

FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 1



GRANT COUNTY, WISCONSIN AND INCORPORATED AREAS

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
VILLAGE OF BAGLEY	550145	CITY OF LANCASTER	550150
VILLAGE OF BLOOMINGTON	550146	VILLAGE OF LIVINGSTON*	550151
VILLAGE OF BLUE RIVER	550147	VILLAGE OF MONTFORT*	550525
CITY OF BOSCOBEL	550148	VILLAGE OF MOUNT HOPE	550152
VILLAGE OF CASSVILLE	555548	VILLAGE OF MUSCODA	550153
CITY OF CUBA CITY*	550514	VILLAGE OF PATCH GROVE*	550528
VILLAGE OF DICKEYVILLE*	550520	CITY OF PLATTEVILLE	550154
CITY OF FENNIMORE*	550504	VILLAGE OF POTOSI	550155
GRANT COUNTY UNINCORPORATED AREAS	555557	VILLAGE OF TENNYSON*	550532
VILLAGE OF HAZEL GREEN*	550589	VILLAGE OF WOODMAN*	550156

*No Special Flood Hazard Areas Identified in Grant County



FEMA

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02/03/2016

FLOOD INSURANCE STUDY NUMBER
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Version Number 2.2.2.1

TABLE OF CONTENTS

Volume 1

	<u>Page</u>
SECTION 1.0 – INTRODUCTION	1
1.1 The National Flood Insurance Program	1
1.2 Purpose of this Flood Insurance Study Report	2
1.3 Jurisdictions Included in the Flood Insurance Study Project	2
1.4 Considerations for using this Flood Insurance Study Report	6
SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS	16
2.1 Floodplain Boundaries	16
2.2 Floodways	16
2.3 Base Flood Elevations	21
2.4 Non-Encroachment Zones	21
2.5 Coastal Flood Hazard Areas	21
2.5.1 Water Elevations and the Effects of Waves	21
2.5.2 Floodplain Boundaries and BFEs for Coastal Areas	22
2.5.3 Coastal High Hazard Areas	22
2.5.4 Limit of Moderate Wave Action	22
SECTION 3.0 – INSURANCE APPLICATIONS	22
3.1 National Flood Insurance Program Insurance Zones	22
3.2 Coastal Barrier Resources System	23
SECTION 4.0 – AREA STUDIED	24
4.1 Basin Description	24
4.2 Principal Flood Problems	24
4.3 Non-Levee Flood Protection Measures	35
4.4 Levees	35
SECTION 5.0 – ENGINEERING METHODS	35
5.1 Hydrologic Analyses	36
5.2 Hydraulic Analyses	38
5.3 Coastal Analyses	42
5.3.1 Total Stillwater Elevations	42
5.3.2 Waves	42
5.3.3 Coastal Erosion	42
5.3.4 Wave Hazard Analyses	42
5.4 Alluvial Fan Analyses	43
SECTION 6.0 – MAPPING METHODS	43
6.1 Vertical and Horizontal Control	43
6.2 Base Map	45
6.3 Floodplain and Floodway Delineation	45
6.4 Coastal Flood Hazard Mapping	56
6.5 FIRM Revisions	56

TABLE OF CONTENTS (continued)
Volume 1 (continued)

6.5.1	Letters of Map Amendment	56
6.5.2	Letters of Map Revision Based on Fill	57
6.5.3	Letters of Map Revision	57
6.5.4	Physical Map Revisions	57
6.5.5	Contracted Restudies	58
6.5.6	Community Map History	58
 SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION		 60
7.1	Contracted Studies	60
7.2	Community Meetings	61
 SECTION 8.0 – ADDITIONAL INFORMATION		 64
 SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES		 66

Figures

	<u>Page</u>
Figure 1: FIRM Panel Index	8
Figure 2: FIRM Notes to Users	9
Figure 3: Map Legend for FIRM	12
Figure 4: Floodway Schematic	17
Figure 5: Wave Runup Transect Schematic	21
Figure 6: Coastal Transect Schematic	22
Figure 7: Frequency Discharge-Drainage Area Curves	38
Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas	42
Figure 9: Transect Location Map	42

Tables

	<u>Page</u>
Table 1: Listing of NFIP Jurisdictions	3
Table 2: Flooding Sources Included in this FIS Report	18
Table 3: Flood Zone Designations by Community	23
Table 4: Coastal Barrier Resources System Information	23
Table 5: Basin Characteristics	24
Table 6: Principal Flood Problems	24
Table 7: Historic Flooding Elevations	35
Table 8: Non-Levee Flood Protection Measures	35
Table 9: Levees	35
Table 10: Summary of Discharges	37
Table 11: Summary of Non-Coastal Stillwater Elevations	38
Table 12: Stream Gage Information used to Determine Discharges	38
Table 13: Summary of Hydrologic and Hydraulic Analyses	39

TABLE OF CONTENTS *(continued)*

Volume 1 *(continued)*

Tables *(continued)*

Table 14: Roughness Coefficients	42
Table 15: Summary of Coastal Analyses	42
Table 16: Tide Gage Analysis Specifics	42
Table 17: Coastal Transect Parameters	42
Table 18: Summary of Alluvial Fan Analyses	43
Table 19: Results of Alluvial Fan Analyses	43
Table 20: Countywide Vertical Datum Conversion	44
Table 21: Stream-by-Stream Vertical Datum Conversion	45
Table 22: Base Map Sources	45
Table 23: Summary of Topographic Elevation Data used in Mapping	47
Table 24: Floodway Data	48
Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams	56
Table 26: Summary of Coastal Transect Mapping Considerations	56
Table 27: Incorporated Letters of Map Change	57
Table 28: Community Map History	59
Table 29: Summary of Contracted Studies Included in this FIS Report	60
Table 30: Community Meetings	62
Table 31: Map Repositories	64
Table 32: Additional Information	66
Table 33: Bibliography and References	67

Exhibits

Flood Profiles	<u>Panel</u>
Beetown Branch	01-02 P
Crooked Creek	03-06 P
Kieler Creek	07-08 P
Little Platte River	09 P
Louisburg Creek	10-11 P
Mississippi River	12-31 P
Platte River	32 P
Rattlesnake Creek	33 P
Rountree Branch	34-37 P
Sanders Creek	38-40 P
Wisconsin River	41-58 P

Published Separately

Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT GRANT COUNTY, WISCONSIN

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60.3, *Criteria for land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after

the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as “Post-FIRM” buildings.

1.2 Purpose of this Flood Insurance Study Report

This Flood Insurance Study (FIS) report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community’s regulations.

1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of Grant County, Wisconsin.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the 8-digit Hydrologic Unit Codes (HUC-8) sub-basins affecting each, are shown in Table 1. The Flood Insurance Rate Map (FIRM) panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

The location of flood hazard data for participating communities in multiple jurisdictions is also indicated in the table.

Jurisdictions that have no identified SFHAs as of the effective date of this study are indicated in the table. Changed conditions in these communities (such as urbanization or annexation) or the availability of new scientific or technical data about flood hazards could make it necessary to determine SFHAs in these jurisdictions in the future.

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Village of Bagley	550145	07060003	55043C0261F, 55043C0262E ² , 55043C0263F, 55043C0264F	
Village of Bloomington	550146	07060003	55043C0295F, 55043C0300E ²	
Village of Blue River	550147	07070005	55043C0029F, 55043C0033F, 55043C0037F, 55043C0045F	
City of Boscobel	550148	07070005	55043C0013F, 55043C0014F, 55043C0016F, 55043C0018F, 55043C0152F	
Village of Cassville	555548	07060003	55043C0557E, 55043C0576E, 55043C0578E, 55043C0579E	
City of Cuba City ¹	550514	07060003, 07060005	55043C0775E ²	
Village of Dickeyville ¹	550520	07060003	55043C0665F, 55043C0730E ²	
City of Fennimore ¹	550504	07060003, 07070005	55043C0350E ²	

¹ No Special Flood Hazard Areas Identified in Grant County

² Panel Not Printed

Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Grant County Unincorporated Areas	555557	07060003, 07060005, 07070005, 07090003	55043C0012F, 55043C0013F, 55043C0014F, 55043C0016F, 55043C0017F, 55043C0018F, 55043C0019E ² , 55043C0028F, 55043C0029F, 55043C0033F, 55043C0034F, 55043C0036F, 55043C0037F, 55043C0040E ² , 55043C0045F, 55043C0053F, 55043C0054F, 55043C0058F, 55043C0065F, 55043C0070E ² , 55043C0093F, 55043C0094F, 55043C0104F, 55043C0108F, 55043C0109F, 55043C0111F, 55043C0112F, 55043C0113F, 55043C0114F, 55043C0116F, 55043C0120E ² , 55043C0127F, 55043C0128F, 55043C0129F, 55043C0131F, 55043C0132F, 55043C0133F, 55043C0134E ² , 55043C0140F, 55043C0145F, 55043C0151F, 55043C0152F, 55043C0155F, 55043C0156F, 55043C0160F, 55043C0175E ² , 55043C0180F, 55043C0185F, 55043C0190E ² , 55043C0195F, 55043C0205F, 55043C0215F, 55043C0225E ² , 55043C0232F, 55043C0234E, 55043C0242E, 55043C0244E, 55043C0251F, 55043C0252F, 55043C0255E ² , 55043C0256F, 55043C0260F, 55043C0261F, 55043C0262E ² , 55043C0263F, 55043C0264F, 55043C0270F, 55043C0295F, 55043C0300E ² , 55043C0305F, 55043C0310E ² , 55043C0315F, 55043C0320F, 55043C0340F, 55043C0350E ² , 55043C0365F, 55043C0370F, 55043C0375E ² , 55043C0400E ² , 55043C0402E, 55043C0404E, 55043C0410F, 55043C0412E, 55043C0414E, 55043C0418E, 55043C0420F, 55043C0428F, 55043C0429F, 55043C0430F, 55043C0435E ² , 55043C0440F, 55043C0442F, 55043C0445F, 55043C0455 F, 55043C0460F, 55043C0465F, 55043C0470F, 55043C0480F, 55043C0485F, 55043C0490E ² , 55043C0495F, 55043C0505F, 55043C0510E ² , 55043C0511F, 55043C0513F, 55043C0515E ² , 55043C0520F, 55043C0527F, 55043C0529F, 55043C0530F, 55043C0535F ² , 55043C0540F, 55043C0545F, 55043C0556E, 55043C0557E, 55043C0559E, 55043C0576E, 55043C0577E ² , 55043C0578E, 55043C0579E, 55043C0581E ² , 55043C0582F, 55043C0583E, 55043C0584E, 55043C0587E, 55043C0591E, 55043C0592E, 55043C0603F, 55043C0605F, 55043C0610F, 55043C0611E, 55043C0612E,	

¹ No Special Flood Hazard Areas Identified in Grant County

² Panel Not Printed

Table 1: Listing of NFIP Jurisdictions (continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
(continued) Grant County Unincorporated Areas	555557	07060003, 07060005, 07070005, 07090003	55043C0616F, 55043C0617F, 55043C0618E, 55043C0619E, 55043C0630E ² , 55043C0635F, 55043C0636F, 55043C0637E, 55043C0638E, 55043C0639E, 55043C0643F, 55043C0644F, 55043C0645F, 55043C0655F, 55043C0657F, 55043C0660F, 55043C0665F, 55043C0670F, 55043C0676F, 55043C0677F, 55043C0680E ² , 55043C0685F, 55043C0700E ² , 55043C0702E, 55043C0706F, 55043C0707F, 55043C0708E, 55043C0709E, 55043C0716E, 55043C0717E, 55043C0719E, 55043C0728F, 55043C0729F, 55043C0730E ² , 55043C0733F, 55043C0735E ² , 55043C0736F, 55043C0738F, 55043C0740F, 55043C0745E ² , 55043C0775E ²	
Village of Hazel Green ¹	550589	07060005	55043C0775E ²	
City of Lancaster	550150	07060003	55043C0480F, 55043C0485F	
Village of Livingston ¹	550151	07060003, 07090003	55043C0400E ²	
Village of Montfort ¹	550525	07060003, 07070005	55043C0400E ²	
Village of Mount Hope	550152	07060003	55043C0305F	
Village of Muscoda	550153	07060003	55043C0054F, 55043C0058F, 55043C0065F, 55043C0070E ²	
Village of Patch Grove ¹	550528	07060003	55043C0300E ²	
City of Platteville	550154	07060003	55043C0540F, 55043C0657F, 55043C0676F, 55043C0677F, 55043C0680E ² , 55043C0685F	
Village of Potosi	550155	07060003	55043C0630E ² , 55043C0636F, 55043C0637E	
Village of Tennyson ¹	550532	07060003	55043C0630E ² , 55043C0635F, 55043C0637E, 55043C0645F	
Village of Woodman ¹	550156	07060003	55043C0131F, 55043C0133F	

¹ No Special Flood Hazard Areas Identified in Grant County

² Panel Not Printed

1.4 Considerations for using this Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1% annual chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1% annual chance and 0.2% annual chance floodplains; and 1% annual chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 31, “Map Repositories,” within this FIS Report.

- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

The initial Countywide FIS Report for Grant County became effective on September 2, 2011. Refer to Table 28 for information about subsequent revisions to the FIRMs.

- FEMA does not impose floodplain management requirements or special insurance ratings based on Limit of Moderate Wave Action (LiMWA) delineations at this time. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. If the LiMWA is shown on the FIRM, it is being provided by FEMA as information only. For communities that do adopt Zone VE building standards in the area defined by the LiMWA, additional Community Rating System (CRS) credits are available. Refer to Section 2.5.4 for additional information about the LiMWA.

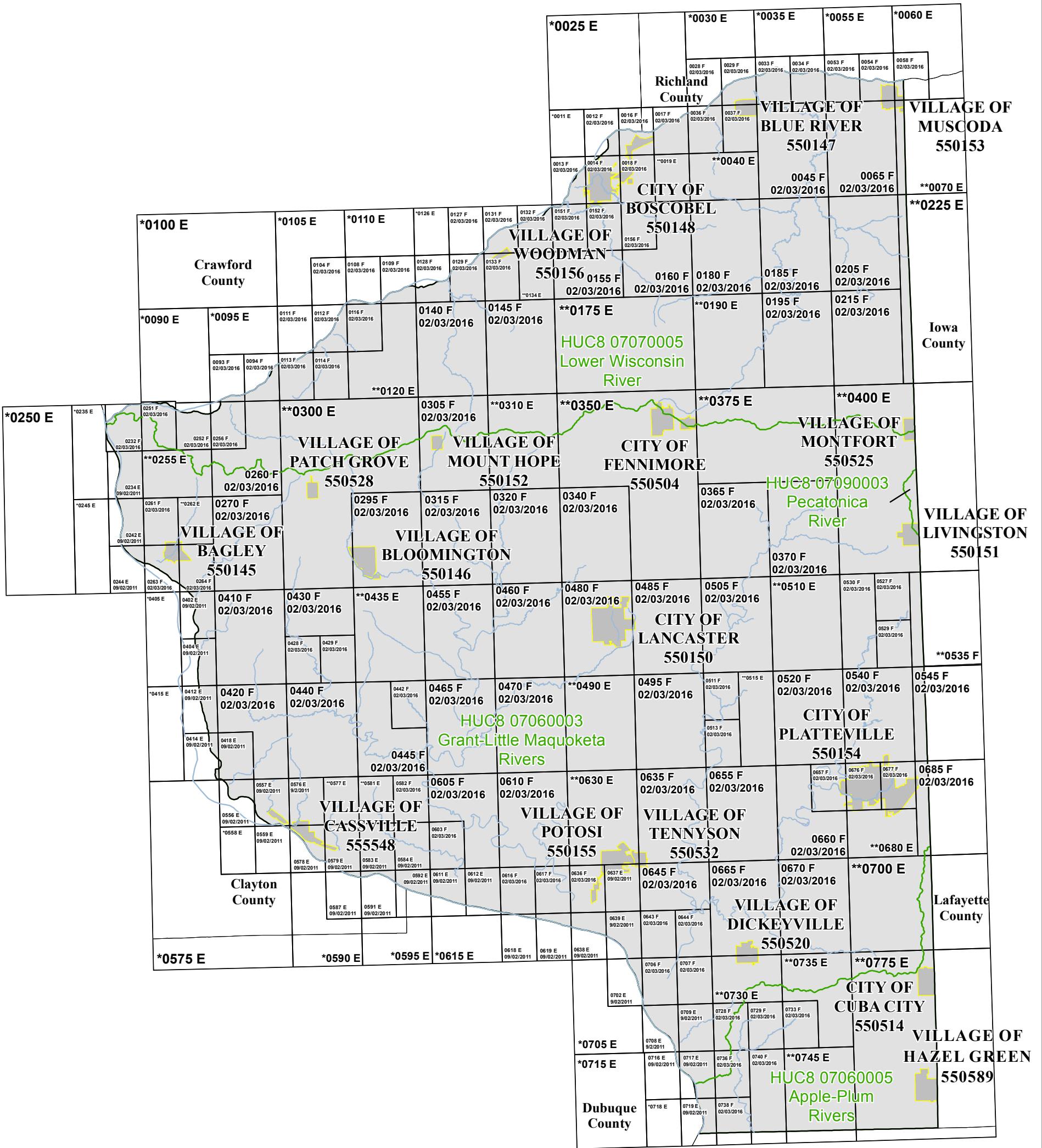
The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Visit the FEMA Web site at <http://www.fema.gov> or contact your appropriate FEMA Regional Office for more information about this program.

- Previous FIS Reports and FIRMs may have included levees that were accredited as providing protection from the 1% annual chance flood based on the information available and the mapping standards of the NFIP at that time. For FEMA to continue to accredit the identified levees with providing protection from the base flood, the levees must meet the criteria of the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10), titled “Mapping of Areas Protected by Levee Systems.”

Since the status of levees is subject to change at any time, the user should contact the appropriate agency for the latest information regarding levees presented in Table 9 of this FIS Report. For levees owned or operated by the U.S. Army Corps of Engineers (USACE), information may be obtained from the USACE national levee database. For all other levees, the user is encouraged to contact the appropriate local community.

- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at <http://www.fema.gov>.

Figure 1: FIRM Panel Index



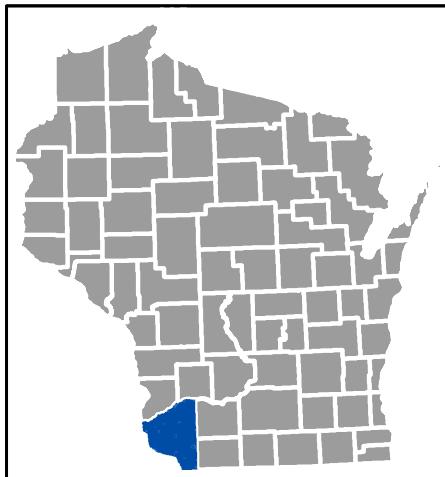
1 inch = 5 miles

Map Projection:
NAD83 HARN UTM Zone 15N
North American Datum of 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SEE FIS REPORT FOR ADDITIONAL INFORMATION



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX

GRANT COUNTY, WISCONSIN AND INCORPORATED AREAS

PANELS PRINTED:
0012, 0013, 0014, 0016, 0017, 0018, 0028, 0029, 0033, 0034, 0036, 0037, 0045, 0053, 0054, 0058, 0065, 0093, 0094, 0104, 0108, 0109, 0111, 0112, 0113, 0114, 0116, 0127, 0128, 0129, 0131, 0132, 0133, 0140, 0145, 0151, 0152, 0155, 0156, 0160, 0180, 0185, 0195, 0205, 0215, 0232, 0234, 0242, 0244, 0251, 0252, 0256, 0260, 0261, 0263, 0264, 0270, 0295, 0305, 0315, 0320, 0340, 0365, 0370, 0402, 0404, 0410, 0412, 0414, 0418, 0420, 0428, 0429, 0430, 0440, 0442, 0445, 0455, 0460, 0465, 0470, 0480, 0485, 0495, 0505, 0511, 0513, 0520, 0527, 0529, 0530, 0540, 0545, 0556, 0557, 0559, 0576, 0578, 0579, 0582, 0583, 0584, 0587, 0591, 0592, 0603, 0605, 0610, 0611, 0612, 0616, 0617, 0618, 0619, 0635, 0636, 0637, 0638, 0639, 0643, 0644, 0645, 0655, 0657, 0660, 0665, 0670, 0676, 0677, 0685, 0702, 0706, 0707, 0708, 0709, 0716, 0717, 0719, 0728, 0729, 0733, 0736, 0738, 0740

FEMA

MAP NUMBER
55043CIND0B

MAP REVISED
FEBRUARY 03, 2016

* PANEL NOT PRINTED - AREA OUTSIDE OF COUNTY BOUNDARY
** PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS

Figure 2: FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 28 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

Coastal Base Flood Elevations shown on the map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the FIS Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on the FIRM.

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

Figure 2. FIRM Notes to Users (continued)

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was Universal Transverse Mercator (UTM) Zone 15. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 31 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by the Wisconsin Regional Orthophotography Consortium (WROC). The aerial photography was acquired in the spring of 2010 to create 1":1000' scale digital orthophotos with 18-inch resolution. The following panels used base map information provided by the U.S. Geological Survey at a scale of 1:12,000: 125, 130, and 140. For information about base maps, refer to Section 6.2 "Base Map" in this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Grant County, Wisconsin, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 28 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

Figure 2. FIRM Notes to Users (continued)

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Grant County, Wisconsin, effective February 3, 2016.

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Figure 3: Map Legend for FIRM

SPECIAL FLOOD HAZARD AREAS: *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*



Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)

- Zone A The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
- Zone AE The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone, either at cross section locations or as static whole-foot elevations that apply throughout the zone.
- Zone AH The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
- Zone AO The flood insurance rate zone that corresponds to the areas of 1% 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 hydraulic analyses are shown within this zone.
- Zone AR The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood 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% annual chance or greater flood.
- Zone A99 The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
- Zone V The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
- Zone VE Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.



Regulatory Floodway determined in Zone AE.

Figure 3: Map Legend for FIRM (continued)






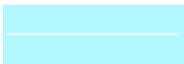



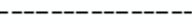
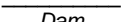
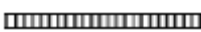

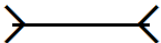
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Zone X Protected by Accredited Levee: Areas protected by an accredited levee, dike or other flood control structures. See Notes to Users for important information.
OTHER AREAS	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible
	NO SCREEN Unshaded Zone X: Areas determined to be outside the 0.2% annual chance floodplain
FLOOD HAZARD AND OTHER BOUNDARY LINES	
	Flood Zone Boundary (white line)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet
GENERAL STRUCTURES	
 <i>Aqueduct Channel Culvert Storm Sewer</i>	Channel, Culvert, Aqueduct, or Storm Sewer
 <i>Dam Jetty Weir</i>	Dam, Jetty, Weir
	Levee, Dike or Floodwall accredited or provisionally accredited to provide protection from the 1% annual chance flood
	Levee, Dike or Floodwall not accredited to provide protection from the 1% annual chance flood.
 <i>Bridge</i>	Bridge

Figure 3: Map Legend for FIRM (continued)


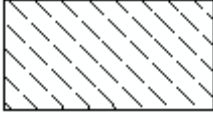

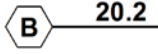

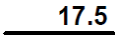
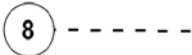


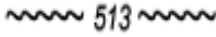




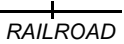



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): <i>CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas. See Notes to Users for important information.</i>	
 CBRS AREA 09/30/2009	Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.
 OTHERWISE PROTECTED AREA 09/30/2009	Otherwise Protected Area
REFERENCE MARKERS	
 22.0	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
 20.2	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
 21.1	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
 17.5	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
 8	Coastal Transect
 	<p>Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.</p> <p>Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.</p>
	Base Flood Elevation Line (shown for flooding sources for which no cross sections or profile are available)
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)
ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity

Figure 3: Map Legend for FIRM (continued)

BASE MAP FEATURES	
<u>Missouri Creek</u>	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway
<u>MAPLE LANE</u>	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
⁴² 76 ^{000m} E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1% annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2% annual chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Grant County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1% annual chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 23), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1% and 0.2% annual chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1% annual chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary is shown on the FIRM. Figure 3, “Map Legend for FIRM”, describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within Grant County, Wisconsin, respectively.

Table 2, “Flooding Sources Included in this FIS Report,” lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 13. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1% annual chance floodplain corresponds to the SFHAs. The 0.2% annual chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

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. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

2.2 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 balancing floodplain development against increasing flood hazard. With this approach, the area of the 1% annual chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1% annual chance flood. The floodway fringe is the area between the floodway and the 1% annual chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water-surface elevation of the 1% annual chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, Federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced. Regulations for Wisconsin require communities in Grant County to limit increases caused by encroachment to 0.5 foot and several communities have adopted additional restrictions. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

Figure 4: Floodway Schematic

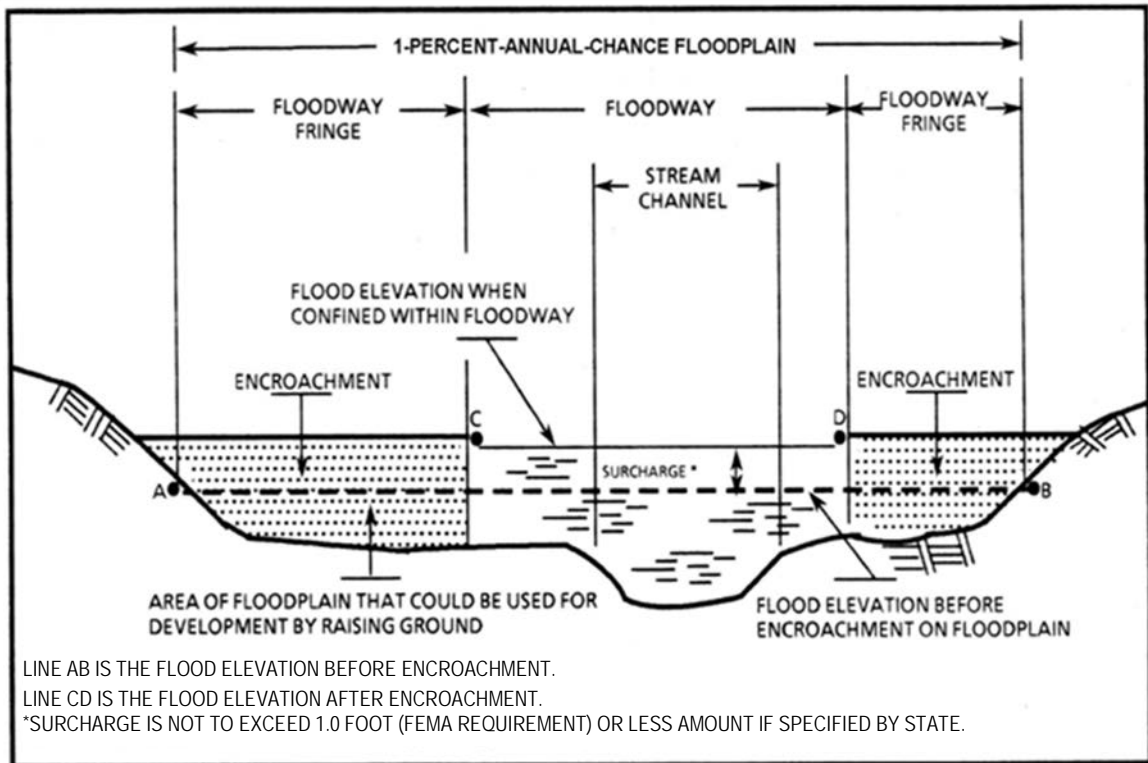


Table 2: Flooding Sources Included in this FIS Report

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Beetown Branch	Grant County Uninc. Areas	Confluence with Grant River	County Highway U	07060003	1.7		N	A	8/2013
Beetown Branch	Grant County Uninc. Areas	Upstream side of County Highway U	0.9 miles downstream of Short Cut Road	07060003	1.2		N	AE	12/1984
Blake Fork	Village of Bloomington, Grant County Uninc. Areas	Confluence with Grant River	STH 133	07060003	11.3		N	A	8/2013
Blue River	Village of Blue River, Grant County Uninc. Areas	Confluence with Wisconsin River	2 miles upstream of Shemak Road	07070005	21.3		N	A	8/2013
Crooked Creek	City of Boscobel, Grant County Uninc. Areas	At Confluence with Wisconsin River	Downstream side of US Highway 61	07070005	3.9		N	AE	9/1978
Fennimore Fork	Grant County Uninc. Areas	Confluence with Blue River	4.5 miles upstream of Witek Road	07070005	12.9		N	A	8/2013
Grant River	Grant County Uninc. Areas	Confluence with Mississippi River	0.8 miles upstream of CTH K	07060003	44.6		N	A	8/2013
Kieler Creek	Grant County Uninc. Areas	Confluence with Menominee River	Jimtown Road	07060005	1.0		N	A	8/2013
Kieler Creek	Grant County Uninc. Areas	CTH H	0.3 miles upstream of CTH H	07060005	0.3		N	A	8/2013
Kieler Creek	Grant County Uninc. Areas	Upstream side of Jimtown Road	Downstream side of County Highway H	07060005	1.7		N	AE	12/1984
Kuenster Creek	Grant County Uninc. Areas	Confluence with Rattlesnake Creek	CTH V	07060003	8.8		N	A	8/2013
Little Grant River	Grant County Uninc. Areas	Confluence with Grant River	Milner Road	07060003	8.2		N	A	8/2013
Little Grant River	Village of Mount Hope, Grant County Uninc. Areas	1/3 mile downstream of Centre Road	300' upstream of Mount Hope limits	07060003	0.9		N	A	8/2013

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Little Platte River	Grant County Uninc. Areas	Confluence with Platte River	CTH A	07060003	36.3		N	A	8/2013
Little Platte River	Grant County Uninc. Areas	Cushman Road	0.3 miles upstream of Cushman Road	07060003	0.3		N	A	8/2013
Little Platte River	Grant County Uninc. Areas	Upstream side of County Highway A	Downstream side of Cushman Road	07060003	0.9		N	AE	12/1984
Louisburg Creek	Grant County Uninc. Areas	Confluence with Menominee River	1.3 miles upstream of Spring Valley Road	07060005	1.3		N	A	8/2013
Louisburg Creek	Grant County Uninc. Areas	CTH H	0.4 miles upstream of CTH H	07060005	0.4		N	A	8/2013
Louisburg Creek	Grant County Uninc. Areas	1.3 miles upstream of Spring Valley Road	Downstream side of County Highway H	07060005	1.5		N	AE	12/1984
Menominee River	Grant County Uninc. Areas	Confluence with Kieler Creek	Grant County boundary	07060005	5.2		N	A	8/2013
Mississippi River	Village of Bagley, Village of Cassville, Grant County Uninc. Areas, Village of Potosi	Illinois-Wisconsin State Line	At Confluence with Wisconsin River	07060003	50.6		Y	AE	7/2004
Platte River	Grant County Uninc. Areas	Confluence with Mississippi River	1 mile downstream of Ellenboro Road	07060003	14.9		N	A	8/2013
Platte River	Grant County Uninc. Areas	0.1 miles downstream of STH 81	Annton Road	07060003	20.9		N	A	8/2013
Platte River	Grant County Uninc. Areas	0.1 miles downstream of State Highway 81	1.0 mile downstream of Ellenboro Road	07060003	1.1		N	AE	12/1984
Rattlesnake Creek	Grant County Uninc. Areas	Confluence with Grant River	0.2 miles downstream of State Highway 133	07060003	12.3		N	A	8/2013
Rattlesnake Creek	Grant County Uninc. Areas	0.4 miles upstream of State Highway 133	1.5 miles upstream of Maple Road	07060003	4.7		N	A	8/2013
Rattlesnake Creek	Grant County Uninc. Areas	0.2 miles downstream of State Highway 133	0.4 miles upstream of State Highway 133	07060003	0.6		N	AE	12/1984

Table 2: Flooding Sources Included in this FIS Report (continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Rountree Branch	Grant County Uninc. Areas, City of Platteville	1.1 miles upstream of confluence with Platte River	Downstream side of Madison Street	07060003	3.9		Y	AE	5/1979
Sanders Creek	City of Boscobel, Grant County Uninc. Areas	Confluence with Wisconsin River	0.1 miles downstream of Doc's Lane	07070005	2.8		Y	AE	8/1995
Wisconsin River	Village of Blue River, City of Boscobel, Grant County Uninc. Areas, Village of Muscoda, Village of Woodman	At Confluence with Mississippi River	Just upstream of Prairie du Sac Dam	07060003, 07070005	44.0		Y	AE	8/2013
All Base Studies	Village of Bagley, Village of Blue River, Grant County Uninc. Areas, City of Lancaster, Village of Mount Hope, City of Platteville	NA	NA	07060003, 07060005, 07070005	74.2		N	A	8/2013

Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 24, “Floodway Data.”

All floodways that were developed for this FIS project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1% annual chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1% annual chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. BFEs are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM.

2.4 Non-Encroachment Zones

Some States and communities use non-encroachment zones to manage floodplain development. While not a FEMA designated floodway, the non-encroachment zone represents that area around the stream that should be reserved to convey the 1% annual chance flood event.

Non-encroachment determinations may be delineated where it is not possible to delineate floodways because specific channel profiles with bridge and culvert geometry were not developed. Any non-encroachment determinations for this FIS project have been tabulated for selected cross sections and are shown in Table 25, “Flood Hazard and Non-Encroachment Data for Selected Streams.”

2.5 Coastal Flood Hazard Areas

2.5.1 Water Elevations and the Effects of Waves

This section is not applicable to this FIS project.

**Figure 5: Wave Runup Transect Schematic
[Not Applicable to this FIS Project]**

2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

This section is not applicable to this FIS project.

2.5.3 Coastal High Hazard Areas

This section is not applicable to this FIS project.

Figure 6: Coastal Transect Schematic [Not Applicable to this FIS Project]

Coastal floodplains are shown on the FIRM using the symbology described in Figure 3, “Map Legend for FIRM.” In many cases, the BFE on the FIRM is higher than the stillwater elevations shown in Table 17 due to the presence of wave effects. The higher elevation should be used for construction and/or floodplain management purposes.

2.5.4 Limit of Moderate Wave Action

This section is not applicable to this FIS project.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as described in Figure 3, “Map Legend for FIRM.” Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in the unincorporated and incorporated areas of Grant County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Village of Bagley	A, AE, X, X (shaded)
Village of Bloomington	A, X
Village of Blue River	A, AE, X, X (shaded)
City of Boscobel	AE, X, X (shaded)
Village of Cassville	AE, X, X (shaded)
City of Cuba City	X
Village of Dickeyville	X
City of Fennimore	X
Grant County Unincorporated Areas	A, AE, X, X (shaded)
Village of Hazel Green	X
City of Lancaster	A, X
Village of Livingston	X
Village of Montfort	X
Village of Mount Hope	A, X
Village of Muscoda	AE, X, X (shaded)
Village of Patch Grove	X
City of Platteville	A, AE, X, X (shaded)
Village of Potosi	AE, X, X (shaded)
Village of Tennyson	X
Village of Woodman	X

3.2 Coastal Barrier Resources System

The Coastal Barrier Resources Act (CBRA) of 1982 was established by Congress to create areas along the Atlantic and Gulf coasts and the Great Lakes, where restrictions for Federal financial assistance including flood insurance are prohibited. In 1990, Congress passed the Coastal Barrier Improvement Act (CBIA), which increased the extent of areas established by the CBRA and added “Otherwise Protected Areas” (OPA) to the system. These areas are collectively referred to as the John. H Chafee Coastal Barrier Resources System (CBRS). The CBRS boundaries that have been identified in the project area are in Table 4, “Coastal Barrier Resource System Information.”

**Table 4: Coastal Barrier Resources System Information
[Not Applicable to this FIS Project]**

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 5 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

Table 5: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Apple-Plum	07060005	Sinsinawa River	This Sub-Basin lies in the southern tip of Grant county. The larger streams and rivers flow into the state of Illinois.	1,485
Grant-Little Maquoketa	07060003	Mississippi River and Grant & Platte Rivers	The greatest portion of Grant county lies within this Sub-Basin. All its rivers and streams are tributaries to the Mississippi River. A portion of this HUC-8 Sub-Basin lies across the Mississippi River, in Iowa.	1,118
Lower Wisconsin	07070005	Wisconsin River	The Wisconsin River corridor provides the entire northern boundary of Grant county. It is the 2 nd largest watershed of Grant county. All streams and rivers are tributary to the Wisconsin.	2,360
Pecatonica	07090003	Pecatonica River	Although the watershed has a total of 1879 square miles, only a single square mile of this Sub-Basin lies in Grant county. None of it is in the mapped floodplain.	1,879

4.2 Principal Flood Problems

Table 6 contains a description of the principal flood problems that have been noted for Grant County by flooding source. Following Table 6 is a description of many floods that have occurred across Grant County and the year they occurred.

Table 6: Principal Flood Problems

Flooding Source	Description of Flood Problems
Crooked Creek	Known to flood during any season, but major floods have occurred in the spring and early summer, the result of spring rains and snowmelt. Damaging floods have been recorded within the Boscobel corporate limits in June 1944, June 1947, July 1950, and July 1964. Rainfall records for the 1950 flood were obtained from the State Climatologist's office. The recurrence interval of this event was determined to be approximately 1% chance flood.

Table 6: Principal Flood Problems (*continued*)

Flooding Source	Description of Flood Problems
Mississippi River	April 1965: Is considered the “benchmark” of flooding on the Mississippi River. At Prairie du Chien the Mississippi rose rapidly in early April. Over the next two weeks, sandbagging commenced, shelters were set up, and highways closed, but all in vain. Residents eventually exchanged cars for boats and watched sheds, garages and other small buildings float away. On the 24th, the river crested at 25.4 feet, the highest level ever recorded in the city. April 2001; Heavy rains, combined with snow melt runoff, caused the Mississippi River to reach near record levels. At most locations the water reached levels second only to the all-time flood of record, which occurred in April 1965. Hardest hit was the Prairie du Chien, Crawford County area and points southward, where flood waters did considerable damage to businesses and homes. This resulted in Buffalo, Crawford, Grant, La Crosse, Trempealeau and Vernon County receiving state and federal disaster relief funds. Water levels began dropping during the latter part of the month, but remained above flood stage through early May
Platte River	A major flood occurred in July 1950. The closest flooding to this occurred in June 1990, but was almost 2.5 feet less at the Rockville, Wisconsin gage
Rountree Branch	Floods are characterized by high peak flows, with relatively moderate volume. The area most seriously affected by flooding along Rountree Branch is located west of State Highway 81 along U.S. Highway 151. Some of the commercial establishments have been isolated on several occasions, with some first floor flooding occurring. Obstructions to the flow of are both natural and manmade.
Sanders Creek	Known to flood during any season, but major floods have occurred in the spring and early summer, the result of spring rains and snowmelt. Damaging floods have been recorded within the Boscobel corporate limits in June 1944, June 1947. July 1950, and July 1964. Rainfall records for the 1950 flood were obtained from the State Climatologist's office. The recurrence interval of this event was determined to be approximately 1% chance flood.
Wisconsin River	Floods occur during the spring due to rain and snowmelt, and during the summer and autumn due to heavy rain when available storage in the reservoirs is less than in spring. The greatest flood on record for the river occurred in September 1938. Other large floods occurred in 1922, 1951, 1960, and 1973.

May 16-17, 1999 –

2 to 5 inches of rainfall forced the evacuation of a trailer park near Platteville when several feet of water rushed under mobile homes. Coon Branch Creek near Benton flooded a nearby park, causing damage to a ball field, a concession stand and a couple of bridges. The flood waters also swept away a 500 gallon gasoline tank as well as a car, which floated nearly 100 yards down the creek before coming to rest in some trees

May 31, 2000 to June 1, 2000 –

Thunderstorms dropped 4 to 8 inches of rain, causing extensive flash flooding. Several mudslides were reported by law enforcement officials, while numerous roads were closed and covered with water as much

May 31, 2000 to June 1, 2000 – *(continued)*

as 2 to 3 feet deep. One vehicle was swept away in Muscoda (Grant County) when the driver attempted to cross about one foot of moving water. The total damage caused by flood waters, which lasted into the morning hours of June 1, was estimated to be nearly 6.0 million dollars. Crawford, Grant, Richland and Vernon counties were declared a federal disaster area.

May 21, 2004 to May 23, 2004 –

2 to 4 inches of rain in two hours on May 21, 2004 and 2 to 4 inches of additional rain on May 23, 2004 caused flash flooding. Law enforcement officials and emergency managers reported several roads were either washed out or covered with water as much as 3 to 4 feet deep. Due to the damage from flash flooding, Crawford, Grant and Vernon County were declared disaster areas.

June 16, 2004 –

Excessive rainfall amounts of 3 to 6 inches in two hours or less caused extensive flash flooding. Law enforcement officials reported several roads were impassable, with water a foot deep in some places. Near Cassville, a bridge over McCartney Branch Creek was damaged by debris in the rain-swollen creek. Flooding also caused structural damage to the foundations of more than 40 homes in Grant County, half of which were in Lancaster.

July 18, 2007 –

During the evening hours of July 17, thunderstorms began forming over parts of northeast Iowa. These storms repeatedly tracked across the same area near the confluence of the Wisconsin and Mississippi Rivers during the early morning hours of July 18. This caused excessive rainfall with amounts totaling 7.31 inches at Prairie du Chien (Crawford County). Mud slides were also observed on many nearby county roads in the hilly terrain closer to the Mississippi River.

Hardest hit by the flash flooding was the town of Bagley (Grant County), where nearly 400 homes were flooded, as debris consisting of mud, rocks and trees built up along area bridges. This allowed flood waters to rise to as much as four feet deep.

Picture 1:
Flooding at
Bagley -
July 2007



August 18, 2007 to August 19, 2007 –

A warm front lifting northward into Iowa triggered round after round of thunderstorms leading to excessive rainfall across southwest Wisconsin during the evening and overnight hours of August 18-19. Total rainfall amounts of 10 to 15 inches were common. Flash flooding affected about 40 homes across parts of northern Grant County. One home was destroyed. Several bridges and roads were also damaged. In Grant County, about 415 people applied for FEMA assistance. Damage attributed to the heavy rainfall and subsequent flooding was estimated to be in the millions of dollars. Grant, La Crosse, Richland and Vernon counties were declared federal disaster areas.

April 25, 2008 –

Thunderstorms with heavy rain were triggered by an upper level disturbance moving across Iowa toward northern Illinois. Excessive rainfall amounts of 3 to 6 inches occurred during the late night of April 24 into the early morning of April 25, which caused flash flooding.

Runoff from excessive rainfall caused significant flooding of approximately 70 homes and several businesses. More than 20 roads were reported closed due to flash flooding. Many remained closed for over a week. In addition, numerous farm fields were made unusable due to erosion and/or standing water. Hardest hit were areas south of Highway 18 and north of Highway 151 including: Cassville, Ellenboro, Glenn Haven, Lancaster, Platteville and Potosi. Damage to homes, roads, bridges and cropland was estimated to be over two million dollars.

June 7, 2008 to June 10, 2008 –

Flash flooding was reported in many of the steep valleys with creeks rising rapidly and water over some roads. Highways 18 and 35 were closed due to mudslides and debris. The heavy rainfall on June 8 enhanced the already dangerous flooding conditions across parts of southwest Wisconsin. Many roads were already closed from the June 7 rains due to water over the roadways, mudslides, or partial washouts. Conditions only worsened, leading to more road closures, sandbagging, and some evacuations. While the rain was tapering off and moving east Sunday night, June 8, the rivers continued to rise, and some rose



Picture 2:
Camel Ridge Road Overtopping, Waterloo Township -
April 25, 2008 Flood

June 7, 2008 to June 10, 2008- (continued)

extremely quickly. Some rivers responded with a foot per hour rises, while others eventually exceeded their river gages ability to record the river levels. All-time record crests were set at a few locations, with top 5 records at many others. Damage to infrastructure and crops was preliminarily estimated at 75 to 85 million dollars. As a result, Crawford, Grant, Juneau, Monroe, Richland and Vernon Counties in central and southwest Wisconsin were declared federal disaster areas.

June 12, 2008 –

A major flash flood hit Grant County during the afternoon of June 12th impacting the communities of Ellenboro, Lancaster, Potosi, Tennyson and other rural areas. Numerous rescues were performed on people trapped in cars, especially in the Potosi area where terrain enhanced the runoff from repeat thunderstorms. Several homes on Hippy Hollow Road in Potosi Township were destroyed along with damage to as many as 600 homes elsewhere in the region. Many highways and county roads suffered flood damage including major bridge and road infrastructure. Rainfall totals of 3 to 4 inches caused flash flooding across parts of southwest Wisconsin during the afternoon and evening of June 12 from repeat thunderstorms. Many county and secondary roads and bridges were washed out in the vicinity of the Platte River. Emergency Operation Centers and shelters were opened. A state of emergency was declared for the county.



Picture 3: Village of Potosi – Flash Flood June 12, 2008

Furnace Branch (City of Cassville):

June 4, 2002 –

Rainfall amounts of 3.5 to 5 inches produced flash flooding, with the Town of Cassville being hardest hit. Furnace Creek, which flows into the northwest part of the Town, was choked with so much debris that the flow of water was diverted into nearby homes and a park. 25 homes had to be evacuated, with 8 of these receiving significant damage. In fact, one home was completely destroyed when the basement collapsed. Local residents also reported cars floating in water 2 to 3 feet deep. Total damage due to the high water was estimated at nearly three-quarters of a million dollars.



Picture 4:
Cassville Flash Flood - June 3-4th, 2002

Grant River:

February 18-21, 1997 –

Rapid snowmelt caused the Grant River between Burton and Potosi to quickly rise out of its banks. Numerous roads in the area were underwater, and water crested just below the bridge at Burton. The river crested at 24.64 feet before slowly falling as colder air moved back in.

June 4, 2002 –

Runoff from flash flooding during the early morning hours continued to cause rivers, such as the Grant River, to flood extensive areas of nearby farm fields throughout much of the day.

May 10, 2003 –

Rainfall amounts of 2 to 4 inches in 1 to 2 hours caused flash flooding. Law enforcement officials reported mudslides along Highway P near Bagley and a road washout near Patch Grove.

August 22, 2007 –

The Grant River rose out of its banks. A cold front moved across southwest Wisconsin in the early evening hours of August 22, which triggered thunderstorms with heavy rainfall. Due to saturated soils, excessive rainfall amounts of 2 to 4 inches in less than two hours caused flash flooding.

June 5, 2008 –

The Grant River produced some flooding at Porter Bridge about five miles southwest of Lancaster.

Summary of Recorded Large Events on the Grant River at Burton, Wisconsin – USGS Gage No. 05413500

<u>Date</u>	<u>Discharge</u> <u>(cfs)</u>	<u>Gage Height</u>
07/16/1950	25,000	24.82
06/22/1954	23,800	24.45
01/25/1967	14,000	23.67
06/13/2008	13,000	23.31

Flood impacts at various gage heights at Burton, Wisconsin are listed as follows:

<u>Gage</u> <u>Height</u> <u>(ft)</u>	<u>Flood Impact</u>
25.5	Water begins flowing over the road.
24.0	Water reaches the bottom of the Highway N Bridge at Burton.
18.0	Minor flooding of lowland areas begins.

Mississippi River:

April 1965 –

At Prairie du Chien the Mississippi rose rapidly in early April and some residents of the city, built on islands and low-lying prairie, began evacuating on the 9th. Over the next two weeks, sandbagging commenced, shelters were set up, and highways closed, but all in vain. Residents eventually exchanged cars for boats and watched sheds, garages and other small buildings float away. On the 24th, the river crested at 25.4 feet, the highest level ever recorded in the city.

April 3-21, 1997 –

Several homes and businesses were damaged as the Mississippi River reached its third highest flood on record.

April 10, 2001 –

Heavy rains, combined with snow melt runoff, caused the Mississippi River to reach near record levels. In fact, at most locations the water reached levels second only to the all-time flood of record, which occurred in April 1965. Hardest hit was the Prairie du Chien, Crawford County area and points southward, where flood waters did considerable damage to businesses and homes. Overall damage due to the high water was estimated around 6 million dollars. This resulted in Buffalo, Crawford, Grant, La Crosse, Trempealeau and Vernon County receiving state and federal disaster relief funds. Water levels began dropping during the latter part of the month, but remained above flood stage through early May.

Mississippi River – Guttenburg, Iowa (Tailwater at Lock and Dam No. 10):

Summary of Recorded Large Events on the Mississippi River at Guttenburg, Iowa

<u>Date</u>	<u>Discharge</u> (cfs)	<u>Gage Height</u>
04/24/1965	N/A	23.65
04/21/2001	N/A	21.68
06/30/1993	N/A	20.15
04/22/1969	N/A	19.84
04/24/1952	N/A	19.69
04/21/1951	N/A	19.63
05/05/1975	N/A	19.41
04/15/1997	N/A	19.4
04/10/1967	N/A	18.94
03/22/1973	N/A	18.59

Flood impacts at various gage heights near Lock and Dam No. 10 are listed as follows:

<u>Gage</u> <u>Height</u> (ft)	<u>Flood Impact</u>
29.6	The water begins to overtop the protective levee.
24.0	Water begins to flow over the lock walls and the protective earthen dikes.
23.7	Water levels reach the flood of record.
21.0	Flooding of some residential areas occurs. Lock and Dam No. 10 is closed to navigation.
20.0	Some basements may begin to experience flooding due to seepage...With most problems occurring on the approaches to town.
19.0	The water is over Island Road.
18.0	Sewer and street flooding begins to occur in Glen Haven, Wisconsin.
15.5	The water is over Marina Road.
15.0	Minor lowland flooding begins to occur.

Mississippi River – Dubuque, Iowa (Tailwater at Lock and Dam No. 11):

Summary of Recorded Large Events on the Mississippi River at Dubuque, Iowa

<u>Date</u>	<u>Discharge</u> <u>(cfs)</u>	<u>Gage Height</u>
04/26/1965	N/A	25.69
04/21/2001	N/A	23.91
07/01/1993	N/A	22.32
04/23/1969	N/A	21.74
04/22/1951	N/A	21.64

Flood impacts at various gage heights near Lock and Dam No. 11 are listed as follows:

<u>Gage</u> <u>Height</u> <u>(ft)</u>	<u>Flood Impact</u>
22.0	Water affects Volunteer Drive leading to Lock and Dam No. 11.

Platte River:

August 22, 2007 –

The Platte River rose up to Oak Road near Dickeyville. A cold front moved across southwest Wisconsin in the early evening hours of August 22, which triggered thunderstorms with heavy rainfall. Due to saturated soils, excessive rainfall amounts of 2 to 4 inches in less than two hours caused flash flooding.

Summary of Recorded Large Events on the Platte River near Rockville, Wisconsin – USGS Gage No. 05414000

<u>Date</u>	<u>Discharge</u> <u>(cfs)</u>	<u>Gage Height</u>
07/16/1950	43,500	17.26
06/29/1990	19,000	14.85
06/12/2008	15,200	14.17

Flood impacts at various gage heights at Rockville, Wisconsin are listed as follows:

<u>Gage</u> <u>Height</u> <u>(ft)</u>	<u>Flood Impact</u>
22.7	Water is up to the bottom of the County Highway B bridge.
9.0	Minor flooding of lowland agricultural areas adjacent to the river begins.

Wisconsin River:

The greatest flood on record for the Wisconsin River occurred in September 1938 at Muscoda, Wisconsin.

Summary of Recorded Large Events on the Wisconsin River at Muscoda, Wisconsin – USGS Gage No. 05407000

<u>Date</u>	<u>Discharge</u> (cfs)	<u>Gage Height</u>
09/16/1938	80,800	11.48
06/11/1881	N/A	11.10
04/16/1922	72,100	10.60
03/20/1973	65,000	10.36
06/26/1993	59,600	10.34

Flood impacts at various gage heights at Muscoda, Wisconsin are listed as follows:

<u>Gage</u> <u>Height</u> (ft)	<u>Flood Impact</u>
13.8	The water reaches the low steel on the State Highway 80 bridge over the river.
11.0	Widespread lowland flooding is likely, but the Town of Muscoda should remain above the flood waters.
10.0	There is extensive lowland flooding. However, no flooding has been reported in Muscoda in previous years.
9.0	The river begins to go out of its banks in some locations with only minor flooding.



Picture 5: Wisconsin River at Grant County line near Muscoda – June 2008

Table 7 contains information about historic flood elevations in the communities within Grant County.

Table 7: Historic Flooding Elevations
[Not Applicable to this FIS Project]

4.3 Non-Levee Flood Protection Measures

Table 8 contains information about non-levee flood protection measures within Grant County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

Table 8: Non-Levee Flood Protection Measures
[Not Applicable to this FIS Project]

4.4 Levees

This section is not applicable to this FIS project.

Table 9: Levees
[Not Applicable to this FIS Project]

SECTION 5.0 – ENGINEERING METHODS

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 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-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2% annual chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 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.

The engineering analyses described here incorporate the results of previously issued Letters of Map Change (LOMCs) listed in Table 27, “Incorporated Letters of Map Change”, which include Letters of Map Revision (LOMRs). For more information about LOMRs, refer to Section 6.5, “FIRM Revisions.”

5.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 13. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 10. Frequency Discharge-Drainage Area Curves used to develop the hydrologic models may also be shown in

Figure 7 for selected flooding sources. A summary of stillwater elevations developed for non-coastal flooding sources is provided in Table 11. (Coastal stillwater elevations are discussed in Section 5.3 and shown in Table 17.) Stream gage information is provided in Table 12.

Table 10: Summary of Discharges

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Beetown Branch	At Beetown	2.7	1,890	*	*	3,510	4,950
Crooked Creek	At Confluence with Wisconsin River	16.2	1,500	*	3,000	3,800	6,100
Kieler Creek	At Kieler	4.0	2,320	*	*	4,300	5,900
Little Platte River	At Arthur	9.0	3,500	*	*	6,400	8,900
Louisburg Creek	At Louisburg	2.4	1,800	*	*	3,360	4,700
Mississippi River	At Southern Grant County Boundary (RM 580.9)	82,100	195,000	*	251,000	274,000	326,000
Mississippi River	At the Northern Grant County Boundary (RM 631.0)	*	167,500	*	226,000	251,000	309,000
Platte River	At Ellenboro	117	12,850	*	*	32,100	55,000
Rattlesnake Creek	At North Andover	22.8	5,520	*	*	10,150	14,300
Rountree Branch	At Confluence with Little Platte River	13.8	3,100	*	6,000	7,700	12,400
Sanders Creek	At Confluence with Wisconsin River	17.1	1,550	*	3,050	3,800	6,200
Wisconsin River	Muscoda USGS Gaging Station 05407000	10,400	58,000	64,600	74,000	80,000	93,000
Wisconsin River	At Prairie Du Sac USGS Gaging Station 05406000	9,180	62,000	69,000	80,000	86,000	100,000

*Not calculated for this FIS project

Figure 7: Frequency Discharge-Drainage Area Curves

[Not Applicable to this FIS Project]

Table 11: Summary of Non-Coastal Stillwater Elevations

[Not Applicable to this FIS Project]

Table 12: Stream Gage Information used to Determine Discharges

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Platte River	05414000	USGS	Platte River near Rockville	142	10/01/1934	Present
Wisconsin River	05407000	USGS	Wisconsin River at Muscoda	10,400	10/01/1913	09/30/1979
Wisconsin River	05406000	USGS	Wisconsin River at Prairie du Sac	9,180	01/01/1946	12/05/1953

5.2 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. Base flood elevations on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 6.3), selected cross sections are also listed on Table 24, "Floodway Data."

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 13. Roughness coefficients are provided in Table 14. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

Table 13: Summary of Hydrologic and Hydraulic Analyses

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Beetown Branch	Confluence with Grant River	County Highway U	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Beetown Branch	Upstream side of County Highway U	0.9 miles downstream of Short Cut Road	1978 USACE Bluff Frequency Study	Bernoulli's Equation	12/19/1984	AE	
Blake Fork	Confluence with Grant River	STH 133	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Blue River	Confluence with Wisconsin River	2 miles upstream of Shemak Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Crooked Creek	At Confluence with Wisconsin River	Downstream side of US Highway 61	Log Pearson Type III & Similar Gage Comparison	HEC 2	09/01/1978	AE	
Fennimore Fork	Confluence with Blue River	4.5 miles upstream of Witek Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Grant River	Confluence with Mississippi River	0.8 miles upstream of CTH K	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Kieler Creek	Confluence with Menominee River	Jimtown Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Kieler Creek	CTH H	0.3 miles upstream of CTH H	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Kieler Creek	Upstream side of Jimtown Road	Downstream side of CTH H	1978 USACE Bluff Frequency Study	Bernoulli's Equation	12/19/1984	AE	
Kuenster Creek	Confluence with Rattlesnake Creek	CTH V	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Little Grant River	Confluence with Grant River	Milner Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Little Grant River	1/3 mile downstream of Centre Road	300' upstream of Mount Hope limits	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Little Platte River	Confluence with Platte River	CTH A	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Little Platte River	Cushman Road	0.3 miles upstream of Cushman Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Little Platte River	Upstream side of County Highway A	Downstream side of Cushman Road	1978 USACE Bluff Frequency Study	Bernoulli's Equation	12/19/1984	AE	
Louisburg Creek	Confluence with Menominee River	1.3 miles upstream of Spring Valley Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Louisburg Creek	CTH H	0.4 miles upstream of CTH H	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Louisburg Creek	1.3 miles upstream of Spring Valley Road	Downstream side of County Highway H	1978 USACE Bluff Frequency Study	Bernoulli's Equation	12/19/1984	AE	
Menominee River	Confluence with Kieler Creek	Grant County boundary	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Mississippi River	Illinois-Wisconsin State Line	At Confluence with Wisconsin River	Upper Mississippi Basin Flood Frequency Study	HEC-UNET 4.0 & HEC-RAS	07/01/2004	AE	
Platte River	Confluence with Mississippi River	1 mile downstream of Ellenboro Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Platte River	0.1 miles downstream of STH 81	Annton Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Platte River	0.1 miles downstream of State Highway 81	1.0 mile downstream of Ellenboro Road	1978 USACE Bluff Frequency Study	Bernoulli's Equation	12/19/1984	AE	

Flooding Source	Study Limits		Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
	Downstream Limit	Upstream Limit					
Rattlesnake Creek	Confluence with Grant River	0.2 miles downstream of State Highway 133	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Rattlesnake Creek	0.4 miles upstream of State Highway 133	1.5 miles upstream of Maple Road	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	
Rattlesnake Creek	0.4 miles upstream of State Highway 133	0.2 miles downstream of State Highway 133	1978 USACE Bluff Frequency Study	Bernoulli's Equation	12/19/1984	AE	
Rountree Branch	1.1 miles upstream of confluence with Platte River	Downstream side of Madison Street	*	HEC 2	05/01/1979	AE	
Sanders Creek	At Confluence with Wisconsin River	0.1 miles downstream of Doc's Lane	Log Pearson Type III & Similar Gage Comparison	HEC 2	08/01/1995	AE	
Wisconsin River	At Confluence with Mississippi River	Just upstream of Prairie du Sac Dam	Discharge-Frequency Curves	HEC-RAS 4.1	08/01/2013	AE	
All Base Studies	NA	NA	Regional Regression Equations	HEC-RAS 4.1	08/01/2013	A	

Table 14: Roughness Coefficients

Flooding Source	Channel “n”	Overbank “n”
Crooked Creek	0.040	0.080-0.100
Mississippi River	0.018-0.037	0.030-0.120
Rountree Branch	0.040-0.060	0.040-0.170
Sanders Creek	0.030-0.040	0.065-0.090
Wisconsin River	0.030-0.033	0.075-0.150

5.3 Coastal Analyses

This section is not applicable to this FIS project.

Table 15: Summary of Coastal Analyses
[Not Applicable to this FIS Project]

5.3.1 Total Stillwater Elevations

This section is not applicable to this FIS project.

Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas
[Not Applicable to this FIS Project]

Table 16: Tide Gage Analysis Specifics
[Not Applicable to this FIS Project]

5.3.2 Waves

This section is not applicable to this FIS project.

5.3.3 Coastal Erosion

This section is not applicable to this FIS project.

5.3.4 Wave Hazard Analyses

This section is not applicable to this FIS project.

Table 17: Coastal Transect Parameters
[Not Applicable to this FIS Project]

Figure 9: Transect Location Map
[Not Applicable in this FIS Report]

5.4 Alluvial Fan Analyses

This section is not applicable to this FIS project.

Table 18: Summary of Alluvial Fan Analyses
[Not Applicable to this FIS Project]

Table 19: Results of Alluvial Fan Analyses
[Not Applicable to this FIS Project]

SECTION 6.0 – MAPPING METHODS

6.1 Vertical and Horizontal Control

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 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS Reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS 12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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 archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please contact information services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov.

The datum conversion locations and values that were calculated for Grant County are provided in Table 20.

Table 20: Countywide Vertical Datum Conversion

Quadrangle Name	Quadrangle Corner	Latitude	Longitude	Conversion from NGVD29 to NAVD88 (feet)
Blue River	SW	43.124987	-90.625125	-0.18
Boscobel	SW	43.124985	-90.750126	-0.20
Mt. Zion	SW	43.249982	-90.750127	-0.13
Boaz	SW	43.249984	-90.625126	-0.16
Richland Center	SW	43.249986	-90.500125	-0.18
Muscoda	SW	43.124989	-90.500125	-0.22
Sextonville	SW	43.249988	-90.375124	-0.14
Avoca	SW	43.124991	-90.375124	-0.18
Crowley Ridge	SW	43.124983	-91.000127	-0.13
Wauzeka West	SW	42.999986	-91.000126	-0.15
Bridgeport	SW	42.999985	-91.125128	-0.16
Steuben	SW	43.124985	-90.875126	-0.19
Wauzeka East	SW	42.999988	-90.875126	-0.16
Long Hollow	SW	42.999988	-90.750126	-0.20
Castle Rock	SW	42.999990	-90.625125	-0.19
Highland West	SW	42.999992	-90.500125	-0.20
Highland East	SW	42.999994	-90.375123	-0.23
Prairie du Chien	SW	42.999986	-91.250131	-0.13
Bagley	SW	42.874988	-91.125129	-0.15
Clayton, Ia-Wi.	SW	42.874987	-91.250131	-0.11
Bloomington	SW	42.874989	-91.000127	-0.11
Mt. Hope	SW	42.874990	-90.875126	-0.16
Fennimore	SW	42.874991	-90.750126	-0.19
Stitzer	SW	42.874991	-90.625127	-0.22
Montfort	SW	42.874992	-90.500127	-0.24
Linden	SW	42.874995	-90.375125	-0.27
Beetown	SW	42.749992	-91.000127	-0.13
Guttenberg	SW	42.749991	-91.125129	-0.15
Hurricane	SW	42.749993	-90.875126	-0.18
Lancaster	SW	42.749993	-90.750126	-0.18
Ellenboro	SW	42.749993	-90.625127	-0.21
Rewey	SW	42.749993	-90.500128	-0.24
Mifflin	SW	42.749995	-90.375127	-0.24
Cassville	SW	42.624995	-91.000129	-0.12
Balltown	SW	42.624996	-90.875127	-0.14
Potosi	SW	42.624998	-90.750127	-0.16
Dickeyville	SW	42.624998	-90.625127	-0.17
Platteville	SW	42.624998	-90.500128	-0.18
Belmont	SW	42.624999	-90.375127	-0.23
Kieler	SW	42.500003	-90.625127	-0.13
Dubuque North	SW	42.500003	-90.750127	-0.13
Cuba City	SW	42.500004	-90.500127	-0.16
New Diggings	SW	42.500004	-90.375127	-0.20
Average Conversion from NGVD29 to NAVD88 = -0.18 (feet)				

Table 21: Stream-by-Stream Vertical Datum Conversion
[Not Applicable to this FIS Project]

6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA’s FIRM database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA’s *Guidelines and Standards for Mapping Partners*, Appendix L.

Base map information shown on the FIRM was derived from the sources described in Table 22.

Table 22: Base Map Sources

Data Type	Data Provider	Data Date	Data Scale	Data Description
Datum Conversion Points from NGS - VERTCON	Wisconsin DNR	2009	NA	S_Datum_Conv_Pt
Transportation	Wisconsin DNR	2012	NA	S_Trnsport_Ln
PLSS Area	Wisconsin DNR	2004	1:24,000	S_PLSS_Ar
Political Boundaries and municipalities in Grant County	Wisconsin DNR	2008	1:24,000	S_Pol_Ar
Hydro - streams and lakes	Wisconsin DNR	2007	1:24,000	S_Wtr_Ar, S_Wtr_Ln

6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 23.

In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% 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.

The floodway widths presented in this FIS Report and on the FIRM were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. Table 2 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 24, "Floodway Data."

Table 23: Summary of Topographic Elevation Data used in Mapping

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Scale	Contour Interval	Citation
City of Boscobel, Grant County Unincorporated Areas, Village of Blue River, Village of Muscoda	Crooked Creek, Sanders Creek, Wisconsin River	LIDAR	1:100	2 foot	WDNR 2014
Grant County Unincorporated Areas	Kieler Creek, Little Platte River, Louisburg Creek, Platte River, Rattlesnake Creek	LIDAR	1:100	2 foot	WDNR 2014
City of Boscobel, City of Cuba City, City of Fennimore, City of Lancaster, City of Platteville, Grant County Unincorporated Areas, Village of Bagley, Village of Bloomington, Village of Blue River, Village of Cassville, Village of Dickeyville, Village of Hazel Green, Village of Livingston, Village of Montfort, Village of Mount Hope, Village of Muscoda, Village of Patch Grove, Village of Potosi, Village of Tennyson, Village of Woodman	Beetown Branch, Crooked Creek, Kieler Creek, Little Platte River, Louisburg Creek, Platte River, Rattlesnake Creek, Rountree Branch, Sanders Creek	LIDAR	1:100	2 foot	WDNR 2014

BFEs shown at cross sections on the FIRM represent the 1% annual chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations.

Table 24: Floodway Data

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET / SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	580.87	2,653/428	77,365	3.5	610.7	610.7	610.7	0.0
B	581.78	5,327/2,751	123,616	2.2	610.9	610.9	610.9	0.0
C	582.90	1,857/1,269	68,992	4.0	611.1	611.1	611.1	0.0
D	583.20	2,400/1,976	66,354	4.1	611.4	611.4	611.4	0.0
E	583.51	4,889/3,940	107,550	2.6	611.6	611.6	611.6	0.0
F	584.07	6,198/4,814	118,000	2.3	611.7	611.7	611.7	0.0
G	585.76	6,413/1,635	137,901	2.0	612.0	612.0	612.0	0.0
H	586.82	9,305/5,217	150,756	1.8	612.1	612.1	612.1	0.0
I	588.05	9,112/6,895	157,406	1.7	612.3	612.3	612.3	0.0
J	588.49	9,638/7,016	166,663	1.7	612.3	612.3	612.3	0.0
K	589.11	9,106/6,178	143,639	1.9	612.4	612.4	612.4	0.0
L	590.06	7,741/5,986	134,182	2.1	612.6	612.6	612.6	0.0
M	590.68	6,835/5,652	120,021	2.3	612.7	612.7	612.7	0.0
N	591.14	7,432/6,341	135,378	2.0	612.9	612.9	612.9	0.0
O	591.65	8,432/7,456	136,601	2.0	613.0	613.0	613.0	0.0
P	592.06	8,904/7,967	147,200	1.9	613.1	613.1	613.1	0.0
Q	592.56	8,875/8,110	134,556	2.1	613.2	613.2	613.2	0.0
R	594.04	7,871/6,889	123,434	2.2	613.5	613.5	613.5	0.0
S	596.01	7,454/6,569	115,995	2.4	614.1	614.1	614.1	0.0
T	597.50	6,606/6,000	97,315	2.8	614.5	614.5	614.5	0.0
U	599.00	6,795/5,994	116,417	2.4	615.2	615.2	615.2	0.0
V	599.91	6,961/6,268	111,823	2.5	615.4	615.4	615.4	0.0
W	600.75	6,763/5,383	91,753	3.0	615.7	615.7	615.7	0.0
X	601.92	7,138/3,419	99,447	2.8	616.2	616.2	616.2	0.0
Y	602.70	7,496/5,583	94,790	2.9	616.6	616.6	616.6	0.0
Z	604.38	6,110/3,832	84,659	3.3	617.3	617.3	617.3	0.0

¹Distances are measured in miles above confluence with Ohio River

²Total floodway width / width within Grant County

TABLE 24	FEDERAL EMERGENCY MANAGEMENT AGENCY GRANT COUNTY, WISCONSIN AND INCORPORATED AREAS	FLOODWAY DATA FLOODING SOURCE: MISSISSIPPI RIVER
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LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET / SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AA	604.88	6,291/3,294	86,188	3.2	617.6	617.6	617.6	0.0
AB	605.48	6,668/3,050	89,911	3.1	617.8	617.8	617.8	0.0
AC	606.06	5,958/573	90,522	3.1	618.0	618.0	618.0	0.0
AD	606.82	7,060/492	98,620	2.8	618.3	618.3	618.3	0.0
AE	607.36	7,490/1,071	93,470	3.0	618.6	618.6	618.6	0.0
AF	607.93	7,798/2,310	107,890	2.6	619.0	619.0	619.0	0.0
AG	608.52	7,920/2,816	105,087	2.7	619.3	619.3	619.3	0.0
AH	609.96	8,303/1,927	149,243	1.9	620.0	620.0	620.0	0.0
AI	611.87	9,341/3,772	125,605	2.2	620.5	620.5	620.5	0.0
AJ	612.93	10,238/1,236	148,261	1.9	620.8	620.8	620.8	0.0
AK	614.75	3,268/642	74,785	3.7	621.2	621.2	621.2	0.0
AL	615.27	3,645/629	90,194	3.2	622.3	622.3	622.3	0.0
AM	616.08	7,212/584	138,352	2.1	622.5	622.5	622.5	0.0
AN	617.35	8,062/684	124,096	2.3	622.8	622.8	622.8	0.0
AO	618.34	8,105/698	129,412	2.2	623.1	623.1	623.1	0.0
AP	620.09	8,998/1,958	144,882	2.0	623.6	623.6	623.6	0.0
AQ	621.60	6,938/2,134	121,636	2.4	624.1	624.1	624.1	0.0
AR	622.12	5,600/2,755	105,455	2.8	624.5	624.5	624.5	0.0
AS	622.72	5,763/3,559	106,696	2.8	624.9	624.9	624.9	0.0
AT	623.29	7,430/5,558	123,237	2.4	625.2	625.2	625.2	0.0
AU	623.76	7,924/6,900	138,221	2.1	625.4	625.4	625.4	0.0
AV	624.26	8,569/7,995	135,821	2.2	625.4	625.4	625.4	0.0
AW	624.82	8,569/7,798	135,053	2.2	625.6	625.6	625.6	0.0
AX	626.17	8,753/3,108	157,130	1.9	626.3	626.3	626.3	0.0
AY	627.40	7,705/2,010	136,886	2.2	626.8	626.8	626.8	0.0
AZ	627.89	7,577/1,802	139,311	2.1	627.0	627.0	627.0	0.0

¹Distances are measured in miles above confluence with Ohio River

²Total floodway width / width within Grant County

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

GRANT COUNTY, WISCONSIN

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: MISSISSIPPI RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET / SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BA	629.56	7,071/3,505	124,710	2.4	627.5	627.5	627.5	0.0
BB	630.49	6,687/5,742	126,464	2.3	627.8	627.8	627.8	0.0

¹Distances are measured in miles above confluence with Ohio River

²Total floodway width / width within Grant County

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY
GRANT COUNTY, WISCONSIN
 AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: MISSISSIPPI RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET / SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	10,953	486	1,406	5.1	843.8	843.8	843.8	0.0
B	12,447	454	1,624	4.4	852.0	852.0	852.0	0.0
C	12,872	528	2,379	3.0	853.3	853.3	853.3	0.0
D	13,044	537	1,245	5.8	854.5	854.5	854.5	0.0
E	13,167	520	3,672	2.0	858.8	858.8	858.8	0.0
F	13,812	410	1,611	4.3	859.6	859.6	859.6	0.0
G	15,141	278	1,167	5.9	865.6	865.6	865.6	0.0
H	17,768	200	1,610	4.1	880.2	880.2	880.2	0.0
I	18,255	220	1,512	4.4	881.0	881.0	881.0	0.0
J	18,602	60	658	9.8	881.8	881.8	881.8	0.0
K	18,696	60	684	9.4	882.2	882.2	882.2	0.0
L	18,981	115	796	8.1	884.2	884.2	884.2	0.0
M	19,829	250	1,722	3.4	888.6	888.6	888.6	0.0
N	20,057	40	498	11.7	891.1	891.1	891.1	0.0
O	20,109	127	1,260	4.6	893.1	893.1	893.1	0.0
P	20,522	77	591	9.9	895.0	895.0	895.0	0.0
Q	20,796	220	1,143	5.1	898.9	898.9	898.9	0.0
R	22,110	157	697	8.4	905.5	905.5	905.5	0.0
S	23,290	229	1,353	4.3	910.8	910.8	910.8	0.0
T	23,741	167	780	7.5	913.1	913.1	913.1	0.0
U	24,566	260	1,929	2.9	921.0	921.0	921.0	0.0
V	25,319	257	695	7.9	922.1	922.1	922.1	0.0
W	25,529	325	1,659	3.3	925.1	925.1	925.1	0.0
X	26,709	286	686	6.1	931.1	931.1	931.1	0.0

¹Distances are measured in feet above confluence with Little Platte River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY
GRANT COUNTY, WISCONSIN
 AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: ROUNTREE BRANCH

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET / SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,340	618	893	4.3	657.9	655.3 ²	655.3	0.0
B	1,866	611	1,693	2.2	659.8	659.8	659.8	0.0
C	2,510	295	889	4.3	662.3	662.3	662.3	0.0
D	2,843	75	595	6.4	663.7	663.7	663.7	0.0
E	2,994	216	937	4.1	664.1	664.1	664.1	0.0
F	3,195	268	1,190	3.2	664.5	664.5	664.5	0.0
G	3,610	70	497	7.6	664.9	664.9	664.9	0.0
H	3,801	102	612	6.2	665.6	665.6	665.6	0.0
I	4,072	97	780	4.9	666.5	666.5	666.5	0.0
J	4,289	106	554	6.9	666.5	666.5	666.5	0.0
K	4,455	124	702	5.4	667.2	667.2	667.2	0.0
L	4,628	179	1,070	3.6	667.6	667.6	667.6	0.0
M	4,787	116	887	4.3	667.7	667.7	667.7	0.0
N	5,016	94	554	6.9	667.8	667.8	667.8	0.0
O	5,164	111	744	5.1	668.5	668.5	668.5	0.0
P	5,377	114	623	6.1	668.6	668.6	668.6	0.0
Q	5,470	116	645	5.9	668.8	668.8	668.8	0.0
R	5,719	236	1,203	3.2	673.8	673.8	673.8	0.0
S	6,163	241	1,522	2.5	674.2	674.2	674.2	0.0
T	7,152	246	1,381	2.8	676.7	676.7	676.7	0.0
U	7,644	295	1,481	2.6	677.3	677.3	677.3	0.0

¹Distances are measured in feet above United States Highway 61

²Elevation computed without consideration of backwater effects from Wisconsin River

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY
GRANT COUNTY, WISCONSIN
AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: SANDERS CREEK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET / SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	7,278	4,435/2,059	72,372	1.1	628.0	628.0	628.0	0.0
B	10,570	3,355/1,510	48,058	1.7	628.5	628.5	628.5	0.0
C	14,989	4,060/1,580	57,648	1.4	629.0	629.0	629.0	0.0
D	20,118	3,790/953	50,426	1.6	629.5	629.5	629.5	0.0
E	25,246	3,800/869	48,805	1.6	630.1	630.1	630.1	0.0
F	29,960	4,001/3,283	47,602	1.7	630.9	630.9	630.9	0.0
G	31,601	3,799/3,346	42,447	1.9	631.3	631.3	631.3	0.0
H	36,674	3,715/1,344	43,673	1.8	632.1	632.1	632.1	0.0
I	41,750	3,620/1,450	42,221	1.9	633.0	633.0	633.0	0.0
J	46,209	4,263/3,416	47,959	1.7	633.8	633.8	633.8	0.0
K	50,850	4,125/2,224	46,429	1.7	634.5	634.5	634.5	0.0
L	54,692	5,350/701	56,338	1.4	635.2	635.2	635.2	0.0
M	60,466	7,458/1,498	75,950	1.1	635.9	635.9	635.9	0.0
N	64,591	6,934/1,610	64,970	1.2	636.3	636.3	636.3	0.0
O	69,726	5,939/3,056	53,730	1.5	637.3	637.3	637.3	0.0
P	76,333	7,250/1,722	54,759	1.5	638.5	638.5	638.5	0.0
Q	81,420	6,118/852	49,838	1.6	639.4	639.4	639.4	0.0
R	86,204	6,054/1,955	47,761	1.7	640.3	640.3	640.3	0.0
S	91,438	6,264/170	50,820	1.6	641.5	641.5	641.5	0.0
T	95,914	6,850/335	55,483	1.4	642.7	642.7	642.7	0.0
U	101,461	5,108/1,975	43,475	1.8	643.9	643.9	643.9	0.0
V	104,904	5,592/1,250	49,477	1.6	644.7	644.7	644.7	0.0
W	107,147	5,389/2,690	54,333	1.5	645.5	645.5	645.5	0.0
X	112,535	4,280/3,821	40,514	2.0	646.7	646.7	646.7	0.0
Y	118,541	5,304/4,024	45,836	1.8	648.0	648.0	648.0	0.0
Z	122,912	6,224/3,424	48,531	1.7	649.3	649.3	649.3	0.0

¹Distances are measured in feet above confluence with Mississippi River

²Total floodway width / width within Grant County

TABLE 24	FEDERAL EMERGENCY MANAGEMENT AGENCY GRANT COUNTY, WISCONSIN AND INCORPORATED AREAS	FLOODWAY DATA
		FLOODING SOURCE: WISCONSIN RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET / SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AA	126,422	6,221/1,937	43,378	1.8	650.5	650.5	650.5	0.0
AB	130,416	5,262/2,253	39,307	2.0	651.8	651.8	651.8	0.0
AC	136,062	4,362/1,400	37,530	2.1	653.7	653.7	653.7	0.0
AD	141,542	3,734/2,943	34,747	2.3	655.3	655.3	655.3	0.0
AE	144,440	1,796/1,249	18,919	4.2	656.4	656.4	656.4	0.0
AF	146,339	2,351/1,580	30,996	2.6	657.9	657.9	657.9	0.0
AG	150,673	5,568/3,644	51,301	1.6	658.7	658.7	658.7	0.0
AH	154,944	6,541/6,122	58,537	1.4	659.3	659.3	659.3	0.0
AI	159,474	5,714/2,811	51,147	1.6	660.2	660.2	660.2	0.0
AJ	164,473	7,816/1,027	67,982	1.2	661.0	661.0	661.0	0.0
AK	169,994	8,926/2,002	69,283	1.2	661.8	661.8	661.8	0.0
AL	175,362	8,052/2,882	55,612	1.4	662.8	662.8	662.8	0.0
AM	179,188	7,569/2,192	48,359	1.7	663.8	663.8	663.8	0.0
AN	184,586	6,491/3,813	48,326	1.7	665.1	665.1	665.1	0.0
AO	190,294	5,142/4,794	38,367	2.1	667.0	667.0	667.0	0.0
AP	193,142	3,795/3,463	37,325	2.1	668.9	668.9	668.9	0.0
AQ	195,970	4,209/3,659	40,194	2.0	669.6	669.6	669.6	0.0
AR	201,309	5,724/4,827	51,537	1.6	670.9	670.9	670.9	0.0
AS	205,617	5,216/3,985	43,911	1.8	671.6	671.6	671.6	0.0
AT	210,125	6,309/5,524	48,610	1.7	672.6	672.6	672.6	0.0
AU	212,900	5,699/5,230	39,659	2.0	673.1	673.1	673.1	0.0
AV	217,151	5,701/4,531	40,339	2.0	674.4	674.4	674.4	0.0
AW	222,234	2,959/2,401	25,120	3.2	676.1	676.1	676.1	0.0
AX	225,833	3,677/2,416	31,609	2.5	677.8	677.8	677.8	0.0
AY	228,156	1,819/793	20,789	3.9	678.6	678.6	678.6	0.0
AZ	229,832	1,813/868	21,796	4.0	679.6	679.6	679.6	0.0

¹Distances are measured in feet above confluence with Mississippi River

²Total floodway width / width within Grant County

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY
GRANT COUNTY, WISCONSIN
 AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: WISCONSIN RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET / SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BA	232,298	3,215/2,862	37,939	2.3	680.7	680.7	680.7	0.0

¹Distances are measured in feet above confluence with Mississippi River

²Total floodway width / width within Grant County

TABLE 24

FEDERAL EMERGENCY MANAGEMENT AGENCY

GRANT COUNTY, WISCONSIN

AND INCORPORATED AREAS

FLOODWAY DATA

FLOODING SOURCE: WISCONSIN RIVER

Non-encroachment areas may be delineated where it is not possible to delineate floodways because specific channel profiles with bridge and culvert geometry were not developed. Any non-encroachment determinations for this FIS project have been tabulated for selected cross sections and are shown in Table 25. The non-encroachment width indicates the measured distance left and right (looking downstream) from the mapped center of the stream to the non-encroachment boundary based on a surcharge of 1.0 foot or less.

Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams

[Not Applicable to this FIS Project]

6.4 Coastal Flood Hazard Mapping

This section is not applicable to this FIS project.

Table 26: Summary of Coastal Transect Mapping Considerations

[Not Applicable to this FIS Project]

6.5 FIRM Revisions

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions to FIS projects may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 31, “Map Repositories”).

6.5.1 Letters of Map Amendment

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA. A LOMA cannot be issued for properties located on the PFD (primary frontal dune).

To obtain an application for a LOMA, visit <http://www.fema.gov> and download the form “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill”. Visit the “Flood Map-Related Fees” section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at http://www.fema.gov/plan/prevent/fhm/ot_lmreq.shtm.

For more information about how to apply for a LOMA, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

6.5.2 Letters of Map Revision Based on Fill

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA's determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same manner as that for a LOMA, by visiting <http://www.fema.gov> for the "MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill" or by calling the FEMA Map Information eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the "Flood Map-Related Fees" section.

A tutorial for LOMR-F is available at http://www.fema.gov/plan/prevent/fhm/ot_lmreq.shtm.

6.5.3 Letters of Map Revision

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit <http://www.fema.gov> and download the form "MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision". Visit the "Flood Map-Related Fees" section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the Grant County FIRM are listed in Table 27.

**Table 27: Incorporated Letters of Map Change
[Not Applicable to this FIS Project]**

6.5.4 Physical Map Revisions

PMRs are an official republication of a community's NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community's chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit <http://www.fema.gov> and visit the "Flood Map Revision Processes" section.

6.5.5 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit www.fema.gov to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

6.5.6 Community Map History

The current FIRM presents flooding information for the entire geographic area of Grant County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBM) and/or Flood Boundary and Floodway Maps (FBFM) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 28, "Community Map History." A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.
- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or "pending" (for Preliminary FIS Reports) is shown. If the community is listed in Table 28 but not identified on the map, the community is treated as if it were unmapped.
- *Initial FHBM Effective Date* is the effective date of the first Flood Hazard Boundary Map (FHBM). This date may be the same date as the Initial NFIP Map Date.
- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.
- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community. This is the first effective date that is shown on the FIRM panel.
- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as Physical Map Revisions (PMR) of FIRM panels within the county are completed, the FIRM Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all the panels within that community.

The initial effective date for the Grant County FIRMs in countywide format was 09/02/2011.

Table 28: Community Map History

Community Name	Initial Identification Date (First NFIP Map Published)	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Village of Bagley	8/30/1974	8/30/1974	5/21/1976	6/17/1986	2/3/2016 9/2/2011
Village of Bloomington	6/28/1974	6/28/1974	7/7/1978 5/28/1976	8/19/1986	2/3/2016 9/2/2011
Village of Blue River	1/28/1977	1/28/1977	N/A	8/9/1999	2/3/2016 9/2/2011
City of Boscobel	12/17/1973	12/17/1973	11/30/1979 5/14/1976	11/4/1981	2/3/2016 9/2/2011 10/6/1998
Village of Cassville	2/19/1972	2/19/1972	7/1/1974	11/28/1975	9/2/2011 8/4/1988
City of Cuba City ¹	9/2/2011	N/A	N/A	9/2/2011	N/A
Village of Dickeyville ¹	9/2/2011	N/A	N/A	9/2/2011	2/3/2016
City of Fennimore ¹	9/2/2011	N/A	N/A	9/2/2011	N/A
Grant County Unincorporated Areas	5/25/1973	5/25/1973	N/A	5/25/1973	2/3/2016 9/2/2011 12/20/1999 6/19/1985 8/20/1976 7/1/1974
Village of Hazel Green ¹	9/2/2011	N/A	N/A	9/2/2011	N/A
City of Lancaster	5/31/1974	5/31/1974	8/29/1975	8/5/1986	2/3/2016 9/2/2011
Village of Livingston ¹	9/2/2011	N/A	N/A	9/2/2011	N/A
Village of Montfort ¹	9/2/2011	N/A	N/A	9/2/2011	N/A
Village of Mount Hope	8/30/1974	8/30/1974	5/14/1976	9/2/2011	2/3/2016
Village of Muscoda	5/10/1974	5/10/1974	5/21/1976	9/8/1999	2/3/2016 9/2/2011
Village of Patch Grove ¹	9/2/2011	N/A	N/A	9/2/2011	N/A
City of Platteville	7/19/1974	7/19/1974	5/28/1976	9/29/1996	2/3/2016 9/2/2011
Village of Potosi	12/28/1973	12/28/1973	5/28/1976	9/2/2011	2/3/2016
Village of Tennyson ¹	9/2/2011	N/A	N/A	9/2/2011	2/3/2016
Village of Woodman ¹	9/2/2011	N/A	N/A	9/2/2011	2/3/2016

¹No Special Flood Hazard Areas Identified in Grant County

SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

7.1 Contracted Studies

Table 29 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

Table 29: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Beetown Branch	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Beetown Branch	12/19/1984	USACE - Rock Is.	*	December 1984	Grant County Uninc. Areas
Blake Fork	2/3/2016	WI-DNR	WI-11-01	August 2013	Village of Bloomington, Grant County Uninc. Areas
Blue River	2/3/2016	WI-DNR	WI-11-01	August 2013	Village of Blue River, Grant County Uninc. Areas
Crooked Creek	5/4/1981	Carl Crane, Inc	H-4785	September 1978	City of Boscobel, Grant County Uninc. Areas
Fennimore Fork	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Grant River	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Kieler Creek	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Kieler Creek	12/19/1984	USACE - Rock Is.	*	December 1984	Grant County Uninc. Areas
Kuenster Creek	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Little Grant River	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Little Grant River	2/3/2016	WI-DNR	WI-11-01	August 2013	Village of Mount Hope, Grant County Uninc. Areas
Little Platte River	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Little Platte River	12/19/1984	USACE - Rock Is.	*	December 1984	Grant County Uninc. Areas
Louisburg Creek	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Louisburg Creek	12/19/1984	USACE - Rock Is.	*	December 1984	Grant County Uninc. Areas
Menominee River	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas

Table 29: Summary of Contracted Studies Included in this FIS Report (continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Mississippi River	9/2/2011	USACE	EMW-2002-IA-0114	July 2004	Village of Bagley, Village of Cassville, Grant County Uninc. Areas, Village of Potosi
Platte River	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Platte River	12/19/1984	USACE - Rock Is.	*	December 1984	Grant County Uninc. Areas
Rattlesnake Creek	2/3/2016	WI-DNR	WI-11-01	August 2013	Grant County Uninc. Areas
Rattlesnake Creek	12/19/1984	USACE - Rock Is.	*	December 1984	Grant County Uninc. Areas
Rountree Branch	9/29/1996	Owen Ayres & Associates	*	May 1979	Grant County Uninc. Areas, City of Platteville
Sanders Creek	12/20/1999	USACE	EMW-92-E-3842	August 1995	City of Boscobel, Grant County Uninc. Areas
Wisconsin River	2/3/2016	WI-DNR & CDM Smith	WI-11-01	August 2013	Village of Blue River, City of Boscobel, Grant County Uninc. Areas, Village of Muscoda, Village of Woodman
All Base Studies	2/3/2016	WI-DNR	WI-11-01	August 2013	Village of Bagley, Village of Blue River, Grant County Uninc. Areas, City of Lancaster, Village of Mount Hope, City of Platteville

7.2 Community Meetings

The dates of the community meetings held for this FIS project and any previous FIS projects are shown in Table 30. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CCO), Scoping, Discovery, etc.), but all meetings represent opportunities for FEMA, community officials, study contractors, and other invited guests to discuss the planning for and results of the project.

Table 30: Community Meetings

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Grant County and Incorporated Areas	2/3/2016	11/16/2011	Discovery	FEMA, State of Wisconsin - Department of Natural Resources, county and communities
		03/06/2014	Resilience	State of Wisconsin - Department of Natural Resources, Wisconsin Emergency Management, county and communities
		06/19/2014	CCO Open House	FEMA, State of Wisconsin - Department of Natural Resources, county and communities
Grant County and Incorporated Areas	09/02/2011	08/08/2008	Initial CCO	State of Wisconsin - Department of Natural Resources, county and communities
		11/17/2009	Final CCO	State of Wisconsin - Department of Natural Resources, county and communities
Grant County, Unincorporated Areas	12/20/1999	08/26/1991	Initial CCO	FEMA, State of Wisconsin - Department of Natural Resources, county and the study contractor
		03/11/1997	Final CCO	FEMA, State of Wisconsin - Department of Natural Resources, county and the study contractor
Village of Blue River	09/08/1999	08/26/1991	Initial CCO	FEMA, State of Wisconsin - Department of Natural Resources, this community and the study contractor
		03/11/1997	Final CCO	FEMA, State of Wisconsin - Department of Natural Resources, this community and the study contractor
Village of Muscoda	09/08/1999	08/26/1991	Initial CCO	FEMA, State of Wisconsin - Department of Natural Resources, this community and the study contractor
		03/11/1997	Final CCO	FEMA, State of Wisconsin - Department of Natural Resources, this community and the study contractor

Table 30: Community Meetings (continued)

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
City of Boscobel	10/06/1998	08/21/1991	Initial CCO	FEMA, State of Wisconsin - Department of Natural Resources, this community and the study contractor
		03/11/1997	Final CCO	FEMA, State of Wisconsin - Department of Natural Resources, this community and the study contractor
City of Platteville	09/29/1996	*	Initial CCO	*
		11/01/1994	Final CCO	FEMA, State of Wisconsin - Department of Natural Resources, this community and the study contractor
Village of Cassville	08/04/1988	*	Initial CCO	*
		09/17/1987	Final CCO	FEMA, State of Wisconsin - Department of Natural Resources, this community and the study contractor
Grant County, Unincorporated Areas	12/19/1984	*	Initial CCO	*
		06/21/1984	Final CCO	FEMA, State of Wisconsin - Department of Natural Resources, county and the study contractor

* This information wasn't available from the previous FIS Reports

SECTION 8.0 – ADDITIONAL INFORMATION

Information concerning the pertinent data used in the preparation of this FIS Report can be obtained by submitting an order with any required payment to the FEMA Engineering Library. For more information on this process, see <http://www.fema.gov>.

The additional data that was used for this project includes the FIS Report and FIRM that were previously prepared for Grant County (FEMA 2011), the City of Boscobel, (FEMA 1998), and the City of Platteville (FEMA 1996).

Table 31 is a list of the locations where FIRMs for Grant County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

Table 31: Map Repositories

Community	Address	City	State	Zip Code
Village of Bagley	Village Hall 400 South Jackley Lane	Bagley	WI	53801
Village of Bloomington	Village Hall 453 Canal Street	Bloomington	WI	53804
Village of Blue River	Village Hall 201 Clinton Street	Blue River	WI	53518
City of Boscobel	City Hall 1006 Wisconsin Avenue	Boscobel	WI	53805
Village of Cassville	Village Hall 100 West Amelia Street	Cassville	WI	53806
City of Cuba City	City Hall 108 North Main Street	Cuba City	WI	53807
Village of Dickeyville	Village Hall 500 East Avenue	Dickeyville	WI	53808
City of Fennimore	City Hall 860 Lincoln Avenue	Fennimore	WI	53809
Grant County Unincorporated Areas	Tax Listers Office 111 South Jefferson Street	Lancaster	WI	53813
Village of Hazel Green	Village Hall 1610 Fairplay Street	Hazel Green	WI	53811
City of Lancaster	City Hall 206 South Madison Street	Lancaster	WI	53813
Village of Livingston	Village Hall 220 West Barber Avenue	Livingston	WI	53554
Village of Montfort	Village Hall 102 East Park Street	Montfort	WI	53569

Table 31: Map Repositories (continued)

Community	Address	City	State	Zip Code
Village of Mount Hope	Village Hall 127 East Main Street	Mount Hope	WI	53816
Village of Muscoda	Village Hall 206 North Wisconsin Avenue	Muscoda	WI	53573
Village of Patch Grove	Village Hall 112 North Street	Patch Grove	WI	53817
City of Platteville	City Hall 75 North Bonson Street	Platteville	WI	53818
Village of Potosi	Village Hall 105 North Main Street	Potosi	WI	53820
Village of Tennyson	Village Hall 101 Bunker Hill Street	Potosi	WI	53820
Village of Woodman	Village Hall 301 Spencer Street	Woodman	WI	53827

The National Flood Hazard Layer (NFHL) dataset is a compilation of effective FIRM databases and LOMCs. Together they create a GIS data layer for a State or Territory. The NFHL is updated as studies become effective and extracts are made available to the public monthly. NFHL data can be viewed or ordered from the website shown in Table 32.

Table 32 contains useful contact information regarding the FIS Report, the FIRM, and other relevant flood hazard and GIS data. In addition, information about the state NFIP Coordinator and GIS Coordinator is shown in this table. At the request of FEMA, each Governor has designated an agency of State or territorial government to coordinate that State's or territory's NFIP activities. These agencies often assist communities in developing and adopting necessary floodplain management measures. State GIS Coordinators are knowledgeable about the availability and location of state and local GIS data in their state.

Table 32: Additional Information

FEMA and the NFIP	
FEMA and FEMA Engineering Library website	http://www.fema.gov
NFIP website	http://www.fema.gov/business/nfip
NFHL Dataset	http://msc.fema.gov
FEMA Region V	536 South Clark Street, 6th Floor Chicago, IL 60605 (312) 408-5529
Other Federal Agencies	
USGS website	http://www.usgs.gov
Hydraulic Engineering Center website	http://www.hec.usace.army.mil
State Agencies and Organizations	
State Floodplain Management website	http://dnr.wi.gov/topic/floodplains/
State NFIP Coordinator	State National Floodplain Insurance Program (NFIP) Coordinator Gary H. Heinrichs Wisconsin Dept. of Natural Res. 101 S. Webster Street – WT/3 Madison, WI 53703 (608) 266-3093 gary.heinrichs@wisconsin.gov
State Floodplain GIS Coordinator	Floodplain Mapping GIS Coordinator Colleen Hermans Wisconsin Dept. of Natural Res. 101 S. Webster Street – WT/3 Madison, WI 53703 Phone: 608-264-8988 colleen.hermans@wisconsin.gov

SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES

Table 33 includes sources used in the preparation of and cited in this FIS Report as well as additional studies that have been conducted in the study area.

Table 33: Bibliography and References

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FEMA 2011	Federal Emergency Management Agency	<i>Flood Insurance Study, Grant County, Wisconsin and Incorporated Areas</i>	Federal Emergency Management Agency	Washington, D.C.	September 2011	
FEMA 2011	Federal Emergency Management Agency	<i>Effective FIRMs, Grant County, Wisconsin and Incorporated Areas</i>	Federal Emergency Management Agency	Washington, D.C.	September 2011	
FEMA 1998	Federal Emergency Management Agency	<i>Flood Insurance Study, City of Boscobel, Wisconsin</i>	Federal Emergency Management Agency	Washington, D.C.	October 1998	
FEMA 1996	Federal Emergency Management Agency	<i>Flood Insurance Study, City of Platteville, Wisconsin</i>	Federal Emergency Management Agency	Washington, D.C.	September 1996	
NGS 2009	National Geodetic Survey	<i>VERTCON 2.1-North American Vertical Datum Conversion Utility.</i>	National Geodetic Survey	Silver Spring, MD	September 2003	http://www.ngs.noaa.gov/
USACE 2010	U.S. Army Corps of Engineers, Hydrologic Engineering Center	<i>HEC-RAS 4.1.0 River Analysis System</i>	USACE	Davis, CA	January 2010	http://www.hec.usace.army.mil/
USACE 2004	U.S. Army Corps of Engineers, Hydrologic Engineering Center	<i>Upper Mississippi River System Flow Frequency Study</i>	USACE, St Paul District	St Paul, MN	January 2004	

Table 33: Bibliography and References (continued)

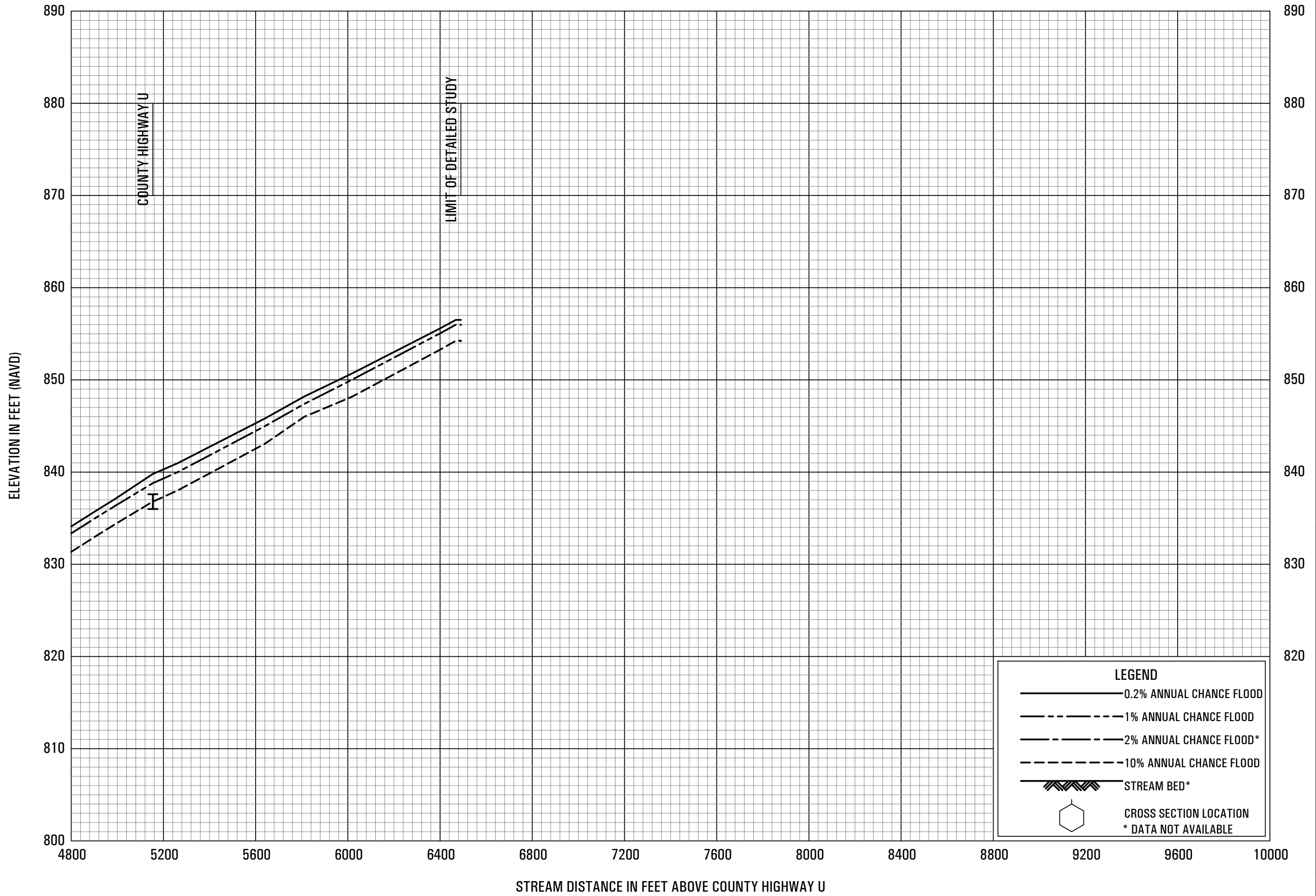
Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USACE 1991	U.S. Army Corps of Engineers, Hydrologic Engineering Center	<i>HEC-2 Water Surface Profiles, Generalized Computer Program</i>	USACE	Davis, CA	April 1991	http://www.hec.usace.army.mil/
USGS 2003	U.S. Department of Interior, Geological Survey	<i>Water-Resources Investigations Report 03-4250, Flood-Frequency Characteristics of Wisconsin Streams</i>	USGS/WDOT	Madison, WI	2003	
USGS 1982	U.S. Department of Interior, Geological Survey	<i>Bulletin # 17B, Guidelines for Determining Flood Flow Frequency</i>	Hydrology Subcommittee of the Interagency Advisory Committee for Water Data	Reston, VA	March 1982	
USGS 1981	U.S. Department of Interior, Geological Survey	<i>Water-Resources Investigations Open-File Report 80-1214, Techniques for Estimating Magnitude and Frequency of Floods for Wisconsin Streams</i>	USGS/WDOT	Madison, WI	March 1981	
USGS 1980	U.S. Department of Interior, Geological Survey	<i>Open File Report 80-1103, Streamflow Model of Wisconsin River for Establishing Flood Frequency and Volume</i>	USGS/WDNR	Madison, WI	November 1980	

Table 33: Bibliography and References (continued)

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
WDNR 2014	Wisconsin Department of Natural Resources	<i>FIRM Panel Index for Grant County, WI and Incorporated Areas Countywide Study</i>	Wisconsin Department of Natural Resources	Madison, WI	2/3/2016	
WDNR 2014	Wisconsin Department of Natural Resources	<i>Base Index for Grant County, WI and Incorporated Areas Countywide Study</i>	Wisconsin Department of Natural Resources	Madison, WI	2/3/2016	
WDNR 2014	Wisconsin Department of Natural Resources	<i>Unshaded Zone X mapping for Grant County, WI and Incorporated Areas</i>	Wisconsin Department of Natural Resources	Madison, WI	2/3/2016	
WDNR 2014	Wisconsin Department of Natural Resources	<i>Redelineation of detailed study</i>	Wisconsin Department of Natural Resources	Madison, WI	2/3/2016	
WDNR 2013	Wisconsin Department of Natural Resources	<i>New Detailed (Zone AE) Study Modeling and Mapping, Wisconsin River</i>	Wisconsin Department of Natural Resources	Madison, WI	August 2013	
WDNR 2013	Wisconsin Department of Natural Resources	<i>New Approximate Study (A Zone) Modeling and Mapping for Grant County, WI and Incorporated Areas Countywide Study</i>	Wisconsin Department of Natural Resources	Madison, WI	August 2013	
WDNR 2012	Wisconsin Department of Natural Resources	<i>Wisconsin's Floodplain Management Program, Chapter NR 116</i>	Wisconsin Department of Natural Resources	Madison, WI	January 2012	http://docs.legis.wisconsin.gov/code/admin_code/nr/100/116.pdf

Table 33: Bibliography and References (continued)

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
WDNR 2010	Wisconsin Department of Natural Resources	<i>2010 Digital Orthoimagery Photo</i>	Wisconsin Department of Natural Resources	Madison, WI	2010	

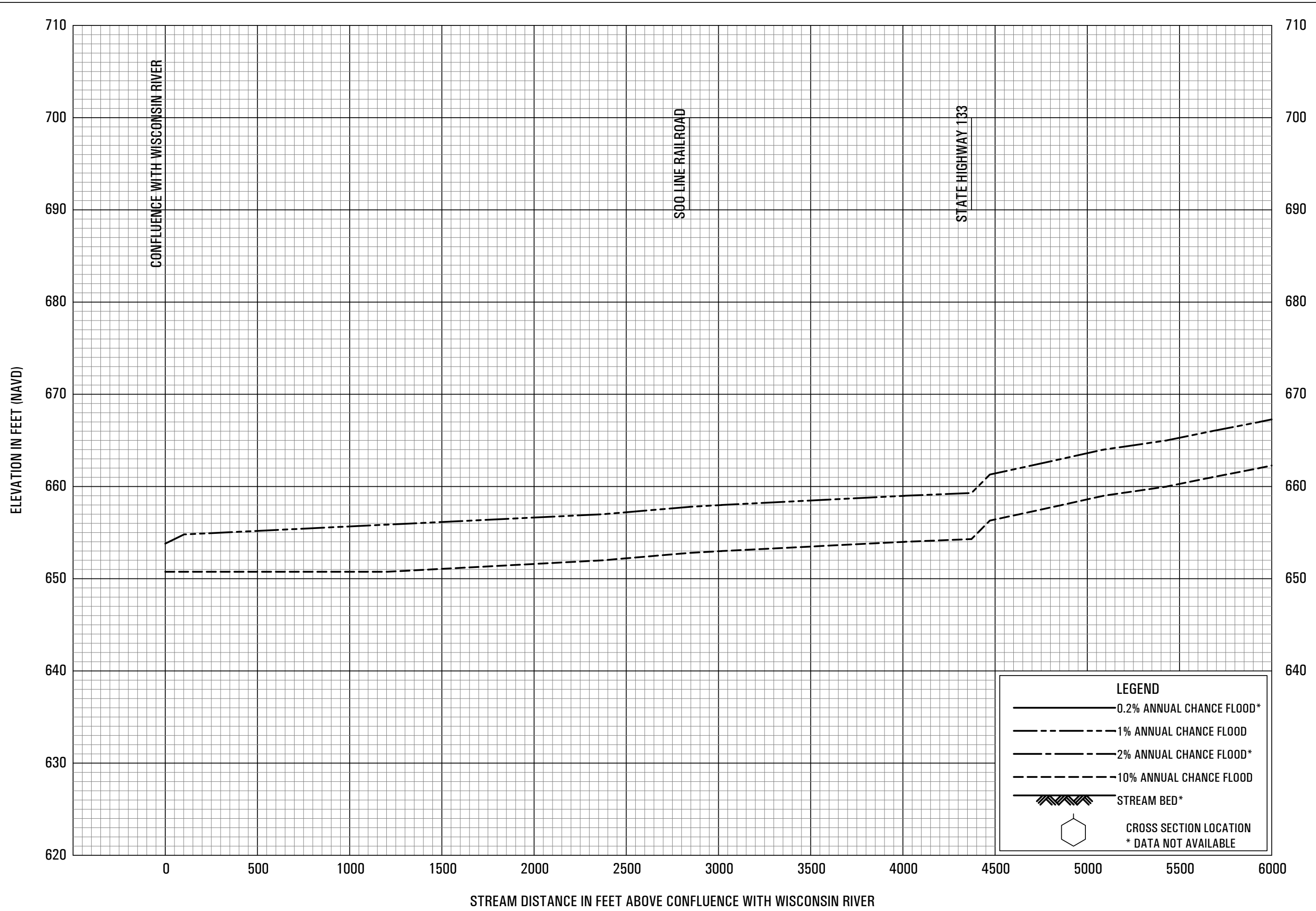


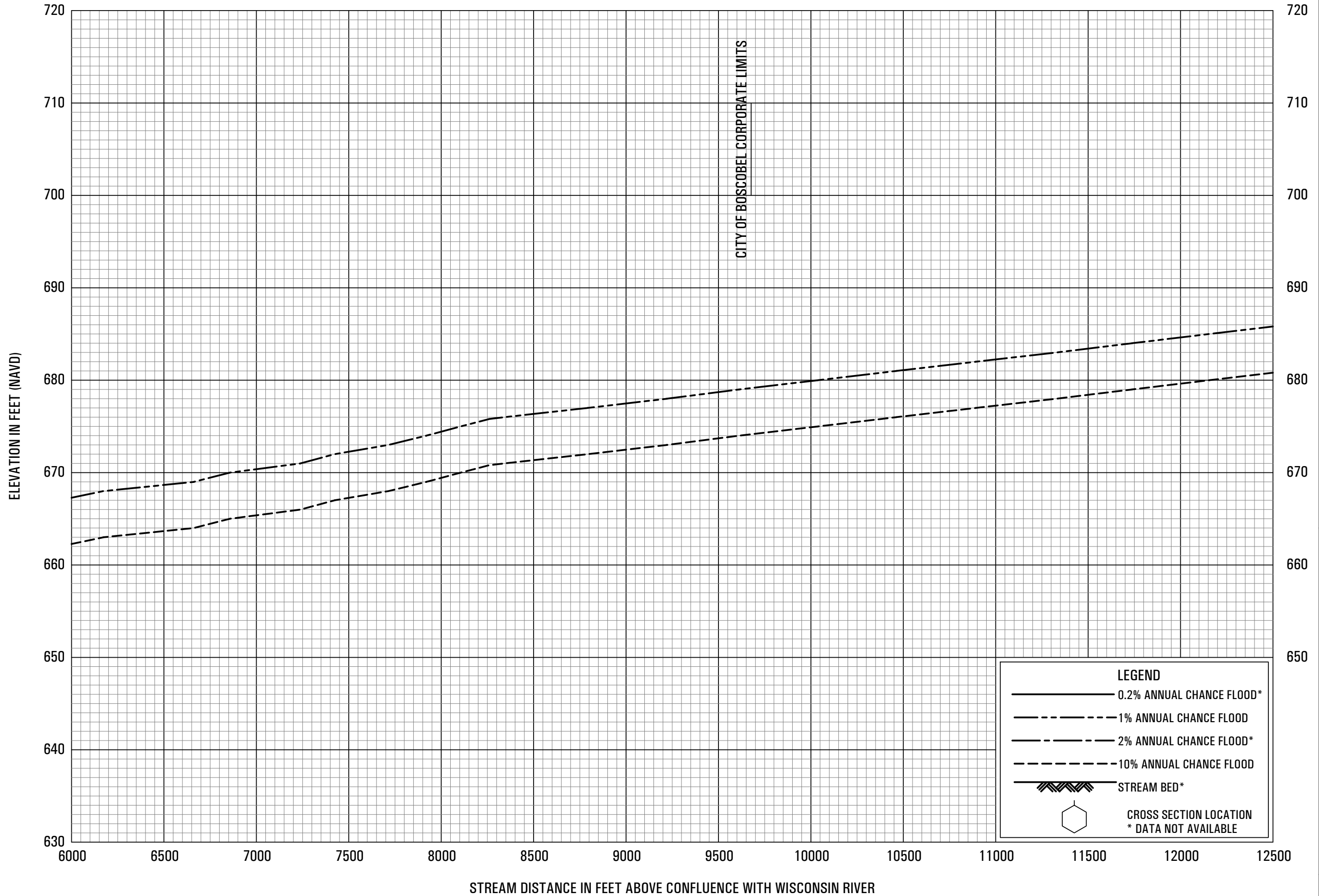
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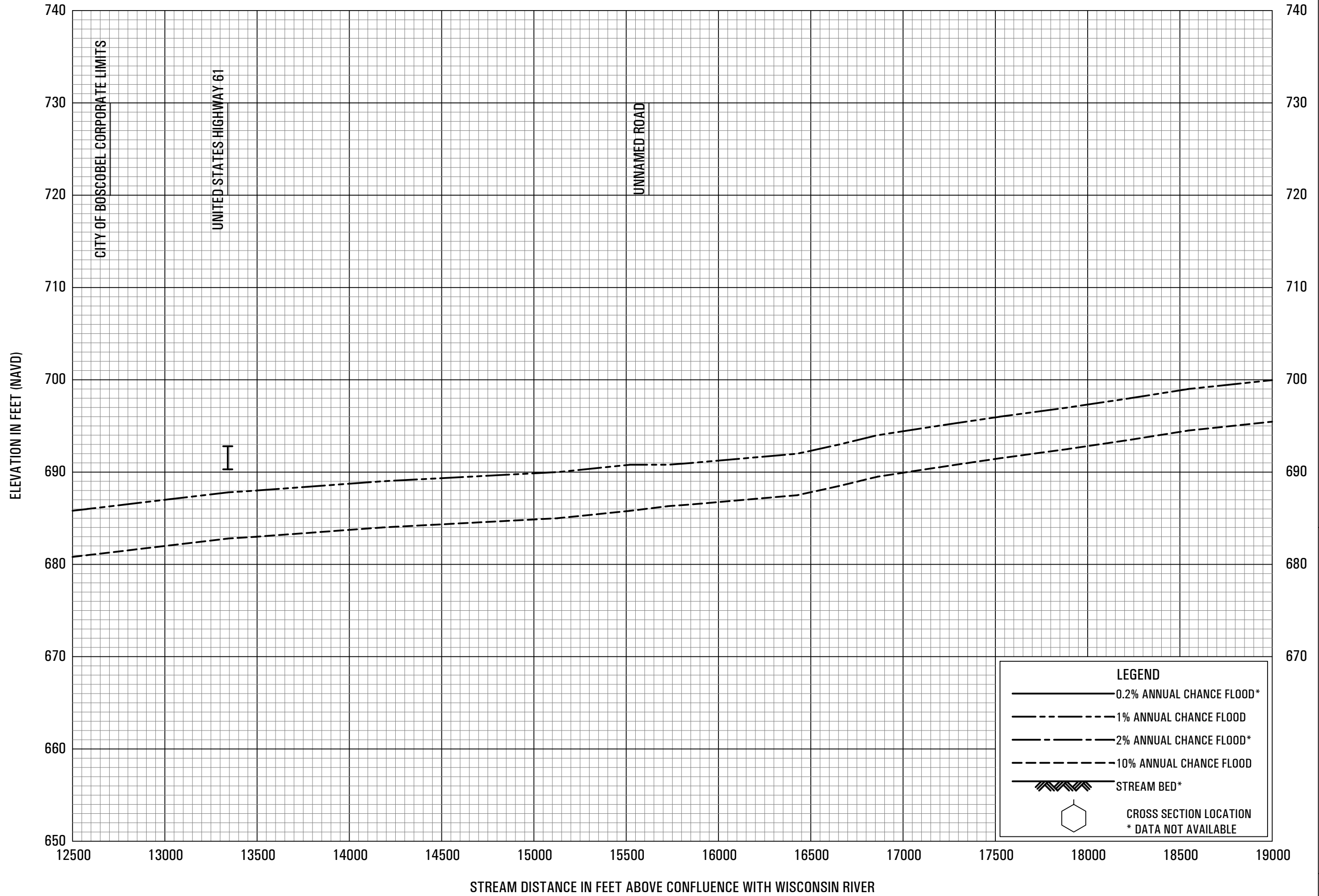
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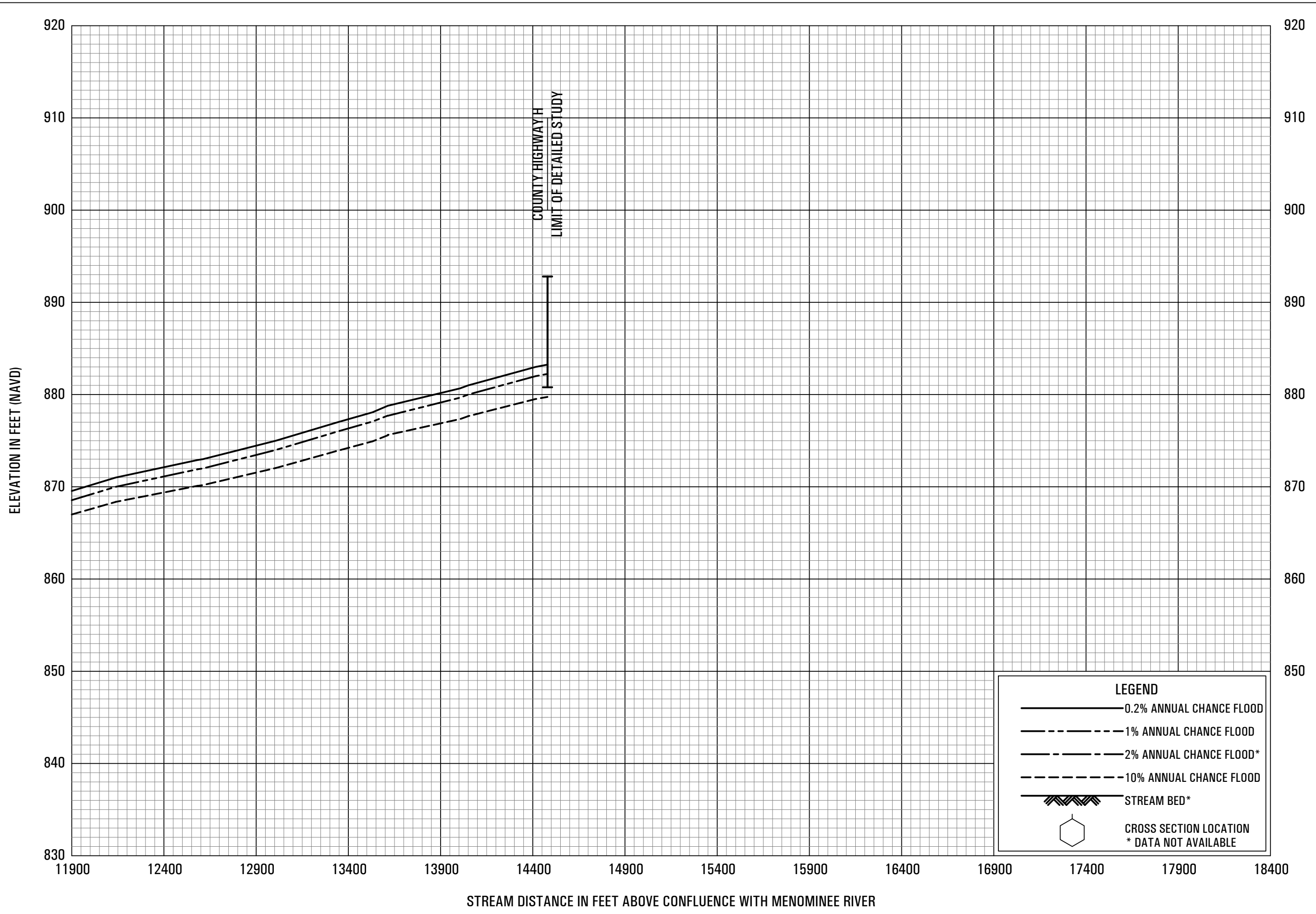
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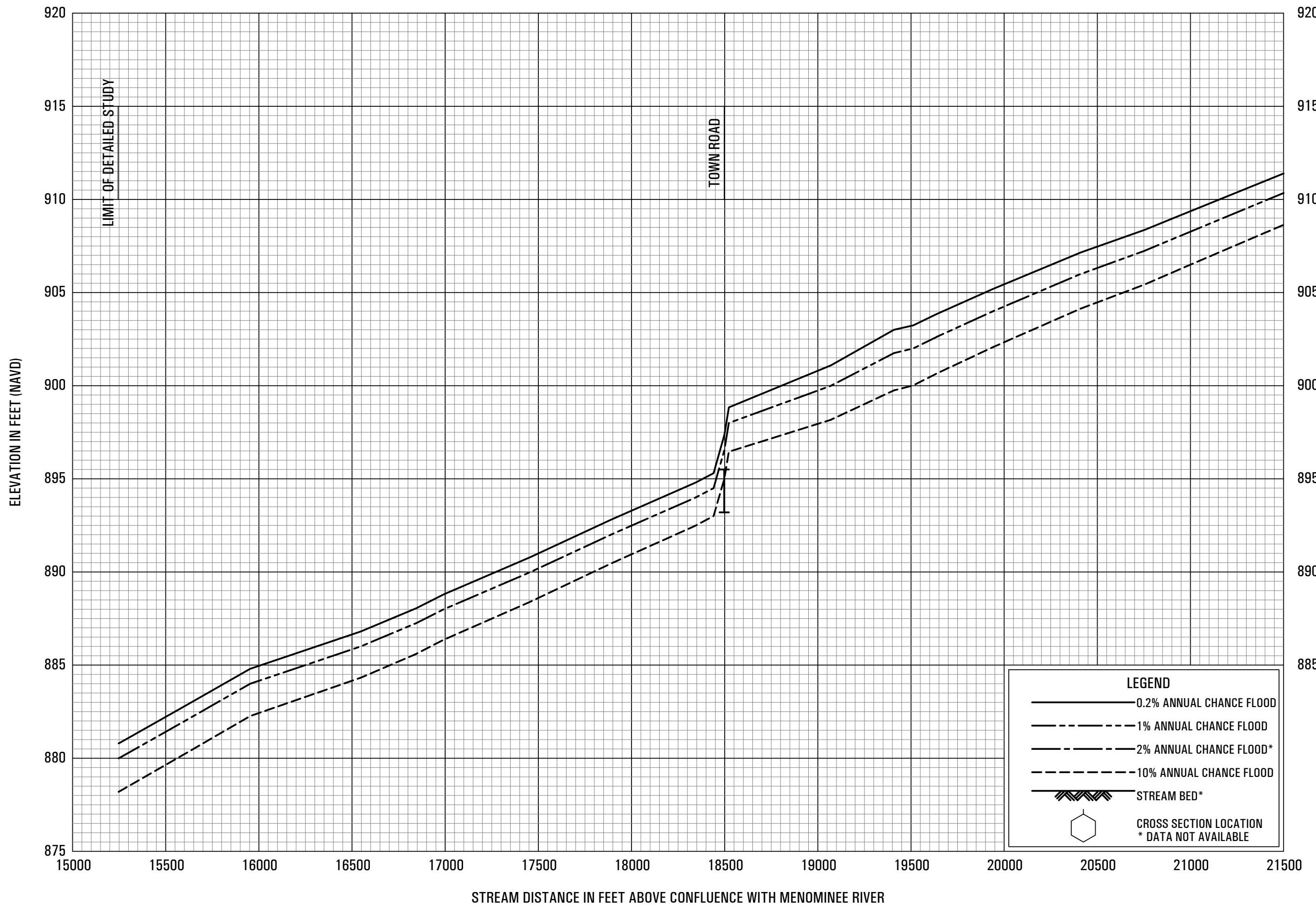
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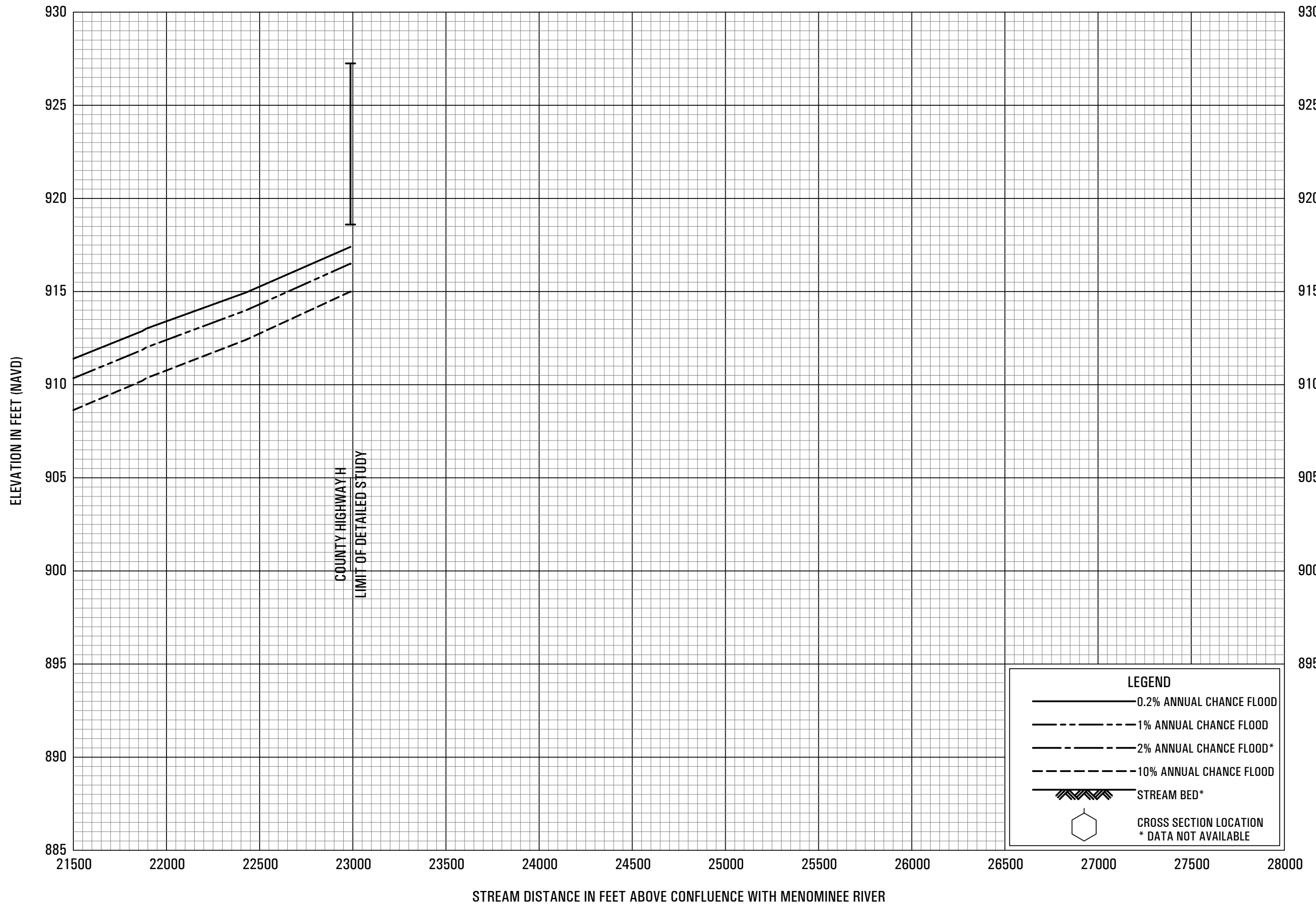




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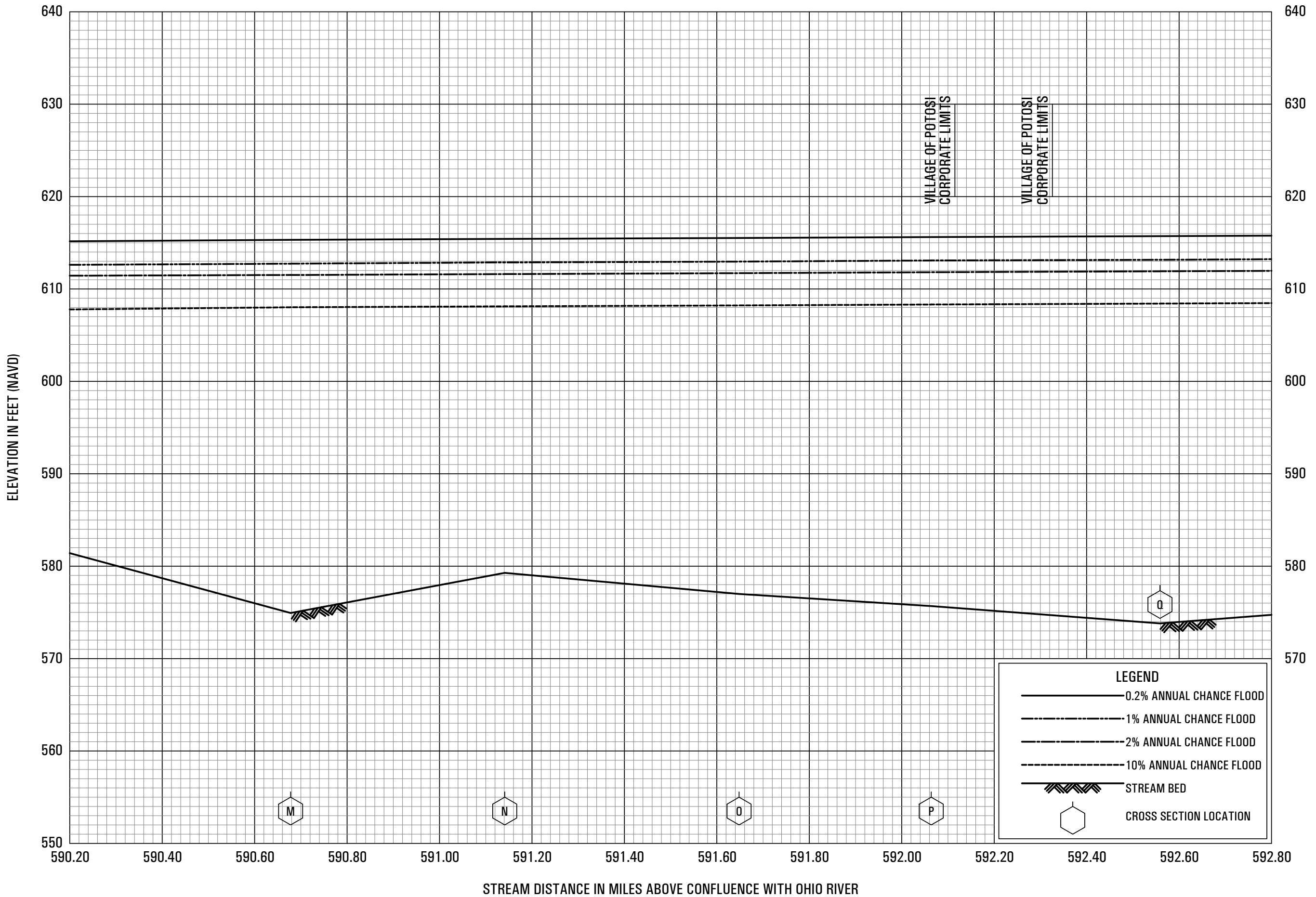


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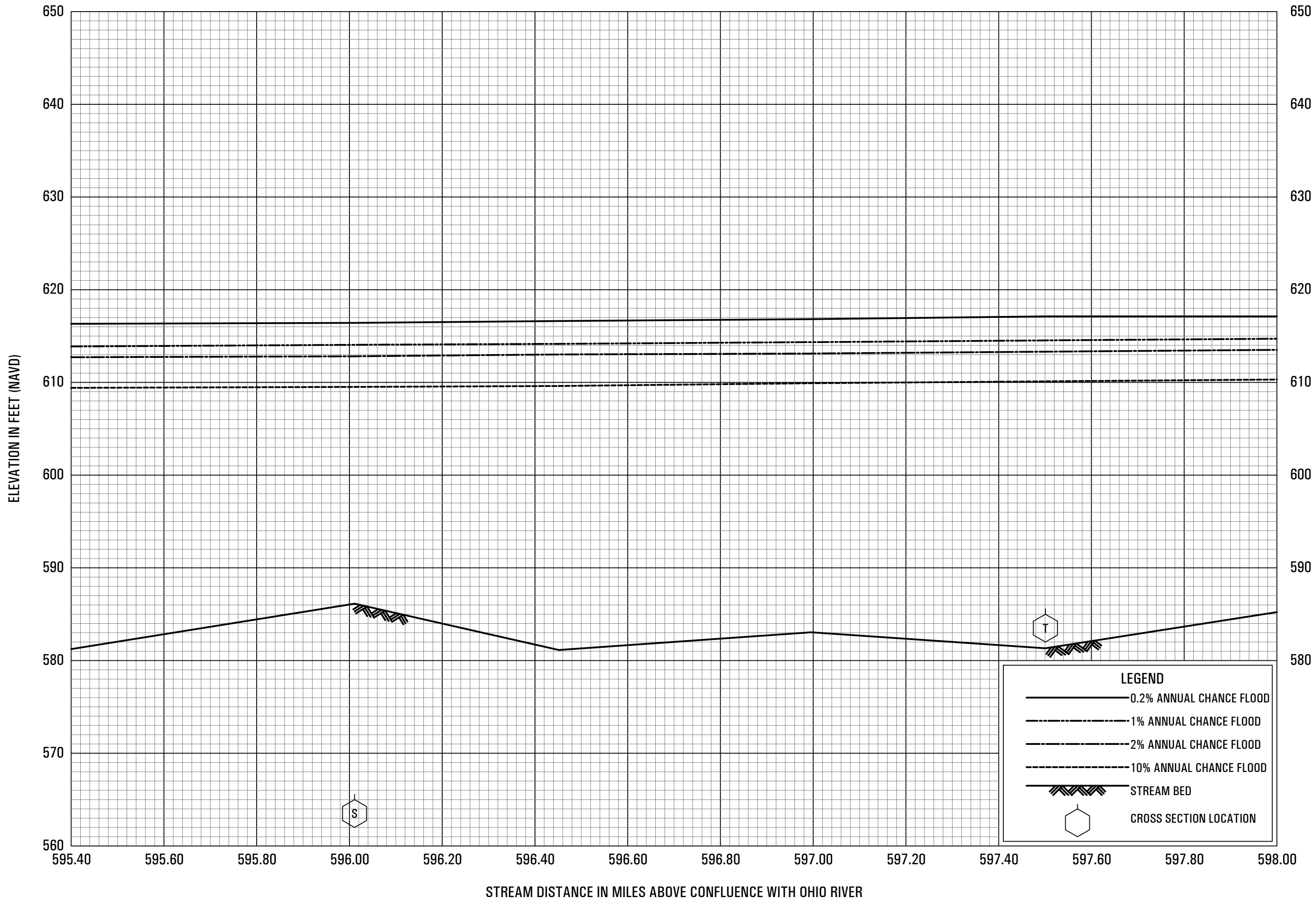


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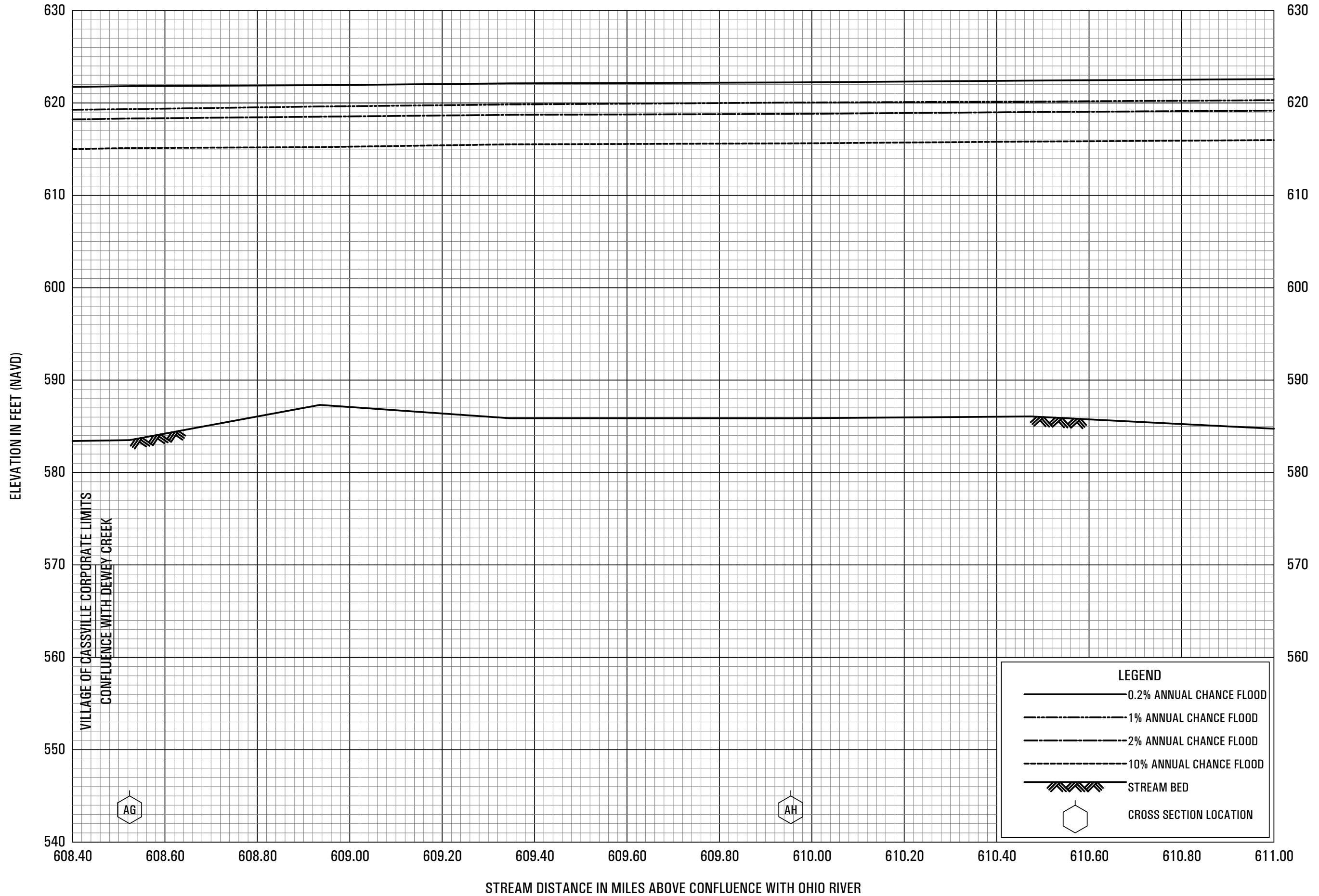


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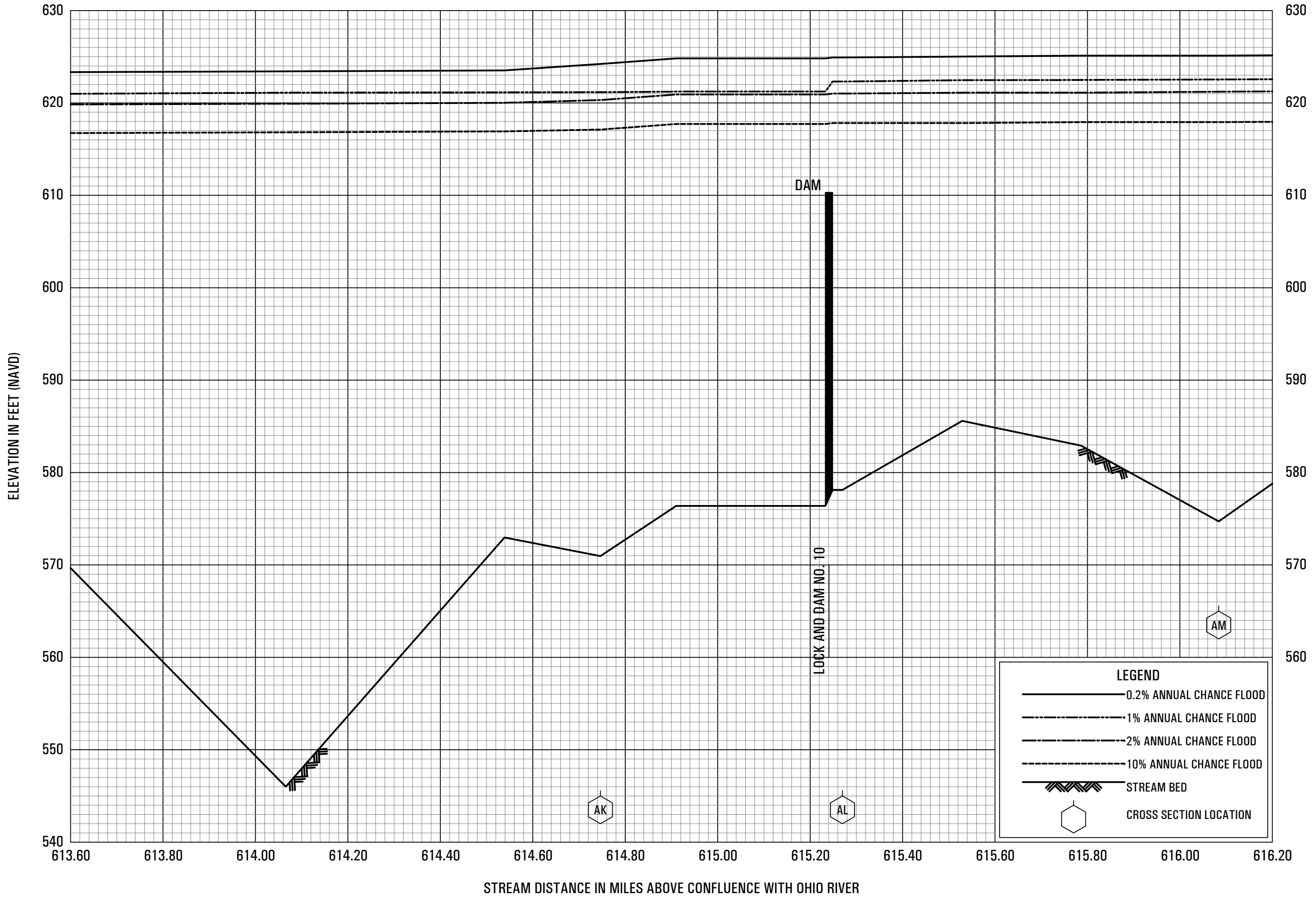


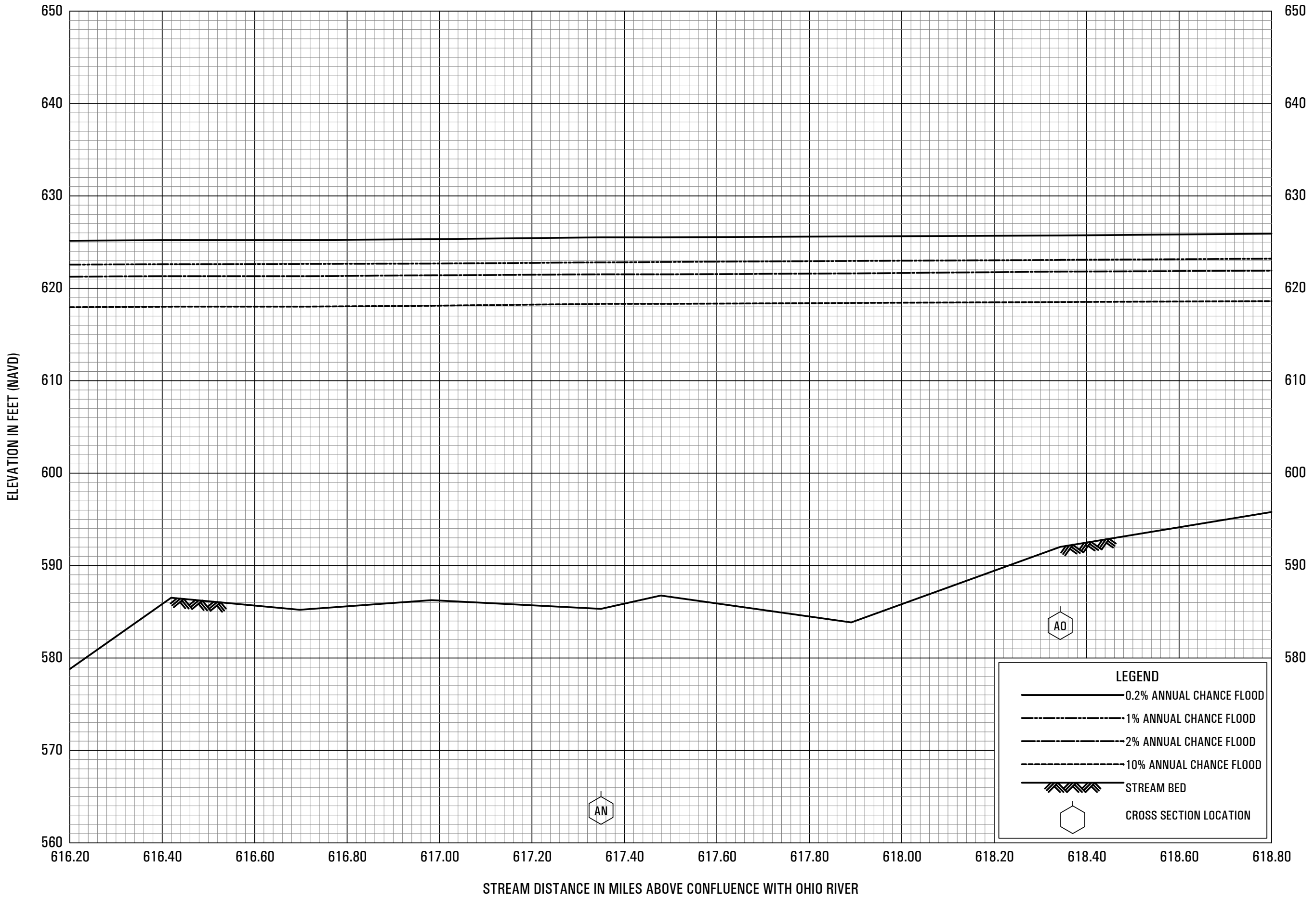
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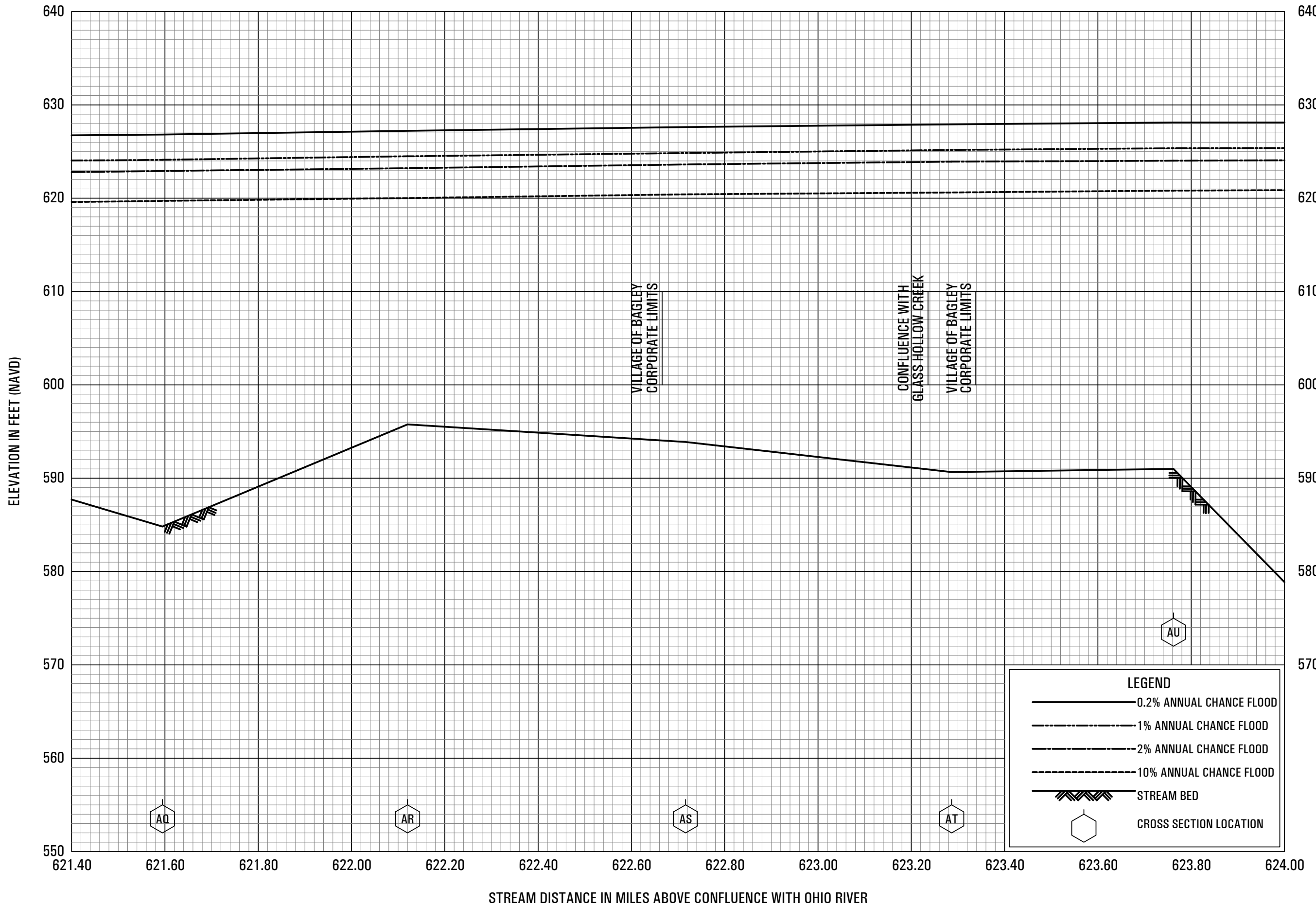


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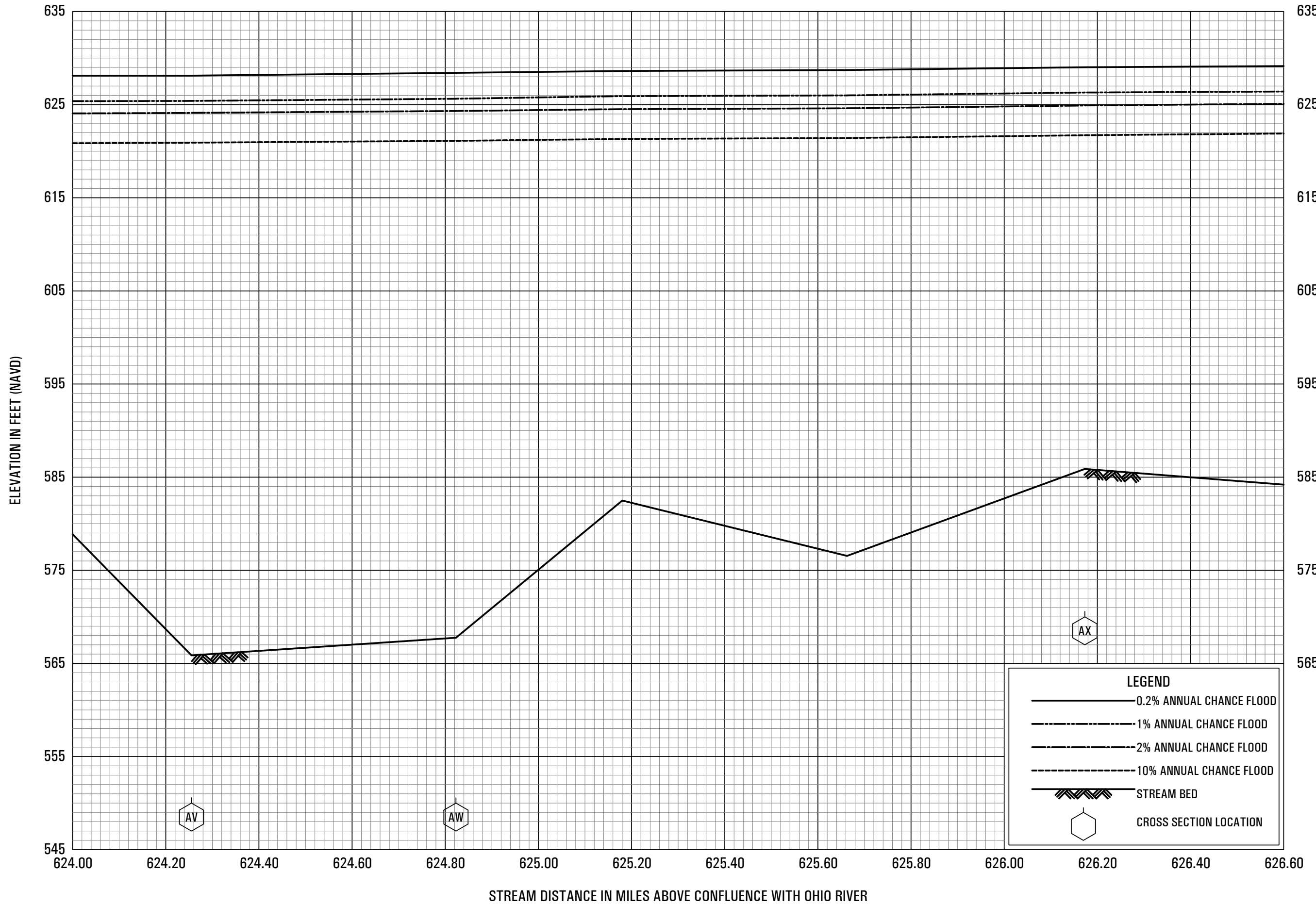


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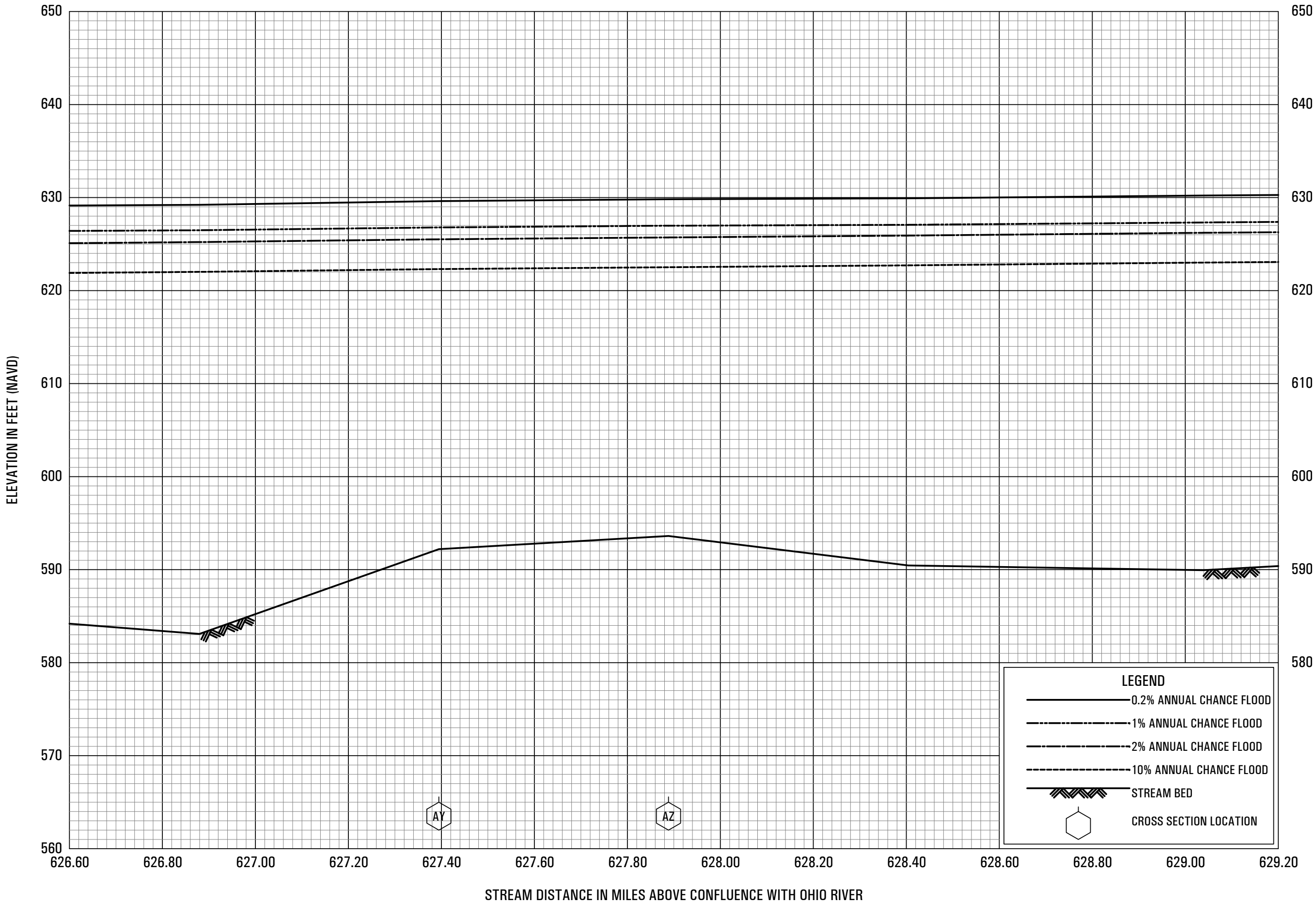


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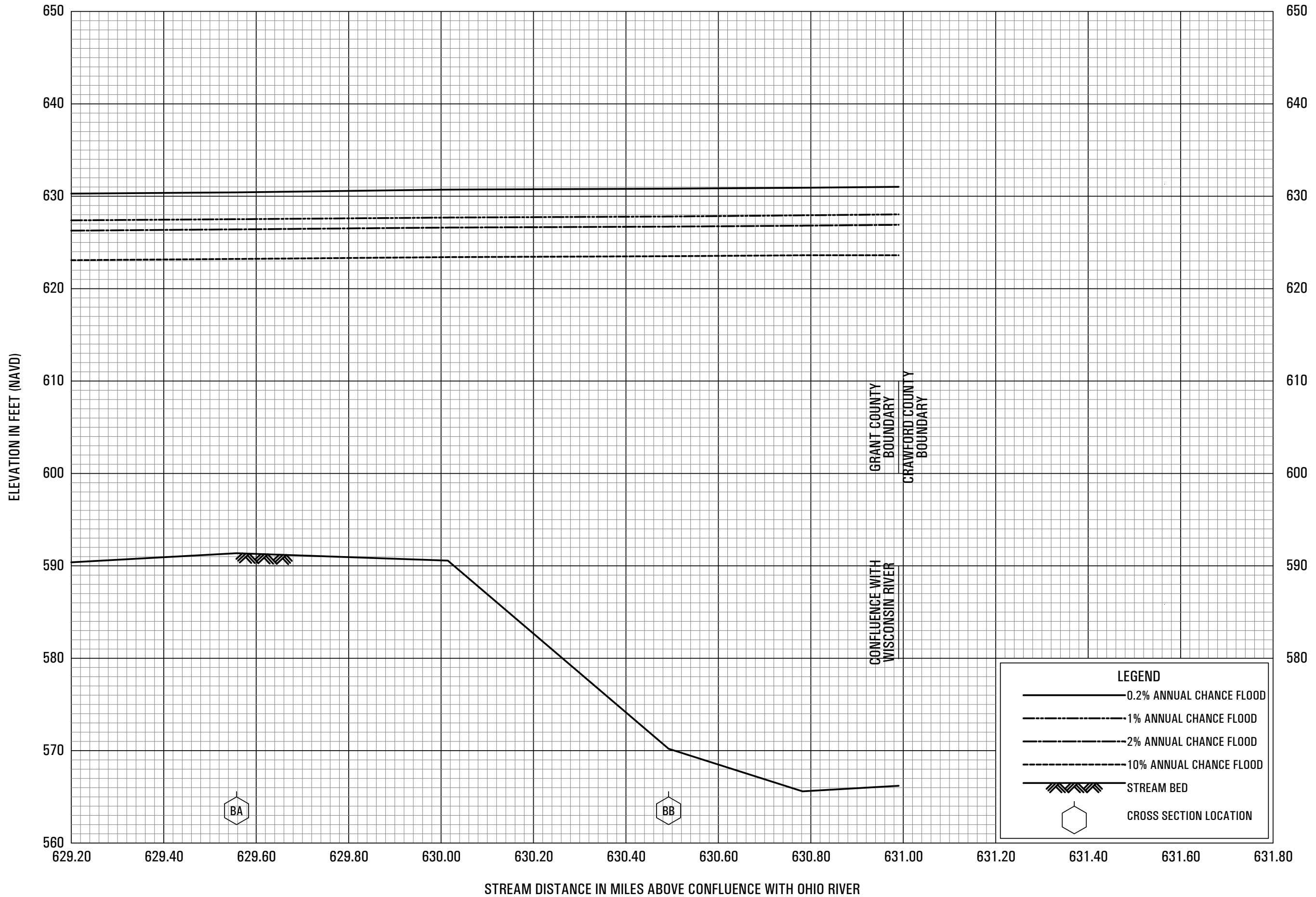


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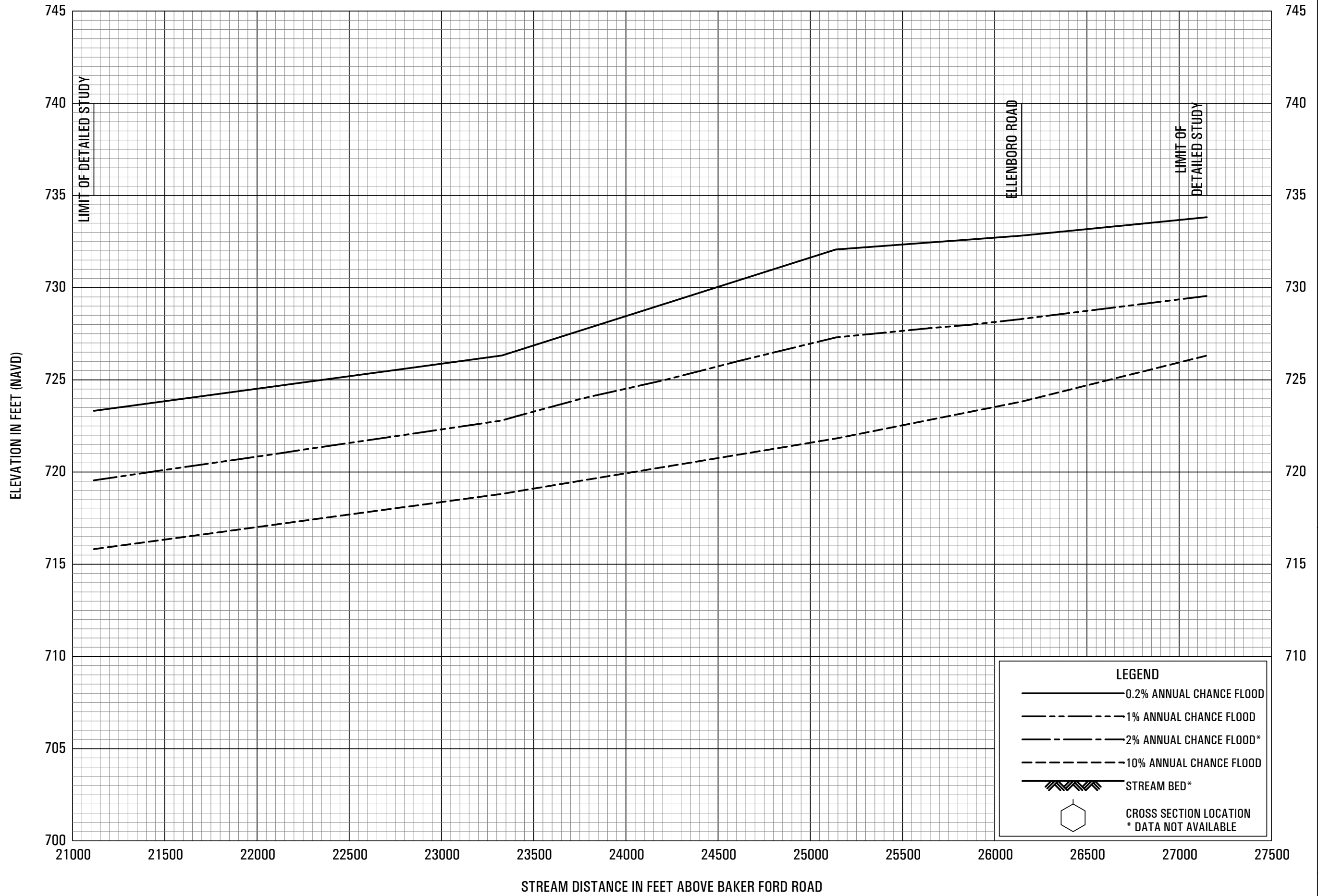
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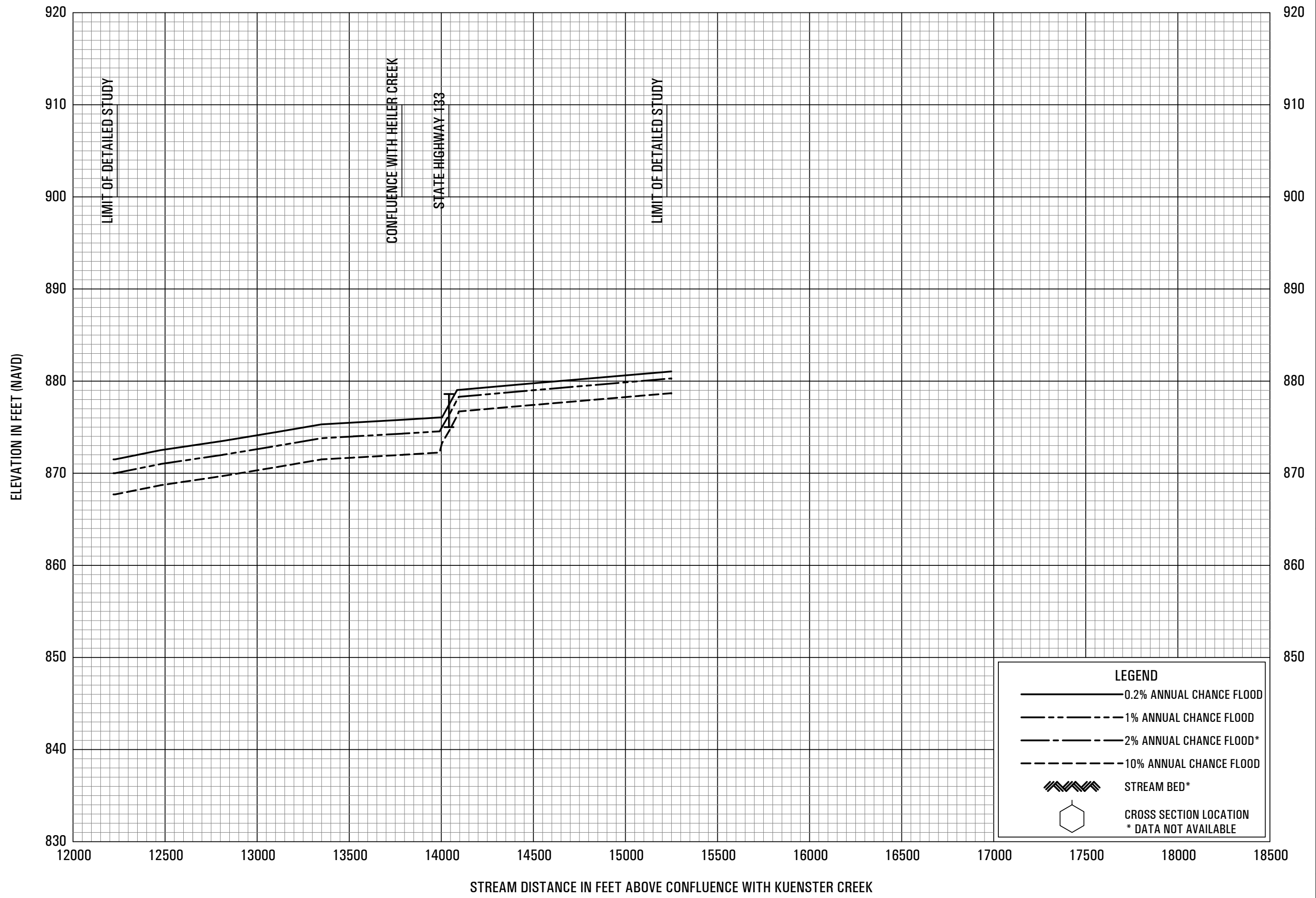


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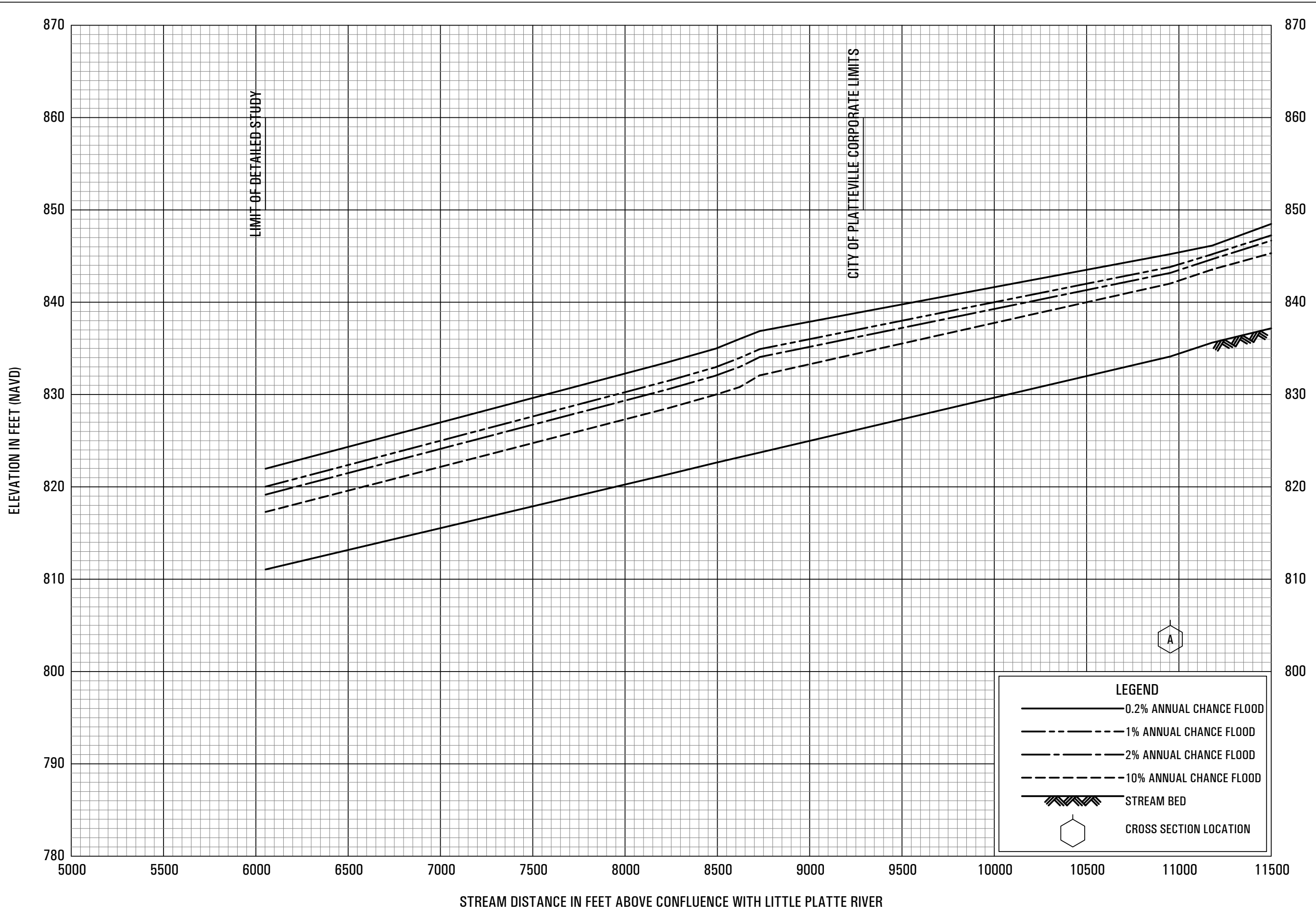


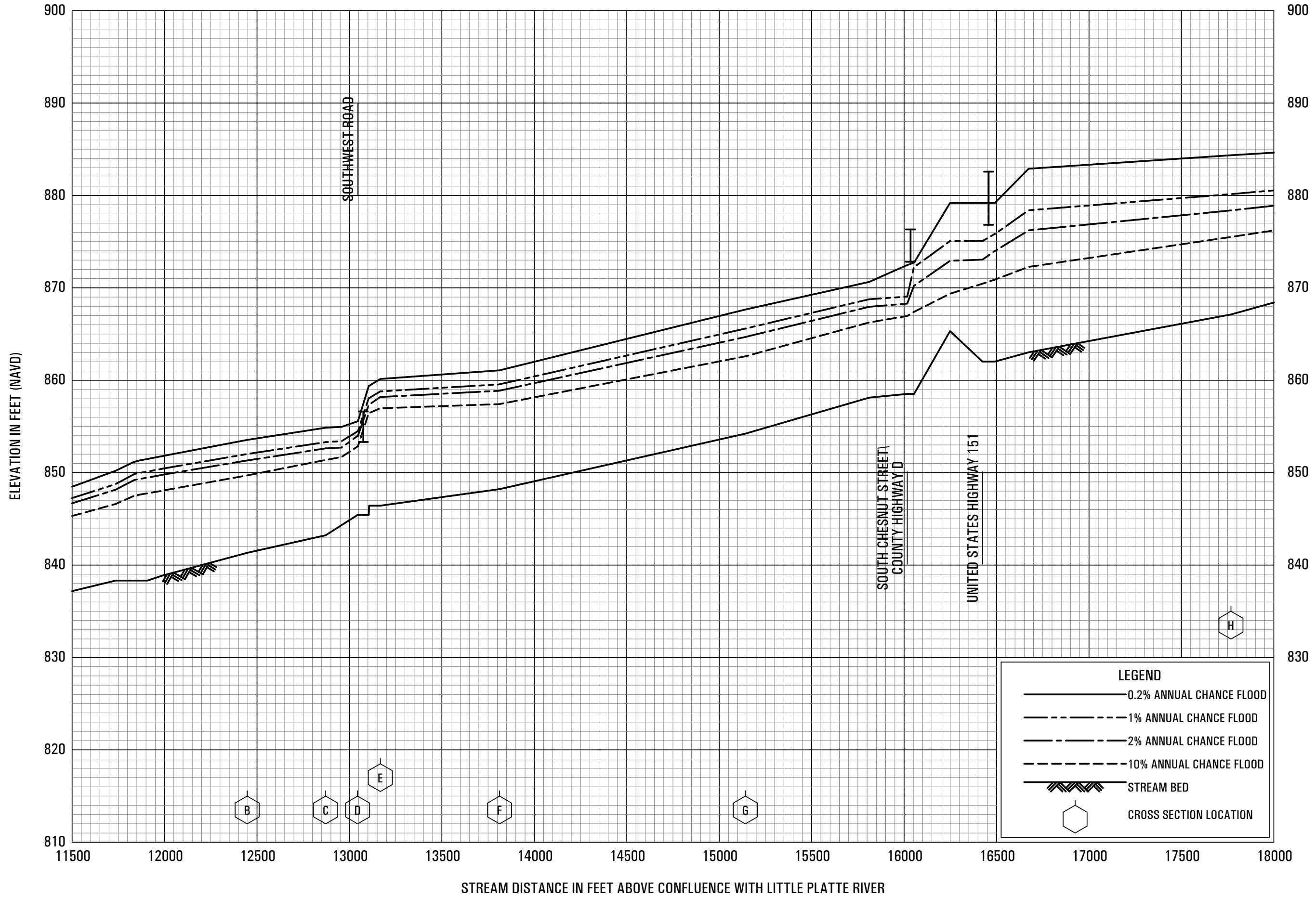
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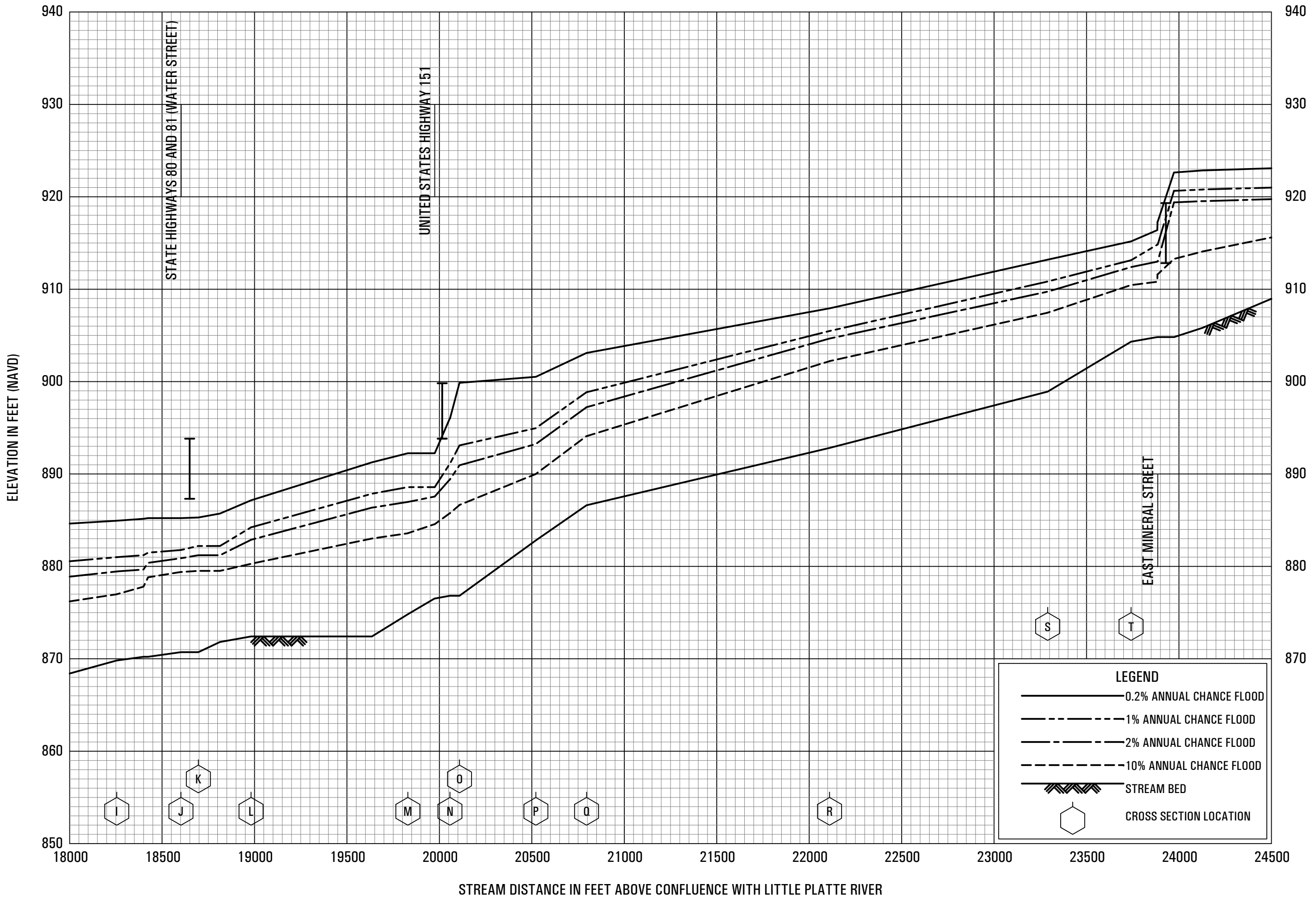


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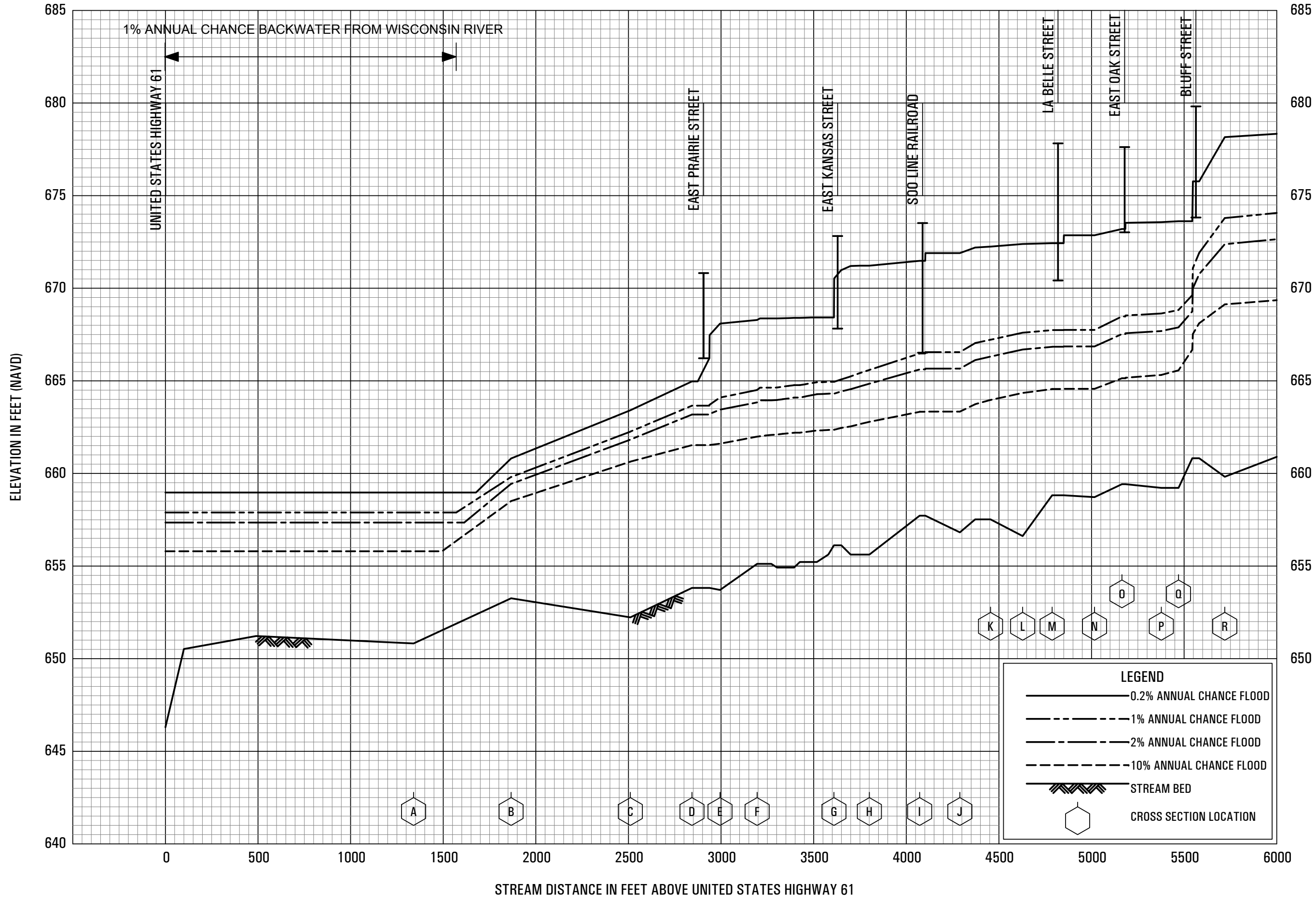
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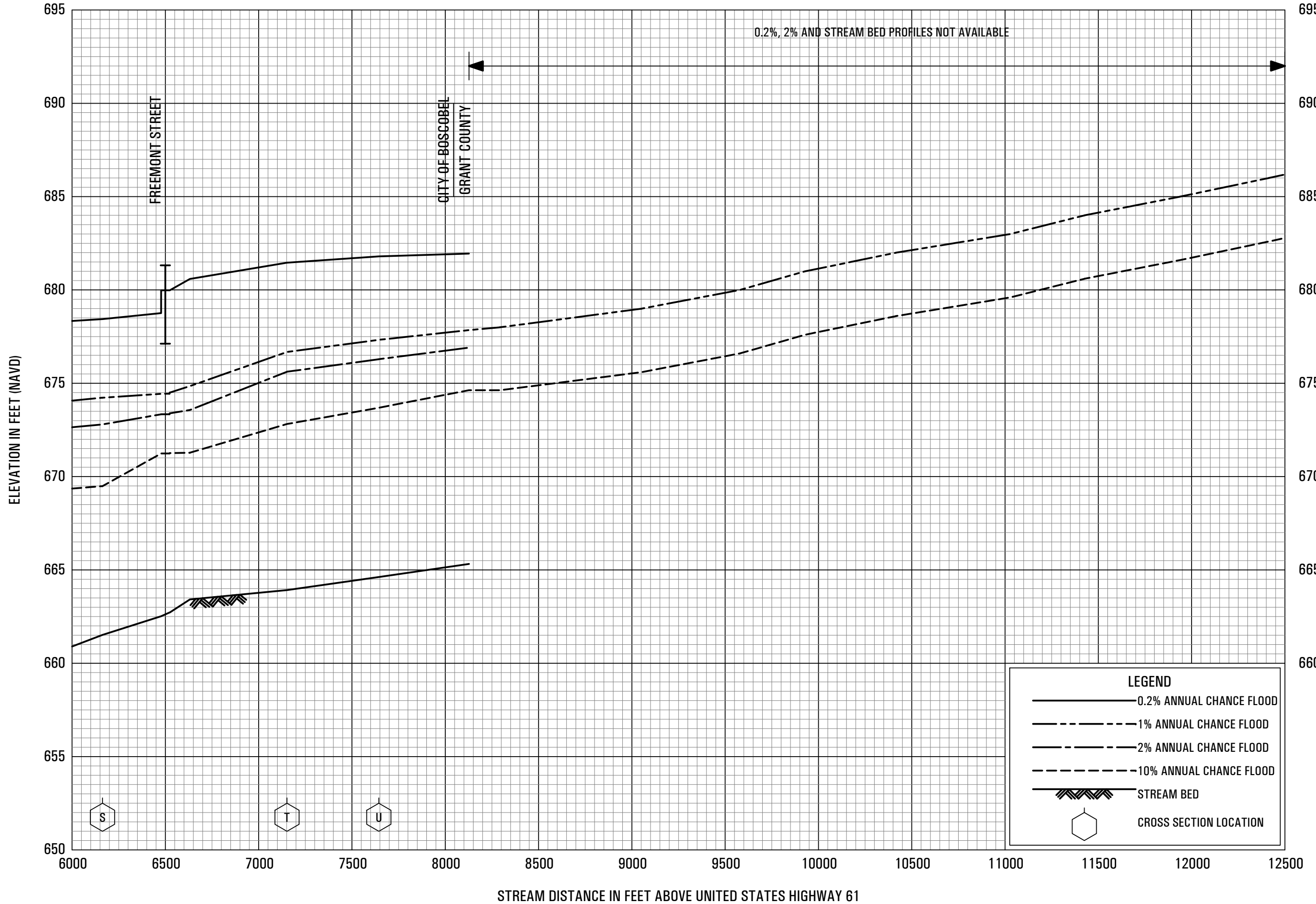


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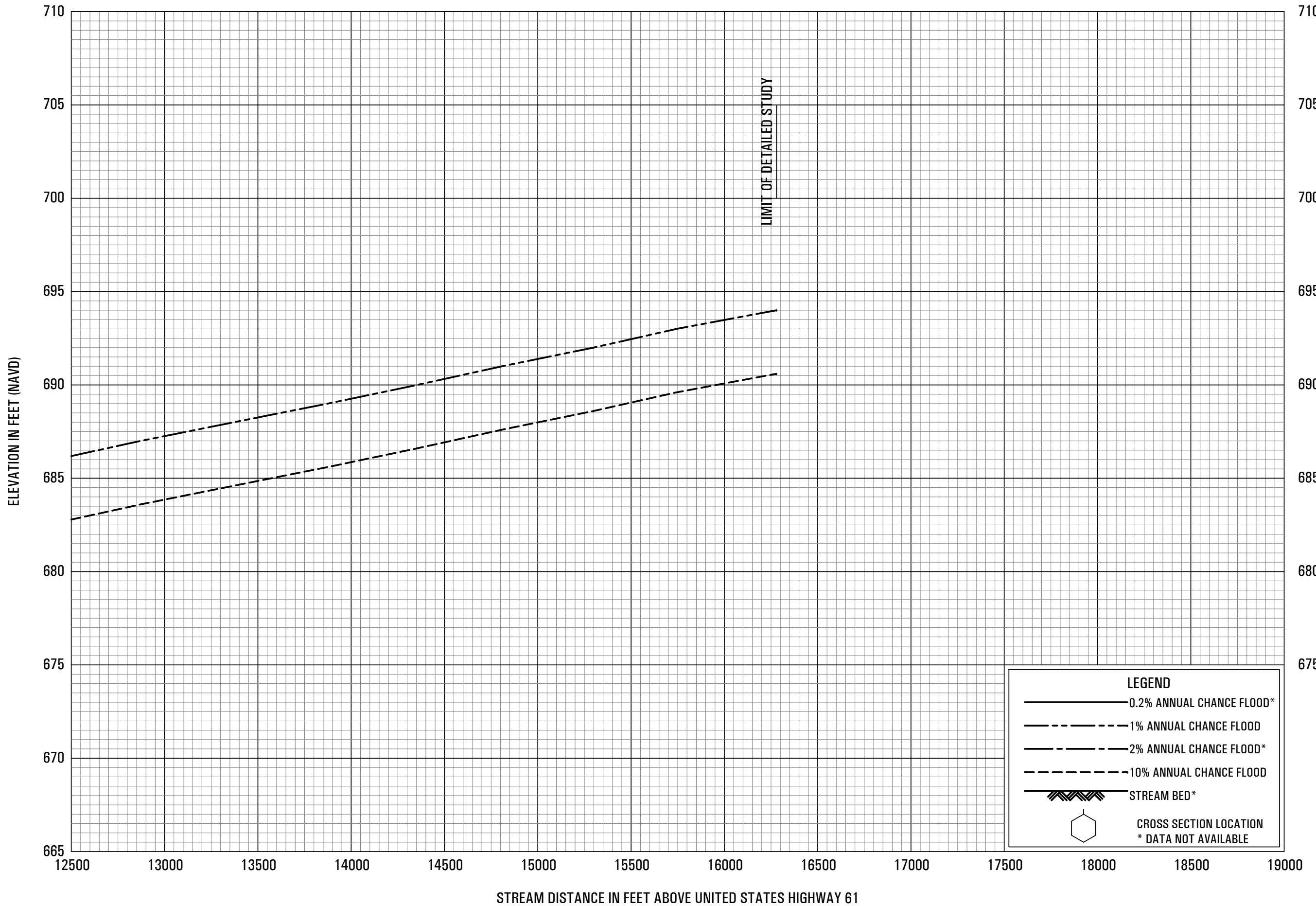


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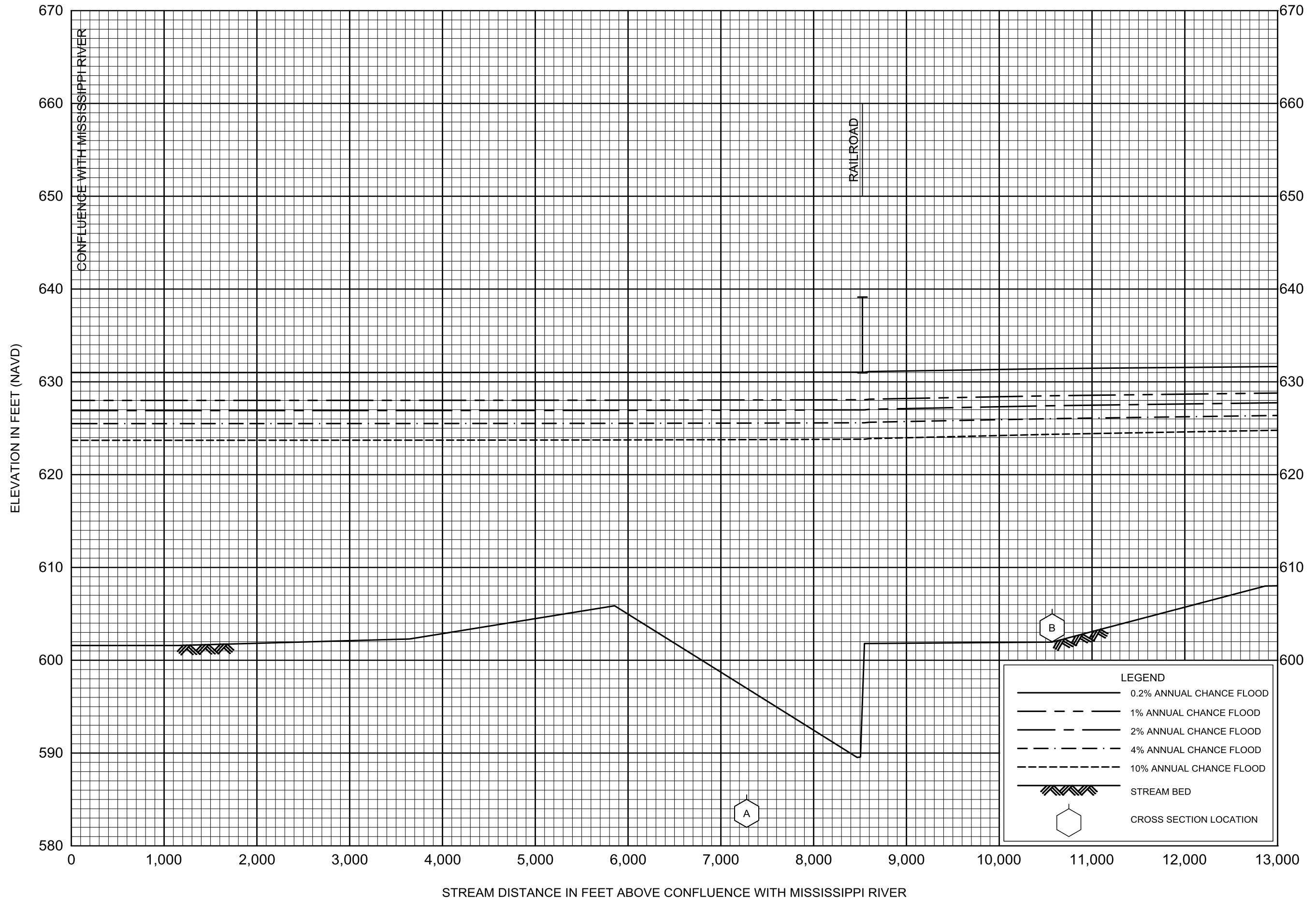


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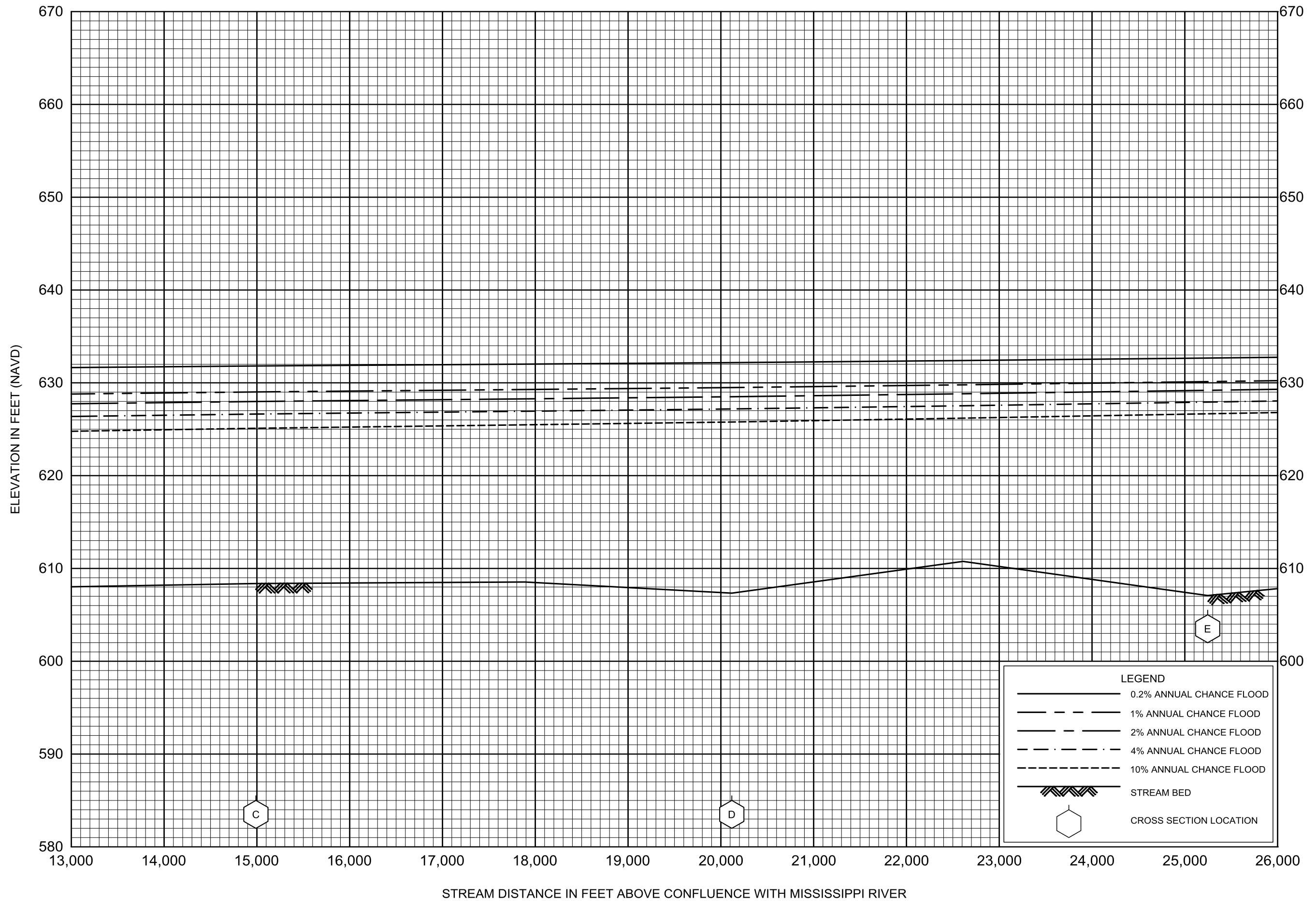
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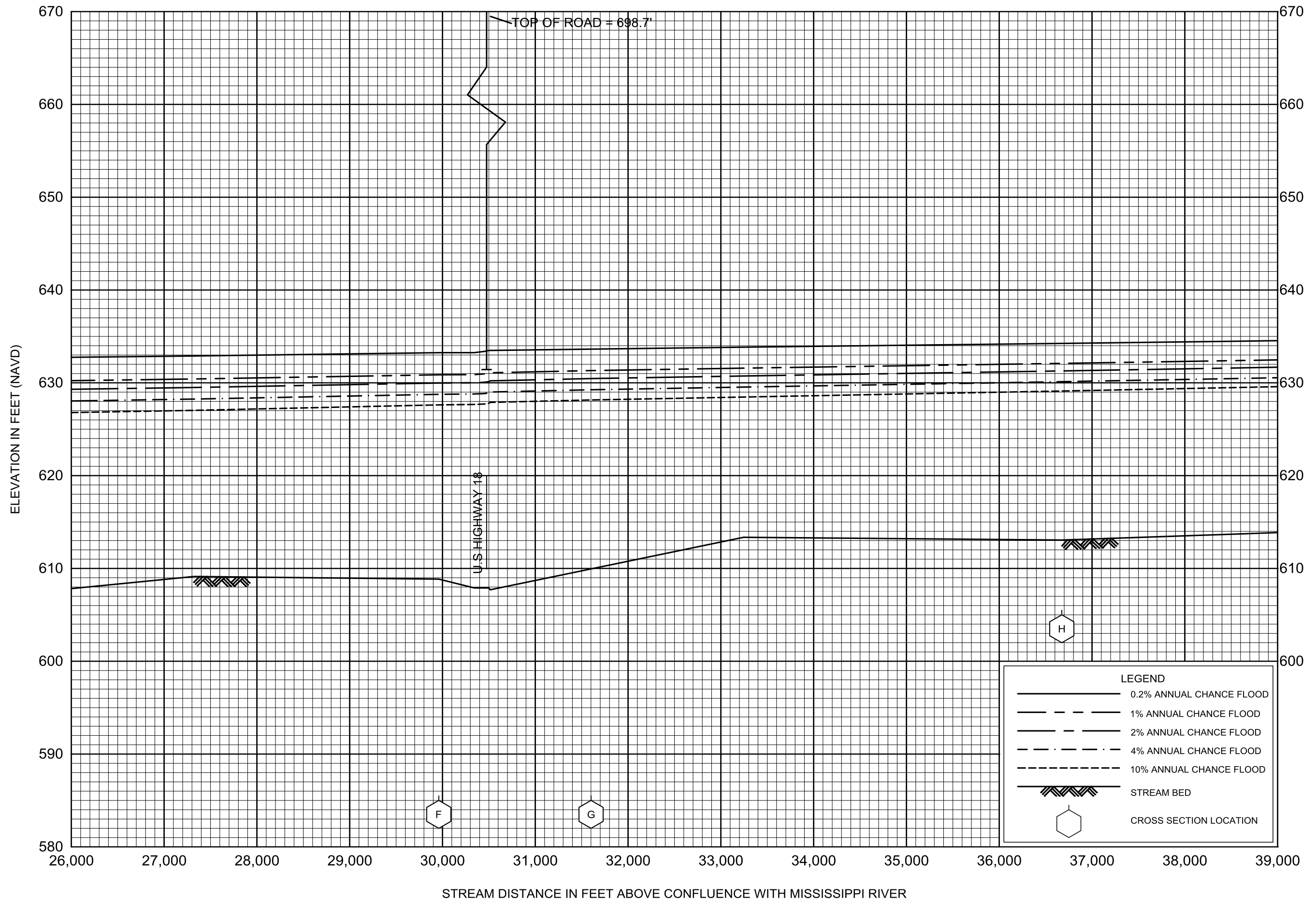


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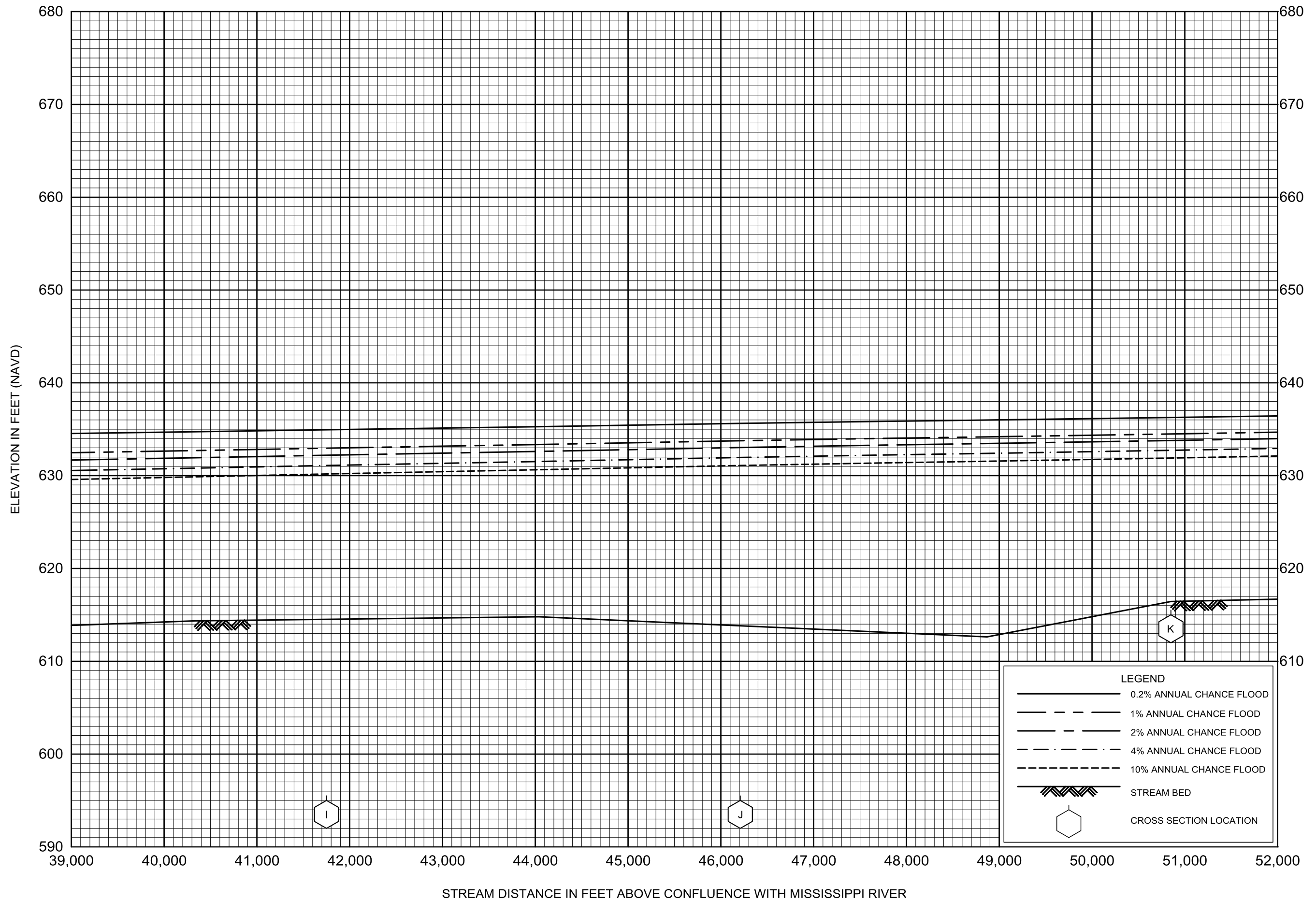
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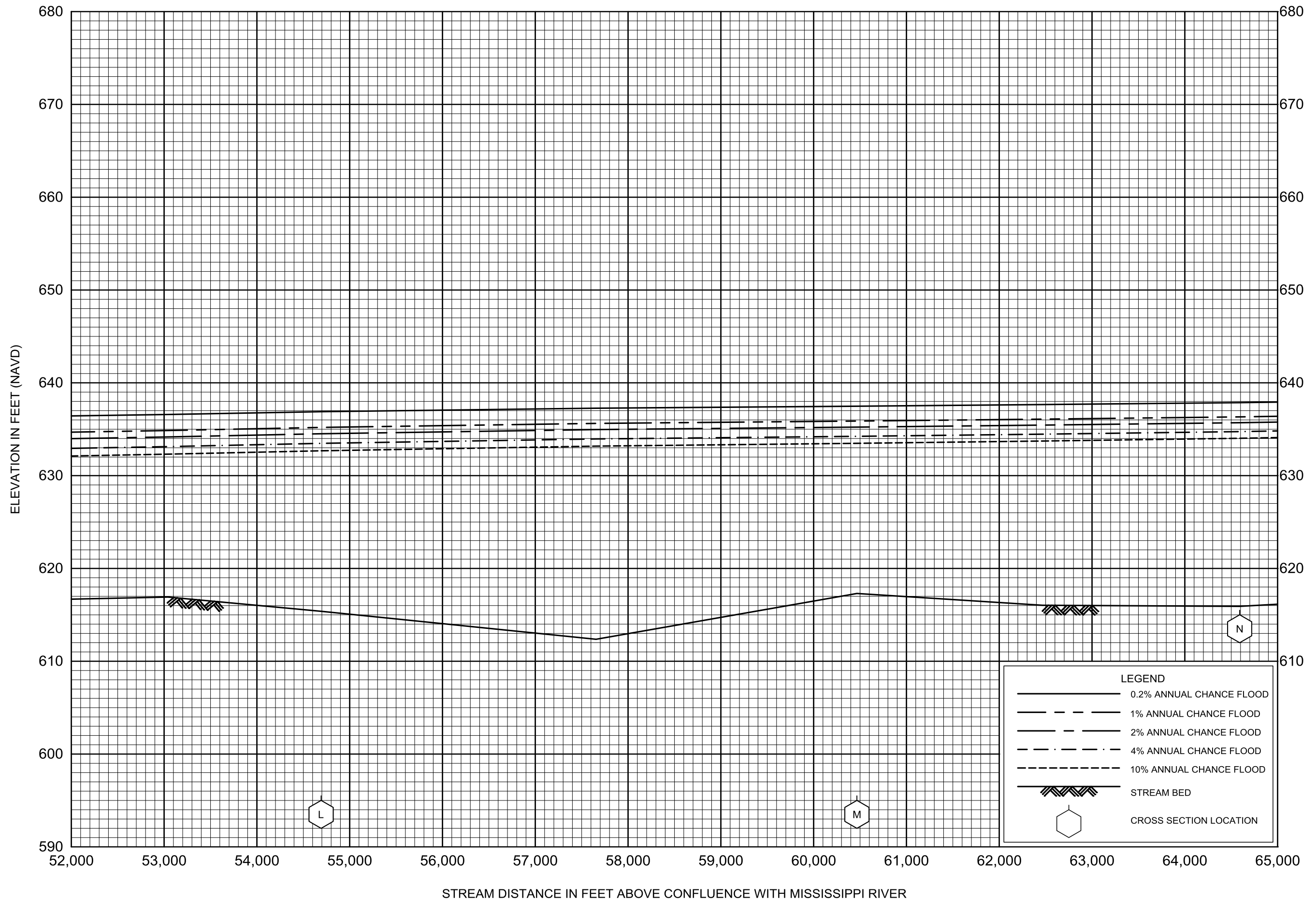


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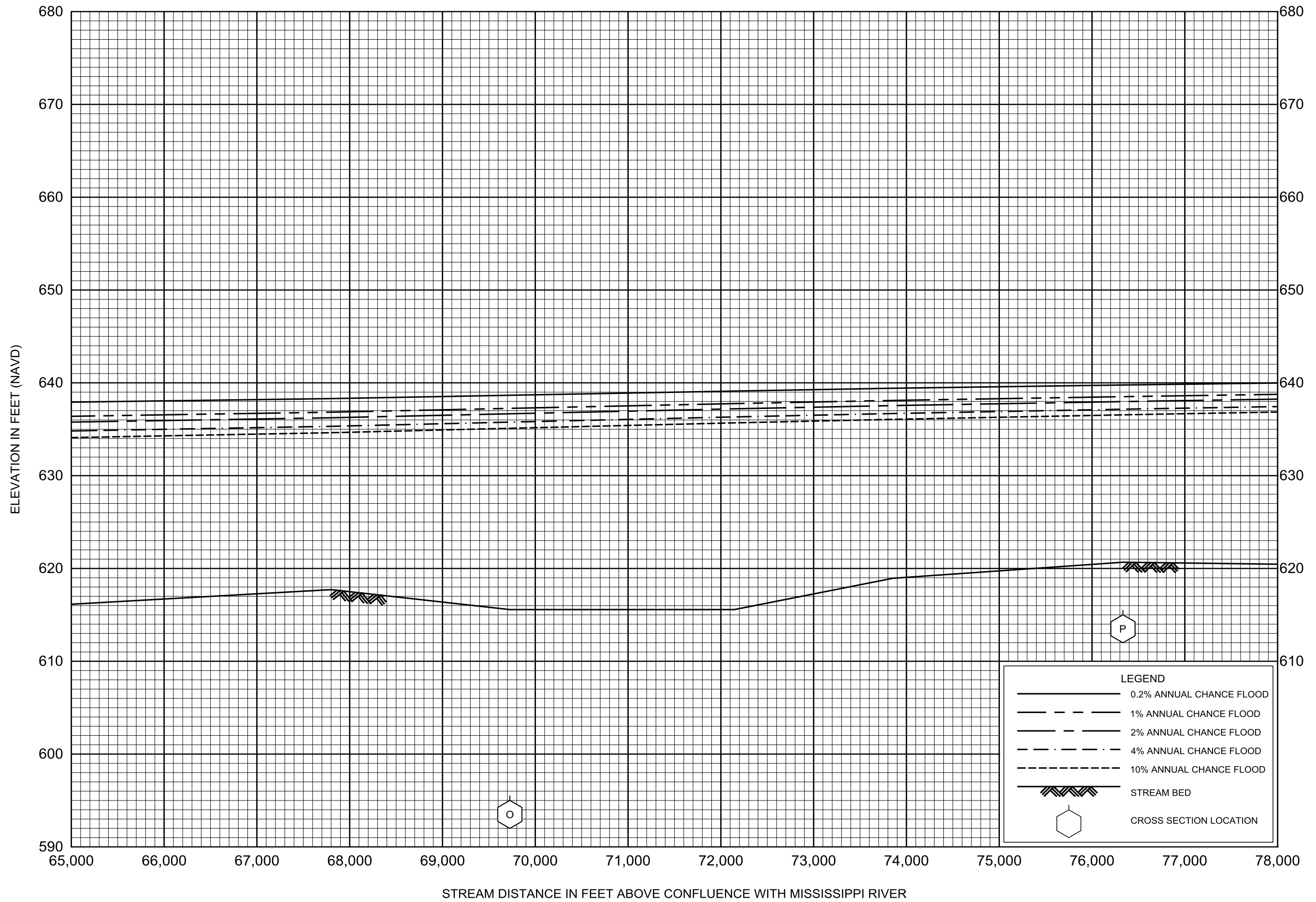


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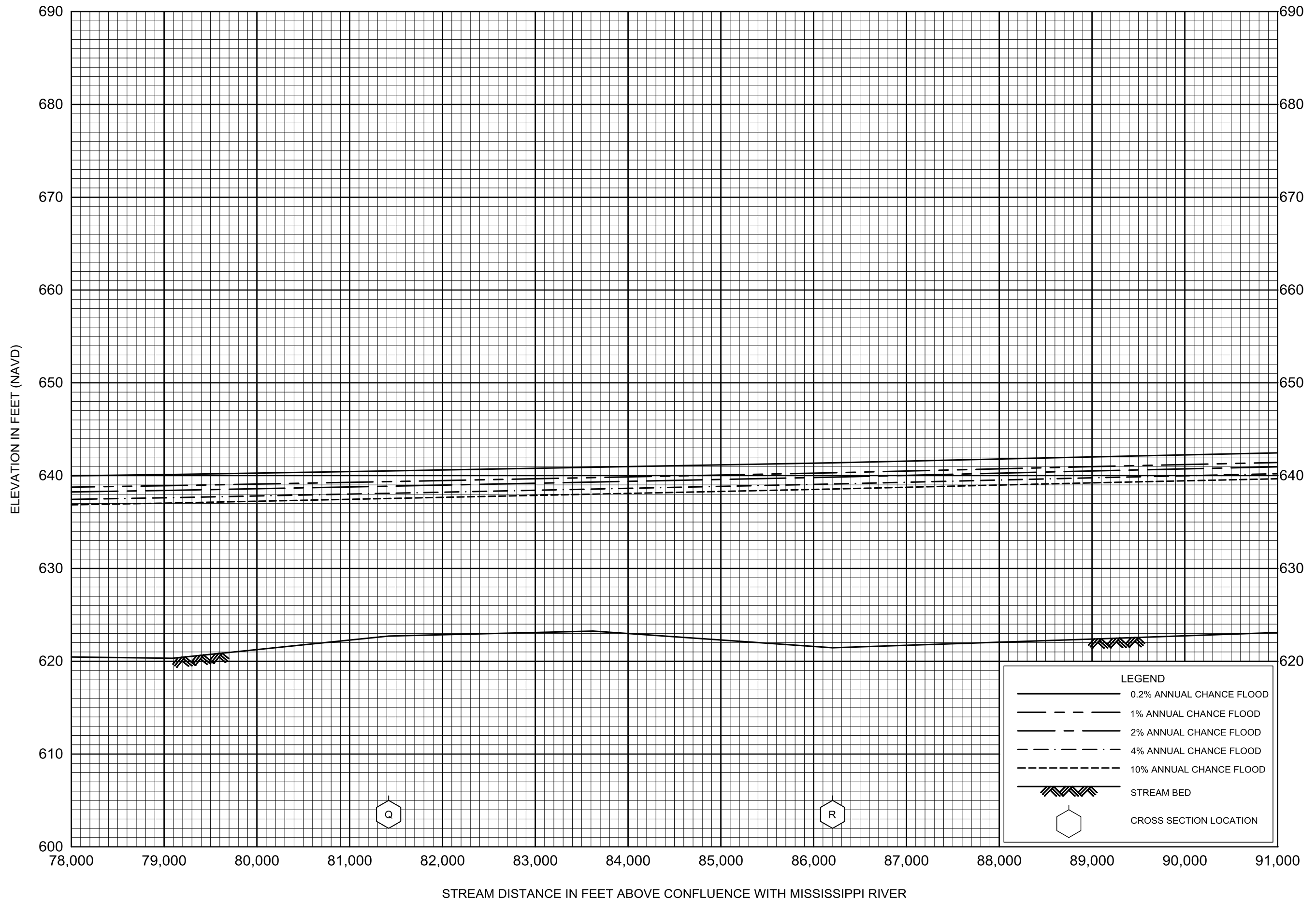
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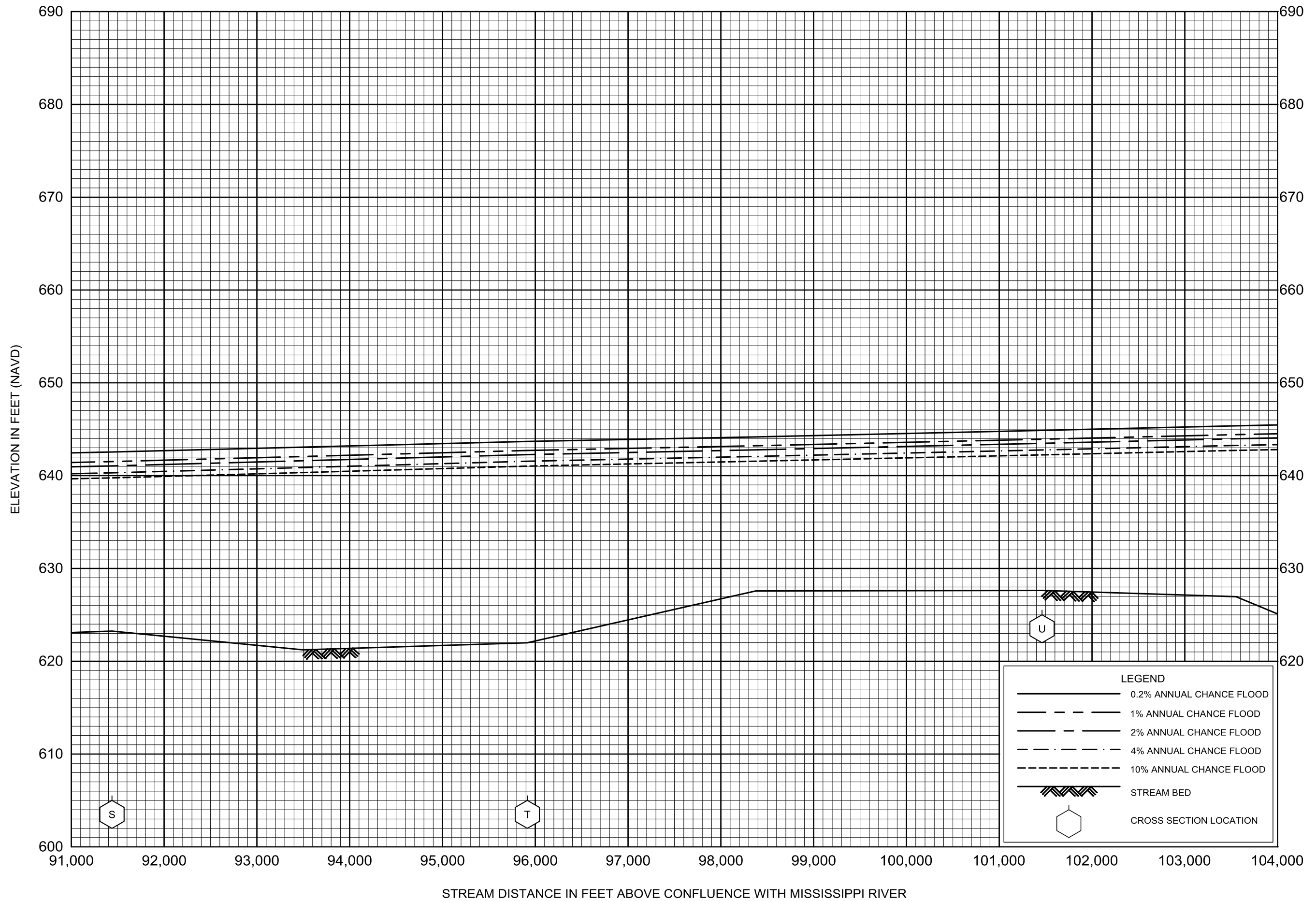


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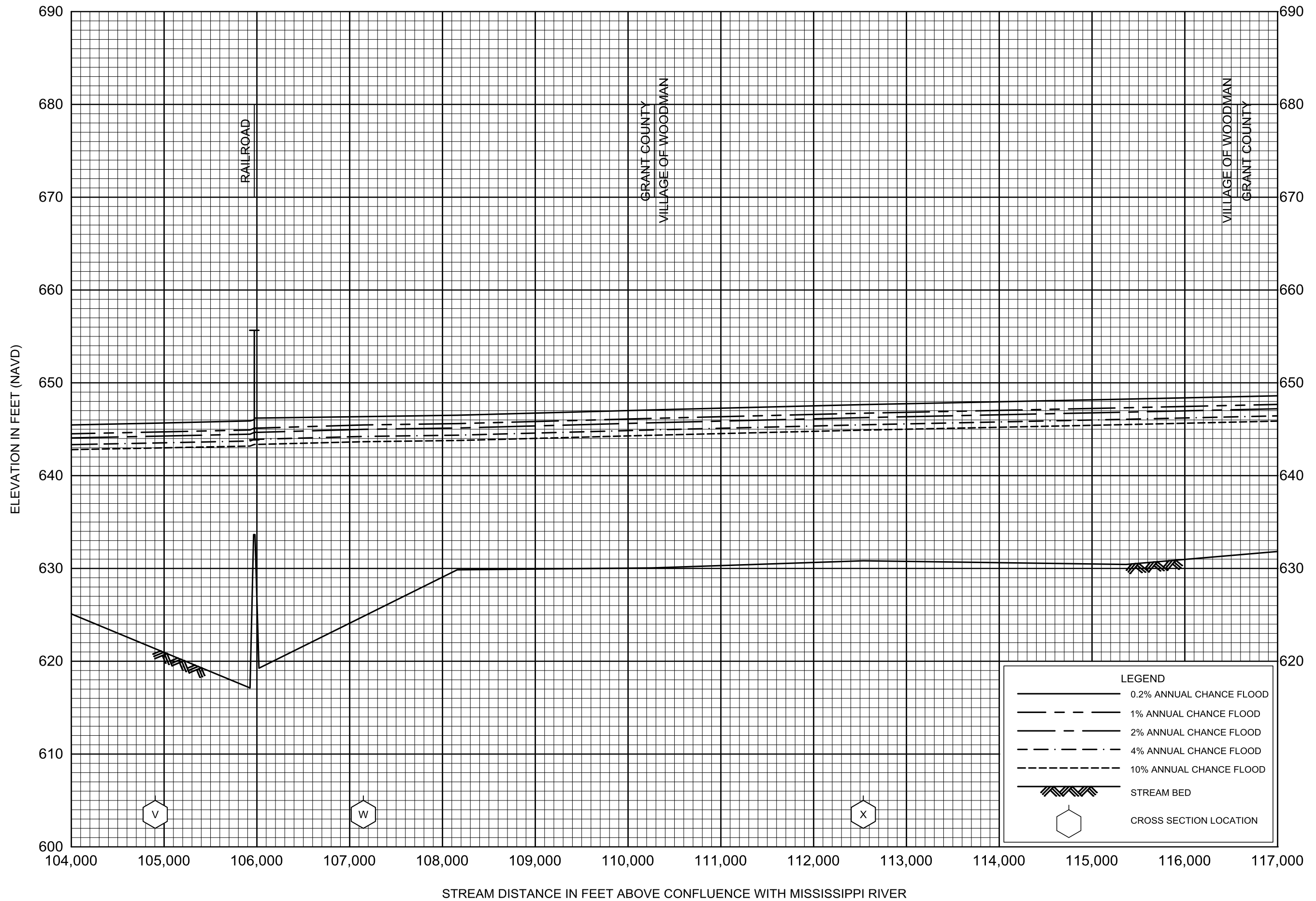


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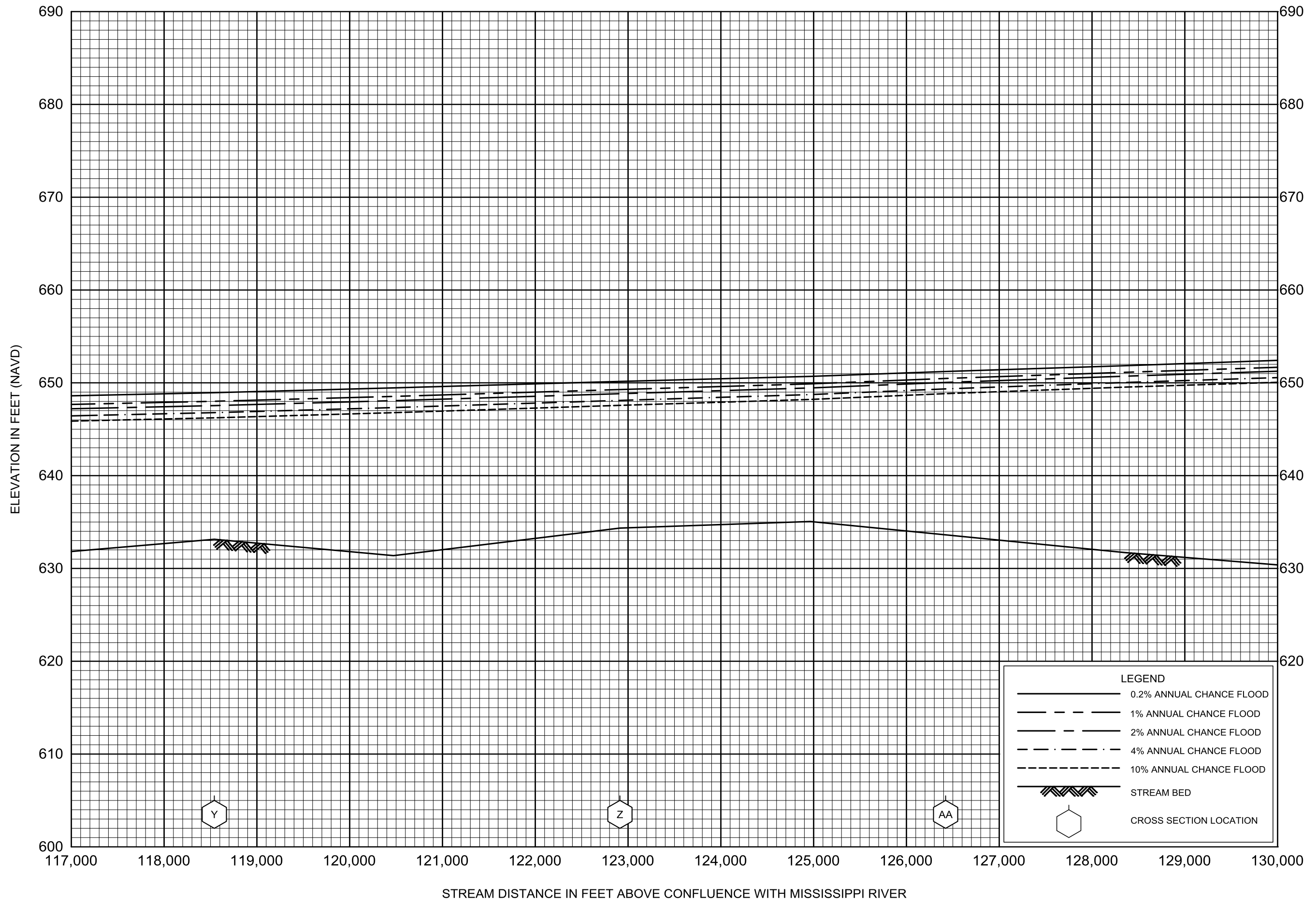
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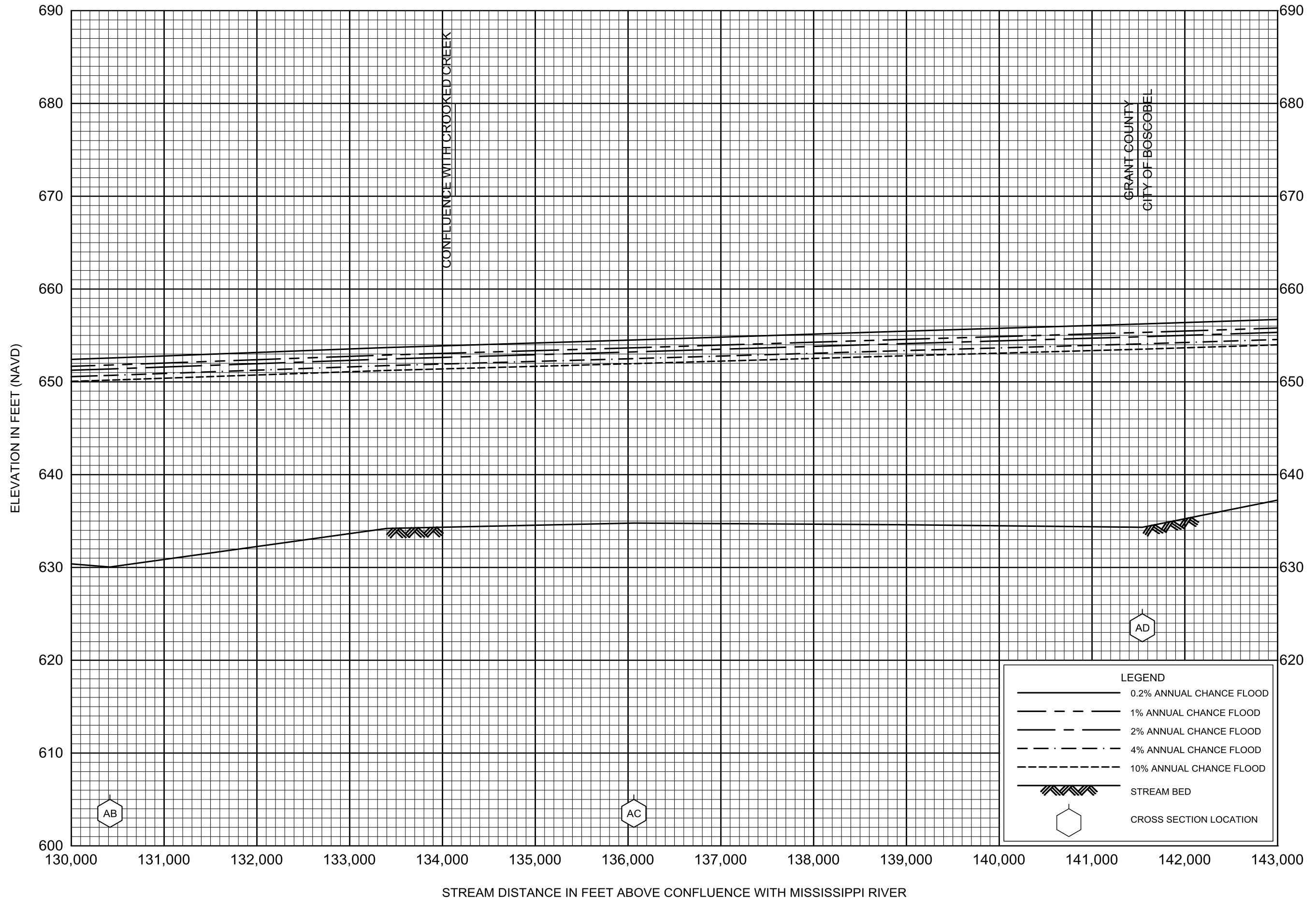
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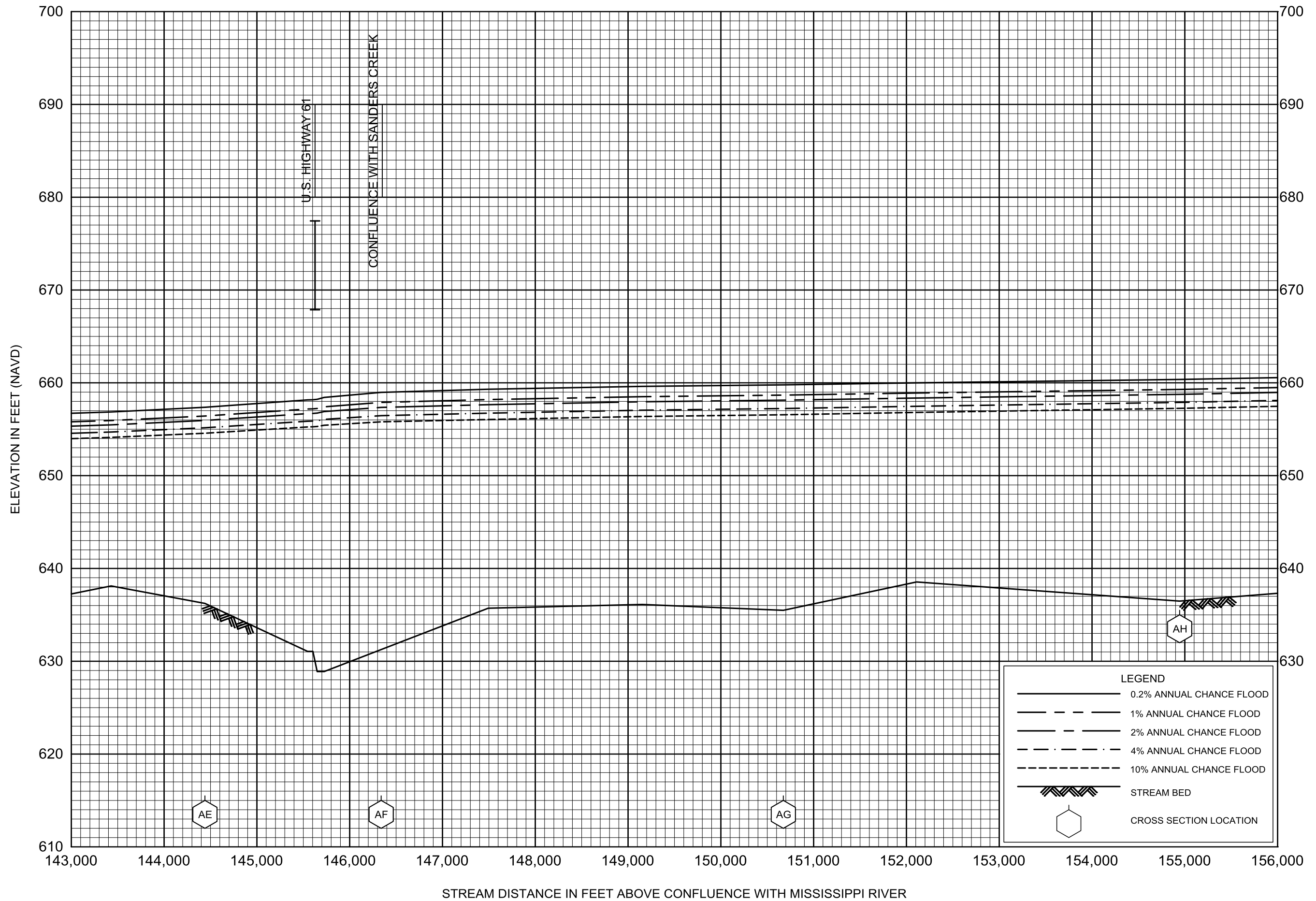


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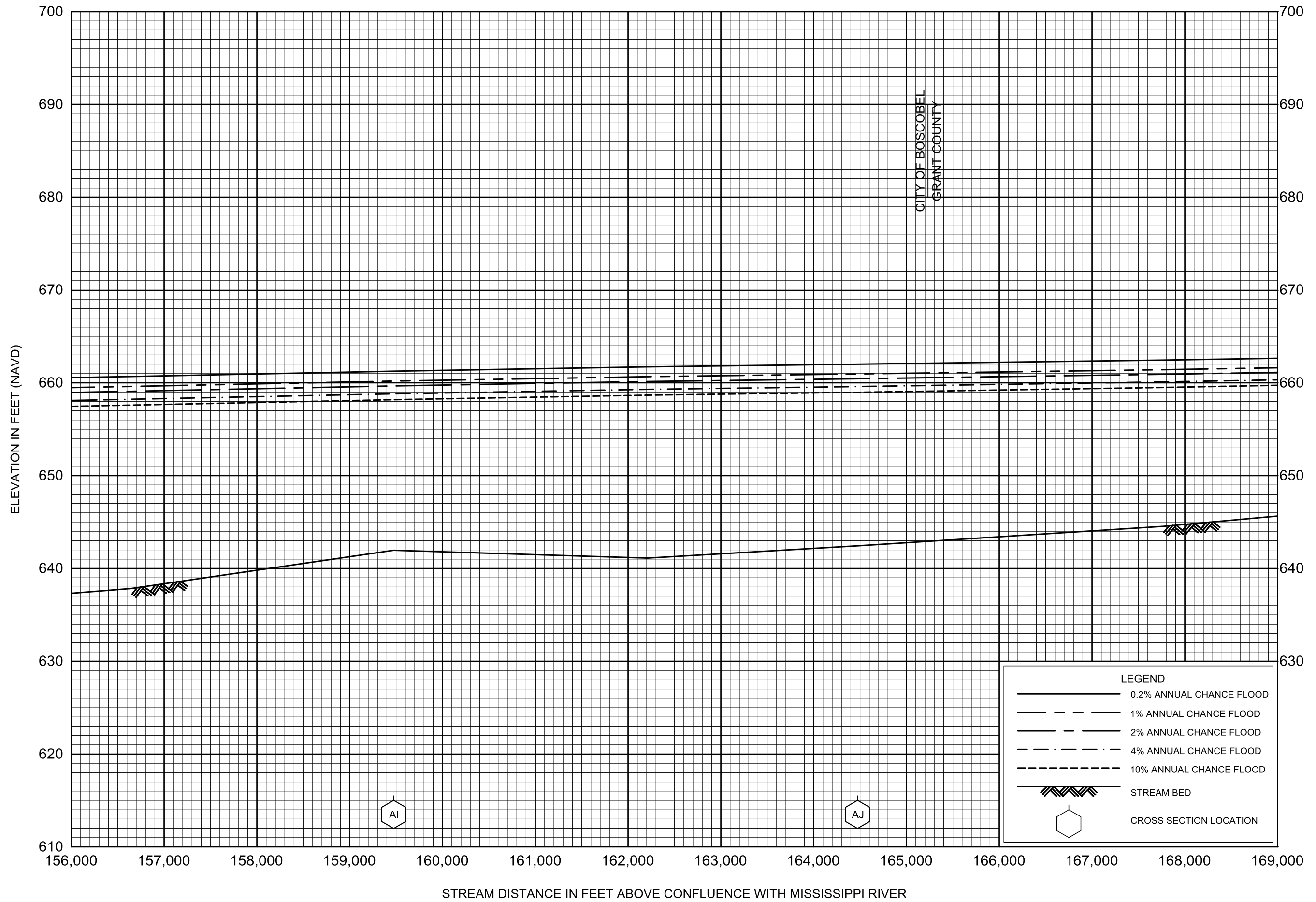


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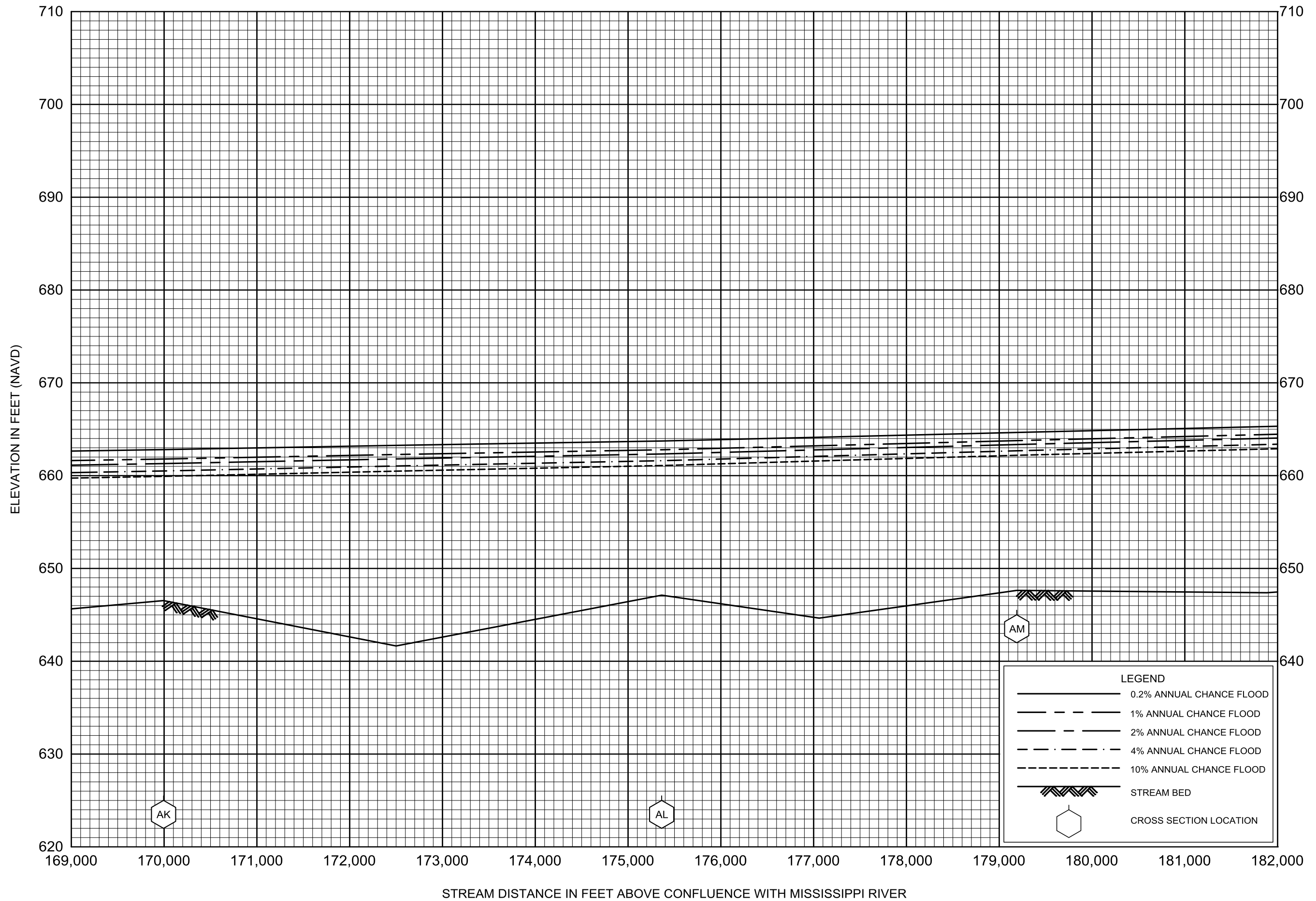


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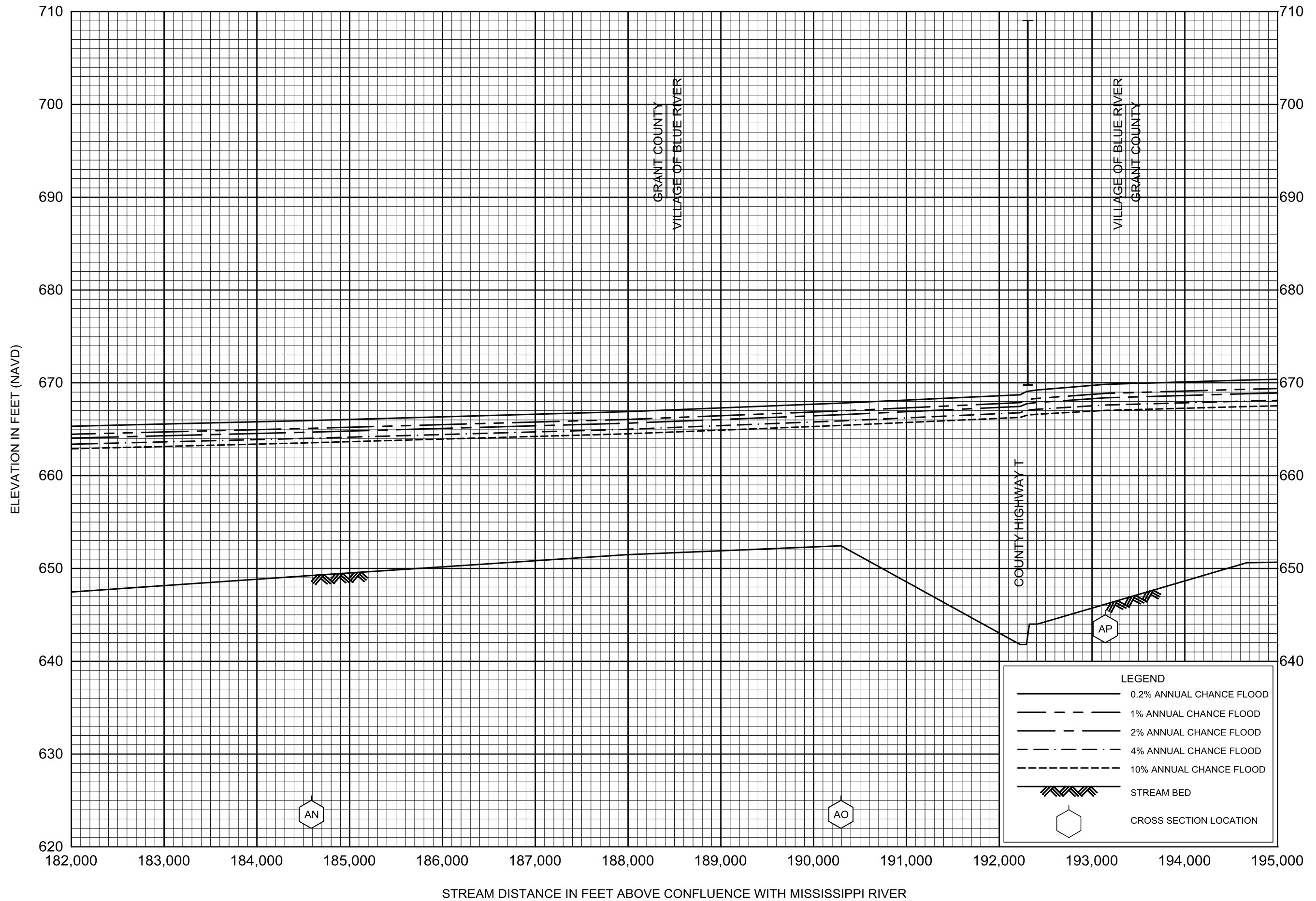


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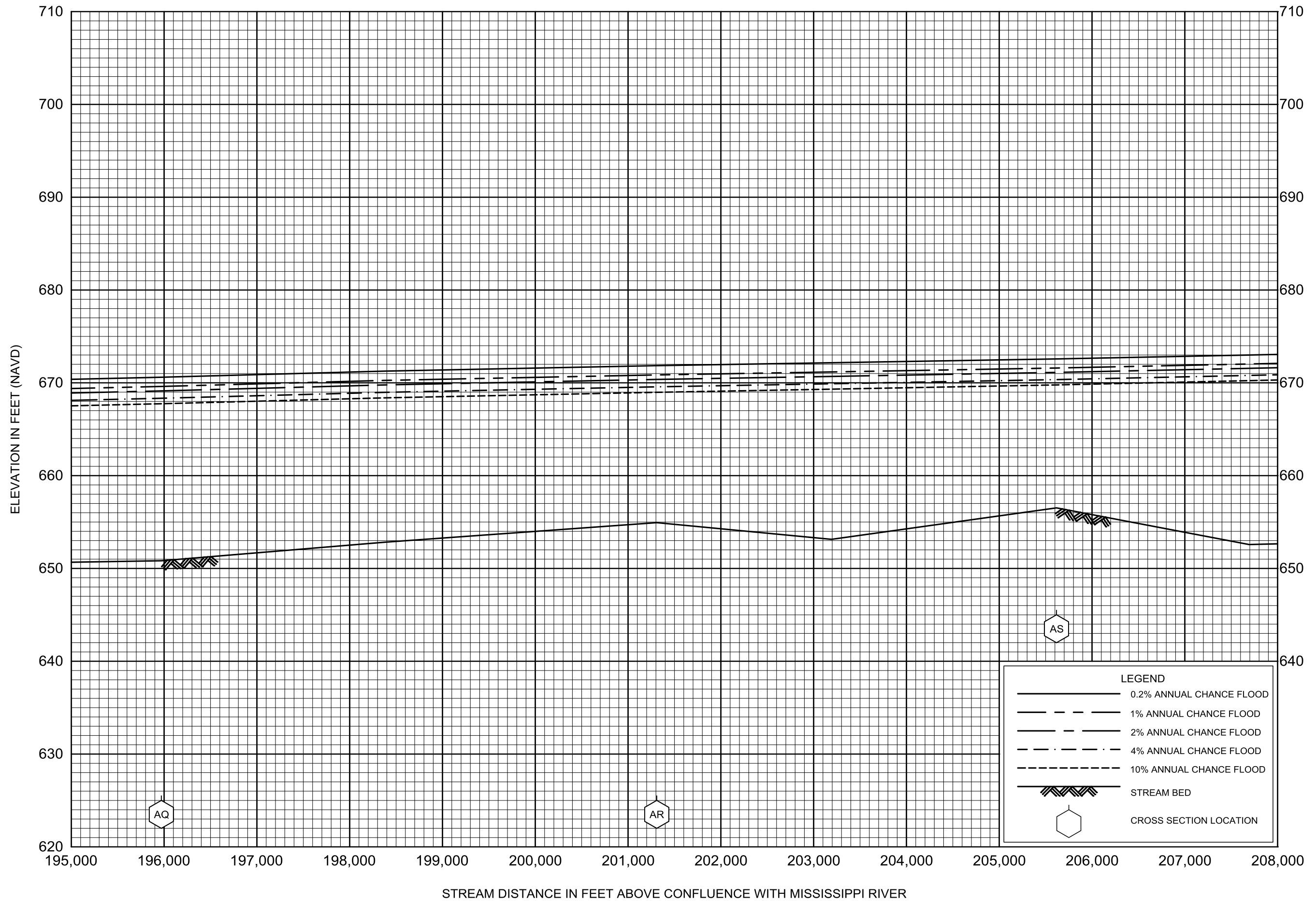


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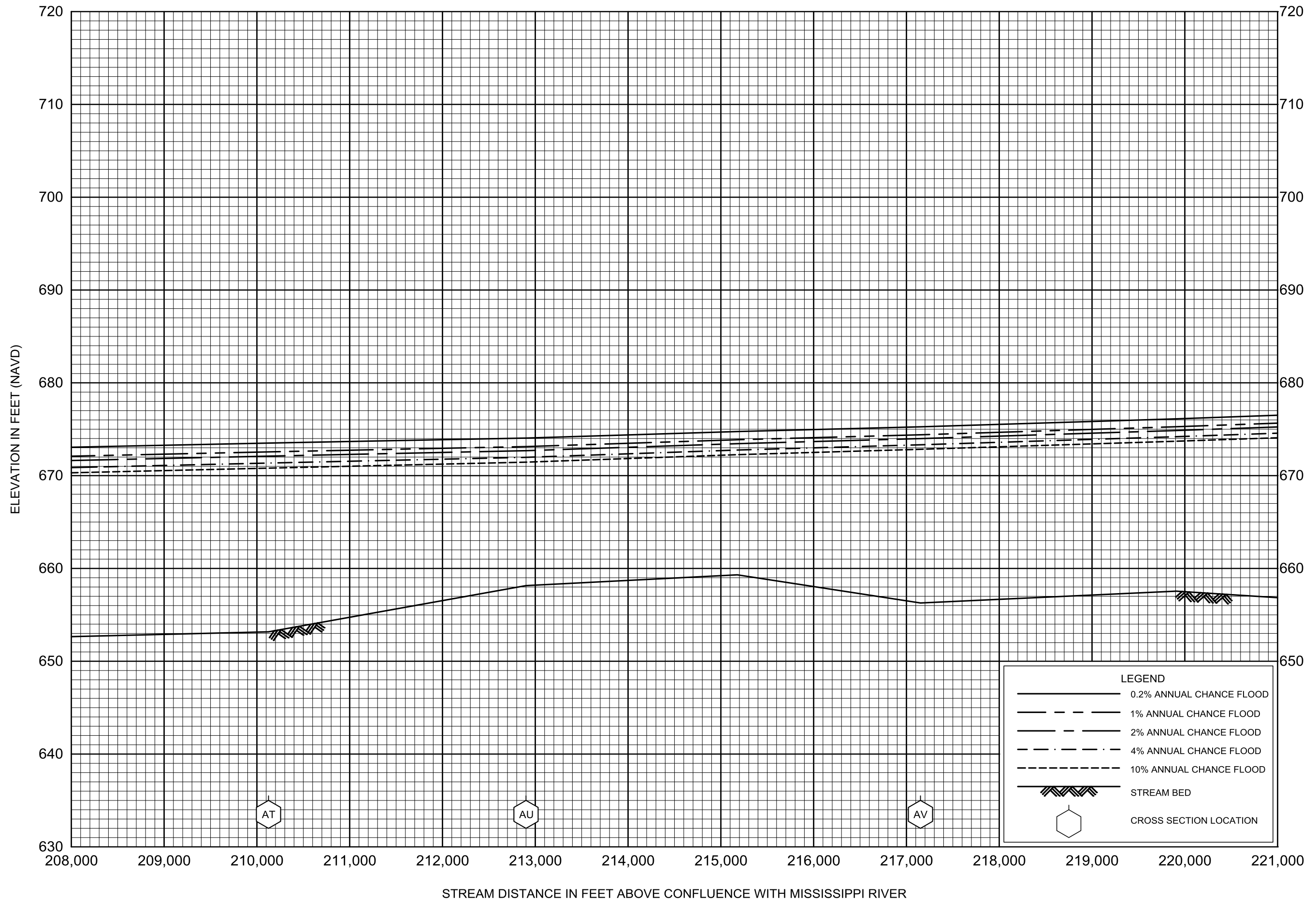
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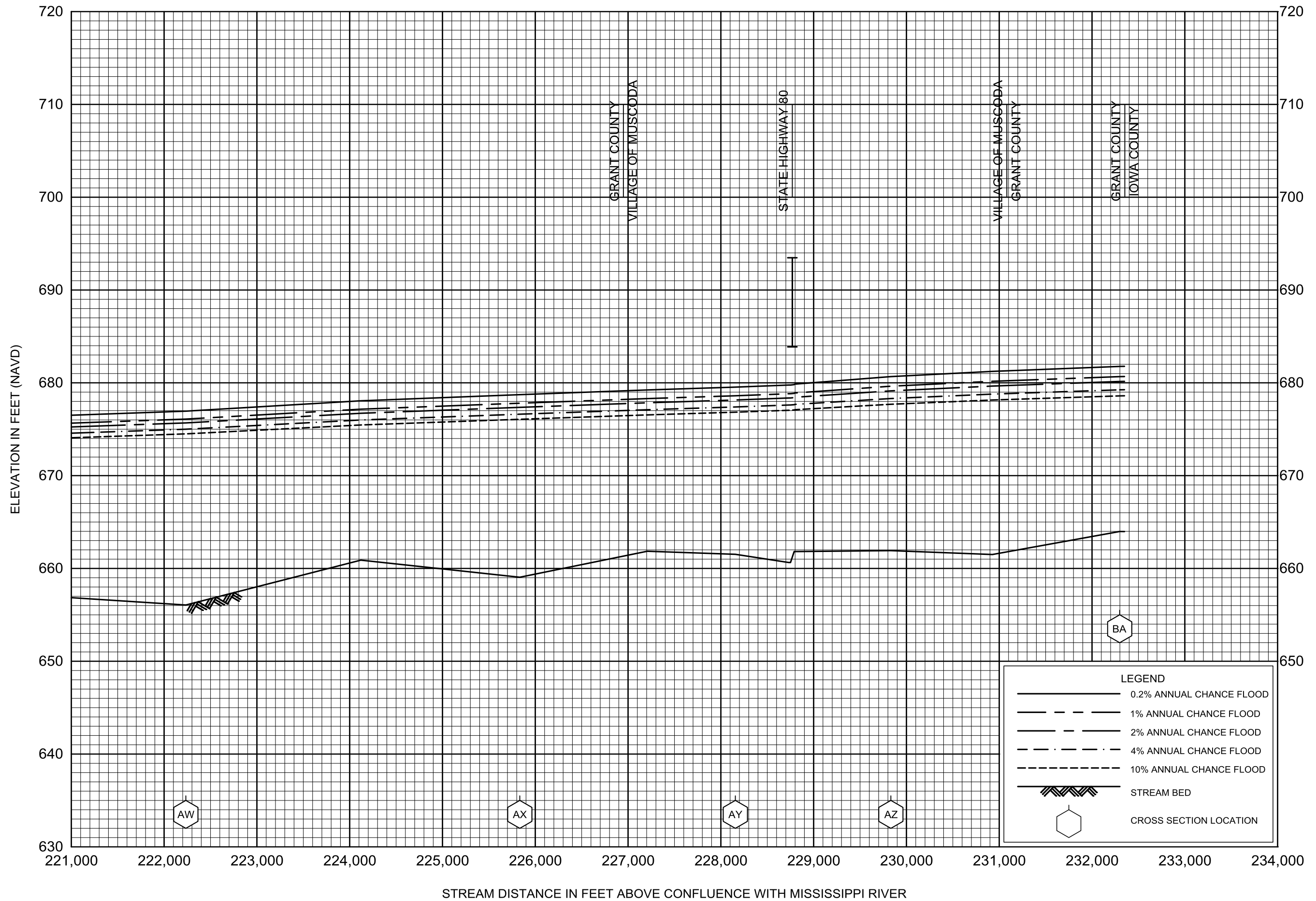


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GRANT COUNTY, WI
AND INCORPORATED AREAS



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GRANT COUNTY, WI
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