

FLOOD INSURANCE STUDY



ULSTER COUNTY, NEW YORK (ALL JURISDICTIONS)

NOTICE
This preliminary FIS report includes only revised Flood Profiles and Floodway Data tables. See "Notice to Flood Insurance Users" page for additional details.

VOLUME 3 OF 4

COMMUNITY NAME	COMMUNITY NUMBER
DENNING, TOWN OF	361439
ELLENVILLE, VILLAGE OF	360975
ESOPUS, TOWN OF	360855
GARDINER, TOWN OF	360856
HARDENBURG, TOWN OF	361578
HURLEY, TOWN OF	360857
KINGSTON, CITY OF	360858
KINGSTON, TOWN OF	361218
LLOYD, TOWN OF	361012
MARBLETOWN, TOWN OF	361219
MARLBOROUGH, TOWN OF	361220
NEW PALTZ, TOWN OF	360859
NEW PALTZ, VILLAGE OF	361544
OLIVE, TOWN OF	360860
PLATTEKILL, TOWN OF ¹	361221
ROCHESTER, TOWN OF	360861
ROSENDALE, TOWN OF	360862
SAUGERTIES, TOWN OF	360863
SAUGERTIES, VILLAGE OF	361504
SHANDAKEN, TOWN OF	360864
SHAWANGUNK, TOWN OF	360865
ULSTER, TOWN OF	360866
WAWARSING, TOWN OF	360867
WOODSTOCK, TOWN OF	360868



PRELIMINARY
May 24, 2013

REVISED:

¹ No Special Flood Hazard Areas Identified



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
36111CV003B

**NOTICE TO
FLOOD INSURANCE STUDY USERS**

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) report may not contain all data available within the Community Map Repository. Please contact the Community Map Repository for any additional data.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this FIS report at anytime. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult with community officials and check the Community Map Repository to obtain the most current FIS report components.

Selected Flood Insurance Rate Map (FIRM) panels for this community contain information that was previously shown separately on the corresponding Flood Boundary and Floodway Map (FBFM) panels (e.g., floodways and cross sections). In addition, former flood hazard zone designations have been changed as follows:

<u>Old Zone</u>	<u>New Zone</u>
A1 through A30	AE
V1 through V30	VE
B	X
C	X

Initial FIS Effective Date: September 25, 2009 (partial countywide)

Revised FIS Dates:

This preliminary FIS report does not include unrevised Floodway Data Tables or unrevised Flood Profiles. These Floodway Data Tables and Flood Profiles will appear in the final FIS report.

TABLE OF CONTENTS - Volume 1

1.0	INTRODUCTION	1
1.1	Purpose of Study	1
1.2	Authority and Acknowledgments	1
1.3	Coordination	6
2.0	AREA STUDIED	6
2.1	Scope of Study	6
2.2	County Description	9
2.3	Principal Flood Problems	10
2.4	Flood Protection Measures	11
3.0	ENGINEERING METHODS	12
3.1	Hydrologic Analyses	13
3.2	Hydraulics Analyses	28
3.3	Vertical Datum	36
4.0	FLOODPLAIN MANAGEMENT APPLICATIONS	37
4.1	Floodplain Boundaries	38
4.2	Floodways	38
5.0	INSURANCE APPLICATIONS	64
6.0	FLOOD INSURANCE RATE MAP	64
7.0	OTHER STUDIES	65
8.0	LOCATION OF DATA	67
9.0	BIBLIOGRAPHY AND REFERENCES	67

Table of Contents – Volume 1- Continued

FIGURES

FIGURE 1 – FLOODWAY SCHEMATIC 39

TABLES

TABLE 1 - INITIAL AND FINAL CCO MEETING DATES 6
TABLE 2 - FLOODING SOURCES STUDIED BY DETAILED METHODS 7
TABLE 3 - SCOPE OF REVISION 7
TABLE 4 - SUMMARY OF DISCHARGES 22
TABLE 5 - SUMMARY OF STILLWATER ELEVATIONS 27
TABLE 6 - MANNING'S "N" VALUES 32
TABLE 7 - LIMITED DETAILED (ENHANCED A-ZONES) FLOOD HAZARD DATA 34
TABLE 8 - FLOODWAY DATA TABLES 40
TABLE 9 - COMMUNITY MAP HISTORY 66

TABLE OF CONTENTS - Volume 2

EXHIBITS

Exhibit 1 – Flood Profiles

Alton Creek	Panels 001P-008P
Alton Creek Tributary	Panels 009P-014P
Beaver Kill	Panels 015P-023P
Birch Creek	Panels 024P-030P
Black Creek	Panels 031P-036P
Broadstreet Hollow	Panels 037P-040P
Bush Kill	Panels 041P-051P
Bushnellsville Creek	Panels 052P-057P
Cross Mountain Hollow	Panel 058P
Dry Brook	Panels 059P-067P
Dwaar Kill East	Panels 068P-072P
Dwaar Kill West	Panels 073P-076P
East Branch Neversink River	Panels 077P-078P
Englishmans Creek	Panel 079P
Esopus Creek Reach 1	Panels 080P-089P

Table of Contents – Volume 3

EXHIBITS – continued

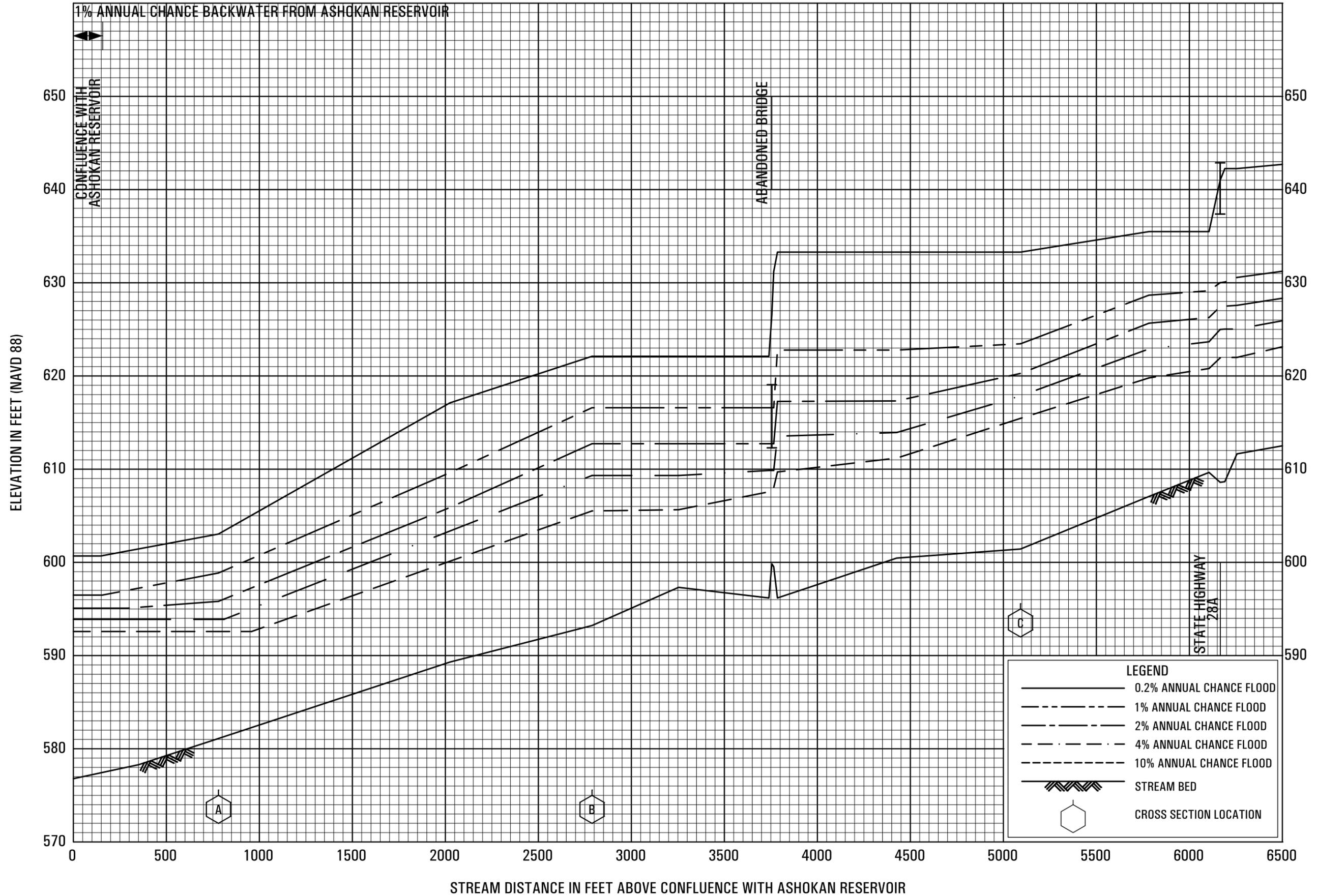
Exhibit 1 – Flood Profiles (continued)

Esopus Creek Reach 2	Panels 090P-100P
Fox Hollow	Panels 111P-114P
Kate Yaeger Kill	Panels 115P-166P
Little Beaver Kill	Panel 117P
Maltby Hollow Brook	Panels 118P-120P
Mara Kill	Panels 121P-142P
Mill Brook	Panels 0143P-0144P
Mink Hollow	Panels 0145P-0152P
Muddy Brook	Panel 0153P
Preymaker Brook	Panels 0154P-0155P
Rochester Creek	Panels 0156P-0157P
Rondout Creek Reach 1	Panels 0158P-0179P
Rondout Creek Reach 2	Panels 0180P-0181P
Sandburg Creek	Panels 0182P-0184P

Table of Contents – Volume 4

Saw Kill	Panels 0185P-0195P
Shawangunk Kill	Panels 0196P-0199P
Shawangunk River	Panel 0200P
Stony Clove Creek	Panels 0201P-0204P
Stony Creek	Panel 0205P
Sundown Creek	Panels 0206P-0211P
Tannery Brook	Panels 0212P-0213P
Tributary 1 to Mill Brook	Panel 0214P
Tributary 1 to Rochester Creek	Panel 0215P
Tributary 2A	Panel 0216P
Tributary No. 18 to Esopus Creek	Panels 0217P-0218P
Twaalfskill Brook	Panels 0219P-0221P
Twaalfskill Creek	Panels 0222P-0226P
Verkeerder Kill	Panels 0227P-0228P
Vernooy Kill	Panel 0229P
Wagner Creek	Panels 0230P-0233P
Wallkill River	Panels 0234P-0243P
Warner Creek	Panels 0244P-0248P
Woodland Creek	Panels 0249P-0251P
Woodland Creek Tributary	Panel 0252P

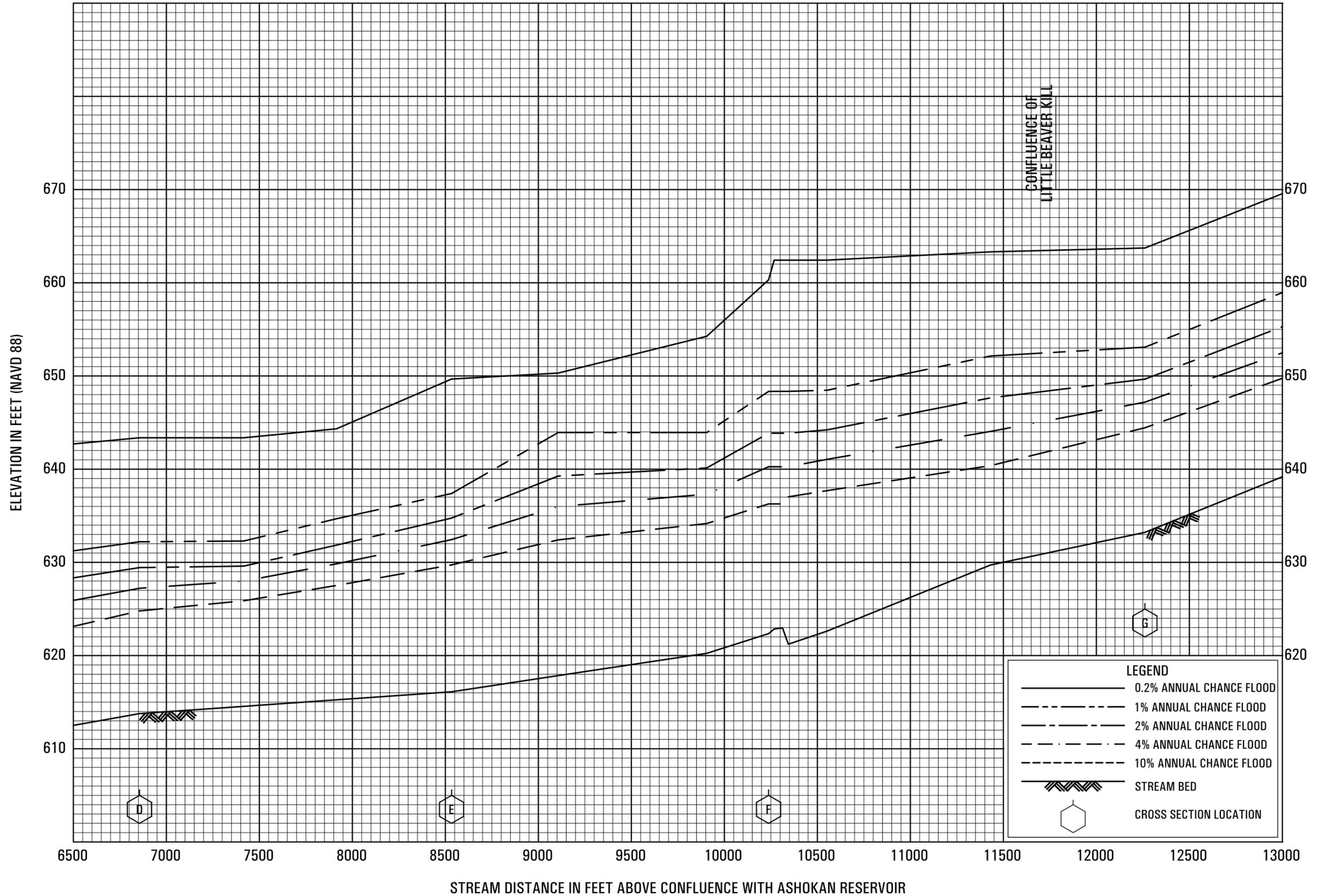
Exhibit 2 – Flood Insurance Rate Map Index Flood Insurance Rate Map



FLOOD PROFILES

ESOPUS CREEK REACH 2

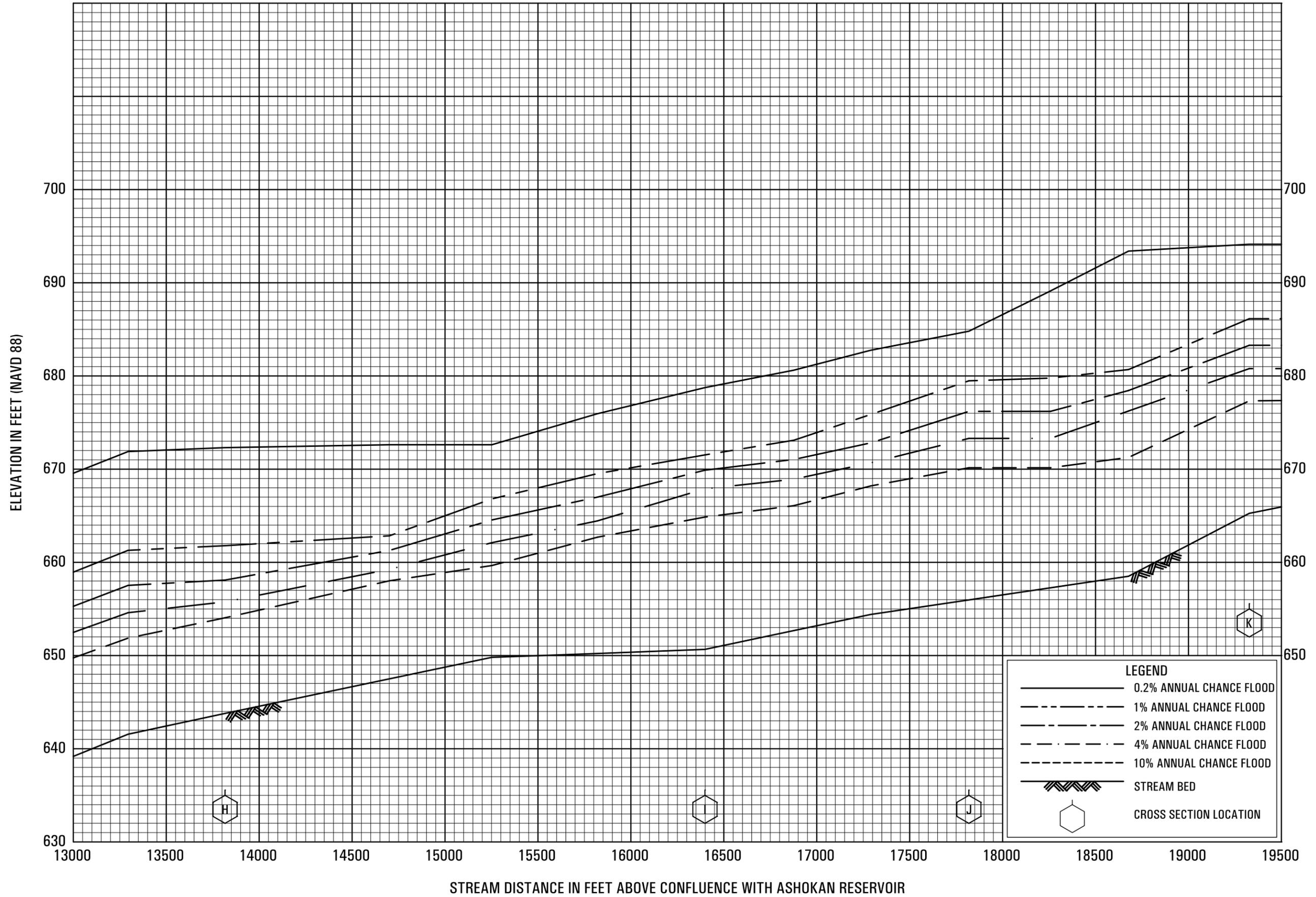
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

ESOPUS CREEK REACH 2

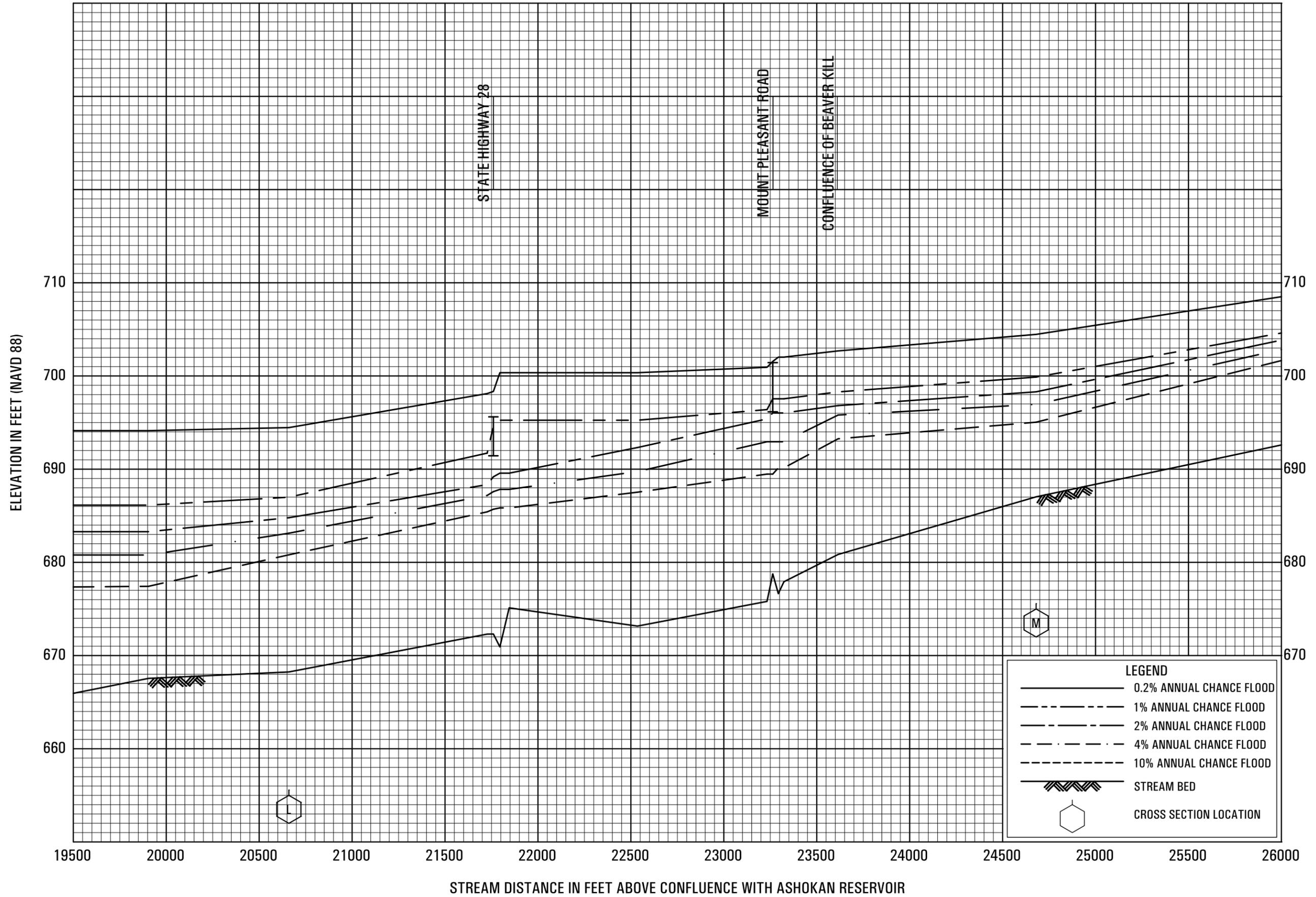
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

ESOPUS CREEK REACH 2

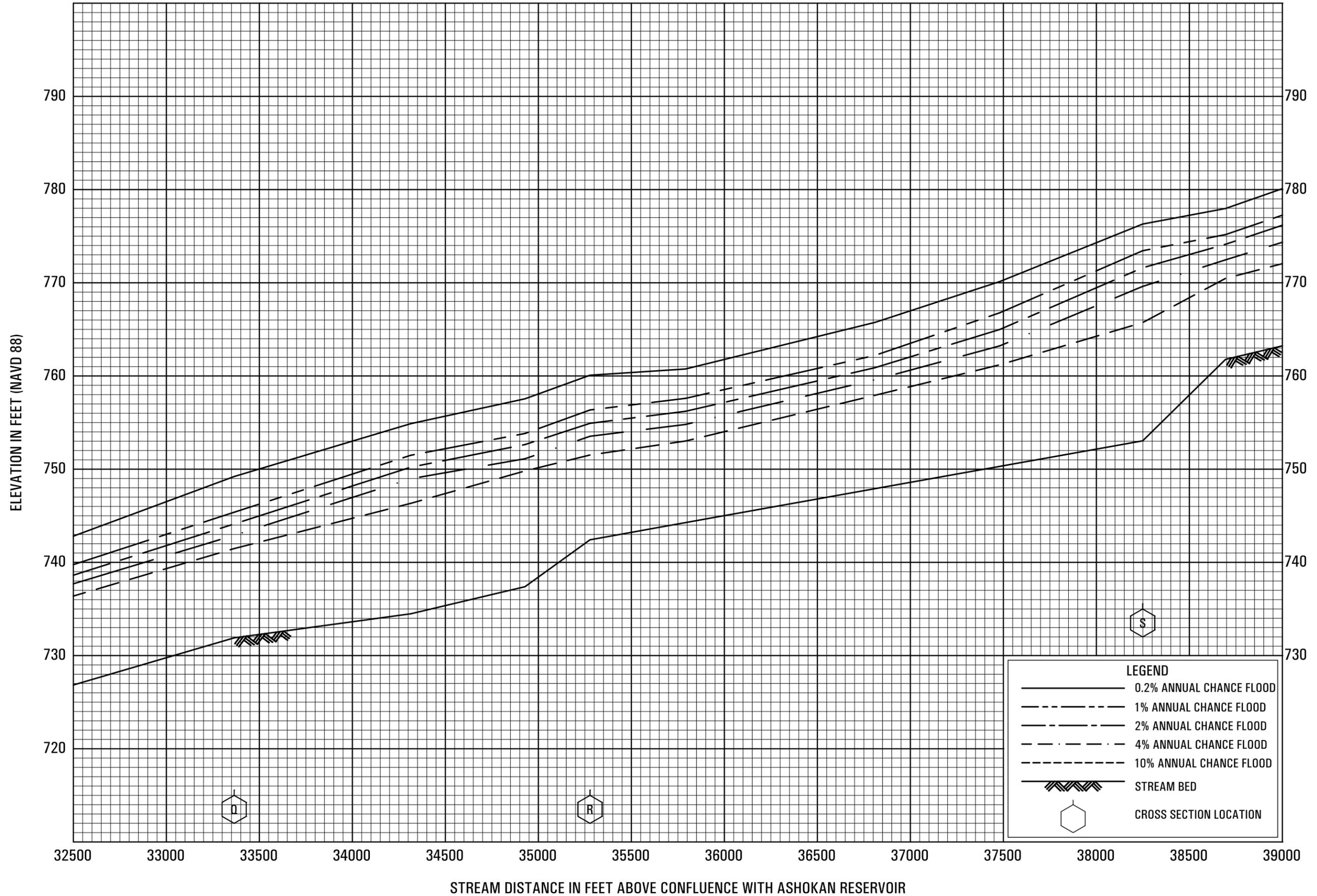
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

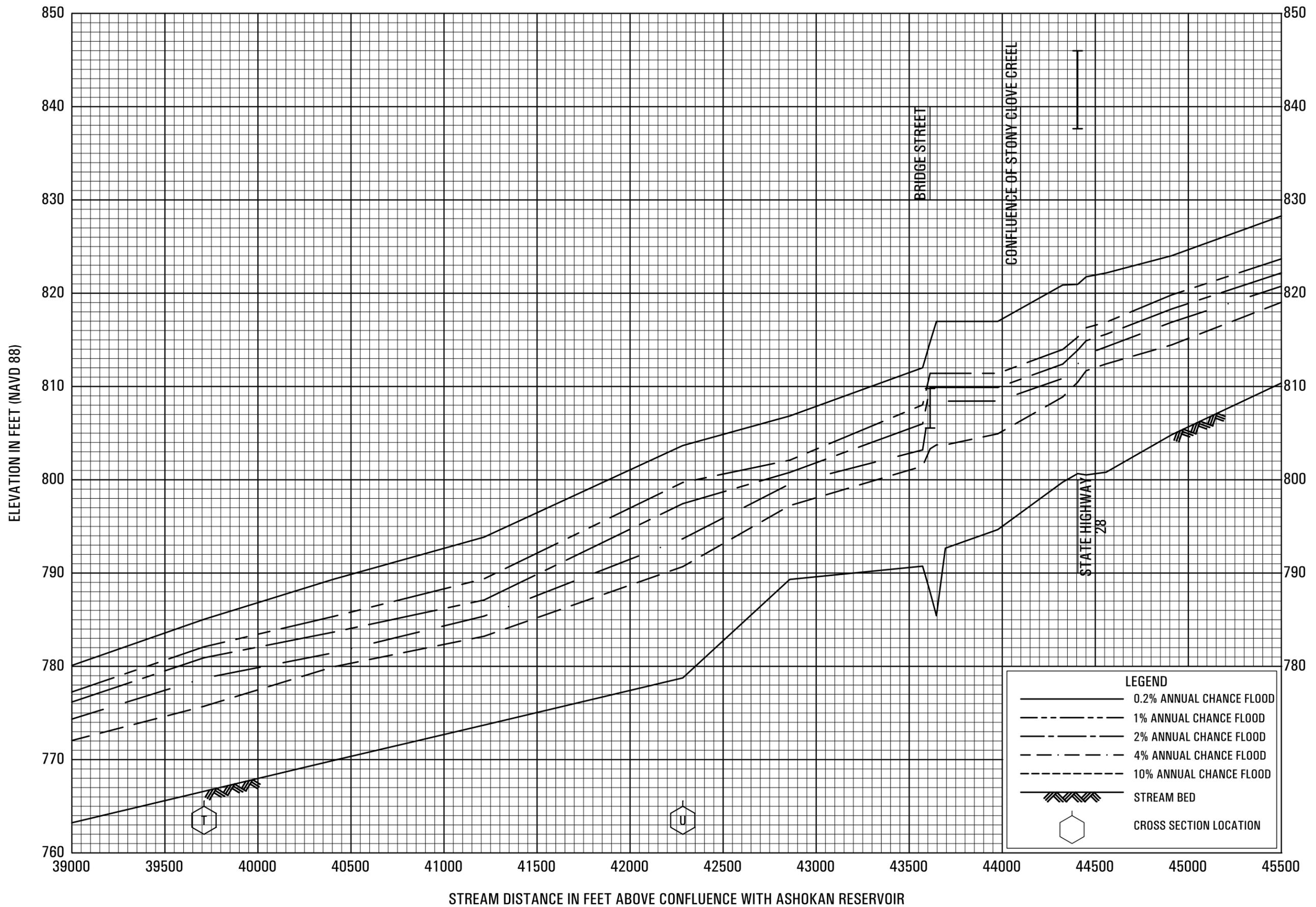


FLOOD PROFILES

ESOPUS CREEK REACH 2

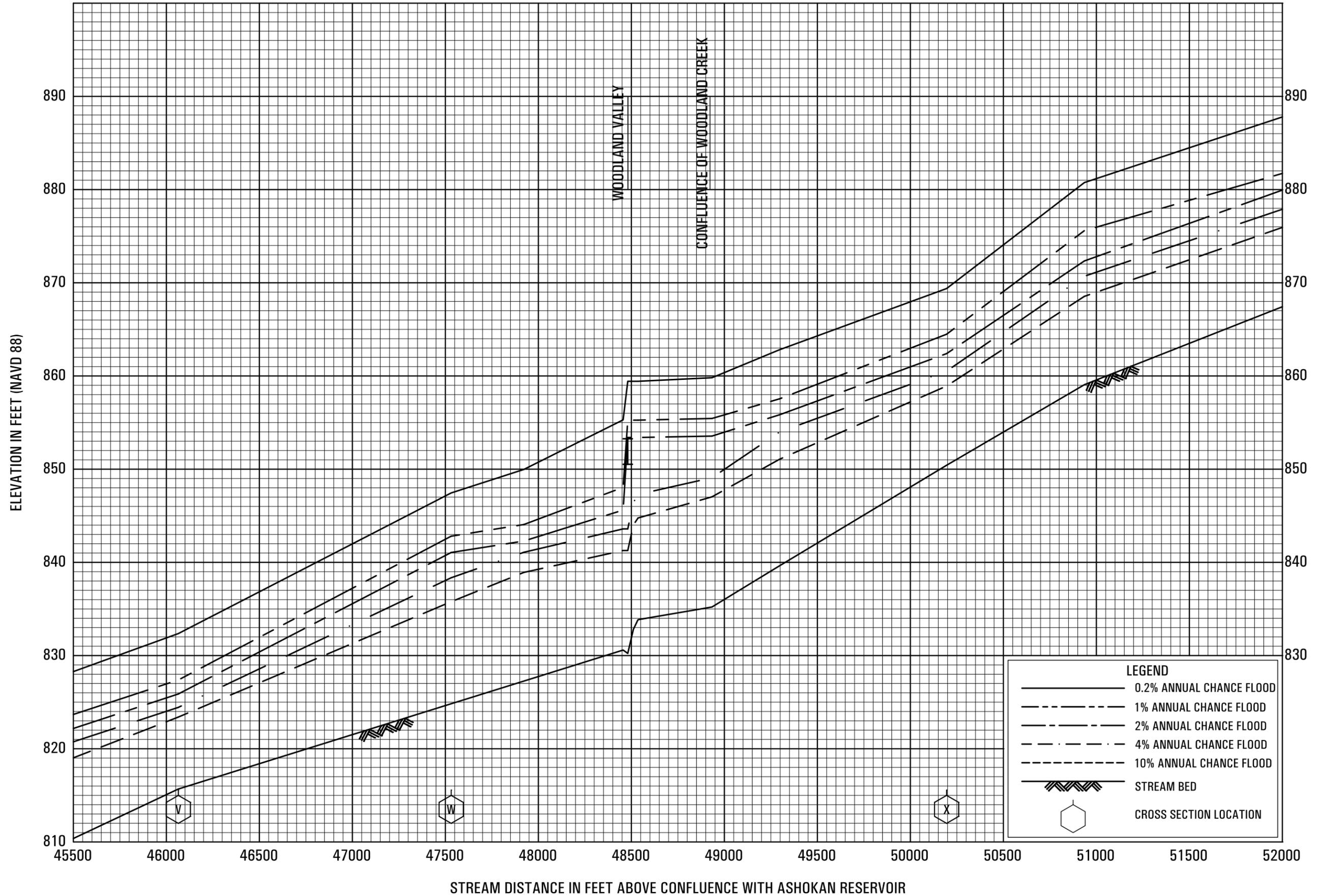
FEDERAL EMERGENCY MANAGEMENT AGENCY

ULSTER COUNTY, NY
(ALL JURISDICTIONS)



FLOOD PROFILES
ESOPUS CREEK REACH 2

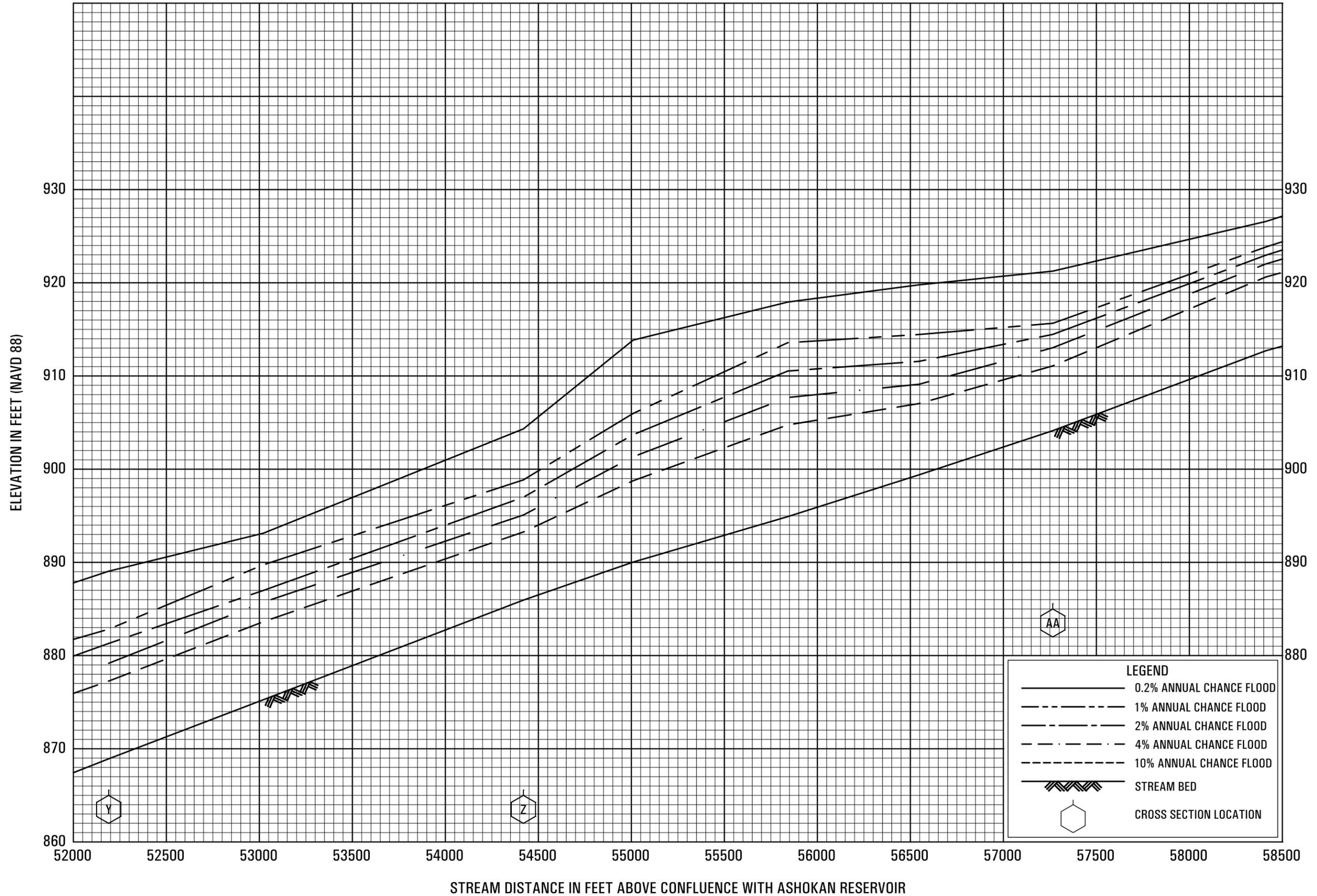
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



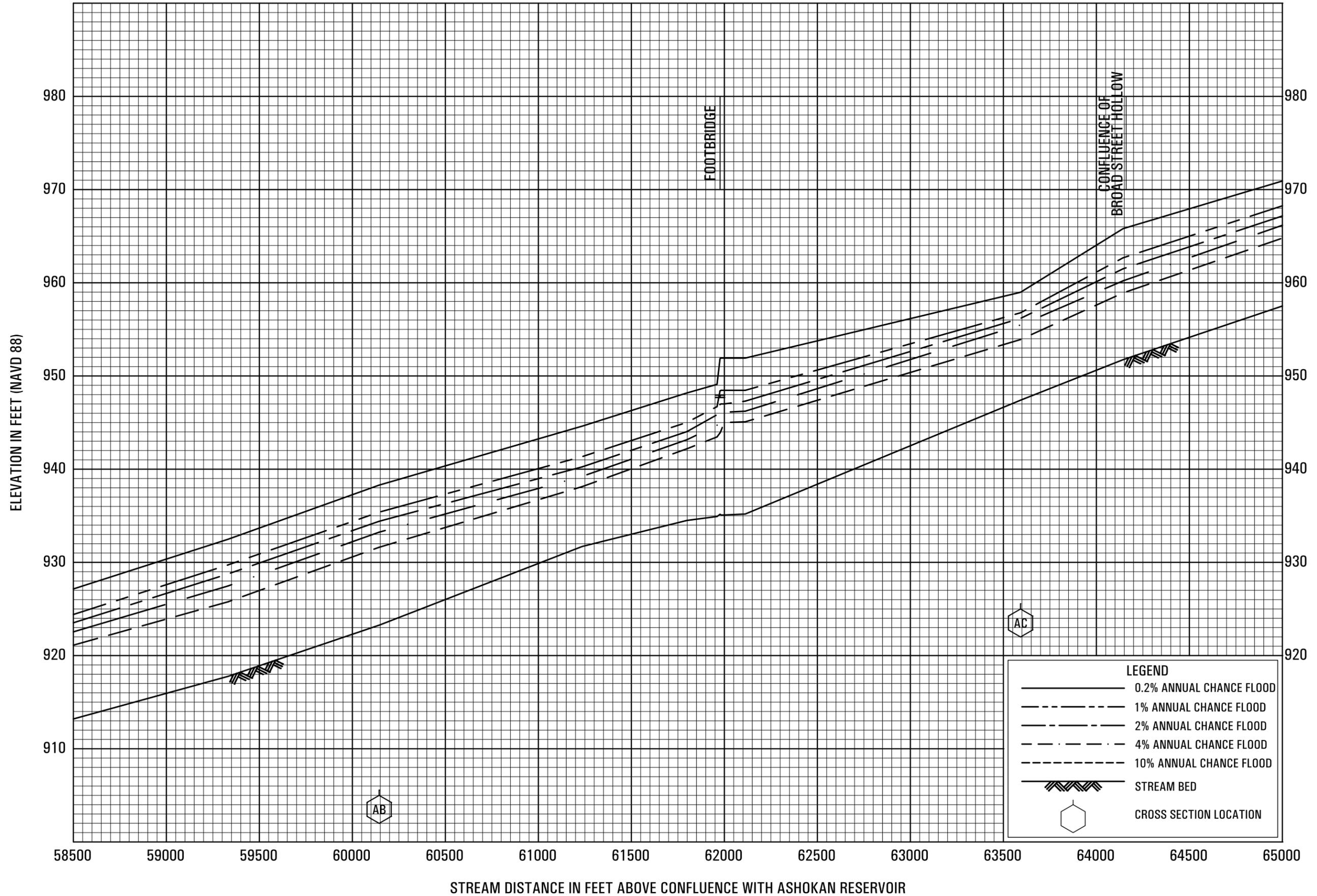
FLOOD PROFILES

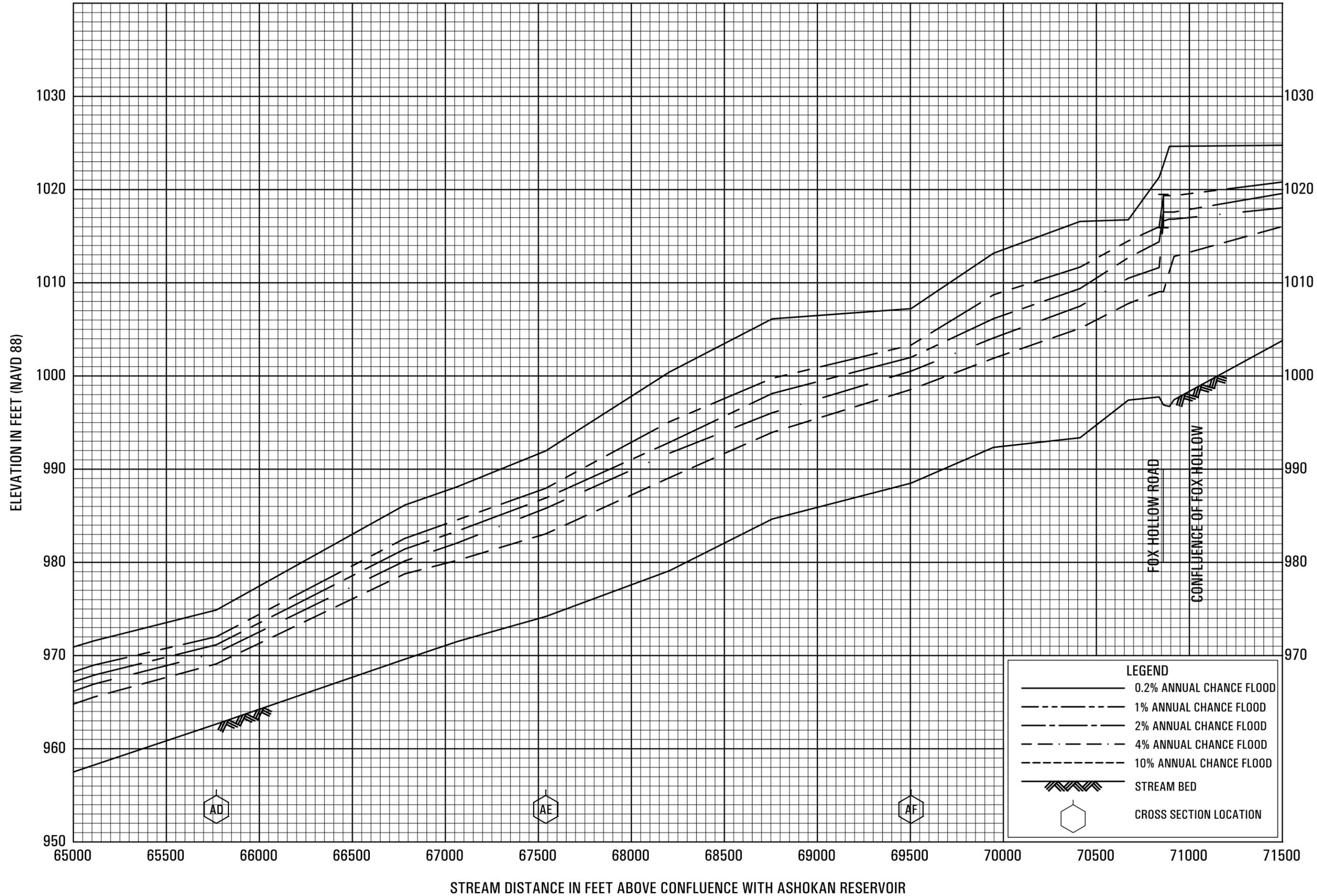
ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

ULSTER COUNTY, NY

(ALL JURISDICTIONS)

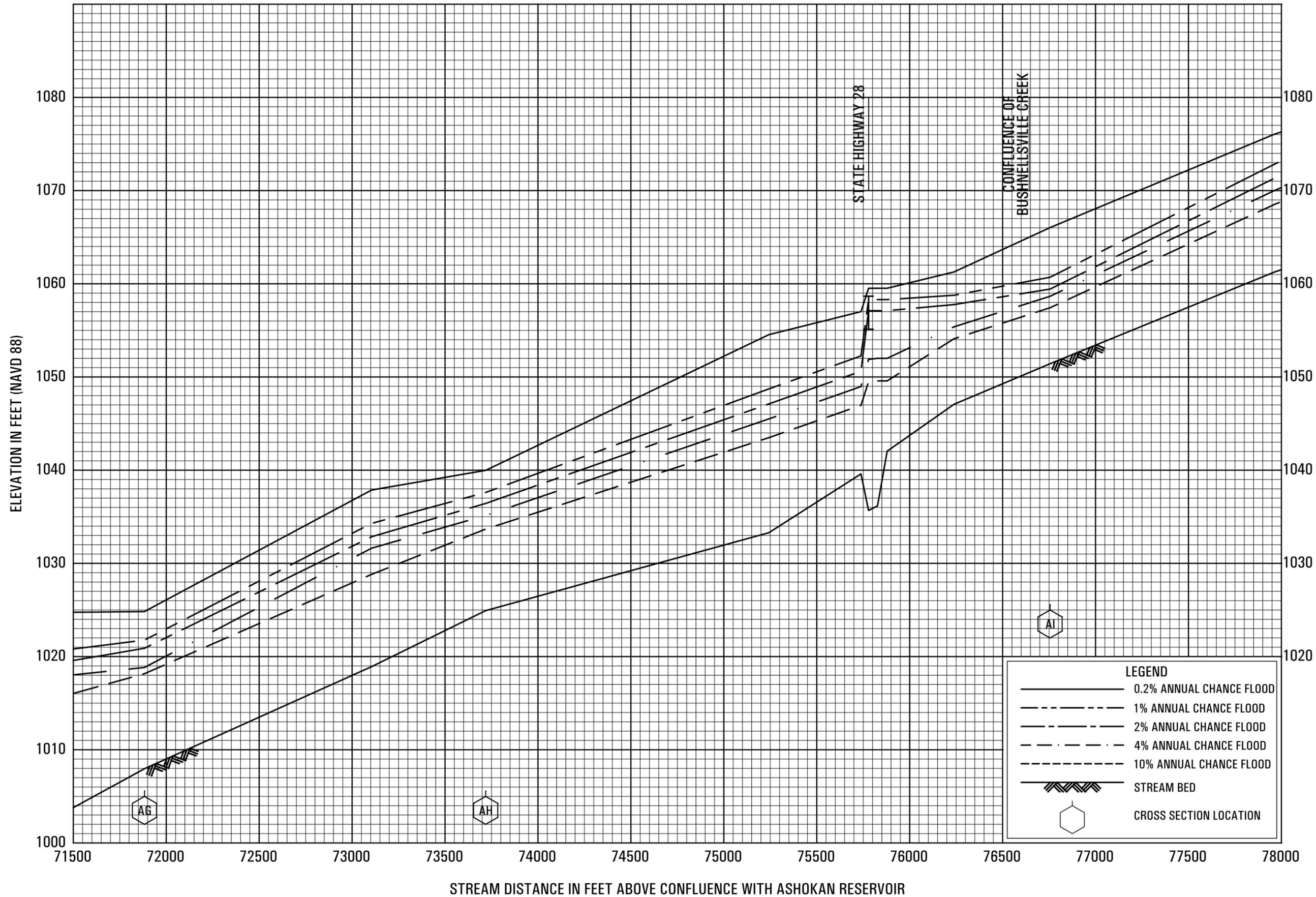




FLOOD PROFILES

ESOPUS CREEK REACH 2

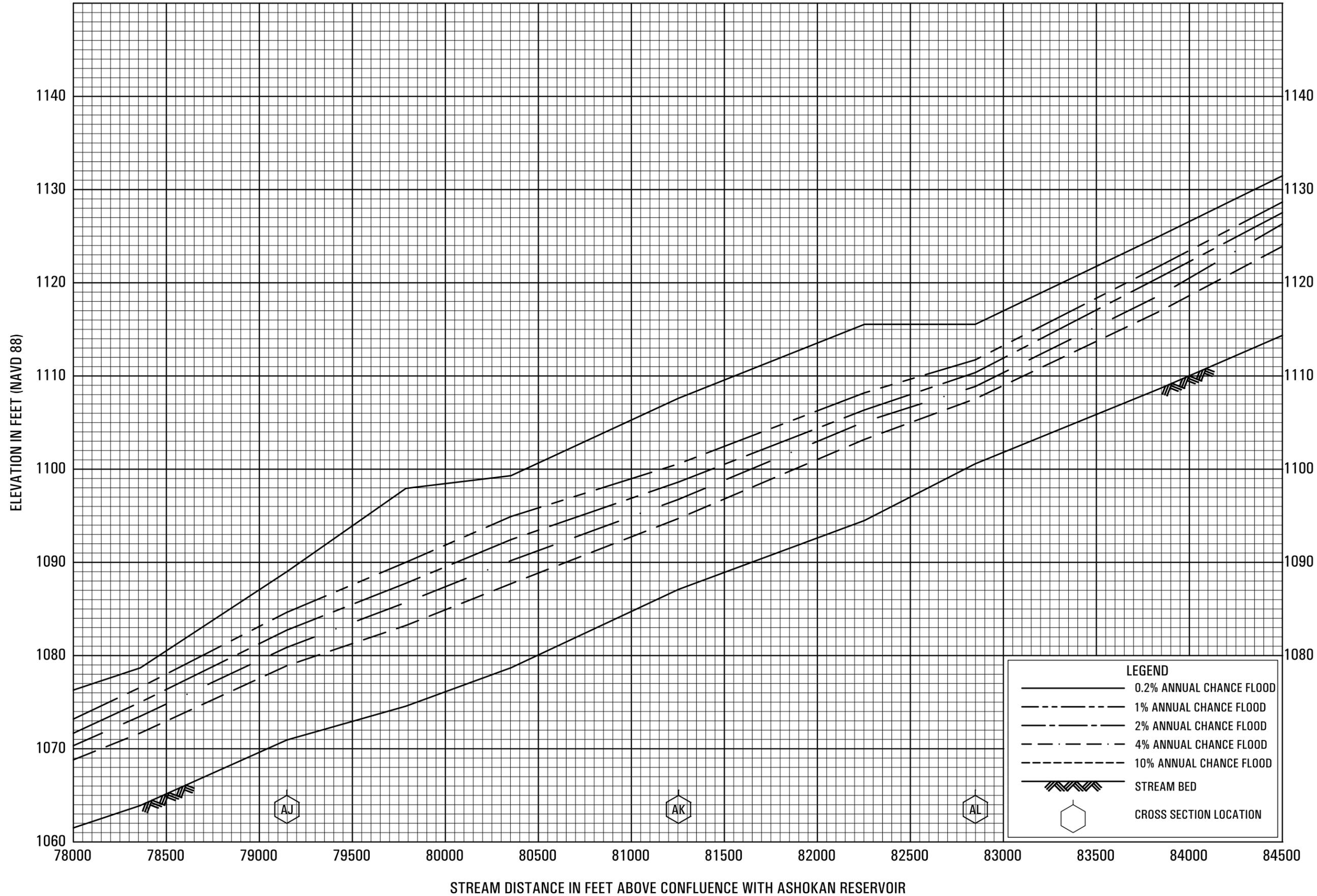
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

ESOPUS CREEK REACH 2

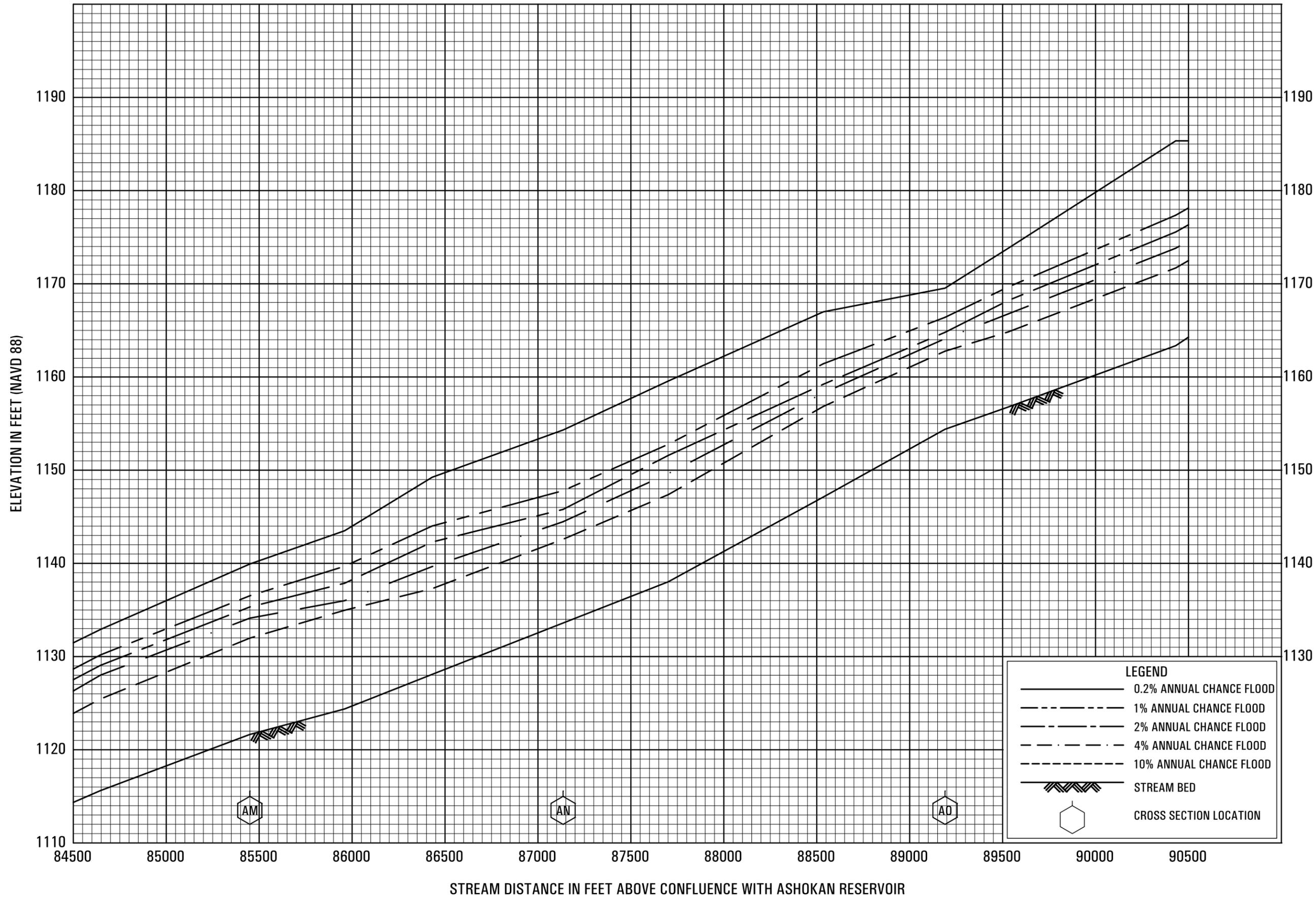
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

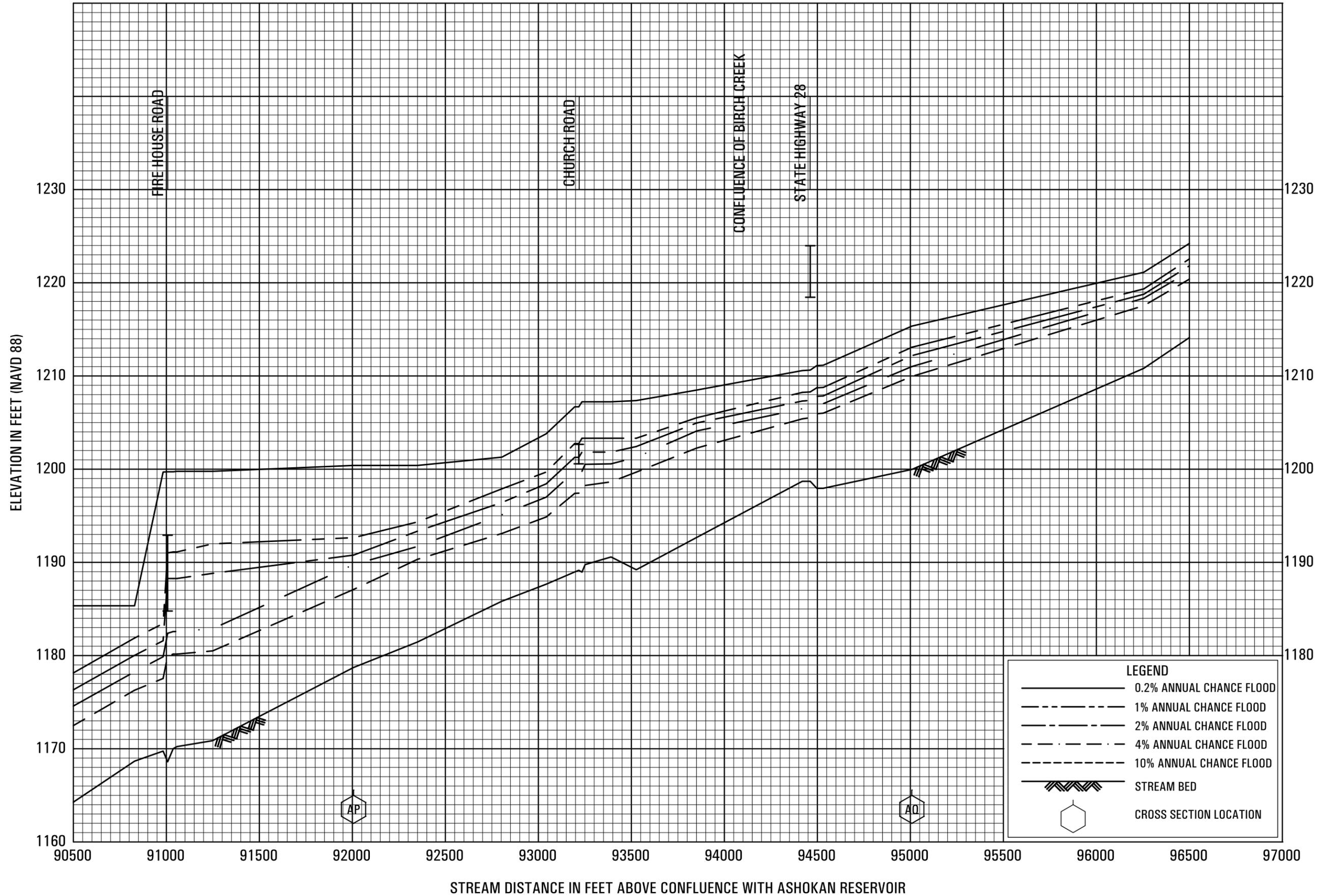
ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



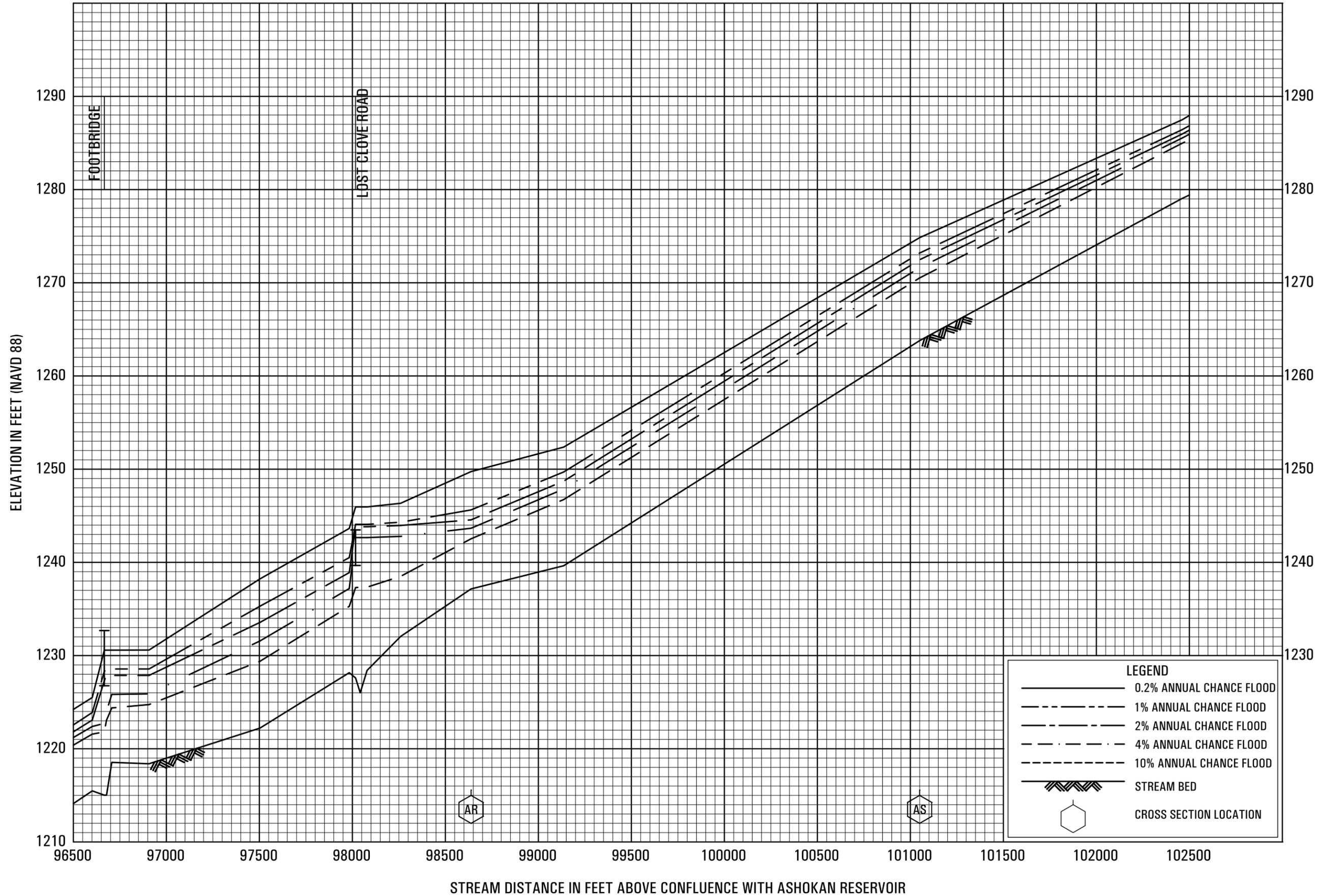
FLOOD PROFILES
ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



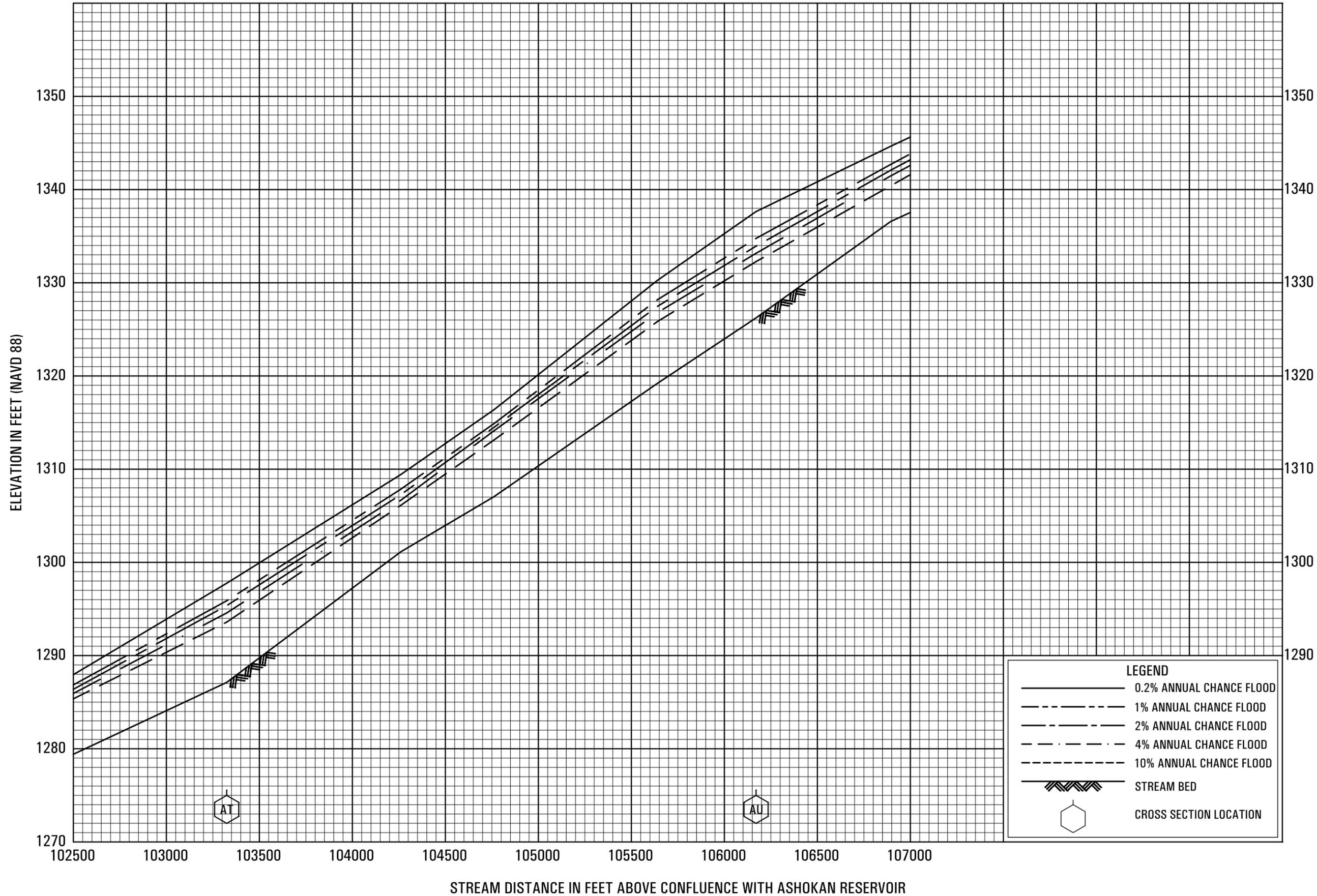
FLOOD PROFILES
ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



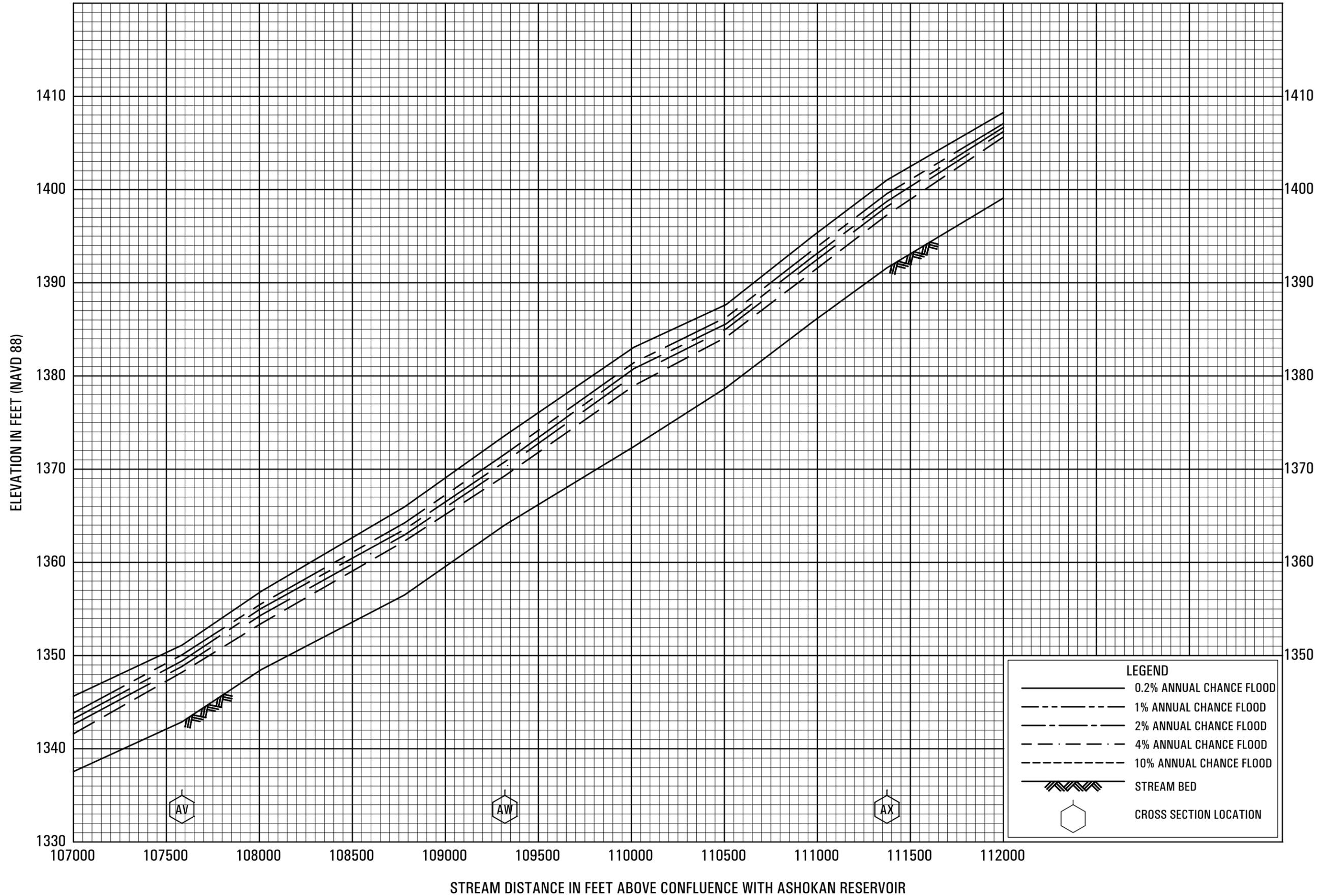
FLOOD PROFILES
ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



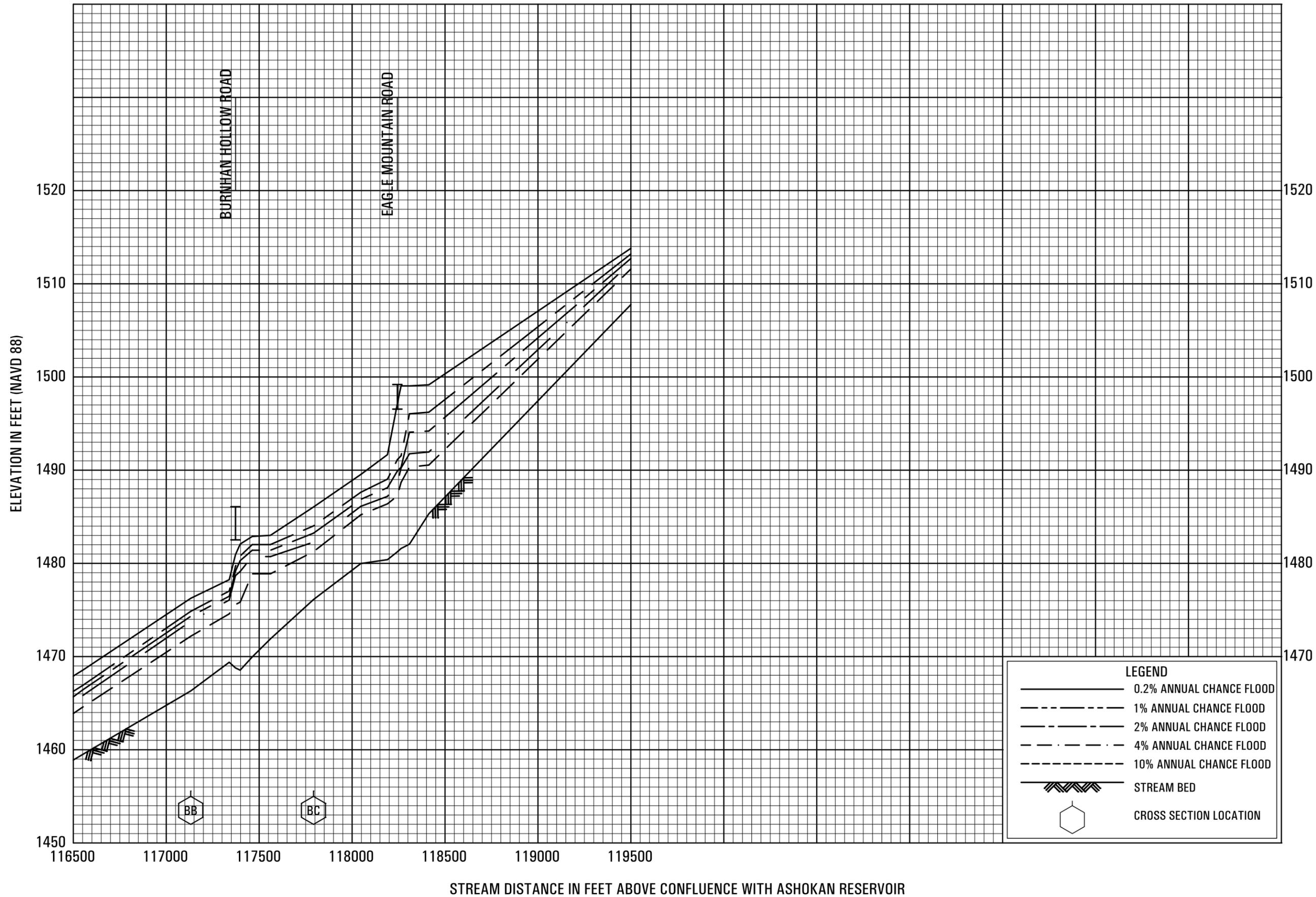
FLOOD PROFILES
ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES
ESOPUS CREEK REACH 2

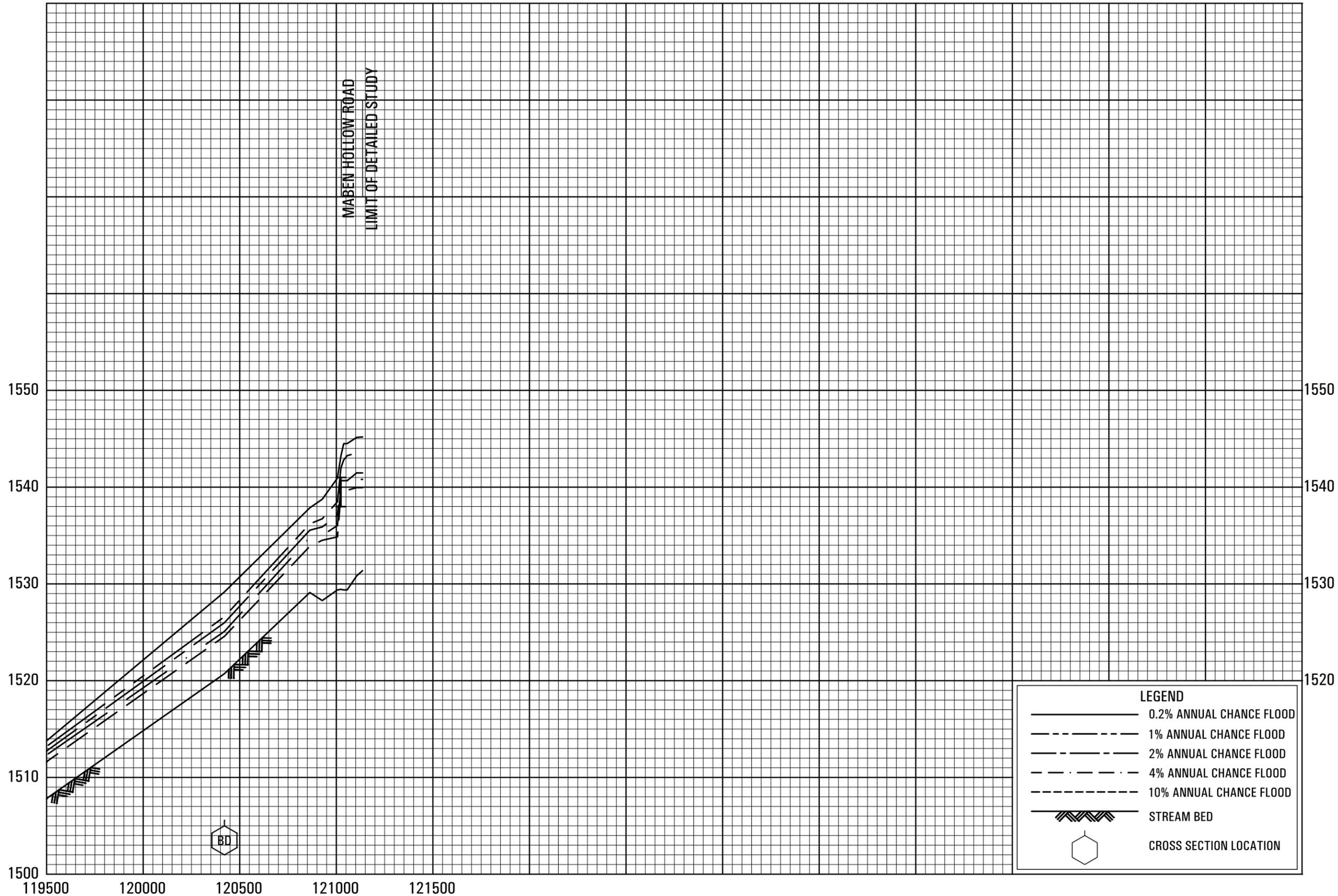
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES
ESOPUS CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

ELEVATION IN FEET (NAVD 88)



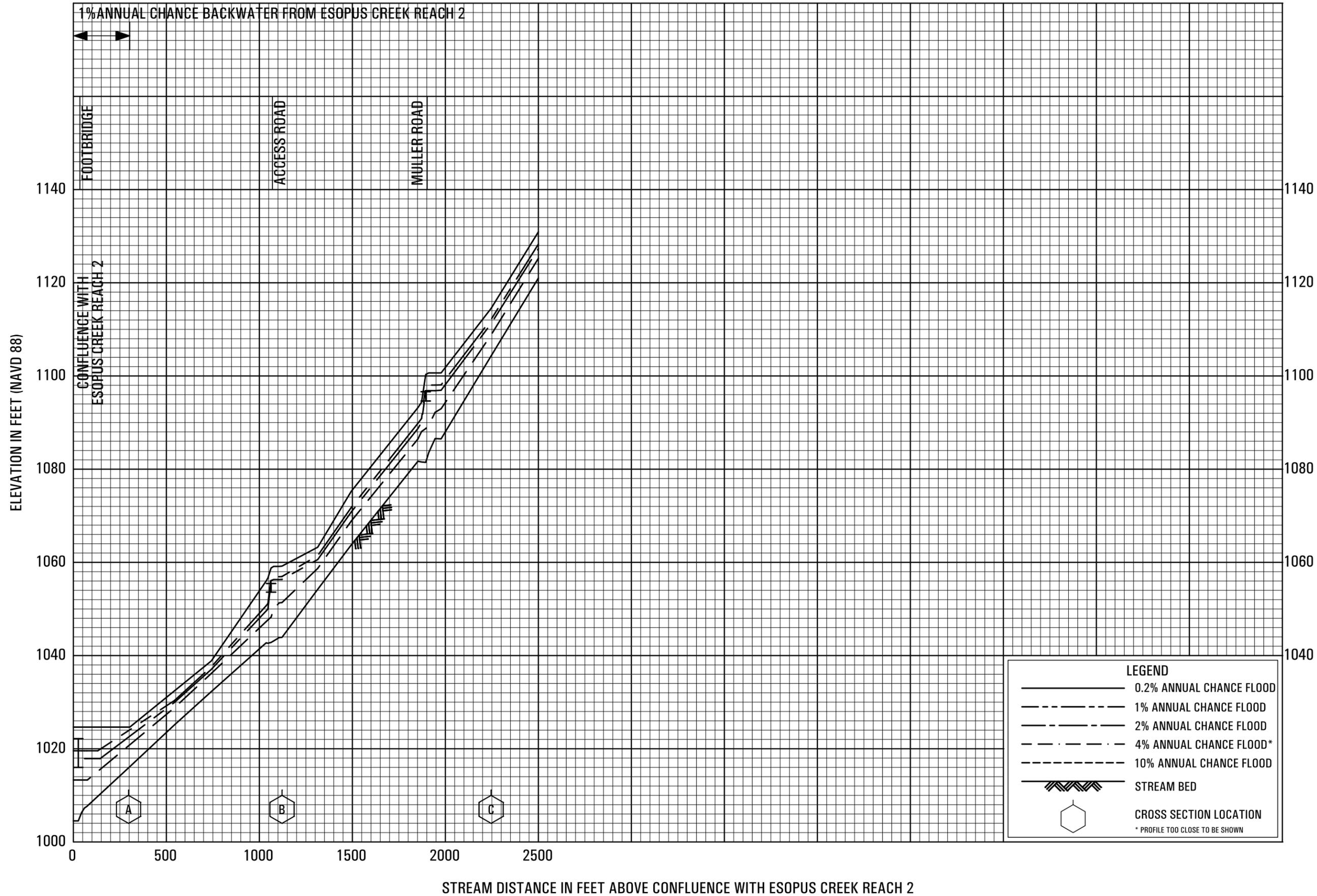
LEGEND

- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 4% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FLOOD PROFILES

ESOPUS CREEK REACH 2

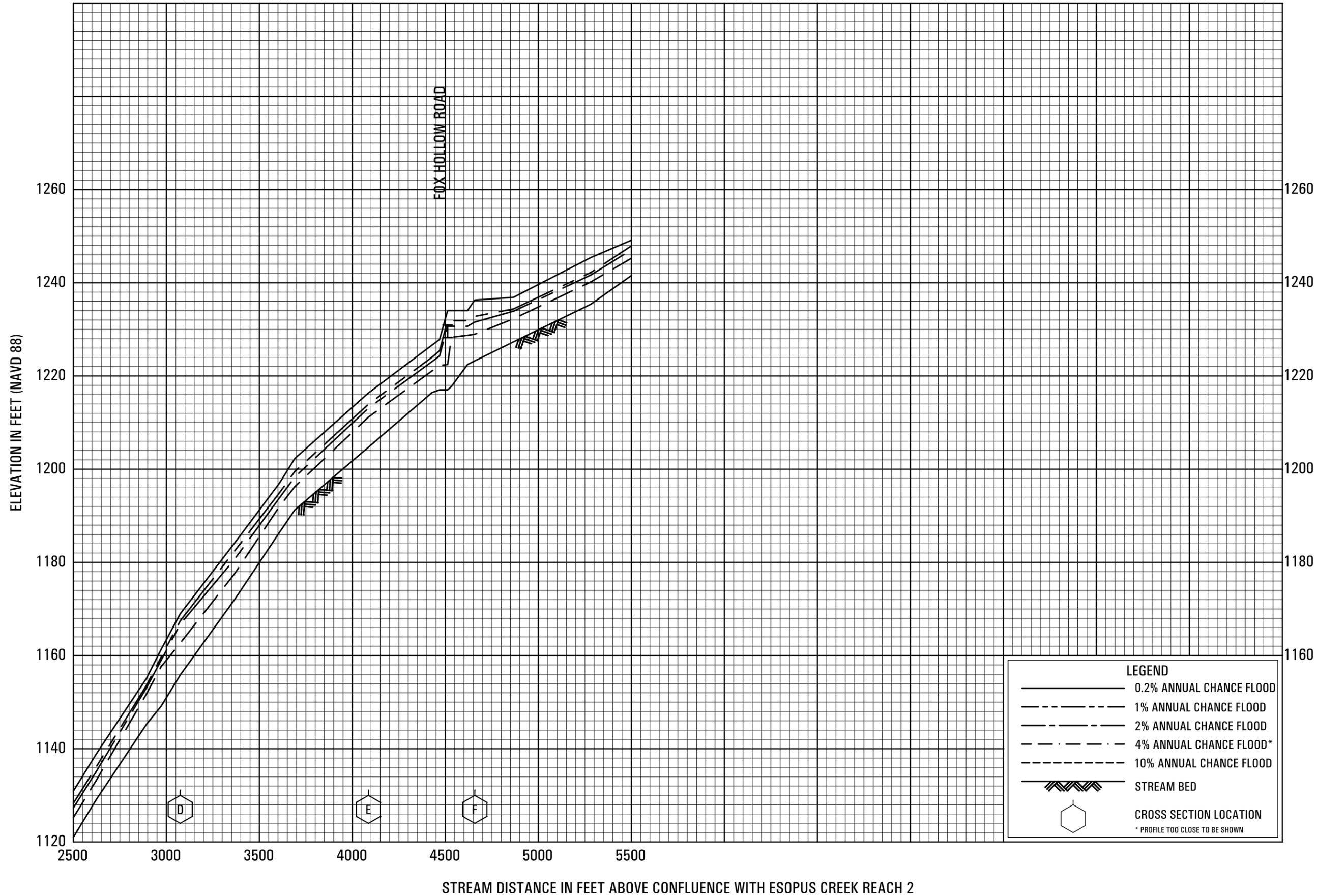
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
(ALL JURISDICTIONS)



FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

FLOOD PROFILES
 FOX HOLLOW

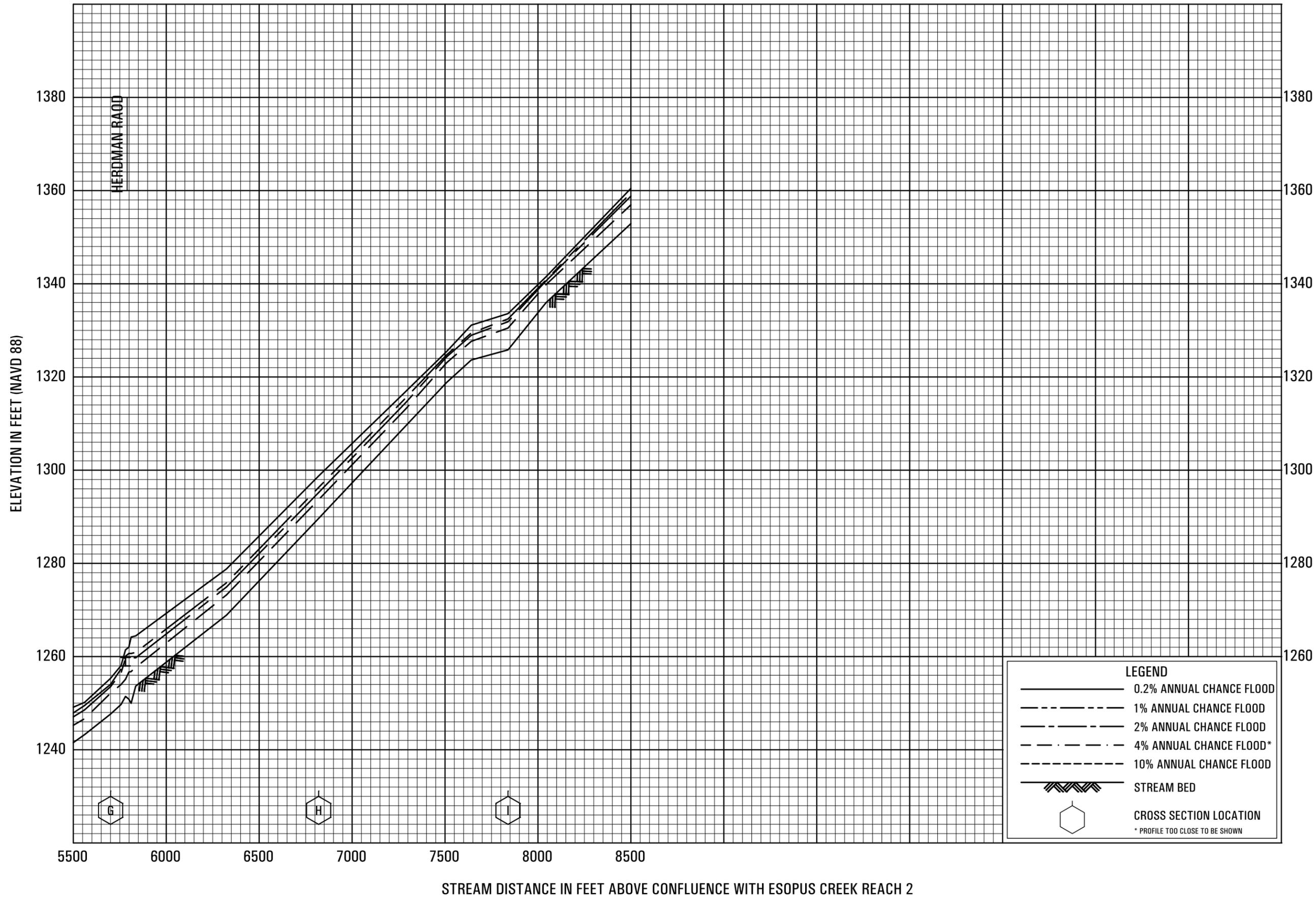
111P



FLOOD PROFILES

FOX HOLLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

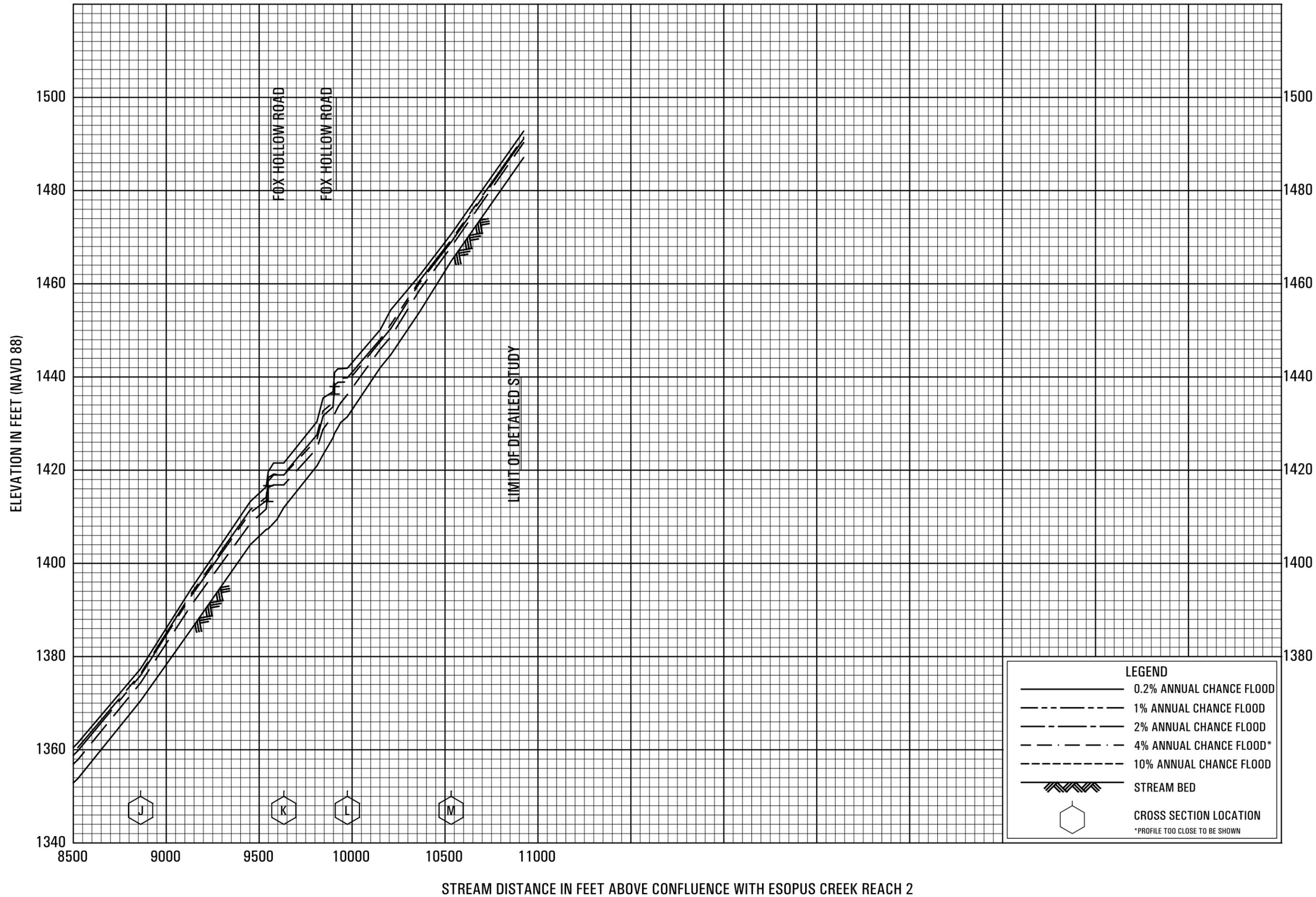


HERDMAN ROAD

FLOOD PROFILES

FOX HOLLOW

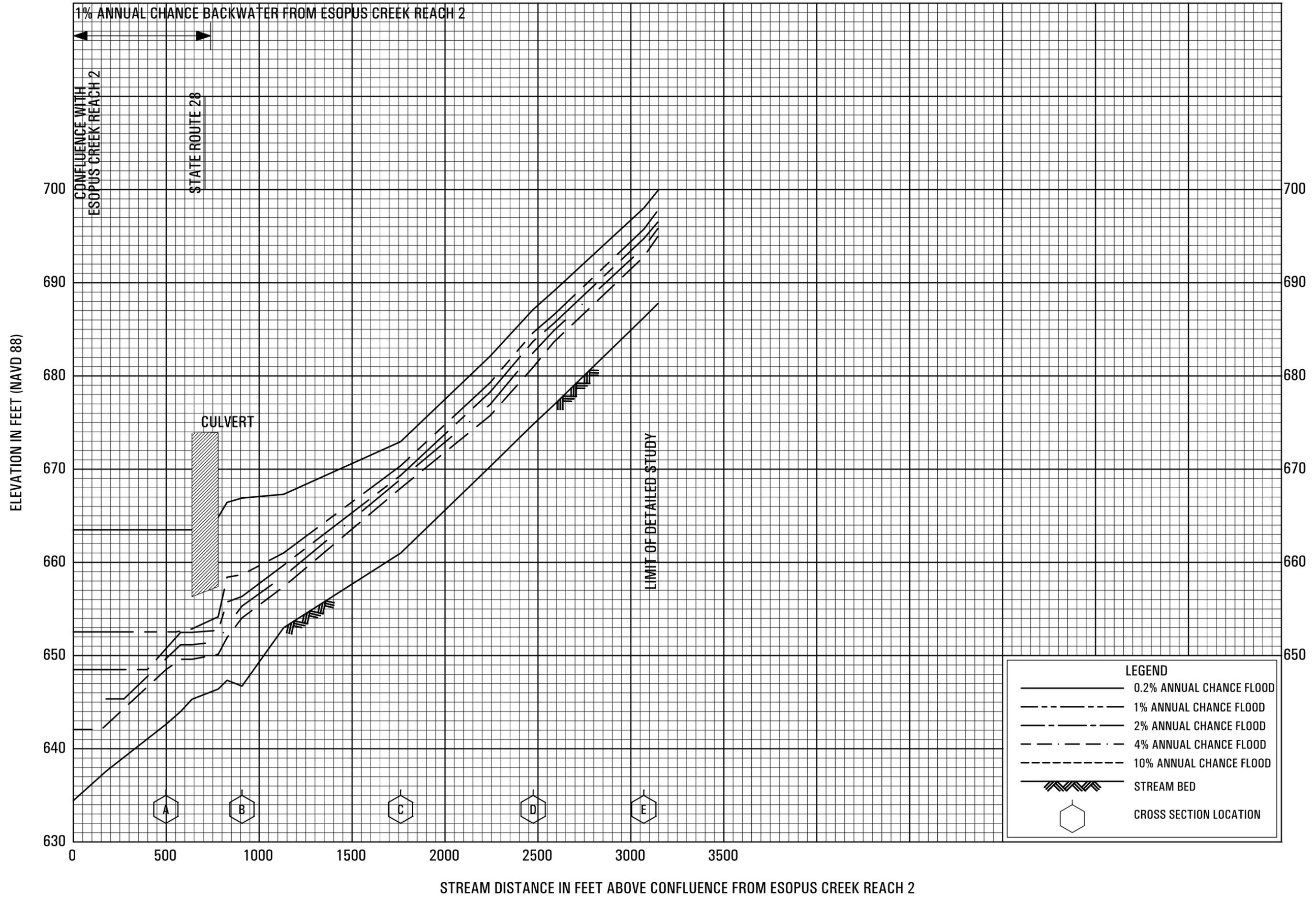
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

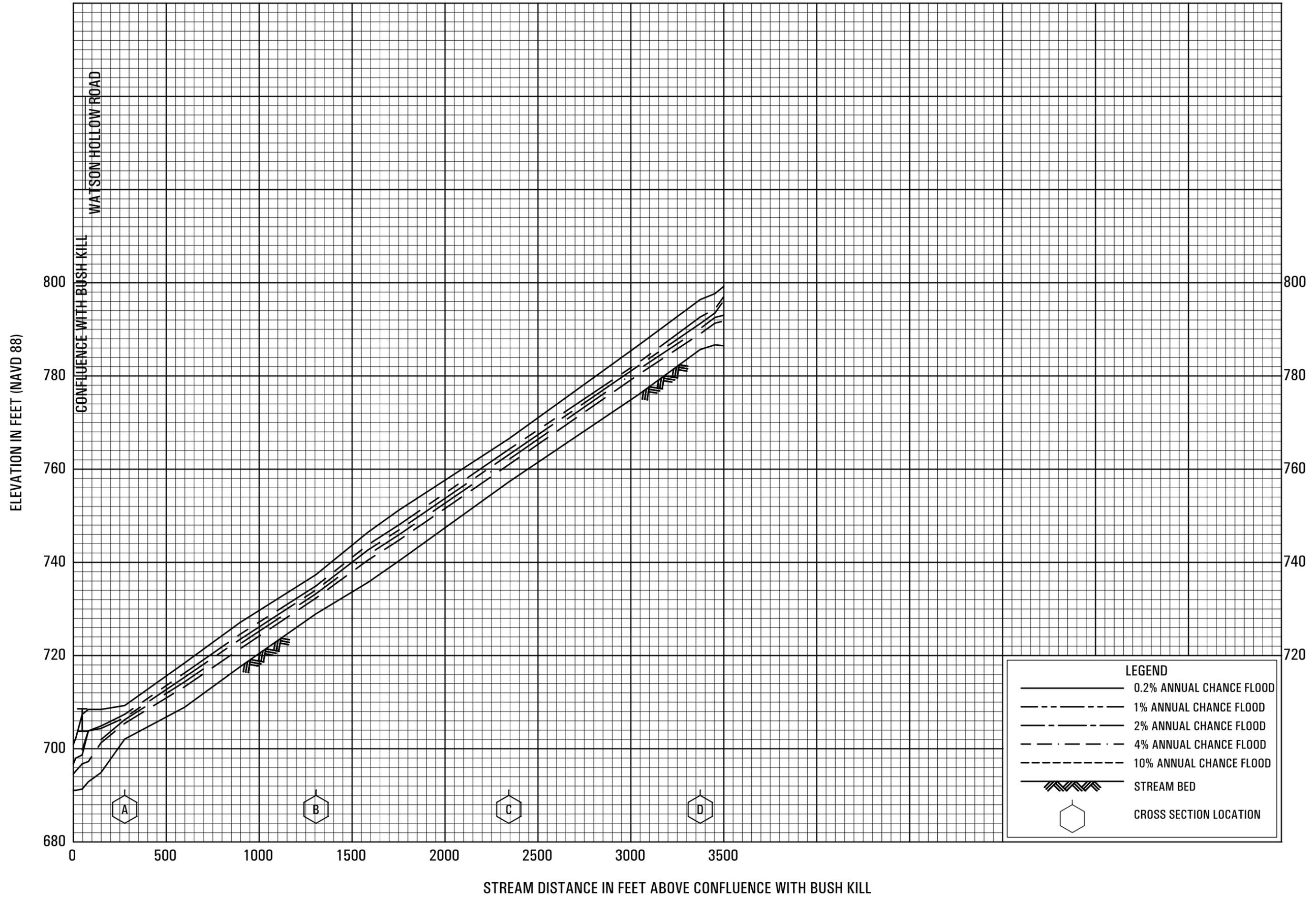
FOX HOLLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES
LITTLE BEAVER KILL

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
(ALL JURISDICTIONS)



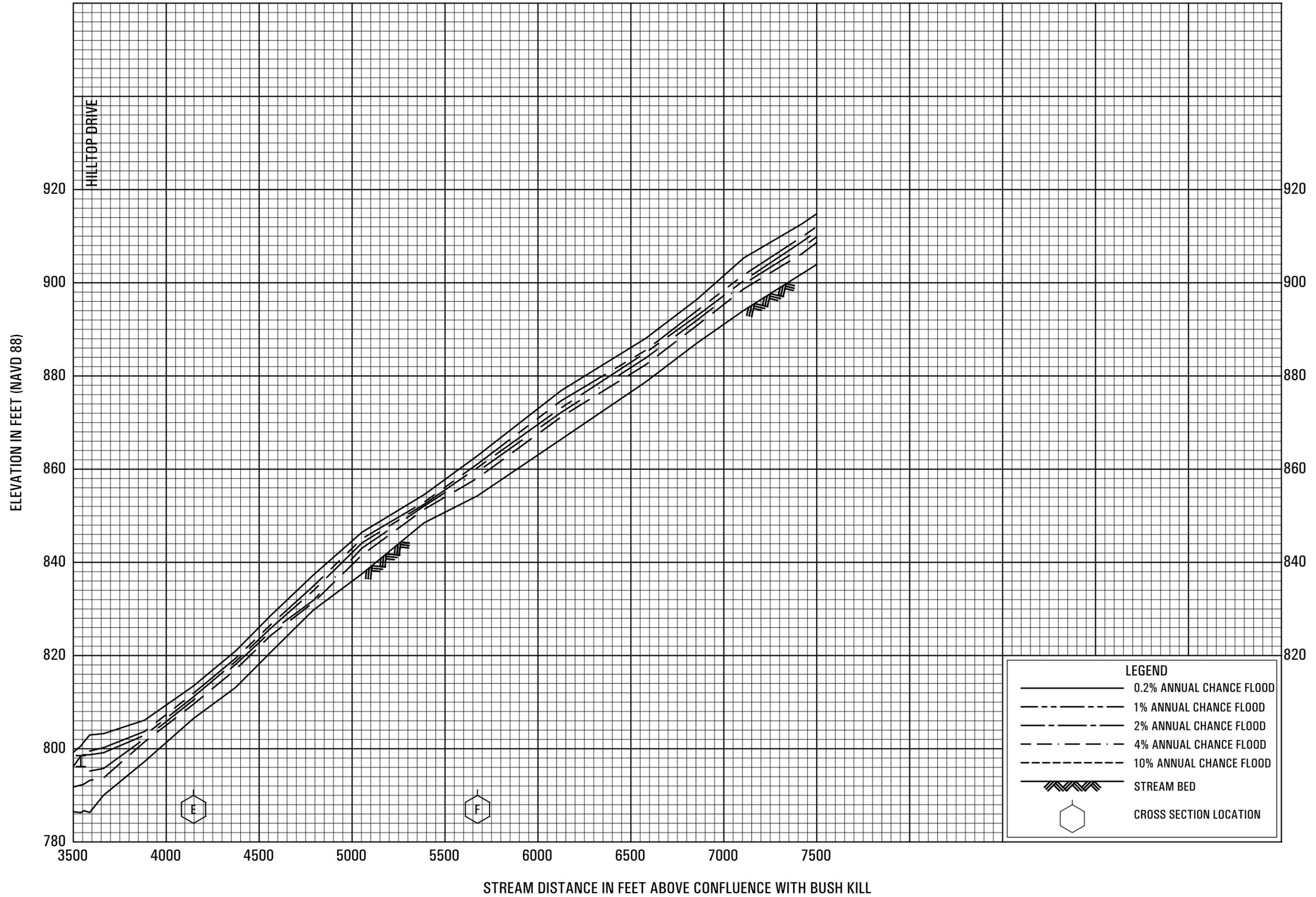
FLOOD PROFILES

MALTBY HOLLOW BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ULSTER COUNTY, NY

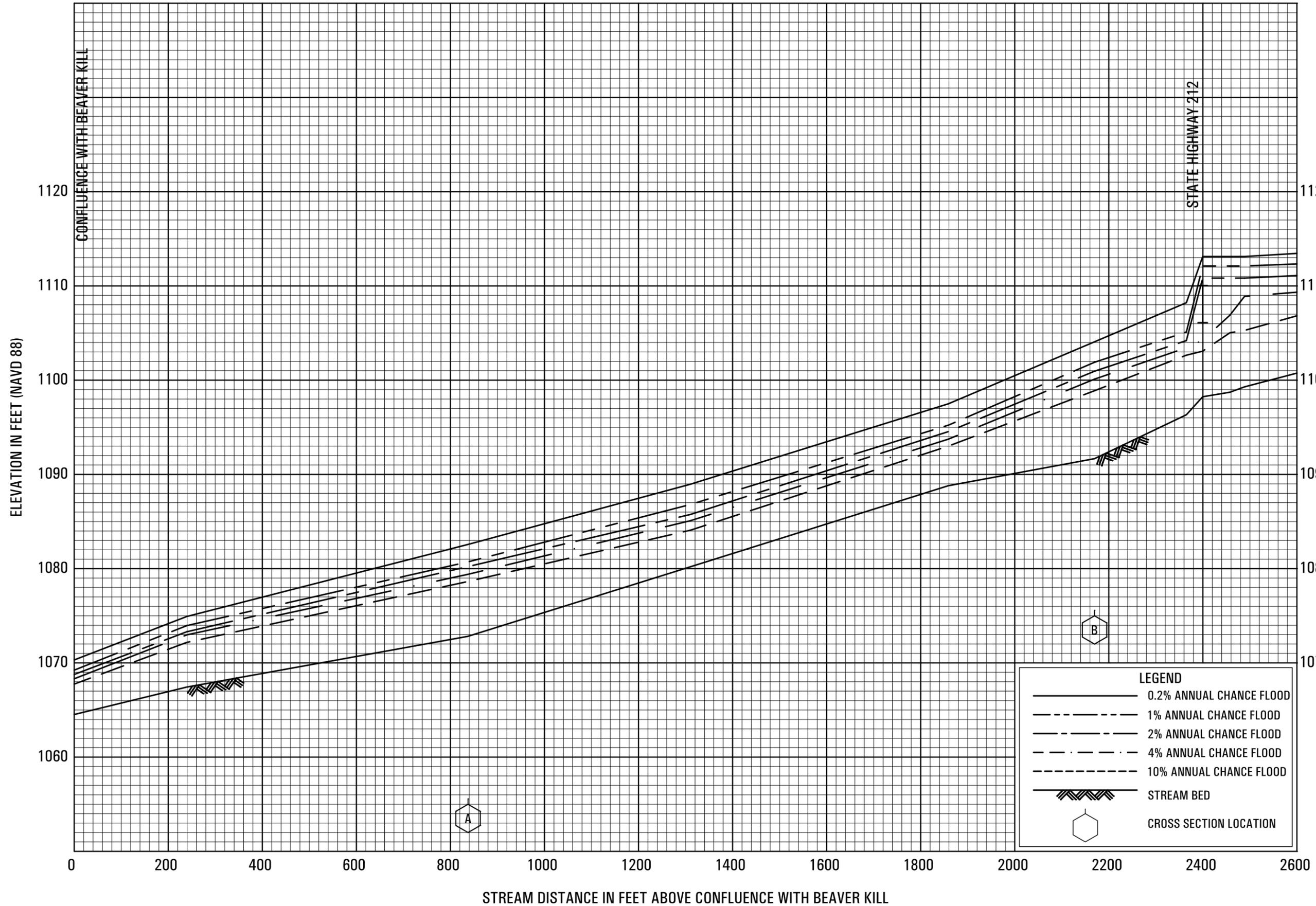
(ALL JURISDICTIONS)



FLOOD PROFILES

MALTBY HOLLOW BROOK

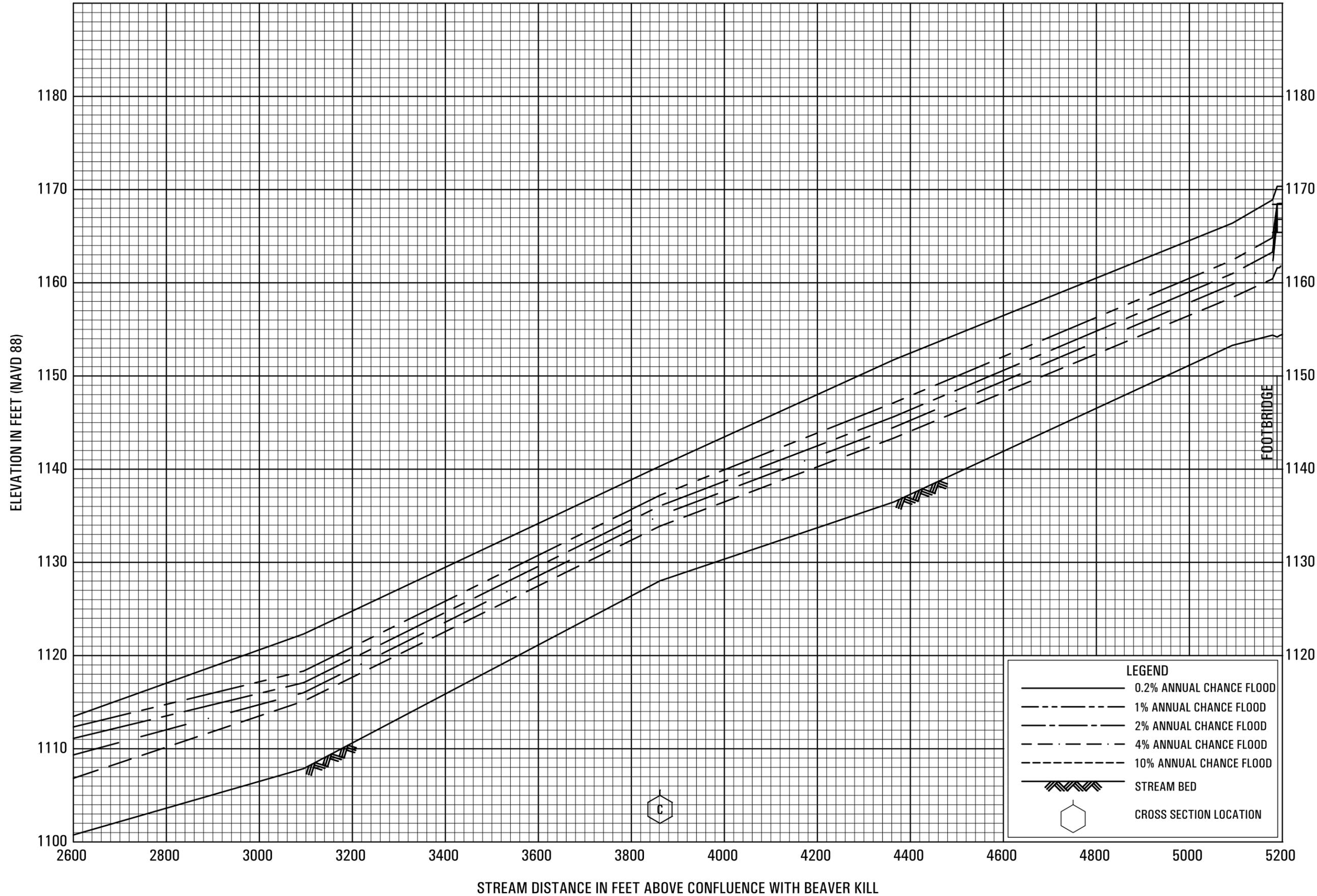
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

MINK HOLLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

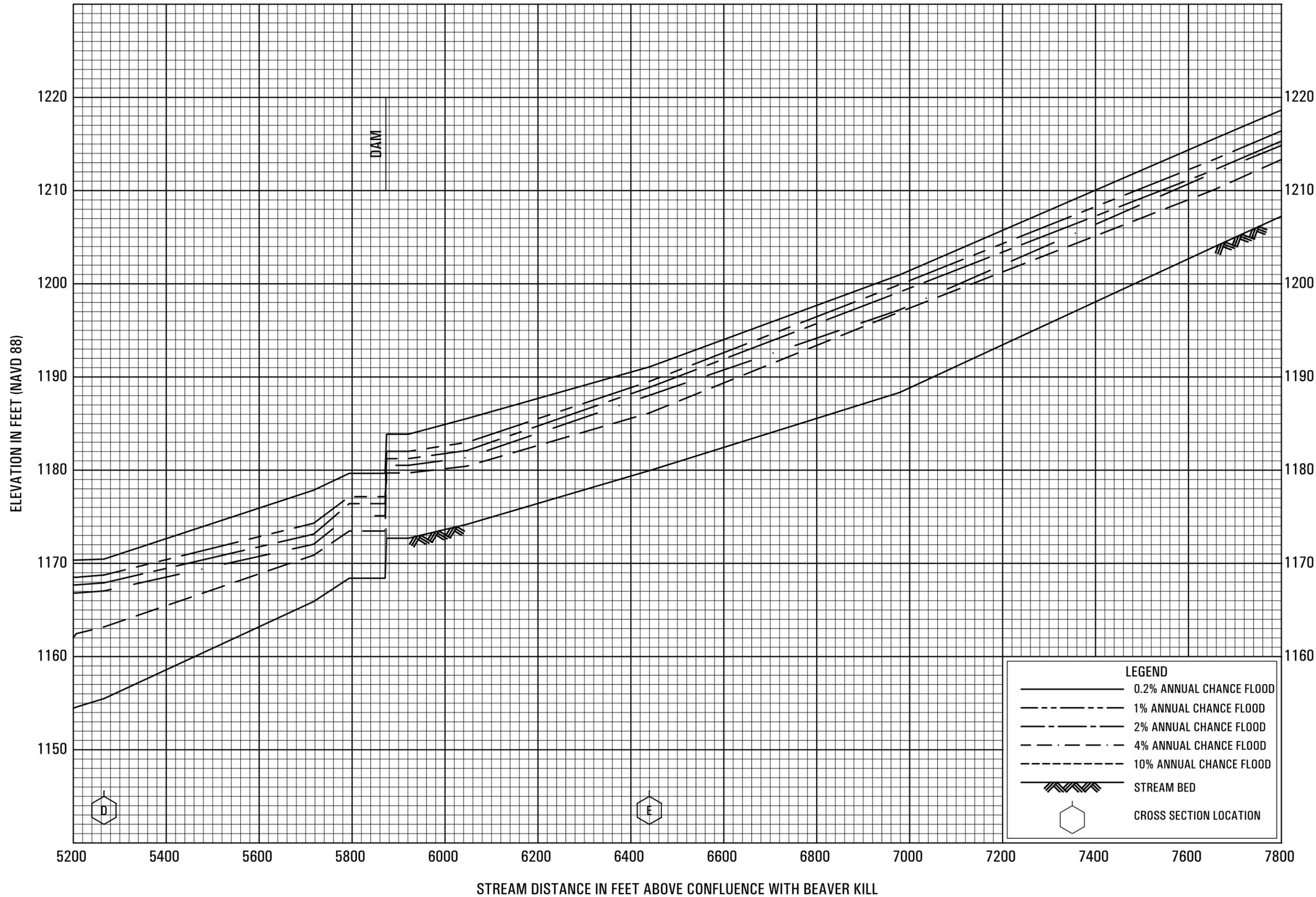


LEGEND	
	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	4% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION

FLOOD PROFILES

MINK HOLLOW

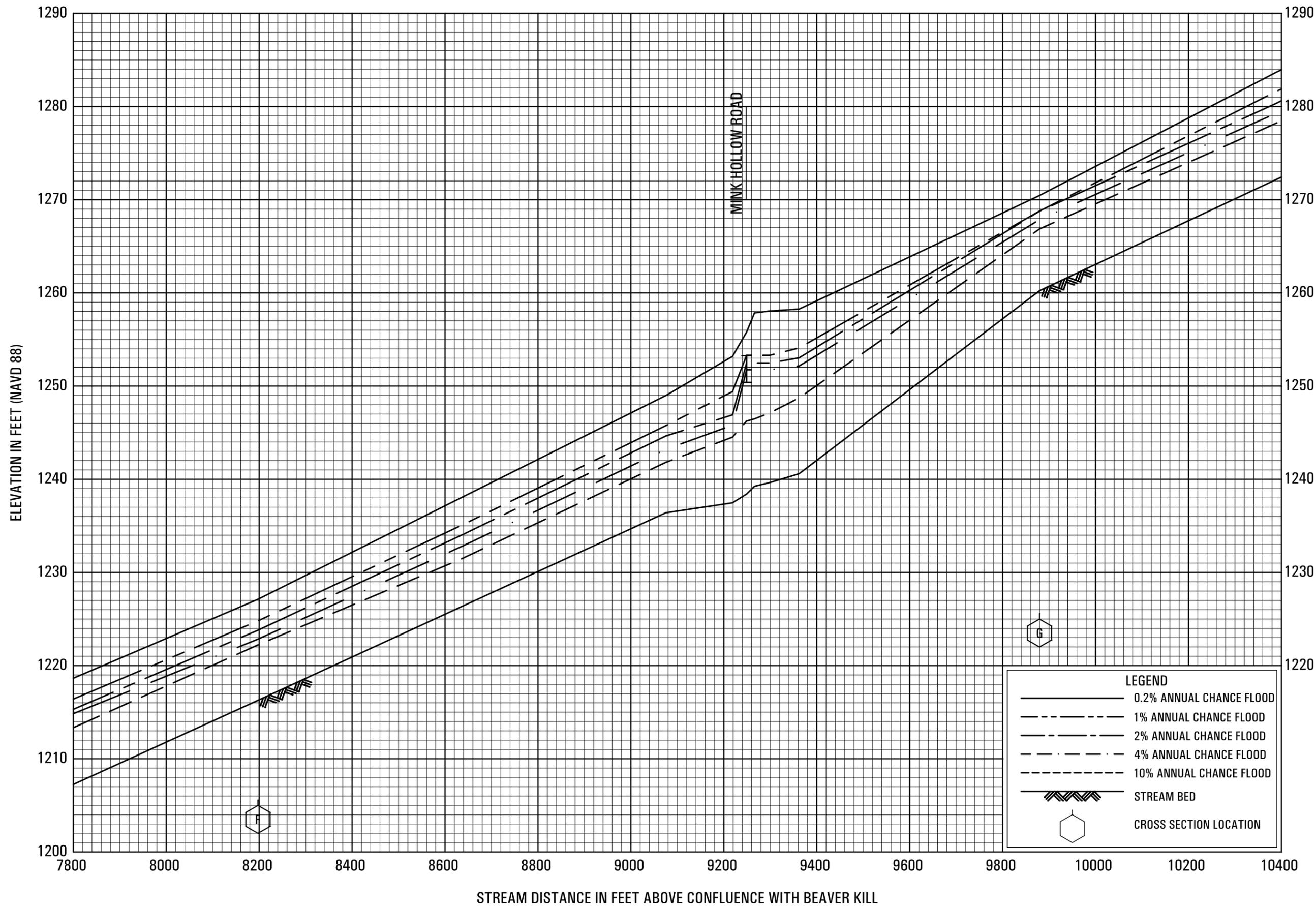
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES

MINK HOLLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

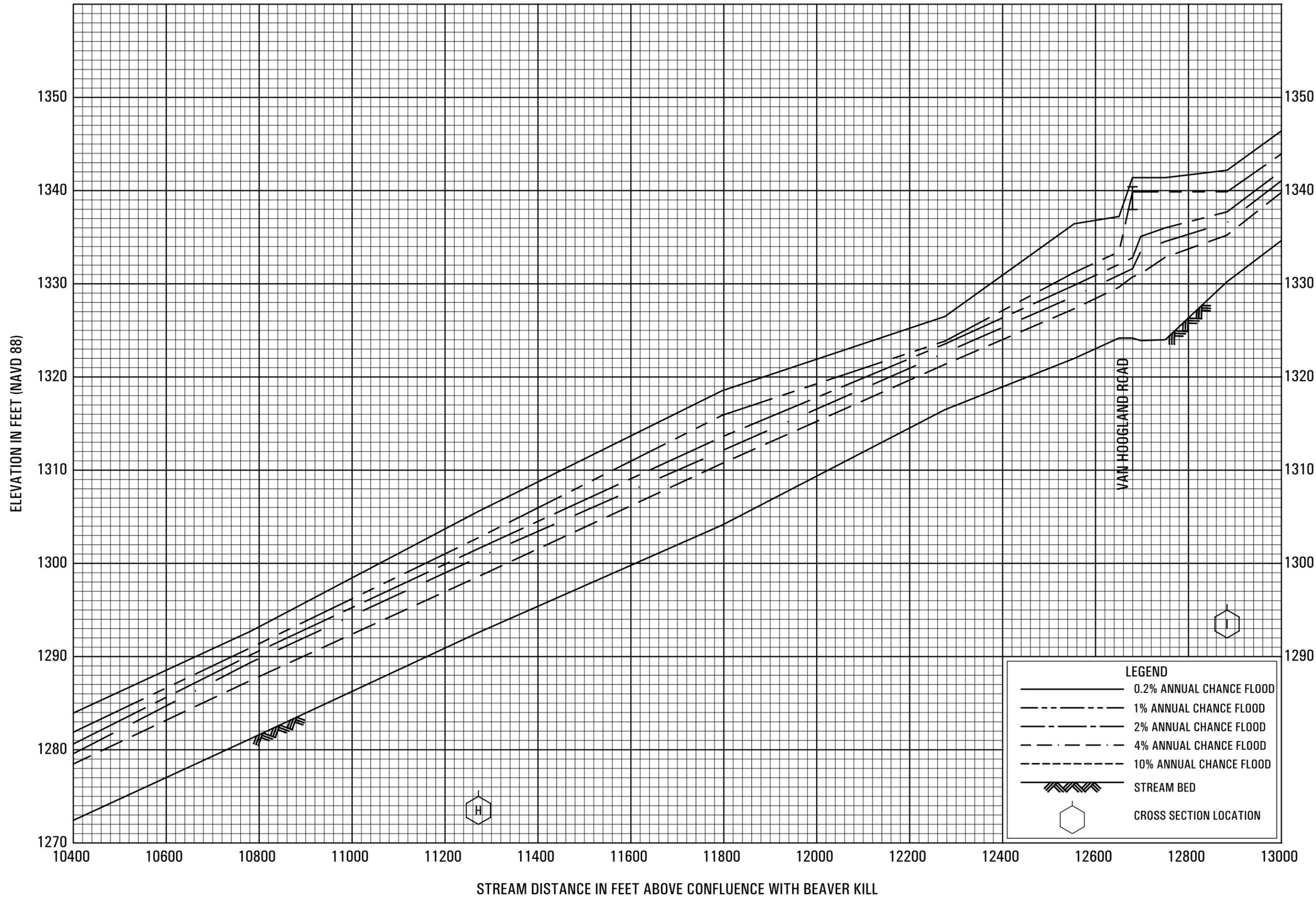


FLOOD PROFILES

MINK HOLLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

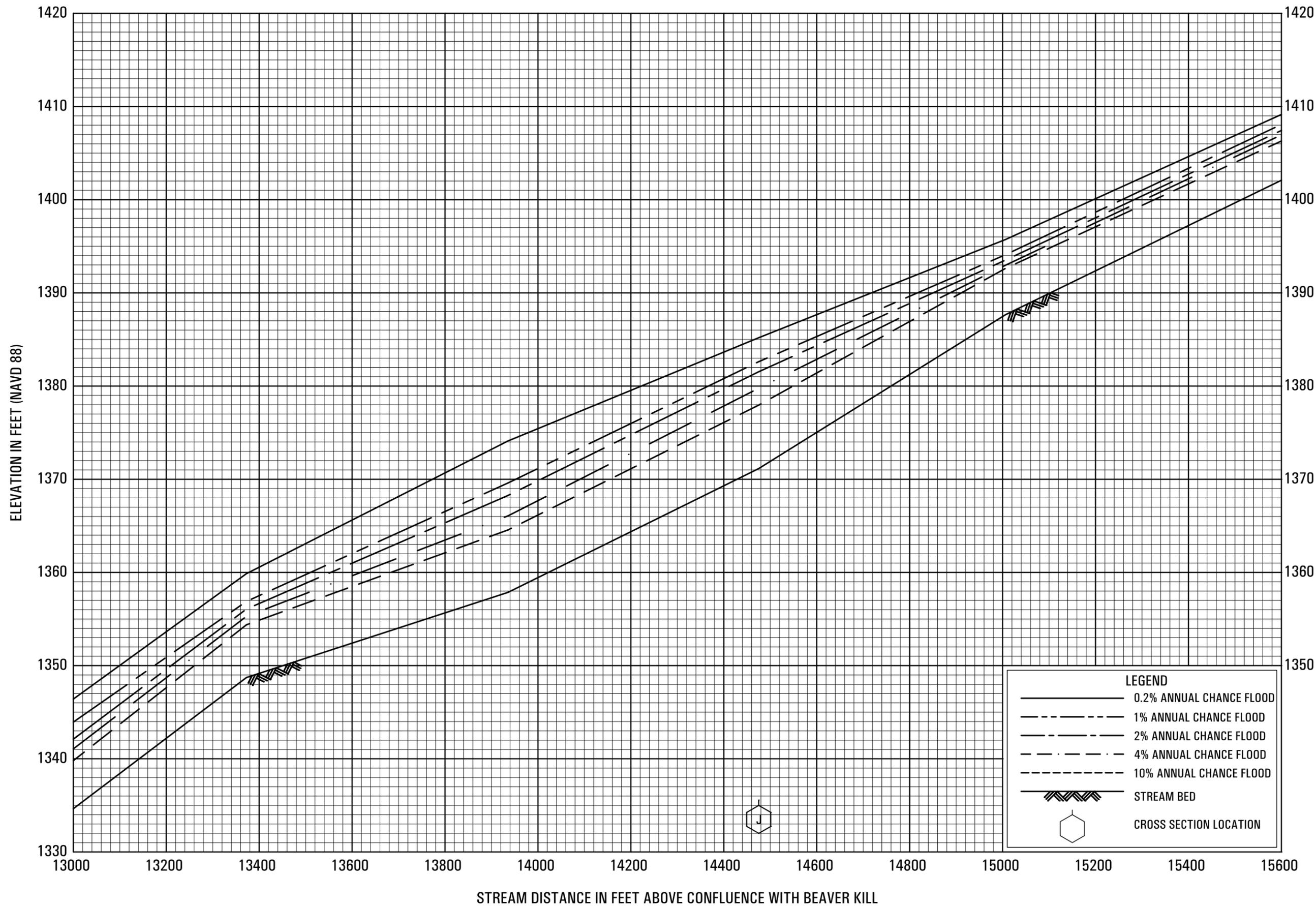
LEGEND	
	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	4% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION



FLOOD PROFILES

MINK HOLLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

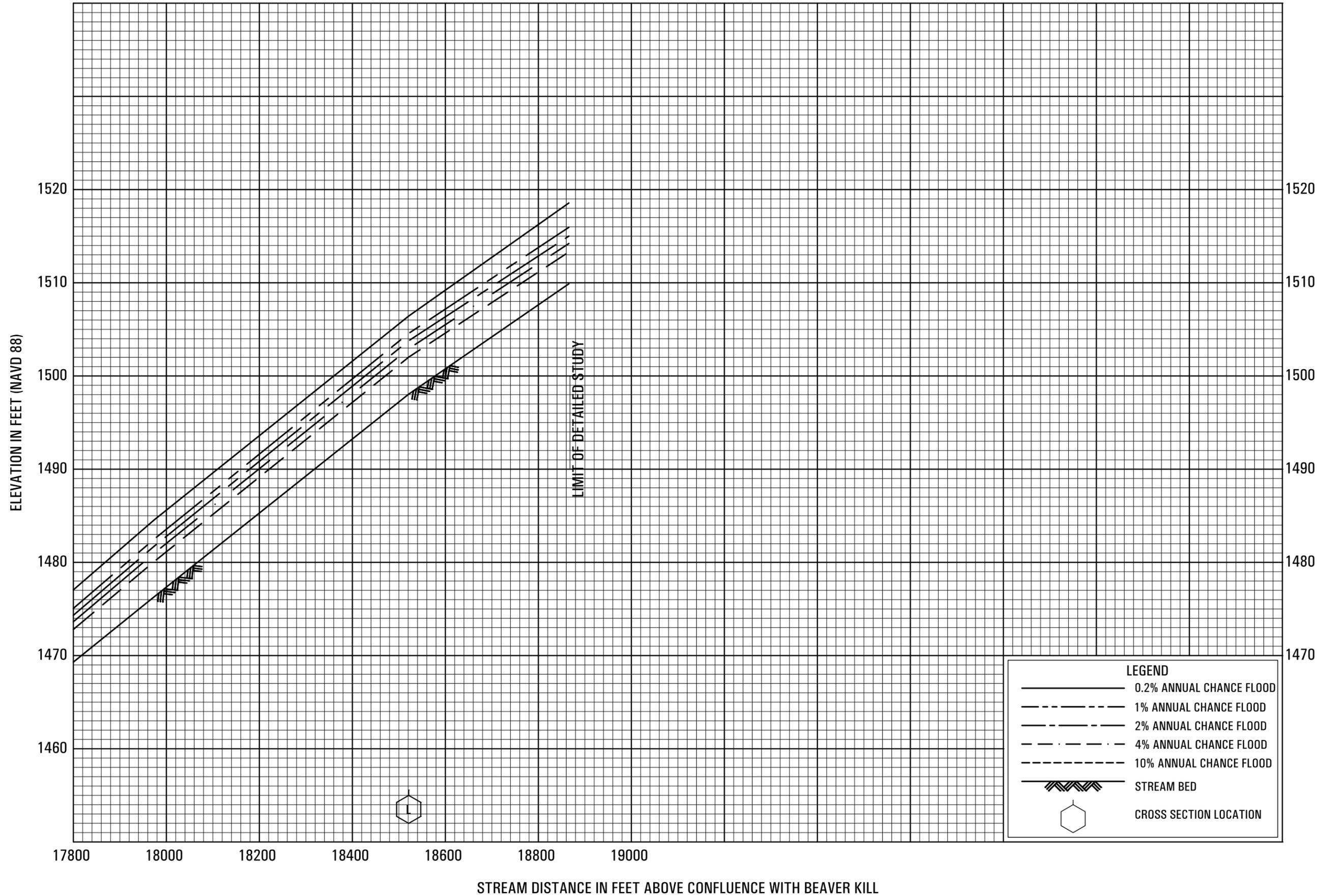


LEGEND	
	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	4% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION

FLOOD PROFILES

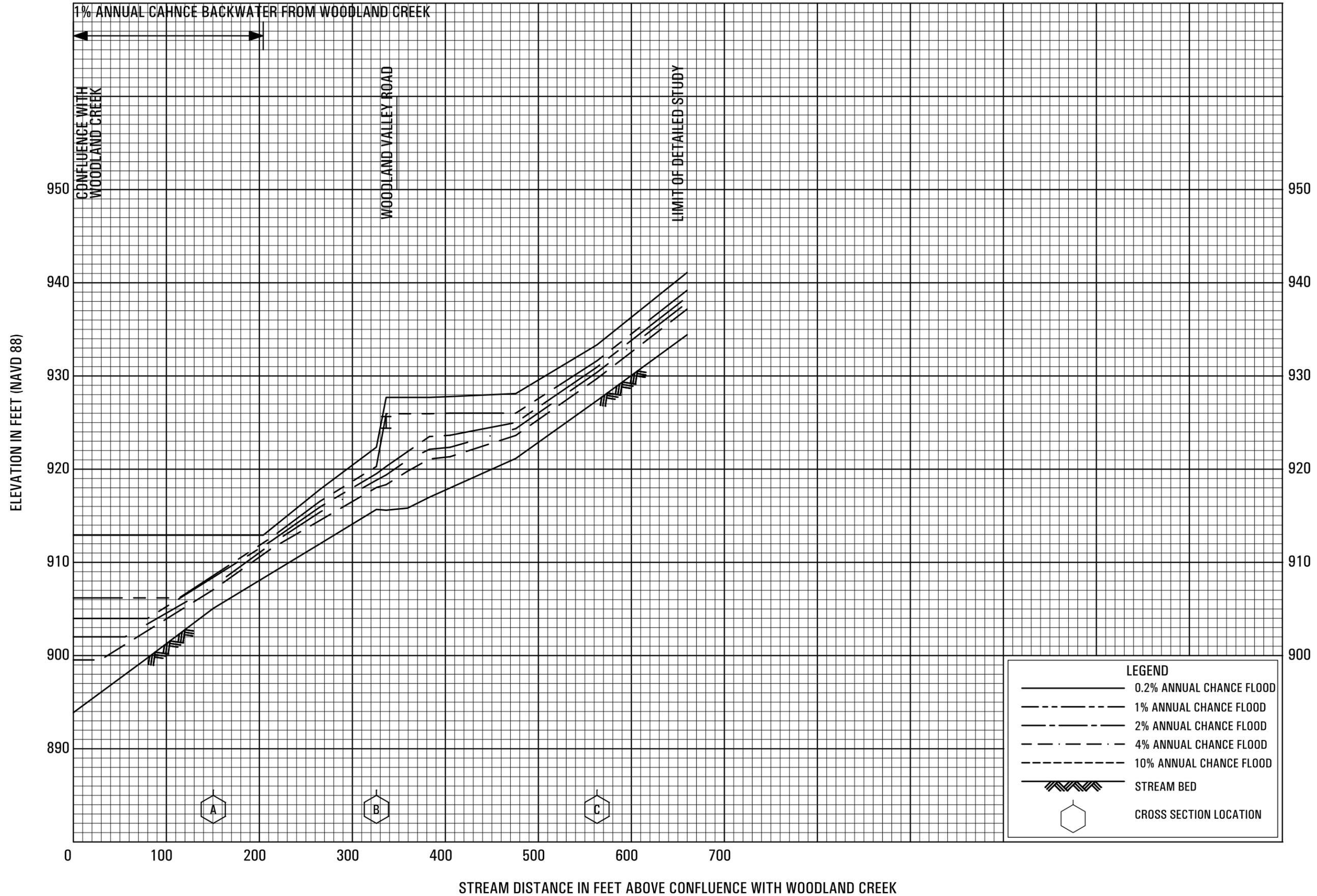
MINK HOLLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)



FLOOD PROFILES
MINK HOLLOW

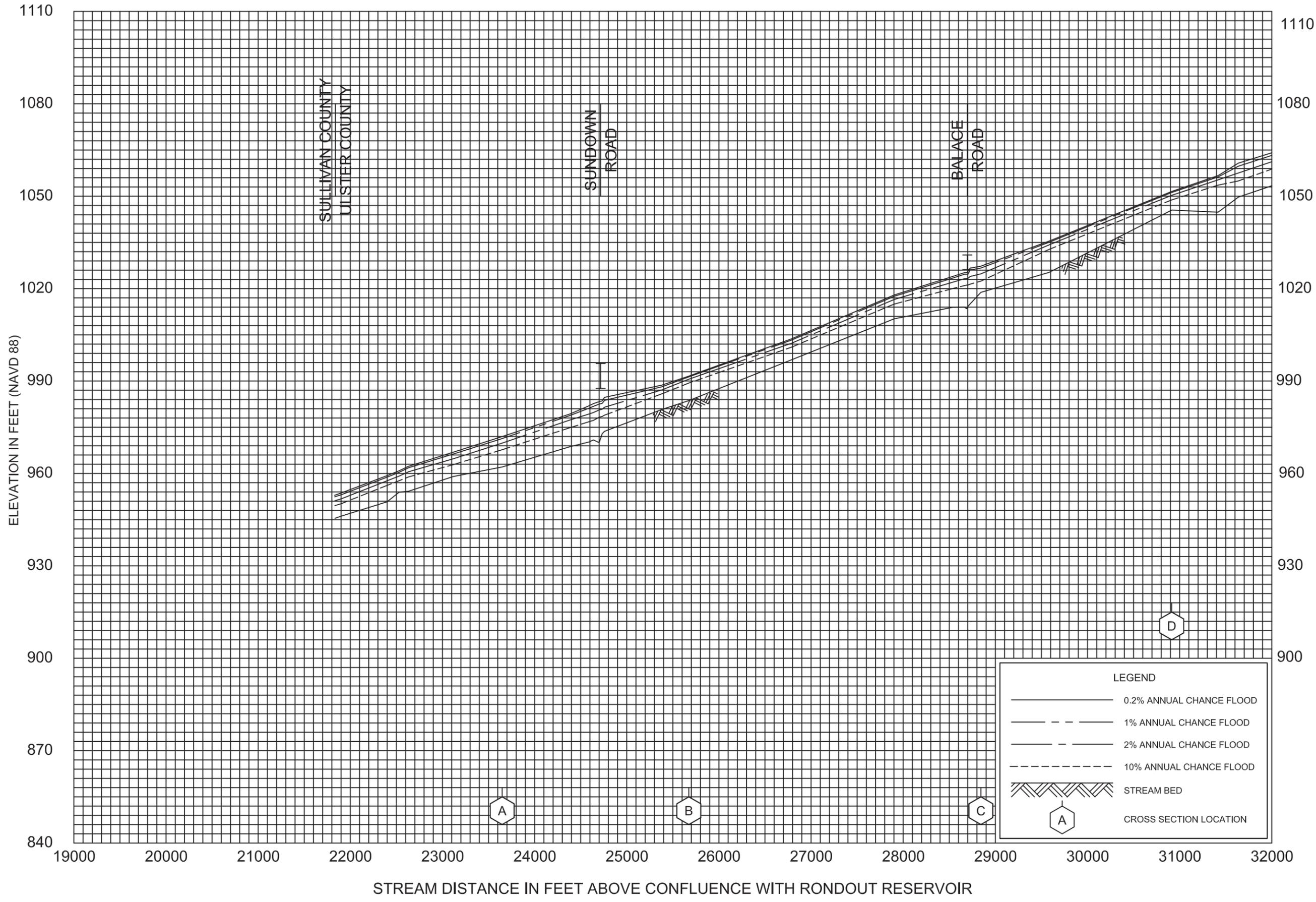
FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
(ALL JURISDICTIONS)



FLOOD PROFILES

MUDDY BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
 (ALL JURISDICTIONS)

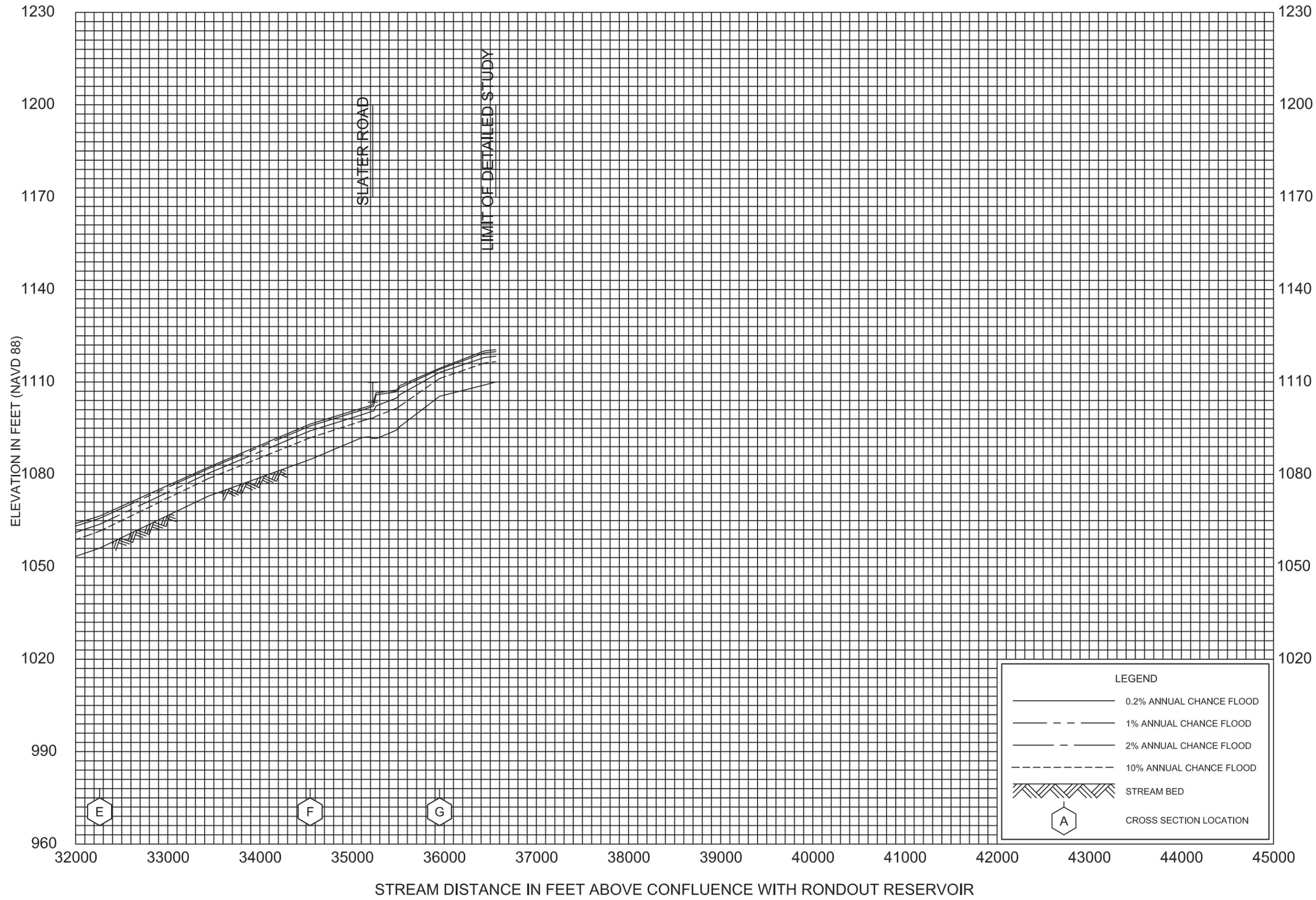


FLOOD PROFILES

RONDOUT CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ULSTER COUNTY, NY
(ALL JURISDICTIONS)

180P



FLOOD PROFILES

RONDOUT CREEK REACH 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

ULSTER COUNTY, NY

(ALL JURISDICTIONS)

181P