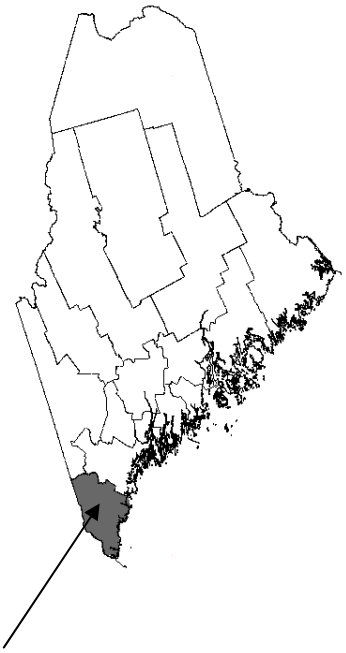
FLOOD INSURANCE STUDY

YORK COUNTY, MAINE
(ALL JURISDICTIONS)

COMMUNITY NAME	COMMUNITY NUMBER
ACTON, TOWN OF	230190
ALFRED, TOWN OF	230191
ARUNDEL, TOWN OF	230192
BERWICK, TOWN OF	230144
BIDDEFORD, CITY OF	230145
BUXTON, TOWN OF	230146
CORNISH, TOWN OF	230147
DAYTON, TOWN OF	230148
ELIOT, TOWN OF	230149
HOLLIS, TOWN OF	230150
KENNEBUNK, TOWN OF	230151
KENNEBUNKPORT, TOWN OF	230170
KITTERY, TOWN OF	230171
LEBANON, TOWN OF	230193
LIMERICK, TOWN OF	230194
LIMINGTON, TOWN OF	230152
LYMAN, TOWN OF	230195
NEWFIELD, TOWN OF	230196
NORTH BERWICK, TOWN OF	230197
OGONQUIT, TOWN OF	230632
OLD ORCHARD BEACH, TOWN OF	230153
PARSONSFIELD, TOWN OF	230154
SACO, CITY OF	230155
SANFORD, TOWN OF	230156
SHAPLEIGH, TOWN OF	230198
SOUTH BERWICK, TOWN OF	230157
WATERBORO, TOWN OF	230199
WELLS, TOWN OF	230158
YORK, TOWN OF	230159



PRELIMINARY
June 9, 2009

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
23031CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.
Selected Flood Insurance Rate Map panels for the community contain information that was previously shown separately on the corresponding Flood Boundary and Floodway Map panels (e.g., floodways, cross sections). In addition, former flood hazard zone designations have been changed as follows:

Old Zone	New Zone
A1 through A30	AE
V1 through V30	VE
B	X
C	X

Part or all of this Flood Insurance Study may be revised and republished at any time. In addition, part of this Flood Insurance Study may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the Flood Insurance Study. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current Flood Insurance Study components.

Initial Countywide FIS Effective Date:

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FLOOD INSURANCE STUDY
YORK COUNTY, MAINE [ALL JURISDICTIONS]

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of York County, including the Cities of Biddeford and Saco; and the Towns of Acton, Alfred, Arundel, Berwick, Buxton, Cornish, Dayton, Eliot, Hollis, Kennebunk, Kennebunkport, Kittery, Lebanon, Limerick, Limington, Lyman, Newfield, North Berwick, Ogunquit, Old Orchard Beach, Parsonsfield, Sanford, Shapleigh, South Berwick, Waterboro, Wells, and York (referred to collectively herein as York County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

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

1.2 Authority and Acknowledgments

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

This FIS was prepared to incorporate all the communities within York County in a countywide format. Information on the authority and acknowledgements for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports, is shown below:

Acton, Town of:	The hydrologic and hydraulic analyses for the December 5, 1984 study were performed by the Soil Conservation Service (SCS) during the course of the Flood Hazard Analyses for the Little Ossipee River and Balch Pond in the Towns of Acton, Newfield, and Shapleigh. The SCS report was completed in September 1977.

Alfred, Town of:	For the original, July 16, 1990, FIS, the hydrologic and hydraulic analyses were prepared by the U.S. Geological Survey (USGS) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No. 20. That work was completed in January 1989. For the May 18, 1998, revision the hydrologic and hydraulic analyses for the Mousam River and Tributary to Middle Branch Mousam River were prepared by Green International Affiliates, Inc., for FEMA under Contract No. EMW-93-C-4144. This work was completed in April 1995.
Arundel, Town of:	The hydrologic and hydraulic analyses for the June 4, 1996, study were prepared by Stone & Webster Engineering Corporation for FEMA, under Contract No. H-4092. This study was completed in June 1979. The wave runup analysis was completed in November 1981.
Berwick, Town of:	The hydrologic and hydraulic analyses for the August 5, 1991, study were prepared by Hamilton Engineering Associates, Inc. for FEMA, during the preparation of the FISs for the Cities of Somersworth and Rochester, New Hampshire.
Biddeford, City of:	The hydrologic and hydraulic analyses for the November 15, 1983, study were prepared by Stone and Webster Engineering Corporation for FEMA, under Contract No. H-4092. This work was completed in October 1978. The wave runup analysis for this study was completed in May 1982
Buxton, Town of:	The hydrologic and hydraulic analyses for the January 5, 1982, study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. IAA-H-14-78, Project Order No. 10. This study was completed in December 1979.

Cornish, Town of:	The hydrologic and hydraulic analyses for the September, 1979, study were prepared by Edward C. Jordan Company for the Federal Insurance Administration (FIA), under Contract No. H-4578. This work, which was completed in June 1978, covered all significant flooding sources in the Town of Cornish.
Dayton, Town of:	The hydrologic and hydraulic analyses for the December 1, 1980, study were prepared by the USGS, Water Resources Division (WRD) for the FIA, under Inter-Agency Agreement No. IAA-H-14-78, Project Order No. 10. This work was completed in July 1979.
Eliot, Town of:	The hydrologic and hydraulic analyses for the June 5, 1989, study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No. 20. This work was completed in December 1987.
Hollis, Town of:	The hydrologic and hydraulic analyses for the January 19, 1982, study were prepared by the USGS for FEMA, under Inter-Agency Agreement No, IAA-H-14-78, Project Order No, 10. This work was completed in December 1979.
Kennebunk, Town of:	The hydrologic and hydraulic analyses for the July 19, 1982, study were prepared by Stone & Webster Engineering Corporation for FEMA, under Contract No. H-4092. This study was completed in June 1979. The wave runup analysis was completed in November 1981.
Kennebunkport, Town of:	The hydrologic and hydraulic analyses for the July 4, 1988, study were prepared by Stone and Webster Engineering Corporation for FEMA, under Contract No. H-4092. This work was completed in October 1978. The wave runup analysis for this study was completed in December 1981.

Kennebunkport, Town of – cont'd:	The Lake of the Woods area, north of Walkers Point, was revised to incorporate updated topographic maps. This work was completed in November 1987 by Dewberry & Davis.
Kittery, Town of:	The hydrologic and hydraulic analyses for the January 5, 1984, study were prepared by Stone and Webster Engineering Corporation for FEMA, under Contract No. H-4092. This work was completed in May 1982.
Lebanon, Town of:	The hydrologic and hydraulic analyses for the Salmon Falls River in the City of Rochester, Strafford County, New Hampshire, were performed by Hamilton Engineering Associates, Inc. for FEMA under Contract No. EMW-C-0334. That work was completed in April 1981. The hydrologic and hydraulic analyses for Salmon Falls River in the Town of Milton, Strafford County, New Hampshire, were prepared by Costello, Loamsney & DeNapoli, Inc., for FEMA, under Contract No. EMW-84-R-160. That work was completed in November 1985. For the July 3, 2002, FIS, the hydrologic and hydraulic analyses for Salmon Falls River were taken from the work performed for the City of Rochester and the Town of Milton as described above. The hydrologic analyses for Little River, Bog Brook, and Great Brook were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-98-IA-0175, Project Order No. 1. This work was completed in February 2000. Planimetric base map files were provided in digital format by the State of Maine, Office of Geographic Information Systems. These files were compiled at a scale of 1:24,000 from USGS 7.5-Minute Series Topographic Maps. Additional information may have been derived from other sources. Users of the precountywide FIRMs should be aware that minor adjustments might have been

Lebanon, Town of – cont'd:	made to specific base map features. The coordinate system used for the production of the precountywide FIRM is Universal Transverse Mercator (UTM), North American Datum of 1927 (NAD27), Clarke 1866 spheroid. Differences in the datum and spheroid used in the production of FIRMs for adjacent communities may result in slight positional differences in map features at the community boundaries. These differences do not affect the accuracy of information shown on the precountywide FIRM.
Limerick, Town of:	In the August 1, 1984, study the hydrologic and hydraulic analyses for the Little Ossipee River were performed by the Soil Conservation Service (SCS) during the course of the Flood Hazard Analyses for the Little Ossipee River in the Towns of Limerick and Waterboro. The SCS report was completed in September 1977.
Limington, Town of:	The hydrologic and hydraulic analyses for the October 1, 1981, study were prepared by the WRD of the USGS for FEMA, under Inter-Agency Agreement No. IAA-H-14-78, Project Order No. 10. This work was completed in December 1979.
Lyman, Town of:	The hydrologic and hydraulic analyses for the May 15, 1991, study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No. 20. This work was completed in March 1989.
North Berwick, Town of:	The hydrologic and hydraulic analyses for the August 1, 1984, study were performed by the SCS during the course of the Flood Hazard Analyses for the Great Works River in the Towns of North Berwick and Sanford. The SCS report was completed in September 1977.

Newfield, Town of:	The hydrologic and hydraulic analyses for the December 5, 1984, study were performed by the SCS during the course of the Flood Hazard Analyses for the Little Ossipee River and Balch Pond in the Towns of Newfield, Acton, and Shapleigh. The SCS report was completed in September 1977.
Ogunquit, Town of:	The hydrologic and hydraulic analyses for the January 5, 1983, study were prepared by Stone & Webster Engineering Corporation for FEMA, under Contract No. H-4092. This study was completed in May 1979. The wave runup analysis was completed in January 1982.
Old Orchard Beach, Town of:	The hydrologic and hydraulic analyses in the January 5, 1984, study were prepared by Stone and Webster Engineering Corporation for FEMA, under Contract No. H-4092. This work was completed in October 1978. The wave runup analysis was completed in May 1982.
Parsonsfield, Town of:	The hydrologic and hydraulic analyses for the June, 1979, study were performed by Edward C. Jordan Company, Inc., for FEMA, under Contract No. H-4578. This work, which was completed in March 1978, covered all significant flooding sources affecting the Town of Parsonsfield.
South Berwick, Town of:	The hydrologic and hydraulic analyses for the December 5, 1984, study were performed by the SCS during the course of the Flood Hazard Analyses for the Great Works River in the Town of South Berwick. The SCS report was completed in September 1977.
Saco, City of:	For the original July 5, 1983, FIS report and January 5, 1984, FIRM (hereinafter referred to as the 1984 FIS), the hydrologic and hydraulic analyses were prepared by Stone & Webster Engineering Corporation for FEMA, under Contract No. H-4092. That

Saco, City of – cont'd:

work was completed in May 1982.

For the March 16, 1998, FIS, the coastal high hazard area analyses and delineations were prepared by ENSR Consulting & Engineering for FEMA, under Contract No. 93-C-420 1. That work was completed in April 1994. Modifications to the ENSR Consulting & Engineering analyses and delineations were made by Dewberry & Davis to bring the study into compliance with the NFIP regulations and the standards set forth in the Guidelines and Specifications for Wave Elevation Determination and V-Zone Mapping (Reference 1). The hydrologic and hydraulic analyses for Sawyer Brook were taken from a floodplain management study prepared by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (Reference 2).

For the January 5, 2006 revision, the redelineation of the coastal and detailed riverine 1-percent-annual-chance floodplain was performed through a Coordinating Technical Partners (CTP) agreement between the Southern Maine Regional Planning Commission and FEMA. Redelineation of Saco River, Goosefare Brook, Sawyer Brook, and the Atlantic Ocean coastline was performed by Woodward & Curran.

The digital base mapping information was derived from USGS Digital Orthophoto Quadrangles (DOQs) produced at a scale of 1:12,000 from photography dated 1998 or later.

The projection used in the production of the digital precountywide FIRM was UTM Zone 19. The horizontal datum was NAD 83, GRS80 spheroid.

For the 2006 revision, the coastal and riverine 1- and 2-percent-annual-chance

Saco, City of – cont'd:	floodplain elevations from the March 16, 1998, study have been used to delineate the floodplain boundaries between transects and between cross sections using topographic maps with a contour interval of 2 feet (Reference 3). The two-foot contour interval topographical mapping was provided by James W. Sewall Company.
Sanford, Town of:	The hydrologic and hydraulic analyses for the December 3, 1991, FIS represent a revision of the original analyses, which were performed by the SCS during the course of the Flood Hazard Analyses for the Great Works River in the Towns of Sanford and North Berwick. The SCS report was completed in September 1977. The hydrologic and hydraulic analyses were performed by the USGS for EFMA under Inter-Agency Agreement No. EMW-87-E-2548, Project Order No. 1A. This work was completed in January 1990. In the July 20, 1998, revision the hydraulic analyses for the Mousam River (Lower Reach) were taken from a revision to the FIS for the Town of Alfred and were prepared by Green International Affiliates, Inc. for FEMA (Reference 4). This work was completed in April 1995.
Shapleigh, Town of:	The hydrologic and hydraulic analyses for the February 5, 1985, study were performed by the SCS during the course of the Flood Hazard Analyses for the Little Ossipee River in the Towns of Acton, Newfield, and Shapleigh. The SCS report was completed in September 1977.
Waterboro, Town of:	In the August 1, 1984, study, the hydrologic and hydraulic analyses for the Little Ossipee River from the downstream corporate limits to the Waterboro-Limington-Limerick town boundary were performed by the USGS during the course

Waterboro, Town of – cont'd:

of the FIS for the Town of Limington. The Limington study was completed in December 1979.

The hydrologic and hydraulic analyses for the Little Ossipee River from the Waterboro-Limington-Limerick town boundary to the upstream corporate limits and for Little Ossipee Lake were performed by the SCS during the course of the Flood Hazard Analyses for the Little Ossipee River in Waterboro and Limerick. The SCS report was completed in September 1977.

Wells, Town of:

For the original January 5, 1983, FIS report and July 5, 1983, FIRM (herein after referred to as the 1983 FIS), the hydrologic and hydraulic analyses were prepared by Stone and Webster Engineering Corporation for FEMA under Contract No. H-4092. That work was completed in September 1978. The wave height and runup analysis for that study was completed in February 1982.

For the January 16, 2003 revision, the hydrologic and hydraulic analyses for the Atlantic Ocean were prepared by ENSR for FEMA, under Contract No. EMW-95-C4783. This work was completed in September 1998.

The digital base map files were provided by the State of Maine, Department of Administrative and Financial Services, Office of GIS, 125 State House Station, Augusta, Maine, 04333-0125, under a Memorandum of Agreement between the Office of GIS and FEMA. These files were compiled at a scale of 1:24,000 from USGS 7.5-minute quadrangle maps. In addition, the files were modified to match the previously compiled FIS for the Town of Wells.

The digital FIRMS were produced in UTM coordinate referenced to the NAD 1929 and the Clarke 1866 spheroid.

York, Town of:

For the original, September 15, 1983, FIS report and December 15, 1983, FIRM (hereinafter referred to as the 1983 FIS), the hydrologic and hydraulic analyses were prepared by Stone and Webster Engineering Corporation for FEMA, under Contract No. H-4092. The stillwater flooding portion for that study was completed in October 1978. The wave runup and wave height analyses were completed in May 1982.

For the June 17, 2002 revision, the hydrologic and hydraulic analyses for the Atlantic Ocean were prepared by ENSR for FEMA, under Contract No. EMW-95-C-4783. This work was completed in September 2, 1998.

The digital base map files for the streamlines were provided by the State of Maine, Department of Administrative and Financial Services, Office of GIS, 125 State House Station, Augusta, Maine, 04333-0125, under a Memorandum of Agreement between the Office of GIS and FEMA. These files were compiled at a scale of 1:24,000 from USGS 7.5-Minute Series Topographic Maps. In addition, the files were modified to match the previously compiled FIS of the Town of York. The digital base map files for the roads were provided by the Town of York and were compiled from 1998 aerial photographs.

The digital precountywide FIRMS were produced in UTM coordinates referenced to NAD 1927 and the Clarke 1866 spheroid.

Base map information shown on this revision was obtained from the Maine Geographic Information System (MeGIS). Base map files were provided in digital format by the Office of Maine GIS (http://apollo.ogis.state.me.us/). Orthophoto images, except for the panels listed below, were produced at a scale of 1:2,400 and 1:4,800. The photography was acquired beginning in the spring of 2003 through the spring of 2005. The pixel resolution of the ortho imagery used for York County is either 0.5-, 1- , or 2-ft, depending on the panel.

Because of incomplete coverage by the MeGIS 2005 orthophoto imagery, an

alternate source for base map imagery was used on several FIRM panels. Panels 0041, 0042, 0066, 0067, 0153, 0190, 0201, 0208, 0215, 0269, 0336, 0351, 0361, 0380, 0469, 0479, 0780, 0486, 0487, 0501, 0516, 0519, 0563, 0584, 0589, 0591, 0603, 0604, 0677, 0679, 0687, 0688, 0702, 0709, 0727, 0734, 0737, 0741, 0763, and 0801 were created using 1-meter pixel resolution USGS DOQQs acquired between 1991 and 1998.

The projection used in the preparation for both sources of orthophoto imagery was Universal Transverse Mercator (UTM) Zone 19. The horizontal datum is North American Datum (NAD) of 1983, GRS80 spheroid.

1.3 Coordination

The purpose of an initial Consultation Coordination Officer's (CCO) meeting is to discuss the scope of the FIS. A final meeting is held to review the results of the study.

The dates of the initial, intermediate and final CCO meetings held for the incorporated communities within York County are shown in Table 1, "CCO Meeting Dates for Precountywide FIS."

TABLE 1 - CCO MEETING DATES FOR PRECOUNTYWIDE FIS

Community Name	Initial CCO Date	Intermediate CCO Date	Final CCO Date
Town of Acton	*	*	June 26, 1984
Town of Alfred	August 9, 1994	*	September 4, 1996
Town of Arundel	*	*	*
Town of Berwick	August 4, 1989	*	September 19, 1990
City of Biddeford	August 10, 1976	November 1, 1978	January 19, 1983
Town of Buxton	December 1, 1977	*	August 20, 1980
Town of Cornish	June 1, 1977	*	March 20, 1979
Town of Dayton	December 15, 1977	September 7, 1978	June 23, 1980
Town of Eliot	February 1, 1985	December 1, 1987	June 22, 1988
Town of Hollis	December 1, 1977	September 7, 1979	August 12, 1981
Town of Kennebunk	August 4, 1976	November 1, 1978	February 8, 1982
Town of Kennebunkport	August 4, 1976	*	May 25, 1982
Town of Kittery	August 3, 1976	November 1, 1978	January 27, 1983
Town of Lebanon	*	*	February 3, 2002
Town of Limerick	*	*	March 22, 1984
Town of Limington	December 15, 1977	*	October 9, 1980
Town of Lyman	February 1, 1985	March 1, 1989	November 29, 1989
Town of Newfield	*	*	June 26, 1984
Town of North Berwick	*	*	March 22, 1984
Town of Ogunquit	August 3, 1976	November 1, 1978	August 16, 1982
Town of Old Orchard Beach	August 10, 1976	November 1, 1978	January 18, 1983
Town of Parsonsfield	June 1, 1977	*	June 1, 1978
City of Saco	*	*	February 16, 2005

*Data not available

TABLE 1 - CCO MEETING DATES FOR PRECOUNTYWIDE FIS – cont'd

Town of Sanford	August 9, 1994	*	*
Town of Shapleigh	*	*	September 18, 1984
Town of South Berwick	*	*	June 26, 1984
Town of Waterboro	*	*	March 22, 1984
Town of Wells	September 9, 1994	July 21, 1999	October 5, 2000
Town of York	September 9, 1994	February 15, 1996	October 5, 2000

*Data not available

For this Countywide FIS, the initial Consultation Coordination Officer (CCO) meeting was held on November 29, 2004, and was attended by representatives of FEMA, the Maine Floodplain Management Program, Watershed Concepts, Camp, Dresser & McKee, Inc. (CDM), USGS Maine Water Science Center, and community officials.

The results of the study were reviewed at the final CCO meeting held on _____, and attended by representatives of _____. All problems raised at that meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

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

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

TABLE 2 –FLOODING SOURCES STUDIED BY DETAILED METHODS

Flooding Source Name	Description of Study Reaches
Atlantic Ocean	Shallow flooding areas near Fortunes Rocks Beach, Lords Pond, Etherington Pond, Lilly Pond, at two points on Horseshoe Cove, near Bracketts point, at Timber Island, on Curtis Cove, and on the east side of Timber Point in the City of Biddeford; at Sampson's Cove and in Lake of the Woods area in Kennebunkport; at Goodwins Road, Crescent Beach, and at the end of Greenoughs Road in the Town of Kittery; at the southern corporate limits in the Town of Old Orchard Beach and the City of Saco; and at Cow Point Beach, Long Branch, Cape Neddick Harbor, and along a portion of Long Beach in the Town of York
	For the entire coastline within the York County coastal communities of Kennebunk, Kennebunkport, Kittery, Ogunquit, Old Orchard Beach, Saco, Wells and York, including all estuaries
	Tidal flooding affecting the Saco River and Goosefare Brook in Saco; affecting the Saco River, the Little River, Moors Brook, and Thatcher Brook in Biddeford
Balch Pond	The entire pond within the Towns of Acton and Newfield
Batson River	From the Dam just downstream of State Route 9 to approximately 0.6 miles upstream of Stone Road in the Town of Kennebunkport.
Bauneg Beg Pond	For the entire shoreline within the communities of North Berwick and Sanford
Blacksmith Brook	From approximately 1.1 miles to 1.5 miles upstream of its confluence with the Webhannet River in the Town of Wells
Branch Brook	For the entire length within the Town of Kennebunk
Bridges Swamp	From Long Beach Avenue to approximately 1725 ft upstream of Ridge Road
Bunganut Pond	For the entire shoreline within the Town of Lyman

TABLE 2 –FLOODING SOURCES STUDIED BY DETAILED METHODS – cont'd

Flooding Source Name	Description of Study Reaches
Cape Neddick River	From Shore Road to its confluence with Tributary 1 to Cape Neddick River.
Cider Hill Creek	For a distance of approximately 1.9 miles upstream of its confluence with the York River in the Town of York
Cooks Brook	From Dennett Dam to the upstream Town of Hollis corporate limits
Day Brook	From its confluence with the Mousam River to a point approximately 1.15 miles upstream in the Town of Kennebunk
Depot Brook	From approximately 0.13 miles downstream of the concrete dam to approximately 0.74 miles upstream of the concrete dam in the Town of Wells
Dolly Gordon Brook	From its confluence with York River to U.S. Route 1 in the Town of York
Estes Lake	For the entire lake within the Town of Alfred and from Estes Lake Dam to the Town of Sanford corporate limits
Goodall Brook	From its confluence with the Great Works River to approximately 100 feet upstream of Berwick Road in the Town of Sanford
Goosefare Brook	From a point 1.86 miles upstream of its confluence with the Atlantic Ocean upstream to approximately 0.4 mile upstream of Ross Road
Great Works River	From just upstream of its confluence with Salmon Falls River to Twombley Road in the Town of Sanford
Green Brook	From its confluence with the Ogunquit River to approximately 600 feet upstream of its confluence with Tributary to Green Brook
Josias River	From its confluence with the Basin to the Village of Ogunquit/Town of York corporate boundary
Kennebunk Pond	For the entire shoreline within the Town of Lyman

TABLE 2 –FLOODING SOURCES STUDIED BY DETAILED METHODS – cont'd

Flooding Source Name	Description of Study Reaches
Kennebunk River	From its confluence with the mouth of the Atlantic Ocean to a point approximately 0.5 miles upstream of U.S. Route 1 in the Town of Arundel
Little Ossipee Lake	For the entire shoreline within the Town of Waterboro, including the outlet stream to its confluence with the Little Ossipee River
Little Ossipee River	From its confluence with Saco River to the confluence with Balch Pond Dam
Little River	From just upstream of its confluence with the Atlantic Ocean to approximately 2380 feet upstream of Oak Ridge Road in the City of Biddeford
Littlefield River	For the entire length within the community of Alfred.
Merriland River (Lower Reach)	From its confluence with the Little River to approximately 0.64 mile upstream of U.S. Route 1
Merriland River (Upper Reach)	From Hobbs Farm Road approximately 2.0 miles upstream
Mill Brook	For the entire length within the community of Old Orchard Beach, from Ross Road to approximately 1.2 miles upstream
Moors Brook	From Meetinghouse Road in Biddeford to a point approximately 1.93 miles upstream
Mousam River (Town of Kennebunk)	From approximately 1000 feet upstream of its confluence with the Atlantic Ocean, upstream to Mill Street
Mousam River (Town of Sandford)	From its confluence with Estes Lake to just upstream of its confluence with Unnamed Tributary
Ogunquit River	From its mouth to its confluence with Green Brook
Ogunquit River Tributary	From its confluence with the Ogunquit River to a distance 0.57 miles upstream

TABLE 2 –FLOODING SOURCES STUDIED BY DETAILED METHODS – cont'd

Flooding Source Name	Description of Study Reaches
Ossipee River	From its confluence with the Saco River to the Town of Parsonsfield corporate limits.
Piscataqua River	At Eliot, Town of; for the entire length within the community
Roberts-Wadley Pond	At Lyman, Town of; for the entire shoreline within the community
Saco River	From West Branch Dam to its confluence with the Ossipee River
Saco River-Right Channel	From its confluence with the Saco River to the Town of Buxton corporate limits.
Salmon Falls River	From a point approximately 0.6 miles downstream of New Dam Road to the Town of Lebanon corporate limits.
Sawyer Brook	From Sawyer Street to Therrien Avenue.
Shaker Pond	The entire pond in the Town of Alfred
Smith Brook	From State Route 9 to approximately 0.25 miles above State Route 9
South Branch of West Brook	From its confluence with West Brook to a point approximately 0.42 miles upstream
Spinney Creek	From approximately 1.0 mile upstream of its confluence with the Piscataqua River to approximately 350 feet upstream of Dennett Road in the Town of Eliot.
Spruce Creek	From just downstream of Wilson Road to a point approximately 2,060 feet upstream of State Route 101 in the Town of Kittery.
Stevens Brook	From approximately 2.0 miles upstream of its confluence with Ogunquit River to approximately 2,000 feet upstream of US Route 1 in the Town of Wells.
Swan Pond	For the entire shoreline within the Town of Lyman

TABLE 2 –FLOODING SOURCES STUDIED BY DETAILED METHODS – cont'd

Flooding Source Name	Description of Study Reaches
Thatcher Brook	From its confluence with the Saco River to a point approximately 0.44 miles upstream of South Street in the Town of Biddeford
Tributary 1 to Cape Neddick River	From its confluence with Cape Neddick River to approximately 1,450 feet upstream of Mountain Road in the Town of Cape Neddick
Tributary 1 to Green Brook	From its confluence with Green Brook to approximately 0.64 miles upstream of its confluence with Green Brook
Tributary to Middle Branch Mousam River	From just downstream of Middle Branch Drive to a point approximately 1.27 miles upstream
Webhannet River	From approximately 3.61 miles to 4.87 miles above its mouth
West Brook	From approximately 2.0 miles upstream of its confluence with Great Works River to approximately 0.42 mile upstream of Bragdon Road
York River	From its confluence with the Atlantic Ocean to a point approximately 1.5 miles upstream of Scotland Bridge Road

In 2007, several flooding sources were studied by detailed methods in the Town of Berwick by the USGS-ME office in Augusta and have been included in this countywide FIS. These flooding sources include: Coffin Brook from the confluence with Worster Brook to a point 1.63 mile upstream; Unnamed Tributary to Coffin Brook (scoped by FEMA as Coffin Brook Tributary 1) from the confluence with Coffin Brook to Cemetery Road; Driscoll Brook from the downstream corporate limits to Blackberry Hill Road; Ferguson Brook from the confluence with Worster Brook to Sullivan Road; Keay Brook from the confluence with Salmon Falls River to the upstream corporate limit; Little River from the confluence with Salmon Falls River to the upstream corporate limit; Mulloy Brook from the confluence with Worster Brook to a point 1.1 mile upstream; Worster Brook from the confluence with Salmon Falls River to a point 5.8 miles upstream; and Unnamed Tributary to Worster Brook (scoped by FEMA as Worster Brook Tributary 3) from the confluence with Worster Brook to Cemetery/Thompson Hill Rd. The Salmon Falls River was redelineated from Sullivan Street to the abandoned bridge on Walnut Grove Road. Limits of detailed study are indicated on the Flood Profiles and on the DFIRM. The areas studied by detailed methods were selected with priority given to all known flood

hazard areas and areas of projected development and proposed construction.

As part of this countywide update, revised coastal analyses were performed for the open water flooding sources in the communities of Biddeford, Kennebunk, Kennebunkport, Kittery, Ogunquit and Old Orchard Beach. In addition, redelineation of coastal flood hazard data was performed for open water flooding sources in the communities of Saco, Wells and York.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon, by FEMA and the individual communities within York County. All or portions of the flooding sources listed in Table 3, "Flooding Sources Studied by Approximate Methods," were studied by approximate methods in the precountywide FISs.

TABLE 3 - FLOODING SOURCES STUDIED BY APPROXIMATE METHODS

Flooding Source Name	Community(s)
Adams Brook	Berwick
Alewife Pond	Kennebunk
Arundel Swamp Brook	Arundel
Bartlett Pond	Lyman
Batson River (upstream portion)	Kennebunkport
Beach Island	Biddeford
Beaver Dam Brook	Berwick, North Berwick
Bell Marsh	York
Bennett Brook	South Berwick
Benson Brook	Parsonsfield
Big Ledge Brook	Saco
Black Brook	Limington
Blacksmith Brook	Wells
Bluff Island (shoreline)	Saco
Bog Brook	Lebanon
Bonny Eagle Pond Outlet Brook	Buxton
Boulter Pond	York
Boyd Brook	South Berwick
Boyd Pond	Limington
Boymon Brook	Saco
Braceys Swamp	York
Branch Brook	Newfield, Wells Kennebunk
Bridges Swamp (portions)	York
Brimstone Pond	Arundel
Brown Brook	Cornish
Buff Brook	Waterboro

TABLE 3 - FLOODING SOURCES STUDIED BY APPROXIMATE METHODS – cont'd

Flooding Source Name	Community(s)
Bumpkin Island	Kennebunkport
Bush Brook	Biddeford
Cape Island	Kennebunkport
Cape Neddick River (portions)	York
Carding Mill Brook	Hollis
Carlisle Brook	Lyman
Carll Branch	Waterboro
Cascade Brook	Old Orchard Beach, Saco
Chases Pond	York
Chellis Brook	Parsonsfield
Chickering Creek	Kittery
Chicks Brook	South Berwick, York
Cider Hill Creek (portions)	York
Cider Mill Pond	North Berwick
Clay Hill Brook	York
Coffin Brook	Berwick
Cooks Brook	Lyman
Cooks Brook, below Dennett Dam	Hollis
Crockett Brook	Hollis, Kittery
Curtis Pond	Sanford
Cutts Pond	Kittery
Cutts Ridge Brook	Eliot, Kittery, York
Davis Pond	Arundel
Deep Brook	Saco
Deer Pond	Hollis
Deering Brook	Buxton
Deering Pond	Sanford
Dennett Brook	Saco
Derring Pond	Kittery
Doles Pond	Limington
Dolly Gordon Brook (portions)	York
Driscoll Brook	Berwick
Duck Brook	Arundel
Duck Island (shorelines)	Kittery
Eagle Island (shoreline)	Saco
East Goose Rock	Kennebunkport
East Sister Island (shorelines)	Kittery
Emerson Brook	Parsonsfield
Estes Brook	North Berwick
Etherington Pond	Biddeford

TABLE 3 - FLOODING SOURCES STUDIED BY APPROXIMATE METHODS – cont'd

Flooding Source Name	Community(s)
Fenderson Brook	Parsonsfield
Ferguson Brook	Berwick
Fishing Island (shorelines)	Kittery
Fogg Brook	Buxton
Folly Island	Kennebunkport
Folly Pond	York
Foss Pond	Limington
Foxwell Brook	Saco
Frost Brook	North Berwick, South Berwick
Fuller Brook	Kittery
Garden Brook	York
Goff Mill Brook	Arundel
Goodall Brook (portions)	Sanford
Gooseberry Island	Biddeford, Kittery
Goosefare Brook	Saco
Grant Brook	North Berwick, Saco, Lebanon
Great Collins Brook	Parsonsfield
Great Creek	Eliot
Great East Lake	Acton
Great Pond	Biddeford
Great Spring Brook	Dayton
Great Works River (portions)	Sanford
Green Brook	Wells
Green Island	Kennebunkport
Haines Meadow Brook	Buxton
Hamlin Brook	Limington
Hamlinton Brook	Waterboro
Hansen Pond	Acton
Harmon Brook	Saco
Harvey Mill Stream	Waterboro
Hay Brook	Alfred, Sanford
Heath, the	Eliot, Lyman, Wells
Henderson Brook	Waterboro
Hill Creek	Kittery
Hilton Brook	Berwick
Hom Island (shorelines)	Kittery
Home Pond	Limington
Hoopers Brook	South Berwick
Hussey Brook	North Berwick
Hutchins Creek	Kittery

TABLE 3 - FLOODING SOURCES STUDIED BY APPROXIMATE METHODS – cont'd

Flooding Source Name	Community(s)
Indian Pond	York
Innis Brook	Saco
Isinglass Pond	Waterboro
Jagger Pond	Sanford
Johnson Brook	Kittery, York
Josias River	York
Junkins Brook	Hollis
Keay Brook	Berwick
Kennebunk Pond, East Outlet	Lyman
Kennebunk Pond, West Outlet	Lyman
Kennebunk River	Arundel, Kennebunk
Killick Brook	Hollis
Killick Pond	Hollis
Killick Pond Brook	Limington
L Pond	Sanford
Lake Carolyn	York
Legion Pond	Kittery
Libby Brook	York, Kittery
Lily Pond	Biddeford, Hollis
Little Brook	Eliot
Little Long Pond	Sanford
Little River	Berwick, Biddeford, Buxton, Cornish, Lebanon, North Berwick, York
Locke Brook	Hollis
Long Pond	Saco
Lords Brook	Lyman
Lords Pond	Biddeford
Love Brook	Berwick
Lovers Brook	South Berwick
Merriland River	Wells
Middle Branch	Waterboro
Middle Branch Mousam River	Alfred
Middle Branch Pond	Alfred, Waterboro
Middle Pond	York
Mill Brook (portions)	Old Orchard Beach
Mill Creek	Saco
Milliken Pond	Old Orchard Beach
Moody Pond	Waterboro
Moulton Brook	York
Mousam River (portions)	Kennebunk, Shapleigh

TABLE 3 - FLOODING SOURCES STUDIED BY APPROXIMATE METHODS – cont'd

Flooding Source Name	Community(s)
Mud Pond	Sanford
Muddy Brook	Hollis, York
Mulloy Brook	Berwick
Negro Island	Biddeford
Neoutaquet River	North Berwick
Nonesuch Brook	Saco
Northwest Pond	Waterboro
Ogunquit River	South Berwick, Wells
Ogunquit River (portions above Green Brook)	Ogunquit
Old Fishing Pond	Sanford
Parker Pond	Lyman
Pease Brook	Cornish
Pendexter Brook	Parsonsfield
Perkins Brook	North Berwick
Perkins Marsh Brook	Sanford
Picture Pond	Sanford
Portsmouth Naval Shipyard	Kittery
Pot Hook Brook	Dayton
Pugsley Brook	Cornish
Ram Island (shoreline)	Saco
Rogers Brook	York
Round Pond	Lyman, Sanford
Round Swamp Brook	Kennebunkport
Runnels Brook	Dayton
Rush Swamp	York
Salmon Falls River	Acton, Berwick, South Berwick
Sand Pond	Sanford
Sandy Brook	Saco
Scituate Pond	York
Shoreys Brook	Eliot
Short Pond	Saco
Skelton Power Station at Union Falls	Dayton
Smelt Brook	York
Smith Brook	Hollis
Smith Brook (upstream portion)	Kennebunkport
South Branch Libby Brook	York
South Branch of West Brook	Wells
South River	Parsonsfield

TABLE 3 - FLOODING SOURCES STUDIED BY APPROXIMATE METHODS – cont'd

Flooding Source Name	Community(s)
Southside Brook	York
Springy Brook	Lyman
Spruce Creek	Eliot, Kittery
Stackpole Creek	Saco
Stage Island	Biddeford, Kennebunkport
Stevens Brook	Wells
Stony Brook	Hollis
Stratton Island (shoreline)	Saco
Stroudwater River	Buxton
Stuart Brook	Saco
Sturgeon Creek	Eliot
Sucker Brook	Kennebunk
Sunken Branch Brook	Lyman
Swan Pond Brook	Biddeford, Lyman
Swan Pond Creek	Dayton
Thatcher Brook	Biddeford
Togue Brook	Berwick
Tongue Brook	North Berwick
Torwater Pond	Lyman
Trafton Brook	Alfred
Tributary to Middle Branch Mousam River	Alfred
Trott Island	Kennebunkport
Turbats Creek	Kennebunkport
Tyler Brook	Kennebunkport
Unnamed Areas	York
Unnamed Low-Lying Areas	Kittery, Old Orchard Beach
Unnamed Ponds	Lyman, Waterboro, Wells
Unnamed Streams	Lyman, Wells
Unnamed Swamps	Waterboro, Eliot, Kennebunkport
Unnamed Tributaries	Countywide
Wales Pond	Hollis
Ward Brook	Kennebunk
Wards Pond	Limington
Webhannet River	Wells
Wedgewood Brook	Parsonsfield
Welchs Pond	York
West Branch Libby Brook	York
West Brook	Biddeford, Wells
West Goose Rock	Kennebunkport

TABLE 3 - FLOODING SOURCES STUDIED BY APPROXIMATE METHODS – cont'd

Flooding Source Name	Community(s)
Whaleback Brook	Limington
Whippoorwill Swamp	York
White Island (shorelines)	Kittery
Whites Marsh Brook	South Berwick
Wilcox Pond	Biddeford
Wilson Creek	Kittery
Wood Island	Biddeford, Kittery
Worster Brook	Berwick
York Pond	Eliot
York River	Eliot, York

Detail-studied streams that were not re-studied as part of this revision may include a profile baseline on the FIRM. The profile baselines for these streams were based on the best available data at the time of their study and are depicted as they were on the previous FIRMs. In some cases the transferred profile baseline may deviate significantly from the channel or may be outside of the floodplain.

This FIS also incorporates the determinations of letters issued by FEMA resulting in map changes (Letter of Map Revision [LOMR], Letter of Map Revision - based on Fill [LOMR-F], and Letter of Map Amendment [LOMA]), as shown in Table 4, "Letters of Map Change."

TABLE 4 – LETTERS OF MAP CHANGE

Community	Case Number	Flooding Source	Letter Date
Alfred, Town of	06-01-B101X	Ponding Area	06/01/2006
Arundel, Town of	03-01-0888A	Unnamed Flooding Area	04/24/2003
Biddeford, Town of	06-01-B015P	Atlantic Ocean	12/15/2006
Biddeford, Town of	199102354FIA	Saco River and Thatcher Brook	03/10/1978
Kennebunk, Town of	03-01-027P	Atlantic Ocean	05/05/2003
Kittery, Town of	97-01-023P	Atlantic Ocean	05/23/1997
Lyman, Town of	06-01-B101X	Ponding Area	06/01/2006

TABLE 4 – LETTERS OF MAP CHANGE – cont'd

Community	Case Number	Flooding Source	Letter Date
Old Orchard Beach, Town of	01-01-009P	Local Wetland Area	10/14/2001
Old Orchard Beach, Town of	1-90-23	Unnamed Tributary	08/06/1990
Old Orchard Beach, Town of	199308178D&D	Little River/ Mill Brook	09/30/1988
Saco, Town of	07-01-0775P	Saco River	06/18/2007

2.2 Community Descriptions

York County is located at the southernmost tip of Maine. In York County, there are 27 towns and 2 cities. The Towns of Cornish, Limerick, Limington, Newfield, and Parsonsfield are in the northern part of the county. The Towns of Arundel, Buxton, Dayton, Hollis, Kennebunk, Kennebunkport, Old Orchard Beach, Wells, and Biddeford and Saco Cities are located in the eastern part of the county. The Towns of Acton and Shapleigh are in the western portion of the county. The Towns of Alfred, Lyman, Sanford, and Waterboro are in the central portion of the county. The southern portion of the county is made up of the Towns of Berwick, Eliot, Kittery, Lebanon, North Berwick, South Berwick, York, and the Town of Ogunquit.

York County is bordered on the north and northeast by Oxford and Cumberland Counties in Maine. It is bordered on the west and south by New Hampshire Counties Carroll, Strafford, and Rockingham. The east and southeast sides of York County are formed by the Atlantic Ocean.

According to census records, the population of York County was 186,742 in 2000 (Reference 5). The total area in York County consists of 1,271 mi^2, including 280 mi^2 of water area. All communities in York County, along with their population and total area, are listed in Table 5, "Population and Total Area by Community."

TABLE 5 – POPULATION AND TOTAL AREA BY COMMUNITY

Community	Total Area (sq. mi) [1]	Population[1]
Acton, Town of	41.07	2,145
Alfred, Town of	27.91	2,497
Arundel, Town of	23.94	3,571

[1]Data obtained from U.S Census Bureau (Reference 5)

TABLE 5 – POPULATION AND TOTAL AREA BY COMMUNITY – cont'd

Community	Total Area (sq. mi) [1]	Population[1]
Berwick, Town of	37.58	6,353
Biddeford, City of	34.54	20,942
Buxton, Town of	41.19	7,452
Cornish, Town of	22.28	1,269
Dayton, Town of	18.41	1,805
Eliot, Town of	21.27	5,954
Hollis, Town of	32.93	4,114
Kennebunk, Town of	35.51	10,476
Kennebunkport, Town of	21.98	3,720
Kittery, Town of	21.00	9,543
Lebanon, Town of	55.79	5,083
Limerick, Town of	28.24	2,240
Limington, Town of	43.28	3,403
Lyman, Town of	40.43	3,795
Newfield, Town of	33.47	1,328
North Berwick, Town of	38.45	4,293
Ogunquit, Town of	4.29	1,226
Old Orchard Beach, Town of	7.55	8,856
Parsonsfield, Town of	60.02	1,584
Saco, City of	39.35	16,822
Sanford, Town of	48.72	20,806
Shapleigh, Town of	41.24	2,326
South Berwick, Town of	32.67	6,671
Waterboro, Town of	57.38	6,214
Wells, Town of	58.16	9,400
York, Town of	57.70	12,854

[1]Data obtained from U.S Census Bureau (Reference 5)

The topography of York County can be described as gently rolling, moderately hilly terrain, with sand dunes and tidal marshes along the coast. There are a range of soil associations in York County. Most of York County consists of soils belonging to the Hermon-Lyman-Peru association. These are upland soils formed in glacial tills and have sandy or loamy textures. Soils in this association are somewhat excessively drained to moderately well-drained. Many ridges and hilltops are shallow to bedrock. Located adjacent to rivers and brooks are soils of the Colton-Adams-Histosol association. The Adams and Colton are generally deep, well-drained and coarse-textured soils that formed in glacial outwash on plains and terraces. Histosols are very poorly drained soils, formed in organic material and found in low-lying areas along the streams.

Located within the county are Maine's Appalachian Mountains, as well as some of the finest beaches and anchorages on the Atlantic Coast. The Western foothills of Maine provide abundant natural resources including lakes, ponds, rivers, and

mountains. The Little Ossipee, Mousam, Saco, and Piscataqua Rivers are among the main rivers that pass through the county. An extensive marsh-swamp, referred to as the "Heath," is located several miles inland and north of the Saco River. Much of the county is heavily forested, with portions cleared for development and agricultural use. Of the urban uses, residential makes up the largest portion. The Cities of Biddeford and Saco comprise one of the largest industrial, commercial, and service trade centers in southwestern Maine.

2.3 Principal Flood Problem

The low-lying coastal areas of York County, including the towns of Arundel, Kennebunk, Kennebunkport, Kittery, Ogunquit, Old Orchard Beach, Wells, and York, and the cities of Biddeford and Saco, are subject to the periodic flooding and wave attack that accompany coastal storms such as northeasters and hurricanes. The majority of these storms cause damage to low coastal highways, boats, beaches, and seawalls. Occasionally, a major storm accompanied by strong onshore winds and high tides results in surge and wave activity that causes extensive property damage and erosion. Some of the more significant storms that occurred in York County include those of November 1945, 1963, and 1968, February 1972, January and February 1978, and October 1991. These storms damaged harbors, marinas, and residential and commercial developments in the flood-prone coastal areas. Continuing erosion associated with severe storms also acts to reduce the beach and dune width to below protective and recreational use requirements (Reference 6). Present and future demands associated with the seasonal tourist industry will further intensify the pressure for development of flood-prone coastal lands. However, the adoption of local or State development regulations concerning floodplain management will help alleviate storm-related losses.

The flood problems for the communities within York County have been compiled and are described below:

The Towns of Acton, Eliot, Newfield, South Berwick, and Shapleigh are experiencing an increase in urbanization, and developmental pressures are expected to continue increasing in these towns. Urbanization within the watershed increases the flood hazard by increasing the rate and amount of runoff. Encroachment into the flood plain by land filling and other developments constricts the flow and reduces the storage of floodwaters. This in turn increases flood depths and the area flooded upstream.

Flooding occurs almost annually along the Great Works River, affecting the towns of North Berwick, South Berwick, and Sanford. Most of the floods are caused by rapid thawing of snow and ice in late winter and early spring, and the flooding is often accelerated by rainfall and ice jams. Less often, flooding occurs later in the year as a result of hurricanes. Minor flooding occurs almost annually. The flood of March 1936 is generally considered to be the largest in recent years

in the Town of South Berwick. This flood also involved the Salmon Falls River. It was generated from approximately 6 inches of rain over a 10-day period and further complicated by high antecedent moisture conditions, snow cover, and ice laden streams. The recurrence interval of this flood was estimated at approximately 1-percent-annual-chance. There are no available records of any significant flood damage in the study area (Reference 7). Notable floods also occurred in this region in 2006 and 2007.

In the Town of Sanford, the flood of March 1983 produced maximum flows of 4,020 cubic feet per second (cfs) at the USGS gage on the Mousam River near West Kennebunk and had a recurrence interval of approximately 85 years (Reference 8). No records of flood damages to the town are available.

Minor flooding occurs almost annually in the Towns of Acton, Limerick, Limington, Newfield, Shapleigh, and Waterboro due to snowmelt and ice jams on the Little Ossipee River. Areas flooded include wooded and open lowlands, roads, and bridges. The flood of record occurred in March 1936 and had a peak discharge of 8,530 cfs at the Little Ossipee Flowage Dam in Limerick and Waterboro. This flood was generated from approximately 4 inches of rain over a two day period and further complicated by high antecedent moisture conditions, snow cover, and ice laden streams. The recurrence interval of the flood was estimated to be slightly in excess of 1-percent-annual-chance. There are no available records of any flood damage in the study area (Reference 7).

A U.S. Geological Survey (USGS) gaging station is located on the Little Ossipee River near South Liminqton and had a period of record of 42 years. The highest recorded discharge (5,760 cfs) at the gage occurred in March 1977. The USGS gaging station was discontinued in September 1982 (Reference 8)

Numerous low-lying areas along the Little Ossipee River are subject to frequent flooding. Flooding of these areas can cause damage to dwellings, existing woodlands, roads, and bridges. A 1-percent-annual-chance flood in Waterboro would inundate approximately 1,300 acres; the 0.2-percent-annual-chance flood would inundate approximately 1,500 acres In Limerick, a 1-percent-annual-chance flood would inundate approximately 900 acres; the 0.2-percent-annual-chance flood would inundate approximately 1,100 acres (Reference 9).

In the Towns of Waterboro and Limerick, an estimated 60 building lots are located within the 1-percent-annual-chance flood plain adjacent to the Little Ossipee Flowage. Approximately 15 of these lots have been recently developed with either seasonal or year-round homes. Due to this intensive development pressure on flood plain lands there was significant flood damage potential exists if development is allowed to continue uncontrolled (Reference 9).

Small areas of localized flooding occur along the southern portion of the Town of Limington. The Little Ossipee River flows approximately 10 miles through a relatively uninhabited section of the town. The river drops a total of 58 feet in

Limington, at a fairly constant rate, except for two sets of falls. There has been very little development in Limington on the flood plains of the river.

Low-lying areas of Cornish and Parsonsfield are subject to periodic flooding caused by the overflow of the Ossipee River. Cornish is also subject to periodic flooding from the Little River. The most severe flooding occurs in the early spring as a result of snowmelt and heavy rain in conjunction with ice jams. Additional floods generally lower in magnitude also occur in late summer as a result of hurricanes and tropical storms. The two major floods occurring in Cornish and Parsonsfield from the Ossipee River were in 1936 and 1953, and the frequencies and peak discharges of these floods were recorded at the two USGS gages at Cornish. The peak discharge of the 1936 flood was 17,200 cfs, and its recurrence interval of approximately 0.3-percent-annual-chance. The 1953 flood had a peak discharge of 13,800 cfs, and a recurrence interval of 1-percent-annual-chance (Reference 7). In the Town of Parsonsfield, the 1936 flood caused flooding of the woolen mill located in Kezar Falls Village and the area near South River. Damages were slight due to the relatively steep banks and sparse development in the flood plain.

Major floods on the Saco River have occurred in the spring, and are usually the result of heavy rainfall combined with snowmelt. Although there has been flooding during other months, ten of the fourteen greatest floods have occurred during March, April, or May. Heavy rainfall associated with hurricanes moving up the coast of Maine has caused flooding in the fall. This flooding occurs on the riverine and estuarine reaches of the Saco River, and affects the towns of Buxton, Dayton, Hollis, Limington, Cornish, and the cities of Biddeford and Saco.

The greatest recorded flood in the lower Saco River basin occurred at West Buxton in March 1936, with a peak flow of 58,200 cfs (Reference 7). In the vicinity of the Cities of Biddeford and Saco, damage from the 1936 flood was centered in the more intensely developed residential, commercial, and industrial areas (Reference 10). The March 1953 flood, the most severe recorded for the New Hampshire portion of the Saco River, caused a peak flow of 50,000 cfs at West Buxton. The 1953 flood caused about $1.8 million in flood damage (Reference 11). The March 1936 and March 1953 floods have recurrence intervals of 400 years and 160 years, respectively. Small areas of localized flooding have been noted along the small brooks studied by approximate methods. Road overflow is not uncommon on these brooks, especially when the culverts at road crossings are clogged with ice.

In the Town of Cornish, the peak discharge of the March 1936 flood was 45,000 cfs, and its recurrence interval is 200 years. The March 1953 flood had a peak discharge of 42,400 cfs and a recurrence interval of 170 years. The frequencies and peak discharges of these floods were recorded at the two USGS gages at Cornish (Reference 7).

Flooding along the Piscataqua River in the Town of Eliot is primarily caused by coastal storm surges that occur during hurricanes and northeasters. The coastal flood of record occurred in February 1978. Flood elevations from the storm were estimated to have a recurrence interval of approximately 1-percent-annual-chance (Reference 12). Only minor flooding along the Piscataqua River is caused by runoff from the upstream rivers that combine to create the Piscataqua River. The most notable riverine flood upstream from Eliot was the March 1936 flood along the Salmon Falls River in South Berwick.

In the Town of Berwick, the March 1936 flood on the Salmon Falls River had an approximate recurrence interval of 50 years. This flood washed out the Eddy Bridge, the Worster Bridge at New Dam, and Rochester Road.

The most severe floods in the Town of Lebanon occur in early spring as a result of snowmelt and heavy rains. In the past, ice jams have helped to cause high-water conditions, but, they have not caused a major flood problem in Lebanon. The dams on the Salmon Falls River are recreational.

Riverine flooding has not generally been a serious problem in the Towns of Kennebunk, Kennebunkport, Wells, York, and the Town of Ogunquit. In the Town of Ogunquit, some riverine flooding has occurred on the non-tidal portions of the Josias and Ogunquit Rivers. Most of the flood plains are underdeveloped and damage is limited during flooding. However, ice jamming occurs on the Josias River upstream of the U. S. Route 1 Bridge. In the Town of Wells, the only riverine flooding occurs infrequently on a small portion of U.S. Route 1 near the Merriland River (Reference 13).

Severe flooding in the Town of Alfred is limited to the Littlefield River, including the shorelines of Estes Lake and Shaker Pond. Flooding generally occurs in the spring from rapid runoff caused by heavy rains combined with snowmelt. Less frequently, flooding occurs later in the year as a result of hurricanes. Significant flooding has occurred in this location in 1977, 1983, and 1984. These floods had recurrence intervals of 2-, 1-, 3-percent-annual-chance, respectively.

Severe flooding in Lyman is limited to the shorelines of Bunganut, Swan, Kennebunk and Roberts-Wadley Ponds. Flooding generally occurs in the spring months from rapid runoff, which is caused by heavy rains combined with snowmelt. Less frequently, flooding occurs later in the year as the result of hurricanes.

2.4 Flood Protection Measures

The coastal communities of York County have adopted the minimum shoreland zoning ordinance as required by the State of Maine (Reference 14). This ordinance serves to protect the shorelines by restricting construction to reduce flood damage.

In 1971, the State of Maine enacted the "Mandatory Zoning and Subdivision Control Law" (Chapter 424, Section 4811 thru 4814 of the Maine Statutes) which requires all municipal units of government to adopt zoning and subdivision control ordinances for shoreland areas. Shoreland areas are defined as land within 250 feet of the normal high water mark of any pond, river, or salt water body. If a municipality fails to adopt zoning and subdivision controls for any reason, the Maine Department of Environmental Protection and the Maine Land Use Regulation Commission shall adopt suitable ordinances for that municipality. The law was revised by the Maine Legislature in 1973 to give the municipalities until June 30, 1974 to adopt the ordinances. At that time, a moratorium was declared in those communities that had failed to develop ordinances on all shoreland areas as defined above. This law prohibits filling or earth-moving without permit within 250 feet of the shoreland.

Flood protection measures for York County have been compiled and are summarized below:

Beach erosion control studies have been conducted for the Kennebunk, Kennebunkport, and Old Orchard Beach beaches to determine the need and justification for restoring eroded beaches, in order to provide additional shore protection and bathing beach area (Reference 6). Beach erosion control studies have also been conducted for Camp Ellis Beach in the City of Saco (Reference 15).

The State of Maine provides concrete seawalls and stone revetments to protect coastal highways. Other protective structures were generally constructed and are maintained either by the coastal community or by private property owners to satisfy their individual requirements and financial capabilities. Limited financial resources sometimes result in less than adequate protection. These structures include such backshore protection as timber and steel sheetpiles, bulkheads, stone revetments, concrete seawalls, and pre-cast concrete units (Reference 6). The coastal communities in York County affected by this are the Towns of Kennebunk, Kennebunkport, Old Orchard Beach, Wells, and York, the Town of Ogunquit, and the Cities of Biddeford and Saco.

Flood discharges in the Saco River basin are greatly affected by the natural valley storage afforded by the large flood plain extending from near the Maine-New Hampshire border to Hiram, Maine. It has been estimated that nearly 200,000 acre-feet of water (8,712 million cubic feet) was stored in this area during both the 1936 and 1953 floods (References 16 and 17).

Cataract Dam, Springs Dam, and Bradbury Dam, all located on the Saco River near Factory Island, help reduce flood flows on the river within the Cities of Biddeford and Saco. Federal agencies, in cooperation with state and local interests, have constructed massive stone jetties at the entrance to the Saco River for flood protection and navigational purposes (Reference 6). In 1967, a study

recommended that local interests regulate development in flood hazard areas of the Saco River basin and adopt suitable building codes providing for the flood-proofing of existing structures in such areas (Reference 10).

In Buxton, Dayton, and Hollis, the Saco River is a wide, smoothly flowing river which is affected by backwater from the three power dams owned by the Central Maine Power Company. Skelton Station is a large hydro-power dam located at Union Falls in Dayton. This composite dam is about 1,965 feet long and was completed in 1949. The station runs at full capacity during high water. Any excess water is passed through two grated, concrete spillway sections which have a capacity of approximately 132,000 cfs. The reservoir, which extends about three miles upstream from this dam, has a normal pool elevation of 126.3 feet.

The Clarks Mill Dam in Dayton is town-operated to maintain a reservoir for fire protection. The stop logs in the sluice are seldom changed. It is a low head dam, and the spillway is adequate to pass the peak flows of this study. The dam near Dennett Road is abandoned and in very poor shape. It is a low head rock crib dam, and the gate section has been completely washed out. Downstream of this dam, the stream drops rapidly to join the Saco River.

At Bar Mills, there is another hydro-power dam on the Saco River just north of U.S. Highway 202. The dam, which is about 1,245 feet long, was completed in 1888. The power station runs at full capacity during high water. Excess water during high flows is passed over a 62.6 foot long spillway section. The dam creates a reservoir that extends about four and a half miles upstream, almost to West Buxton. The normal full pond elevation is 146.5 feet.

Proceeding upstream, the next dam on the Saco River is the West Buxton Power Station, built in 1906. It is a concrete gravity dam about 585 feet long and 30 feet high. The dam has two overflow sections with a total crest length of 333 feet, a gated section with a 20-foot wide vertical lift gate, and two 40-foot wide stanchion sections. The power station could pass a 0.2-percent-annual-chance discharge with no retention of floodwaters. At its normal elevation of 177.1 feet, the pond extends about one and a half miles upstream, almost to the Bonny Eagle Dam.

The hydro-power station at Bonny Eagle was built in 1910. It is a concrete gravity dam approximately 1,120 feet long with a 350-foot spillway section. This station has a maximum operating head of 38 feet.

Flood elevations downstream from the confluence of the Saco and Little Ossipee Rivers are affected by the dam at the Bonny Eagle Power Station, located about a mile and a half downstream. The Little Ossipee River and its network of small streams are controlled by the operation of dams located upstream of the Town of Limington at the outlets of Little Ossipee Lake and Balch and Ledgemere Ponds, which have a combined storage capacity of 581 million cubic feet.

None of these dams significantly alter streamflow or control flooding.

The Saco River Corridor Commission has zoned all the shoreland of the Saco River in Dayton, Hollis, and Limington, all the shoreland of the Little Ossipee River in Limington, and all of the shoreland along the Ossipee River from the New Hampshire border to its confluence with the Saco River. This protected area is known as the "Saco River Corridor" and includes the land areas within 500 feet of the normal high water mark of the Saco River. In areas where the flood plain exceeds 500 feet in width, the corridor is extended to include the flood plain area up to a maximum of 1,000 feet wide. In Dayton, Hollis, and Limington, the Saco River corridor is zoned either Resource Protection or Limited Residential, which severely restricts encroachment and development in the flood plain (Reference 18). In 1967, the USACE made a study of the need for flood control structures in the Saco River basin-use regulations in the flood plain could best control and protect development (Reference 19). The Saco River Environmental Advisory Committee has mapped the Saco River flood plain based on the 1936 flood data. The maps have been provided to all Saco River Corridor communities for their use in planning and zoning in the flood plain. Results of updated precountywide studies were used to revise the delineation of the corridor.

Buxton's Town Land Use Plan (1976) provides flood protection by limiting development within 300 horizontal feet of the normal high-water mark of Bonny Eagle and Duck Ponds, The Bog (Groveville), the Little and Stroudwater Rivers, and McKenney Brook (Reference 18).

In the Town of Acton, a 10-foot high earthfill dam with a steel and concrete spillway is located at the outlet of Balch Pond. If adequately maintained, the dam provides safe passage of flood flows.

Estes Lake on the Mousam River has a capacity of 210 million cubic feet of storage. This affords flood protection for towns downstream from the Town of Alfred, but not for the Alfred itself because the lake is located close to the downstream corporate limits. Shaker Pond has a natural outlet with no dam.

The greatest flood protection measures afforded the Town of Cornish along the Ossipee and Saco Rivers are the relatively steep banks which tend to contain the flood flows. In the headwaters of the Ossipee River, Ossipee Lake acts as a natural flood-retarding basin, reducing the peak discharge in the Town of Cornish. The bog areas upstream of Hiram Falls Dam on the Saco River also act as a flood storage basin and reduce the peak discharge in Cornish. Non-structural flood protection measures are also being utilized to aid in the prevention of future flood damage. These are land-use regulations adopted from the Saco River Corridor Commission, established in 1973. These land-use regulations control buildings within areas that have a high risk of flooding.

Flood protection measures in the Town of Eliot along the Piscataqua River are limited to those afforded by local zoning ordinances and those privately constructed by local residents.

The dam on Cooks Brook at Clarks Mills is operated by the Town of Hollis to maintain a reservoir for fire prevention. The stop logs in the sluice are changed infrequently. It is a low head dam, and the spillway is adequate to pass the peak flows utilized in this study. The dam near Dennett Road is abandoned and in poor condition. It is a low head, rock crib dam, with the gate section completely washed out. None of these dams significantly alter high stream flow or control flooding in the Town of Hollis.

In the Town of Limerick, the Little Ossipee Flowage Dam outlet on the Little Ossipee River has four-foot high flashboards used for temporary flood protection.

Several dams are located on streams within the Town of Kennebunk, but these do not provide significant flood protection. Stone breakwater jetties have been constructed at the mouth of the Kennebunk River by the federal government in cooperation with local interests.

Three dams are located along the Great Works River in the Town of North Berwick. These dams have not been designed for flood control in the community, but they do serve to reduce peak flows downstream.

A 10-foot high earthfill dam with a steel and concrete spillway is located at the outlet of Balch Pond in the Town of Newfield. If adequately maintained, the dam provides safe passage of flood flows.

The Soil Conservation Service (SCS) in Orono, Maine, maintains a flood control dike on Ogunquit Beach in the Town of Ogunquit. A stabilization project calls for the re-establishment of the primary dune height of 22 feet. The project affects a 6,300-foot length of beach and has a 5:1 fore-and-back slope with a 25-foot top width (Reference 20). Several dams are located on streams within Ogunquit, but these do not provide significant flood protection.

The steep banks of the Ossipee River, which contain the riverflows, provide the greatest flood protection to the Town of Parsonsfield. In the headwaters of the Ossipee River, Ossipee Lake reduces the peak flow discharges in the Town of Parsonsfield. There are no structural flood protection measures scheduled for construction in the future.

A masonry dam approximately 25 feet high is located at the outlet of Leigh's Mill Pond in South Berwick. Brattle Dam No. 1, a masonry structure approximately 10 feet high, crosses the Great Works River at Brattle Street. Brattle Dam No. 2, a stone and timber dam approximately 15 feet high, is located some 300 feet downstream. A masonry dam approximately 9 feet high is located at the outlet of Shapleigh Pond in the Town of Shapleigh. If adequately maintained, the dams

provide safe passage of flood flows.

The flow of the Mousam River is regulated by Square Pond and Mousam and Estes Lakes, with a combined capacity of approximately 700 million cubic feet, and by power plants upstream. Seven dams on the Mousam River in the Town of Sanford provide negligible flood protection

In the Town of Waterboro, the Little Ossipee Flowage Outlet Dam on the Little Ossipee River has four-foot high flashboards used for temporary flood protection. The Little Ossipee Lake Dam on Little Ossipee Lake provides safe passage of flood flows at its present discharge capacity.

Concrete seawall barriers exist along much of the coastline in the Town of Wells, and a jetty extends out from the entrance to Wells Harbor. Seawalls delineated on the FIRM for the January 16, 2003 Wells FIS revision have been identified as flood protection structures that reduce wave effects during the base flood.

In 1945, the USACE constructed a seawall at York Harbor in the Town of York. The seawall has been washed out and consequently improvements made (Reference 21). Seawalls delineated on the FIRM for the July 15, 2002 York FIS revision have been identified as flood protection structures that reduce wave effects during the base flood. There are no flood protection structures on the streams in York.

There are no known existing or planned flood protection structures within the Towns of Arundel, Berwick, or Lebanon. There are dams on the Salmon Falls River in Berwick, but they are for recreational purposes only.

3.0 ENGINEERING METHODS

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

community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail affecting the county.

For each community within York County that has a previously printed FIS report, the hydrologic analyses described in those reports have been compiled and are summarized below.

Precountywide Analyses

During major floods, the entire length of the Little River in Kennebunk and Wells acts as an estuary. Water-surface elevations during floods are not a function of discharge alone, but a complex function of discharge, flood volume, tide levels, and wind effects. Rather than attempt to treat these factors separately, the Atlantic Ocean tidal flood elevations were used as the flood elevations for this estuary. Since the peak discharges of the Little River would not be used in flooding analysis, no hydrology has been established for the Little River in these towns.

Flood flows for the various frequencies of the Great Works River and Goodall Brook were computed from an analysis of stream hydraulics, soil cover, land use, and rainfall data using the SCS TR-20 computer program (Reference 22). A 24-hour duration storm and normal antecedent moisture conditions were used. All flood flows were reservoir routed through Bauneg Beg Pond. The discharges obtained from the TR-20 program are somewhat higher than those estimated from a USGS regression equation; however, they fall within the standard errors of estimate for the equation (Reference 23).

For the Little Ossipee River, flood flows for the 10-, 2-, 1-, and 0.2-percent annual chance floods were computed using the SCS TR-20 computer program (Reference 22). A 24-hour duration storm and normal antecedent moisture conditions were used. The USGS gage (No. 01066500) located on the Little Ossipee River near South Limington has a period of record of 36 years. The computed discharges correlated favorably with a log-Pearson Type III analysis of the gage data (Reference 23).

For the Mousam River, flood flows for the 10-, 2-, 1-, and 0.2-percent annual chance flood peak discharges were originally computed based on the Maine flood magnitude and frequency formulas developed by the USGS (References 23, 24, and 25).

In the precountywide May 18, 1998 FIS for the Town of Alfred, the primary source of peak-flow data used to determine flood discharges for the flooding

sources studied by detailed methods was USGS gaging station No. 01069500, on the Mousam River near West Kennebunk. The West Kennebunk gage is located approximately 0.5 mile downstream of Estes Lake Dam and has a drainage area of approximately 99 square miles. Records of flood peaks were available at this gage from 1940 to 1984. The 1-percent-annual-chance discharge at the gage was based on a log-Pearson Type III analysis of annual peak flow data (Reference 26).

Peak discharges upstream from the USGS gage were established by adjusting the discharge computed at the gage from differences in drainage area between the upstream site and the gage using the following formula:

$$Q = Q_g(A/A_g)^b$$

where Q is the desired 1-percent-annual-chance flood discharge at the upstream site, Q_g is the 1-percent-annual-chance flood discharge at the USGS gage, and A and A_g, are drainage areas at the respective sites. The value of the exponent b is 0.8.

Since the gage is located downstream of all regulation affecting Sanford, the peak flow data already takes into account the effects of any regulation by upstream lakes and reservoirs. The flood discharges computed at the gage were modified on the basis of drainage area relationships to compute the adopted discharges in Sanford (Reference 23). The discharges for the Mousam River (Lower Reach) were derived from discharges calculated for Estes Lake. According to USGS Water-Supply Paper 1580-B, a useable storage capacity of less than 4.5 million cubic feet per square mile, in general, affects peak discharges by less than 10 percent (Reference 27). The useable storage capacity of Estes Lake is less than this limit; therefore, it was not considered in the computation of upstream flood discharges. The 1-percent-annual-chance flood flow for Tributary to Middle Branch Mousam River was determined using the USGS regional regression equation for the region (Reference 23).

Two USGS gages on the Ossipee River were used to establish the peak discharge-frequency relationships. The gage located at Effingham Falls, New Hampshire, has 34 years of record, and the gage located at Cornish, Maine, has 60 years of record (References 28 and 29). Values of the 10-, 2-, 1-, 0.2-percent-annual-chance peak discharges were obtained from a log-Pearson Type III distribution of annual peak flow data in accordance with the U.S. Water Resources Council Bulletin 17 (Reference 30). Peak flows for other locations on the Ossipee River were computed by use of the drainage area proration method mentioned above, $Q = Q_g(A/A_g)^b$ (Reference 31). The value of b applied to the Ossipee River was 0.8. This value was based on the analysis of peak discharges at the two gages listed above.

In the precountywide July 4, 1988, FIS for the Town of Kennebunkport, the 1-percent-annual-chance flood elevation at the Lake of the Woods area was also determined by the proportion method, with a transposition coefficient of 0.75.

Reservoir routing was performed to find the water-surface elevation of that flood in this area.

The stage-frequency relationship for the Piscataqua River in the Town of Eliot was established through information obtained in a review of flood history of the area and the precountywide Flood Insurance Studies for the Towns of South Berwick and Kittery, Maine, and the Cities of Portsmouth and Dover, New Hampshire (References 7, 12, 32, 33, 34, and 35). In the precountywide FIS's for the downstream communities of Kittery and Portsmouth, New Hampshire, the 1-percent-annual-chance flood elevations for the Piscataqua River were determined to be 8.0 and 8.2 respectively (References 33 and 34). These elevations agree with high-water data obtained by USGS staff during the February 1978 flood, which was considered a 1-percent-annual-chance event. In the FIS for the City of Dover, New Hampshire, a 1-percent-annual=chance elevation of 8.4 feet was determined for the Cocheco River near its confluence of the Piscataqua River (Reference 35). Based on these results, a 1-percent-annual-chance flood elevation for the entire length of the Piscataqua River in Eliot was determined to be 8.3 feet.

The computation of flow past the hydro-power plant at West Buxton was the principal source of data for defining discharge frequency relationships for the Saco River. Records of annual, maximum daily discharges were furnished to the USGS by the Central Maine Power Company. Discharges were computed from records of flow over dam, through waste gates, and through wheels of the power plant. The data cover a period of 66 years (1908-1916 and 1920-1977). Discharge figures for this station have not been published by the USGS since 1940; prior to 1940 these data were published as "Station 01067000, Saco River at West Buxton, Maine."

Values for the 10-, 2-, 1-, and 0.2-percent annual chance peak discharges were obtained from a log-Pearson Type III distribution of these annual, maximum daily flow data (Reference 36). The results from this analysis increased by 1.7 percent to simulate instantaneous discharge because the flow data for West Buxton are values of maximum daily discharge. The 1.7-percent factor was determined to be the average amount by which instantaneous peak flows exceeded concomitant daily flows at West Buxton, and was based on a comparison of 59 events. The instantaneous peak discharges were computed from flow through wheels and gates and flow over spillways. Because of the difference in drainage area from West Buxton (1,571 square miles) to the Hollis-Dayton corporate limits (1,594 square miles), further increases in the peak flow were required to estimate flow at the downstream end of the study area. The area at the Hollis-Limington corporate limits is 1,550 square miles, so a slight decrease in flow was made for the upstream end of the reach. Flood discharges for the right and left channel around Bonny Eagle Island were computed using' split flow techniques. The largest part of the flow goes through the left channel, where the spillway section of the dam is located.

The hydrologic analyses for Salmon Falls River were taken from the precountywide FIS's for the Cities of Somersworth and Rochester, New Hampshire (References 37 and 38). Flood discharge-frequencies for the Salmon Falls River were computed using log-Pearson Type III statistical analyses (Reference 36) of peak discharges at gage No. 01072500 located on the Salmon Falls River near South Lebanon, Maine. The gage was in operation from 1930 to 1969.

For the March 16, 1998, FIS for the City of Saco, Sawyer Brook discharges were computed using the NRCS TR-20 computer program (Reference 39). This program used historical rainfall data for all computed frequencies. Modeled storms had a 24-hour duration and a Type III rainfall distribution.

The Batson, Josias, Kennebunk, Ogunquit, Ogunquit Tributary and Little Rivers, the Bog, Goosefare, Great, and Smith Brooks, Spruce and Spinney Creeks, and miscellaneous streams and rivers throughout the County of York are ungaged. The 10-, 2-, 1-, and 0.2-percent annual chance flood peak discharges were computed based on the Maine flood magnitude and frequency formulas developed by the USGS, and were found to be applicable to these flood sources (References 23 and 24). The USGS formulas predict discharges based on the parameters of watershed drainage area, main channel slope, and percentage of area of lakes and ponds.

The values of the peak flows for Cooks and Day Brooks at 10-, 2-, 1-, and 0.2-percent annual chance intervals were obtained using equations developed by R. A. Morrill and outlined in USGS Open-File Report 75-292 (Reference 23).

The 1-percent-annual-chance flood discharge at the outlets of Bunganut Pond, Swan Pond, Kennebunk Pond, and Roberts-Wadley Pond were determined by applying a USGS regression equation (Reference 23).

Countywide Analyses

The 10-, 2-, 1-, and 0.2-percent-annual-chance flood flows for Coffin Brook, Coffin Brook Tributary 1, Driscoll Brook, Ferguson Brook, Keay Brook, Little River, Mulloy Brook, Worster Brook, and Worster Brook Tributary 3 were computed with regression equations (Reference 40). The regression equations use drainage area and percent wetlands as explanatory variables. All drainage areas were determined using a Watershed Information System (WISE) (Reference 41) and a Geographic Information System (GIS). Basin wetlands were computed with U.S. Fish and Wildlife Service National Wetland Inventory maps at a scale of 1:24:000 with GIS.

Peak discharge-drainage area relationships for York County are shown in Table 6, Summary of Discharges. This table includes the revised flooding sources in the Town of Berwick.

TABLE 6 – SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Batson River					
At dam near U.S. Route 1	5.76	408	693	849	1,310
Blacksmith Brook					
At U.S. Route 1	2.25	179	312	385	607
Bridges Swamp					
At mouth	1.09	110	198	249	403
Bunganut Pond					
At outlet	2.91	*	*	165	*
Cape Neddick River					
At confluence with Cape Neddick Harbor	9.53	479	785	950	1,420
Cider Hill Creek					
Above confluence with York River	4.99	285	477	582	886
Coffin Brook[1]					
At confluence with Worster Brook	0.91	173	291	350	505
About 3,930 ft downstream from School Street, upstream from confluence with Unnamed Stream (Coffin Brook Tributary 1)	0.50	106	182	219	320
About 2,030 ft downstream from School Street	0.37	80.4	138	168	245
Cooks Brook					
At Dyer Road	10.30	494	803	968	1,440

*Data not computed
[1]Updated calculations for this countywide study

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Cooks Brook – cont'd					
At Clarks Mill (State Route 35)	9.82	469	772	934	1,410
At State Route 5	8.76	469	772	934	1,410
Dayton-Hollis-Lyman corporate limits	7.11	382	632	766	1,160
Day Brook					
At confluence with the Mousam River	2.68	194	335	412	644
Depot Brook					
At U.S. Route 1	1.41	124	219	273	436
Dolly Gordon Brook					
Above confluence with York River	3.42	196	329	400	613
Above Maine Turnpike	1.25	88	147	179	274
Driscoll Brook[1]					
At downstream corporate limits	1.72	146	231	273	377
At Blackmore Road, about 3,150 ft upstream from downstream corporate limits	1.24	95.9	152	179	247
Upstream from confluence with Unnamed Stream, about 4,100 ft downstream from Blackberry Hill Road	0.47	40.8	65.8	78.2	109
At Blackberry Hill Road	0.29	17.0	26.9	31.8	43.9

[1]Updated calculations for this countywide study

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Estes Lake					
At USGS gage No. 01069500	99.00	*	*	4,000	*
At outlet of Estes Lake	98.00	*	*	4,000	*
Above confluence with Mousam River (Littlefield River Branch)	50.50	*	*	2,300	*
Ferguson Brook[1]					
At confluence with Worster Brook	0.65	91.4	152	182	259
About 2,260 ft downstream from School Street	0.44	60.8	101	121	174
About 1,420 ft upstream from School Street	0.21	38.7	66.5	80.5	118
Goodall Brook					
At Berwick Road	0.90	110	190	220	250
Goosefare Brook					
At confluence of Branch Brook	6.45	410	689	840	1,284
At the Boston and Maine Railroad bridge	3.98	279	468	571	873
Upstream of Ross Road	2.82	211	355	433	662
Great Works River					
At State Route 9	36.90	1,070	2,000	2,360	3,930
At Oak Woods Road	22.10	550	1,160	1,370	2,160
At the outlet of Bauneg Beg Pond	18.20	540	1,060	1,240	1,710
At Sand Pond Road	11.40	930	1,660	1,940	2,640
At Vine Road	86.30	4,210	6,950	8,010	11,000
At Emery's Bridge Road	82.10	4,000	6,620	7,640	10,500

*Data not computed
[1]Updated calculations for this countywide study

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Great Works River – cont'd					
At Old South Berwick Road	46.10	1,780	3,110	3,640	5,180
At Twombley Road	3.50	440	740	860	970
Green Brook					
At confluence with Ogunquit River	5.02	397	660	801	1,211
Josias River					
At confluence with The Basin	7.31	546	930	1,140	1,760
Upstream of Shore Road	6.65	506	862	1,057	1,632
Keay Brook[1]					
At confluence with Salmon Falls River	11.6	4470	692	796	1050
Upstream from confluence with Murdock Lake tributary, about 500 ft downstream from Ridlon Road	9.2	421	626	723	960
Upstream from confluence with Unnamed Tributary, about 3,100 ft upstream from Ridlon Road	8.4	403	601	695	925
Kennebunk Pond					
At outlet (west)	1.14	*	*	69	*
Kennebunk River					
At mouth	52.88	2,317	3,644	4,335	6,262

*Data not computed
[1]Updated calculations for this countywide study

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Little Ossipee River					
At Balch Pond Road	14.00	250	470	550	760
At State Route 5	112.40	4,000	7,400	9,000	13,400
At a point approximately 2,500 feet below the upstream corporate limits	66.50	1,700	3,300	4,000	6,000
At the mouth	187.00	4,630	7,890	9,640	14,800
At the Limington-Limerick-Waterboro town boundary	157.00	4,030	6,860	8,380	12,900
At State Route 11	21.70	370	690	830	1,250
At USGS gage No. 01066500	168.00	4,250	7,240	8,850	13,600
At Little Ossipee Flowage Outlet Dam	155.20	2,900	6,400	7,800	12,000
Little River					
About 2,500 ft downstream from Long Swamp Road[1]	51.7	1644	2334	2653	3413
At a point approximately 2.4 miles upstream of its mouth	6.31	423	715	874	1,342
At confluence with Salmon Falls River[1]	54.4	1771	2517	2862	3685
At mouth	6.31	423	715	874	1,342
Confluence with Ossipee River	7.60	620	1,060	1,310	2,070
Upstream from confluence with Unnamed Stream, about 1.2 mi downstream from Diamond Hill Road[1]	49.2	1545	2193	2492	3206
Littlefield River					
At USGS gage No. 01069500	99.00	*	*	4,000	*
At outlet of Estes Lake	98.00	*	*	4,000	*

*Data not computed
[1]Updated calculations for this countywide study

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Littlefield River – cont'd					
Above confluence with the Mousam River (Littlefield River Branch	50.50	*	*	2,330	*
Above confluence with Hay Brook	43.50	*	*	2,070	*
Above confluence with Middle Branch	22.40	*	*	1,220	*
At outlet of Shaker Pond	19.40	*	*	1,080	*
Merriland River					
At Lords Road	16.81	935	1,529	1,846	2,757
At Hobbs Road	10.77	602	993	1,202	1,807
Mill Brook					
At Ross Road	2.68	169	288	354	547
Moors Brook					
At Meetinghouse Road	2.83	264	466	579	921
Mousam River					
At confluence with the Atlantic Ocean	119.00	2,827	3,120	3,508	4,505
At inlet to Estes Lake	47.50	1,380	2,020	2,340	3,160
At small mill dam approximately 420 feet downstream of Washington Street	41.50	1,240	1,820	2,100	2,840
Upstream of confluence of unnamed tributary approximately 1170 feet downstream of Stanley Road	32.00	1,000	1,470	1,710	2,310

*Data not computed

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Mousam River (Lower Reach)					
At downstream corporate limits	102.00	*	*	4,000	*
Mulloy Brook[1]					
At confluence with Worster Brook	0.47	87	148	178	258
About 1,900 ft upstream from School Street	0.28	71	124	152	224
Ogunquit River					
At breached dam	14.60	933	1,551	1,882	2,845
Downstream of Maine Turnpike	13.16	859	1,427	1,732	2,618
Upstream of Maine Turnpike	12.94	847	1,408	1,709	2,583
Upstream of North Village Road	11.94	794	1,321	1,602	2,422
At mouth	13.16	933	1,551	1,882	2,845
East of Maine Turnpike	12.94	859	1,427	1,732	2,618
West of Maine Turnpike	11.94	847	1,408	1,709	2,583
Ogunquit River Tributary					
At confluence with Ogunquit River	1.01	110	182	221	334
Ossipee River					
Cornish Gage (No. 01065500)	453.00	7,840	11,760	13,690	18,890
At Corporate Limits	450.00	7,715	11,575	13,470	18,590
Upstream of Mill Brook	387.50	6,920	10,380	12,080	16,670
Upstream of South River	354.00	6,435	9,655	11,240	15,510
Roberts-Wadley Pond					
At outlet	9.36	*	*	233	*

*Data not computed
[1]Updated calculations for this countywide study

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Saco River					
At Springs Dam	1,680.00	25,800	38,600	45,000	62,600
At West Buxton dam	1,572.00	25,400	37,900	44,000	61,000
Saco boundary	1,623.00	25,800	38,600	45,000	62,600
Cornish Gage (No. 01066000)	1,298.00	23,065	33,790	38,950	52,560
Buxton-Dayton-Hollis corporate limits (mouth of Cooks Brook)	1,594.00	25,600	38,200	44,200	61,500
Skelton hydro-power station	1,622.00	25,800	38,600	45,000	62,600
At Bar Mills Dam	1,594.00	25,600	38,200	44,200	61,500
At Bonny Eagle Dam	1,560.00	25,300	37,700	43,800	60,600
At the Hollis-Limington-Standish town boundary	1,550.00	25,200	37,500	43,600	60,200
At the Baldwin-Standish-Limington town boundary	1,330.00	23,600	34,600	39,800	53,800
At the Baldwin-Cornish-Limington town boundary	1,296.00	23,100	33,800	39,000	52,600
Saco River-Right Channel					
At the Buxton-Town of Standish boundary	1,560.00	25,300	37,700	43,800	60,600
Salmon Falls River					
At New Dam Road	234.70	4,600	7,460	9,000	13,800
At Walnut Grove Road	148.60	3,360	5,450	6,570	10,080
At Spaulding Avenue	130.50	3,050	4,940	5,960	9,150
Sawyer Brook					
At Sawyer Street	0.17	190	305	355	460
At Therrien Avenue	0.09	65	110	125	165
Smith Brook					
At State Route 9	1.54	112	195	241	381

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
South Branch of West Brook					
At confluence with West Brook	2.77	207	347	422	645
Spinney Creek					
At confluence with the Piscataqua River	1.03	99	178	222	359
Spruce Creek					
At the confluence with the Piscataqua River	2.56	167	285	349	542
Stevens Brook					
At U.S. Route 1	2.01	187	336	418	668
Swan Pond					
At outlet	0.97	*	*	99	*
Thatcher Brook					
At Main Street	6.54	353	584	708	1,069
Tributary 1 to Cape Neddick River					
Above private road	2.01	138	226	274	409
Tributary 1 to Green Brook					
At confluence with Green Brook	1.22	136	210	255	385
Tributary to Middle Branch Mousam River	0.50	35	60	75	115

*Data not computed

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Unnamed Tributary to Coffin Brook (Coffin Tributary 1)[1]					
At confluence with Coffin Brook	0.39	89.3	154	186	273
About 350 ft upstream from Mayberry Lane	0.31	73	127	154	226
Unnamed Tributary to Worster Brook (Worster Tributary 3)[1]					
At confluence with Worster Brook	0.86	95	155	185	261
About 1,620 ft upstream From confluence with Worster Brook	0.46	74	124	150	216
About 2,700 ft upstream From confluence with Worster Brook	0.16	30	53	65	95
Webhannet River					
Approximately 0.5 mile upstream of U.S. Route 1	5.25	393	673	826	1,282
West Brook					
At Bragdon Road bridge	6.61	415	696	847	1,294
At Bragdon Road culvert	3.84	268	451	549	838
Worster Brook[1]					
At confluence with Salmon Falls River	7.59	411	669	777	1040
Upstream from confluence with Ferguson Brook	6.12	375	572	666	899
Upstream from confluence with Coffin Brook	4.71	246	972	432	580
Upstream from confluence with Mulloy Brook	4.24	206	311	362	484

[1]Updated calculations for this countywide study

TABLE 6 – SUMMARY OF DISCHARGES – cont'd

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Worster Brook[1]					
Upstream from confluence with Unnamed Stream, about 1.6 mi downstream from Brown Road	2.49	128	196	228	308
At Brown Road	0.6	88.2	147	176	252
About 2,700 ft upstream from Brown Road	0.36	56.2	94.6	114	164
About 3,700 ft upstream from Brown Road	0.23	35.3	59.7	71.9	104

[1]Updated calculations for this countywide study

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM [Flood Insurance Rate Map (FIRM)] represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Cross section data for the below-water sections were obtained from field surveys. Cross sections were located at close intervals above and below bridges, culverts, and dams in order to computer the significant backwater effects of these structures. In addition, cross sections were taken between hydraulic controls whenever warranted by topographic changes.

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

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

For each community within York County, the hydraulic analyses described in these reports have been compiled and are summarized below.

Precountywide Analyses

All cross sections, bridges and culverts were surveyed to obtain elevation data, structural data, and structural geometry. Cross sections were selected immediately below changes in stream configuration. Roughness coefficients (Manning's "n") were determined by field inspection at each cross section using a step-by-step procedure. Where feasible, transposed cross sections were used to reduce the number of surveyed cross sections. Transposed cross sections are surveyed sections which can be transferred either upstream or downstream to represent a location which is similar in valley shape.

In Acton, topographic data were obtained from 10 surveyed valley and bridge cross sections and from USGS topographic maps (References 42 and 43). Water-surface elevations of floods of the selected recurrence intervals were computed using the SCS WSP-2 computer program (Reference 44). Starting water-surface elevations for the Little Ossipee River were obtained from the FIS for the Town of Newfield (described below). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

For the July 16, 1990, Town of Alfred FIS, cross section data for the Littlefield River were obtained from USGS topographic maps (References 43 and 45). Below-water portions of the cross sections were taken from maps of Maine lakes (Reference 46). Water-surface elevations of floods of the selected recurrence intervals for the Littlefield River were computed using the USGS step-backwater computer program (Reference 47). The starting water-surface elevation at the Estes Lake outlet was determined by applying flow over broad-crested weir equations (Reference 48). For the Littlefield River, which was modeled without a floodway, the results of the water-surface computations are tabulated for the selected cross sections.

In the May 18, 1998, Town of Alfred FIS, cross section data for the Mousam River and Tributary to Middle Branch Mousam River were obtained through field surveys. Water-surface elevations of floods of the selected recurrence intervals for the Mousam River and Tributary to Middle Branch Mousam River were computed using the United States Army Corps of Engineers (USACE) HEC-2 computer program (Reference 49). The starting water-surface elevations for the Mousam River were assumed to be at critical depth downstream of Old Falls Dam in Kennebunk. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

In Arundel, Cross sections for the flooding source studied by detailed methods were obtained from field surveys and photogrammetric mapping. Water-surface profiles of floods of the selected recurrence intervals on the stream studied by detailed methods were computed using the USACE HEC-2 step-backwater model (Reference 50). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for the Kennebunk River were taken from mean spring high tide.

Cross sections for the backwater analyses of the Salmon Falls River in Berwick

were obtained from aerial photographs flown in May 1980 at a scale of 1:9,600 (Reference 51). The below-water sections were obtained by field measurement. Water-surface elevations of floods of the selected recurrence intervals were computed using the U.S. Army Corps of Engineers (COE) HEC-2 step-backwater computer program (Reference 52). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations were calculated using the slope/area method.

In Biddeford, cross-section data were obtained from topographic maps compiled from aerial photographs (Reference 53). Below-water sections were obtained from field surveys. Water-surface elevations of floods of the selected recurrence intervals were determined using the COE HEC-2 step-backwater computer program (Reference 54). Starting water-surface elevations for the Saco River were based on the computed pool elevations behind Springs Dam and Bradbury Dam. Starting water-surf ace elevations for the Little River, Moors Brook, and Thatcher Brook were determined based on the mean spring high tide. Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals.

Cross sections for the backwater analyses in Buxton were obtained from topographic maps developed from aerial photographs taken on November 13, 1978 (References 55 and 56). The below-water sections were obtained by field measurements. Water-surface elevations of floods of the selected recurrence intervals were computed through the use of the USGS E-341 step-backwater computer program (Reference 57). The downstream starting water-surface elevations were taken from the FIS's for the Town of Dayton and the City of Saco (below). These elevations were verified by computations of discharge at the Bradbury and Springs Dams in the Cities of Biddeford and Saco, respectively. The starting water-surf ace elevations upstream of Skelton Station were determined by a log-Pearson Type III analysis of annual, maximum forebay elevations. These data (for the years 1949 to 1978) were furnished by Central Maine Power Company. The starting elevations upstream of West Buxton and Bar Mills Dams were determined from the spillway discharge curves provided by the Central Maine Power Company. Adjustments were made for maximum flow through the hydro-stations at designated fled times. Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals. For the streams studied by approximate methods, the 100-year flood elevations were estimated using a method which was developed by USGS hydrologists at the Augusta, Maine, office. A regional stage-frequency relationship indicated an estimated 10-foot rise over the mapped stream elevation as the inundation limit of the 100-year flood (Reference 58).

Cross-section data for the detailed study areas in Cornish were obtained from photogrammetric maps; the below-water sections were obtained by field survey (Reference 59). Several small wooden bridges were not studied and are not shown because they are assumed to be washed out during flooding. Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for

floods of the selected recurrence intervals. Water-surface elevations of floods of the selected recurrence intervals were computed through the use of the COE HEC-2 step-backwater computer program (Reference 54). Starting water-surface elevations for the Saco, Ossipee, and Little Rivers were calculated using the slope/area method.

Cross-section data for the backwater analyses of the Saco River and Cooks Brook in Dayton and Hollis were obtained from aerial photographs taken for this study on November 13, 1978 (References 60 and 61). The below-water data were obtained by field measurement. Water-surface elevations of floods of the selected recurrence intervals were computed through use of the USGS E431 step-backwater computer program (Reference 57). The starting water-surface elevations on the Saco River were taken from the FIS's of the Cities of Biddeford and Saco (both are described within this section). These elevations were verified by computations of discharge at the Bradbury and Springs Dams in Biddeford and Saco, respectively. The starting water-surface elevations upstream of Skelton Station Dam were determined by a log-Pearson Type III analysis of annual maximum forebay elevations. Skelton Station Pond is completely flooded by backwater from the Saco River.

In the Dayton and Hollis area, the starting water-surface elevations on Cooks Brook were determined by computations of discharge over Dennett Dam and Clarks Mill Dam. To determine stage-discharge relations for each of these dams, the study contractor made direct readings of pond elevations, surveyed the dams, and recorded their physical dimensions. Reference points were set in the forebays of the dams so the head on the dams could be computed for observed and measured flows. Current-meter measurements were made at both dams, and a relationship between stages and discharges was determined. These ratings were extended on the basis of the standard flow-over-dam formulas (Reference 48):

$$Q = C\ L\ (H)3/2$$

where Q is the discharge being studied (in cfs), C is the coefficient of discharge, L is the length of the dam perpendicular to the direction of flow (in feet), and H is the head on the dam (in feet).

The measurements of flow to obtain values of "C" did not differentiate the flow for leakage or flow through deep gates. The dams were observed during two seasons of high flow and no gate changes were made. Therefore, the assumption was made that the gates are opened only during times of major repair. This assumption was verified by local residents. The coefficient of discharge was determined using the tables and graphs of the USGS Techniques of Water Resources Investigations, which lists "C" values for various dam types (Reference 48). The actual "C" value used in the formula given above to compute the flood elevation was based on both of these "C" determinations. This procedure was used for the abandoned dam near Dennett Road, as well as the Clarks Mill Dam. Flood profiles were drawn showing computed water-surface elevations to an

accuracy of 0.5 foot for floods of the selected recurrence intervals. For the streams studied by approximate methods in Dayton and Hollis, the 100-year flood elevations were estimated using a regional stage-frequency relationship which indicates an estimated 10-foot rise over the mapped stream elevation as the inundation limit of the 100-year flood (Reference 58).

Also in Hollis, the Flood Hazard Boundary Map (FHBM) was used to delineate additional small, localized areas of flooding, including swamps and ponds (Reference 62). Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals.

In Eliot, cross sectional data for Spinney Creek were obtained from topographic maps compiled from aerial photographs (Reference 53). Below-water sections were obtained from field surveys. Water-surface elevations of floods of the selected recurrence intervals were computed using the COE HEC-2 step-backwater computer program (Reference 52). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. The starting water-surface elevations for Spinney Creek were determined using the mean spring high tide. Portions of the profiles for Spinney Creek were not prepared where those portions were affected by backwater from the Piscataqua River.

Water-surface profiles for Kennebunk and Kennebunkport were developed using two computer models. The tidal reach of the rivers was studied using a one dimensional storm surge model for coastal rivers that was developed by New England Coastal Engineers, Inc. (Reference 63). For the inland reaches of streams and rivers, the COE HEC-2 step-backwater model was applied (Reference 50). Cross-sectional data for both computer models were obtained from photogrammetric mapping, while below-water cross sections were obtained by field survey. In areas where the streams meander, the channel distances were determined from the centerline of flow in the flood plain, not the stream centerline.

In Kennebunk, starting water-surface elevations for the Kennebunk River and the Mousam River downstream of the dam at U. S. Route 1 were taken from mean spring high tide. For the portion of the Mousam River upstream of the dam, the starting water-surface elevations were determined using critical depth. The slope/area method was used for Day Brook. It was determined that flooding on Branch Brook would be totally controlled by the Atlantic Ocean for the entire length of the detailed study within Kennebunk. The Little River is an estuary, where water- surface elevations are not a function of discharge alone. For this reason, the HEC-2 step-backwater computer program was not used to analyze the flooding on the Little River.

In Kennebunkport, starting water-surface elevations for the Batson River were taken at critical depth. Starting water-surface elevations for the Kennebunk River,

Little River, and Smith Brook were determined from the mean spring high tide. It was determined that flooding on the Kennebunk River would be totally controlled by the Atlantic Ocean for the entire length of the detailed study within Kennebunkport.

Cross-sectional data for Kittery were obtained from topographic maps compiled from aerial photographs (Reference 53). Below-water sections were obtained from field surveys. Water-surface elevations of floods of the selected recurrence intervals were determined using the COE HEC-2 step-backwater computer program (Reference 54). Starting water-surface elevations for Spruce Creek and Spinney Creek were determined using the mean spring high tide. Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals.

In Lebanon, the computer model Quick-2, a simple step-backwater modeling program (Reference 64) was used to analyze Bog Brook, Great Brook, and Little River. The model requires cross-section data, Manning's "n" value, slope, and flow data as input. The input values were determined from field reconnaissance. All of the structures and representative cross sections were modeled for each flooding source. The flood line was produced using engineering judgment. Cross sections for the backwater analyses of the Salmon Falls River were obtained from aerial photographs flown in May 1980 at a scale of 1.0 inch equals 800 feet. The below-water sections were obtained by field measurement. Water-surface elevations of floods of the selected recurrence intervals were computed using the U.S. Army Corps of Engineers (USACE) HEC-2 step- backwater computer program (Reference 65). Starting water-surface elevations for the Salmon Falls River were taken from known elevations in the FIS for the City of Rochester, New Hampshire (Reference 38). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Cross-section data for the Little Ossipee River in Limerick were obtained from 21 surveyed valley and bridge cross sections and from USGS topographic maps (Reference 42). Water-surface elevations of floods of the selected recurrence intervals were computed using the SCS WSP-2 computer program (Reference 44). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

In Limington, cross-section data for the backwater analyses of the Saco and Little Ossipee Rivers were obtained from aerial photographs (Reference 66). The below-water sections were obtained by field measurements. For the streams studied by approximate methods, the 100-year flood elevations were estimated by a method developed by USGS hydrologists at the Augusta, Maine, office (Reference 58). The regional stage-frequency relationship indicates that the inundation limit of the 100-year flood is an estimated 10 feet higher than the stream elevation as mapped on USGS topographic maps (References 42 and 43). The Town of Lebanon used this data for their starting water-surface elevation data for the Little Ossipee River.

In Lyman, cross sections were extended into overbank areas using topographic maps (Reference 45). The 100-year flood elevation for Bunganut Pond was determined by rating the outlet overflow weir and culvert pipe. The outlet weir was rated by applying the USGS step-backwater computer program (Reference 67). Traditional flow-over-weir equations were not applicable in this case. Flow through the culvert was determined by applying appropriate formulas published by the USGS (Reference 68). The 100-year flood elevation for Swan Pond was determined by rating the culvert at the outlet of the pond. Flow through the culvert was calculated by applying standard USGS practices (Reference 68). Flow over the roadway at the culvert was computed using the USGS step-backwater computer program (Reference 67). The 100-year flood elevation for Kennebunk Pond was determined by rating both the east and west outlets of the pond. The constricted opening at the west outlet was rated by using the USGS step-backwater computer program (Reference 67). The culvert at the east outlet was rated using standard USGS practices (Reference 68).

The 100-year flood elevation for Roberts-Wadley Pond in Lyman was calculated using the USGS step-backwater computer program (Reference 67). The dam at the outlet of the pond is irregular and has two small breached sections. Traditional weir equations were not appropriate. The step-backwater program was used to compute critical flow over the dam and then to adjust for the effects of velocity head to compute the pond's 100-year flood elevation. Starting elevations used in step-backwater applications were based on slope-conveyance computations. Resultant flood elevations for the ponds were confirmed by comparisons with knowledge of historical flood elevations obtained from local residents.

Topographic data for Newfield were obtained from 10 surveyed valley and bridge cross sections and from USGS topographic maps (References 42 and 43). Water-surface elevations of floods of the selected recurrence intervals were computed using the SCS WSP-2 computer program (Reference 44). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for the Little Ossipee River were obtained from the FIS for the Town of Limerick (described above).

Topographic data in North Berwick were obtained from 47 surveyed valley and bridge cross sections and from USGS topographic maps (References 45 and 69). Water-surface elevations of floods of the selected recurrence intervals were computed using the SCS WSP-2 computer program (Reference 44). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for the Great Works River were obtained from the FIS for the Town of South Berwick (described below).

Water-surface profiles for Ogunquit were developed using two computer models. The tidal reach of the Ogunquit River was studied using a one dimensional storm surge model for coastal rivers (Reference 63). For the inland reaches of the Josias

and Ogunquit River, and the Ogunquit River Tributary, the COE HEC-2 step-backwater computer model was applied (Reference 50). Cross-sectional data for both computer models were obtained from photogrammetric mapping, while below-water cross sections were obtained by field survey. Critical depth was used for starting water-surface elevations on the Josias and Ogunquit Rivers. The slope/area method was used to obtain the starting water-surface elevation for the Ogunquit River Tributary. Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals. Hydraulic analyses of the shoreline characteristics of the flooding source studied in detail were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along the shoreline.

Cross-sectional data for the streams studied by detailed riverine methods in Old Orchard Beach was obtained from photogrammetric mapping while the below-water sections were obtained by field survey (Reference 53). Water-surface elevations were developed using two computer models. The tidal portions of the streams in Old Orchard Beach were analyzed using the One-Dimensional Storm Surge Model for Coastal Rivers (Reference 63). The riverine portions of the streams studied by detailed methods utilized the COE HEC-2 stepbackwater computer program (Reference 50). Water-surface elevations for the portion of Mill Brook downstream of Ross Road to the Boston & Maine railroad were determined using rainfall data (Reference 70). For the streams studied by detailed riverine methods, the starting water-surface elevations were taken at the mean spring tide level of 5.4 feet. Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals.

The above-water cross section data for the Ossipee River in Parsonsfield were obtained from photogrammetric maps (Reference 59); the below-water sections were obtained by field survey. Water-surface profiles were developed for the 10-, 50-, 100-, and 500-year floods using a HEC-2 step-backwater computer program (Reference 71). The computer program was started using the slope-area method at the confluence of the Ossipee and Saco Rivers and was continued upstream. A trial-and-error procedure was employed to calibrate the program using the flood of record (1936) on the Ossipee River (Reference 7). Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals. Streams studied by approximate methods were checked by information gathered from the detailed study areas, information from the town, and the Flood Hazard Boundary Map (Reference 72). No normal depth calculations were made for these areas.

Cross-section data for the flooding sources studied by detailed methods in Saco were obtained from topographic maps compiled from aerial photographs (Reference 53). Below-water sections were obtained from field surveys. For the 1984 Town of Saco FIS, water-surface elevations of floods of the selected recurrence intervals for the Saco River and Goosefare Brook were computed using the USACE HEC-2 step-backwater computer program (Reference 49).

Starting water-surface elevations for the Saco River were based on computed pool elevations behind the Springs Dam and the Bradbury Dam. Starting water-surface elevations for Goosefare Brook were determined based on the mean spring high tide.

For the March 16, 1998, Town of Saco FIS, water-surface elevations for Sawyer Brook were computed using the NRCS WSP2 standard step-backwater computer program (Reference 73). Starting water-surface elevations for Sawyer Brook were computed using critical depth. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

The hydraulic analysis in the September 4, 1984, Town of Sanford FIS was taken from an SCS flood hazard analysis for the Great Works River (Reference 74). Topographic data were obtained from 47 surveyed valley and bridge cross sections and from USGS topographic maps (References 45 and 69). Water-surface elevations of floods of the selected recurrence intervals were computed using the SCS WSP-2 computer program (Reference 44).

For the December 3, 1991, Town of Sanford FIS revision, cross section data for the backwater analyses were obtained from field surveys conducted during the 1989 field season by the study contractor, and water-surface elevations were computed using the USGS WSPRO step-backwater computer program (References 67 and 75). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. The hydraulic analysis for Estes Lake and the starting water-surface elevations for the Mousam River at Estes Lake were taken from the FIS for the Town of Alfred (above). Starting water-surface elevations for the Great Works River and Goodall Brook were taken from the SCS Flood Hazard Analyses for South Berwick (Reference 76). Starting water-surface elevations upstream of each of the seven dams on the Mousam River were determined from stage-discharge relationships based on the surveyed physical characteristics of the dams and appropriate flow over weir equations documented by the USGS (Reference 68).

For the July 20, 1998, Town of Sanford FIS revision, water-surface elevations for the 100-year floods were computed for the Mousam River (Lower Reach) using the U. S. Army Corps of Engineers (USACE) HEC-2 computer program (Reference 77). The starting water-surface was assumed to be at critical depth downstream of Old Falls Dam at Kennebunk and the computer model includes this dam as it controls the water-surface at the Sanford-Kennebunk corporate limits.

Topographic data for Shapleigh were obtained from 17 surveyed valley and bridge cross sections and from USGS topographic maps (References 42 and 43). Field surveys were obtained during the summer of 1975. Only those features in the flood plain a t the time the surveys were made were considered in the computations. Water-surface elevations of floods of the selected recurrence intervals were computed using the SCS WSP-2 computer program (Reference

51). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for the Little Ossipee River were obtained from the FIS for the Town of Newfield (described above).

In South Berwick, topographic data were obtained from 32 surveyed valley and bridge cross sections and from USGS topographic maps (References 45 and 69). Field surveys were obtained in 1975. Only those features in the flood plain at the time the surveys were made were considered in the computations. Water-surface elevations of floods of the selected recurrence intervals were computed using the SCS WSP-2 computer program (Reference 44). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for the Great Works River were calculated by the slope/area method.

Valley and bridge cross sections in Waterboro were obtained from USGS 15-minute series topographic maps (Reference 42). Water-surface elevations of floods of the selected recurrence intervals for the Little Ossipee River from the downstream corporate limits to the Waterboro-Limington-Limerick town boundary were computed using the USGS step-backwater computer program (Reference 78). Water-surface elevations for the Little Ossipee River from the Waterboro-Limington-Limerick town boundary to the upstream corporate limits were computed using the SCS WSP-2 computer program (Reference 44). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for the Little Ossipee River were obtained from the FIS for Limington (described above).

Water-surface elevations of floods of the selected recurrence intervals in Wells were computed using 2 computer models. The tidal reach of the rivers were studied using a one-dimensional storm surge model for coastal rivers that was developed by New England Coastal Engineers, Inc. (Reference 63). For the inland reaches of streams and rivers, the USACE HEC-2 step-backwater model was applied (Reference 50). Cross-sectional data for both computer models were obtained from photogrammetric mapping, while below- water cross sections were obtained by field survey.

Also in Wells, the Little River is an estuary where water-surface elevations are not a function of discharge alone. For this reason, the HEC-2 step-backwater computer program was not used in analyzing the flooding on the Little River (Reference 50). Starting water-surface elevations for the Ogunquit, Webhannet, and Meniland Rivers and Blacksmith Brook were taken at critical depth. Starting water-surface elevations for Depot Brook, Green Brook, Stevens Brook, West Brook, and South Branch of West Brook were obtained using the slope/area method. For Tributary 1 to Green Brook, the starting water-surface elevations were taken from the flood profile of Green Brook at their confluence. It was determined that flooding from Branch Brook and Little River is controlled by the Atlantic Ocean for their detailed study lengths within Wells. Flood profiles were

drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

In York, cross sections for the flooding sources studied by detailed riverine methods were obtained from photogrammetric mapping while below-water sections were obtained by field survey (Reference 53). Water-surface elevations of floods of the selected recurrence intervals were computed using 2 computer models. The tidal portions of the streams in York were analyzed using a one-dimensional storm surge model for coastal rivers (Reference 63). The riverine portions of the streams studied by detailed methods utilized the USACE HEC-2 step-backwater computer program (Reference 50). For the streams studied by detailed riverine methods, with the exception of Bridges Swamp, the starting water-surface elevations were taken at the mean spring tide level of 5.4 feet. For Bridges Swamp, the starting water-surface elevations were computed using the slope/area method. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Countywide Analyses

Analyses of the hydraulic characteristics of flooding from Coffin Brook, Coffin Brook Tributary 1, Driscoll Brook, Ferguson Brook, Keay Brook, Little River, Mulloy Brook, Worster Brook, and Worster Brook Tributary 3, were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables (see accompanying Excel file). For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Cross sections for the flooding source studied by detailed methods were obtained from field surveys and supplemented by LIDAR data. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry. Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles.

Water-surface elevations of floods of the selected recurrence intervals were computed using the USACE HEC-RAS 3.1.3 step-backwater computer program (USACE, 2001). The starting water surface elevations for the 10, 50, 100 and 500-year flow profiles at the mouth were calculated by the HEC-RAS normal depth computation routine and a downstream water surface slopes estimated from channel survey data. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Qualifying bench marks within a given jurisdiction that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (NSRS) as First or Second Order Vertical and have a vertical stability classification of A, B, or C are shown and labeled on the FIRM with their 6-character NSRS Permanent Identifier.

Bench marks cataloged by the NGS and entered into the NSRS vary widely in vertical stability classification. NSRS vertical stability classifications are as follows:

- Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)

- Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)

- Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monument below frost line)

- Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

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

Roughness factors (Manning's "n") used in the hydraulic computations for this updated countywide study were determined from field observations guided by U.S. Geological Water Supply Publications (USGS, 1989; USGS, 1998).

The following tabulation shows the channel and overbank "n" values for the streams studied by detailed methods in both the precountywide and countywide studies. Values calculated for this countywide study have been noted in the table:

TABLE 7 – MANNING'S "n" VALUES

Flooding Source	Channel "n"	Overbanks
Batson River	0.020-0.050	0.050-0.090
Blacksmith Brook	0.050	0.090
Bridges Swamp	0.050	0.090
Bunganut Pond (at outlet)	0.030-0.045	0.055-0.110
Cape Neddick River	0.013-0.050	0.090
Cider Hill Creek	0.020-0.050	0.050-0.020
Coffin Brook[1]	0.045-0.05	0.09-0.11
Coffin Brook Tributary 1[1]	0.05-0.06	0.1-0.11
Cooks Brook	0.030-0.055	0.040-0.110
Day Brook	0.013-0.050	0.050-0.090

[1]Updated calculations for this countywide study

TABLE 7 – MANNING'S "n" VALUES – cont'd

Flooding Source	Channel "n"	Overbanks
Depot Brook	0.013-0.050	0.050-0.090
Dolly Gordon Brook	0.013-0.050	0.050-0.090
Driscoll Brook[1]	0.04-0.05	0.045-0.1
Ferguson Brook[1]	0.045-0.06	0.05-0.12
Goosefare Brook	0.013-0.050	0.050-0.090
Great Works River	0.030-0.060	0.035-0.110
Green Brook	0.030-0.050	0.030-0.090
Kennebunk Pond (at west outlet)	0.030-0.045	0.055-0.110
Kennebunk River	0.020-0.050	0.090
Keay Brook[1]	0.045-0.06	0.085-0.11
Little Ossipee River	0.015-0.057	0.060-0.100
Little Ossipee River (Limington)	0.020-0.060	0.045-0.125
Little River	0.020-0.050	0.050-0.090
Little River (Cornish)	0.035-0.05	0.08-0.10
Little River(Berwick)[1]	0.045-0.075	0.05-0.15
Littlefield River	0.030-0.045	0.055-0.110
Merriland River	0.013-0.050	0.050-0.090
Mill Brook	0.013-0.050	0.050-0.090
Moors Brook	0.020-0.050	0.050-0.090
Mousam River (Alfred)	0.030-0.070	0.070-0.080
Mousam River (Kennebunk)	0.010-0.050	0.050-0.90
Mousam River (Lower Reach)	0.03-0.07	0.07-0.08
Mulloy Brook[1]	0.045-0.06	0.09
Ogunquit River	0.030-0.050	0.090
Ossipee River	0.03-0.045	0.07-0.09
Roberts-Wadley Pond (at outlet)	0.030-0.045	0.055-0.110
Saco River	0.030-0.055	0.040-0.110
Saco River (Cornish)	0.035-0.045	0.08-0.09
Saco River (Limington)	0.035-0.055	0.045-0.110
Saco River (Saco and Biddeford)	0.050	0.090
Saco River-Right Channel	0.030-0.055	0.040-0.110
Salmon Falls River (Berwick)	0.030-0.045	0.050-0.150
Salmon Falls River (Rochester, NH)	0.03-0.04	0.06-0.15
Salmon Falls River (Milton, NH)	0.03-0.07	0.04-0.12
Sawyer Brook	0.055-0.065	0.080-0.095
Smith Brook	0.013-0.050	0.050-0.090
South Branch of West Brook	0.050	0.090
Spinney Creek	0.013-0.050	0.050-0.090
Spruce Creek	0.013-0.050	0.050-0.090
Stevens Brook	0.013-0.050	0.050-0.090

[1]Updated calculations for this countywide study

TABLE 7 – MANNING'S "n" VALUES – cont'd

Flooding Source	Channel "n"	Overbanks
Swan Pond (at outlet)	0.030-0.045	0.055-0.110
Thatcher Brook	0.013-0.050	0.050-0.090
Tributary 1 to Cape Neddick River	0.013-0.050	0.090
Tributary 1 to Green Brook	0.013-0.050	0.050-0.090
Tributary to Middle Branch Mousam River	0.045	0.100
Webhannet River	0.050	0.090
West Brook	0.013-0.050	0.050-0.090
Worster Brook[1]	0.03-0.47	0.075-0.12
Worster Brook Tributary 3[1]	0.045-0.055	0.05-0.11

[1]Updated calculations for this countywide study

3.3 Coastal Analyses

Precountywide Analyses

In New England, flooding of low-lying coastal areas is caused primarily by storm surges generated by extratropical coastal storms called northeasters. Hurricanes occasionally produce significant storm surges in New England, but not with the frequency of northeasters. To calculate the storm surge and total stillwater elevations produced by historical storms it is necessary to determine the pressure and wind fields of the storms. A computer model was developed by the study contractor to simulate these fields based on several northeaster storm parameters (Reference 25).

Synoptic weather maps were searched to determine the northeasters and hurricanes that could potentially produce significant flooding in York County. Tidal records from adjacent tide gages were examined to verify which historical storms produced high water elevations. A total of 154 storms from 1942 to 1978 were considered in the analysis of flood levels. The extent and frequency of recurrence of coastal flooding was determined by conducting a frequency analysis of annual maximum heights along the Atlantic coastline of York County, including the Towns of Kennebunk, Kennebunkport, Kittery, Old Orchard Beach, Wells, and York, the Village of Ogunquit, and the Cities of Biddeford and Saco. The flood elevations associated with historical storms were simulated using a modified version of the FEMA storm surge model (References 79 and 80). Input to the model consisted of wind and pressure fields generated either by the synthetic northeaster model or a hurricane wind and pressure field model for each historical storm selected. The study area, including Kennebunkport, was modeled with a 4-nautical-mile-square grid which provided sufficient resolution to

accurately represent the topography. Output from the model included the time history of storm-induced surge heights in the area. These surges were combined with the predicted astronomical tide for the same period to produce a total stillwater elevation for each community in the study area. The total stillwater elevation was calibrated using historical tide elevation data at Portland, Maine, and Portsmouth, New Hampshire. Thus, the historical storm-induced flood levels in York County could be simulated for each storm considered in the analysis. The annual maximums of these reproduced historical stillwater elevations were fitted with a Pearson Type III distribution (Reference 36). The goodness-of-fit was tested using the chi-square test and accepted at the 10 percent confidence level. In Kittery and Biddeford, elevations for the tidal portions of the Saco River, the Little River, Moors Brook, the Piscataqua River, and Thatcher Brook were determined using a one-dimensional storm surge model (Reference 63).

The effects of wave action are also considered in the determination of flood hazard areas. Coastal structures that are located above stillwater elevations can still be severely damaged by wave runup, wave-induced erosion, and wave-borne debris. For example, during the northeasters of January and February 1978, considerable damage along the Maine coast was caused by wave activity, even though most of the damaged structures were above the high-water level. The extent of wave runup past stillwater levels depends greatly on the wave conditions and local topography.

Wave heights and corresponding wave crest elevations were determined using the National Academy of Science (NAS) methodology (Reference 81). The wave runup was determined using the methodology developed by Stone and Webster Engineering Corporation for the FEMA (Reference 82).

For the FIS revisions of the Towns of Wells and York (on June 17, 2002 and January 16, 2003, respectively), coastal hydrologic analyses were carried out to estimate the 100- year storm characteristics. Published values in the Tidal Flood Survey (Reference 83) and National Ocean Service tidal benchmark data were used to estimate the stillwater elevation for a 100-year flood (References 84, 85, and 86).

For the March 16, 1998 FIS of the City of Saco, the 100-year stillwater elevation for the Atlantic Ocean used in the coastal analyses was taken from the U.S. Army Corps of Engineers (USACE) Tidal Flood Profiles -New England Coastline (Reference 83). The 0.2-percent annual chance stillwater elevation was extrapolated by graphing the 10-, 2-, 1-percent annual chance flood elevations versus flood frequency on semi-log paper. Wave heights and corresponding wave crest elevations were determined using the Wave Height Analysis for Flood Insurance Studies (WHAFIS) model, Version 3.0 (Reference 1).

Hydraulic analyses of the shoreline characteristics of the flooding sources studied in detail were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along the shoreline.

As of 1989, FEMA defines a "coastal high hazard area" as an area of special flood hazards extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high-velocity wave action (i.e., wave heights greater than or equal to 3 feet) from storms or seismic sources. The "primary frontal dune" is defined as a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope. The COE has also established the 3-foot breaking wave as the criterion for identifying the limit of coastal high hazard zones (Reference 87). The 3-foot wave has been determined as the minimum size wave capable of causing major damage to conventional wood frame or brick veneer structures.

A wave height analysis was performed to determine wave heights and corresponding wave crest elevations for the areas inundated by the stillwater flooding. A wave runup analysis was performed to determine the height and extent of runup beyond the limit of stillwater inundation.
The results of these analyses were combined into a wave envelope, which was constructed by extending the maximum wave runup elevation seaward to its intersection with the wave crest profile.

The methodology for analyzing wave heights and corresponding wave crest elevations in Biddeford, Kennebunk, Kennebunkport, Kittery, Ogunquit, Old Orchard Beach, and Saco was developed by the National Academy of Sciences (Reference 81). The NAS methodology is based on three major concepts. First, a storm surge on the open coast is accompanied by waves. The maximum height of these waves is related to the depth of water by the following equation:

$$H_b = 0.78d$$

where H_b is the crest to trough height of the maximum or breaking wave and d is the stillwater depth. The elevation of the crest of an unimpeded wave is determined using the equation:

$$Z_w = S^* + 0.7H^* = S^* + 0.55d$$

where Z_w, is the wave crest elevation, S* is the stillwater elevation at the site, and He is the wave height at the site. The 0.7 coefficient is the portion of the wave height which reaches above the stillwater elevation. H_b is the upper limit for H*.

The second major concept is that the breaking wave height may be diminished by dissipation of energy by natural or man-made obstructions. The wave height transmitted past a given obstruction is determined by the following equation:

$$H_t = BH_i$$

where H_t is the transmitted wave height, H_i is the incident wave height, and B is a transmission coefficient ranging from 0.0 to 1.0. The coefficient is a function of the physical characteristics of the obstruction. Equations have been developed by the NAS to determine B for vegetation, buildings, natural barriers such as dunes, and man-made barriers such as breakwaters and seawalls (Reference 81).

The third concept deals with unimpeded reaches between obstructions. New wave generation can result from wind action. This added energy is related to distance and mean depth over the unimpeded reach.

The methodology for analyzing wave runup was developed by Stone and Webster Engineering Corporation (Reference 82). The wave runup computer program (based on earlier work done by the COE) operates using an ensemble of deepwater wave heights, H_i, the surge stillwater elevation, a wave period, T_S, and beach slope, m. For Biddeford, Kennebunk, Kennebunkport, Kittery, Ogunquit, and Old Orchard Beach, wave heights range from 5 feet up to the significant wave height of 30 feet; the wave period equals 14 seconds.

These concepts and equations were used to compute wave envelope elevations associated with the 100-year storm surge. Accurate topographic, land-use, and land cover data are required for the coastal analyses. Maps of the study areas (including the communities of Biddeford, Kennebunk, Kennebunkport, Kittery, Ogunquit, and Old Orchard Beach), at a scale of 1:2,400 with a contour interval of 5 feet, were used for the topographic data (Reference 53). The land-use and land cover data were obtained by field surveys.

Wave heights were computed along transects which were located perpendicular to the average mean shoreline. The transects were located with consideration given to the physical and cultural characteristics of the land so that they would closely represent conditions in their locality. Transects were spaced close together in areas of complex topography and dense development. In areas having more uniform characteristics, the transects were spaced at larger intervals. It was also necessary to locate transects in areas where unique flooding existed and in areas where computed wave heights varied significantly between adjacent transects.

Along each transect, wave heights, wave crest elevations, and wave runup were computed considering the combined effects of changes in ground elevation, vegetation, and physical- features. The calculations were carried inland along the transect until the wave crest elevation was permanently less than 0.5 foot above the stillwater surge elevation or until the coastal flooding met another flooding source (i.e. riverine) with an equal water-surface elevation. The results of the calculations are accurate unti1 local topography, vegetation, or cultural development within the community undergo any major changes. In Saco, the wave height analysis was carried out in accordance with the Guidelines and

Specifications for Wave Elevation Determination and V-Zone Mapping (Reference 1).

For each transect, the program produces a maximum wave runup elevation which define the inland extent of flooding. Between transects, runup elevations are interpolated to give the areal extent of flooding. Wave crest profiles are constructed for each transect by extending the maximum wave runup elevation seaward to its intersection with the wave profile determined by the NAS wave height analyses (References 80 and 88).

In Ogunquit, the flood elevations associated with historical storms were simulated using a modified version of the FEMA storm surge model (References 79 and 80). Input to the model consisted of wind and pressure fields generated either by the synthetic northeaster model or a hurricane wind and pressure field model for each historical storm selected. The study area, including Ogunquit, was modeled with a 4-nautical-mile-square grid which provided sufficient resolution to accurately represent the topography. Output from the model included the time history of storm-induced water elevations in the area. These elevations were combined with the predicted astronomical tide for the same period to produce a total storm tide elevation for each community in the study area. The total storm tide elevation was calibrated using historical tide elevation data at Portland, Maine, and Portsmouth, New Hampshire. Thus, the historical storm-induced flood levels in Ogunquit could be simulated for each storm considered in the analysis.

For the March 16, 1998, City of Saco FIS, ground elevations along each transect were taken from field surveys, and the coastal flooding was delineated on topographic maps compiled and controlled by James W. Sewall Co. at a scale of 1"= 400’ with a contour interval of 4 feet (Reference 89). Erosion analyses were conducted along each transect using the standard procedures outlined in the Guidelines and Specifications for Wave Elevation Determination and V-Zone Mapping (Reference 1).

Along each of the eroded transects in Saco, wave heights and wave crest elevations were computed considering the combined effects of changes in ground elevations, vegetation, and physical features. The stillwater elevation for the 100-year flood was used as the starting water-surface elevation for each transect. A deepwater significant wave height of 25 feet, and period of 12.5 seconds were determined using engineering judgment given the results of buoy measurements taken from the U.S. Department of Commerce's Climatic Summaries for NDBC Buoys and Stations Update 1, and wave information taken from the USACE wave information study, WIS Report 30, Hindcast Wave Information for the U.S. Atlantic Coast, and the wave information study, WIS Report 19, Hurricane Hindcast Methodology and Wave Statistics for Atlantic and Gulf Hurricanes from 1956 -1975 (References 90, 91, and 92). These deepwater wave conditions were used as input into the WHAFIS model. Wave heights were calculated to the nearest 0.1 foot, and wave elevations were determined at whole-foot increments along the transects. The location of the 3- foot breaking wave for determining the

terminus of the V zone (area with velocity wave action) was also computed at each transect.

After analyzing wave heights along each transect in Saco, wave elevations were interpolated between transects. Topographic maps (Reference 89) were used along with engineering judgment to interpolate flood hazards and elevations between transects. Controlling features affecting the elevations were identified and considered in relation to their position at a particular transect and their variation between transects.

The landward limit of the coastal high hazard area (VE zone) is defined as the furthest landward of the three following locations: first, the areas where the 3-foot or greater wave could occur; second, the areas where the eroded ground profile is 3 feet or more below the maximum runup elevation; and third, the inland limit of the primary frontal dune as defined in Title 44, Part 59, Section 1 of the Code of Federal Regulations (44 CFR 59.1).

Wave runup analysis was performed at each transect in Saco. For Transects 2 through 6, the mean runup elevation was computed using FEMA's Wave Runup Model, Version 2.0 (Reference 93). For Transect 1, the runup methodology for vertical seawalls was used as outlined in the Shore Protection Manual (Reference 94). For Transects 2, 3, and 4, the inland limit of the primary frontal dune was the minimum criteria for locating the inland limit of the VE zone. For Transects 1, 5, and 6, the inland limit of the VE zone was set slightly landward of the crest of the structures based on excessive overtopping and historical performance.

In the January 16, 2003, Wells FIS revision, and the June 17, 2002, York FIS revision, the wave height and runup calculations used follow the methodologies described in FEMA's Guidelines and Specifications for Wave Elevation Determination and V Zone Mapping (Reference 95). WHAFIS 3.0 was used to predict wave heights. RUNUP 2.0 was used to predict wave runup on natural shores. Calculations based on the Shore protection Manual (Reference 94) were used to predict wave runup on seawall barriers. Wave setup is included in the stillwater elevation for the wave height analysis, but is not included in the wave runup analysis as specified in the guidelines

Fourteen transects along the Wells coastline and thirty-four transects along the Town of York coastline were surveyed by Chas. H. Sells, Inc. The surveyed transects were straightened by mathematically projecting each surveyed point onto a straight line connecting the first and last surveyed points. Bathymetric data from the USGS topographic maps was used to extend the transects offshore (USGS, 1973). Coastal-processes that may affect the transect profile, such as dune erosion and seawall scour, were estimated following the Guidelines and Specifications for Wave Elevation Determination and V Zone Mapping (Reference 95). In Wells, thirteen of the transects were revised by Dewberry & Davis, eleven transects were extended to model wave effect for inland areas subjected to coastal storm surge inundation, two to include a change in stillwater

elevation to account for a reduction in wave setup. In addition, one transect was added based on topographic information provided by Chas. H. Sells. In York, One transect was revised by Dewberry & Davis to reflect storm-induced erosion (dune removal) in the wave analysis. Along each transect, wave envelopes were computed considering the combined effects of changes in ground elevation, vegetation, and physical features.

The Wave Information Study (WIS) Report #33 was used to assess wave characteristics (Reference 96). Mean wave characteristics were determined as specified in the FEMA Guidelines and Specifications for Wave Elevation Determination and V Zone Mapping (Reference 95):

$$H_{bar} = (H_S)(0.626)$$
$$T_{bar} = (T_S)(0.85)$$

Wave H_{bar} is the average wave height of all waves, H_S is the significant wave height or the average over the highest one-third of waves, T_{bar} is the average wave period, and T_S is the significant wave associated with the significant wave height.

Wave setup was calculated using the procedures detailed in the Guidelines and Specifications for Wave Elevation Determination and V Zone Mapping (Reference 95). Because much of the Wells and York coastline has experienced historical flooding above predicted surge and runup elevations, setup was assumed to be an important component of the wave height analyses and was applied to the entire exposed coastline in the Towns of Wells and York. Wave runup, not including wave setup, was applied for BFE determination and mapping at transects 1, 2, and 3 in Wells. Areas of shallow flooding, designated AO zones, are shown along portions of the shorelines. These areas are the result of wave runup overtopping and ponding behind seawalls and berms for average depths of 1 to 2 feet. The results of the calculations are accurate until local topography, vegetation, or cultural development within the community undergo major changes. After analyzing the wave heights along each transect, wave elevations were interpolated between transects. Various source data were used for interpolation, including topographic maps and engineering judgment. Controlling features affecting the elevations were identified and considered in relation to their position at a particular transect and their variation between transects.

The precountywide stillwater elevations for the 10-, 2-, 1-, and 0.2-percent-annual-chance floods have been determined and are shown in Table 8. The analyses reported in this study reflect the stillwater elevations, shown in Table 8, due to tidal and wind setup effects and include the contributions from wave action effects. Updated stillwater elevations for the York County Atlantic Ocean coastline can be found at the end of this section in Countywide Analyses.

TABLE 8 - SUMMARY OF PRECOUNTYWIDE STILLWATER ELEVATIONS

FLOODING SOURCE AND LOCATION	ELEVATION (FEET NAVD) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2 PERCENT ANNUAL CHANCE
Atlantic Ocean				
At Blacksmith Brook - West of Drakes Island Beach Road between Laudholm Farms Road and Lower Landing Road	7.9	8.6	8.9	*
At Brave Boat Harbor - Southwest of Raynes Neck Road north of York corporate limits	7.8	8.6	8.9	*
At Cape Neddick Harbor - along Bay Haven Road southeast of Main Street	7.8	8.6	8.9	*
At Eastern Point - East of Millbury Lane south of Eastern Point Road	7.8	8.6	8.9	*
At Godfrey's Cove, northwest of Lickla Kings Road	7.8	8.6	8.9	*
At Little River - along the Wells corporate limits north of Laudholm Farms Road	7.9	8.6	8.9	*
At Little River - west of York Street south of Bayview Road	7.8	8.6	8.9	*
At Phillips Cove - northwest of Shore Road north of Bayberry Lane	7.8	8.6	8.9	*
At Stevens Brook - west of Ocean Avenue between Eldridge Road and the Wells corporate limits	7.9	8.6	8.9	*

*Data not available

TABLE 8 - SUMMARY OF PRECOUNTYWIDE STILLWATER ELEVATIONS – cont'd

FLOODING SOURCE AND LOCATION	ELEVATION (FEET NAVD) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2 PERCENT ANNUAL CHANCE
Atlantic Ocean – cont'd				
At the Webhannet River - west of Webhannet Drive between Mie Road and Eldridge Road	7.9	8.6	8.9	*
At the Webhannet River - west of Atlantic Avenue between Lower Landing Road and Mile Road	7.9	8.6	8.9	*
At York Harbor - west of Stage Neck Road between York Street and Western Point Boulevard	7.8	8.6	8.9	*
At York River - approximately 700 feet west of Brave Boat Harbor Road	7.27.9	7.7	8.0	8.5
Balch Pond	558.4	559.0	559.2	559.8
Bauneg Beg Pond				
Entire shoreline within North Berwick	208.1	209.2	209.6	209.8
Entire shoreline within Sanford	207.3	209.2	209.6	209.8
Bunganut Pond				
Entire shoreline within Lyman	*	*	277.1	*
Kennebunk Pond				
Entire shoreline within Lyman	*	*	273.8	*
Lake of the Woods				
Entire area	10.7	11.1	11.3	11.5

*Data not available

TABLE 8 - SUMMARY OF PRECOUNTYWIDE STILLWATER ELEVATIONS – cont'd

FLOODING SOURCE AND LOCATION	ELEVATION (FEET NAVD) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2 PERCENT ANNUAL CHANCE
Little Ossipee Lake	312	312.4	313	314.7
Mill Brook				
Downstream of Ross Road	6.5	7.1	7.5	8.3
Piscataqua River				
Entire length within Eliot	*	*	8.3	*
Roberts-Wadley Pond				
Entire shoreline within Lyman	*	*	275.7	*
Swan Pond				
Entire shoreline within Lyman	*	*	281.6	*

*Data not available

Countywide Analyses

As part of this countywide update, revised coastal analyses were performed for the open water flooding sources in the communities of Biddeford, Kennebunk, Kennebunkport, Kittery, Ogunquit and Old Orchard Beach. In addition, redelineation of coastal flood hazard data was performed for open water flooding sources in the communities of Saco, Wells and York. Redelineation of coastal flood hazards is defined as applying the results of previous coastal analyses to new or more detailed topographic data. Provided below is a summary of the analyses performed. All revised coastal analyses and redelineation of coastal flood hazards were performed in accordance with Appendix D "Guidance for Coastal Flooding Analyses and Mapping," (Reference 97) of the Guidelines and Specifications, as well as, the "Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update", (Reference 98).

For the communities with revised coastal analyses, published values in the Tidal Flood Survey (Reference 99) were used to estimate the stillwater elevations for the 10-, 2-, and 1-percent-annual-chance floods for open water flooding sources. The 0.2-percent-annual-chance stillwater elevations were extrapolated from the

more the frequent stillwater elevations in the Tidal Flood Survey. For communities with redelineation of coastal flood hazard data, the 10-, 2-, 1- and 0.2-percent-annual-chance stillwater elevations are the same as published in the previous Flood Insurance Studies. Stillwater elevations for the revised and redelineated flooding sources are presented in Table 9.

TABLE 9 – SUMMARY OF REVISED STILLWATER ELEVATIONS

FLOODING SOURCE AND LOCATION	ELEVATION (feet NAVD 88) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
Biddeford				
SACO RIVER	7.9	8.5	8.9	9.5
ATLANTIC OCEAN	7.9	8.5	8.9	9.5
Kennebunk				
ATLANTIC OCEAN	7.9	8.5	8.9	9.5
Kennebunkport				
ATLANTIC OCEAN	7.9	8.5	8.9	9.5
Kittery				
ATLANTIC OCEAN	8.2	8.8	9.2	9.8
Ogunquit				
ATLANTIC OCEAN	7.9	8.5	8.9	9.5
Old Orchard Beach				
ATLANTIC OCEAN	7.9	8.5	8.9	9.5
Saco				
ATLANTIC OCEAN	7.8	8.5	8.8	9.5
Wells				
ATLANTIC OCEAN	7.8	8.5	11.3[1]	*

*Data not computed
[1]Includes Wave Setup

TABLE 9 – SUMMARY OF REVISED STILLWATER ELEVATIONS – cont'd

FLOODING SOURCE AND LOCATION	ELEVATION (feet NAVD 88) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
Wells – cont'd				
STEVENS BROOK West of Ocean Avenue between Eldridge Road and the Wells corporate limits	7.8	8.5	8.8	*
WEBHANNET RIVER West of Webhannet Drive between Mile Road and Eldridge Road	7.8	8.5	8.8	*
WEBHANNET RIVER West of Atlantic Avenue between Lower Landing Road and Mile Road	7.8	8.5	8.8	*
BLACKSMITH BROOK West of Drakes Island Beach Road between Laudholm Farms Road and Lower Landing Road	7.8	8.5	8.8	*
LITTLE RIVER Along the Wells corporate limits and north of Laudholm Farm Road	7.8	8.5	8.8	*
York				
ATLANTIC OCEAN Entire open coast shoreline within the Town of York	7.7	8.5	11.4[1]	*

*Data not computed
[1]Includes Wave Setup

TABLE 9 – SUMMARY OF REVISED STILLWATER ELEVATIONS – cont'd

FLOODING SOURCE AND LOCATION	ELEVATION (feet NAVD 88) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
York				
ATLANTIC OCEAN				
Northwest of Long Beach Avenue between Beacon Street and Nubble Road	7.7	8.5	8.8	*
CAPE NEDDICK RIVER				
North of Algonic west of Shore Road	7.7	8.5	8.8	*
CAPE NEDDICK HARBOR				
Along Bay Haven Road southeast of Main Street	7.7	8.5	8.8	*
PHILLIPS COVE				
Northwest of Shore Road north of Bayberry Lane	7.7	8.5	8.8	*
LITTLE RIVER				
West of York Street south of Bayview Road	7.7	8.5	8.8	*
GODFREY'S COVE				
Northwest of Lickla Kings Road	7.7	8.5	8.8	*
EASTERN POINT				
East of Millbury Lane south of Eastren Point Road	7.7	8.5	8.8	*

*Data not computed
[1]Includes Wave Setup

TABLE 9 – SUMMARY OF REVISED STILLWATER ELEVATIONS – cont'd

FLOODING SOURCE AND LOCATION	ELEVATION (feet NAVD 88) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
York – cont'd				
YORK HARBOR				
West of Stage Neck Road between York Street and Western Point Boulevard	7.7	8.5	8.8	*
YORK RIVER				
Approximately 700 feet west of Brave Boat Harbor Road	7.1	7.6	7.9	8.4
BRAVE BOAT HARBOR				
Southwest of Raynes Neck Road north of York corporate limits	7.7	8.5	8.8	*

*Data not computed
[1]Includes Wave Setup

For the communities with revised coastal analyses, the elevations presented in the Tidal Flood Survey are referenced to the National Tidal Datum Epoch (NTDE) of 1960-1978. The current tidal datum is based on the NTDE of 1983-2001. The NTDE is a specific 19 year period that includes the longest periodic tidal variations caused by the astronomic tide-producing forces. The value averages out long term seasonal meteorological, hydrologic, and oceanographic fluctuations and provides a nationally consistent tidal datum network (bench marks) by accounting for seasonal and apparent environmental trends in sea level rise that affect the accuracy of tidal datums. For use in this coastal analysis revision, the stillwater elevations presented in the Tidal Flood Survey were converted to the current tidal datum. A datum conversion factor of +0.25 feet was applied to the data in the Tidal Flood Survey for Kittery; +0.09 feet for Ogunquit; and +0.05 feet for the remaining communities in York County.

For two (2) of the communities with redelineation of coastal flood hazard data (Wells and York), the elevations presented in the previous Flood Insurance Studies (FIS) are referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29). These elevations were converted to the North American Vertical

Datum of 1988 (NAVD 88). The vertical datum shift between NGVD29 and NAVD88 was determined in accordance with Appendix B "Guidance for Converting to the North American Vertical Datum of 1988," (Reference 100) of the Guidelines and Specifications, as well as, the "Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update", (Reference 98). The previous FIS for Saco was prepared using the NAVD88 datum.

For the communities with revised coastal analyses, wave setup along the open coast was calculated using the procedures detailed in the "Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update", (Reference 98). Specifically, the Direct Integration Method (DIM) was applied. Because much of the York County coastline has experienced historical flooding and damage above predicted surge and runup elevations, setup was assumed to be an important component of the analyses and was applied to the entire open coast shoreline in the revised community, except for areas inundated by wave runup. Wave setup was also included in the previous coastal analyses for the communities of Wells and York.

For the communities with revised coastal analyses, offshore wave characteristics representing a 1-percent-annual-chance storm were determined using hindcast wave data from the US Army Corps of Engineers Wave Information Studies (WIS) stations. A Peaks-Over-Threshold statistical analysis (Reference 101) was applied on 20 years (1980-1999) of wave characteristic data from WIS Station 41, located offshore of the Town of York. For areas sheltered from direct ocean waves, such as bays, harbors and west facing shorelines, wave characteristics representing a 1-percent-annual-chance storm were determined using a restricted fetch analysis and the US Army Corps of Engineers Automated Coastal Engineering System (ACES) software package. Mean wave characteristics were determined as specified in the FEMA guidance for V Zone mapping.

Wave heights and wave runup in the communities with revised coastal analyses were computed along transects that were located perpendicular to the average shoreline. The transects were located with consideration given to the physical and cultural characteristics of the land so that they would closely represent local conditions. Transects were spaced close together in areas of complex topography and dense development. In areas having more uniform characteristics, the transects were spaced at larger intervals. It was also necessary to locate transects in areas where unique flooding existed and in areas where computed wave heights varied significantly between adjacent transects.

Transect data for the communities with redelineation of coastal hazard data are referenced to each community's previous FIS.

Transect descriptions for the restudied coastal analyses and for the communities with redelineation of coastal hazard data are shown in Table 10 below and have been re-numbered to conform to countywide standards.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
1	Old Orchard Beach from the Corporate Limits of the Town of Scarborough southwest to Parcher Avenue.	8.9	18
2	From Parcher Avenue southwest to Rosewood Street.	8.9	18
3	From Rosewood Street southwest to Mullen Avenue.	8.9	18
4	From Mullen Avenue southwest to Dube Street.	8.9	18
5	From Dube Street southwest to Fourth Avenue.	8.9	18
6	From Fourth Avenue southwest to Odena Avenue.	8.9	16
7	From Odena Avenue southwest to the mouth of Goosefare Brook near Porter Road.	8.9	19
8	From the mouth of Goosefare Brook near Porter Road, along Goosefare Brook, to the Corporate Limits of the Town of Saco.	8.9	18

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
9	Approximately 750 feet from the intersection of Piney Woods Road and Bayview Drive running perpendicular to the shoreline.	8.7	12
10	Approximately 700 feet northwest of the intersection of Bayview Road and Seaside Avenue running perpendicular to the shoreline.	8.7	12
11	Approximately 1,400 feet north northwest of the intersection of Pond Avenue and Seaside Avenue running perpendicular to the shoreline	8.7	12
12	Approximately 800 feet southwest of the intersection of Pond Avenue and Seaside Avenue running perpendicular to the shoreline.	8.7	12
13	Approximately 950 feet east southeast of the intersection of Seaside Avenue and Lower Beach Road running perpendicular to the shoreline.	8.7	12
14	Approximately 400 feet southeast of the intersection of North Avenue and Bay Avenue running perpendicular to the shoreline.	8.7	12

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
15	Between north and south jetty at the mouth of the Saco River; extends west up the river. Crosses shoreline approx. 1200 ft north of the intersection of Pool St and Hills Beach Rd.	8.9	27
16	In Wood Island Harbor, extending southwest along Island View Dr.	8.9	17
17	On Basket Island, extending southwest over the island.	8.9	17
18	In Wood Island Harbor, extending southwest along Sky Harbor Dr.	8.9	19
19	In Biddeford Pool, extending southwest between Staples St. and Bayview Ave.	8.9	24
20	In Biddeford Pool, extending west along First St.	8.9	20
21	In Biddeford Pool, extending northwest along Fifth St.	8.9	19
22	In Fletcher Neck, extending north, perpendicular to Gilbert Pl.	8.9	19
23	In Fletcher Neck, extending northwest along Beach Ave.	8.9	19

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
24	In Fletcher Neck, extending northwest along Thorndike Ave.	8.9	20
25	In Fletcher Neck, extending northwest along Burnie Way.	8.9	19
26	In Fortunes Rocks, extending northwest along Neptune Ln.	8.9	19
27	In Horseshoe Cove, extending northwest through Old Kings Highway and Seal Lane, parallel to Fortunes Rocks Road.	8.9	18
28	In Horseshoe Cove, extending southwest through the shoreline north of Hoyt Neck.	8.9	18
29	In New Barn Cove, just south of Hoyt Neck, extending northwest between Sea Spray Dr. and Bayberry Rd.	8.9	20
30	South of Hoyt Neck, extending northwest along Juniper Ln.	8.9	19
31	East side of Curtis Cove, extending northwest through the pocket beach parallel to Brackett Point Rd.	8.9	19

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
32	On Timber Island, extending northwest through the southeast shoreline.	8.9	19
33	Goose Rocks Beach from the mouth of the Little River west to the intersection of Sand Point Road and Kings Highway.	8.9	15
34	Goose Rocks Beach from the intersection of Sand Point Road and Kings Highway west to Broadway Avenue.	8.9	19
35	Goose Rocks Beach from Broadway to the point along Kings Highway midway between Belair Avenue and Bartlett Avenue.	8.9	18
36	Goose Rocks Beach from the point along Kings Highway midway between Dyke Road and cottage Avenue.	8.9	19
37	Goose Rocks Beach from the point along Kings Highway midway between Dyke Road and Cottage Avenue southwest to Sunset Lane.	8.9	19

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
38	Goose Rocks Beach from Sunset Lane southwest to the mouth of the Batson River.	8.9	18
39	Cape Porpoise from the mouth of the Batson River south to approximately 700 feet north of the intersection of Marshall Point Road and Skipper Joes Point Road.	8.9	19
40	Cape Porpoise from approximately 700 feet north of the intersection of Marshall Point Road and Skipper Joes Point Road south to the southern extent of Skipper Joes Point Road	8.9	19
41	Cape Porpoise from the southern extent of Skipper Joes Point Road south to the easternmost extent of Agamenticus Avenue.	8.9	17
42	Islands directly offshore of Kennebunkport. Stage, Little Stage, Cape, Redin, Trott, Goat, Folly, Negro, Bass, Green, and Bumpkin Island	8.9	19

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
43	Cape Porpoise Harbor from the easternmost extent of Agamenticus Avenue south to the northern extent of Cape Porpoise Harbor along Pier Road.	8.9	17
44	Cape Porpoise Harbor from the northern extent of Cape Porpoise Harbor along Pier Road west to the mouth of Paddy Creek near Lands End Road.	8.9	15
45	Vaughn Island and the shoreline of Cape Porpoise from the mouth of Paddy Creek near Lands End Road southwest to the mouth of Turbats Creek near the easternmost extent of Turbats Creek Road	8.9	17
46	Cape Arundel from the easternmost extent of Turbats Creek Road south to Sandpiper Lane	8.9	24
47	Cape Arundel from Sandpiper Lane southwest to the northeast corner of Walkers Point near the parking lot along Ocean Avenue.	8.9	25

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
48	Cape Arundel from the northeast corner of Walkers Point near the parking lot along Ocean Avenue southwest to Atlantic Avenue.	8.9	30
49	Cape Arundel from Atlantic Avenue west to the intersection of Ocean Avenue and the driveway to the lone property on Old Fort Point.	8.9	20
50	Cape Arundel from the intersection of Ocean Avenue and the driveway to the lone property on Old Fort Point west to the mouth of the Kennebunk River.	8.9	19
51	Goochs Beach from the mouth of the Kennebunk River west to intersection of Beach Avenue and Gooch Avenue	8.9	19
52	Goochs Beach from the intersection of Gooch Avenue and Beach Avenue west to the intersection of Peninsula Drive and Beach Avenue	8.9	20
53	Middle Beach from the intersection of Peninsula Drive and Beach Avenue west to Harris Lane	8.9	19

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
54	Mothers Beach from Harris Lane west to Strong Lane.	8.9	21
55	Mothers Beach from Strong Lane west to the easternmost intersection of Lords Point Road and Beach Avenue.	8.9	18
56	Lords Point from the easternmost intersection of Lords Point Road and Beach Avenue west around Lords Point to Oak Street	8.9	19
57	Kennebunk Beach from Oak Street west to the bend in Great Hill Road near Robie Road	8.9	18
58	Libbys Point from the bend in Great Hill Road near Robie Road west to the eastern extent of marsh upland of Great Hill	8.9	18
59	Great Hill from the eastern extent of marsh upland of Great Hill west to the westernmost intersection of Atlantic Circle and Great Hill road	8.9	19
60	Great Hill from the westernmost intersection of Atlantic Circle and Great hill Road west to the mouth of the Mousam River.	8.9	22

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
61	Parsons Beach from the mouth of the Mousam River west to the eastern extent of the residential seawall along Parsons Beach Road.	8.9	18
62	Parsons Beach along the length of residential seawall (approximately 750 feet)	8.9	19
63	intersection of Crescent Surf and Parsons Beach Road west around the point to the western extent of adjacent residential seawalls.	8.9	19
64	western extent of residential seawalls to the mouth of the Little River.	8.9	19
65	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 1,700 feet northeast of the intersection of Drakes Island Beach Road and Blueberry Lane.	11.4	17.9
66	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 950 feet northeast of the intersection of Drakes Island Beach Road and Drakes Island Road.	11.4	17.9

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
67	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 2,500 feet northeast of the southernmost intersection of Atlantic Avenue and Biverside Road.	11.4	17.9
68	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 1,200 feet northeast of the intersection of Atlantic Avenue and Biverside Road.	11.4	17.9
69	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 500 feet southeast of the intersection of Fifth Avenue and Sagamore Street.	11.4	17.9
70	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 550 feet northeast of the intersection of Atlantic Avenue and Mile Road	11.4	17.9
71	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 450 feet southeast of the intersection of Atlantic Avenue and Mile Road.	11.4	17.9

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
72	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 400 feet east of the intersection of Webhannet Drive and Days Lane.	11.4	17.9
73	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 1,500 feet northeast of the intersection of Webhannet Drive and Eldridge Road.	8.9	18.5
74	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 400 feet northeast of the intersection of Webhannet Drive and Eldridge Road	11.4	17.9
75	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 650 feet southeast of the intersection of Webhannet Drive and Seaview Drive.	11.4	17.9
76	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 250 feet southeast of the intersection of Ocean Avenue and Ocean View Street.	11.4	17.9

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
77	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 500 feet northeast of the intersection of Ocean Avenue and Furbush Road.	8.9	19.5
78	At the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 1,750 feet southeast of the intersection of Ocean Avenue and Furbush Road.	8.9	19.0
79	AT the shoreline of the Atlantic Ocean, in the Town of Wells, approximately 1,300 feet southeast of the intersection of Ocean Avenue and Bourne Avenue	8.9	19.1
80	Corporate Limits of the Town of Wells south to the northern extent of Grasshopper Lane near Kingfield Avenue.	8.9	18
81	The northern extent of Grasshopper Lane near Kingfield Avenue south to the intersection of Dunelawn Drive and River Road.	8.9	18

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
82	The intersection of Dunelawn Drive and River Road south to the bridge along Beach Street near the mouth of the Ogunquit River.	8.9	19
83	From the bridge along Beach Street near the mouth of the Ogunquit River south to Obends Lane.	8.9	20
84	From Obeds Lane to the intersection of Israel Head Road and Sterns Road.	8.9	33
85	From the intersection of Israel Head Road and Sterns Road south to the intersection of Marginal Way Walk and Perkins Cove Road.	8.9	22
86	From the intersection of Marginal Way Walk and Perkins Cove Road south to the southeastern extent of Oarweed Cove.	8.9	20
87	From the southwestern extent of Oarweed Cove to the footbridge over Perkins Cove.	8.9	20

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
88	From the footbridge over Perkins Cove south to the Corporate Limits of the Town of York.	8.9	22
89	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 300 feet northeast of the intersection of Bay Road and Circuit Road.	11.4	17.9
90	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 2,200 feet northeast of the intersection of Shore Road and Bald Head Cliff Road.	11.4	17.9
91	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 1,600 feet southeast of the intersection of Shore Road and Bald Head Cliff Road.	11.4	17.9
92	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 2,650 feet south of the intersection of Shore Road and Bald Head Cliff Road.	11.4	17.9

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
93	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 450 feet southeast of the intersection of Drifting Gull Road and Bayberry Lane.	11.4	17.9
94	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 3,500 feet northeast of the intersection of Shore Road and Old Country Road.	11.4	17.9
95	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 2,000 feet southeast of the intersection of Shore Road and Old Country Road.	11.4	17.9
96	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 1,800 feet southeast of the intersection of Shore Road and River Road.	11.4	17.9
97	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 900 feet northeast of the intersection of Shore Road and Bay Haven Road.	11.4	17.9

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
98	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 900 feet southeast of Freeman Street and Bay Haven Road.	11.4	17.9
99	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 600 feet northeast of Freeman Street and Newport Road.	11.4	17.9
100	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 650 feet southeast of Main Street and Beach Street.	11.4	17.9
101	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 600 feet northeast of the intersection of Broadway Road and Kendall Road.	11.4	17.9
102	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 500 feet northeast of the intersection of Nubble Road and Cycad.	8.7	19.0

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
103	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 800 feet southeast of the intersection of Nubble Street and Cycad Avenue.	11.4	17.9
104	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 350 feet southwest of the intersection of Nubble Road and Shelton Avenue.	8.8	19.4
105	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 625 feet southwest of the intersection of 6th Avenue and Nubble Road.	11.4	17.9
106	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 700 feet southeast of the intersection of Church Street and Midnight Drive.	8.8	18.2
107	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 400 feet southeast of the intersection of Long Beach Avenue and Beacon Street	11.4	17.9

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
108	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 300 feet southeast of the intersection of Long Beach Avenue and Webber Road.	11.4	17.9
109	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 850 feet southeast of the intersection of Parker Street and Edwards Street.	11.4	17.9
110	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 850 feet southeast of the intersection of Hiram Street and Willard Street.	8.8	20.8
111	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 750 feet northeast of the intersection of York Street and Eureka Avenue.	11.4	17.9
112	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 850 feet southeast of the intersection of Roaring Rock Road and Wavecrest Drive.	11.4	17.9

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
113	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 900 feet southeast of the intersection of Eastern Point Road and Millbury Lane.	11.4	17.9
114	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 1,000 feet southeast of the intersection of York Street and Aldis Lane.	11.4	17.9
115	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 650 feet southeast of the intersection of York Street and Orchard Lane.	11.4	17.9
116	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 1,200 feet southeast of the intersection of York Street and Orchard Lane.	11.4	17.9
117	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 1,800 feet east of the intersection of Western Road and Western Point Road.	8.8	18.4

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
118	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 1,800 feet southeast of the intersection of Western Road and Western Point Road.	11.4	17.9
119	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 1,700 feet northeast of the intersection of Godfreys Cove Road and Kings Road.	11.4	17.9
120	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately 2,000 feet southeast of the intersection of Godfreys Cove Road and Kings Road.	11.4	17.9
121	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately .52 mile southwest of Godfreys Cove Road and Kings Road.	11.4	17.9
122	At the Shoreline of the Atlantic Ocean, in the Town of York, approximately .79 mile southeast of the intersection of Raynes Neck Road and Jungle Road.	11.4	17.9

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
123	Brave Boat Harbor from Brave Boat Harbor Road southeast to the mouth of Brave Boat Harbor	9.2	18
124	The mouth of Brave Boat Harbor south to the northern extent of Sisters Point.	9.2	20
125	The northern extent of Sisters Point south to the easternmost extent of Tower Road.	9.2	19
126	From the easternmost extent of Tower Road south to the southernmost extent of Goodwin Road.	9.2	19
127	The southernmost extent of Goodwin Road southwest to the western extent of the small cove northeast of Sewards Cove.	9.2	19
128	The western extent of the small cove northeast of Sewards Cove southwest to the southern extent of Pocahontas Road in Sewards Cove.	9.2	20
129	The southern extent of Pocahontas Road in Sewards Cove southwest to the westernmost extent of Pocahontas Road.	9.2	18

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
130	The westernmost extent of Pocahontas Road north to the small inlet just south of Chauncey Creek.	9.2	17
131	From the small inlet just south of Chauncey Creek northeast to the bridge over Chauncey Creek at Gerrish Island Lane.	9.2	14
132	From the bridge over Chauncey Creek at Gerrish Island Lane west to Bellamy Lane.	9.2	22
133	From Bellamy Lane west to the intersection of Crocketts Neck Road and Pepperrell Road.	9.2	18
134	From the intersection of Crocketts Neck Road and Pepperrell Road west to the mouth of Barters Creek.	9.2	22
135	Shoreline of Spruce Creek.	9.2	13
136	From the mouth of Spruce Creek to the bridge over Back Channel at Walker Street.	9.2	22
137	Shoreline of Seavey Island	9.2	15

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

TABLE 10 – COUNTYWIDE TRANSECT DESCRIPTIONS – cont'd

TRANSECT	LOCATION	1-PERCENT-ANNUAL-CHANCE STILLWATER	MAXIMUM 1-PERCENT ANNUAL CHANCE WAVE CREST[1]
138	Shoreline of Badgers Island and shoreline of the Piscataqua River from the bridge at Walker Street to the bridge at the US Route 1 Bypass.	9.2	14
139	Shoreline of the islands of the Isle of Shoals.	9.2	40

[1] Because of map scale limitations, the maximum wave elevation may not be shown on the FIRM.

For the communities with revised coastal analyses, the coastal transect data was extracted from 2-foot contour topographic data developed from Light Detection and Ranging (LiDAR) data collected for this study in November 2006. Additionally, portions of thirty three (33) coastal transects were field surveyed in May and June of 2007 to supplement the contour data for the study area. As appropriate, coastal protection structure details and 0.0 ft NAVD elevation were included and noted in the transect field surveys. Bathymetric data from NOAA Nautical Charts were used to extend the transects offshore for wave runup calculations. Coastal processes that may affect the transect profile, such as dune erosion and seawall scour and failure, were estimated in accordance with Appendix D "Guidance for Coastal Flooding Analyses and Mapping," (Reference 97) of the Guidelines and Specifications, as well as, the "Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update", (Reference 98). Along each transect, wave envelopes were computed considering the combined effects of changes in ground elevation, vegetation, and physical features. Between transects, elevations were interpolated using topographic maps, land-use and land-cover data, and engineering judgment to determine the aerial extent of flooding. The results of the calculations are accurate until local topography, vegetation, or land development within the community undergo major changes.

Wave height and runup calculations used in the revised coastal analysis follow the methodologies described in the FEMA guidance for V Zone mapping specifically the "Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update", (Reference 98). WHAFIS 3.0 was used to predict wave heights.

The “Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update” (Reference 98) allows for the following methods to be used to determine wave runup: RUNUP 2.0 modeling software; “Technical Advisory Committee for Water Retaining Structures” (TAW) methodology; Automated Coastal Engineering System (ACES) software; and the Shore Protection Manual guidance (Reference 102). Each of the aforementioned methods has an appropriate set of nearshore conditions for which it should be applied. For example, the methods described in the Shore Protection Manual are to be used to determine runup on vertical structures. In addition, the “Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update” (Reference 98) also provides for adjusted runup on bluffs based on the "Casco Bay Method". Wave runup was calculated for each of the restudied coastal transects, based on appropriate methods.

The wave height and wave runup methodologies were used to compute wave envelope elevations associated with the 1-percent-annual-chance storm surge for the communities with revised coastal analyses in York County. Accurate topographic, land-use, and land cover data are required for the coastal analyses. The LiDAR topographic data utilized for this study meets the accuracy standards for flood hazard mapping (Reference 103). Depths below mean low water were determined from National Ocean Survey Coastal Charts (Reference 104). The land-use and land cover data were obtained by field surveys and aerial photographs (Reference 105).

Areas of shallow flooding, designated AO or AH zones, are shown along portions of the shoreline. These areas are the result of wave runup overtopping and ponding behind seawalls and berms with average depths of 1 to 3 feet.

The 2-foot contour topographic data developed from 2006 LiDAR mission was also used for the communities with redelineation of coastal flood hazards. The results of the previous coastal analyses were then applied to this topographic data to develop the DFIRMs.

In accordance with Appendix D “Guidance for Coastal Flooding Analyses and Mapping,” (Reference 97) of the Guidelines and Specifications, as well as, the “Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update”, (Reference 98) the effect of the Primary Frontal Dune (PFD) on coastal flood hazard mapping was evaluated for all communities. The extent of the PFD was calculated in accordance with the Massachusetts Office of Coastal Zone Management methodology (Reference 106), then field verified.

Table 11 “Transect Data,” lists the flood hazard zone and base flood elevations for each transect, along with the 1-percent-annual-chance stillwater elevation for both communities with revised and redelineated coastal flood hazards.

TABLE 11 – COUNTYWIDE TRANSECT DATA

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Biddeford						
ATLANTIC OCEAN						
TRANSECT 15	7.9	8.5	8.9	9.5	VE	27, 12-15
					AE	10-12
TRANSECT 16	7.9	8.5	8.9	9.5	VE	17, 13-14
					AE	9-13
TRANSECT 17	7.9	8.5	8.9	9.5	VE	13-17
					AE	11-13
TRANSECT 18	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
TRANSECT 19	7.9	8.5	8.9	9.5	VE	24, 14-18
					AE	20, 11-14
TRANSECT 20	7.9	8.5	8.9	9.5	VE	15-20
					AE	9-15
TRANSECT 21	7.9	8.5	8.9	9.5	VE	14-19
					AE	12-14, 9
TRANSECT 22	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-14
					AO	Depth 3'
TRANSECT 23	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-14
TRANSECT 24	7.9	8.5	8.9	9.5	VE	15-20
					AE	9-15
TRANSECT 25	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-15
TRANSECT 26	7.9	8.5	8.9	9.5	VE	15-19
					AE	12-14
TRANSECT 27	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
TRANSECT 28	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Biddeford – cont'd						
ATLANTIC OCEAN						
TRANSECT 29	7.9	8.5	8.9	9.5	VE	15-20
					AE	9-14
TRANSECT 30	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-15
TRANSECT 31	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-15
TRANSECT 32	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-14
Kennebunk						
ATLANTIC OCEAN						
TRANSECT 51	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
TRANSECT 52	7.9	8.5	8.9	9.5	VE	15-20
					AE	9-15
					AO	Depth 3'
TRANSECT 53	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-15
					AO	Depth 3'
TRANSECT 54	7.9	8.5	8.9	9.5	VE	16-21
					AE	9-15
					AO	Depth 3'
TRANSECT 55	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
					AO	Depth 3'
TRANSECT 56	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-15
TRANSECT 57	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Kennebunk – cont'd						
ATLANTIC OCEAN						
TRANSECT 58	7.9	8.5	8.9	9.5	VE	15-18
					AE	9-15
					AO	Depth 3'
TRANSECT 59	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
TRANSECT 60	7.9	8.5	8.9	9.5	VE	22, 15-20
					AE	9-15
TRANSECT 61	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
TRANSECT 62	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-15
					AO	Depth 3'
TRANSECT 63	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-15
TRANSECT 64	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
					AO	Depth 3'
Kennebunkport						
ATLANTIC OCEAN						
TRANSECT 33	7.9	8.5	8.9	9.5	VE	12-15
					AE	9-12
TRANSECT 34	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-13
					AO	Depth 3' to 1'
TRANSECT 35	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
					AO	Depth 3'
TRANSECT 36	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
					AO	Depth 2'

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Kennebunkport – cont'd						
ATLANTIC OCEAN						
TRANSECT 37	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
TRANSECT 38	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
					AO	Depth 3'
TRANSECT 39	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
TRANSECT 40	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
					AO	Depth 3'
TRANSECT 41	7.9	8.5	8.9	9.5	VE	17, 12-15
					AE	10-12
TRANSECT 42	7.9	8.5	8.9	9.5	VE	15-19
					AE	13-14
					AO	Depth 3'
TRANSECT 43	7.9	8.5	8.9	9.5	VE	13-17
					AE	11-13
TRANSECT 44	7.9	8.5	8.9	9.5	VE	12-15
					AE	9-12
TRANSECT 45	7.9	8.5	8.9	9.5	VE	13-17
					AE	11-13
TRANSECT 46	7.9	8.5	8.9	9.5	VE	24, 14-19
					AE	12-14
					AO	Depth 3'
TRANSECT 47	7.9	8.5	8.9	9.5	VE	25, 15-19
					AE	13-15
TRANSECT 48	7.9	8.5	8.9	9.5	VE	30, 16-22
					AE	14-16

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Kennebunkport – cont'd						
ATLANTIC OCEAN						
TRANSECT 49	7.9	8.5	8.9	9.5	VE	15-20
					AE	9-15
					AO	Depth 3' to 2'
TRANSECT 50	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
Kittery						
ATLANTIC OCEAN						
TRANSECT 123	8.2	8.8	9.2	9.8	VE	14-18
					AE	9-14
TRANSECT 124	8.2	8.8	9.2	9.8	VE	20, 15-19
					AE	12-14
TRANSECT 125	8.2	8.8	9.2	9.8	VE	15-19
					AE	9-14
					AO	Depth 3'
TRANSECT 126	8.2	8.8	9.2	9.8	VE	15-19
					AE	13-15
					AO	Depth 3'
TRANSECT 127	8.2	8.8	9.2	9.8	VE	15-19
					AE	9-15
					AO	Depth 3'
TRANSECT 128	8.2	8.8	9.2	9.8	VE	15-20
					AE	13-15
					AO	Depth 3'
TRANSECT 129	8.2	8.8	9.2	9.8	VE	14-18
					AE	9-14
					AO	Depth 1'
TRANSECT 130	8.2	8.8	9.2	9.8	VE	17, 12-15
					AE	10-12

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Kittery – cont'd						
ATLANTIC OCEAN						
TRANSECT 131	8.2	8.8	9.2	9.8	VE	13-14
					AE	10-13
TRANSECT 132	8.2	8.8	9.2	9.8	VE	22, 13-16
					AE	11-13
TRANSECT 133	8.2	8.8	9.2	9.8	VE	18, 13-17
					AE	11-13
					AO	Depth 1'
TRANSECT 134	8.2	8.8	9.2	9.8	VE	22, 14-18
					AE	12-14
TRANSECT 135	8.2	8.8	9.2	9.8	VE	12-13
					AE	10-12
TRANSECT 136	8.2	8.8	9.2	9.8	VE	22, 16-13
					AE	11-13
TRANSECT 137	8.2	8.8	9.2	9.8	VE	13-15
					AE	10-12
TRANSECT 138	8.2	8.8	9.2	9.8	VE	12-14
					AE	10-12
TRANSECT 139	8.2	8.8	9.2	9.8	VE	40, 17-22
					AE	16-14
Ogunquit						
ATLANTIC OCEAN						
TRANSECT 80	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
TRANSECT 81	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
TRANSECT 82	7.9	8.5	8.9	9.5	VE	15-19
					AE	9-14
					AO	Depth 3'
TRANSECT 83	7.9	8.5	8.9	9.5	VE	15-20
					AE	13-15

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Ogunquit – cont'd						
ATLANTIC OCEAN						
TRANSECT 84	7.9	8.5	8.9	9.5	VE	33, 14-19
					AE	12-14
TRANSECT 85	7.9	8.5	8.9	9.5	VE	22, 15-20
					AE	13-15
TRANSECT 86	7.9	8.5	8.9	9.5	VE	15-20
					AE	9-15
					AO	Depth 3'
TRANSECT 87	7.9	8.5	8.9	9.5	VE	15-20
					AE	9-15
TRANSECT 88	7.9	8.5	8.9	9.5	VE	16-22
					AE	14-16
Old Orchard Beach						
ATLANTIC OCEAN						
TRANSECT 1	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
TRANSECT 2	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
TRANSECT 3	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
TRANSECT 4	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14
TRANSECT 5	7.9	8.5	8.9	9.5	VE	14-18
					AE	12-14
TRANSECT 6	7.9	8.5	8.9	9.5	VE	14-16
					AE	12-14
TRANSECT 7	7.9	8.5	8.9	9.5	VE	14-19
					AE	9-14
TRANSECT 8	7.9	8.5	8.9	9.5	VE	14-18
					AE	9-14

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Saco						
ATLANTIC OCEAN						
TRANSECT 9	7.8	8.5	8.8	11.5	VE	10-12
					AE	9
TRANSECT 10	7.8	8.5	8.8	11.5	VE	10-12
					AE	9
TRANSECT 11	7.8	8.5	8.8	11.5	VE	10-12
					AE	9
TRANSECT 12	7.8	8.5	8.8	11.5	VE	10-12
					AE	9
TRANSECT 13	7.8	8.5	8.8	11.5	VE	10-12
					AE	9
					AO	Depth 1'
TRANSECT 14	7.8	8.5	8.8	11.5	VE	10-12
					AE	9
					AO	Depth 1'
Wells						
ATLANTIC OCEAN						
TRANSECT 65	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
	7.9	8.6	8.9	*	AE	9-10
TRANSECT 66	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 2'
	7.9	8.6	8.9	*	AE	9-10
TRANSECT 67	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
	7.9	8.6	8.9	*	AE	9-10
TRANSECT 68	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
	7.9	8.6	8.9	*	AE	9-10

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Wells – cont'd						
ATLANTIC OCEAN						
TRANSECT 69	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 2'
	7.9	8.6	8.9	*	AE	9-10
TRANSECT 70	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 2'
	7.9	8.6	8.9	*	AE	9-10
TRANSECT 71	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
	7.9	8.6	8.9	*	AE	9-11
TRANSECT 72	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 2'
	7.9	8.6	8.9	*	AE	9-10
TRANSECT 73	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 2'
	7.9	8.6	8.9	*	AE	9-10
TRANSECT 74	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 2'
	7.9	8.6	8.9	*	AE	9-10
TRANSECT 75	7.9	8.6	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 1'
TRANSECT 76	7.9	8.6	11.4	*	VE	13-18
					AE	9-13
					AO	Depth 1'
	7.9	8.6	8.9	*	AE	9-10

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
Wells – cont'd						
ATLANTIC OCEAN						
TRANSECT 77	7.9	8.6	8.9	*	VE	19
					AE	19, 9-10
					AO	Depth 1'
TRANSECT 78	7.9	8.6	8.9	*	VE	19
					AE	19, 9-10
					AO	Depth 1'
TRANSECT 79	7.9	8.6	8.9	*	VE	19
					AE	19, 9-10
					AO	Depth 1'
York						
ATLANTIC OCEAN						
TRANSECT 89	7.7	8.5	11.4	*	VE	13-18
	7.7	8.5	8.8	*	VE	13
					AE	13
TRANSECT 90	7.7	8.5	11.4	*	VE	14-18
	7.7	8.5	8.8	*	AE	14
						14
TRANSECT 91	7.7	8.5	11.4	*	VE	13-18
	7.7	8.5	8.8	*	VE	13
					AE	13
TRANSECT 92	7.7	8.5	11.4	*	VE	15-18
	7.7	8.5	8.8	*	VE	15
					AE	15
TRANSECT 93	7.7	8.5	11.4	*	VE	15-18
	7.7	8.5	8.8	*	VE	15
					AE	15
TRANSECT 94	7.7	8.5	11.4	*	VE	15-18
	7.7	8.5	8.8	*	VE	15
					AE	15

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
York –cont'd						
ATLANTIC OCEAN						
TRANSECT 95	7.7	8.5	11.4	*	VE	13-18
	7.7	8.5	8.8	*	VE	13
					AE	10-13
					AO	Depth 1'
TRANSECT 96	7.7	8.5	11.4	*	VE	13-18
	7.7	8.5	8.8	*	VE	13
					AE	13
TRANSECT 97	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
TRANSECT 98	7.7	8.5	11.4	*	VE	13-18
	7.7	8.5	8.8	*	VE	12
					AE	12
TRANSECT 99	7.7	8.5	11.4	*	VE	14-18
	7.7	8.5	8.8	*	VE	14
					AE	14
TRANSECT 100	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 2'
TRANSECT 101	7.7	8.5	11.4	*	VE	16-18
	7.7	8.5	8.8	*	AE	16
					AE	16
TRANSECT 102	7.7	8.5	8.8	*	VE	19
					AE	19
TRANSECT 103	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
TRANSECT 104	7.7	8.5	8.8	*	VE	19
					AE	19
TRANSECT 105	7.7	8.5	11.4	*	VE	13-18
					AE	11-13

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
York –cont'd						
ATLANTIC OCEAN						
TRANSECT 106	7.7	8.5	8.8	*	VE	18
					AE	18
					AO	Depth 1'
					AE	9
TRANSECT 107	7.7	8.5	11.4	*	VE	16-18
	7.7	8.5	8.8	*	VE	16
					AE	16
					AO	Depth 1'
					AE	9
TRANSECT 108	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
TRANSECT 109	7.7	8.5	11.4	*	VE	17-18
	7.7	8.5	8.8	*	VE	17
					AE	17
					AO	Depth 1'
TRANSECT 110	7.7	8.5	8.8	*	VE	21
					AE	21
					AO	Depth 1'
					AE	9
TRANSECT 111	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
TRANSECT 112	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
					AO	Depth 2'
TRANSECT 113	7.7	8.5	11.4	*	VE	13-18
	7.7	8.5	8.8	*	VE	13
					AE	13
TRANSECT 114	7.7	8.5	11.4	*	VE	13-18
					AE	11-13

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

TABLE 11 – COUNTYWIDE TRANSECT DATA – cont'd

STILLWATER ELEVATIONS (feet NAVD[1])

FLOODING SOURCE	10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance	ZONE	BASE FLOOD ELEVATION (ft NAVD)[1,2]
York –cont'd						
ATLANTIC OCEAN						
TRANSECT 115	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
	7.7	8.5	8.8	*	AE	9
TRANSECT 116	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
TRANSECT 117	7.7	8.5	8.8	*	VE	18
					AE	18
TRANSECT 118	7.7	8.5	11.4	*	VE	13-18
	7.7	8.5	8.8	*	VE	13
					AE	13
TRANSECT 119	7.7	8.5	11.4	*	VE	13-18
					AE	11-13
	7.7	8.5	8.8	*	AE	9-11
TRANSECT 120	7.7	8.5	11.4	*	VE	11-13
					AE	11-13
					AO	Depth 1'
	7.7	8.5	8.8	*	AE	9
TRANSECT 121	7.7	8.5	11.4	*	VE	13-18
	7.7	8.5	8.8	*	VE	12
					AE	12
TRANSECT 122	7.7	8.5	11.4	*	VE	14-18
	7.7	8.5	8.8	*	VE	14
					AE	14

[1]North American Vertical Datum of 1988
[2]Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

Figure 1, "Transect Schematic" represents s sample transect that illustrates the relationship between stillwater elevation, the wave crest elevation, the ground elevation profile and the location of the V/A zone boundary.

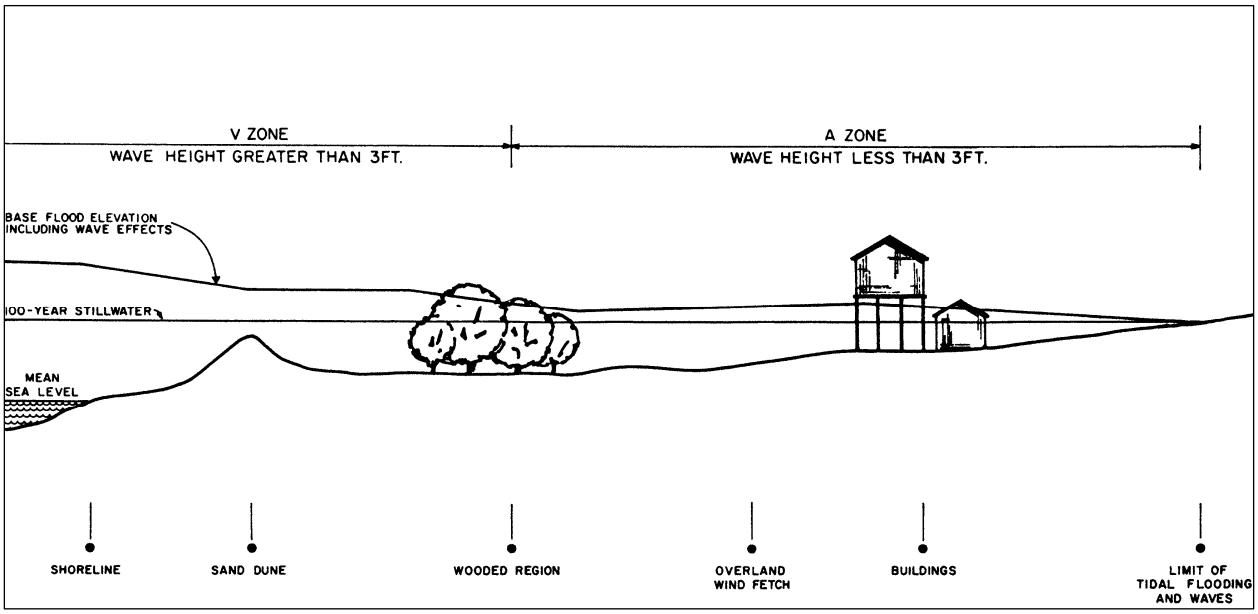


Figure 1. Transect Schematic

3.4 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD). With the completion of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are now prepared using NAVD 88 as the referenced vertical datum.

All flood elevations shown in this countywide FIS report and on the FIRM are referenced to the NAVD 88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. Ground, structure, and flood elevations may be compared and/or referenced to NGVD 29 by applying a standard conversion factor. **The conversion factor from NGVD 29 to NAVD 88 is -0.7, and from NAVD 88 to NGVD 29 is +0.7.**

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

NGS Information Services
NOAA, N/NGS12
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 Technical Support Data Notebook associated with the FIS report and FIRM for this county. Interested individuals may contact FEMA to access these data.

The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 102.4 will appear as 102 on the FIRM and 102.6 will appear as 103. Therefore, users that wish to convert the elevations in this FIS to NGVD 29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1 foot.

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

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

4.1 Floodplain Boundaries

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

For unrevised streams in York County, data was taken from previously printed FISs for each individual community and are compiled below.

For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:62,500, with a contour interval of 20 feet (Reference 42), at a scale of 1:62,500, with a contour interval of 10 feet (Reference 69), at a scale of 1:24,000, with contour intervals of 10 and 20 feet (References 107 and 108), at a scale of 1:24,000, with a contour interval of 20 feet (References 43), at a scale of 1:24,000, with a contour interval of 10 feet (Reference 45), at a scale of 1:4,800, with a contour interval of 4 feet (References 55, 60, 61, 66, and 109), at a scale of 1:4,800, with a contour interval of 5 feet (Reference 59), at a scale of 1:2,400, with a contour interval of 5 feet (Reference 53), and at a scale of 1:480, with a contour interval of 2 feet (Reference 110).

For the Towns of Acton, Limerick, North Berwick, Newfield, Sanford, Shapleigh South Berwick, and Waterboro, the boundaries were interpolated between cross sections using aerial photographs at a scale of 1:20,000 in addition to using topographic maps (Reference 111).

In addition to topographic maps, the floodplain boundaries of the Town of Berwick were delineated using the FISs for the Cities of Somersworth and Rochester, New Hampshire.

For the Town of Eliot, portions of the flood boundaries for Spinney Creek were taken from the FIS for the Town of Kittery (Reference 33).

For flooding sources studied by approximate methods, the boundaries of the 1-percent annual chance floodplain were delineated using the Flood Hazard Boundary Maps (FHBM) for the Town of Acton (Reference 112), Town of Alfred (Reference 113), Town of Arundel, also using USGS topographic maps at a scale of 1:24,000 with contour intervals of 10 and 20 feet (References 43, 45, and 114), City of Biddeford (Reference 115), Town of Cornish (Reference 116), Town of Eliot (Reference 117), Town of Kennebunk, also using information from town officials and residents (Reference 118), Town of Kennebunkport, also using information from town officials and residents (Reference 119), Town of Kittery (Reference 120), Town of Lyman (Reference 121), Town of North Berwick (Reference 122), Town of Newfield (Reference 123), Village of Ogunquit (Reference 124), Town of Old Orchard beach (Reference 107), Town of Shapleigh (Reference 125), Town of South Berwick (Reference 126), Town of Wells (Reference 127) and the Town of York (Reference 128).

For the streams studied by approximate methods in the Town of Berwick, the boundary of the 100-year flood was determined using a regional equation developed by the United States Geological Survey (Reference 23) in conjunction with the Corps of Engineers HEC-2 backwater model (Reference 52) and the FHBM for the Town of Berwick (Reference 129).

The approximate 100-year flood boundaries in Buxton and Limington were delineated using 7.5 and 15-minute USGS topographic maps enlarged to a scale of 1"=1,000' (References 42, 43, and 130).

The approximate 100-year flood boundaries for the five small streams studied in Dayton and the approximate studies of the streams in Hollis were delineated on 15-minute USGS topographic maps enlarged to a scale of 1:12,000 (References 42 and 131).

For Parsonsfield, the approximate study area flood boundaries were delineated using topographic maps at scales of 1:24,000 and 1:62,500, with a contour interval of 20 feet (References 42 and 43). Approximate flood boundaries in some portions of the study area were taken from the FHBM (Reference 72).

For the streams studied by approximate methods in the City of Saco, the 100-year floodplain boundaries were delineated using the previously printed FHBM of Saco (Reference 98). The portion of Deep Brook south of Route 5 was redelineated using updated topographic maps (Reference 3).

For the Town of Sanford, the approximate study area flood boundaries were transferred from the previously published FIS for Sanford (Reference 108).

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

For this countywide revision, for the stream studied in detail, the 10-, 2-, 1-, and 0.2-percent-annual-chance floodplains have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using LIDAR data with a contour interval of 4 feet.

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

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in

areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways used for this study were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. In areas of tidal flooding, floodways are generally not applicable; however, since the estuarine portion of streams can experience flooding that occurs independently from tidal flooding, floodways have been determined for those downstream portions of the Saco River, Little River, Moors Brook, and Thatcher Brook in Biddeford, of the Kennebunk, Mousam and Little Rivers in Kennebunk, of Spinney Creek, Spruce Creek, and the Piscataqua River in Kittery, of Goosefare and Mill Brooks in Old Orchard Beach, of the Saco River and Goosefare Brook in Saco, and of the York River in York.

The results of the floodway computations are tabulated for selected cross sections (see Table 12, Floodway Data). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

In some instances, no HEC-2 step-backwater analysis has been performed for the downstream portions of the flooding source. In these cases, their floodways were determined using engineering judgment. The floodways for the Saco River, Little River, Moors Brook, and Thatcher Brook in Biddeford, the Little River in Kennebunk, the Piscataqua River in Kittery, Goosefare and Mill Brooks in Old Orchard Beach, the Saco River in Saco, and the York River in York are entirely coincident with the channel banks.

Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 12, "Floodway Data"). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Portions of the computed floodway widths extend beyond the corporate limits for Cooks Brook in Dayton and Hollis, for Goosefare Brook in Old Orchard Beach and Saco, for the Great Works River in North Berwick and Sanford, for Green

Brook in Wells, for the Kennebunk River in Arundel, Kennebunk, and Kennebunkport, for the Little River in Kennebunkport and Wells, for the Little Ossipee River in Acton, Limerick, Limington, Newfield, Shapleigh, and Waterboro, for the Mousam River in Alfred, for the Mousam River (Lower Reach) in Sanford, for the Ogunquit River in Ogunquit and Wells, for the Ossipee River in Cornish and Parsonsfield, for the Saco River in Biddeford, Buxton, Cornish, Dayton, Hollis, Limington and Saco, for the Saco River-Right Channel in Buxton, for the Salmon Falls River in Berwick and Lebanon, and for Spinney Creek in Eliot and Kittery.

For this countywide study, for the revised flooding sources in the Town of Berwick including Coffin Brook, Unnamed Tributary to Coffin Brook (Coffin Brook Tributary 1), Driscoll Brook, Ferguson Brook, Keay Brook, Little River, Mulloy Brook, Worster Brook, and Unnamed Tributary to Worster Brook (Worster Brook Tributary 3), no floodway data was computed. Profiles were created for these flooding sources and are included in this countywide report (Exhibit 1).

No floodways were computed for the Littlefield River and Tributary to Middle Branch Mousam River in Alfred, for Skelton Station Pond in Dayton, and for the Town of Lyman. A floodway was computed for Sawyer Brook in Saco; however, it is not shown in this FIS due to extremely narrow floodway widths.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 12, "Floodway Data." To reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 12, for certain downstream cross sections of Thatcher Brook in Biddeford, of the Ossipee River in Cornish, of the Kennebunk and Little Rivers in Kennebunkport, of the Little Ossipee River in Limington, of the Ogunquit River Tributary in Ogunquit, of Stevens Brook in Wells, and of the Cape Neddick River in York are lower than the regulatory flood elevations in that area, which must take into account the 1-percent annual chance flooding due to backwater from other sources.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation (WSEL) of the base flood 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 2, "Floodway Schematic".

Under the State of Maine Revised Statutes Annotated (M.R.S.A.) Title 38 § 439-A, 7C where the floodway is not designated on the Flood Insurance Rate Map, the floodway is considered to be the channel of a river or other water course and the adjacent land areas to a distance of one-half the width of the floodplain, as measured from the normal high water mark to the upland limit of the floodplain, unless a technical evaluation certified by a registered professional engineer is provided demonstrating the actual floodway based upon approved FEMA modeling methods.

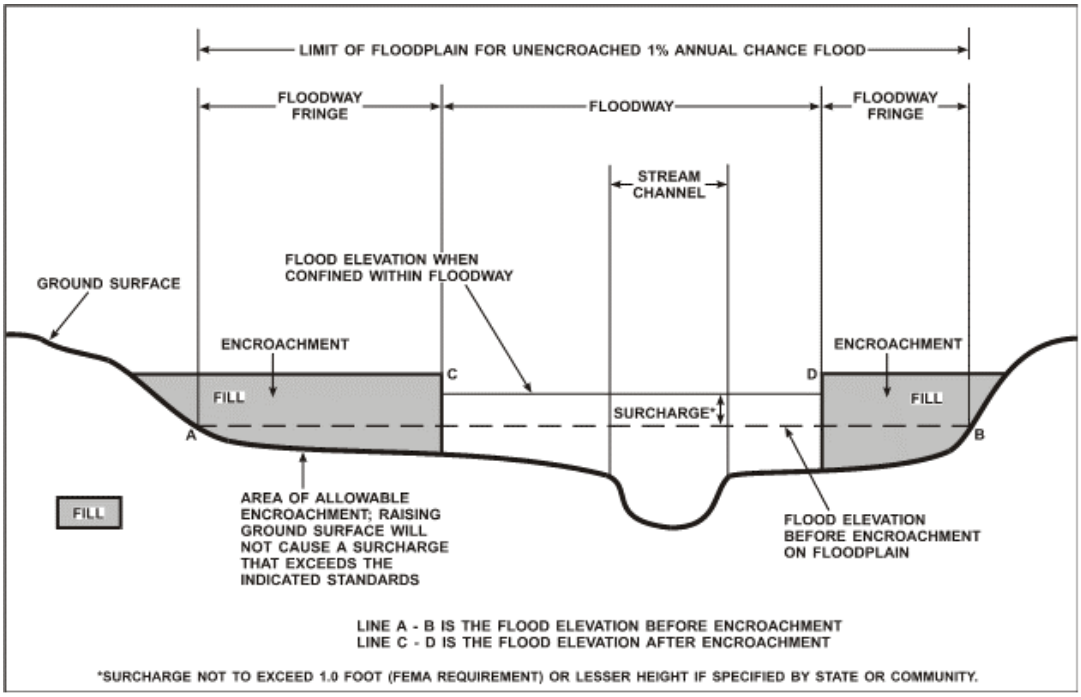


Figure 2. Floodway Schematic

Table 13, 1-Percent-Annual-Chance Flood Data, shows the 1-percent-annual-chance flood data for Littlefield River. No floodway data was computed for Littlefield River.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	206	99	972	0.9	14.6	14.6	15.0	0.4
B	1,500	139	1340	0.6	14.6	14.6	15.0	0.4
C	2,439	55	423	2.0	18.6	18.6	18.6	0.0
D	4,092	64	513	1.7	18.9	18.9	19.1	0.2
E	4,229	108	863	1.0	20.9	20.9	20.9	0.0
F	4,905	96	584	1.5	21.0	21.0	21.1	0.1
G	6,162	90	437	1.9	21.5	21.5	21.9	0.4
H	7,022	50	336	2.5	22.1	22.1	22.6	0.5
I	7,366	27	149	5.7	22.4	22.4	22.9	0.5

[1] FEET ABOVE DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

BATSON RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	5,787	10	36	10.8	11.4	11.4	12.1	0.7
B	5,908	10	28	13.6	15.9	15.9	16.3	0.4
C	6,030	11	41	9.4	22.4	22.4	22.7	0.3
D	6,141	10	36	10.8	26.8	26.8	27.0	0.2
E	6,384	30	99	3.9	31.6	31.6	32.6	1.0
F	6,600	38	72	5.4	37.5	37.5	37.5	0.0
G	6,785	23	73	5.3	40.4	40.4	40.5	0.1
H	6,959	15	41	9.4	42.8	42.8	42.8	0.0
I	7,086	8	23	16.5	45.8	45.8	46.5	0.7
J	7,292	8	22	11.6	56.8	56.8	57.7	0.9
K	7,645	105	239	1.6	61.0	61.0	61.9	0.9
L	7,946	46	150	2.6	62.4	62.4	62.8	0.4

[1] FEET ABOVE CONFLUENCE WITH WEBHANNET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

BLACKSMITH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	95	26	62	4.0	8.9	8.9	9.9	1.0
B	359	250	901	0.3	9.3	9.3	10.3	1.0
C	834	10	27	9.3	11.0	11.0	11.5	0.5
D	1,151	38	96	2.6	15.9	15.9	16.8	0.9
E	1,362	8	18	13.7	20.5	20.5	21.1	0.6
F	1,468	17	34	7.3	30.0	30.0	31.0	1.0
G	1,785	27	63	4.0	34.4	34.4	34.6	0.2
H	1,943	27	388	0.7	45.9	45.9	46.0	0.1
I	2,207	10	133	1.9	45.9	45.9	46.0	0.1
J	2,735	7	86	2.9	45.9	45.9	46.1	0.2
K	3,575	199	520	0.5	45.9	45.9	46.8	0.9

[1] FEET ABOVE LONG BEACH AVENUE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

BRIDGES SWAMP

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	4,330	30	203	4.7	8.9 [2]	8.9	8.7	-0.2
B	4,541	20	83	11.5	11.7	11.7	12.0	0.3
C	4,752	43	143	6.7	15.6	15.6	16.5	0.9
D	4,963	23	131	7.3	18.9	18.9	18.9	0.0
E	5,122	68	345	2.8	20.2	20.2	20.5	0.3
F	5,898	17	115	8.2	22.3	22.3	22.9	0.6
G	6,320	44	328	2.9	24.0	24.0	24.8	0.8
H	6,431	44	402	2.4	26.6	26.6	26.6	0.0
I	6,954	120	596	1.6	26.8	26.8	26.9	0.1

[1] FEET ABOVE SHORE ROAD

[2] TIDAL FLOODING FROM THE ATLANTIC OCEAN

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

CAPE NEDDICK RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	6,494	35	252	2.3	8.1	8.1	8.1	0.0
B	6,864	30	145	4.0	8.3	8.3	8.3	0.0
C	9,979	102	402	1.4	11.1	11.1	12.1	1.0

[1] FEET ABOVE CONFLUENCE WITH YORK RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

CIDER HILL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	30	328	3.0	189.1	189.1	189.1	0.0
B	230	40	377	2.6	189.3	189.3	189.5	0.2
C	420	60	531	1.8	189.3	189.3	189.8	0.5
D	610	50	429	2.3	189.3	189.3	190.0	0.7
E	810	40	376	2.6	189.4	189.4	190.3	0.9
F	1,080	30	306	3.2	189.9	189.9	190.8	0.9
G	1,260	40	378	2.6	190.2	190.2	191.2	1.0
H	1,360	90	606	3.2	191.6	191.6	191.6	0.0
I	1,640	90	515	2.6	191.8	191.8	191.8	0.0
J	2,020	65	417	1.6	192.2	192.2	192.2	0.0
K	2,390	90	674	1.9	192.6	192.6	192.6	0.0
L	2,740	100	419	2.2	192.9	192.9	192.9	0.0
M	3,150	160	874	1.1	193.4	193.4	193.4	0.0
N	4,060	290	1,110	0.8	193.8	193.8	193.8	0.0
O	4,770	220	539	1.7	194.9	194.9	194.9	0.0
P	5,210	110	90	3.2	197.3	197.3	197.6	0.3
Q	5,570	50	207	4.5	200.3	200.3	200.7	0.4
R	5,690	40	192	4.9	201.1	201.1	201.9	0.8
S	5,910	60	177	5.3	205.3	205.3	206.0	0.7
T	6,180	40	192	4.9	211.2	211.2	211.9	0.7
U	6,310	30	212	4.4	222.7	222.7	222.7	0.0
V	6,360	130	1,066	0.9	222.8	222.8	223.1	0.3
W	7,040	292	2,380	0.4	222.8	222.8	223.1	0.3
X	8,130	240	1,980	0.5	222.8	222.8	223.2	0.4
Y	9,540	200	1,406	0.7	222.9	222.9	223.3	0.4
Z	11,660	230	797	1.2	223.9	223.9	224.1	0.2
AA	12,930	210	1,251	0.8	224.6	224.6	224.7	0.1

[1] FEET ABOVE DENNETT DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

COOKS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	14,930	30	195	4.8	227.2	227.2	227.4	0.2
AC	14,970	30	219	4.3	228.0	228.0	228.0	0.0
AD	15,200	31	219	4.3	228.1	228.1	228.3	0.2
AE	16,040	520	2,034	0.4	228.3	228.3	229.3	1.0
AF	17,580	260	604	1.3	229.4	229.4	229.8	0.4
AG	18,240	80	134	5.7	234.6	234.6	235.0	0.4
AH	19,570	170	630	1.2	243.3	243.3	244.0	0.7

[1] FEET ABOVE DENNETT DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

COOKS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,188	21	164	2.5	47.0	47.0	47.0	0.0
B	2,006	22	132	3.1	47.3	47.3	47.9	0.6
C	3,802	10	50	8.2	53.7	53.7	54.6	0.9
D	6,061	95	207	2.0	66.8	66.8	67.6	0.8

[1] FEET ABOVE CONFLUENCE WITH MOUSAM RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

DAY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	211	15	60	4.5	45.0	45.0	46.0	1.0
B	370	15	48	5.6	46.6	46.6	47.5	0.9
C	634	10	36	7.6	51.5	51.5	52.3	0.8
D	950	21	62	4.4	56.4	56.4	57.1	0.7
E	1,214	11	48	5.6	59.1	59.1	59.8	0.7
F	1,373	25	86	3.1	61.3	61.3	61.4	0.1
G	2,112	83	292	0.9	61.8	61.8	62.4	0.6
H	3,907	11	29	9.3	76.4	76.4	76.4	0.0

[1] FEET FROM CONCRETE DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

DEPOT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	7,022	20	97	1.8	8.7	8.7	8.7	0.0
B	7,498	52	213	0.8	8.8	8.8	8.9	0.1
C	8,184	10	23	7.8	10.4	10.4	10.9	0.5
D	8,290	18	53	3.5	12.4	12.4	13.4	1.0
E	8,501	18	131	1.4	17.7	17.7	17.7	0.0

[1] FEET ABOVE CONFLUENCE WITH YORK RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

DOLLY GORDON BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	4,715	41	94	2.3	253.7	253.7	254.7	1.0
B	4,980	94	362	0.6	256.1	256.1	257.1	1.0

[1] FEET ABOVE CONFLUENCE WITH GREAT WORKS RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

GOODALL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	11,035	109	446	1.9	9.0	9.0	9.3	0.3
B	11,801	37	278	3.0	9.3	9.3	9.8	0.5
C	12,339	77	584	1.4	9.5	9.5	10.2	0.7
D	12,545	43	416	2.0	13.5	13.5	13.5	0.0
E	13,015	182	1,425	0.4	15.6	15.6	15.6	0.0
F	14,441	78	403	1.4	15.6	15.6	15.6	0.0
G	14,784	32	265	2.2	15.8	15.8	15.9	0.1
H	14,969	32	264	1.5	19.0	19.0	19.1	0.1
I	15,233	147	1,246	0.5	19.0	19.0	19.1	0.1
J	16,394	114	724	0.8	19.0	19.0	19.1	0.1
K	17,440	236	1,210	0.5	19.1	19.1	19.3	0.2
L	21,331	17	46	9.4	19.5	19.5	19.5	0.0
M	21,458	132	856	0.5	25.2	25.2	25.2	0.0
N	23,654	18	50	8.6	29.0	29.0	29.0	0.0

[1] FEET ABOVE CONFLUENCE WITH ATLANTIC OCEAN

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

GOOSEFARE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,600	504	5,398	1.5	32.2	32.2	33.2	1.0
B	4,245	81	937	8.5	43.6	43.6	44.6	1.0
C	4,410	94	573	1.7	56.1	56.1	57.1	1.0
D	4,900	143	2,188	3.6	84.3	84.3	85.3	1.0
E	7,060	112	1,585	5.0	86.4	86.4	87.4	1.0
F	15,900	147	2,133	3.6	89.0	89.0	90.0	1.0
G	25,550	246	2,670	2.9	94.1	94.1	95.1	1.0
H	17,800	490	5,413	1.3	94.2	94.2	95.2	1.0
I	35,055	566	5,225	1.3	95.1	95.1	96.1	1.0
J	36,610	175	2,208	3.0	95.6	95.6	96.6	1.0
K	46,230	168	2,851	2.2	96.1	96.1	97.1	1.0
L	51,520	151	1,956	3.2	98.5	98.5	99.5	1.0
M	55,700	519	4,462	1.3	99.0	99.0	100.0	1.0
N	59,840	138	2,105	2.5	99.7	99.7	100.7	1.0
O	69,180	90	1,226	3.0	101.1	101.1	102.1	1.0
P	2,305	224	2,105	2.5	104.6	104.6	105.6	1.0
Q	2,345	247	1,303	2.8	104.7	104.7	105.7	1.0
R	7,305	245	2,600	1.3	108.1	108.1	109.1	1.0
S	8,725	385	3,834	0.9	108.9	108.9	109.9	1.0
T	9,825	45	418	5.7	110.4	110.4	111.4	1.0
U	10,025	39	359	6.6	111.1	111.1	112.1	1.0
V	10,125	58	417	5.7	111.3	111.3	112.3	1.0
W	10,425	107	933	2.5	118.6	118.6	119.6	1.0
X	10,555	203	1,399	1.7	125.0	125.0	126.0	1.0
Y	17,535	63	383	3.7	129.8	129.8	130.8	1.0
Z	19,680	87	527	2.7	143.7	143.7	144.7	1.0
AA	19,805	177	1,587	0.9	152.1	152.1	153.1	1.0

[1] FEET ABOVE CONFLUENCE WITH SALMON FALLS RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT WORKS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	27,960	89	345	4.0	170.3	170.3	171.3	1.0
AC	28,110	74	774	1.8	177.9	177.9	178.9	1.0
AD	34,465	76	490	2.6	186.7	186.7	187.7	1.0
AE	39,625	77	391	3.2	199.8	199.8	200.8	1.0
AF	47,565	281	2,313	1.0	209.6	209.6	210.6	1.0
AG	56,250	85	472	4.1	218.4	218.4	219.4	1.0
AH	56,335	31	207	9.4	218.5	218.5	219.5	1.0
AI	56,500	56	516	3.8	220.2	220.2	221.2	1.0
AJ	63,940	117	897	2.0	228.6	228.6	229.6	1.0
AK	67,800	536	2,750	0.4	229.1	229.1	230.1	1.0
AL	67,960	295	1,009	1.2	229.1	229.1	230.1	1.0
AM	68,175	500	4,528	0.3	233.3	233.3	234.3	1.0
AN	71,550	241	707	1.6	236.9	236.9	237.9	1.0
AO	73,760	77	241	3.6	241.7	241.7	242.7	1.0

[1] FEET ABOVE CONFLUENCE WITH SALMON FALLS RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT WORKS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,270	50	304	2.6	92.6	92.6	93.0	0.4
B	4,646	50	208	3.9	95.6	95.6	96.1	0.5
C	4,752	50	212	3.8	101.3	101.3	101.3	0.0
D	6,706	93	29	0.9	102.9	102.9	102.9	0.0

[1] FEET ABOVE CONFLUENCE WITH OGUNQUIT RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

GREEN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	211	25	106	10.7	14.7	14.7	14.7	0.0
B	370	29	305	3.7	16.9	16.9	17.4	0.5
C	528	82	467	2.4	17.9	17.9	18.5	0.6
D	1,003	23	228	5.0	18.6	18.6	19.2	0.6
E	1,109	98	646	1.8	19.3	19.3	20.2	0.9
F	1,373	75	553	2.1	19.6	19.6	20.4	0.8
G	1,901	111	780	1.4	19.9	19.9	20.7	0.8
H	2,534	79	503	2.1	20.1	20.1	20.9	0.8
I	3,168	71	340	3.1	20.7	20.7	21.7	1.0
J	3,696	29	146	7.2	23.1	23.1	23.4	0.3
K	3,907	36	209	5.1	26.0	26.0	26.8	0.8
L	4,066	28	174	6.1	30.1	30.1	30.1	0.0
M	4,435	26	233	4.5	31.1	31.1	32.0	0.9
N	4,805	56	406	2.6	31.7	31.7	32.7	1.0
O	5,122	59	307	3.4	32.4	32.4	33.3	0.9
P	5,280	34	195	5.4	33.6	33.6	34.6	1.0

[1] FEET ABOVE CONFLUENCE WITH THE BASIN

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

JOSIAS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	5,998	*	1,100	3.9	9.0	4.8 [2]	4.8	0.0
B	18,269	201	1,639	2.6	9.5	9.5	9.9	0.4
C	18,427	165	2,006	2.2	9.7	9.7	10.1	0.4
D	22,176	212	1,757	2.5	10.6	10.6	11.1	0.5
E	27,192	107	1,471	2.9	12.4	12.4	13.2	0.8
F	27,350	107	1,506	2.9	12.8	12.8	13.5	0.7
G	30,624	56	319	13.6	15.5	15.5	16.1	0.6
H	34,214	118	934	4.6	34.8	34.8	35.8	1.0
I	34,426	92	338	12.8	38.2	38.2	38.3	0.1
J	34,584	60	363	11.9	43.9	43.9	43.9	0.0
K	37,171	85	763	5.7	57.5	57.5	58.4	0.9

[1] FEET ABOVE CONFLUENCE WITH THE ALANTIC OCEAN

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM ATLANTIC OCEAN

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

KENNEBUNK RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,050	220	963	10.0	226.3	221.3 [2]	222.3	1.0
B	1,150	130	894	10.8	226.3	224.6 [2]	225.2	0.6
C	1,250	150	756	12.8	230.3	230.3	230.3	0.0
D	1,380	100	1,170	8.2	234.1	234.1	234.1	0.0
E	1,460	100	1,360	7.1	235.6	235.6	235.6	0.0
F	1,860	130	1,680	5.7	236.7	236.7	236.8	0.1
G	2,210	140	1,260	7.7	239.5	239.5	239.5	0.0
H	2,740	220	2,800	3.4	243.1	243.1	243.1	0.0
I	3,530	350	4,970	1.9	243.9	243.9	244.1	0.2
J	4,190	460	6,060	1.6	244.1	244.1	244.4	0.3
K	5,320	530	6,780	1.4	244.4	244.4	244.8	0.4
L	6,750	700	8,810	1.0	244.6	244.6	245.0	0.4
M	8,060	500	5,590	1.6	244.7	244.7	245.2	0.5
N	8,820	600	7,680	1.2	244.9	244.9	245.4	0.5
O	9,810	1,220	13,300	0.7	244.9	244.9	245.5	0.6
P	12,710	430	4,300	2.1	245.5	245.5	246.2	0.7
Q	14,920	280	2,880	3.1	247.8	247.8	248.4	0.6
R	15,960	450	6,400	1.4	248.5	248.5	249.1	0.6
S	16,630	310	4,960	1.8	248.7	248.7	249.3	0.6
T	18,940	750	12,100	0.7	249.1	249.1	249.7	0.6
U	20,140	750	11,400	0.8	249.1	249.1	249.7	0.6
V	24,330	700	6,890	1.3	249.5	249.5	250.3	0.8
W	28,840	800	11,300	0.8	250.0	250.0	250.9	0.9
X	31,140	870	9,170	1.0	250.2	250.2	251.1	0.9
Y	31,670	850	8,240	1.1	250.3	250.3	251.2	0.9
Z	32,120	400	3,120	2.8	250.5	250.5	251.5	1.0
AA	32,660	430	896	9.9	259.5	259.5	259.5	0.0

[1] FEET ABOVE CONFLUENCE WITH SACO RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM SACO RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE OSSIPEE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	32,900	350	1,790	5.0	266.2	266.2	266.8	0.6
AC	33,010	280	1,250	7.1	267.4	267.4	268.3	0.9
AD	33,090	260	1,550	5.7	269.0	269.0	270.0	1.0
AE	33,270	260	862	10.3	272.7	272.7	272.7	0.0
AF	33,690	150	953	9.3	279.4	279.4	279.7	0.3
AG	33,860	120	977	9.1	280.8	280.8	281.6	0.8
AH	33,970	90	897	9.9	283.9	283.9	283.9	0.0
AI	34,240	280	2,380	3.7	284.9	284.9	285.7	0.8
AJ	34,340	320	2,600	3.4	285.3	285.3	286.1	0.8
AK	34,620	230	2,480	3.6	286.0	286.0	286.9	0.9
AL	34,980	430	4,990	1.8	286.5	286.5	287.4	0.9
AM	35,850	1,090	10,600	0.8	286.7	286.7	287.6	0.9
AN	39,160	735	6,210	1.4	287.4	287.4	288.4	1.0
AO	39,910	810	4,800	1.8	287.8	287.8	288.7	0.9
AP	41,660	930	9,020	1.0	288.3	288.3	289.3	1.0
AQ	44,040	800	7,320	1.2	288.6	288.6	289.6	1.0
AR	45,460	490	4,360	2.0	289.0	289.0	290.0	1.0
AS	45,980	330	2,560	3.5	289.5	289.5	290.4	0.9
AT	46,110	690	2,420	3.7	290.3	290.3	290.7	0.4
AU	47,060	570	5,760	1.5	290.8	290.8	291.8	1.0
AV	48,070	810	6,980	1.3	291.2	291.2	292.2	1.0
AW	48,740	680	5,900	1.5	291.4	291.4	292.4	1.0
AX	49,570	570	5,040	1.7	291.8	291.8	292.8	1.0
AY	50,530	720	5,990	1.4	292.3	292.3	293.3	1.0
AZ	51,760	300	3,290	2.6	293.2	293.2	294.1	0.9
BA	53,190	680	5,860	1.4	294.2	294.2	295.1	0.9
BB	54,020	500	5,060	1.7	294.7	294.7	295.6	0.9

[1] FEET ABOVE CONFLUENCE WITH SACO RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM SACO RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE OSSIPEE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	54,415	155	1,997	3.9	295.2	295.2	296.2	1.0
BD	54,565	205	2,436	3.2	295.2	295.2	296.2	1.0
BE	54,765	140	2,210	3.5	295.5	295.5	296.5	1.0
BF	82,965	287	1,948	4.6	314.8	314.8	315.8	1.0
BG	83,115	88	985	9.1	314.8	314.8	315.8	1.0
BH	89,865	190	1,696	5.2	326.5	326.5	327.5	1.0
BI	99,765	244	1,849	3.5	344.9	344.9	345.9	1.0
BJ	99,965	318	1,437	4.5	346.0	346.0	347.0	1.0
BK	105,065	110	1,037	3.9	354.5	354.5	355.5	1.0
BL	110,765	171	1,278	3.1	362.7	362.7	363.7	1.0
BM	115,800	85	644	4.6	383.6	383.6	384.6	1.0
BN	131,000	186	864	2.7	420.1	420.1	421.1	1.0
BO	137,300	130	764	2.8	437.8	437.8	438.8	1.0
BP	142,950	61	253	3.3	473.7	473.7	474.7	1.0
BQ	143,160	53	621	1.3	486.0	486.0	487.0	1.0
BR	143,235	66	472	1.8	487.8	487.8	488.8	1.0
BS	144,275	64	283	2.9	495.9	495.9	496.9	1.0
BT	145,350	75	290	2.8	504.7	504.7	505.7	1.0
BU	145,450	300	3,157	0.3	515.7	515.7	516.7	1.0
BV	147,650	500	6,449	0.1	515.7	515.7	516.7	1.0
BW	157,300	60	233	2.7	530.2	530.2	531.2	1.0
BX	157,450	69	148	4.3	532.0	532.0	533.0	1.0
BY	162,250	53	178	3.1	549.0	549.0	550.0	1.0
BZ	162,350	25	112	4.9	550.5	550.5	551.5	1.0
CA	162,600	145	1,120	0.5	552.3	552.3	553.3	1.0

[1] FEET ABOVE CONFLUENCE WITH SACO RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM SACO RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE OSSIPEE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	935	60	335	3.9	288.1	288.1	289.0	0.9
B	1,715	23	45	29.3	307.6	307.6	307.6	0.0
C	1,945	81	935	1.4	342.3	342.3	342.3	0.0
D	3,050	110	949	1.4	345.5	345.5	346.2	0.7
E	4,395	32	130	10.1	350.2	350.2	350.2	0.0
F	4,535	54	342	3.8	352.1	352.1	353.1	1.0
G	6,990	140	686	1.9	355.8	355.8	356.7	0.9
H	7,135	238	1,161	1.1	356.4	356.4	357.3	0.9

[1] FEET ABOVE CONFLUENCE WITH OSSIPEE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE RIVER (TOWN OF CORNISH)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	12,672	104	566	1.5	9.0	8.3 [2]	9.3	1.0
B	15,814	30	318	2.8	14.8	14.8	15.8	1.0
C	16,025	20	77	11.3	16.9	16.9	17.0	0.1
D	17,757	44	326	2.7	22.3	22.3	22.4	0.1
E	17,868	39	292	3.0	26.4	26.4	26.4	0.0
F	20,249	143	808	1.1	26.6	26.6	26.8	0.2

[1] MEASURED ABOVE MOUTH

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM ATLANTIC OCEAN

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	70	192	9.6	13.1	13.1	13.1	0.0
B	106	22	157	11.7	14.5	14.5	14.5	0.0
C	158	42	210	8.8	15.9	15.9	15.9	0.0
D	1,478	106	752	2.5	19.4	19.4	19.7	0.3
E	4,541	90	834	2.2	20.2	20.2	20.6	0.4
F	4,594	22	223	8.3	20.2	20.2	20.6	0.4
G	4,699	22	175	10.5	20.2	20.2	20.6	0.4
H	4,805	30	312	5.9	22.5	22.5	22.5	0.0
I	5,016	* [2]	327	5.7	23.0	23.0	23.0	0.0
J	5,966	75	814	2.3	23.3	23.3	24.2	0.9
K	6,600	55	583	3.2	23.5	23.5	24.4	0.9
L	7,550	136	966	1.9	24.1	24.1	25.1	1.0
M	23,126	75	145	8.3	128.5	128.5	128.5	0.0
N	23,285	* [2]	182	6.6	129.4	129.4	129.5	0.1
O	27,826	* [2]	666	1.8	131.2	131.2	131.4	0.2
P	31,416	42	130	9.2	160.6	160.6	161.1	0.5
Q	31,522	89	338	3.6	164.6	164.6	164.6	0.0
R	34,003	185	662	1.8	167.4	167.4	167.7	0.3

[1] FEET FROM BREACHED DAM AT LORDS ROAD

[2] FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MERRILAND

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	3,115	57	276	1.3	9.0 [2]	7.8	8.1	0.3
B	5,280	213	957	0.4	9.0 [2]	7.8	8.3	0.5
C	9,451	20	37	9.6	17.9	17.9	17.9	0.0

[1] FEET ABOVE CONFLUENCE WITH JONES CREEK

[2] BACK WATER EFFECT FROM SACO BAY

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MILL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,059	10	46	12.6	9.2	9.2	9.2	0.0
B	2,218	120	424	1.4	12.5	12.5	12.5	0.0
C	3,696	36	57	10.2	15.5	15.5	15.7	0.2
D	5,016	60	311	1.9	18.8	18.8	19.6	0.8
E	7,867	30	49	7.4	28.2	28.2	28.2	0.0
F	10,190	35	114	3.2	43.7	43.7	44.1	0.4

[1] FEET ABOVE CONFLUENCE WITH SACO RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MOORS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	443	5,248	0.8	153.0	153.0	154.0	1.0
B	2190	223	2,442	1.6	153.1	153.1	154.1	1.0
C	3840	263	1,742	2.3	153.3	153.3	154.2	0.9
D	5240	90	700	5.7	171.0	171.0	171.7	0.7
E	6070	152	1,232	3.2	172.1	172.1	172.8	0.7
F	6885	61	442	9.0	172.4	172.4	173.4	1.0

[1] FEET ABOVE KENNEBUNK CORPORATE LIMITS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

MOUSAM RIVER (LOWER REACH)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	13,306	132	1,167	3..0	8.8	8.8	9.0	0.2
B	14,045	125	834	4.2	9.2	9.2	9.7	0.5
C	15,312	76	306	11.5	20.5	20.5	20.8	0.3
D	15,787	113	462	7.6	42.6	42.6	43.6	1.0
E	16,843	118	1,217	2.9	44.9	44.9	45.2	0.3
F	18,374	134	1,395	2.5	45.5	45.5	45.8	0.3
G	19,853	107	1,175	3.0	46.0	46.0	46.4	0.4
H	22,229	92	1,037	3.4	46.9	46.9	47.5	0.6
I	24,024	595	3,498	1.0	47.8	47.8	48.6	0.8
J	26,242	1,042	4,418	0.8	48.0	48.0	48.9	0.9
K	28,195	81	1,023	3.4	48.2	48.2	49.1	0.9
L	28,723	303	1,848	1.9	48.4	48.4	49.3	0.9
M	31,310	79	311	11.3	54.2	54.2	54.2	0.0
N	31,416	79	1,666	2.1	73.4	73.4	73.4	0.0
O	32,314	133	2,267	1.5	73.4	73.4	73.4	0.0
P	33,422	133	2,317	1.5	73.8	73.8	73.8	0.0
Q	34,109	75	450	7.8	73.8	73.8	73.8	0.0
R	34,214	75	1,327	2.6	88.5	88.5	89.4	0.9
S	34,637	95	1,702	2.1	88.6	88.6	89.5	0.9

[1] FEET ABOVE MOUTH

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MOUSAM RIVER (TOWN OF KENNEBUNK)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	500	360	2,753	0.8	215.6	215.6	215.6	0.0
B	690	300	2,225	1.0	216.2	216.2	216.2	0.0
C	1,940	290	2,184	1.1	216.3	216.3	216.3	0.0
D	3,320	171	1,009	2.3	216.5	216.5	216.5	0.0
E	4,940	140	817	2.9	217.3	217.3	217.3	0.0
F	6,560	190	1,019	2.3	218.3	218.3	218.3	0.0
G	8,160	120	729	3.2	219.1	219.1	219.3	0.2
H	9,770	75	513	4.6	220.4	220.4	221.0	0.6
I	11,790	105	705	3.3	223.3	223.3	223.9	0.6
J	14,160	253	1,931	1.2	225.5	225.5	226.2	0.7
K	16,200	131	903	2.6	226.7	226.7	227.4	0.7
L	17,250	73	550	4.2	227.7	227.7	228.4	0.7
M	18,620	156	866	2.7	230.1	230.1	230.9	0.8
N	19,510	72	590	4.0	231.5	231.5	232.5	1.0
O	19,750	152	577	2.7	232.0	232.0	232.9	0.9
P	21,040	99	914	2.5	233.7	233.7	234.7	1.0
Q	21,140	60	632	3.7	234.6	234.6	235.0	0.4
R	21,850	95	982	2.4	234.7	234.7	235.5	0.8
S	23,080	118	911	2.6	235.2	235.2	236.2	1.0
T	23,220	46	386	6.1	237.0	237.0	237.0	0.0
U	24,920	86	749	3.1	239.1	239.1	239.7	0.6
V	26,840	101	1,158	2.0	239.9	239.9	240.6	0.7
W	28,620	81	938	2.5	240.2	240.2	241.0	0.8
X	30,560	375	3,333	0.7	240.4	240.4	241.3	0.9
Y	32,200	76	689	3.4	240.5	240.5	241.4	0.9
Z	32,330	120	1,066	2.2	242.2	242.2	243.1	0.9
AA	33,060	140	1,396	1.7	242.5	242.5	243.5	1.0

[1] FEET ABOVE CONFLUENCE WITH ESTES LAKE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MOUSAM RIVER (TOWN OF SANDFORD)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	35,150	64	562	4.2	243.6	243.6	244.5	0.9
AC	36,290	125	1,220	1.9	245.0	245.0	246.0	1.0
AD	36,390	152	1,307	1.8	246.4	246.4	246.9	0.5
AE	36,930	45	264	8.8	247.1	247.1	247.5	0.4
AF	37,950	62	496	4.7	253.7	253.7	254.7	1.0
AG	38,070	49	336	7.0	259.5	259.5	259.5	0.0
AH	38,250	44	196	12.0	260.7	260.7	260.7	0.0
AI	38,560	44	316	6.6	272.6	272.6	272.6	0.0
AJ	38,740	44	340	6.2	275.4	275.4	275.4	0.0
AK	38,890	105	700	3.0	276.2	276.2	276.2	0.0
AL	39,640	228	1,914	1.1	284.9	284.9	284.9	0.0
AM	39,810	313	2,618	0.8	285.1	285.1	285.1	0.0
AN	42,790	114	637	3.3	285.1	285.1	285.1	0.0
AO	42,930	71	730	2.9	289.5	289.5	289.5	0.0
AP	43,950	89	854	2.5	289.7	289.7	289.8	0.1
AQ	44,400	52	520	4.0	289.9	289.9	289.9	0.0
AR	45,780	167	1,210	1.7	290.5	290.5	291.2	0.7
AS	46,300	50	390	4.8	293.2	293.2	294.2	1.0
AT	46,500	258	2,540	0.8	301.7	301.7	301.7	0.0
AU	48,840	132	1,130	1.9	301.8	301.8	301.8	0.0
AV	49,220	240	1,638	1.3	308.1	308.1	308.1	0.0
AW	50,730	99	545	3.8	308.4	308.4	308.4	0.0
AX	50,850	55	198	10.6	308.8	308.8	308.8	0.0
AY	51,190	166	631	3.3	315.6	315.6	315.9	0.3
AZ	51,610	49	301	7.0	323.5	323.5	324.3	0.8
BA	51,850	52	419	5.0	337.0	337.0	337.0	0.0
BB	52,410	80	664	3.2	338.1	338.1	338.2	0.1

[1] FEET ABOVE CONFLUENCE WITH ESTES LAKE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MOUSAM RIVER (TOWN OF SANDFORD)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	52,600	85	463	4.5	338.7	338.7	339.0	0.3
BD	52,770	305	3,116	0.6	350.1	350.1	350.1	0.0
BE	56,370	88	368	5.2	350.4	350.4	350.4	0.0
BF	56,520	42	168	11.5	354.9	354.9	354.9	0.0
BG	57,820	61	493	3.5	366.5	366.5	367.4	0.9
BH	58,830	29	148	11.6	386.3	386.3	386.3	0.0
BI	58,940	86	766	2.2	390.1	390.1	390.1	0.0
BJ	60,350	80	364	4.7	391.0	391.0	391.4	0.4
BK	62,500	41	296	5.8	398.1	398.1	398.6	0.5
BL	63,800	80	611	2.8	400.2	400.2	400.9	0.7
BM	64,330	34	149	11.5	422.1	422.1	422.1	0.0
BN	64,400	48	423	4.0	429.9	429.9	429.9	0.0
BO	64,800	50	445	3.8	430.6	430.6	430.6	0.0
BP	65,750	43	377	4.5	431.4	431.4	431.8	0.4

[1] FEET ABOVE CONFLUENCE WITH ESTES LAKE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MOUSAM RIVER (TOWN OF SANDFORD)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	9,557	47	172	10.9	27.8	27.8	28.0	0.2
B	9,821	55	589	3.2	34.0	34.0	34.0	0.0
C	10,454	55	589	3.2	34.3	34.3	34.6	0.3
D	11,141	63	526	3.6	35.1	35.1	35.9	0.8
E	11,299	237	1,004	1.9	35.3	35.3	36.3	1.0
F	11,669	89	654	2.9	43.0	43.0	43.0	0.0
G	12,091	110	229	8.2	52.1	52.1	52.1	0.0
H	12,355	38	220	8.6	56.4	56.4	56.6	0.2
I	12,778	28	251	7.5	59.3	59.3	60.1	0.8
J	13,675	64	674	2.8	61.0	61.0	62.0	1.0
K	14,731	72	703	2.7	61.5	61.5	62.5	1.0
L	15,840	45	439	3.9	62.2	62.2	63.2	1.0
M	16,579	74	609	2.8	62.9	62.9	63.9	1.0
N	16,896	108	897	1.9	63.1	63.1	64.1	1.0
O	17,741	74	208	8.3	65.2	65.2	65.2	0.0
P	18,058	52	343	5.1	68.0	68.0	68.3	0.3
Q	18,269	132	1,052	1.6	68.9	68.9	69.3	0.4
R	19,378	90	391	4.4	69.2	69.2	69.7	0.5
S	19,853	90	504	3.4	78.5	78.5	78.5	0.0
T	20,011	100	669	2.6	83.0	83.0	83.0	0.0
U	20,698	33	32p	5.3	83.2	83.2	83.2	0.0
V	21,648	76	565	3.0	84.0	84.0	84.7	0.7
W	22,810	65	595	2.7	85.0	85.0	85.7	0.7
X	22,915	55	431	3.7	86.0	86.0	86.4	0.4
Y	23,338	60	473	3.4	86.4	86.4	86.9	0.5
Z	23,813	57	368	4.4	86.9	86.9	87.5	0.6
AA	24,024	142	1,150	1.4	87.1	87.1	88.0	0.9

[1] FEET ABOVE CONFLUENCE WITH ATLANTIC OCEAN

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

OGUNQUIT RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	24,341	57	57	3.3	87.4	87.4	88.2	0.8
AC	25,027	45	45	4.4	88.0	88.0	88.9	0.9
AD	26,030	88	88	3.0	89.6	89.6	90.5	0.9

[1] FEET ABOVE CONFLUENCE WITH ATLANTIC OCEAN

[2] THIS WIDTH EXTENDS BEYOND YORK COUNTY

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

OGUNQUIT RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	158	61	129	1.7	61.6	59.8 [2]	60.6	0.8
B	317	45	101	2.2	61.6	60.7 [2]	61.3	0.6
C	475	45	277	0.8	65.5	65.5	66.2	0.7
D	845	40	208	1.1	65.5	65.5	66.3	0.8
E	1,320	43	182	1.2	65.7	65.7	66.7	1.0
F	1,795	75	253	0.9	65.9	65.9	66.9	1.0
G	2,323	35	45	4.9	69.4	69.4	69.6	0.2
H	2,957	50	299	0.7	69.8	69.8	70.7	0.9

[1] FEET ABOVE CONFLUENCE WITH OGUNQUIT RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM OGUNQUIT RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

OGUNQUIT RIVER TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	396	157	1,184	11.6	282.3	273.1 [2]	274.1	1.0
B	3,274	168	1,709	8.0	282.6	282.6	282.6	0.0
C	6,706	1,258	8,428	1.6	285.0	285.0	285.4	0.4
D	12,672	821	5,982	2.3	290.1	290.1	290.7	0.6
E	15,127	130	1,238	10.9	291.4	291.4	292.0	0.6
F	18,084	308	3,050	4.4	296.4	296.4	297.0	0.6
G	21,833	158	1,550	8.7	299.4	299.4	300.1	0.7
H	26,928	150	1,362	9.9	309.5 [3]	309.5 [3]	309.9 [3]	0.4
I	29,040	120	1,666	8.1	313.1 [3]	313.1 [3]	313.9 [3]	0.8
J	31,258	235	1,176	11.5	318.8 [3]	318.8 [3]	318.8 [3]	0.0
K	36,379	150	1,109	12.1	346.6 [3]	346.6 [3]	346.9 [3]	0.3
L	36,643	251	2,808	4.8	354.4 [3]	354.4 [3]	354.8 [3]	0.4
M	37,646	100	848	15.9	356.4 [3]	356.4 [3]	356.5 [3]	0.1
N	38,227	110	1,327	10.2	360.9 [3]	360.9 [3]	361.7 [3]	0.8
O	39,283	290	3,126	4.3	369.9 [3]	369.9 [3]	370.4 [3]	0.5
P	41,395	159	1,682	8.0	370.9 [3]	370.9 [3]	371.3 [3]	0.4
Q	43,349	151	1,638	8.2	373.0 [3]	373.0 [3]	373.6 [3]	0.6
R	44,827	176	1,949	6.9	374.8 [3]	374.8 [3]	375.5 [3]	0.7
S	45,461	130	2,066	6.5	375.6 [3]	375.6 [3]	376.4 [3]	0.8
T	46,042	129	1,231	10.9	375.7 [3]	375.7 [3]	376.7 [3]	1.0
U	50,002	172	2,422	5.6	380.4 [3]	380.4 [3]	381.2 [3]	0.8
V	54,014	177	2,970	4.5	381.7 [3]	381.7 [3]	382.7 [3]	1.0
W	54,490	218	3,633	3.3	382.0 [3]	382.0 [3]	382.9 [3]	0.9
X	57,446	236	3,759	3.2	382.4 [3]	382.4 [3]	383.4 [3]	1.0
Y	59,770	301	4,239	2.7	382.7 [3]	382.7 [3]	383.7 [3]	1.0
Z	61,512	188	2,617	4.3	382.9 [3]	382.9 [3]	383.9 [3]	1.0
AA	62,198	172	2,209	5.1	383.1 [3]	383.1 [3]	384.1 [3]	1.0

[1] FEET ABOVE CONFLUENCE WITH SACO RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM SACO RIVER

[3] WATER - SURFACE ELEVATIONS COMPUTED WITHOUT CONSIDERING ICE-JAM EFFECTS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

OSSIPEE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	63,413	201	3,048	3.7	383.7 [3]	383.7 [3]	384.6 [3]	0.9
AC	66,158	400	4,916	2.3	384.2 [3]	384.2 [3]	385.2 [3]	1.0
AD	69,115	245	3,137	3.6	384.5 [3]	384.5 [3]	385.4 [3]	0.9
AE	71,122	330	5,089	2.2	384.9 [3]	384.9 [3]	385.9 [3]	1.0

[1] FEET ABOVE CONFLUENCE WITH SACO RIVER

[3] WATER - SURFACE ELEVATIONS COMPUTED WITHOUT CONSIDERING ICE-JAM EFFECTS

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	109,877	380	4,440	0.9	181.5	181.5	181.5	0.0
B	110,510	250	2,270	1.8	181.5	181.5	181.5	0.0
C	110,986	180	1,630	2.4	181.6	181.6	181.6	0.0

[1] FEET ABOVE CATARACT DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SACO RIVER - RIGHT CHANNEL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	3,379	400	6,586	6.8	56.4	56.4	57.4	1.0
B	4,805	500	12,304	3.7	57.5	57.5	58.5	1.0
C	5,016	550	14,800	3.0	57.6	57.6	58.6	1.0
D	8,026	600	11,270	4.0	58.4	58.4	59.3	0.9
E	12,250	620	15,502	2.9	59.8	59.8	60.5	0.7
F	12,355	620	12,291	3.7	59.8	59.8	60.6	0.8
G	14,573	812	15,655	2.9	60.3	60.3	61.0	0.7
H	16,315	1,314	15,516	2.9	60.7	60.7	61.5	0.8
I	17,952	564	12,485	3.6	61.3	61.3	61.9	0.6
J	20,064	602	9,954	4.5	61.9	61.9	62.4	0.5
K	22,070	600	12,388	3.6	62.8	62.8	63.1	0.3
L	23,549	260	5,719	7.9	63.0	63.0	63.2	0.2
M	25,238	465	10,409	4.3	64.6	64.6	64.9	0.3
N	26,822	720	13,060	3.4	64.6	64.6	65.4	0.8
O	28,301	518	10,670	4.2	65.0	65.0	65.8	0.8
P	30,941	245	6,841	6.6	65.9	65.9	66.8	0.9
Q	32,842	850	13,621	3.3	67.0	67.0	68.0	1.0
R	35,482	271	8,023	5.6	67.8	67.8	68.7	0.9
S	35,587	300	8,925	5.0	67.9	67.9	68.9	1.0
T	38,544	346	11,149	4.0	68.9	68.9	69.9	1.0
U	40,920	357	9,786	4.6	69.4	69.4	70.4	1.0
V	42,926	325	9,881	4.6	69.9	69.9	70.9	1.0
W	45,355	470	11,179	4.0	70.5	70.5	71.5	1.0
X	47,362	540	14,565	3.1	71.0	71.0	72.0	1.0
Y	49,632	670	14,600	3.1	72.3	72.3	73.2	0.9
Z	50,688	530	10,800	4.2	72.5	72.5	73.5	1.0
AA	52,483	240	8,030	5.6	73.1	73.1	74.0	0.9

[1] FEET ABOVE WEST BRANCH DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	53,856	300	9,390	4.8	73.7	73.7	74.7	1.0
AC	54,912	320	8,950	5.0	74.1	74.1	75.0	0.9
AD	55,704	520	13,300	3.4	74.5	74.5	75.4	0.9
AE	56,338	340	8,460	5.3	74.6	74.6	75.5	0.9
AF	57,341	490	14,400	3.1	75.1	75.1	76.1	1.0
AG	57,763	820	18,000	2.5	75.2	75.2	76.2	1.0
AH	59,189	270	8,350	5.4	75.4	75.4	76.4	1.0
AI	59,611	1,440	61,300	0.7	127.2	127.2	127.2	0.0
AJ	61,406	720	34,900	1.3	127.2	127.2	127.2	0.0
AK	62,885	830	38,700	1.2	127.2	127.2	127.2	0.0
AL	64,258	1,100	54,800	0.8	127.2	127.2	127.2	0.0
AM	66,158	680	31,000	1.4	127.2	127.2	127.2	0.0
AN	66,739	400	15,700	2.8	127.2	127.2	127.2	0.0
AO	67,162	310	13,300	3.3	127.2	127.2	127.2	0.0
AP	67,478	270	13,400	3.3	127.2	127.2	127.2	0.0
AQ	69,696	200	4,320	10.2	127.2	127.2	127.2	0.0
AR	69,854	230	4,130	10.7	128.6	128.6	128.6	0.0
AS	70,646	470	8,110	5.4	130.5	130.5	130.5	0.0
AT	71,491	270	3,620	12.2	130.8	130.8	130.8	0.0
AU	72,283	300	3,950	11.2	133.7	133.7	134.1	0.4
AV	73,022	260	4,160	10.6	136.4	136.4	136.7	0.3
AW	74,818	300	5,770	7.7	140.7	140.7	141.4	0.7
AX	74,976	490	8,470	5.2	141.1	141.1	142.1	1.0
AY	75,926	340	5,500	7.5	142.0	142.0	142.7	0.7
AZ	76,243	260	3,230	12.8	143.8	143.8	144.5	0.7
BA	76,560	500	7,720	5.7	151.5	151.5	151.5	0.0
BB	77,458	290	4,060	10.9	151.9	151.9	151.9	0.0

[1] FEET ABOVE WEST BRANCH DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	78,725	390	4,920	9.0	155.5	155.5	155.5	0.0
BD	79,358	320	8,870	5.0	156.9	156.9	156.9	0.0
BE	79,992	680	11,300	3.9	157.2	157.2	157.3	0.1
BF	80,573	450	10,400	4.2	157.4	157.4	157.4	0.0
BG	81,523	490	8,510	5.2	157.6	157.6	157.6	0.0
BH	82,790	490	8,080	5.5	157.9	157.9	158.0	0.1
BI	83,899	400	8,100	6.0	158.3	158.3	158.4	0.1
BJ	85,694	350	8,850	5.0	158.7	158.7	159.2	0.5
BK	86,645	270	8,080	5.5	158.9	158.9	159.3	0.4
BL	88,123	300	8,100	5.4	159.1	159.1	159.7	0.6
BM	89,707	560	12,800	3.5	159.7	159.7	160.5	0.8
BN	90,394	450	9,160	4.8	159.9	159.9	160.7	0.8
BO	91,186	400	8,910	5.0	160.2	160.2	160.9	0.7
BP	92,347	270	6,890	6.4	160.6	160.6	161.2	0.6
BQ	93,350	390	9,320	4.7	161.1	161.1	162.0	0.9
BR	94,090	380	8,990	4.9	161.3	161.3	162.1	0.8
BS	95,146	610	9,710	4.6	161.6	161.6	162.5	0.9
BT	95,990	550	10,600	4.2	161.9	161.9	162.8	0.9
BU	97,680	300	7,970	5.5	162.3	162.3	163.2	0.9
BV	99,053	280	7,170	6.2	162.7	162.7	163.5	0.8
BW	99,950	270	7,160	6.2	163.2	163.2	163.9	0.7
BX	100,742	250	6,540	6.8	163.6	163.6	164.3	0.7
BY	101,270	260	6,230	7.1	163.9	163.9	164.7	0.8
BZ	102,115	460	10,300	4.3	164.7	164.7	165.5	0.8
CA	103,171	420	8,650	56.1	165.0	165.0	165.8	0.8
CB	103,488	340	7,190	6.2	165.2	165.2	165.9	0.7
CC	103,646	570	13,900	3.2	180.0	180.0	180.0	0.0

[1] FEET ABOVE WEST BRANCH DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
CD	103,910	370	9,950	4.4	180.0	180.0	180.0	0.0
CE	105,125	890	13,100	3.4	180.3	180.3	180.3	0.0
CF	106,181	1,090	16,500	2.7	180.5	180.5	180.5	0.0
CG	106,973	1,200	14,100	3.1	180.6	180.6	180.6	0.0
CH	107,606	1,200	15,900	2.8	180.8	180.8	180.8	0.0
CI	108,451	770	12,300	3.6	180.9	180.9	180.9	0.0
CJ	109,190	1,300	13,500	3.3	181.1	181.1	181.1	0.0
CK	109,877	380	4,440	0.9	181.5	181.5	181.5	0.0
CL	110,510	250	2,270	1.8	181.5	181.5	181.5	0.0
CM	110,986	180	1,630	2.5	181.6	181.6	181.6	0.0
CN	111,725	90	763	5.3	181.9	181.9	181.9	0.0
CO	113,678	400	11,800	3.7	221.3	221.3	221.3	0.0
CP	114,629	380	6,960	6.3	221.5	221.5	221.5	0.0
CQ	115,632	340	8,020	5.5	222.1	222.1	222.1	0.0
CR	117,586	420	10,700	4.1	222.6	222.6	222.6	0.0
CS	118,430	340	9,140	4.8	222.7	222.7	222.7	0.0
CT	121,018	420	11,100	3.9	223.2	223.2	223.2	0.0
CU	121,862	510	12,800	3.4	223.4	223.4	223.4	0.0
CV	123,341	690	18,500	2.4	223.5	223.5	223.5	0.0
CW	124,502	250	6,600	6.6	223.5	223.5	223.5	0.0
CX	125,717	290	10,200	4.3	223.8	223.8	223.9	0.1
CY	127,512	760	12,200	3.6	224.1	224.1	224.3	0.2
CZ	129,096	330	8,490	5.2	224.3	224.3	224.5	0.2
DA	129,888	380	10,700	4.1	224.5	224.5	224.7	0.2
DB	130,838	690	13,100	3.4	224.7	224.7	224.9	0.2
DC	131,630	740	11,600	3.8	224.8	224.8	225.0	0.2
DD	132,211	540	14,300	3.0	225.0	225.0	225.2	0.2

[1] FEET ABOVE WEST BRANCH DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DE	132,686	330	8,840	5.0	225.0	225.0	225.2	0.2
DF	134,006	320	7,800	5.6	225.3	225.3	225.4	0.1
DG	134,746	320	8,640	5.1	225.5	225.5	225.7	0.2
DH	135,538	380	8,580	5.1	225.7	225.7	226.0	0.3
DI	136,488	400	8,990	4.9	225.9	225.9	226.2	0.3
DJ	137,069	420	10,000	4.4	226.0	226.0	226.4	0.4
DK	137,808	630	13,300	3.3	226.2	226.2	226.6	0.4
DL	138,547	560	12,000	3.6	226.2	226.2	226.6	0.4
DM	139,022	780	24,900	1.6	226.4	226.4	226.8	0.4
DN	139,550	490	9,732	4.1	226.4	226.4	226.8	0.4
DO	140,078	380	5,500	7.2	226.4	226.4	226.8	0.4
DP	140,712	280	3,520	11.3	226.9	226.9	227.3	0.4
DQ	141,134	370	4,250	9.4	231.2	231.2	231.2	0.0
DR	141,398	430	5,310	7.5	231.9	231.9	231.9	0.0
DS	141,504	510	5,620	7.1	232.0	232.0	232.0	0.0
DT	141,926	410	3,450	11.5	232.7	232.7	232.7	0.0
DU	142,296	400	5,450	7.3	234.6	234.6	235.2	0.6
DV	143,194	350	5,080	7.8	236.1	236.1	236.5	0.4
DW	144,514	357	5,930	6.7	237.5	237.5	237.9	0.4
DX	145,691	380	7,550	5.3	238.5	238.5	238.7	0.2
DY	146,414	276	2,380	16.1	240.8	240.8	240.8	0.0
DZ	146,626	280	5,550	7.2	245.0	245.0	245.0	0.0
EA	147,470	320	6,600	6.0	245.7	245.7	245.7	0.0
EB	150,163	310	6,480	6.1	246.7	246.7	246.9	0.2
EC	151,430	300	6,340	6.3	247.1	247.1	247.3	0.2
ED	153,014	360	7,040	5.6	247.7	247.7	248.0	0.3
EE	155,021	240	6,080	6.6	248.1	248.1	248.6	0.5

[1] FEET ABOVE WEST BRANCH DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
EF	158,030	260	6,260	6.4	249.3	249.3	249.8	0.5
EG	159,245	300	5,630	7.1	249.7	249.7	250.3	0.6
EH	160,142	320	7,190	5.5	250.0	250.0	250.9	0.9
EI	162,307	240	4,960	8.0	250.9	250.9	251.9	1.0
EJ	164,578	330	6,450	6.2	252.7	252.7	253.7	1.0
EK	165,158	500	13,000	3.1	253.4	253.4	254.3	0.9
EL	165,528	350	6,010	6.6	253.4	253.4	254.3	0.9
EM	165,845	400	6,400	6.2	253.7	253.7	254.7	1.0
EN	166,109	450	7,880	5.0	254.2	254.2	255.1	0.9
EO	166,637	200	3,370	11.8	254.2	254.2	255.1	0.9
EP	166,795	210	3,670	10.8	254.8	254.8	255.5	0.7
EQ	167,112	190	2,330	17.1	254.9	254.9	255.6	0.7
ER	167,323	250	5,210	7.6	260.1	260.1	260.1	0.0
ES	167,798	250	4,680	8.5	260.3	260.3	260.3	0.0
ET	167,957	300	4,910	8.1	260.6	260.6	260.8	0.2
EU	168,538	400	6,620	6.0	261.6	261.6	261.8	0.2
EV	168,907	400	5,570	7.1	261.8	261.8	261.9	0.1
EW	169,699	500	8,220	4.8	262.5	262.5	262.7	0.2
EX	172,234	685	9,750	4.1	264.1	264.1	265.0	0.9
EY	179,678	439	6,730	5.9	267.8	267.8	268.8	1.0
EZ	188,285	3,242	39,000	1.0	270.0	270.0	271.0	1.0
FA	192,773	595	9,580	4.2	270.4	270.4	271.3	0.9
FB	194,515	1,473	16,400	2.4	271.3	271.3	272.3	1.0
FC	196,363	246	5,570	7.0	271.5	271.5	272.5	1.0
FD	202,171	400	7,620	5.1	274.9	274.9	275.8	0.9
FE	203,702	344	6,330	6.2	275.9	275.9	276.8	0.9
FF	210,626	449	8,143	4.8	279.0	279.0	280.0	1.0

[1] FEET ABOVE WEST BRANCH DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
FG	215,236	284	7,675	5.1	280.3	280.3	281.3	1.0
FH	215,446	275	6,832	5.7	281.0	281.0	281.9	0.9
FI	217,446	240	5,463	7.1	281.7	281.7	282.6	0.9

[1] FEET ABOVE WEST BRANCH DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	8,250	130	1,264	7.1	72.4	72.4	72.6	0.2
B	10,480	98	814	11.1	74.9	74.9	75.3	0.4
C	10,558	120	1,026	8.8	76.1	76.1	76.1	0.0
D	12,353	154	1,376	6.5	84.5	84.5	85.5	1.0
E	12,441	260	5,378	1.7	108.6	108.6	108.6	0.0
F	15,661	160	2,472	3.6	108.7	108.7	108.7	0.0
G	18,146	113	1,782	5.0	115.9	115.9	116.1	0.2
H	18,198	115	1,310	6.9	123.2	123.2	123.2	0.0
I	20,428	296	887	10.1	166.3	166.3	166.3	0.0
J	20,479	275	3,015	3.0	174.1	174.1	174.1	0.0
K	20,809	109	1,312	6.9	174.1	174.1	174.1	0.0
L	20,919	130	1,756	5.1	175.0	175.0	175.0	0.0
M	22,499	160	2,113	4.3	175.9	175.9	176.0	0.1
N	24,769	125	2,080	4.3	176.5	176.5	176.7	0.2
O	27,489	127	2,206	4.1	177.0	177.0	177.4	0.4
P	29,289	111	1,712	5.3	177.2	177.2	177.6	0.4
Q	30,649	115	2,052	4.4	177.8	177.8	178.2	0.4
R	33,829	175	2,461	3.7	178.5	178.5	179.1	0.6
S	36,474	166	1,927	4.7	179.7	179.7	180.5	0.8
T	36,527	183	1,829	4.9	182.1	182.1	182.2	0.1
U	39,327	915	7,086	1.3	182.9	182.9	183.1	0.2
V	51,497	146	1,499	4.4	183.8	183.8	184.3	0.5
W	52,552	77	1,131	5.8	184.5	184.5	185.0	0.5
X	70,162	354	3,005	2.2	189.1	189.1	190.1	1.0
Y	78,187	100	528	12.5	193.9	193.9	193.9	0.0
Z	78,637	199	1,713	3.8	197.2	197.2	197.9	0.7
AA	78,714	164	1,667	3.9	205.5	205.5	205.5	0.0

[1] FEET ABOVE MAIN STREET

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SALMON FALLS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	80,014	79	643	10.2	205.5	205.5	205.5	0.0
AC	80,116	219	1,335	4.9	206.8	206.8	206.9	0.1
AD	80,536	70	452	14.5	209.2	209.2	209.2	0.0
AE	80,610	70	704	9.3	212.5	212.5	212.5	0.0
AF	81,810	100	1,335	4.9	214.3	214.3	214.8	0.5
AG	87,950	165	1,306	4.6	215.6	215.6	216.6	1.0
AH	91,200	81	868	6.9	218.6	218.6	219.4	0.8
AI	91,266	536	1,805	3.3	220.5	220.5	220.7	0.2
AJ	100,386	125	1,267	4.7	222.2	222.2	222.7	0.5
AK	104,466	248	2,338	2.5	225.5	225.5	226.4	0.9
AL	107,682	199	1,079	5.5	227.5	227.5	228.3	0.8
AM	107,756	235	1,646	3.6	228.7	228.7	229.7	1.0
AN	109,936	1,586	4,687	1.3	231.9	231.9	232.5	0.6
AO	110,298	748	3,344	1.8	246.6	246.6	246.6	0.0
AP	111,348	532	8,177	0.7	246.6	246.6	246.6	0.0
AQ	114,408	988	8,201	0.7	246.6	246.6	246.6	0.0
AR	115,833	93	664	8.3	247.5	247.5	247.5	0.0
AS	117,128	179	607	9.1	257.1	257.1	257.1	0.0
AT	118,928	131	902	6.1	264.8	264.8	265.0	0.2
AU	120,118	81	421	13.1	309.4	309.4	309.4	0.0
AV	121,658	324	1,966	2.8	354.4	354.4	355.4	1.0
AW	123,598	202	1,506	3.7	398.2	398.2	398.7	0.5
AX	123,798	115	813	6.8	398.7	398.7	399.2	0.5
AY	124,978	234	3,371	1.6	419.5	419.5	420.1	0.6
AZ	125,718	197	2,520	2.1	419.6	419.6	420.2	0.6
BA	127,728	2,088	46,821	0.1	419.6	419.6	420.2	0.6
BB	130,248	610	9,603	0.6	419.6	419.6	420.2	0.6

[1] FEET ABOVE MAIN STREET

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SALMON FALLS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	132,338	333	4,158	1.3	419.6	419.6	420.2	0.6
BD	134,218	705	9,177	0.6	419.7	419.7	420.3	0.6
BE	135,178	550	7,198	0.7	419.7	419.7	420.3	0.6
BF	135,698	273	4,312	1.2	420.1	420.1	420.8	0.7
BG	138,948	1,390	24,230	0.2	420.2	420.2	420.9	0.7
BH	140,748	1,971	30,716	0.2	420.2	420.2	420.9	0.7
BI	143,048	1,584	21,746	0.2	420.2	420.2	420.9	0.7
BJ	145,278	1,645	21,542	0.2	420.2	420.2	420.9	0.7
BK	147,028	2,150	26,769	0.1	420.2	420.2	420.9	0.7
BL	149,468	450	4,179	0.6	420.2	420.2	420.9	0.7
BM	150,908	450	4,179	0.6	420.2	420.2	420.9	0.7
BN	152,468	160	1,714	1.5	420.2	420.2	420.9	0.7
BO	154,598	299	2,454	1.1	420.3	420.3	421.1	0.8
BP	155,898	200	1,593	1.6	420.3	420.3	421.1	0.8
BQ	157,128	200	1,593	1.6	420.3	420.3	421.3	1.0
BR	158,648	551	3,783	0.7	420.5	420.5	421.5	1.0

[1] FEET ABOVE MAIN STREET

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SALMON FALLS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	180	10	59	4.1	10.0	10.0	10.0	0.0
B	359	18	32	7.6	11.4	11.4	11.4	0.0
C	401	53	430	0.6	21.3	21.3	21.3	0.0
D	1,225	41	120	2.0	21.4	21.4	21.4	0.0

[1] FEET ABOVE STATE ROUTE 9

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SMITH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,218	65	287	1.5	157.7	157.7	158.5	0.8

[1] FEET ABOVE CONFLUENCE WITH WEST BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

SOUTH BRANCH OF WEST BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	5,597	16	32	7.0	8.7	8.7	9.1	0.4
B	5,650	17	41	5.4	10.6	10.6	11.1	0.5
C	5,755	55	304	0.7	18.2	18.2	18.2	0.0
D	6,178	97	292	0.8	18.2	18.2	18.3	0.1
E	6,547	20	36	6.2	18.2	18.2	18.5	0.3
F	6,706	173	1,378	0.2	28.9	28.9	28.9	0.0

[1] FEET ABOVE CONFLUENCE WITH ATLANTIC OCEAN

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SPINNEY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	17,530	9	50	6.9	9.0	8.1	8.1	0.0
B	17,582	78	379	0.9	9.0	9.0	9.0	0.0
C	18,586	87	356	1.0	9.3	9.3	9.4	0.1
D	18,850	13	39	9.1	11.5	11.5	11.8	0.3
E	19,642	26	109	3.2	18.2	18.2	19.0	0.8

[1] FEET ABOVE CONFLUENCE WITH PISCATAQUA RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SPRUCE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	11,722	61	116	9.6	8.9	6.8 [2]	6.8	0.0
B	12,144	41	148	9.8	9.1	9.1	9.9	0.8
C	12,619	33	124	11.7	11.0	11.0	12.0	1.0
D	12,936	55	205	13.0	12.3	12.3	13.2	0.9
E	13,200	29	62	14.7	14.0	14.0	14.6	0.6
F	13,464	10	38	17.5	16.8	16.8	17.2	0.4
G	13,675	6	31	27.0	26.3	26.3	26.7	0.4
H	13,834	66	419	33.4	32.7	32.7	33.3	0.6
I	13,992	10	27	36.4	35.7	35.7	36.2	0.5
J	14,098	10	38	47.7	47.0	47.0	47.3	0.3
K	14,362	27	94	52.6	51.9	51.9	52.8	0.9
L	14,784	15	57	57.9	57.2	57.2	57.6	0.4
M	15,787	67	265	61.4	60.7	60.7	61.7	1.0

[1] FEET ABOVE CONFLUENCE WITH OGUNQUIT RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM ATLANTIC OCEAN

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

STEVENS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,429	90	1,192	0.6	58.1	57.8 [2]	58.8	1.0
B	4,013	104	1,581	0.4	58.1	57.9 [2]	58.9	1.0
C	6,442	135	711	1.0	58.3	58.3	59.3	1.0

[1] FEET ABOVE CONFLUENCE WITH SACO RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERING BACKWATER EFFECTS FROM SACO RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

THATCHER BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	63	14	74	3.7	27.0	27.0	27.5	0.5
B	433	61	146	1.9	27.8	27.8	28.7	0.9
C	750	88	71	3.9	29.7	29.7	29.9	0.2
D	908	10	28	9.6	36.0	36.0	36.0	0.0
E	1,067	10	31	8.9	41.2	41.2	41.5	0.3
F	1,647	55	108	2.5	46.3	47.2	47.5	0.3
G	1,800	55	340	0.8	51.7	51.7	51.7	0.0
H	3,147	9	28	9.9	53.5	53.5	53.9	0.4

[1] FEET ABOVE CONFLUENCE WITH CAPE NEDDICK RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY 1 TO CAPE NEDDICK RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	528	93	290	0.9	102.9	102.9	102.9	0.0
B	686	93	387	0.7	105.6	105.6	105.7	0.1
C	1,901	10	27	9.4	106.8	106.8	107.1	0.3
D	2,059	35	191	1.3	111.2	111.2	111.6	0.4
E	2,904	25	152	1.7	111.3	111.3	112.0	0.7
F	3,010	25	172	1.5	114.5	114.5	114.5	0.0

[1] FEET ABOVE CONFLUENCE WITH GREEN BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY 1 TO GREEN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	23,126	30	85	9.7	30.1	30.1	30.2	0.1
B	23,866	44	227	3.6	39.8	39.8	40.7	0.9
C	24,130	16	76	10.8	41.3	41.3	41.5	0.2
D	24,763	39	216	3.8	50.4	50.4	51.3	0.9
E	25,714	13	65	12.7	59.5	59.5	60.0	0.5

[1] FEET ABOVE MOUTH

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

WEBHANNET RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	10,982	30	181	4.7	131.3	131.3	132.3	1.0
B	13,992	45	131	6.5	150.3	150.3	151.0	0.7
C	14,150	45	287	3.0	157.5	157.5	157.5	0.0
D	14,256	58	388	2.2	157.5	157.5	157.7	0.2
E	14,784	56	259	2.1	157.6	157.6	158.2	0.6
F	14,942	102	630	0.9	159.3	159.3	159.7	0.4
G	17,530	16	61	9.1	160.1	160.1	160.7	0.6

[1] FEET ABOVE CONFLUENCE WITH GREAT WORKS RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

WEST BROOK

FLOODING SOURCE		RIVER CHANNEL				BASE FLOOD ELEVATION (FEET NAVD 88)
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQARE FEET)	MEAN VELOCITY (FEET PER SECOND)	STREAM-BED ELEVATION (FEET NAVD 88)	
A	20,100	893	11,500	0.4	195.3	215.5
B	22,800	711	9,740	0.2	194.2	215.5
C	23,600	280	3,820	0.6	192.2	215.9
D	24,600	212	2,550	0.9	194.2	215.9
E	27,600	516	3,950	0.6	203.2	215.9
F	30,300	494	3,170	0.7	204.3	215.9
G	31,700	306	1,670	1.2	206.0	215.9
H	33,700	381	2,130	1.0	205.3	216.1
I	35,800	263	1,130	1.8	210.4	216.2
J	36,500	172	586	2.1	211.4	216.6
K	37,800	96	334	3.6	212.3	217.6
L	38,450	127	397	3.1	213.0	218.6
M	38,650	114	389	3.1	215.2	220.7
N	38,700	203	253	4.8	225.9	230.4
O	39,300	458	2,770	0.4	217.3	231.0
P	41,200	355	1,670	0.7	217.8	231.1
Q	44,250	320	1,280	1.0	218.5	231.2
R	44,400	646	2,750	0.4	222.8	231.7
S	45,100	247	935	1.3	221.8	231.8
T	45,400	187	933	1.3	223.3	232.9
U	47,300	681	3,040	0.4	21.8	233.2
V	54,200	662	3,550	0.3	225.3	233.2
W	54,600	712	2,760	0.4	224.9	233.2
X	55,000	201	735	1.5	224.4	233.3
Y	55,400	954	8,700	0.1	213.0	233.9

[1] FEET ABOVE MILL STREET

* NOTE 100-YEAR FLOOD ELEVATION FOR SHAKER POND IS 234.6

TABLE 13

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

1% ANNUAL CHANCE FLOOD DATA

LITTLEFIELD RIVER

5.0 INSURANCE APPLICATION

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

Zone A

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

Zone AE

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

Zone AH

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

Zone AO

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

Zone V

Zone V is the flood insurance rate zone that corresponds to the 1-percent-annual-chance coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no BFEs are shown within this zone.

Zone VE

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

Zone X

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

6.0 FLOOD INSURANCE RATE MAP

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

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

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

The countywide FIRM presents flooding information for the entire geographic area of York County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table 14, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Acton, Town of	February 21, 1975	August 31, 1979	June 5, 1985	None
Alfred, Town of	February 21, 1975	November 19, 1976	July 16, 1990	May 18, 1998
Arundel, Town of	April 4, 1975	December 17, 1976	April 1, 1987	June 4, 1996
Berwick, Town of	August 9, 1974	July 30, 1976	August 5, 1991	None
Biddeford, City of	May 24, 1974	November 5, 1976	May 15, 1984	None
Buxton, Town of	April 5, 1974	January 14, 1977	July 5, 1982	None
Clarks Island	TBD	None	TBD	None
Cornish, Town of	June 28, 1974	July 30, 1976	March 18, 1980	None
Dayton, Town of	June 28, 1974	July 30, 1976	June 1, 1981	None
Eliot, Town of	June 28, 1974	October 29, 1976	June 5, 1989	None
Fishing Island	TBD	None	TBD	None
Hollis, Town of	May 31, 1974	August 6, 1976	July 19, 1982	None
Kennebunk, Town of	June 28, 1974	October 10, 1975	January 19, 1983	July 15, 1992
Kennebunkport, Town of	December 6, 1974	December 3, 1976	April 18, 1983	July 4, 1988

TABLE 14

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME
(ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Kittery, Town of	November 1, 1974	September 24, 1976 October 1, 1983	July 5, 1984	July 3, 1986
Lebanon, Town of	February 7, 1975	None	July 3, 2002	None
Limerick, Town of	January 10, 1975	June 15, 1979	February 1, 1985	None
Limington, Town of	May 31, 1974	October 22, 1976 August 10, 1979	April 1, 1982	None
Lyman, Town of	February 7, 1975	None	May 15, 1991	None
Newfield, Town of	February 21, 1975	June 15, 1979	June 5, 1985	None
North Berwick, Town of	February 21, 1975	October 15, 1976 July 6, 1979	February 1, 1985	None
Ogunquit, Town of	February 18, 1977	None	July 5, 1983	July 15, 1992
Old Orchard Beach, Town of	August 23, 1974	November 19, 1976	July 5, 1984	None
Parsonfield, Town of	June 28, 1974	May 17, 1977	December 18, 1979	None
Saco, City of	September 20, 1974	January 14, 1977	January 5, 1984	March 16, 1998 January 5, 2006

TABLE 14

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME
(ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Sanford, Town of	September 13, 1974	September 10, 1976 August 23, 1977 April 25, 1980	March 4, 1985	December 3, 1991 July 20, 1998
Shapleigh, Town of	January 17, 1975	June 15, 1979	August 5, 1985	None
South Berwick, Town of	August 9, 1974	October 15, 1976 July 6, 1979	June 5, 1985	None
Waterboro, Town of	February 21, 1975	October 15, 1976 August 17, 1979	February 1, 1985	None
Wells, Town of	October 18, 1974	October 15, 1976	July 5, 1983	July 15, 1992 January 16, 2003
White Island	TBD	None	TBD	None
Wood Island	TBD	None	TBD	None
York, Town of	June 21, 1974	October 22, 197	December 15, 1983	July 15, 1992 June 17, 2002

TABLE 14

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME
(ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction within York County has been compiled in this FIS. Therefore, this FIS supersedes all previously printed FIS reports, FIRMs, and/or FHBMs for all of the incorporated jurisdictions within York County.

York County is bordered by the Maine Counties of Oxford to the north and Cumberland to the northeast. In addition, Carroll, Strafford, and Rockingham Counties, New Hampshire border York County's western border. At the time of this revision, Oxford and Cumberland County were under going countywide revisions and will be in agreement with this countywide FIS.

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

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting FEMA Region I, 99 High Street, 6th Floor, Boston, MA 02110.

9.0 BIBLIOGRAPHY AND REFERENCES

1. Federal Emergency Management Agency, Guidelines and Specifications for Wave Elevation Determination and V-Zone Mapping, 3rd Draft, July 1989.

2. U.S. Department of Agriculture, Natural Resources Conservation Service, Sawyer Brook Flood Plain Management Study, Orono, Maine, November 30, 1995.

3. James W. Sewall Co., of Old Town, Maine, Topographic maps compiled from aerial photographs. Contour Interval 2 feet. Saco, Maine, 2000.

4. Federal Emergency Management Agency, Preliminary Flood Insurance Study, Town of Alfred, York County. Maine, Washington, D.C., July 23, 1996.

5. U.S. Census Bureau, 2000 Census of Population and Housing, Population and Housing Unit Counts, PHC-3-21, Maine, Washington, DC, 2003.

6. U.S. Army Corps of Engineers, North Atlantic Division, National Shoreline Study, Regional Inventory, North Atlantic Region, Volume I, New York, New York, 1971.

7. U.S. Department of the Interior, Geological Survey, Water-Supply Paper 798, The Floods of March 1936, Washington, D.C. 1937.

8. U.S. Department of the Interior, Geological Survey, Water Resources Data for Maine, Washington, D.C., Published Annually.

9. U.S. Department of Agriculture, Soil Conservation Service, Flood Hazard Analyses, Little Ossipee River, Towns of Limerick and Waterboro, York County, Maine, Orono, Maine, September 1977.

10. New England River Basins Commission, Regional and National Demands on the Maine Coastal Zone, January 1971.

11. Saco River Corridor Commission, The View From the Valley by the Saco River Environmental Advisory Committee, Cornish, Maine, April 1973.

12. U.S. Department of the Interior, Geological Survey, Water Resources Investigations 79-61, Coastal Flood of February 7, 1978 in Maine, Massachusetts, and New Hampshire, Boston, Massachusetts, 1979.

13. U.S. Army Corps of Engineers, New England Division, Water Resources Development, Maine, Waltham, Massachusetts, 1975.

14. State of Maine, Guidelines for Municipal Shoreland Zoning Ordinances, Augusta, Maine, December 15, 1973.

15. U.S. Army Corps of Engineers, North Atlantic Division, Beach Erosion Reconnaissance Report, Saco, Maine, New York, 1976.

16. New England - New York Inter-Agency Committee, The Resources of the New England – New York Area, Saco River Basin, Washington , D. C., 1955.

17. U.S. Army Corps of Engineers, New England District, Flood Control Structures in Saco Basin, Waltham, Maine, 1967.

18. State of Maine, Maine State Legislature, Saco River Corridor Act, H.P. 797-L. D. 967, Augusta, Maine, 1979.

19. U.S. Army Corps of Engineers, New England Division, Northeast Flood Studies, Report Review of Survey for Flood Control and Allied Purposes, Saco River Basin, Waltham, Massachusetts, 1967.

20. U.S. Department of Agriculture, Soil Conservation Service, Ogunquit Sand Dune Land Stabilization Measure – Draft Environmental Statement, Orono, Maine, 1972.

21. Town Clerk, Town of York, Maine, Personal Communication, February 13, 1978.

22. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 20, Computer Program, Project Formulation, Hydrology, Washington, D. C., 1965.

23. U.S. Department of the Interior, Geological Survey, Open-File Report 75-292, A Technique for Estimating the Magnitude and Frequency of Floods in Maine, by R. A. Morrill, Washington, D. C., 1975.

24. Mr. Kevin Merli, Region I Government Technical Monitor, Federal Insurance Administration, Personal Communication, January 16, 1978.

25. Stone & Webster Engineering Corporation, Development and Verification of Synthetic Northeaster Model for Coastal Flood Analysis, Boston, Massachusetts, October 1978.

26. U.S. Department of the Interior, Geological Survey, Office of Water Data Collection, Interagency Advisory Committee on Water Data, "Guidelines for Determining Flood Flow Frequency," Bulletin 17B, Reston, Virginia, Revised September 1981.

27. U.S. Department of the Interior, Geological Survey, Water-Supply Paper 1580-B, Factors Influencing the Occurrence of Floods in a Humid Region of Diverse Terrain by Manuel A. Bensen, Washington, D.C., 1962.

28. U.S. Department of the Interior, Geological Survey, Water Supply Paper, Surface Water Supply of the United States, Washington, D.C., Published Annually 1902-1960.

29. U.S. Department of the Interior, Geological Survey, Surface Water Supply of the United States Resource Data for Maine, Washington, D.C., Published Annually 1961-1976.

30. Water Resources Council, "Guidelines for Determining Flood Flow Frequency," Bulletin 17, Washington, D.C., March 1976.

31. Ven Te Chow, Handbook of Applied Hydrology, New York: McGraw Hill, Inc., 1964.

32. Federal Emergency Management Agency, Flood Insurance Study, Town of South Berwick, York County, Maine, Washington, D.C., June 5, 1985.

33. Federal Emergency Management Agency, Flood Insurance Study, Town of Kittery, York County, Maine, Washington, D.C., July 5, 1984.

34. Federal Emergency Management Agency, Flood Insurance Study, City of Portsmouth, Rockingham County, New Hampshire, Washington, D.C., May 17, 1982.

35. Federal Emergency Management Agency, Flood Insurance Study, City of Dover, Strafford County, New Hampshire, Washington, D.C., April 15, 1980.

36. Water Resources Council, "Guidelines for Determining Flood Flow Frequency," Bulletin 17A, Washington, D.C., June 1977.

37. Federal Emergency Management Agency, Flood Insurance Study, City of Somersworth, Strafford County, New Hampshire, Washington, D.C., February 1982.

38. Federal Emergency Management Agency, Flood Insurance Study, City of Rochester, Strafford County, New Hampshire, Washington, D.C., March 1982.

39. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 20, Computer Program for Project Formulation - Hydrology, Draft of Second Edition. Washington, D.C., May 1983.

40. Hodgkins, G, 1999. Estimating the Magnitude of Peak Flows for Streams in Maine for Selected Recurrence Intervals: US Geological Survey Water-Resources Investigations Report 99-4008, 45 p.

41. Watershed Concepts Division of Hayes, Seay, Mattern and Mattern, 1999, Watershed Information System (WISE), application version 3.0.0.06, 2006.

42. U.S. Department of the Interior, Geological Survey, 15-Minute Series Topographic Maps, Scale 1:62,500, Contour Interval 20 Feet: Wolfeboro, Maine, 1942; Newfield, Maine, 1942; Newfield, Maine, 1958; Buxton, Maine, 1942; Sebago Lake, Maine, 1942; Berwick, Maine, 1942.

43. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 20 Feet: Sanford, Maine, 1983; Mousam Lake, Maine, 1983; Biddeford, Maine, 1975; Cornish, Maine, 1964; Gorham, Maine, 1957, Photorevised 1970; Kezar Falls, Maine 1964; Newfield, Maine-New Hampshire, 1958; Dover East, New Hampshire-Maine, 1973; Portsmouth, New Hampshire-Maine, 1973.

44. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 61, WSP-2 Computer Program, Washington, D. C., May 1976.

45. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet: Alfred, Maine, 1983; Waterboro, Maine, 1983; Kennebunk, Maine, 1983; Lyman, Maine, 1983; North Berwick, Maine, 1956; Somersworth, Maine, 1958; York Harbor, Maine, 1956; Dover East, Maine, 1956.

46. State of Maine, Department of Inland Fisheries and Game, Lake Maps: Estes Lake, 1967, Shaker Pond, 1961, Augusta, Maine.

47. U.S . Department of the Interior, Geological Survey/U. S. Department of Transportation, Federal Highway Administration, WSPRO Computer Model for Water Surface Profile Computations, Washington, D. C., June 1988.

48. U.S. Department of the Interior, Geological Survey, Techniques of Water-Resources Investigations, Measurement of Peak Discharge at Dams by Indirect Methods, by H. Hulsing, Washington, D.C., 1968.

49. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Generalized Computer Program, Davis, California, May 1991.

50. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, Davis, California, October 1973.

51. Moore Survey and Mapping, of Shrewsbury, Massachusetts, Maps compiled from aerial photographs, Scale 1:9,600, Contour Interval 5 feet: Rochester, New Hampshire, May 1980; Somersworth, New Hampshire, May 1980.

52. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Generalized Computer Program, Davis, California, April 1984.

53. James W. Sewall Co. of Old Town, Maine, Topographic Maps compiled from aerial photographs, Scale 1:2,400, Contour Interval 5 Feet: Kittery, Maine, 1977; Old Orchard Beach, Maine, 1977; York, Maine, 1977; Biddeford, Maine, 1977; Kennebunk, Maine, 1977; Kennebunkport, Maine, 1977; Ogunquit, Maine, 1977; Wells, Maine, 1977.

54. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, Davis, California, October 1973, Revised November, 1976.

55. Hansa Engineering Corporation, Topographic Maps Prepared from Aerial Photographs, Scale 1"=400', Contour Interval 4 Feet, Los Angeles, California, November 13, 1978.

56. Hansa Engineering Corporation, Aerial Photographs of the Saco River, Scale 1:9600, Los Angeles, California, November 13, 1978.

57. U.S. Department of the Interior, Geological Survey, Open-File Report, Computer Program E431, Users Manual, Computer Applications for Step-Backwater and Floodway Analyses by James O. Shearman, Washington, D.C., 1976.

58. U.S. Department of the Interior, Geological Survey, "Methods of Determining Limits of Inundation by 100-Year Frequency Flood for Flood-Prone Area Maps", Augusta, Maine, 1972.

59. James W. Sewall Co. of Old Town, Maine, Photogrammetric Maps, Scale 1:4800, Contour Interval 5 Feet: Cornish, Maine, January 1978; Parsonsfield, Maine, January 1978.

60. Hansa Engineering Corporation, Los Angeles, California, Topographic Maps compiled from aerial photographs, Negative Scale 1:9600, Contour Interval 4 Feet, Saco River, Flown on November 13, 1978 (Unpublished).

61. Hansa Engineering Corporation, Los Angeles, California, Topographic Maps of Hollis, Maine, Scale 1:4800, Contour Interval 4 Feet, compiled from aerial photographs at a negative scale of 1:9600, Flown on November 13, 1978 (Unpublished).

62. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Hollis, York County, Maine, Washington, D.C., 1974, Revised 1976.

63. New England Coastal Engineers, Inc., "A One-Dimensional Numerical Storm Surge Model for Coastal Rivers Including Application to the Damariscotta and Sheepscot Rivers, Maine, and Chatham Harbor, Massachusetts." Boston, Massachusetts, July 1977.

64. Federal Emergency Management Agency, Managing Floodplain Development in Approximate Zone A Areas, A Guide for Obtaining and Developing Base (100-Year) Flood Elevations, July 1995.

65. U.S. Army Corps of Engineers, Hydrologic Engineering Center, Computer Program 723-X6-L202A, HEC-2 Water-Surface Profiles, Davis, California, December 1968, with update.

66. Hansa Engineering Corporation, Aerial Photographs of the Saco River, Scale 1" = 400' , Contour Interval 4 Feet, Los Angeles, California, November 13, 1978.

67. U.S. Federal Highway Administration, Report FHWA/RD-86/109, WSPRO-Bridge Waterways Analysis Model/Research Report by J. S. Shearman, W. H. Kirby, V. R. Schneider, and H. N. Flippo, Jr., Washington, D.C., 1986.

68. U.S. Department of the Interior, Geological Survey, Techniques of Water-Resource Investigation, Measurement of Peak Discharge at Culverts by Indirect Methods; Book 3, Chapter A3, Washington, D.C., 1968.

69. U. S. Department of the Interior, Geological Survey, 15-Minute Series Topographic Maps, Scale 1:62,500, Contour Interval 10 Feet: Berwick, Maine, 1958; Kennebunk, Maine, 1956; Dover, Maine, 1956; York, Maine, 1956.

70. U.S. Department of Commerce, Weather Bureau, Technical Paper No. 40, Rainfall Frequency Atlas of the United States, Washington, D. C., 1961, Revised 1963.

71. U.S. Army Corps of Engineers, Hydrologic Engineering Center, Computer Program 723-X6-L202A, HEC-2 Water-Surface Profiles, Users Manual, Davis, California, October 1973, Revised November 1976.

72. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Parsonsfield, Maine, Scale 1:12,000, May 1977.

73. U.S. Department of Agriculture, Soil Conservation Service, National Engineering Handbook, Part 630, Chapter 31, Computer Program for Water Surface Profiles. Washington, D.C., October 1993.

74. U.S. Department of Agriculture, Soil Conservation Service, Flood Hazard Analyses, Great Works River, Towns of North Berwick and Sanford, York County, Maine, Orono, Maine, September 1977.

75. U.S. Department of the Interior, Geological Survey, written communication from James O. Shearman, April 25, 1989.

76. U.S. Department of Agriculture, Soil Conservation Service, Flood Hazard Analyses, Great Works River, Towns of South Berwick, York County, Maine, Orono, Maine, September 1977.

77. U.S. Army Corps of Engineers, HEC-2 Water Surface Profiles, Users Manual and Computer Program, (Haestad Methods Version 6.51), September 1990.

78. U.S. Department of the Interior , Geological Survey, Open-File Report 76-499, Computer Applications for Step-Backwater and Floodway Analyses by James 0. Shearman, Washington D. C., 1976.

79. Tetra Tech, Inc., Coastal Flooding Handbook, Parts I and II, Pasadena, California, May 1977.

80. Stone & Webster Engineering Corporation, Determination of Coastal Storm Tide Levels, Boston, Massachusetts, October 1978.

81. National Academy of Sciences, Methodology for Calculating Wave Action Effects Associated with Storm Surges, Washington, D.C., 1977.

82. Stone & Webster Engineering Corporation, Manual for Wave Runup Analysis, Coastal Flood Insurance Studies, Boston, Massachusetts, November 1981.

83. U.S. Army Corps of Engineers, Hydraulics and Water Quality Section, New England Division. (September 1988). Tidal Flood Profiles -New England Coastline.

84. National Oceanic and Atmospheric Administration, National Ocean Service, Tidal Bench Marks for Cape Neddick, Atlantic Ocean. Washington, D.C., June 1, 1988.

85. National Oceanic and Atmospheric Administration, National Ocean Service, Tidal Bench Marks for Portsmouth Naval Shipyard, Seavey Island, Portsmouth, Washington, D.C., July 16, 1987.

86. National Oceanic and Atmospheric Administration, National Ocean Service, Tidal Bench Marks for Portland, Casco Bay, Washington, D.C., December 20, 1984.

87. U.S. Army Corps of Engineers, Galveston District, Guidelines for Identifying Coastal High Hazard Zones, Galveston, Texas, June 1975.

88. Federal Emergency Management Agency, User's Manual for Wave Height Analysis, to accompany Methodology for Calculating Wave Action Effects Associated with Storm Surges, FIA, Washington, D. C., February 1981.

89. James W. Sewall Co., of Old Town, Maine, Topographic maps compiled from aerial photographs. Scale 1"=400', Contour Interval 4 Feet. Saco, Maine, April 1993.

90. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, National Data Buoy Center, Climatic Summaries for NDBC Buoys and Stations Update 1, February 1990.

91. U.S. Army Corps of Engineers, Waterways Experiment Station, WIS Report 30, Hindcast Wave Information for the U.S. Atlantic Coast, March 1993.

92. U.S. Army Corps of Engineers, Waterways Experiment Station, WIS Report 19, Hurricane Hindcast Methodology and Wave Statistics for Atlantic and Gulf Hurricanes from 1956 - 1975, Final Report, March 1993.

93. Dewberry & Davis, Investigation and Improvement of the Capabilities of the FEMA Wave Runup Model (Technical Documentation for RUNUP 2.01), Report and Computer Program. Fairfax, Virginia, April 1990.

94. U.S. Army Corps of Engineers, Coastal Engineering Research Center, Shore Protection Manual, Volume I and II, 4th Edition. Washington, D.C., 1984.

95. Federal Emergency Management Agency, Guidelines and Specifications for Wave Elevation Determination and V Zone Mapping, Washington, D.C., March 1995.

96. U.S. Army Corps of Engineers, Waterways Experiment Station, WIS Report 33, Hindcast Wave Information for the U.S. Atlantic Coast: Update 1976-1993 with Hurricanes, Vicksburg, Mississippi, June 1995.

97. Federal Emergency Management Agency. (April 2003). Guidelines and Specifications for Flood Hazard Mapping Partners. Appendix D: Guidance for Coastal Flooding Analyses and Mapping. Washington, D.C.

98. Federal Emergency Management Agency, Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update, February 2007.

99. U.S. Army Corp of Engineers, Hydraulics and Water Quality Section. Tidal Flood Profiles New England Coastline. September 1988.

100. Federal Emergency Management Agency. (April 2003). Guidelines and Specifications for Flood Hazard Mapping Partners. Appendix B: "Guidance for Converting to the North American Vertical Datum of 1988." Washington, D.C.

101. Goda, Y. (2000). Random Seas and Design of Maritime Structures. World Scientific, Singapore.

102. U.S. Army Corps of Engineers, Coastal Engineering Research Center. (1984). Shore Protection Manual. (Volumes I and II, 4th Edition). Washington, D.C.

103. Office of Maine GIS. Topographic Data 2'. Digital format.

104. U.S. Department of Commerce, Coast and Geodetic Survey, Gulf of Maine Coastal Chart, #13009, 34th Edition, March 1, 2009.

105. Geod Surveying and Aerial Mapping Corporation, of Oak Ridge, New Jersey, Aerial Photographs.

106. The Massachusetts Office of Coastal Zone Management (2006). Technical Report: "Primary Frontal Dune Delineation: A Geologically Based Quantitative Methodology for Sandy Beaches in Northeastern Massachusetts".

107. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Old Orchard Beach, York County, Maine, August, 23, 1974, Revised November 19, 1976.

108. Federal Emergency Management Agency, Flood Insurance Study, Town of Sanford, York County, Maine, Washington, D.C., December 3, 1991.

109. Chas. H. Sells, Inc., Aerial Photogrammetric Topographic Maps, Scale 1"=400', Contour Interval 4 feet, July 1996.

110. Sebago Technics, Inc., of Westbrook, Maine, Topographic Maps, Scale 1:480, Contour Interval 2 Feet: Kennebunkport, Maine, September 10, 1986.

111. U.S. Department of Agriculture, Soil Conservation Service, Aerial Photographs, ELB Series, Scale 1:20,000: Acton, Maine, May 1962; Limerick, Maine, May 1962; North Berwick, Maine, May 1962; Sanford, Maine, May 1962; Shapleigh, Maine, May 1962; South Berwick, Maine, May 1962; Waterboro, Maine, May 1962.

112. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Acton, York County, Maine, June 23, 1975, Revised August 31, 1979.

113. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Alfred, York County, Maine, November 19, 1976.

114. Federal Emergency Management Agency, Flood Insurance Rate Map. Town of Arundel, York County, Maine, Washington, D.C. April 1, 1987.

115. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, City of Biddeford, York County, Maine, January 20, 1975.

116. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Cornish, York County, Maine, June 28, 1974.

117. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Eliot, York County, Maine, October 29, 1976.

118. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Kennebunk, York County, Maine, June 28, 1974, Revised October 10, 1975.

119. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Kennebunkport, York County, Maine, December 17, 1976.

120. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Kittery, York County, Maine, June 12, 1975.

121. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Lyman, York County, Maine, February 7, 1975.

122. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of North Berwick, York County, Maine, August 5, 1975.

123. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Newfield, York County, Maine, February 21, 1975, June 15, 1979.

124. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Village of Ogunquit, York County, Maine, May 7, 1975.

125. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Shapleigh, York County, Maine, January 17, 1975, Revised June 15, 1979.

126. Federal Emergency Management Agency, Flood Insurance Study, Town of South Berwick, York County, Maine, April 21, 1975.

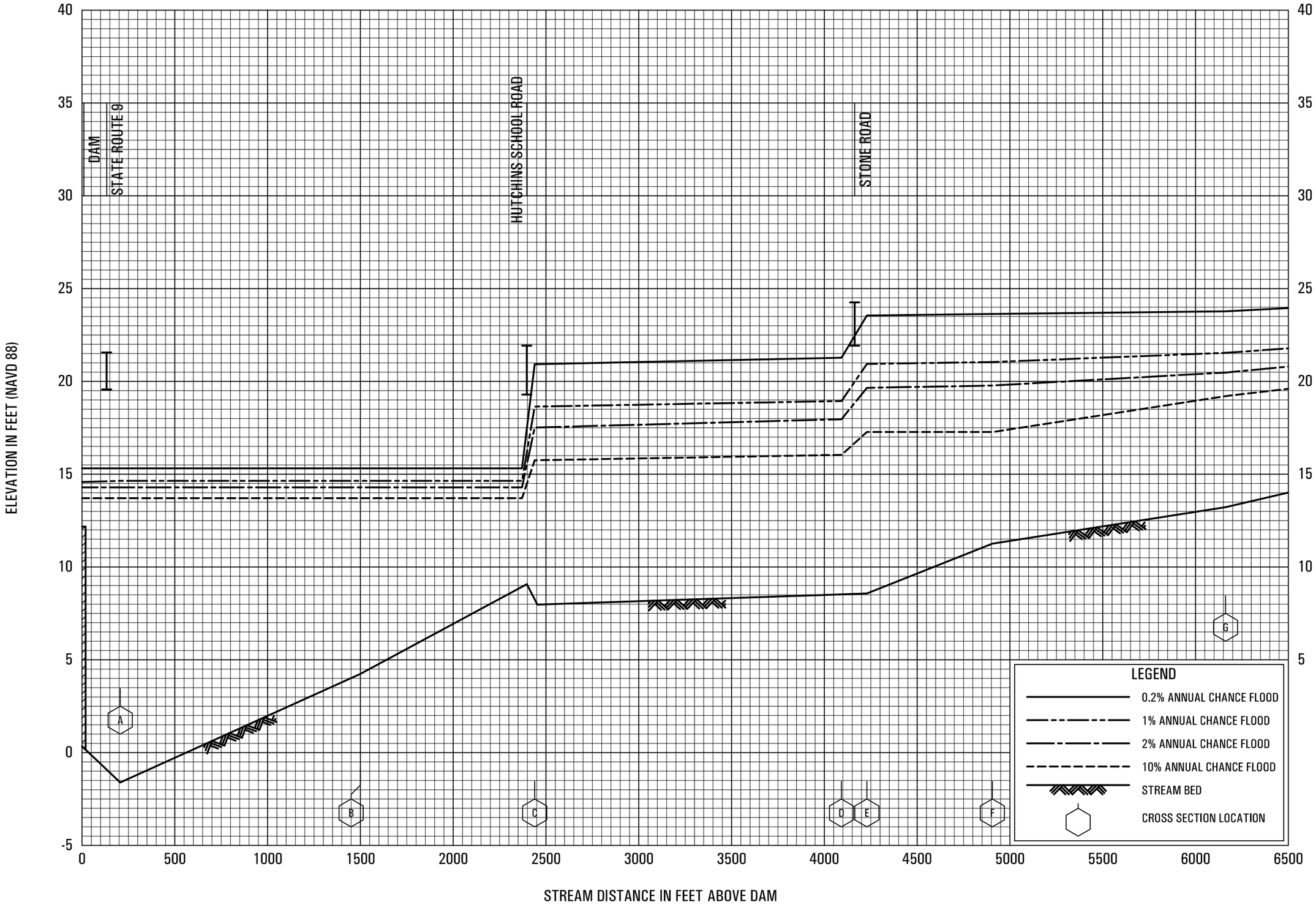
127. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Wells, York County, Maine,. October 15, 1976.

128. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of York, York County, Maine, October 22, 1976.

129. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Berwick, York County, Maine, July 30, 1976.

130. U.S. Department of the Interior, Geological Survey, 15-Minute Series Topographic Maps, Scale 1:62,500, Contour Interval 40 Feet: Buxton, Maine, 1942.

131. U.S. Department of the Interior, Geological Survey, 15-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 4 Feet: Buxton, Maine, 1942; Kennebunk, Maine, 1956.



FLOOD PROFILES

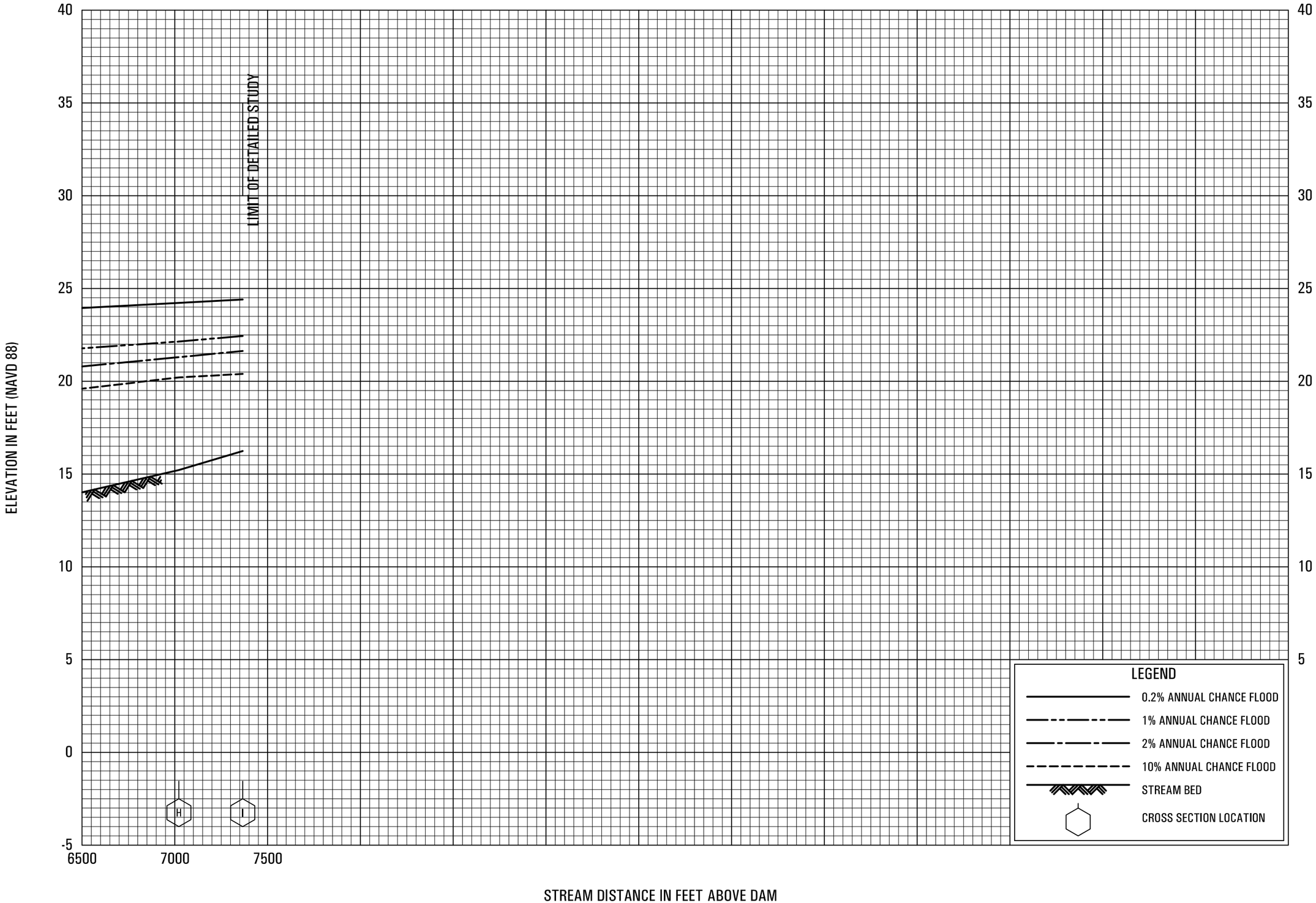
BATSON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

01P



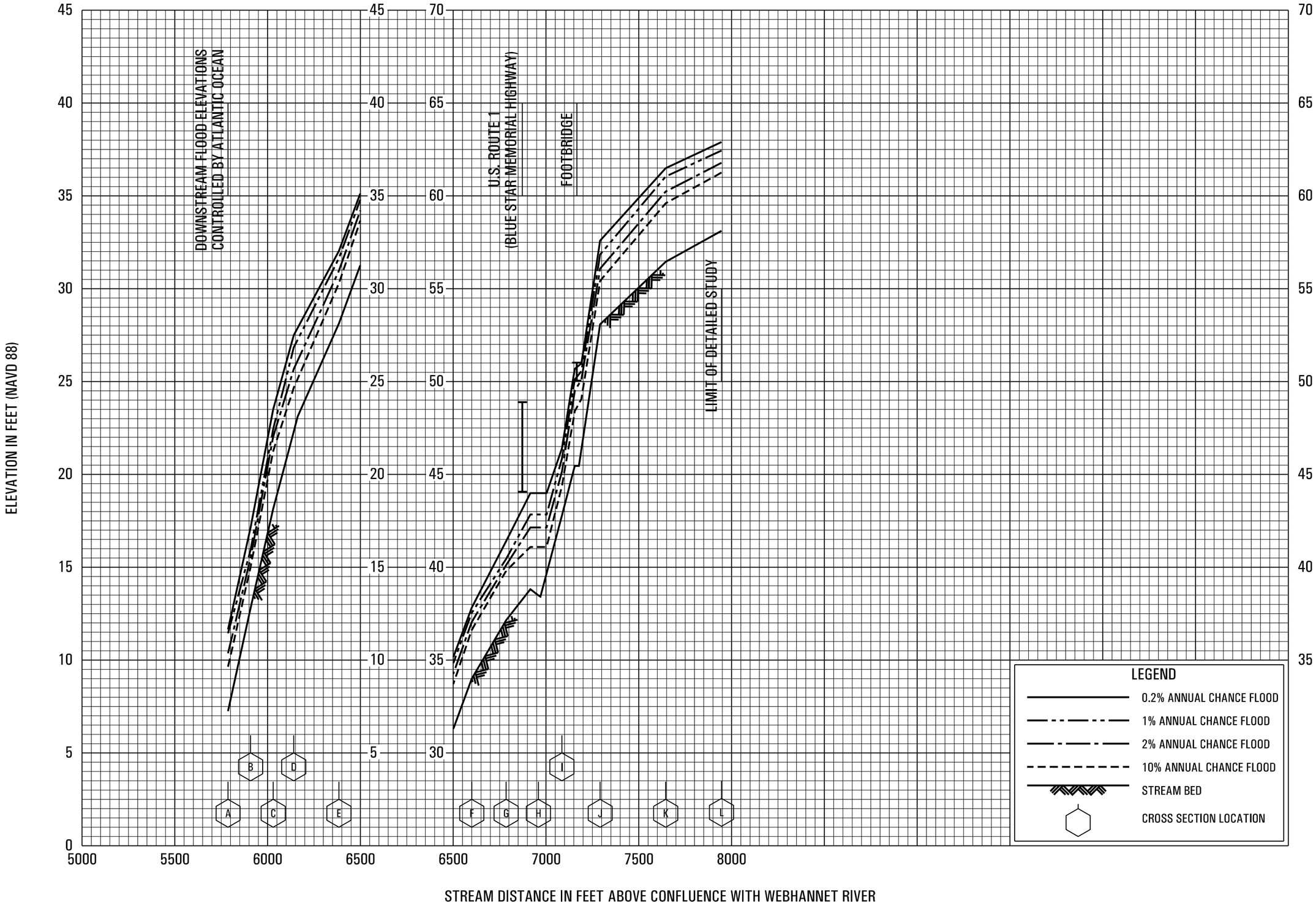
FLOOD PROFILES

BATSON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



FLOOD PROFILES

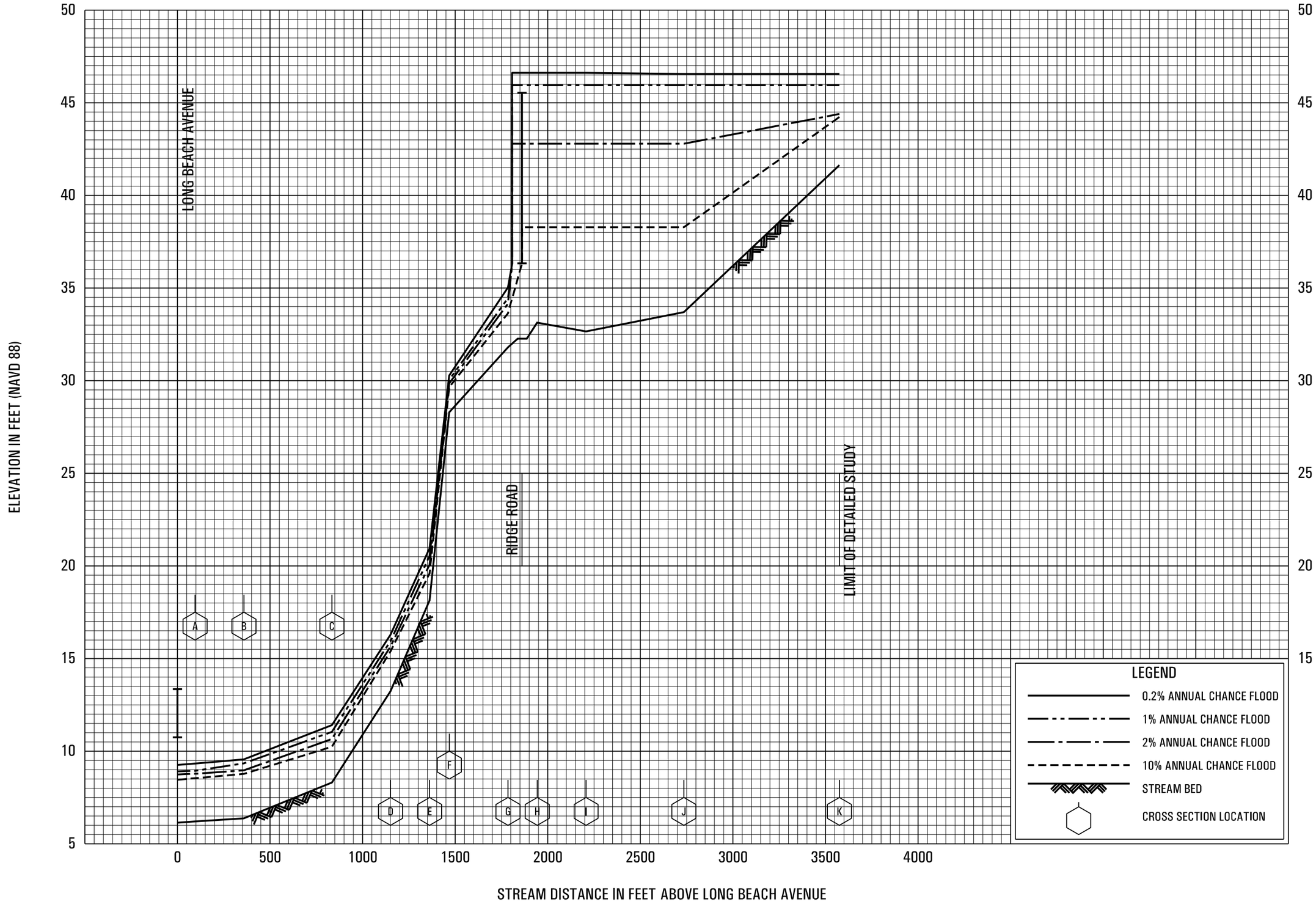
BLACKSMITH BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

03P



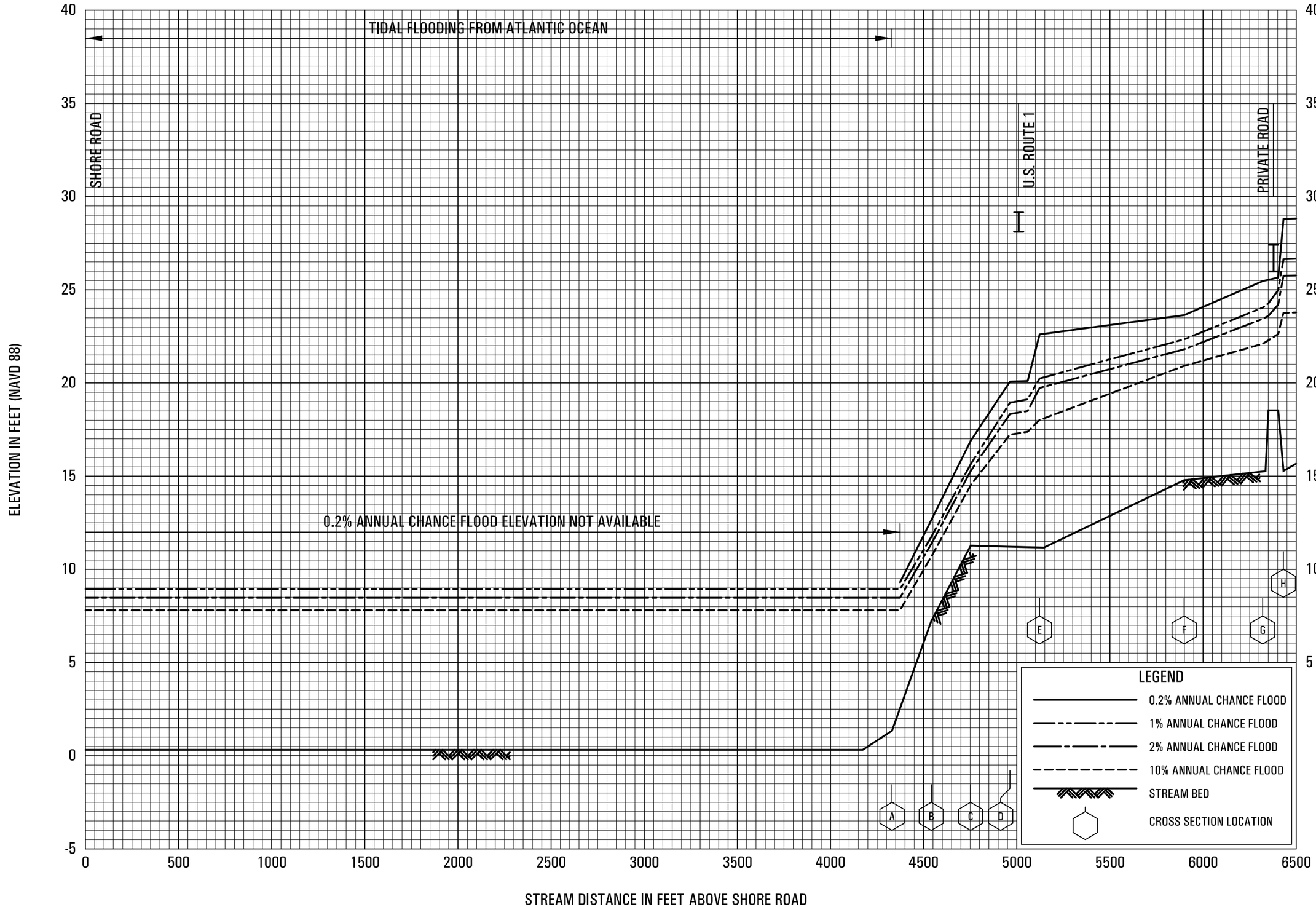
FLOOD PROFILES

BRIDGES SWAMP

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



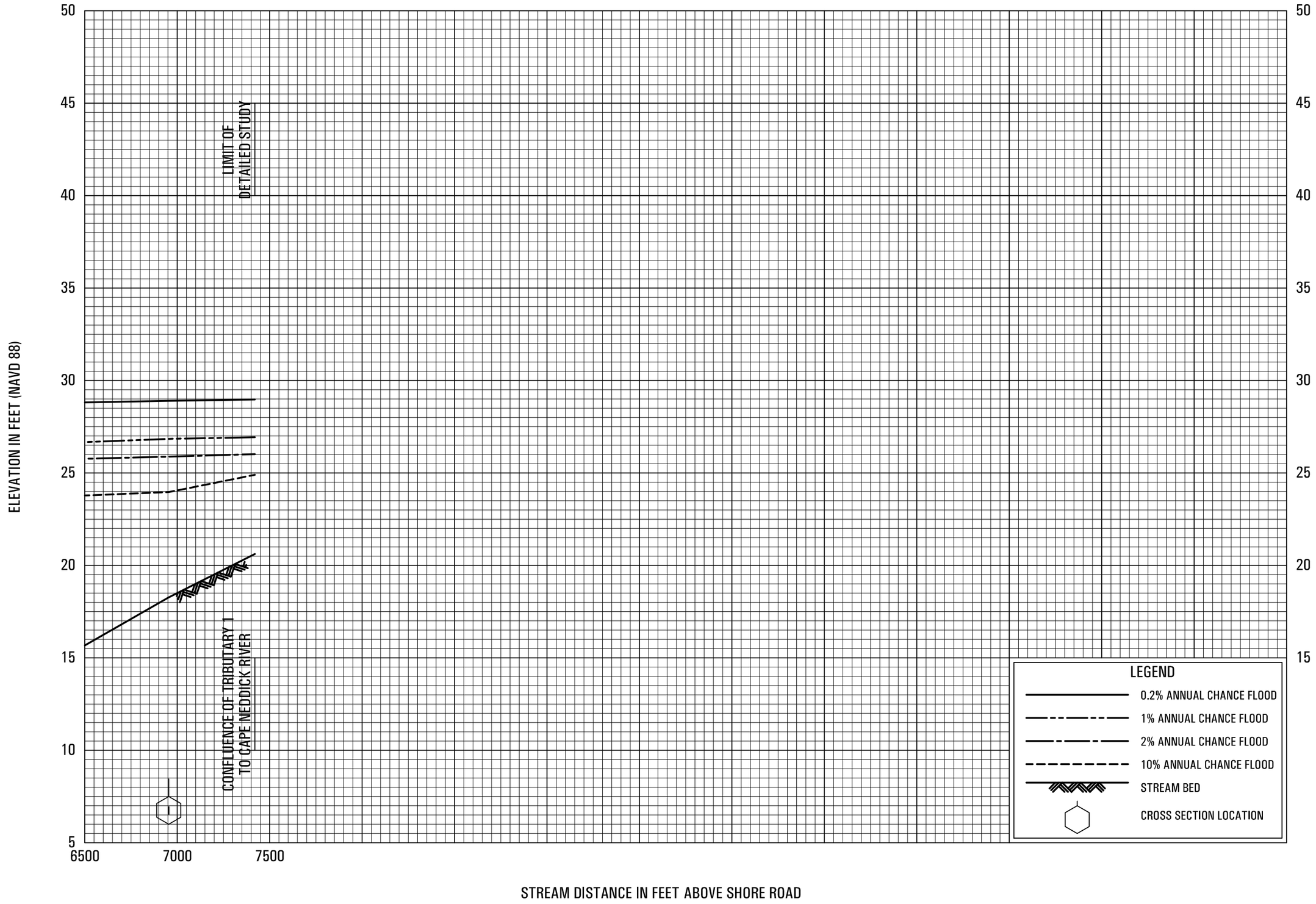
FLOOD PROFILES

CAPE NEDDICK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



FLOOD PROFILES

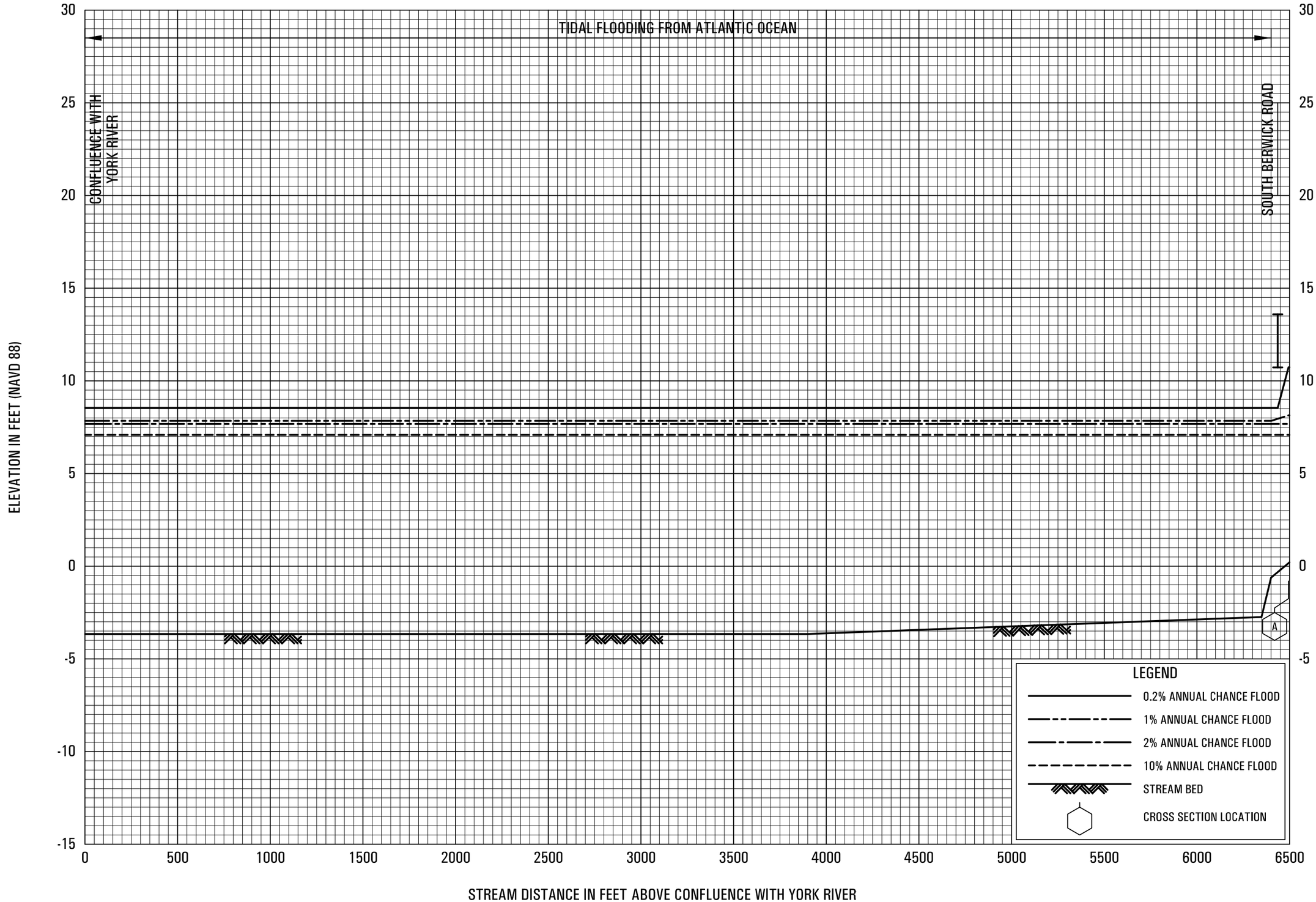
CAPE NEDDICK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

06P



FLOOD PROFILES

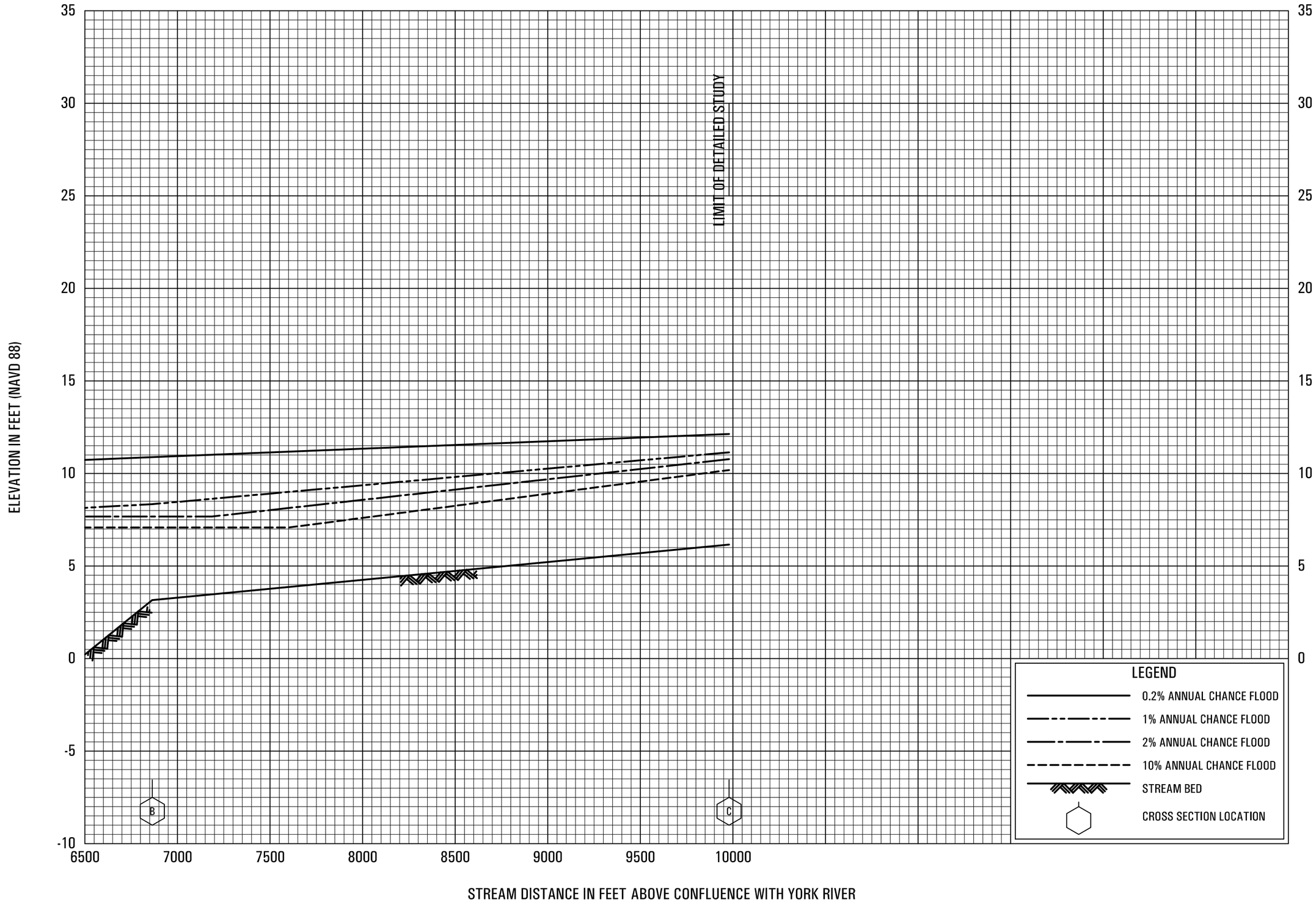
CIDER HILL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

07P



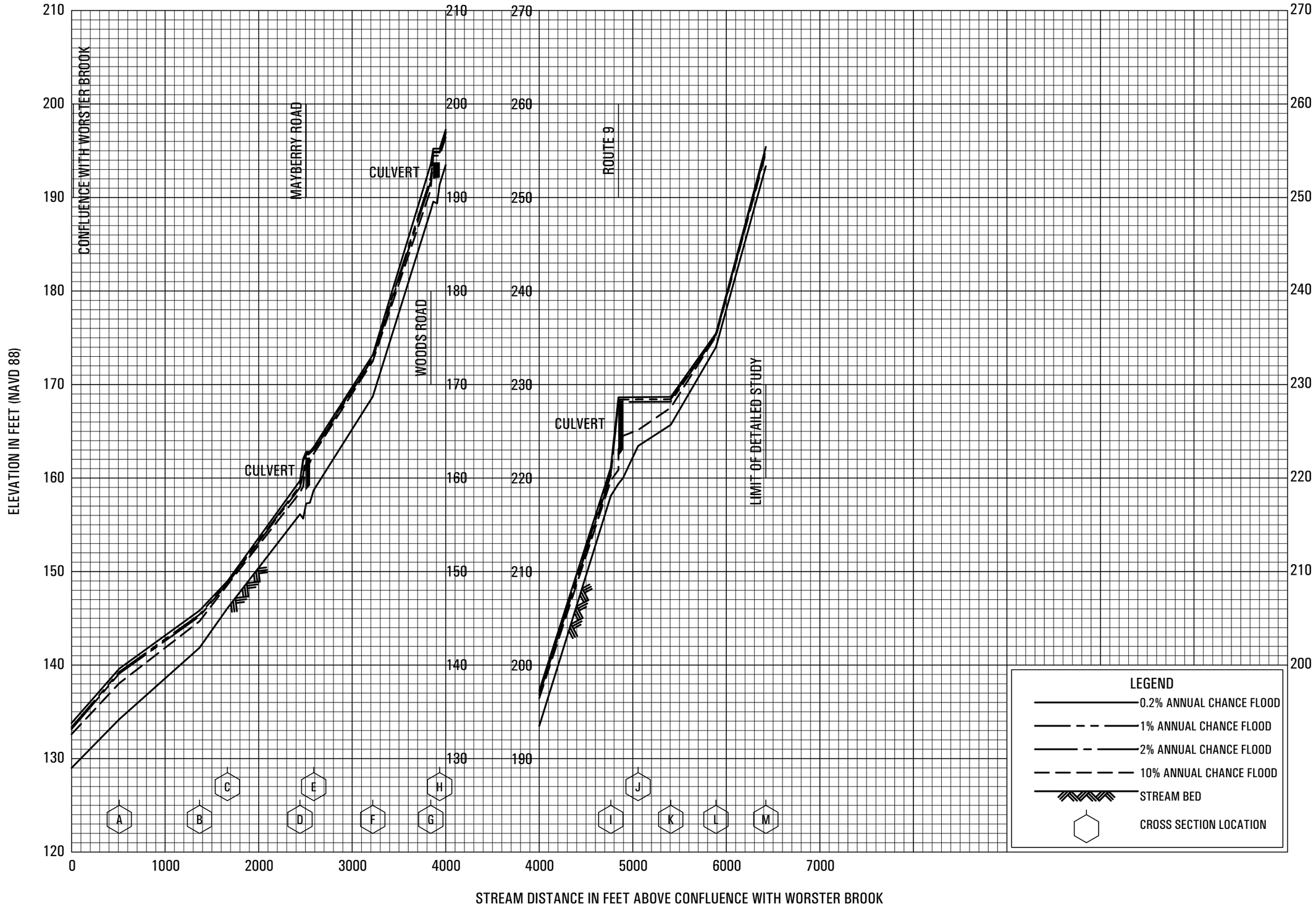
FLOOD PROFILES

CIDER HILL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



FLOOD PROFILES

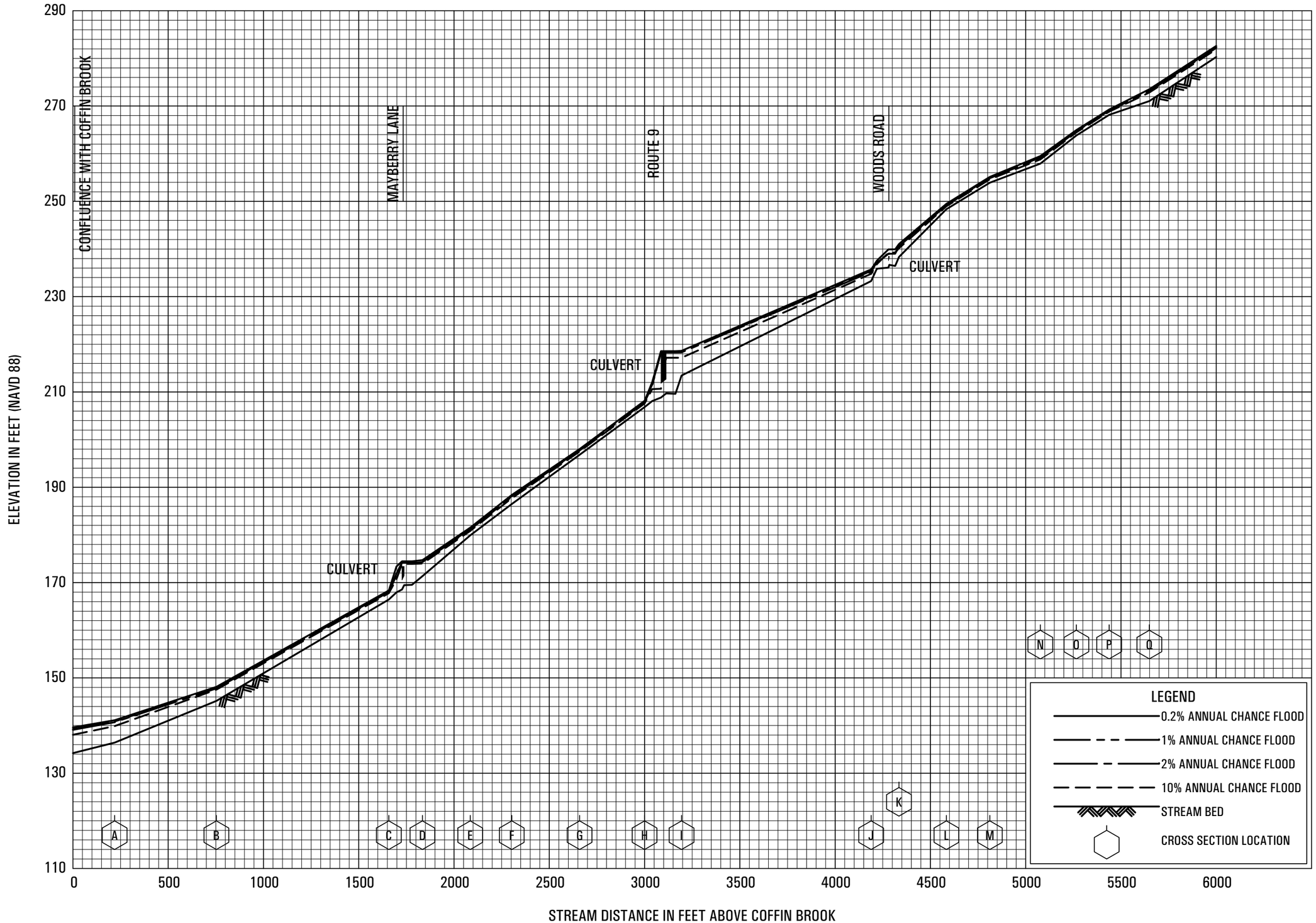
COFFIN BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)

09P



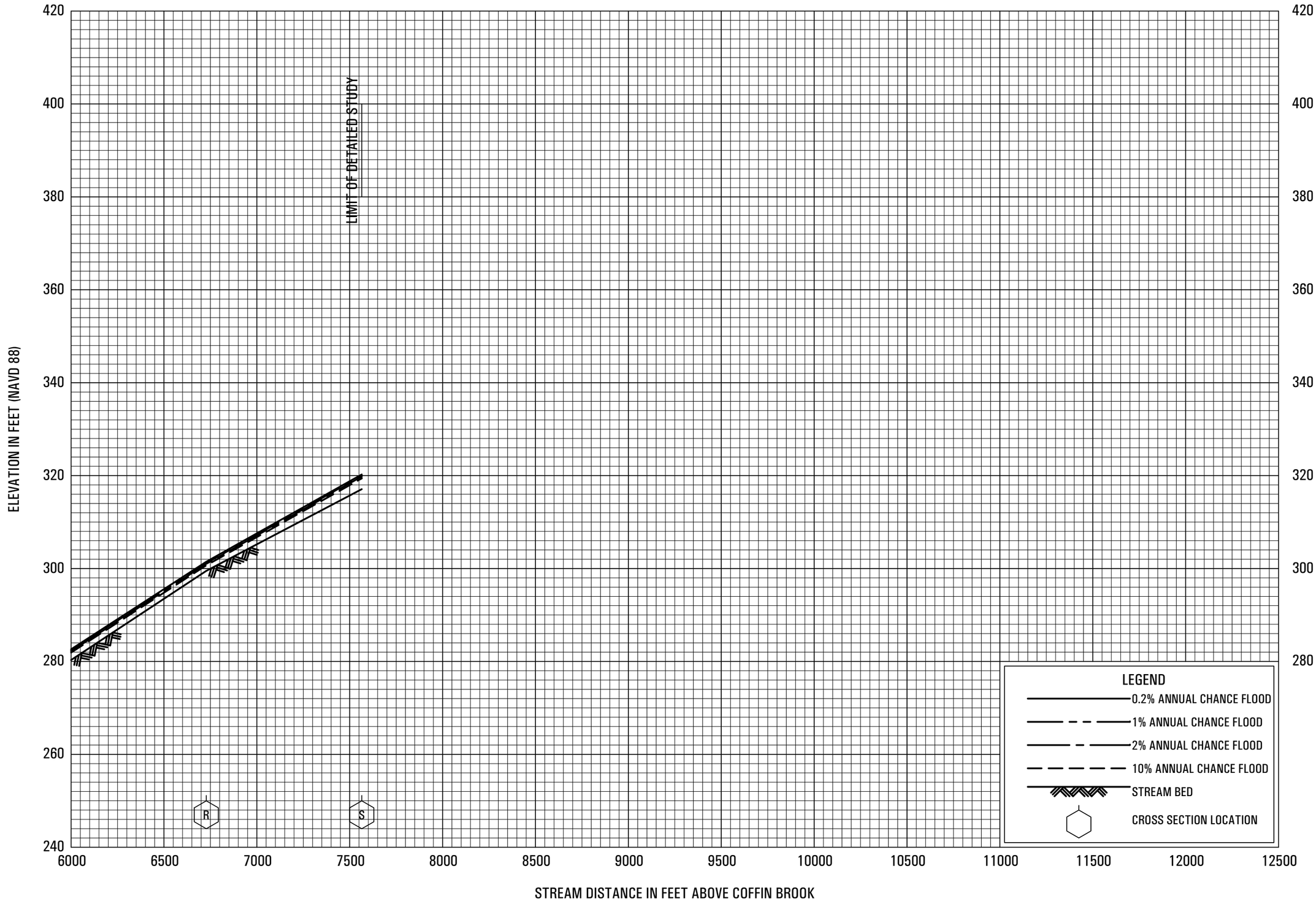
FLOOD PROFILES

COFFIN BROOK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



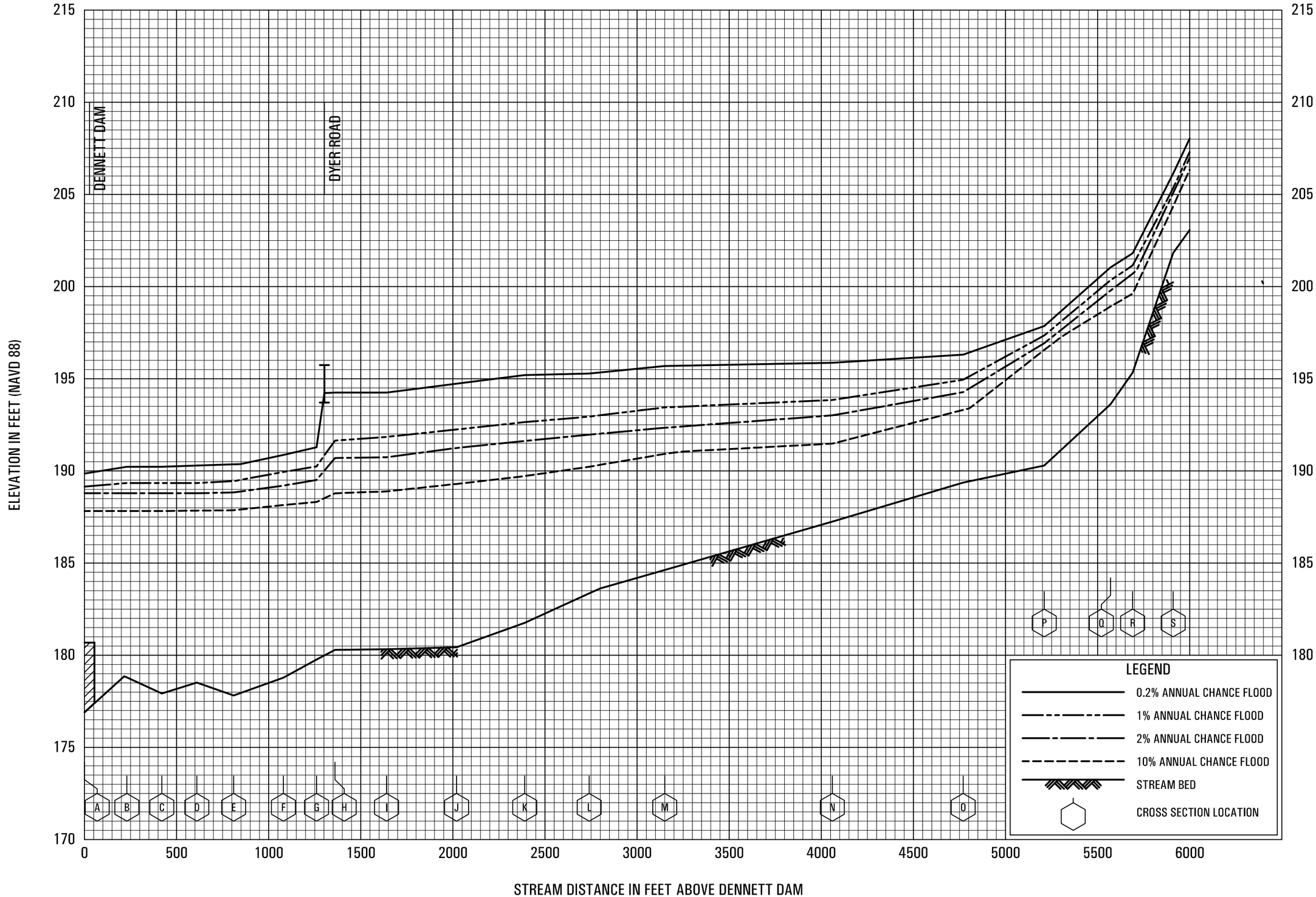
FLOOD PROFILES

COFFIN BROOK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



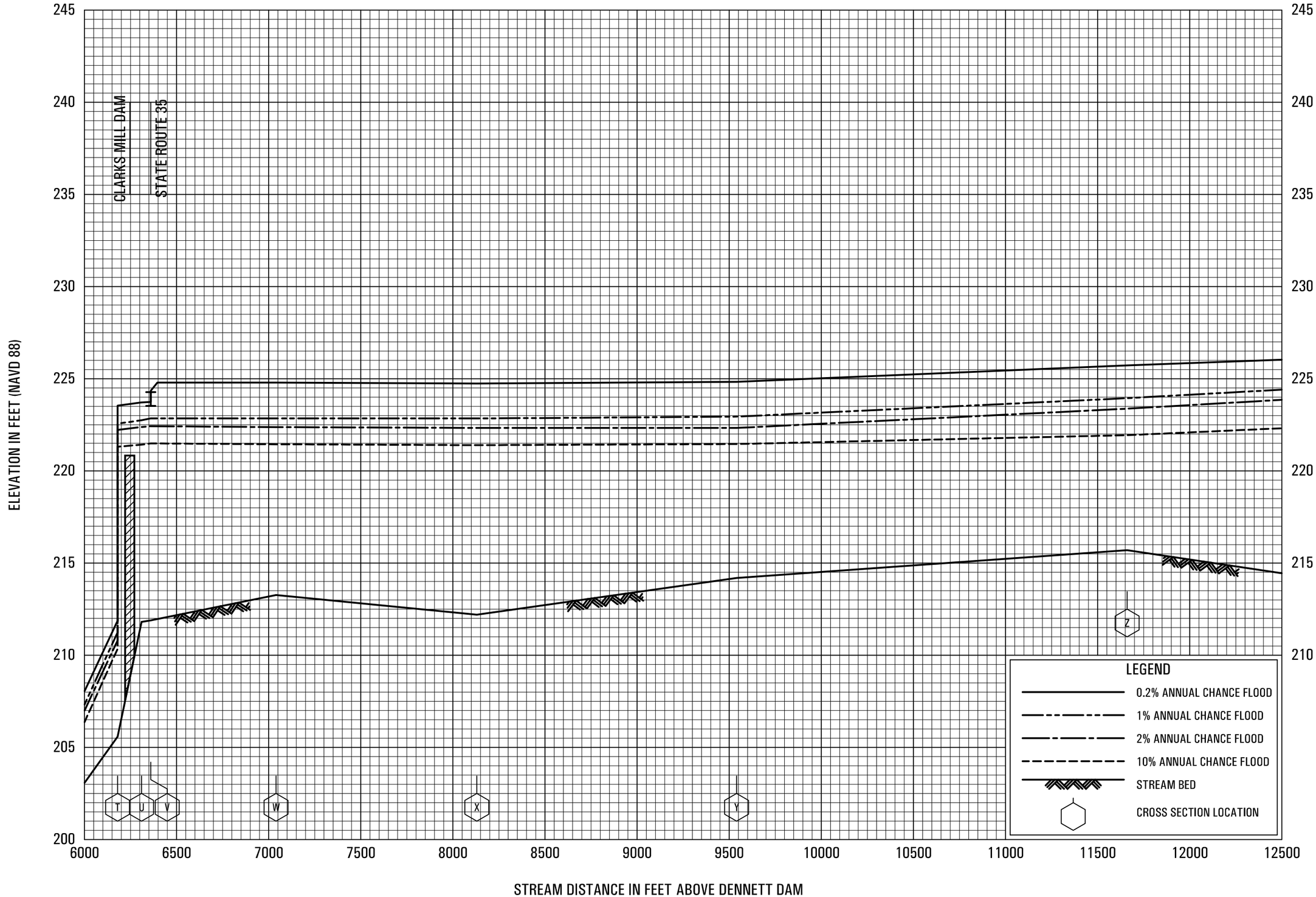
FLOOD PROFILES

COOKS BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



FLOOD PROFILES

COOKS BROOK

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YORK COUNTY, ME

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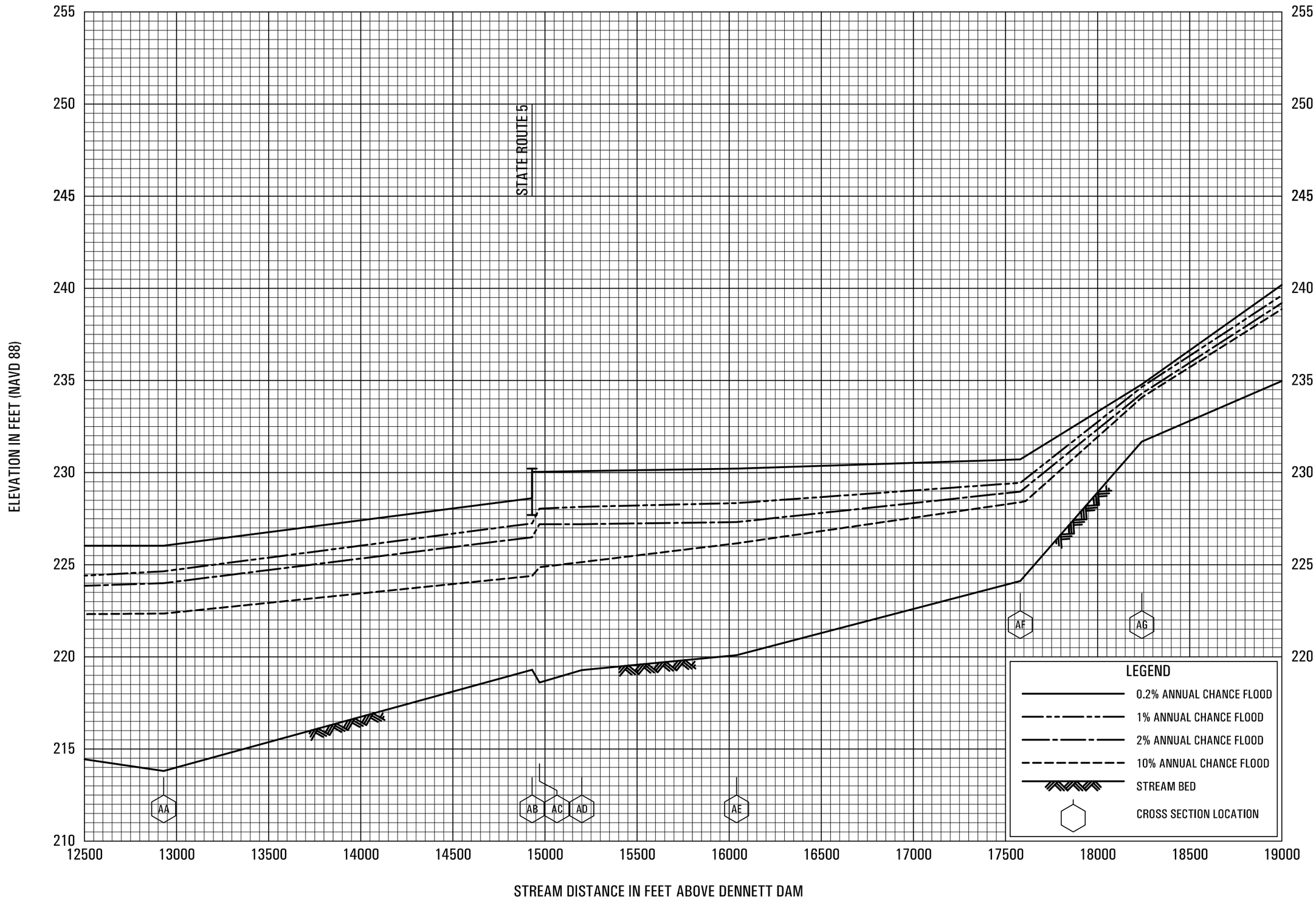

FLOOD PROFILES

COOKS BROOK

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YORK COUNTY, ME

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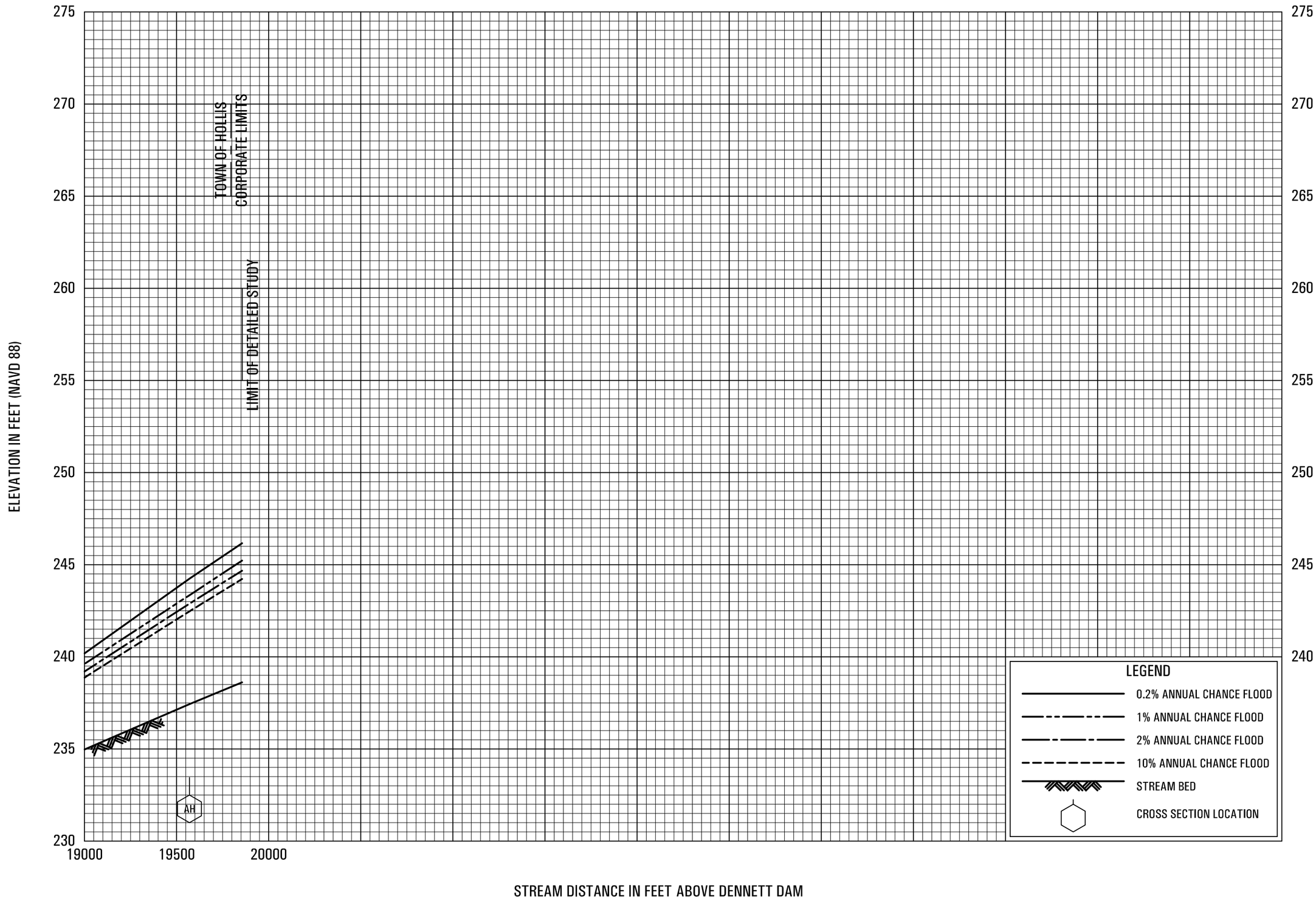

FLOOD PROFILES

COOKS BROOK

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YORK COUNTY, ME

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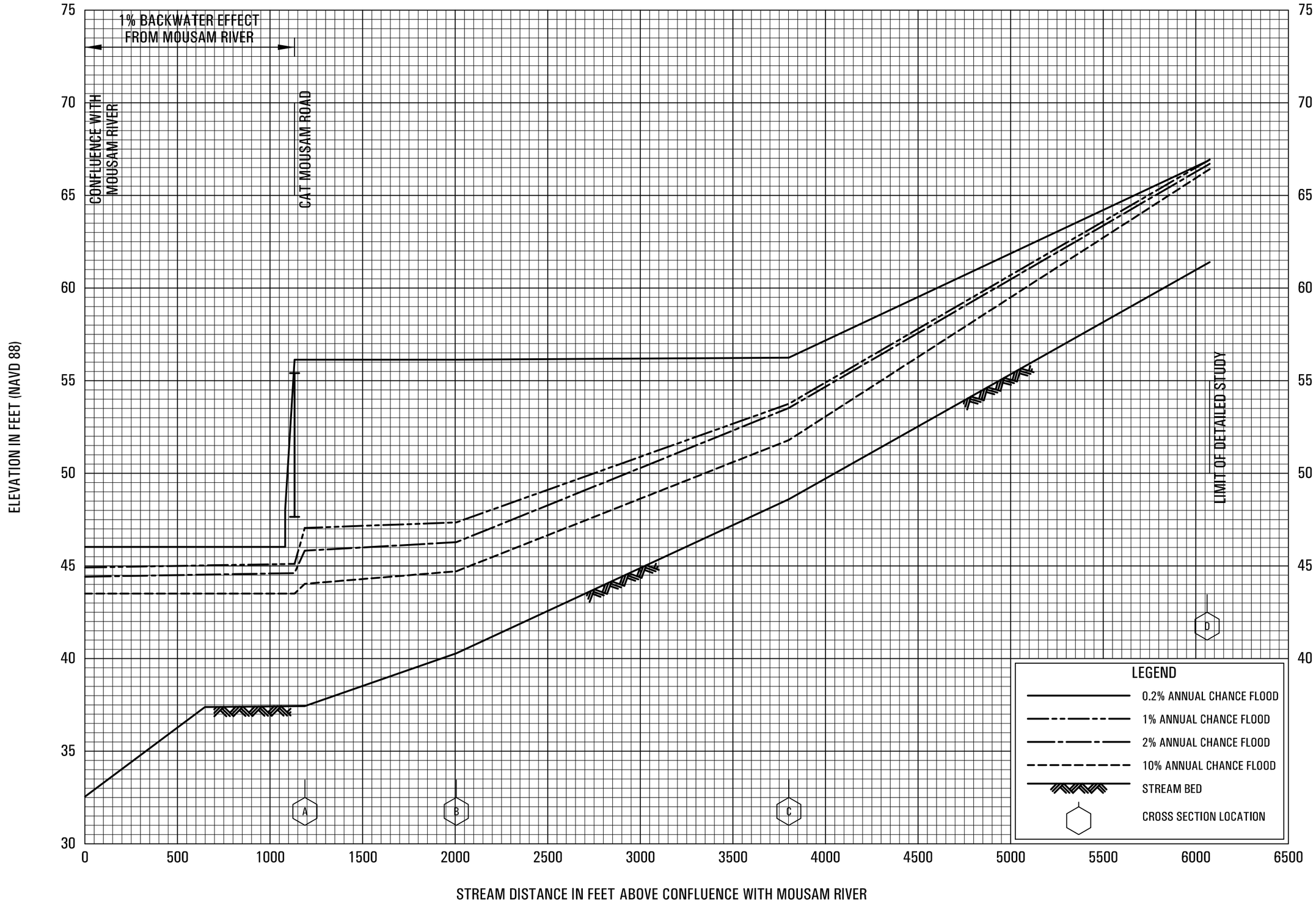


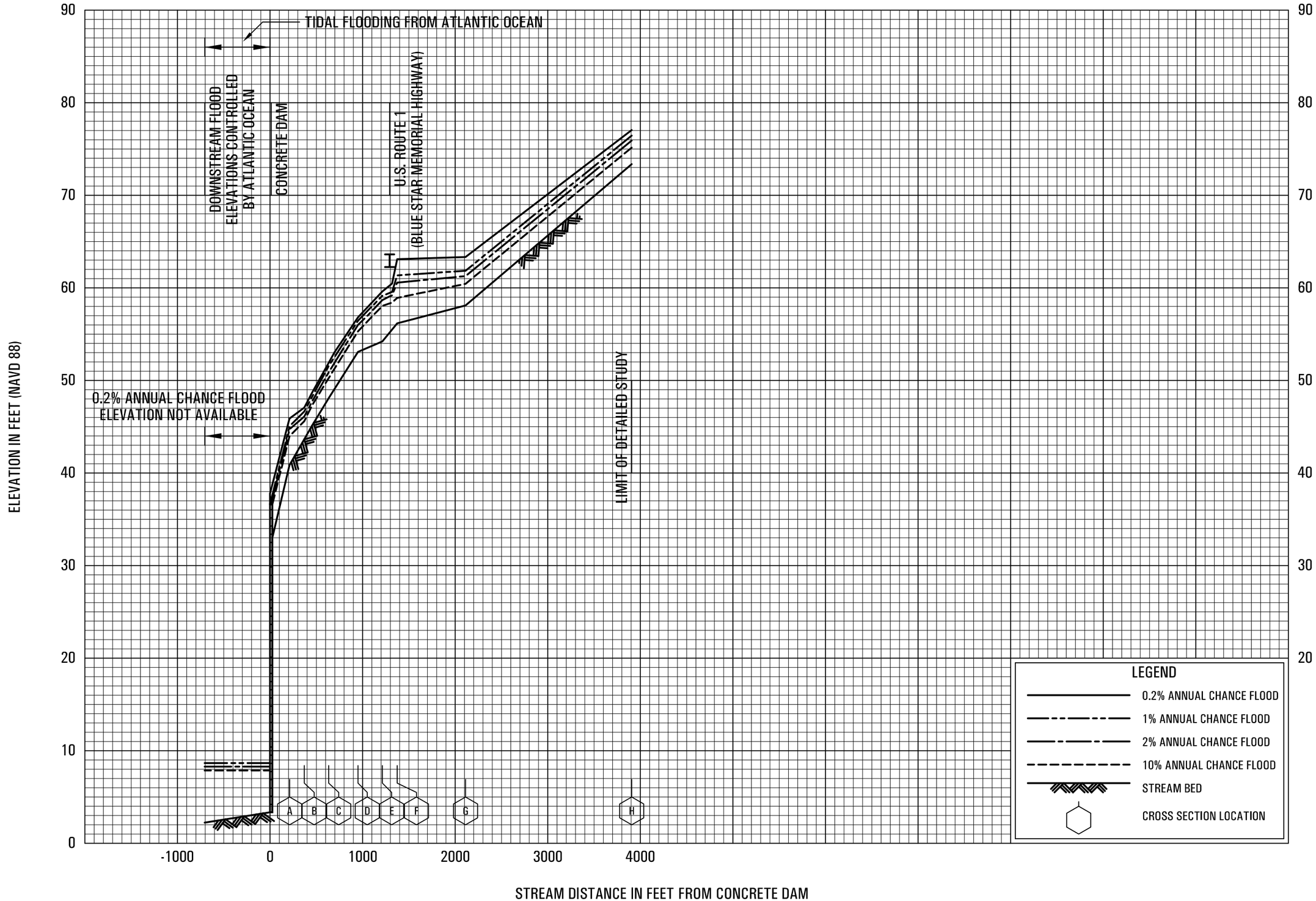
FLOOD PROFILES

DAY BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



FLOOD PROFILES

DEPOT BROOK

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YORK COUNTY, ME

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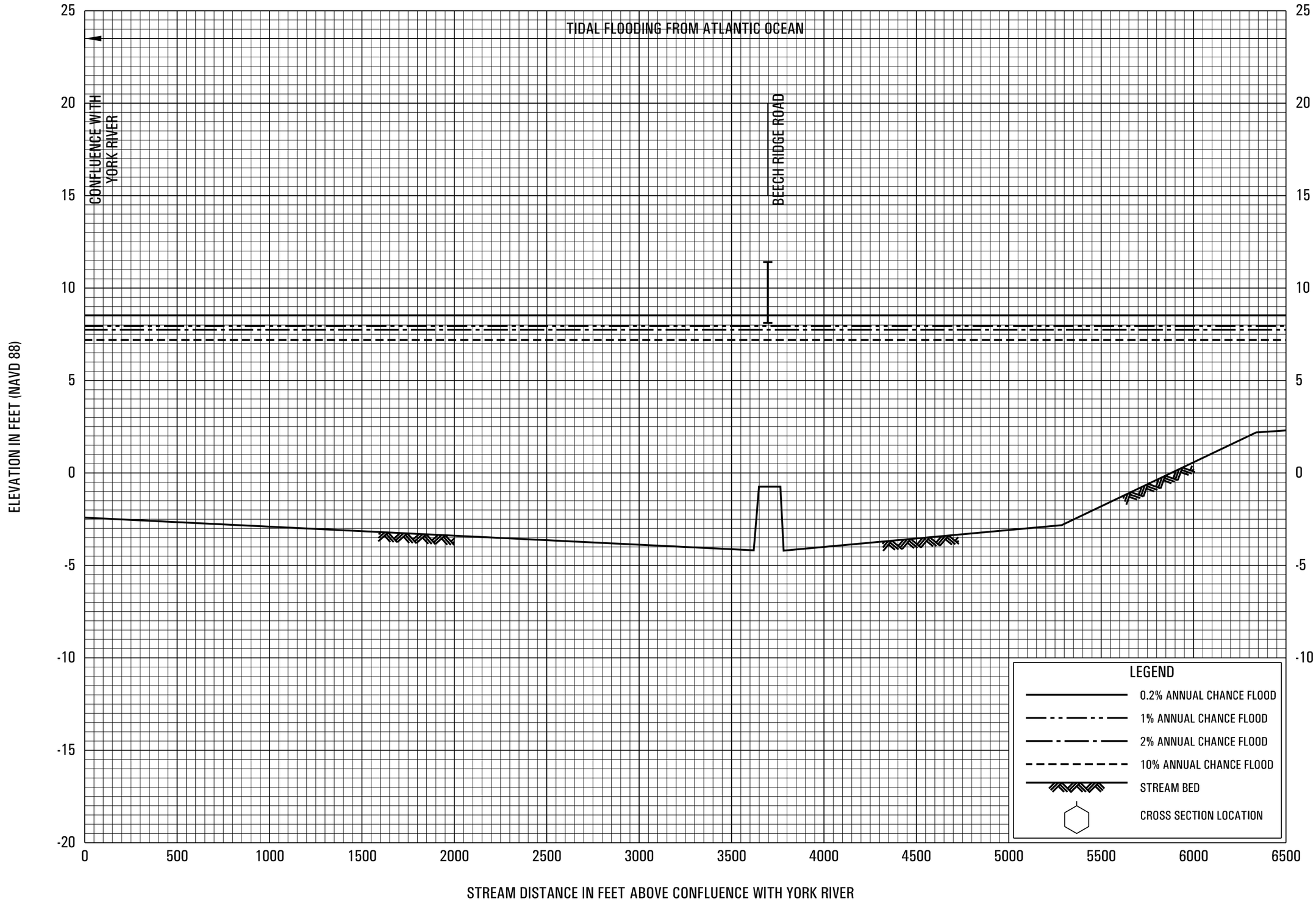


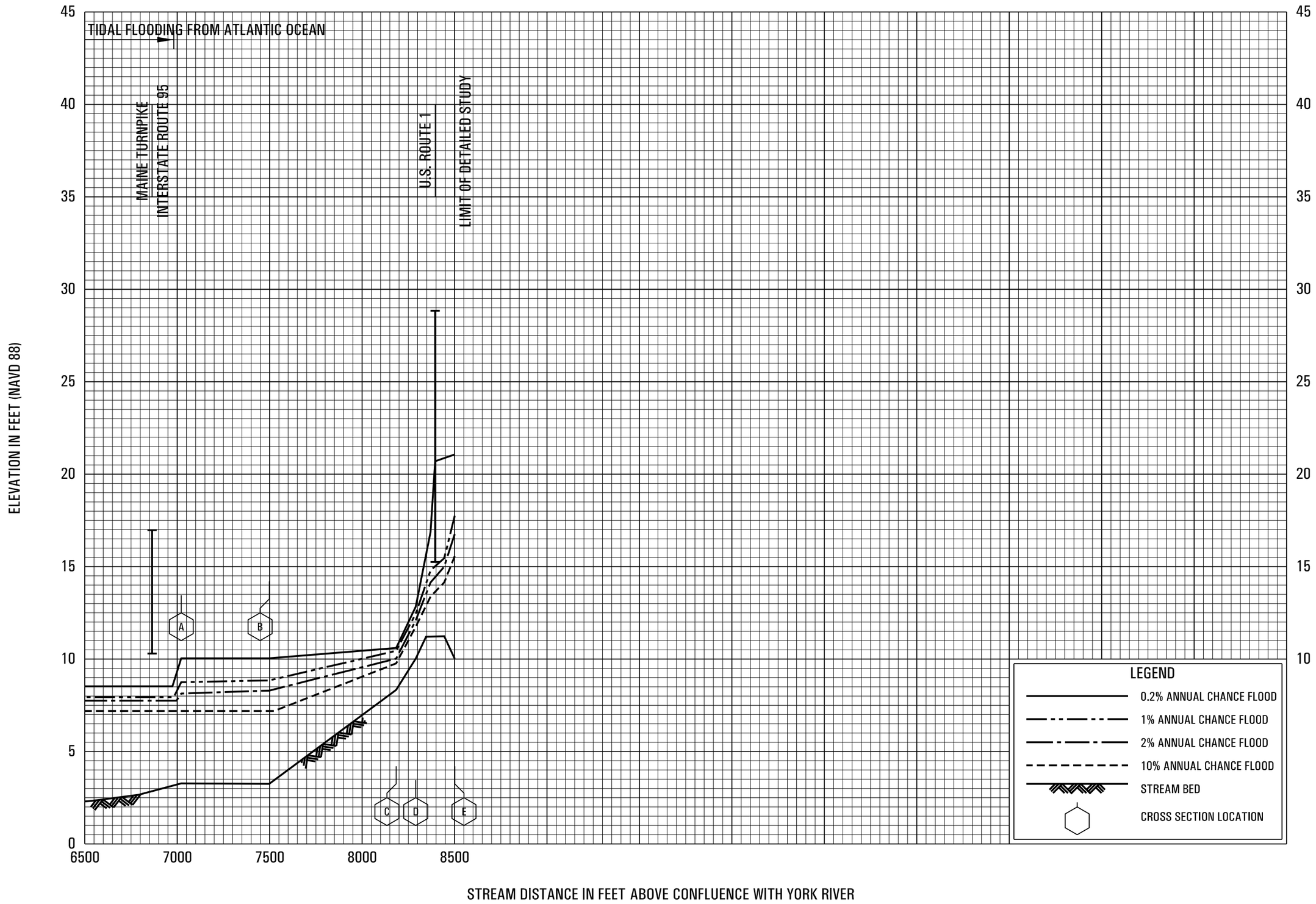
FLOOD PROFILES

DOLLY GORDON BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



FLOOD PROFILES

DOLLY GORDON BROOK

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YORK COUNTY, ME

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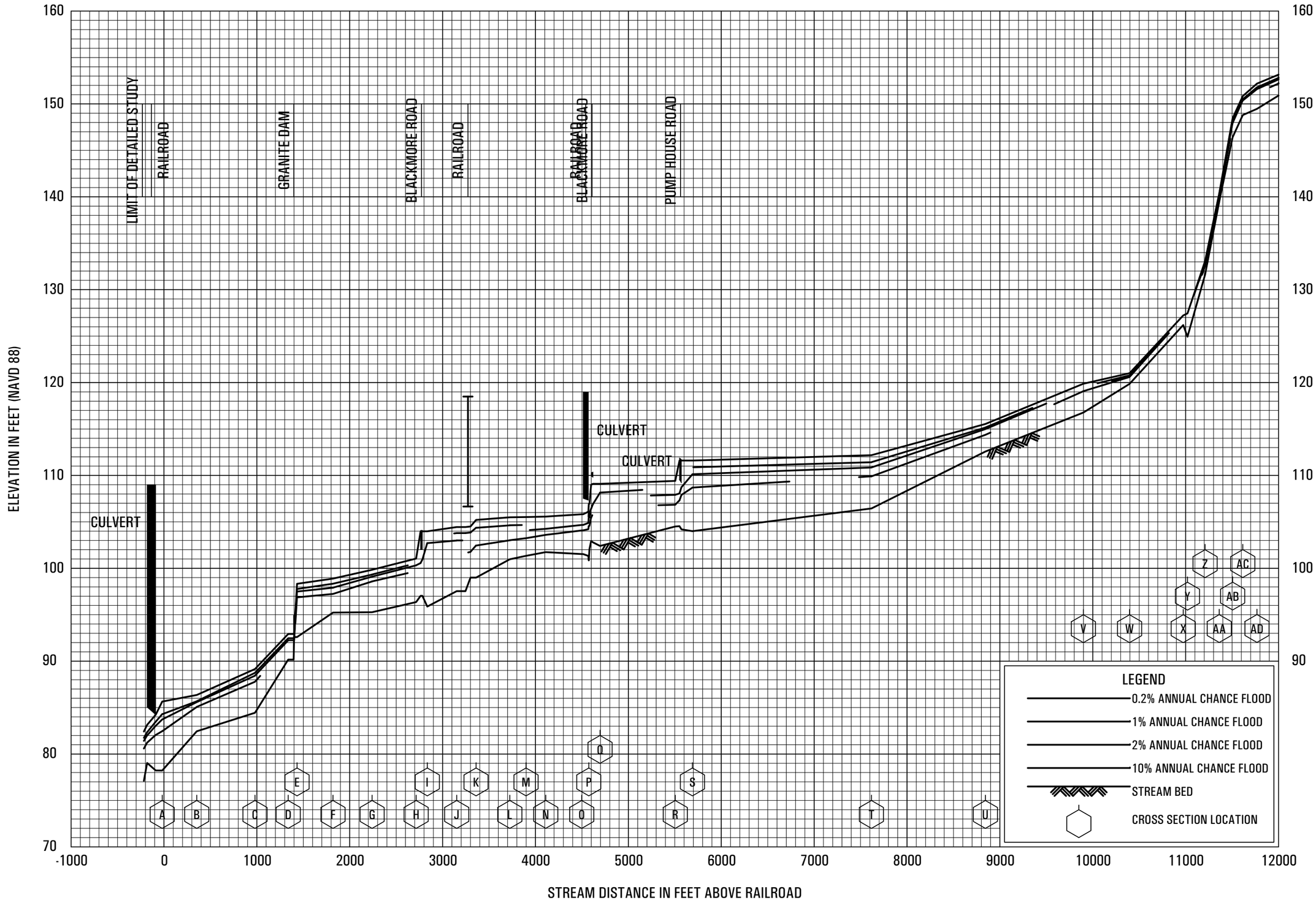

FLOOD PROFILES

DRISCOLL BROOK

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YORK COUNTY, ME

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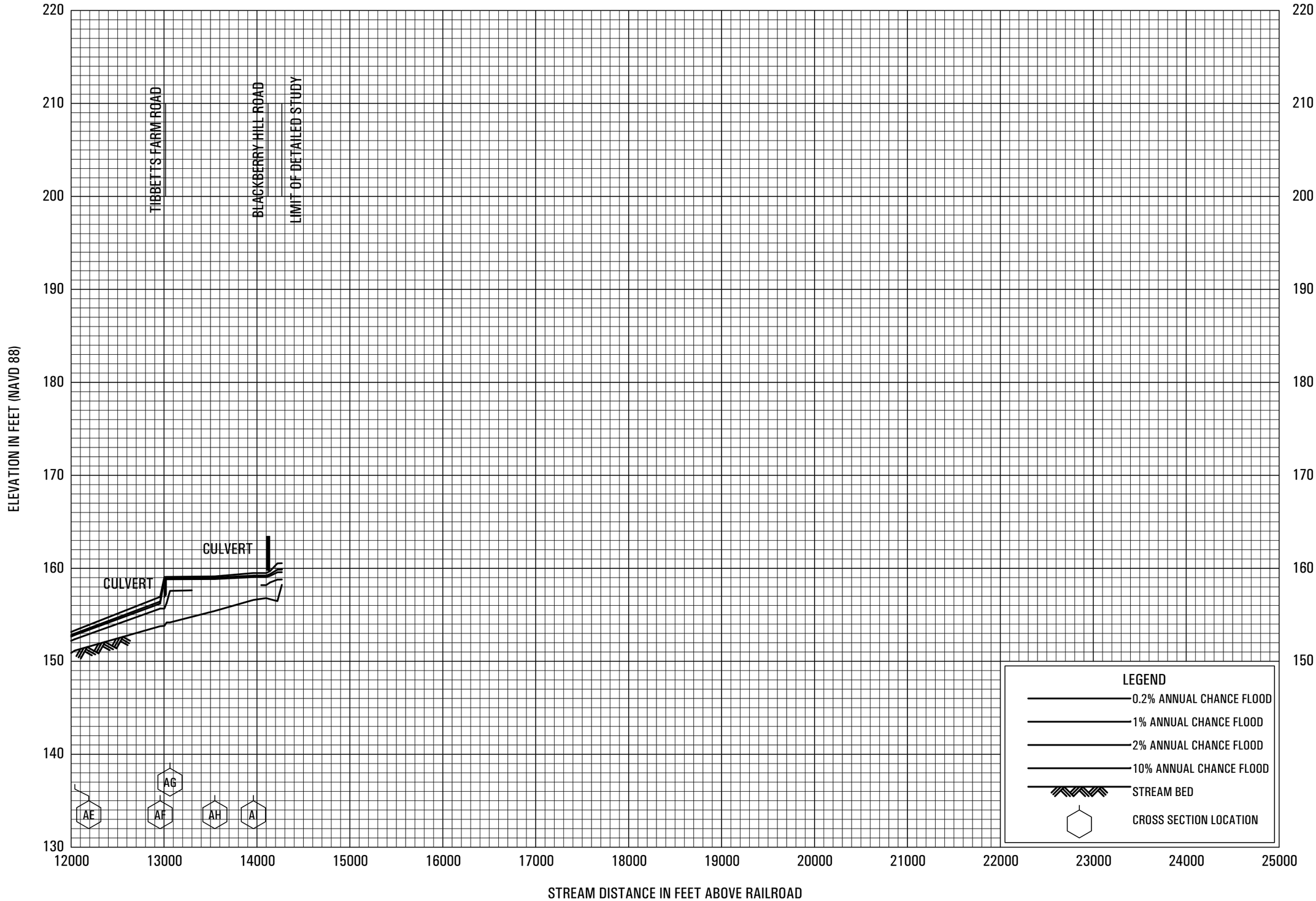

FLOOD PROFILES

DRISCOLL BROOK

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YORK COUNTY, ME

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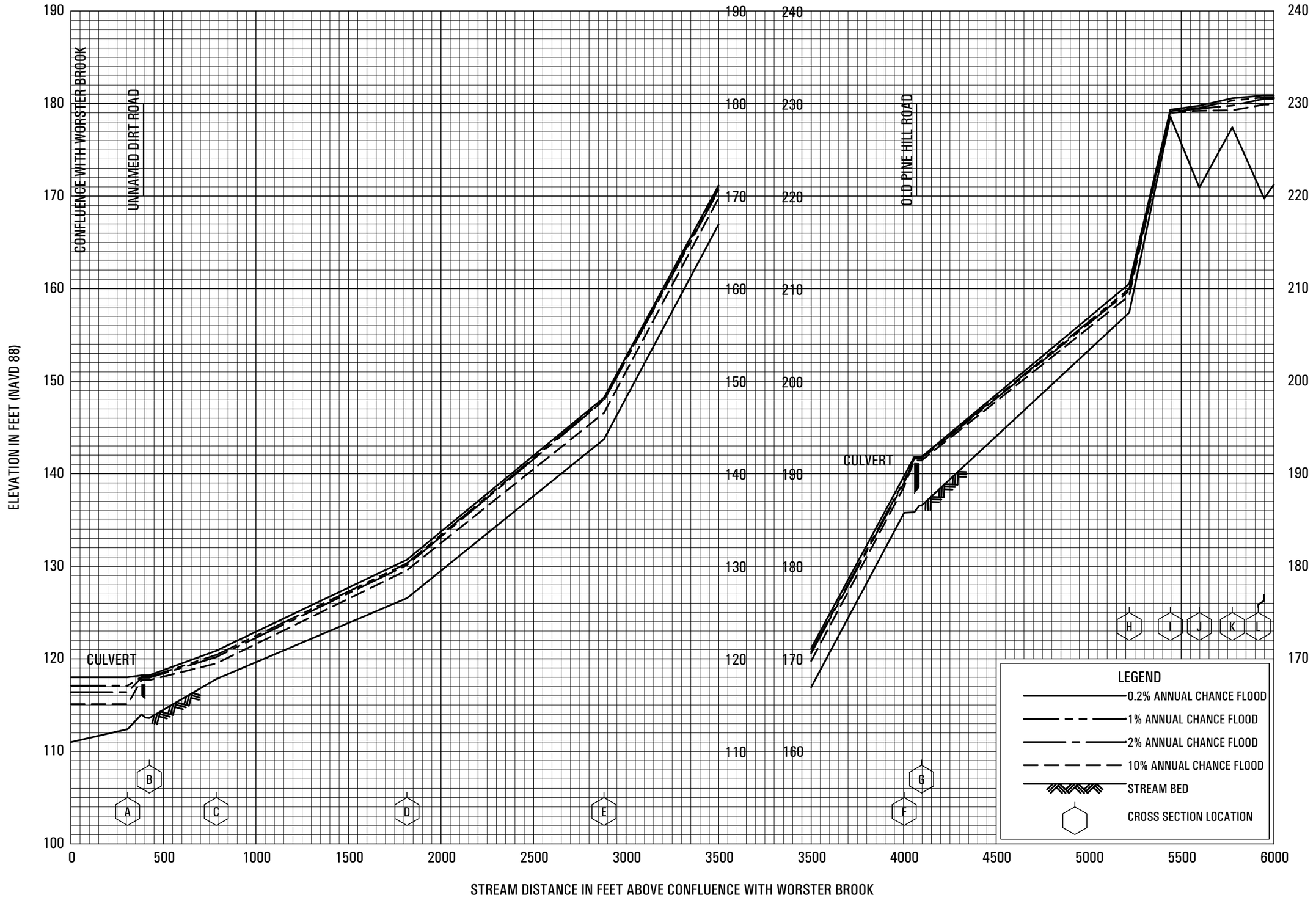

FLOOD PROFILES

FERGUSON BROOK

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YORK COUNTY, ME

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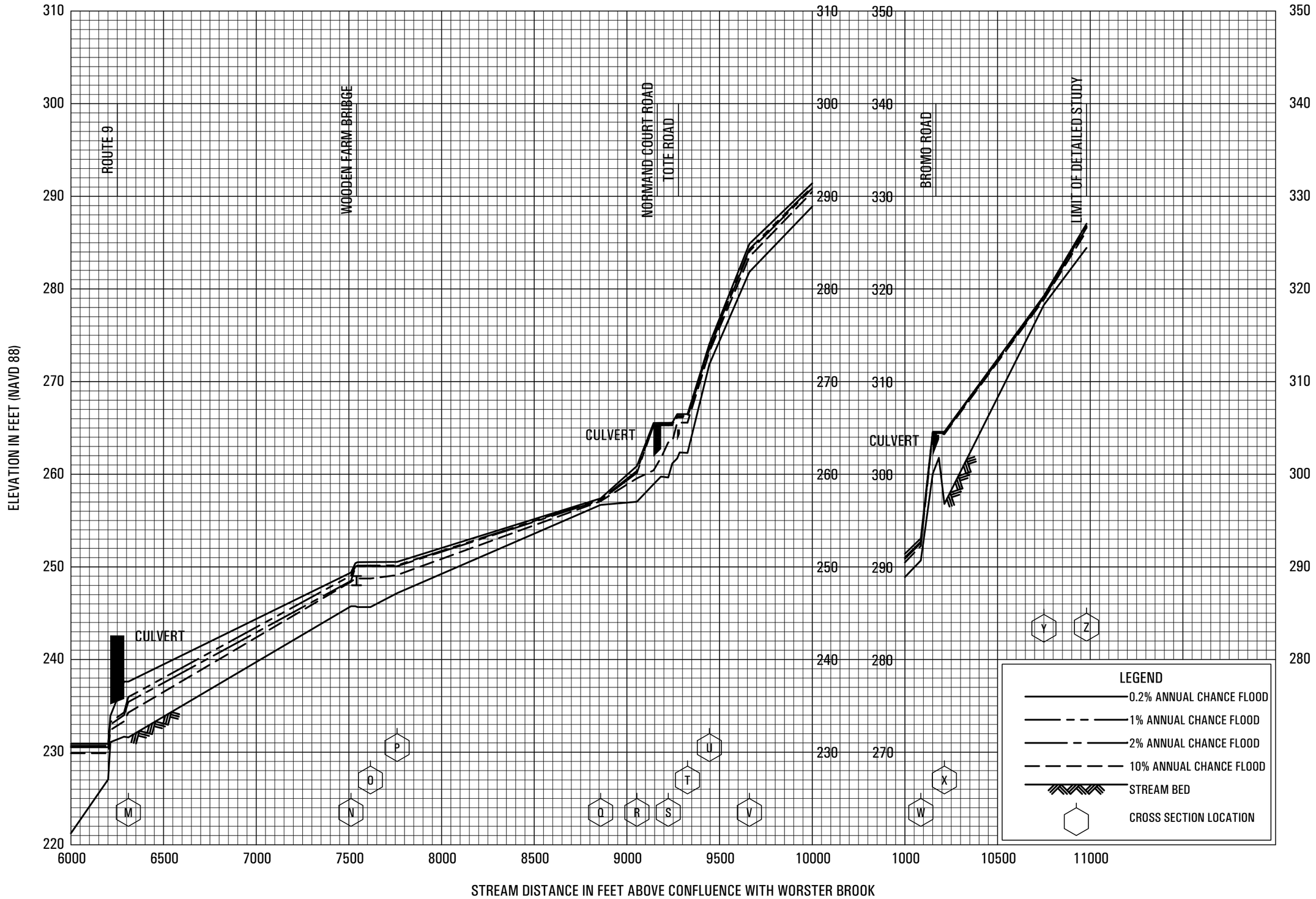

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FERGUSON BROOK

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YORK COUNTY, ME

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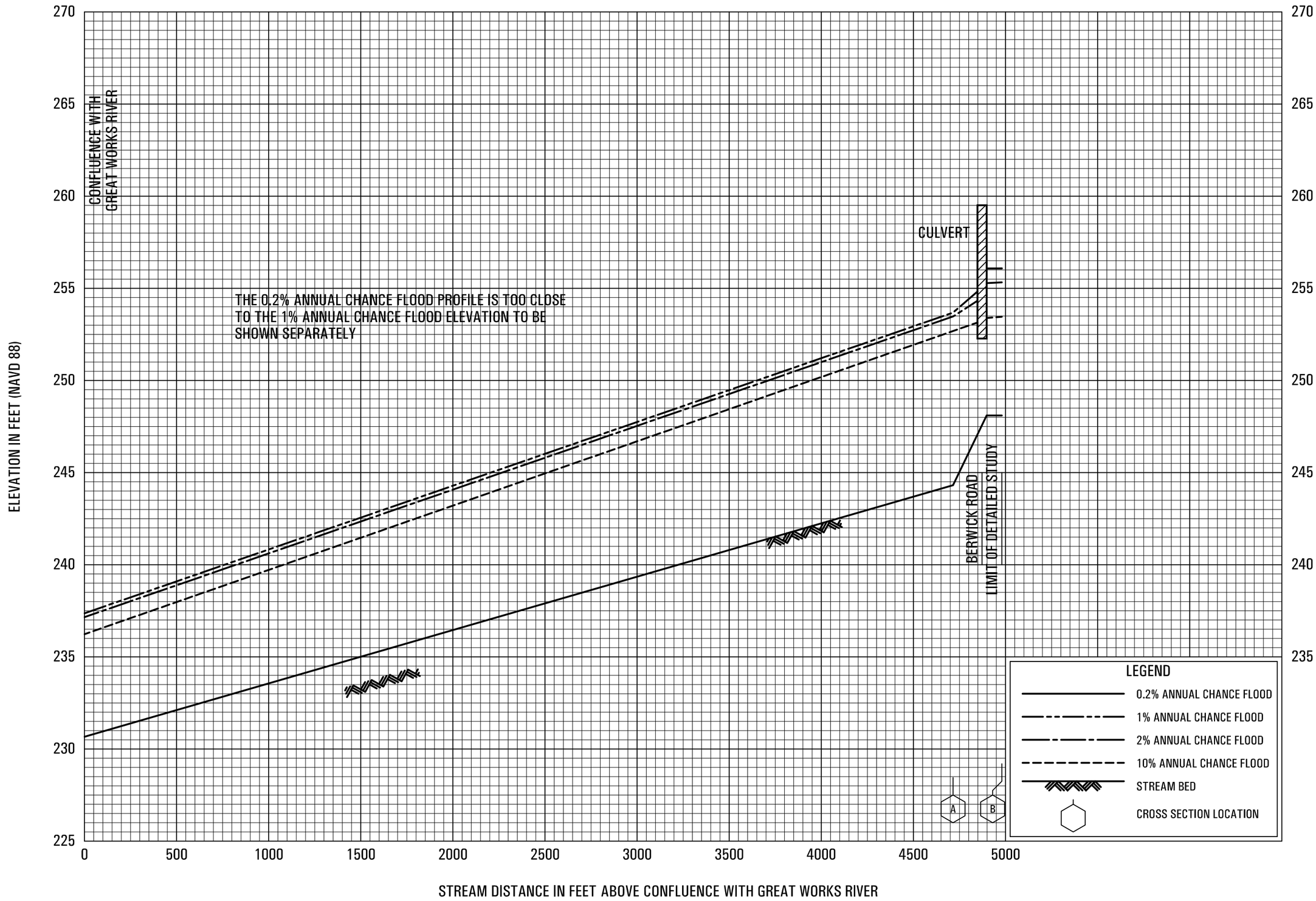

FLOOD PROFILES

GOODALL BROOK

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YORK COUNTY, ME

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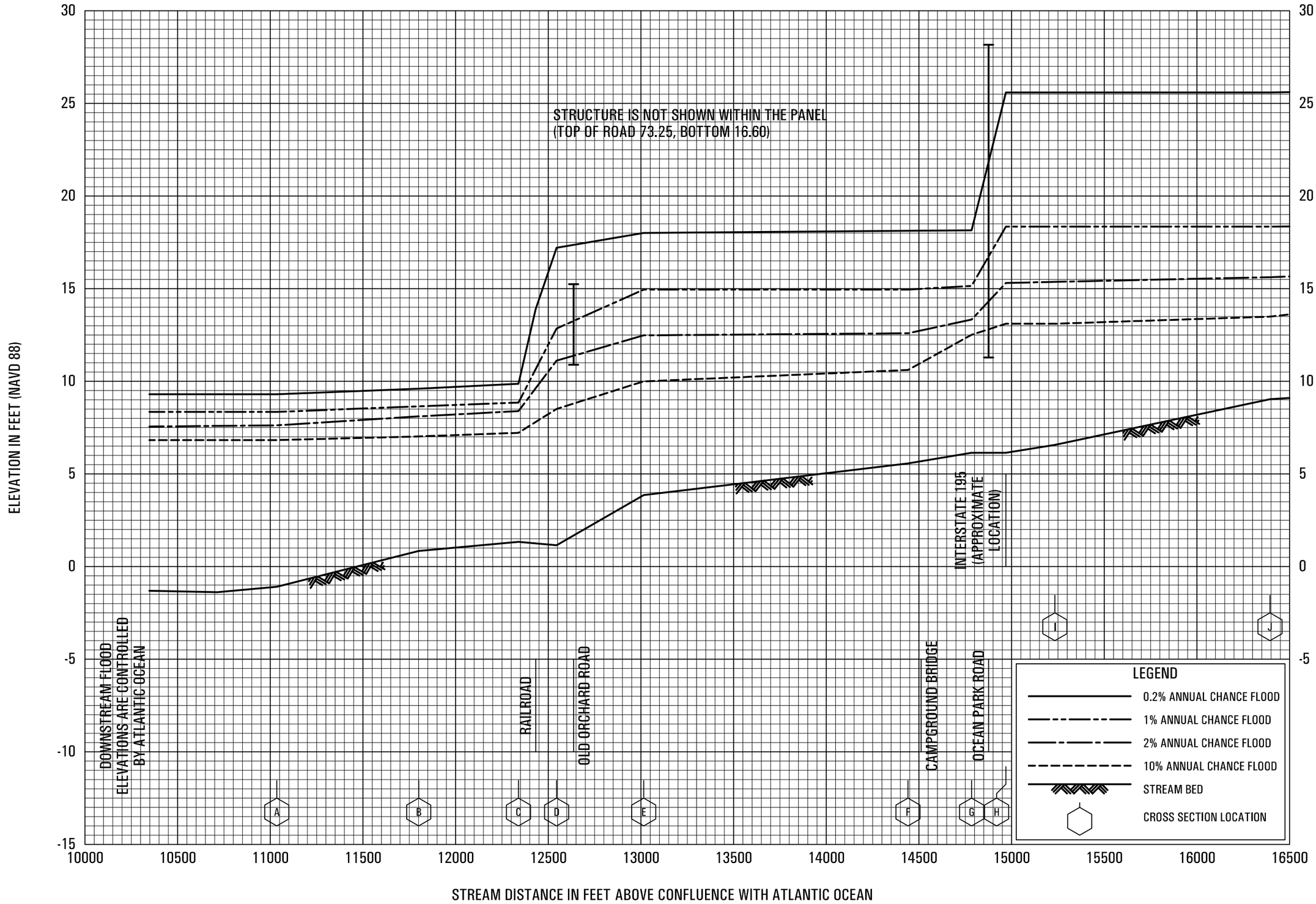


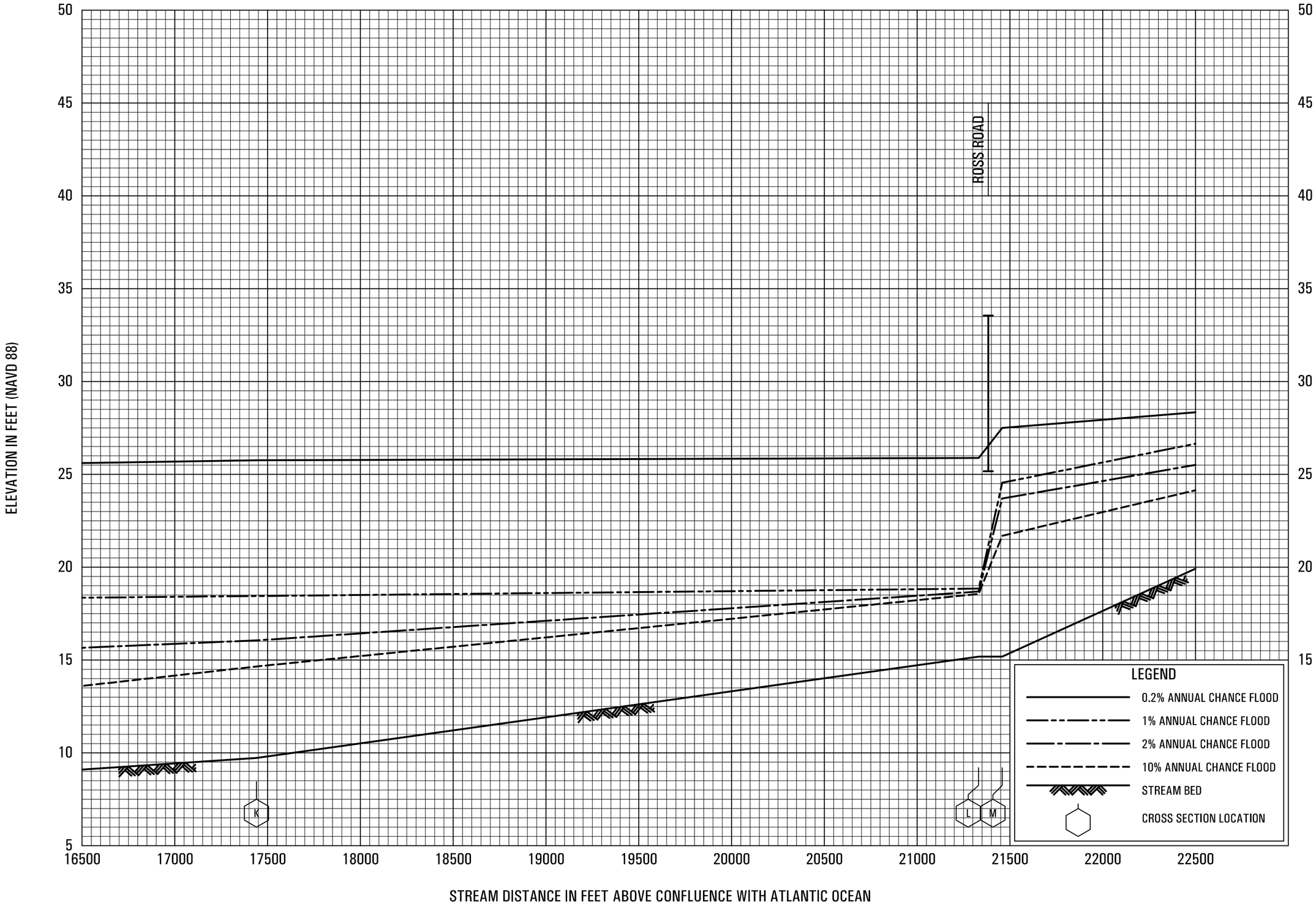
FLOOD PROFILES

GOOSEFARE BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



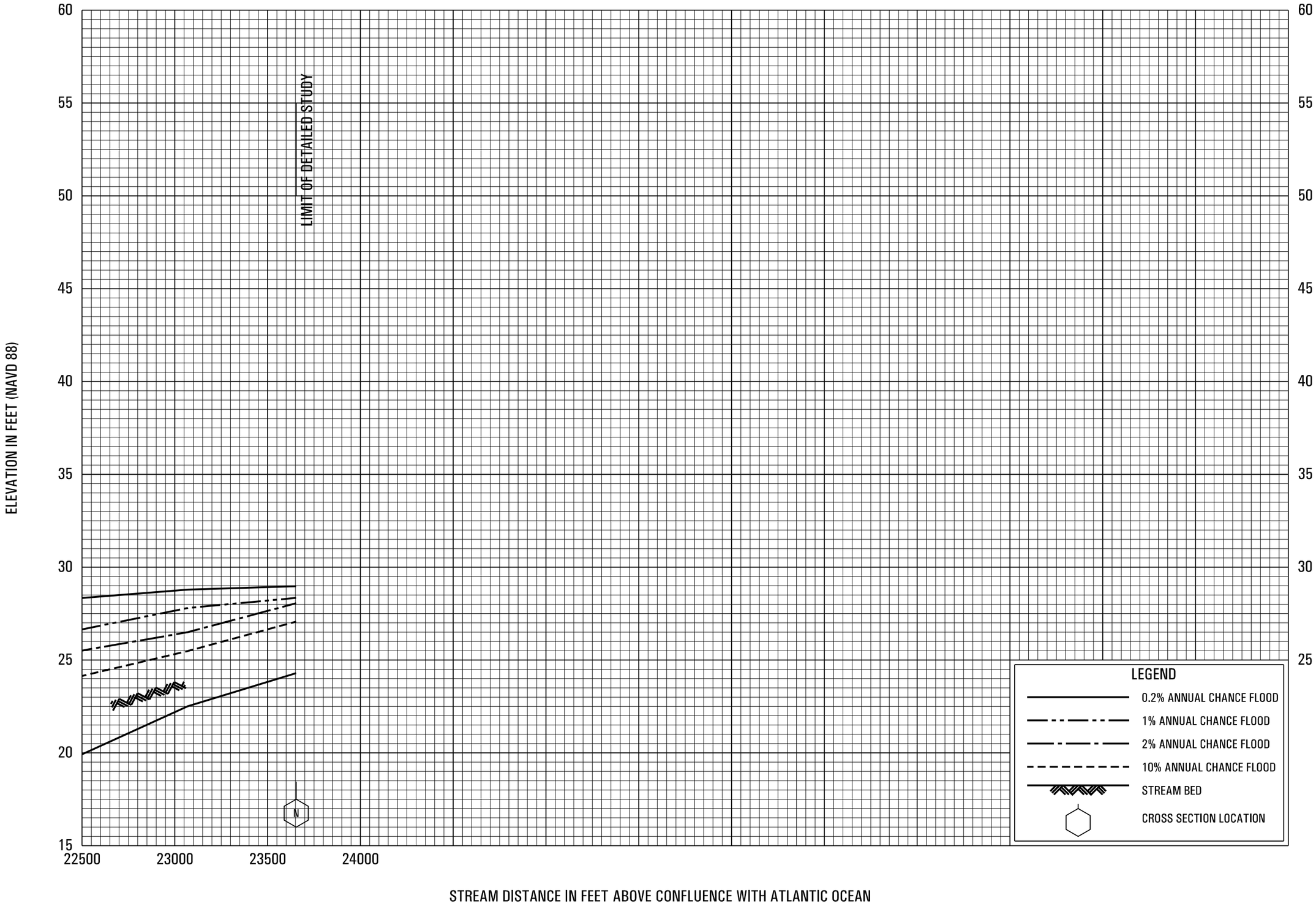
FLOOD PROFILES

GOOSEFARE BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



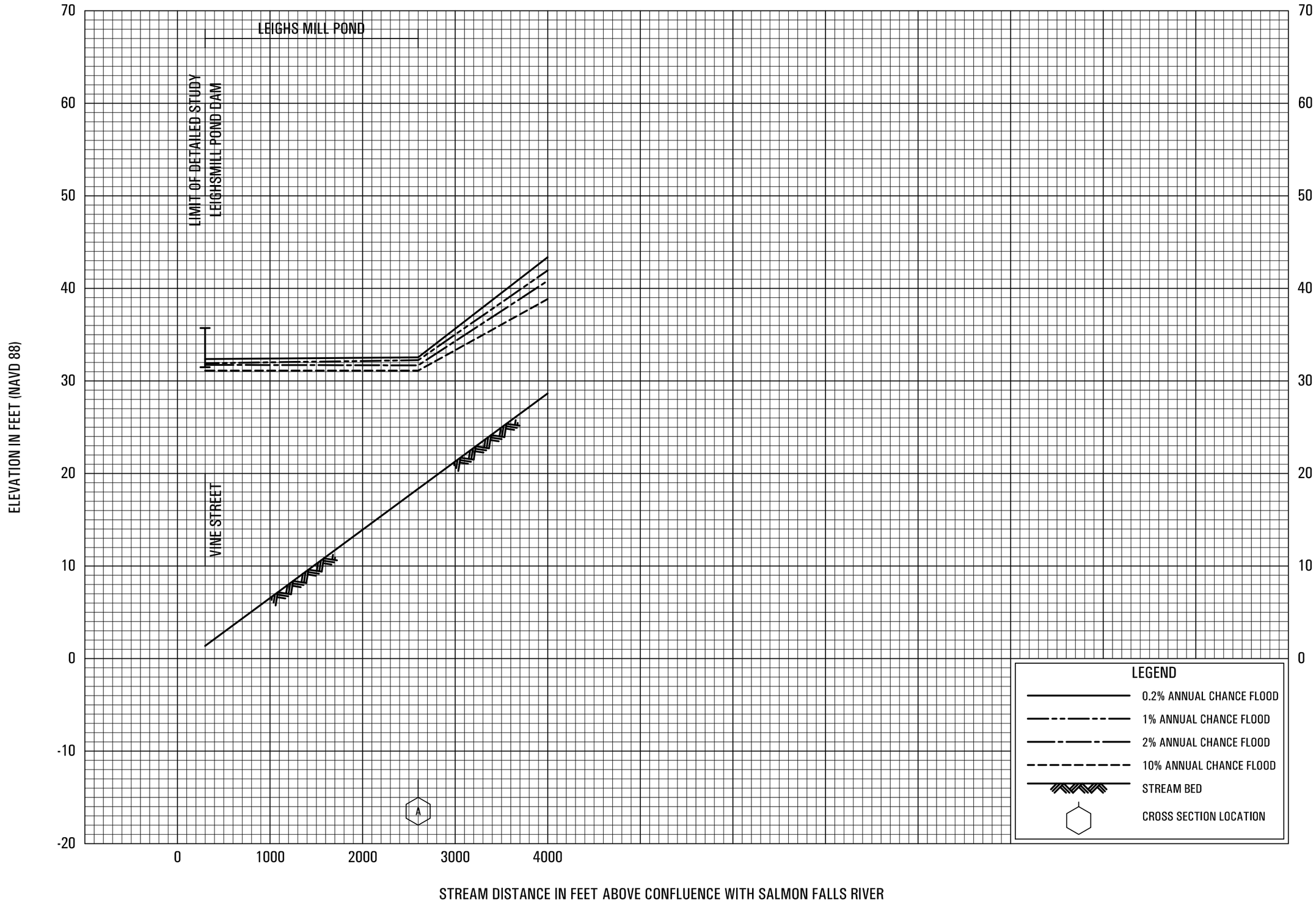
FLOOD PROFILES

GOOSEFARE BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



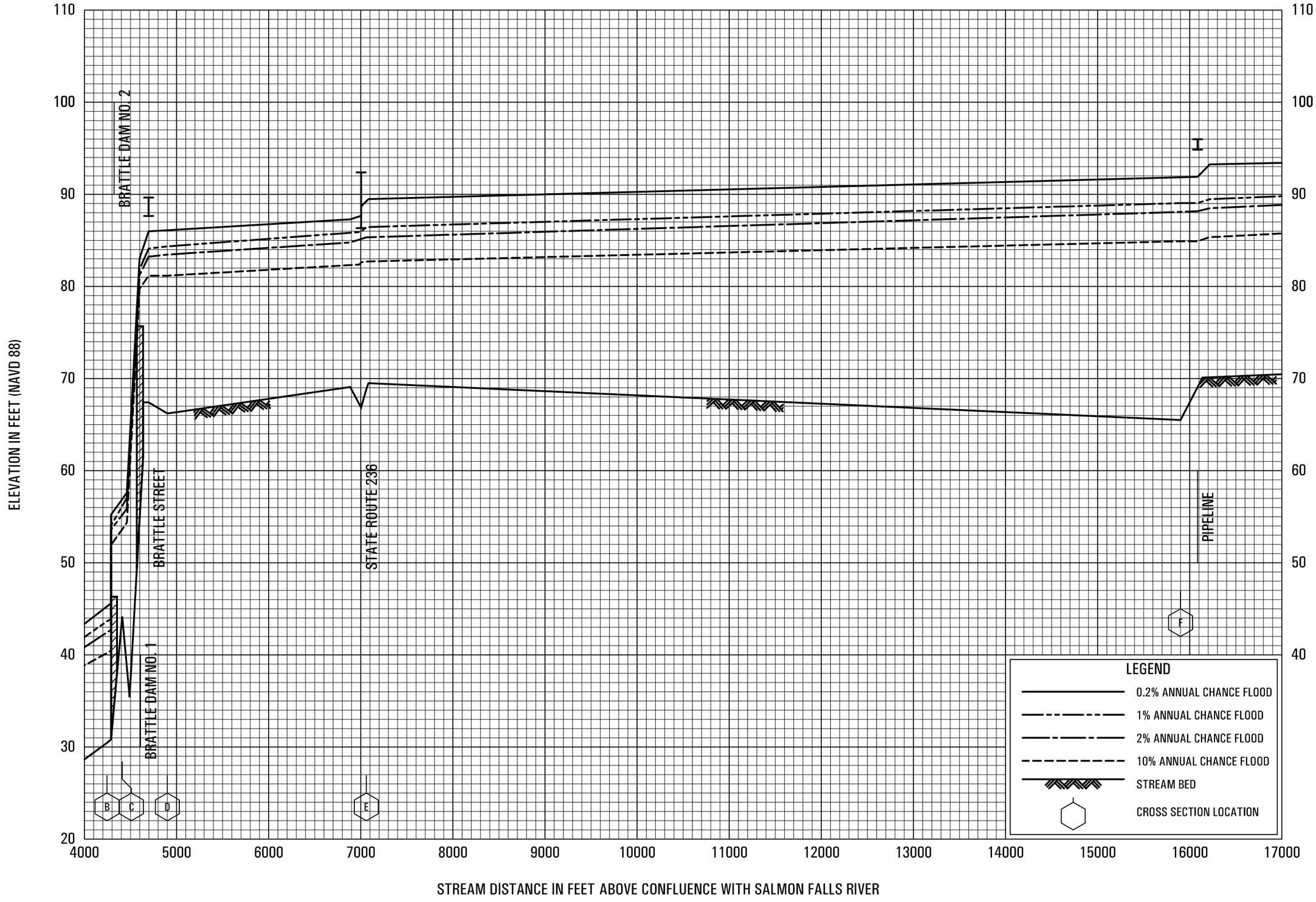
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



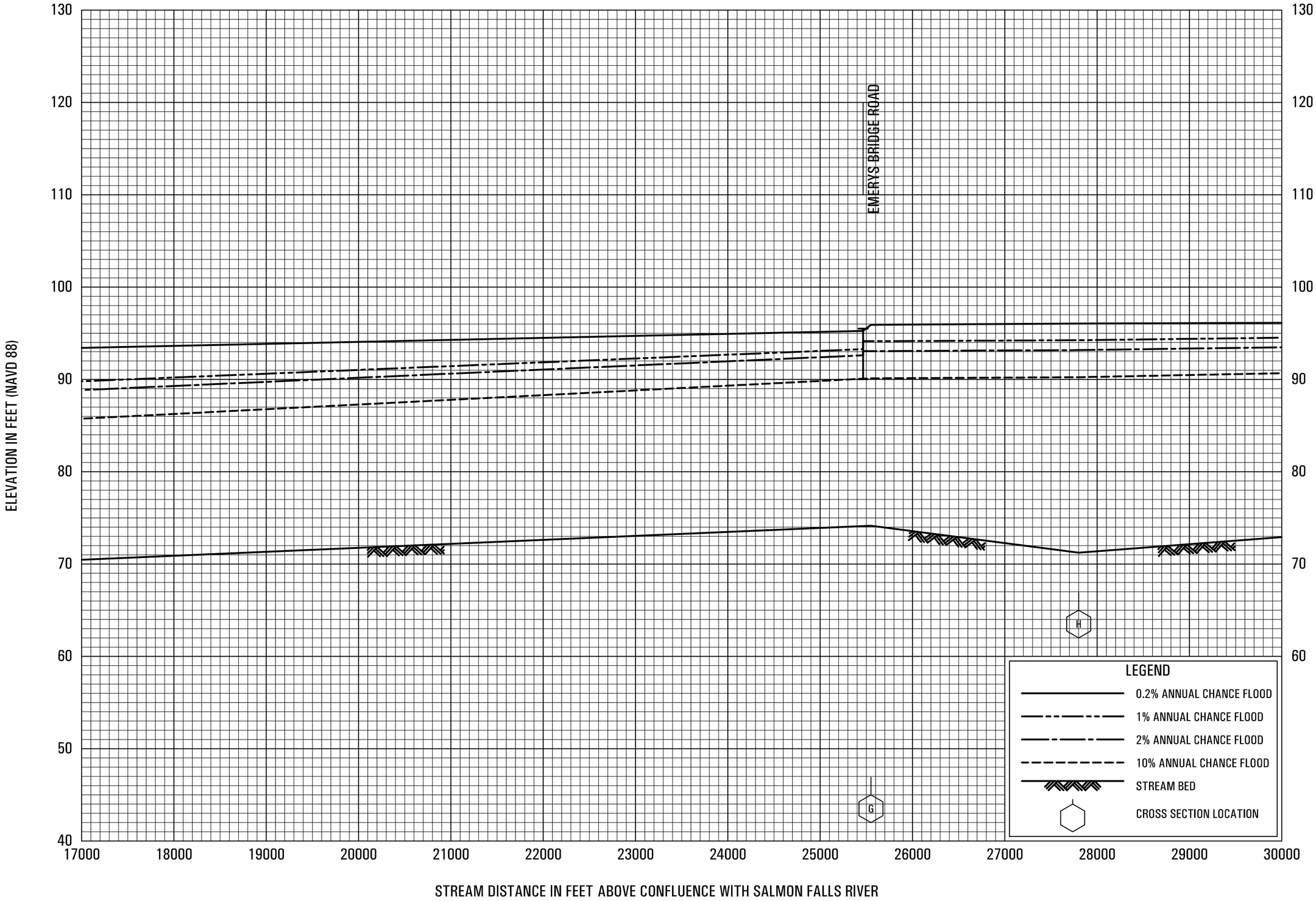
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



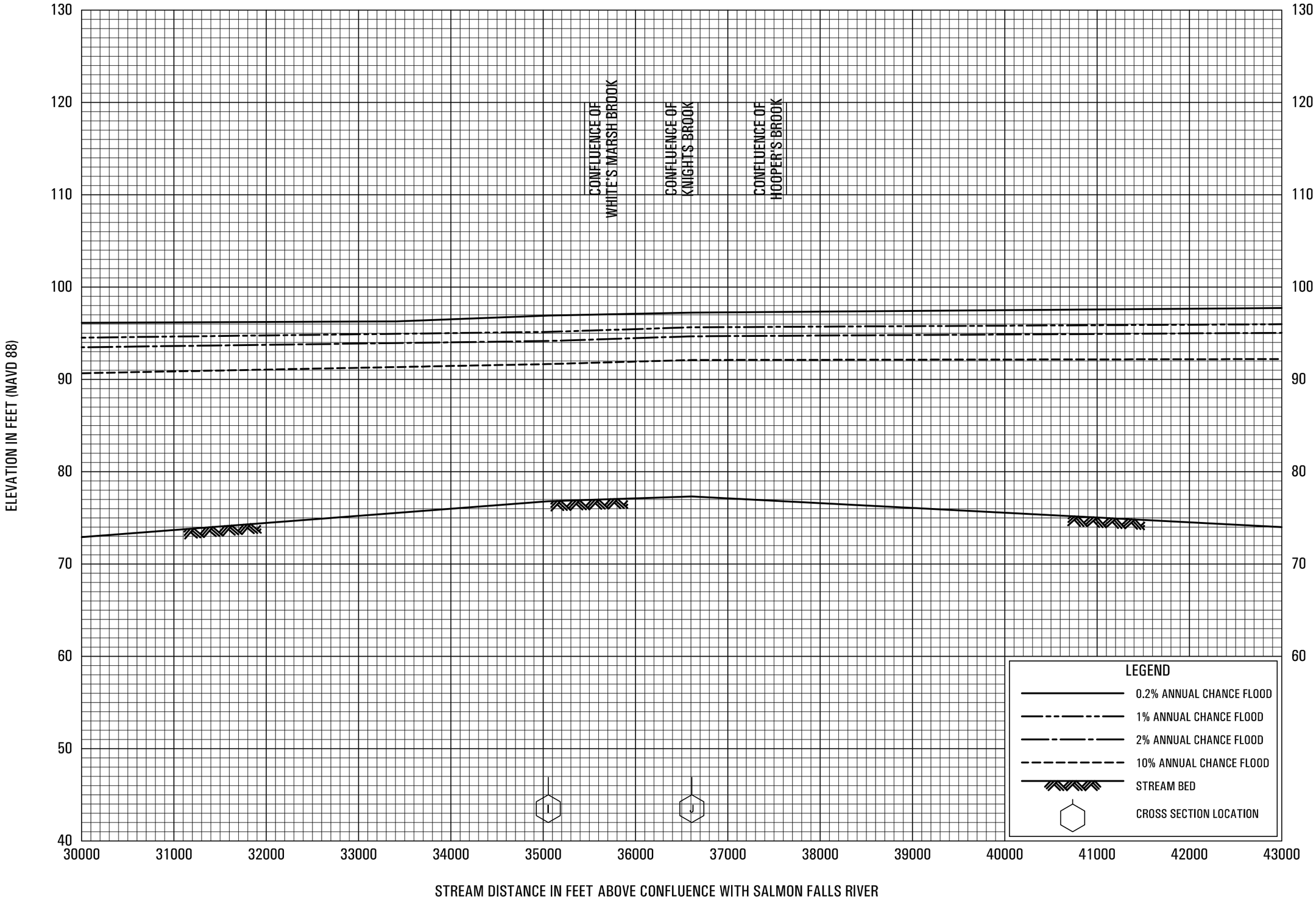
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



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GREAT WORKS RIVER

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YORK COUNTY, ME

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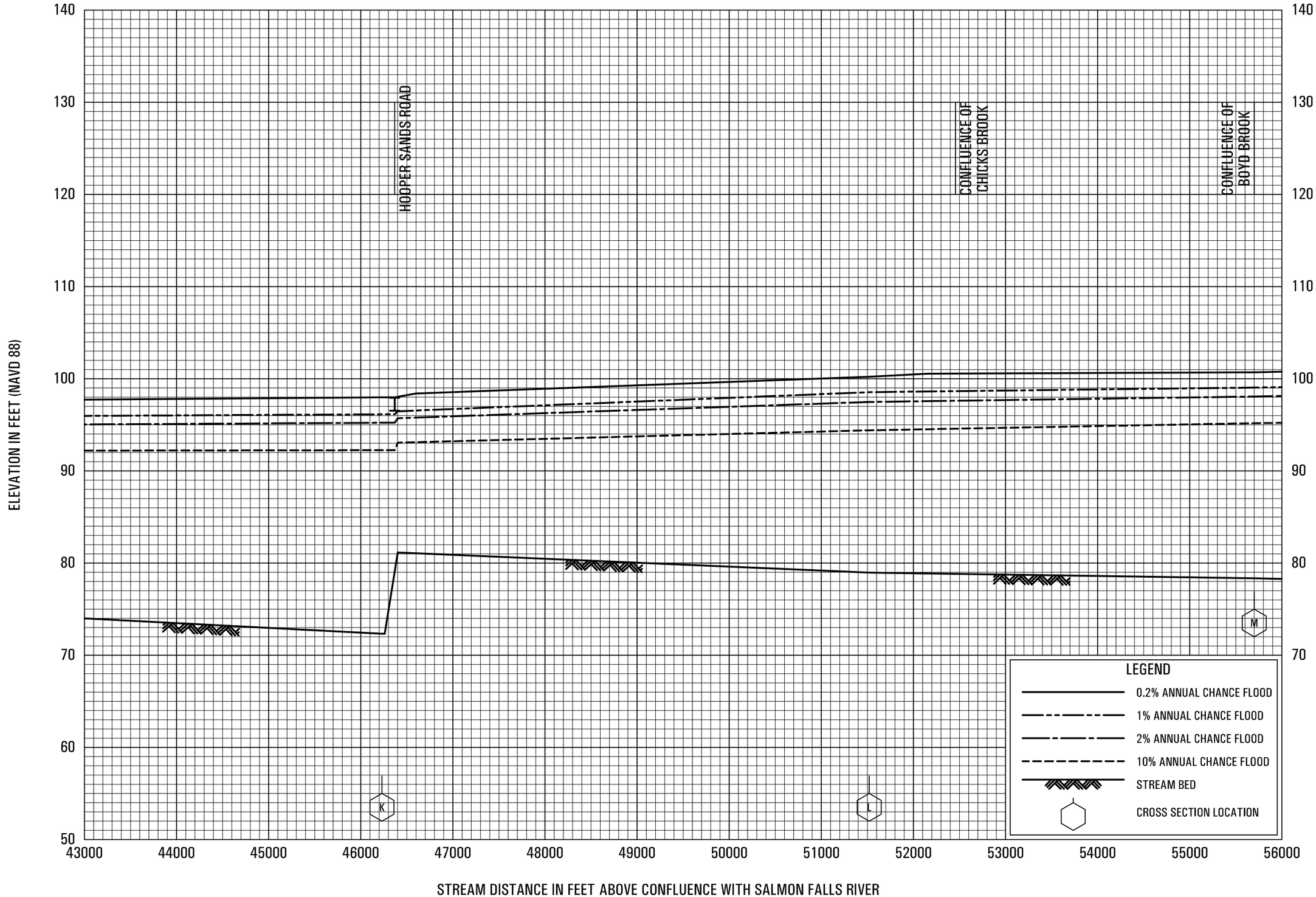


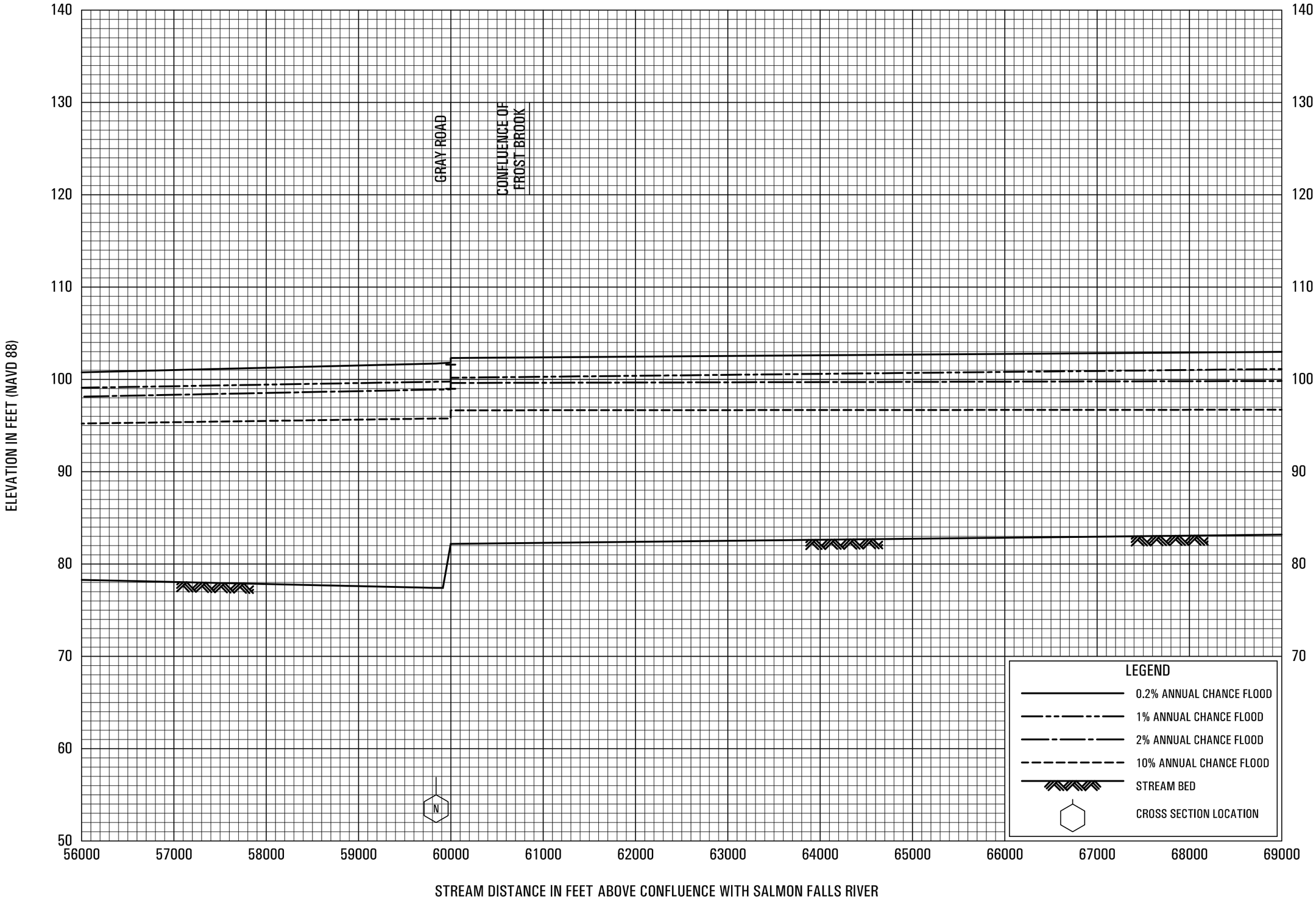
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



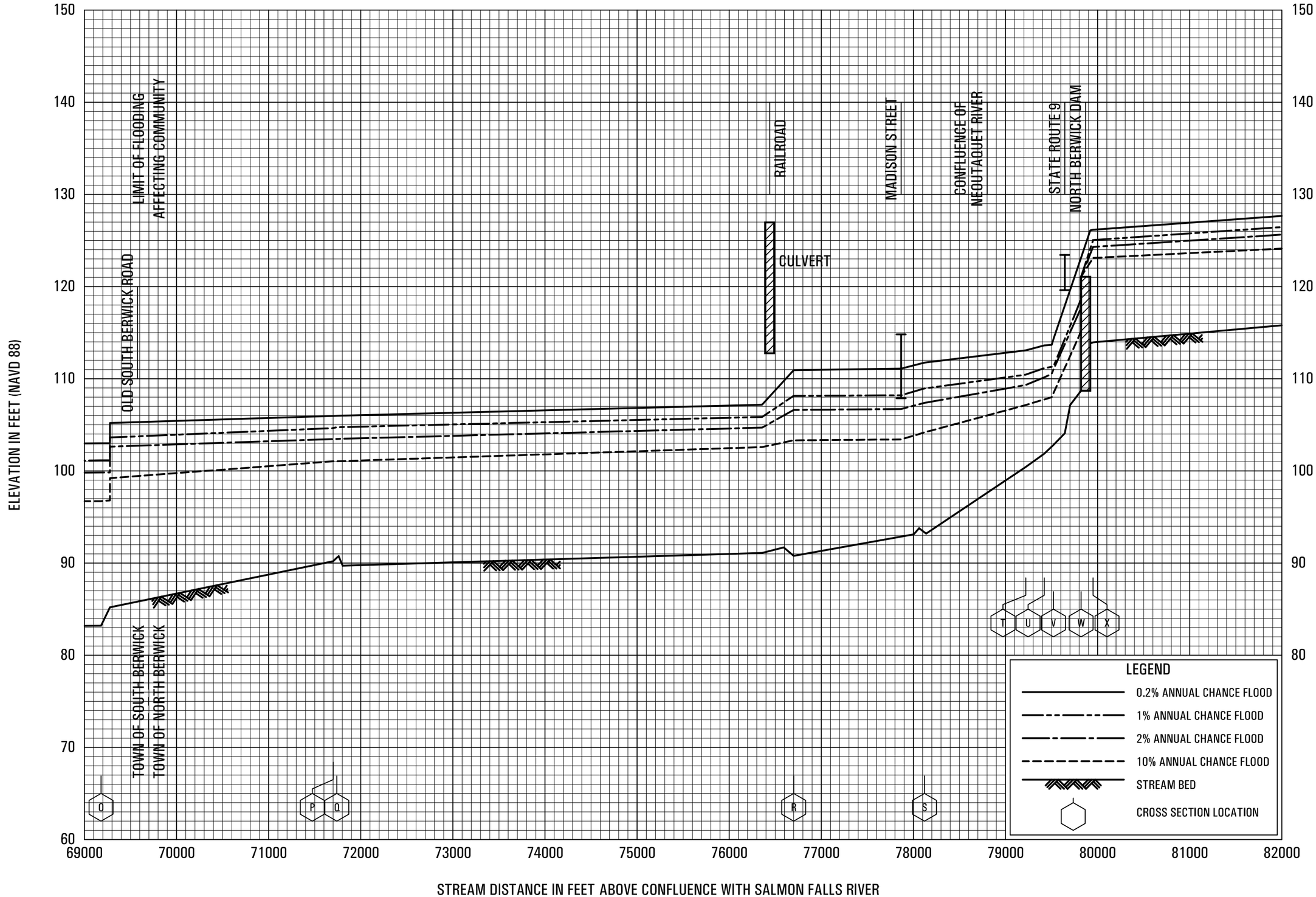
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



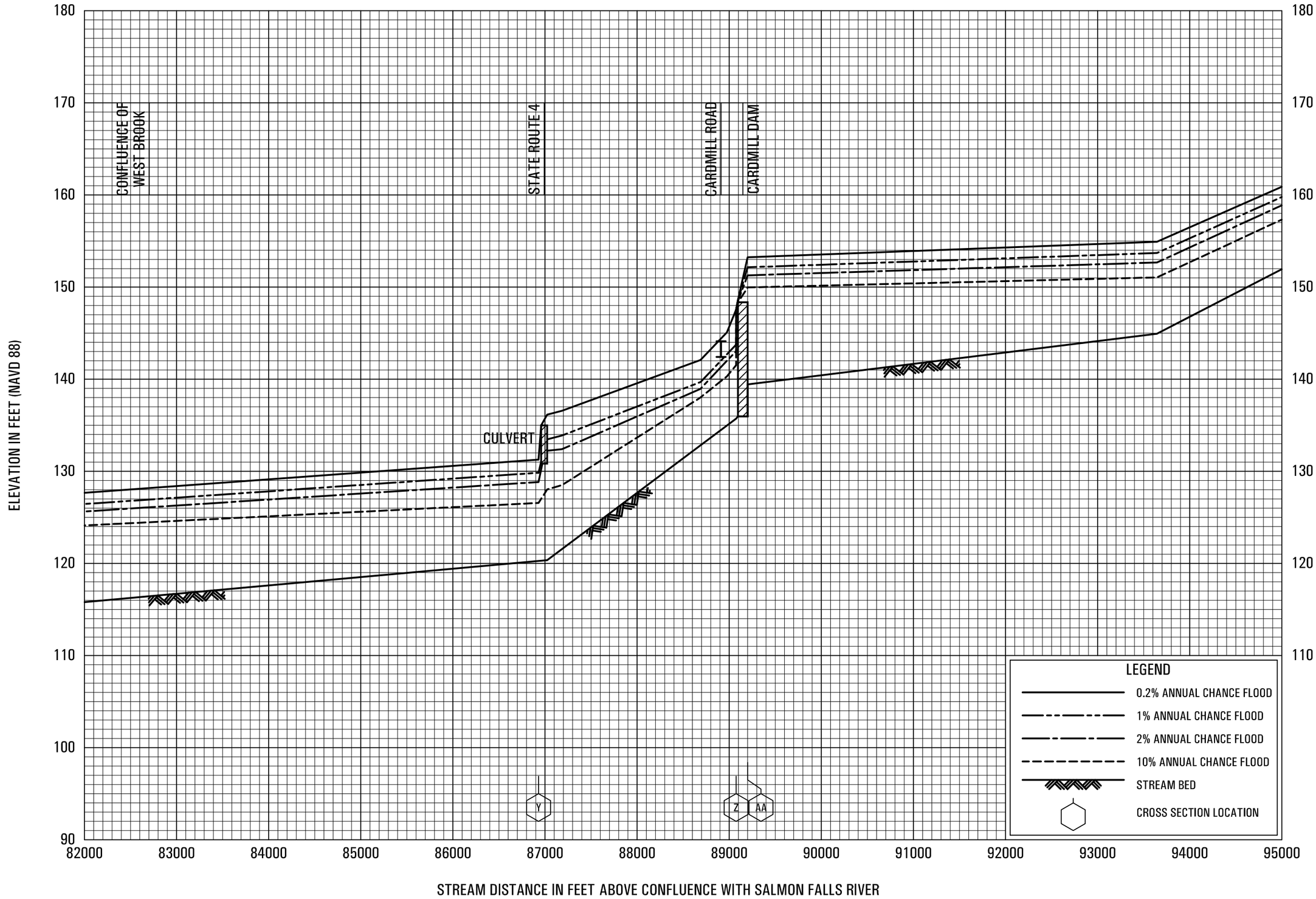
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



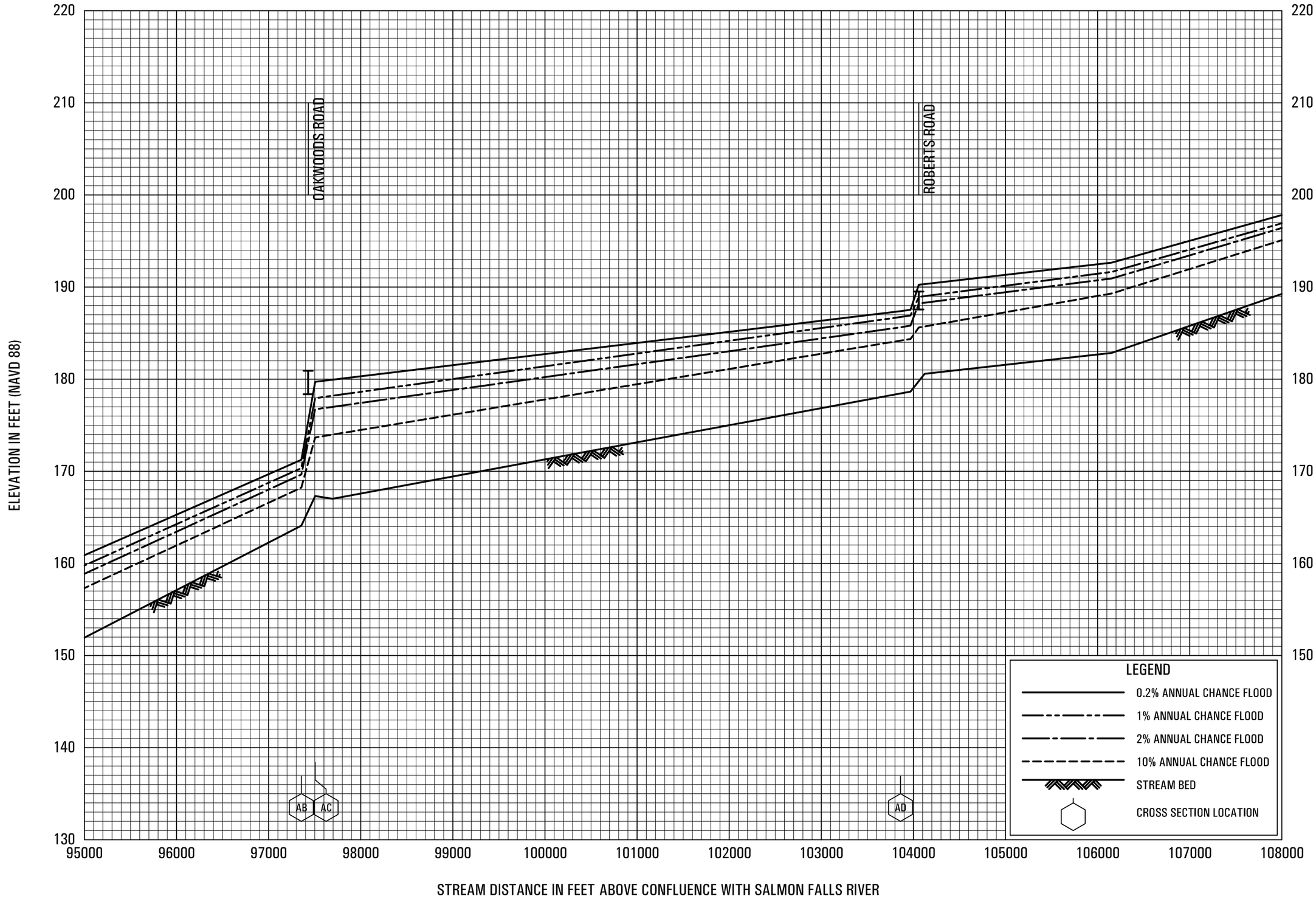
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



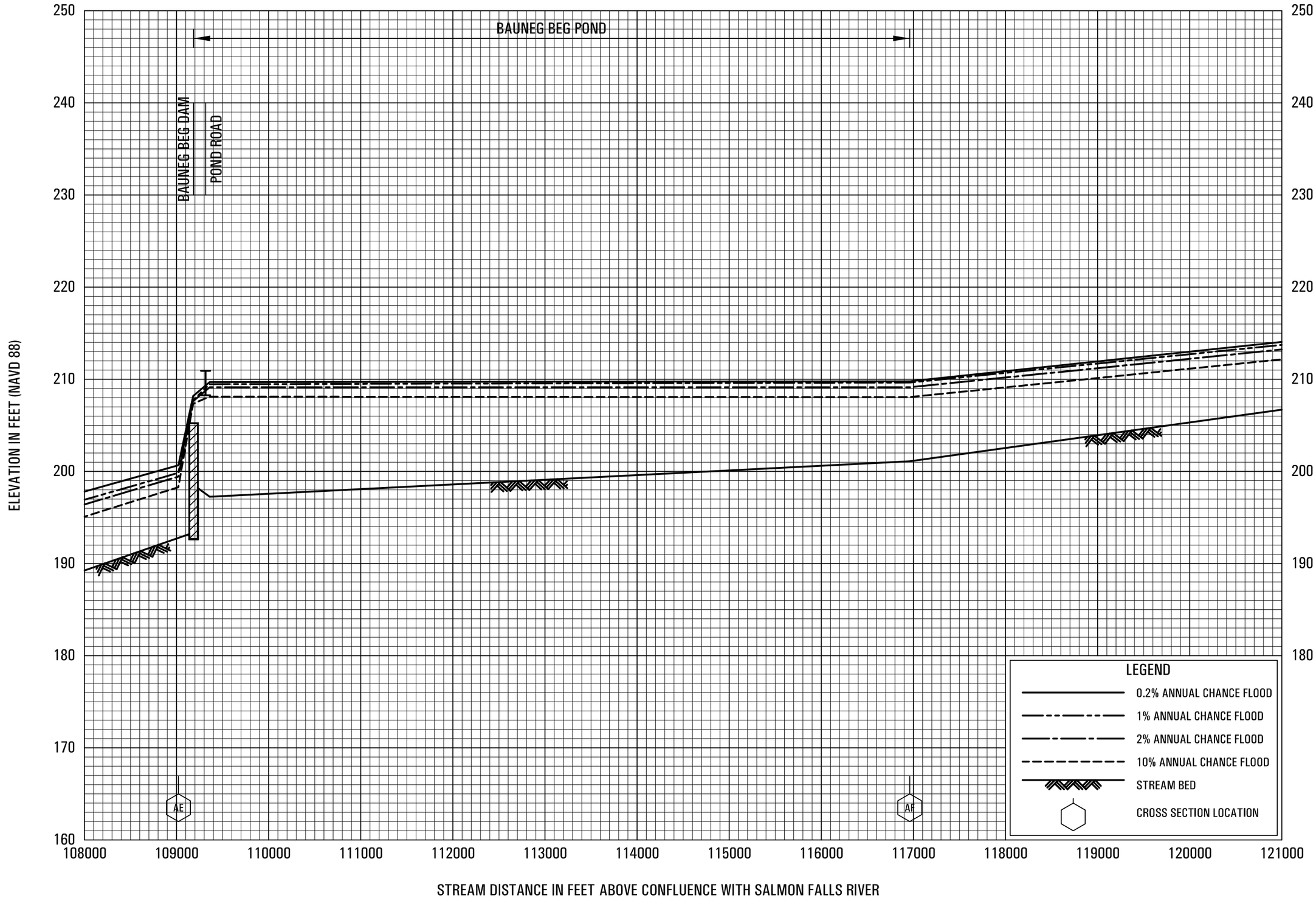
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



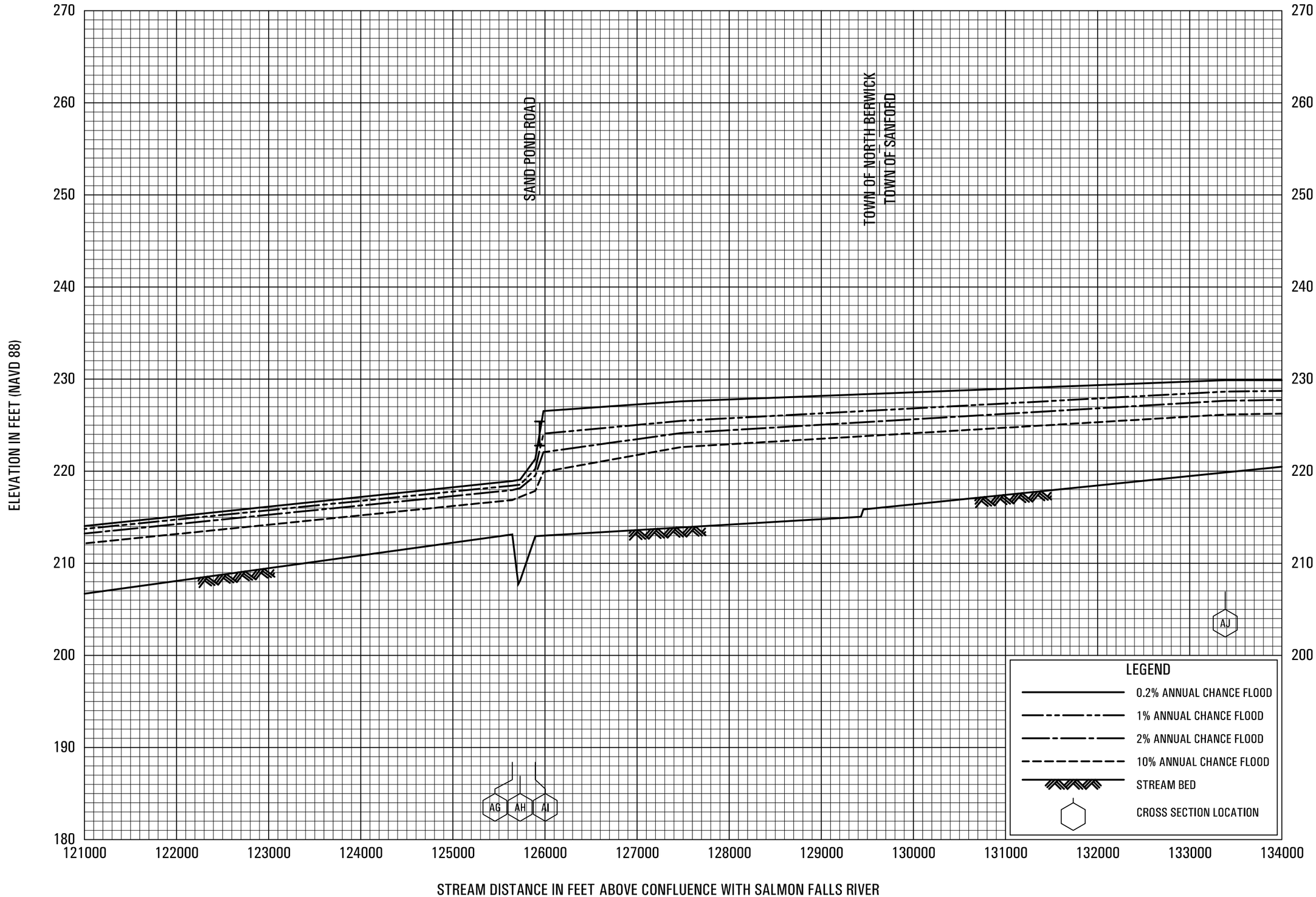
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



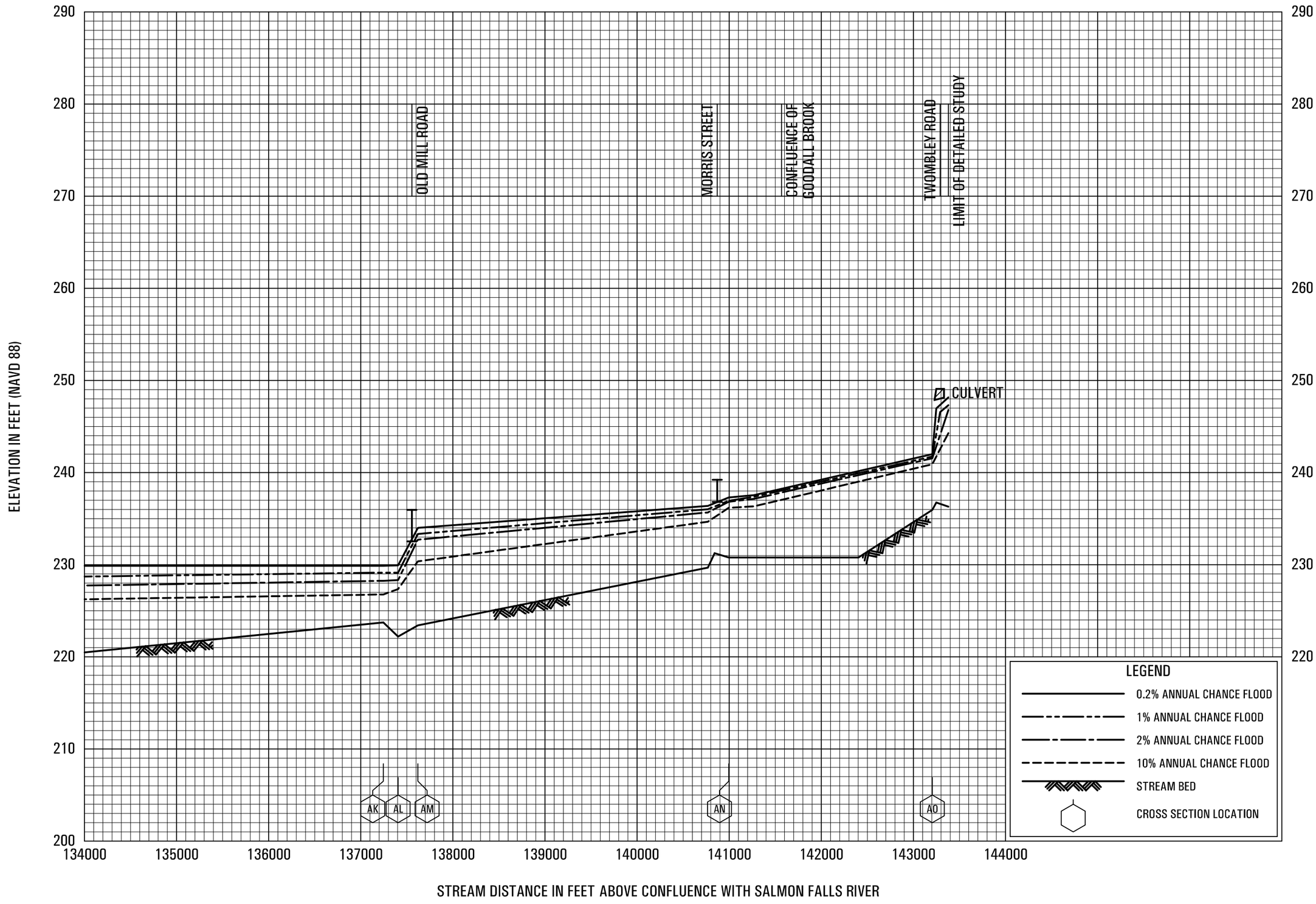
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



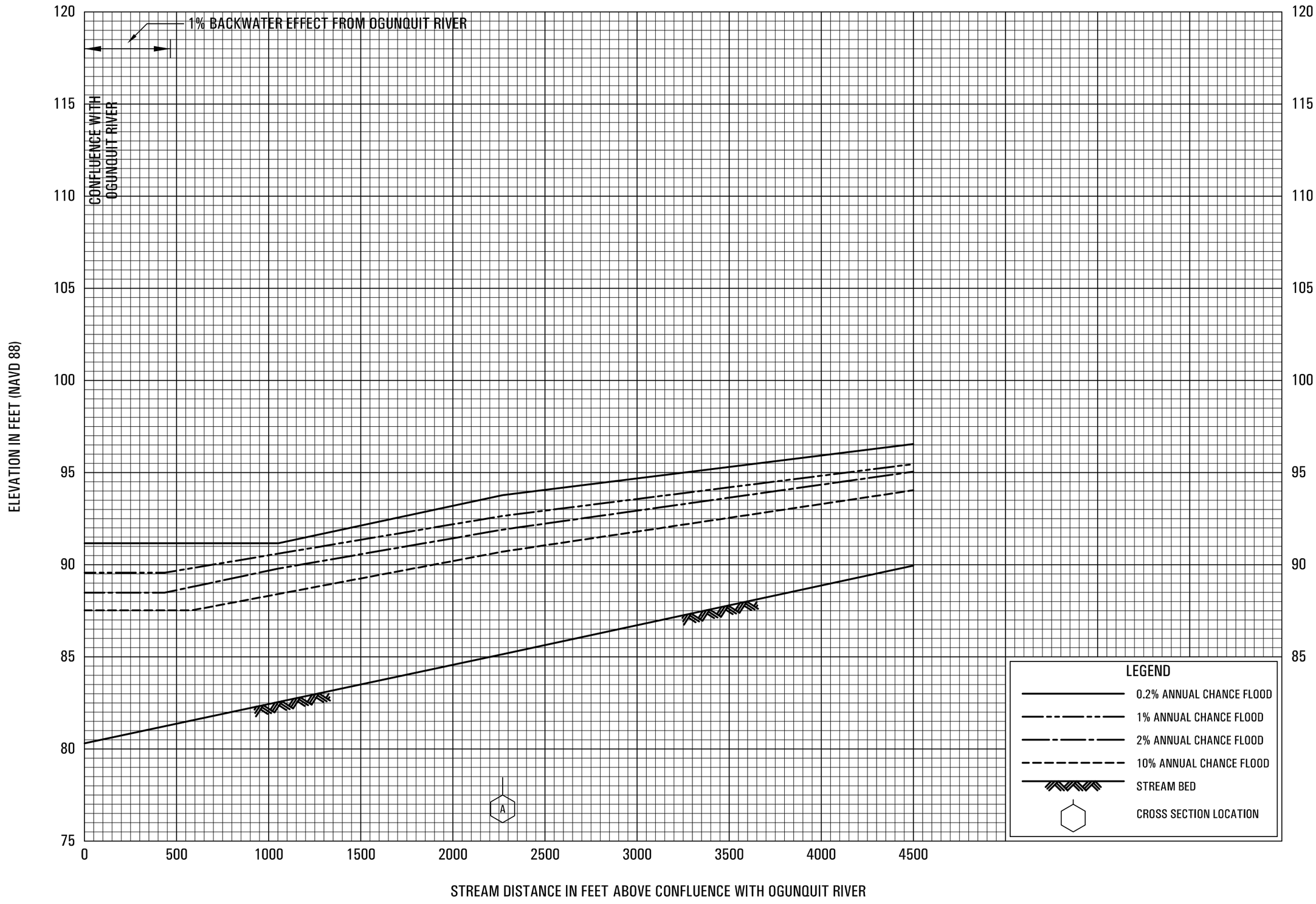
FLOOD PROFILES

GREAT WORKS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



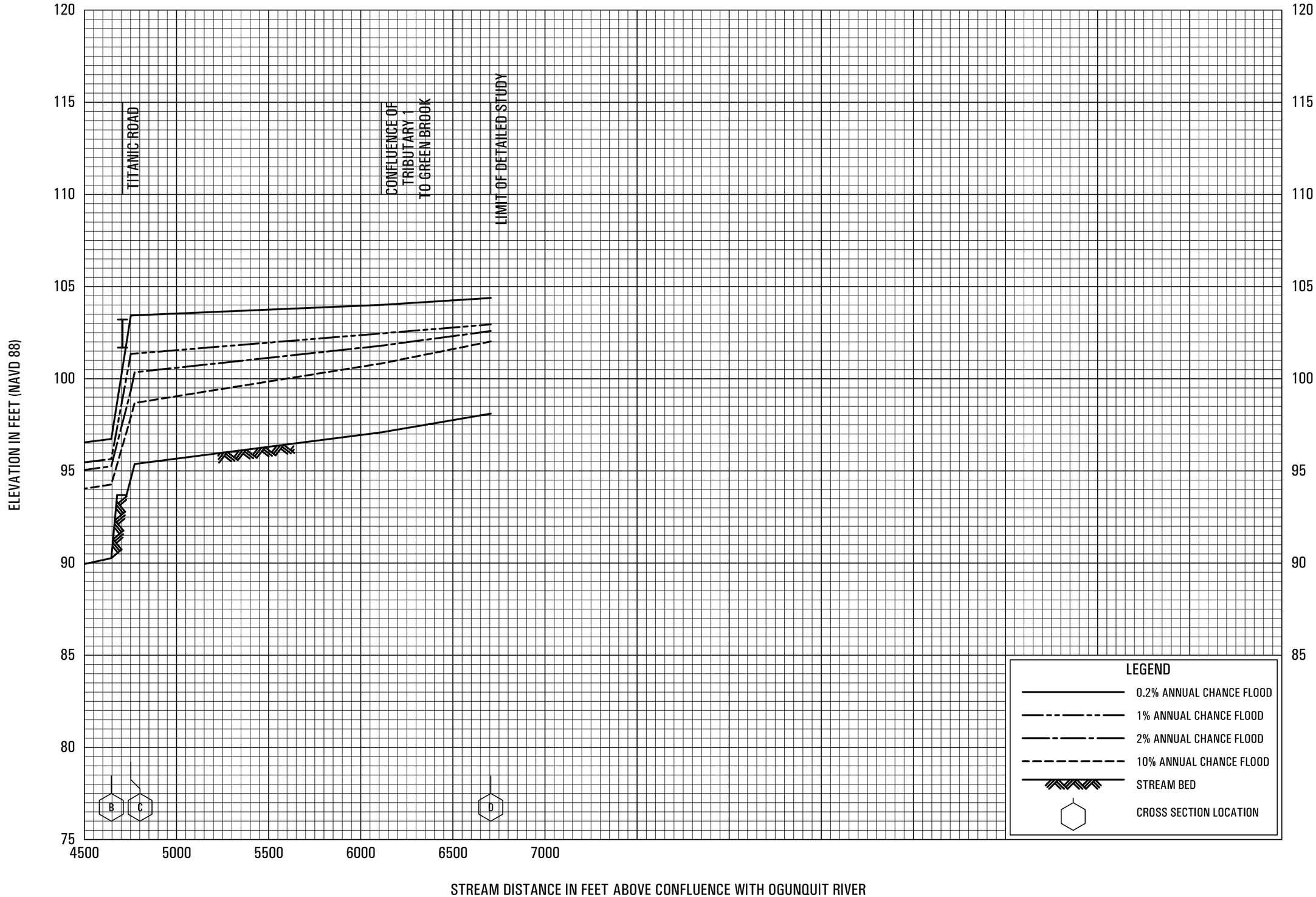
FLOOD PROFILES

GREEN BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



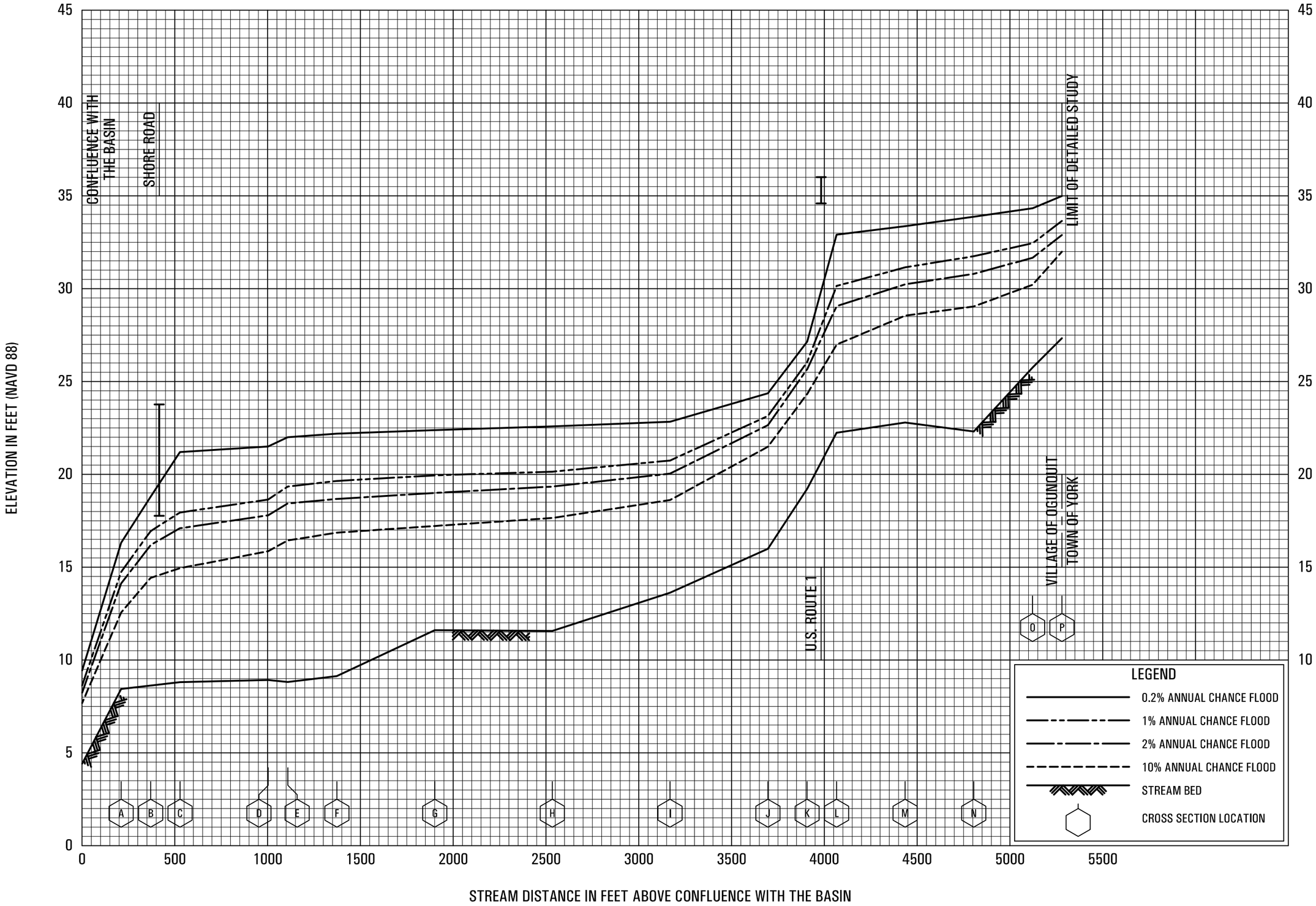
FLOOD PROFILES

GREEN BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



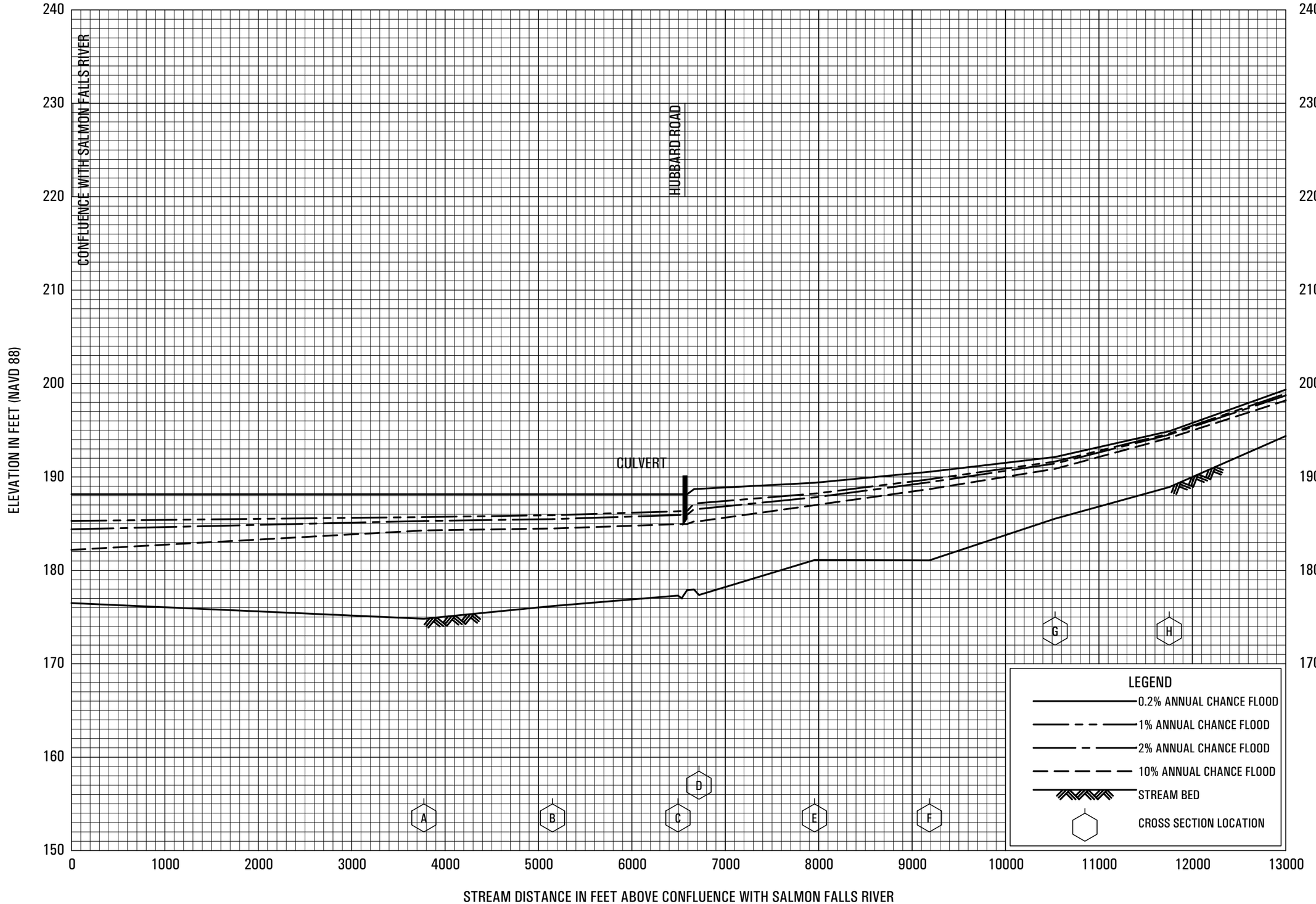
FLOOD PROFILES

JOSIAS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



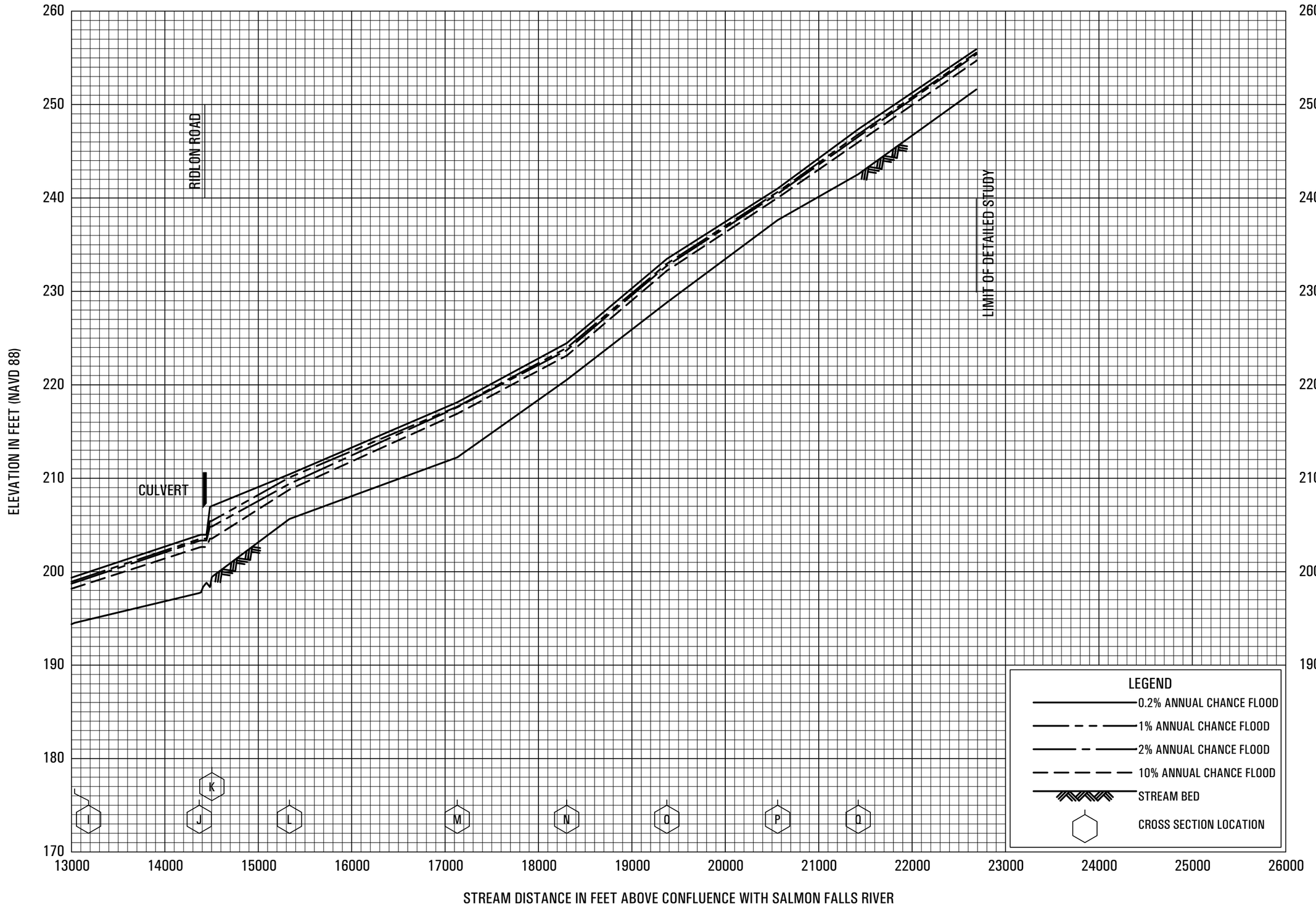
FLOOD PROFILES

KEAY BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



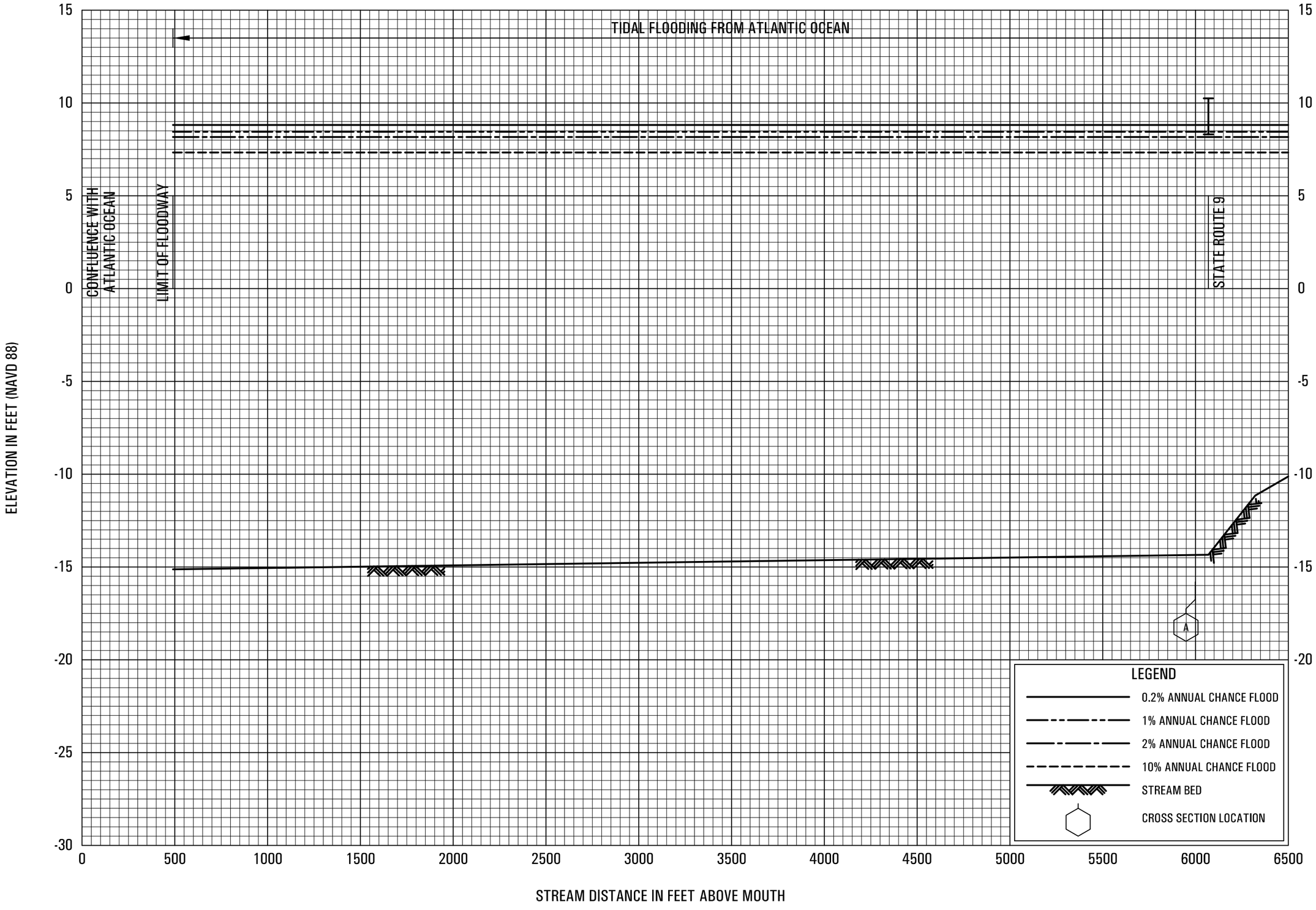
FLOOD PROFILES

KEAY BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



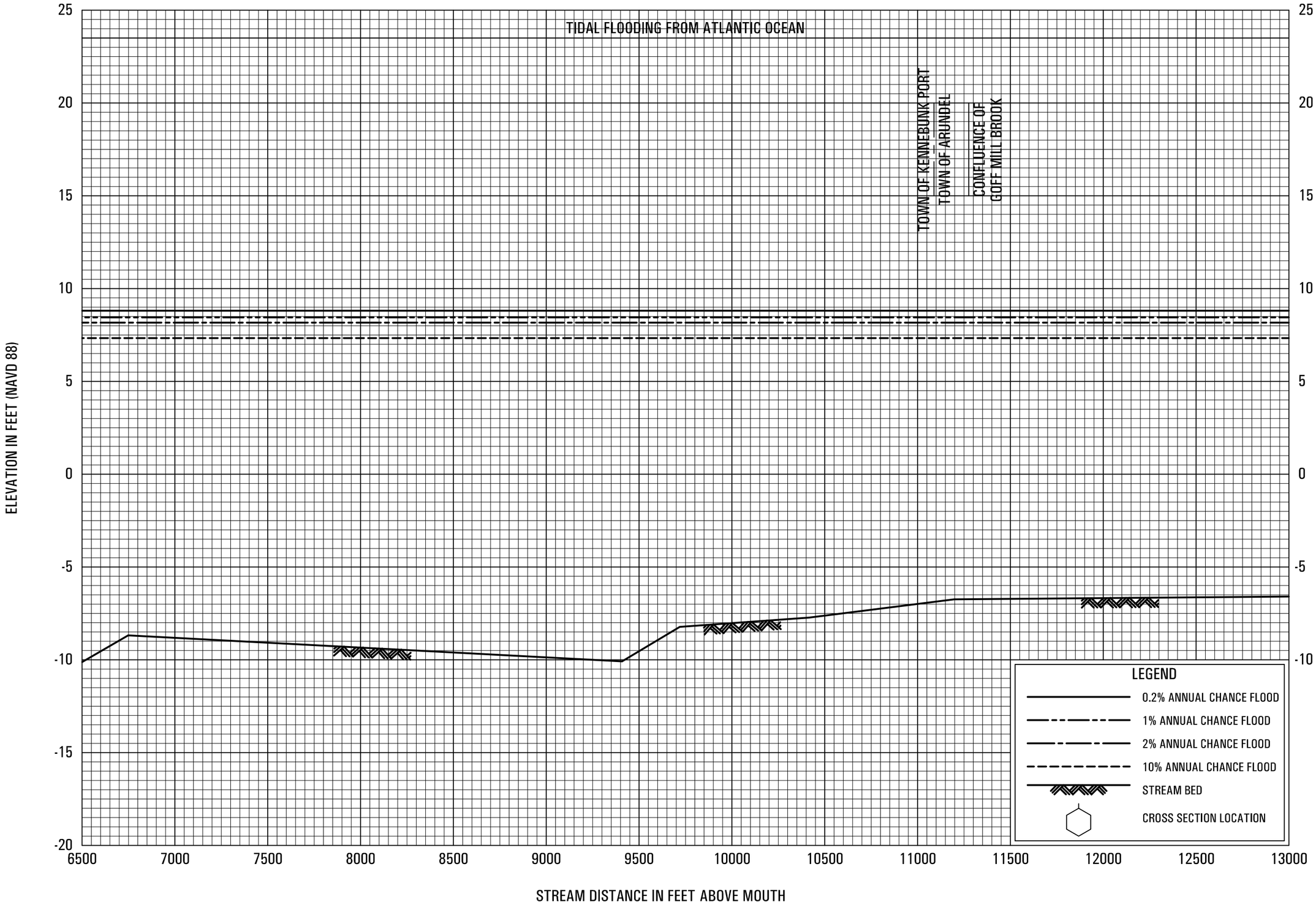
FLOOD PROFILES

KENNEBUNK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



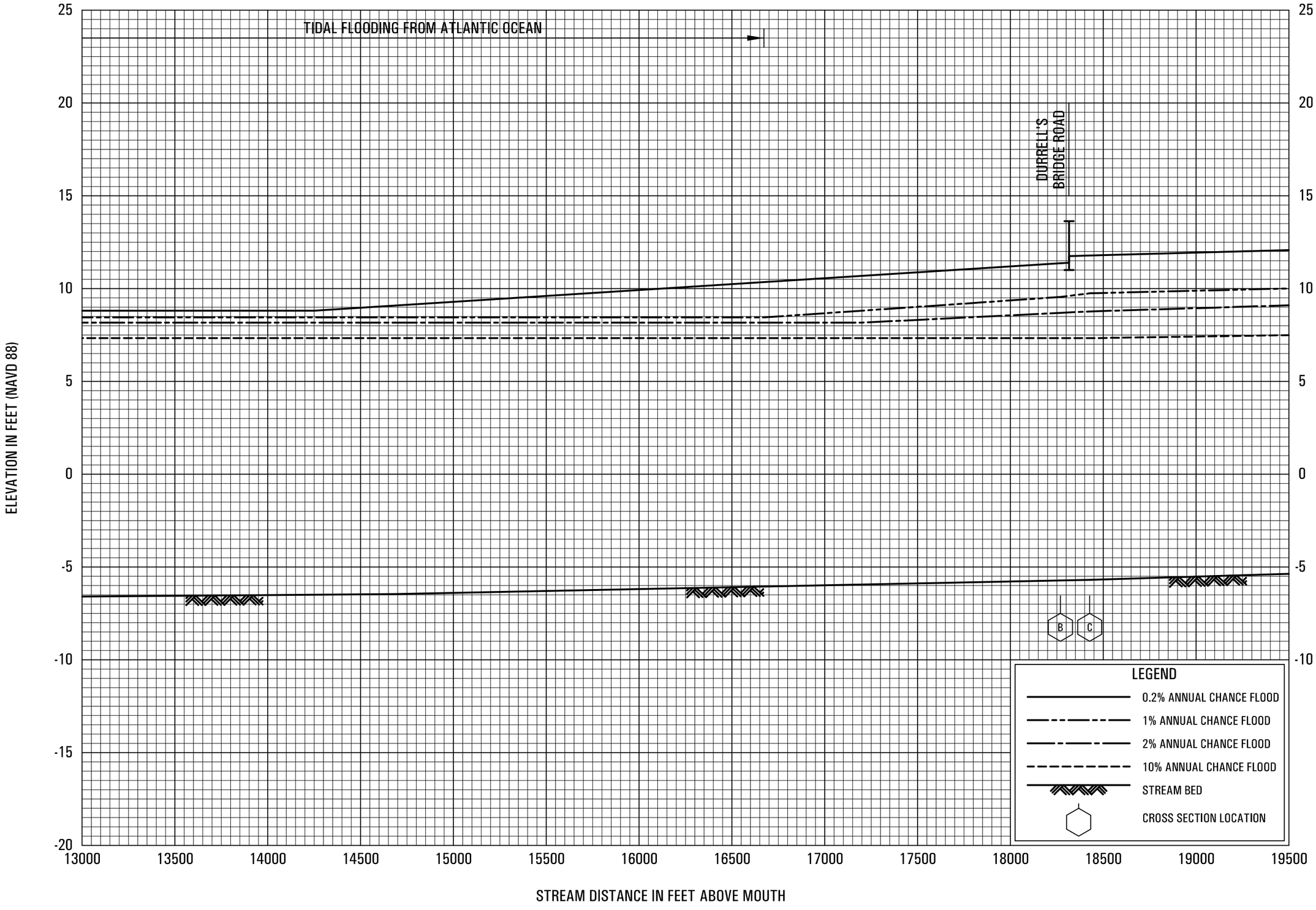
FLOOD PROFILES

KENNEBUNK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



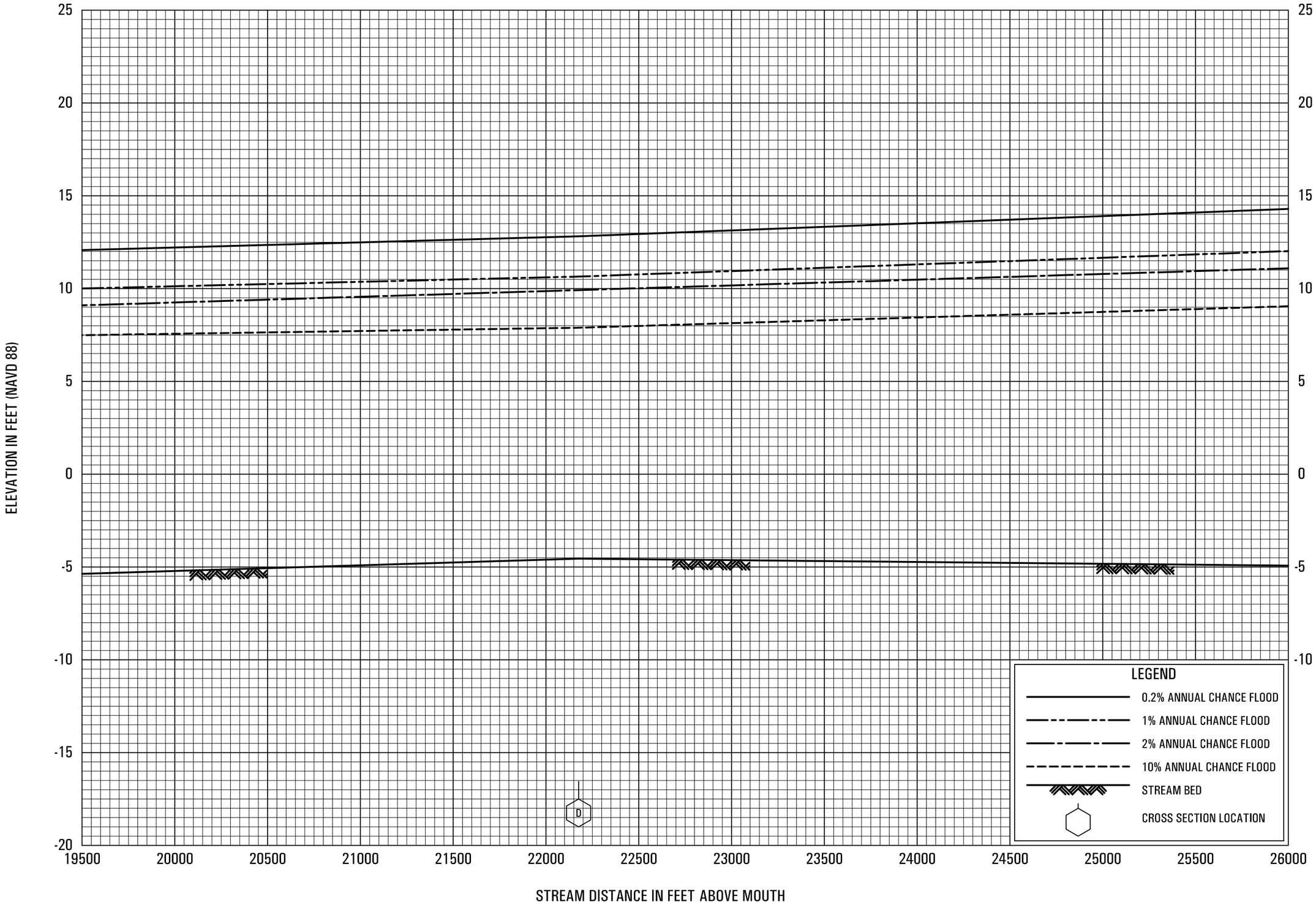
FLOOD PROFILES

KENNEBUNK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



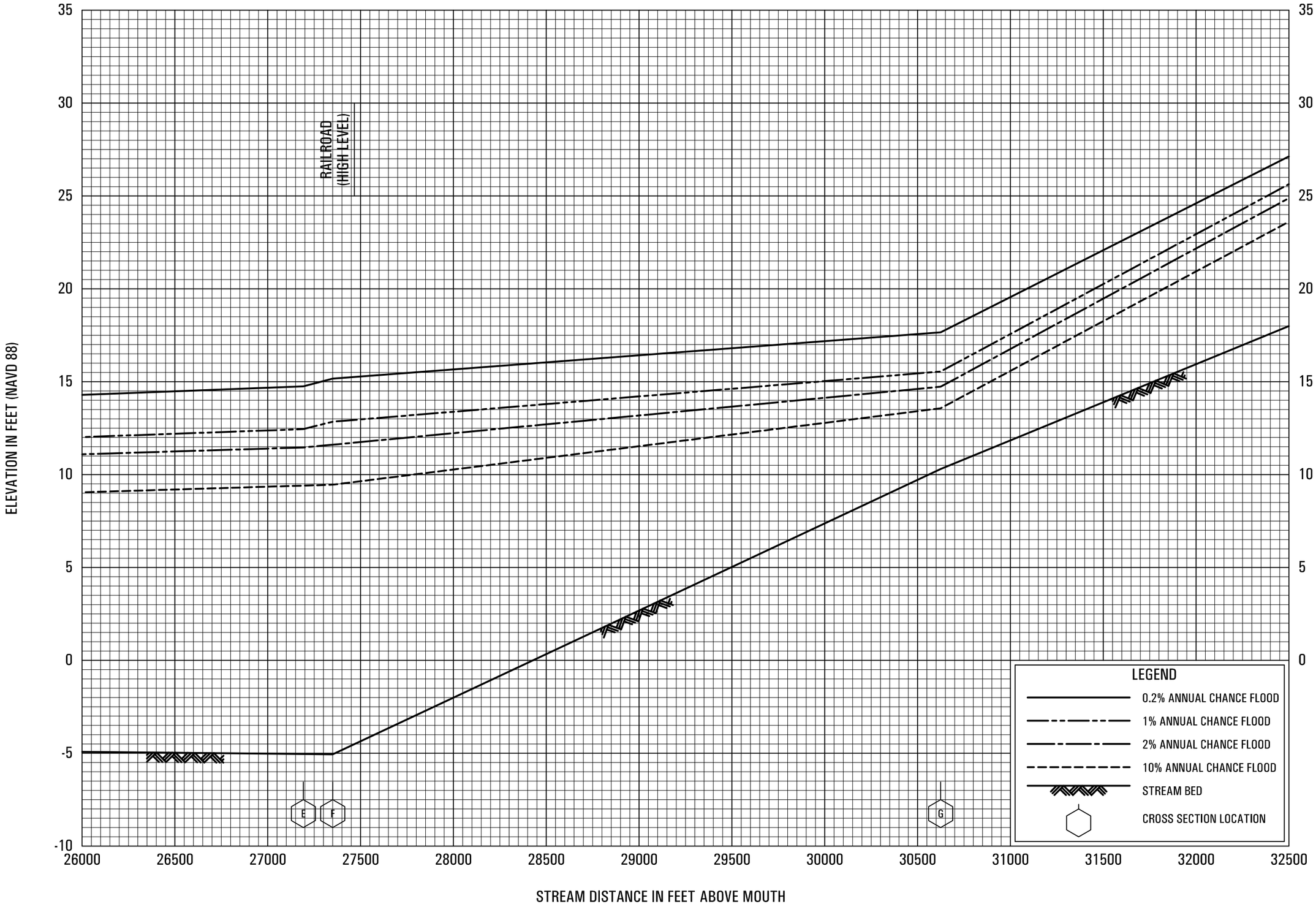
FLOOD PROFILES

KENNEBUNK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



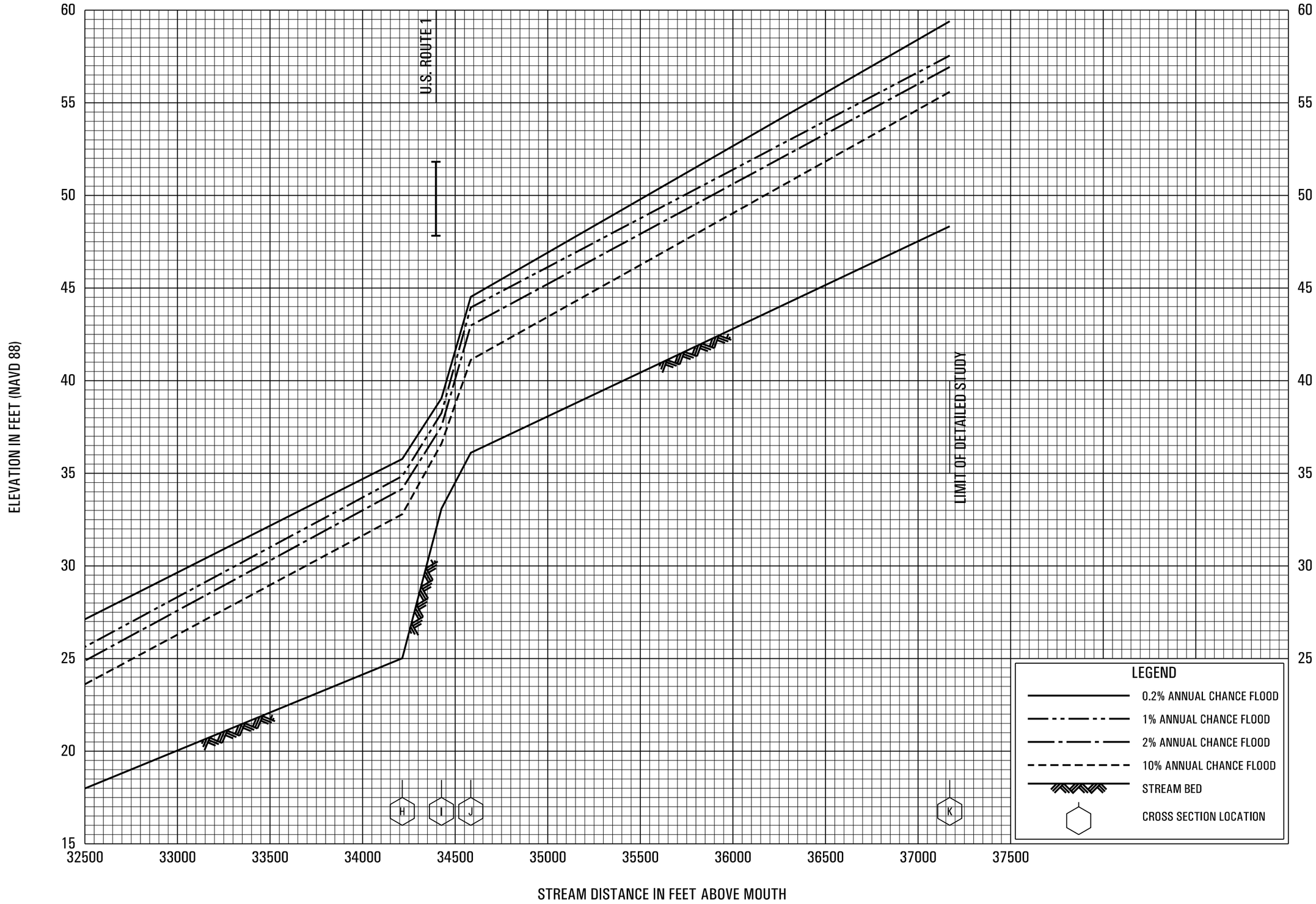
FLOOD PROFILES

KENNEBUNK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



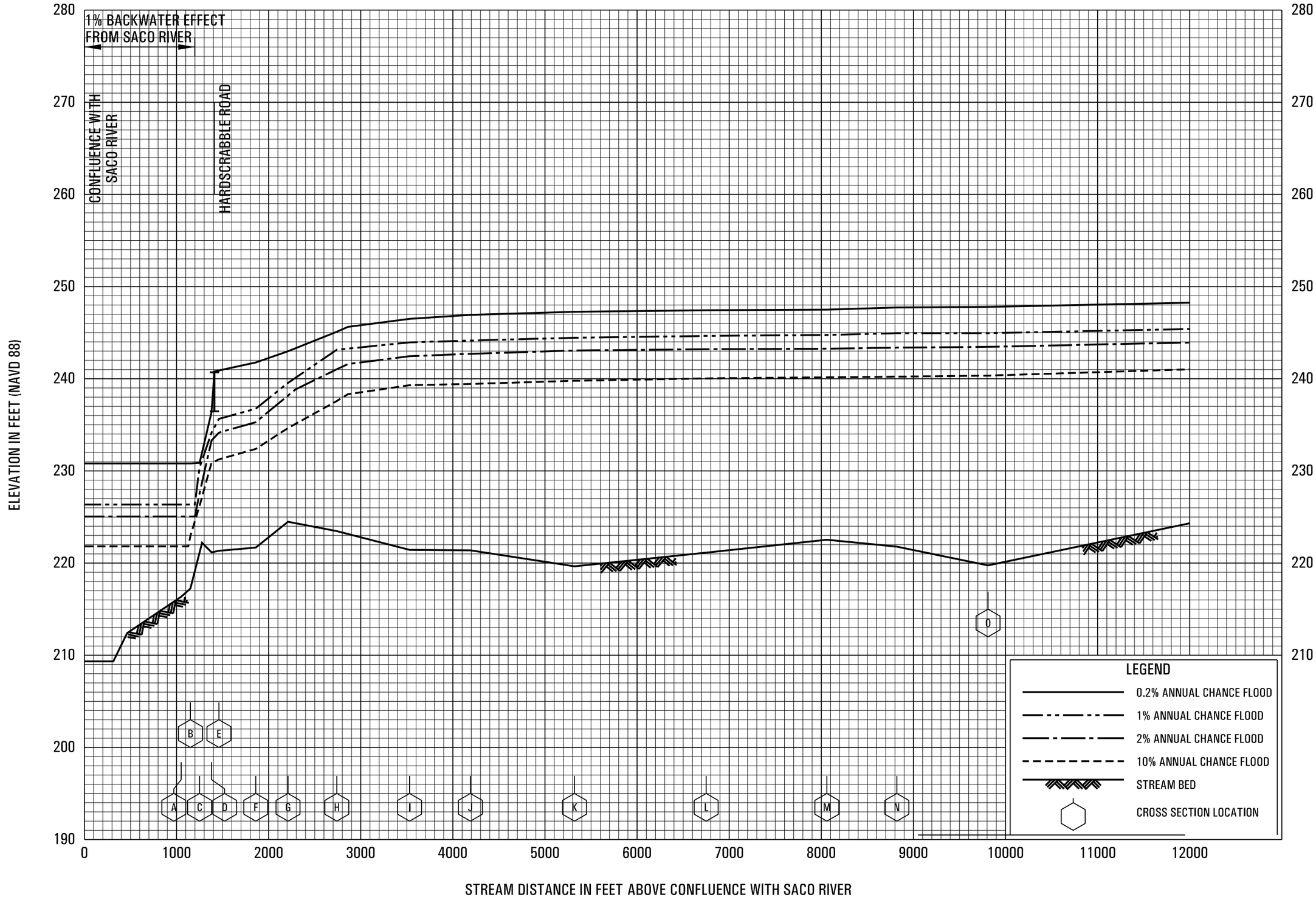
FLOOD PROFILES

KENNEBUNK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



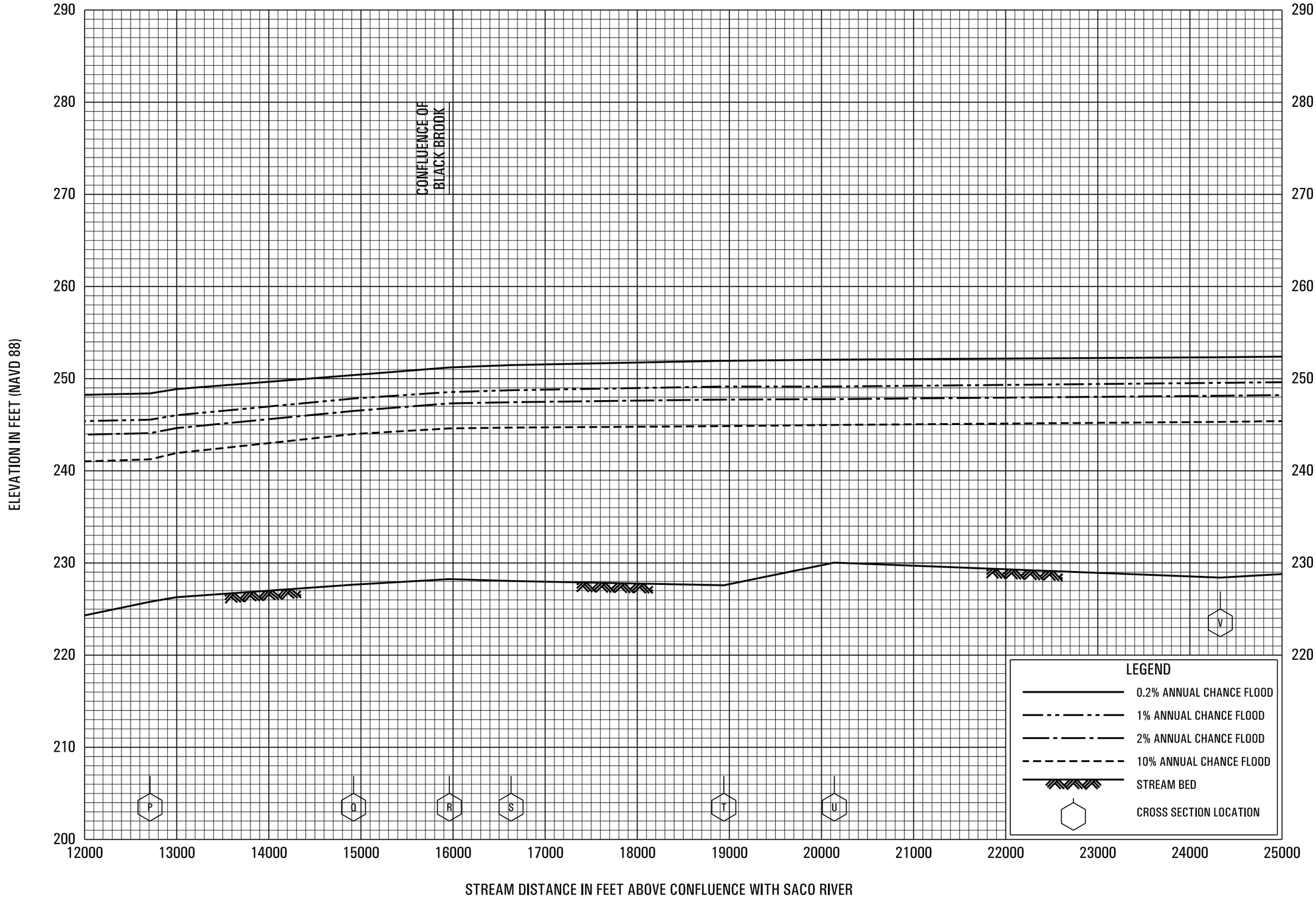
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



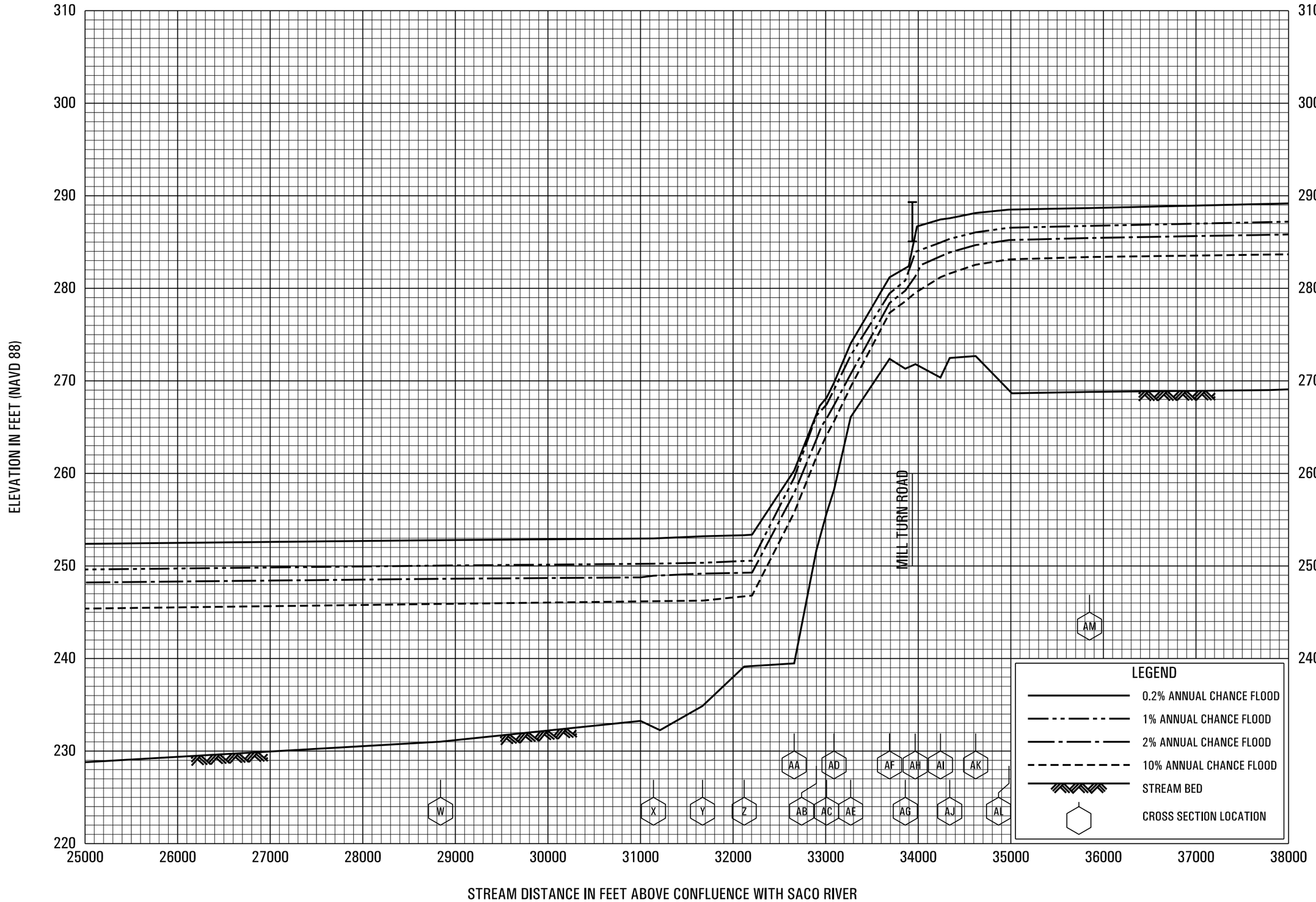
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



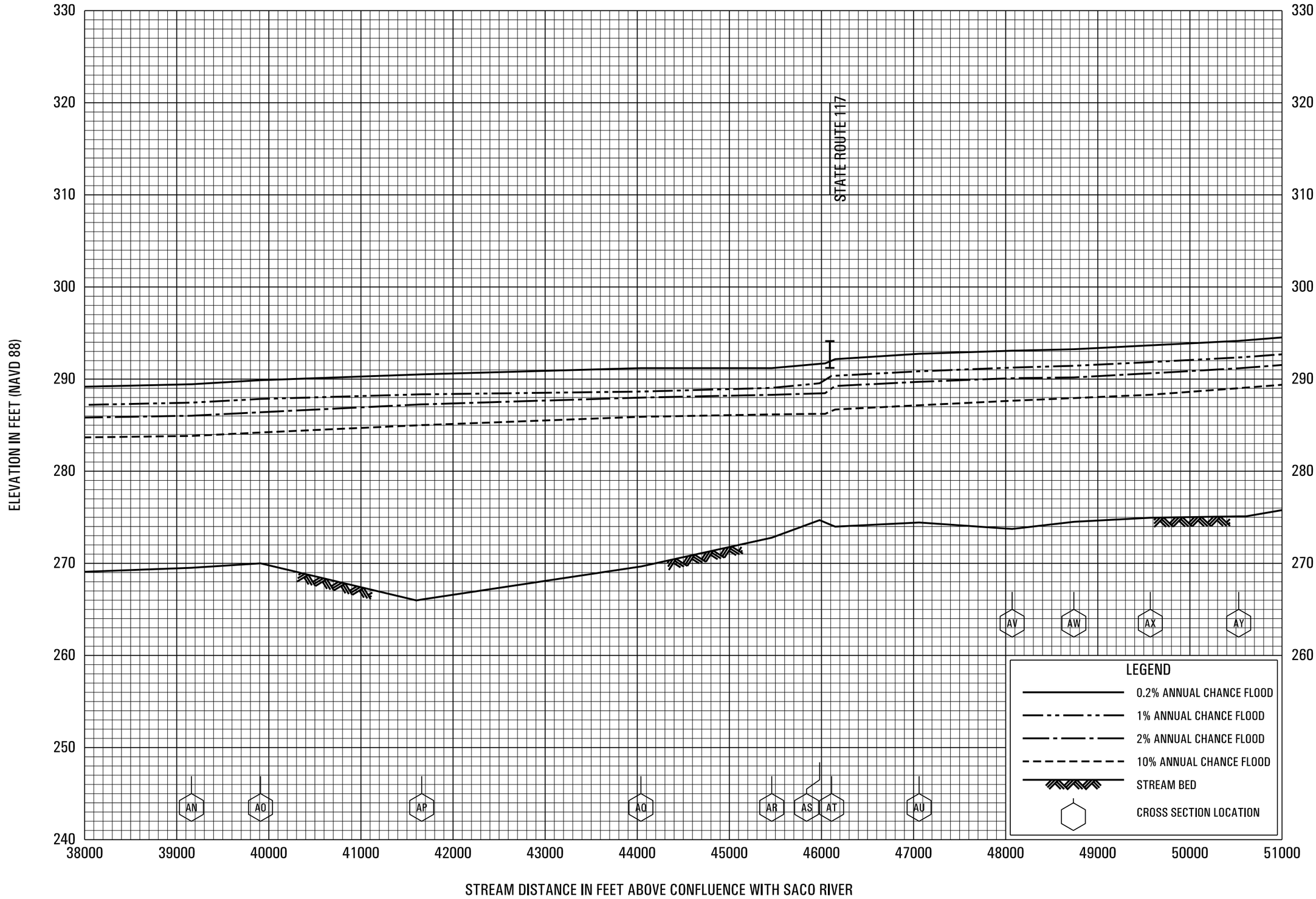
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



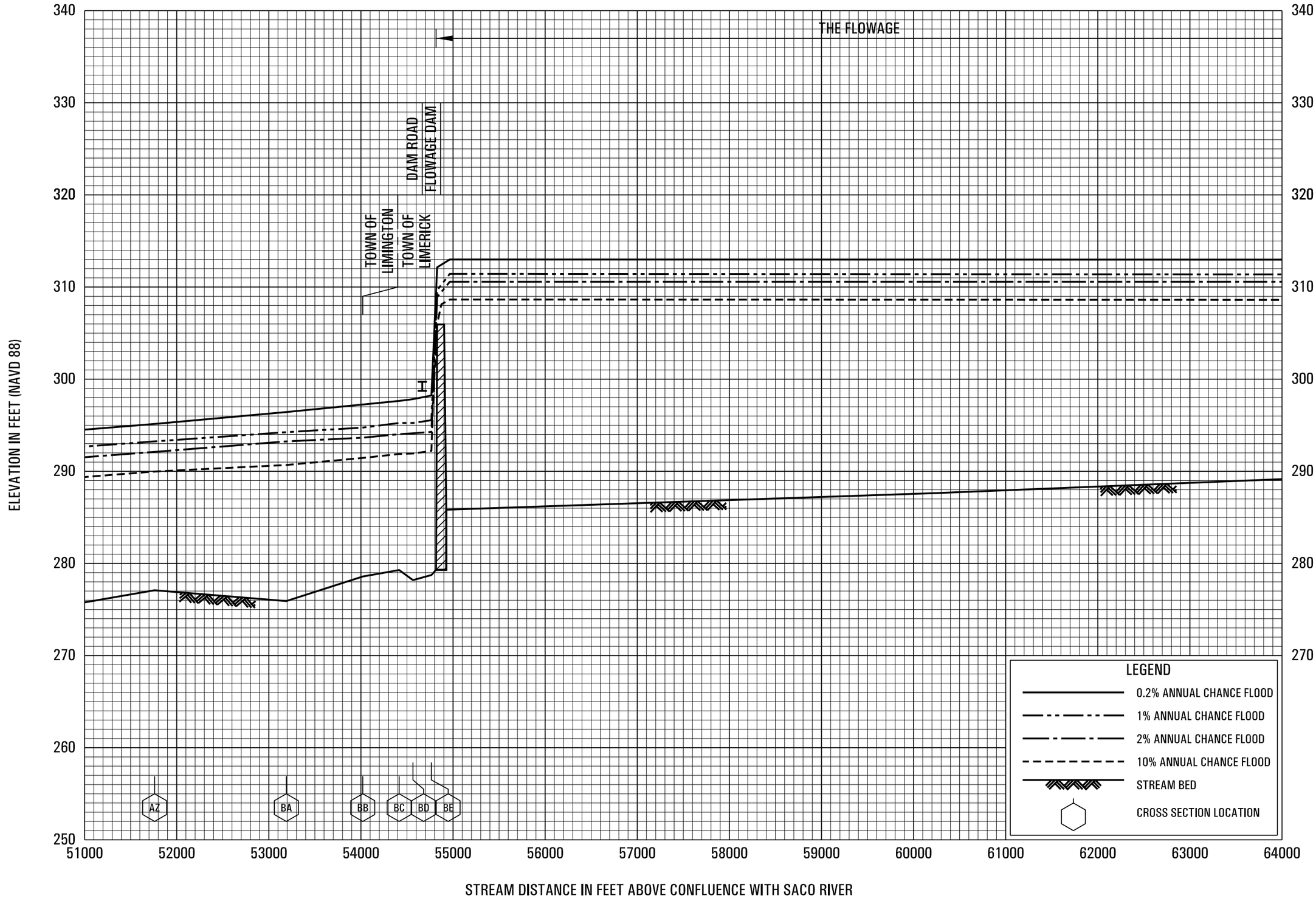
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



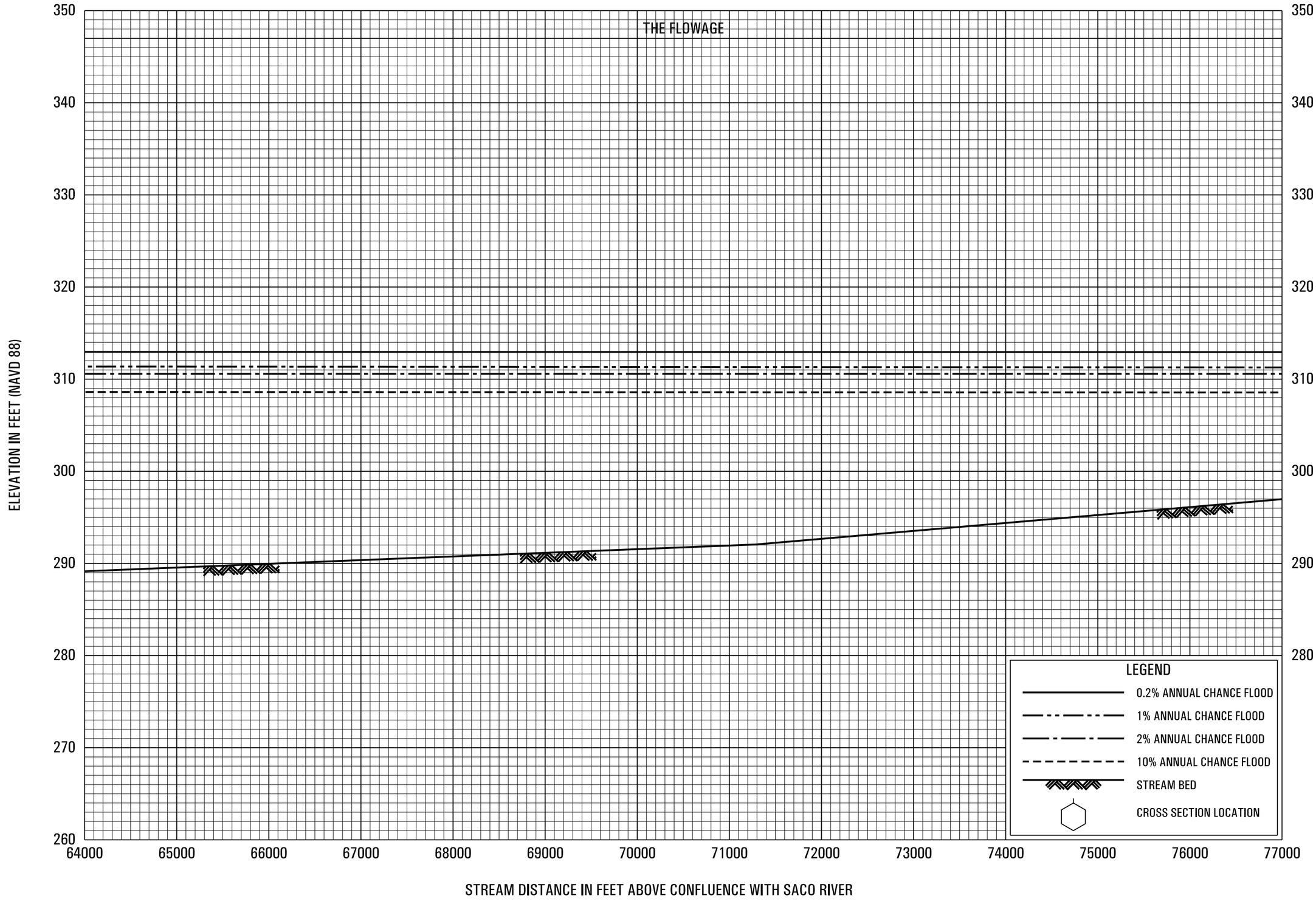
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



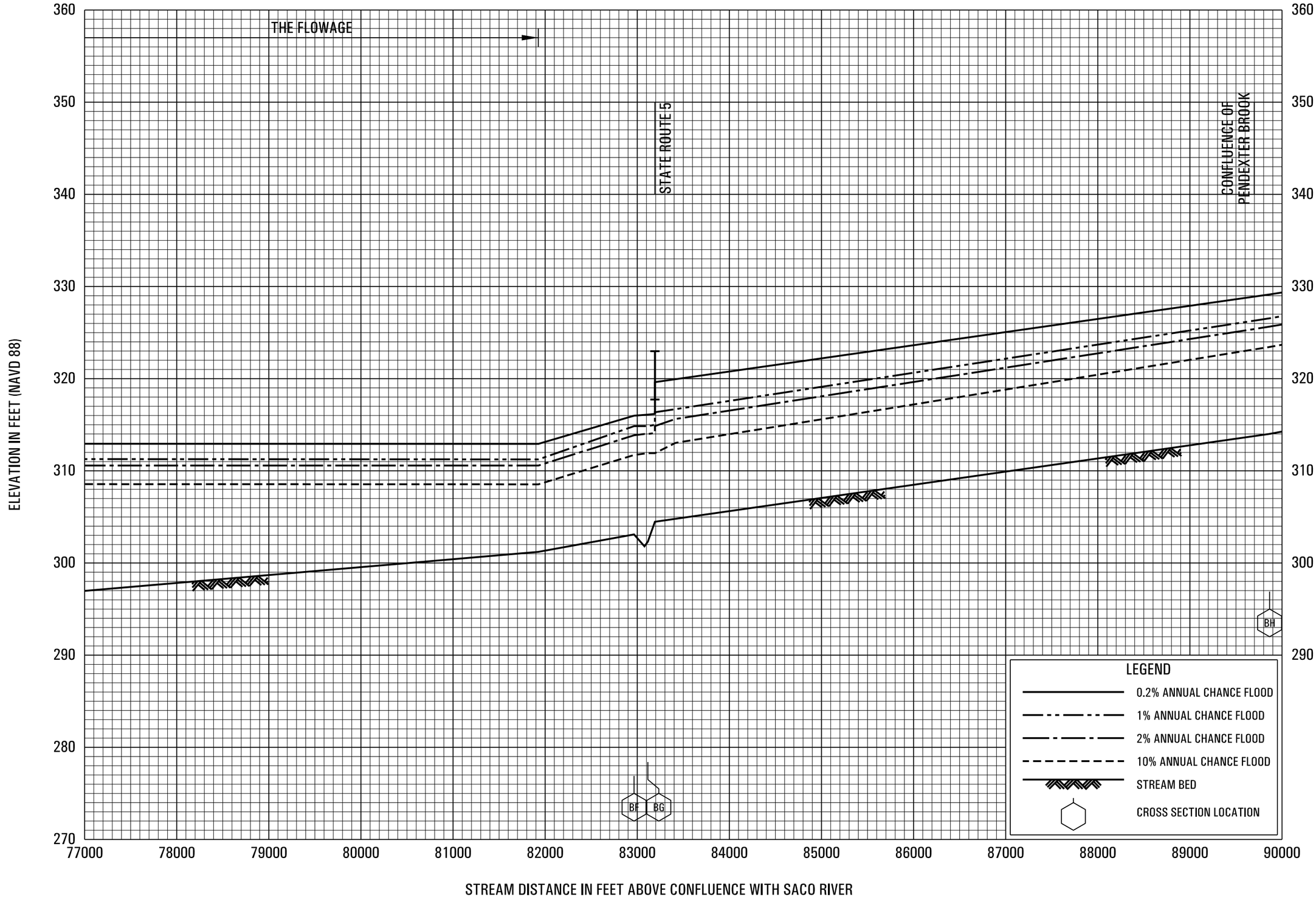
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



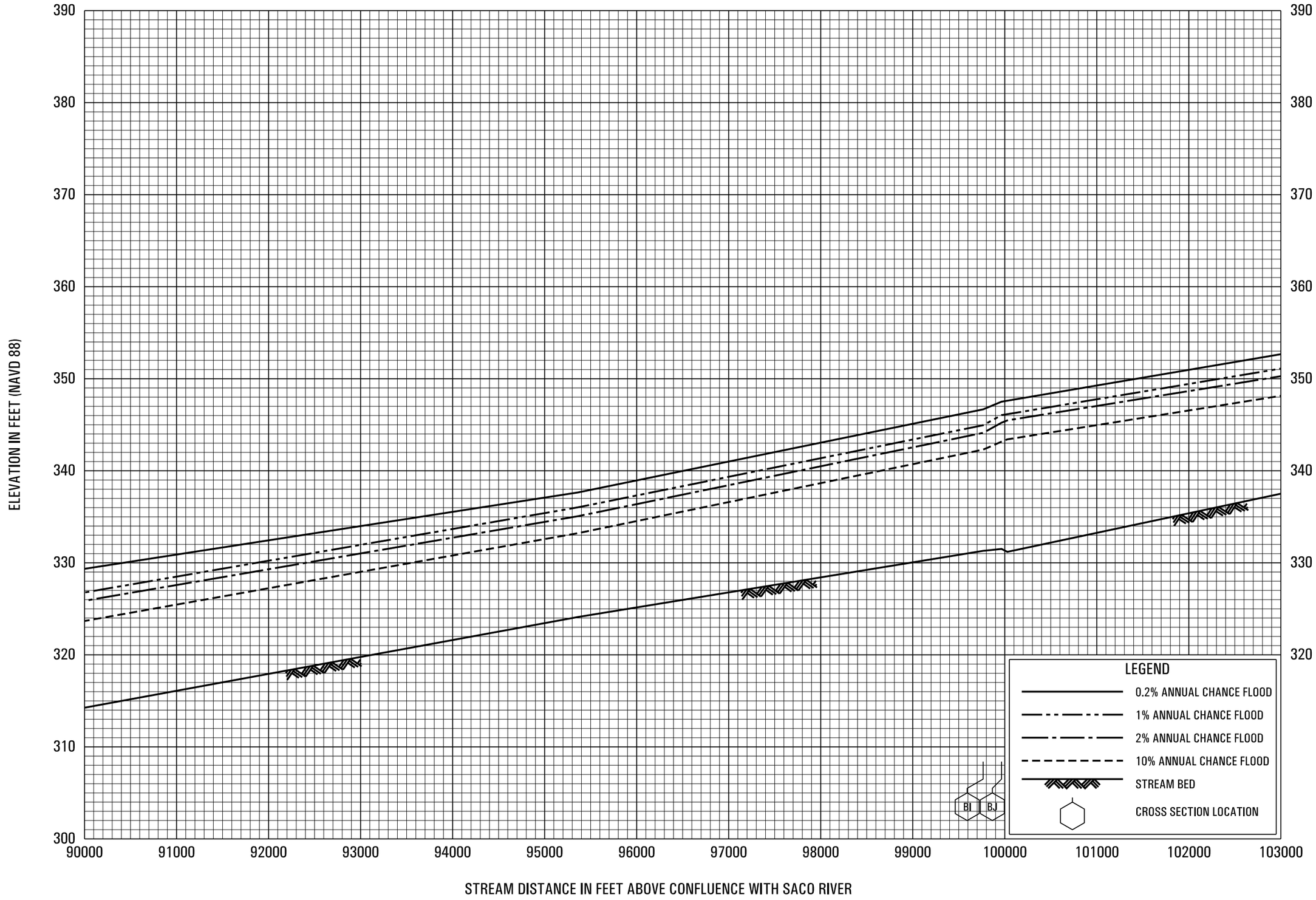
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



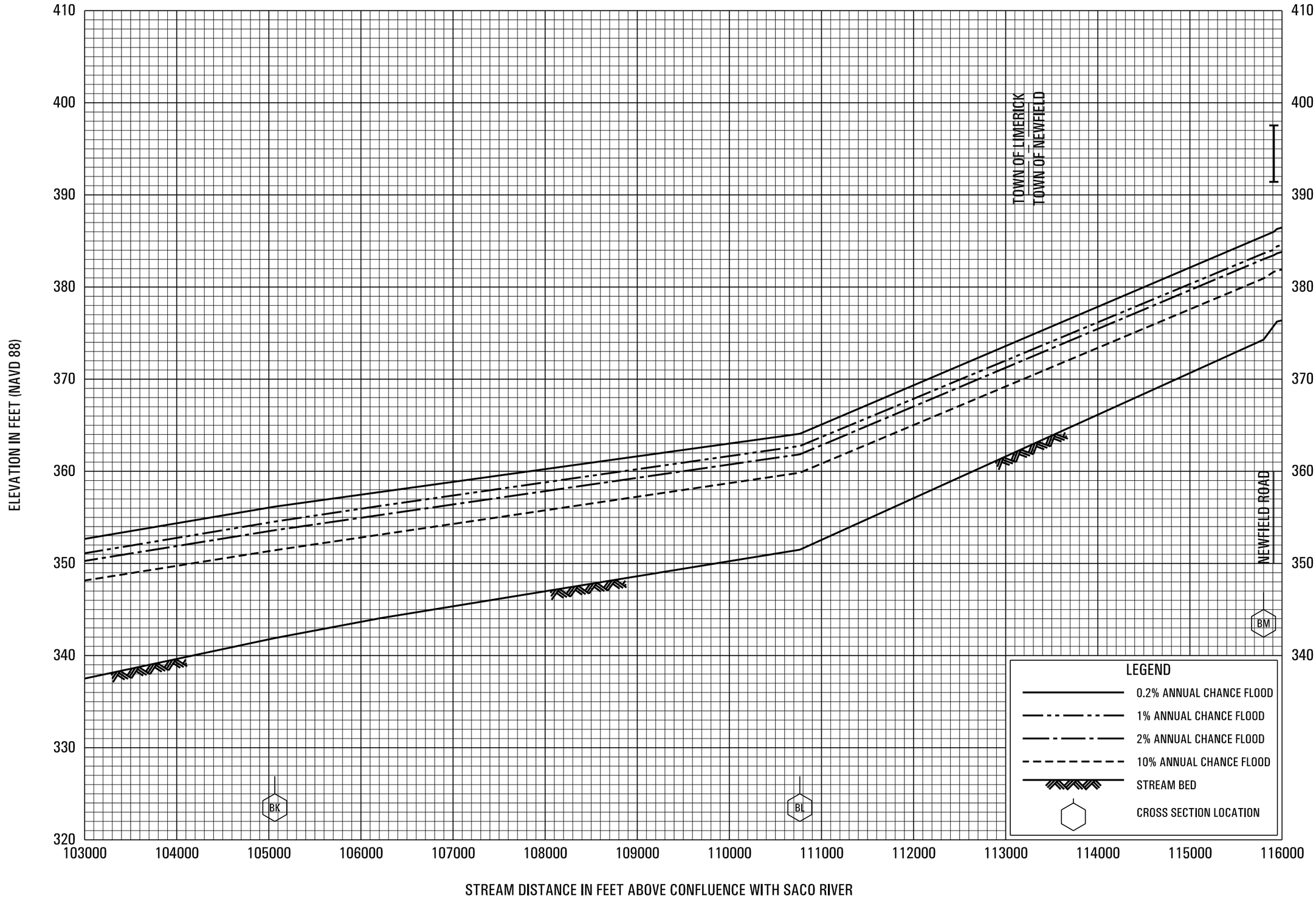
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



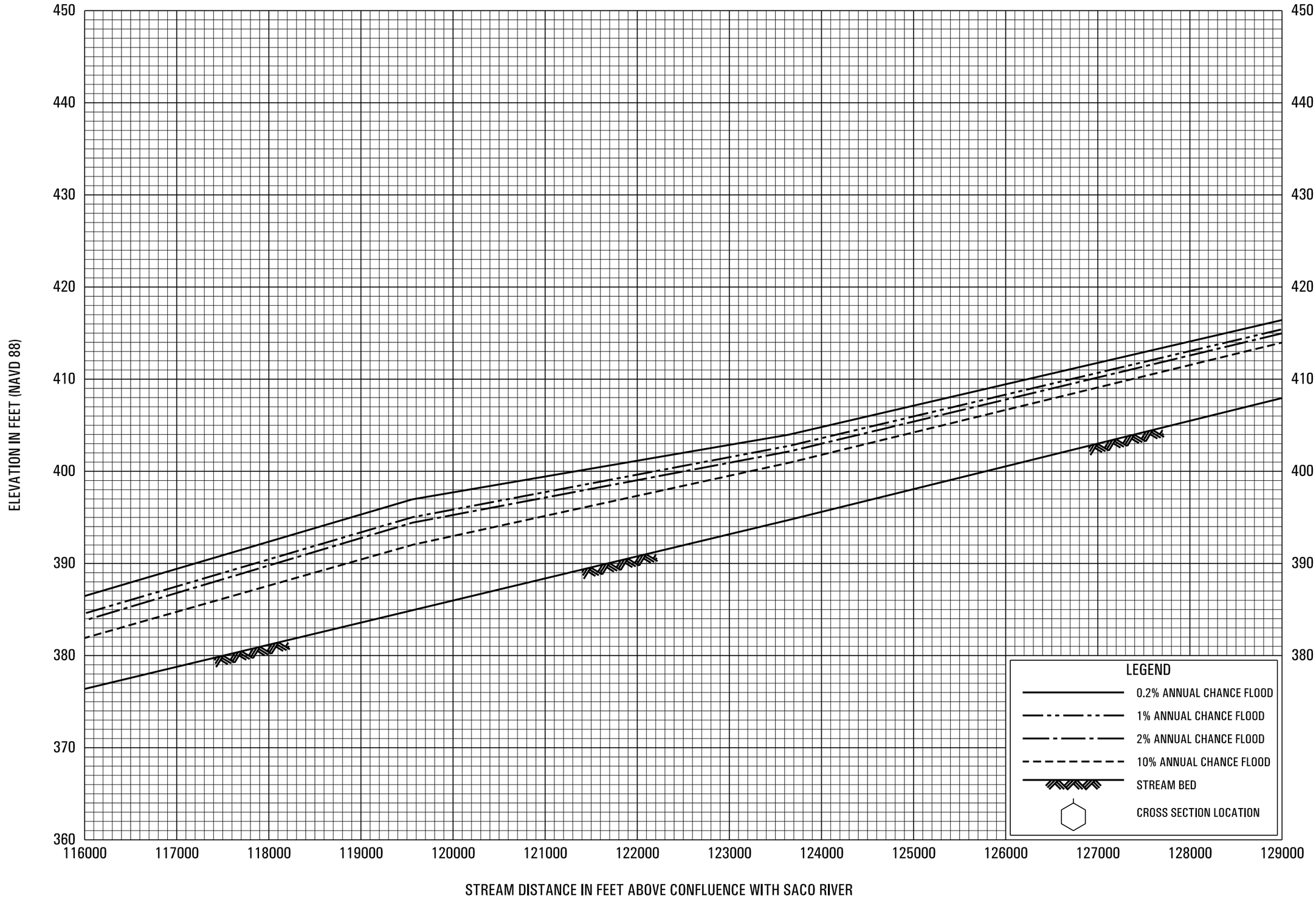
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



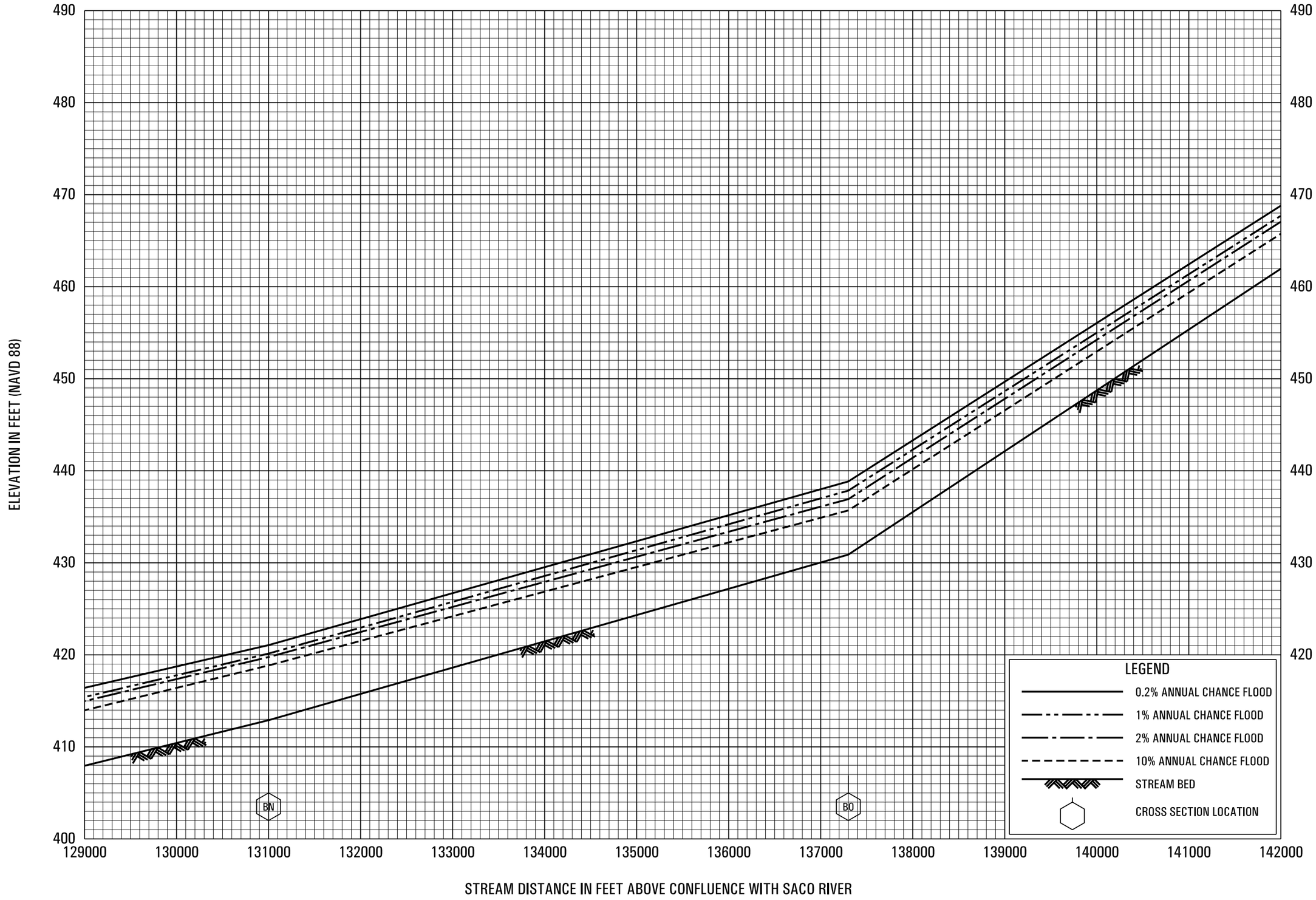
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



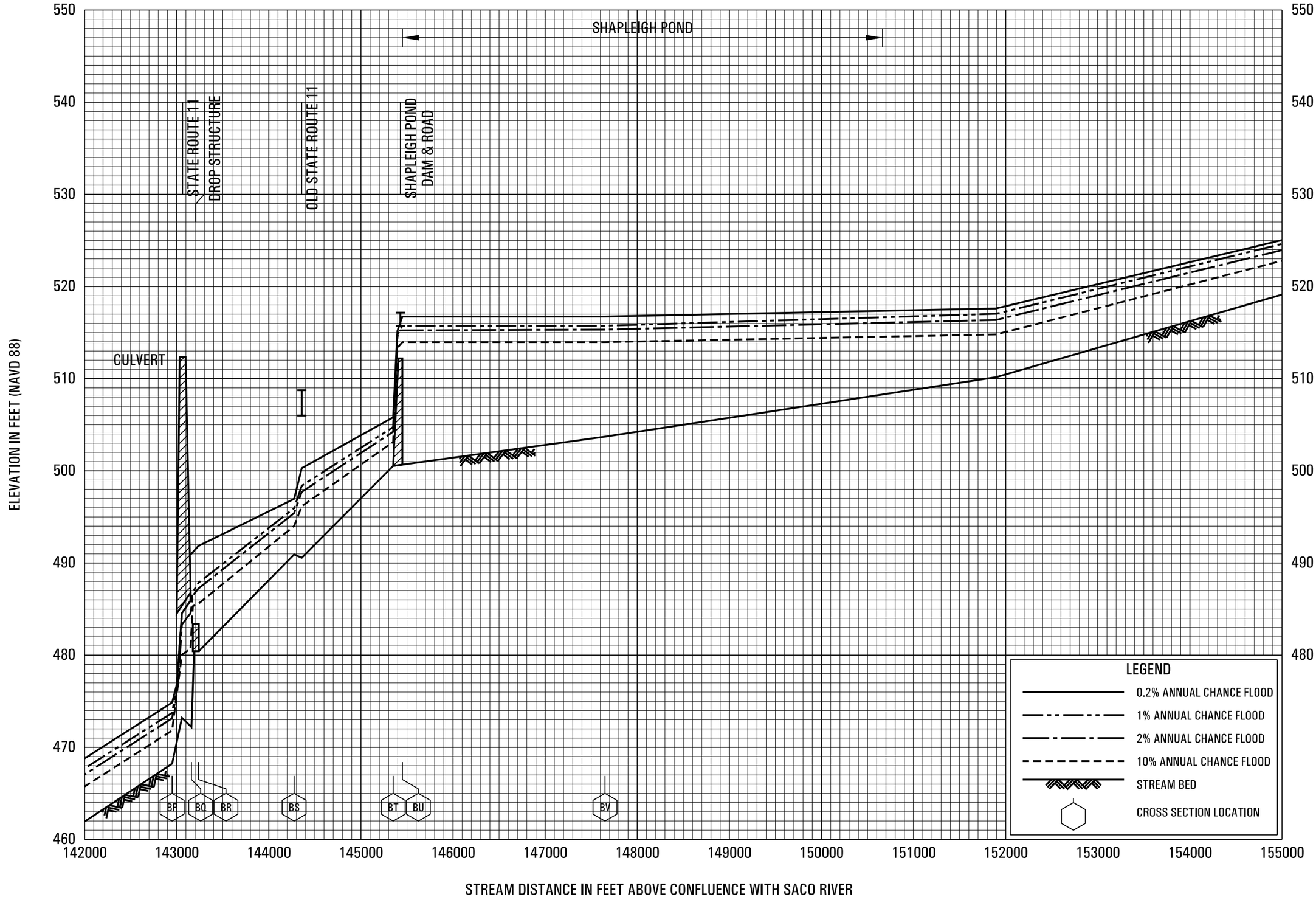
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



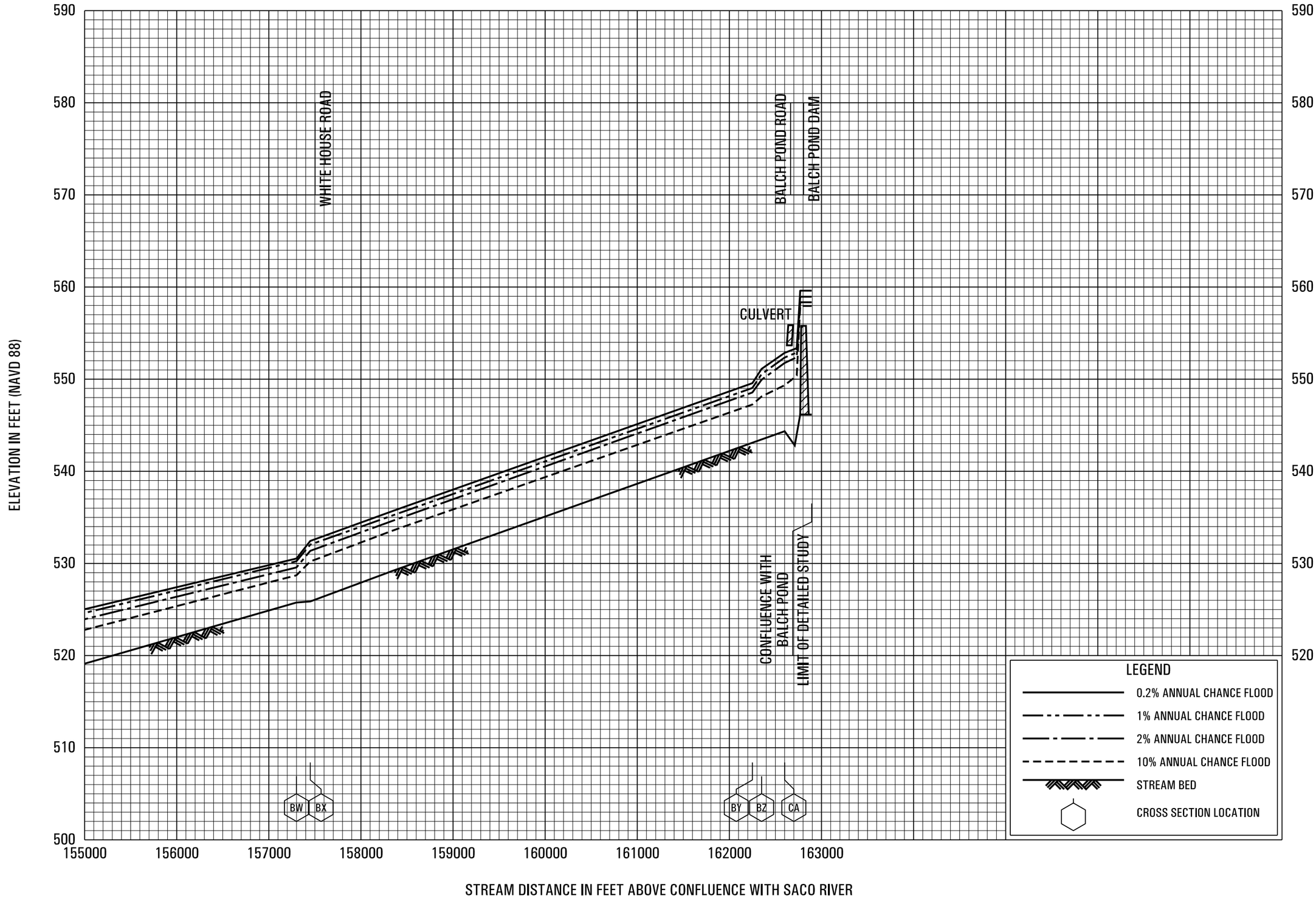
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



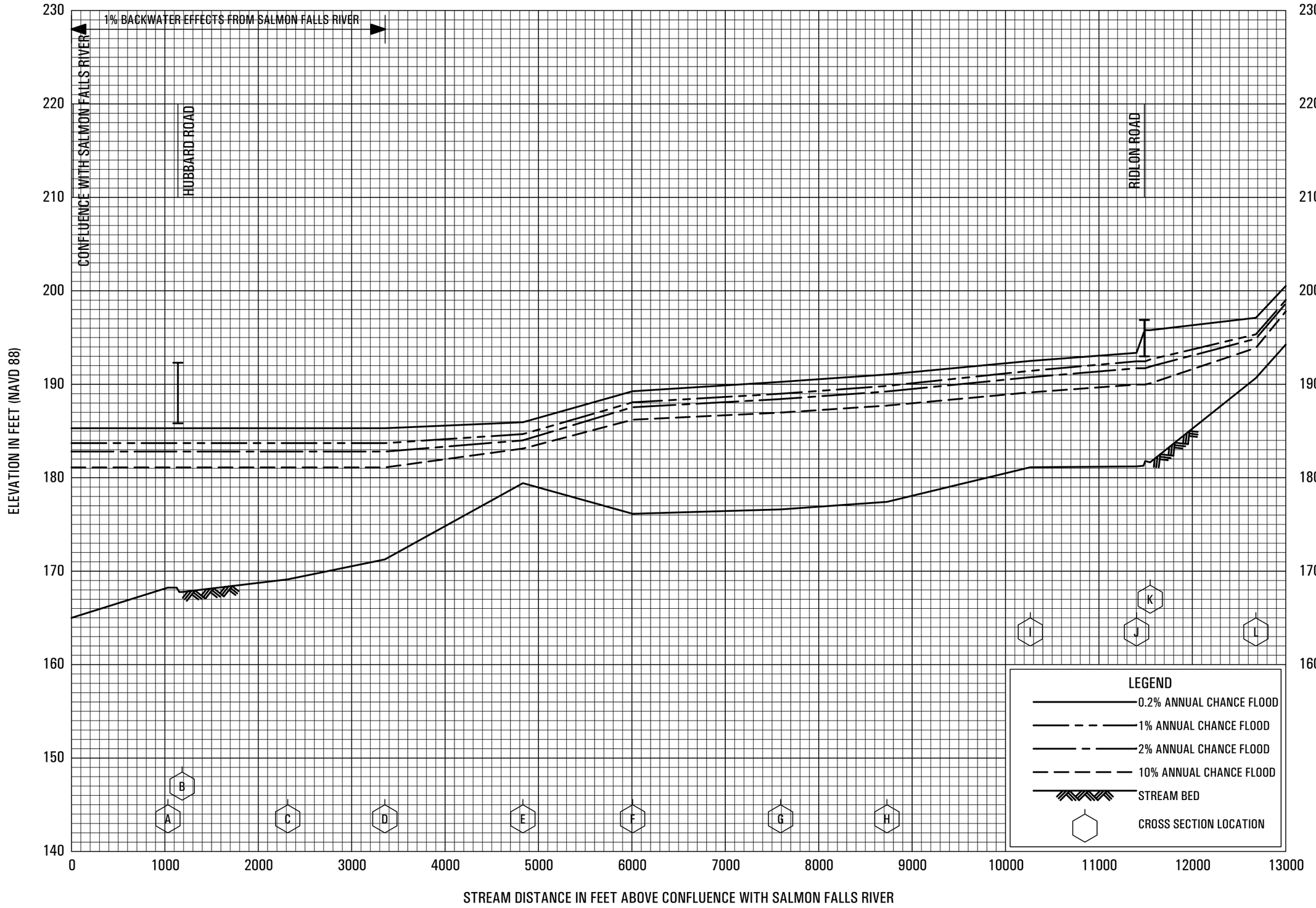
FLOOD PROFILES

LITTLE OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



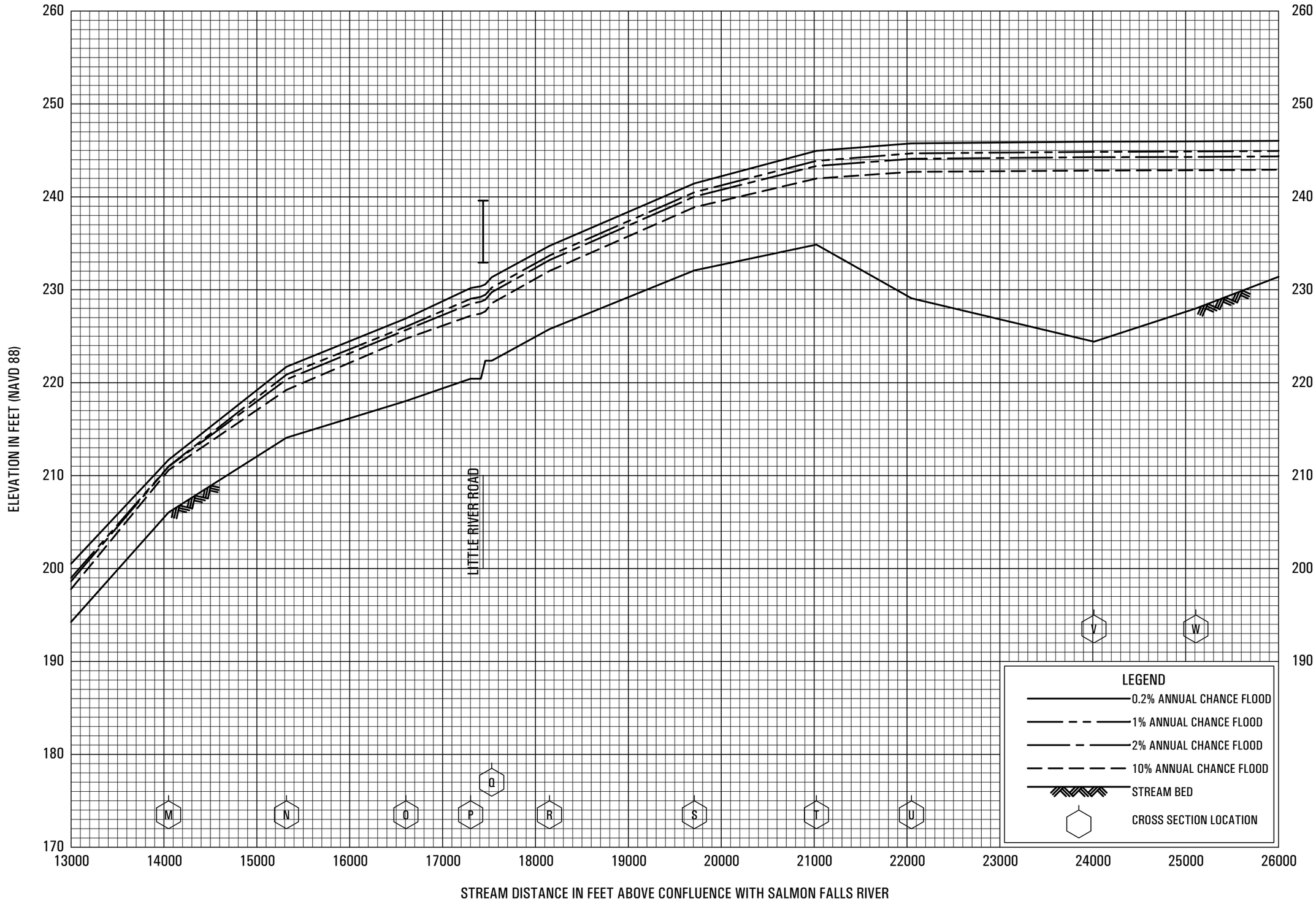
FLOOD PROFILES

LITTLE RIVER (TOWN OF BERWICK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



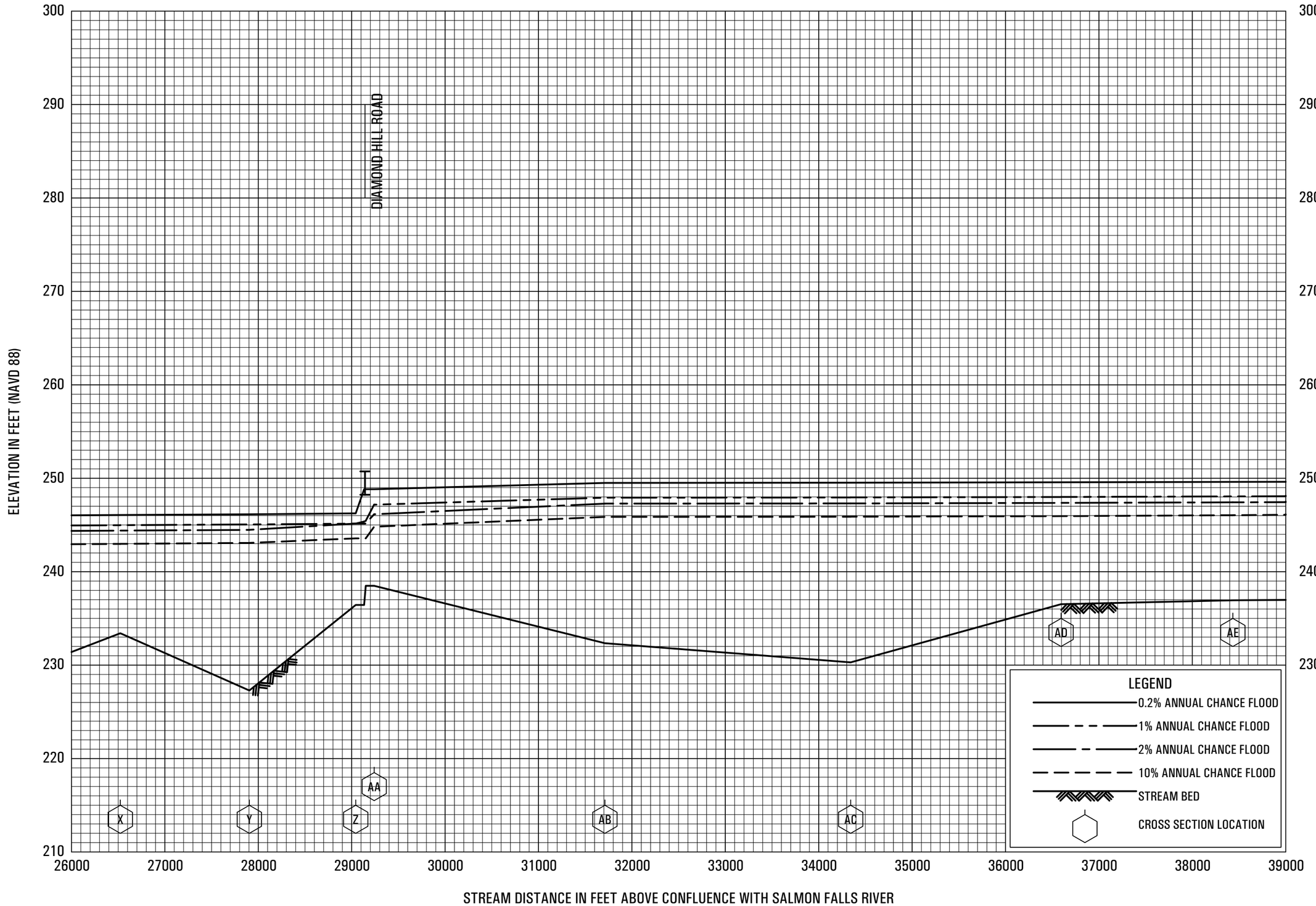
FLOOD PROFILES

LITTLE RIVER (TOWN OF BERWICK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



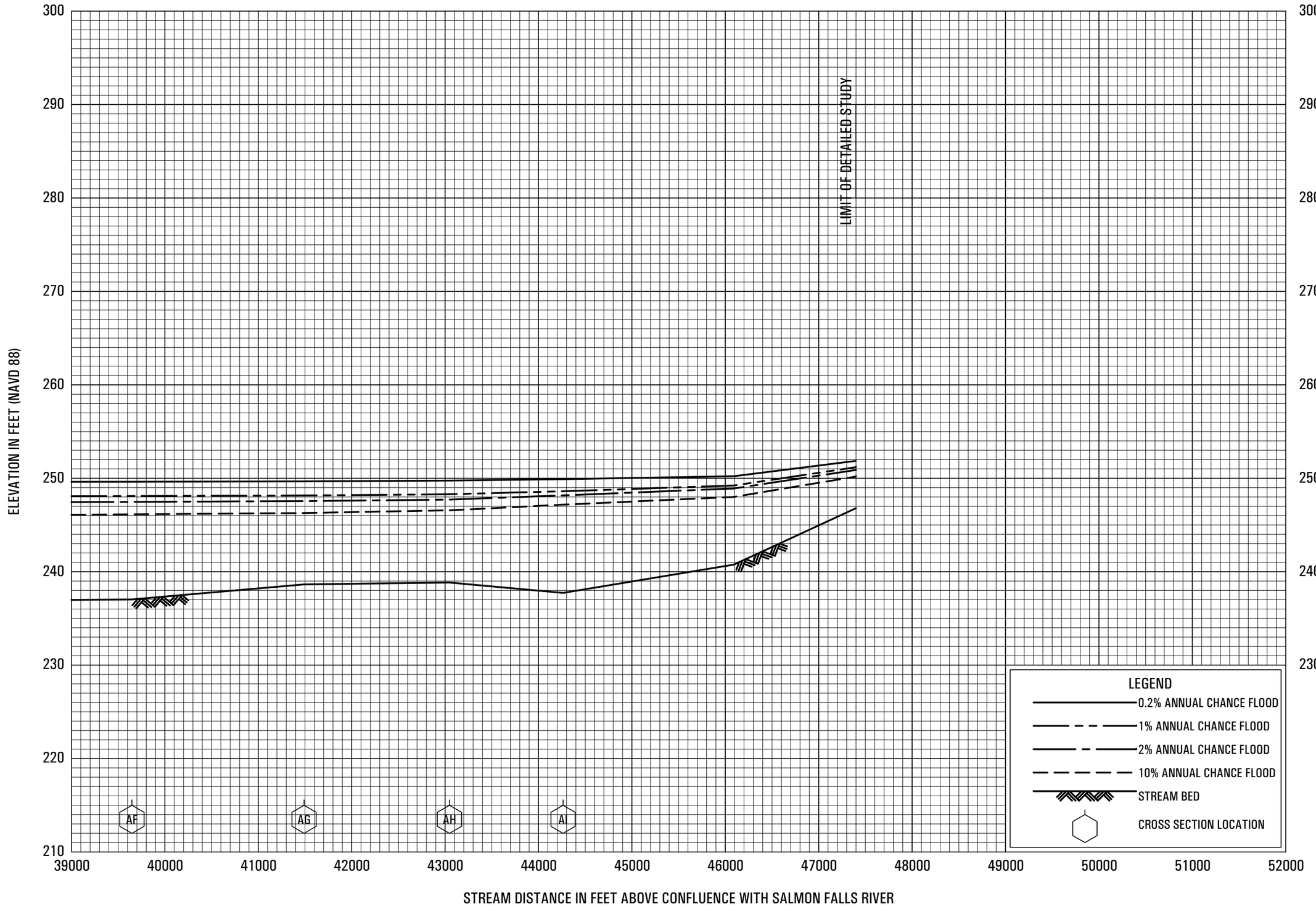
FLOOD PROFILES

LITTLE RIVER (TOWN OF BERWICK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



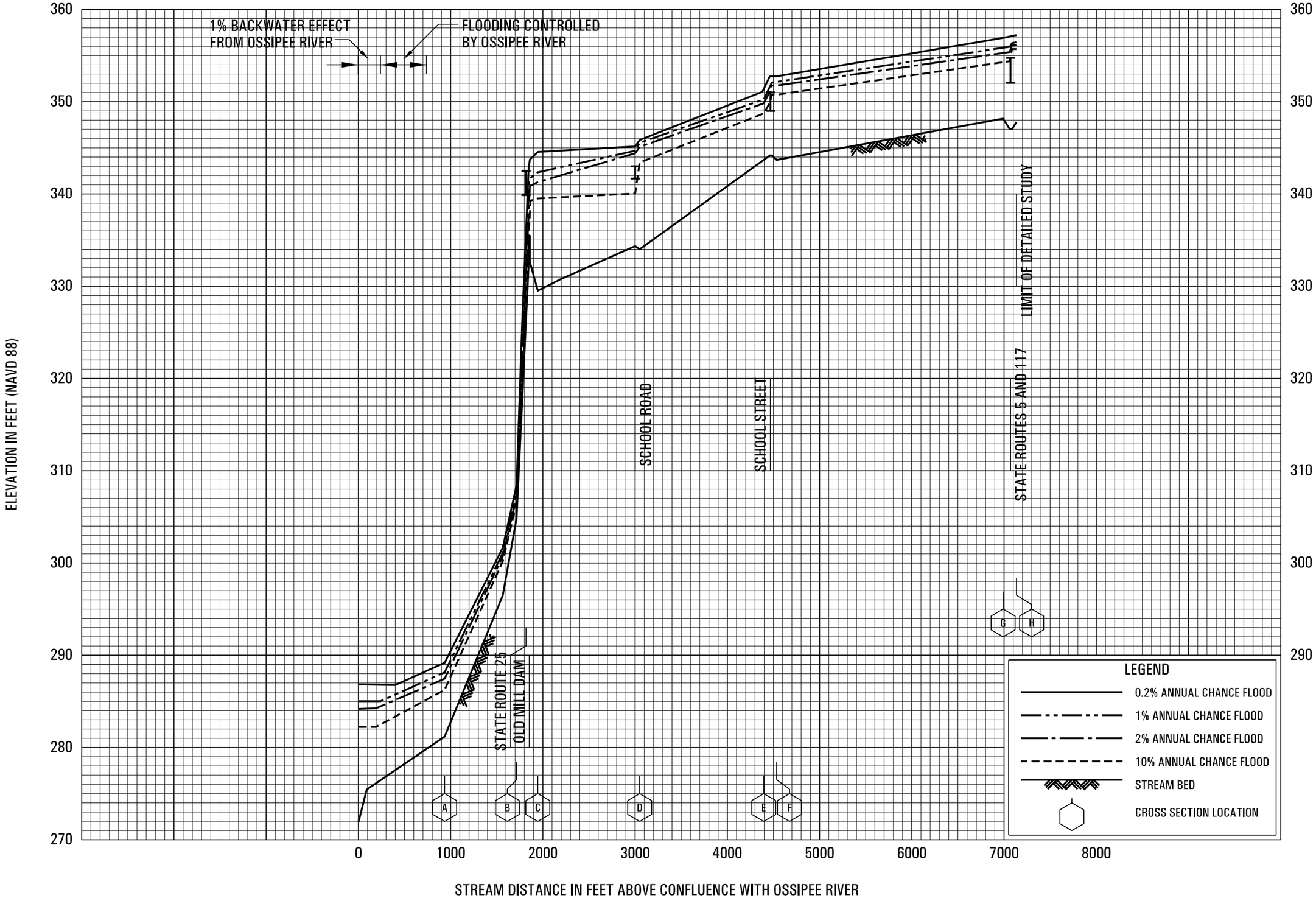
FLOOD PROFILES

LITTLE RIVER (TOWN OF BERWICK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



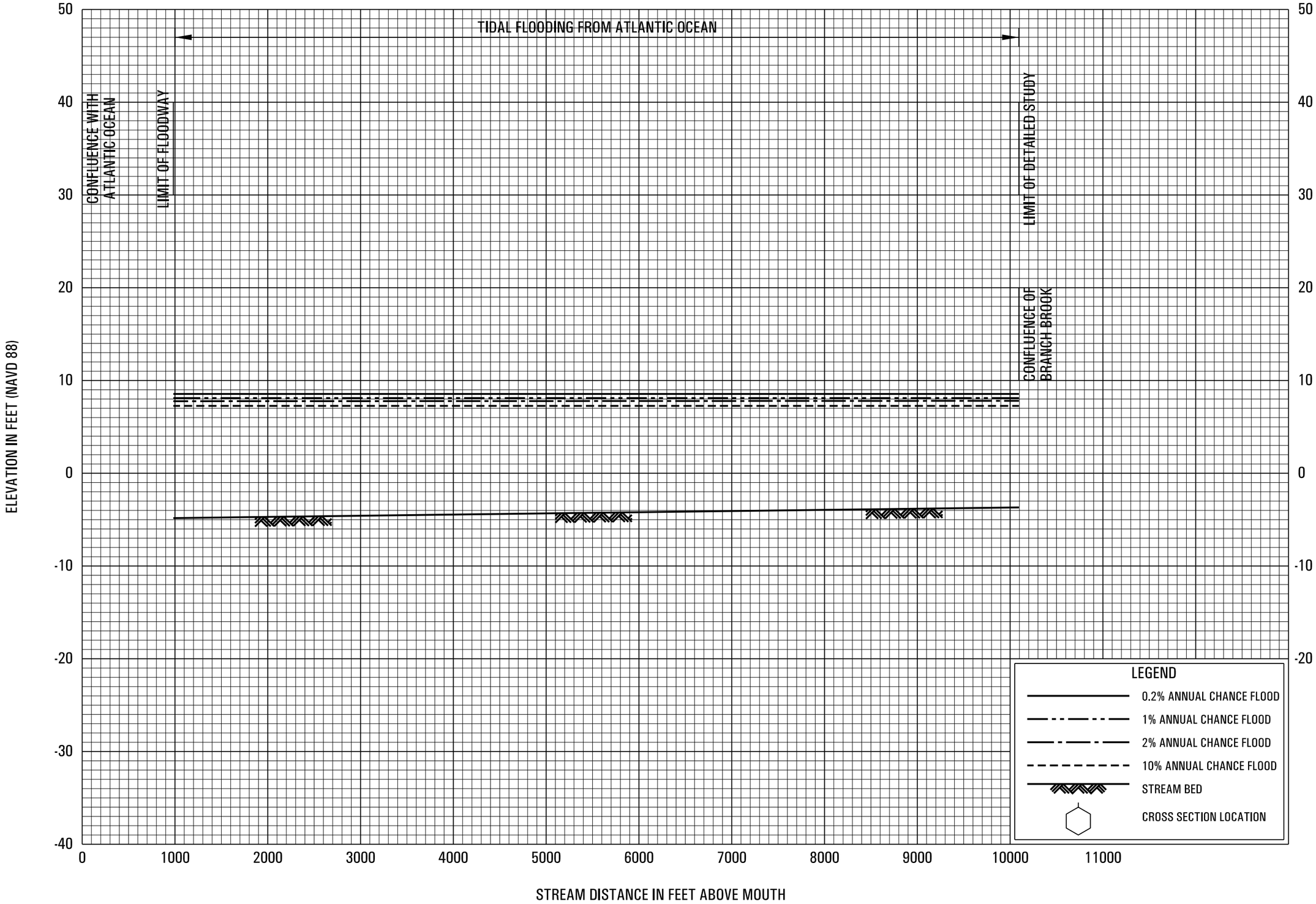
FLOOD PROFILES

LITTLE RIVER (TOWN OF CORNISH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



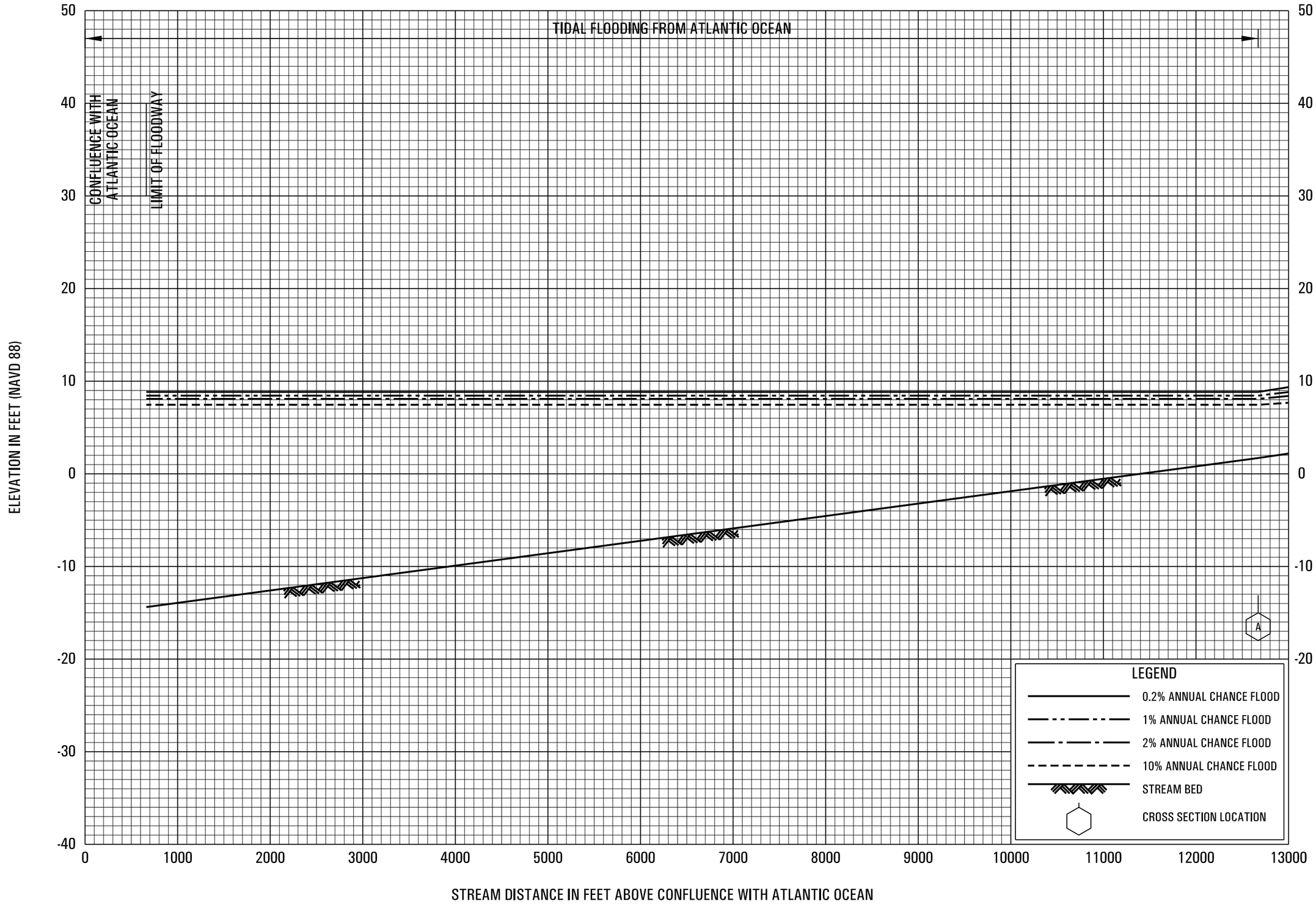
FLOOD PROFILES

LITTLE RIVER (TOWN OF KENNEBUNK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



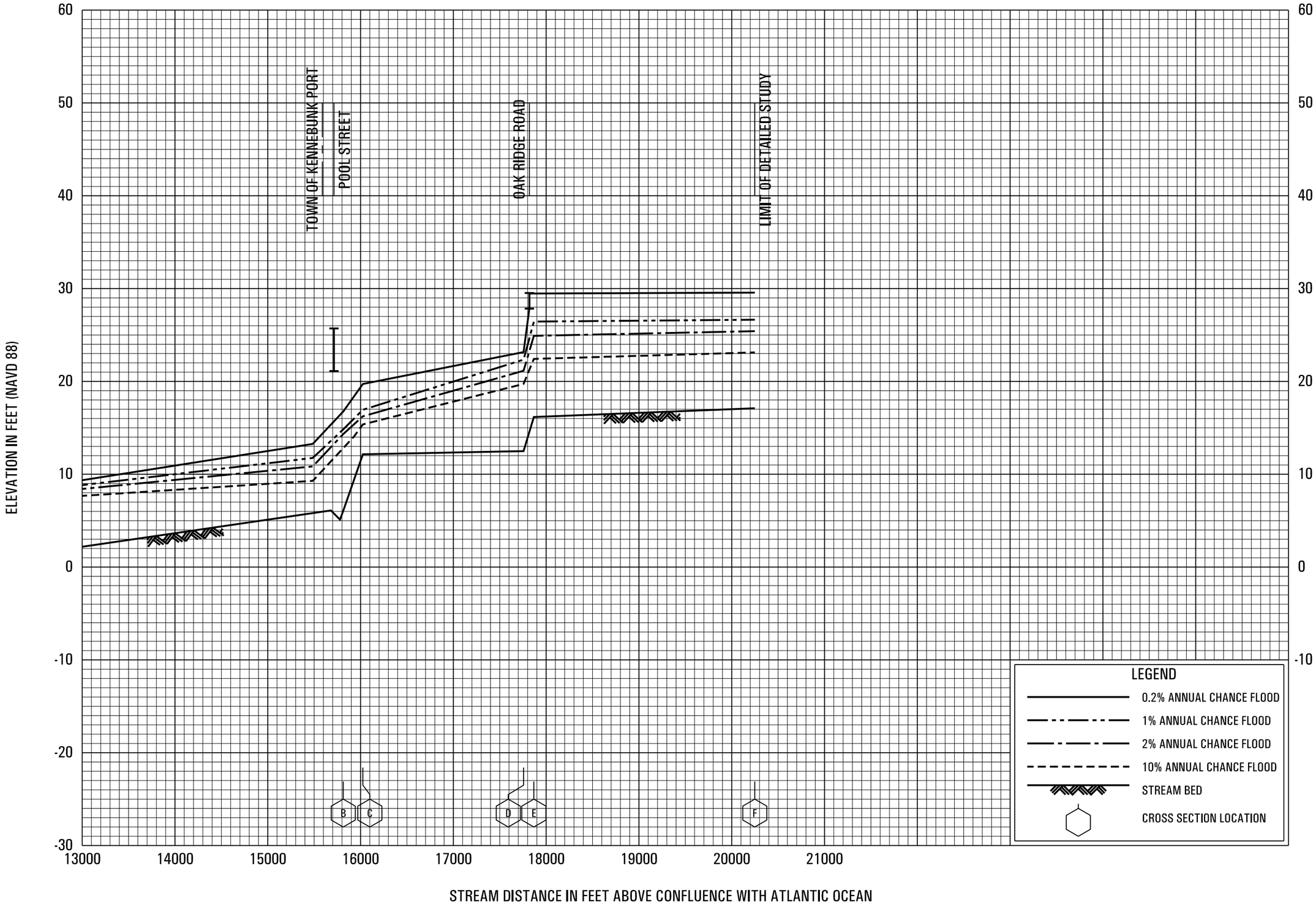
FLOOD PROFILES

LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



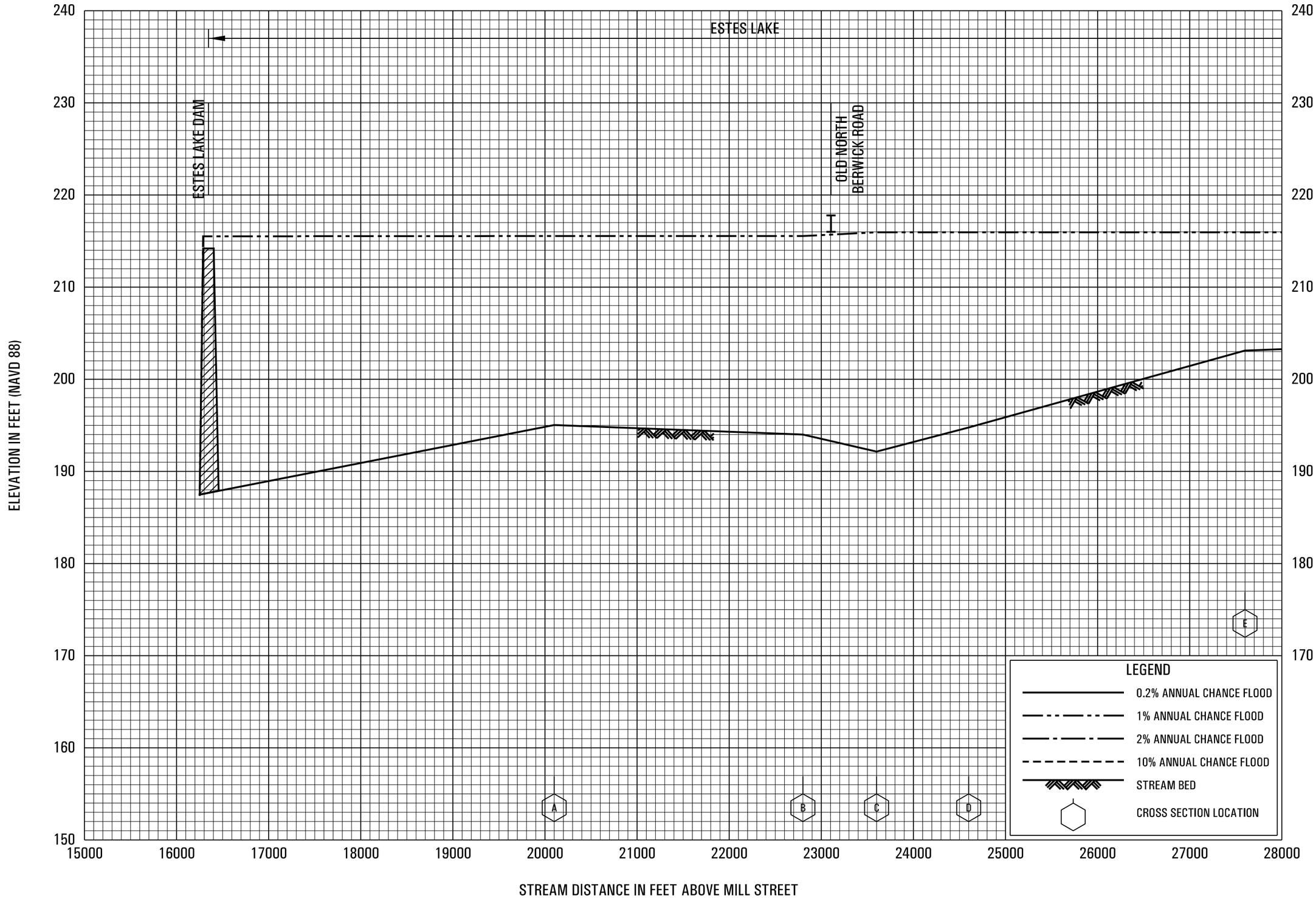
FLOOD PROFILES

LITTLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



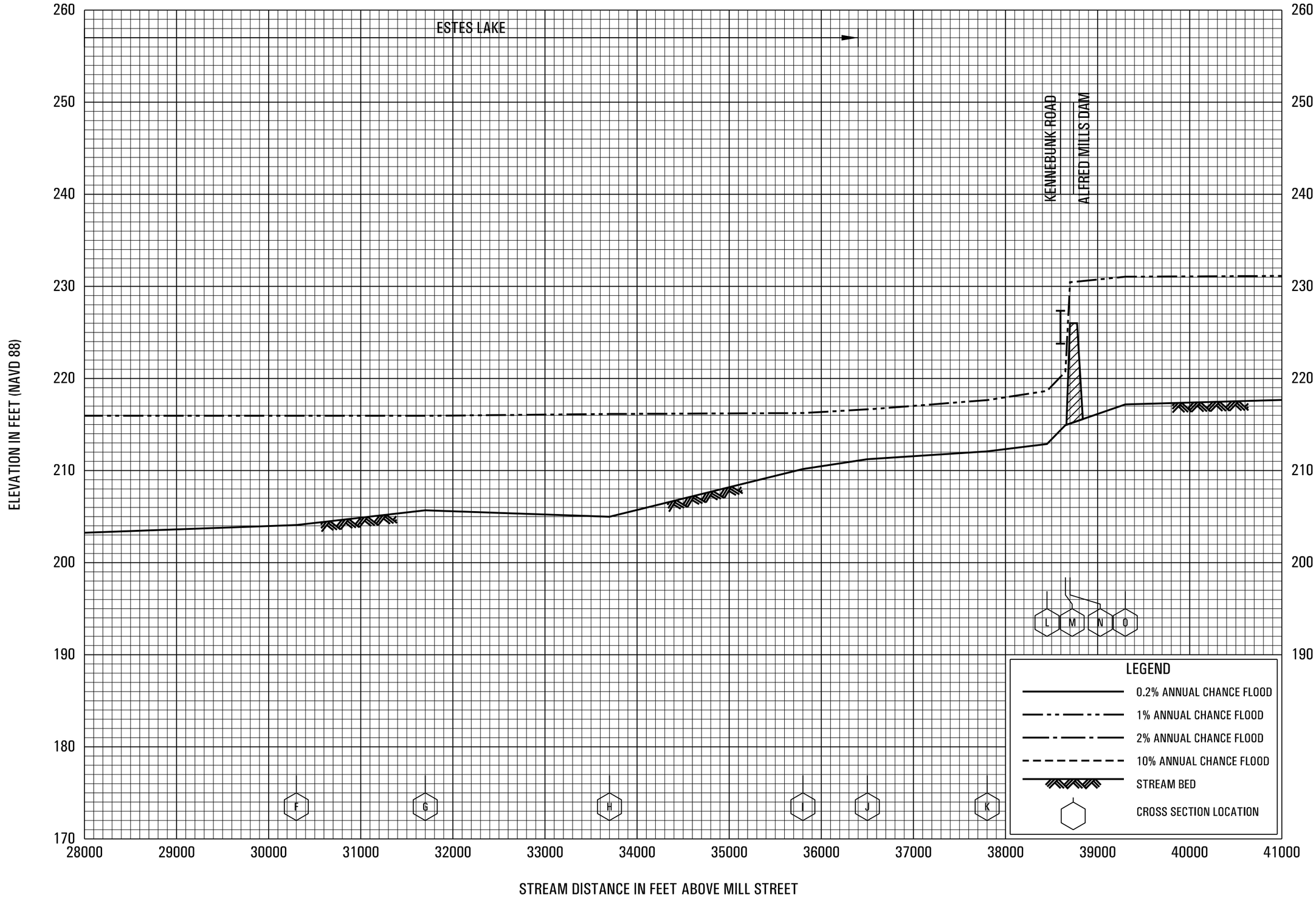
FLOOD PROFILES

LITTLEFIELD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



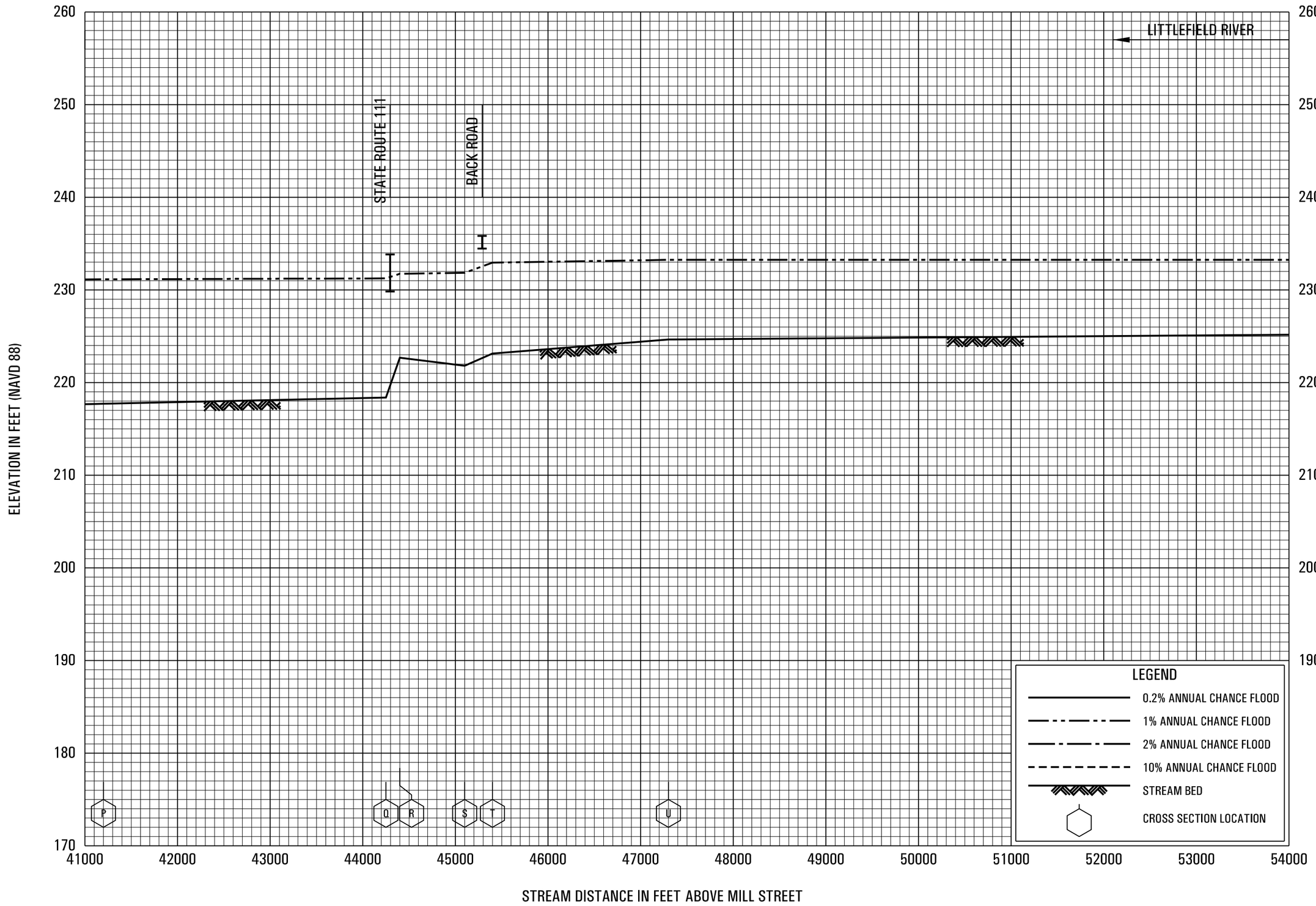
FLOOD PROFILES

LITTLEFIELD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



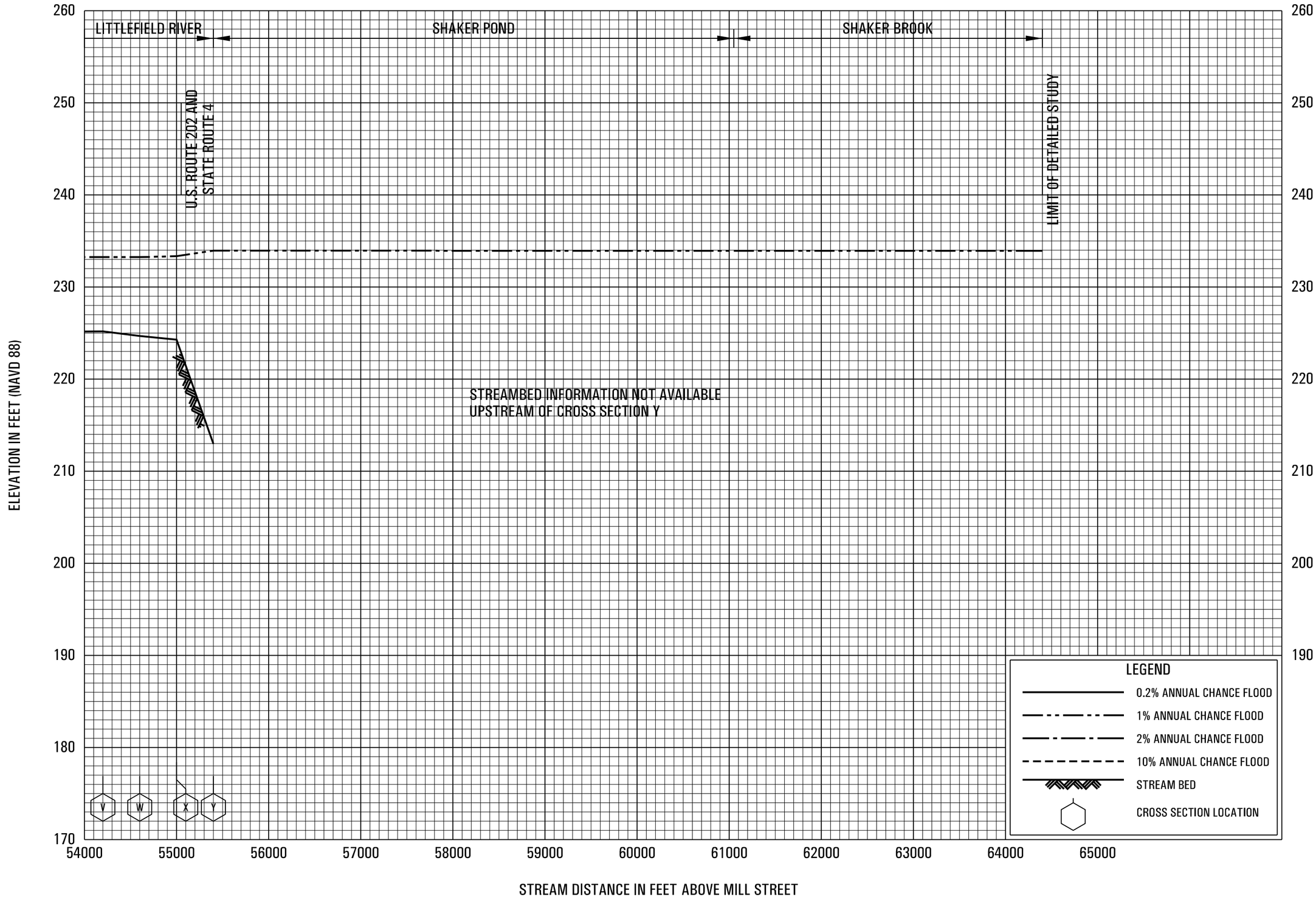
FLOOD PROFILES

LITTLEFIELD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



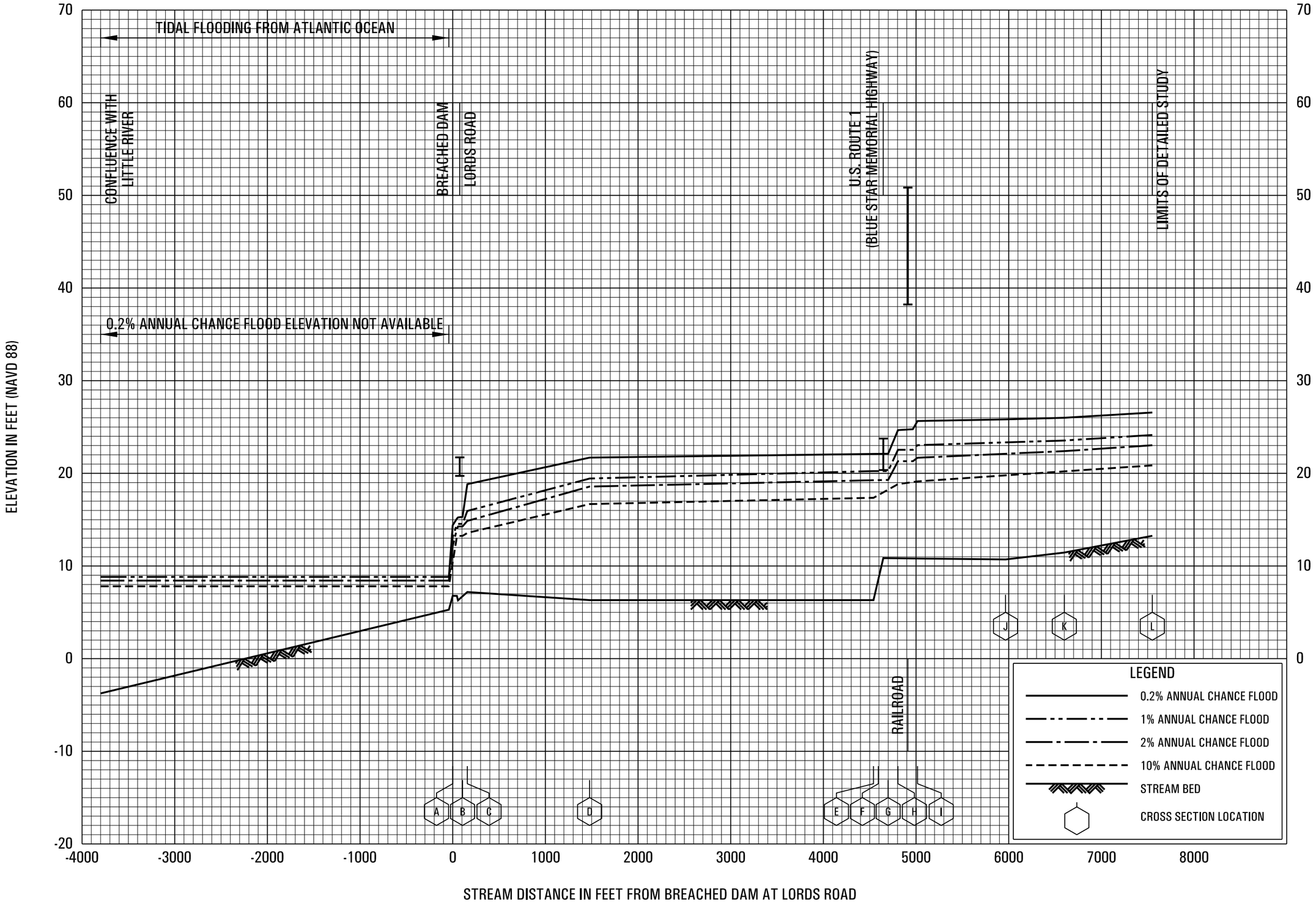
FLOOD PROFILES

LITTLEFIELD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



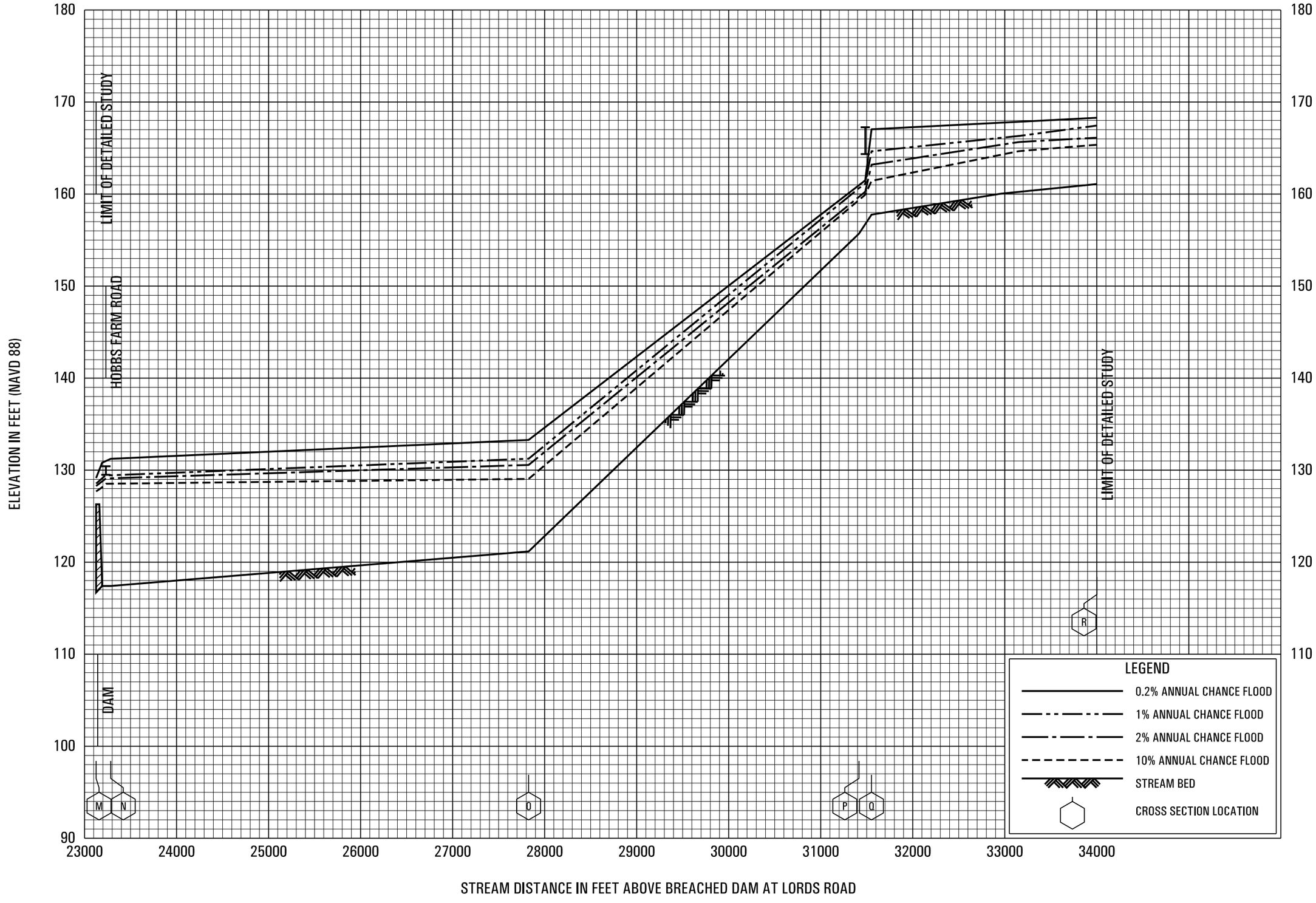
FLOOD PROFILES

MERRILAND RIVER (LOWER REACH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



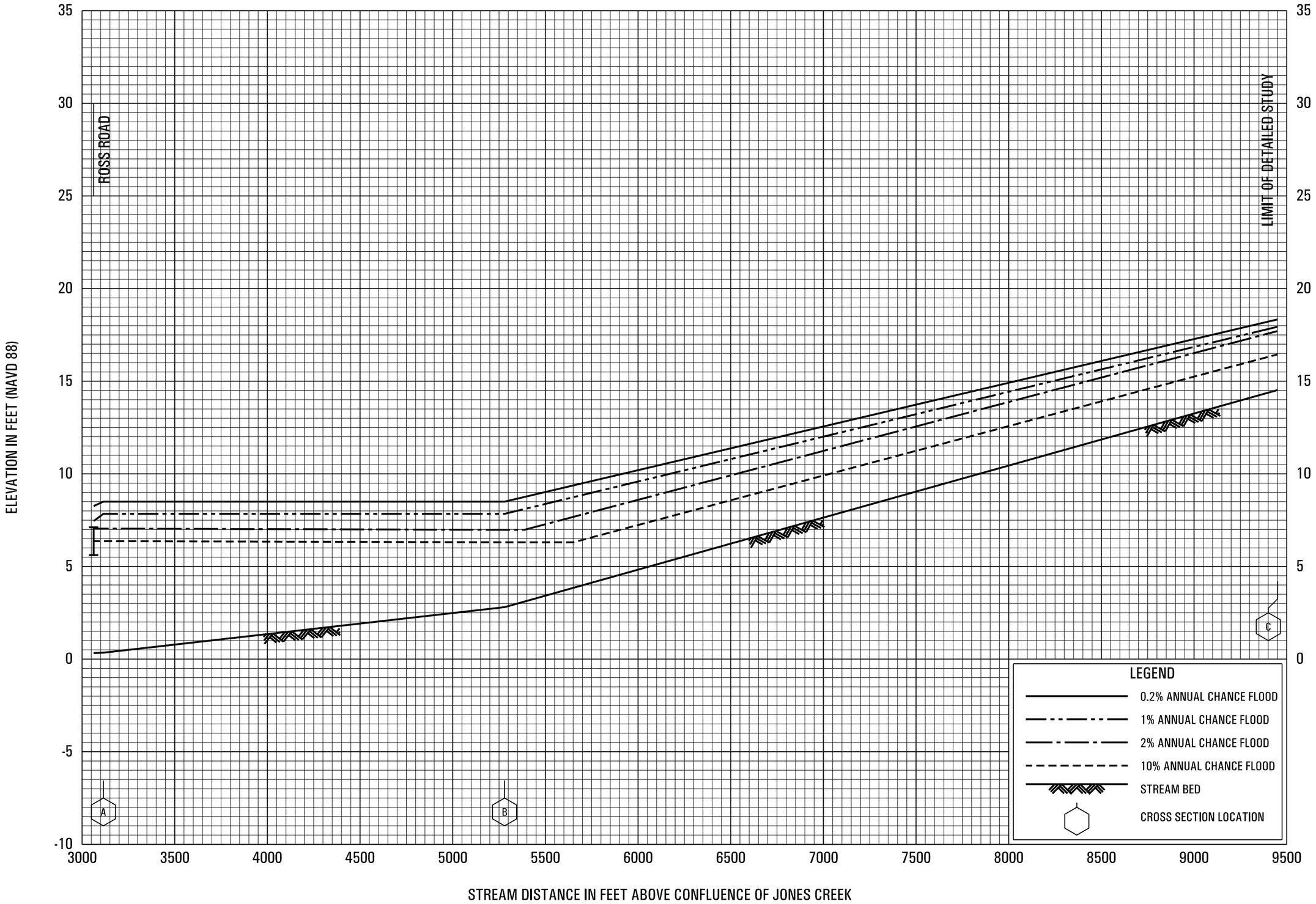
FLOOD PROFILES

MERRILAND RIVER (UPPER REACH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



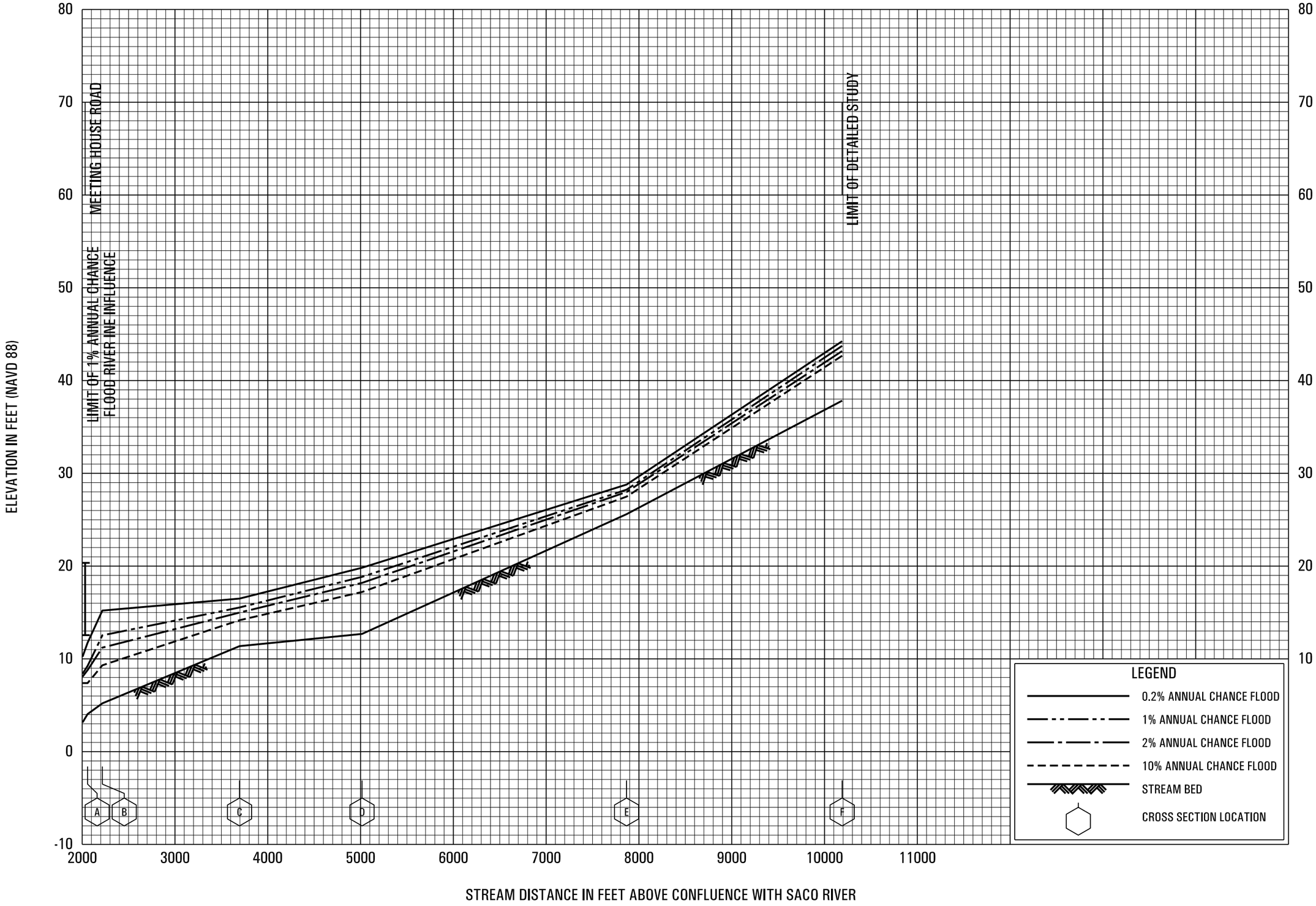
FLOOD PROFILES

MILL BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



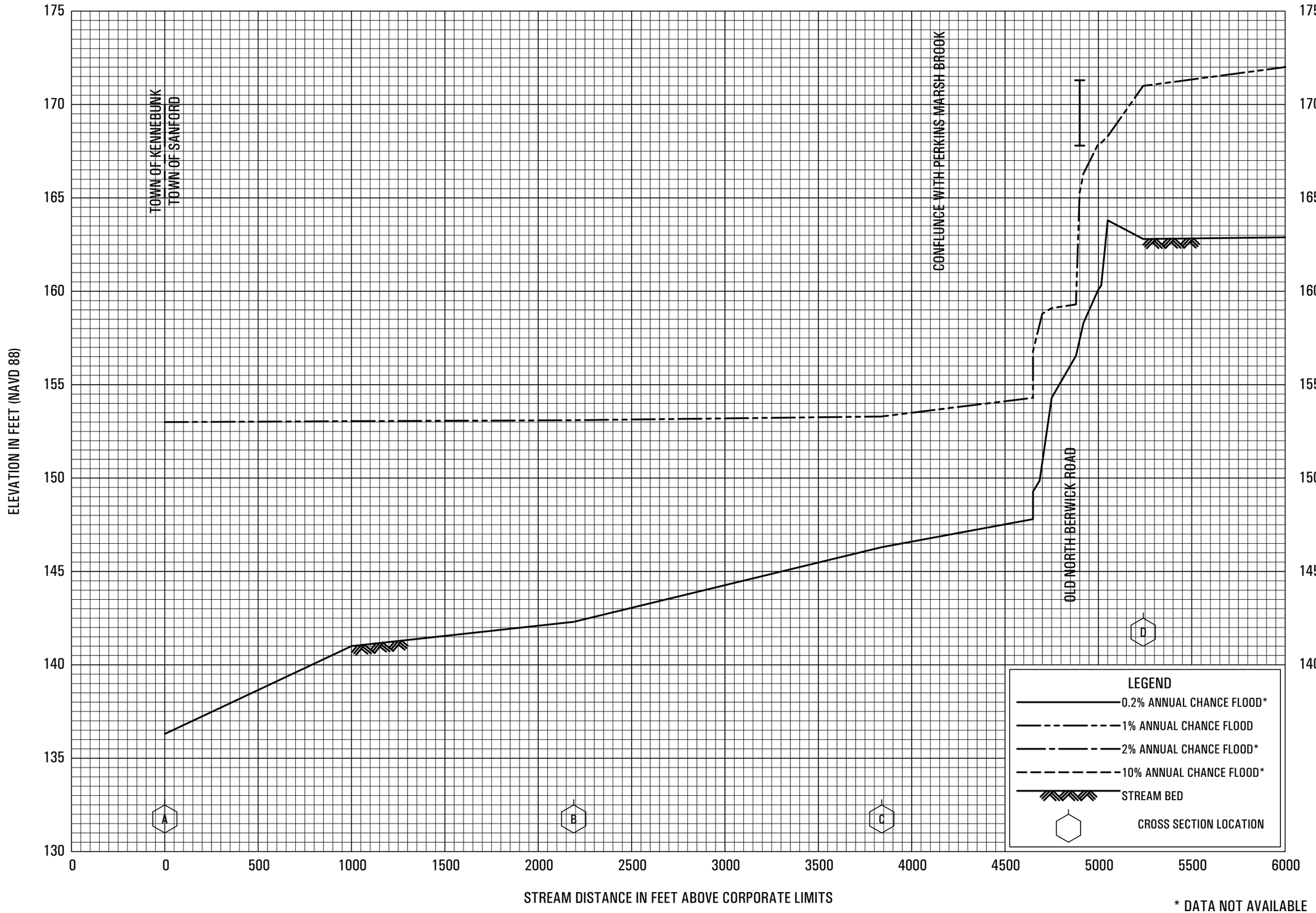
FLOOD PROFILES

MOORS BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



* DATA NOT AVAILABLE

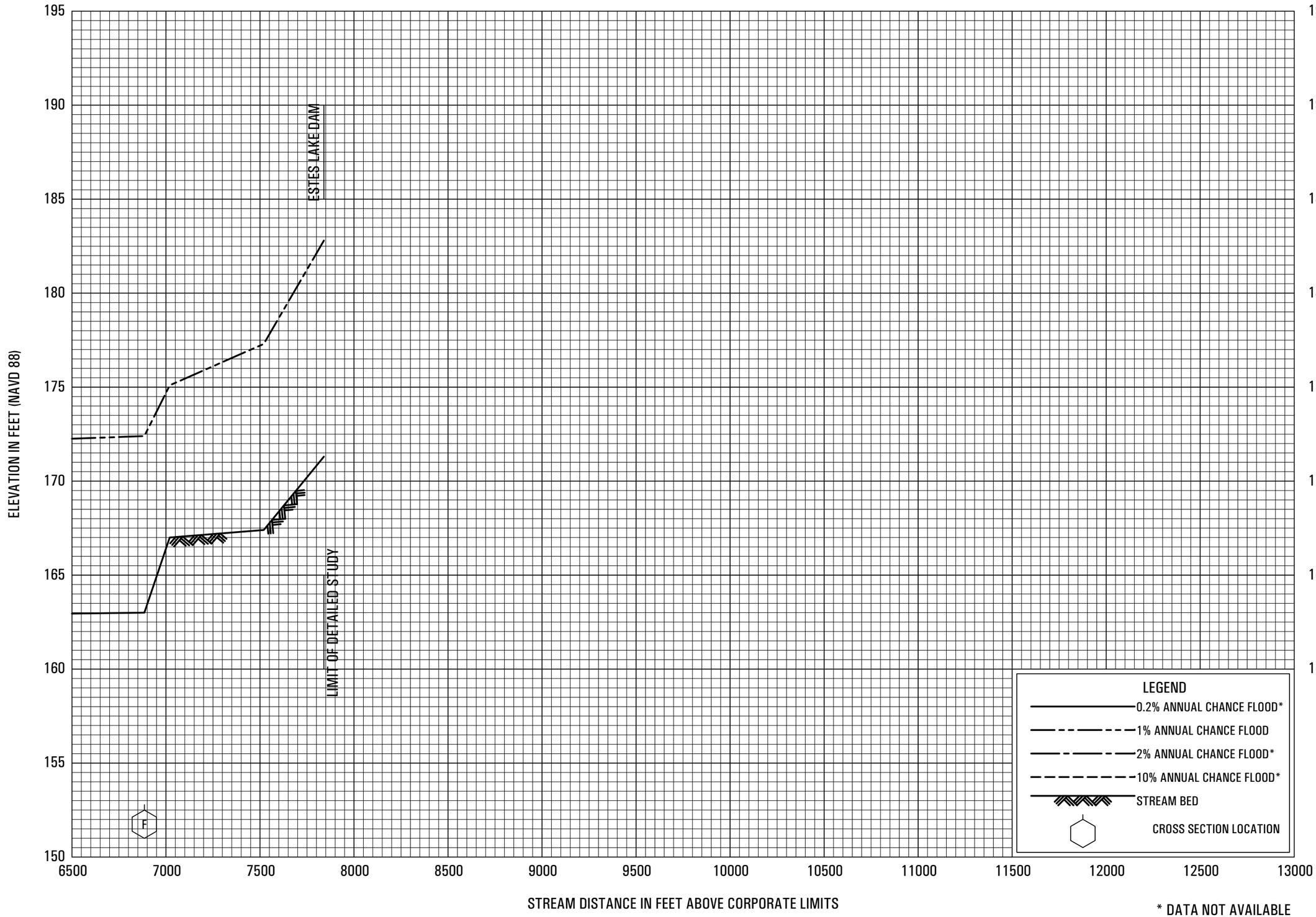
FLOOD PROFILES

MOUSAM RIVER (LOWER REACH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



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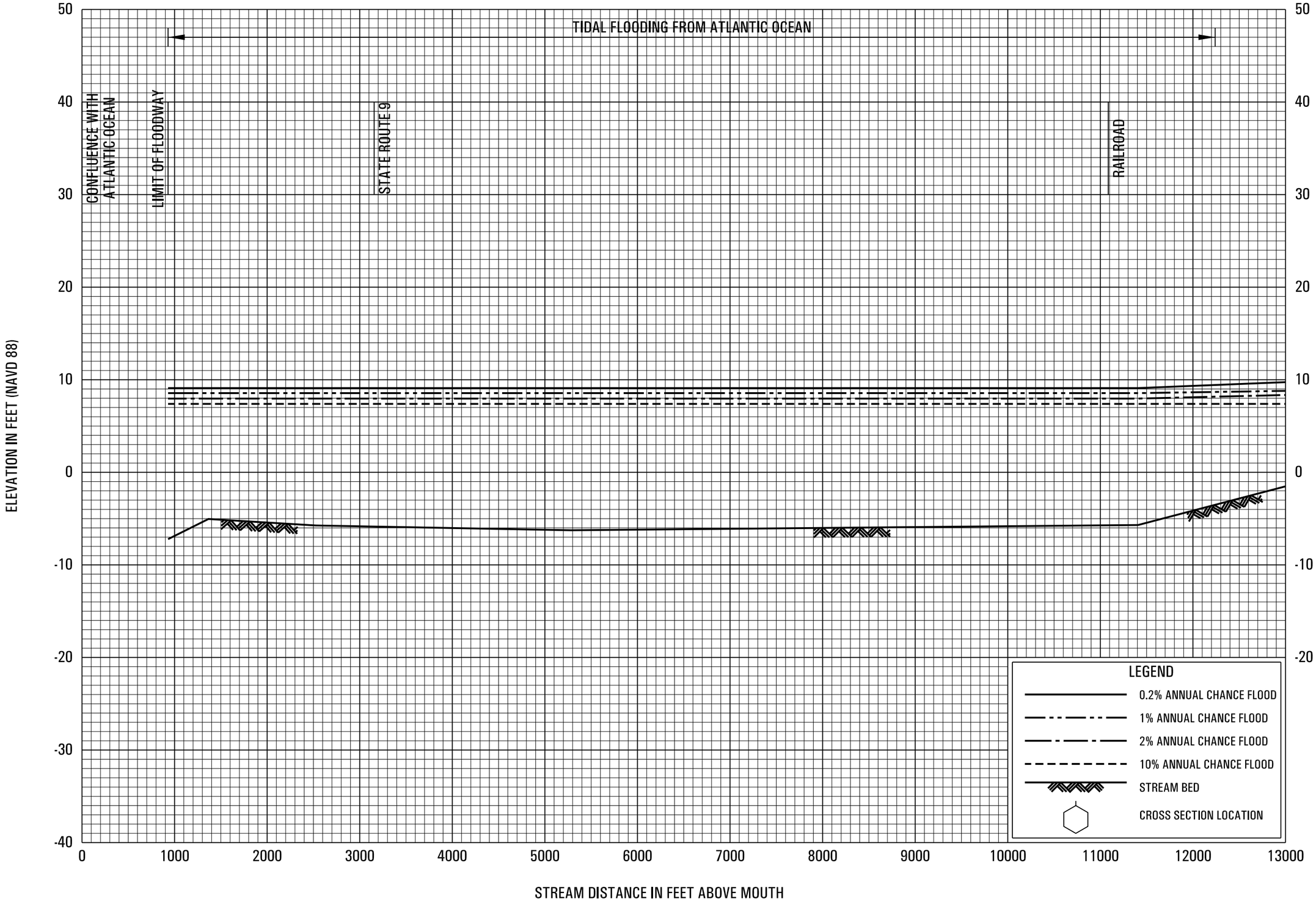
FLOOD PROFILES

MOUSAM RIVER (LOWER REACH)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



FLOOD PROFILES

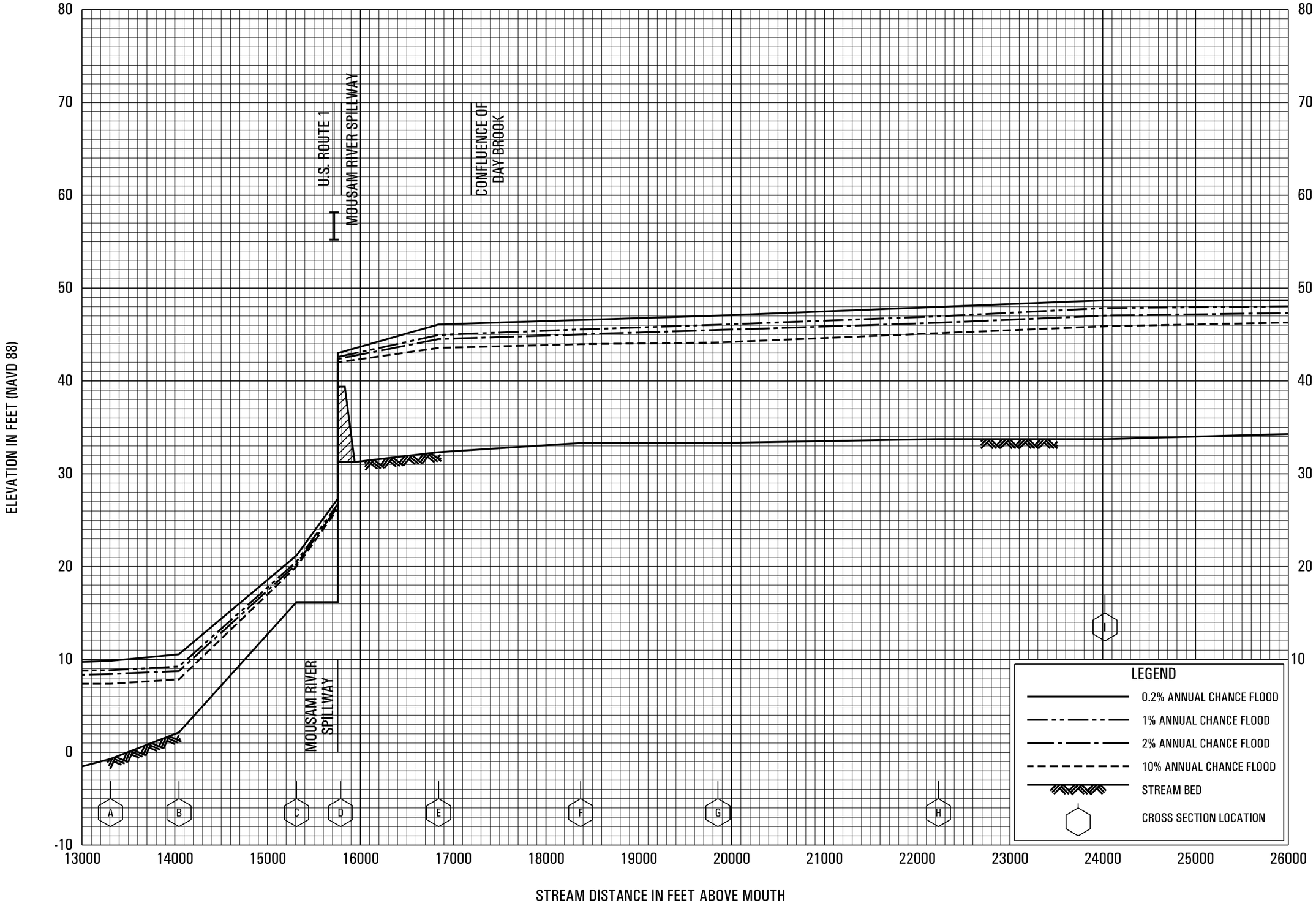
MOUSAM RIVER (TOWN OF KENNEBUNK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

82P



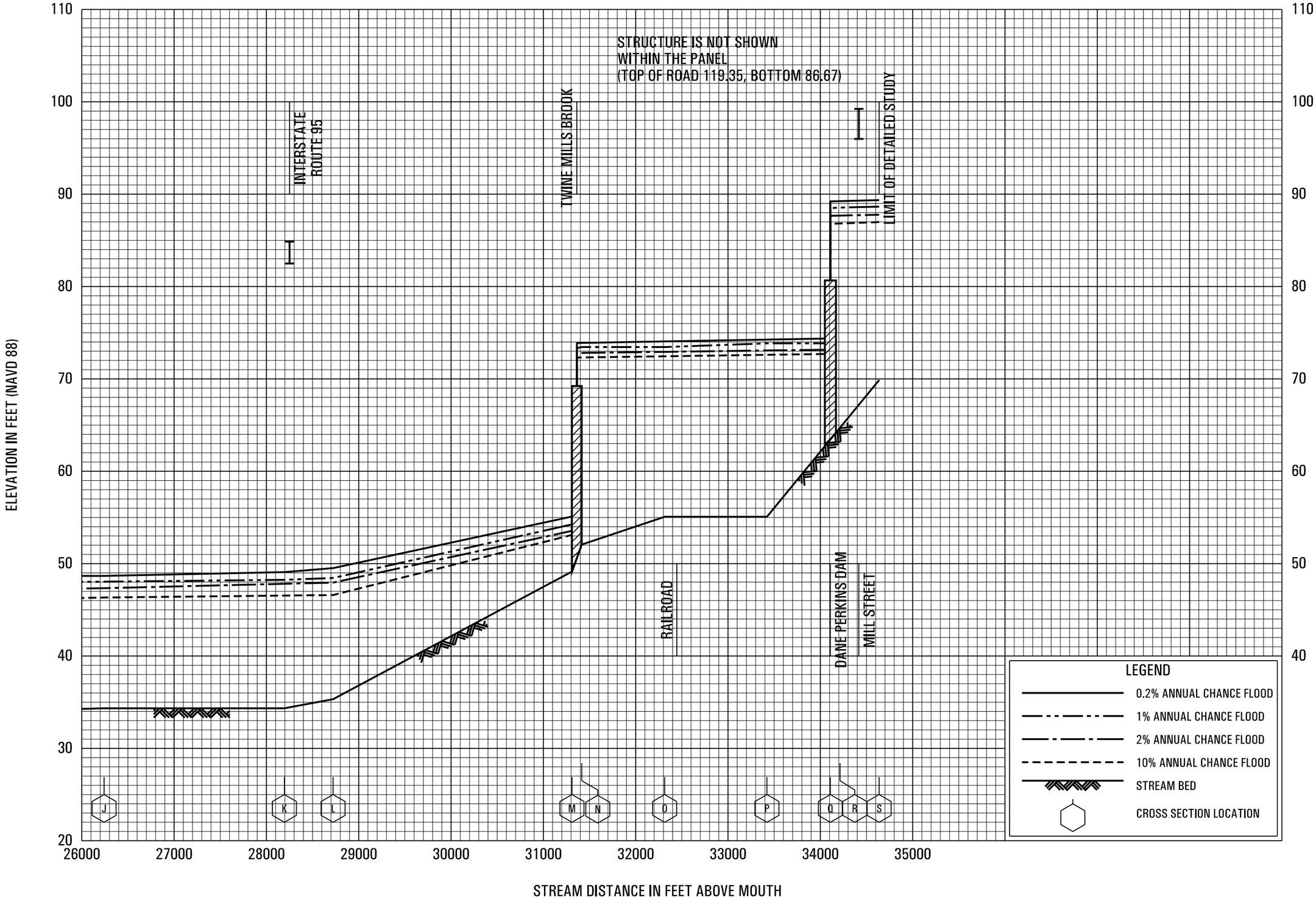
FLOOD PROFILES

MOUSAM RIVER (TOWN OF KENNEBUNK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



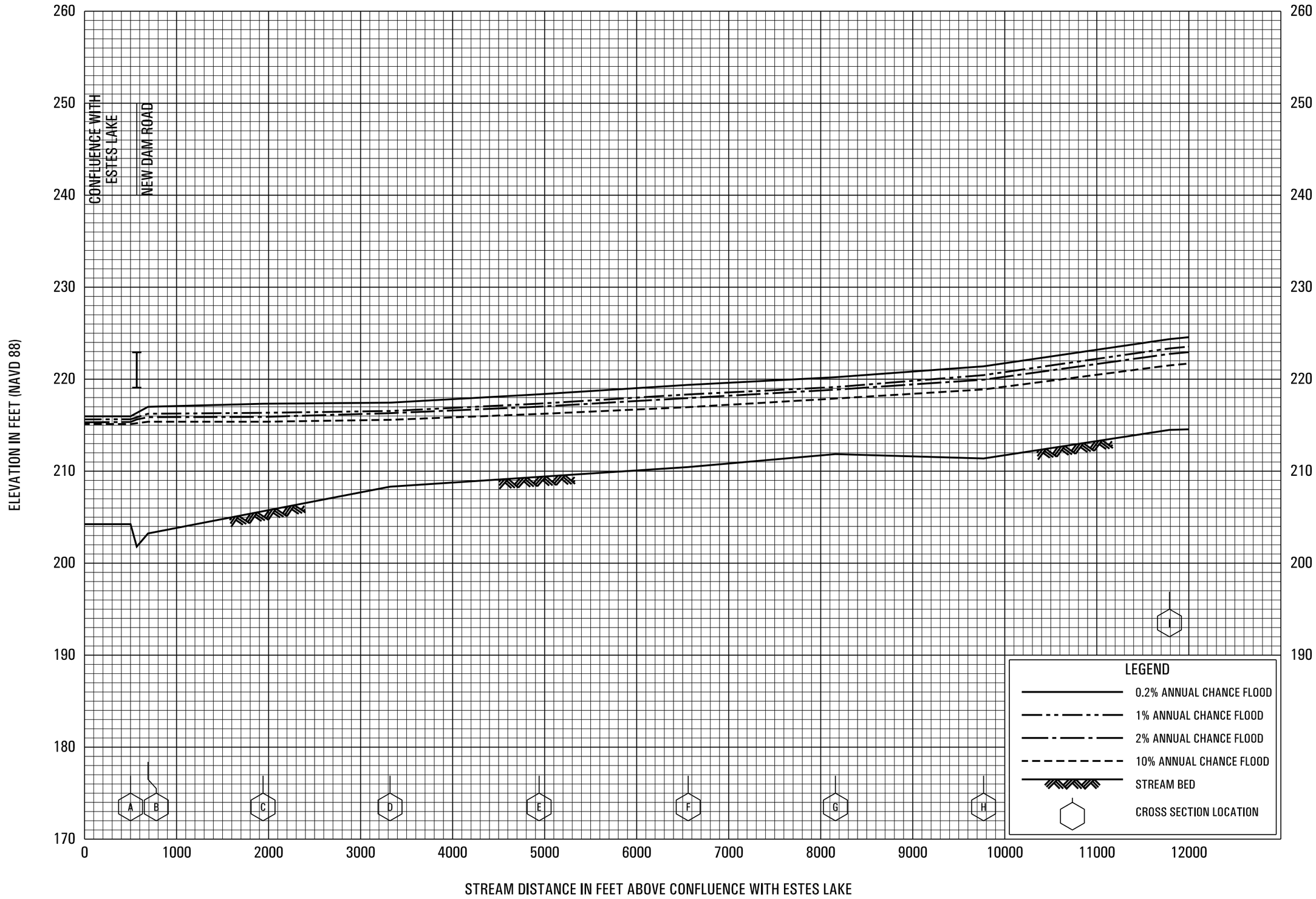
FLOOD PROFILES

MOUSAM RIVER (TOWN OF KENNEBUNK)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



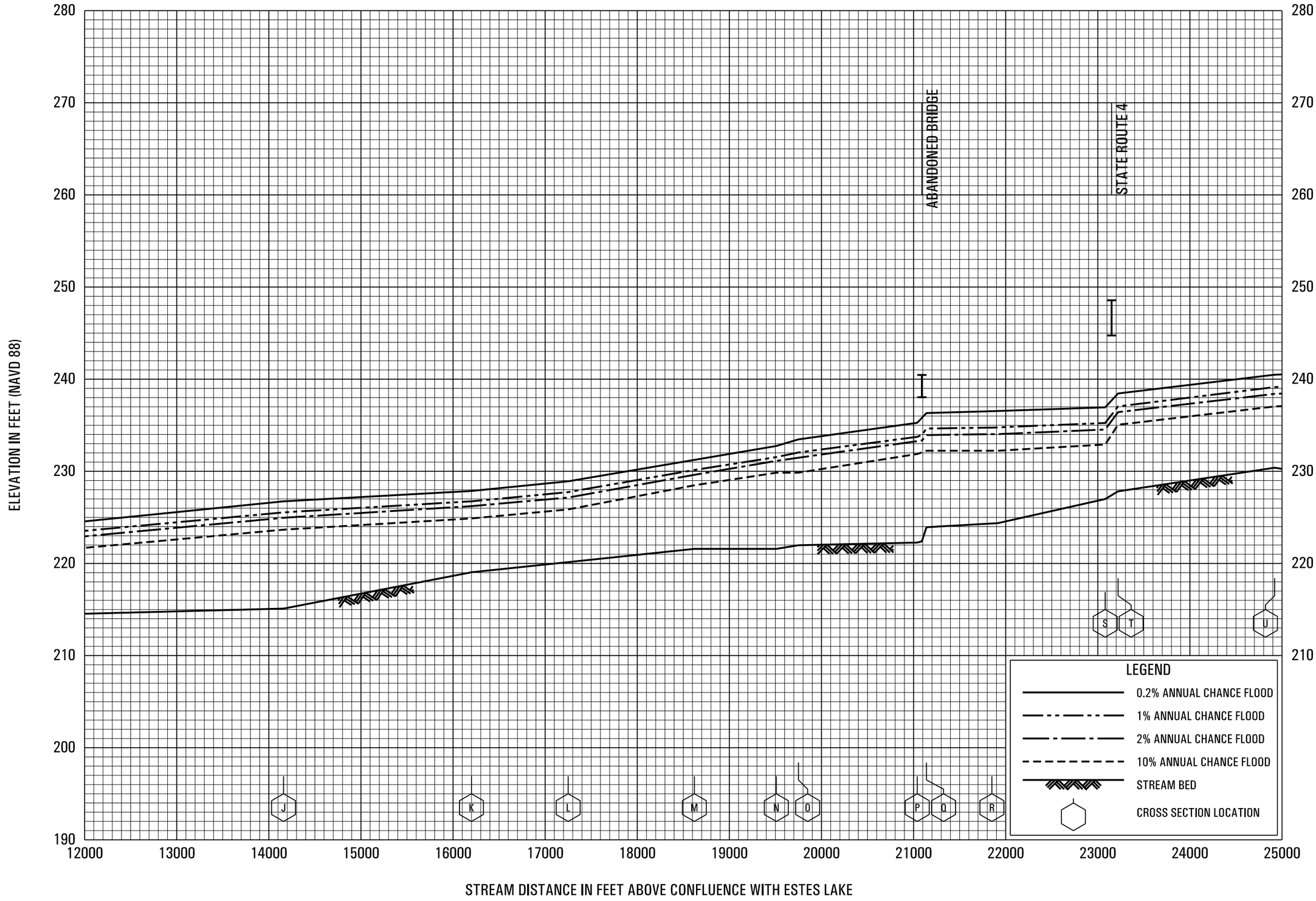
FLOOD PROFILES

MOUSAM RIVER (TOWN OF SANDFORD)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



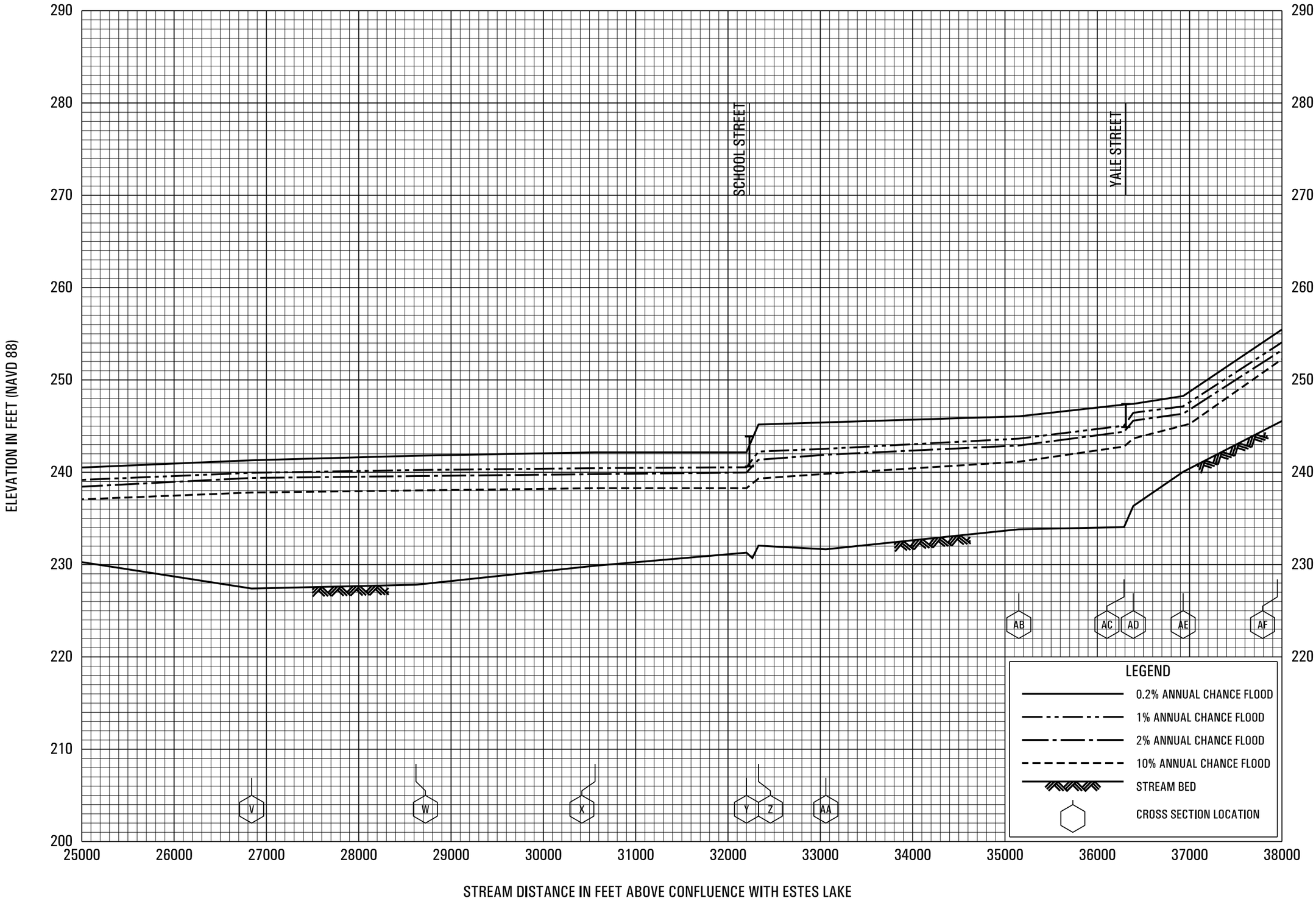
FLOOD PROFILES

MOUSAM RIVER (TOWN OF SANDFORD)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



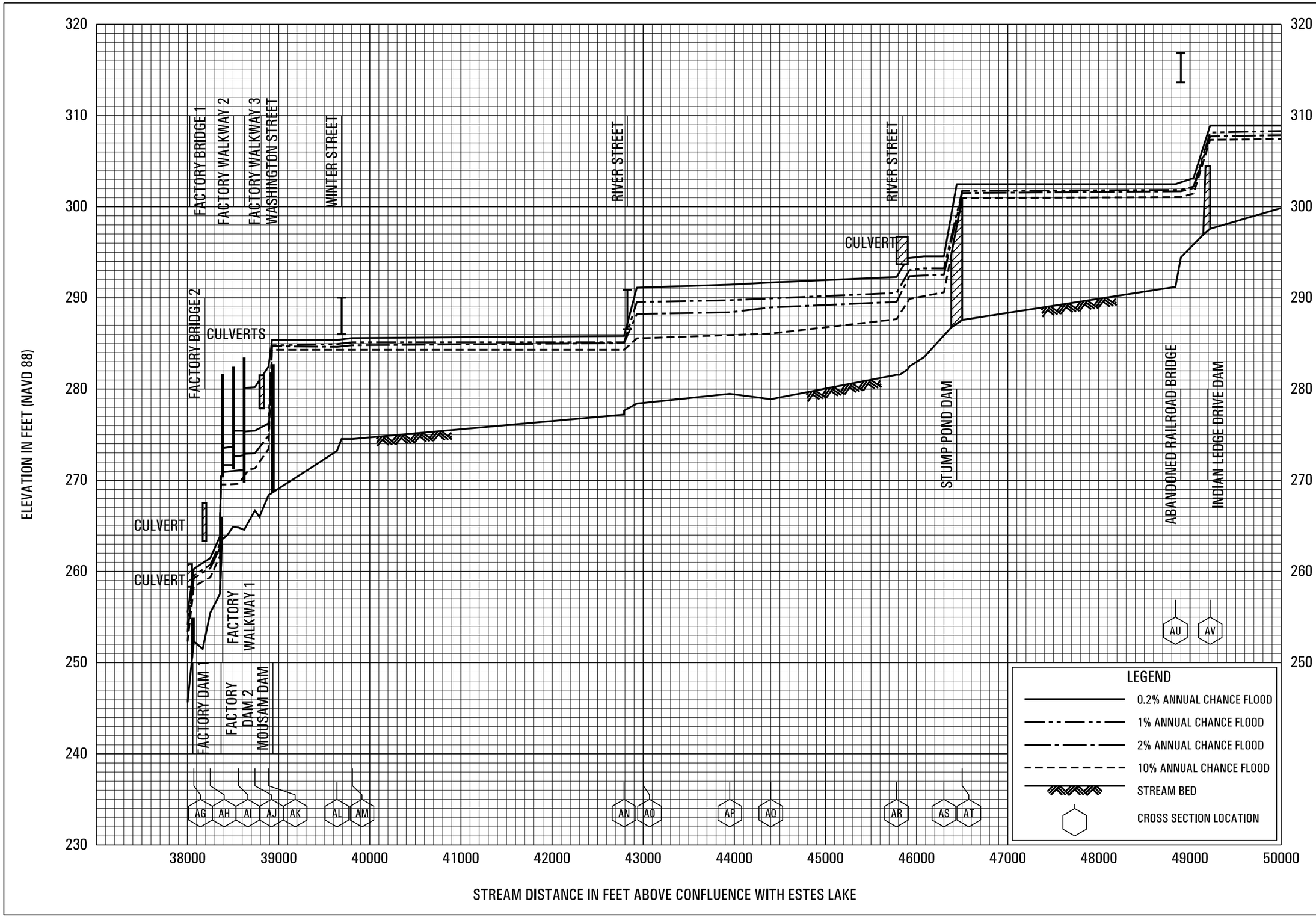
FLOOD PROFILES

MOUSAM RIVER (TOWN OF SANDFORD)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



FLOOD PROFILES

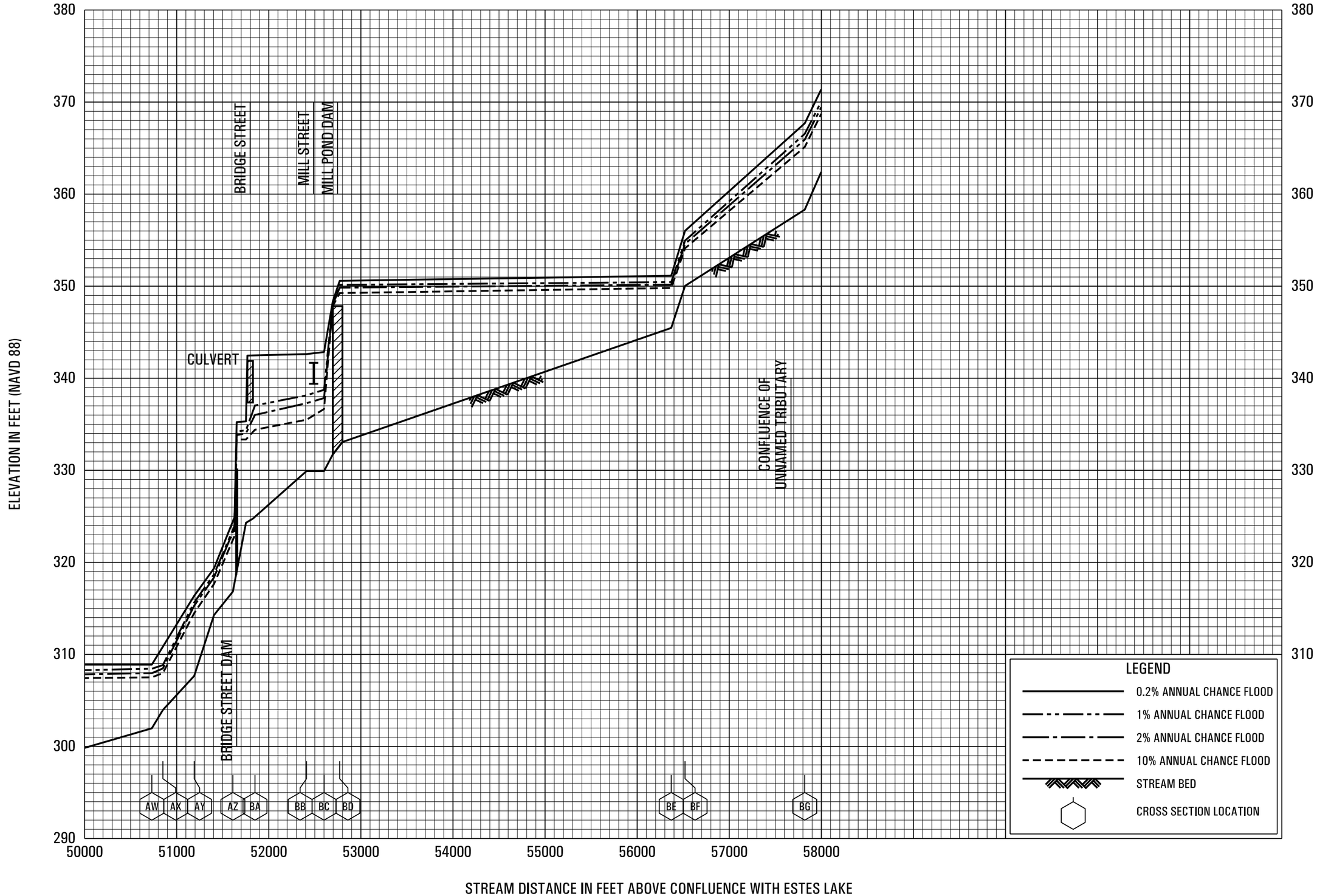
MOUSAM RIVER (TOWN OF SANDFORD)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

88P



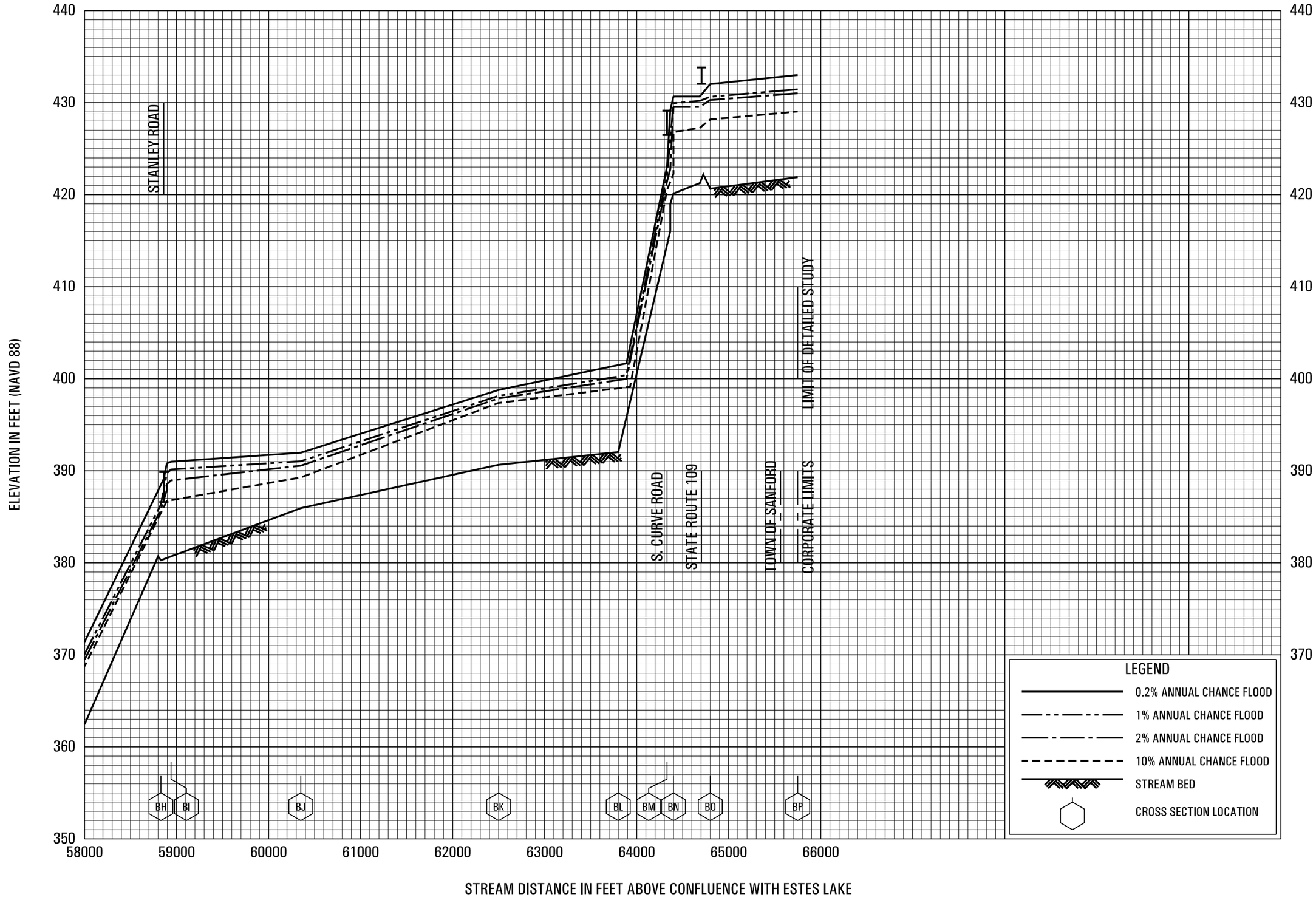
FLOOD PROFILES

MOUSAM RIVER (TOWN OF SANDFORD)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



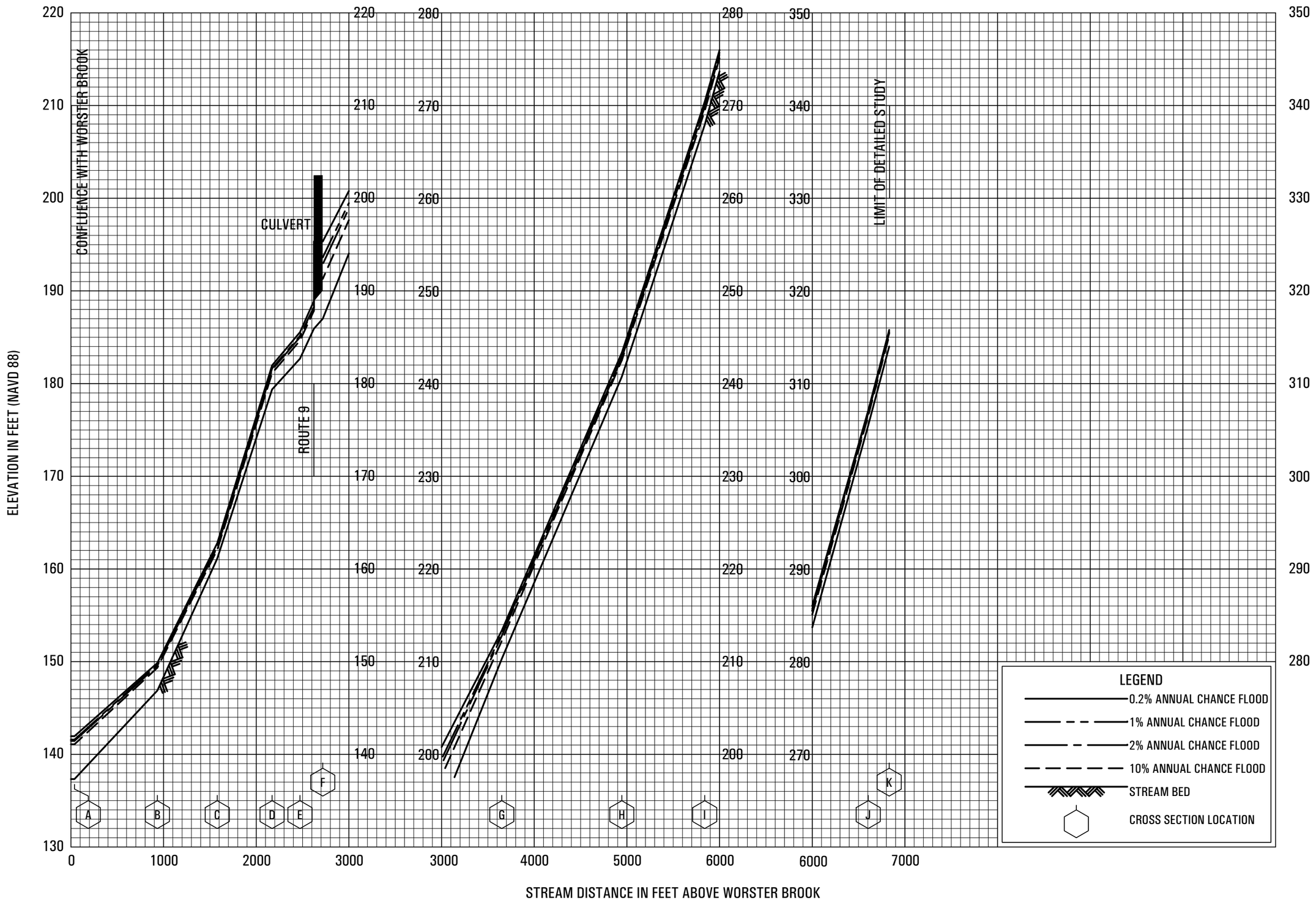
FLOOD PROFILES

MOUSAM RIVER (TOWN OF SANFORD)

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



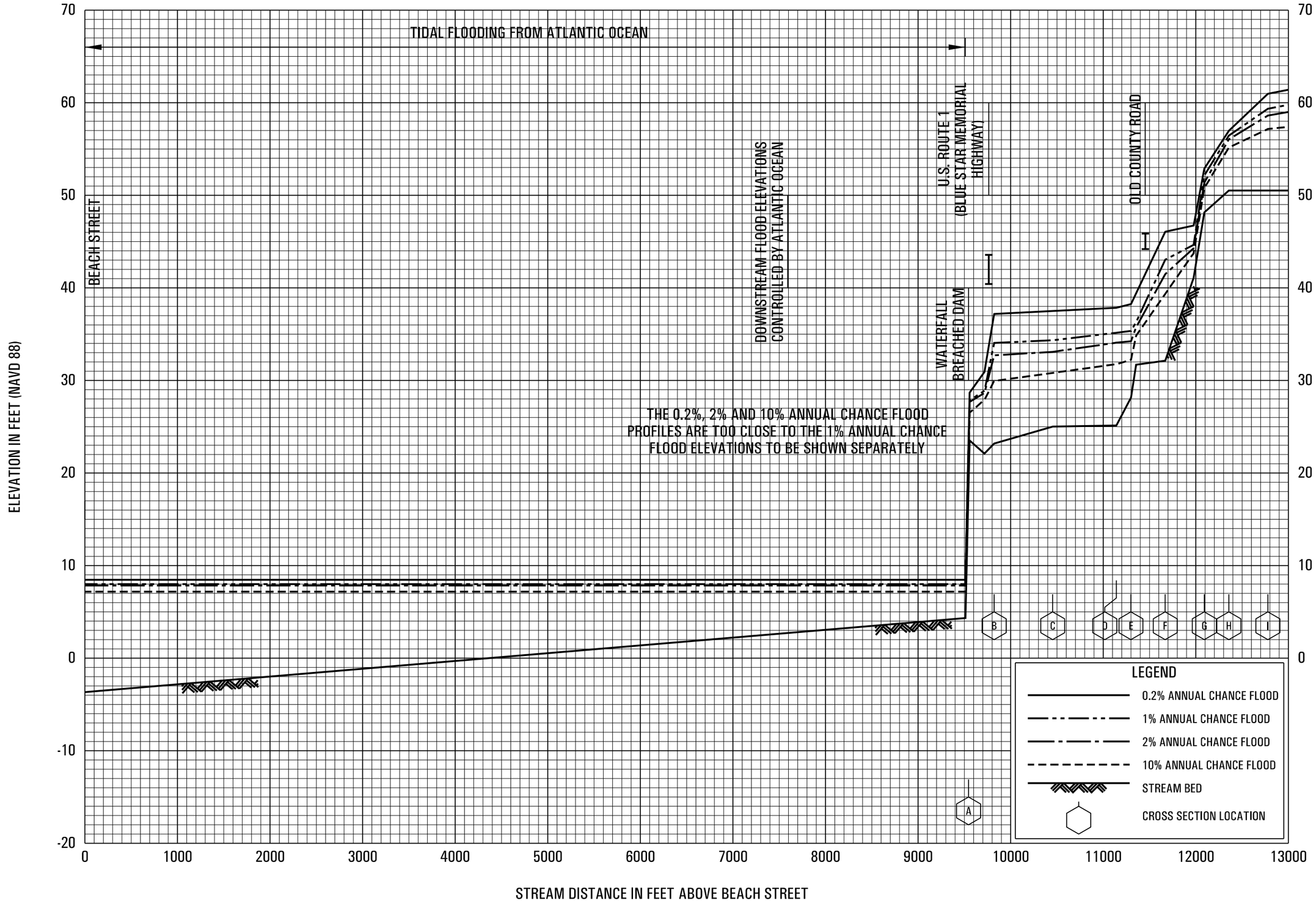
FLOOD PROFILES

MULLOY BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



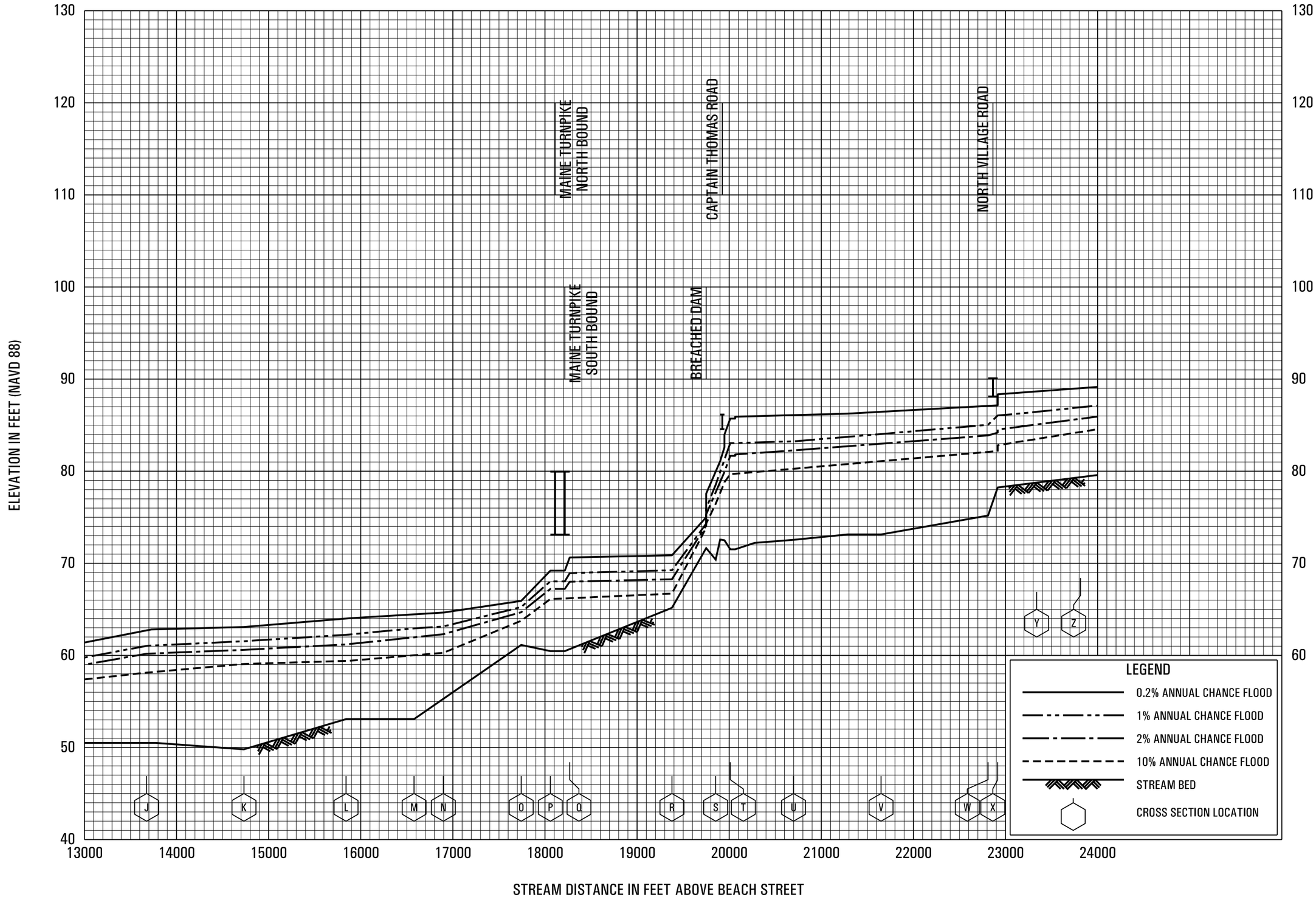
FLOOD PROFILES

OGUNQUIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



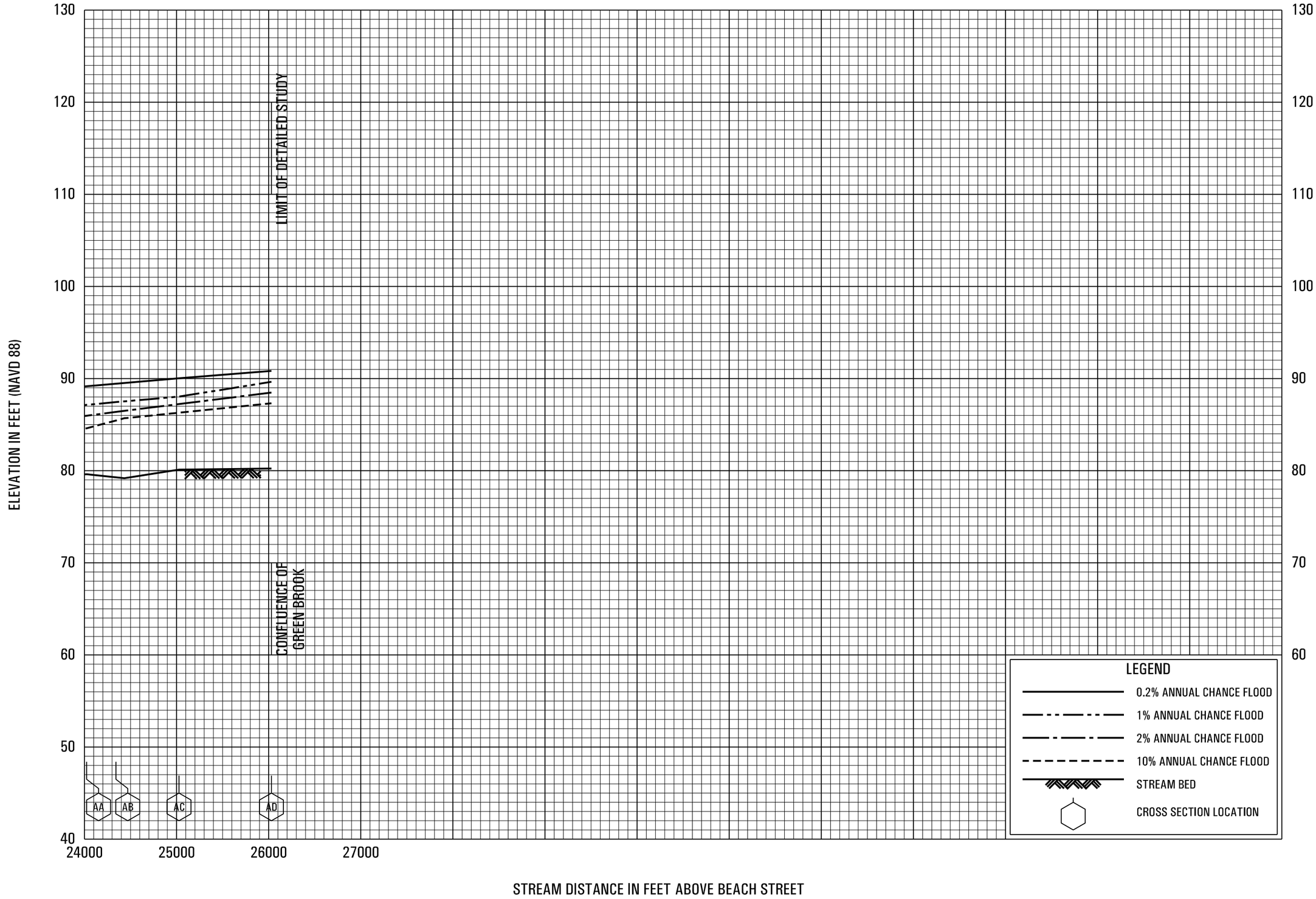
FLOOD PROFILES

OGUNQUIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



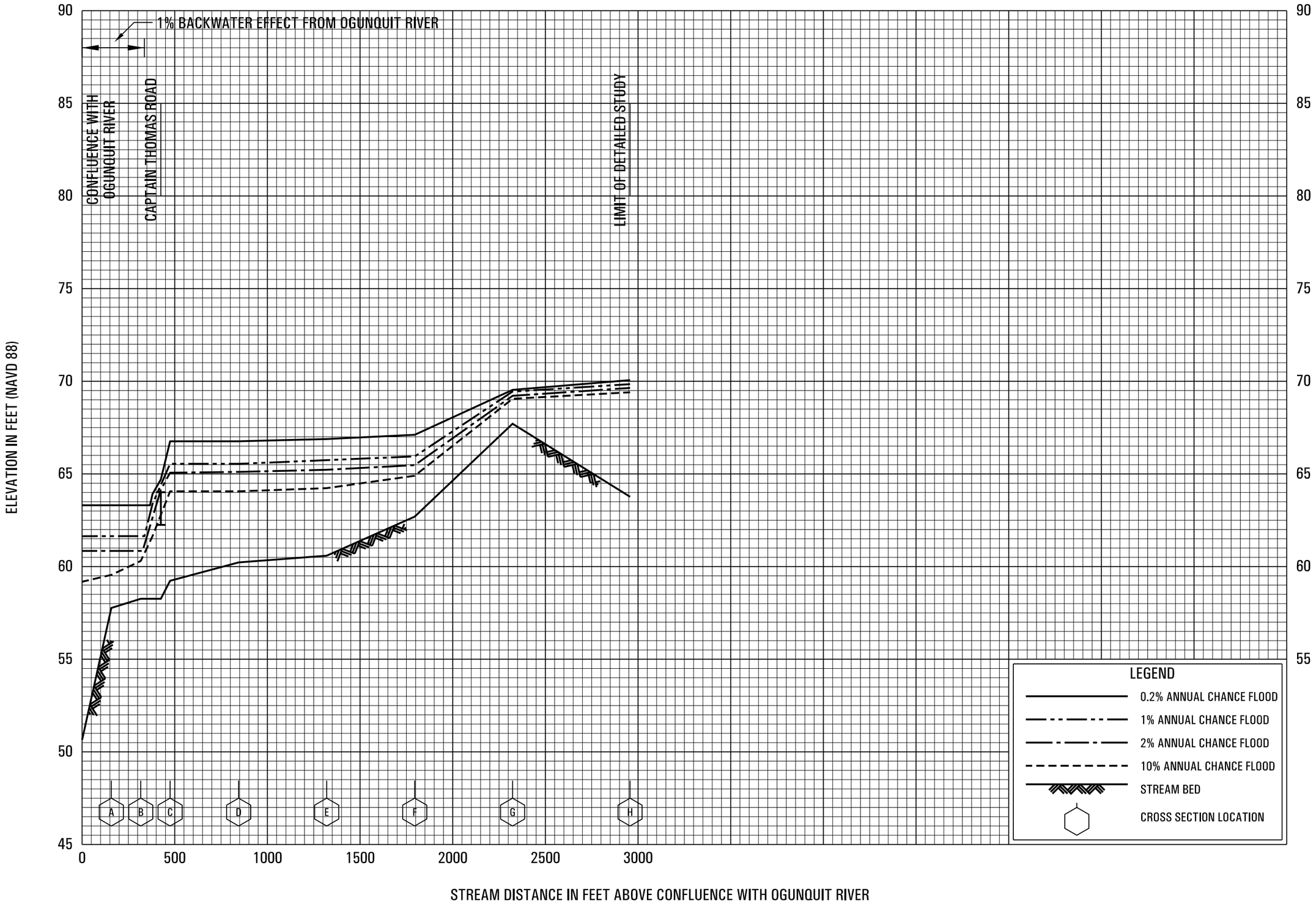
FLOOD PROFILES

OGUNQUIT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



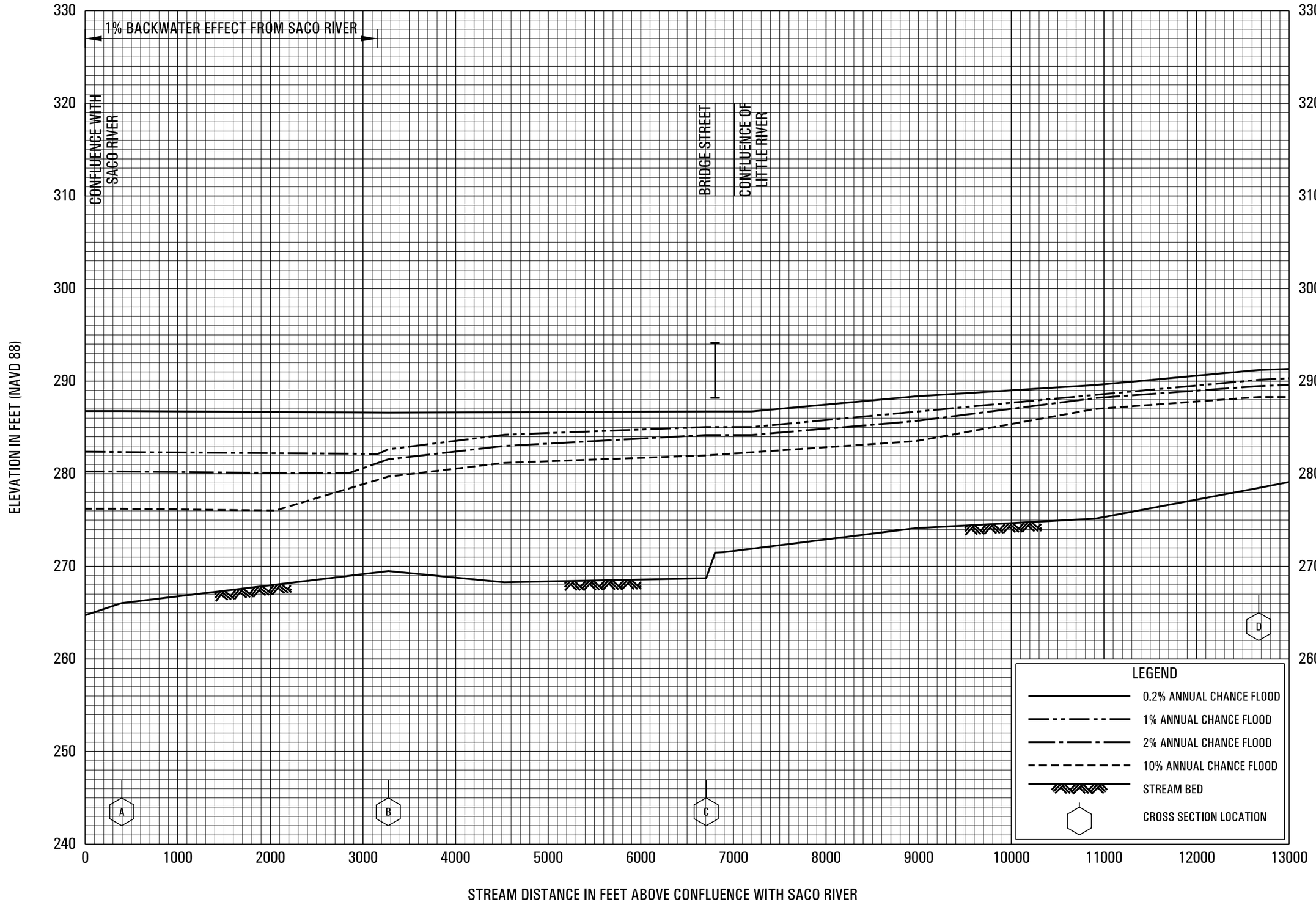
FLOOD PROFILES

OGUNQUIT RIVER TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



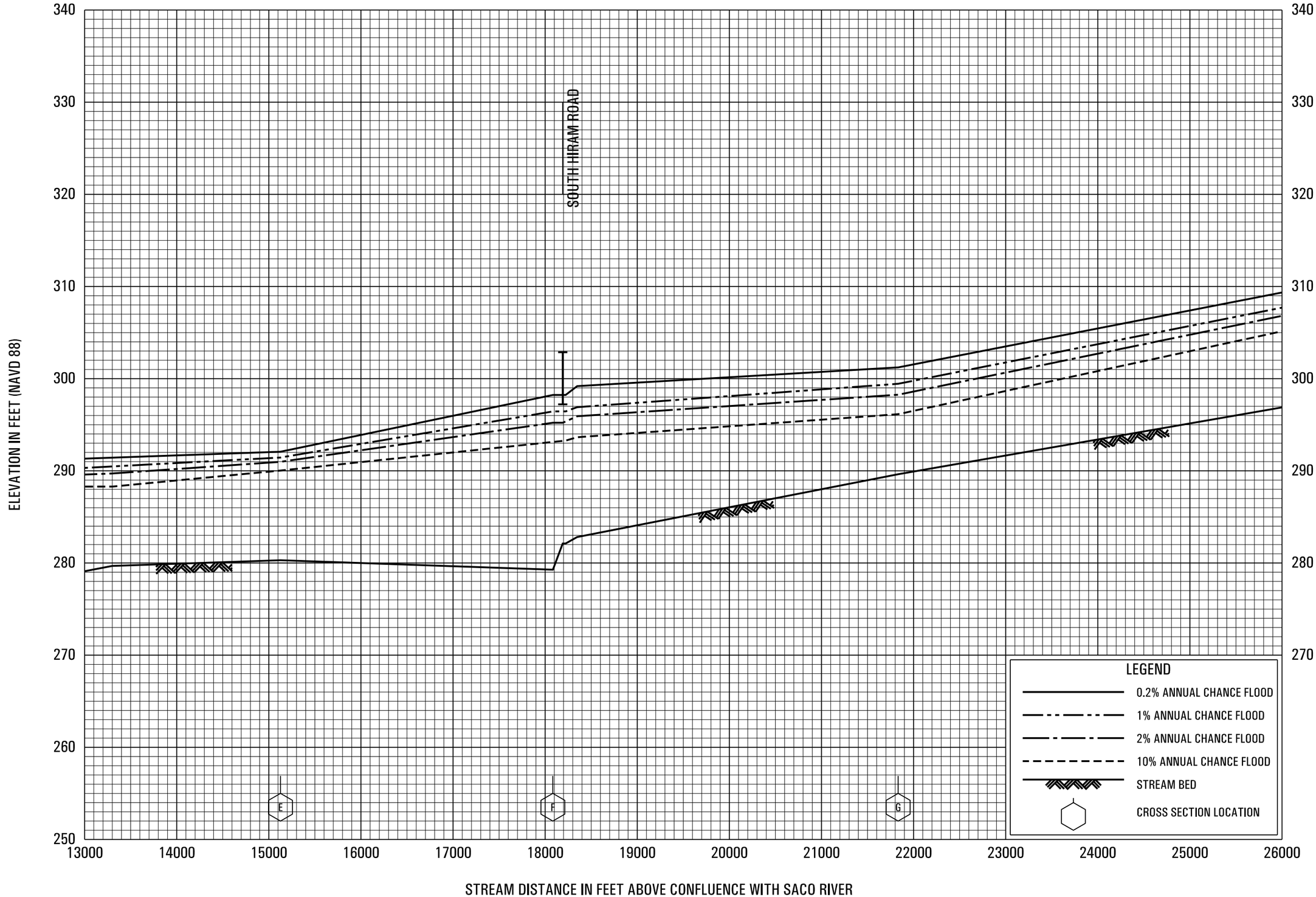
FLOOD PROFILES

OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



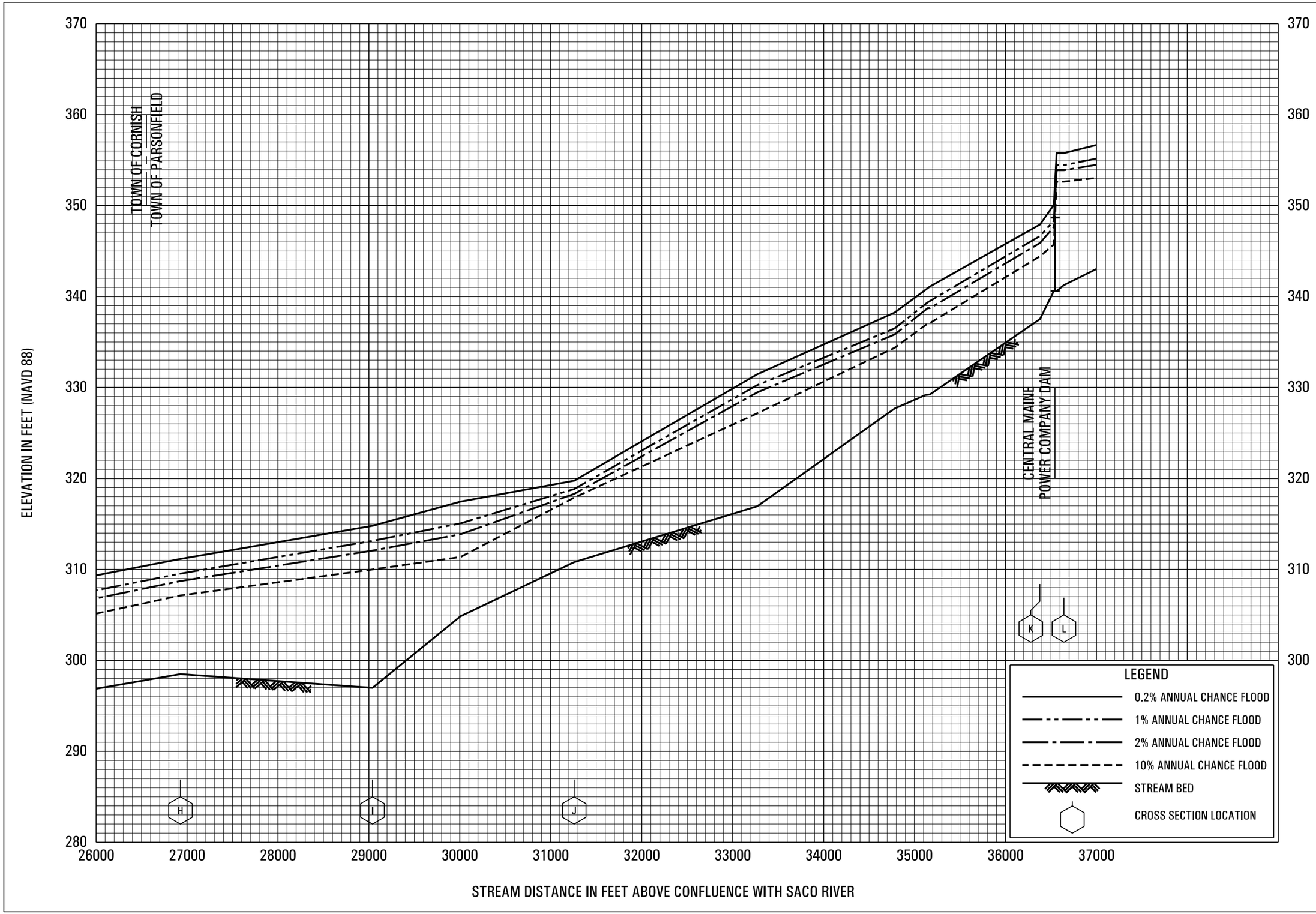
FLOOD PROFILES

OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



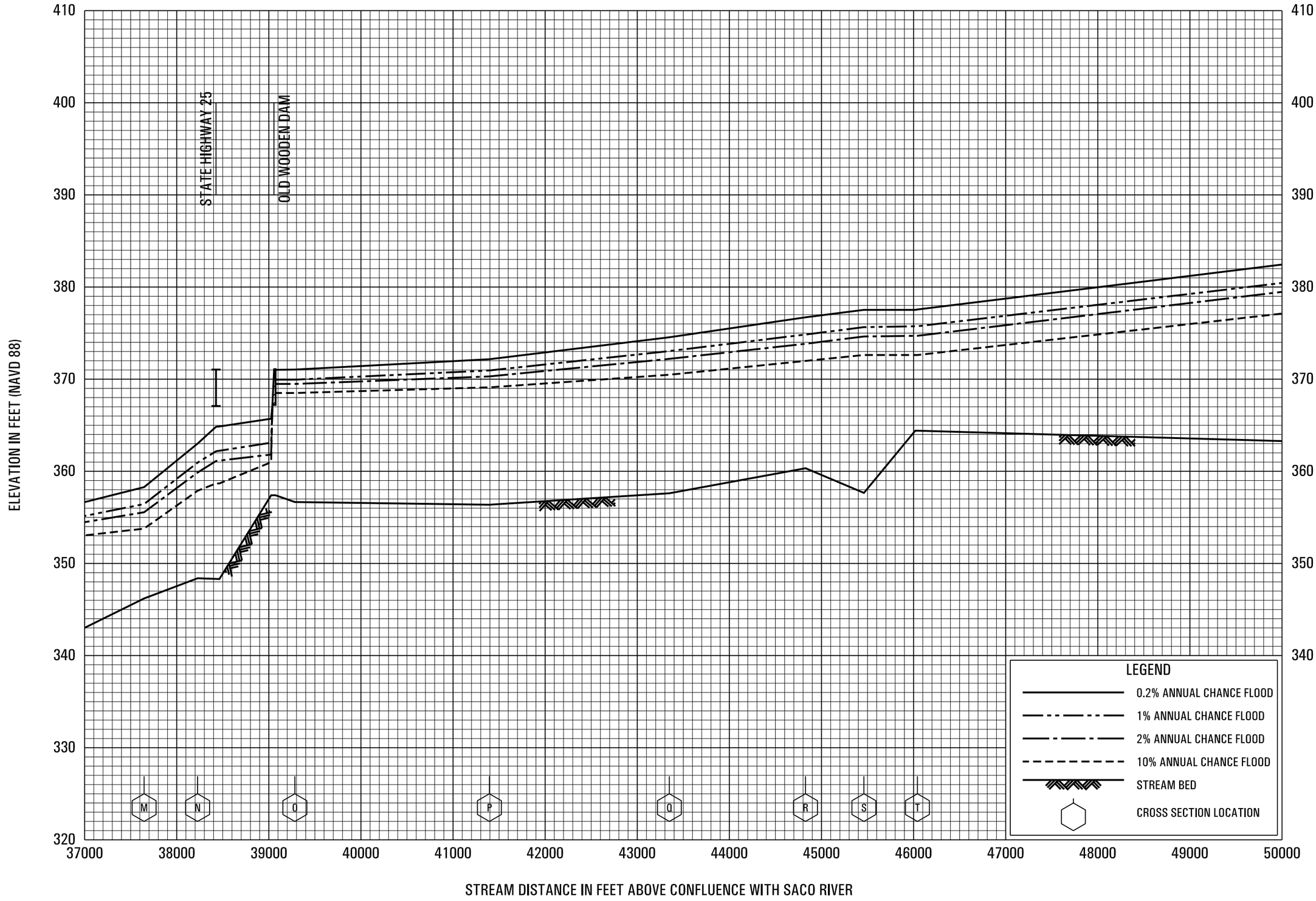
FLOOD PROFILES

OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



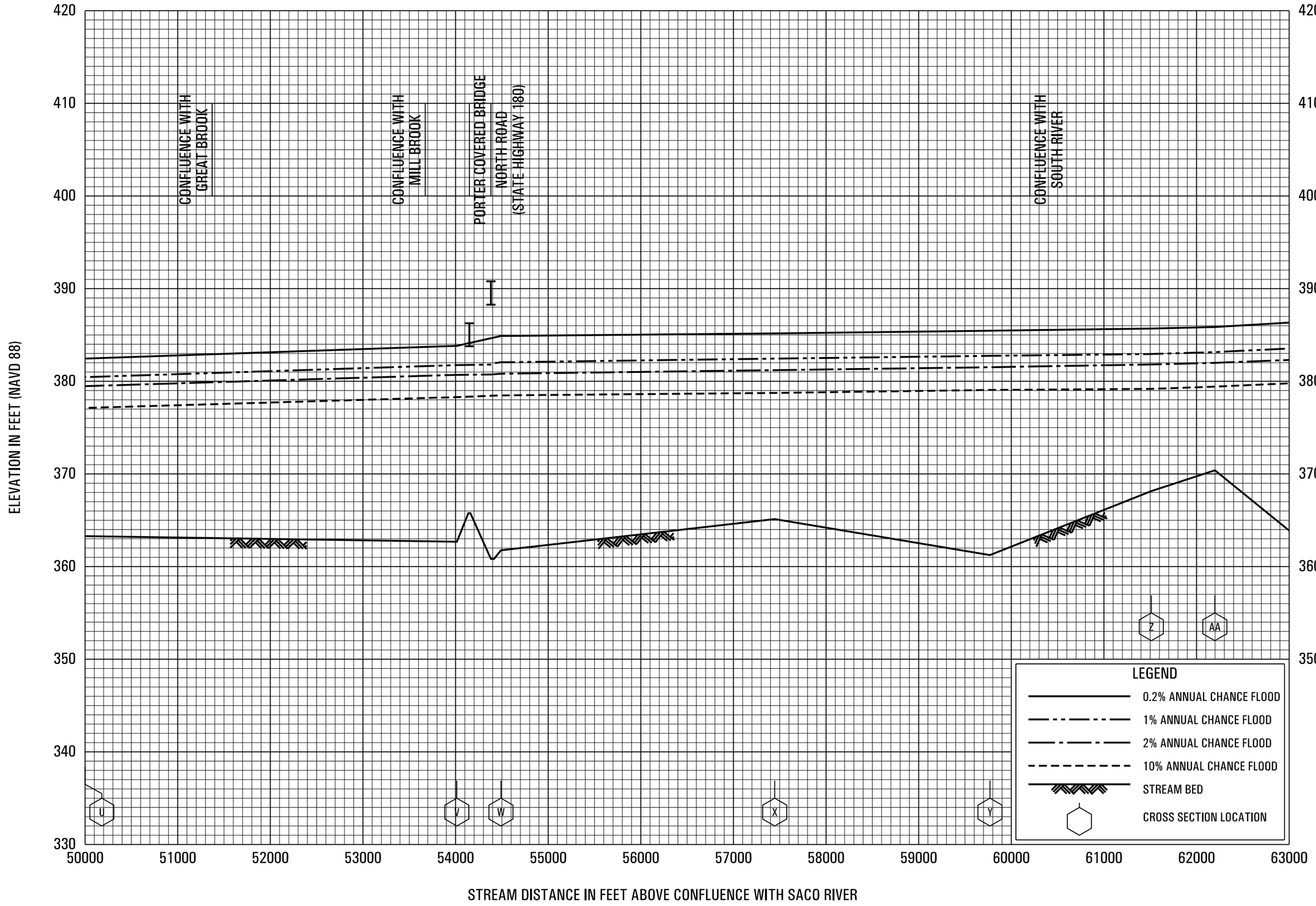
FLOOD PROFILES

OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



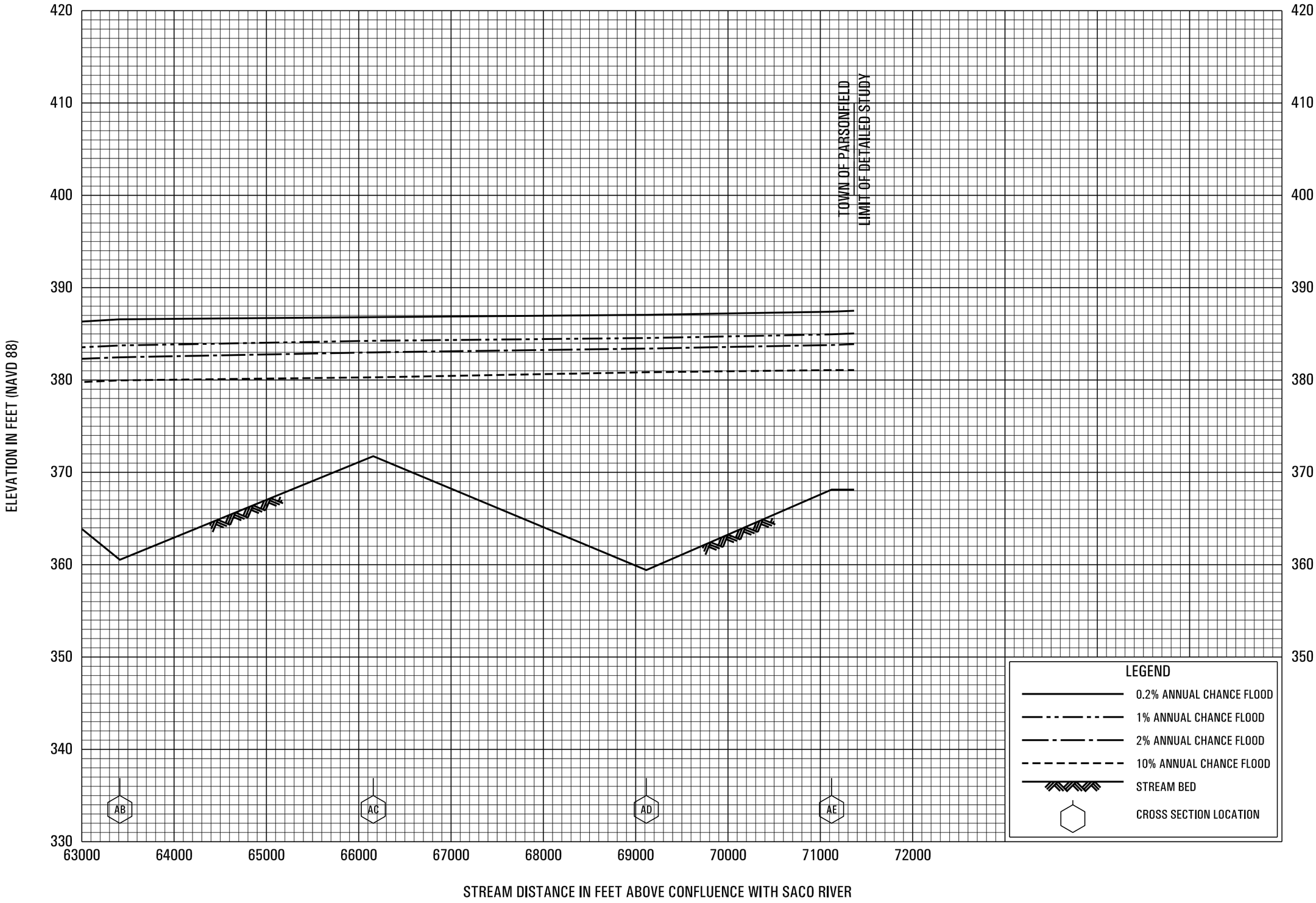
FLOOD PROFILES

OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



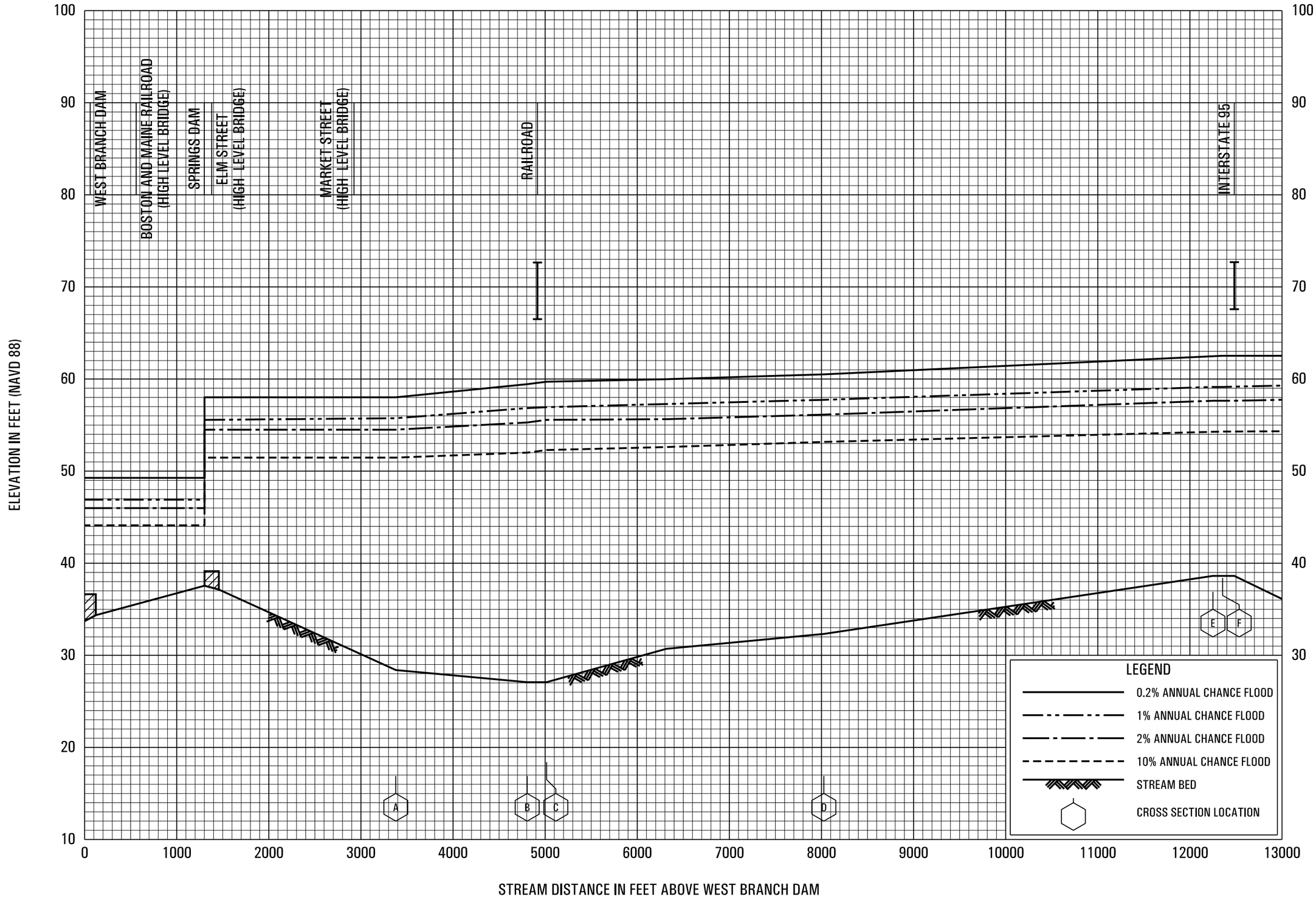
FLOOD PROFILES

OSSIPEE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



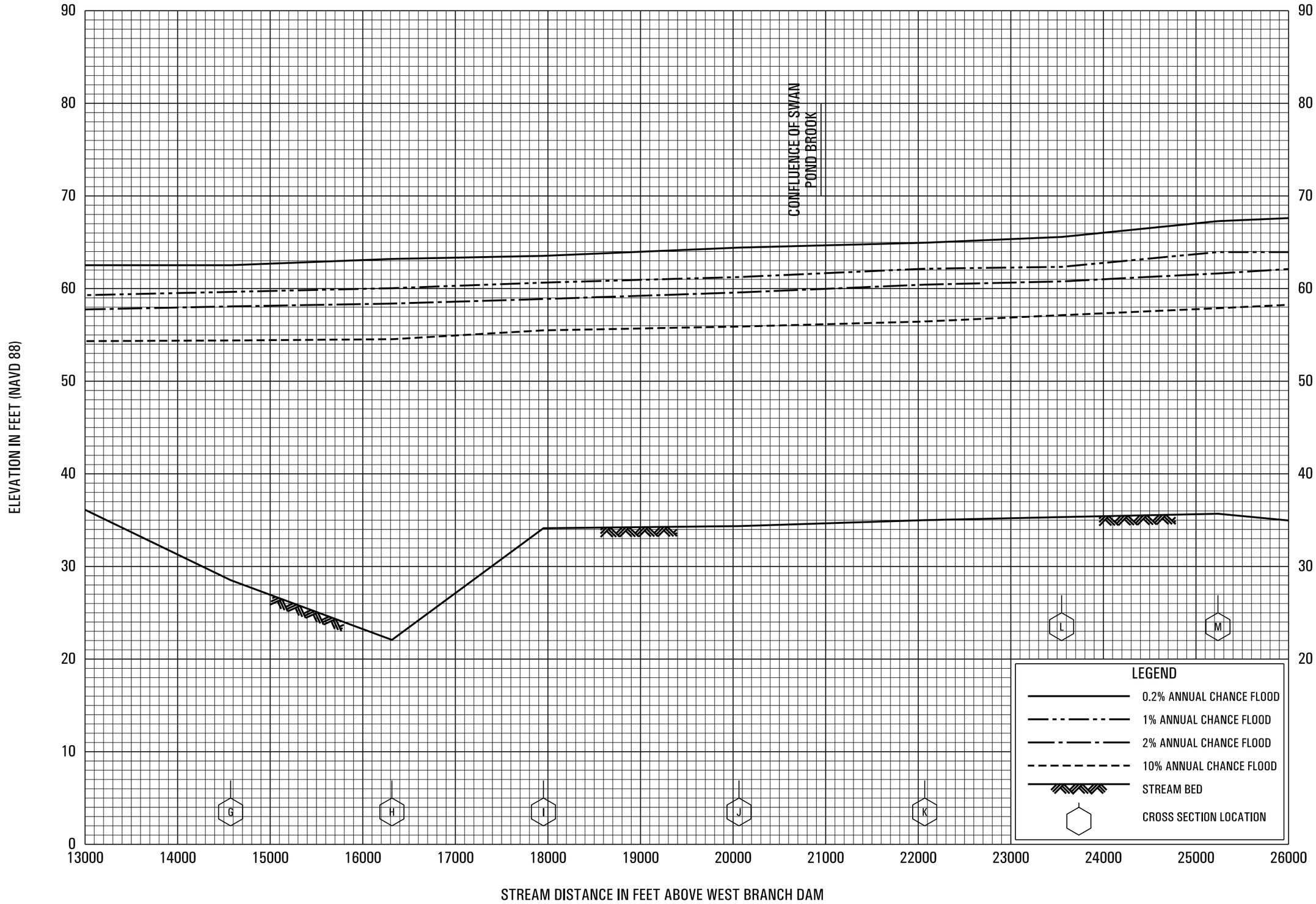
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



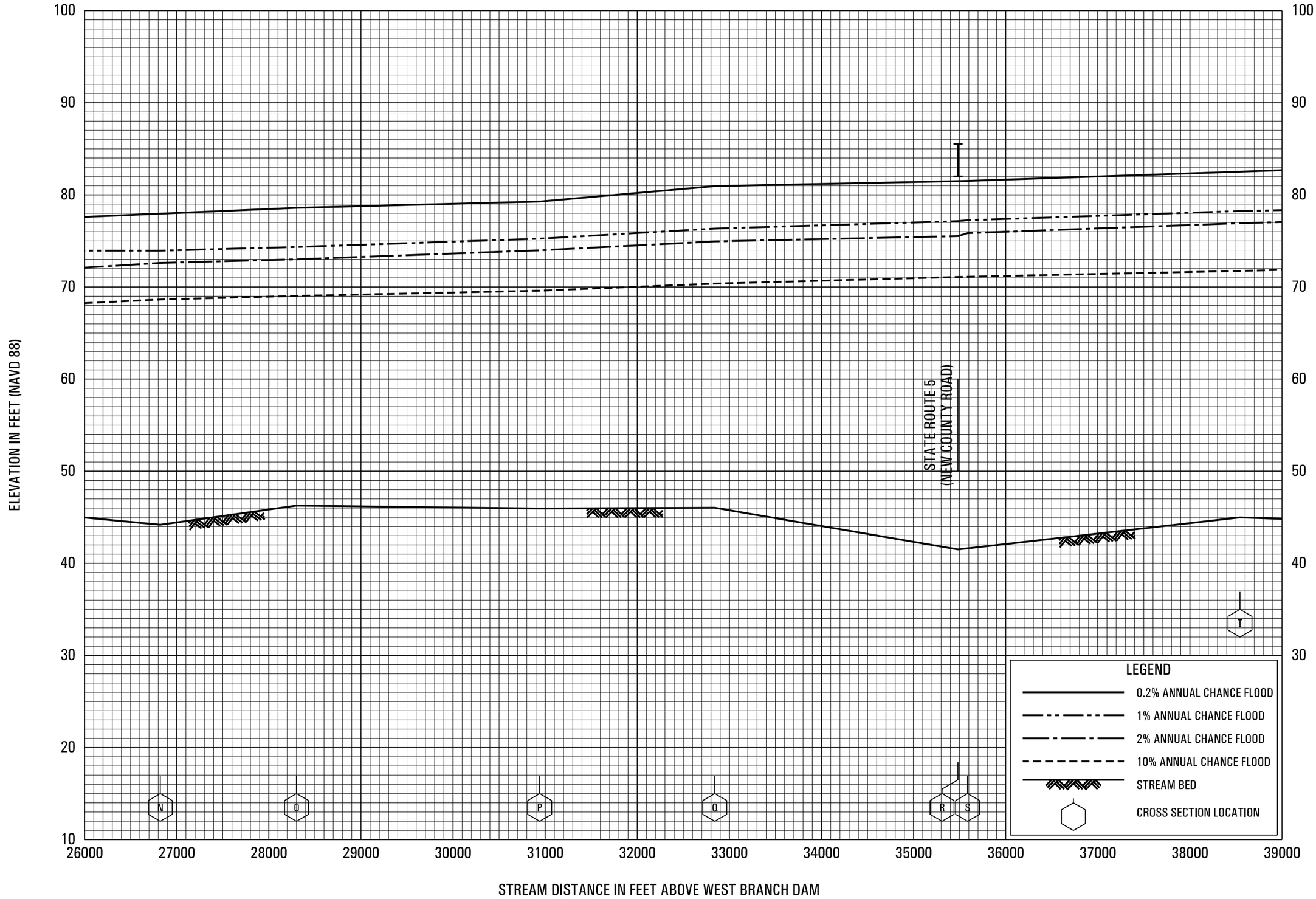
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



FLOOD PROFILES

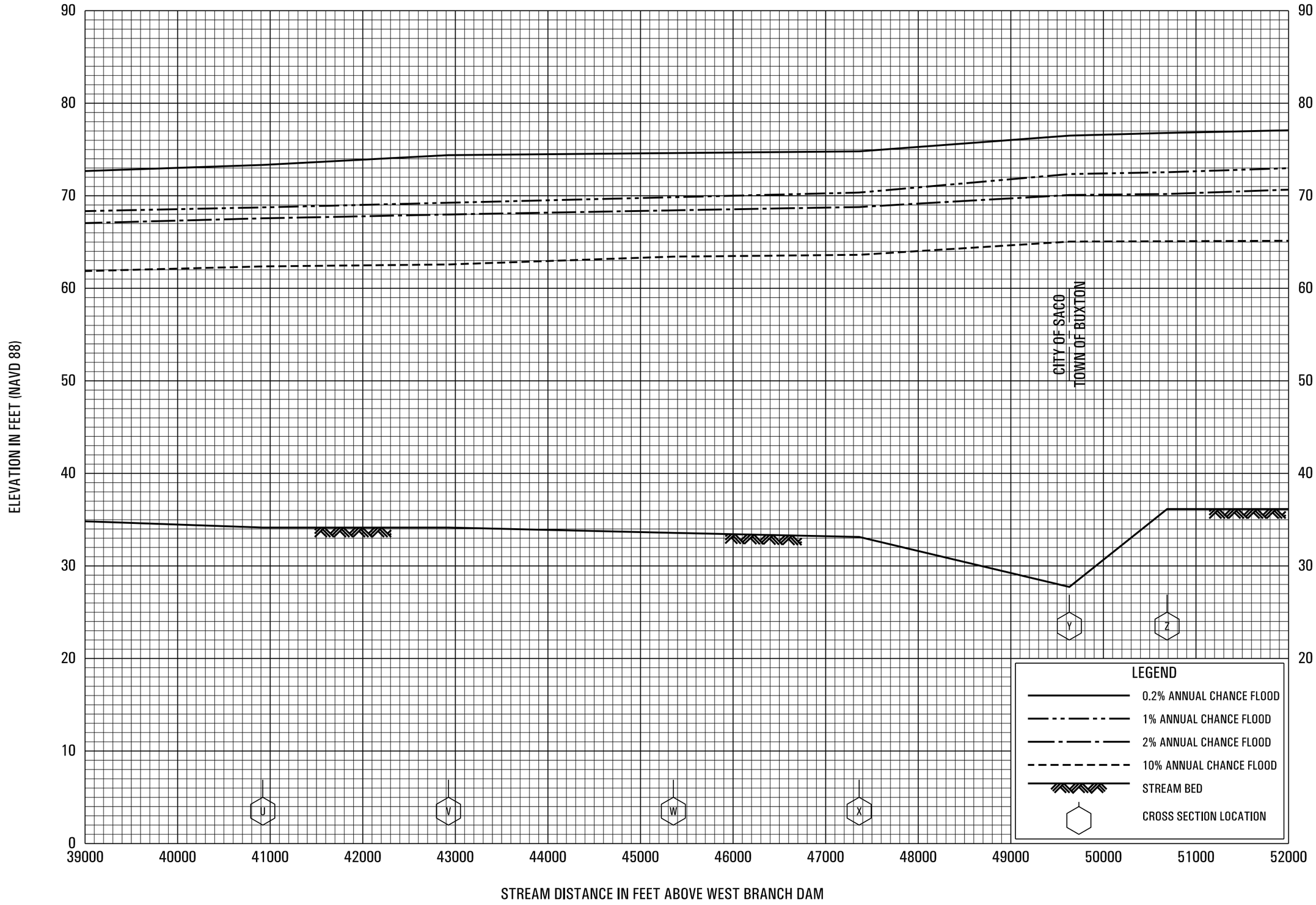
SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

104P



FLOOD PROFILES

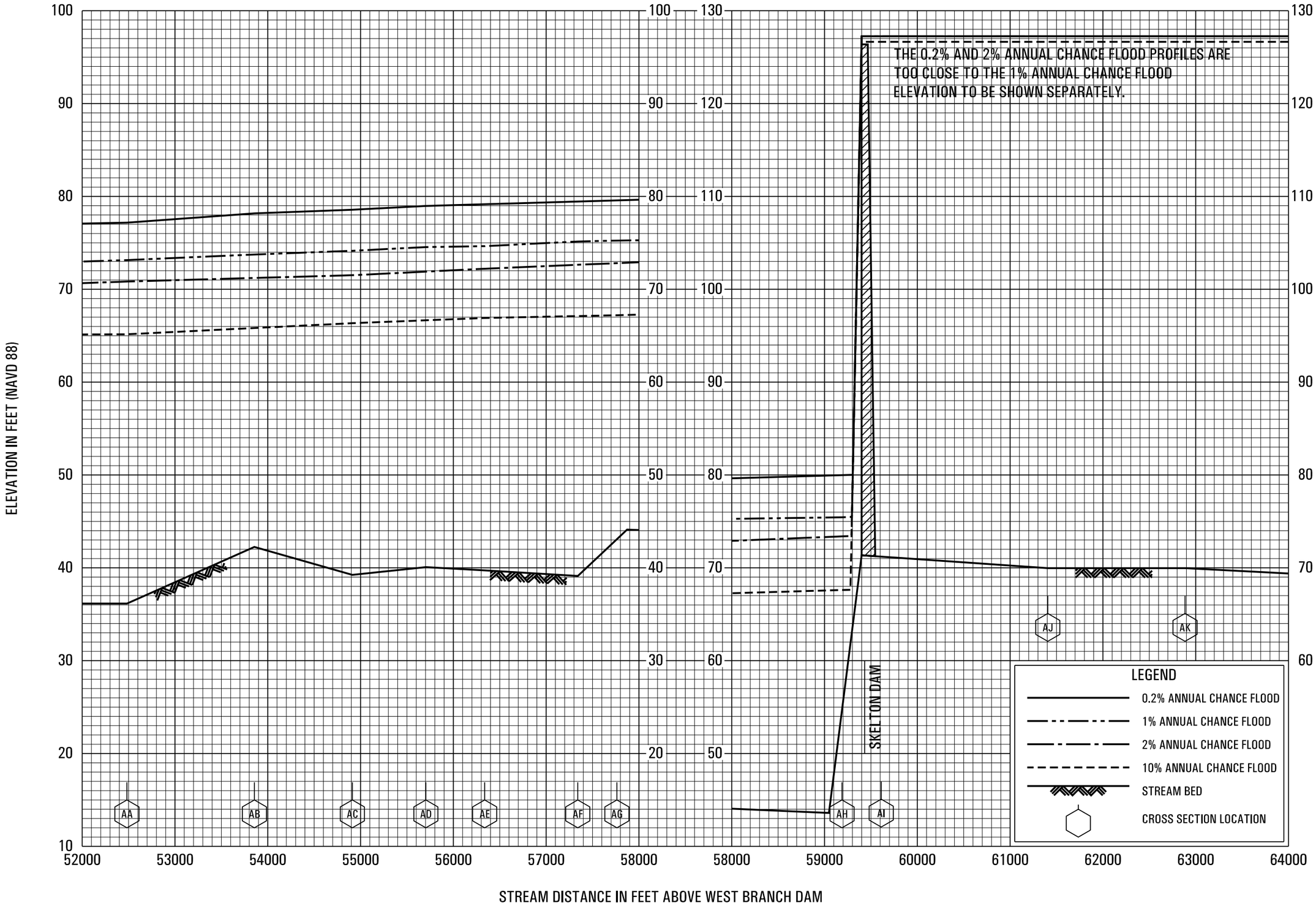
SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

105P



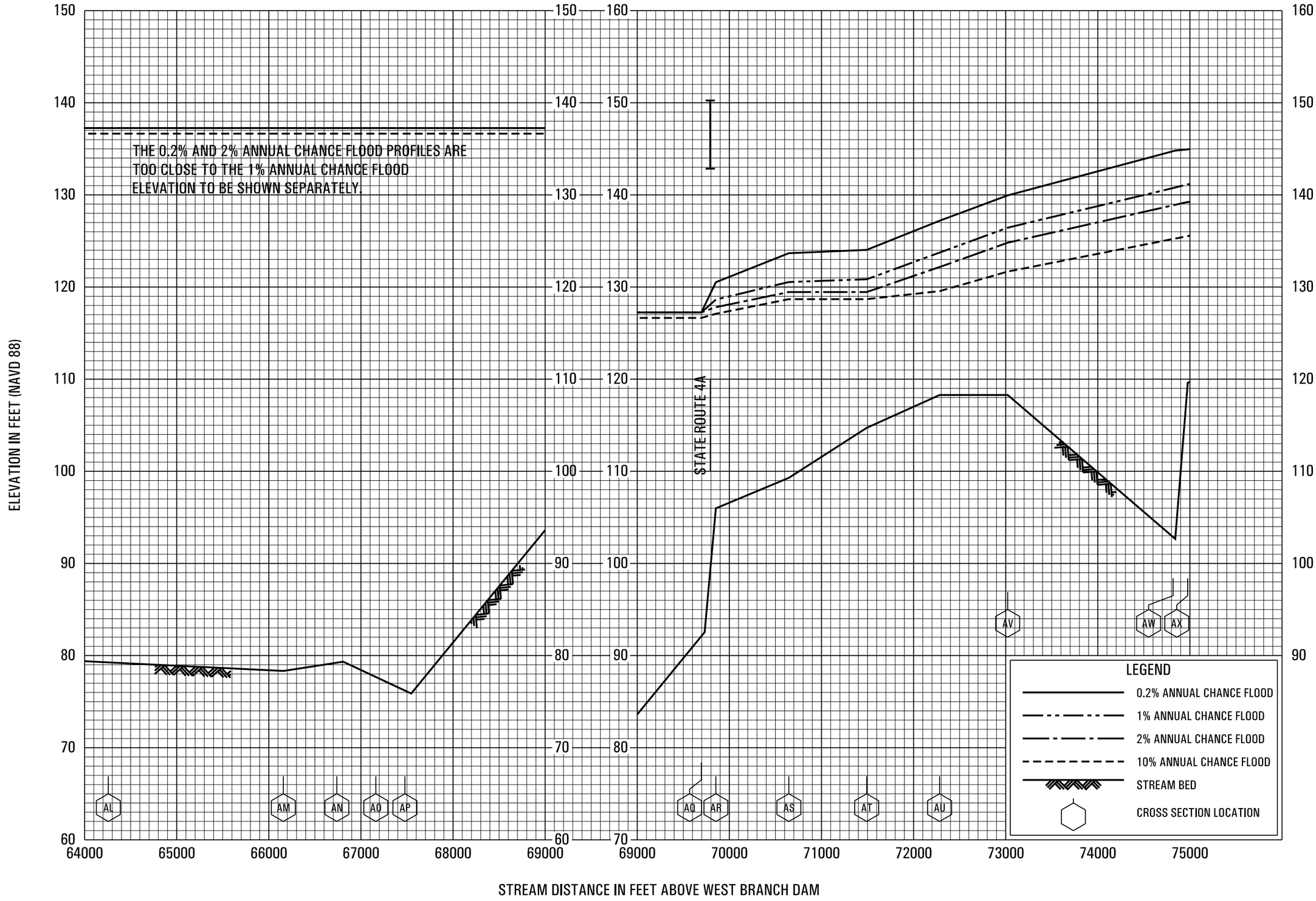
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



FLOOD PROFILES

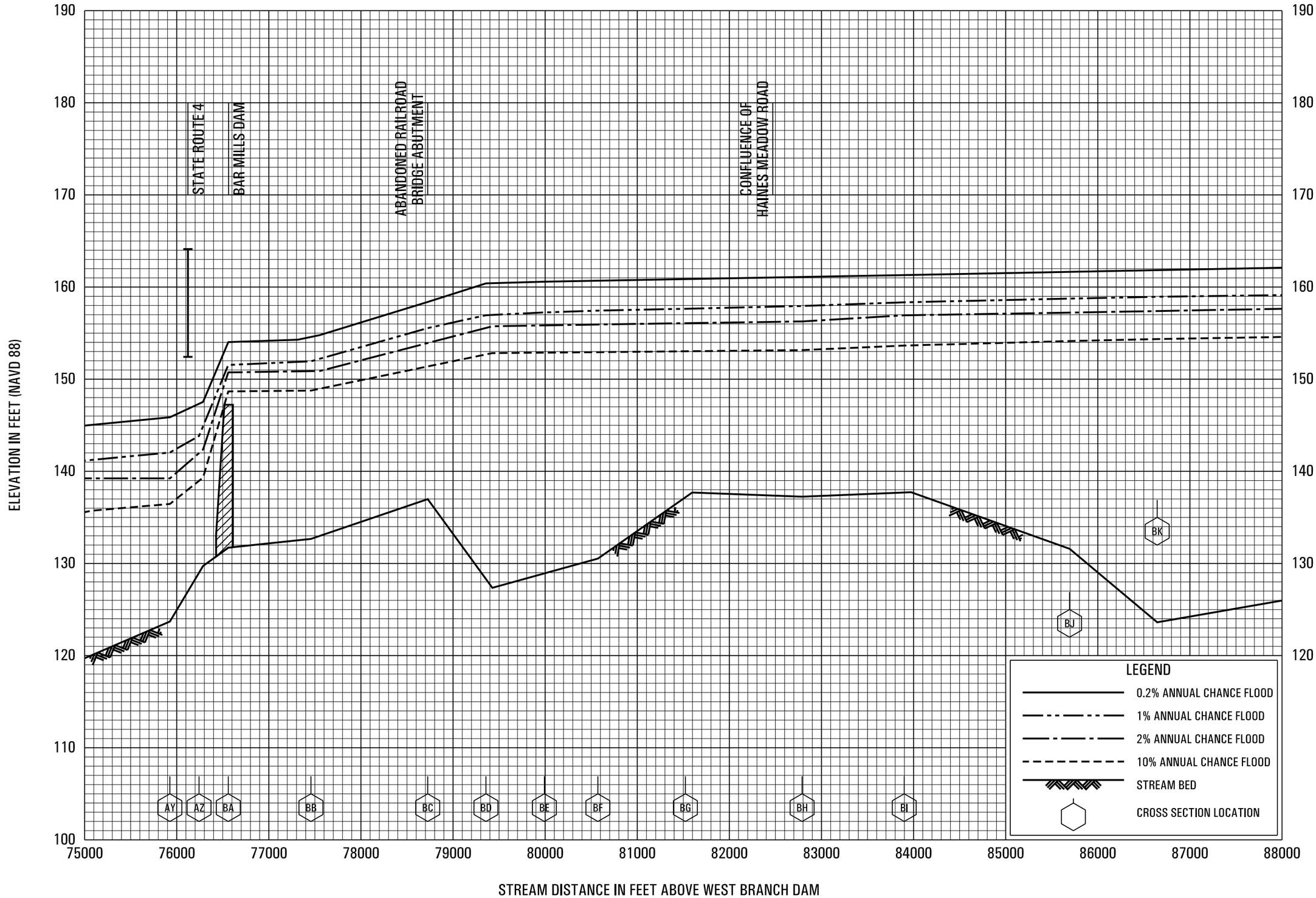
SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

107P



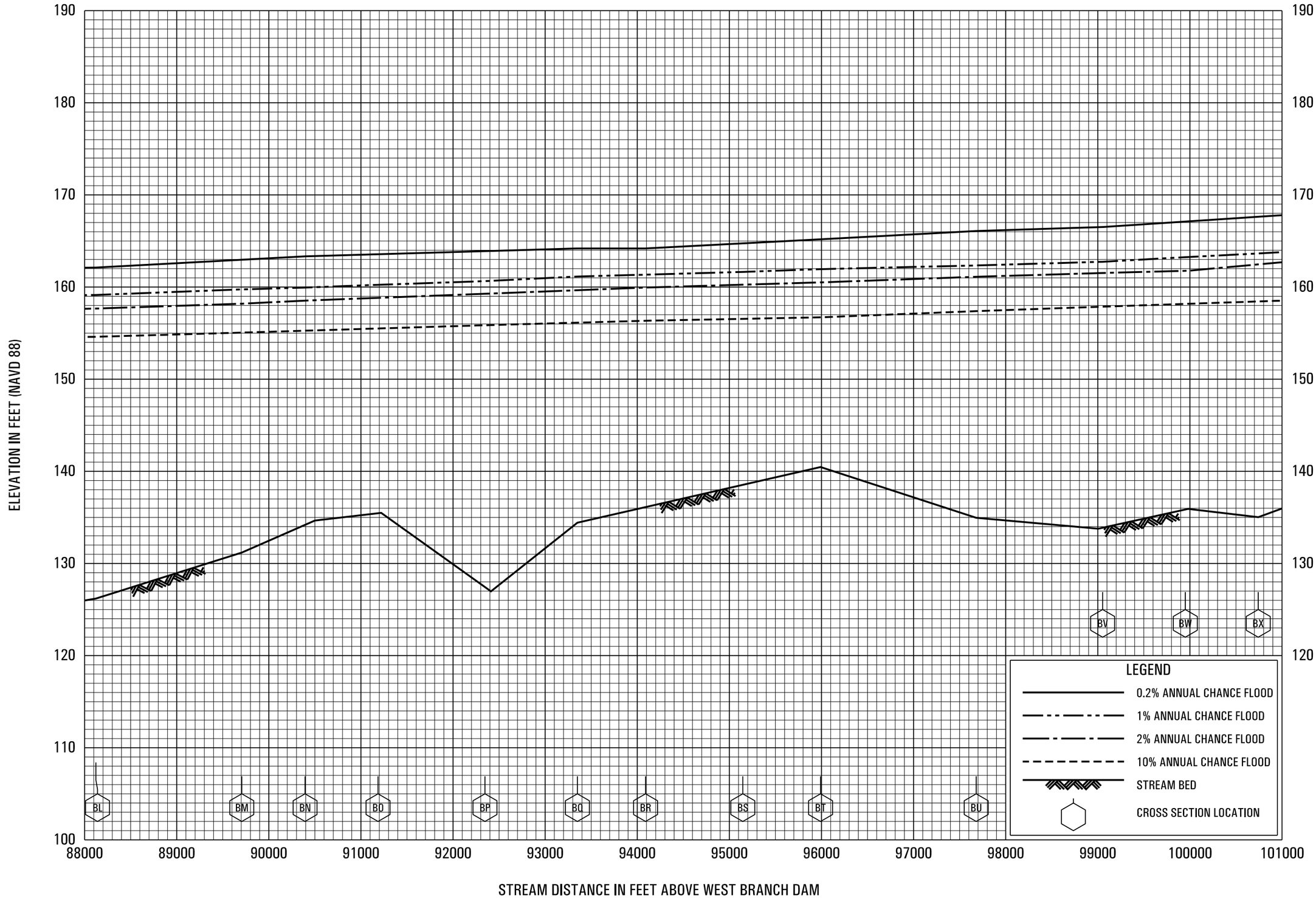
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



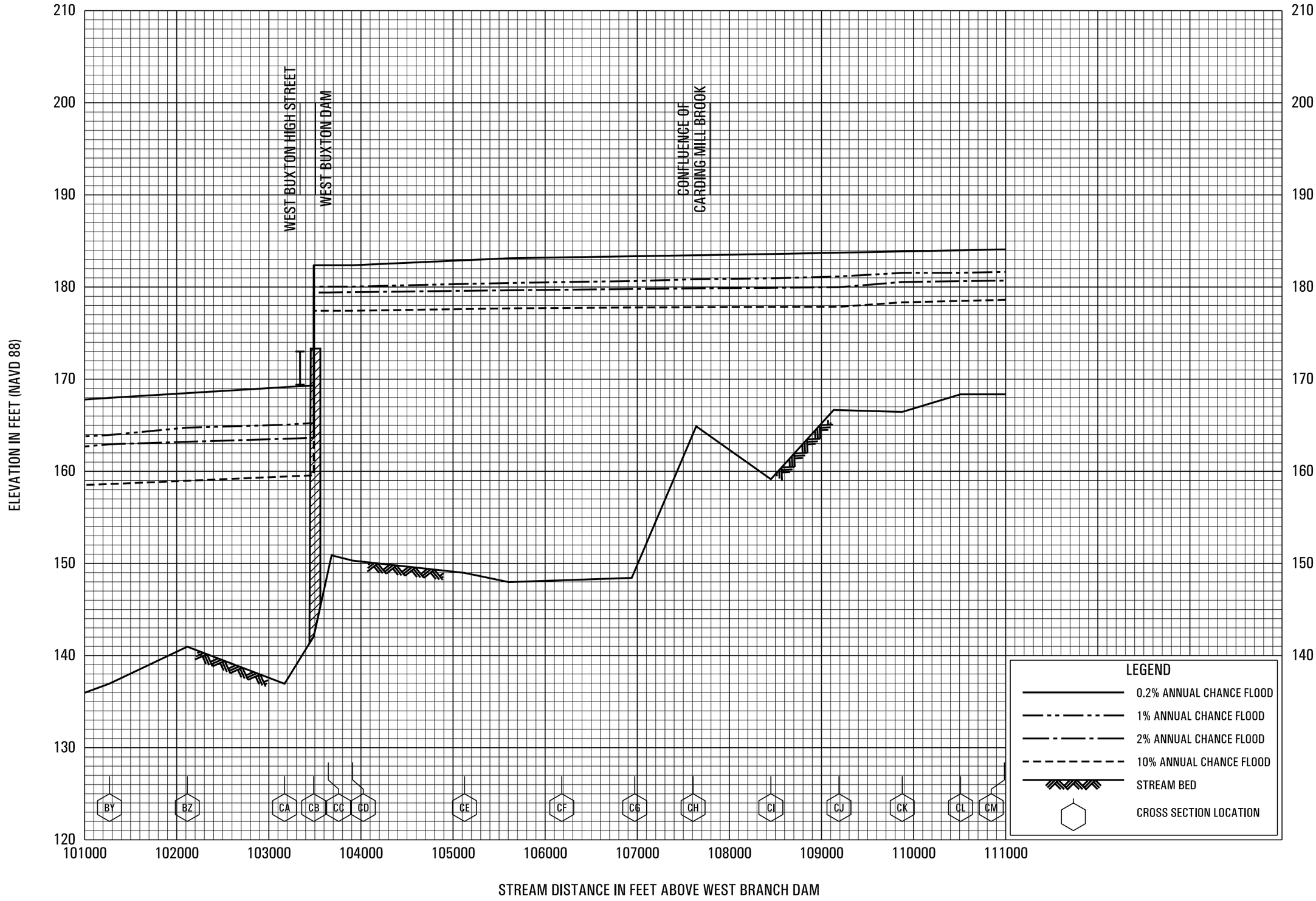
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



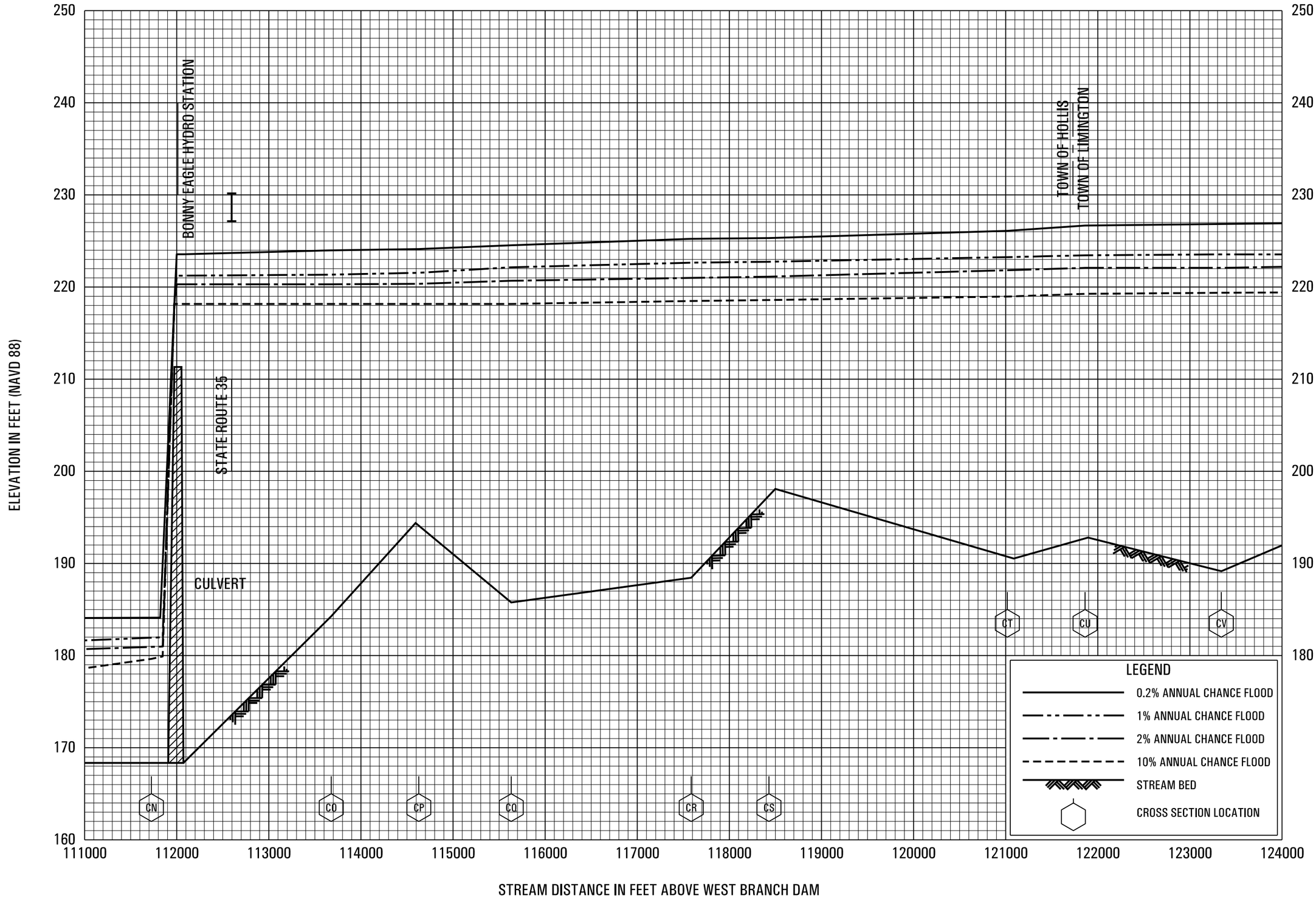
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



FLOOD PROFILES

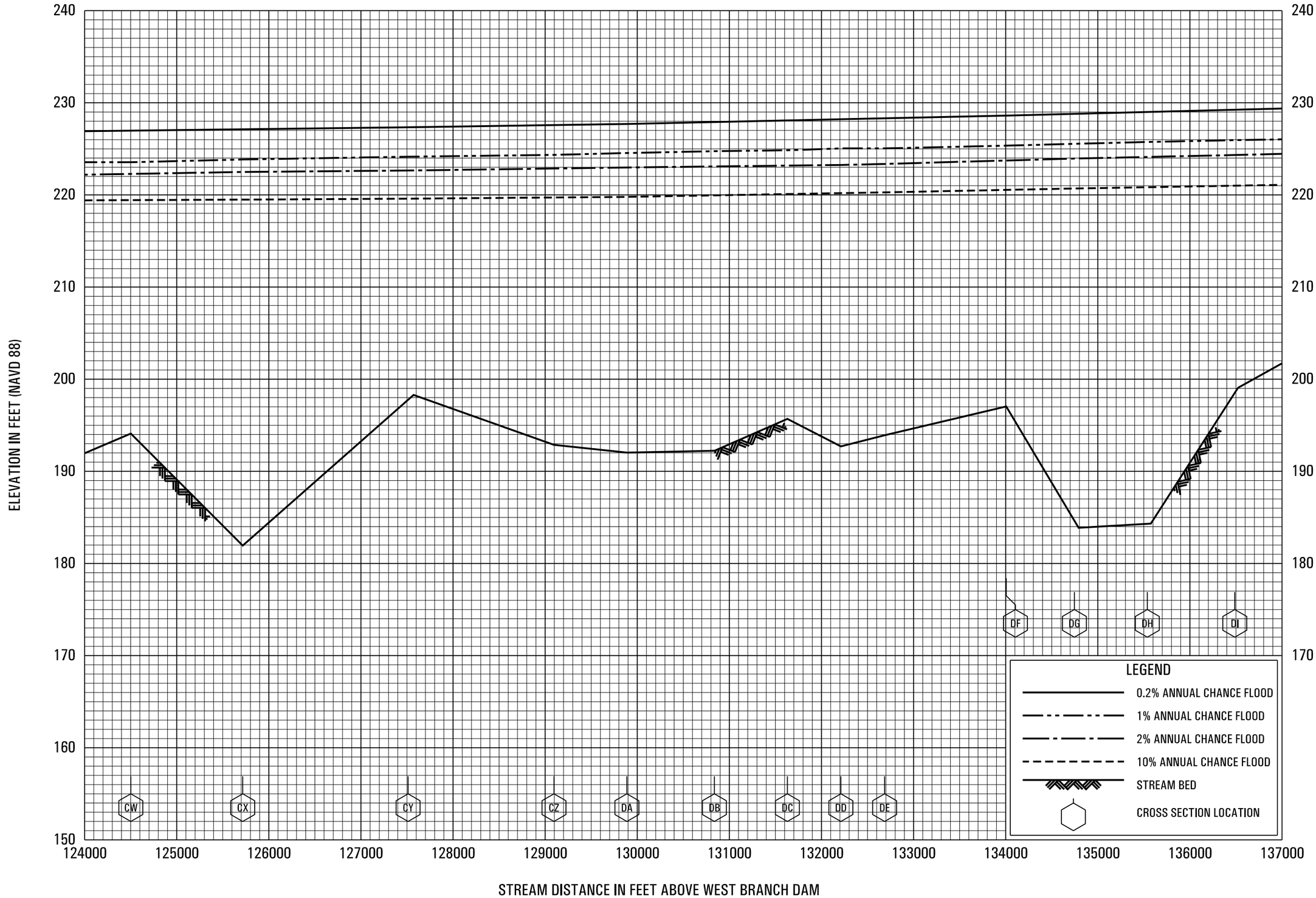
SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

111P



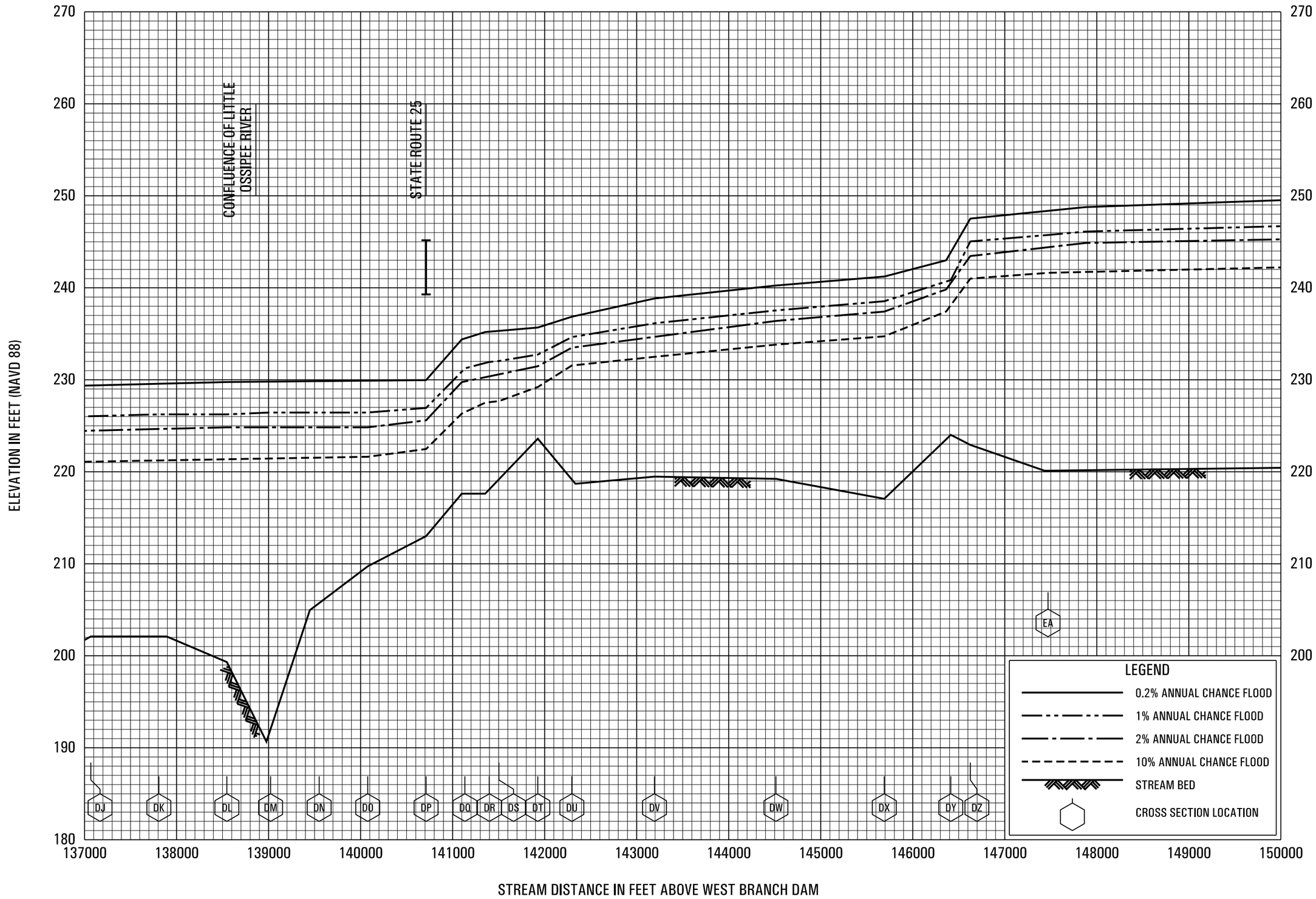
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



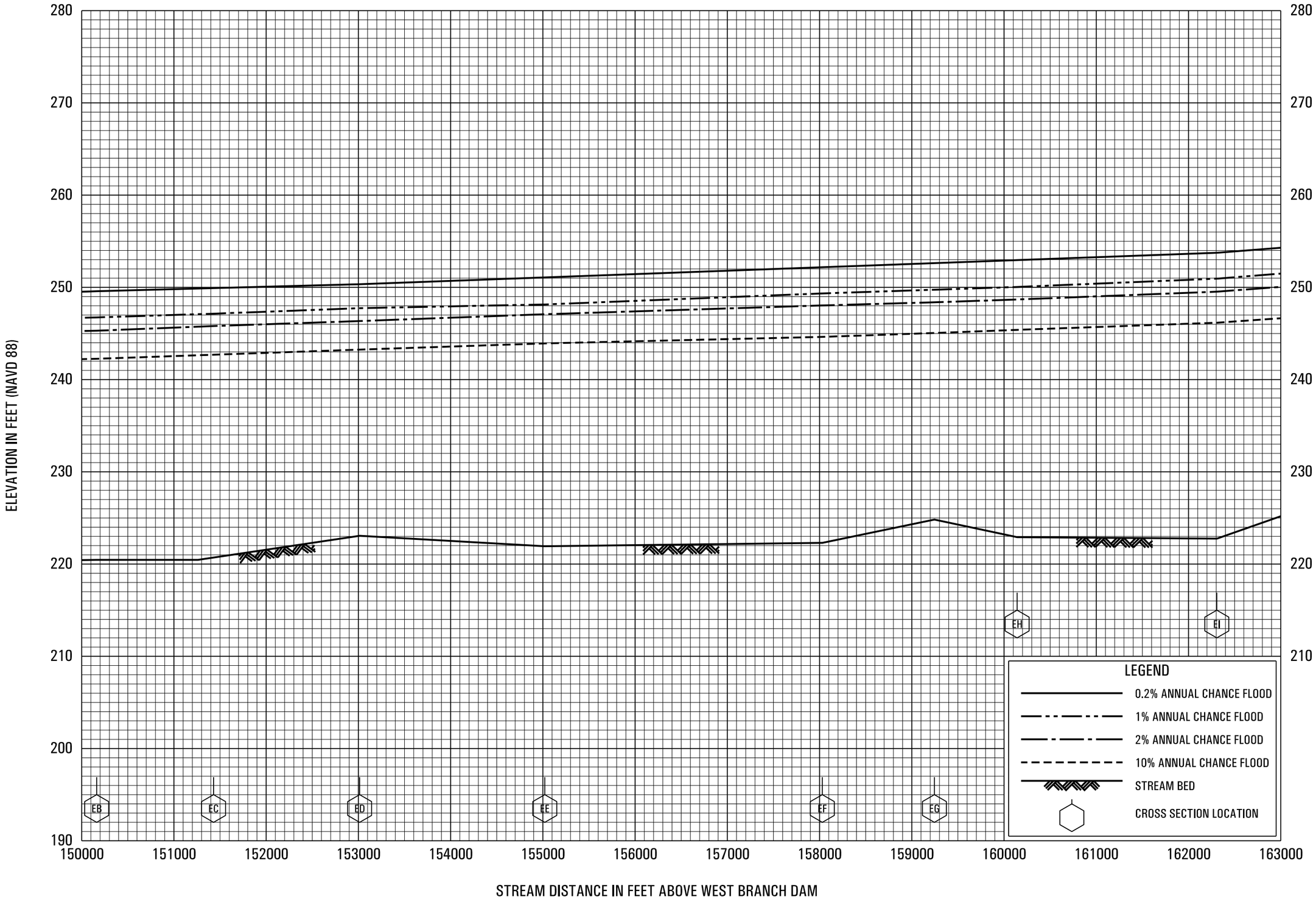
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



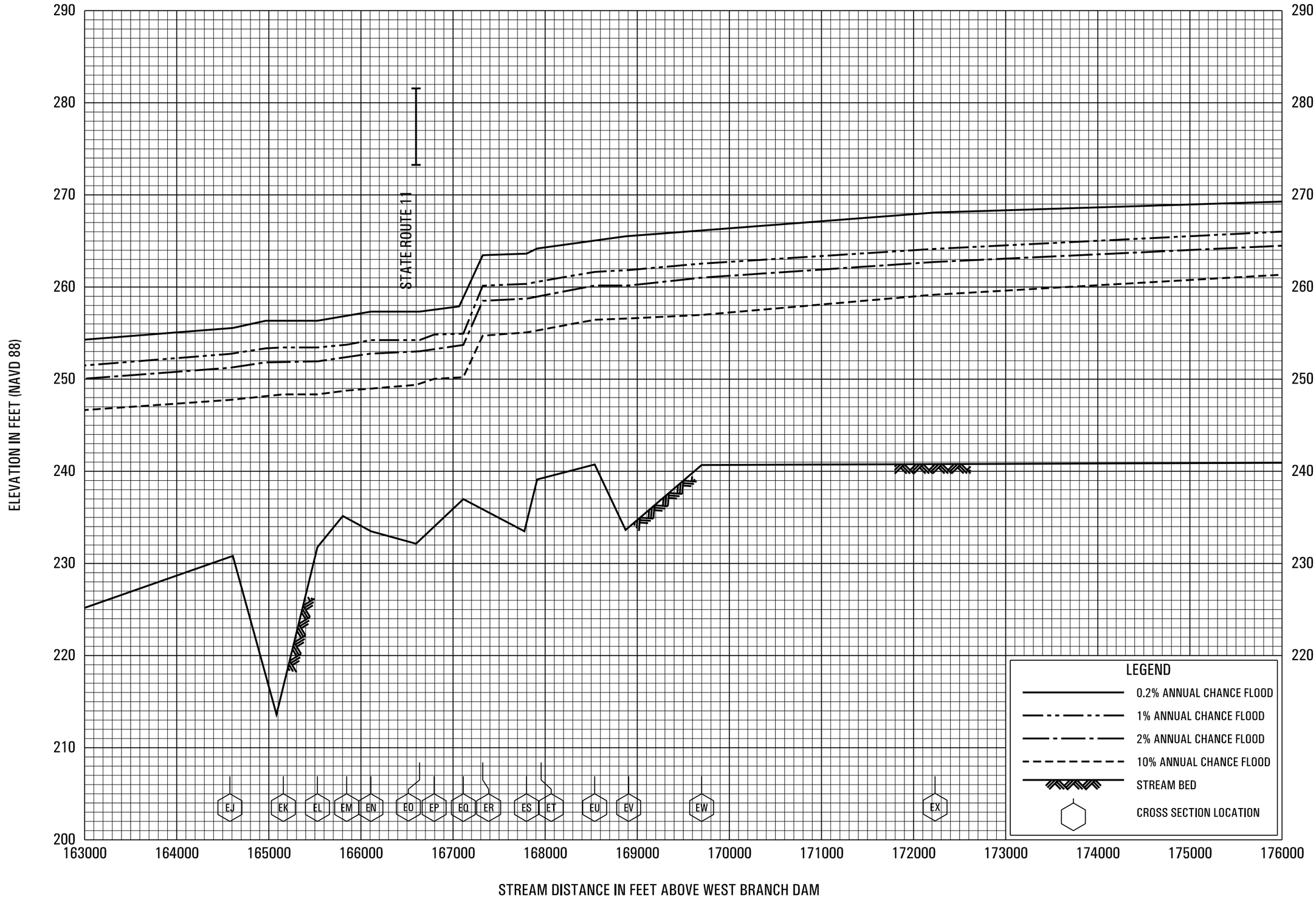
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



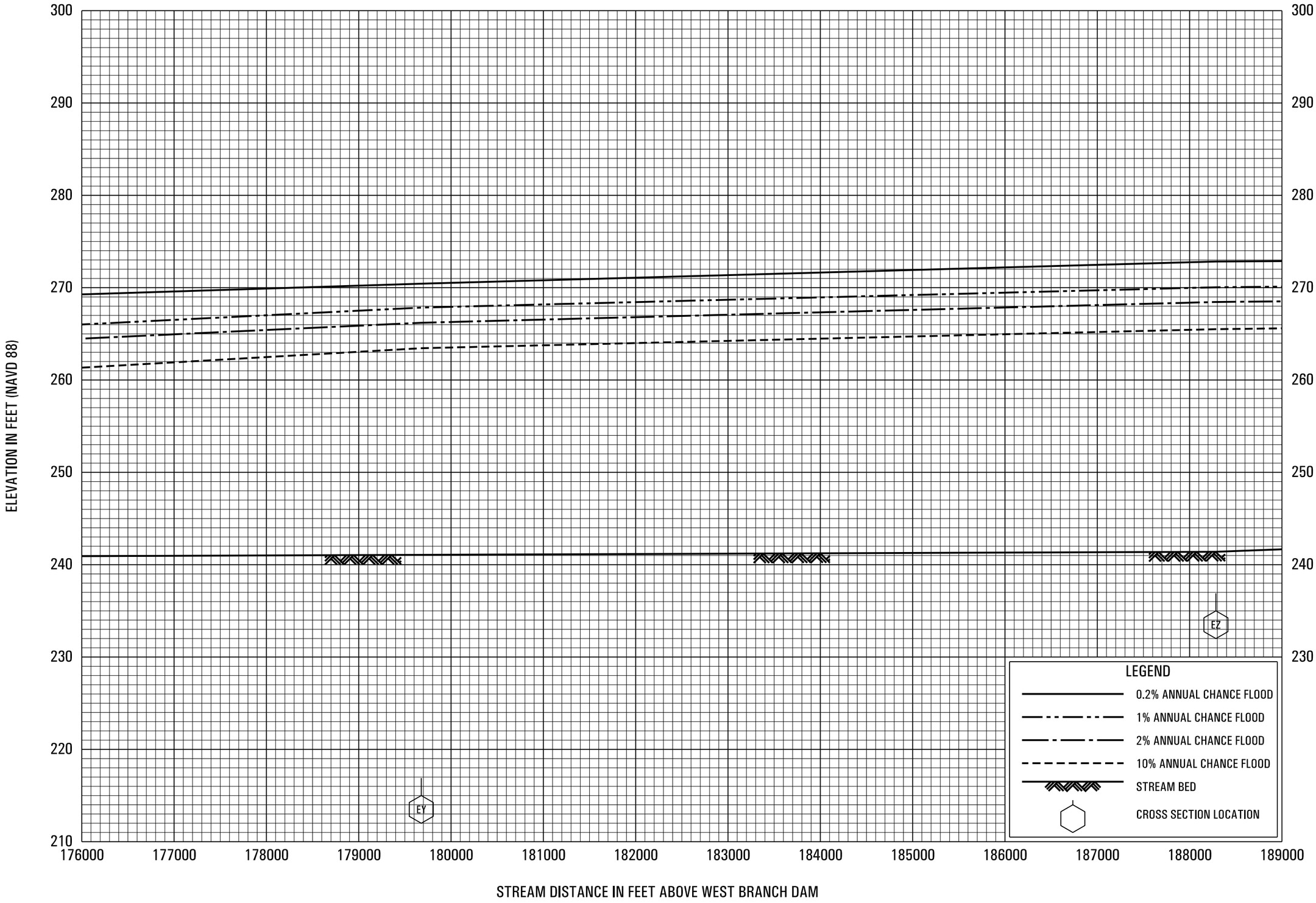
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



FLOOD PROFILES

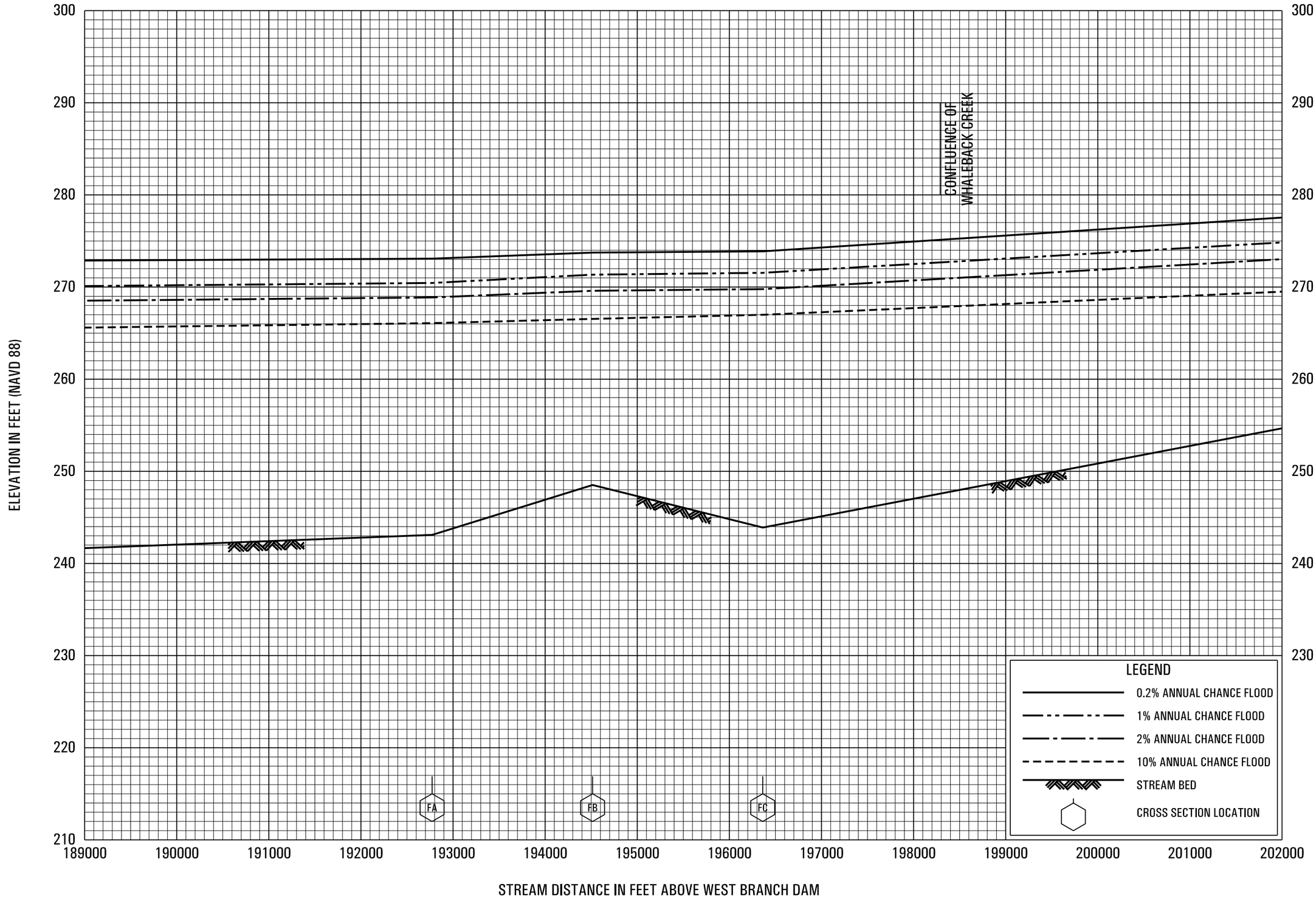
SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

116P



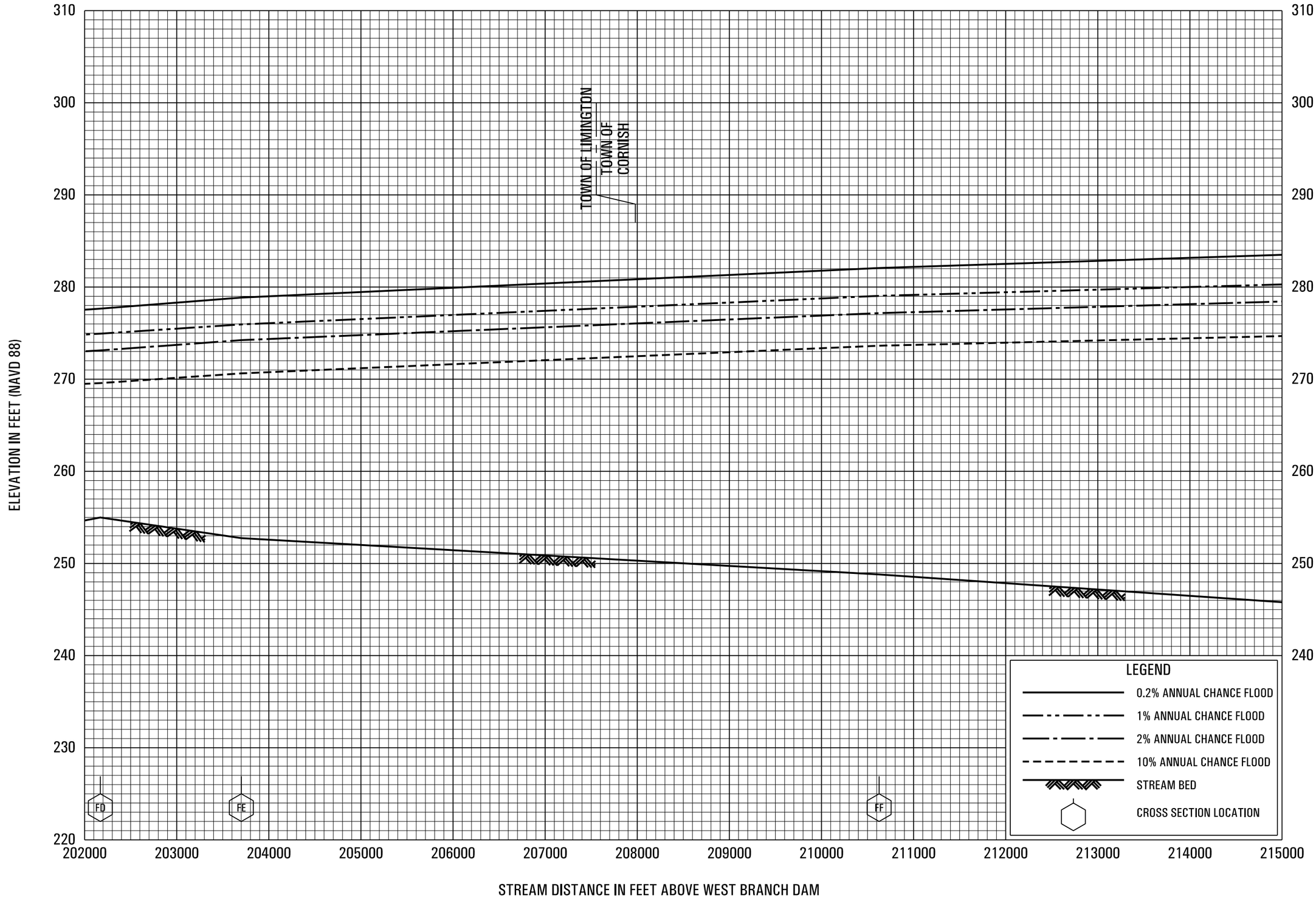
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



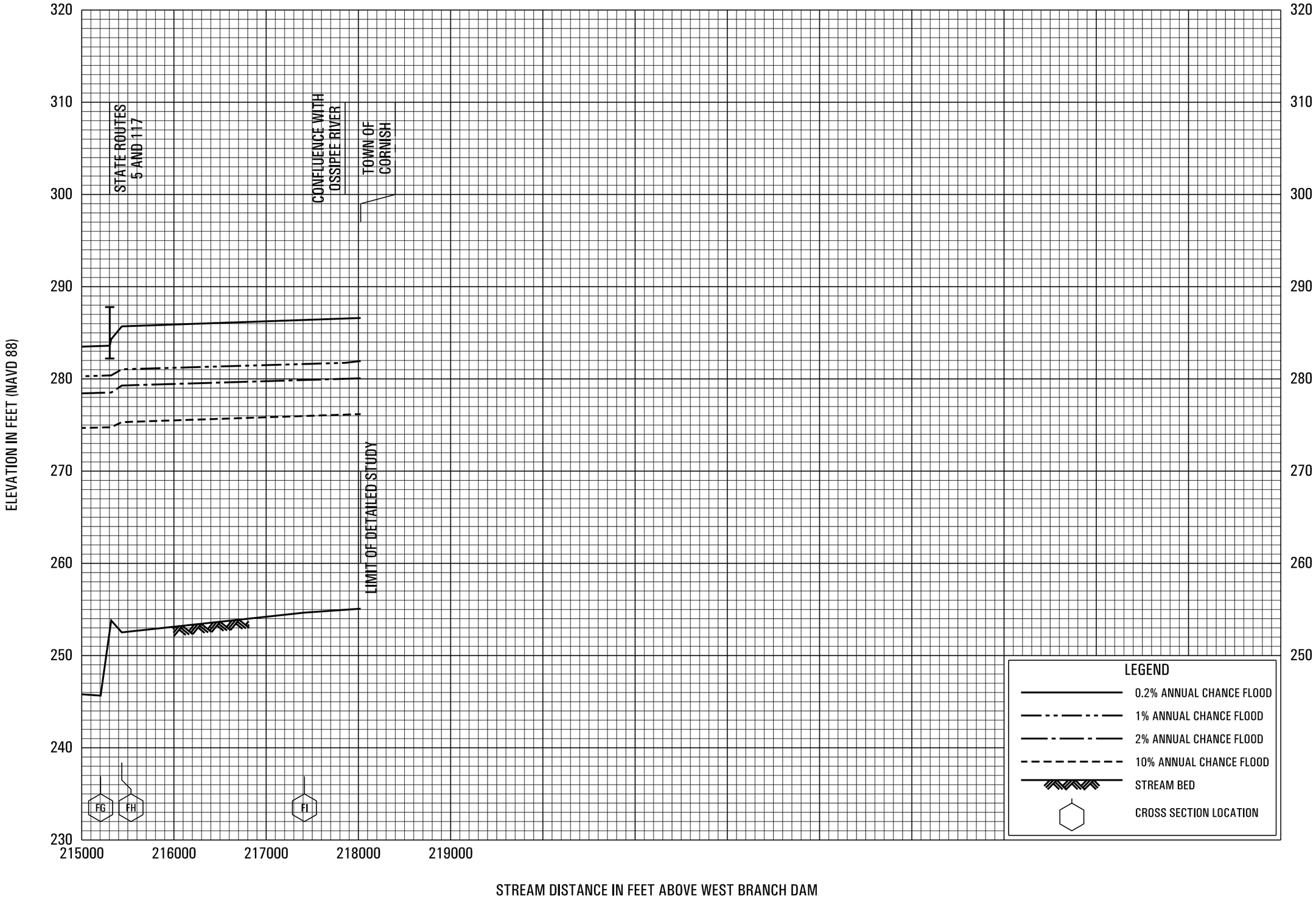
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



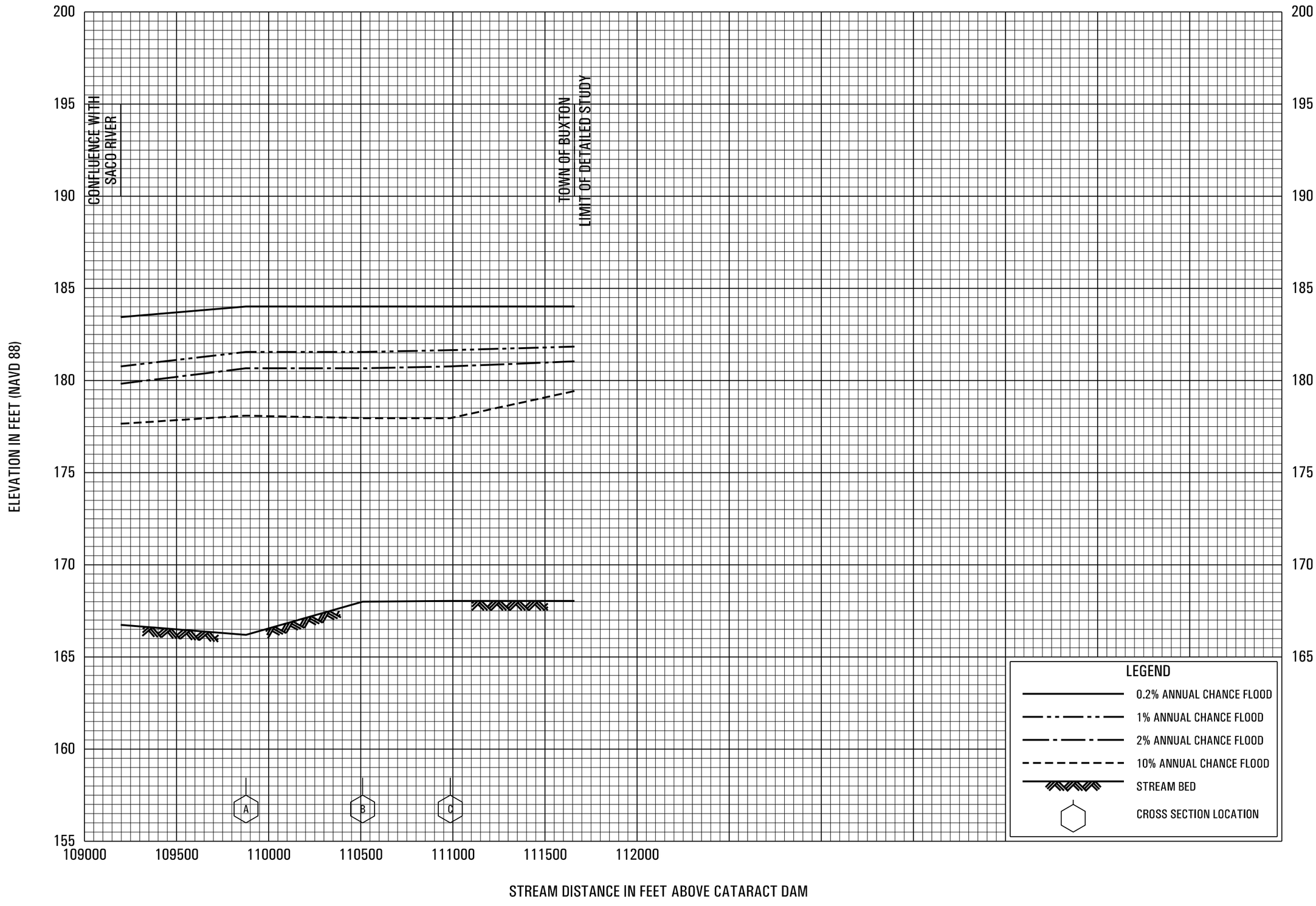
FLOOD PROFILES

SACO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



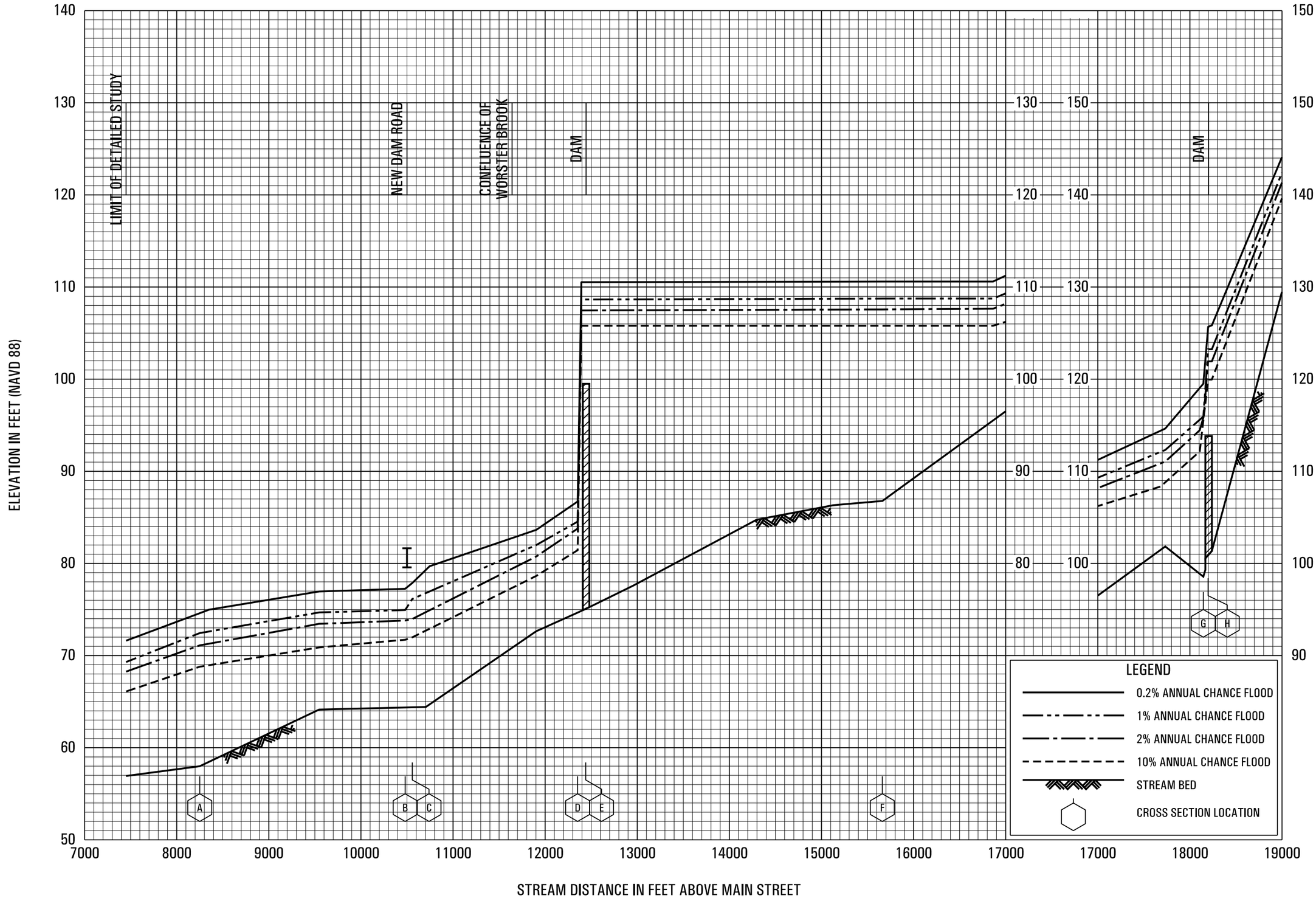
FLOOD PROFILES

SACO RIVER RIGHT CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



FLOOD PROFILES

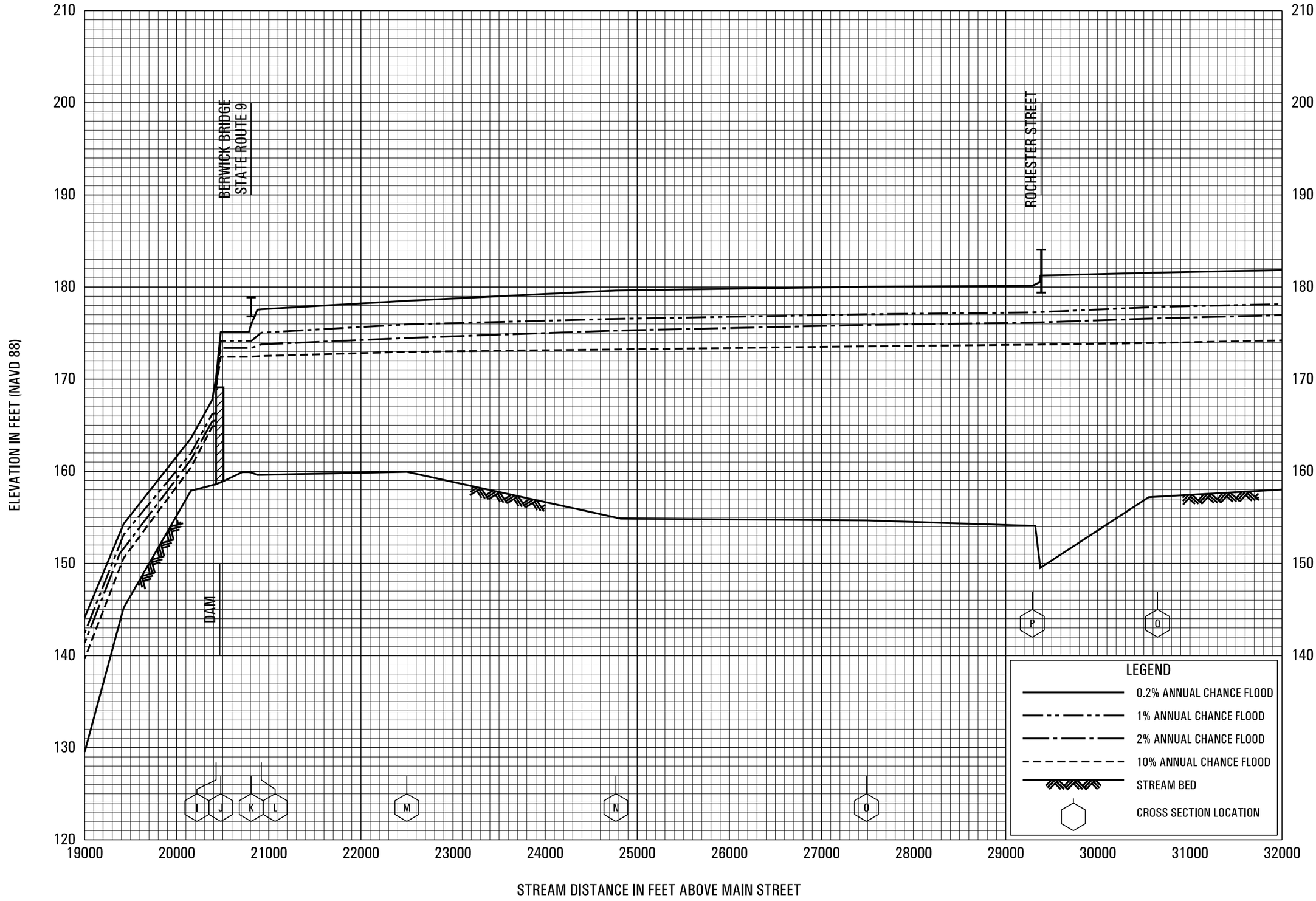
SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS

121P



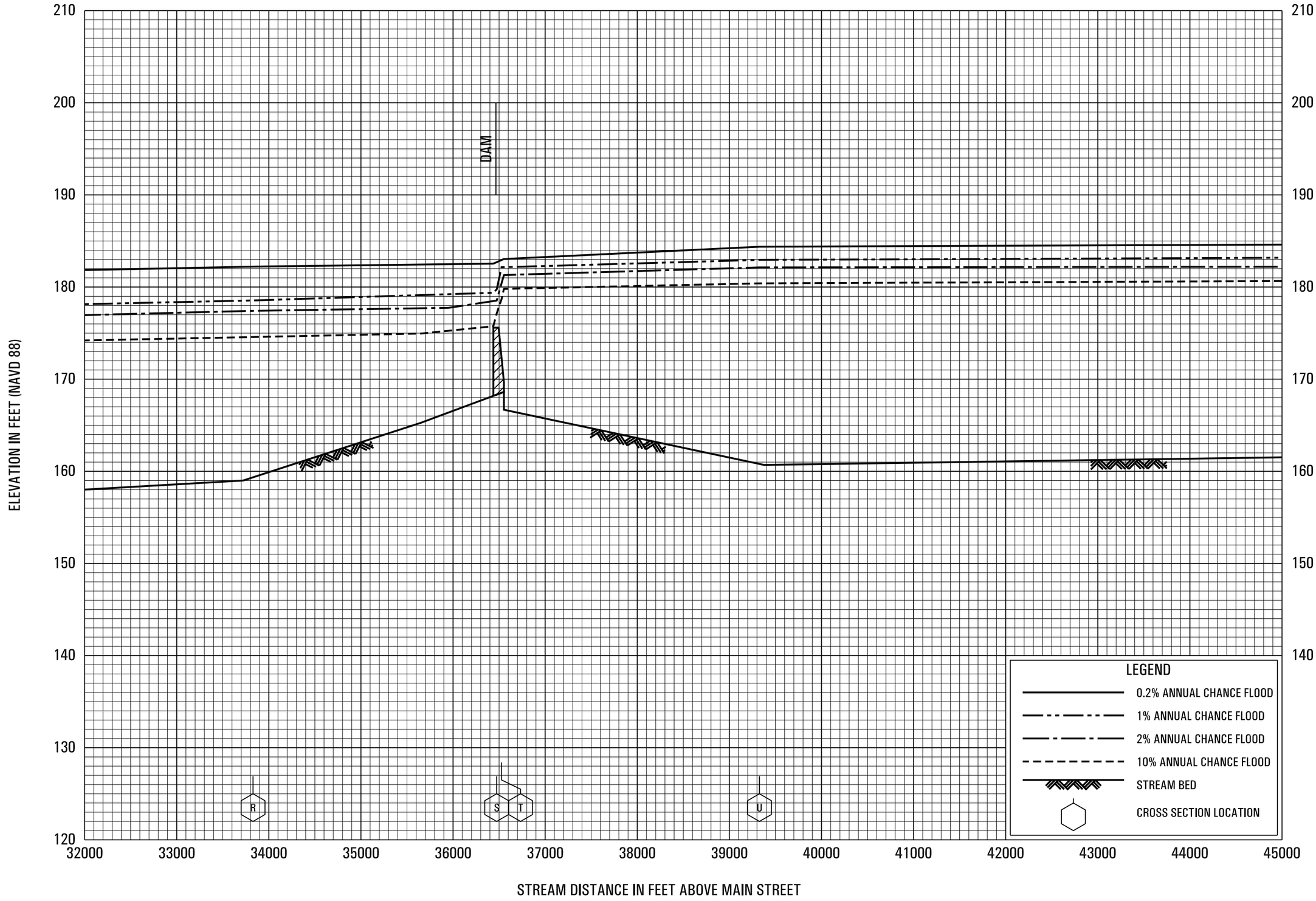
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



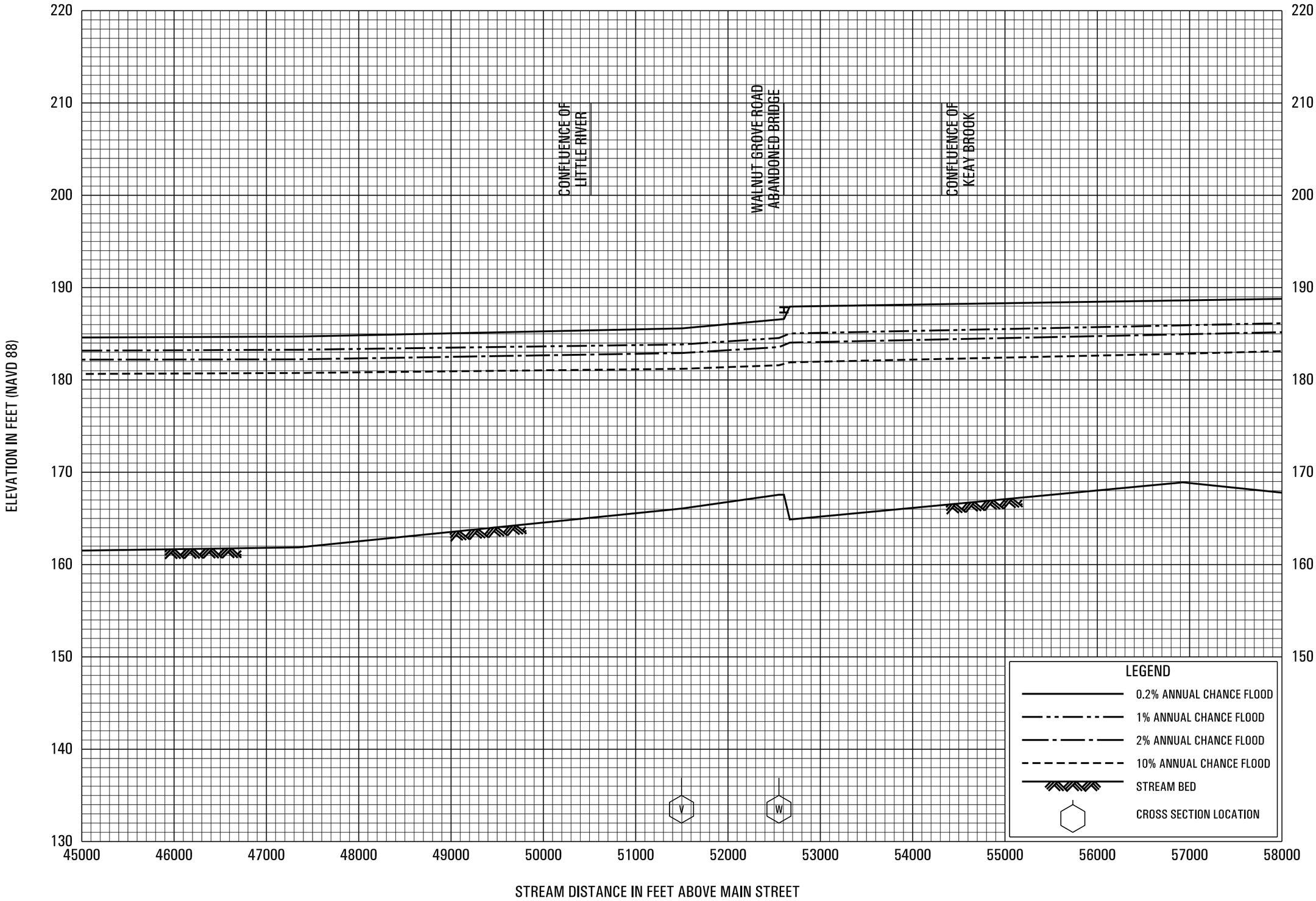
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



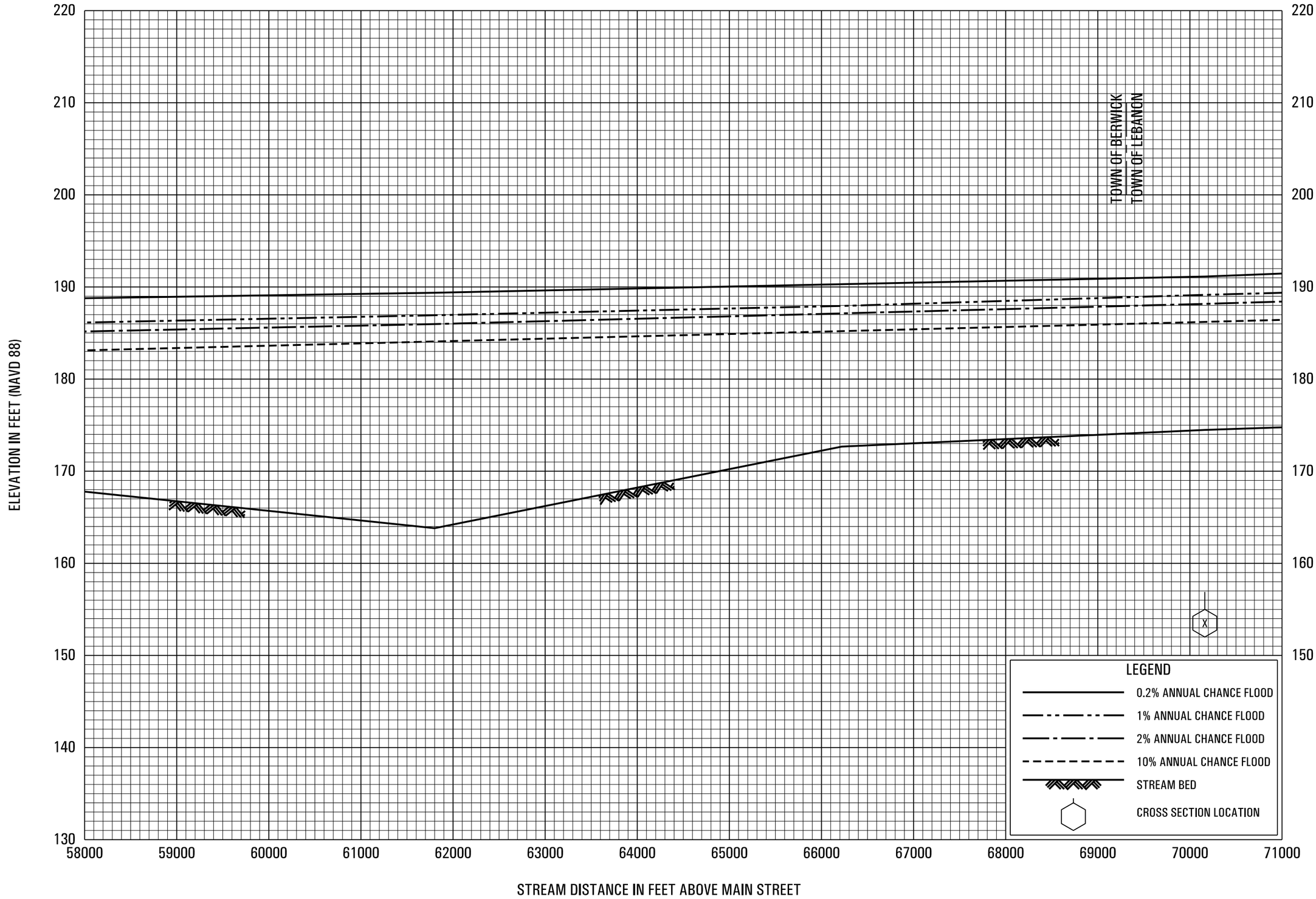
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



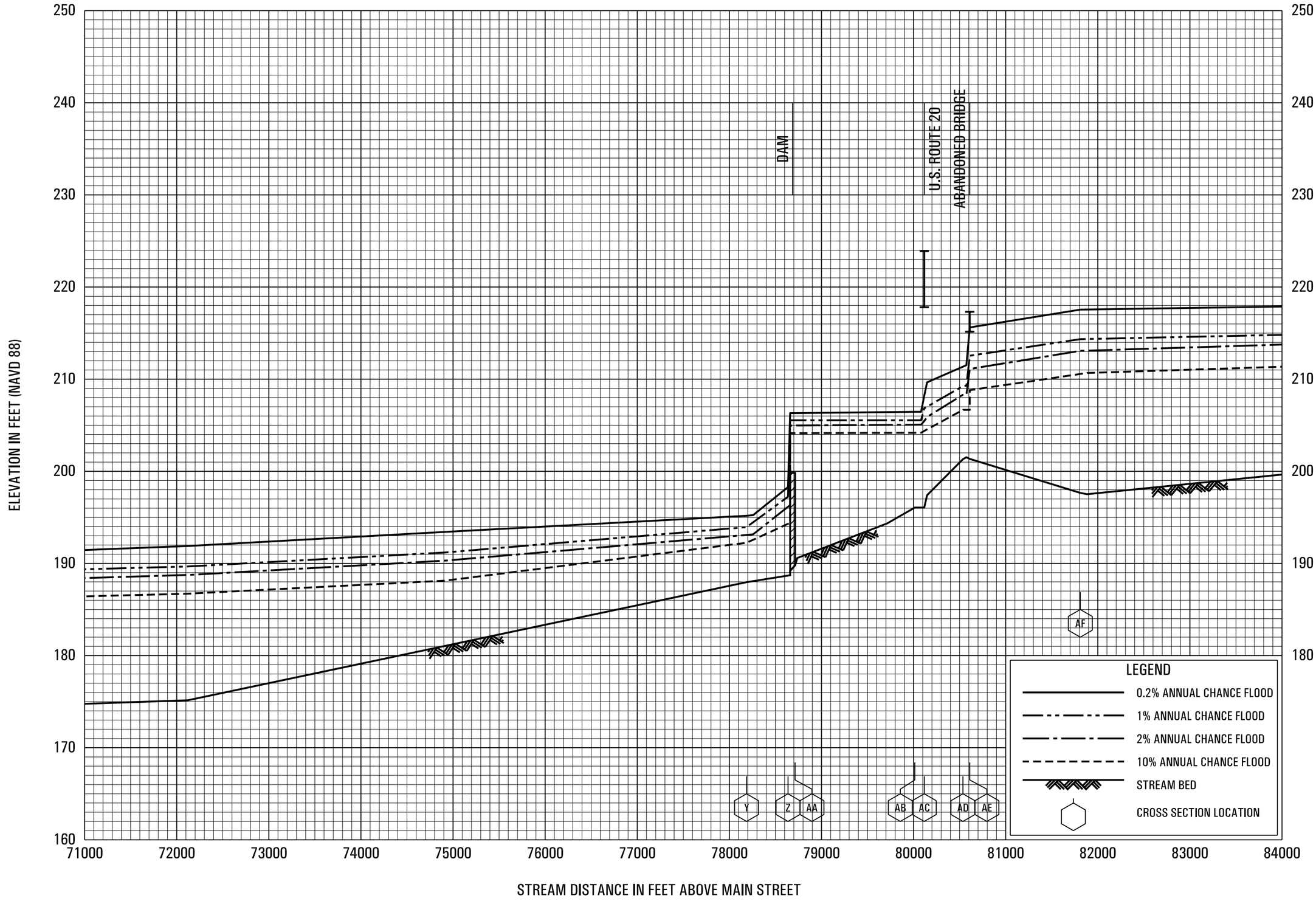
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



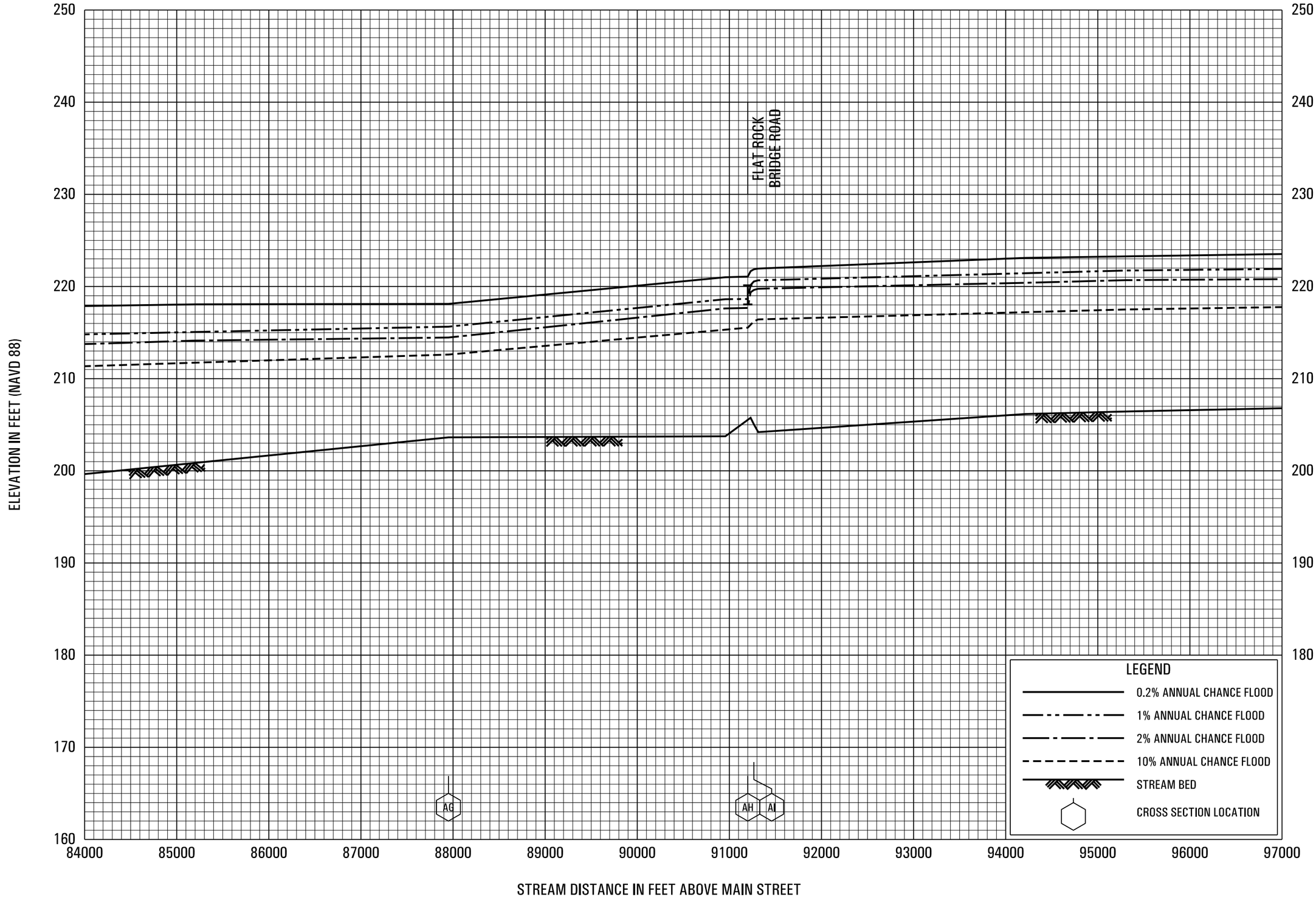
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



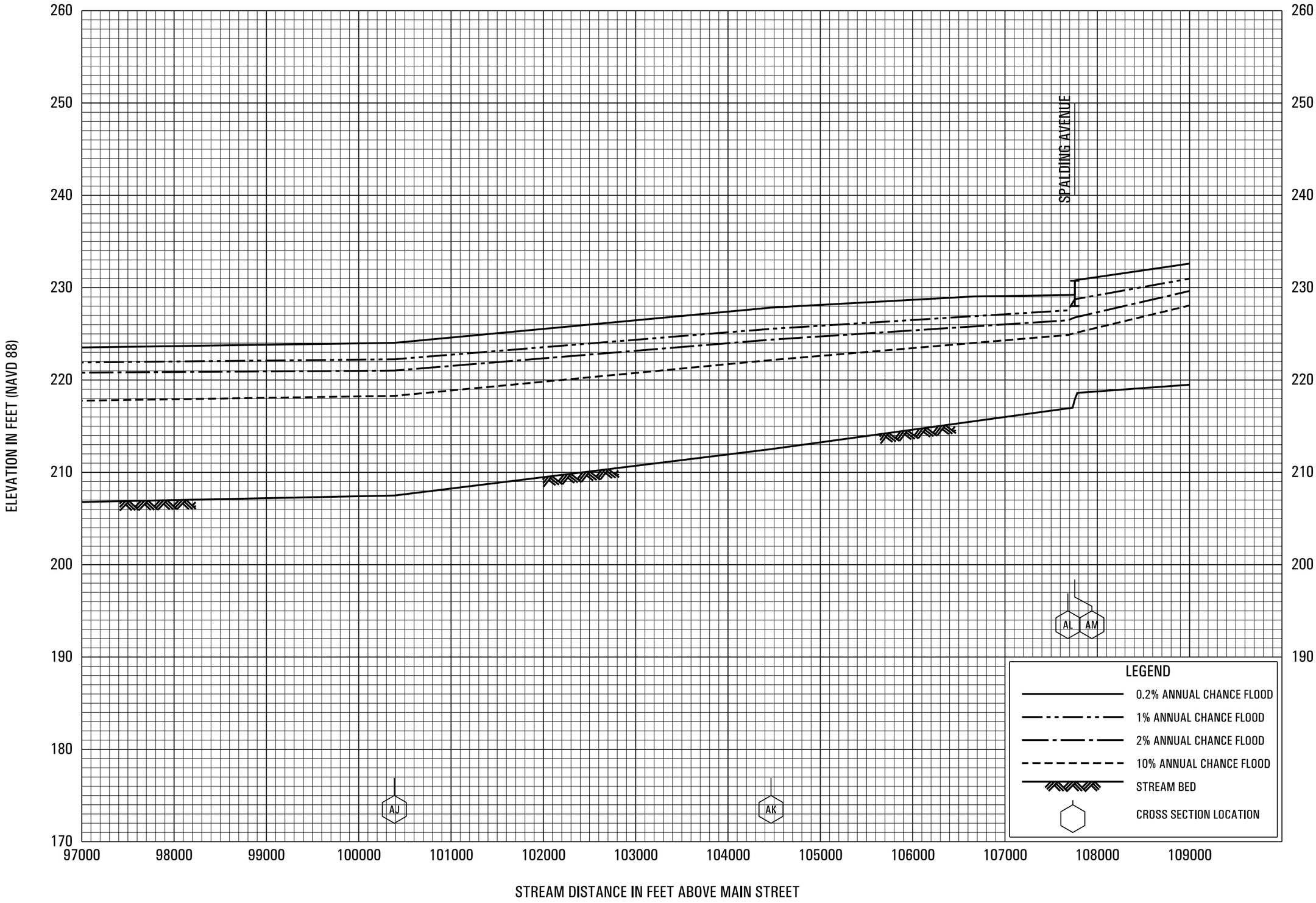
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



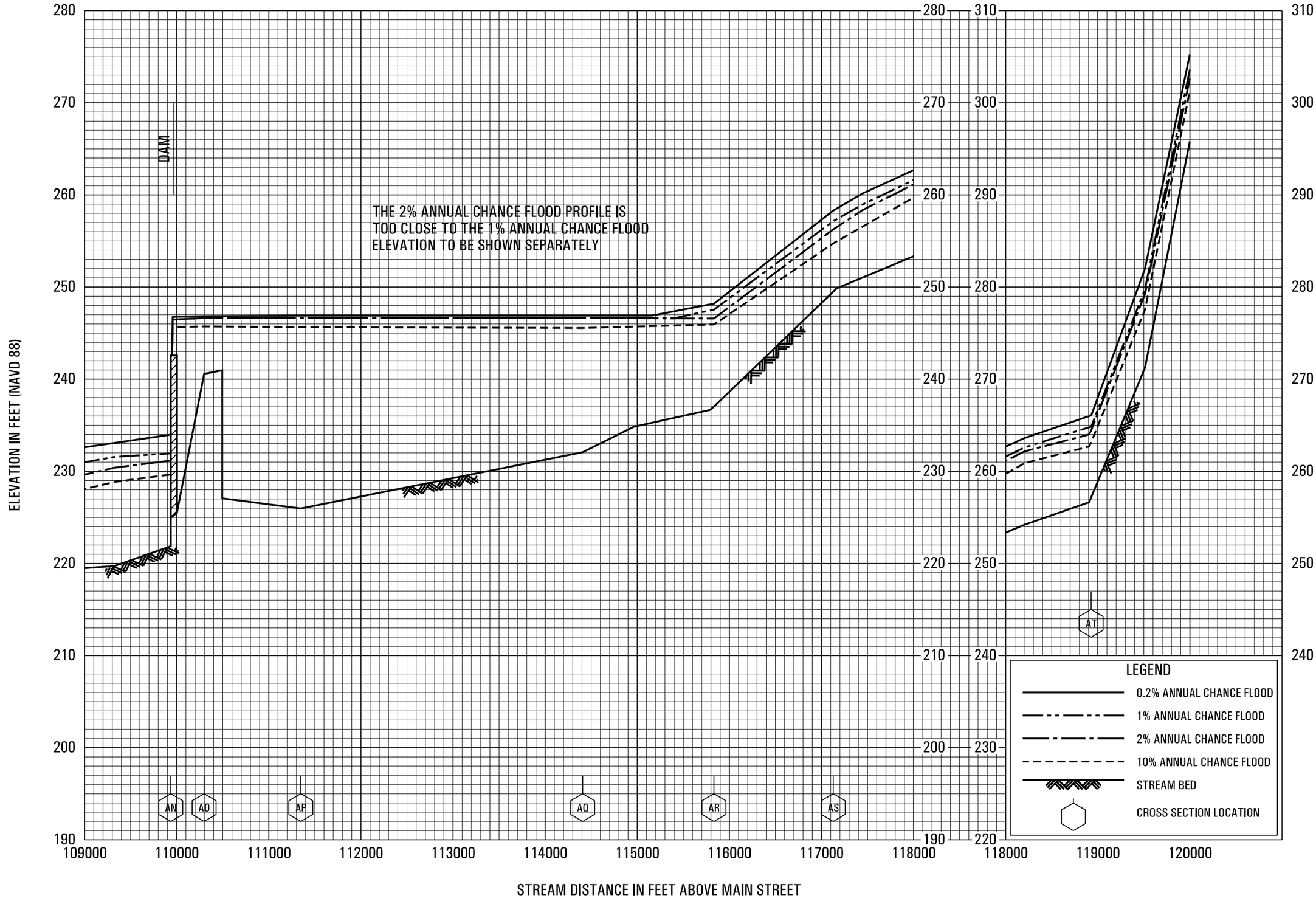
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



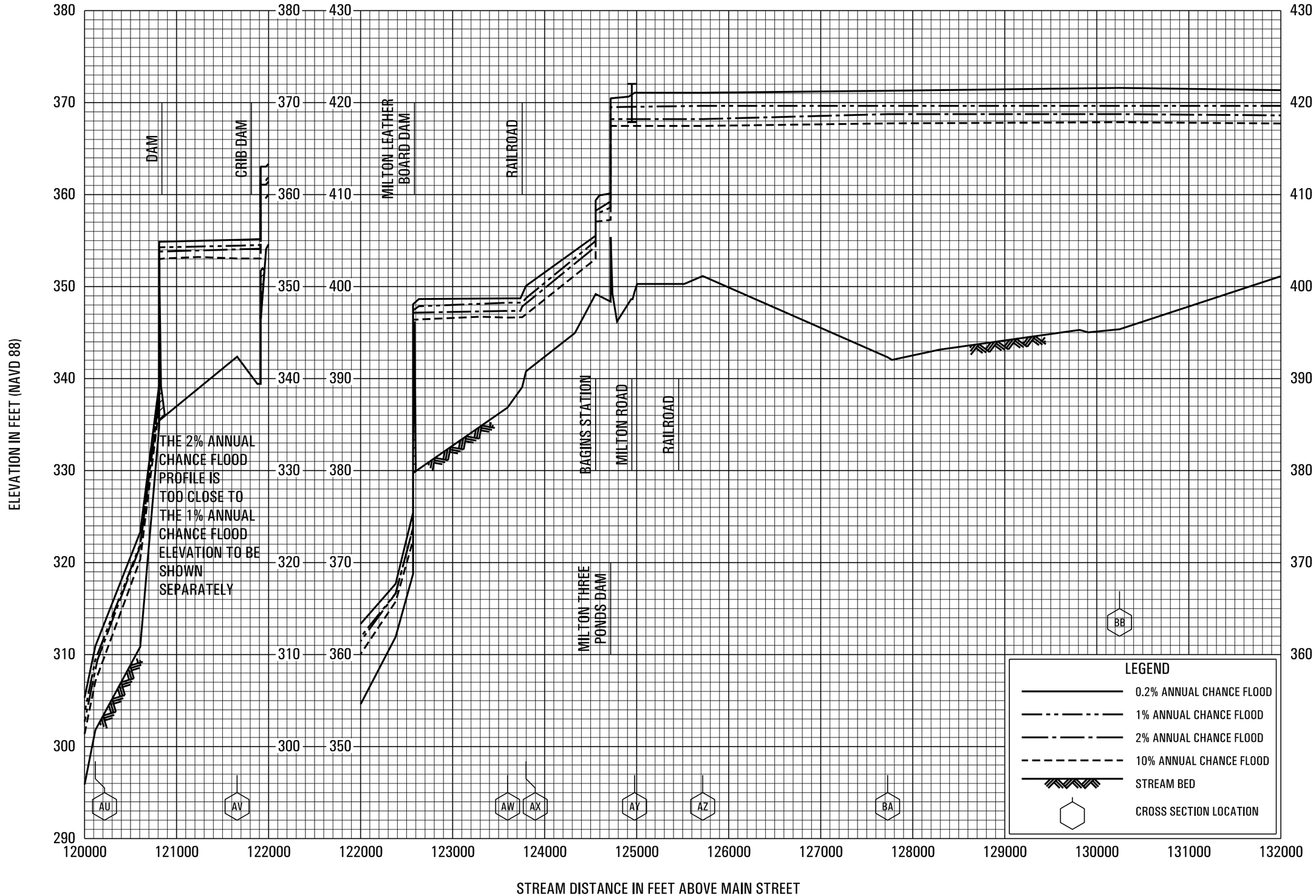
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



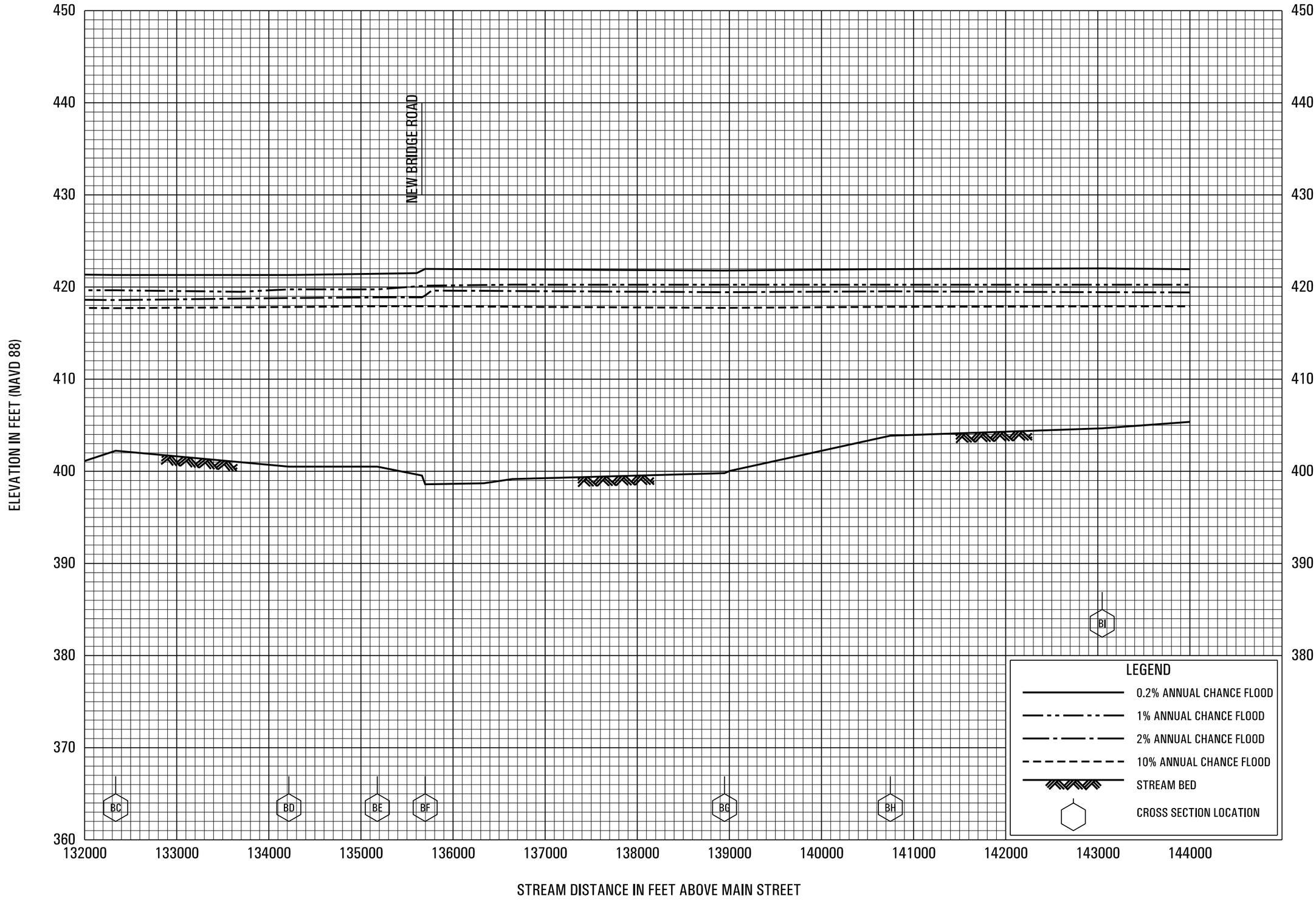
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



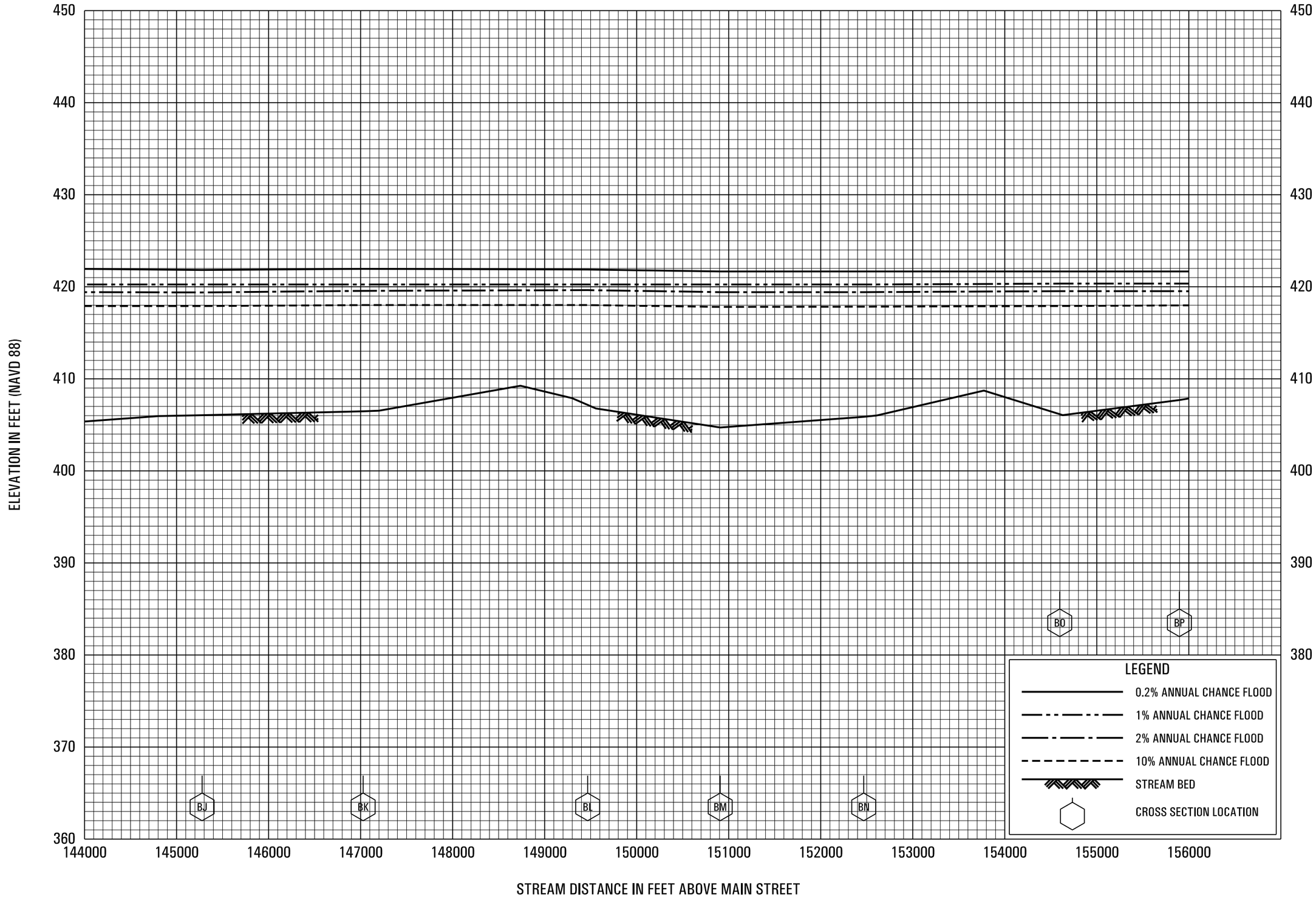
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



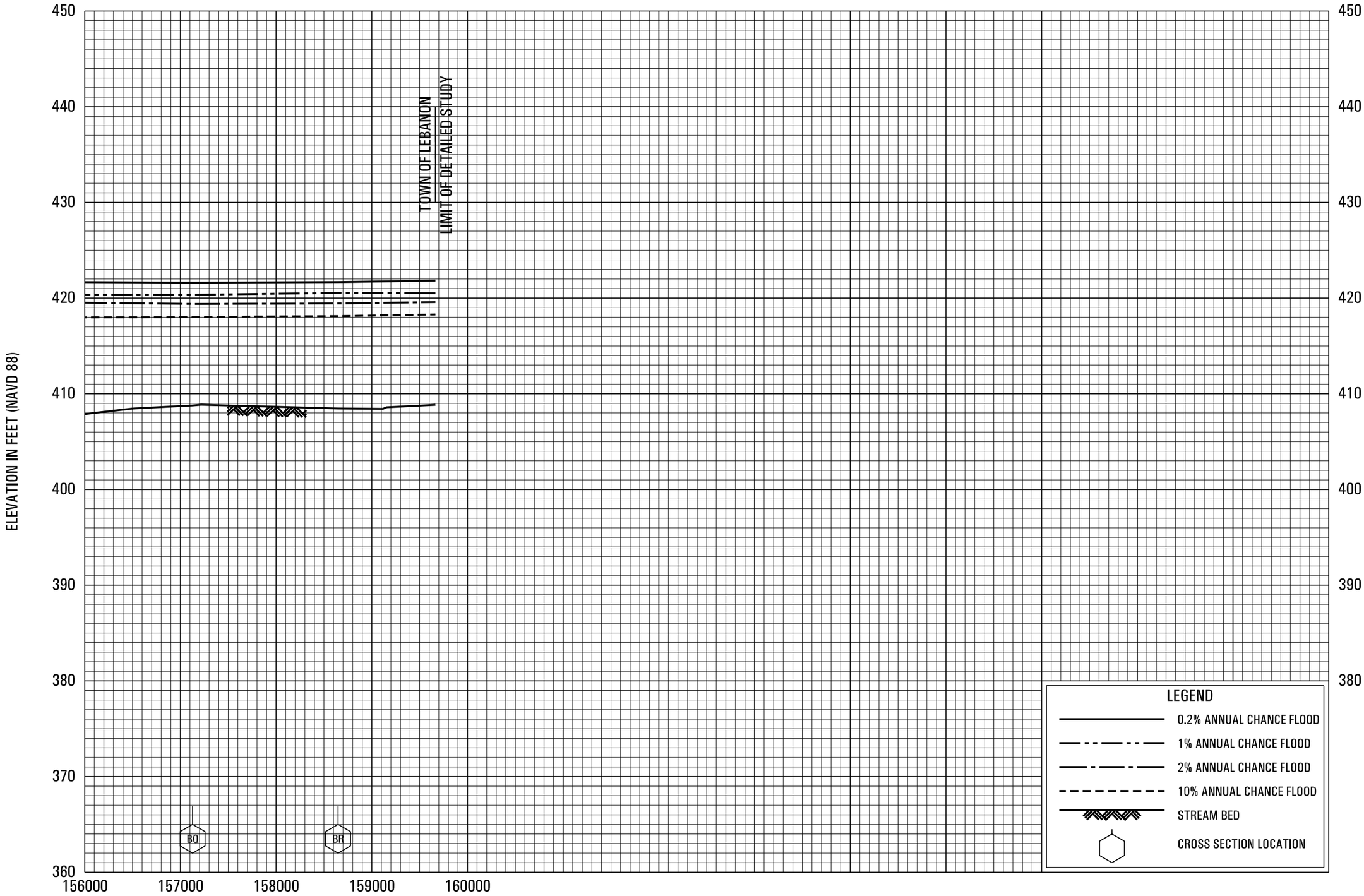
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



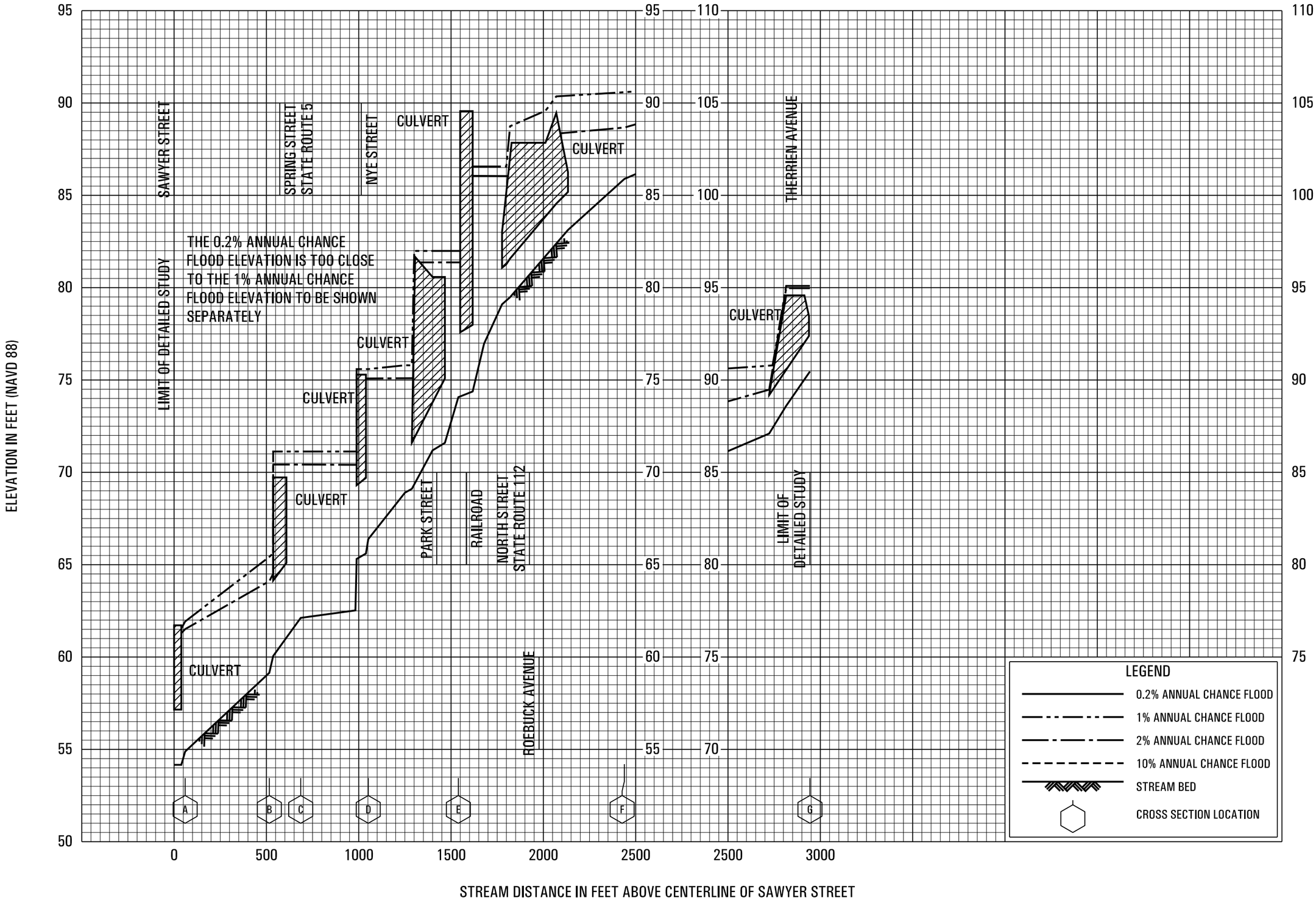
FLOOD PROFILES

SALMON FALLS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



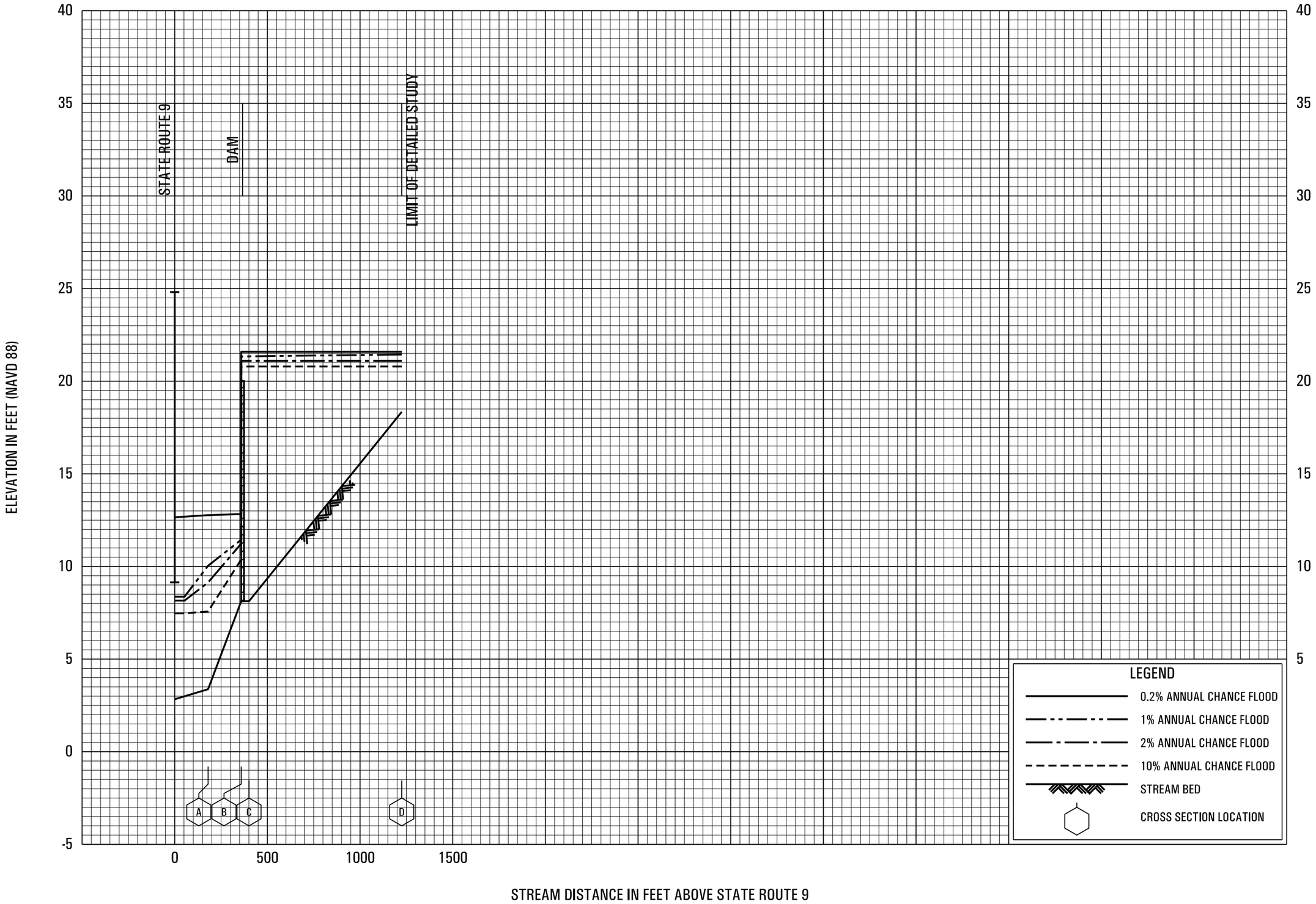
FLOOD PROFILES

SAWYER BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



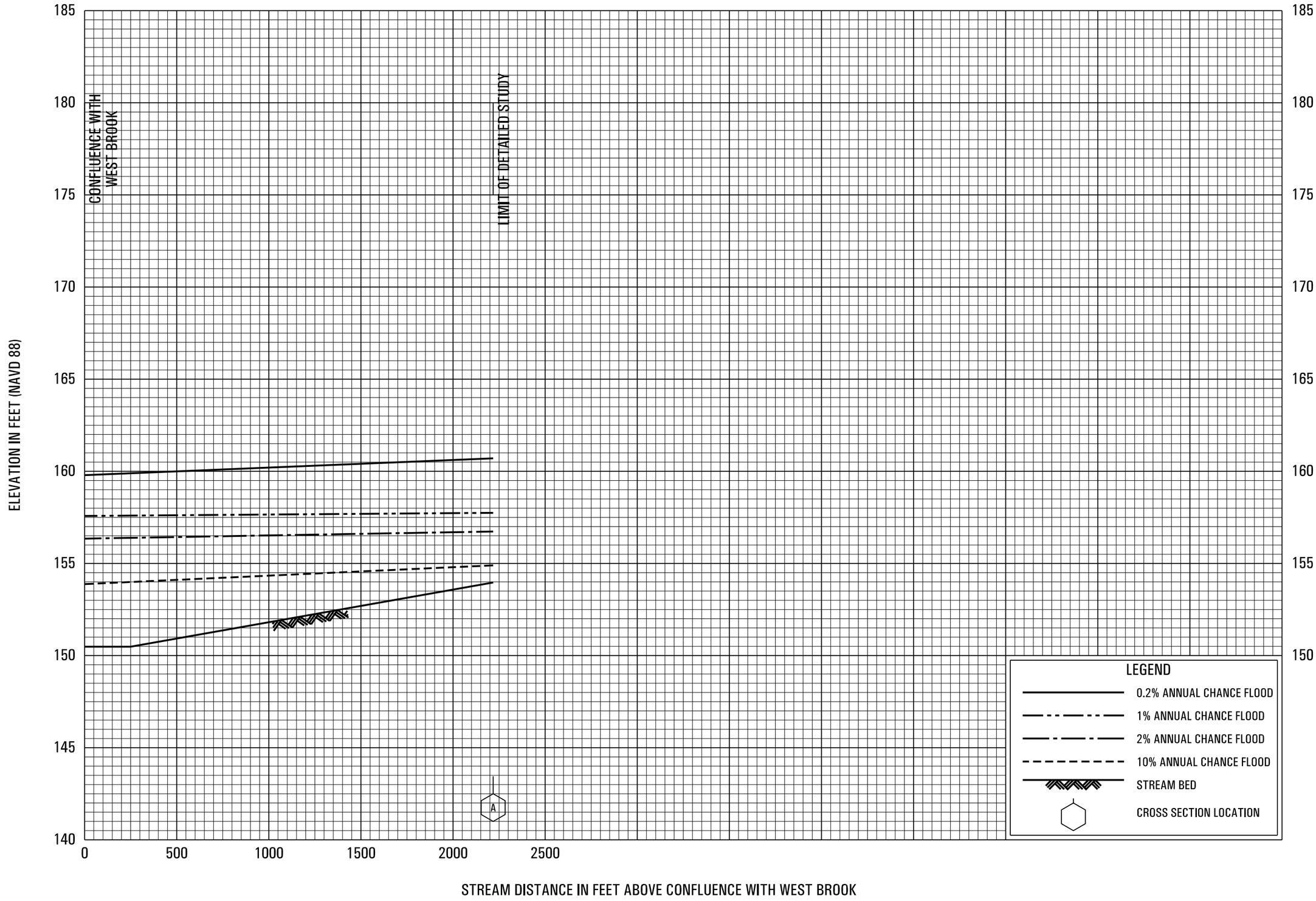
FLOOD PROFILES

SMITH BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



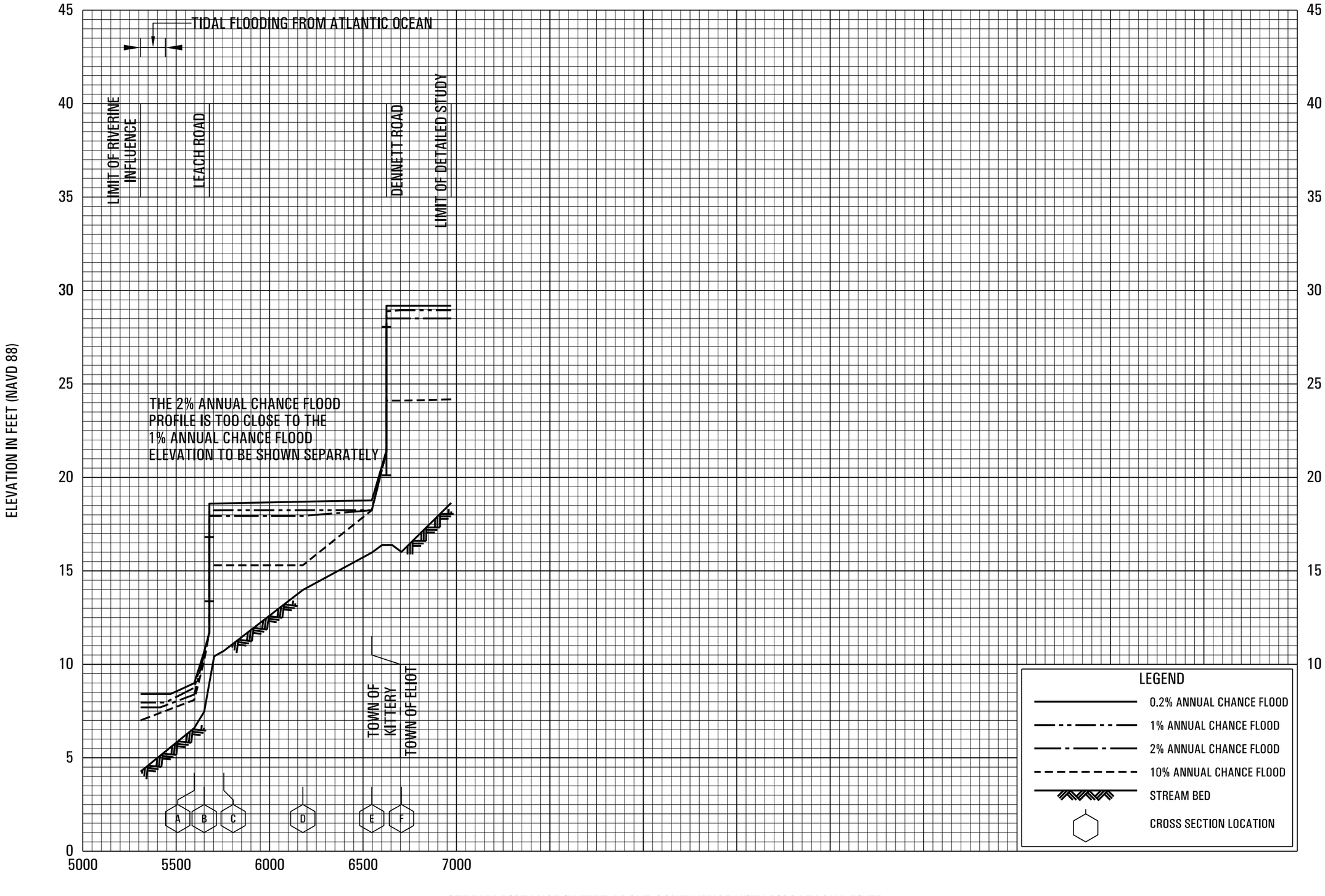
FLOOD PROFILES

SOUTH BRANCH OF WEST BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



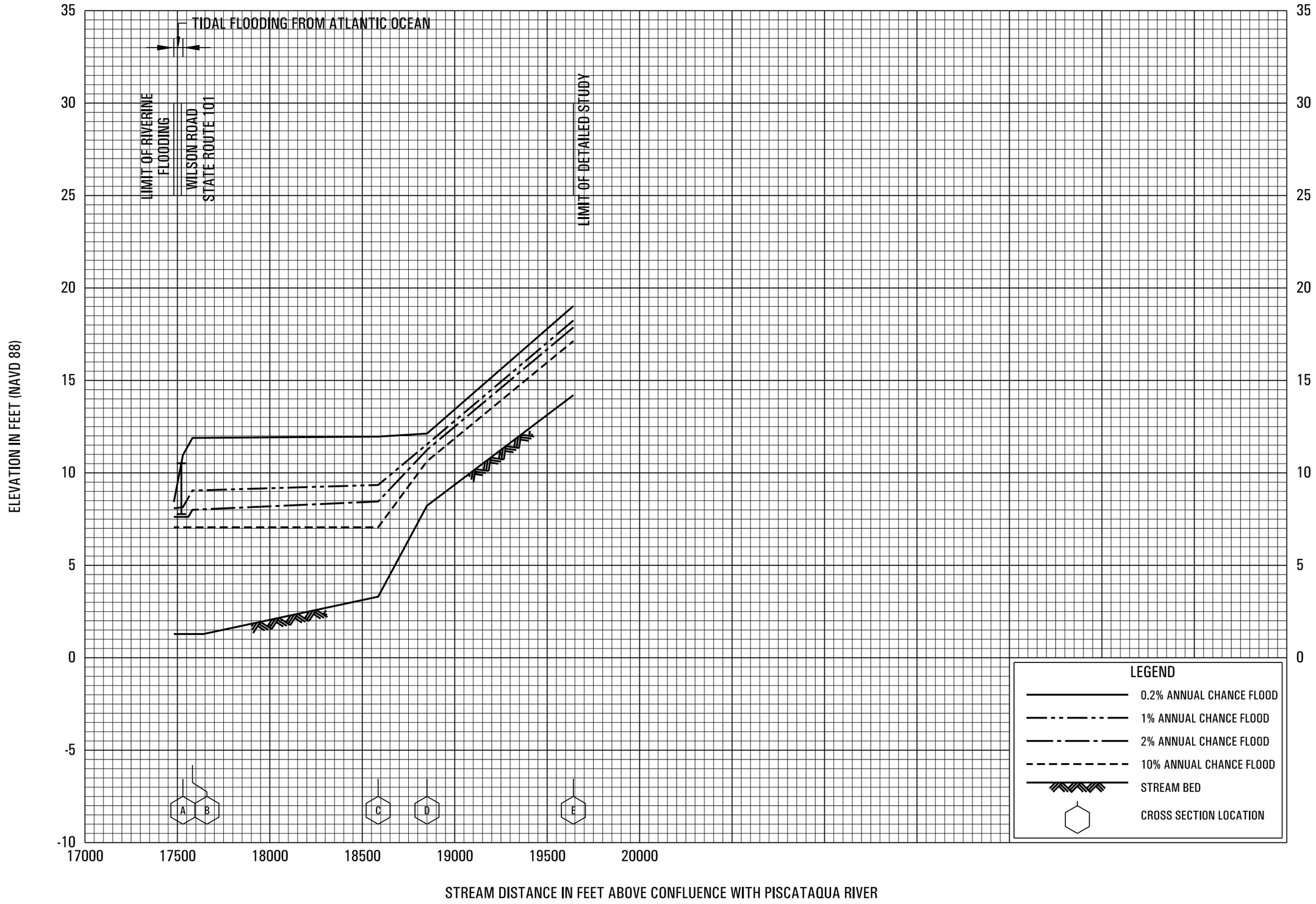
FLOOD PROFILES

SPINNEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



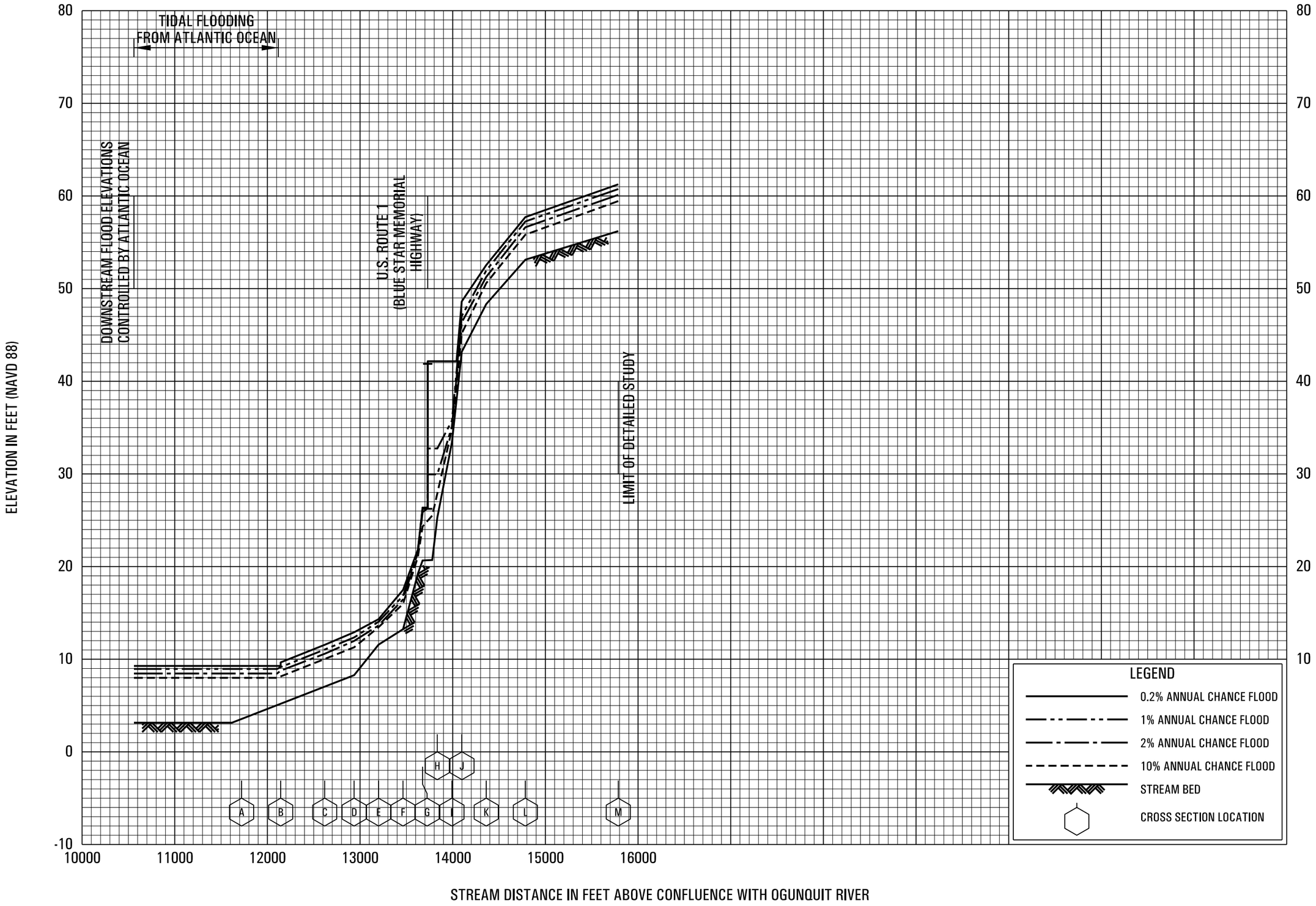
FLOOD PROFILES

SPRUCE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



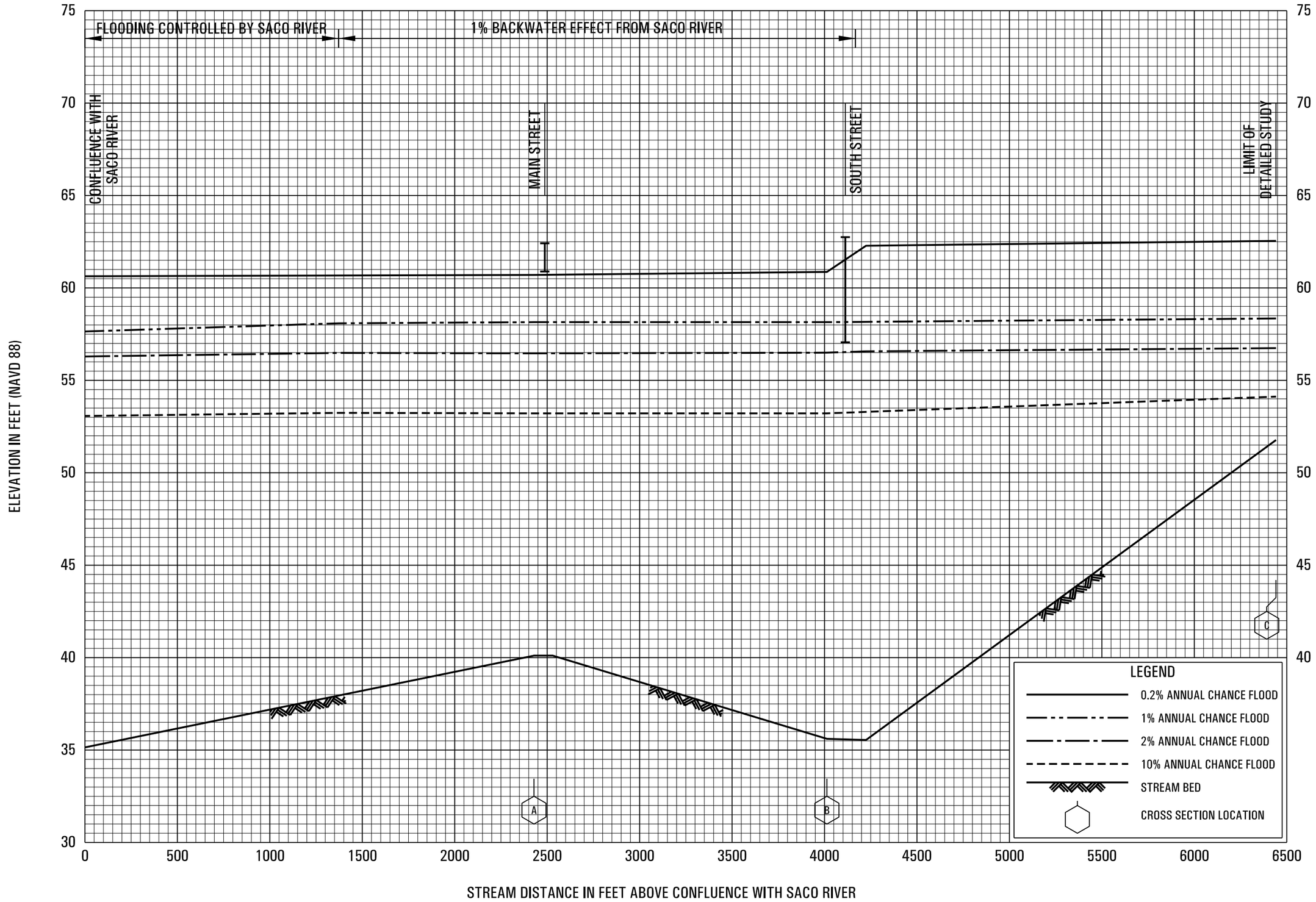
FLOOD PROFILES

STEVENS BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



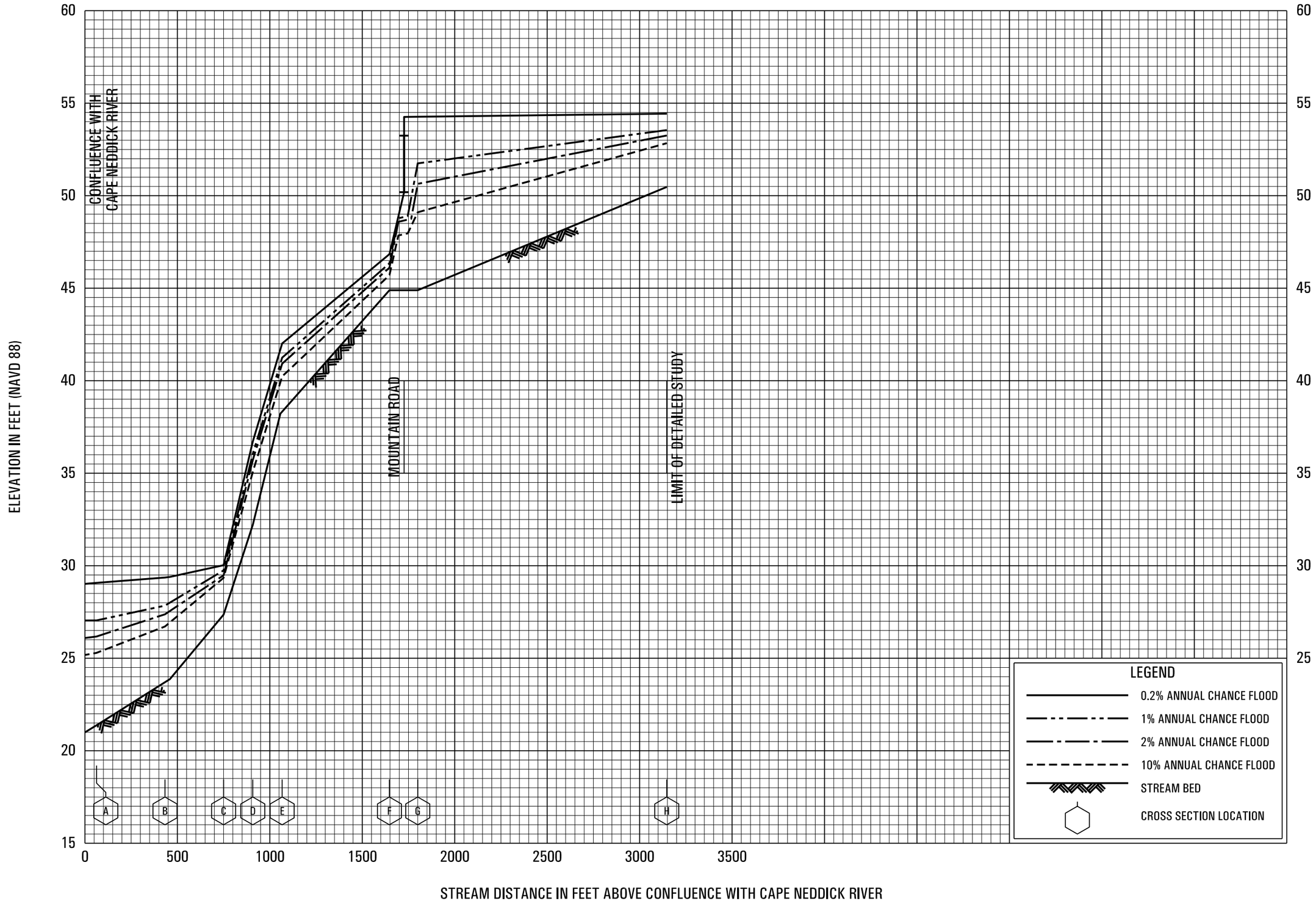
FLOOD PROFILES

THATCHER BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



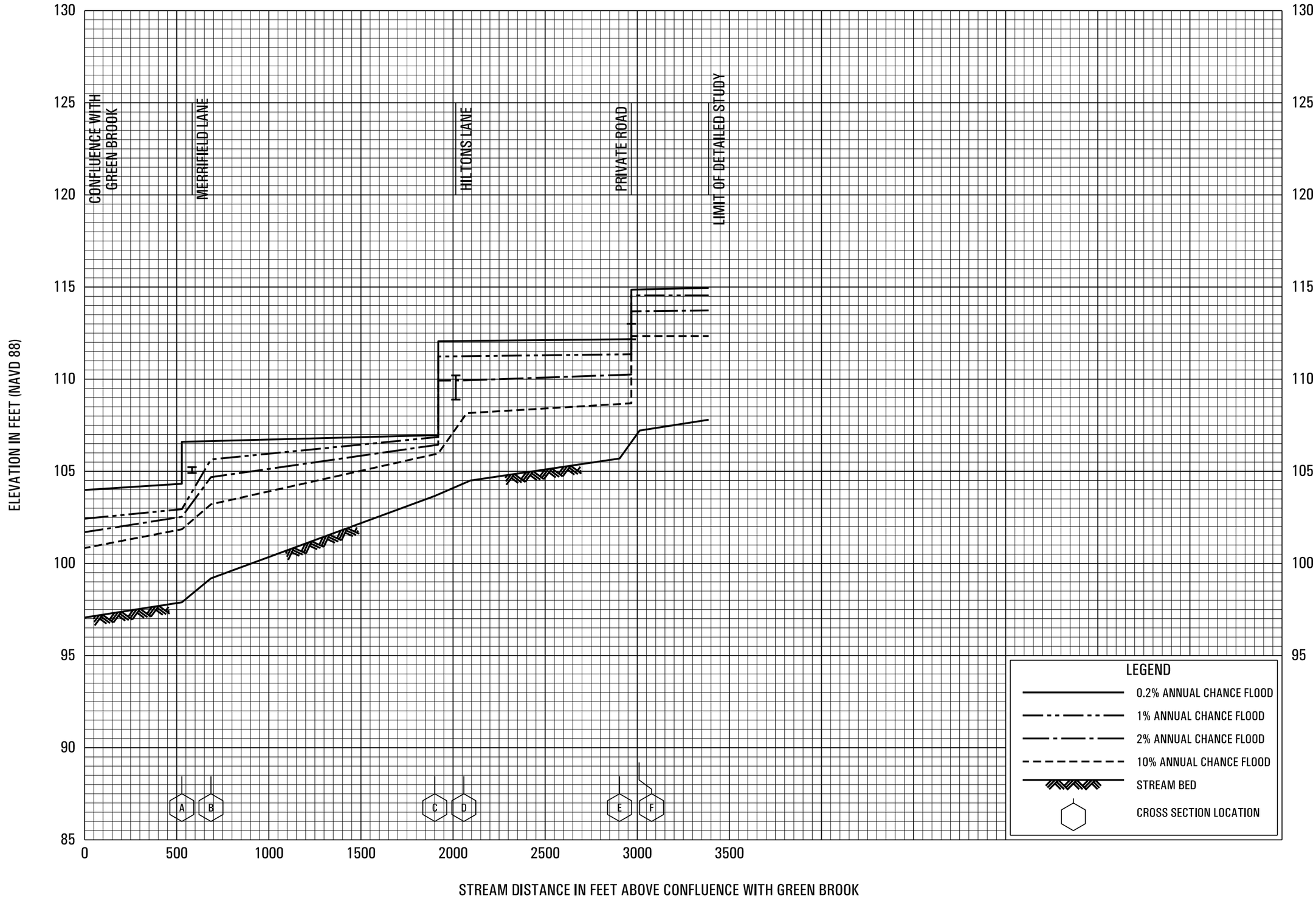
FLOOD PROFILES

TRIBUTARY 1 TO CAPE NEDDICK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



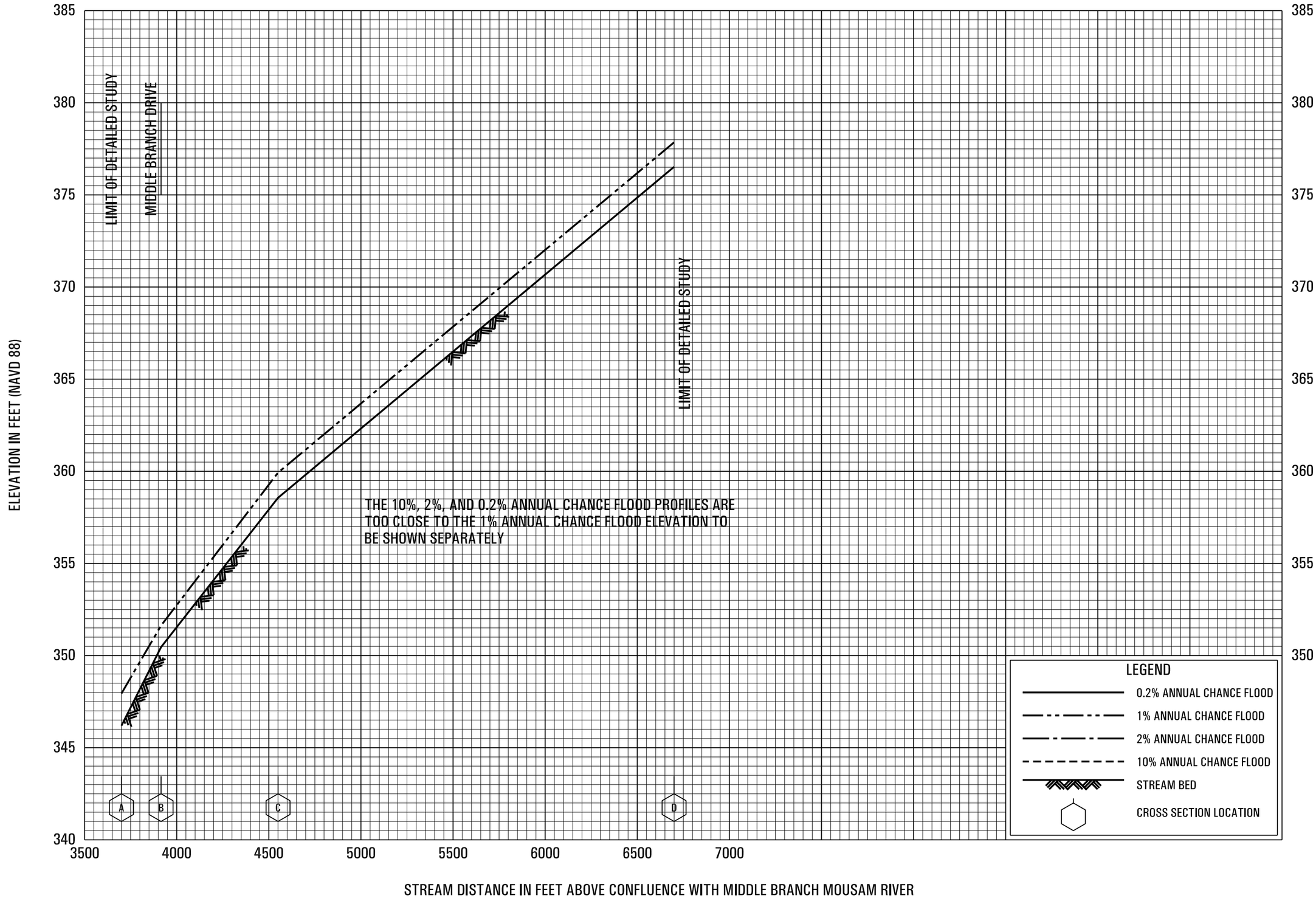
FLOOD PROFILES

TRIBUTARY 1 TO GREEN BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



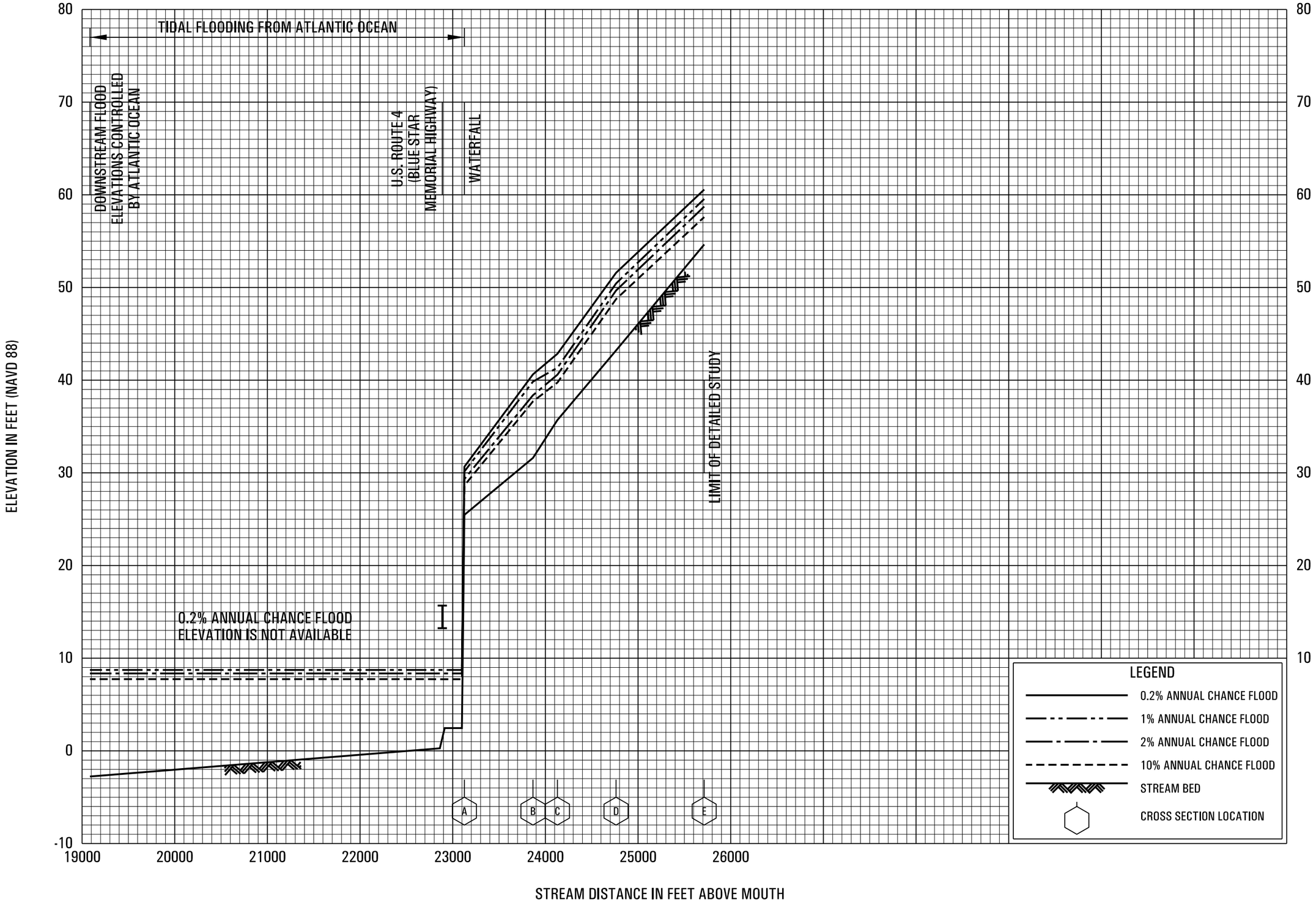
FLOOD PROFILES

TRIBUTARY TO MIDDLE BRANCH MOUSAM RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



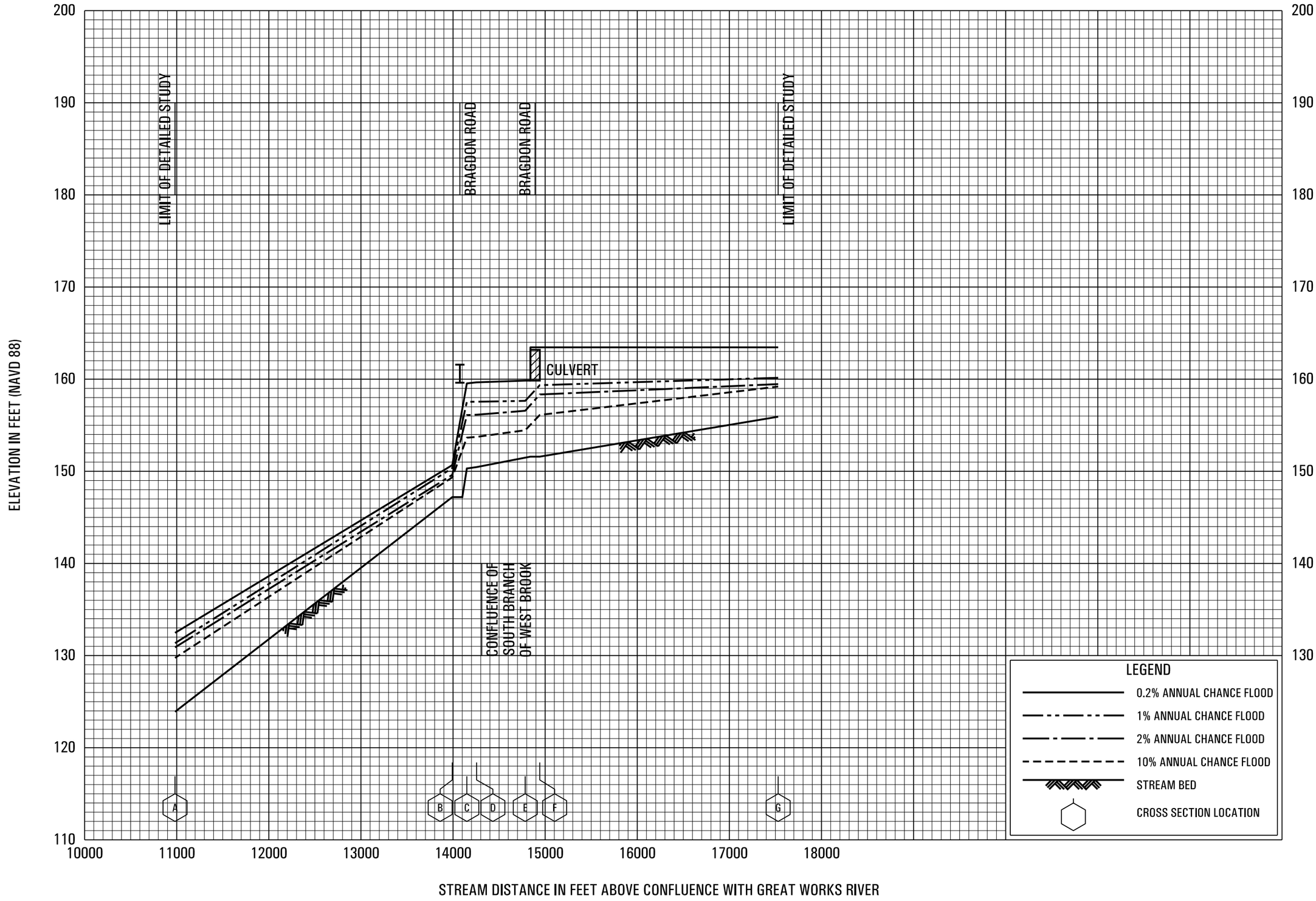
FLOOD PROFILES

WEBHANNET RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



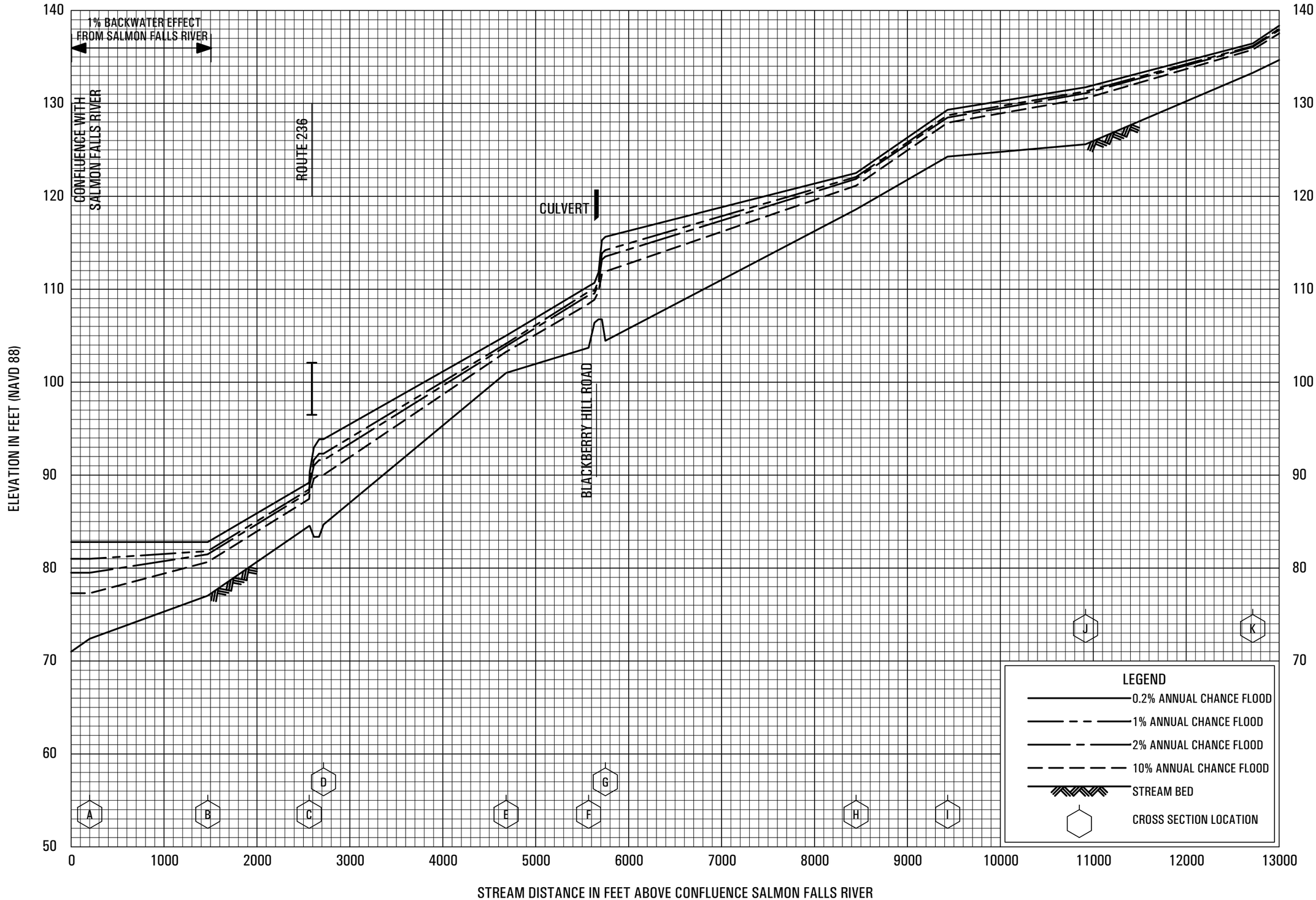
FLOOD PROFILES

WEST BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

ALL JURISDICTIONS



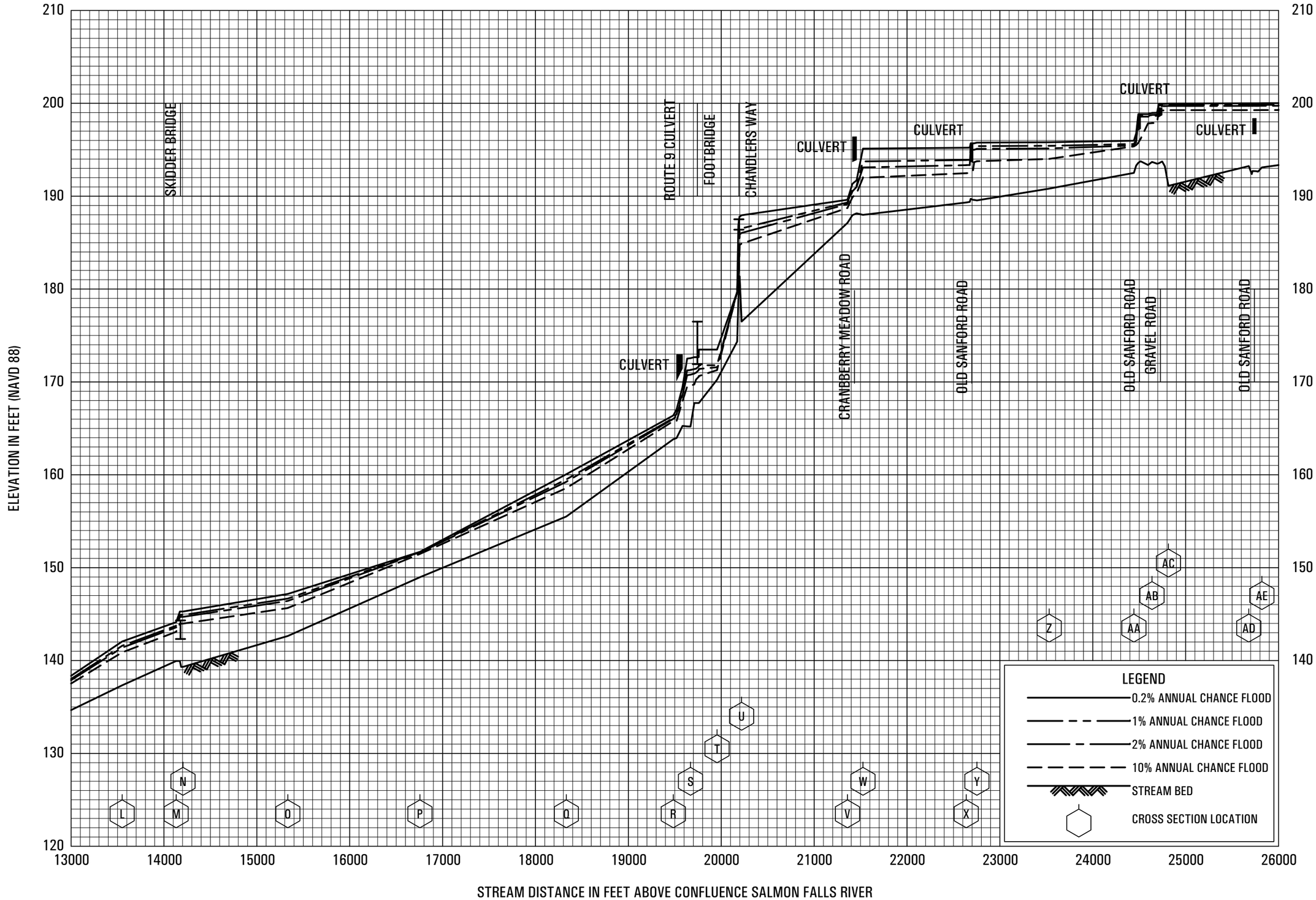
FLOOD PROFILES

WORSTER BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



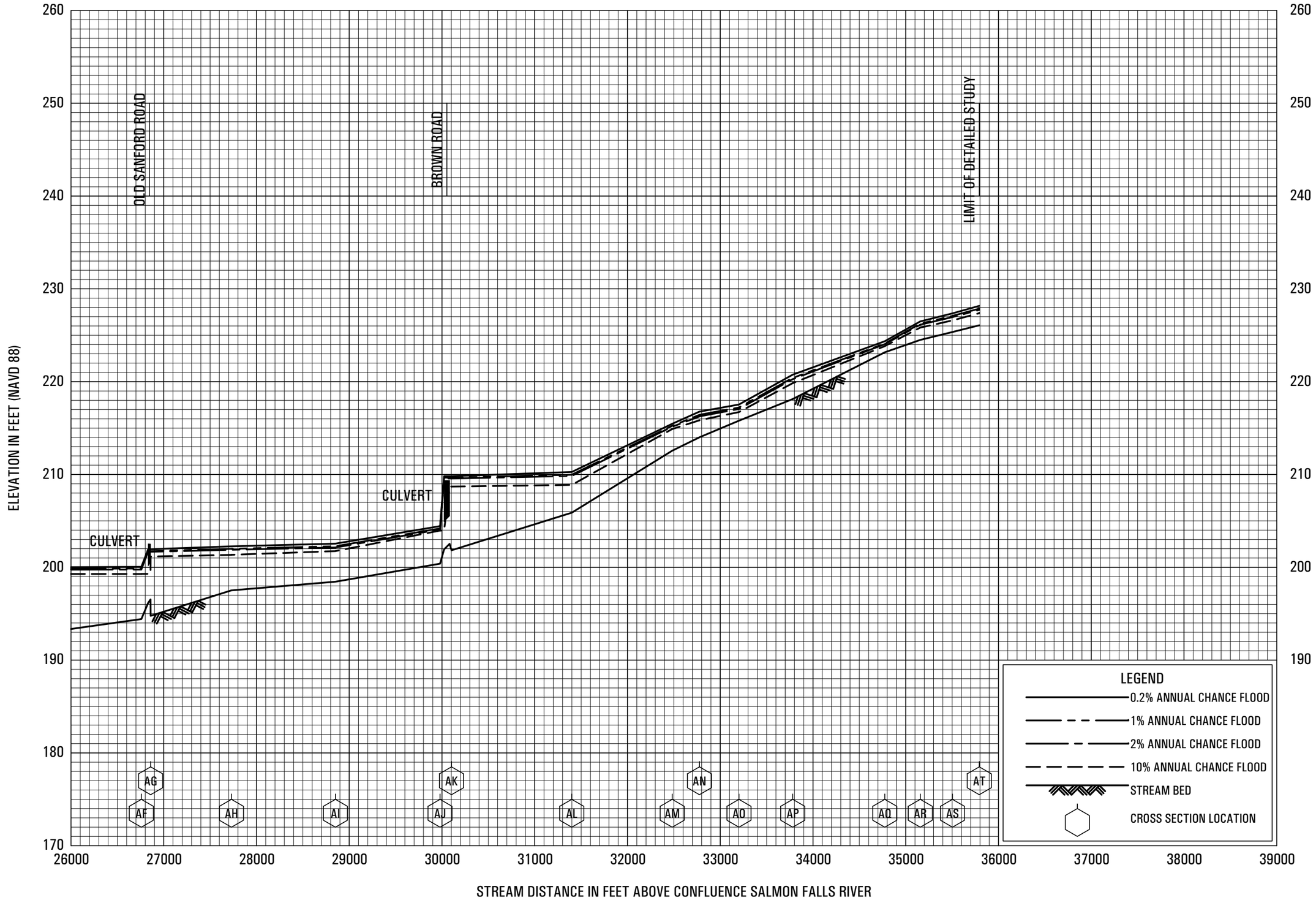
FLOOD PROFILES

WORSTER BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



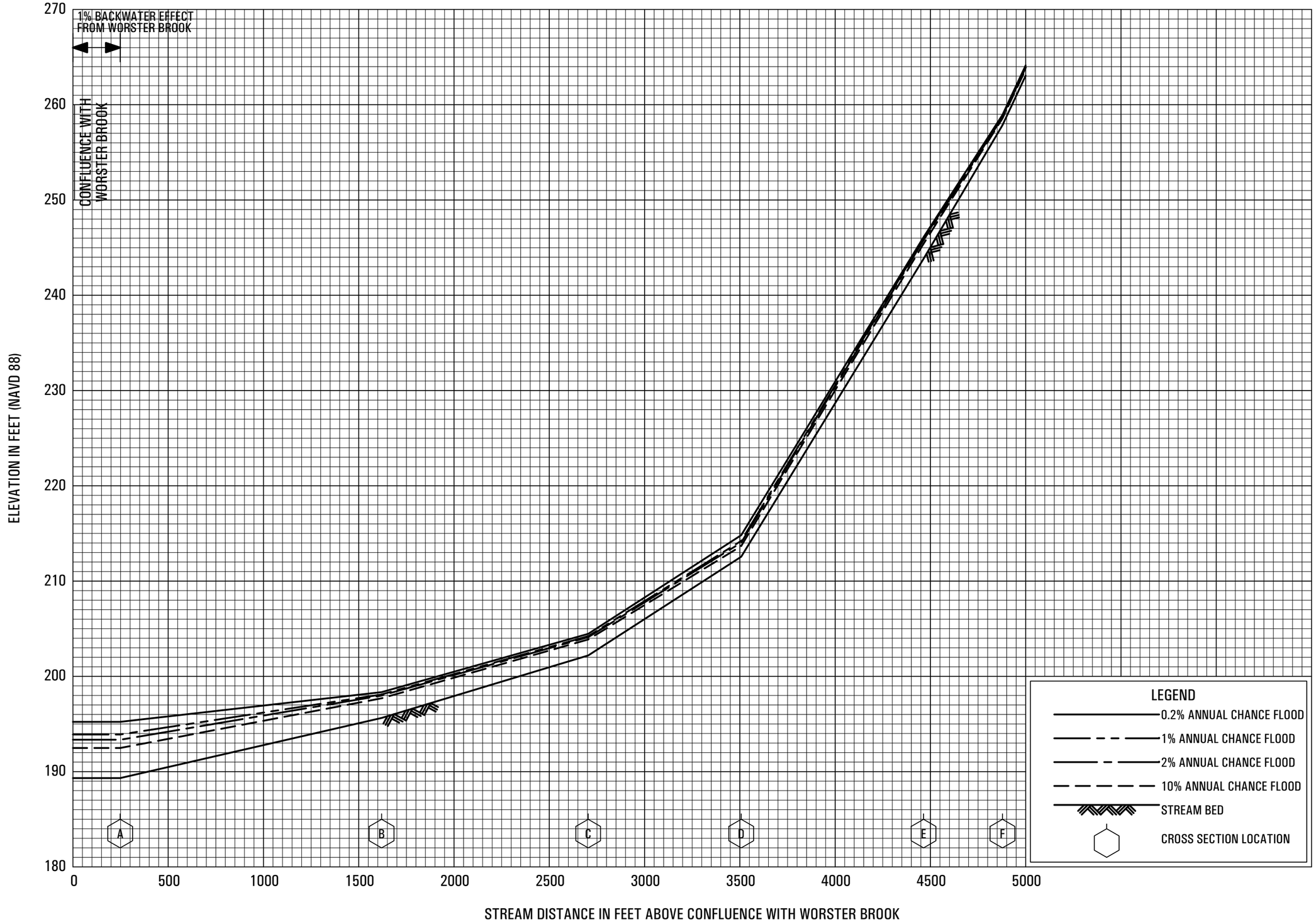
FLOOD PROFILES

WORSTER BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



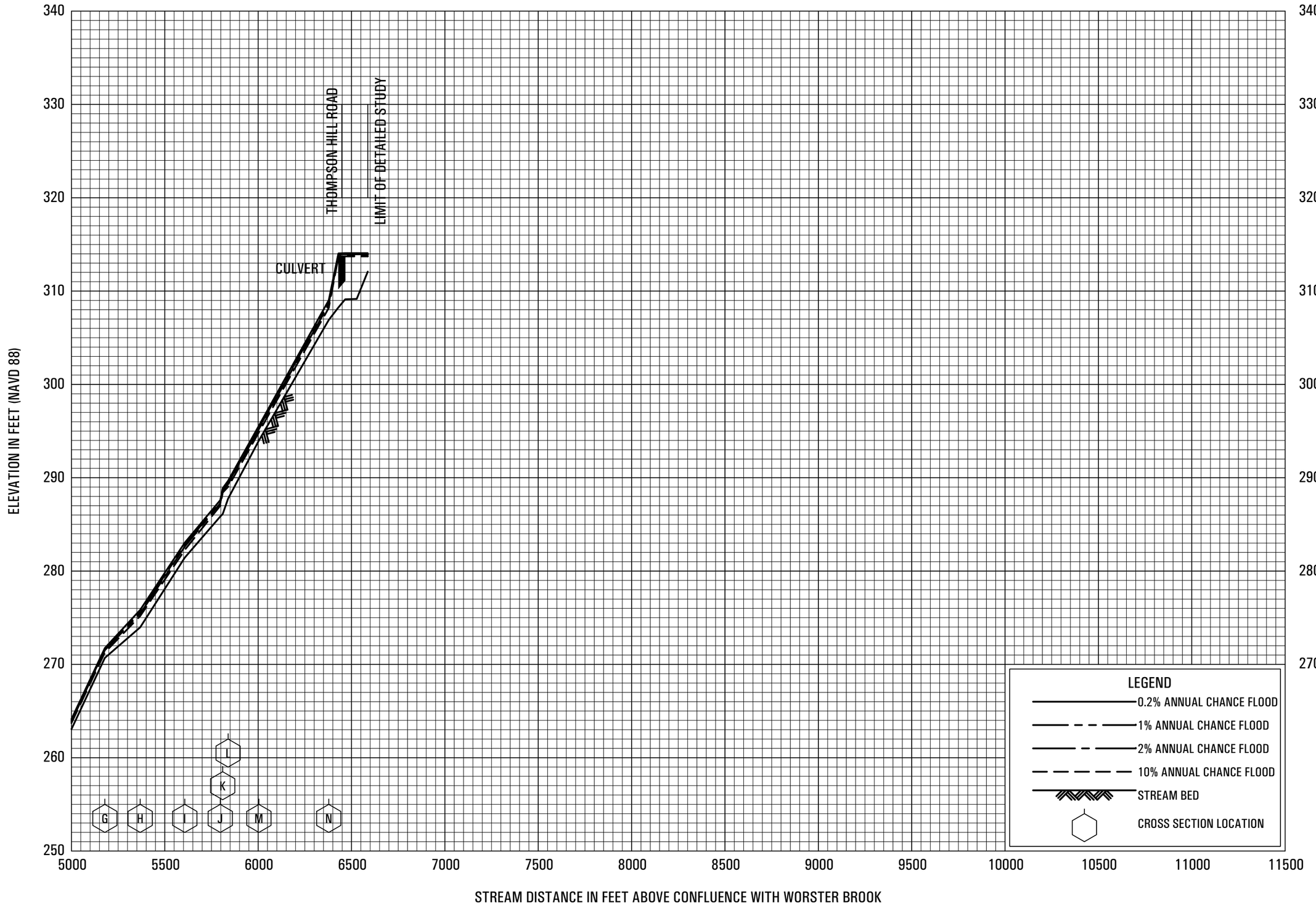
FLOOD PROFILES

WORSTER BROOK TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)



FLOOD PROFILES

WORSTER BROOK TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

YORK COUNTY, ME

(ALL JURISDICTIONS)