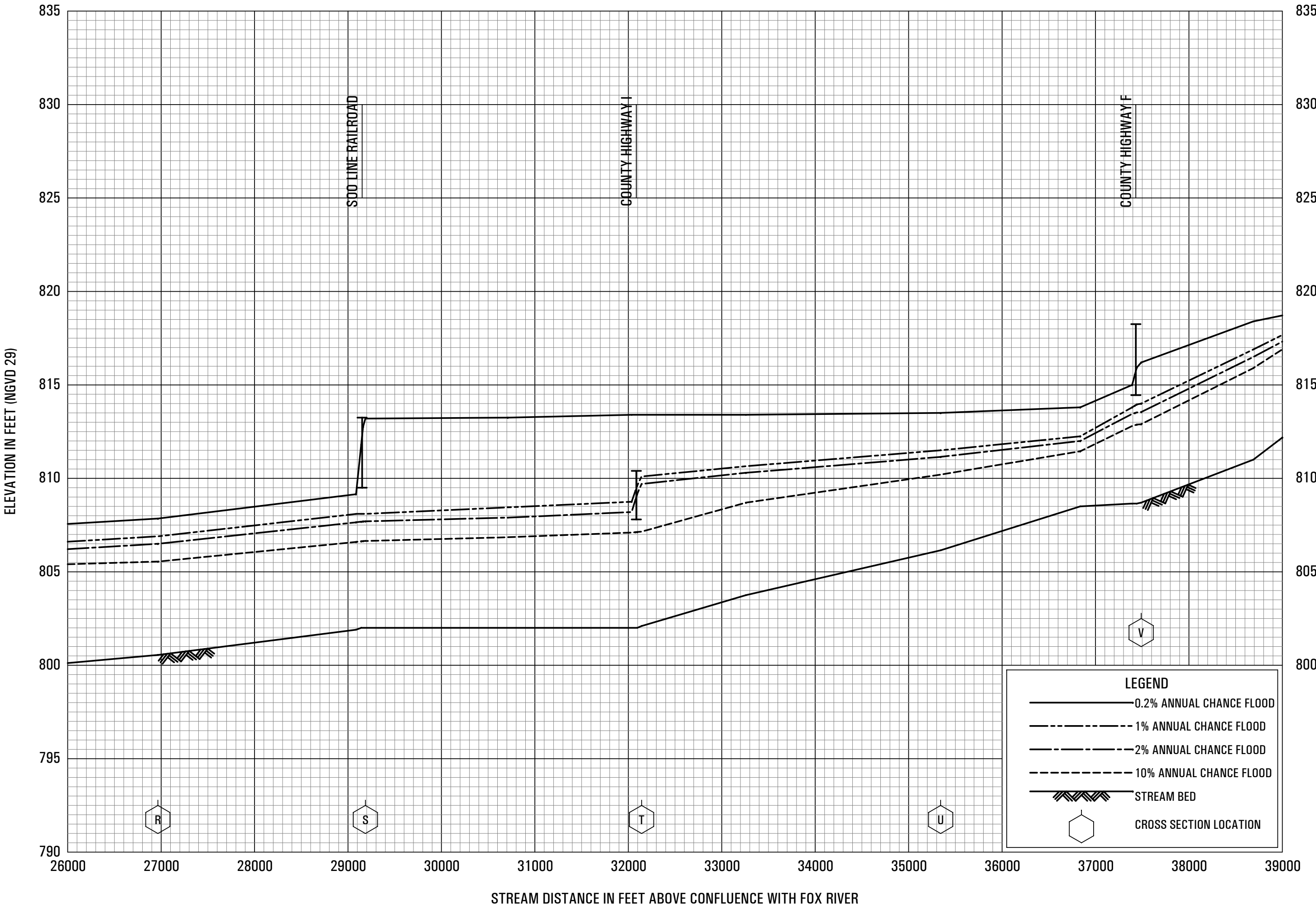
FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



FLOOD PROFILES

PEBBLE BROOK

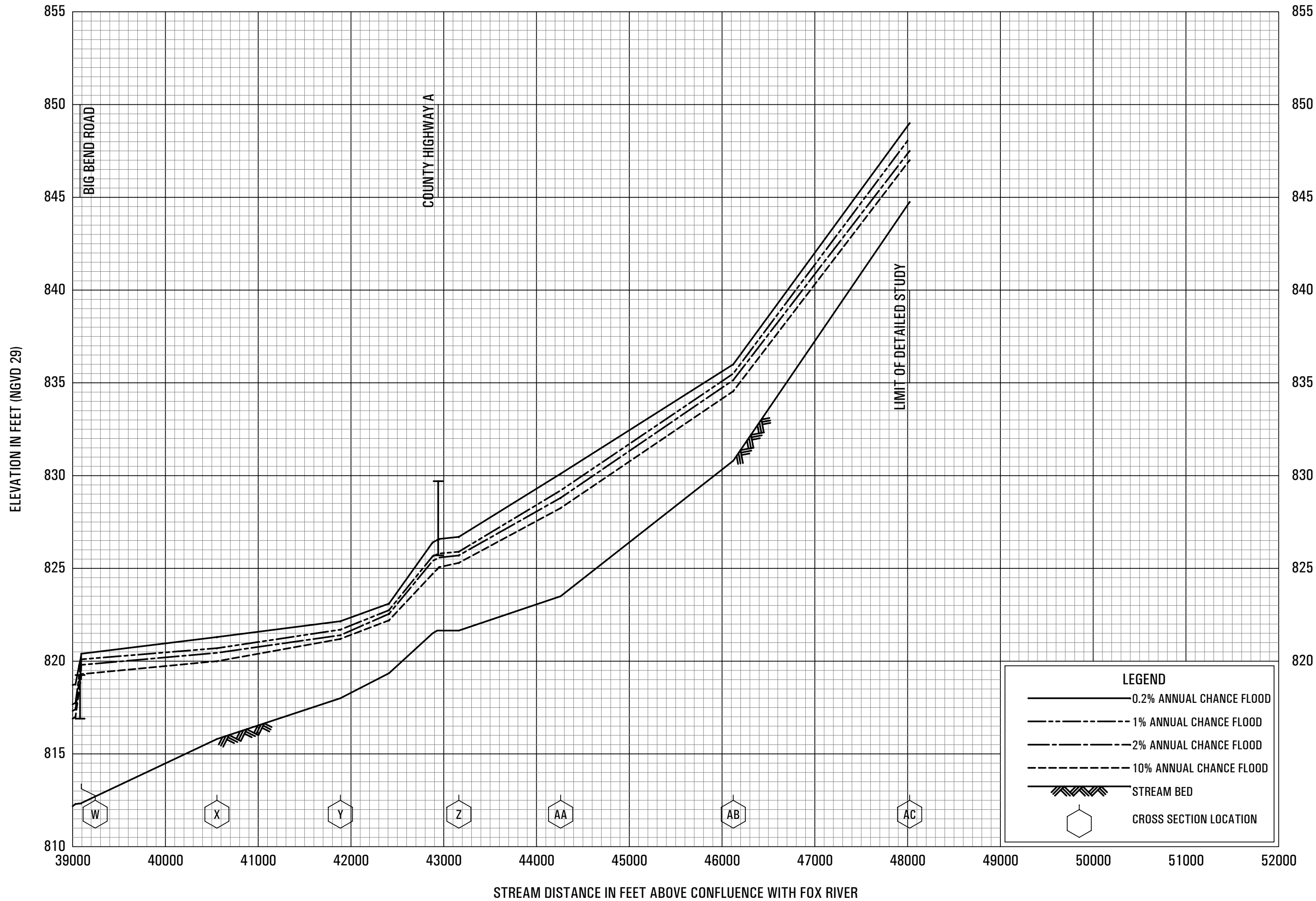
FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



FLOOD PROFILES

PEBBLE BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

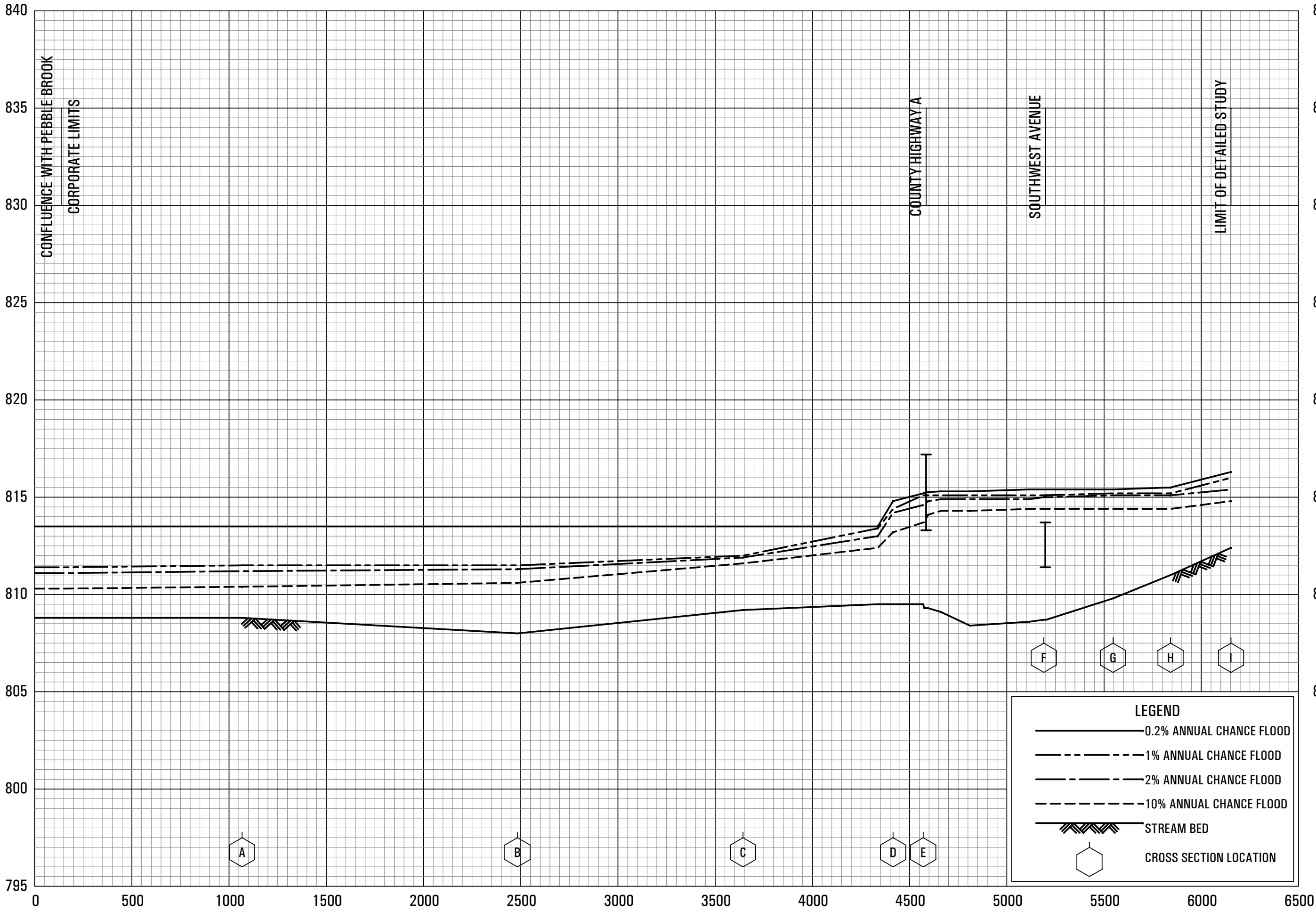


FLOOD PROFILES

PEBBLE BROOK

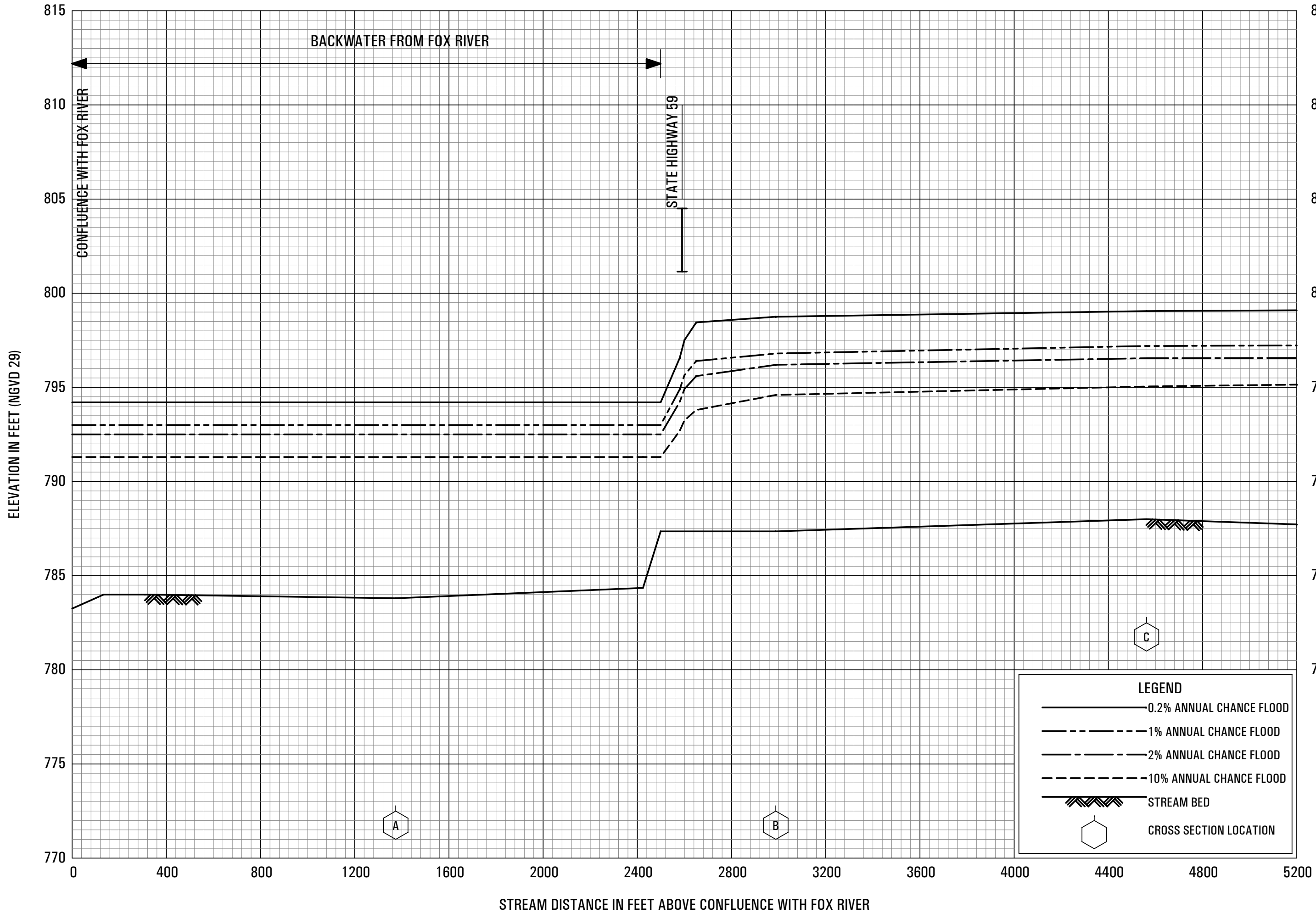
FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- . - . 2% ANNUAL CHANCE FLOOD
- - - - 10% ANNUAL CHANCE FLOOD
- / / / / — STREAM BED
- ⬡ CROSS SECTION LOCATION

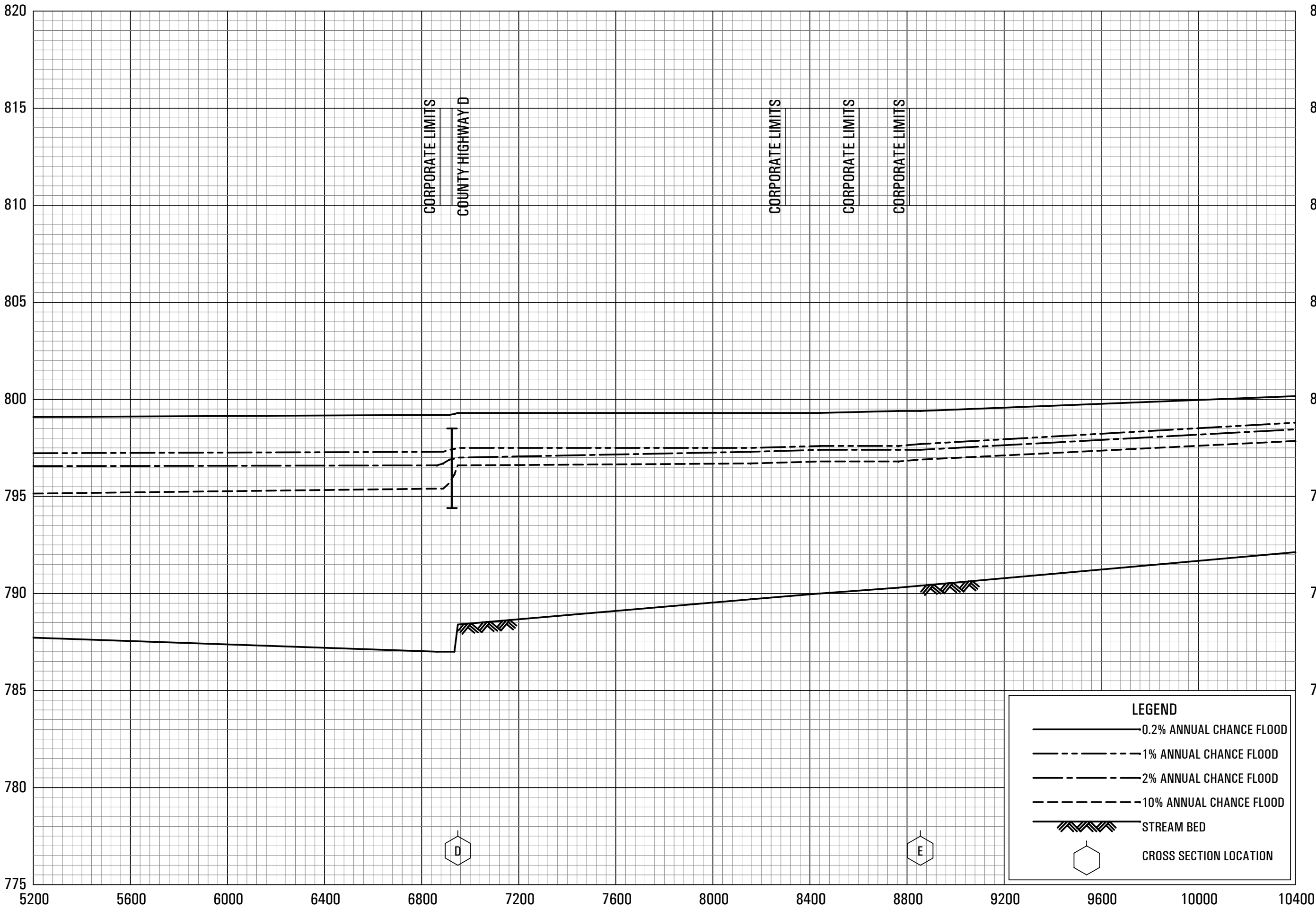


FLOOD PROFILES

PEBBLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

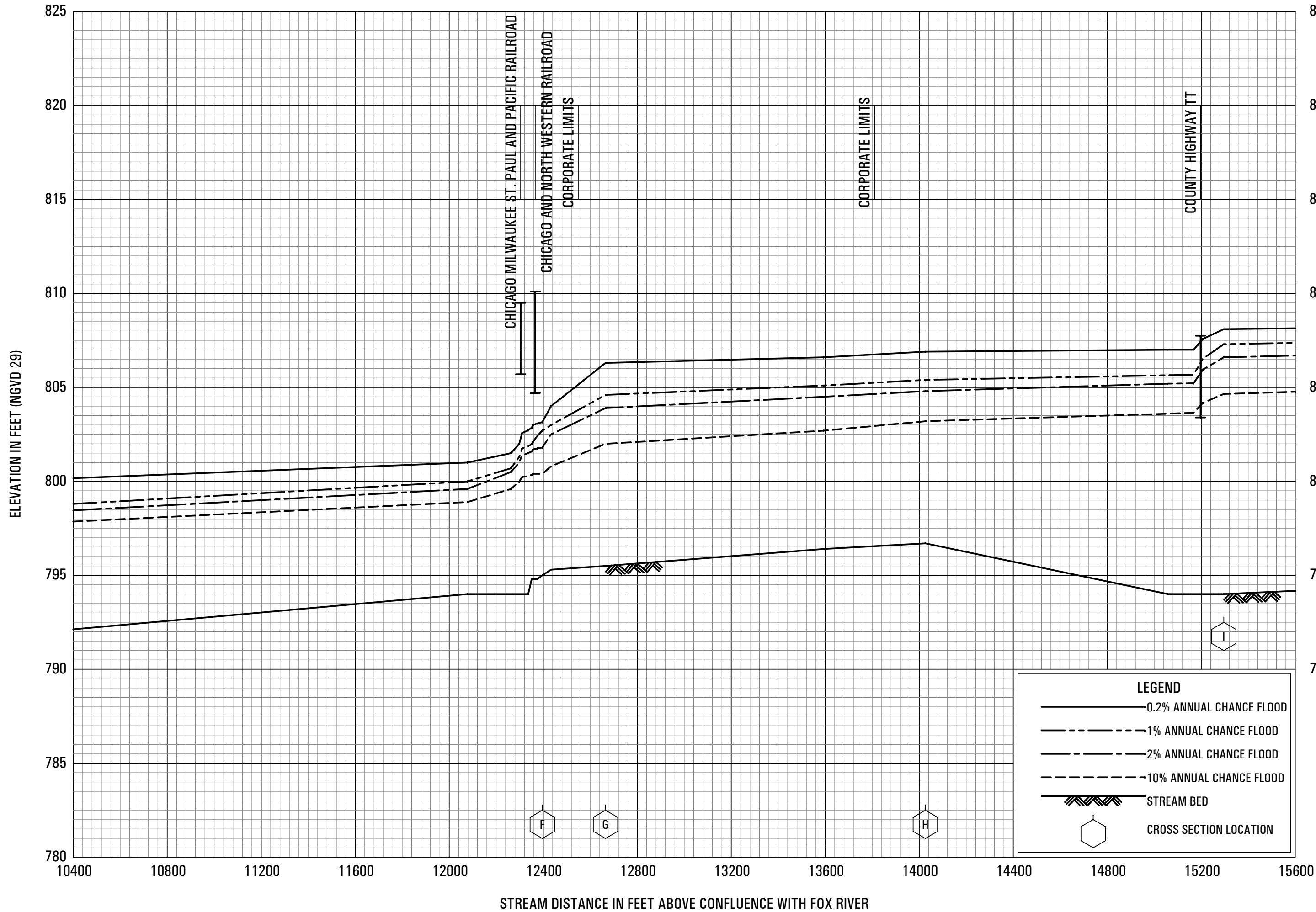


STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

FLOOD PROFILES

PEBBLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

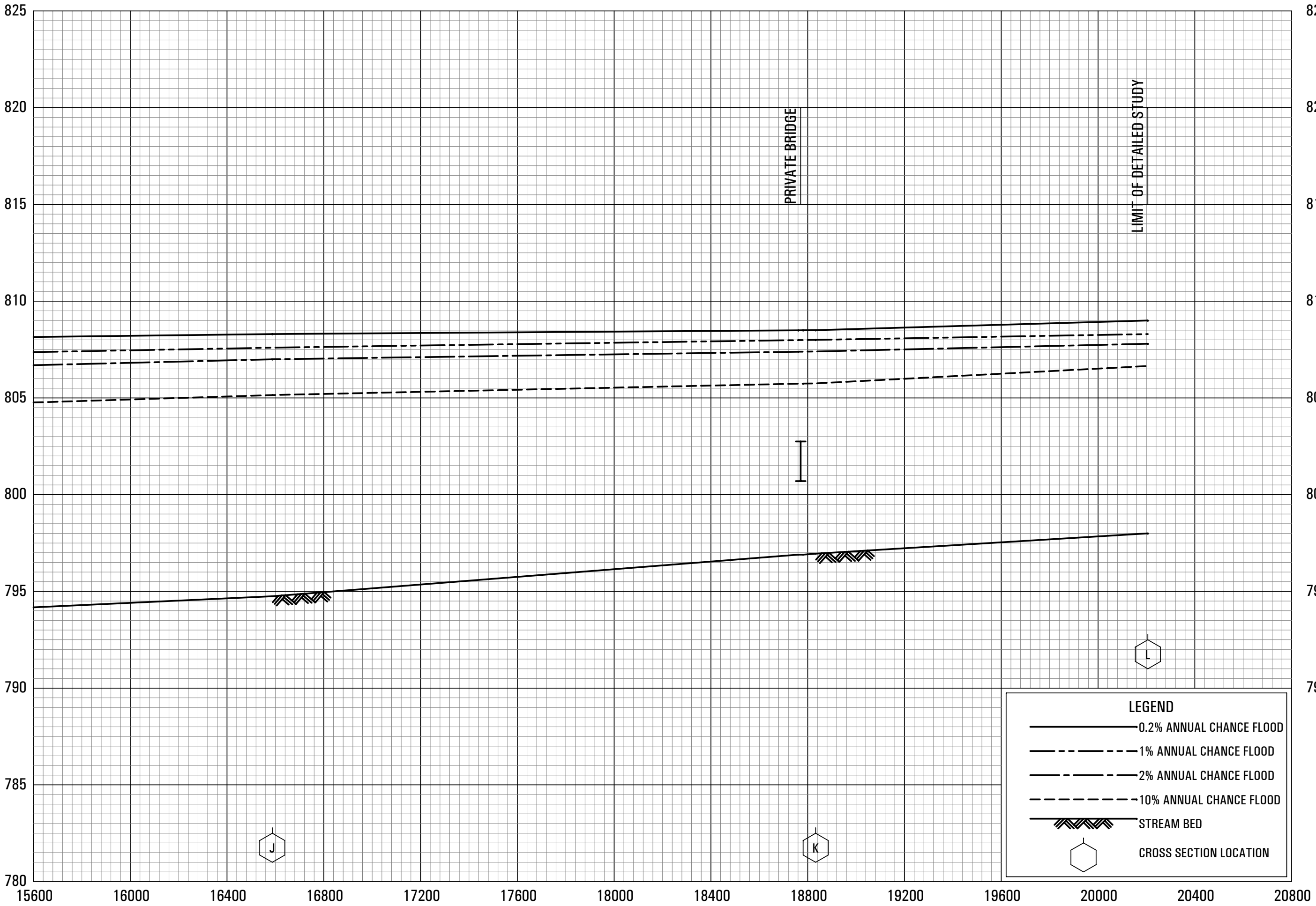


FLOOD PROFILES

PEBBLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

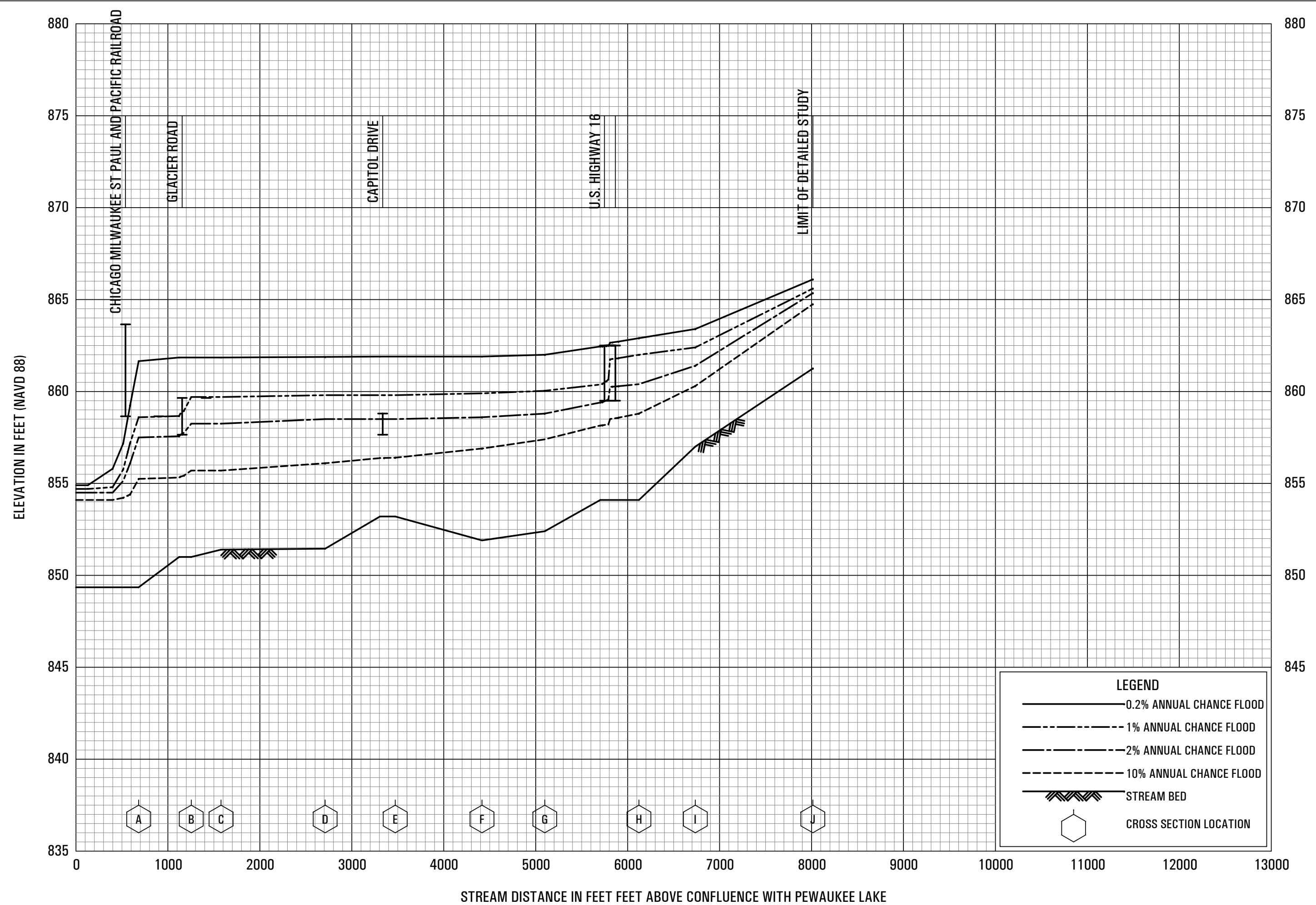
ELEVATION IN FEET (NGVD 29)

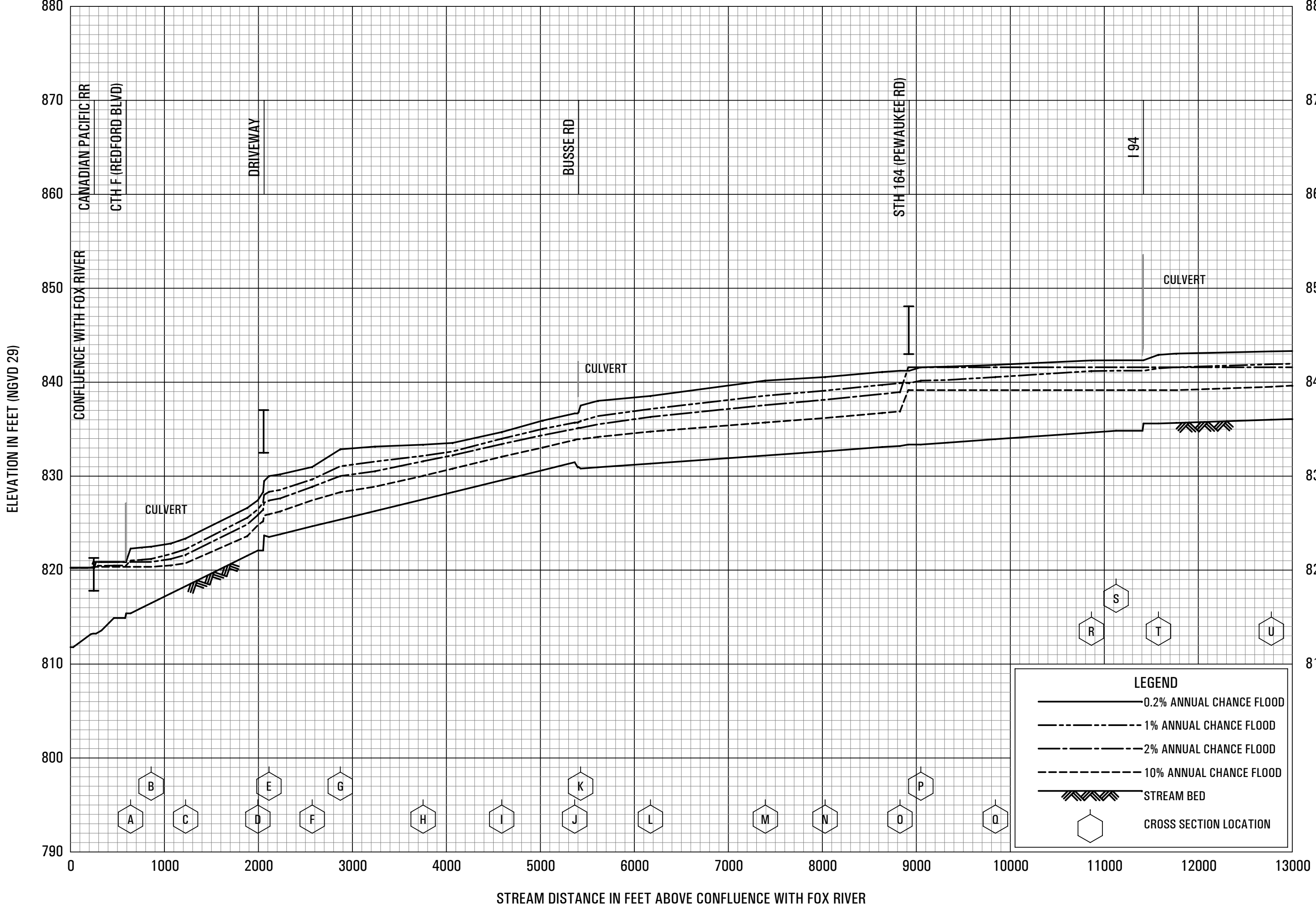


FLOOD PROFILES

PEBBLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS





ELEVATION IN FEET (NGVD 29)

900
890
880
870
860
850
840
830
820
810

13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

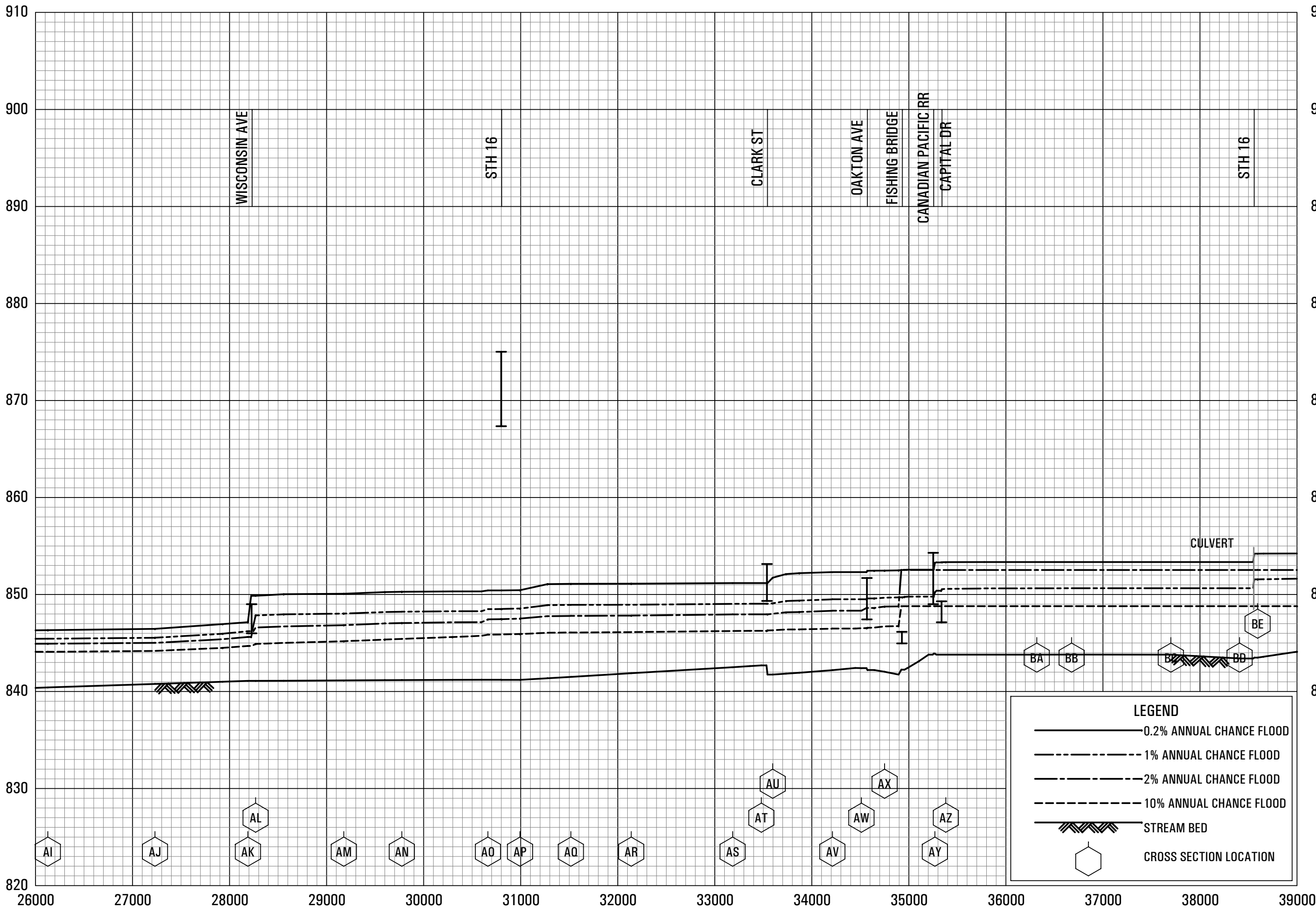
FLOOD PROFILES

PEWAUKEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

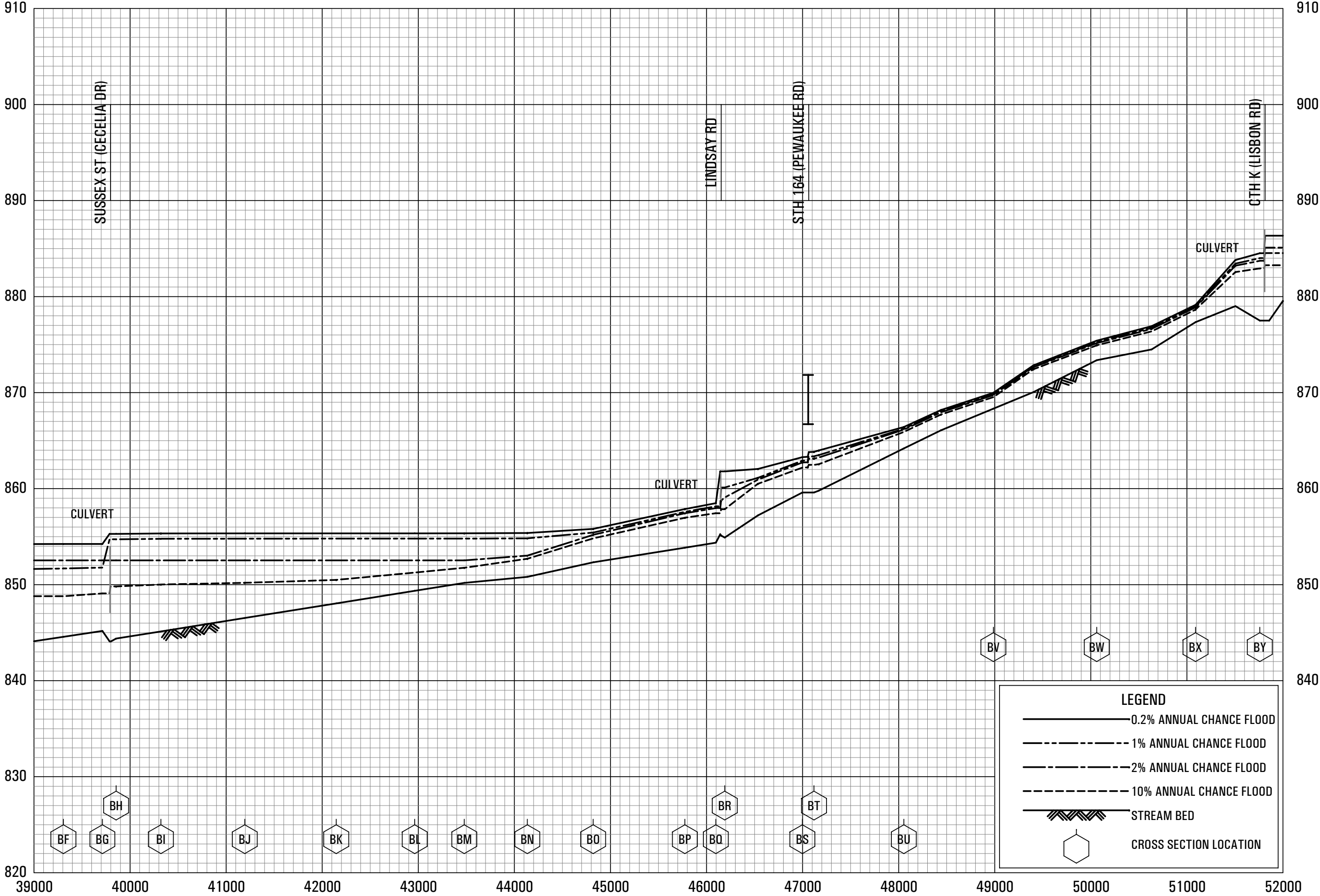
FLOOD PROFILES

PEWAUKEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

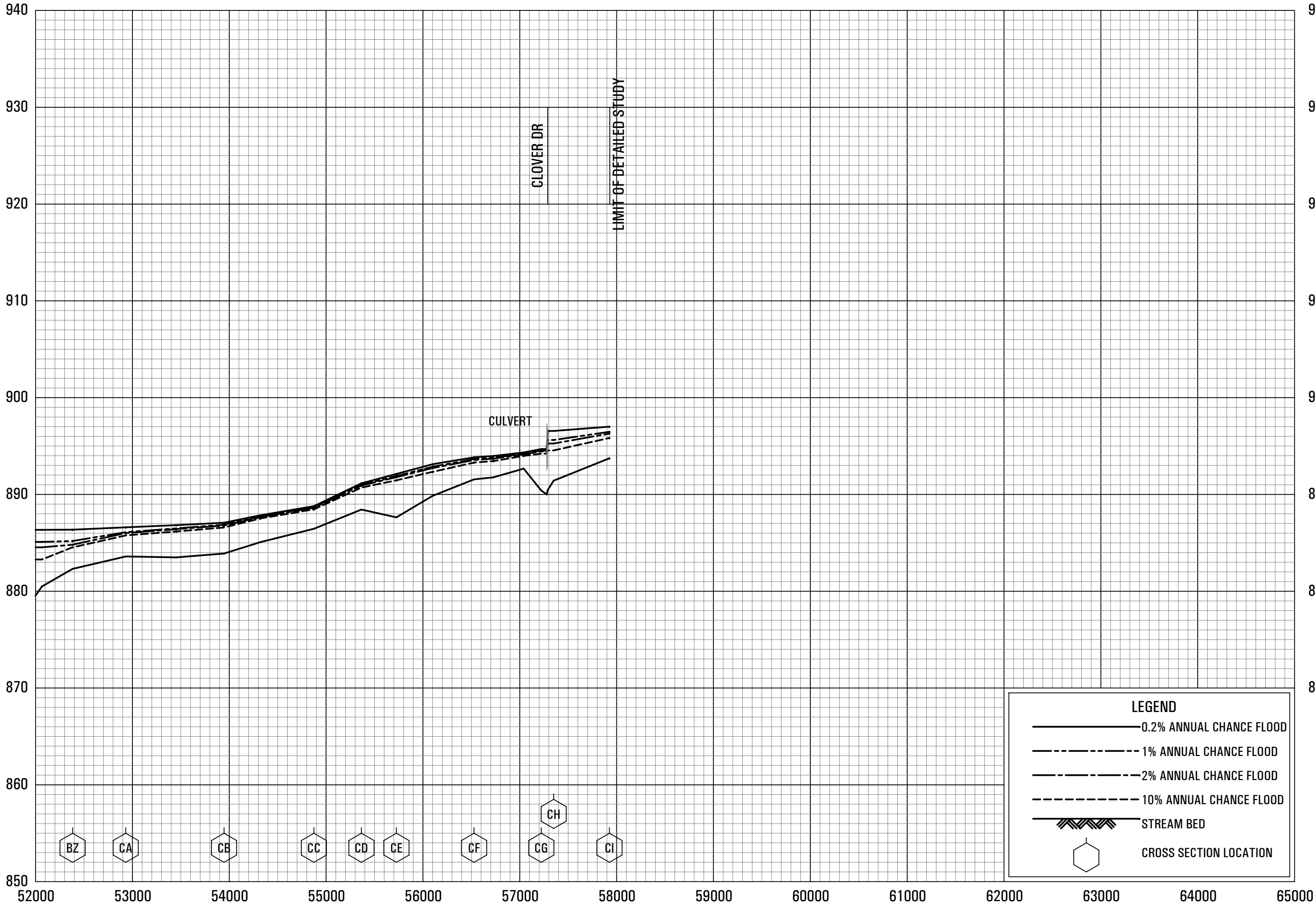
FLOOD PROFILES

PEWAUKEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

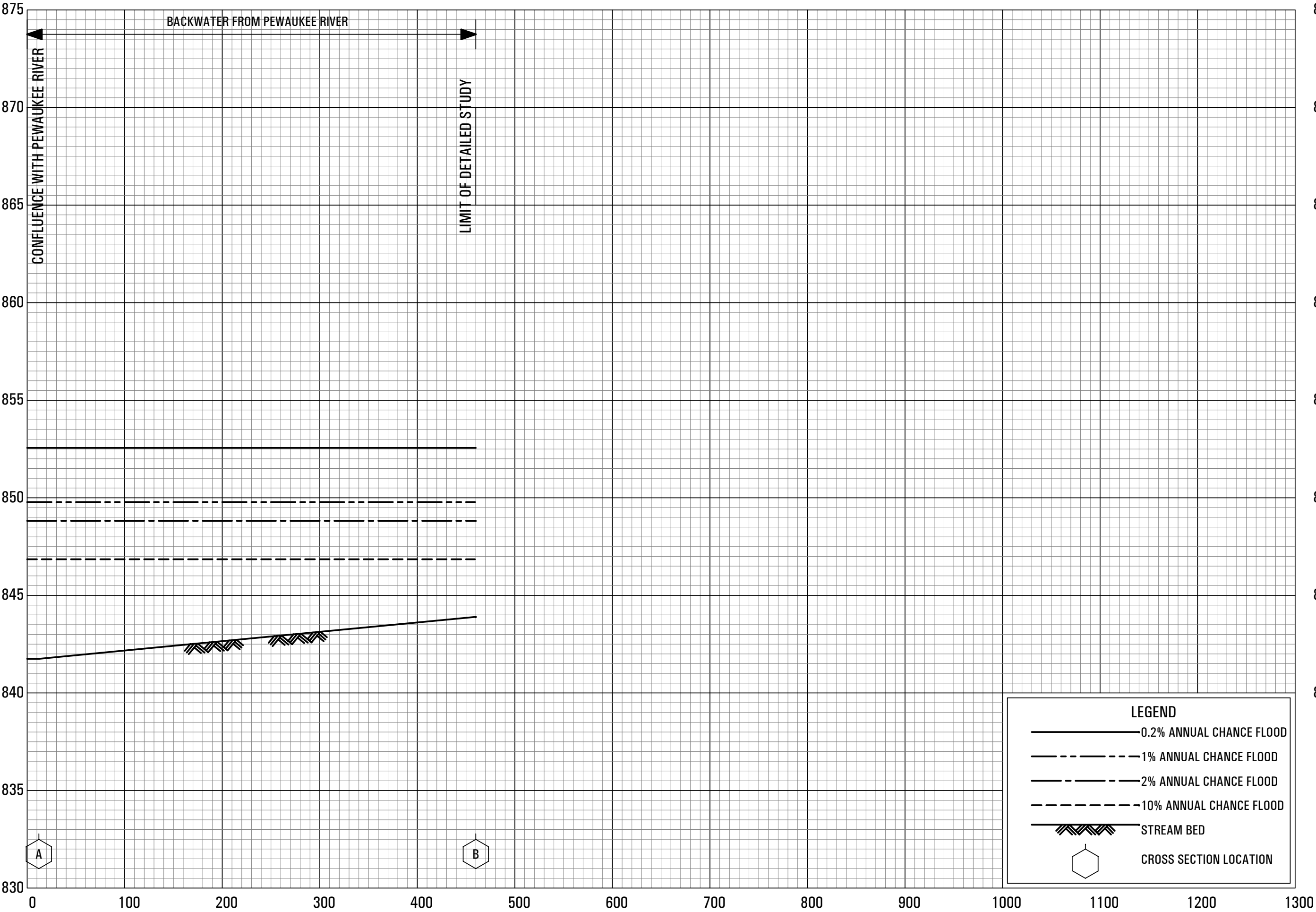
CROSS SECTION LOCATION

FLOOD PROFILES

PEWAUKEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

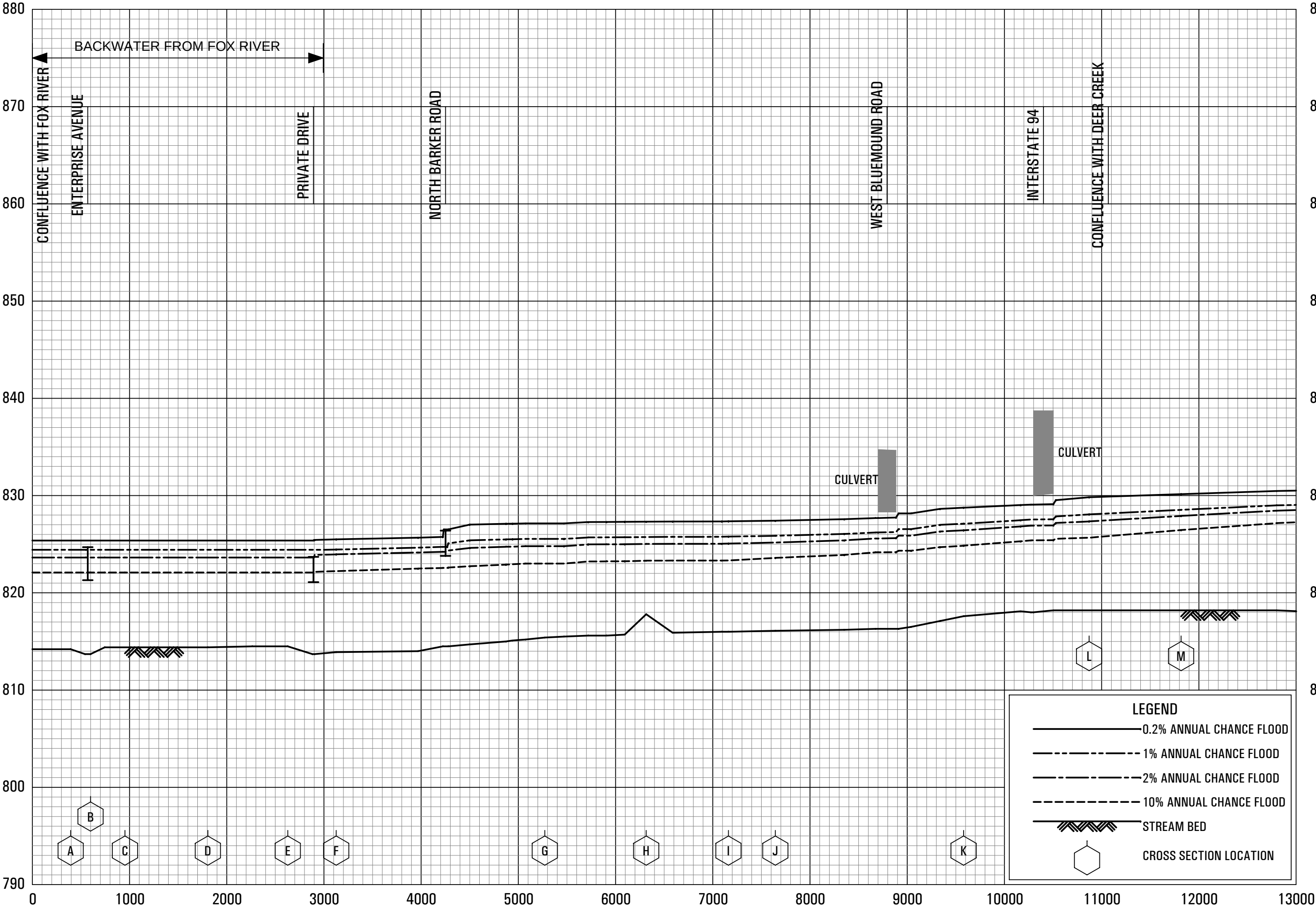
2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

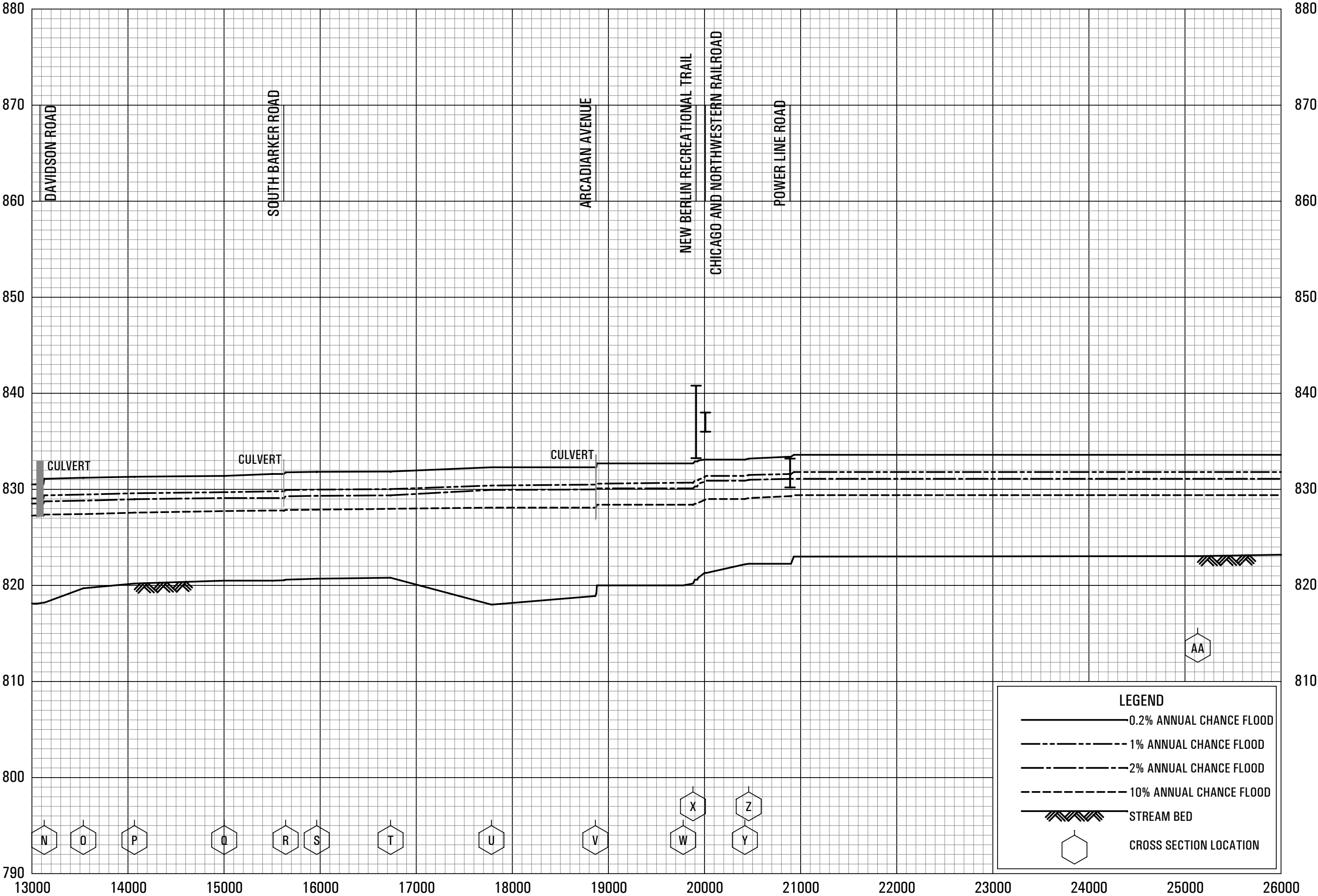
FLOOD PROFILES

POPLAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

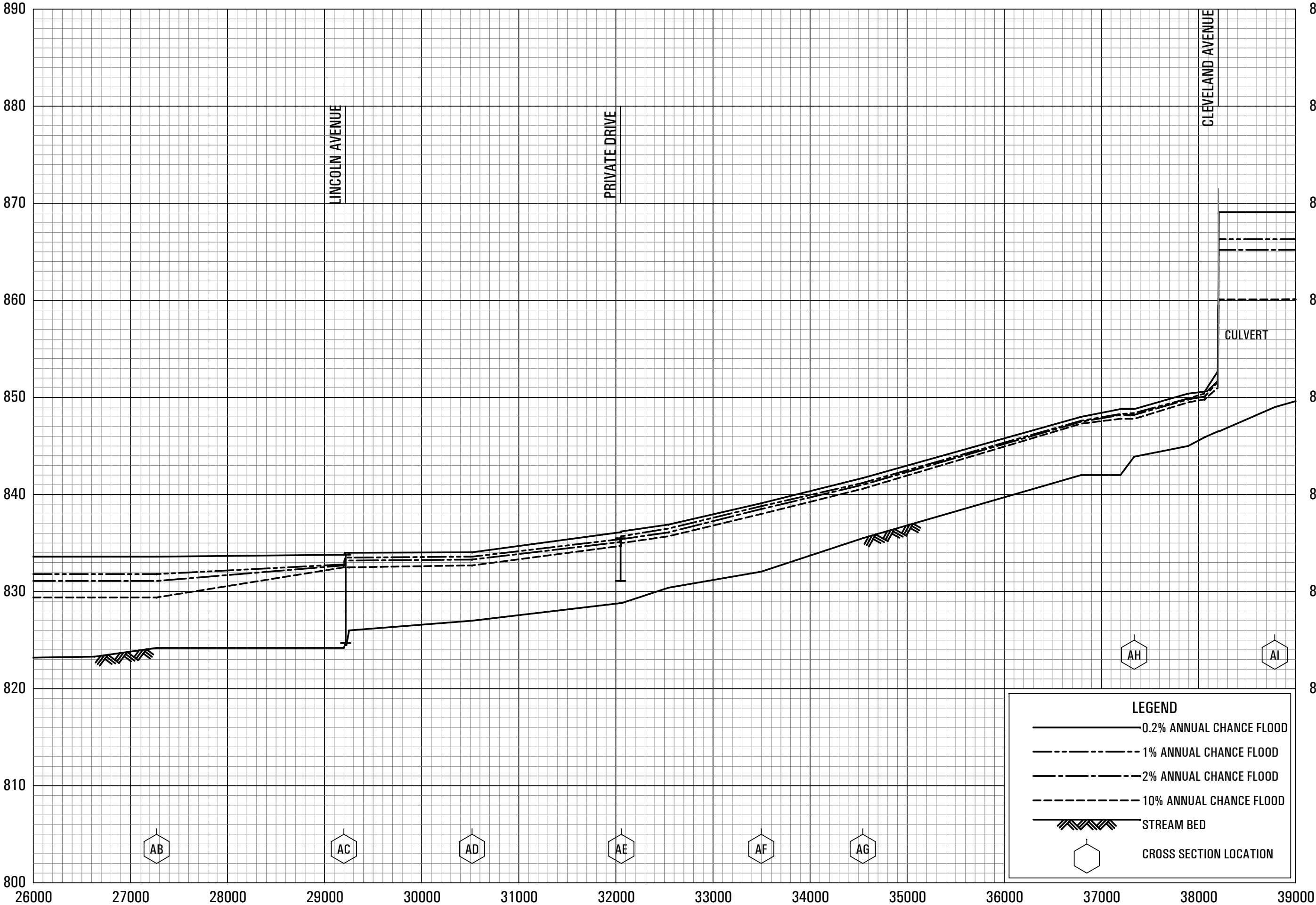


FLOOD PROFILES

POPLAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

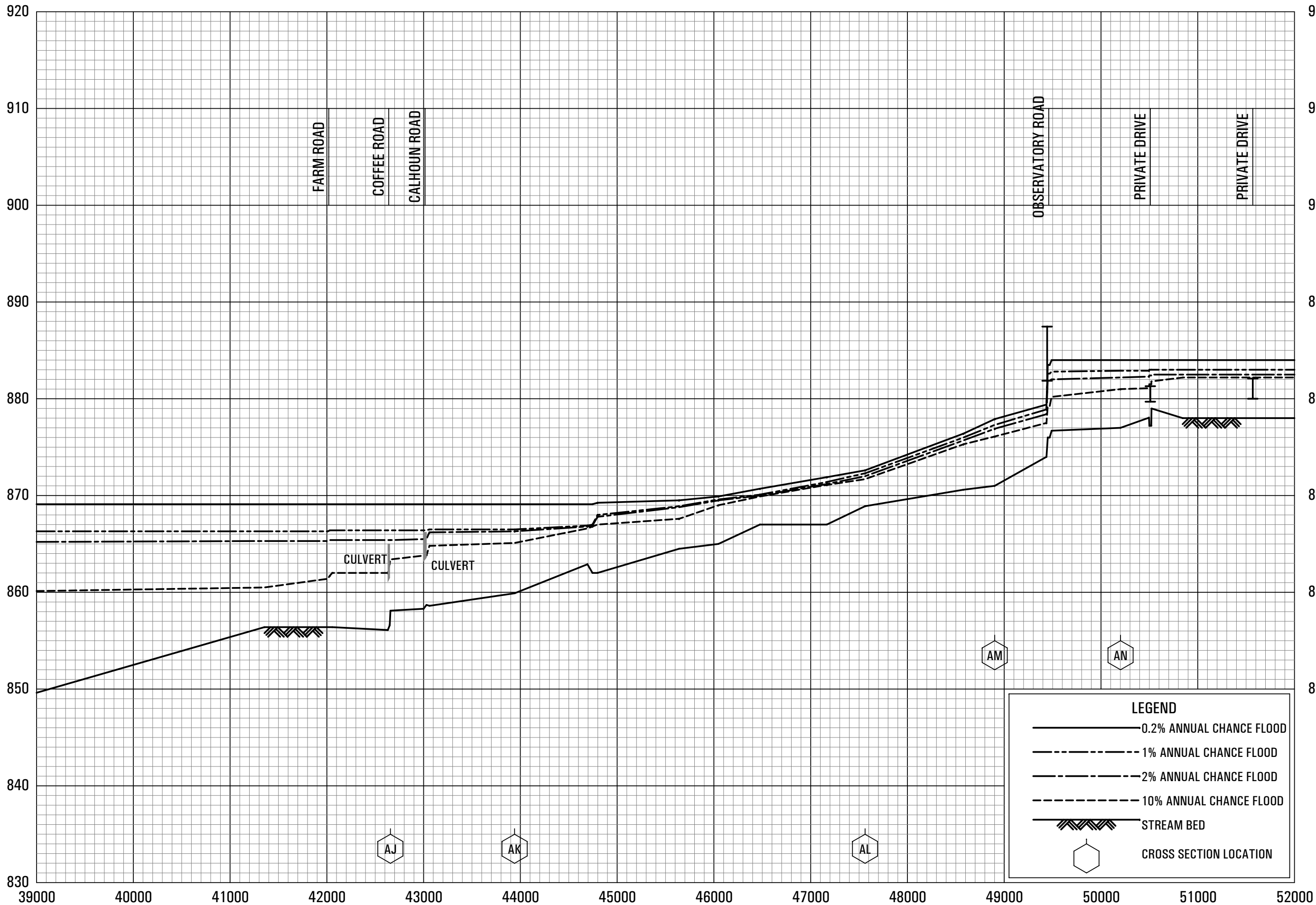


FLOOD PROFILES

POPLAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



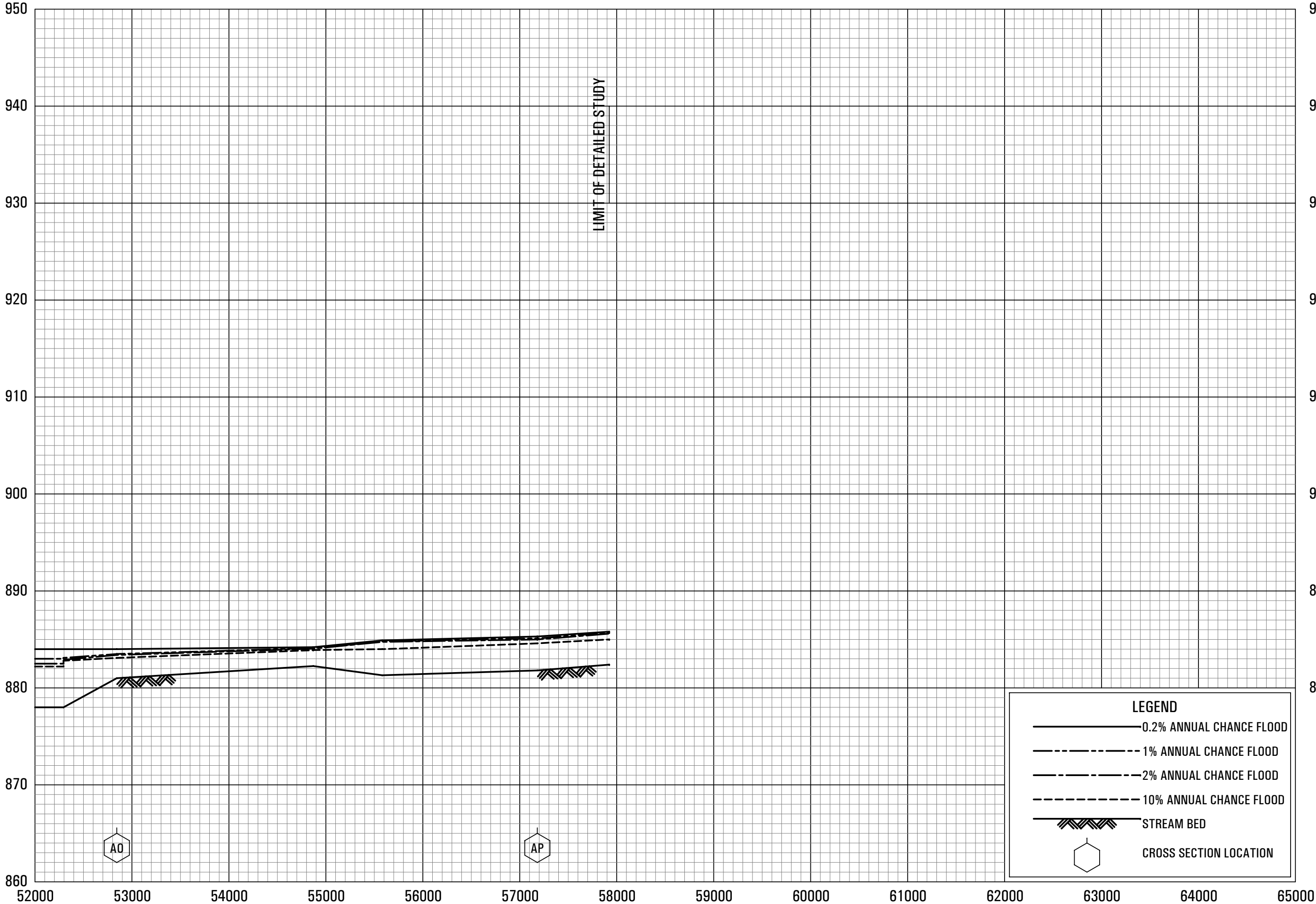
STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

FLOOD PROFILES

POPLAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

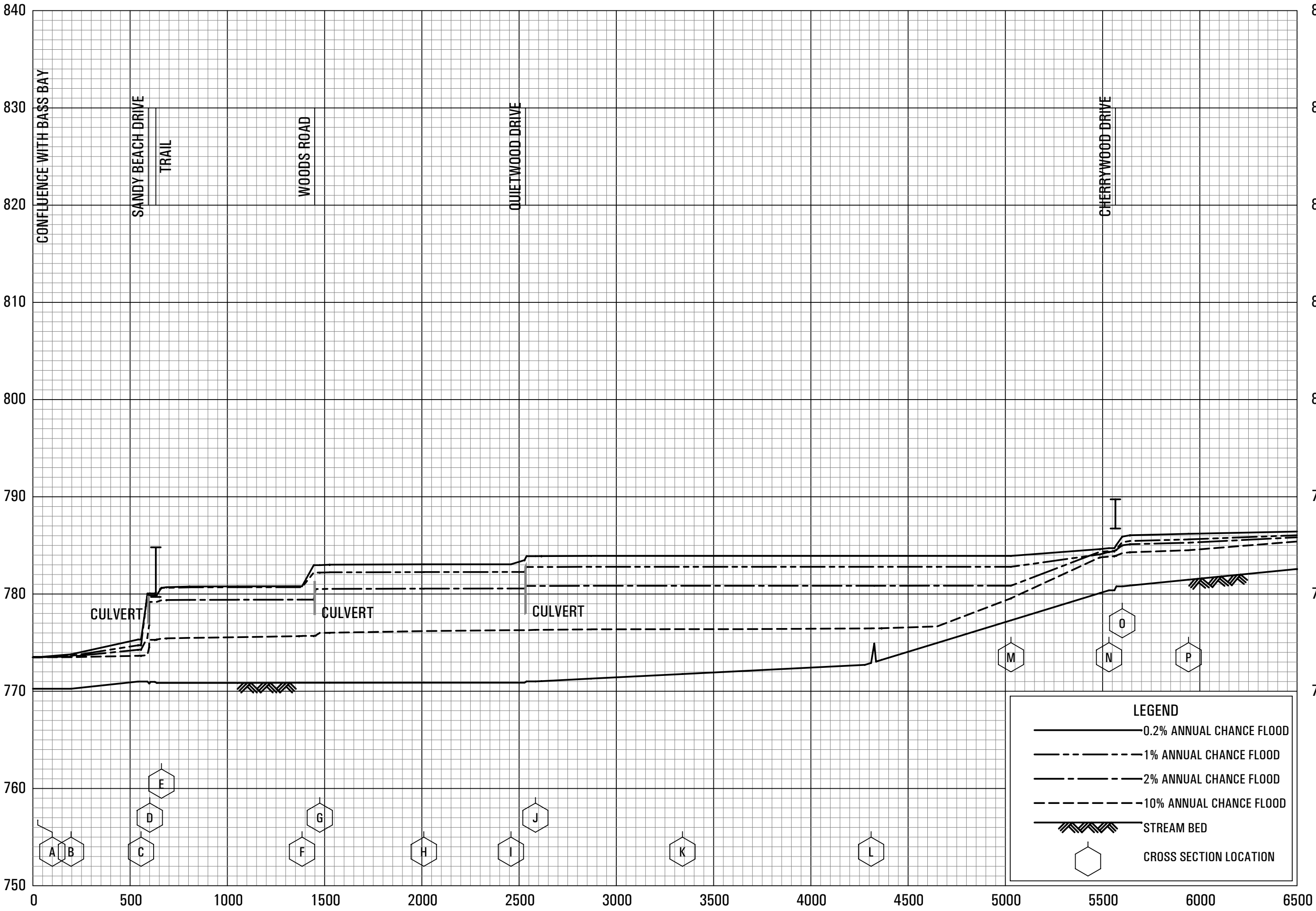
FLOOD PROFILES

POPLAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

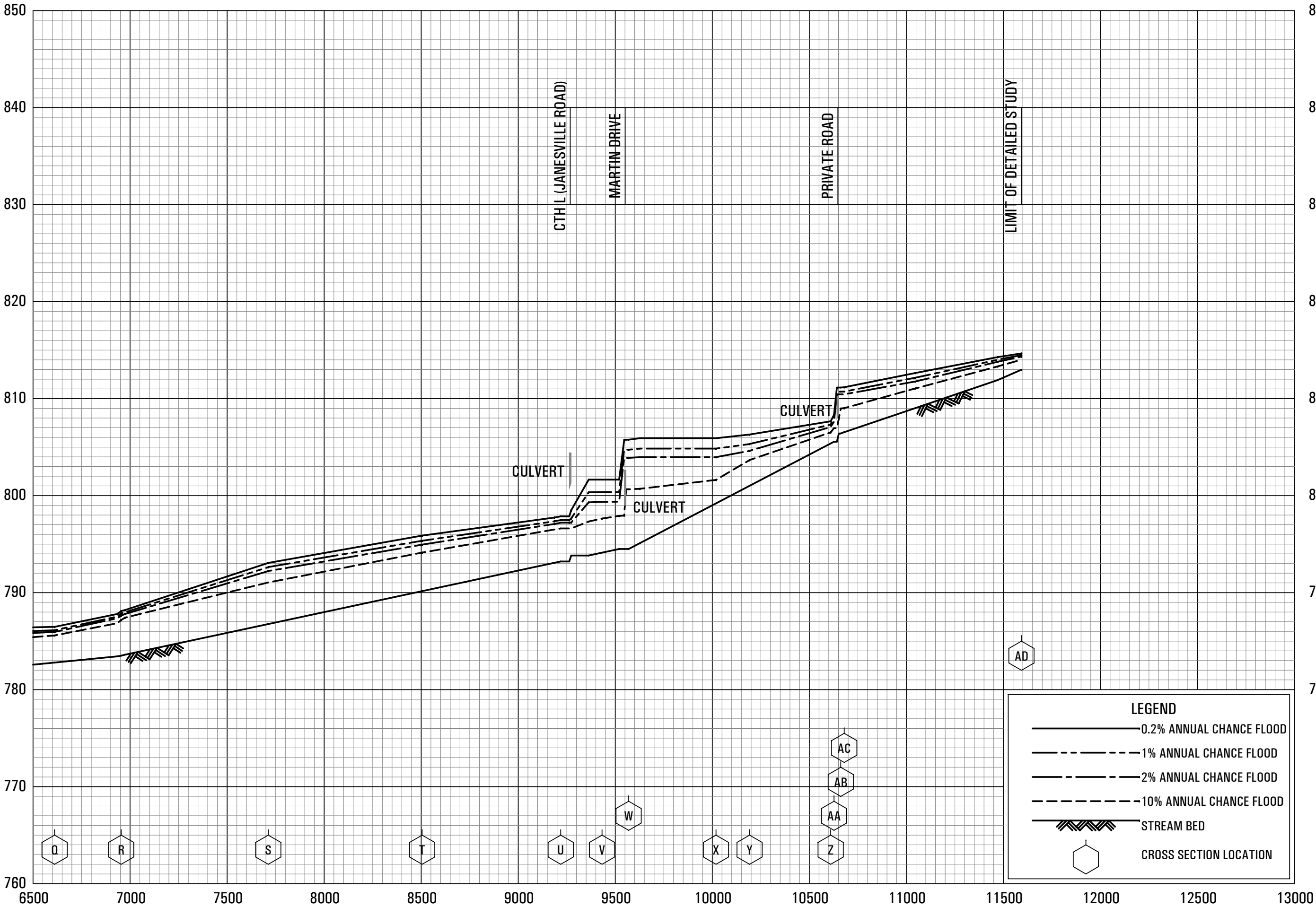
CROSS SECTION LOCATION

FLOOD PROFILES

QUIETWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



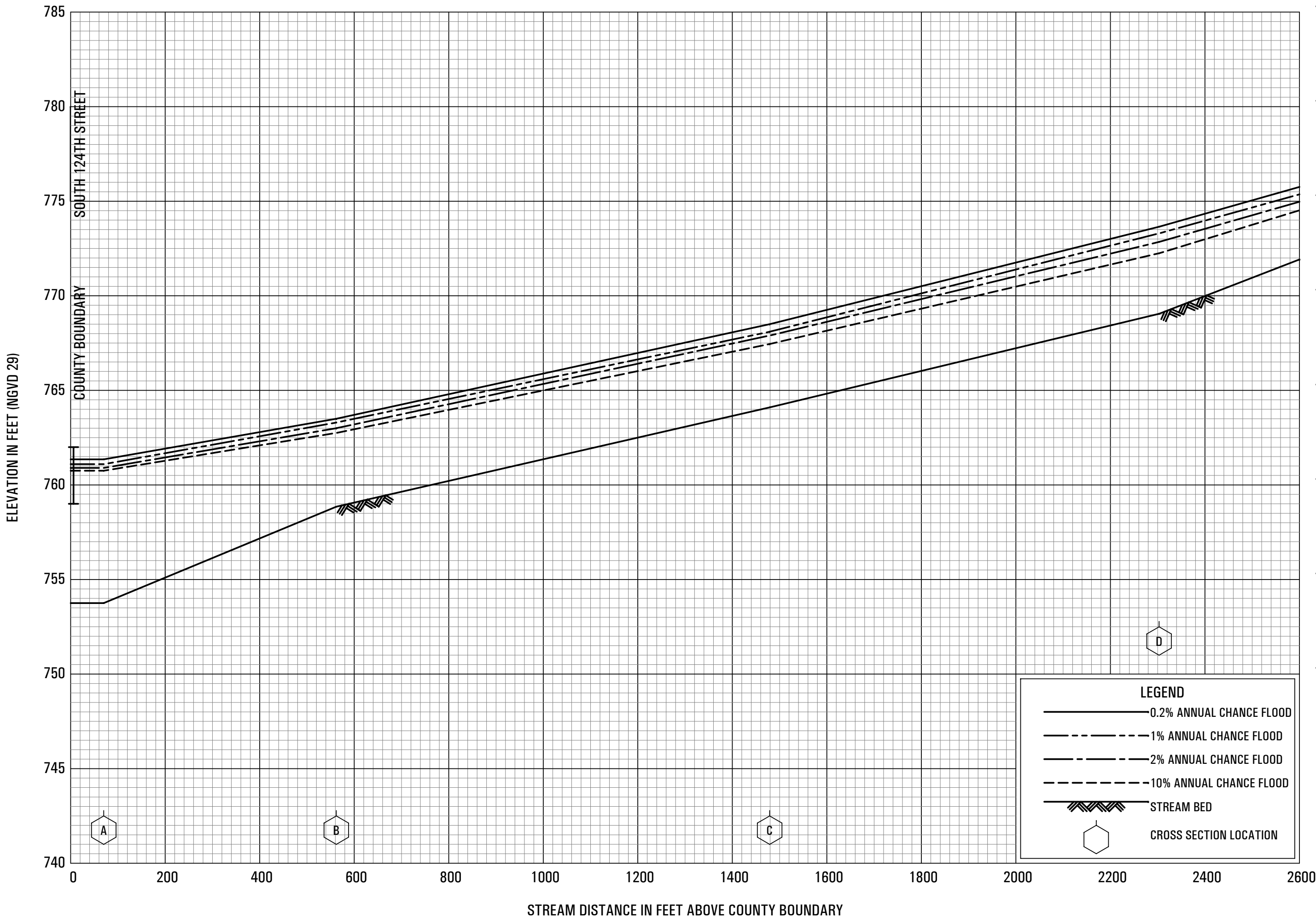
STREAM DISTANCE IN FEET ABOVE THE CONFLUENCE WITH BASS BAY

FLOOD PROFILES

QUIETWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

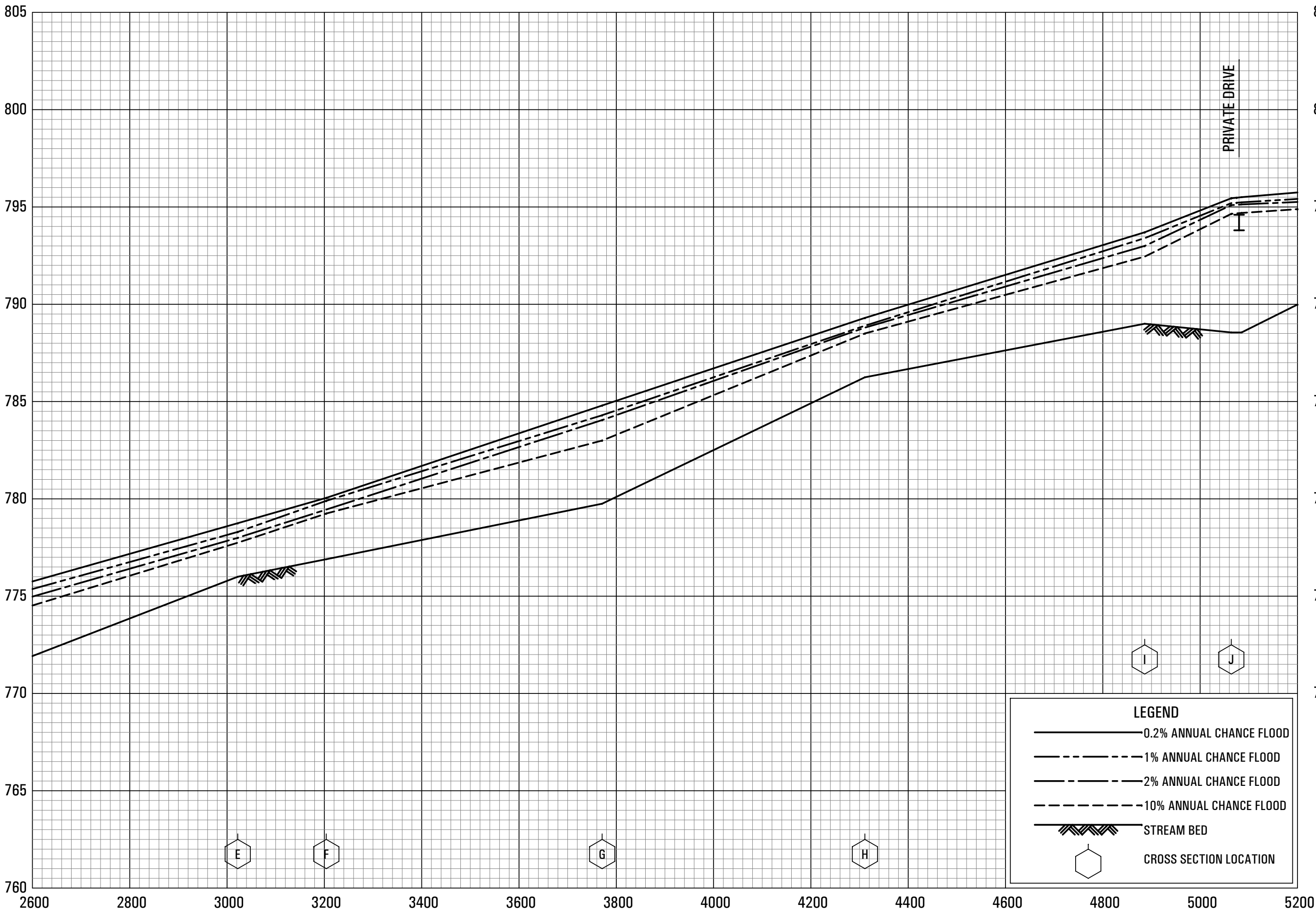


FLOOD PROFILES

ROOT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

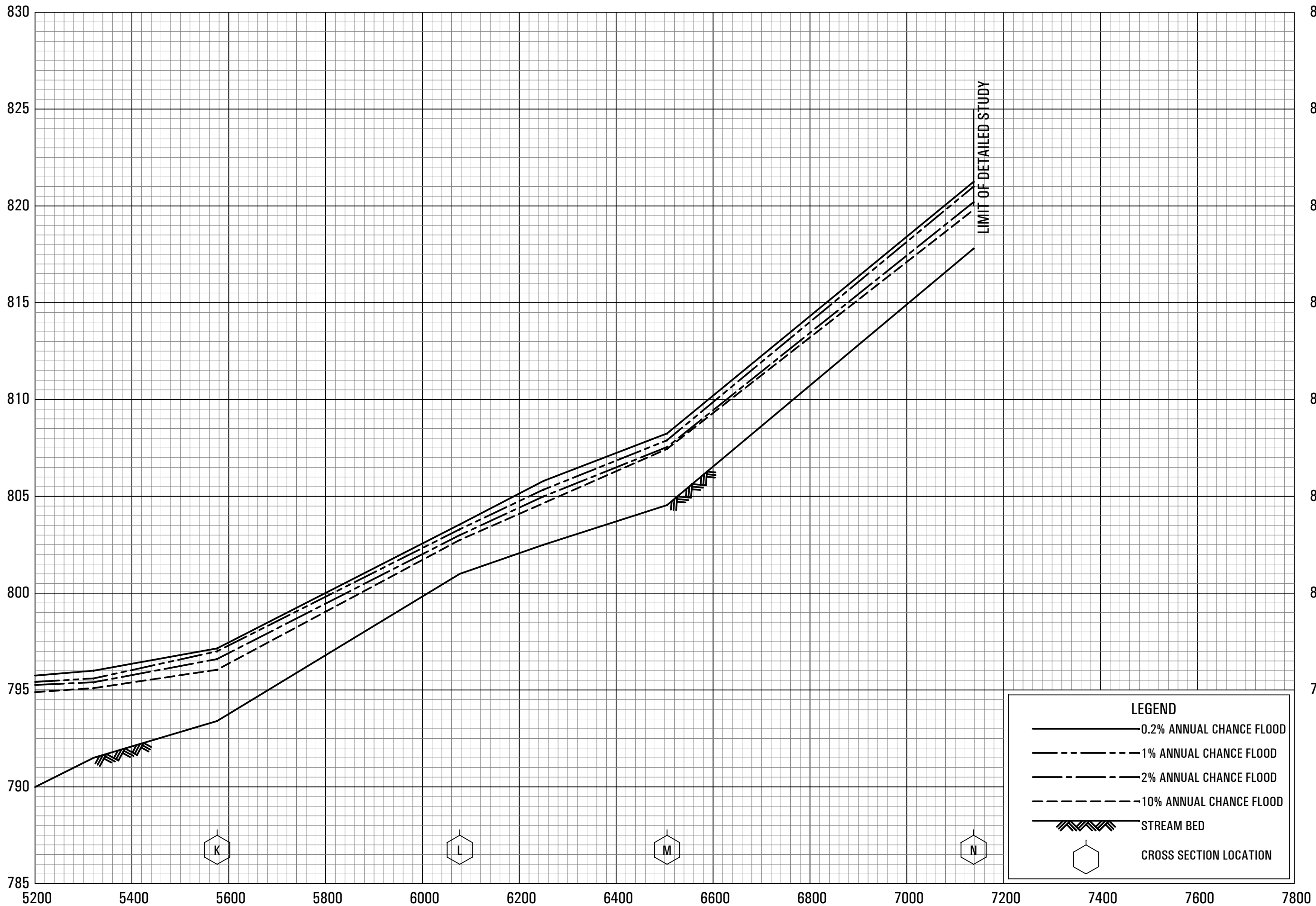
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FLOOD PROFILES

ROOT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

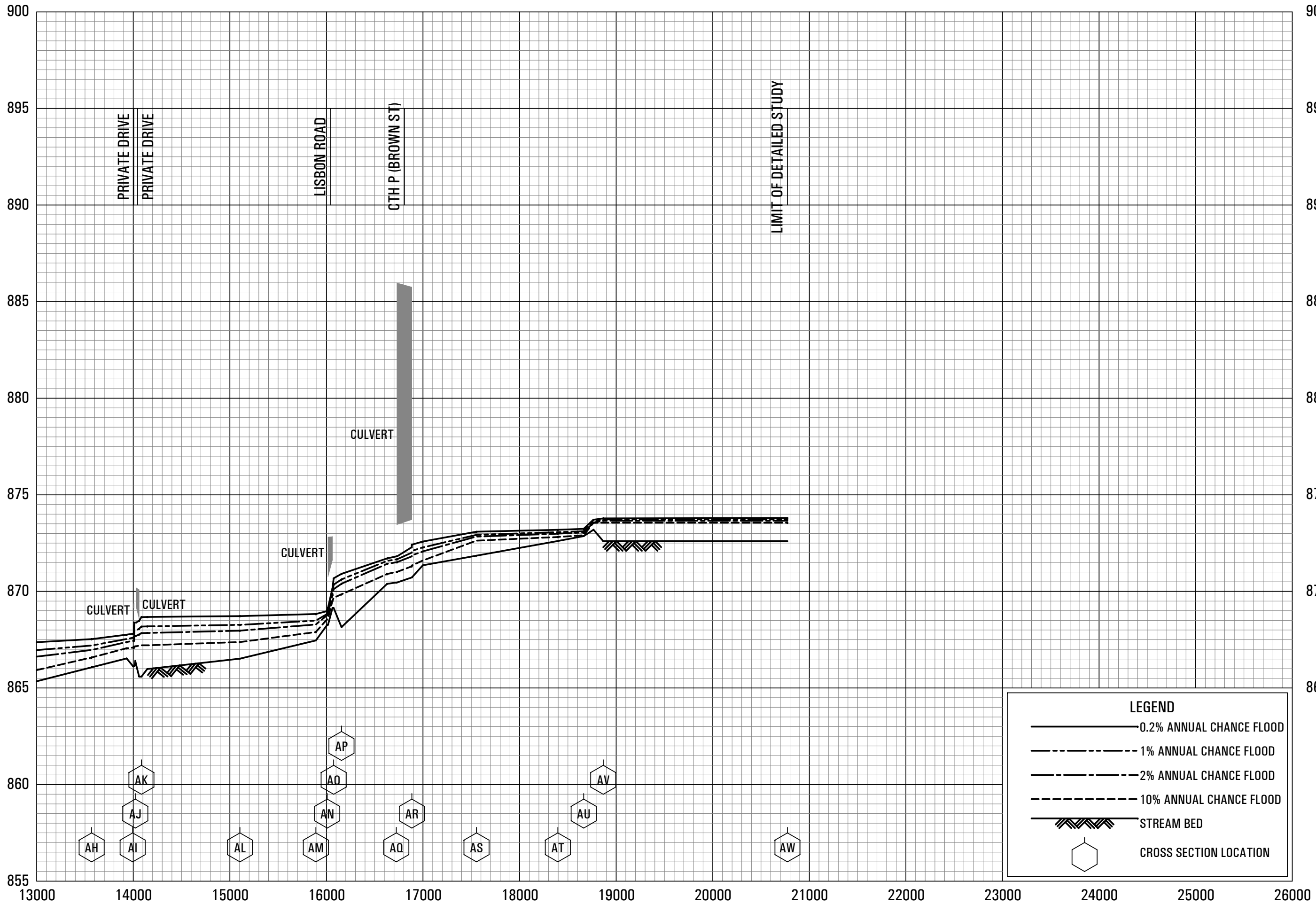


FLOOD PROFILES

ROOT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

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

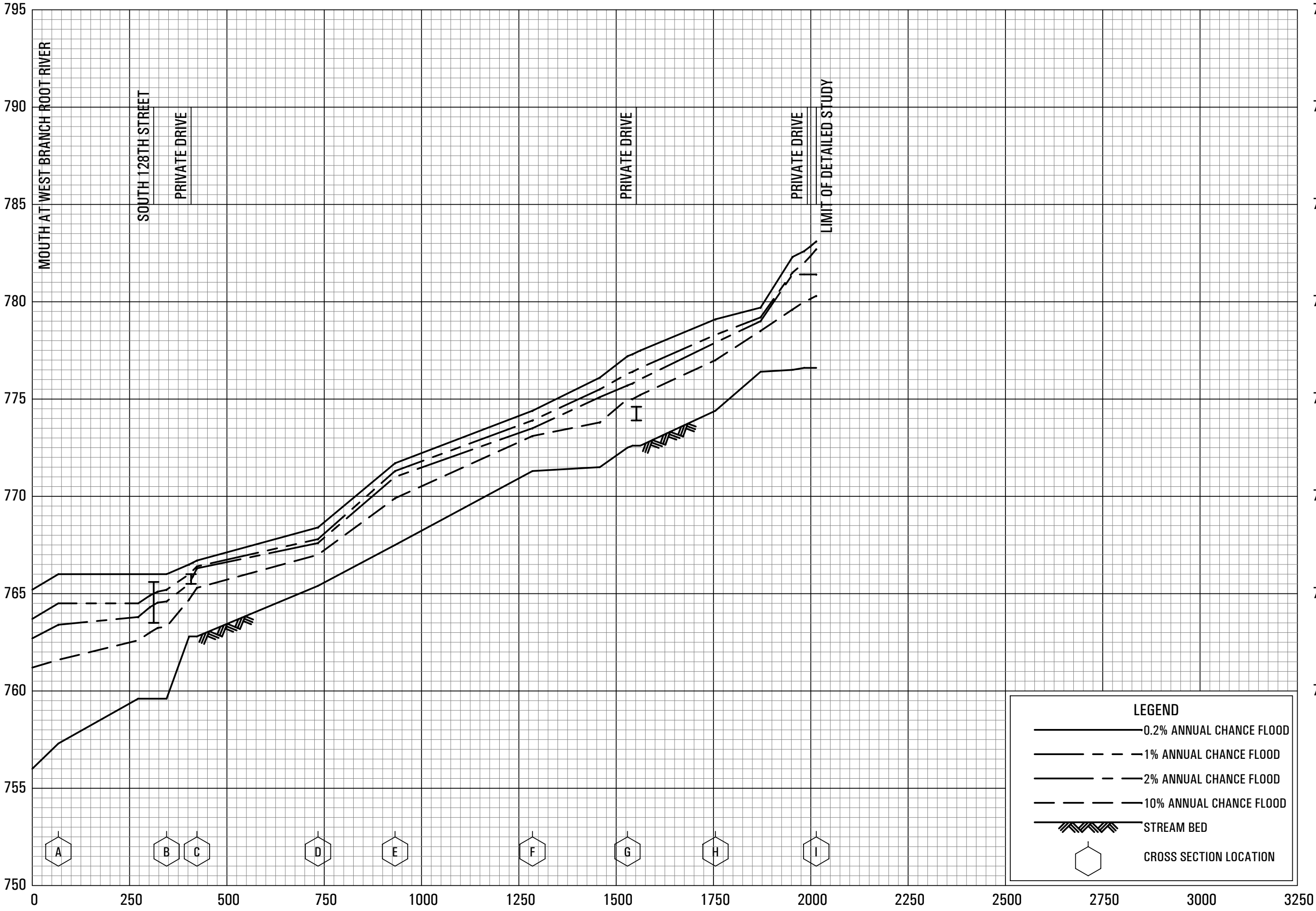
FLOOD PROFILES

ROSENOW CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

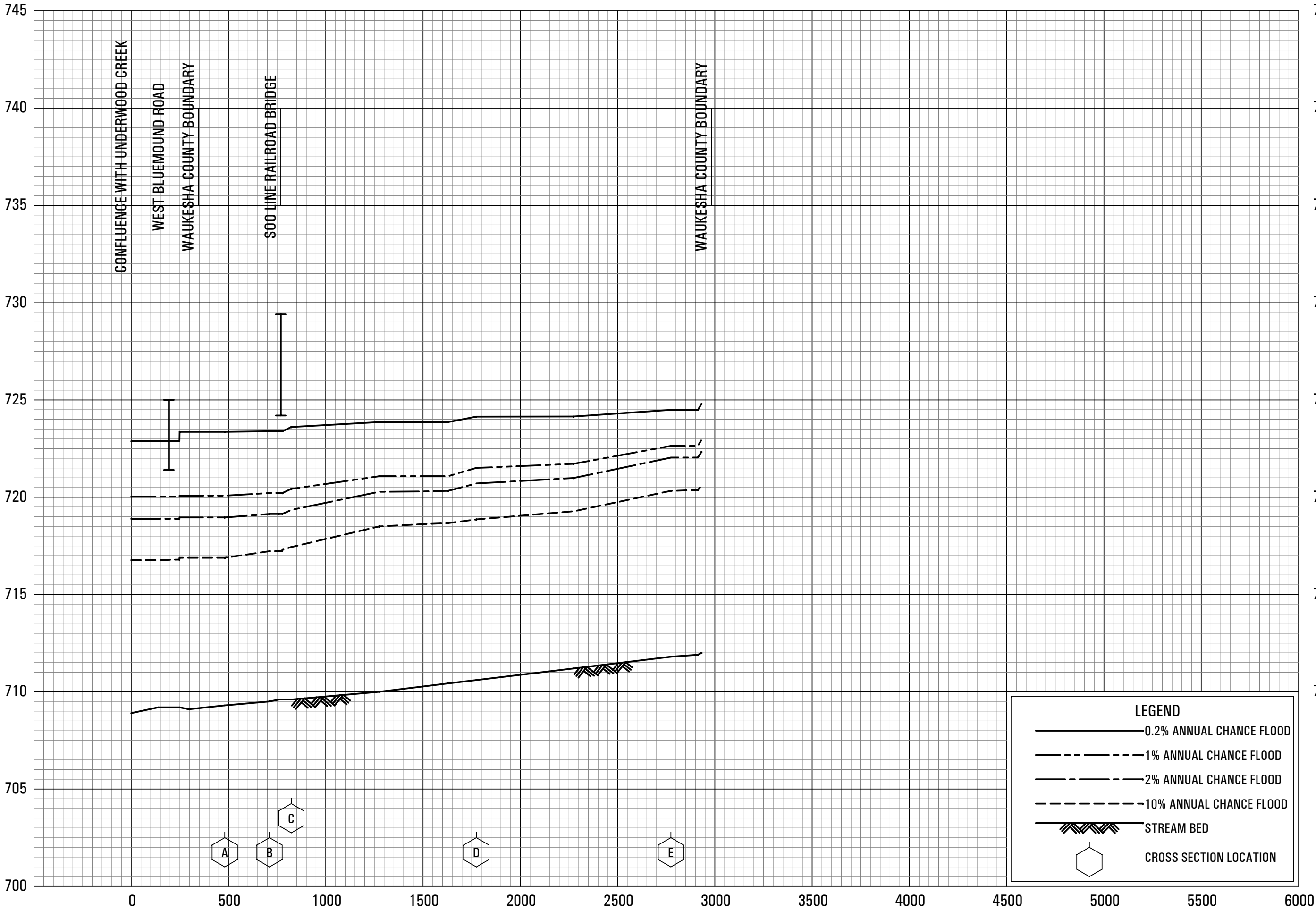
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FLOOD PROFILES

SOUTH 130TH STREET TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



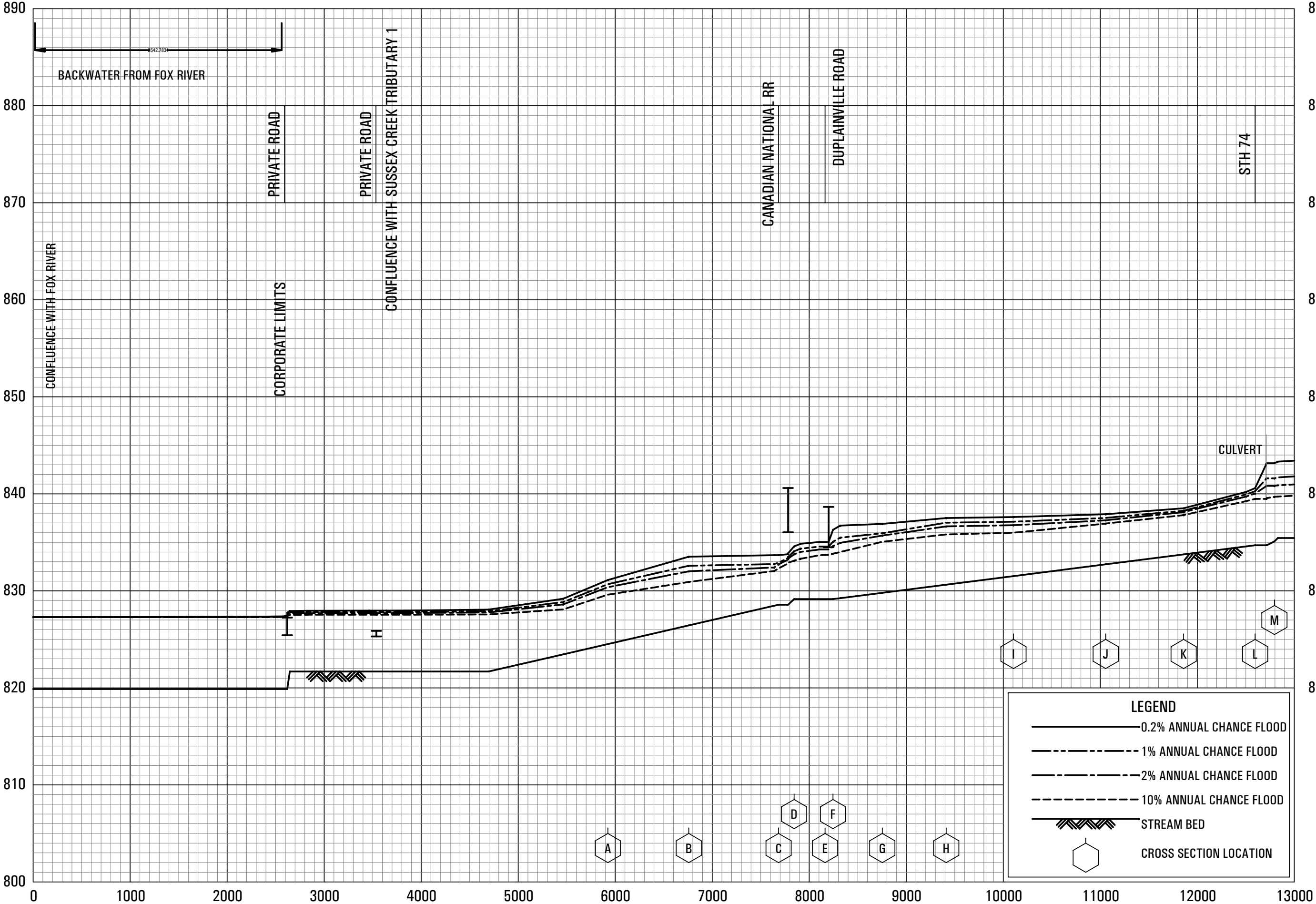
FLOOD PROFILES

SOUTH BRANCH UNDERWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



FLOOD PROFILES

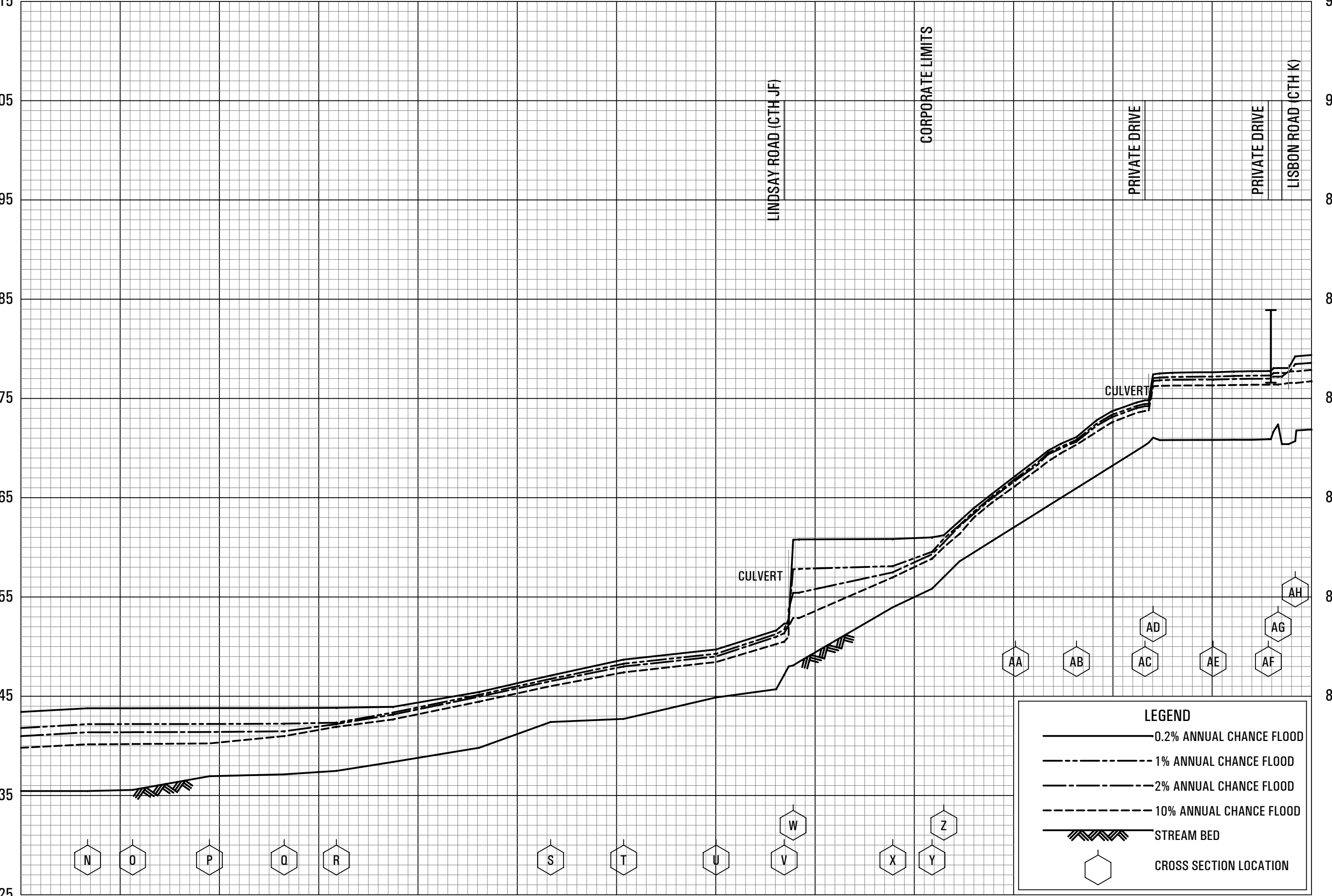
SUSSEX CREEK AND SOUTH BRANCH SUSSEX CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

915
905
895
885
875
865
855
845
835
825



13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000

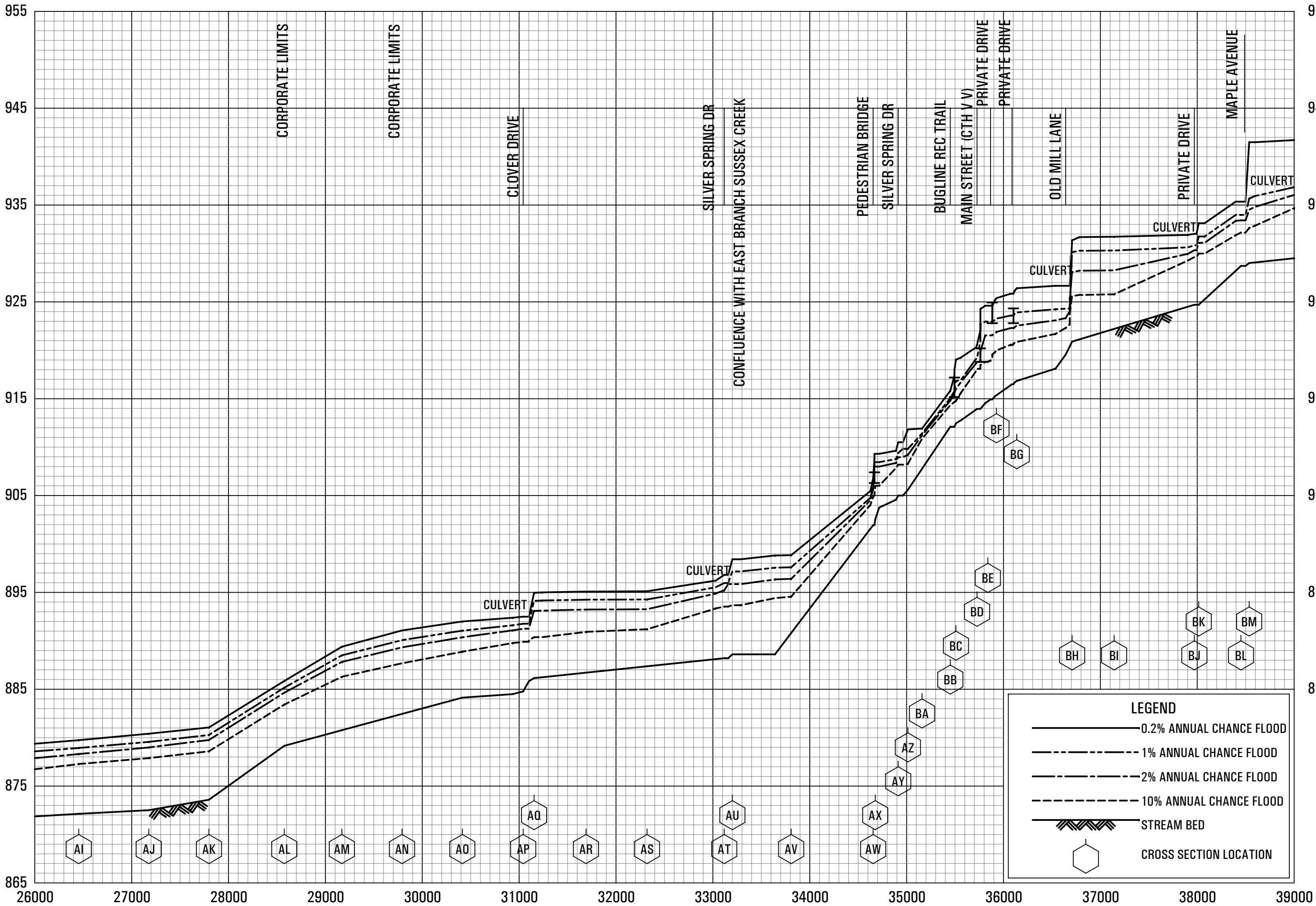
STREAM DISTANCE IN FEET ABOVE FOX RIVER

FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

SUSSEX CREEK AND SOUTH BRANCH SUSSEX CREEK

ELEVATION IN FEET (NGVD 29)



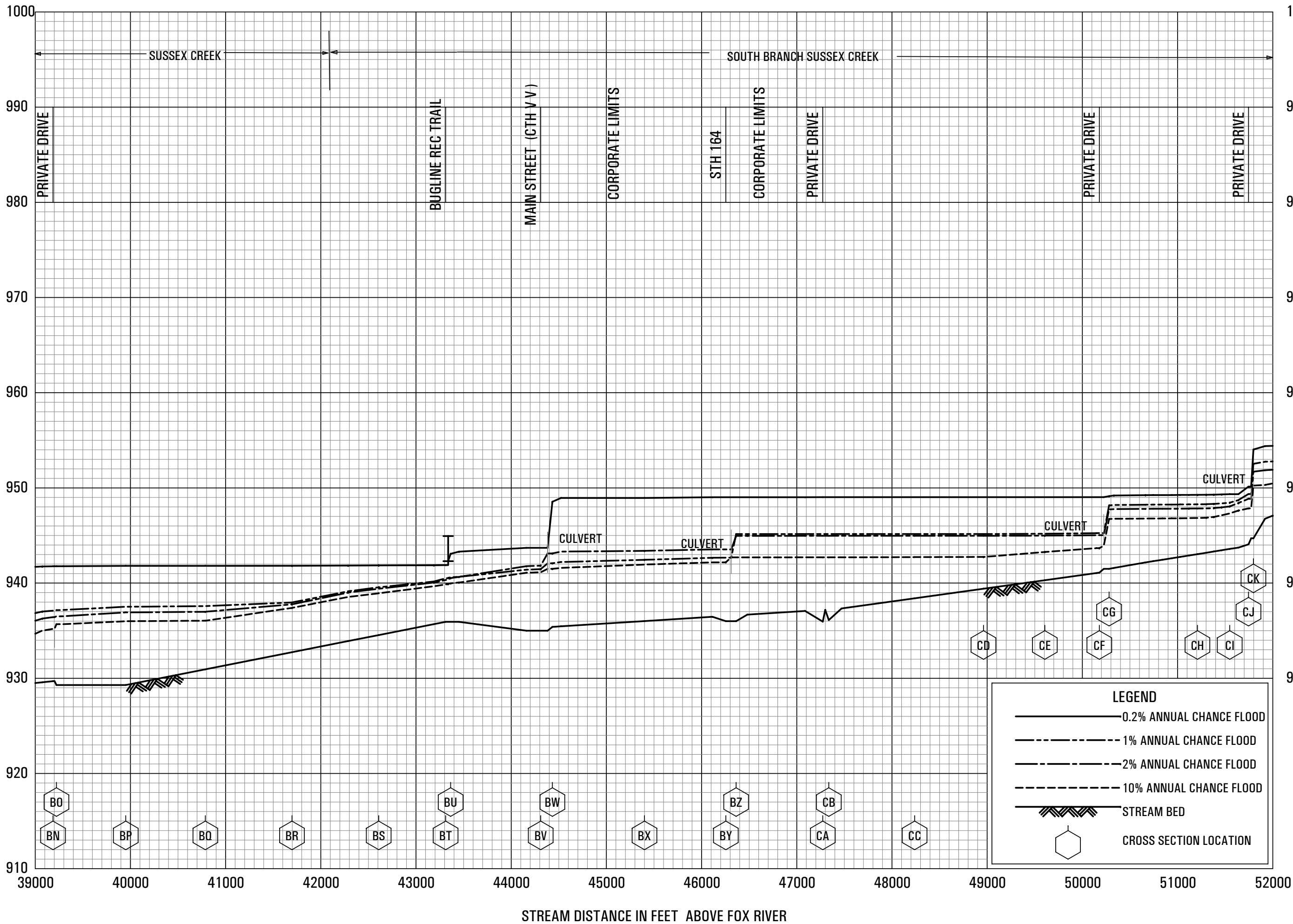
FLOOD PROFILES

SUSSEX CREEK AND SOUTH BRANCH SUSSEX CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



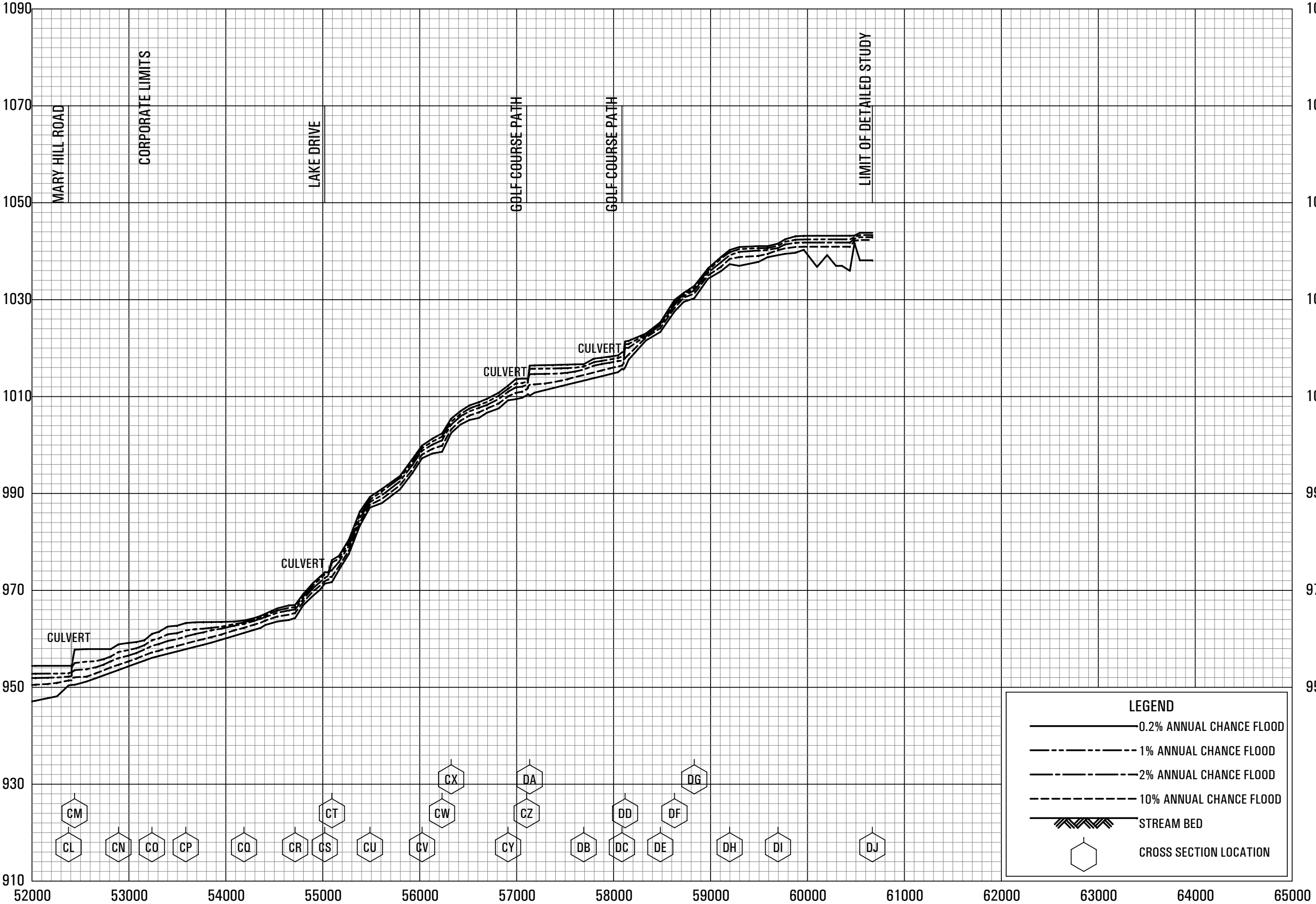
FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

SUSSEX CREEK AND SOUTH BRANCH SUSSEX CREEK

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

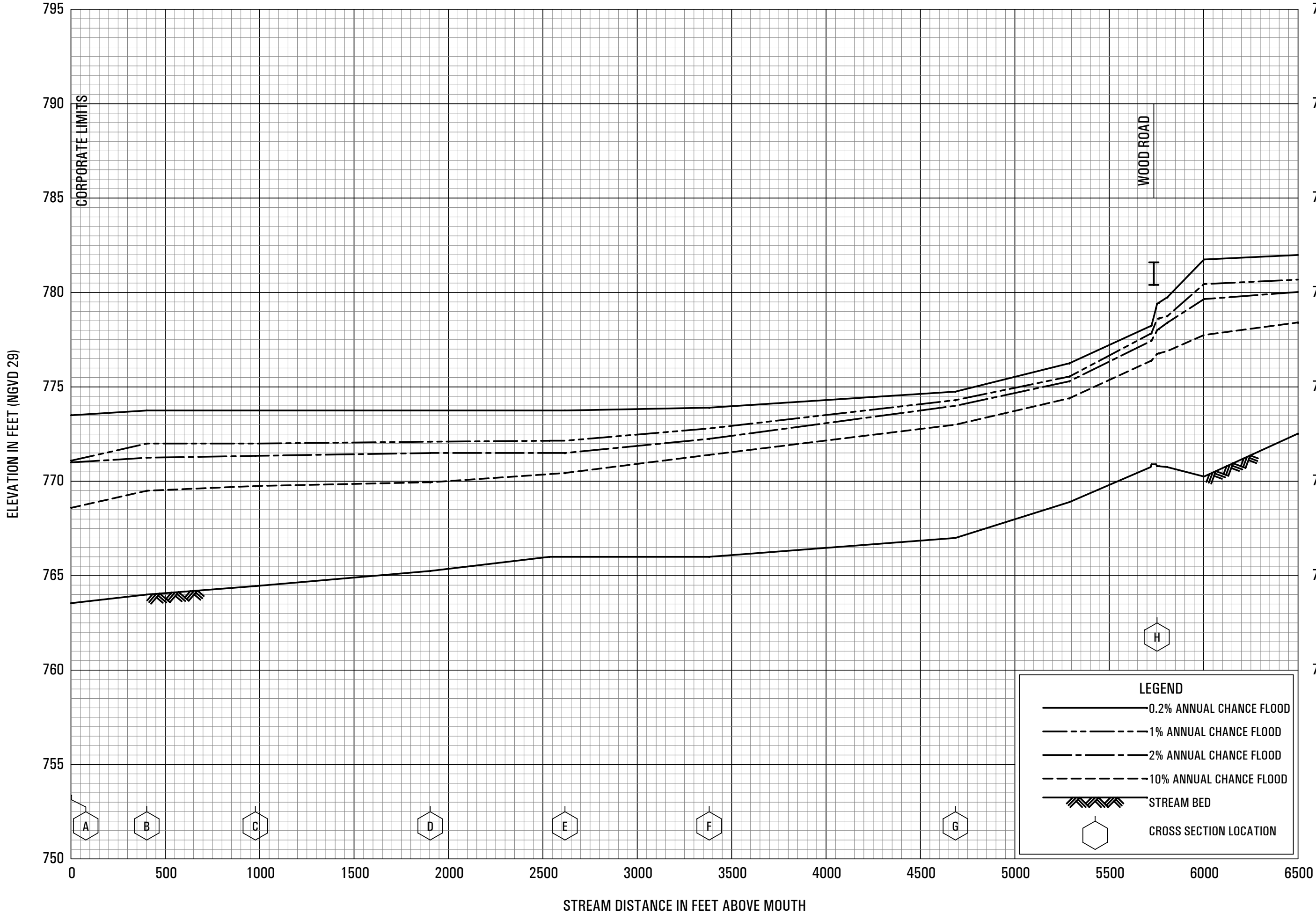
STREAM BED

CROSS SECTION LOCATION

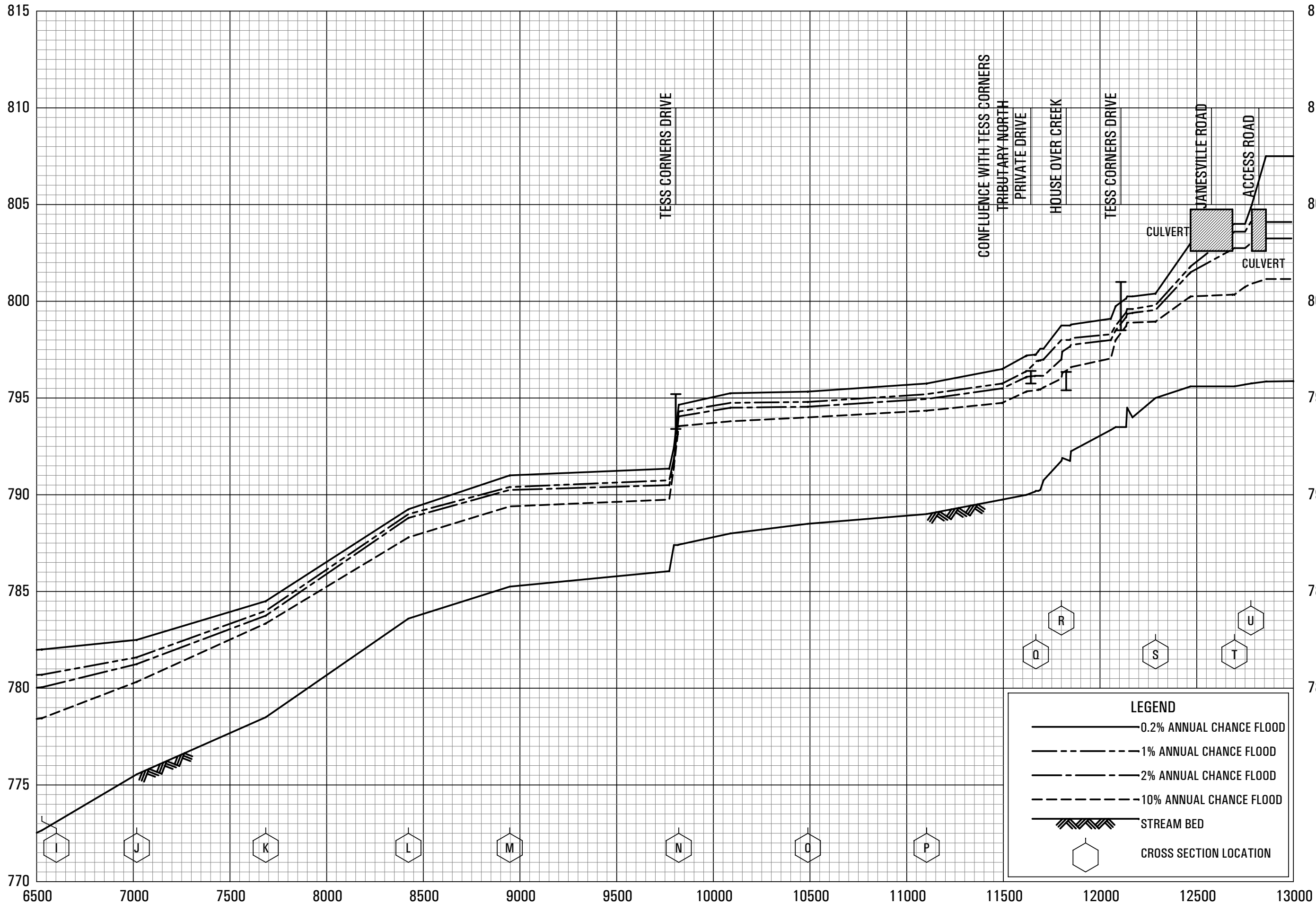
FLOOD PROFILES

SUSSEX CREEK AND SOUTH BRANCH SUSSEX CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS



ELEVATION IN FEET (NGVD 29)

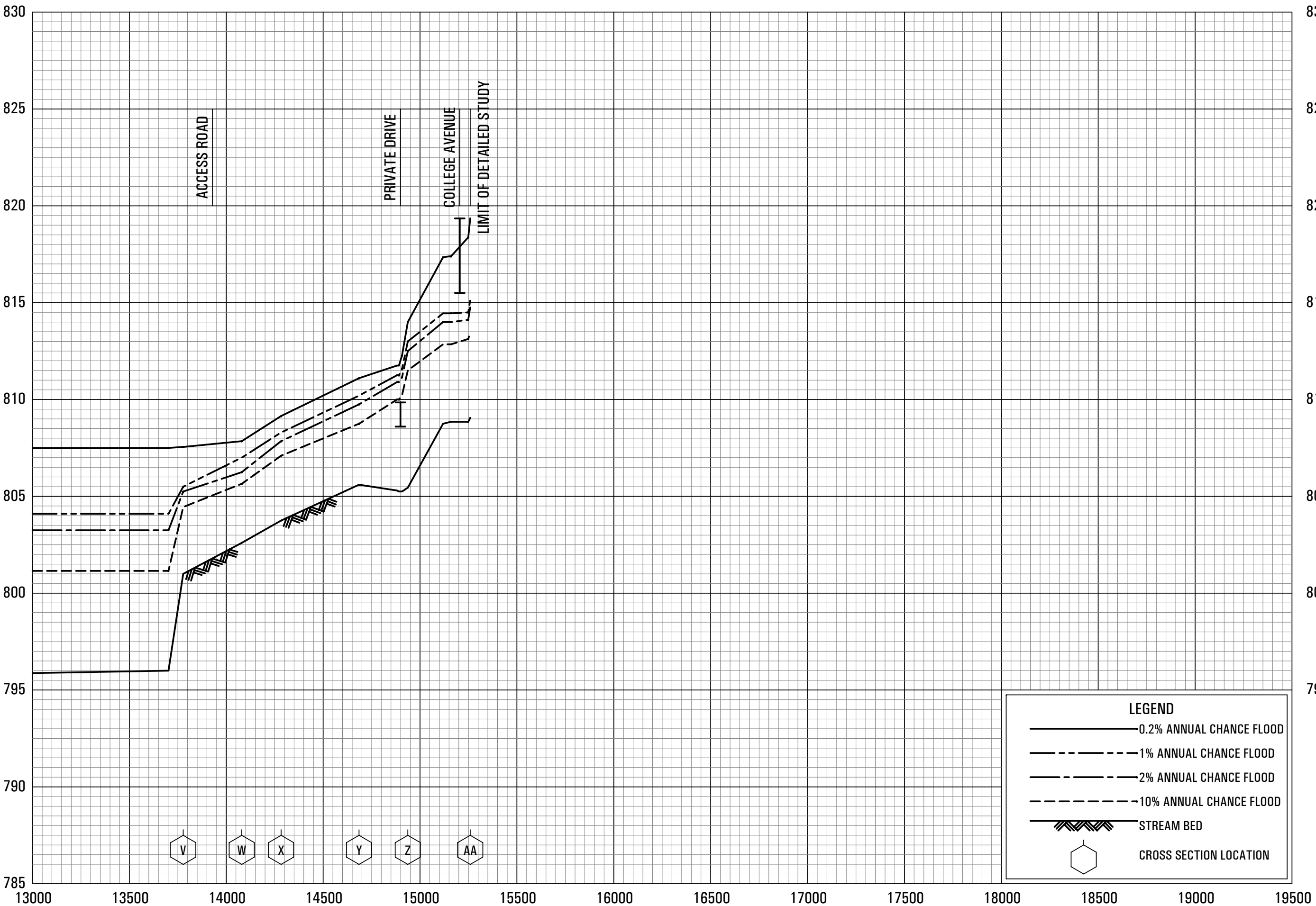


FLOOD PROFILES

TESS CORNERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

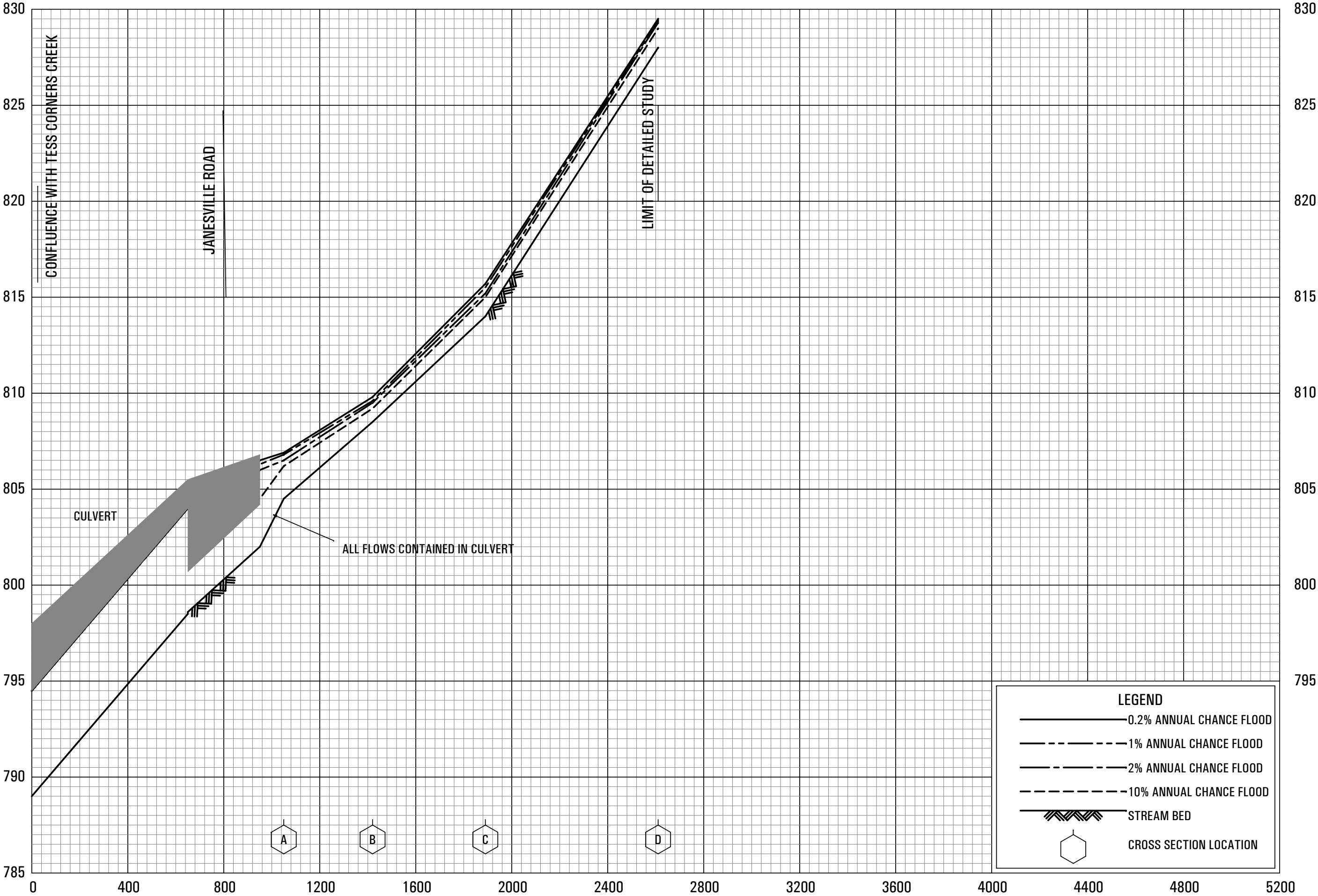


FLOOD PROFILES

TESS CORNERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

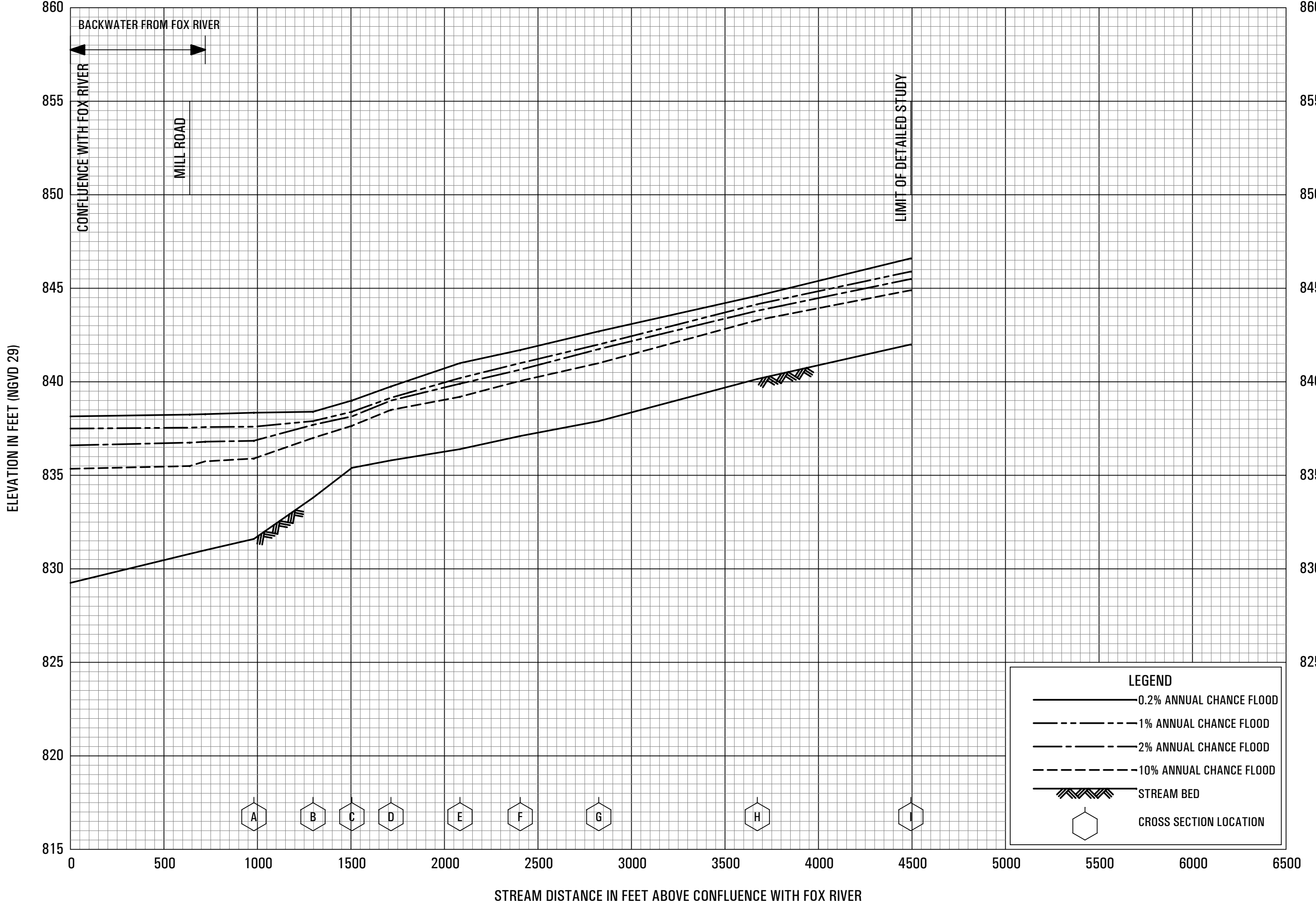
ELEVATION IN FEET (NGVD 29)



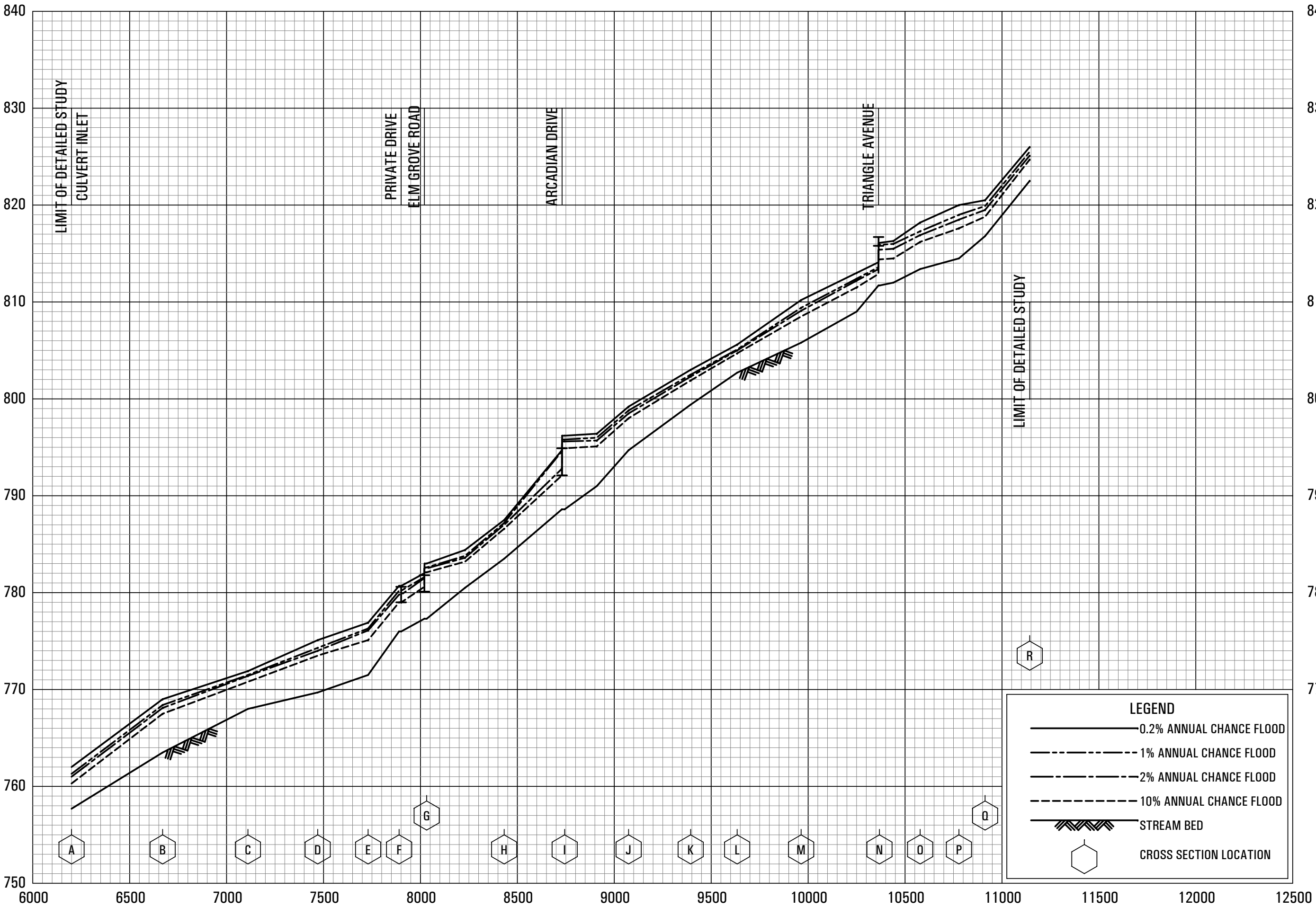
FLOOD PROFILES

TESS CORNERS CREEK NORTH BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY , WI
AND INCORPORATED AREAS



ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

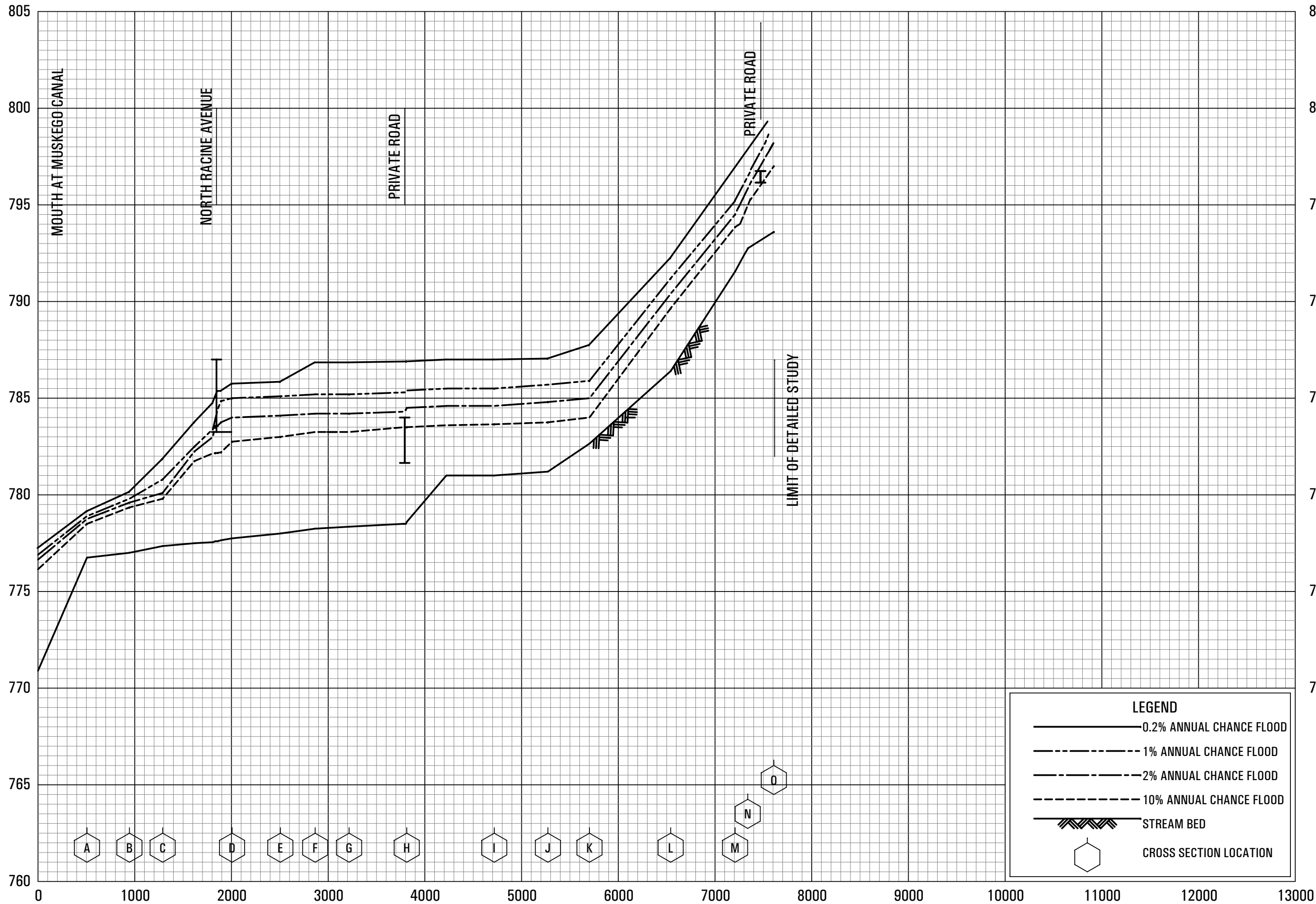
2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)



LEGEND

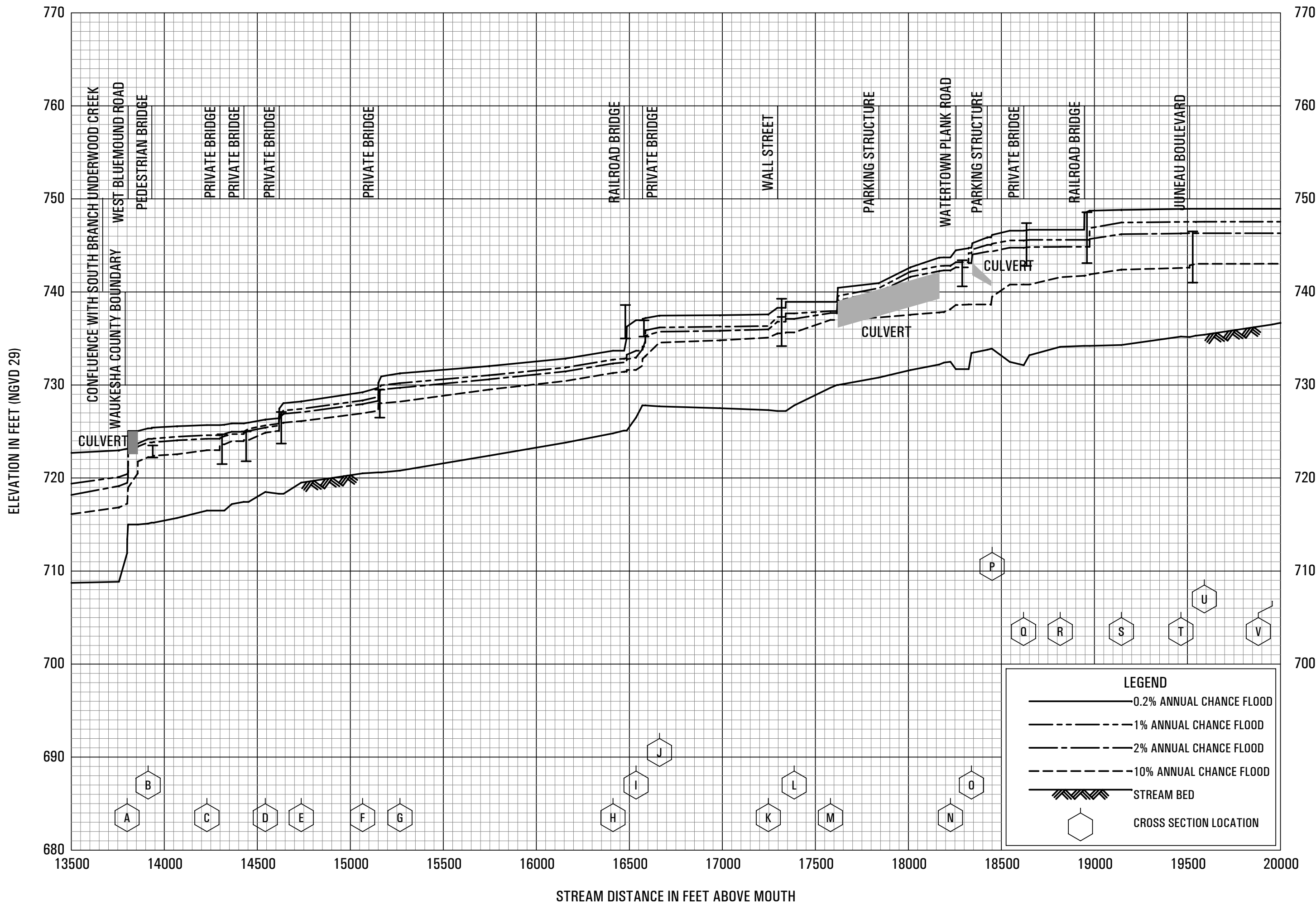
- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- . - 2% ANNUAL CHANCE FLOOD
- - - 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FLOOD PROFILES

UNNAMED TRIBUTARY OF MUSKEGO CANAL

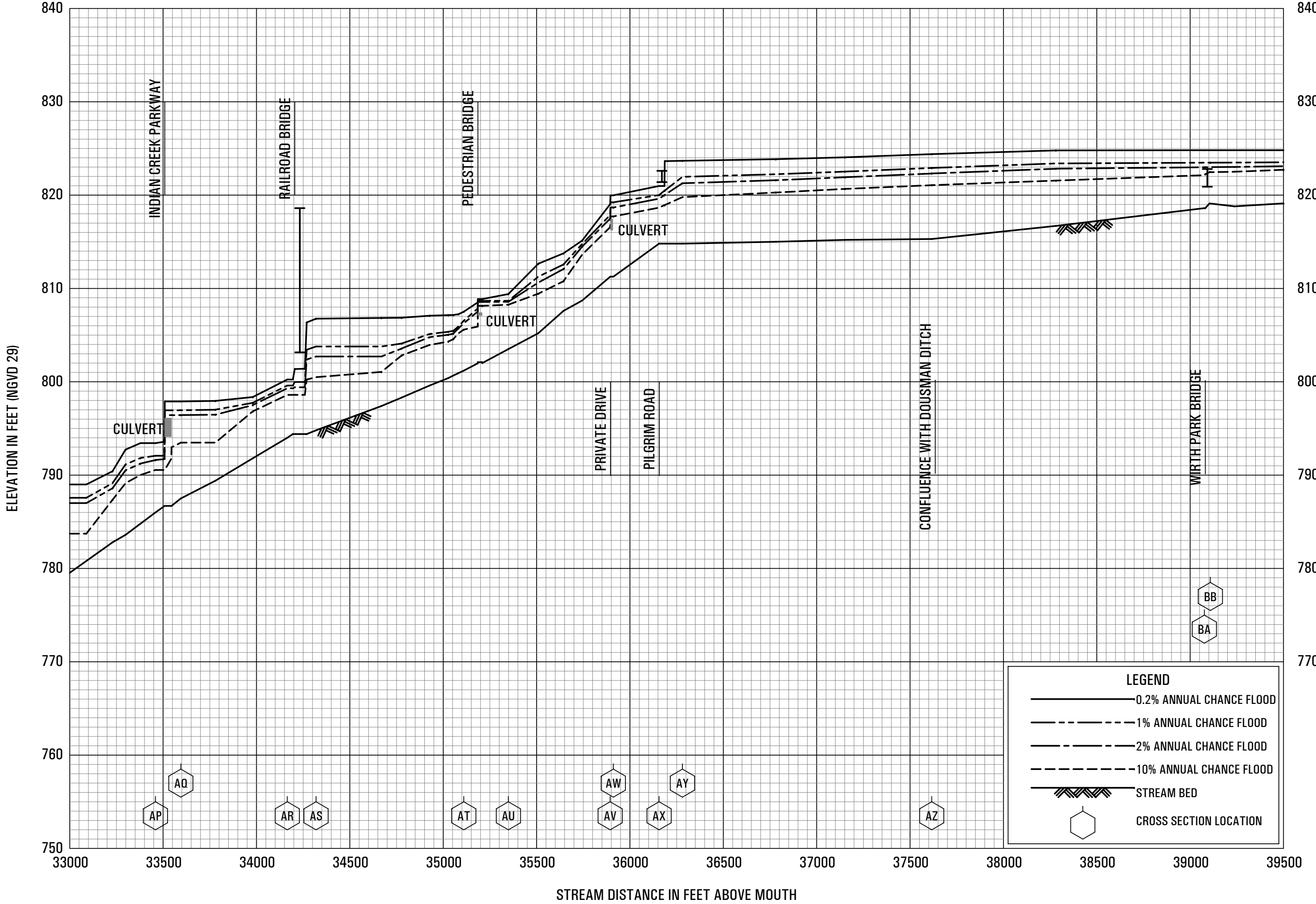


FLOOD PROFILES

UNDERWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

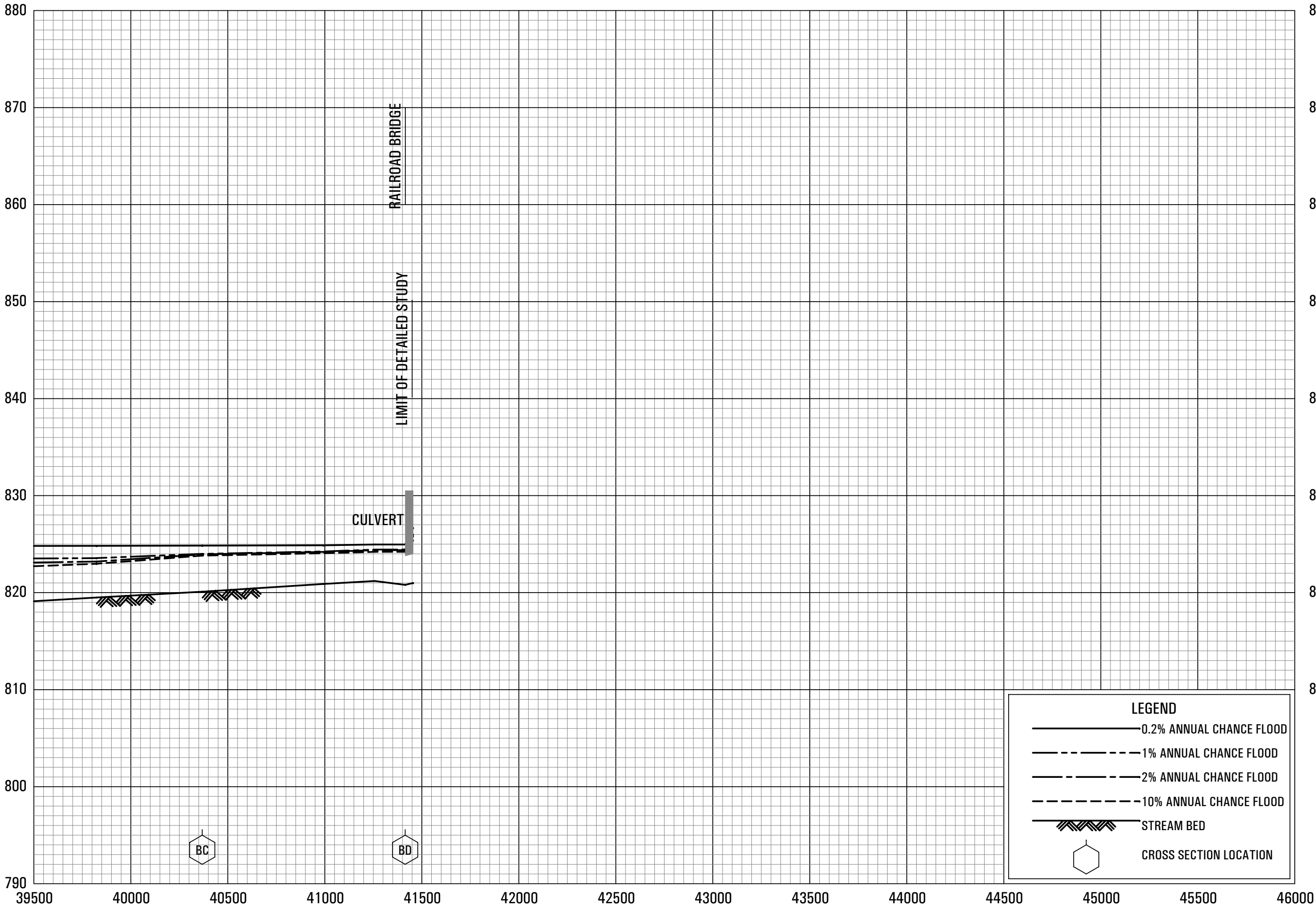


FLOOD PROFILES

UNDERWOOD CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



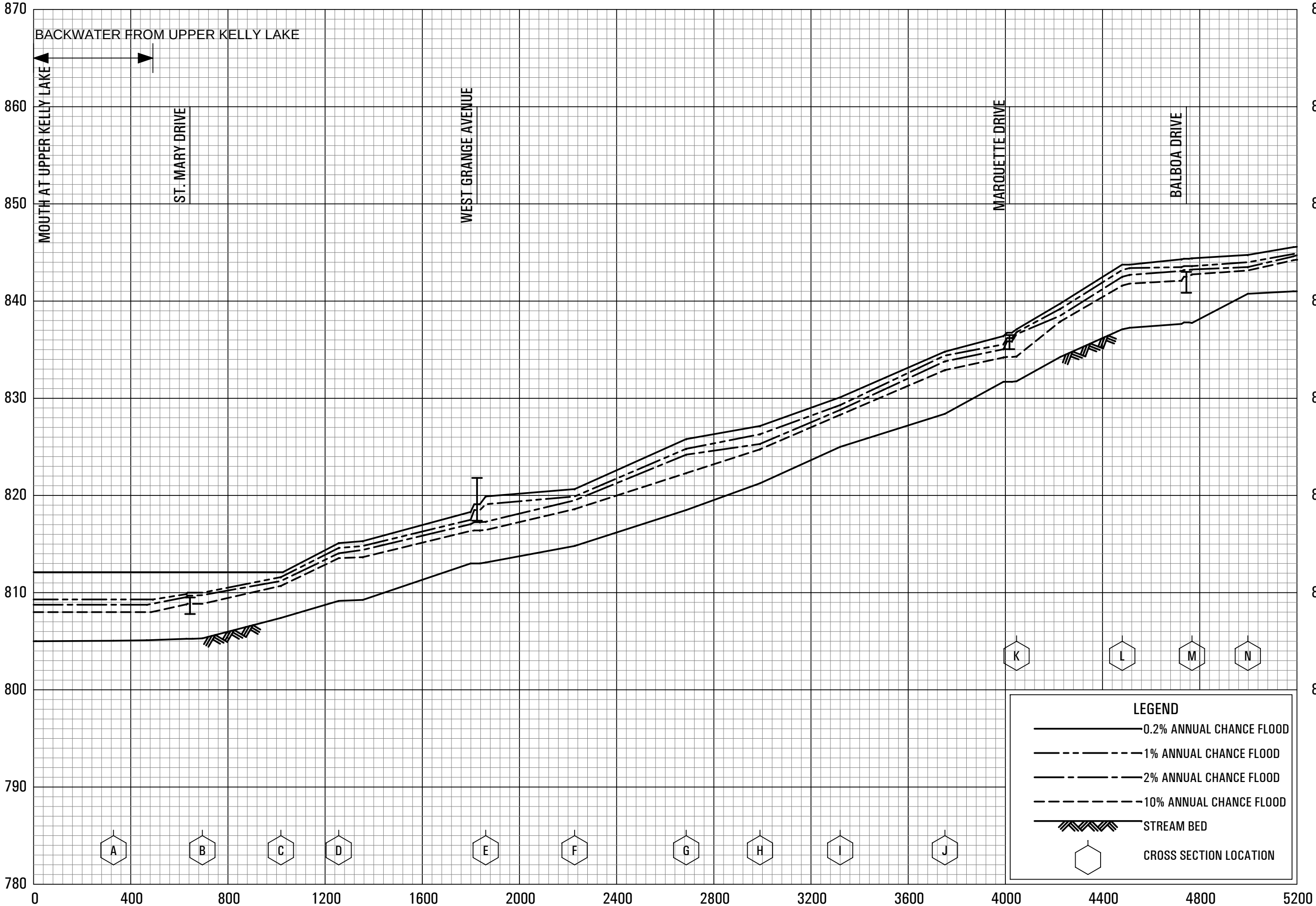
FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FLOOD PROFILES

UNDERWOOD CREEK

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

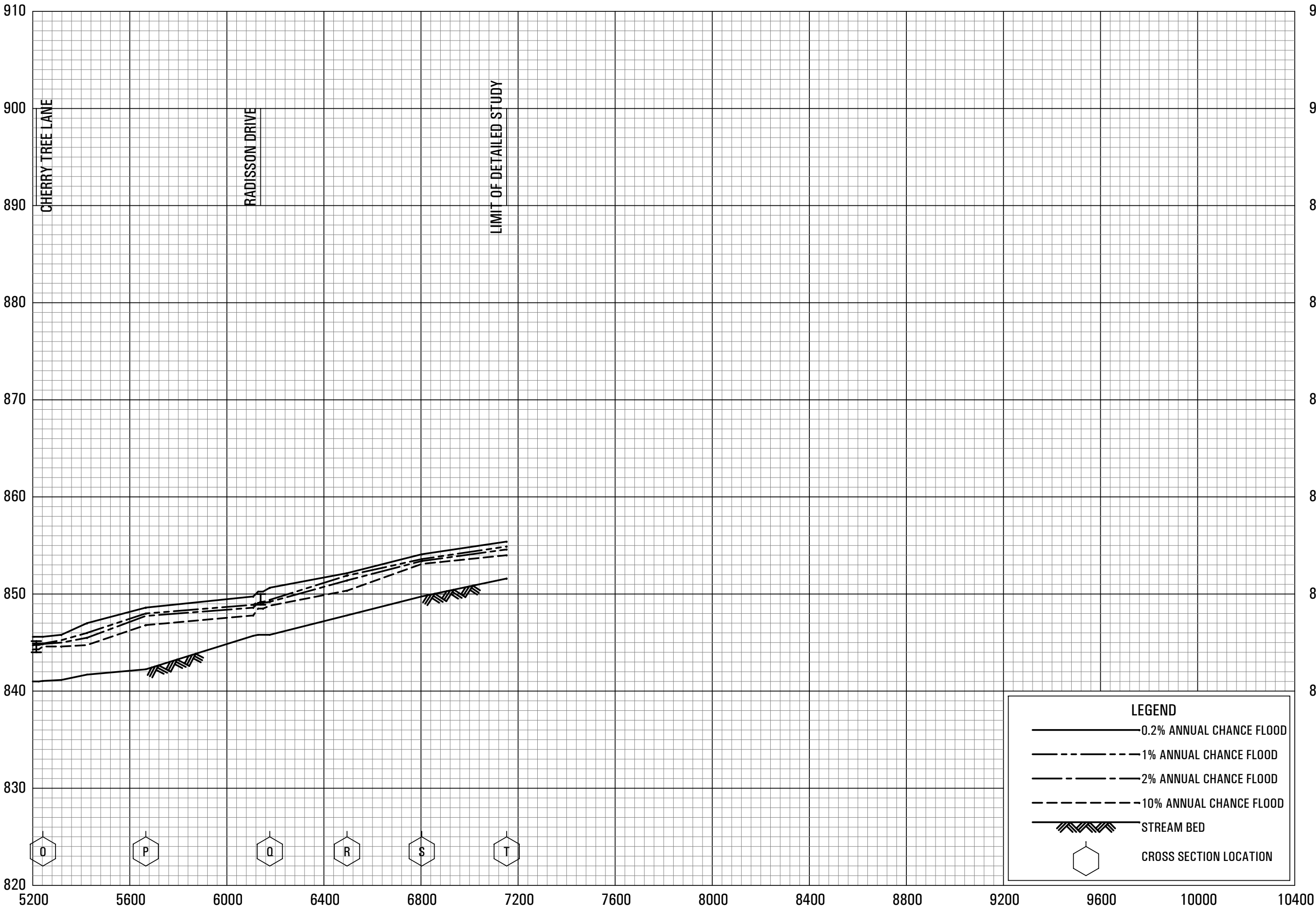
STREAM BED

CROSS SECTION LOCATION

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FLOOD PROFILES
UPPER KELLY LAKE TRIBUTARY

ELEVATION IN FEET (NGVD 29)

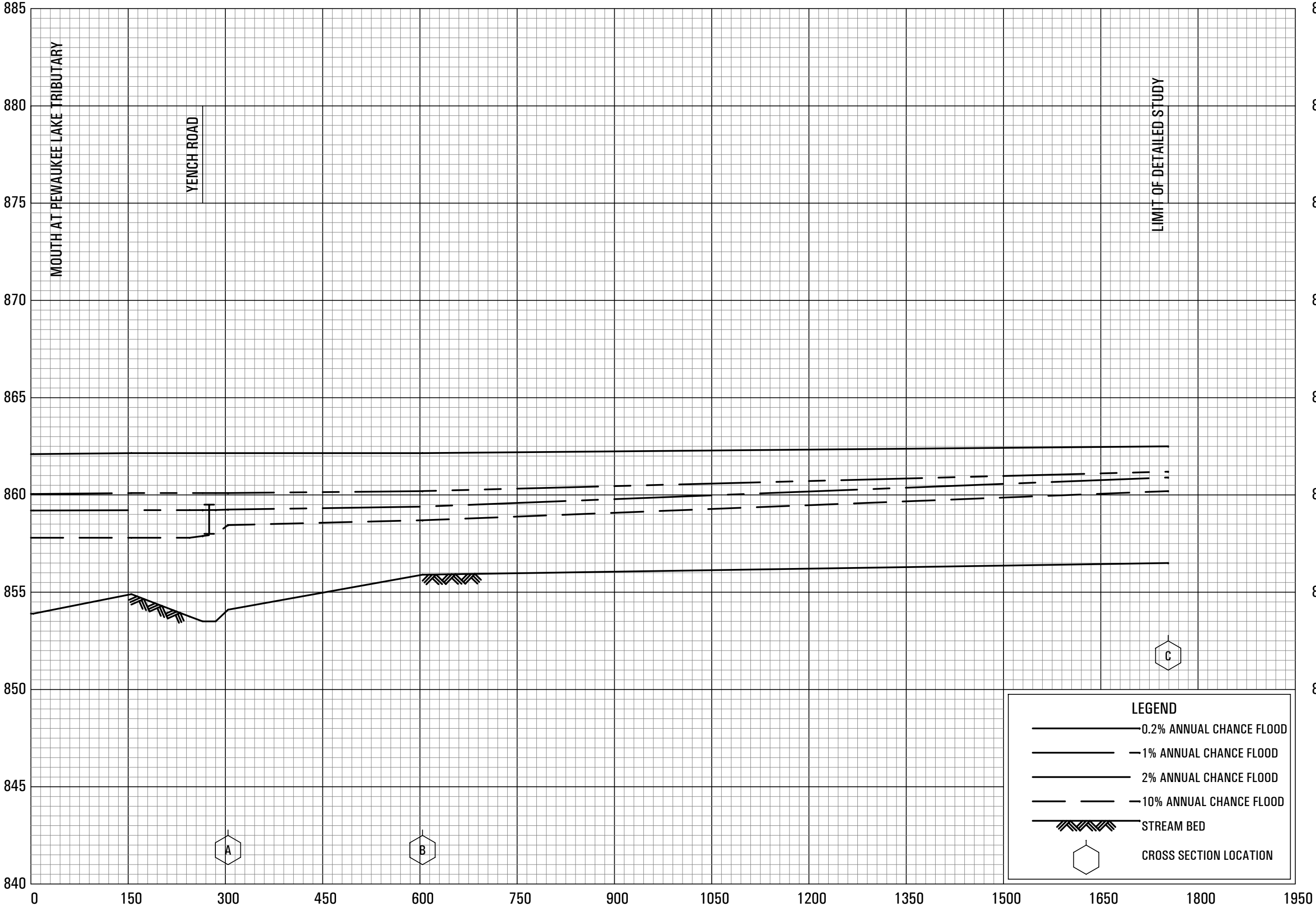


FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

UPPER KELLY LAKE TRIBUTARY

ELEVATION IN FEET (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

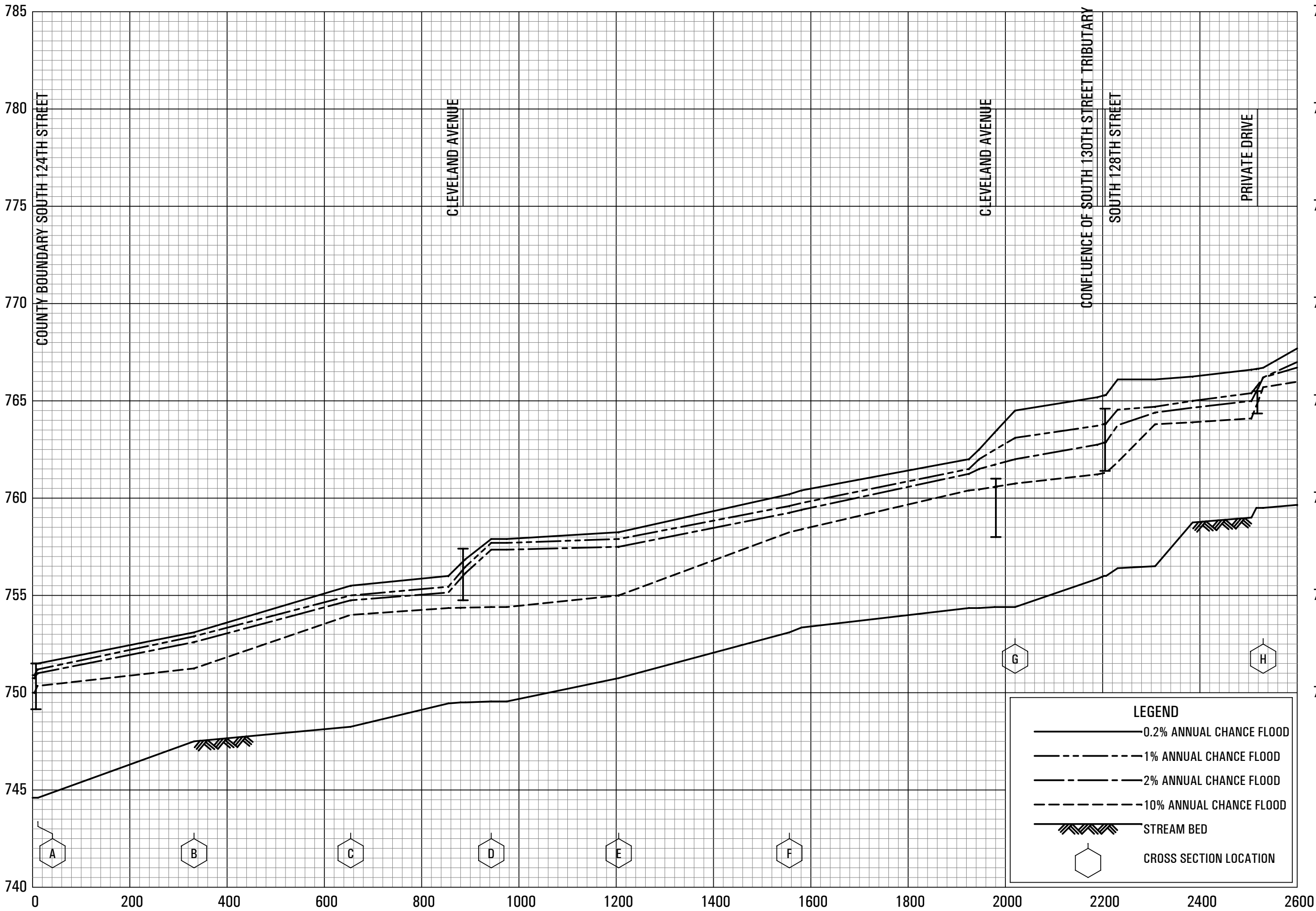
FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

FLOOD PROFILES

WEST BRANCH PEWAUKEE LAKE TRIBUTARY

ELEVATION IN FEET (NGVD 29)

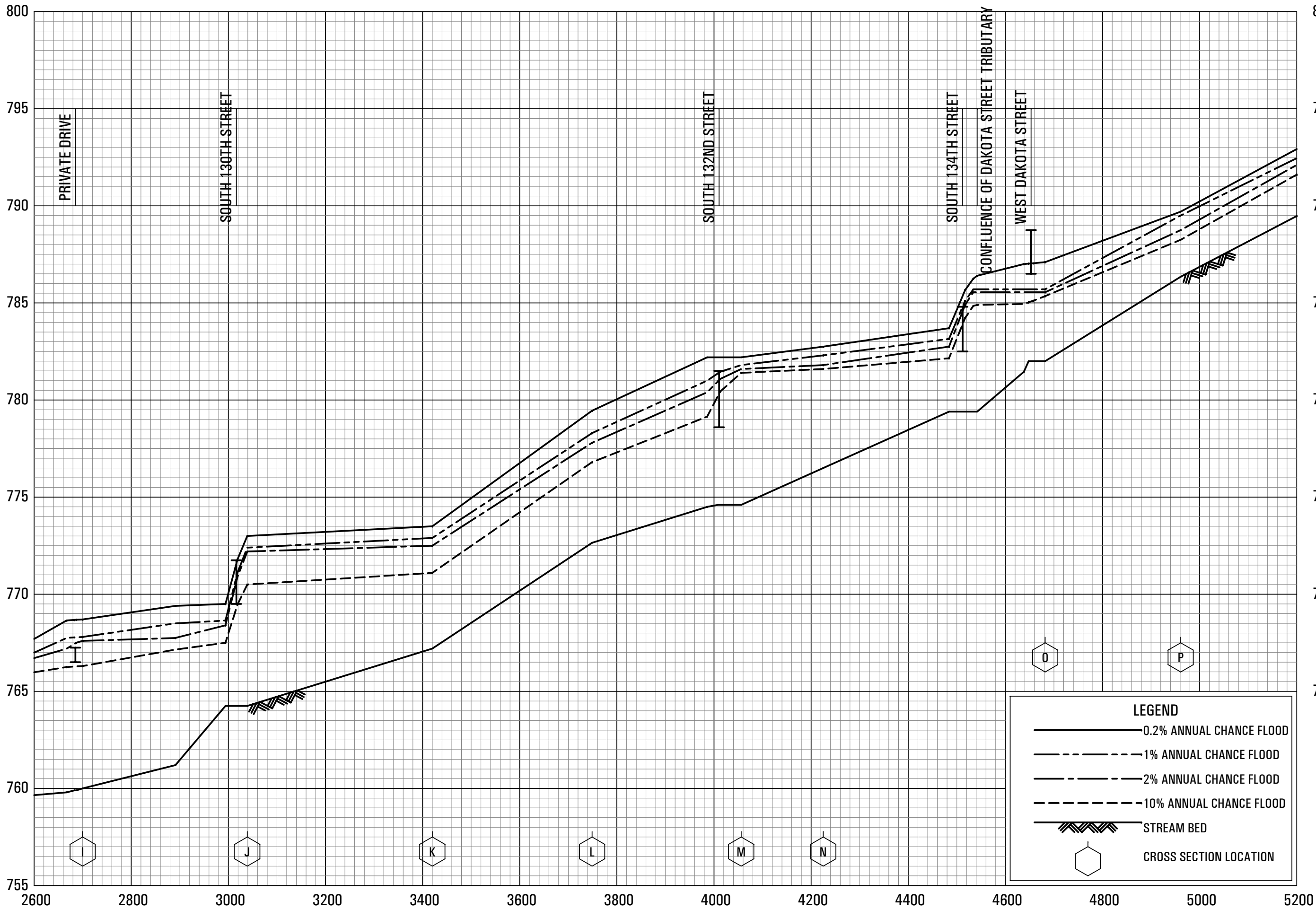


FLOOD PROFILES

WEST BRANCH ROOT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



LEGEND

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

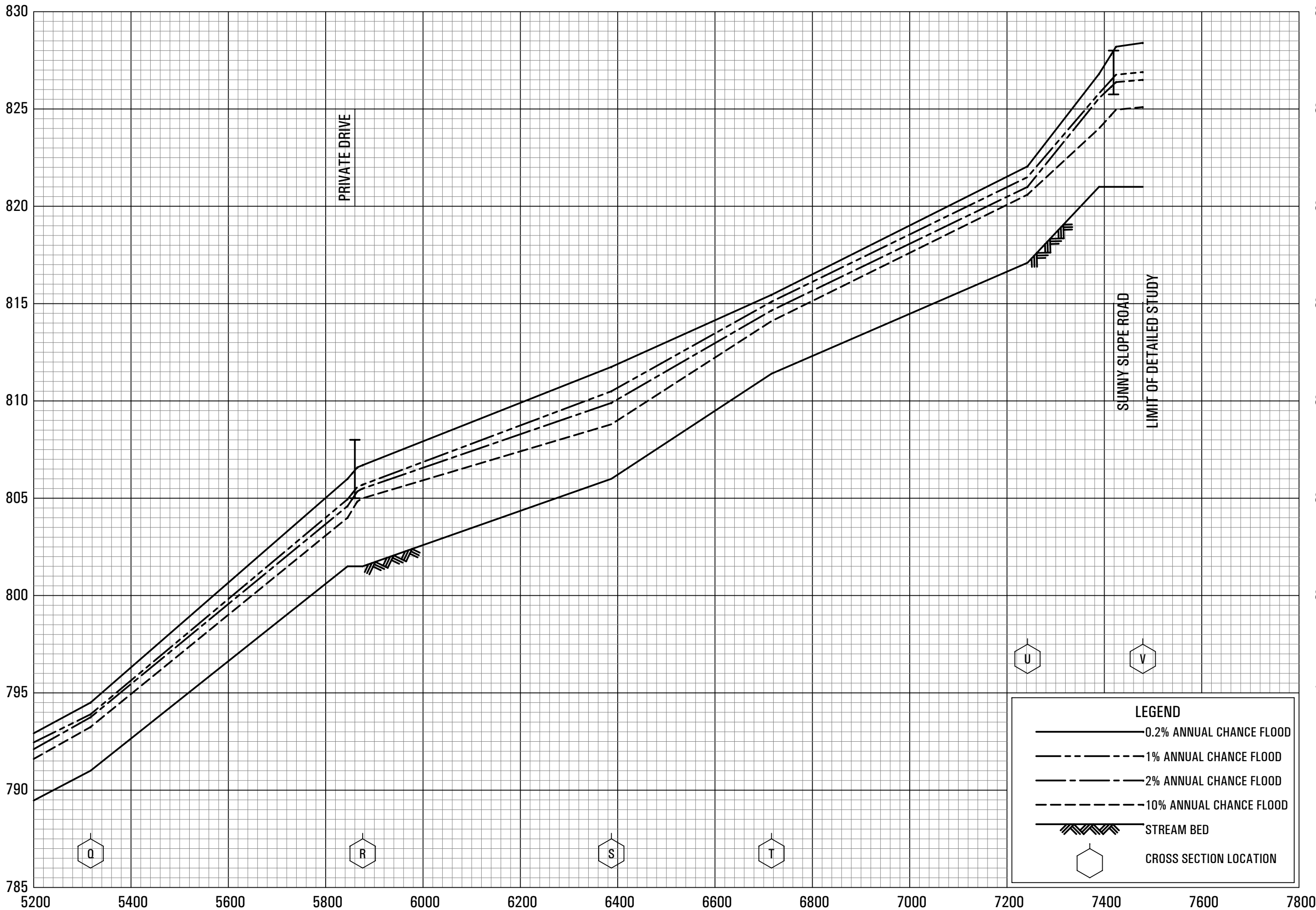
FLOOD PROFILES

WEST BRANCH ROOT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

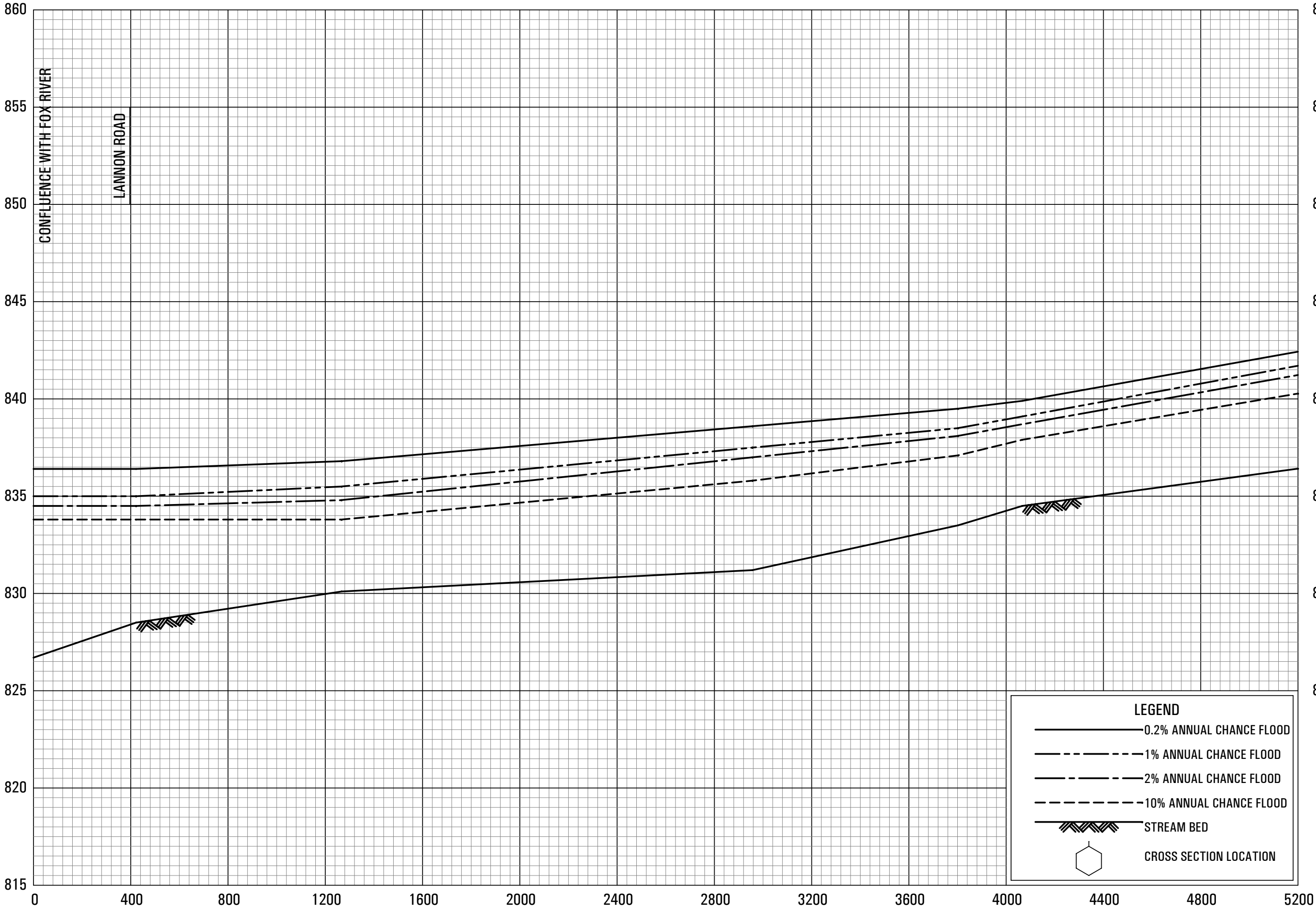
ELEVATION IN FEET (NGVD 29)



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 (NGVD 29)



LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

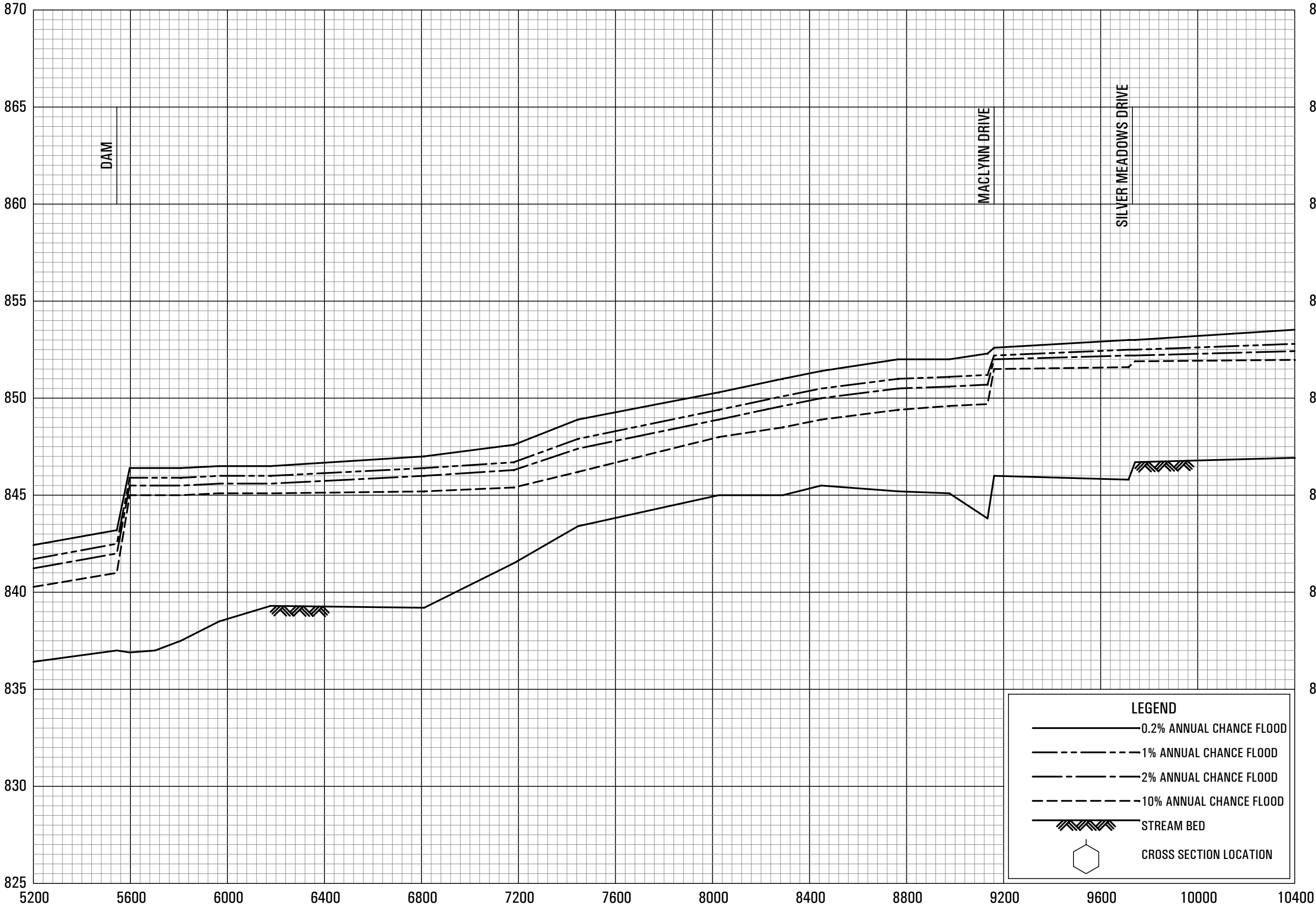
CROSS SECTION LOCATION

FLOOD PROFILES

WILLOW SPRINGS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



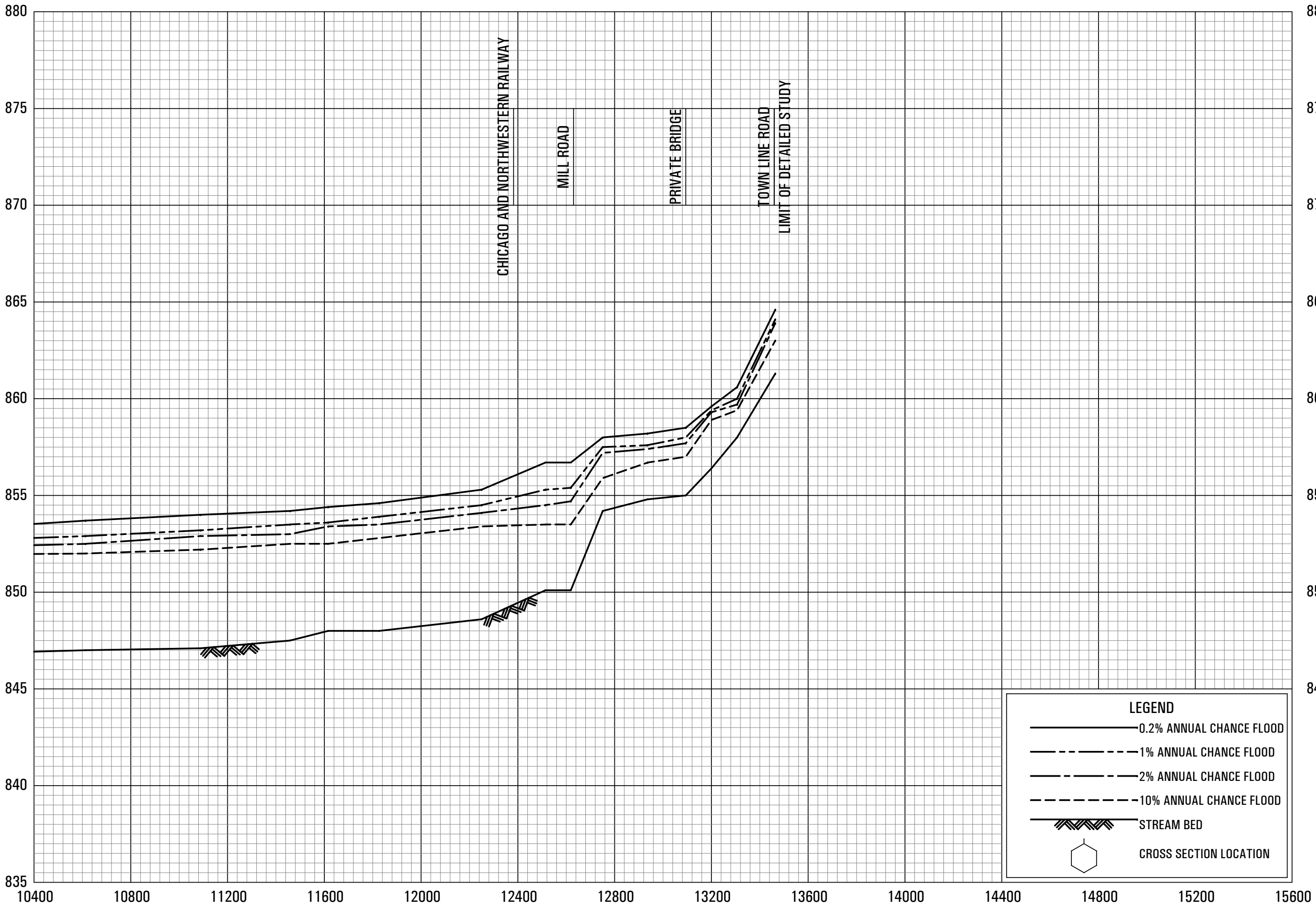
FLOOD PROFILES

WILLOW SPRINGS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)

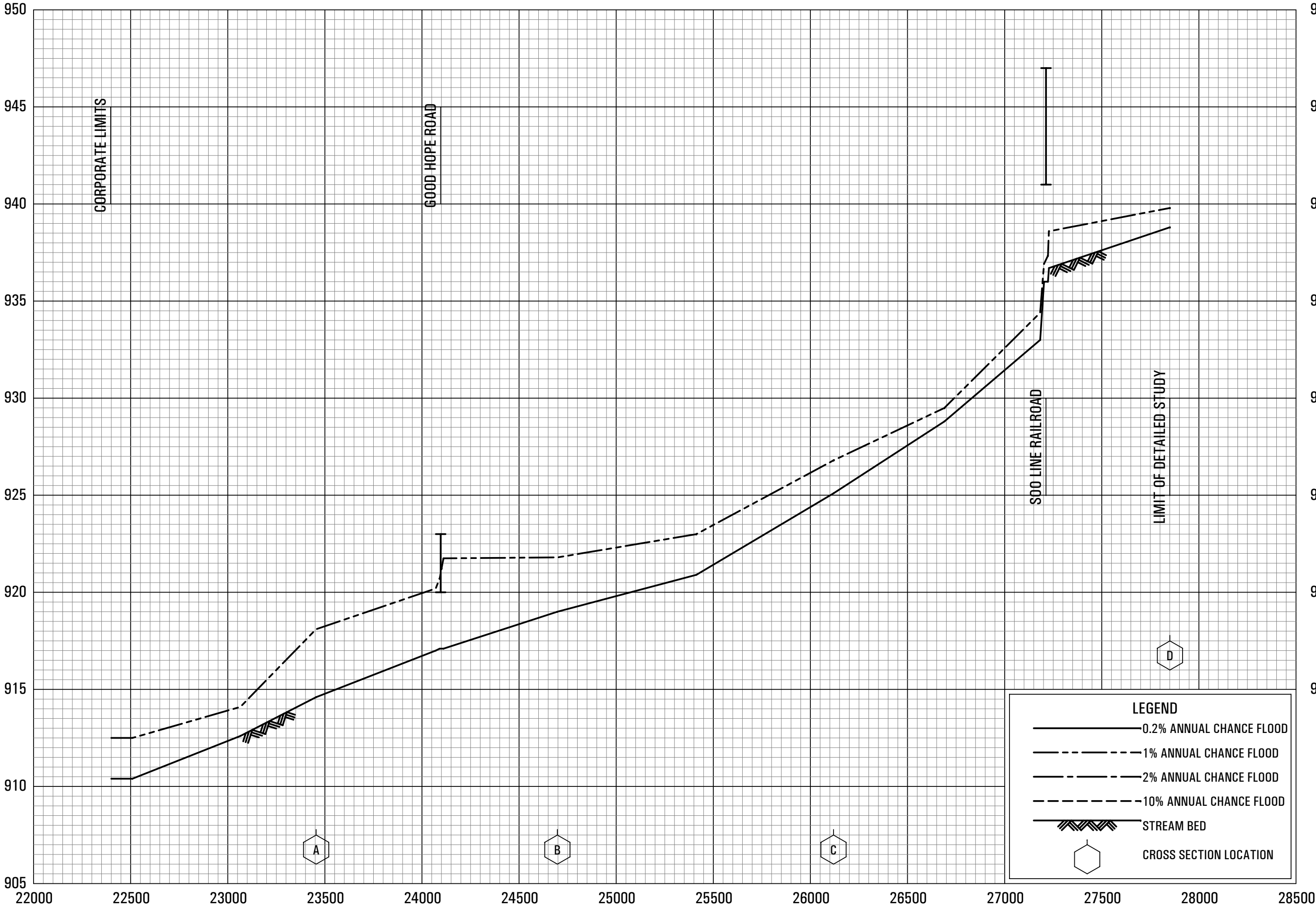


FLOOD PROFILES

WILLOW SPRINGS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

ELEVATION IN FEET (NGVD 29)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH FOX RIVER

FLOOD PROFILES

WILLOW SPRINGS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

WAUKESHA COUNTY, WI
AND INCORPORATED AREAS

Appendix B

Stage Storage

Rating Tables

FROM SEWRPC

Stage Storage		
Elevation (ft)	Storage Change (acre-ft)	Storage (acre-ft)
809.00	0.00	0
811.00	31.00	31
813.00	202.00	233
817.00	867.00	1100
* 817.13	45.00	1145

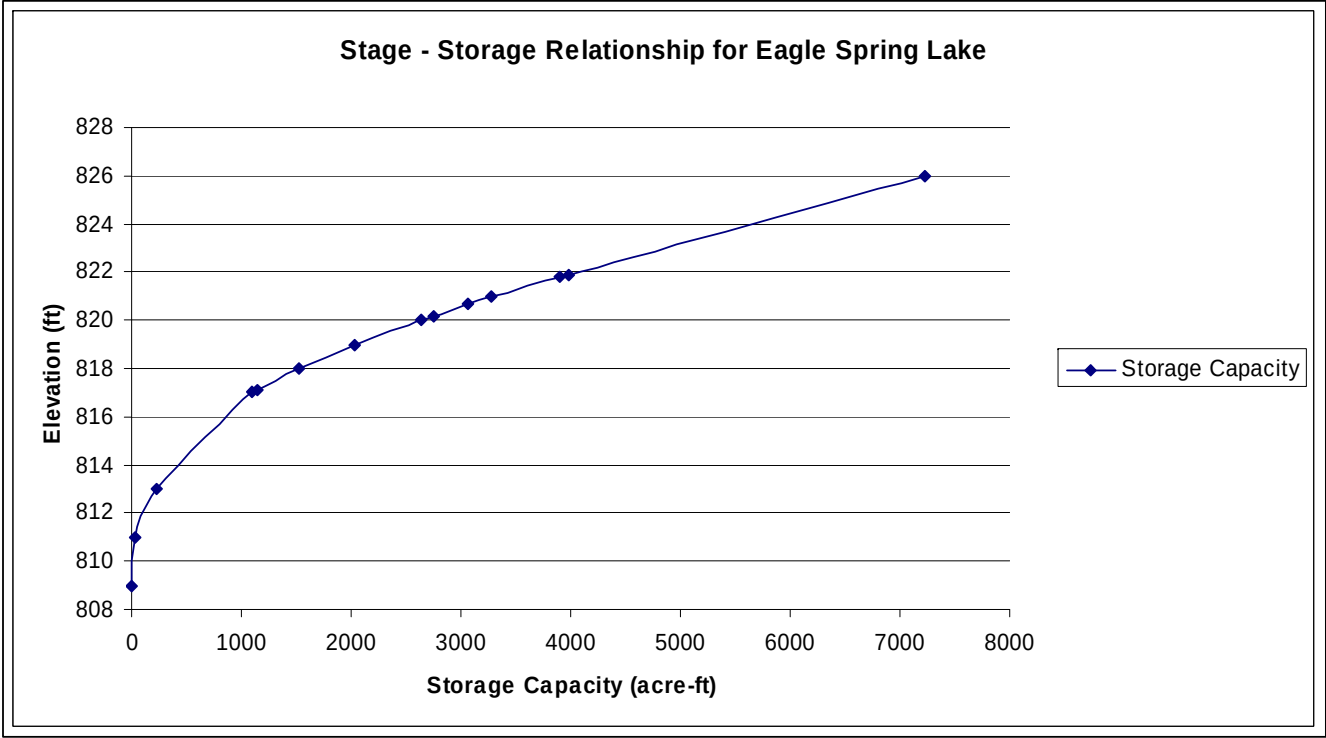
*Spillway Elevation

Stage-Storage above Spillway Elev.		
Elevation (ft)	Storage Change (acre-ft)	Storage (acre-ft)
818.00	375.00	1520
819.00	520.00	2040
820.00	600.00	2640
820.18	114.00	2754
820.68	432.00	3072
821.00	635.00	3275
821.80	632.00	3907
821.90	79.00	3986
826.00	3952.00	7227

Initial Water Elevation of Eagle Springs Lake

Max. Water Elevation before water starts to flow over the road

*Linear Interpolation



Appendix C
Elevation Surface Area

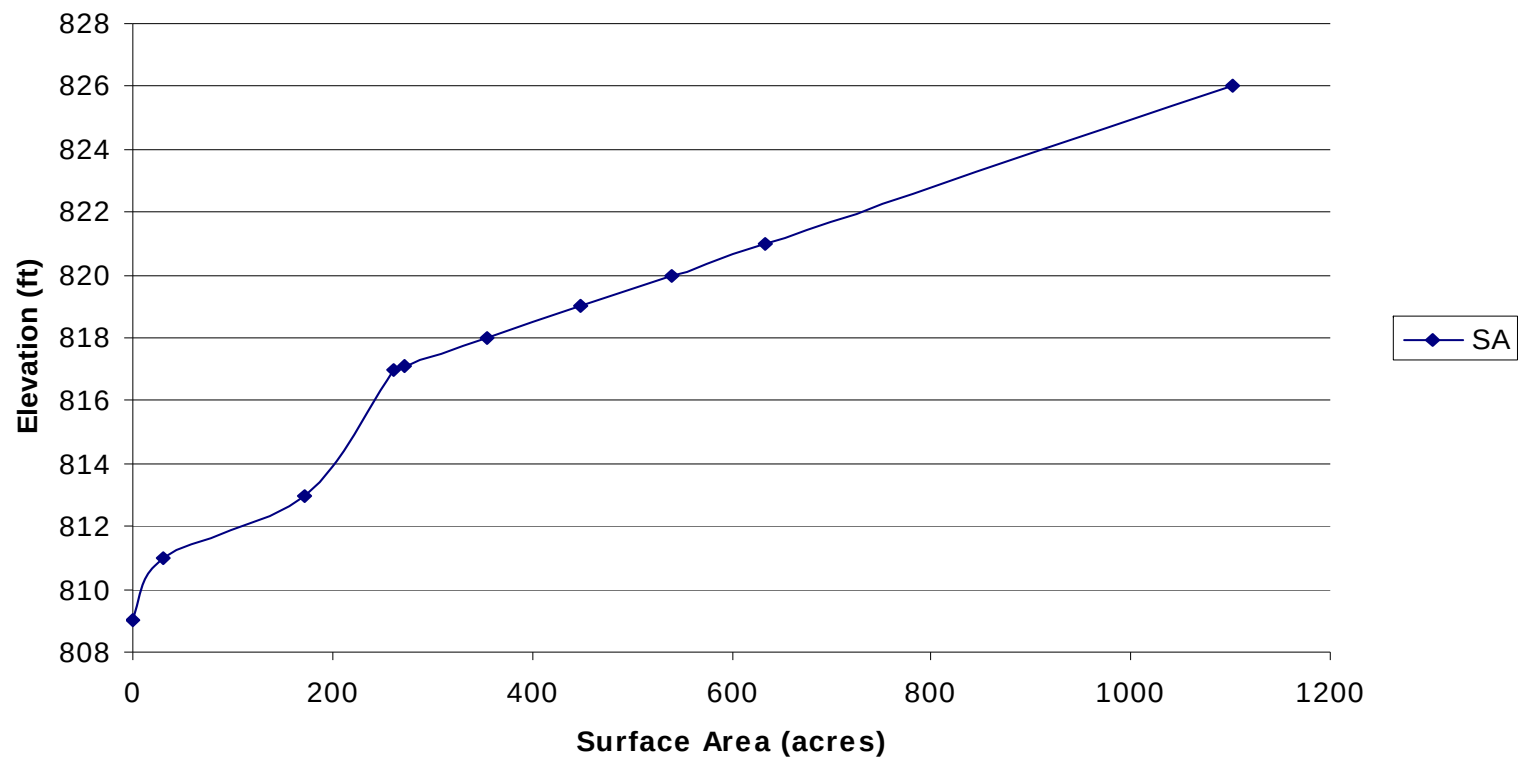
PROJECT: EAGLE SPRINGS LAKE
DATE: Nov-06

Rating Tables

SA-Elevation		
Elevation (ft)	SA Change (acre)	SA (acre)
809.00	0.4	0.40
811.00	30.20	30.60
813.00	141.20	171.80
817.00	89.20	261.00
817.13	12.00	273

SA above Spillway Elevation		
Elevation (ft)	SA Change (acre)	SA (acre)
818.00	342.00	354
819.00	448.00	448
820.00	541.00	541
821.00	634.00	634
826.00	1101.00	1101

SA-Elevation Relationship for Eagle Spring Lake



Appendix D

Rating Tables

REVISED ALTERNATIVE 3 - WAMBOLD & KROLL

Fully Functioning

W/ 48" PIPE ADDED @ KROLL DAM

GATE OPEN STOP BOARDS OUT

Wambold (North Outlet) Dam

$$Q = CLH^{(3/2)}$$

Elevation	C	L	H	Q	
817.00	N/A	N/A	0	#VALUE!	
817.13	N/A	N/A	0	#VALUE!	
817.50	3.3	10.5	0.4	8.77	
818.00	3.3	10.5	0.9	29.58	
818.50	3.3	10.5	1.4	57.40	
819.00	3.3	10.5	1.9	90.75	
819.50	3.3	10.5	2.4	128.83	
820.00	3.3	10.5	2.9	171.12	
820.18	3.3	10.5	3.05	184.57	
820.50	3.3	10.5	3.4	217.23	
820.68	3.3	10.5	3.55	231.76	Normal Pool Elevation
820.69	3.3	10.5	3.56	232.74	
821.00	3.3	10.5	3.9	266.87	
821.13	3.3	10.5	4	277.20	(Even w/ Concrete Wingwalls)
821.8	3.3	10.5	4.67	349.69	NOTE: Top of Dam is 821.80
Elevation	C	L	H	Q	
Orifice Flow Begins after 821.13 $Q = CA(2gh)^{(1/2)}$					
821.8	0.9	42	0.67	248.50	NOTE: Top of Dam is 821.80 (Top Road)

Kroll (South Outlet) Dam

$$Q = CLH^{(3/2)}$$

Elevation	C	L	H	Q	
817.0	N/A	N/A	0	0	
817.13	N/A	N/A	0	0	
817.5	3.3	9	0.5	10.5	
818.0	3.3	9	1	29.7	
818.5	3.3	9	1.5	54.6	
Orifice Flow $Q = CA(2gh)^{(1/2)}$					
Elevation	C	A	h	Q	
819.0	0.6	15.3	1.1	77.3	
819.5	0.6	15.3	1.6	93.2	
820.0	0.6	15.3	2.1	106.8	
* Orifice Flow @ Outlet $Q = CA(2gh)^{(1/2)}$					
Elevation	C	A	h	Q	
1100	817.0	0.6	50	10	761.3
	817.5	0.6	50	10.5	780.1
1520	818.0	0.6	50	11	798.5
	818.5	0.6	50	11.5	816.4
2040	819.0	0.6	50	12	834.0
	819.5	0.6	50	12.5	851.2
2640	820.0	0.6	50	13	868.0
2754	820.18	0.6	50	13.18	874.0
	820.5	0.6	50	13.5	884.6
3072	820.68	0.6	50	13.68	890.4
3275	821.0	0.6	50	14	900.8
	821.5	0.6	50	14.5	916.7
	821.8	0.6	50	14.8	926.2

* Orifice Flow at Outlet Controls

Combined Capacity

	Elevation	Q _w	Q _k	Q _t	
1100	817.0	0.0	761.3	761	
	817.5	8.8	780.1	789	
1520	818.0	29.6	798.5	828	
	818.5	57.4	816.4	874	
2040	819.0	90.7	834.0	925	
	819.5	128.8	851.2	980	
2640	820.0	171.1	868.0	1039	
	820.18	184.6	874.0	1059	
	820.5	217.2	884.6	1102	
3072	820.68	231.8	890.4	1122	Initial Pool Elevation
3275	821.0	266.9	900.8	1168	
	821.8	349.69	926.2	1276	

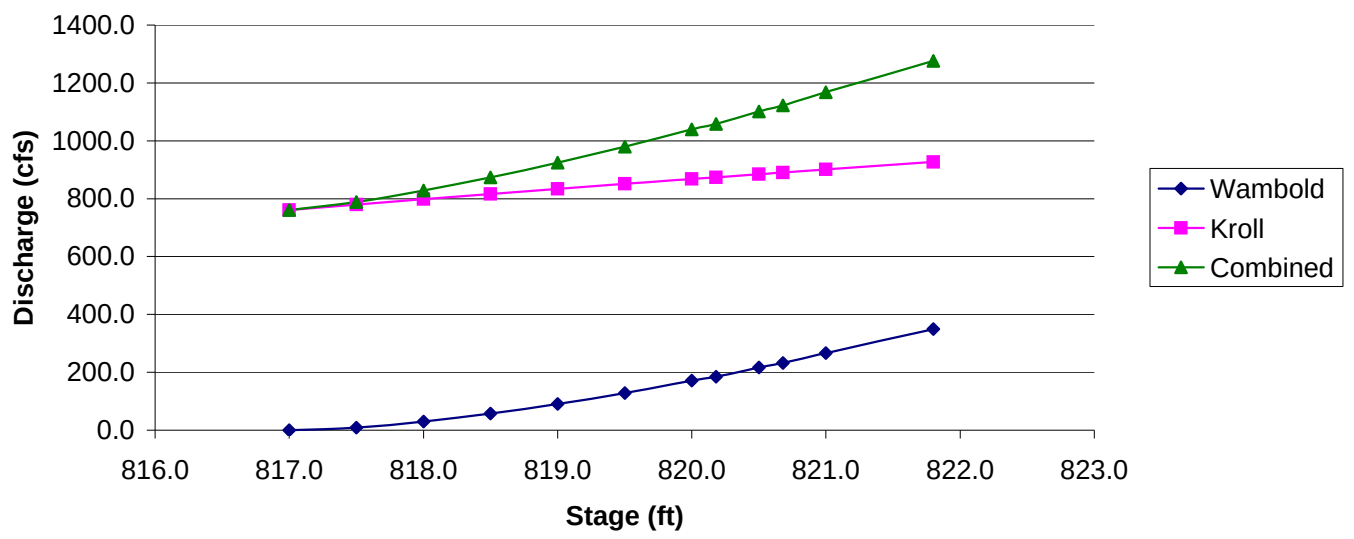
*** Assume No Outflow
Below Normal Pool Elevation

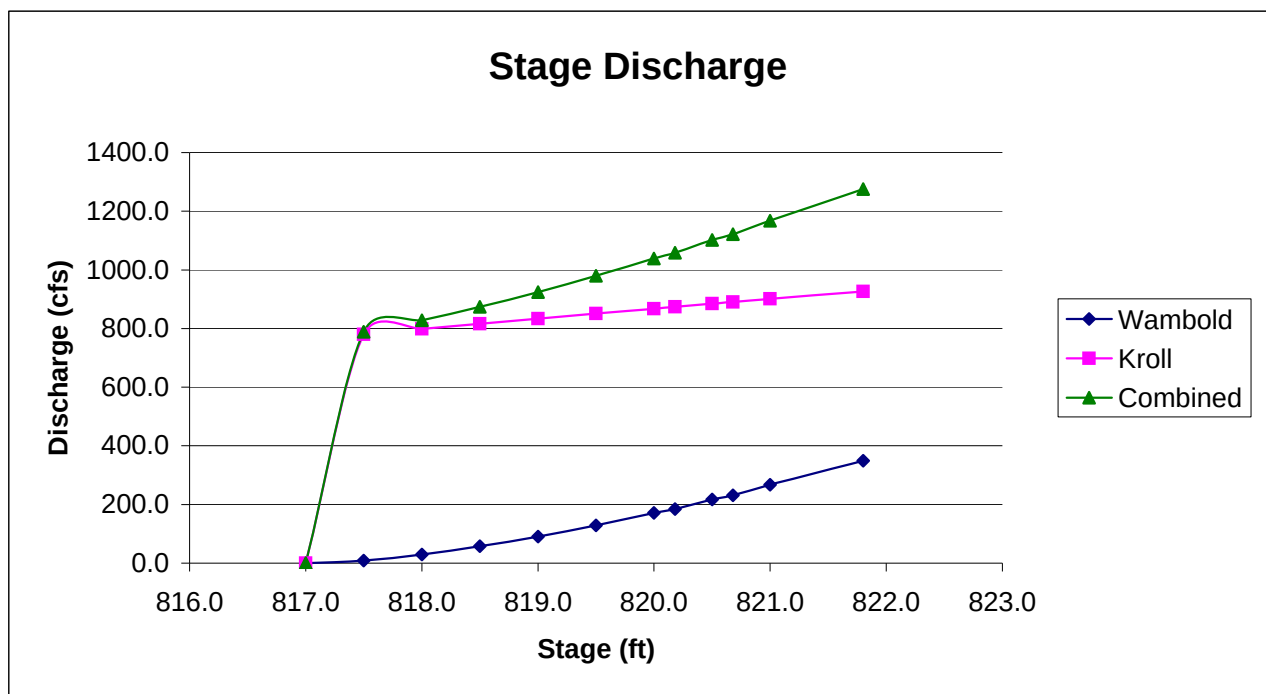
Combined Capacity

	Elevation	Q _w	Q _k	Q _t	
	817.0	0.0	0.0	0	
	817.5	8.8	780.1	789	
	818.0	29.6	798.5	828	
	818.5	57.4	816.4	874	
	819.0	90.7	834.0	925	
	819.5	128.8	851.2	980	
	820.0	171.1	868.0	1039	
	820.18	184.6	874.0	1059	
	820.5	217.2	884.6	1102	
	820.68	231.8	890.4	1122	Initial Pool Elevation
	821.0	266.9	900.8	1168	
	821.8	349.69	926.2	1276	

*** Assume Outflow Occurs
Below Normal Pool Elevation

Stage Discharge





Appendix E

HEC-HMS

Project: Eagle Springs
Simulation Run: Run 1 Subbasin: Subbasin-1

Start of Run:	01May2006, 00:00	Basin Model:	Basin 1
End of Run:	14May2006, 00:01	Meteorologic Model:	Met 1
Compute Time:	19Aug2010, 09:54:28	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge :	2003.4 (CFS)	Date/Time of Peak Discharge :	02May2006, 19:19
Total Precipitation :	12880.0 (AC-FT)	Total Direct Runoff :	6880.2 (AC-FT)
Total Loss :	5999.8 (AC-FT)	Total Baseflow :	0.0 (AC-FT)
Total Excess :	6880.2 (AC-FT)	Discharge :	6880.2 (AC-FT)

Project: Eagle Springs
Simulation Run: Run 1 Reservoir: Reservoir-1

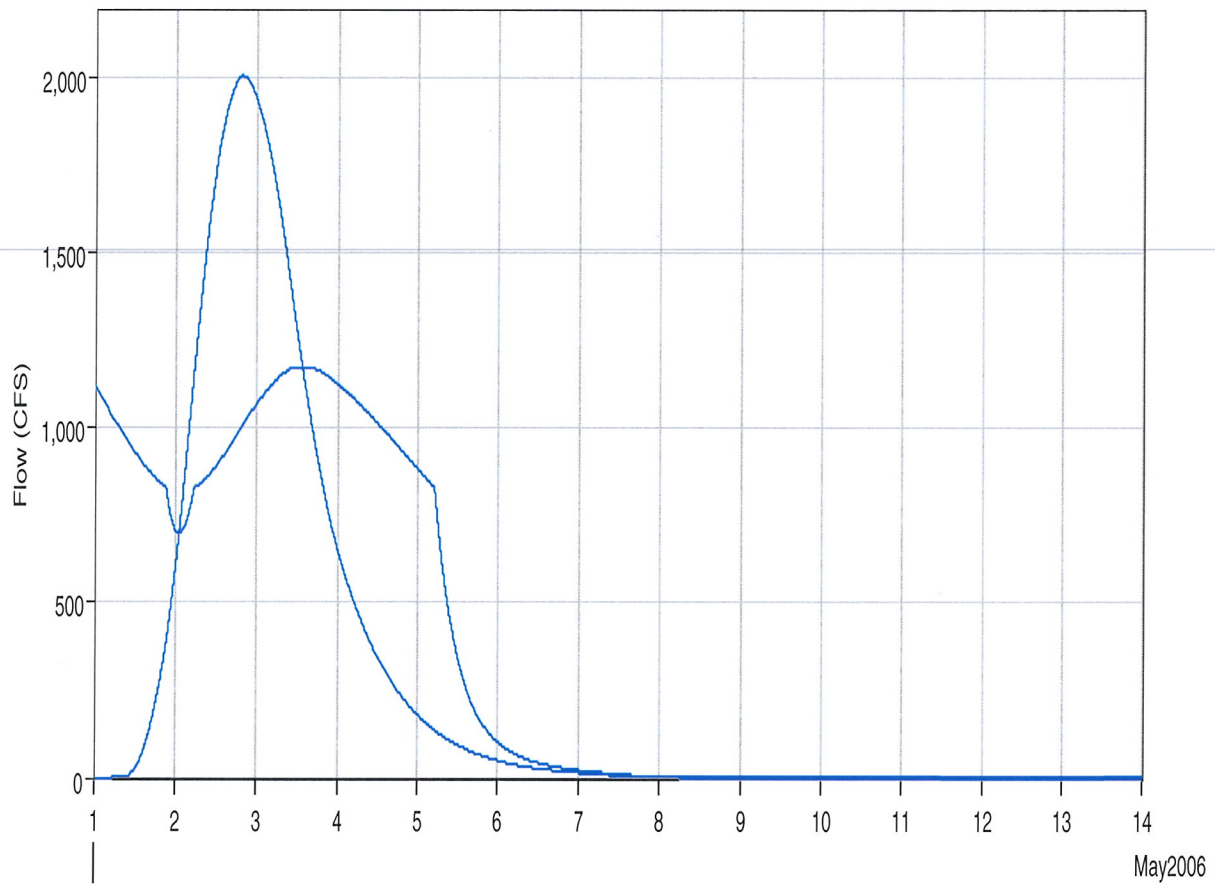
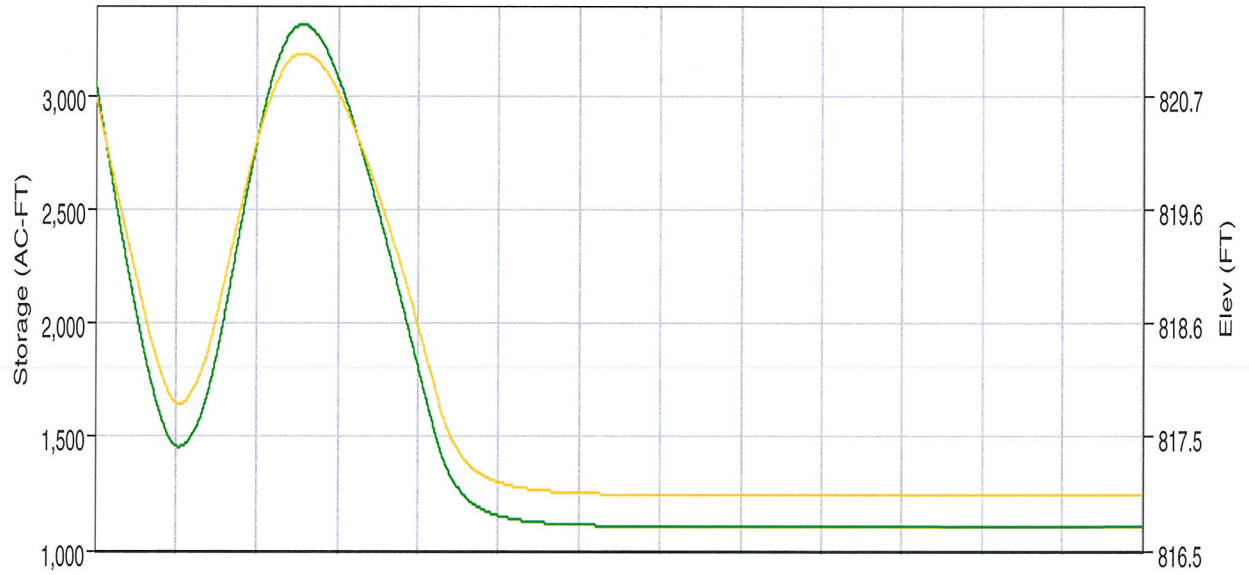
Start of Run:	01May2006, 00:00	Basin Model:	Basin 1
End of Run:	14May2006, 00:01	Meteorologic Model:	Met 1
Compute Time:	19Aug2010, 09:54:28	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	2003.4 (CFS)	Date/Time of Peak Inflow :	02May2006, 19:19
Peak Outflow :	1173.8 (CFS)	Date/Time of Peak Outflow :	03May2006, 13:22
Total Inflow :	6880.2 (AC-FT)	Peak Storage :	3308.8 (AC-FT)
Total Outflow :	8852.2 (AC-FT)	Peak Elevation :	821.0 (FT)

Reservoir "Reservoir-1" Results for Run "Run 1"



Run:Run 1 Element:RESERVOIR-1 Result:Storage

Run:Run 1 Element:RESERVOIR-1 Result:Pool Elevation

Run:Run 1 Element:RESERVOIR-1 Result:Outflow

Run:Run 1 Element:RESERVOIR-1 Result:Combined Inflow

Project Springs Simulation Run: Run 1

Simulation Date: 02May2006, 00:00:00 Basin Model: Basin 1
Sample Date: 14May2006, 00:01 Meteorologic Model: Met 1
19Aug2010, 10:45:22 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak
Subbasin-1	21	2003.4	02May2006, 19:1
Reservoir-1	21	1173.8	03May2006, 13:2

Appendix F

Cost Estimate



Eagle Spring Lake Management District
Kroll Dam Modifications - Culvert Crossing CTH E
29-Apr-10
OPINION OF PROBABLE COST

				AYRES ESTIMATE			
Item No.	Description	UNIT	Approx. Quantity	Est. Unit Price	Total Price		
	Base Bid						
1	Mobilization	L.S.	1	\$5,000.00	\$5,000.00		
2	Traffic Control	L.S.	1	\$5,000.00	\$5,000.00		
3	Silt Fence	L.F.	100	\$5.00	\$500.00		
4	Erosion Bales	L.F.	50	\$12.00	\$600.00		
5	Erosion Mat	S.Y.	100	\$1.50	\$150.00		
6	Inlet Protection	Each	5	\$5.00	\$25.00		
7	Full Depth Pavement Saw Cutting	L.F.	100	\$1.00	\$100.00		
8	48" Storm Sewer RCP (Culvert Pipe)	L.F.	100	\$75.00	\$7,500.00		
9	48" Apron Endwall w/ Medium Riprap	Each	1	\$1,000.00	\$1,000.00		
10	96" Storm Manhole w/ Casting	Each	1	\$5,000.00	\$5,000.00		
11	Roadway Excavation	C.Y.	150	\$15.00	\$2,250.00		
12	6" Base Course (1 1/4" Stone)	TON	500	\$10.00	\$5,000.00		
13	6" Base Course (3" Stone)	TON	500	\$10.00	\$5,000.00		
14	6" Asphaltic Concrete Paving	TON	10	\$60.00	\$600.00		
15	Type "B" Turf Replacement	S.Y.	200	\$5.00	\$1,000.00		
16	Pavement Marking 4-in Epoxy Yellow (Centerline Double Yellow)	L.F.	50	\$1.00	\$50.00		
BASE BID TOTAL					\$38,775.00		
SUBTOTAL PROJECT ESTIMATE					\$38,775.00	Price per foot of road	\$6.46
ENGINEERING							
TOTAL PROJECT ESTIMATE					\$38,775.00		
SOURCE:	WISDOT BID-X BID TAB ANALYSIS 2009 - 2010						
	Sorted by Quantity & County in the State of Wisconsin						
ENGINEERING TO INCLUDE:							
ESTIMATE DOES NOT INCLUDE:							