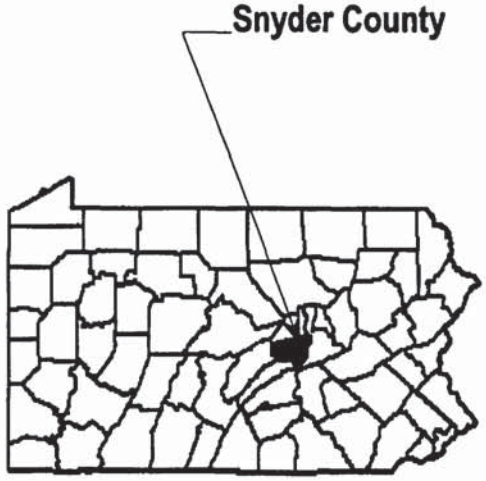
FLOOD INSURANCE STUDY

SNYDER COUNTY, PENNSYLVANIA
ALL JURISDICTIONS

COMMUNITY NAME	COMMUNITY NUMBER
ADAMS, TOWNSHIP OF	422031
BEAVER, TOWNSHIP OF	422032
BEAVERTOWN, BOROUGH OF	420805
CENTER, TOWNSHIP OF	422591
CHAPMAN, TOWNSHIP OF	422034
FRANKLIN, TOWNSHIP OF	422035
FREEBURG, BOROUGH OF	422030
JACKSON, TOWNSHIP OF	422036
MC CLURE, BOROUGH OF	420806
MIDDLEBURG, BOROUGH OF	420807
MIDDLECREEK, TOWNSHIP OF	422037
MONROE, TOWNSHIP OF	421020
PENN, TOWNSHIP OF	421024
PERRY, TOWNSHIP OF	422038
SELINSGROVE, BOROUGH OF	425387
SHAMOKIN DAM, BOROUGH OF	420809
SPRING, TOWNSHIP OF	422039
UNION, TOWNSHIP OF	422040
WASHINGTON, TOWNSHIP OF	422041
WEST BEAVER, TOWNSHIP OF	422507
WEST PERRY, TOWNSHIP OF	422042



EFFECTIVE DATE:
November 16, 2007

Reprinted with corrections on August 8, 2016

Federal Emergency Management Agency
FLOOD INSURANCE STUDY NUMBER
42109CV000A

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 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
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.

This FIS report was reissued on August 8, 2016, to make a correction; this version replaces any previous versions. See the Notice-to-User Letter that accompanied this correction for details.

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FLOOD INSURANCE STUDY
SNYDER COUNTY, PENNSYLVANIA
(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 Snyder County, including the Boroughs of Beavertown, Freeburg, McClure, Middleburg, Selinsgrove and Shamokin Dam and the Townships of Adams, Beaver, Center, Chapman, Franklin, Jackson, Middlecreek, Monroe, Penn, Perry, Spring, Union, Washington, West Beaver, and West Perry (referred to collectively herein as Snyder 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 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 countywide FIS has been prepared to include all jurisdictions within Snyder County into a countywide FIS. Information on the authority and acknowledgements for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports (References 1-14), as shown below:

Township of Center	The hydrologic and hydraulic analyses for this study 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.8. This work was completed in August 1986. FIS effective March 16, 1988.
Township of Chapman	The hydrologic and hydraulic analyses for this study were prepared by Bourquard and Berger Associates for the FEMA, under Contract No. H-4763. This work was completed in April 1980. FIS effective July 6, 1981.
Township of Franklin	The hydrologic and hydraulic analyses for this study were prepared by Bourquard and Berger Associates for the FEMA, under Contract No. H-4763. This work was completed in March 1980. FIS effective February 2, 1982.

Township of Jackson	The hydrologic and hydraulic analyses for this study were prepared by Bourquard and Berger Associates for FEMA, under Contract No. H-4763. This work was completed in February 1980. FIS effective July 20, 1981.
Borough of Middleburg	The hydrologic and hydraulic analyses for this study were prepared by Bourquard and Berger Associates for FEMA, under Contract No. H-4763. This work which was completed in March 1980. The revised hydrologic analysis for Middle Creek was prepared by the Natural Resources Conservation Service (NRCS) formerly the Soil Conservation Service (SCS) and completed in April 1983. The revised hydraulic analysis for Middle Creek was prepared by Dewberry & Davis and completed in December 1983. FIS effective October 16, 1984.
Township of Middlecreek	The hydrologic and hydraulic analyses for this study were prepared by Bourguard and Berger Associates for FEMA, under Contract No. H-4763. This work was completed in February 1980. FIS effective July 6, 1981.
Township of Monroe	The source of authority for the study is the National Flood Insurance Act of 1968, as amended. Authority and financing is contained in Contract No. H3496 between the contractor and the Federal Insurance Administration (FIA). FIS effective August 1976.
Township of Penn	The hydrologic and hydraulic analyses for this study were prepared by the Susquehanna River Basin Commission (SRBC) for FEMA, under Contract No. H-3824. This work was completed in August 1981. FIS effective March 16, 1982.
Township of Perry	The hydrologic and hydraulic analyses for this study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No.8. This work was completed in October 1986. FIS effective March 16, 1988.
Borough of Selinsgrove	The hydrologic and hydraulic analyses for this study represent a revision of the FIRM published in 1973. This study was prepared by Bourquard and Berger Associates for FEMA, under Contract No. H-4763. This work was completed in March 1980. FIS effective May 17, 1982.
Township of Spring	The hydrologic and hydraulic analyses for this study were prepared by the USGS for FEMA, under Inter-Agency Agreement No.EMW-85-E-1823, Project Order No.8. This work was completed in September 1986. FIS effective March 16, 1988.

Township of Union — The hydrologic and hydraulic analyses for this study were prepared by Bourquard and Berger Associates for FEMA, under Contract No. 8-4763. This work was completed in April 1980. FIS effective May 17, 1982.

Township of Washington — The hydrologic and hydraulic analyses for this study were performed by the SRBC during the preparation of the FIS for the Township of Penn. This study was completed in August 1981. FIS effective May 15, 1986.

Township of West Perry — The hydrologic and hydraulic analyses for this study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No.8. This work was completed in July 1986. FIS effective December 3, 1987.

The authority and acknowledgements for the Boroughs of Beavertown, Freeburg, McClure, and Shamokin Dam, and the Townships of Adams, Beaver, and West Beaver are not included because there were no previously printed FIS reports for those communities.

The hydrologic and hydraulic analyses for the Susquehanna River were prepared by the U.S. Army Corps of Engineers (USACE) Hydrologic Engineering Center and Philadelphia District for the Federal Emergency Management Agency, under Inter-Agency Agreement Nos. EMW - 99-IA-0176, Project Order Number 1 and EMW-2001-IA-0223 (Reference 15). This work was completed in September 2003.

1.3 Coordination

The purpose of an initial Consultation Coordination Officer's (CCO) meeting is to discuss the scope of the FIS. A final CCO meeting is held to review the results of the study. The dates of the initial and final CCO meeting held for all the jurisdictions within Snyder County, if known, are shown in Table 1, "Initial and Final CCO Meeting Dates", below:

Table 1. "Initial and Final CCO Meeting Dates"

Community Name	Initial CCO Date	Final CCO Date
Township of Center	November 1984	April 22, 1987
Township of Chapman	May 1978	February 3, 1981
Township of Franklin	May 1978	August 11, 1981
Township of Jackson	April 1979	November 12, 1980
Borough of Middleburg	May 1978	August 11, 1981
Township of Middlecreek	May 1978	February 3, 1981
Township of Monroe	*	*
Township of Penn	May 14, 1975	August 30, 1978
Township of Perry	November 29, 1984	April 22, 1987
Borough of Selinsgrove	May 1978	December 7, 1981
Township of Spring	November 28, 1984	April 22, 1987
Township of Union	May 1978	December 7, 1981
Township of Washington	*	April 19, 1985
Township of West Perry	November 29, 1984	February 12, 1987

* Data not available.

The initial CCO meetings were held with representatives from the communities, the study contractors, and FEMA, to explain the nature and purpose of FISs, and to identify the streams to be studied by detailed methods. All affected communities were requested to provide any data pertinent to the study. The final CCO meetings were held with representatives from the communities, the study contractors, and FEMA to review the results of the studies.

The results of the countywide FIS were reviewed at the final CCO meeting held on March 21, 2006, and attended by representatives of FEMA, The State of Pennsylvania, SEDA- Council of Governments, and the community. 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 Snyder County, Pennsylvania (All Jurisdictions), including the communities listed in Section 1.1 The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through Snyder County.

All, or portions of, the flooding sources listed in Table 2, "Detailed Study Streams", were studied by detailed methods. Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the Flood Insurance Rate Map (FIRM).

Table 2. "Detailed Studied Streams"

Beaver Creek	Stumps Run
Middle Creek*	Susquehanna River
Middle Creek (Township of Spring)*	Tributary #1 (to Middle Creek)
Mitchell Run	Tributary #7 (to Middle Creek)
North Branch Mahantango Creek	Tributary #12 (to Middle Creek)
Penns Creek	West Branch Mahantango Creek
Silver Creek	West Mahantango Creek
South Tributary	

* Two separate creeks are named Middle Creek within Snyder County. In this document, unless otherwise indicated, Middle Creek refers to the drainages in the Borough of Middleburg and Townships of Franklin, Middle Creek, Union and Washington.

For this countywide FIS, limits of detailed study for the newly studied or revised streams are shown in the following tabulation:

Stream Name	Limit of Detailed Study
Beaver Creek	From confluence with Middle Creek upstream approximately 2.1 miles to 1,200 feet upstream from State Road 522.
Middle Creek	From confluence with Penns Creek upstream 5.8 miles to the corporate limits between the Townships of Penn and Washington and the Township of Middle Creek; from 1.34 miles upstream from the corporate limits between the Townships of Penn and Washington and the Township of Middle Creek (120 feet downstream from the Conrail bridge) upstream 1.31 miles to approximately 0.55 miles upstream of U. S. Route 522; from 0.42 miles downstream from the corporate limits of the Borough of Middleburg upstream approximately 6.1 miles to 645 feet above Legislative Route 54032 in the Township of Franklin.
Middle Creek (Township of Spring)	From 0.62 mile downstream from the confluence of Middle and Beaver Creeks upstream 5.25 miles to 275 feet upstream from Turkey Hill Road (Township Road 570).
Mitchell Run	From the confluence with Beaver Creek upstream 1,750 feet.
North Branch Mahantango Creek	From the confluence with West Branch Mahantango Creek upstream 7.1 miles to 450 feet upstream from State Route 35.
Penns Creek	From the confluence with the Susquehanna River upstream 10.66 miles to the corporate limits between the Townships of Monroe and Jackson; from 1.46 miles upstream from Legislative Route 54046 in the Township of Jackson upstream approximately 1.45 miles; from 5.55 miles upstream from Legislative Route 54046 upstream 1.69 miles to 0.65 miles upstream from State Route 204; from the corporate limits between the Townships of Jackson and Center upstream 2.19 miles to the upstream corporate limit of the Township of Center (approximately 0.45 miles upstream from State Route 104).
Silver Creek	From the confluence with the Susquehanna River upstream approximately 3.0 miles to 1,130 feet upstream from Legislative Route 54071.
South Tributary	From the confluence with Penns Creek upstream approximately 0.55 miles to West Sassafras Street in the Borough of Selinsgrove.
Stumps Run	From the confluence with Middle Creek upstream 0.41 miles.
Susquehanna River	For its entire reach with Snyder County.

Tributary 1 (to Middle Creek)	From the confluence with Middle Creek upstream approximately 0.62 miles.
Tributary 7 (to Middle Creek)	From the confluence with Middle Creek upstream approximately 2.08 miles to SR4014 crossing.
Tributary 12 (to Middle Creek)	From the confluence with Middle Creek upstream approximately 0.61 miles to approximately 0.04 miles south of Paxtonville Rd.
West Branch Mahantango Creek	From 2.83 miles above the confluence with the North Branch Mahantango Creek (0.42 miles downstream from Township Road 301 in the Township of Perry) upstream 2.2 miles to 760 feet upstream form Legislative Route 54004; from 7.35 miles above the confluence with the North Branch Mahantango Creek upstream 0.9 miles to the corporate limits between the Townships of Perry and West Perry; from 225 feet downstream from Legislative Route 34010 upstream 2.75 miles to 250 feet above Township Route 306 in the Township of West Perry.
West Mahantango Creek	From the confluence with the Susquehanna upstream approximately 2.0 miles to the confluence of West Branch Mahantango Creek and North Branch Mahantango Creek.

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 each individual municipality.

2.2 Community Description

Snyder County was formed on March 2, 1855, out of Union County (Reference 16). Snyder County encompasses 331 square miles in central Pennsylvania and is bordered to the north by Union County, to the east by Northumberland County, to the south by Juniata County and to the west by Mifflin County. The 2000 population of Snyder County was 37,546 (Reference 17), an increase of 2.4% from 1990.

Snyder County is located within the Valley and Ridge Physiographic Province of the Appalachian System, which produces rolling, dissected mountainous terrain with roughly paralleling ridges. The landform is the result of geological activity in which huge layers of rock were folded upward by tremendous amounts of internal pressure. Glaciation, erosion and other climatic elements have gradually worn away most of the sharper protrusions, leaving the rolling terrain. Generally, steep ridges are underlain by sandstone or conglomerate and have very shallow soils; the valleys have formed in limestones and shales and contain deep well-drained soils.

The Susquehanna River forms the eastern boundary of the county. Tracts of gently sloping terrace land and level floodplain can be found along the Susquehanna River and other streams. Elevations within the county range from approximately 1,800 to 2,100 feet in the mountains (the high point is Shade Mountain at 2,165 feet, located north of St Johns Church in Juniata County to approximately 400 feet along the banks of the Susquehanna at the Snyder County/Juniata County border (Reference 18).

A generally west to east atmospheric flow subjects the area to a continental type of climate modified by the addition of moisture from the Gulf of Mexico and the Atlantic Ocean. The average annual precipitation is 47 inches and is reasonably well distributed throughout the year, although several inches more fall during the summer months. Snowfalls of up to several inches occur fairly frequently throughout the winter months, with annual average of approximately 35 inches. The mean annual temperature for the area is approximately 52 degrees Fahrenheit (°F), with a mean maximum of 62° F and a mean minimum of 40° F. Generally, February is the coldest month and July the warmest. During the summer months, the area is regularly subject to afternoon and evening thunderstorms often accompanied by heavy rains and damaging winds.

2.3 Principal Flood Problems

Historically, flooding in this portion of the Susquehanna River Basin occurs most frequently in spring and early summer, although it can occur during any season of the year. Prime factors affecting the volume of runoff resulting from storm precipitation are antecedent soil moisture and the precipitation intensity. Major floods have occurred as a result heavy rainfall on frozen ground.

The characteristics of the Susquehanna River Basin are such that flood-producing storms of two types generally occur; tropical and extra-tropical (Reference 15). Flooding can occur during any season of the year. Occasional local flooding and/or intense flash floods are most likely to occur in squall lines just to the east of a slow moving north-south oriented cold front (extra-tropical storm), these are usually warm weather phenomena where afternoon heating adds to the instability of the already unstable, moist air mass (Reference 19). Storms of tropical origin affect the Susquehanna River valley on an average of approximately once in three years. Their usual path is from the south to the northeast, but a few have traveled from the southeast to the northwest. The tropical storm season runs from June to November (Reference 20).

Numerous flooding events have been recorded on the Susquehanna River over the past 100 years. Records obtained from USGS gaging station at Sunbury, Pennsylvania (downstream of the confluence with the West Branch Susquehanna River) indicated flooding in March 1936, May 1946, March 1964, June 1972, September 1975, January 1996, and September 2004 as indicated in the following tabulation:

Date	Peak Discharge at Sunbury, PA Gage * (cfs)
March 1936	556,000
May 1946	446,000
March 1964	405,000
June 1972	620,000
September 1975	439,000
January 1996	424,000
September 2004	427,000

* = (Reference 21)

Record flooding occurred on the Susquehanna River in June 1972. A peak flow of 620,000 cubic feet per second (cfs) was recorded at the gaging station in Sunbury, Pennsylvania. The recurrence interval for the June 1972 flood was between the 1-percent-annual-chance and 0.2 -percent-annual-chance events when comparing the Susquehanna River profiles with the June 1972 high-water mark profile (Reference 22).

Although no stream gages are available for the West Mahantango Creek or the North Branch Mahantango Creek, a comparison of water-surface profiles against high-water marks obtained from the Pennsylvania Department of Transportation, District 3, and from residents, who live along these streams, indicate that the June 1972 flood was approximately a 2-percent-annual-chance flood. Similarly, the recurrence interval for the June 1972 flood for Silver Creek fell between the 1-percent-annual-chance and 0.2-percent-annual-chance events.

Although there are no stream gages on Middle Creek, it is known that major floods occurred in 1889, 1933, 1936, 1942, 1952, 1956, (Reference 23) and 1972. The June 1972 flood was determined by hydrologic analysis of rainfall records and stream gage records in adjacent areas to have been greater than a 0.2-percent-annual-chance flood on Middle Creek. In contrast, a comparison of water-surface profiles developed against high-water marks obtained from residents who live along Stumps Run, Tributary 1 (to Middle Creek), Tributary 2 (to Middle Creek), and South Tributary indicates that the June 1972 flood was approximately a 10-percent-annual-chance flood or smaller on these streams.

The USGS gage (No. 5550) located on Penns Creek, just upstream of the Township of Jackson, measures the flow from a 301 square mile portion of the Penns Creek watershed. It has been in operation since 1930. The highest recorded discharges at this gage were 34,600 cfs in June 1972, 19,800 cfs in September 1934, and 15,700 cfs in March 1936. More recent floods include 25,300 cfs in January 1996 and 16,000 cfs in September 2004 (Reference 21).

2.4 Flood Protection Measures

There are a number of existing flood protection measures within the study area and a number of flood protection measures that have been improved since the date of the effective flood insurance studies.

The existing levees and floodwalls in the areas of Edwardsville/Kingston, Exeter, Forty-Fort/Swoyersville, Hanover/Wilkes-Barre, Plymouth, and Sunbury have been raised as part of the Wyoming Valley Levee Raising Project. All of these levees have been evaluated in terms of overtopping elevation only and all are in excess of three-feet of freeboard above the water surface elevation for the 1-percent-annual-chance storm event. Any known remaining levee structures are located beyond the limits of flooding for the 100-storm event caused by the Main Stem Susquehanna River and therefore were not evaluated for this study.

Eleven upstream dams on the Main Stem and West Branch of the Susquehanna River contribute to the reduction of flood hazards from the Susquehanna River. The peak flow reductions attributed to these flood control facilities have been included in the hydrologic analysis.

Flood hazard reduction in the other Susquehanna River subbasins is aided by Stillwater Reservoir, located about nine miles north of Carbondale, Pennsylvania, on the Lackawanna River; East Sidney Lake, located about eight miles east of Sidney, New York, on Ouleout Creek; Whitney Point Dam, located about one mile north of Whitney Point, New York, on the Otselic River; Almond Dam, located about two miles northwest of Hornell, New York,

on Canacadea Creek; Arkport Dam, located about five miles northeast of Hornell, New York, on the Canisteo River; the Tioga-Hammond Dam complex, located 20 miles southwest of Elmira, New York, on the Tioga River and Crooked Creek; and the Cowanesque Lake project located on the Cowanesque River approximately 2.2 miles above the confluence with the Tioga River at Lawrenceville, Pennsylvania.

Flood hazard reduction in the West Branch Susquehanna River subbasin is aided by F. J. Sayers Dam, located approximately 12 miles southwest of Lock Haven, Pennsylvania, on Bald Eagle Creek; Stevenson Dam, located approximately 8 miles northeast of Sinnemahoning, Pennsylvania, on First Fork Sinnemahoning Creek; Kettle Creek Dam, located approximately 8 miles northeast of Westport, Pennsylvania, on Kettle Creek; and Curwensville Dam, located approximately 7 miles southwest of Clearfield, Pennsylvania, on the West Branch Susquehanna River.

Three flood control reservoirs and a dike offer protection from flooding of Middle Creek. All flood control reservoirs are located on upstream tributaries. Flood control reservoir PA-636 is located on South Branch Middle Creek and controls a drainage area of 33 square miles. Flood control reservoir PA-637 is located on North Branch Middle Creek and controls a drainage area of 17.6 square miles. Flood control reservoir PA-638 is located on a small tributary near Beavertown and controls a drainage area of 5.3 square miles. A dike, PA-640, provides local protection to Middleburg.

A flood control dam is located on Middle Creek in the Township of Spring approximately 2,700 feet upstream from the confluence of beaver Creek, which is approximately 4,670 feet upstream from the downstream corporate limits of the township. The regulated 1-percent-annual-chance discharge from the dam is 1,560 cfs, conduit capacity. The 100-year stage in the reservoir is 594.34 feet, determined by the NRCS and creates backwater upstream to the vicinity of Middle Road. Two emergency spillways are at an elevation of 598.8 feet.

A flood warning system was established by the Snyder County Civil Defense Agency in December 1978. The system consists of twelve rain gages in the Penns Creek and Middle Creek watersheds. In the Middle Creek watershed, manually read stream gages are located at the bridge north of Beavertown, at Royer's bridge and at the bridge in the Borough of Middleburg.

3.0 ENGINEERING METHODS

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

The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

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

Pre-countywide Analyses

Each community with Snyder County with the exception of the Boroughs of Beavertown, Freeburg, McClure, and Shamokin Dam, and the Townships of Adams, Beaver, and West Beaver has a previously printed FIS report (Reference 1-14). The hydrologic analyses described in those reports have been compiled and summarized below. For streams that flow through two or more communities, each methodology described applies only to that portion of the stream studied by detailed methods within the referenced community.

For West Mahantango Creek and North Branch Mahantango Creek in the Township of Chapman, Tributary 2, and Silver Creek, a comparison of peak discharges developed from regional hydrologic methods was made at key locations (References 24-27). The discharge-frequency from the USACE Tropical Storm Agnes study was adopted since it was applicable for these sizes of drainage area, compatible with the study that developed flood flows on the Susquehanna River, and reasonably well supported by another regional method (References 26, 27).

The flood frequency discharge values for West Branch Mahantango Creek and North Branch Mahantango Creek the Township of Perry and the West Branch Mahantango Creek in the Township of West Perry were determined utilizing regional regression equations developed in USGS Water Resources Investigations 82-21 (Reference 28). The Pennsylvania State University PSU-IV method confirmed the determination (Reference 29). This technique was developed for specific use in estimating peak flood flows for ungaged sites on small streams in Pennsylvania.

For Middle Creek in the Borough of Middleburg and the Townships of Franklin, Middle Creek, Penn and Washington, a peak discharge-frequency relationship was selected with consideration of those relationships previously developed by the NRCS for the Middle Creek watershed and those developed for the FIS for the Township of Penn (References 8, 23). Upon completion of the three flood control reservoirs on Middle Creek in 1983, the hydrologic analysis for the creek was revised by the NRCS to consider the retention effects of the three structures. This peak discharge-frequency relationship was also developed by the SCS through the use of its rainfall-runoff model, TR-20 (Reference 30).

The flood frequency discharge values for the Middle Creek, Beaver Creek and Mitchell Run in the Township of Spring were determined utilizing regional regression equations developed in USGS Water Resources Investigations 82-21 (Reference 31). The flood-frequency discharge value for Middle Creek (Township of Spring) below the flood-control dam was determined by adding the computed flood-frequency discharge from Beaver Creek at its mouth to the conduit capacity of the dam (1,560 cfs).

For Penns Creek, discharge-frequency relationships were developed and coordinated with the FIS for the Borough of Selinsgrove and Townships of Jackson, Penn, Monroe and Union (References 7, 8, 32). A comparison of several methods of peak discharge determinations was made at downstream locations outside of Jackson. These points were chosen because the results of all existing and concurrent studies could be evaluated there. A peak discharge-frequency relationship was obtained using methods from the Water Resources Council Bulletin 17A. The USGS data for the Penns Creek gaging station were adjusted by drainage area proportionment to the downstream locations for comparison (Reference 32). Peak discharge-frequency relationships were also developed from regional hydrologic methods as a check on the reasonableness of the adjusted gaging station analysis (References 20, 33). After a comparison of the results, it was determined that the gaging station analysis was the most desirable. In the Township of Center, the flood frequency discharge value for Penns Creek was determined utilizing USGS Bulletin 17B (Reference 34).

For Stumps Run in the Borough of Middleburg and the Township of Franklin, Tributary 1 in the Townships of Franklin and Middlecreek, and South Tributary in the Borough of Selinsgrove and Township of Penn, a comparison of peak discharge-frequency relationships developed from regional hydrologic methods and the NRCS TR-55 method was made (References 20, 25-27, 35). The inherent compatibility of peak discharges developed from the TR-55 method with those used for Middle Creek as well as the conservatism of the computed discharges were factors in the adoption of peak discharges developed by the TR-55 method. Peak discharge-drainage area relationships for all streams within Snyder County, which have been studied in detail, are shown in Table 3, "Summary of Discharges".

This Revision

The USACE, Baltimore District, completed a hydrologic study as part of the Wyoming Valley Levee Raising Project in January 1995. Four USGS stream gages are currently in operation on the main stem Susquehanna River within the area covered by this study. The USACE study considered the effects of the many flood control reservoirs upstream of the project area on the Main Stem and West Branch of the Susquehanna River in addition to the hydraulic changes brought about by the alterations to the flood control projects being proposed at the time. At least eight reservoirs were in various stages of completion between 1940 and 1980. The USACE study created a homogenous data set by altering the flow data since 1940 to reflect flows that would have occurred without reservoir regulation. This "natural conditions" data set for the period of record for each gage was then adjusted by average reduction factors consistent with the flood control reservoirs in place to determine an "existing conditions" data set. This "existing conditions" data set was then adjusted to include the effects of the levee raisings and "improved conditions" data set was created (References 15, 36) and shown on Table 4, "Summary of Discharge for Susquehanna River Improve Conditions".

The result of this analysis provided a discharge frequency curve for each of the four USGS gages, or the "improved conditions" discharge frequency curve. In order to get more accurate flow transitions along the study area, changes in flow were generated at tributaries with greater than five square miles of contributing area using the incremental addition in contributing area technique.

Table 3, "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
Beaver Creek					
Confluence with Middle Creek	13.5	*	*	2,740	*
At US Route 522	10.5	*	*	2,300	*
Middle Creek					
Confluence with Penns Creek and Susquehanna River	175	6,050	9,200	10,900	14,750
Downstream corporate limits of Franklin Township	160	6,050	9,200	10,900	14,650
Downstream of confluence with Stumps Run	137	6,150	9,300	11,000	14,950
Downstream corporate limits of Middleburg Borough	137 [1]	4,105 [1]	5,185 [1]	7,345 [1]	10,006 [1]
Upstream limit of detailed study in Franklin Township	115	6,200	9,400	11,150	15,100
Middle Creek (Township of Spring)					
At downstream corporate limits of Spring Township	47.8	*	*	4,300 [2]	*
Above confluence with Beaver Creek	34.1	*	*	1,560	*
At Middle Road	17.9	*	*	3,470	*
At Turkey Hill Road	15.3	*	*	3,100	*
Mitchell Run					
Confluence with Beaver Creek	3.3	*	*	1,000	*
North Branch Mahantango					
Confluence with West Branch Mahantango Creek	37.1	3,540	6,620	8,380	14,000
At Township Route 344, Meiserville	34.5	*	*	5,450	*
At Legislative Route 54002	29.4	*	*	4,860	*
At Legislative Route 54003	19.3	*	*	3,580	*
At Township Route 351	14.7	*	*	2,940	*
At Township Route 356	9.5	*	*	2,140	*
At State Route 35 - Mount Pleasant Hills	9.0	*	*	2,050	*
Penns Creek					
At confluence with Susquehanna River	554.0	18,400	30,000	37,400	58,700
Upstream of confluence of Middle Creek	377	13,800	22,500	28,000	44,000
Downstream of the confluence of Bear Run	338	13,700	22,400	27,900	43,600
USGS Gage No. 5550	301	12,180	21,600	26,800	42,410
Silver Creek					
Confluence with Susquehanna River	5.9	1,150	1,920	2,240	2,960

Table 3, "Summary of Discharges" - continued

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 Tributary					
At confluence with Penns Creek	2.0	600	900	1,230	2,800
Stumps Run					
Confluence with Middle Creek	2.54	840	1,450	1,900	3,500
Downstream corporate limits of Franklin Township	2.46	790	1,340	1,730	3,100
Susquehanna River					
Downstream corporate limits of Chapman Township	19,687	342,000	490,000	575,000	840,000
At confluence with Penns Creek	18,434	320,000	460,000	540,000	790,000
USGS gage at Sunbury	18,300	305,000	435,000	505,000	701,000
Confluence with West Branch Susquehanna River	18,163	305,000	435,000	505,000	701,000
Tributary 1 (Township of Middleburg)					
Confluence with Middle Creek	1.6	910	1,440	1,820	2,500
Approximately 1300 ft. upstream of Private Road	1.2	730	1,100	1,410	1,950
Tributary 7 (Township of Franklin)					
Confluence with Middle Creek	3.6	1,160	1,950	2,620	4,700
Tributary 12 (Township of Franklin)					
Confluence with Middle Creek	7.6	1,380	2,310	2,690	3,560
West Branch Mahantango Creek					
Confluence with West Mahantango Creek	46.9	*	*	9,690	*
Approximately 38,840 Ft. above confluence with West Mahantango Creek	20.8	*	*	3,520	*
Legislative Route 34010	11.9	*	*	2,350	*
At State Route 35	9.81	*	*	2,040	*
At Fairgrounds Road	5.98	*	*	1,420	*
Upstream limit of study (approximately 300 feet upstream from Township Route 306)	3.18	*	*	900	*
West Mahantango Creek					
Confluence with Susquehanna River	86.2	6,300	11,310	14,110	23,000

* - Data not available

[1] Revised based on hydraulic control reservoirs on Middle Creek completed in 1983

[2] Discharge for Middle Creek below flood control dam determined by adding discharge from Beaver Creek (2,740 cfs) at its mouth to the conduit capacity of the dam (1560 cfs)

Table 4, "Summary of Discharges for Susquehanna River Improved Conditions"

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
Susquehanna River					
Confluence with Lower Mahantango Creek	19,034.6	317,243	452,462	525,271	729,139
Confluence with Upper Mahantango Creek	18,870.6	314,510	448,563	520,746	722,857
USGS gage at Sunbury	18,300	305,000	435,000	505,000	701,000

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 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 Sections

For cross sections for Penns Creek in the Township of Center, West Branch Mahantango Creek and North Branch Mahantango Creek in the Township of Perry, Middle Creek, Beaver Creek and Mitchell Run in the Township of Spring and West Branch Mahantango Creek in the Township of West Perry, all bridges, dams and culverts within were field surveyed to obtain elevation data and structural geometry. Cross sections were surveyed to compute the significant backwater effects of these structures.

Cross sections for the West Mahantango Creek and North Branch Mahantango Creek in the Township of Chapman, Middle Creek, Stumps Run, Tributary 1 (to Middle Creek), and Tributary 2 (to Middle Creek) in the Township of Franklin, Penns Creek in the Township of Jackson, Middle Creek and Stumps Run in the Borough of Middleburg, Middle Creek in the Township of Middlecreek, South Tributary in the Borough of Selinsgrove, and Silver Creek in the Township of Union were obtained from aerial photographs flown in December 1978 at a scale of 1" = 1,000' (Reference 37). Cross sections from Tributary 1 (to Middle Creek) in the Township of Middlecreek were developed from topographic maps at a scale of 1" = 100' and a contour interval of 2 feet. Cross sections for Middle Creek in the Township of Washington were developed from aerial photographs flown in March 1975 at a scale of 1' = 2,400' (Reference 38). The below water sections were obtained by a stream bottom profile field survey. All bridges, dams and culverts were tied into the vertical photo base by the establishment of elevation reference marks placed directly on the bridges. All dimensions of structures were obtained in the field and related to the appropriate elevation reference marks.

Cross sections for Penns Creek in the Township of Monroe were located at regular intervals along the stream length and at significant changes in ground relief and land use or land cover. Ground elevations for the cross sections were photogrammetrically obtained from 1" = 200' scale base maps. Channel bottom elevations were obtained from existing profiles.

Cross sections for Penns Creek, Middle Creek and South Tributary in the Township of Penn were obtained from aerial photographs (Reference 38). The below water sections were obtained by field measurement. All bridges and culverts were surveyed to obtain elevation data and structural geometry.

Cross sections and hydraulic analyses for Penns Creek and Middle Creek in the Township of Union were obtained from the FIS for the Township of Penn (Reference 8).

Cross sections for this revision of the Susquehanna River were obtained from the Digital Terrain Model (DTM), which was developed from aerial photography flown in April 1999 and April 2001 (References 40, 41). The below water portion of the DTM was developed from new river surveys performed in summer 2000 using CHANNEL, an ARC/INFO software application (Reference 39). Bridge geometry was obtained from as-built bridge drawings from the Pennsylvania Department of Transportation and from field investigations.

Water Surface Elevations

Water surface elevations (WSEL'S)for floods of the selected recurrence intervals for Penns Creek in the Township of Center were computed from the downstream corporate limits of the township to approximately 0.84 miles upstream using normal depths of flooding for the 1-percent-annual-chance recurrence interval and the Township of Jackson FIS (Reference 42). From 0.84 miles upstream of the corporate limits to approximately 2.23 miles upstream, the WSPRO step-backwater computer program was used (References 42, 43). Water surface elevations of floods for the 1-percent-annual-chance recurrence interval were determined from normal depths of flooding for Middle Creek, Beaver Creek and Mitchell Run in the Township of Spring.

Water surface elevations for floods with a 1-percent-annual-chance recurrence interval for reaches of the West Branch Mahantango Creek in the Township of West Perry from approximately 4.98 to 5.78 miles above the corporate limits were computed using HY-7, a step-backwater program written by the USGS (References 42, 43). For an additional 1.94 miles on the West Branch Mahantango Creek, normal depths of flooding for the 1-percent-annual-chance recurrence interval were estimated for the regional relationship between drainage area and flood depth (Reference 44).

Water surface profiles for the selected recurrence intervals for Middle Creek, North Branch Mahantango Creek, Penns Creek, Silver Creek, South Tributary, Stumps Run, Tributary 1 to Middle Creek, Tributary 2 to Middle Creek, and West Mahantango Creek were computed through the use of the USACE HEC-2 step-backwater computer program (Reference 45).

Water surface elevations for the Susquehanna River for the selected recurrence intervals were computed using the USACE HEC-RAS River Analysis System computer program (References 15, 46). The HEC-RAS model was calibrated to five historic events and eight frequency based events at the gages. Comparisons were also made with high water marks collected during the flood of 1972 attributed to Tropical Storm Agnes using the best available bridge and levee data for 1972. These marks were modeled within acceptable limits.

Starting Water Surface Elevations

Starting water surface elevations for Penns Creek in the Township of Center were taken from the FIS for the Township of Jackson (Reference 4). Starting water surface elevations for Penns Creek in the Borough of Selinsgrove, and Penns Creek and Middle Creek in the Township of Union were taken from the FIS for the Township of Penn (Reference 8).

Starting water surface elevations for the West Mahantango Creek and North Branch Mahantango Creek in the Township of Chapman, Middle Creek in the Township of Franklin, Penns Creek in the Township of Jackson, Middle Creek in the Borough of Middleburg, Middle Creek and Tributary 1 in the Township of Middlecreek, Penns Creek, Middle Creek and South Tributary in the Township of Penn, South Tributary in the Borough of Selinsgrove, Sliver Creek in the Township of Union, and Middle Creek in the Township of Washington were determined using the slope/area method.

Starting water-surface elevations for Stumps Run, Tributary 1 (to Middle Creek) and Tributary 2 (to Middle Creek) in the Township of Franklin, Stumps Run in the Borough of Middleburg, North Branch Mahantango Creek in the Township of Perry were determined using normal depth calculations.

Starting water-surface elevations for the West Branch Mahantango Creek in the Township of Perry and Middle Creek, Beaver Creek and Mitchell Run in the Township of Spring were estimated from the regional relationship between drainage area and flood depth prepared by the USGS (Reference 47).

Roughness Factors

Channel roughness factors (Manning's "n" values) used in the hydraulic computations were assigned on the basis of aerial and ground level photographs, field observations, topographic maps and engineering judgment. The "n" values were selected from tables published by Ven Te Chow (Reference 48) and the Bureau of Public Roads (Reference 49), based on channel conditions and overbank vegetation or land use. The channel and over bank "n" values are listed below in Table 5. For the USACE study (Reference 15), roughness factors for the Susquehanna River were chosen by engineering judgment and were based on inspection of the aerial photography and field visits (see Table 6).

Table 5. "Manning's "n" Values"

	Roughness Coefficients	
Stream Name	Channel	Overbanks
Beaver Creek	0.030 – 0.038	0.045 – 0.080
Middle Creek	0.030 – 0.070	0.039 – 0.110
Middle Creek (Spring Township)	0.030 – 0.038	0.045 – 0.080
Mitchell Run	0.030 – 0.038	0.045 – 0.080
North Branch Mahantango	0.033 – 0.061	0.050 – 0.110
Penns Creek	0.025 – 0.100	0.030 – 0.100
Silver Creek	0.040 – 0.048	0.043 – 0.100
South Tributary	0.050	0.060 – 0.100
Stumps Run	0.040 – 0.050	0.030 – 0.120
Susquehanna River	0.028 – 0.033	0.038 – 0.085
Tributary 1	0.045 – 0.050	0.030 – 0.100
Tributary 2	0.045 – 0.050	0.030 – 0.100
West Branch Mahantango Creek	0.030 – 0.036	0.050 – 0.120
West Mahantango Creek	0.033 – 0.050	0.045 – 0.120

Table 6. "Manning's "n" Values by Land Use"

Land Use	Manning's "n" Value
River Channel	0.030
City Area	0.120
Open and Farmed Fields	0.050
Forests	0.065
Ponds	0.030

The hydraulic analyses for this study are 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. However, the blockage of bridge or culvert waterway openings during a period of storm water runoff could result in the flooding of areas outside those within the flood delineation lines.

3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum. In Snyder County, the vertical datum conversion from NGVD29 to NAVD88 is -0.73 feet.

NGVD29 – 0.73 ft = NAVD88

Flood elevations shown in this FIS report and on the FIRM are referenced to the NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the NGVD29 and NAVD88, 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
(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 community. Interested individuals may contact FEMA to access these data.

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

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

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, 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 various scales and contour intervals.

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

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

For this revision, floodplain boundaries throughout Snyder County have been revised based on newer, more up-to-date topographic information than was previously available. The flood elevations, where available, were used in conjunction with the updated topographic information to remap the floodplain boundaries. In areas where flood elevations were not available, the existing floodplain boundaries were digitized using effective FIRMs.

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.

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 7, "Floodway Data." In order 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 X for certain downstream cross sections 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 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 1.

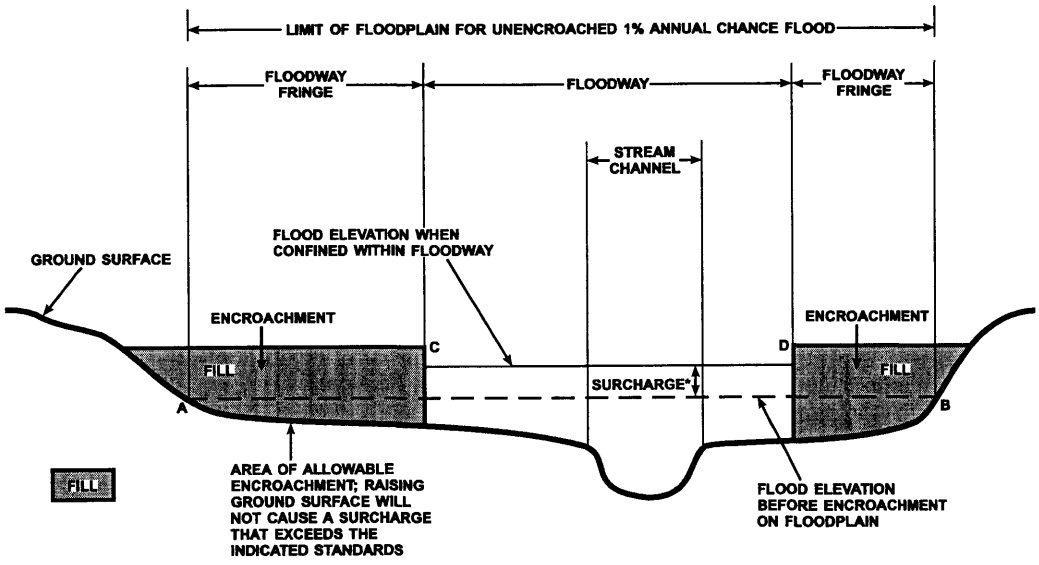

Figure 1- Floodway Schematic

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Middle Creek								
A	195	187	1,393	7.8	432.0	433.4	418.9	0.9
B	655	217	1,729	6.3	432.0	433.4	420.3	0.4
C	795	193	2,081	5.2	432.0	433.4	421.3	1.0
D	1,155	146	1,406	7.8	432.0	433.4	421.3	0.9
E	1,620	330	2,941	3.7	432.0	433.4	422.5	0.7
F	2,035	246	2,204	4.9	432.0	433.4	422.6	0.6
G	2,490	248	1,927	5.7	432.0	433.4	423.0	0.6
H	3,435	285	1,333	8.2	432.0	433.4	424.2	0.2
I	3,865	152	1,745	6.2	432.0	433.4	427.1	1.0
J	3,960	393	2,703	4.0	432.0	433.4	427.4	1.0
K	4,160	334	2,410	4.5	432.0	433.4	427.5	1.0
L	4,480	270	4,253	2.6	432.0	433.4	428.2	0.8
M	4,585	412	6,235	1.7	440.1	440.1	440.9	0.8
N	5,330	354	5,044	2.2	440.2	440.2	441.0	0.8
O	5,725	369	5,550	2.0	440.2	440.2	441.0	0.8
P	6,275	615	8,137	1.3	440.3	440.3	441.0	0.7
Q	6,805	501	6,208	1.8	440.3	440.3	441.0	0.7
R	7,885	440	5,175	2.1	440.4	440.4	441.1	0.7
S	9,275	366	4,665	2.3	440.5	440.5	441.2	0.7
T	10,000	529	5,823	1.9	440.6	440.6	441.3	0.7
U	10,760	1,017	9,687	1.1	440.7	440.7	441.4	0.7
V	12,105	807	6,893	1.6	440.8	440.8	441.4	0.6
W	12,810	526	4,851	2.2	440.9	440.9	441.5	0.6
X	13,740	458	3,381	3.2	441.1	441.1	441.7	0.6
Y	14,995	210	1,766	6.2	441.5	441.5	442.1	0.6
Z	15,635	283	1,242	8.8	442.4	442.4	442.7	0.3

[1] Feet above confluence with Penns Creek

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

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MIDDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Middle Creek (continued)								
AA	15,845	460	4,426	2.5	443.2	443.2	444.0	0.8
AB	16,465	755	3,485	3.1	443.4	443.4	444.2	0.8
AC	16,725	851	4,080	2.7	443.6	443.6	444.4	0.8
AD	17,075	815	4,211	2.6	443.8	443.8	444.5	0.7
AE	17,520	897	4,616	2.4	444.2	444.2	444.9	0.7
AF	17,990	660	3,996	2.7	445.4	445.4	445.9	0.5
AG	18,370	477	3,200	3.4	445.7	445.7	446.2	0.5
AH	18,800	640	4,119	2.6	445.8	445.8	446.5	0.7
AI	19,520	636	3,480	3.1	446.0	446.0	446.8	0.8
AJ	19,865	497	2,643	4.1	446.2	446.2	447.0	0.8
AK	20,330	521	3,184	3.4	446.8	446.8	447.6	0.8
AL	20,785	376	2,464	4.4	447.2	447.2	447.9	0.7
AM	21,595	531	2,358	4.6	447.9	447.9	448.8	0.9
AN	21,945	657	3,162	3.4	448.3	448.3	449.3	1.0
AO	22,340	387	2,391	4.6	448.7	448.7	449.5	0.8
AP	23,260	297	1,596	6.8	449.8	449.8	450.8	1.0
AQ	24,115	363	2,263	4.8	451.8	451.8	452.8	1.0
AR	24,870	259	2,635	4.1	453.1	453.1	454.0	0.9
AS	25,085	256	2,328	4.7	453.2	453.2	454.1	0.9
AT	25,795	246	2,139	5.1	453.7	453.7	454.5	0.8
AU	26,465	306	2,481	4.4	454.5	454.5	455.2	0.7
AV	27,095	347	2,645	4.1	454.9	454.9	455.7	0.8
AW	27,175	297	2,489	4.4	455.4	455.4	455.9	0.5
AX	28,095	380	2,624	4.2	456.1	456.1	456.6	0.5
AY	28,520	320	2,967	3.7	456.6	456.6	457.2	0.6
AZ	28,860	315	3,494	3.1	456.7	456.7	457.4	0.7

[1] Feet above confluence with Penns Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MIDDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Middle Creek (continued)								
BA	7060 [1]	80	799	13.6	458.8	458.8	459.6	0.8
BB	7645 [1]	255	2,414	4.5	464.1	464.1	465.0	0.9
BC	9035 [1]	624	5,134	2.1	466.3	466.3	467.2	0.9
BD	9670 [1]	690	4,629	2.4	466.8	466.8	467.7	0.9
BE	9815 [1]	579	4,382	2.5	467.0	467.0	467.9	0.9
BF	10205 [1]	380	3,709	2.9	467.4	467.4	468.3	0.9
BG	10755 [1]	448	4,183	2.6	467.9	467.9	468.8	0.9
BH	11168 [1]	567	5,016	2.2	468.5	468.5	469.4	0.9
BI	11365 [1]	579	5,251	2.1	468.6	468.6	469.5	0.9
BJ	11730 [1]	727	5,507	2.0	468.7	468.7	469.6	0.9
BK	12565 [1]	298	2,356	4.6	469.1	469.1	470.0	0.9
BL	13210 [1]	468	4,456	2.4	470.2	470.2	471.2	1.0
BM	13990 [1]	473	3,752	2.9	470.4	470.4	471.4	1.0
BN	8860 [2]	598	4,195	2.6	490.3	490.3	491.3	1.0
BO	75 [3]	918	4,844	2.3	490.9	490.9	491.8	0.9
BP	755 [3]	532	2,313	4.8	491.3	491.3	492.1	0.8
BQ	1325 [3]	117	1,076	6.8	491.5	491.5	492.2	0.7
BR	2290 [3]	202	1,833	4.0	493.1	493.1	494.0	0.9
BS	3060 [3]	249	2,367	3.1	493.7	493.7	494.5	0.8
BT	3450 [3]	380	3,714	2.0	494.1	494.1	495.0	0.9
BU	4070 [3]	620	4,454	1.6	494.3	494.3	495.2	0.9
BV	4450 [3]	926	4,709	1.6	494.4	494.4	495.3	0.9
BW	4765 [3]	1,032	2,382	3.1	494.5	494.5	495.3	0.8
BX	5310 [3]	999	4,630	1.6	495.7	495.7	496.3	0.6
BY	5890 [3]	1,494	7,752	0.9	496.0	496.0	496.7	0.7
BZ	6910 [3]	1,128	6,475	1.1	496.3	496.3	497.0	0.7

[1] Feet above corporate limits of Middle Creek Borough
[2] Feet above corporate limits of Franklin Township
[3] Feet above corporate limits of Middleburg Township

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

MIDDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE 1	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Middle Creek (continued)								
CA	7410 (1)	798	4,371	1.7	496.8	496.8	497.5	0.7
CB	7880 (1)	486	2,935	2.5	496.9	496.9	497.6	0.7
CC	17750 (2)	330	1,835	6.0	498.6	498.6	499.2	0.6
CD	19150 (2)	593	3,819	2.9	500.2	500.2	501.0	0.8
CE	20480 (2)	337	2,346	4.7	500.9	500.9	501.7	0.8
CF	22090 (2)	360	2,712	4.1	502.6	502.6	503.4	0.8
CG	23220 (2)	210	2,050	5.4	503.5	503.5	504.3	0.8
CH	24455 (2)	714	5,115	2.2	505.2	505.2	506.1	0.9
CI	25640 (2)	737	4,897	2.2	505.7	505.7	506.6	0.9
CJ	27085 (2)	734	4,920	2.2	506.3	506.3	507.2	0.9
CK	28055 (2)	771	4,185	2.6	506.9	506.9	507.8	0.9
CL	29075 (2)	675	3,983	2.8	508.8	508.8	509.6	0.8
CM	30290 (2)	291	2,307	4.8	510.2	510.2	511.0	0.8
CN	31170 (2)	384	2,893	3.8	511.2	511.2	512.0	0.8
CO	31375 (2)	339	2,585	4.3	511.4	511.4	512.2	0.8
CP	31730 (2)	537	4,825	2.3	513.0	513.0	513.9	0.9

[1] Feet above corporate limits of Middleburg Borough

[2] Feet above corporate limits of Franklin Township

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MIDDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
North Branch Mahantango Creek								
A	270	170	1,666	4.9	427.5	422.9 [2]	423.4	0.5
B	580	124	1,242	6.6	427.5	423.5 [2]	423.9	0.4
C	980	124	1,140	7.2	427.5	424.6 [2]	425.1	0.5
D	2,745	331	1,658	4.9	429.6	429.6	430.2	0.6
E	3,570	328	2,108	3.9	431.3	431.3	431.9	0.6
F	4,365	71	706	11.6	433.3	433.3	433.8	0.5
G	5,160	218	2,029	4.0	437.4	437.4	438.2	0.8
H	5,990	163	1,531	5.4	438.8	438.8	439.5	0.7
I	6,660	188	1,631	5.0	439.7	439.7	440.3	0.6
J	7,410	131	1,036	7.9	440.6	440.6	441.1	0.5
K	8,835	215	2,018	4.1	444.5	444.5	445.2	0.7
L	9,515	197	1,276	6.4	445.6	445.6	446.2	0.6
M	10,005	314	1,772	4.6	448.0	448.0	448.7	0.7

[1] Feet above confluence with the West Mahantango Creek

[2] Elevation computed without consideration of backwater effects from the West Mahantango Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

NORTH BRANCH MAHANTANGO CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD) [2]	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Penns Creek (continued)								
A	900	470	8,299	4.5	431.2	426.2	426.7	0.5
B	2,010	801	8,953	4.2	431.7	426.4	426.9	0.5
C	3,320	805	8,885	4.2	432.0	426.6	427.1	0.5
D	4,460	802	9,632	3.9	432.3	426.9	427.6	0.7
E	5,555	800	8,324	4.5	432.5	427.1	427.8	0.7
F	6,335	844	11,121	3.4	432.6	427.5	428.3	0.8
G	7,650	855	11,044	3.4	432.8	427.7	428.5	0.8
H	8,450	1,400	15,436	2.4	433.1	428.0	428.8	0.8
I	9,065	1,300	13,385	2.8	433.2	428.1	428.9	0.8
J	9,775	537	5,854	6.4	433.3	428.1	428.9	0.8
K	9,805	519	6,471	5.8	433.3	428.2	429.0	0.8
L	9,855	507	6,562	5.7	433.3	428.3	429.1	0.8
M	9,885	521	6,706	5.6	433.3	428.3	429.1	0.8
N	10,305	290	3,572	7.8	433.4	428.3	429.2	0.9
O	10,800	700	7,725	3.6	433.5	429.2	430.0	0.8
P	11,485	542	7,106	3.9	433.6	429.5	430.2	0.7
Q	12,360	600	6,743	4.2	433.7	429.6	430.4	0.8
R	13,340	700	7,379	3.8	433.9	430.0	430.7	0.7
S	14,105	652	8,699	3.2	434.0	430.3	431.0	0.7
T	14,185	233	3,663	7.6	434.1	430.3	431.0	0.7
U	15,600	950	9,156	3.1	434.7	431.0	431.7	0.7
V	16,230	761	8,397	3.3	434.8	431.2	431.9	0.7
W	18,210	602	6,775	4.1	435.4	431.4	432.3	0.9
X	19,190	312	4,635	6.0	435.8	432.1	433.1	1.0
Y	20,460	465	6,538	4.3	436.8	432.9	433.9	1.0
Z	20,685	540	9,047	3.1	436.9	433.2	434.2	1.0

[1] Feet above confluence with Susquehanna

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

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

PENNS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Penns Creek (continued)								
AA	22,980	1,199	14,784	1.9	438.0	433.7 [2]	434.7	1.0
AB	24,620	450	6,016	4.7	438.6	434.0 [3]	434.9	0.9
AC	24,725	440	5,292	5.3	438.6	434.1 [3]	435.0	0.9
AD	24,860	564	5,853	4.8	438.6	434.4 [3]	435.2	0.8
AE	25,360	540	4,401	6.4	438.6	434.8 [3]	435.6	0.8
AF	26,375	442	5,879	4.8	438.6	435.9 [3]	436.8	0.9
AG	28,000	500	5,684	4.9	438.6	437.1 [3]	437.8	0.7
AH	28,600	400	5,250	5.3	438.6	437.4 [3]	438.1	0.7
AI	29,850	461	5,282	5.3	438.6	438.4 [3]	439.1	0.7
AJ	30,990	450	4,346	6.4	439.3	439.3	439.9	0.6
AK	33,070	228	2,613	10.7	441.4	441.4	442.3	0.9
AL	33,160	200	2,478	11.3	441.4	441.4	442.4	1.0
AM	33,320	305	3,081	9.1	443.2	443.2	443.4	0.2
AN	34,240	823	6,767	4.1	444.8	444.8	445.3	0.5
AO	35,125	781	5,651	5.0	445.2	445.2	445.8	0.6
AP	36,835	327	3,500	8.0	446.7	446.7	447.4	0.7
AQ	39,320	300	3,724	7.5	449.2	449.2	450.1	0.9
AR	41,160	444	3,993	7.0	451.0	451.0	450.0	1.0
AS	42,800	257	3,332	8.4	452.9	452.9	453.9	1.0
AT	44,980	445	4,946	5.7	455.4	455.4	456.3	0.9
AU	47,135	339	4,127	6.8	457.1	457.1	457.6	0.5
AV	49,165	263	3,331	8.4	458.2	458.2	459.0	0.8
AW	49,205	193	2,860	9.8	458.3	458.3	458.9	0.6
AX	49,445	224	3,017	9.3	459.3	459.3	459.8	0.5
AY	50,130	284	3,939	7.1	460.4	460.4	461.1	0.7
AZ	52,060	230	3,264	8.6	461.7	461.7	462.3	0.6

[1] Feet above confluence with Susquehanna River

2 Elevation computed without consideration of flooding effects from Susquehanna River

3 Elevation computed without consideration of backwater effects from Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

PENNS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Penns Creek (continued)								
BA	53,890 [2]	212	2,721	10.3	463.7	463.7	464.2	0.5
BB	55,480 [2]	234	3,421	8.2	465.8	465.8	466.7	0.9
BC	8,205 [1]	202	3,329	8.4	467.77	467.77	468.57	0.8
BD	9,520 [1]	245	3,963	7.1	469.07	469.07	469.97	0.9
BE	10,285 [1]	333	4,992	5.6	469.67	469.67	470.67	1.0
BF	11,470 [1]	253	3,603	7.8	470.07	470.07	470.97	0.9
BG	12,440 [1]	272	3,995	7.0	470.77	470.77	471.8	1.0
BH	13,950 [1]	610	6,443	4.3	472.47	472.47	473.47	1.0
BI	15,420 [1]	191	2,765	10.1	473.17	473.17	474.17	1.0
BJ	29,420 [1]	360	2,504	11.1	488.57	488.57	489.37	0.8
BK	30,390 [1]	26	6,284	4.4	491.47	491.47	492.47	1.0
BL	30,940 [1]	36	5,765	4.8	491.47	491.47	492.47	1.0
BM	32,080 [1]	130	4,877	5.7	491.87	491.87	492.87	1.0
BN	33,120 [1]	580	4,941	5.6	492.3	492.3	493.17	0.9
BO	34,480 [1]	75	3,217	8.6	493.57	493.57	494.3	0.7
BP	34,780 [1]	83	3,582	7.7	493.87	493.87	494.67	0.8
BQ	34,965 [1]	83 [3]	3,284	8.4	494.07	494.07	494.77	0.7
BR	35,980 [1]	38 [3]	2,507	11.0	494.37	494.37	495.07	0.7
BS	36,565 [1]	60	3,209	8.6	495.47	495.47	496.3	0.8
BT	37,710 [1]	16	5,021	5.5	496.97	496.97	497.77	0.8
BU	38,220 [1]	20	5,696	4.9	497.37	497.37	498.17	0.8

[1] Feet above Jackson Township corporate limits [3] Width within county

[2] Feet above confluence with Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

PENNS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Silver Creek								
A	883	67	421	5.2	420.4	415.4 [2]	416.4	1.0
B	1,353	61	276	7.9	420.4	417.2 [2]	417.8	0.6
C	1,868	123	318	6.9	422.3	422.3	422.4	0.1
D	2,848	45	258	8.5	431.7	431.7	432.2	0.5
E	4,048	56	256	8.6	450.2	450.2	450.3	0.1
F	4,818	166	774	2.8	454.5	454.5	455.1	0.6
G	5,183	41	242	9.1	455.4	455.4	455.9	0.5
H	5,633	175	810	2.7	461.5	461.5	461.5	0.0
I	6,498	137	320	5.7	467.8	467.8	467.9	0.1
J	7,233	99	561	3.3	475.9	475.9	476.4	0.5
K	8,678	107	412	4.5	486.4	486.4	486.9	0.5
L	8,953	110	479	3.8	489.6	489.6	490.1	0.5
M	9,778	117	254	7.2	496.2	496.2	496.2	0.0
N	11,008	171	328	5.6	512.2	512.2	512.2	0.0
O	12,178	124	442	4.2	520.8	520.8	521.0	0.2
P	12,798	230	981	1.9	527.8	527.8	528.3	0.5
Q	13,232	130	283	5.3	529.7	529.7	529.8	0.1
R	14,262	116	285	5.3	539.0	539.0	539.2	0.2
S	14,982	94	890	1.7	552.8	552.8	553.6	0.8
T	16,022	170	422	3.6	556.1	556.1	556.2	0.1

[1] Feet above confluence with Susquehanna River

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

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SILVER CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SCTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
South Tributary								
A	215	75	216	4.5	434.7	421.3 [2]	421.8	0.5
B	560	45	157	7.9	434.7	426.1 [2]	426.1	0.0
C	795	29	190	6.5	434.7	430.5 [2]	430.5	0.0
D	1,000	124	570	2.2	436.3	436.3	436.4	0.1
E	1,185	200	582	2.1	436.6	436.6	436.8	0.2
F	1,580	120	563	2.2	438.6	438.6	439.4	0.8
G	2,145	376	1,040	1.2	439.8	439.8	440.8	1.0
H	2,750	100	195	6.3	443.8	443.8	443.8	0.0
I	3,410	45	245	5.0	450.4	450.4	451.1	0.7

[1] Feet above confluence with Penns Creek

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

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SOUTH TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SCTION	DISTANCE	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Stumps Run								
A	323 [1]	197	532	3.4	494.2	490.6 [2]	491.1	0.5
B	488 [1]	149	410	4.4	494.2	492.0 [2]	492.5	0.5
C	850 [1]	220	945	1.9	497.0	497.0	497.6	0.6
D	1,145 [1]	116	418	4.4	499.1	429.6	499.1	0.0
E	1,300 [1]	71	266	6.8	500.2	500.2	500.3	0.1
F	1,415 [1]	67	257	7.1	502.0	502.0	502.2	0.2
G	1,640 [1]	128	587	3.1	504.6	504.6	505.6	1.0
H	1,910 [1]	192	435	4.2	507.6	507.6	507.6	0.0
I	2,100 [1]	92	340	5.4	510.3	510.3	510.3	0.0
J	2,325	195	807	2.0	517.2	517.2	517.7	0.5
K	2,480	145	382	4.3	517.5	517.5	518.0	0.5
L	2,975	118	302	5.4	522.6	522.6	522.9	0.3
M	3,408	83	257	6.4	526.2	526.2	526.3	0.1
N	3,900	43	163	8.6	535.3	535.3	535.3	0.0
O	4,140	92	331	3.8	538.5	538.5	539.3	0.8
P	4,586	48	166	7.5	546.5	546.5	546.5	0.0
Q	4,885	52	171	7.3	552.4	552.4	552.4	0.0
R	5,125	105	250	5.0	557.0	557.0	557.1	0.1

[1] Feet above confluence with Middle Creek

[2] Elevation computed without consideration of backwater from Middle Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

STUMPS RUN

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	DIFFERENCE (FT.)
Susquehanna River								
A	881	2,565	53,816	9.6	405.7	405.7	406.7	1.0
B	1,784	2,419	49,763	10.4	406.3	406.3	407.2	0.9
C	2,955	2,363	48,512	10.7	407.3	407.3	408.1	0.8
D	4,087	2,724	55,152	9.4	408.7	408.7	409.4	0.7
E	5,096	3,168	60,096	8.6	409.9	409.9	410.7	0.8
F	6,314	3,560	66,270	7.8	411.8	411.8	412.6	0.8
G	7,203	4,273	77,809	6.7	412.7	412.7	413.5	0.8
H	8,083	4,350	74,611	7.0	413.2	413.2	414.0	0.8
I	8,890	4,431	76,151	6.8	413.7	413.7	414.4	0.7
J	9,428	4,522	78,777	6.6	414.1	414.1	414.8	0.7
K	10,617	4,840	89,039	5.8	415.1	415.1	415.6	0.5
L	11,464	5,070	93,598	5.5	415.6	415.6	416.1	0.5
M	12,597	4,686	96,597	5.4	416.1	416.1	416.6	0.5
N	13,887	4,191	98,485	5.3	416.4	416.4	416.9	0.5
O	15,096	3,725	94,744	5.5	416.7	416.7	417.1	0.4
P	15,701	3,432	87,232	5.9	416.7	416.7	417.2	0.5
Q	16,220	3,259	91,481	5.7	416.9	416.9	417.3	0.4
R	16,871	3,210	90,619	5.7	417.0	417.0	417.4	0.4
S	17,456	3,139	88,753	5.8	417.1	417.1	417.5	0.4
T	18,149	3,161	85,549	6.1	417.2	417.2	417.6	0.4
U	19,012	3,338	85,012	6.1	417.4	417.4	417.8	0.4
V	20,161	3,313	78,818	6.6	417.8	417.8	418.2	0.4
W	20,981	3,411	78,545	6.6	418.1	418.1	418.5	0.4
X	21,765	3,835	88,441	5.9	418.5	418.5	418.9	0.4
Y	23,080	4,093	97,857	5.3	418.8	418.8	419.3	0.5
Z	24,324	3,928	92,647	5.6	419.0	419.0	419.5	0.5

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	DIFFERENCE (FT.)
Susquehanna River (continued)								
AA	25,257	3,899	83,333	6.2	419.2	419.2	419.8	0.6
AB	26,221	4,005	83,637	6.2	419.7	419.7	420.2	0.5
AC	27,184	4,154	85,995	6.0	419.9	419.9	420.6	0.7
AD	28,069	4,077	85,953	6.0	420.3	420.3	420.8	0.5
AE	29,117	4,058	83,333	6.2	420.6	420.6	421.2	0.6
AF	30,141	4,003	87,106	6.0	421.0	421.0	421.6	0.6
AG	31,134	3,824	81,108	6.4	421.3	421.3	421.8	0.5
AH	32,442	4,645	86,962	6.0	421.8	421.8	422.4	0.6
AI	33,482	4,713	80,194	6.5	422.1	422.1	422.7	0.6
AJ	34,338	4,802	78,912	6.6	422.5	422.5	423.0	0.5
AK	34,986	4,763	76,135	6.8	423.0	423.0	423.5	0.5
AL	35,667	4,642	77,904	6.7	423.7	423.7	424.2	0.5
AM	36,287	4,549	77,137	6.7	424.3	424.3	424.7	0.4
AN	36,899	4,539	78,836	6.6	424.9	424.9	425.3	0.4
AO	37,566	4,460	78,419	6.6	425.6	425.6	426.0	0.4
AP	38,354	4,122	74,919	6.9	426.4	426.4	426.7	0.3
AQ	39,152	3,789	73,303	7.1	426.9	426.9	427.1	0.2
AR	39,842	3,180	65,391	7.9	427.2	427.2	427.3	0.1
AS	41,413	2,828	70,782	7.1	427.8	427.8	428.1	0.3
AT	43,089	3,495	86,324	5.9	428.3	428.3	428.9	0.6
AU	44,427	4,311	109,300	4.6	428.7	428.7	429.4	0.7
AV	45,293	4,364	93,228	5.4	428.7	428.7	429.4	0.7
AW	46,127	4,481	95,698	5.3	429.1	429.1	429.8	0.7
AX	47,028	4,651	86,993	5.8	429.5	429.5	430.2	0.7
AY	48,190	5,071	88,937	5.7	430.0	430.0	430.6	0.6
AZ	48,959	5,396	91,125	5.5	430.4	430.4	431.0	0.6

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	DIFFERENCE (FT.)
Susquehanna River (continued)								
BA	49,466	5,561	93,419	5.4	430.9	430.9	431.4	0.5
BB	50,240	5,046	96,252	5.3	431.2	431.2	431.7	0.5
BC	51,041	4,243	84,103	6.0	431.4	431.4	431.8	0.4
BD	51,652	4,468	92,712	5.5	431.7	431.7	432.1	0.4
BE	52,131	4,364	90,614	5.6	431.8	431.8	432.2	0.4
BF	52,812	4,515	93,563	5.4	432.0	432.0	432.5	0.5
BG	53,214	4,488	94,771	5.3	432.1	432.1	432.6	0.5
BH	53,608	4,421	99,608	5.1	432.3	432.3	432.8	0.5
BI	54,114	4,315	93,075	5.4	432.3	432.3	432.9	0.6
BJ	54,879	4,139	92,250	5.5	432.5	432.5	433.0	0.5
BK	55,575	3,997	92,090	5.5	432.6	432.6	433.2	0.6
BL	56,184	3,903	92,708	5.5	432.7	432.7	433.3	0.6
BM	56,946	3,646	89,967	5.6	432.8	432.8	433.4	0.6
BN	57,802	3,270	79,648	6.3	433.1	433.1	433.6	0.5
BO	58,411	3,170	79,555	6.4	433.2	433.2	433.9	0.7
BP	58,982	3,180	81,012	6.2	433.4	433.4	434.1	0.7
BQ	59,499	3,183	82,318	6.1	433.5	433.5	434.2	0.7
BR	60,073	3,238	84,880	6.0	433.6	433.6	434.4	0.8
BS	60,707	3,033	77,856	6.5	433.7	433.7	434.5	0.8
BT	61,293	2,923	74,928	6.7	433.8	433.8	434.6	0.8
BU	61,800	2,833	71,929	7.0	433.9	433.9	434.8	0.9
BV	62,195	2,870	70,365	7.2	434.0	434.0	434.9	0.9
BW	62,530	2,959	72,055	7.0	434.3	434.3	435.0	0.7
BX	62,820	2,976	69,813	7.2	434.4	434.4	435.0	0.6
BY	63,155	3,040	76,049	6.6	434.7	434.7	435.3	0.6
BZ	63,560	3,055	68,431	7.4	434.7	434.7	435.3	0.6

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	DIFFERENCE (FT.)
Susquehanna River (continued)								
CA	63,987	3,114	72,578	7.0	434.8	434.8	435.5	0.7
CB	64,495	3,193	72,266	7.0	434.9	434.9	435.7	0.8
CC	64,970	3,226	73,846	6.8	435.0	435.0	435.9	0.9
CD	65,552	3,207	74,717	6.8	435.3	435.3	436.1	0.8
CE	66,186	3,121	74,973	6.7	435.6	436.6	436.4	0.8
CF	66,633	3,059	72,956	6.9	435.7	435.7	436.5	0.8
CG	67,154	2,970	68,482	7.4	436.0	436.0	436.8	0.8
CH	67,738	3,050	74,629	6.8	436.4	436.4	437.1	0.7
CI	68,208	3,112	72,637	7.0	436.5	436.5	437.2	0.7
CJ	69,204	3,237	72,994	6.9	437.1	437.1	437.8	0.7
CK	69,845	3,266	76,282	6.6	437.7	437.7	438.4	0.7
CL	70,700	3,349	75,185	6.7	438.0	438.0	438.7	0.7
CM	71,146	3,553	87,044	5.8	438.3	438.3	439.0	0.7
CN	71,757	3,301	83,595	6.0	438.4	438.4	439.1	0.7
CO	72,124	3,153	84,172	6.0	438.6	438.6	439.2	0.6
CP	72,488	3,005	81,181	6.2	438.6	438.6	439.3	0.7
CQ	73,159	2,834	76,156	6.6	438.7	438.7	439.4	0.7
CR	73,703	2,880	78,761	6.4	438.9	438.9	439.5	0.6
CS	74,066	2,818	75,253	6.7	439.0	439.0	439.6	0.6
CT	74,618	2,763	68,502	7.4	439.2	439.2	439.8	0.6
CU	75,005	2,778	69,065	7.3	439.4	439.4	440.0	0.6
CV	75,603	2,826	74,411	6.8	439.6	439.6	440.3	0.7
CW	76,262	2,963	76,670	6.6	439.9	439.9	440.5	0.6
CX	76,680	3,059	77,518	6.5	440.0	440.0	440.6	0.6
CY	77,067	3,074	79,860	6.3	440.1	440.1	440.8	0.7
CZ	77,459	3,168	78,959	6.4	440.2	440.2	440.8	0.6

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	DIFFERENCE (FT.)
Susquehanna River (continued)								
DA	77,878	3,199	79,879	6.3	440.3	440.3	441.0	0.7
DB	78,238	3,317	79,761	6.3	440.4	440.4	441.0	0.6
DC	78,617	3,233	80,262	6.3	440.6	440.6	441.2	0.6
DD	79,046	3,335	81,512	6.2	440.7	440.7	441.3	0.6
DE	79,397	3,361	80,173	6.3	440.8	440.8	441.4	0.6
DF	79,787	3,238	79,191	6.4	440.9	440.9	441.5	0.6
DG	80,239	3,296	79,022	6.4	441.0	441.0	441.6	0.6
DH	80,629	3,306	78,370	6.4	411.1	441.1	441.7	0.6
DI	81,015	3,310	76,320	6.6	411.2	441.2	441.8	0.6
DJ	81,363	3,356	75,098	6.7	411.3	441.3	441.9	0.6
DK	81,870	3,360	71,448	7.1	411.5	441.5	442.0	0.5
DL	82,468	3,403	74,228	6.8	411.8	441.8	442.3	0.5
DM	82,898	3,443	75,526	6.7	411.9	441.9	442.5	0.6
DN	83,200	3,478	76,033	6.6	442.0	442.0	442.6	0.6
DO	83,518	3,503	78,400	6.4	442.2	442.2	442.7	0.5
DP	83,830	3,523	85,244	5.9	442.4	442.4	442.9	0.5
DQ	84,142	3,723	92,144	5.5	442.6	442.6	443.1	0.5
DR	84,777	3,776	94,022	5.4	442.7	442.7	443.2	0.5
DS	85,366	3,546	88,975	5.7	442.8	442.8	443.3	0.5
DT	85,808	3,473	86,475	5.8	442.9	442.9	443.4	0.5
DU	86,247	3,498	88,436	5.7	443.1	443.1	443.6	0.5
DV	86,629	3,443	86,688	5.8	443.2	443.2	443.6	0.4
DW	87,042	3,385	86,010	5.9	443.3	443.3	443.7	0.4
DX	87,419	3,388	88,166	5.7	443.4	443.4	443.8	0.4
DY	87,841	3,451	90,529	5.6	443.5	443.5	443.9	0.4
DZ	88,280	3,814	97,299	5.2	443.6	443.6	444.1	0.5

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	DIFFERENCE (FT.)
Susquehanna River (continued)								
EA	88,659	3,822	96,898	5.2	443.7	443.7	444.1	0.4
EB	89,067	3,224	88,803	5.7	443.7	443.7	444.1	0.4
EC	89,436	3,074	88,153	5.7	443.8	443.8	444.2	0.4
ED	89,844	2,915	80,995	6.2	443.8	443.8	444.2	0.4
EE	90,252	3,022	83,204	6.1	443.9	443.9	444.4	0.5
EF	90,639	2,836	86,723	5.8	444.1	444.1	444.5	0.4
EG	91,477	2,527	82,373	6.1	444.2	444.2	444.6	0.4
EH	91,866	2,464	80,906	6.2	444.3	444.3	444.7	0.4
EI	92,281	2,382	76,520	6.6	444.3	444.3	444.7	0.4
EJ	92,777	2,396	67,813	7.5	444.3	444.3	444.7	0.4
EK	93,268	2,333	68,529	7.4	444.4	444.4	444.8	0.4
EL	93,753	2,304	68,665	7.4	444.6	444.6	445.0	0.4
EM	94,370	2,341	70,645	7.2	444.8	444.8	445.2	0.4
EN	94,866	2,330	71,421	7.1	444.9	444.9	445.3	0.4
EO	95,832	2,359	73,048	6.9	445.2	445.2	445.6	0.4
EP	96,615	2,441	75,209	6.7	445.4	445.4	445.8	0.4
EQ	97,208	2,414	74,083	6.8	445.5	445.5	445.9	0.4
ER	97,819	2,261	69,264	7.3	445.6	445.6	445.9	0.3
ES	98,361	2,176	66,109	7.6	445.7	445.7	446.0	0.3
ET	98,862	2,072	60,884	8.3	445.7	445.7	446.0	0.3
EU	99,305	2,036	59,357	8.5	445.8	445.8	446.2	0.4
EV	100,117	1,928	59,834	8.4	446.1	446.1	446.5	0.4
EW	101,717	1,036	29,633	6.2	447.5	447.5	447.8	0.3
EX	102,299	923	26,133	7.0	447.5	447.5	447.8	0.3

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Tributary #1 (Middle Creek Township)								
A	1,440	286	1,147	1.5	474.1	474.1	474.8	0.7
B	1,625	387	1,716	1.0	474.1	474.1	474.8	0.7
C	1,815	383	1,697	1.0	474.1	474.1	474.8	0.7
D	2,196	106	440	3.9	479.3	479.3	479.3	0.0
E	2,511	97	302	5.0	484.6	484.6	484.6	0.0
F	2,648	125	259	5.8	486.4	486.4	486.6	0.2
G	2,715	107	381	3.9	491.2	491.2	491.2	0.0
H	2,930	209	287	5.2	493.4	493.4	493.4	0.0
I	3,130	174	266	5.6	497.7	497.7	497.7	0.0
J	3,567	137	243	6.2	508.1	508.1	508.1	0.0
K	3,807	55	195	7.7	514.5	514.5	515.1	0.6
L	4,022	69	221	6.8	521.6	521.6	521.6	0.0

[1] Feet above confluence with Middle Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY #1 to MIDDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Tributary #7 (Franklin Township)								
A	170	276	1,139	2.2	500.7	500.1 [2]	500.9	0.6
B	710	98	449	5.5	502.1	502.1	502.7	0.6
C	1,250	98	406	6.1	505.5	505.5	506.1	0.6
D	1,710	168	755	3.3	509.4	509.4	510.0	0.6
E	2,140	179	787	3.1	513.5	513.5	513.5	0.0
F	2,980	108	445	5.6	517.4	517.4	518.1	0.7
G	3,830	199	834	3.0	523.8	523.8	524.3	0.5
H	5,320	130	475	5.2	534.8	534.8	535.4	0.6
I	5,560	137	972	2.6	540.8	540.8	541.4	0.6
J	6,510	163	755	2.7	546.2	546.2	546.8	0.6
K	6,925	164	664	3.1	547.3	547.3	547.9	0.6
L	7,890	85	395	5.2	557.9	557.9	558.7	0.8
M	9,040	126	458	4.5	571.6	571.6	572.6	1.0
N	10,290	150	507	4.1	583.9	583.9	584.5	0.6

[1] Feet above confluence with Middle Creek

[2] Elevation computed without consideration of backwater effects from Middle Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY #7 to MIDDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
Tributary #12 (Franklin Township)								
A	630	149	462	5.8	512.8	508.9 [2]	509.9	1.0
B	945	681	503	3.0	512.9	512.9	512.9	0.0
C	1,020	642	1,397	1.1	513.4	513.4	513.7	0.3
D	1,290	233	261	5.8	516.3	516.3	516.4	0.1
E	1,700	184	260	5.9	523.7	523.7	523.7	0.0
F	1,950	179	313	4.9	529.5	529.5	529.7	0.2
G	2,670	106	226	6.8	551.9	551.9	551.9	0.0
H	2,945	85	194	7.9	560.3	560.3	560.3	0.0

[1] Feet above confluence with Middle Creek

[2] Elevation computed without consideration of backwater effects

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY #12 to MIDDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SCTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
West Branch Mahantango Creek								
A	15,480	839	4,837	1.7	463.3	463.3	464.1	0.8
B	16,220	416	1,934	4.3	463.9	463.9	464.6	0.7
C	16,500	607	2,682	3.1	464.7	464.7	465.5	0.8
D	16,910	336	1,747	4.7	465.3	465.3	466.0	0.7
E	18,580	488	1,674	4.2	470.4	470.4	471.1	0.7
F	19,800	359	1,067	6.7	475.7	475.7	476.3	0.6
G	20,680	300	2,627	2.7	478.8	478.8	479.6	0.8
H	22,155	253	1,946	3.6	483.8	483.8	484.6	0.8
I	22,690	517	2,898	2.5	485.1	485.1	486.0	0.9
J	23,430	243	2,002	3.5	485.7	485.7	486.4	0.7
K	24,280	308	1,777	4	486.7	486.7	487.5	0.8
L	25,015	252	1,250	5.7	488.7	488.7	489.2	0.5
M	25,800	457	3,229	2.2	494.9	494.9	494.9	0.0
N	26,560	461	2,929	2.4	495.1	495.1	495.1	0.0

[1] Feet above confluence with North Branch Mahantango Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

WEST BRANCH MAHANTANGO CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SCTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
West Mahantango Creek								
A	540	294	2,623	5.3	405.0	394.1 [2]	395.1	1.0
B	1,090	179	1,426	9.8	405.0	395.3 [2]	395.8	0.5
C	3,565	199	1,657	8.4	405.0	404.6 [2]	405.6	1.0
D	4,530	105	1,149	12.2	409.6	409.6	410.1	0.5
E	6,655	389	3,358	4.2	416.0	416.0	417.0	1.0
F	9,300	79	1,118	12.5	420.2	420.2	421.2	1.0
G	10,585	154	1,985	7.1	424.9	424.9	425.9	1.0

[1] Feet above confluence with Susquehanna River

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

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

WEST MAHANTANGO CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SCTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY (NAVD)	WITH FLOODWAY (NAVD)	INCREASE (FT.)
West Mahantango Creek								
A	540	294	2,623	5.3	407.9	394.1 [2]	395.1	1.0
B	1,090	179	1,426	9.8	407.9	395.3 [2]	395.8	0.5
C	3,565	199	1,657	8.4	407.9	404.6 [2]	405.6	1.0
D	4,530	105	1,149	12.2	409.6	409.6	410.1	0.5
E	6,655	389	3,358	4.2	416.0	416.0	417.0	1.0
F	9,300	79	1,118	12.5	420.2	420.2	421.2	1.0
G	10,585	154	1,985	7.1	424.9	424.9	425.9	1.0

[1] Feet above confluence with Susquehanna River
[2] Elevation computed without consideration of backwater effects from the Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

WEST MAHANTANGO CREEK

5.0 INSURANCE APPLICATION

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

Zone A

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

Zone AE

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

Zone AH

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

Zone AO

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

Zone AR

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

Zone A99

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

Zone V

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

Zone VE

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

Zone X

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

Zone X (Future Base Flood)

Zone X (Future Base Flood) is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined based on future-conditions hydrology. No BFEs or base flood depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

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 BFE's or average depths. Insurance agents use zones and BFE's 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 Snyder County, Pennsylvania. 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 (FBFM's), where applicable. Historical data relating to the maps prepared for each community are presented in Table 8, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATES	FIRM EFFECTIVE DATES	FIRM REVISIONS DATES
Adams, Township of	December 13, 1974	February 29, 1980	January 3, 1986	None
Beaver, Township of	November 1, 1974	July 30, 1976	October 15, 1985	None
Beavertown, Borough of	May 31, 1974	October 10, 1975	August 19, 1985	None
Center, Township of	December 6, 1974	January 21, 1977	March 16, 1988	None
Chapman, Township of	March 28, 1975	None	January 6, 1982	None
Franklin, Township of	November 15, 1974	None	August 2, 1982	None
Freeburg, Borough of	December 13, 1974	None	August 19, 1985	None
Jackson, Township of	November 22, 1974	None	January 20, 1982	None
McClure, Borough of	July 30, 1976	None	October 15, 1985	None
Middleburg, Borough of	February 20, 1973	November 12, 1976	August 2, 1982	October 16, 1984
Middlecreek, Township of	January 10, 1975	June 11, 1976	January 6, 1982	None
Monroe, Township of	February 1, 1974	May 7, 1976	February 2, 1977	April 25, 1980
Penn, Township of	July 22, 1977	None	September 16, 1982	None
Perry, Township of	January 3, 1975	July 11, 1980	March 16, 1988	None
Selinsgrove, Borough of	May 4, 1973	None	May 4, 1973	November 17, 1982
Shamokin Dam, Borough of	January 16, 1974	None	March 1, 1977	None
Spring, Township of	January 17, 1975	March 14, 1980	March 16, 1988	None
Union, Township of	July 18, 1975	None	November 17, 1982	None
Washington, Township of	January 17, 1975	April 11, 1980	May 15, 1986	None
West Beaver, Township of	January 24, 1975	April 25, 1980	September 24, 1984	None
West Perry, Township of	November 1, 1974	May 9, 1980	December 3, 1987	None

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY
SNYDER COUNTY
(ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

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

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this FIS can be obtained by contacting FEMA, Federal Insurance and Mitigation Division, One Independence Mall, Sixth Floor, 615 Chestnut Street, Philadelphia, Pennsylvania 19106-4404

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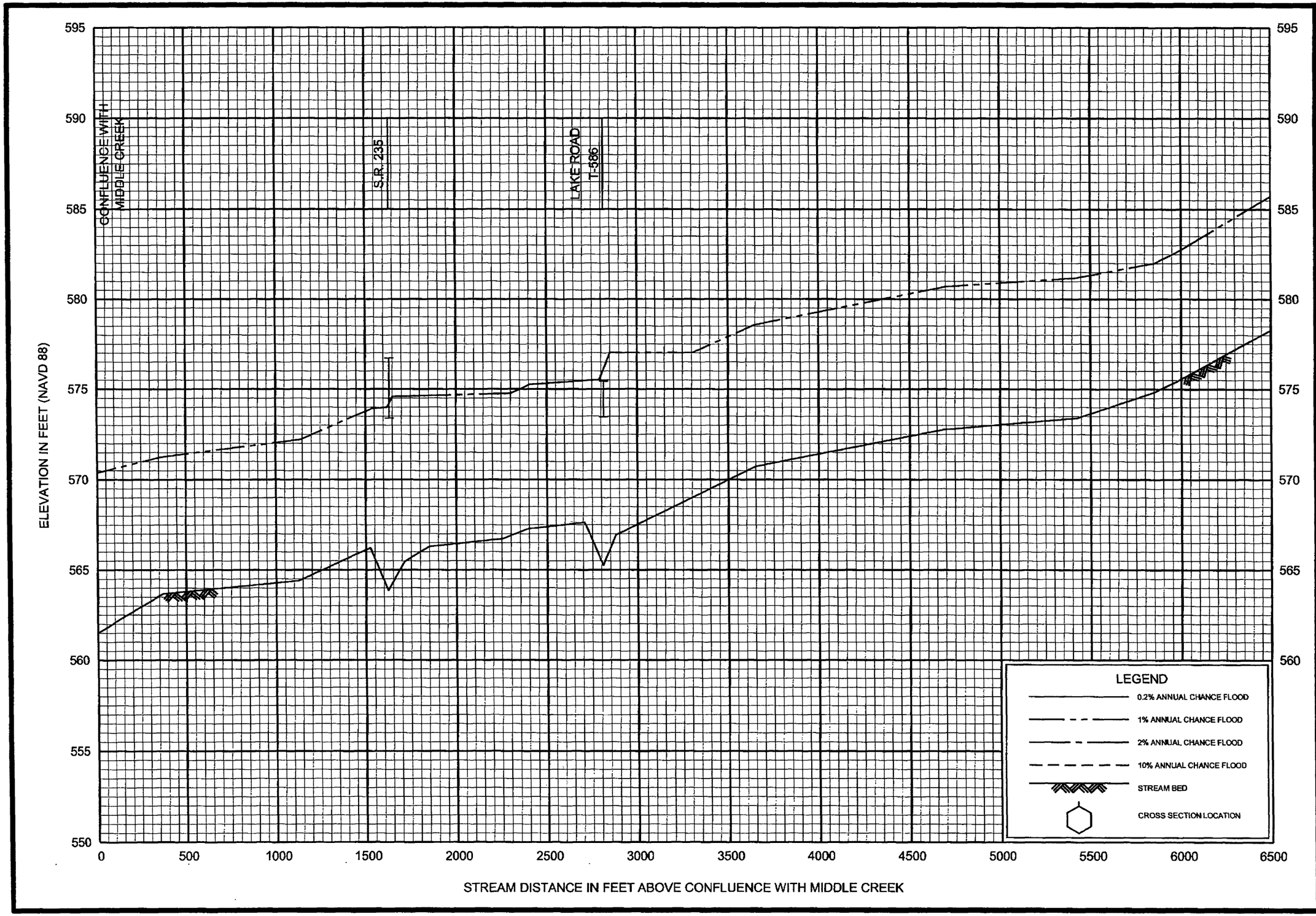

FLOOD PROFILES

BEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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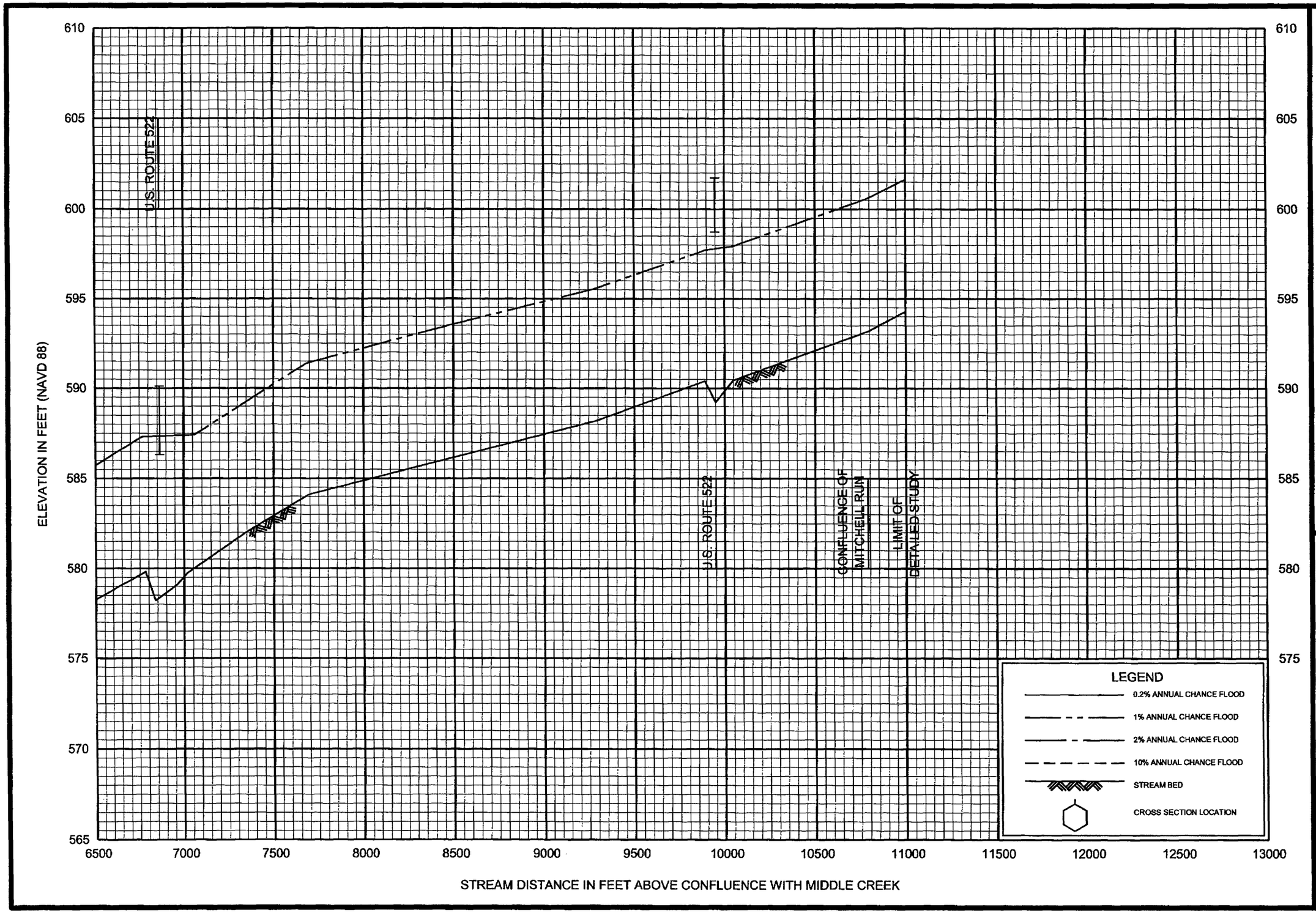

FLOOD PROFILES

BEAVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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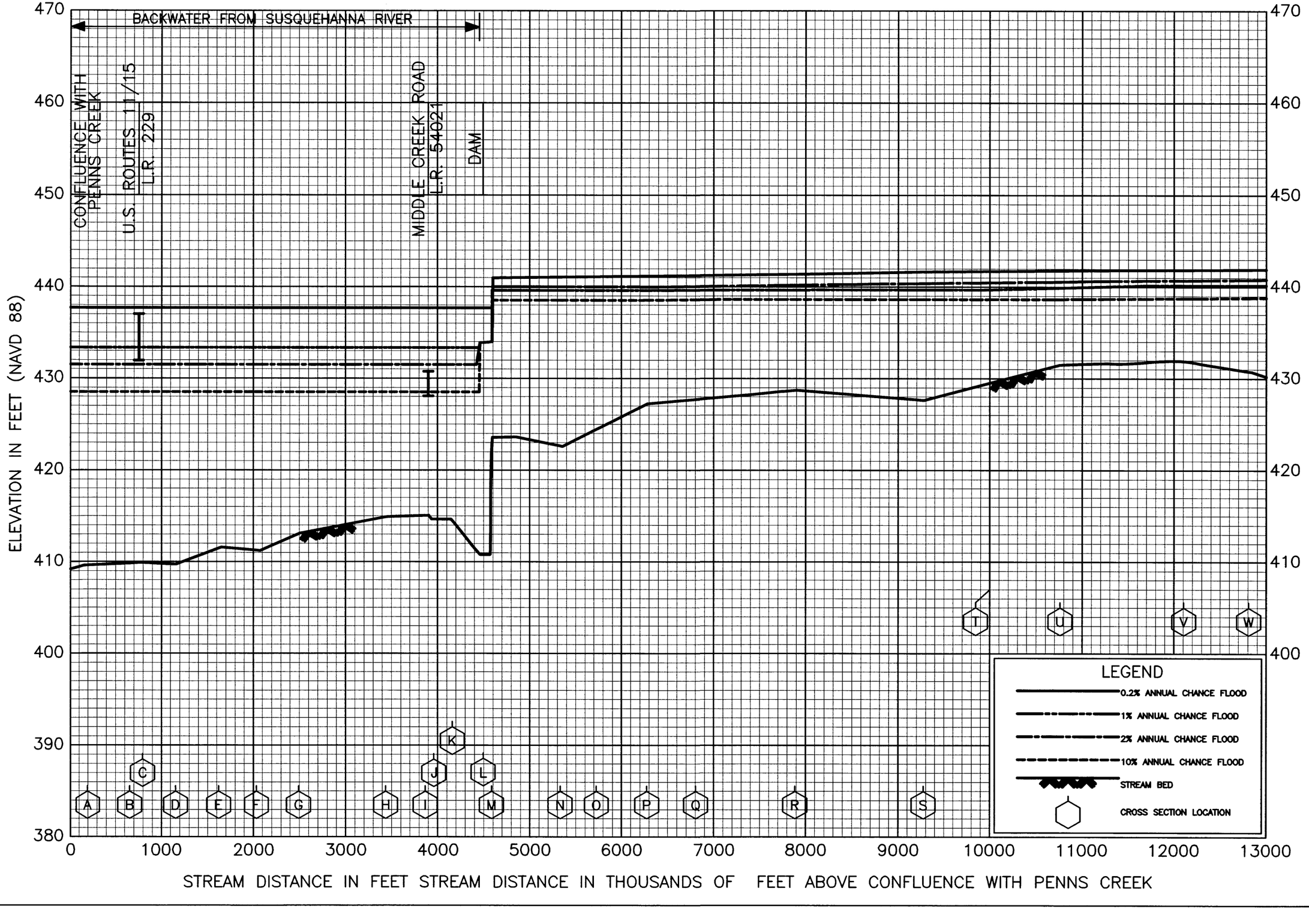

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER CO, PA
(ALL JURISDICTIONS)

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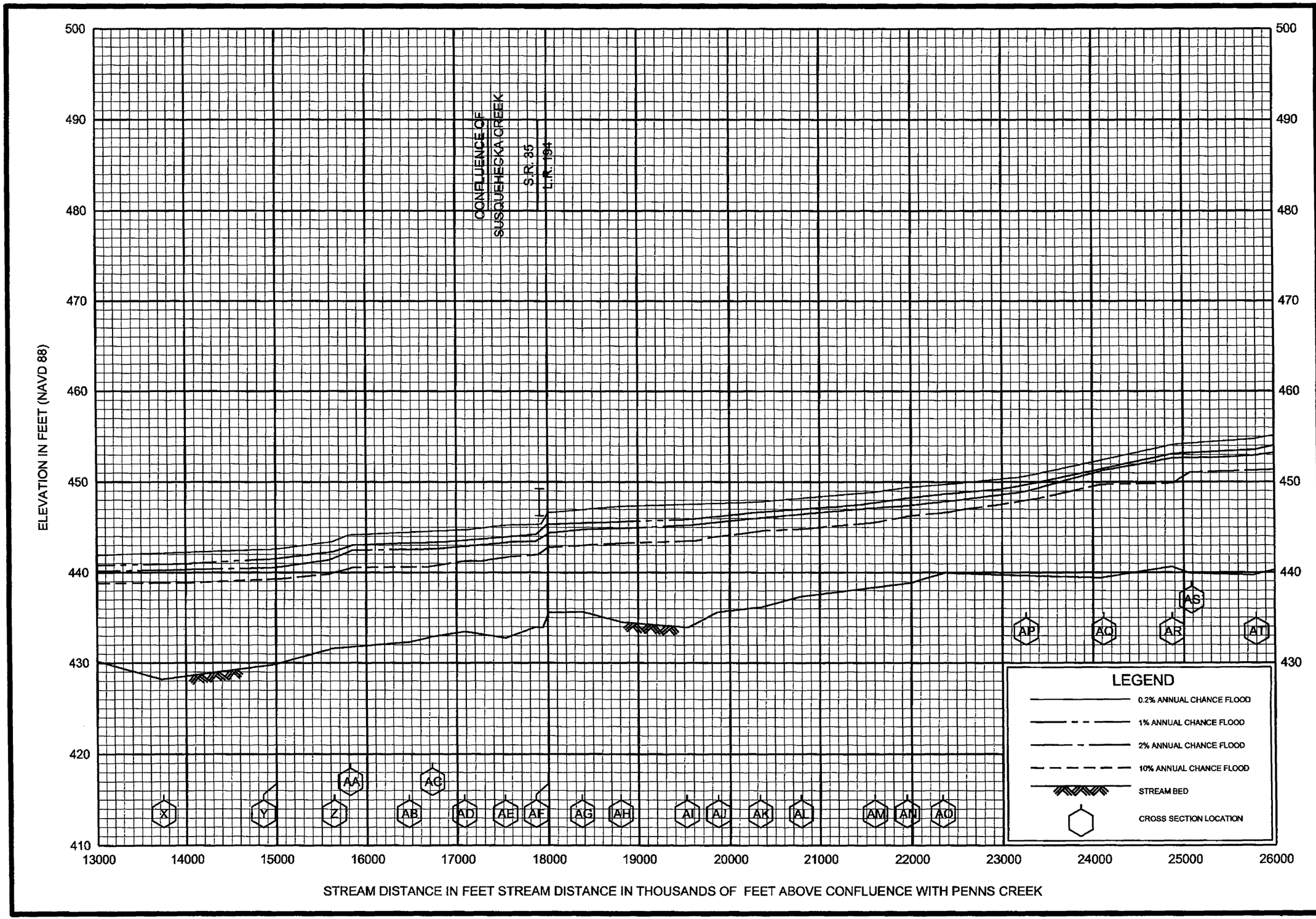

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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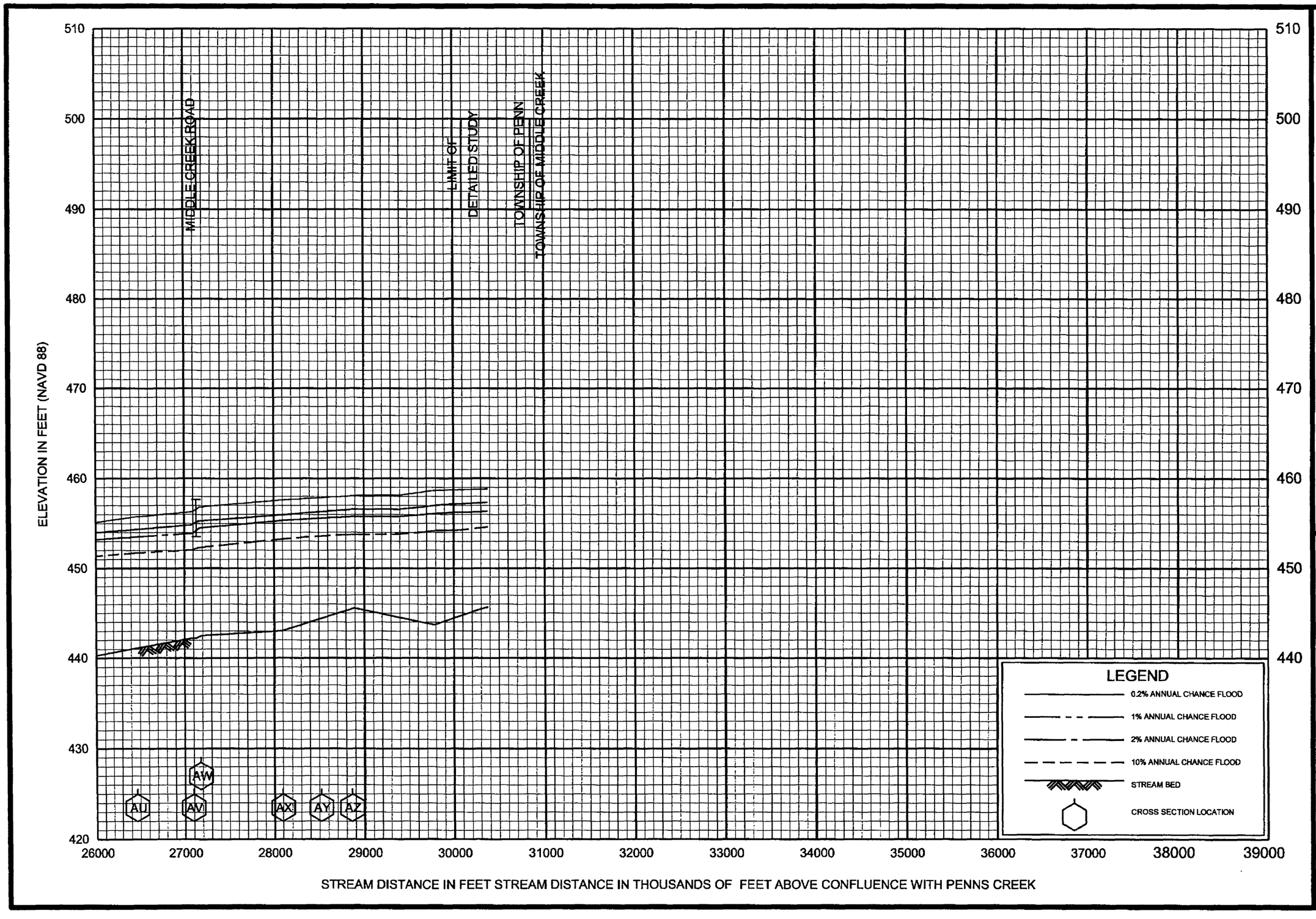

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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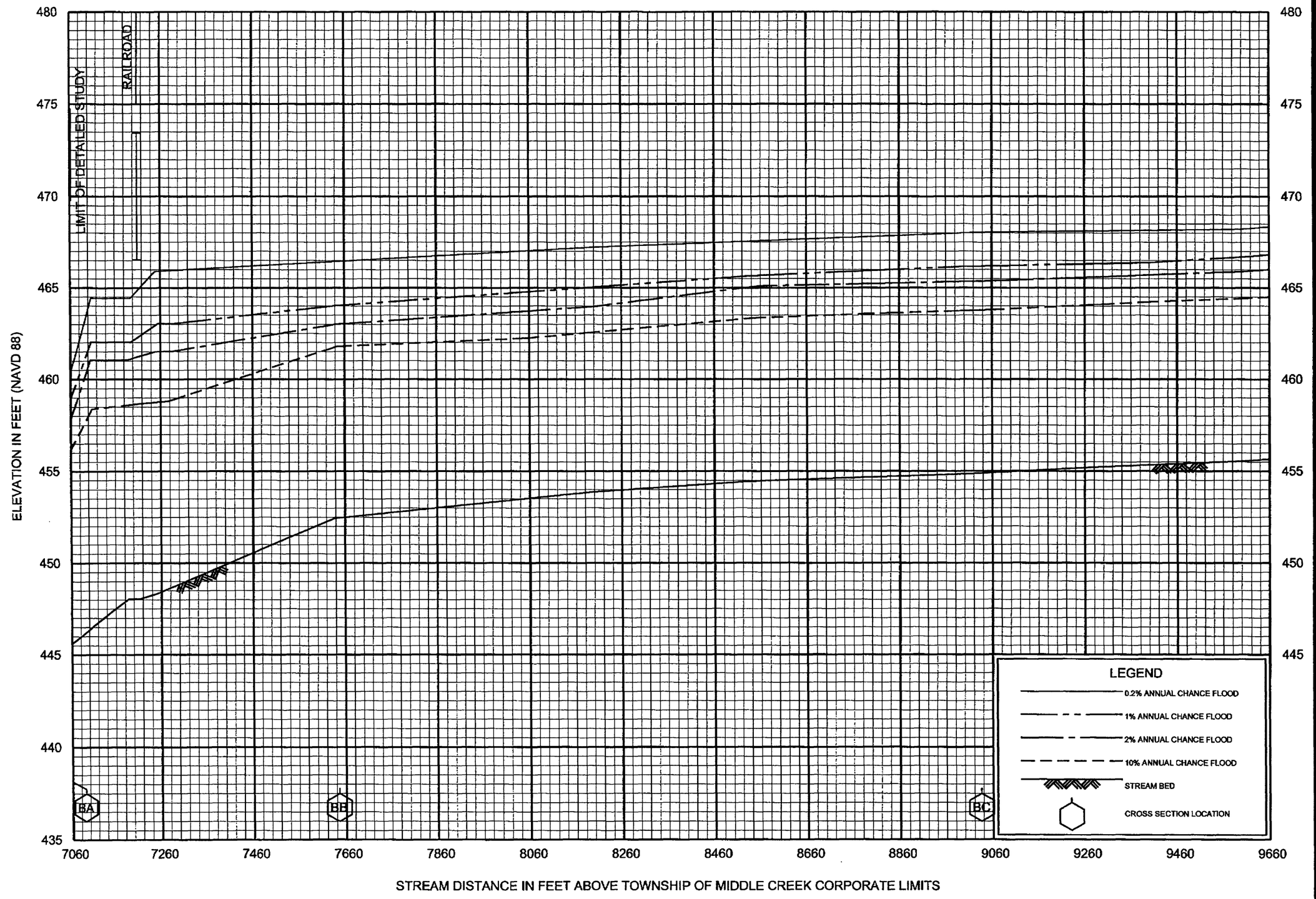

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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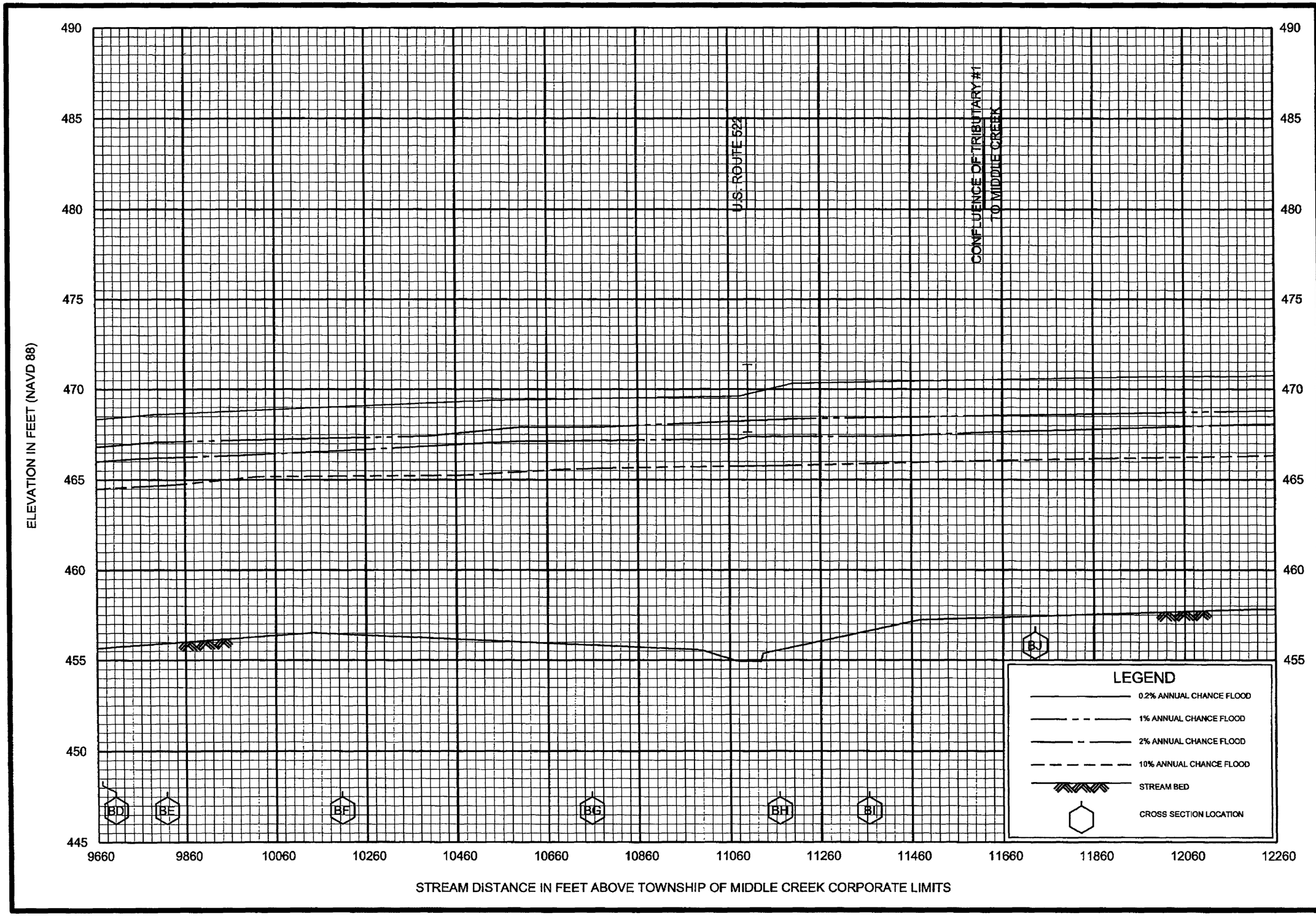

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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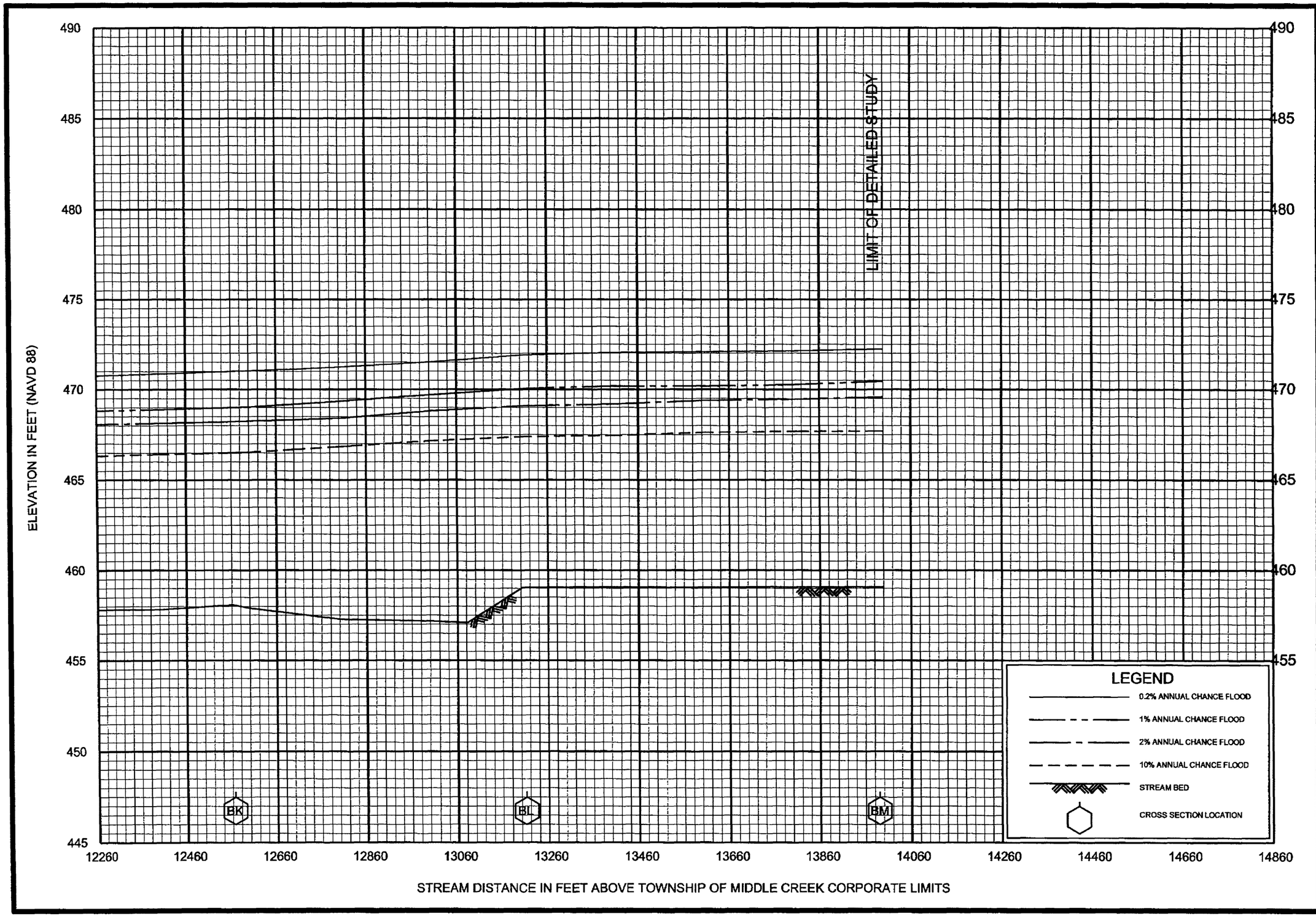

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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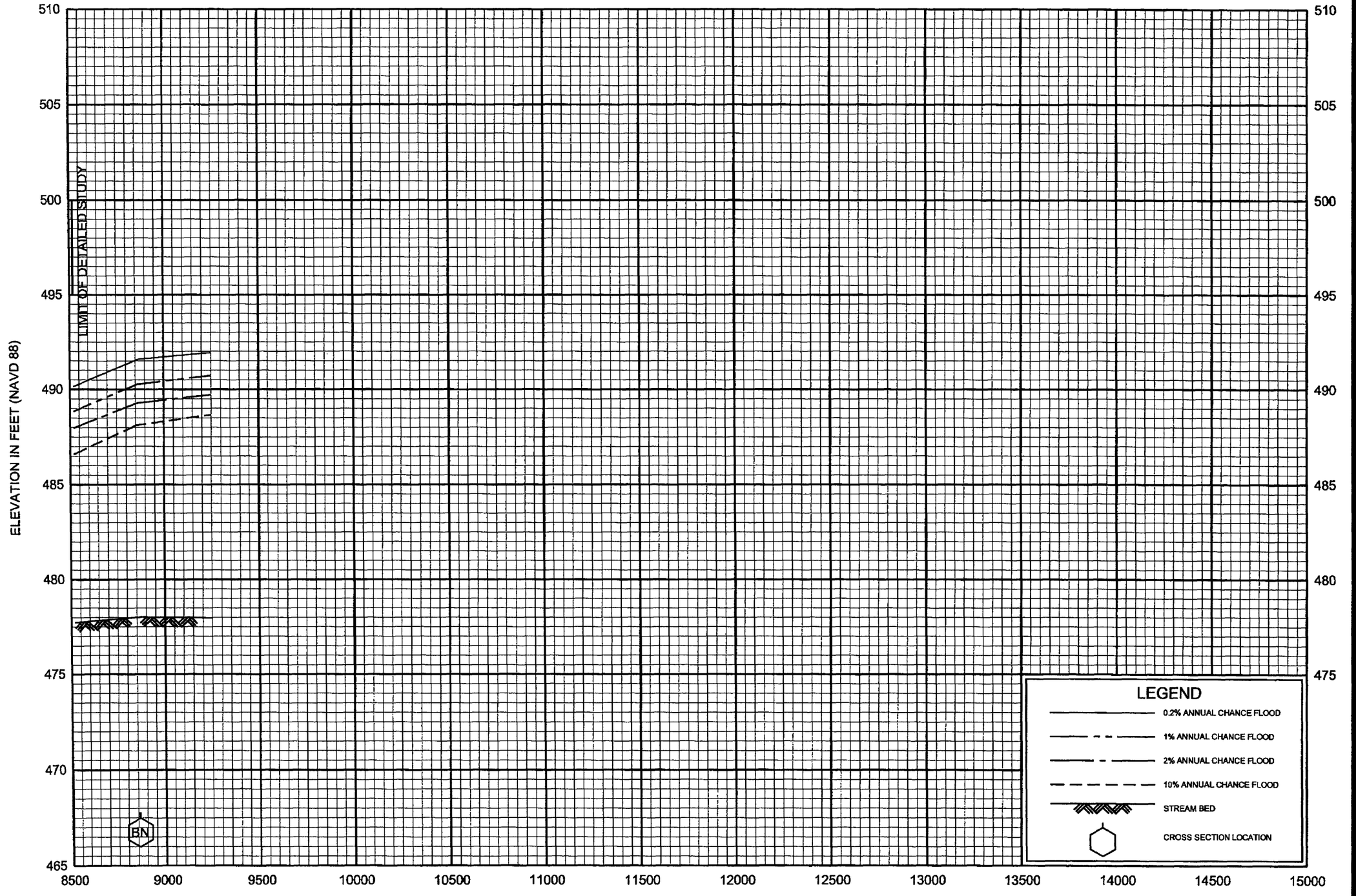

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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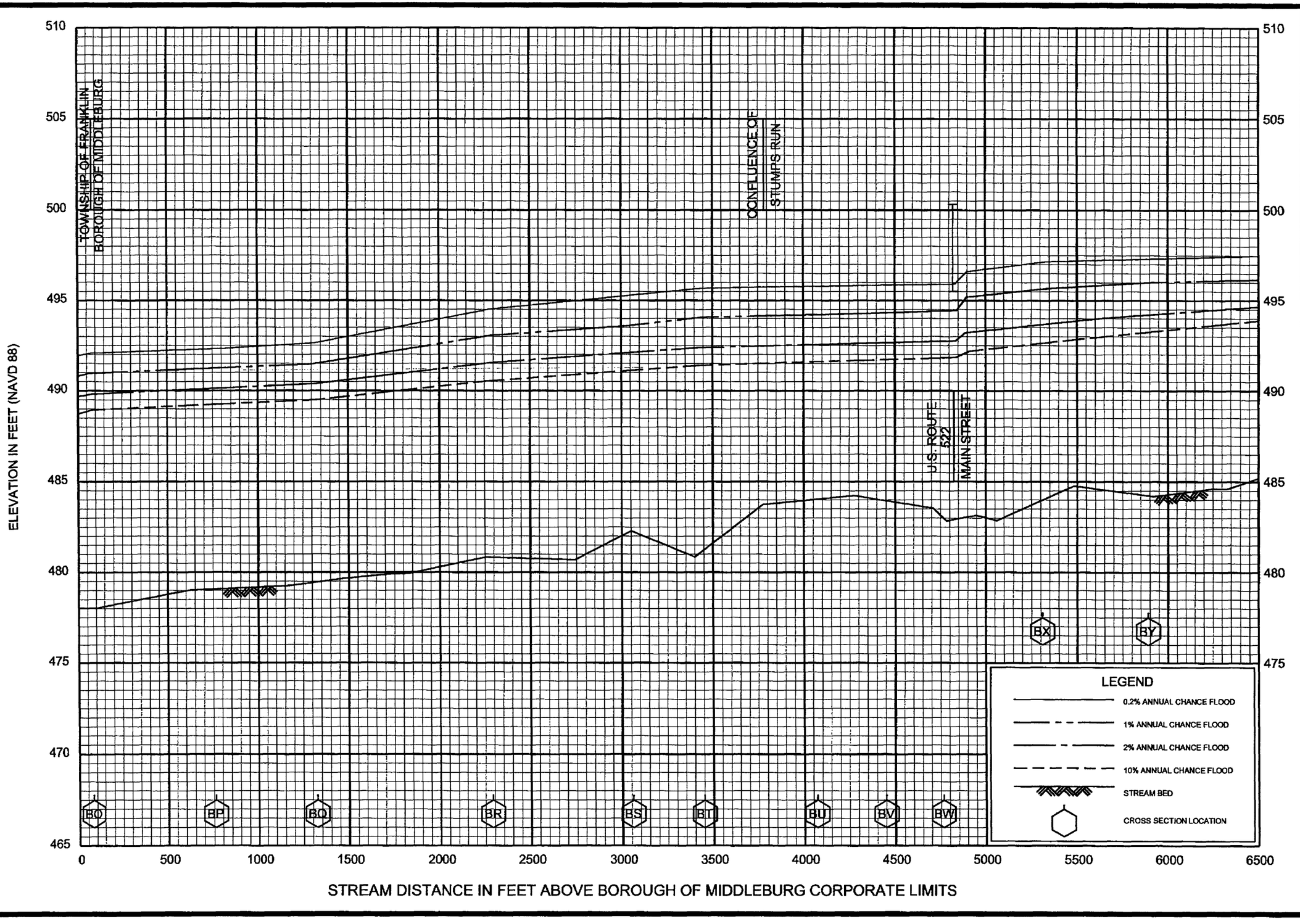


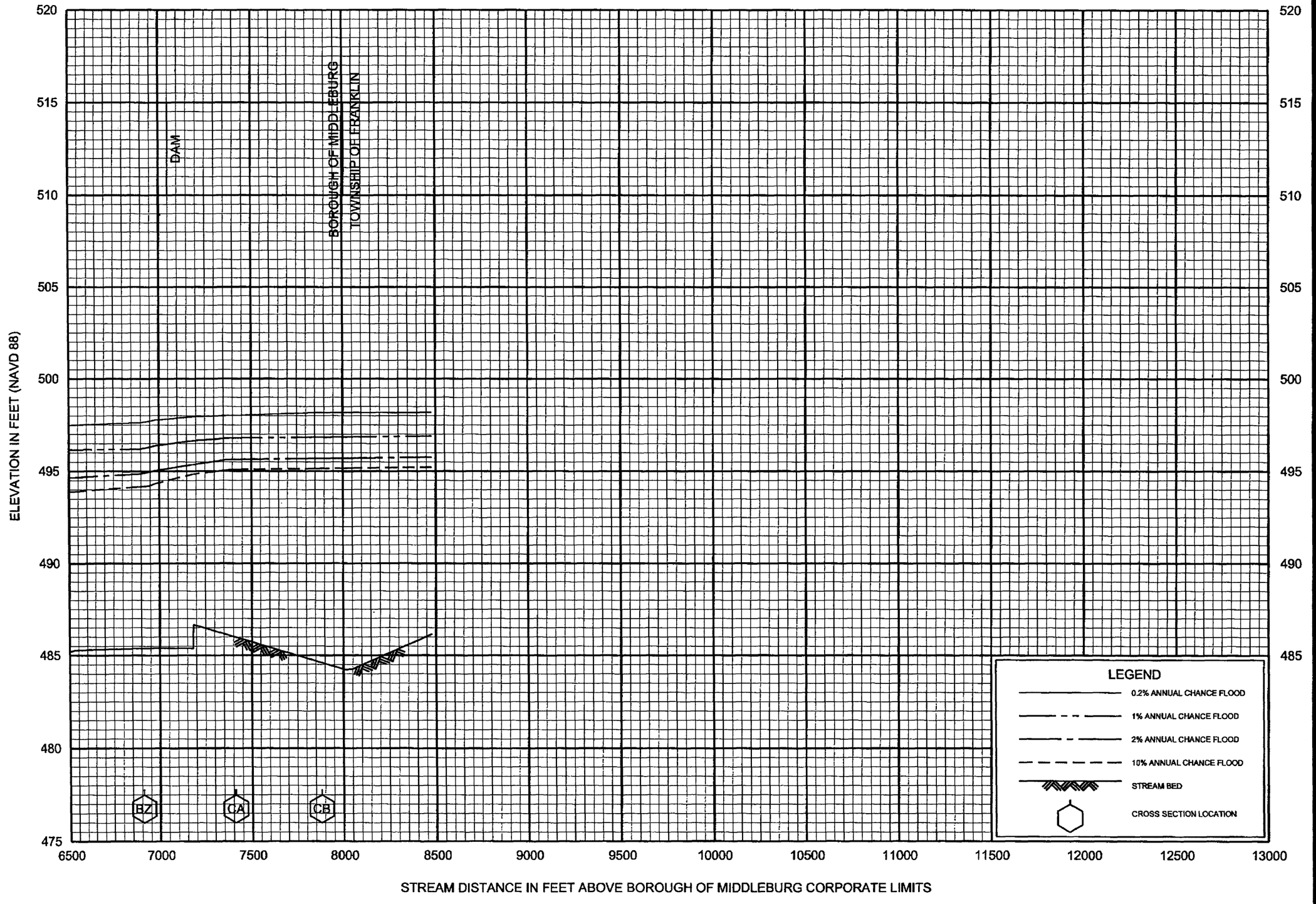
FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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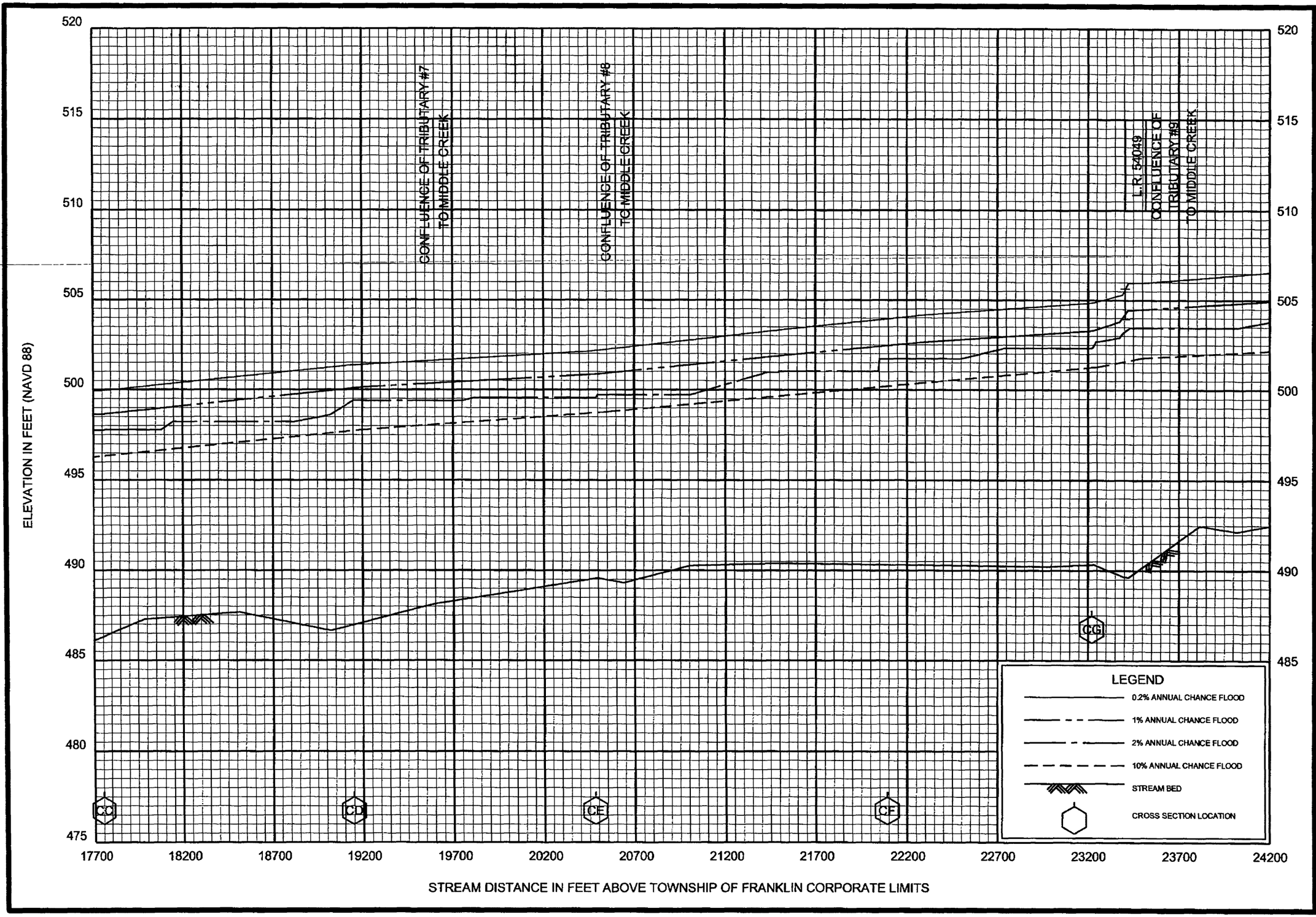

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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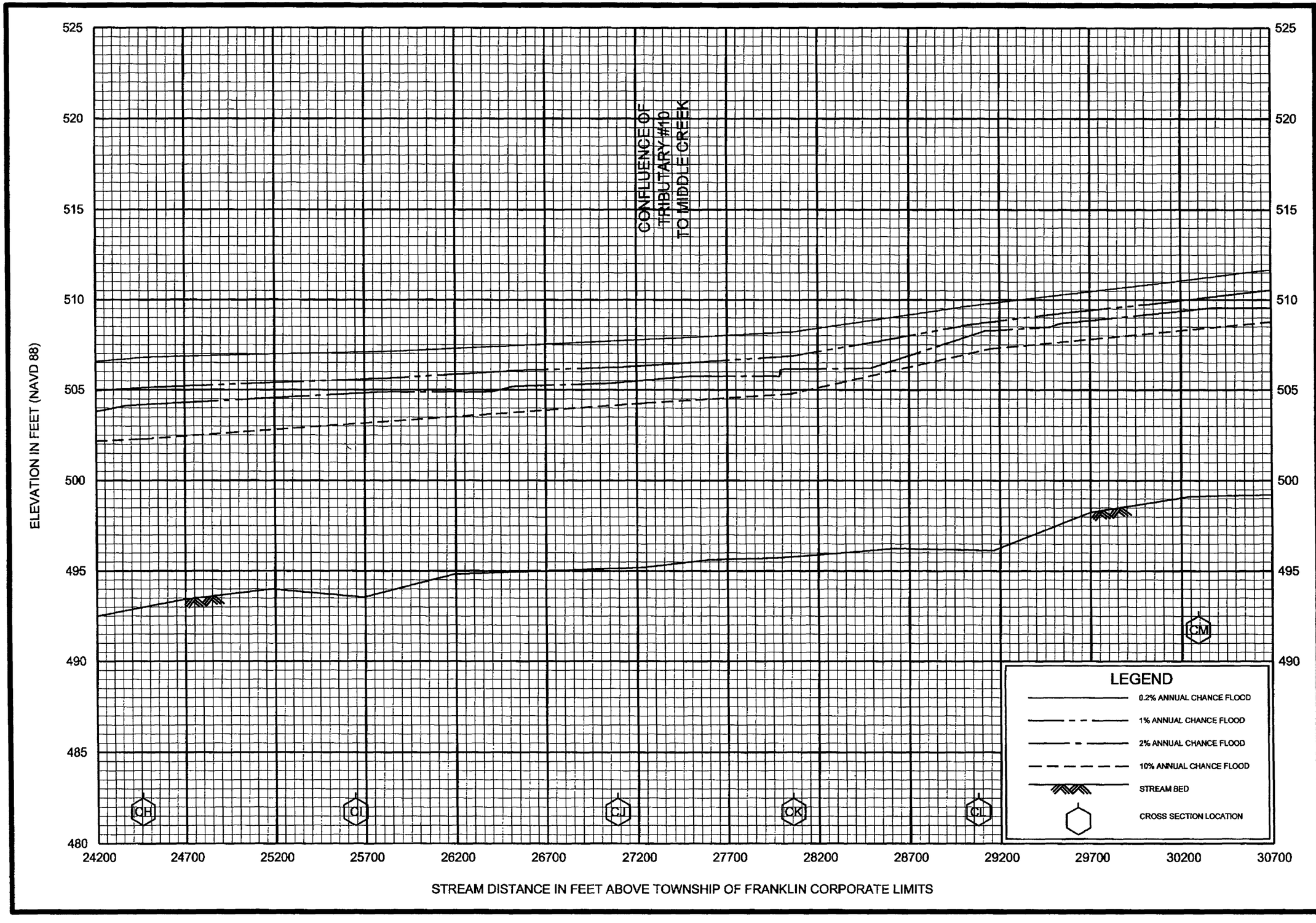

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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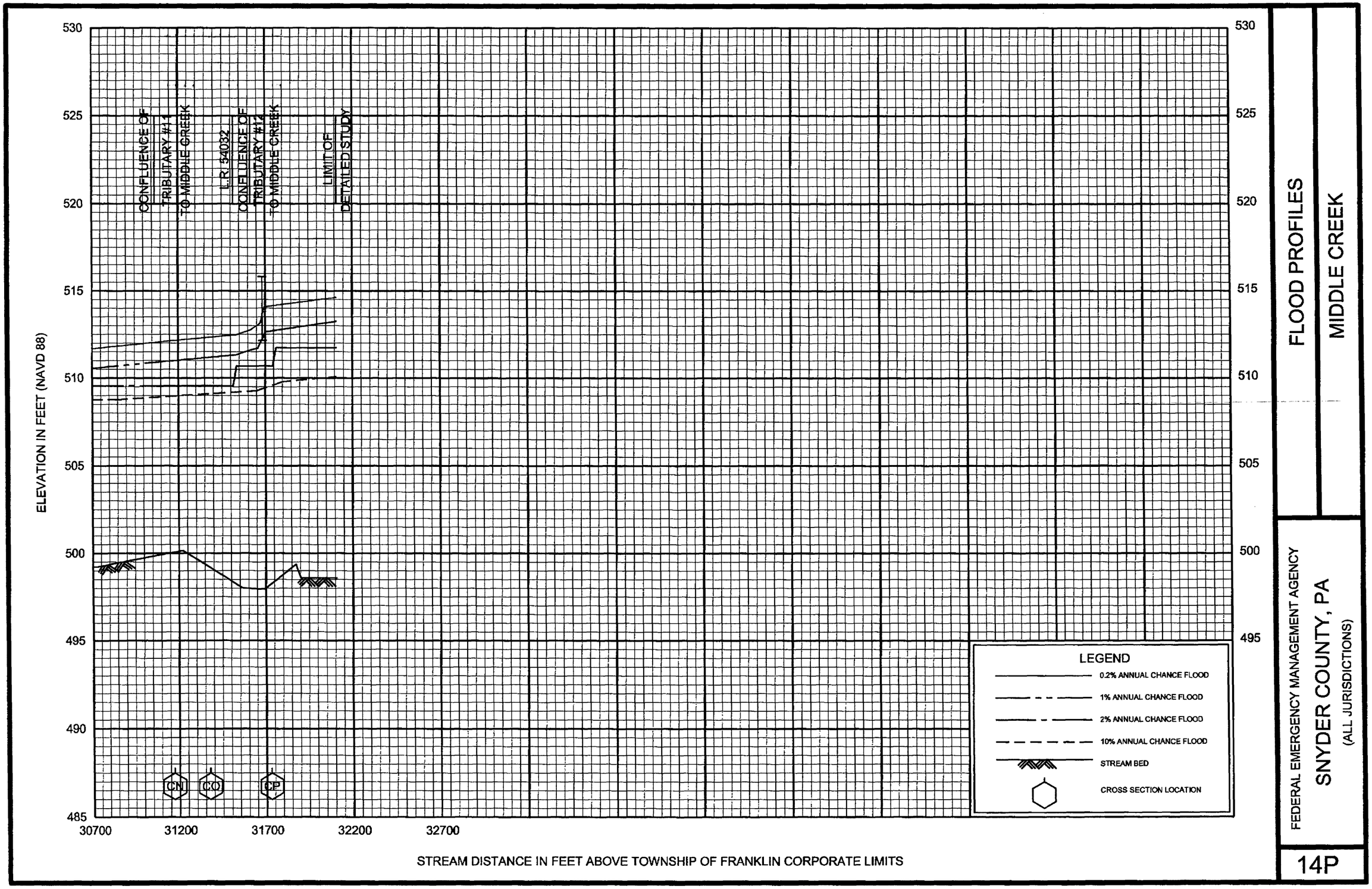

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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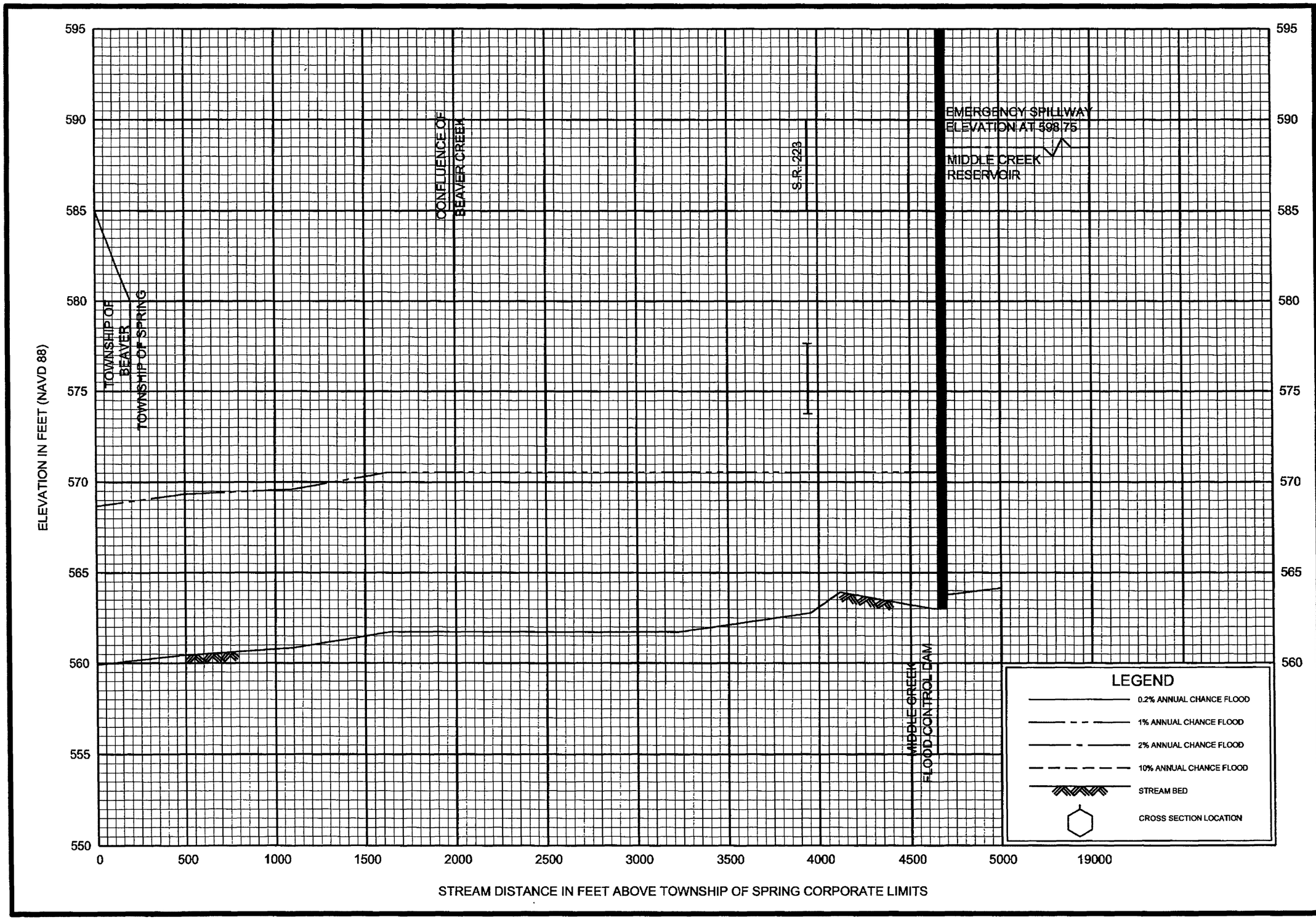

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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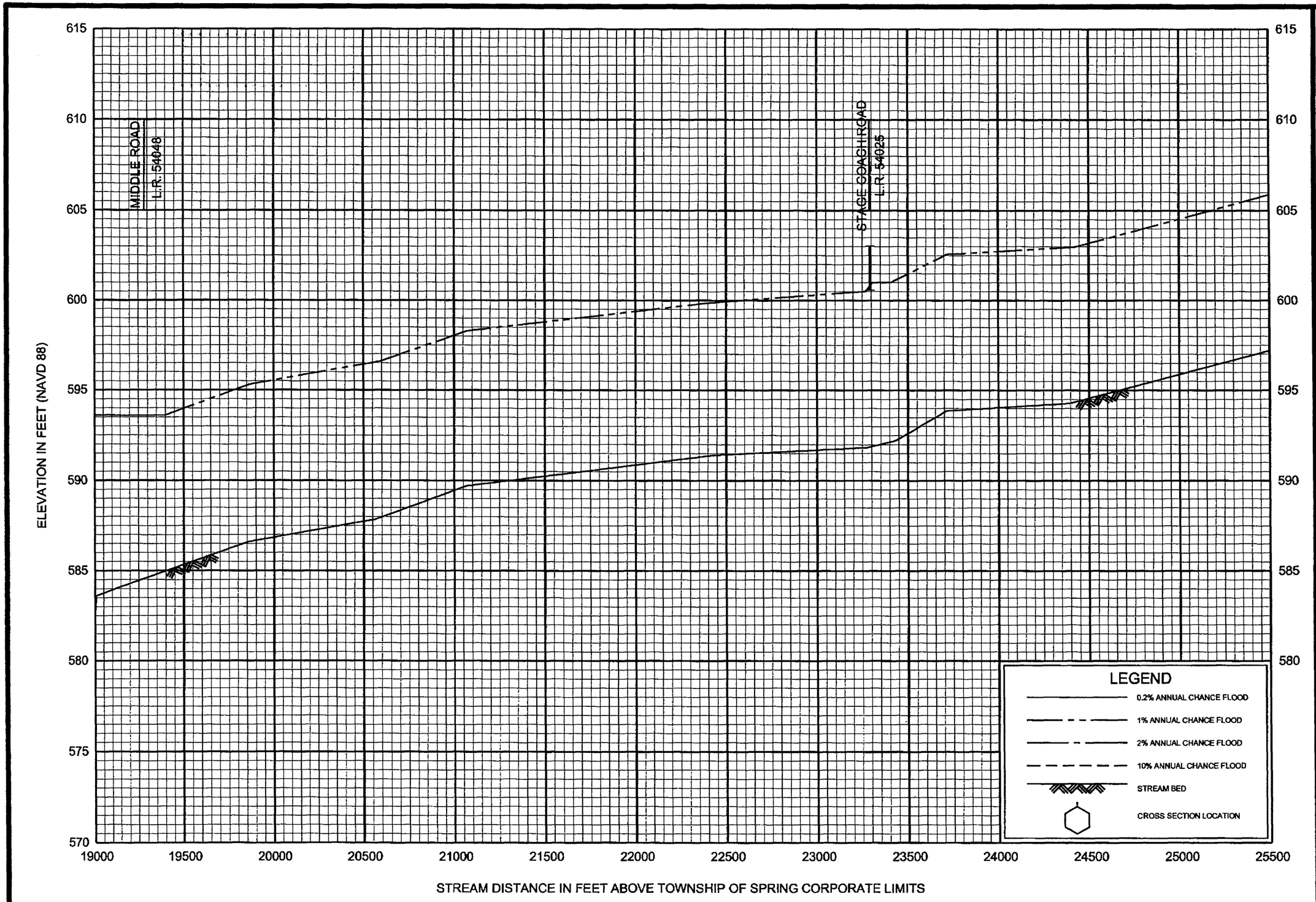

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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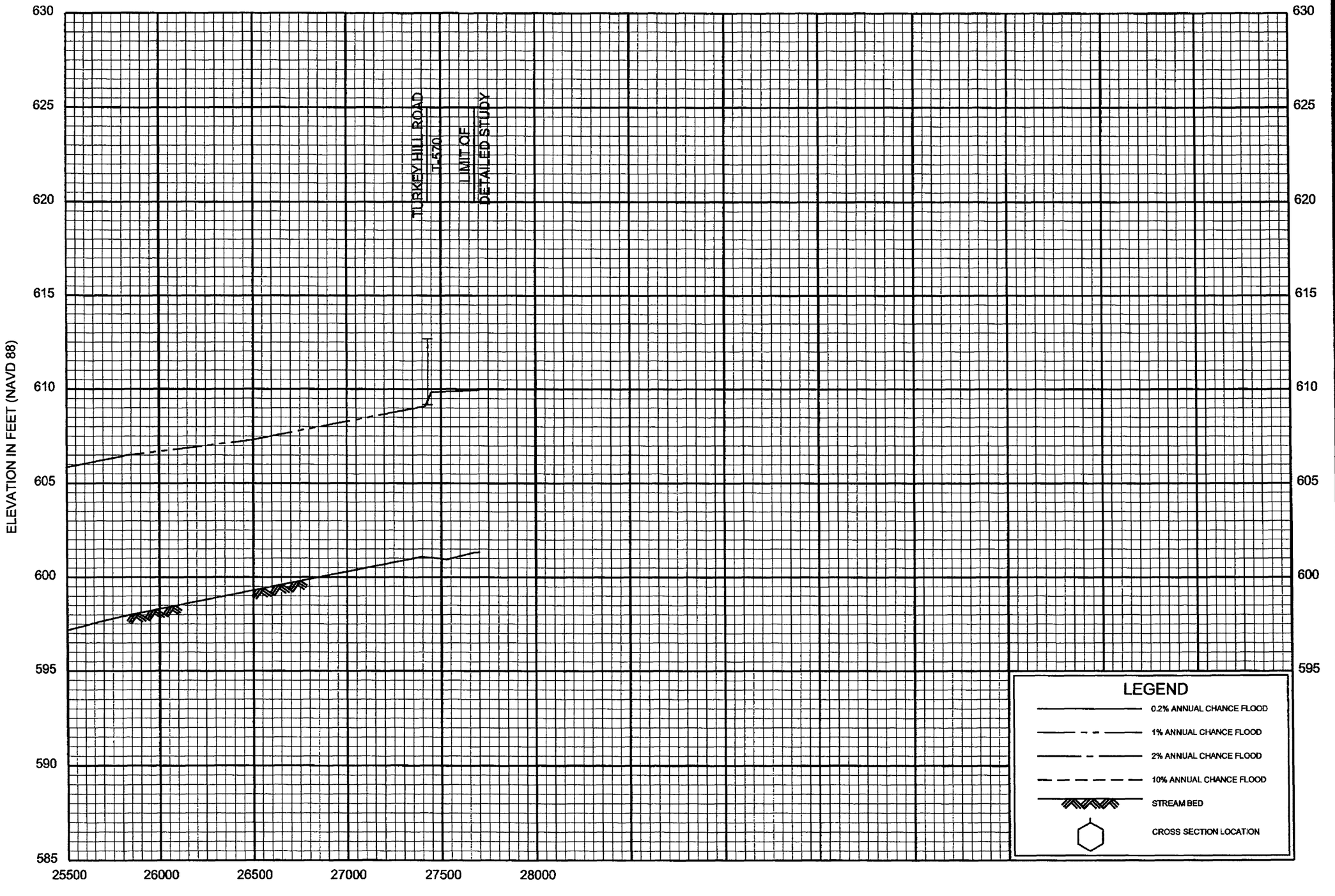

FLOOD PROFILES

MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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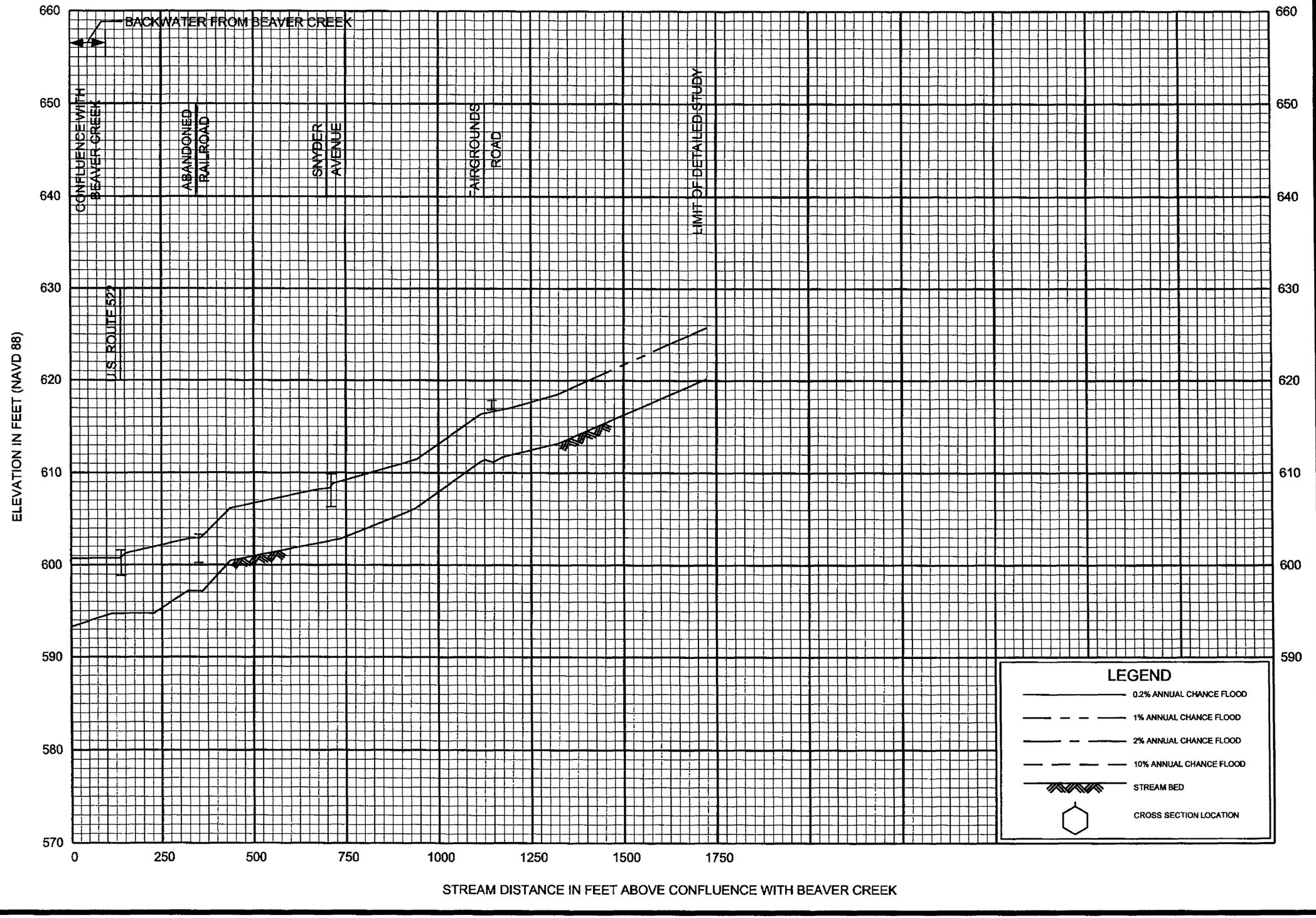

FLOOD PROFILES

MITCHELL RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

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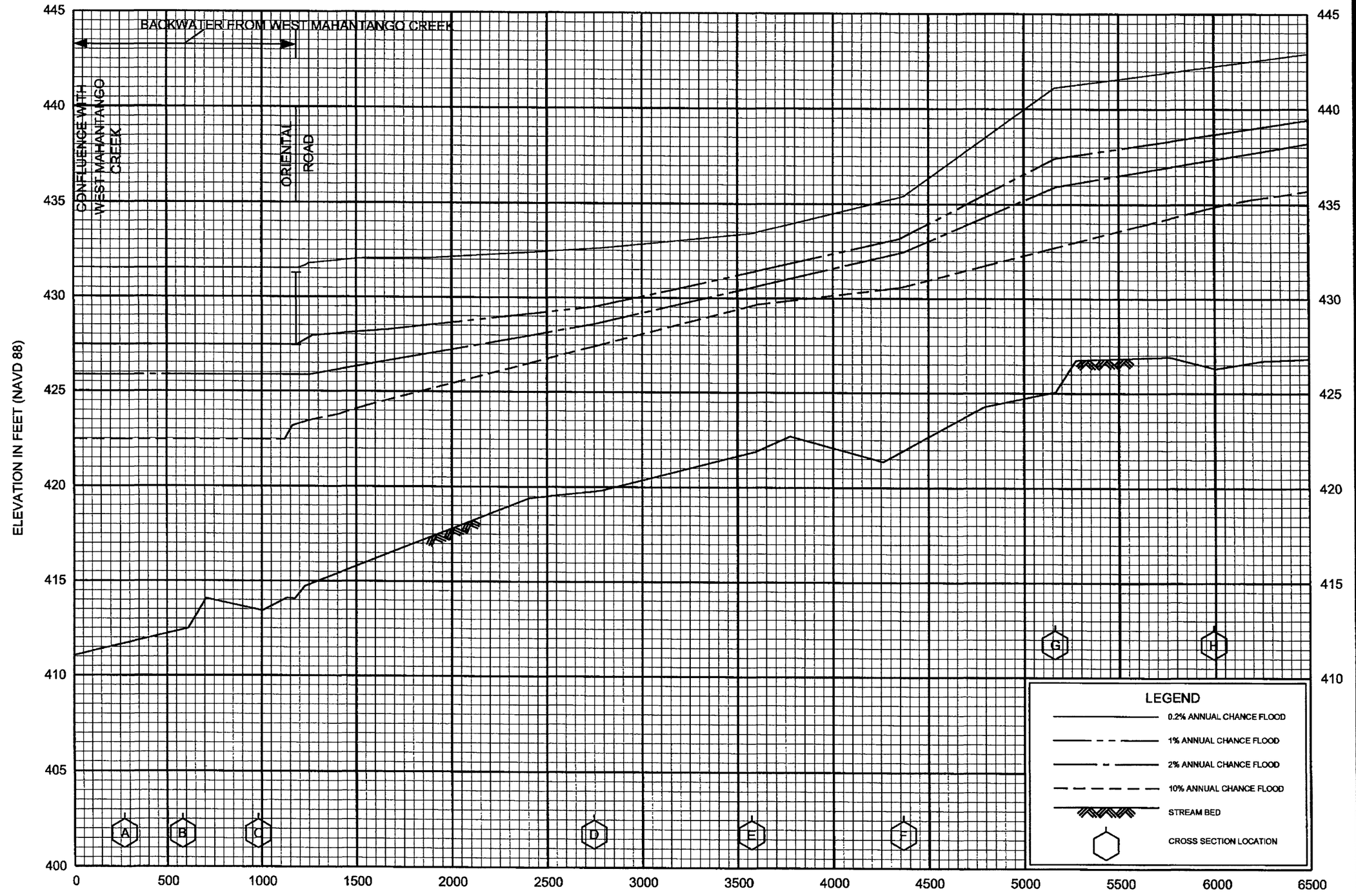


FLOOD PROFILES

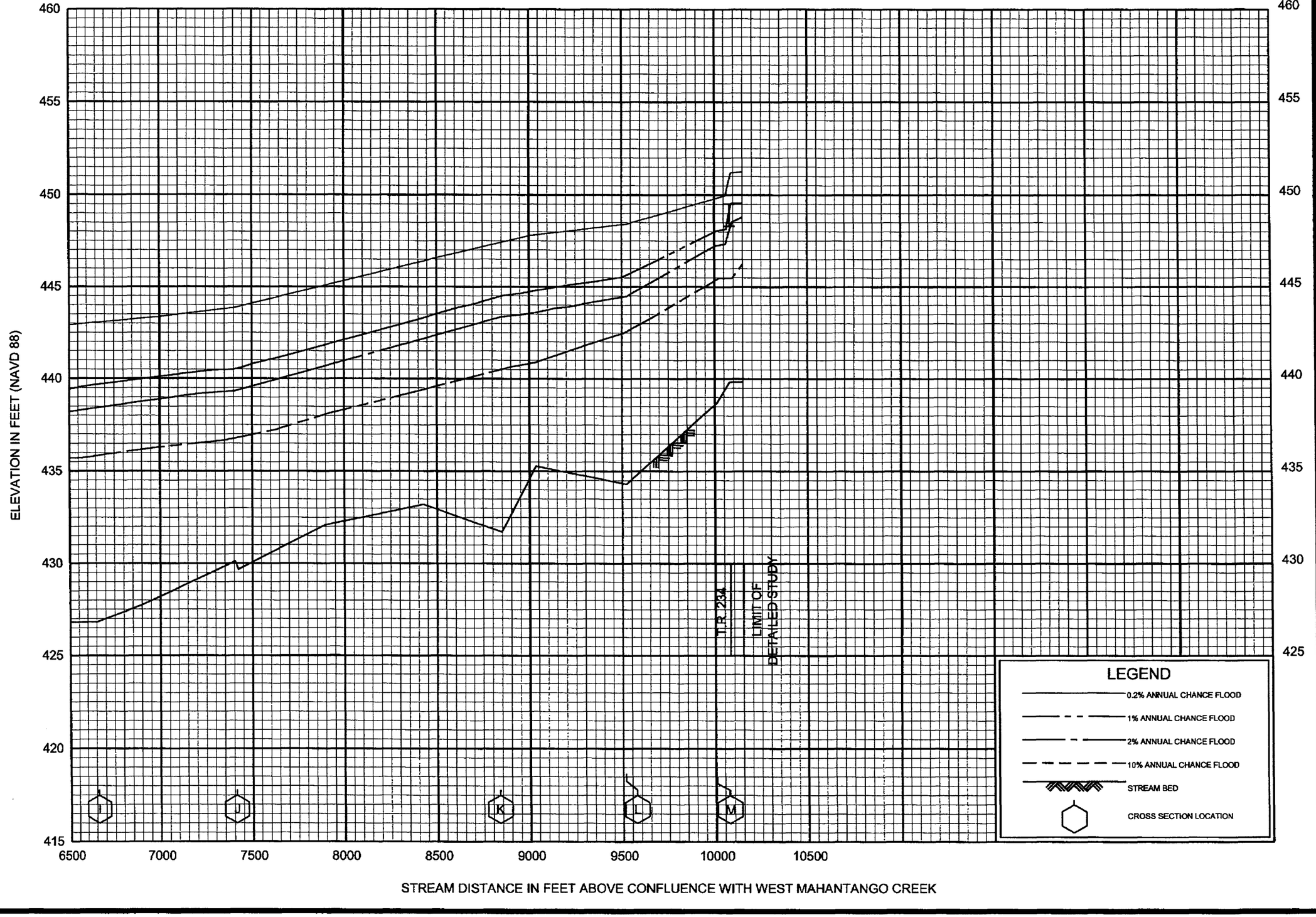
NORTH BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

19P



FLOOD PROFILES

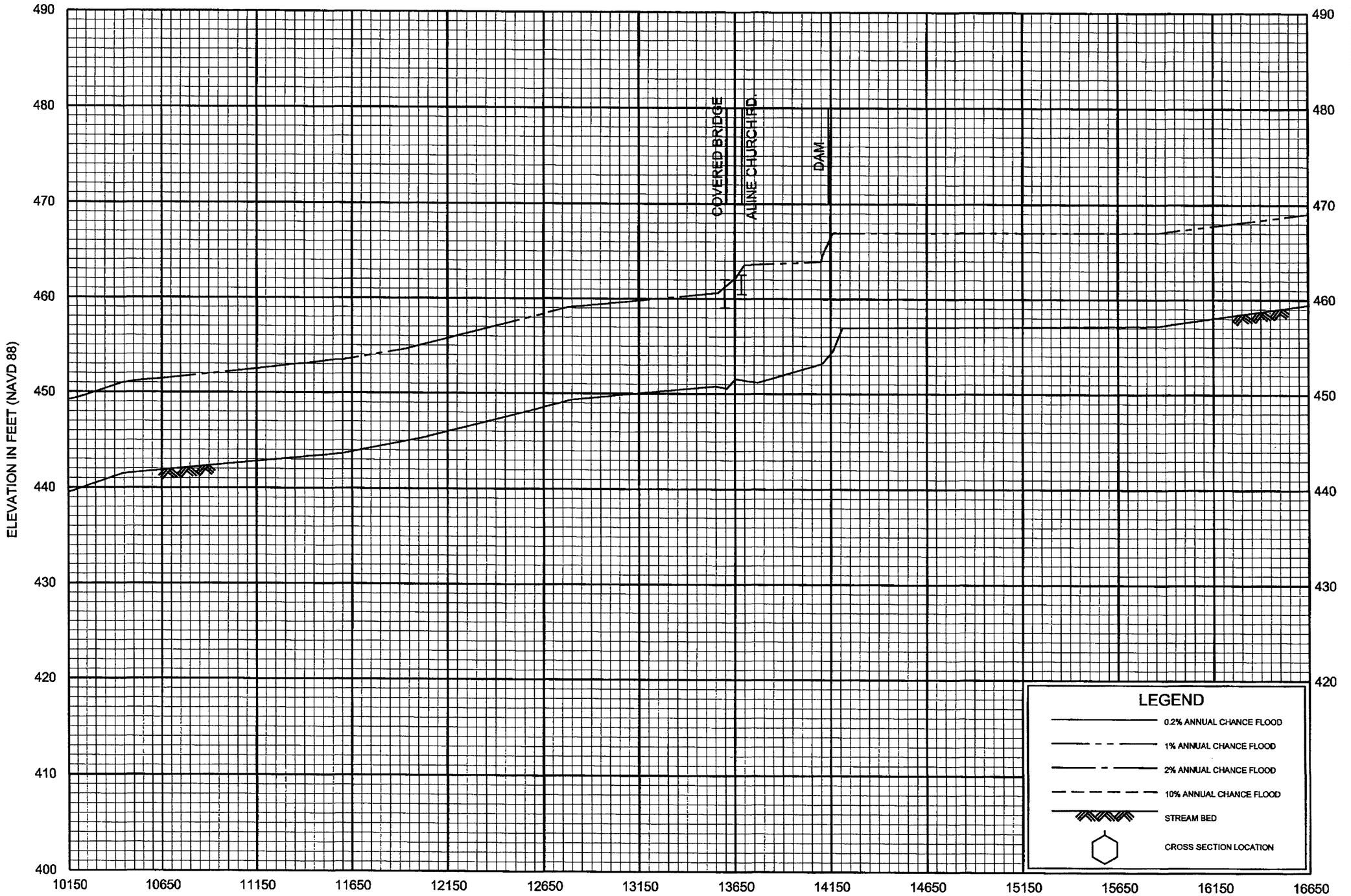
NORTH BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

20P



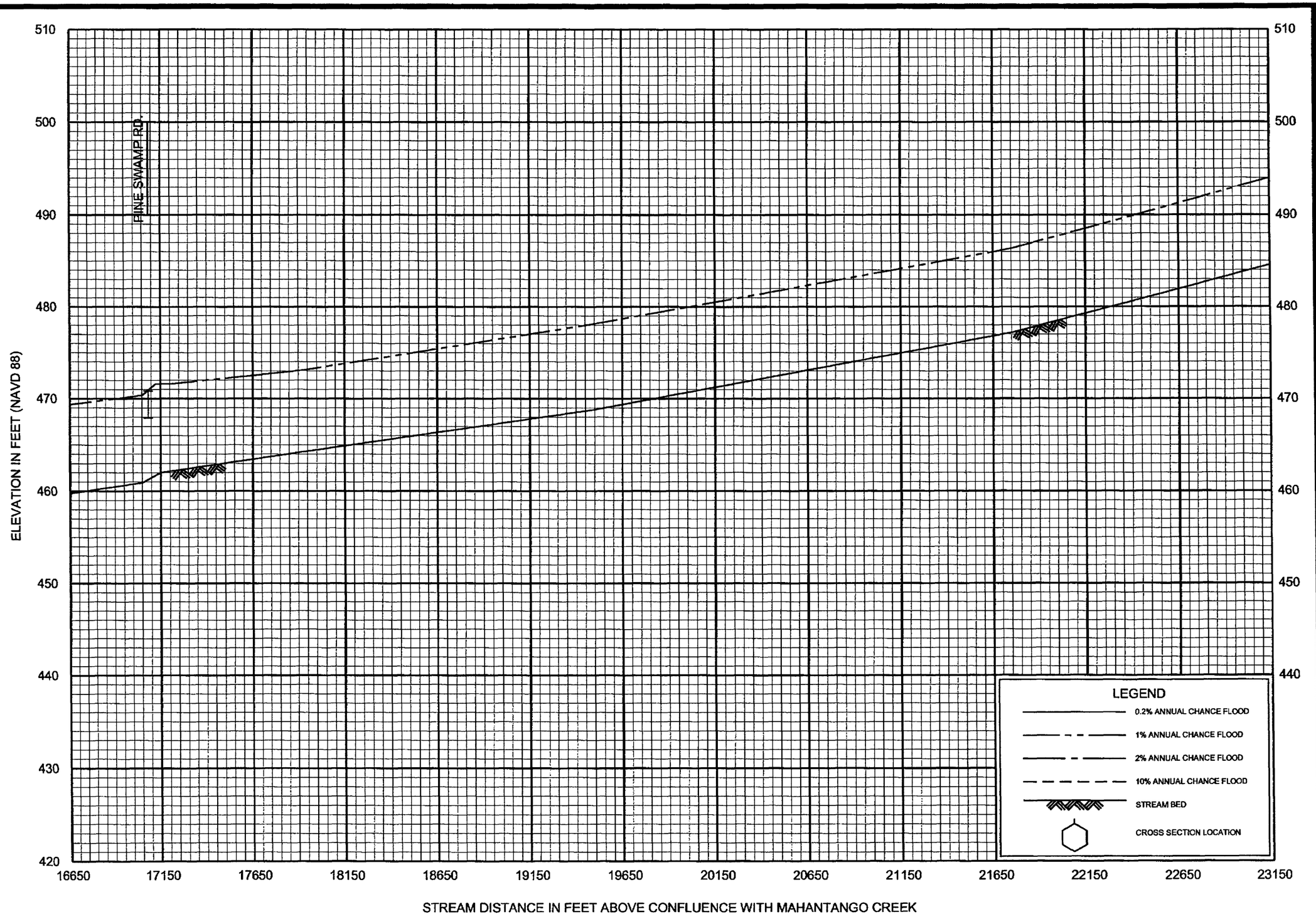
FLOOD PROFILES

NORTH BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

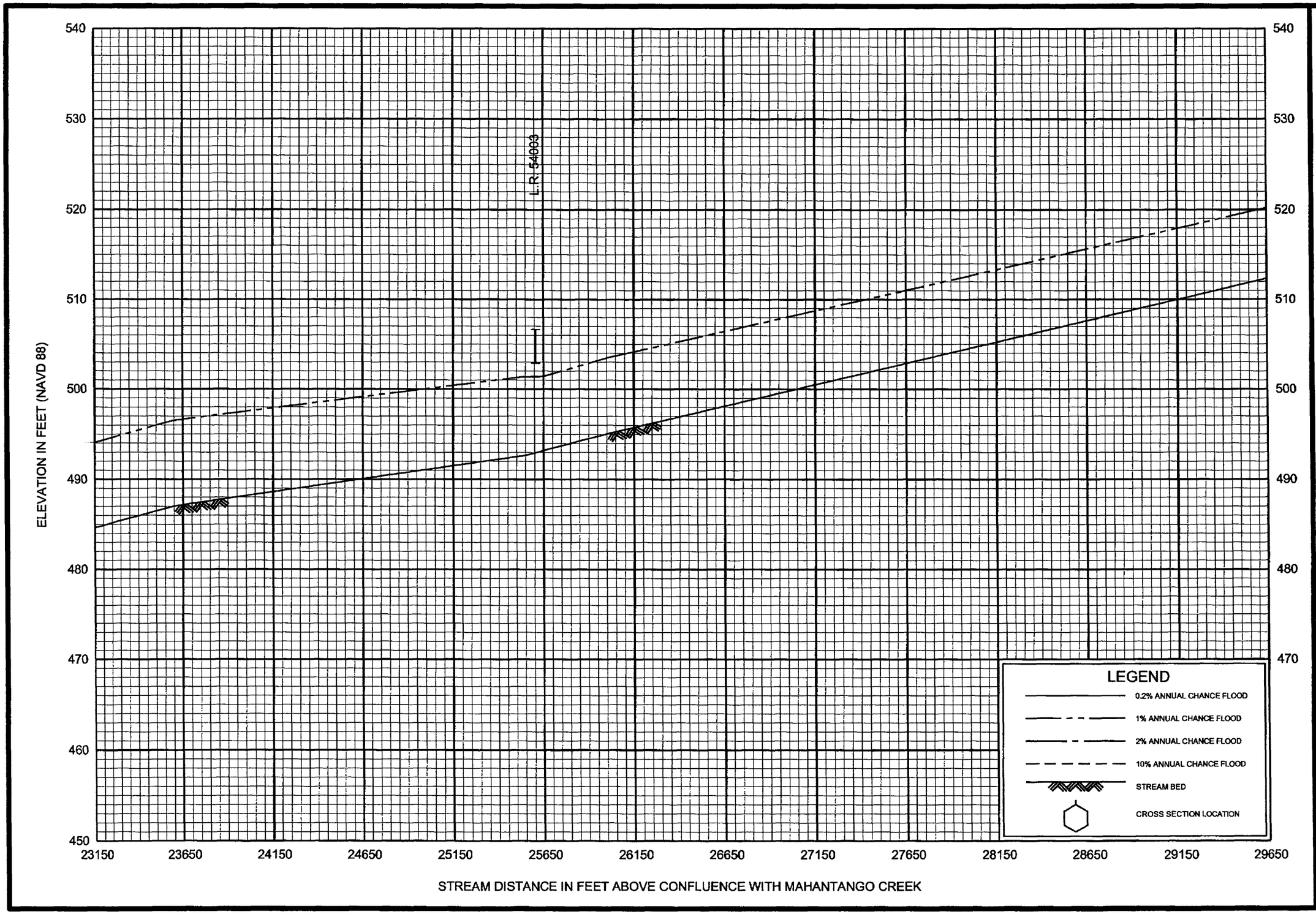
NORTH BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

22P



FLOOD PROFILES

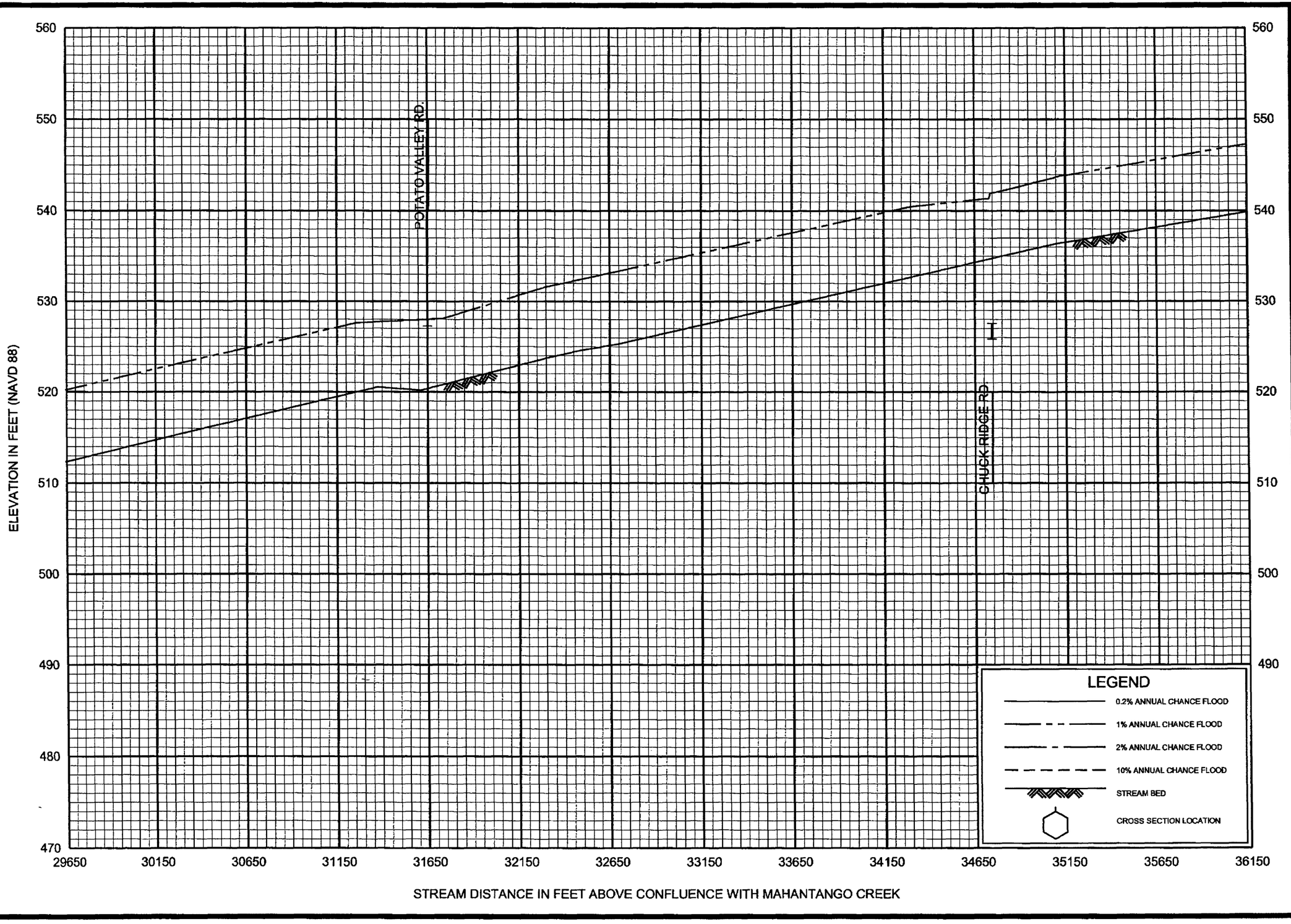
NORTH BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

23P



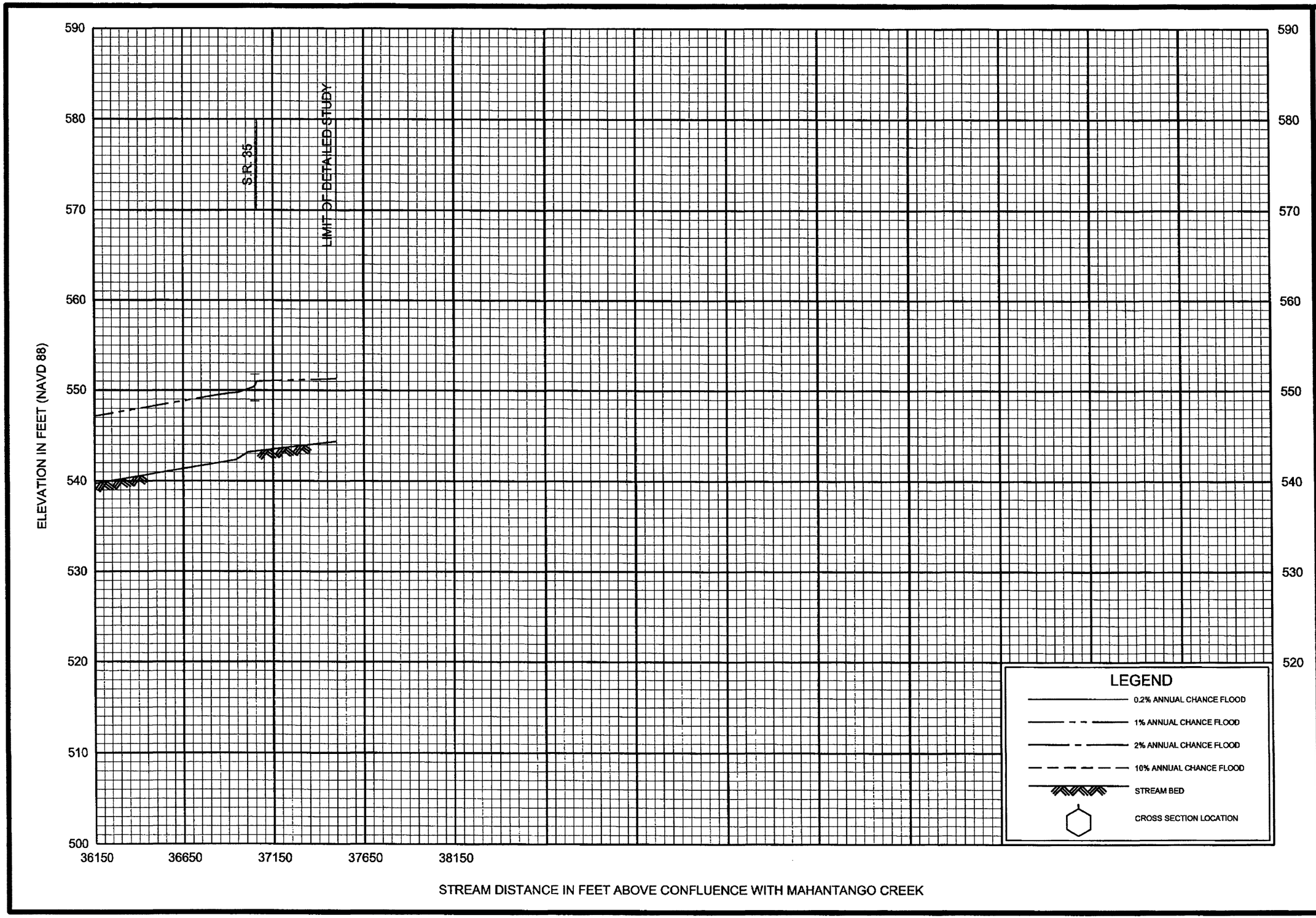
FLOOD PROFILES

NORTH BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

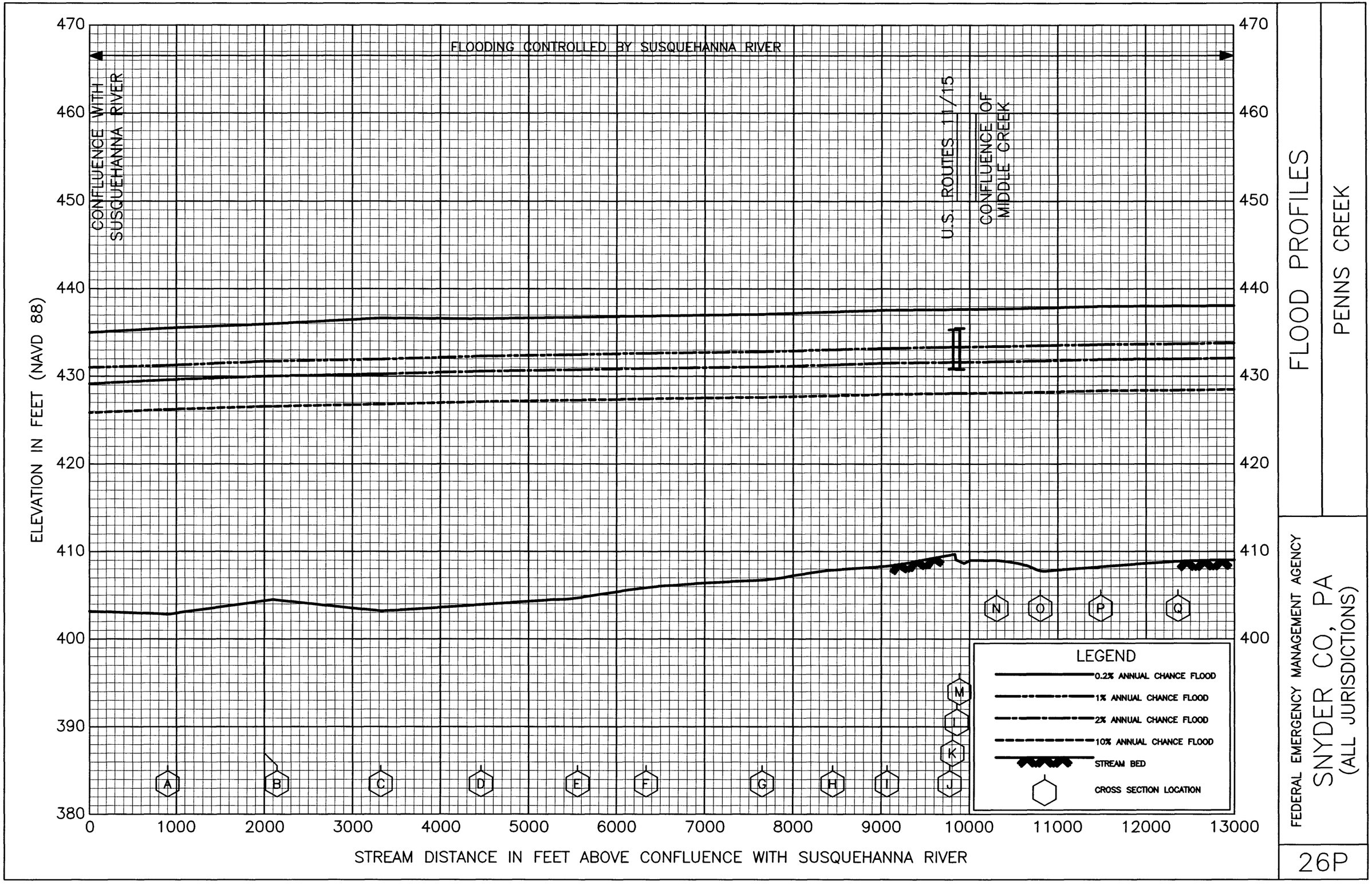
NORTH BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

25P

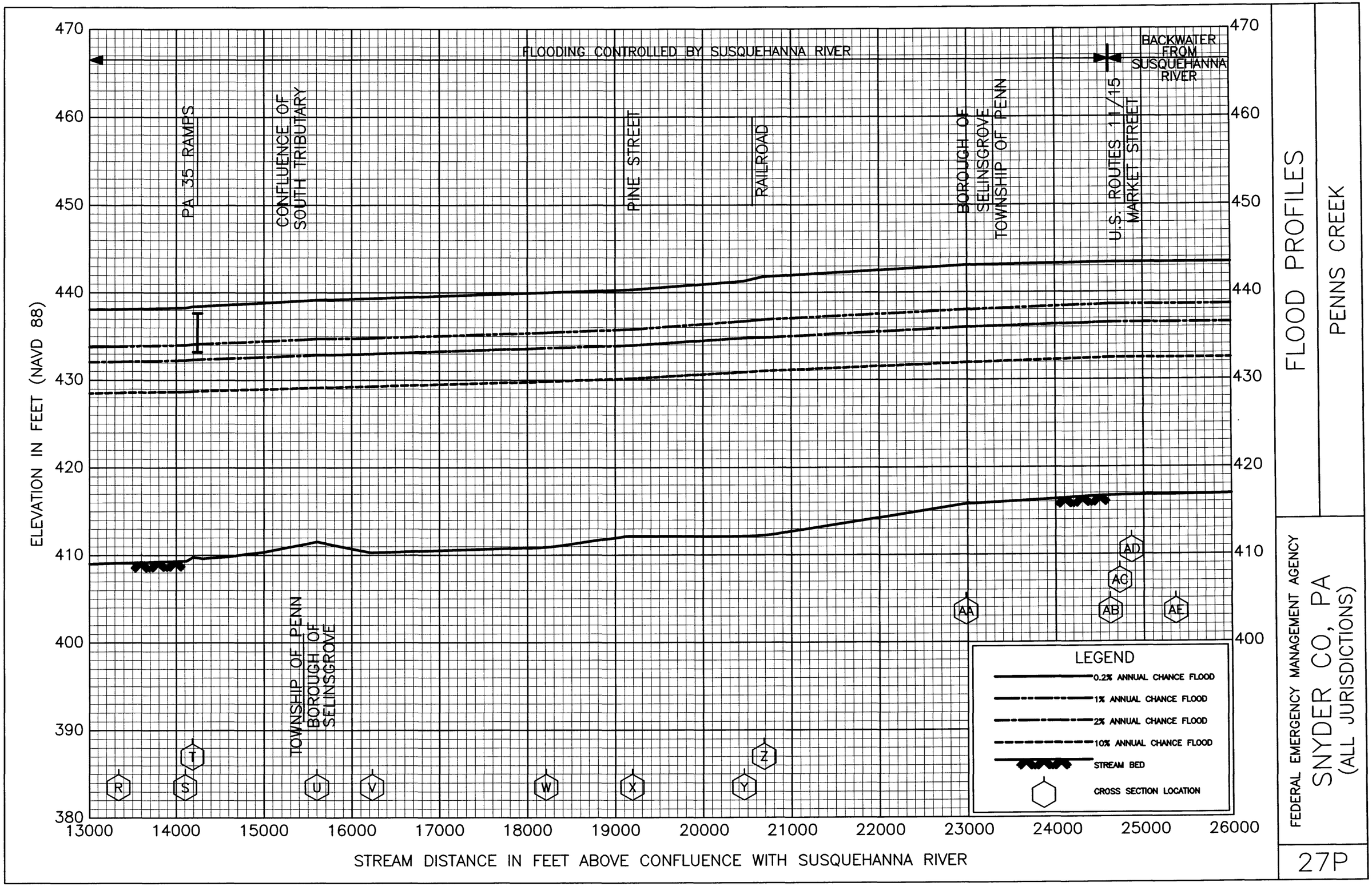


FLOOD PROFILES

PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER CO, PA
(ALL JURISDICTIONS)

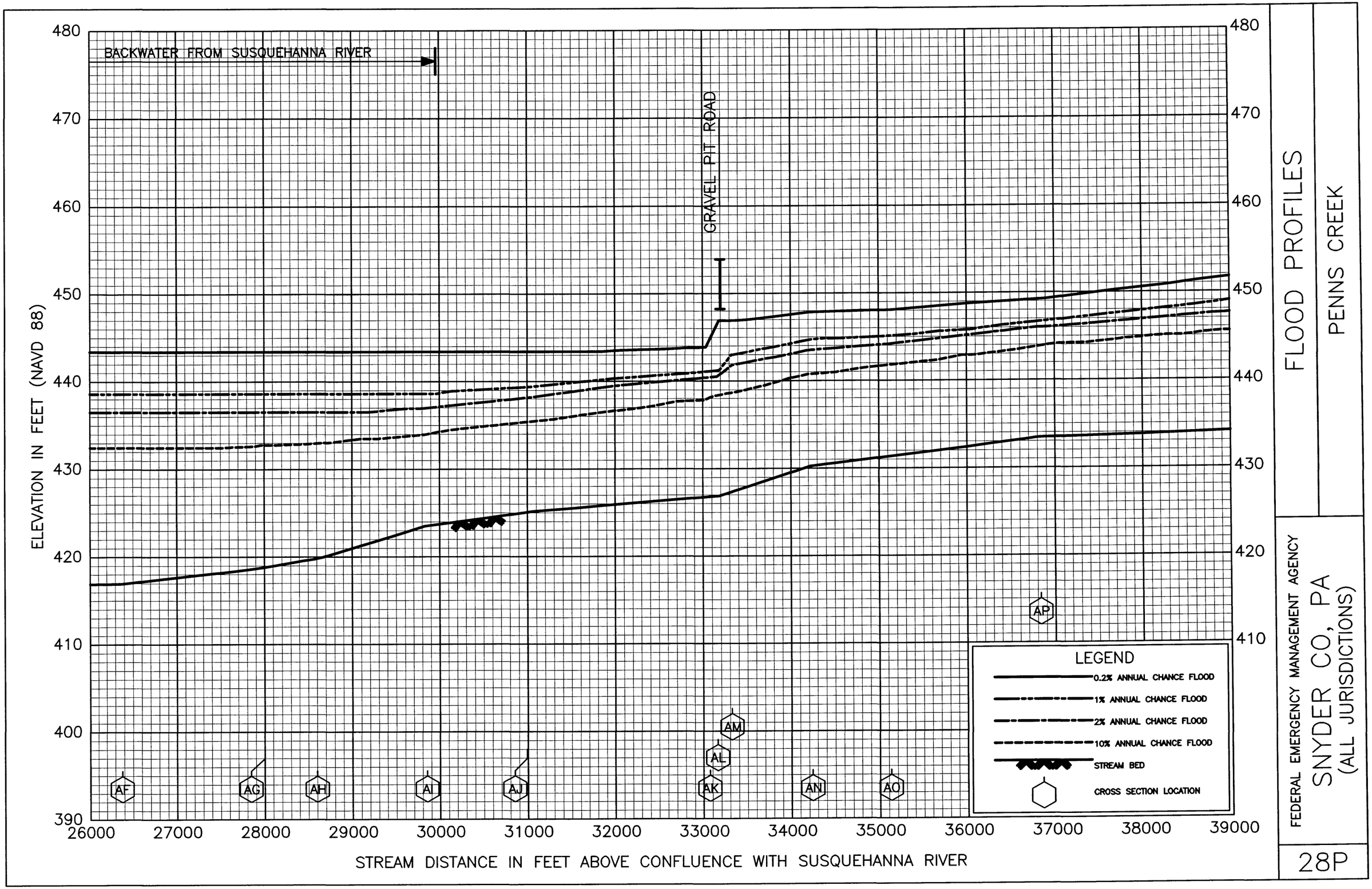


FLOOD PROFILES

PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER CO, PA
(ALL JURISDICTIONS)



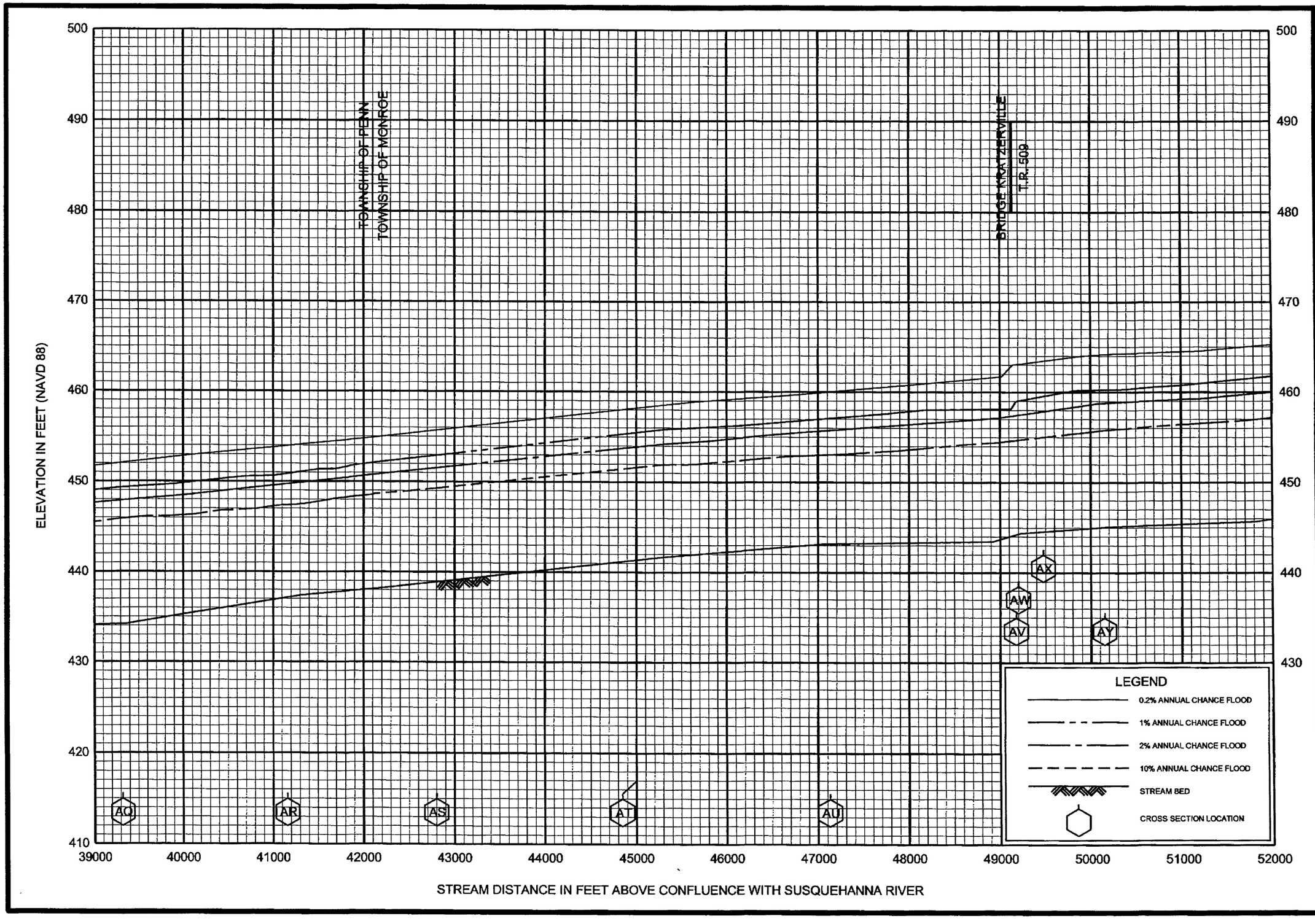
FLOOD PROFILES

PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER CO, PA
(ALL JURISDICTIONS)

28P



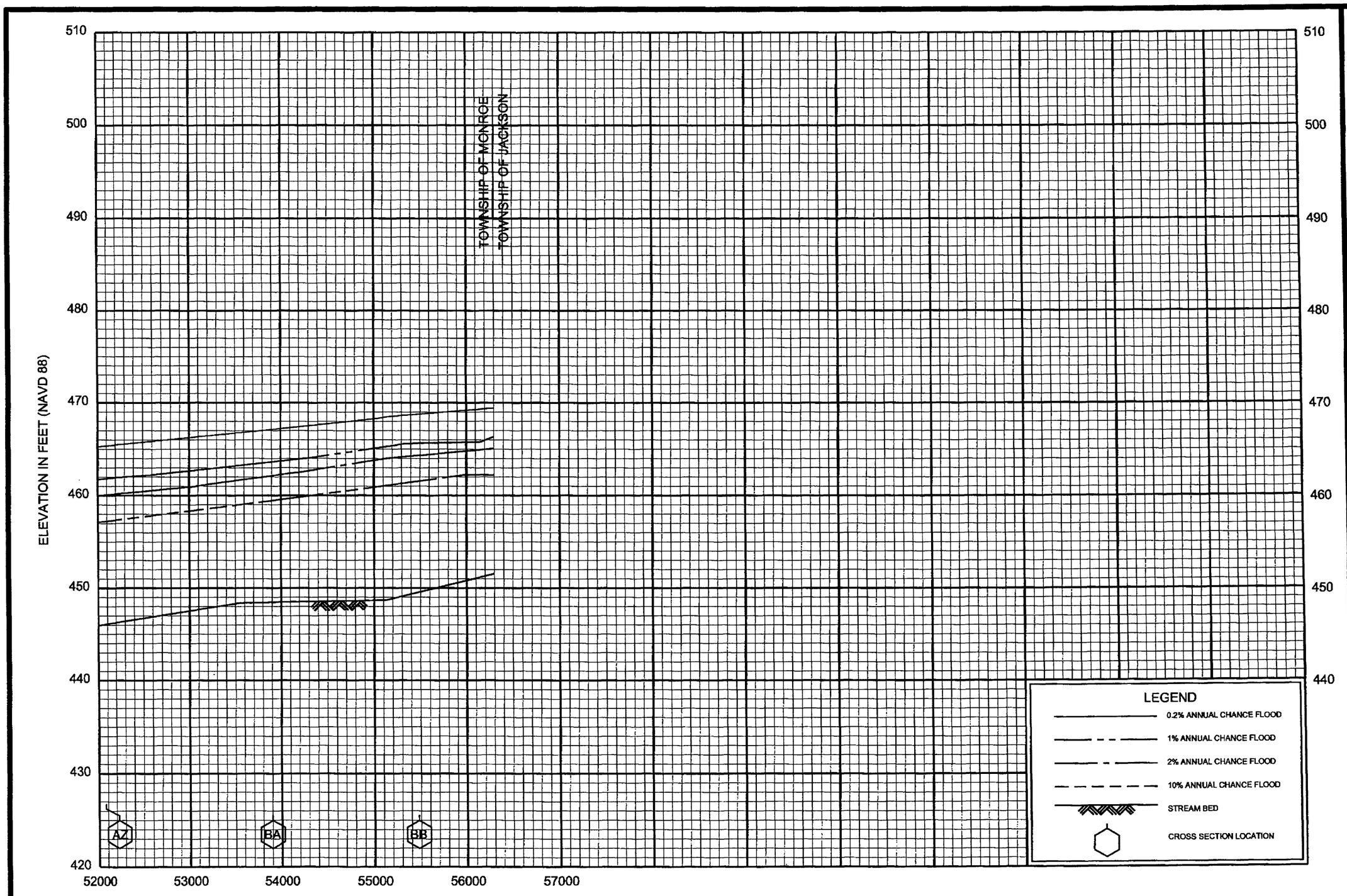
FLOOD PROFILES

PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



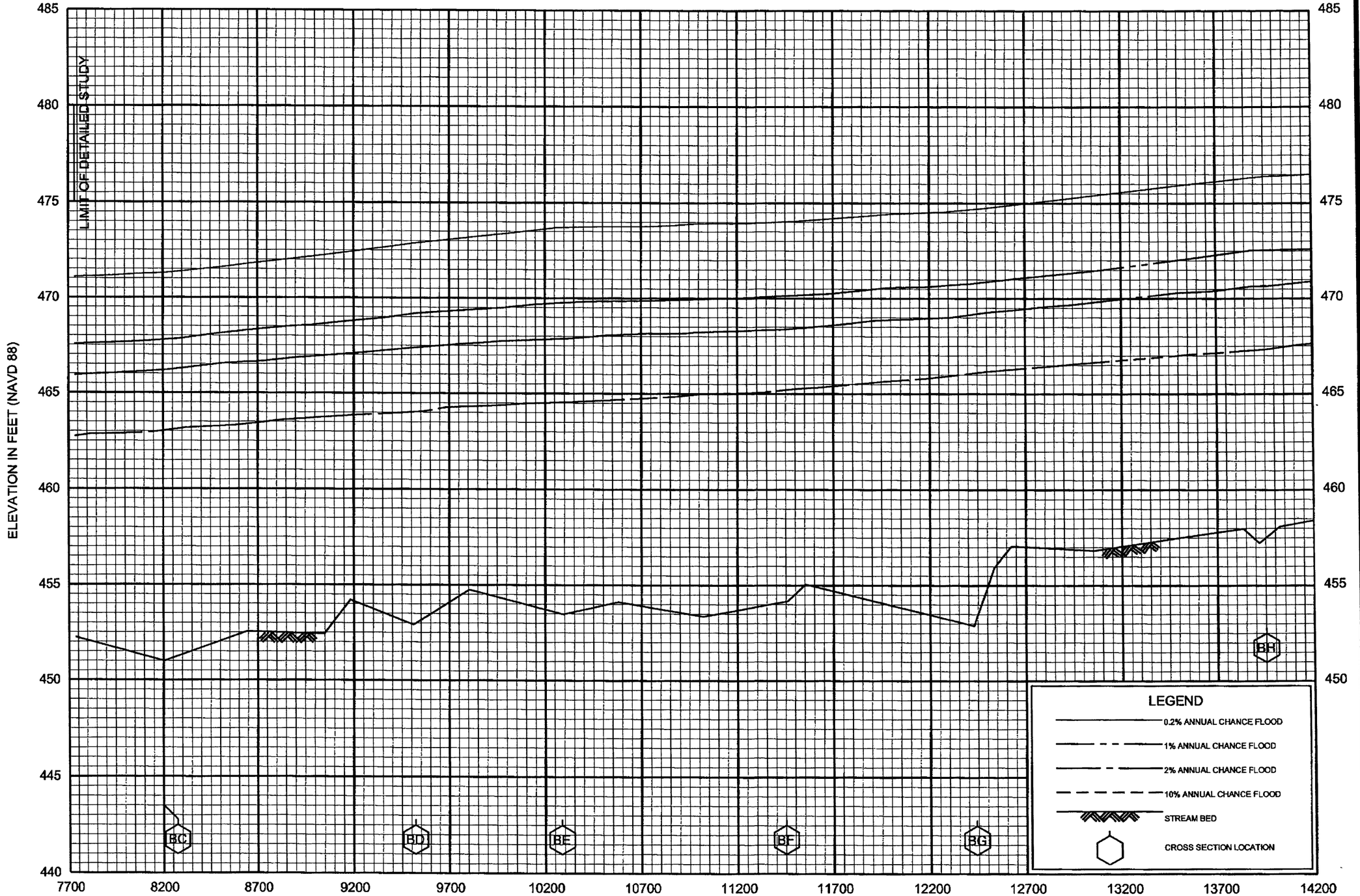
FLOOD PROFILES

PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

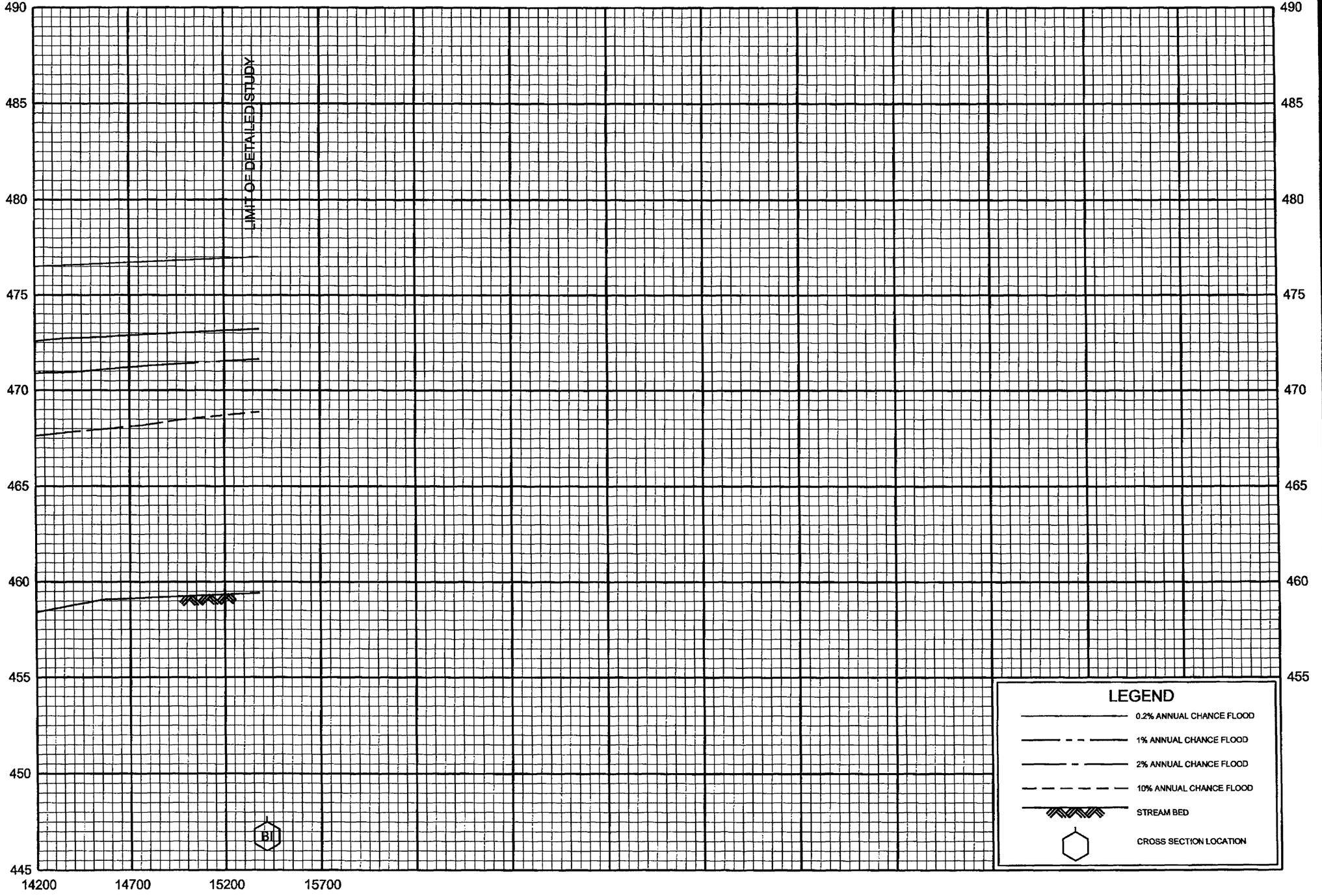
PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

31P



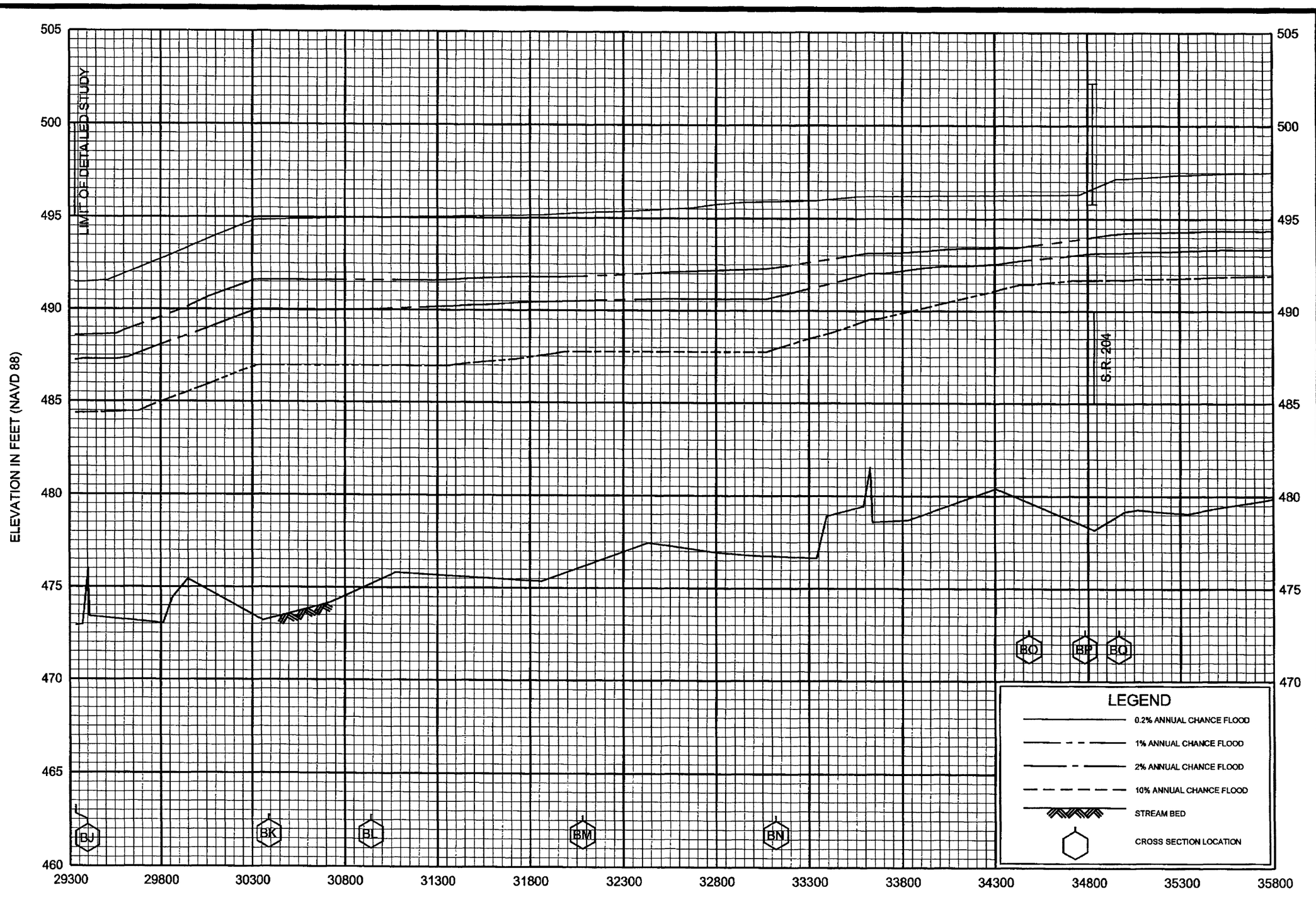
FLOOD PROFILES

PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



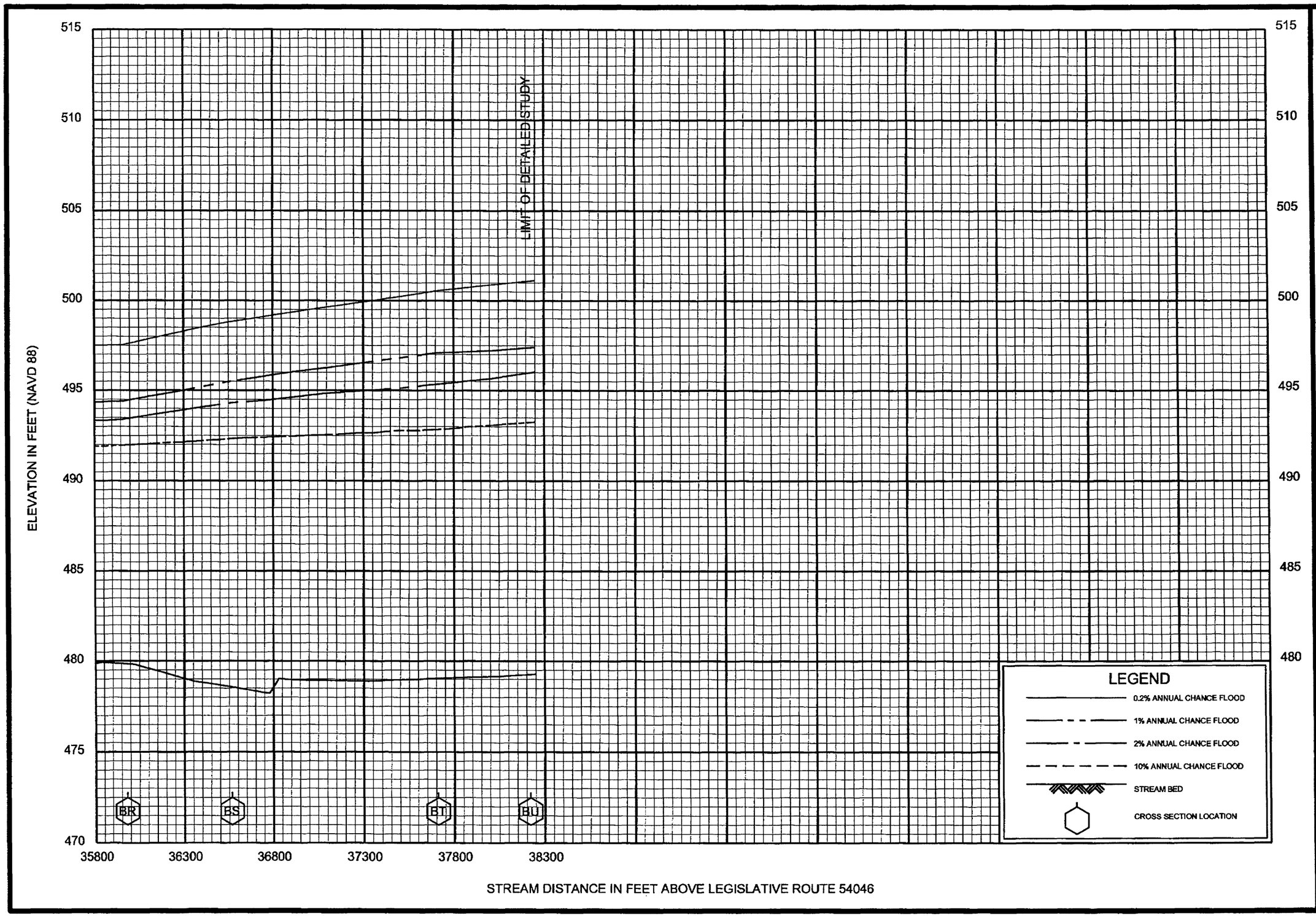
FLOOD PROFILES

PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

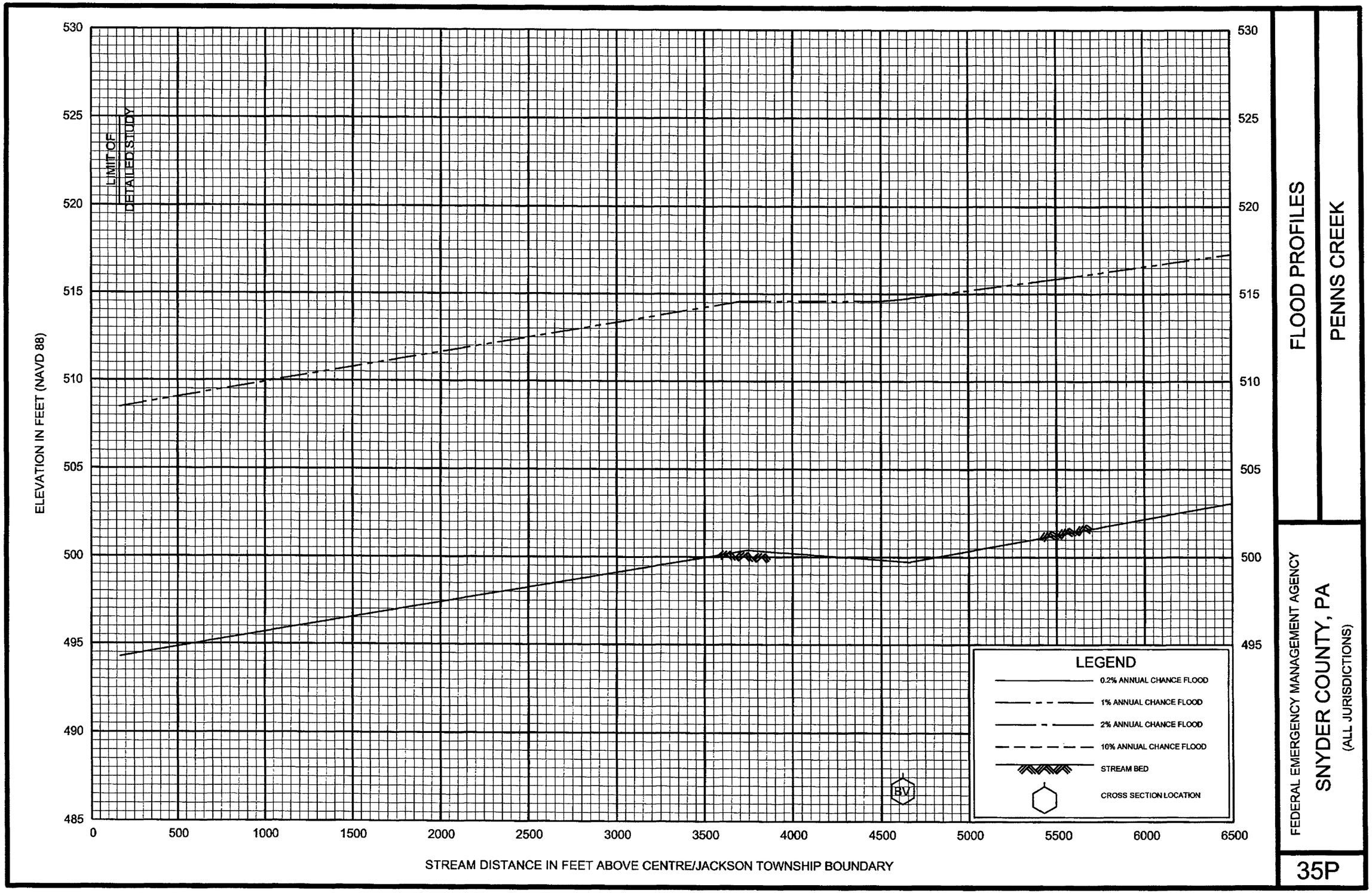
PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

34P



FLOOD PROFILES

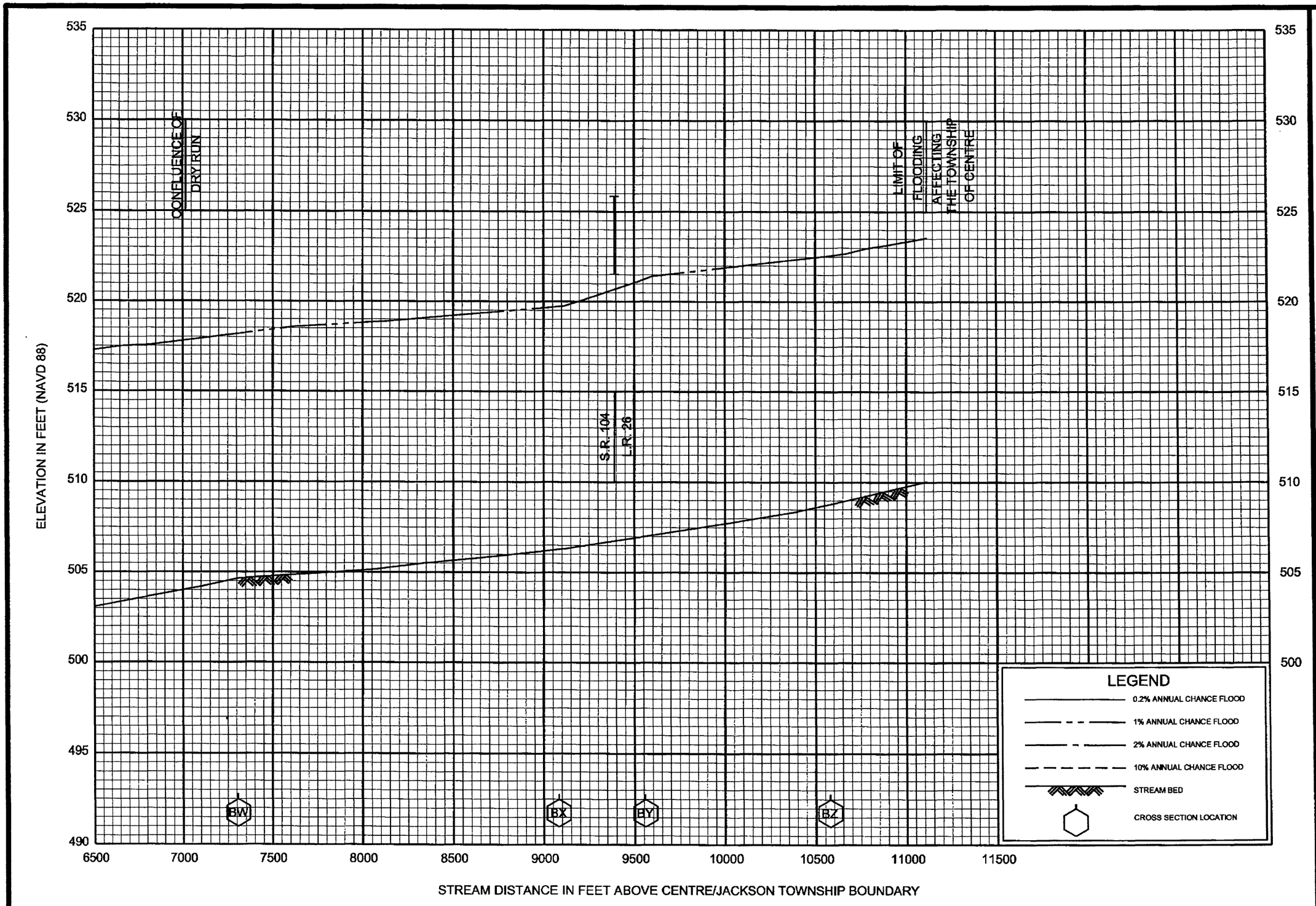
PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

35P



FLOOD PROFILES

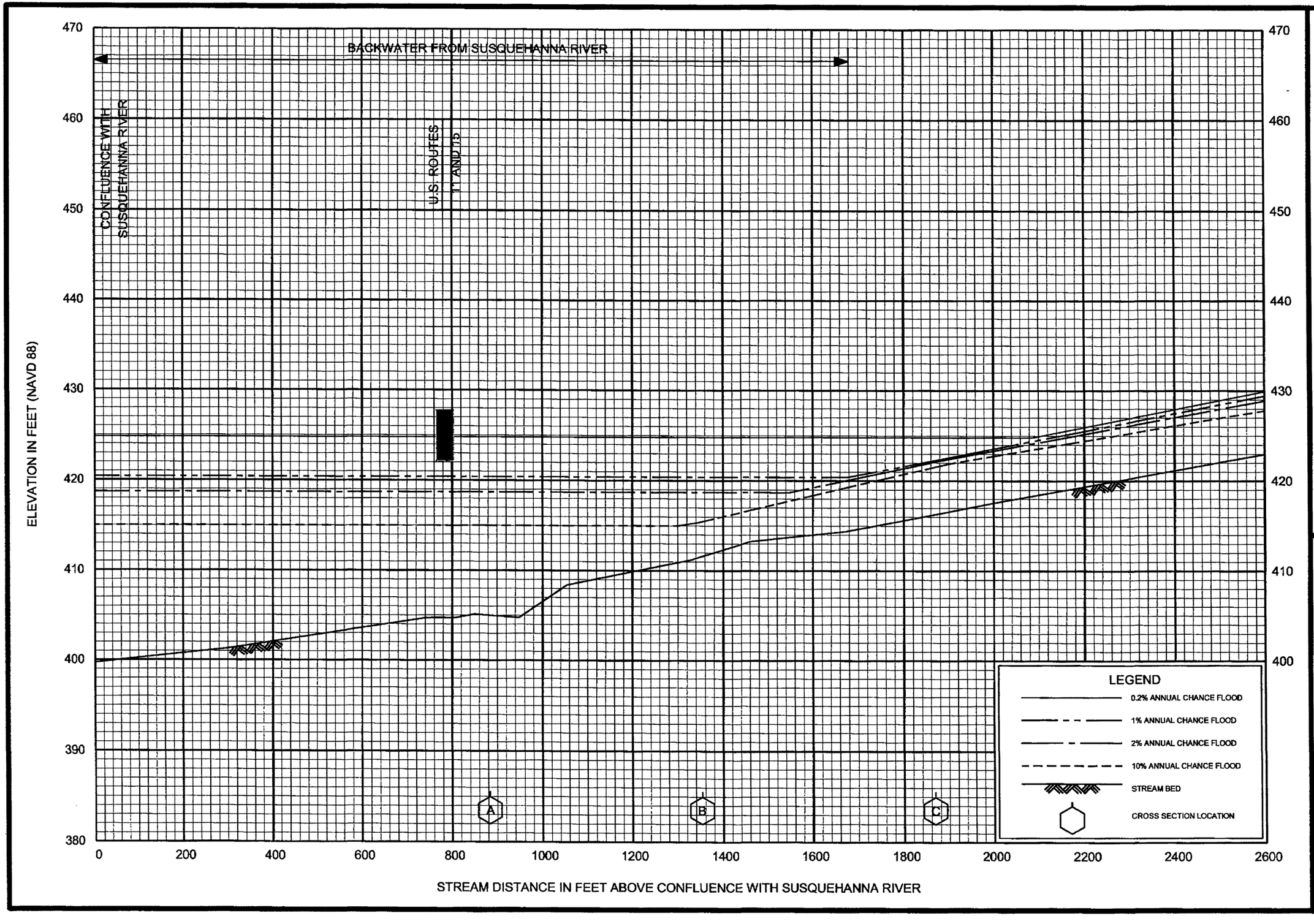
PENNS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

36P



FLOOD PROFILES

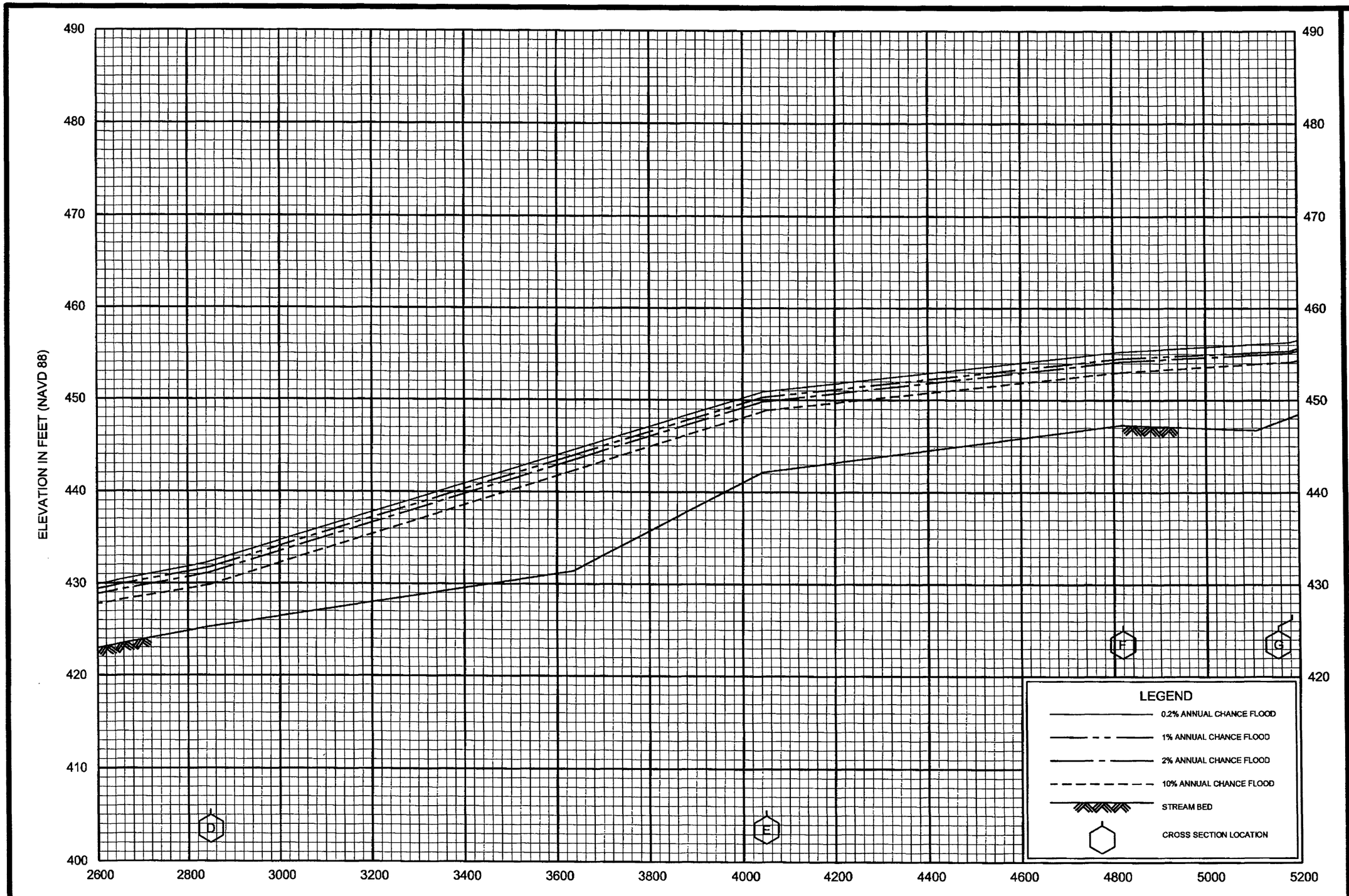
SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

37P



FLOOD PROFILES

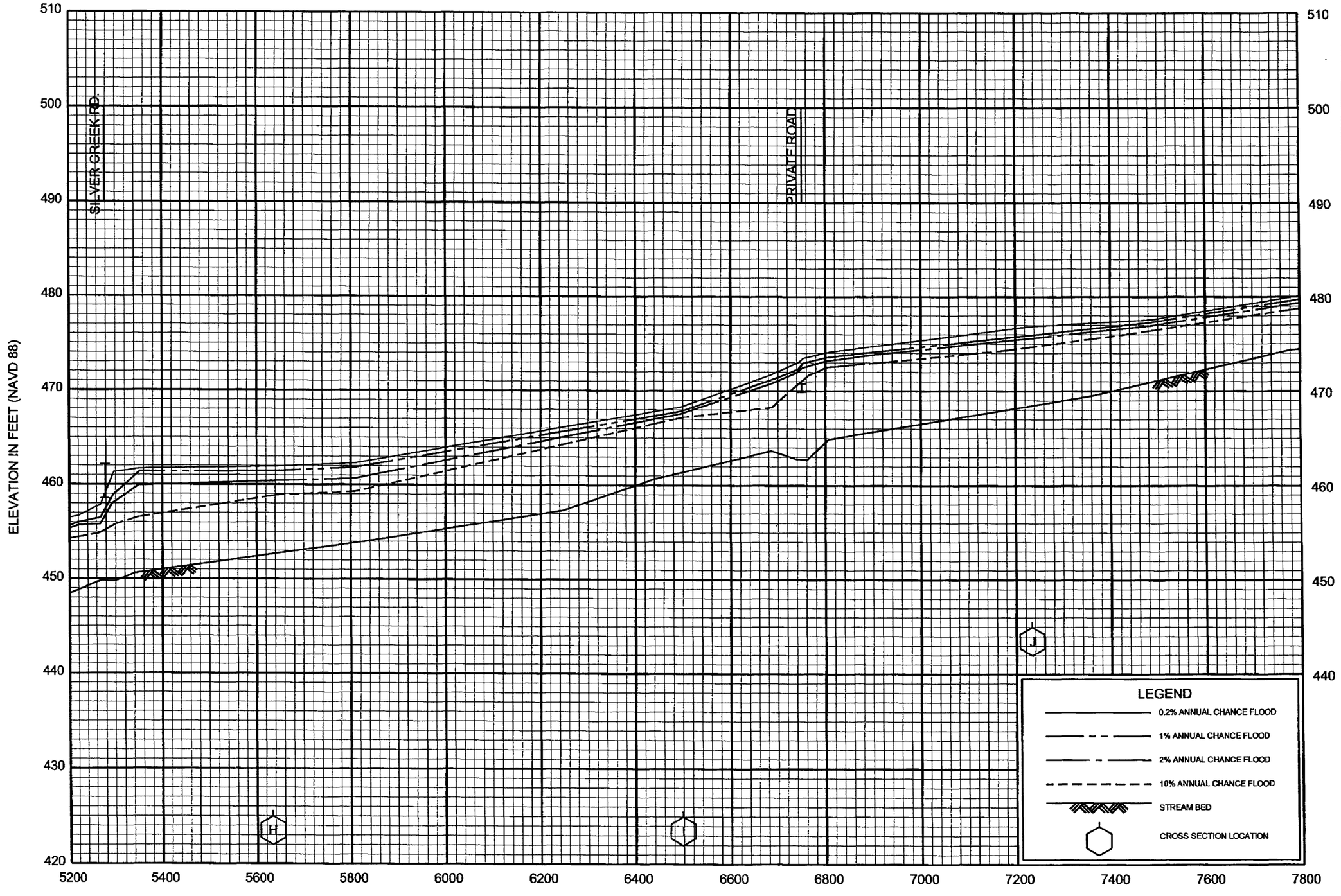
SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

38P



FLOOD PROFILES

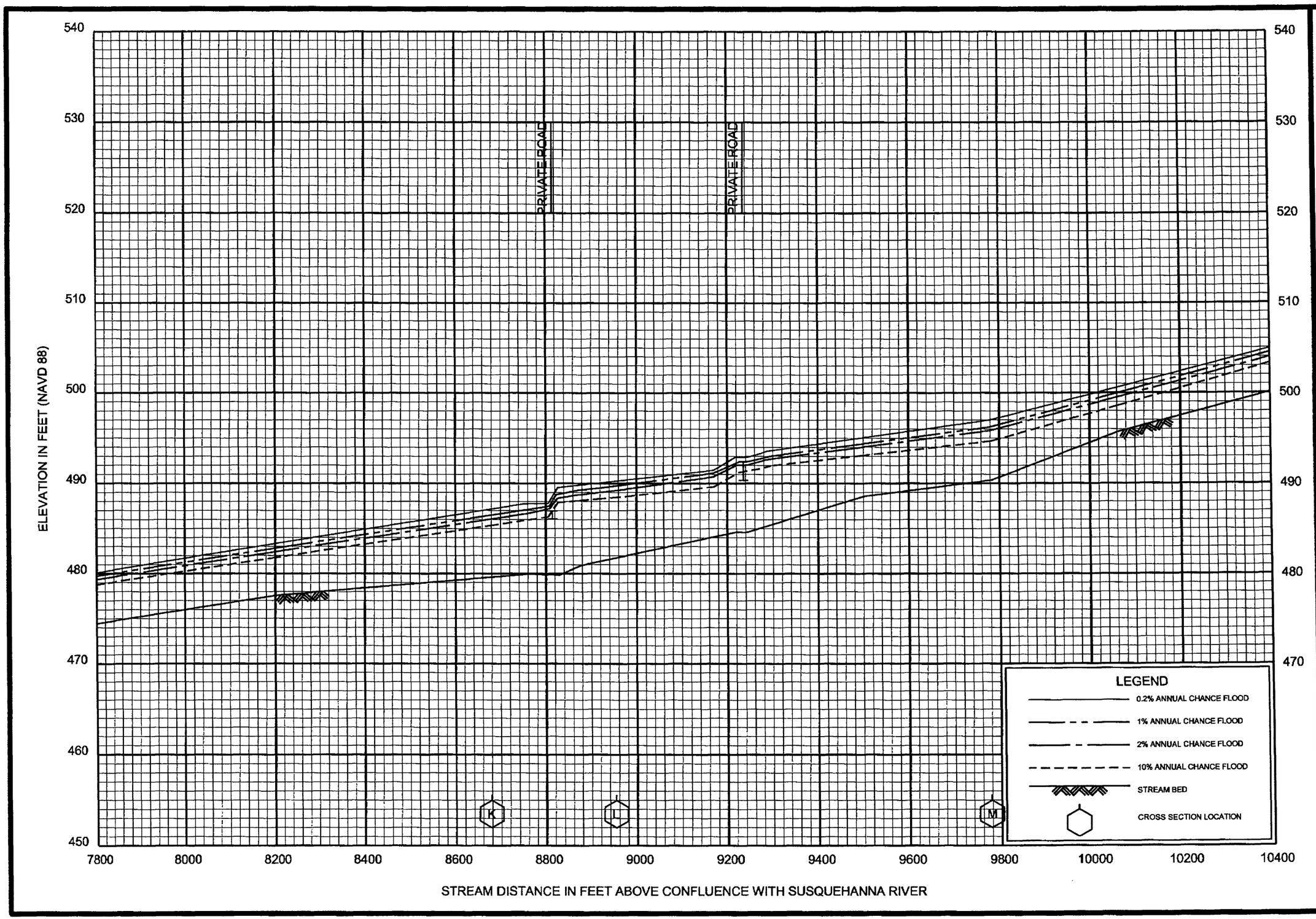
SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

39P



FLOOD PROFILES

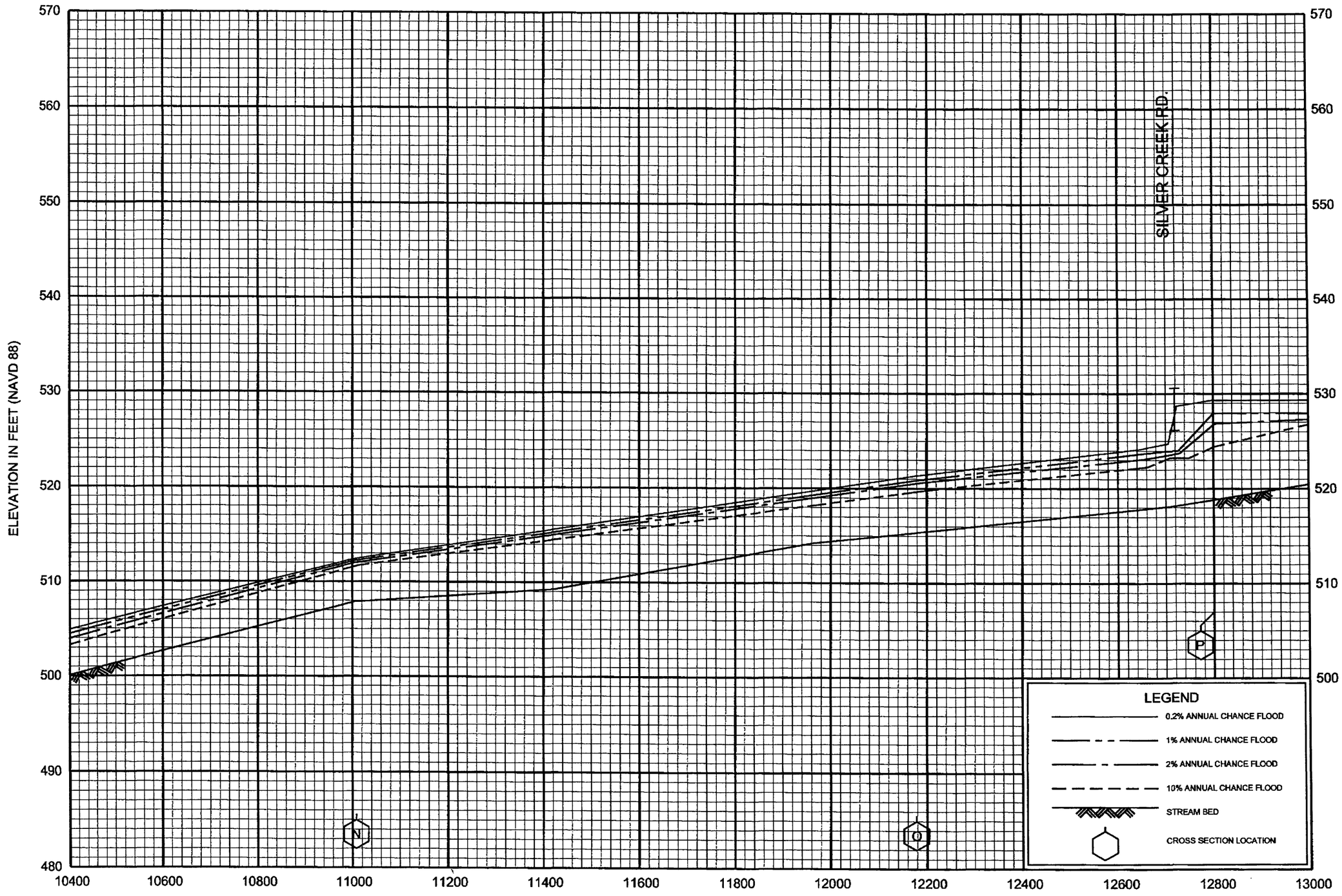
SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

40P



FLOOD PROFILES

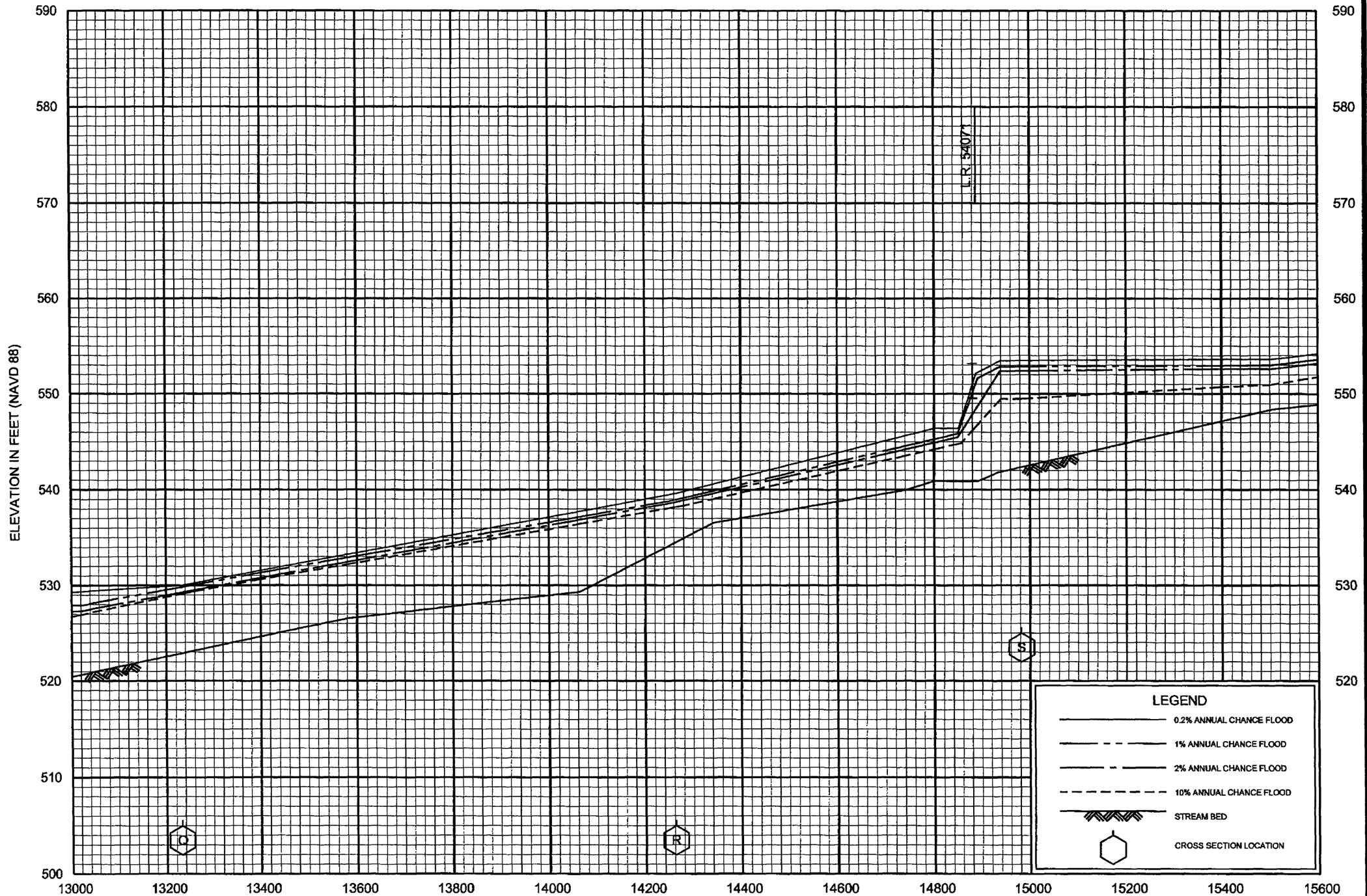
SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

41P



FLOOD PROFILES

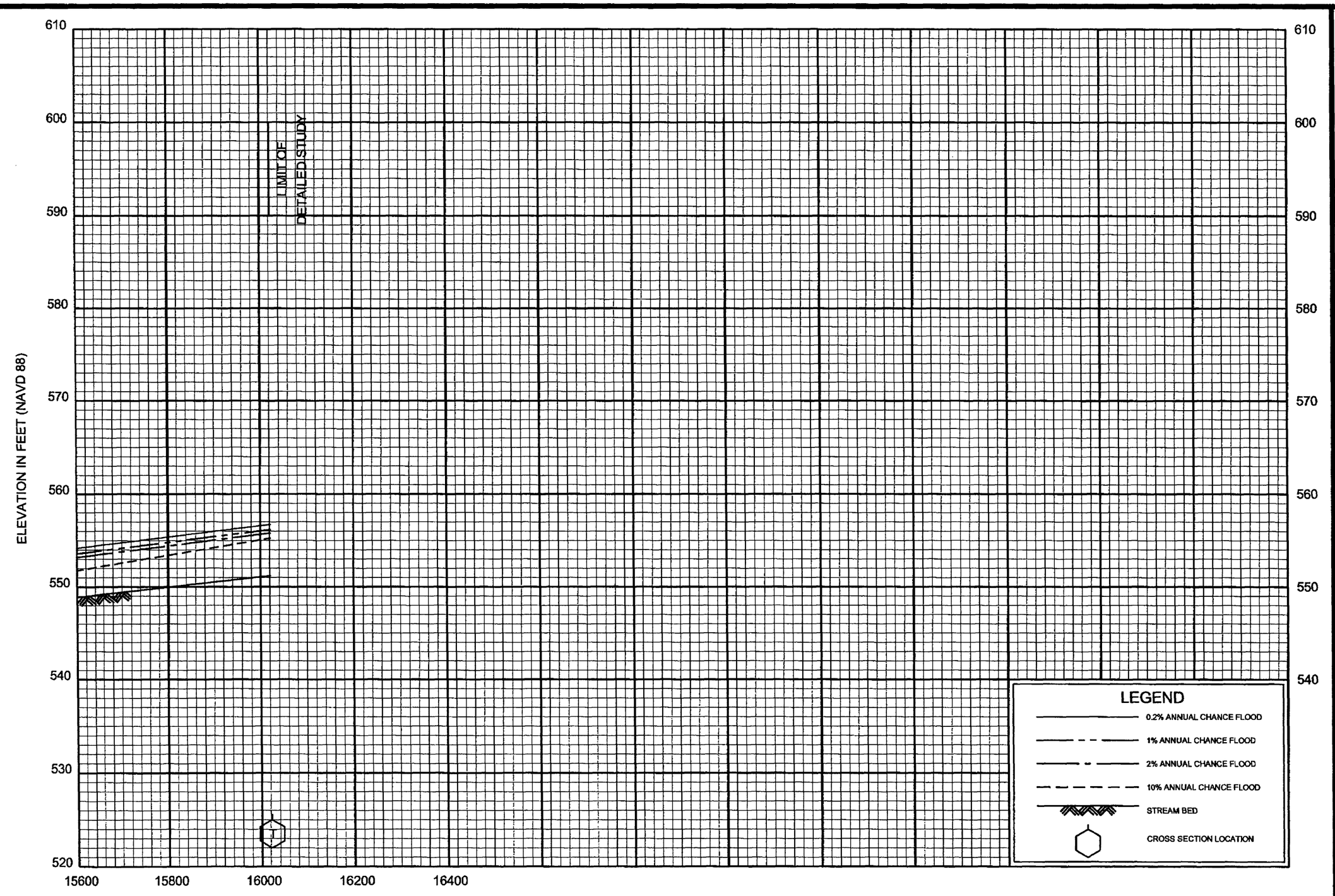
SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

42P



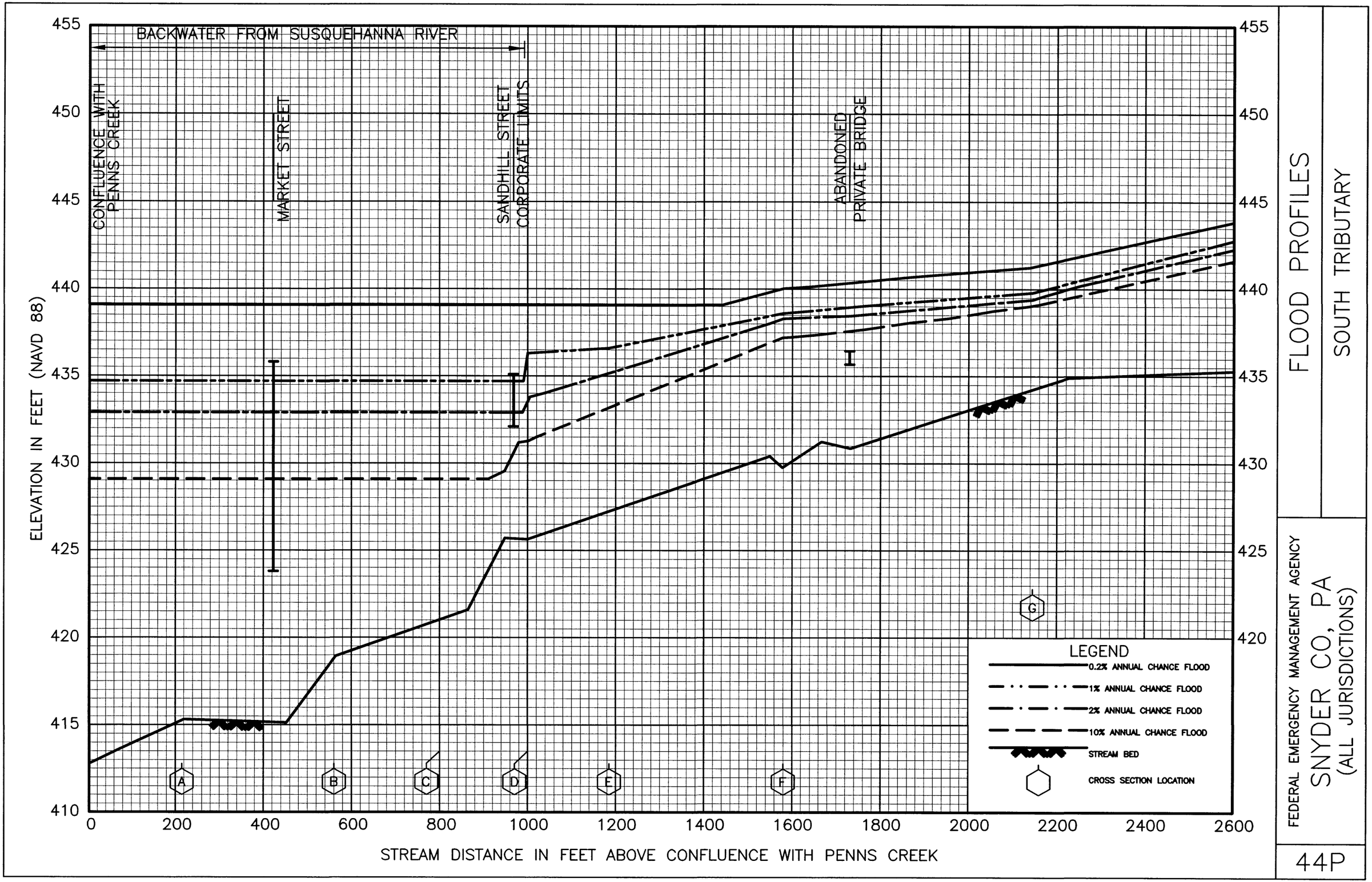
FLOOD PROFILES

SILVER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



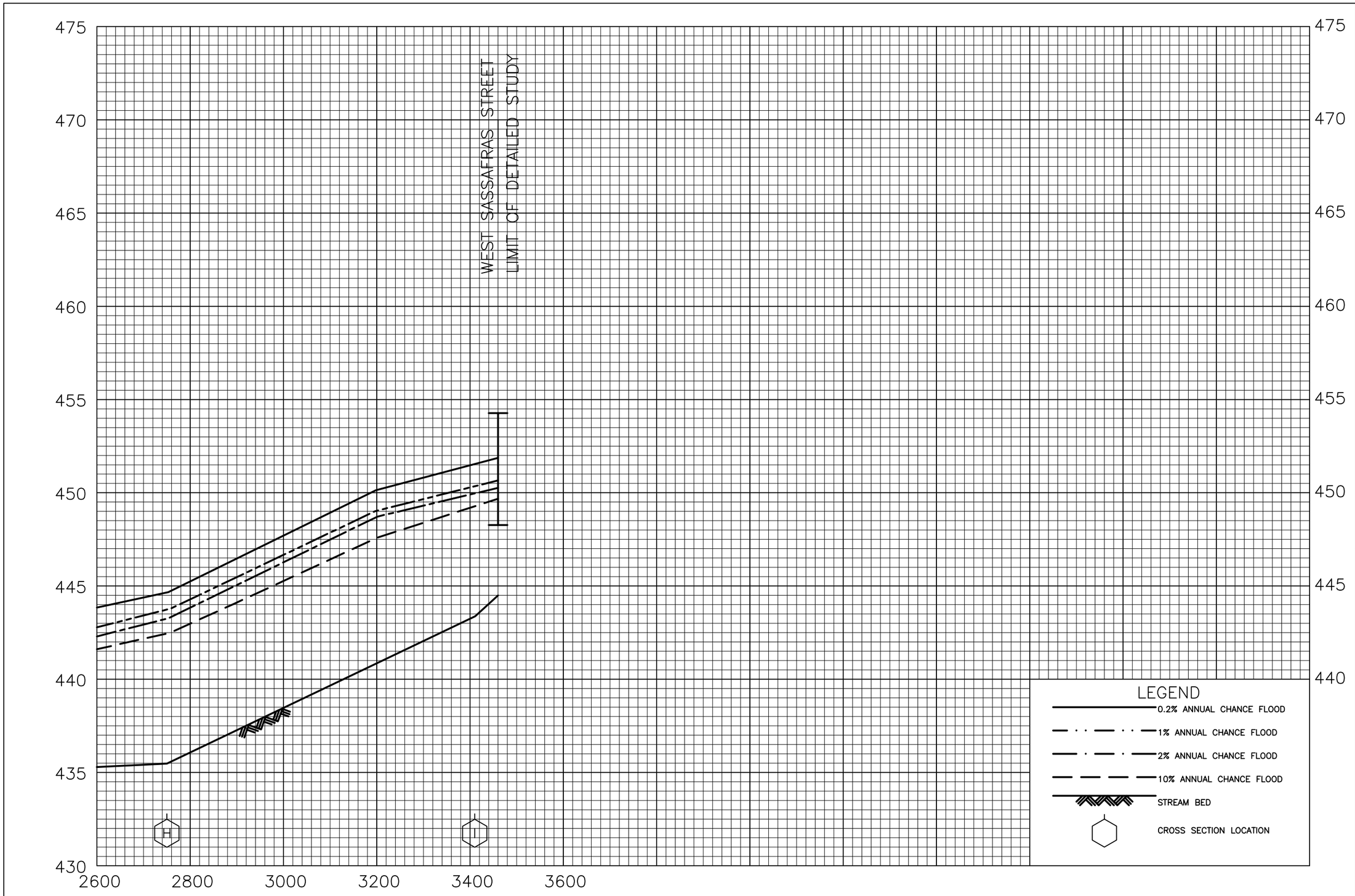
FLOOD PROFILES

SOUTH TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER CO, PA
(ALL JURISDICTIONS)

44P



FLOOD PROFILES

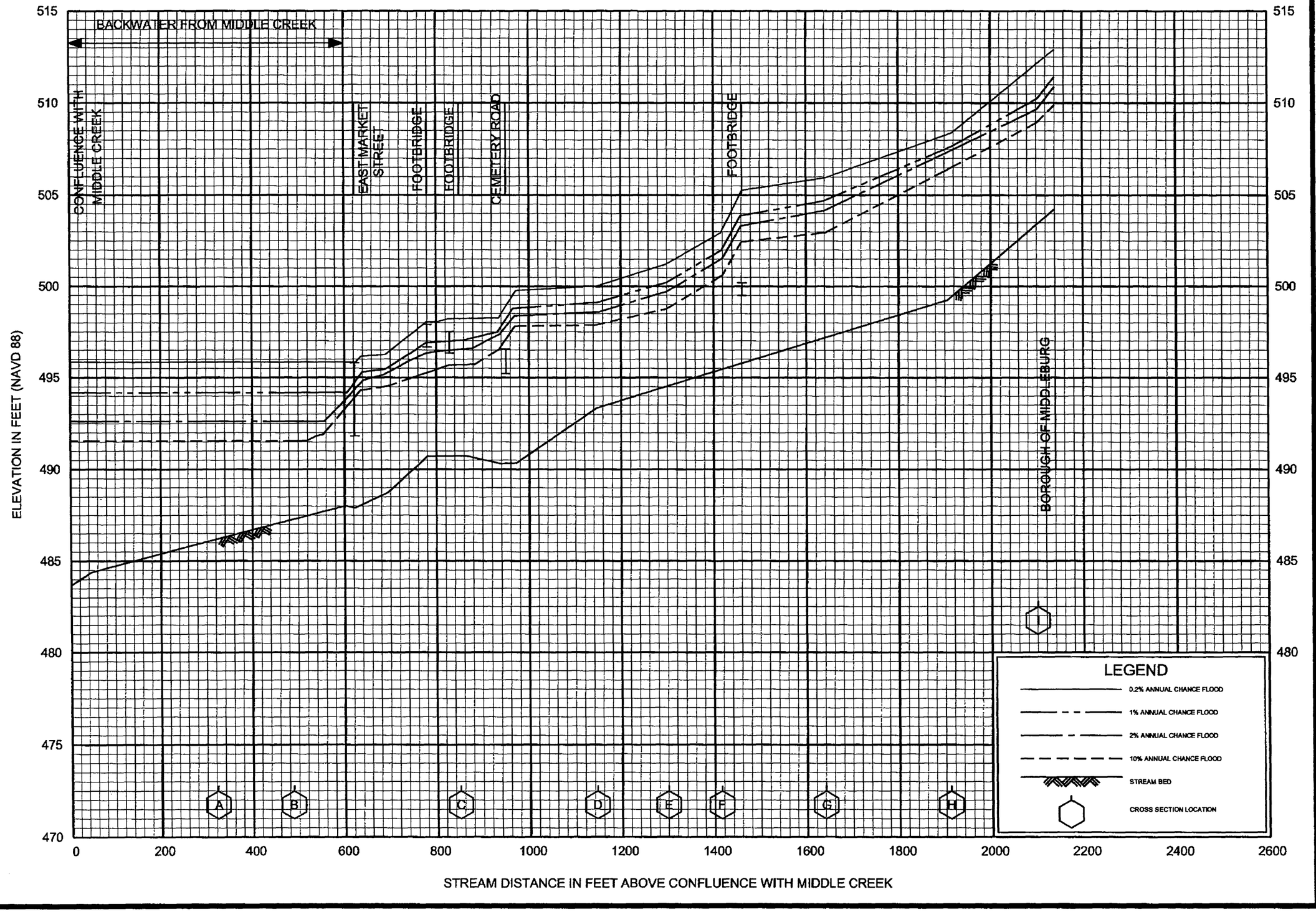
SOUTH TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER CO, PA

(ALL JURISDICTIONS)

45P



FLOOD PROFILES

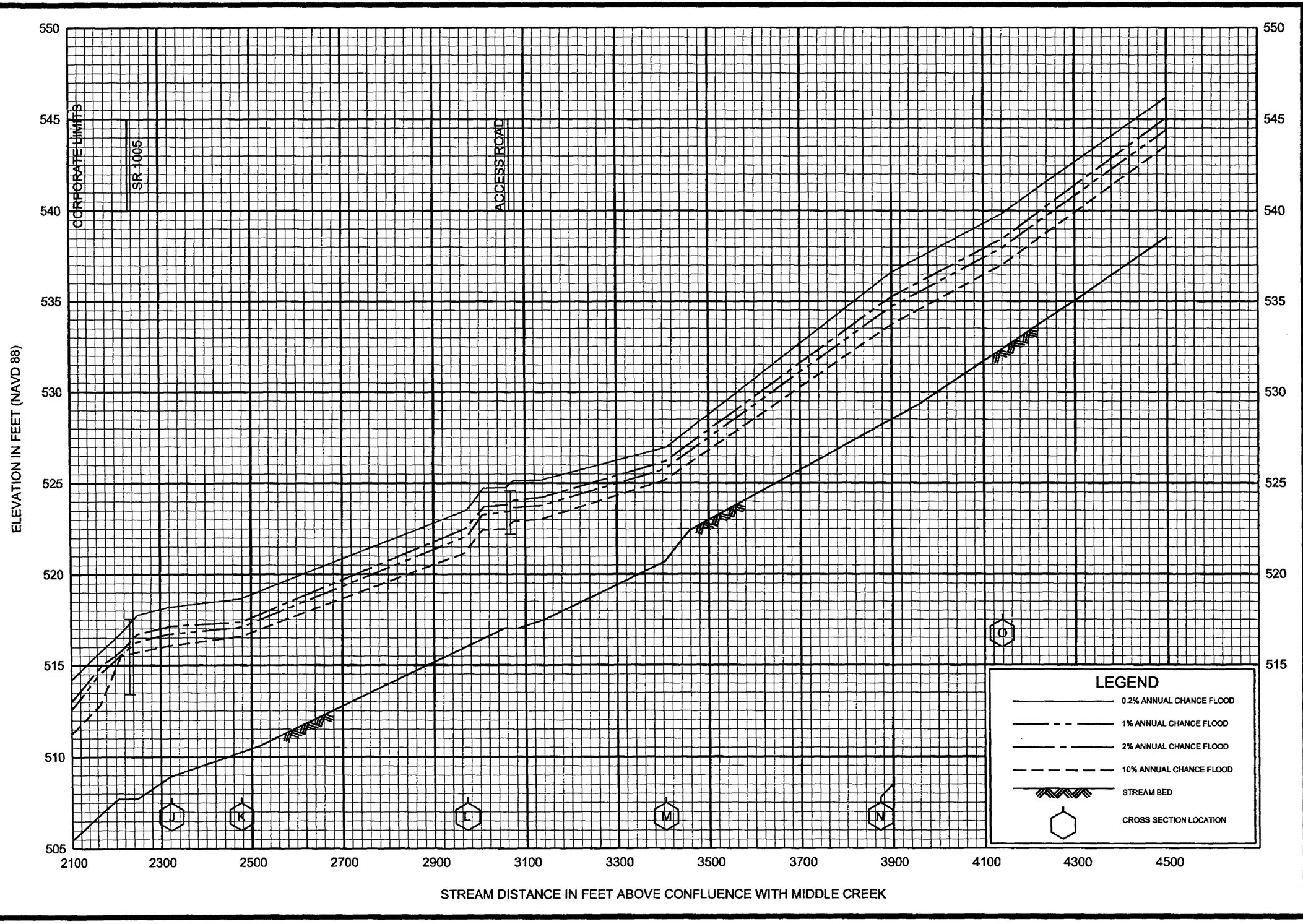
STUMPS RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

46P



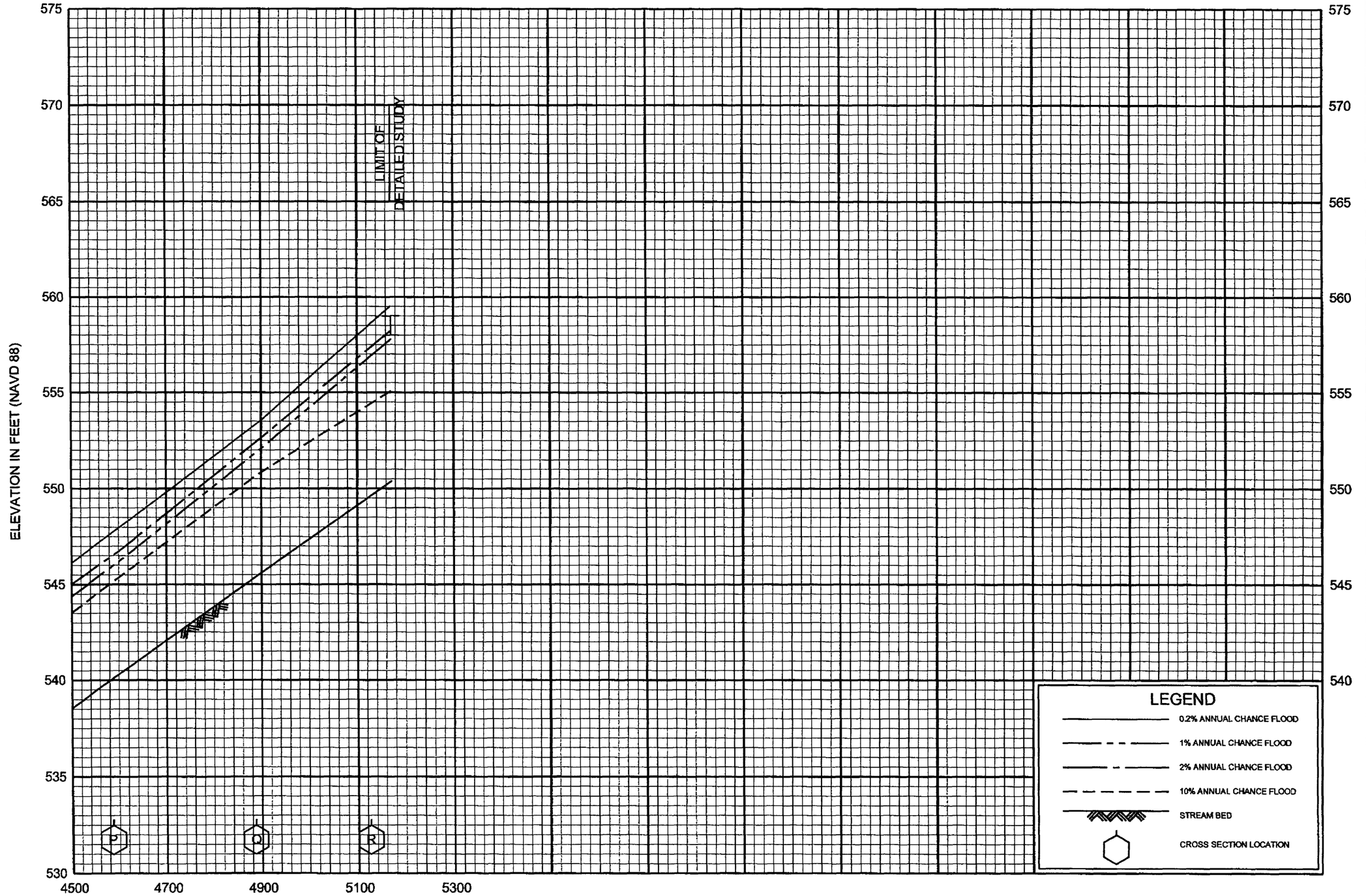
FLOOD PROFILES

STUMPS RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

AND INCORPORATED AREAS



FLOOD PROFILES

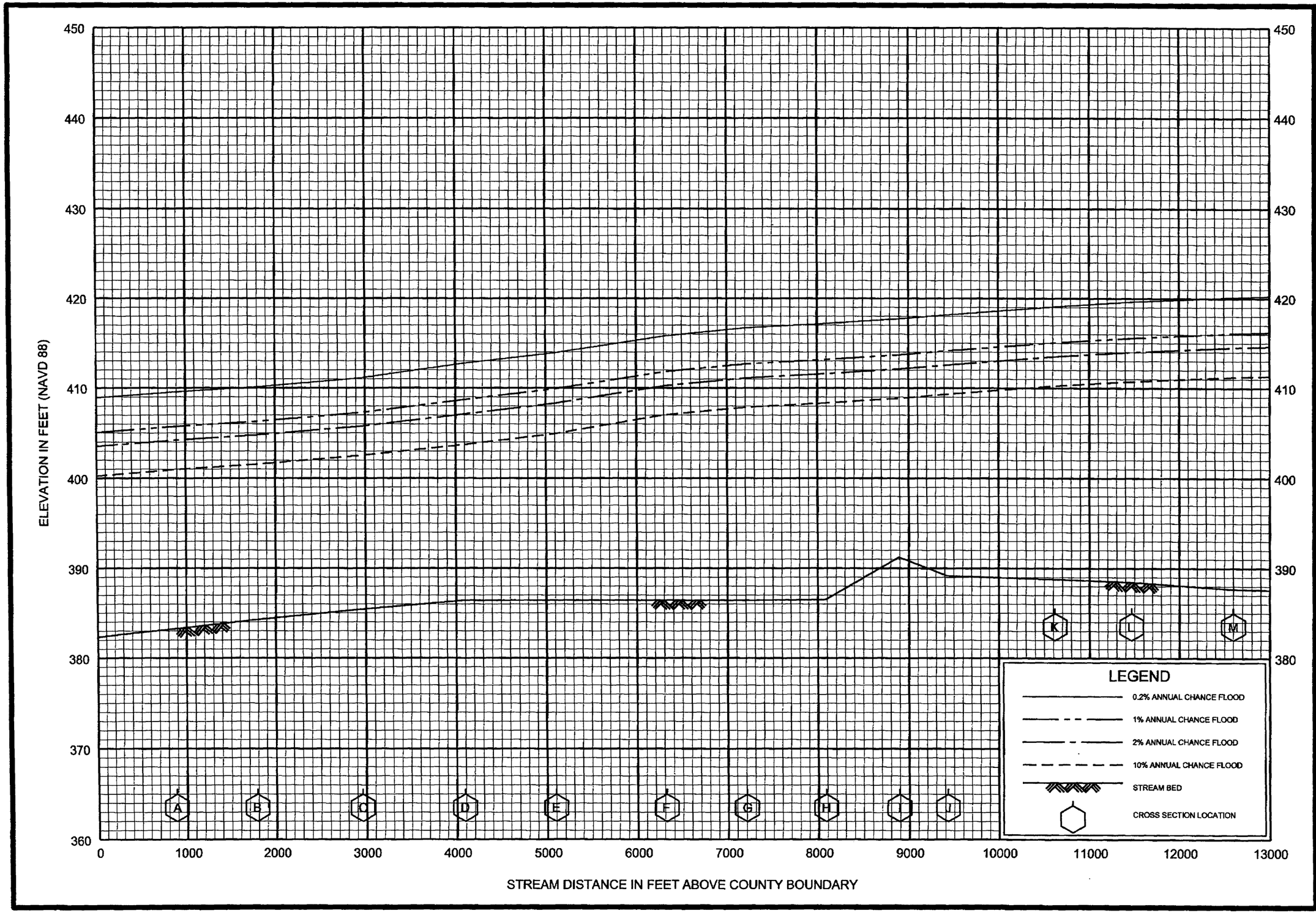
STUMPS RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

AND INCORPORATED AREAS

48P



FLOOD PROFILES

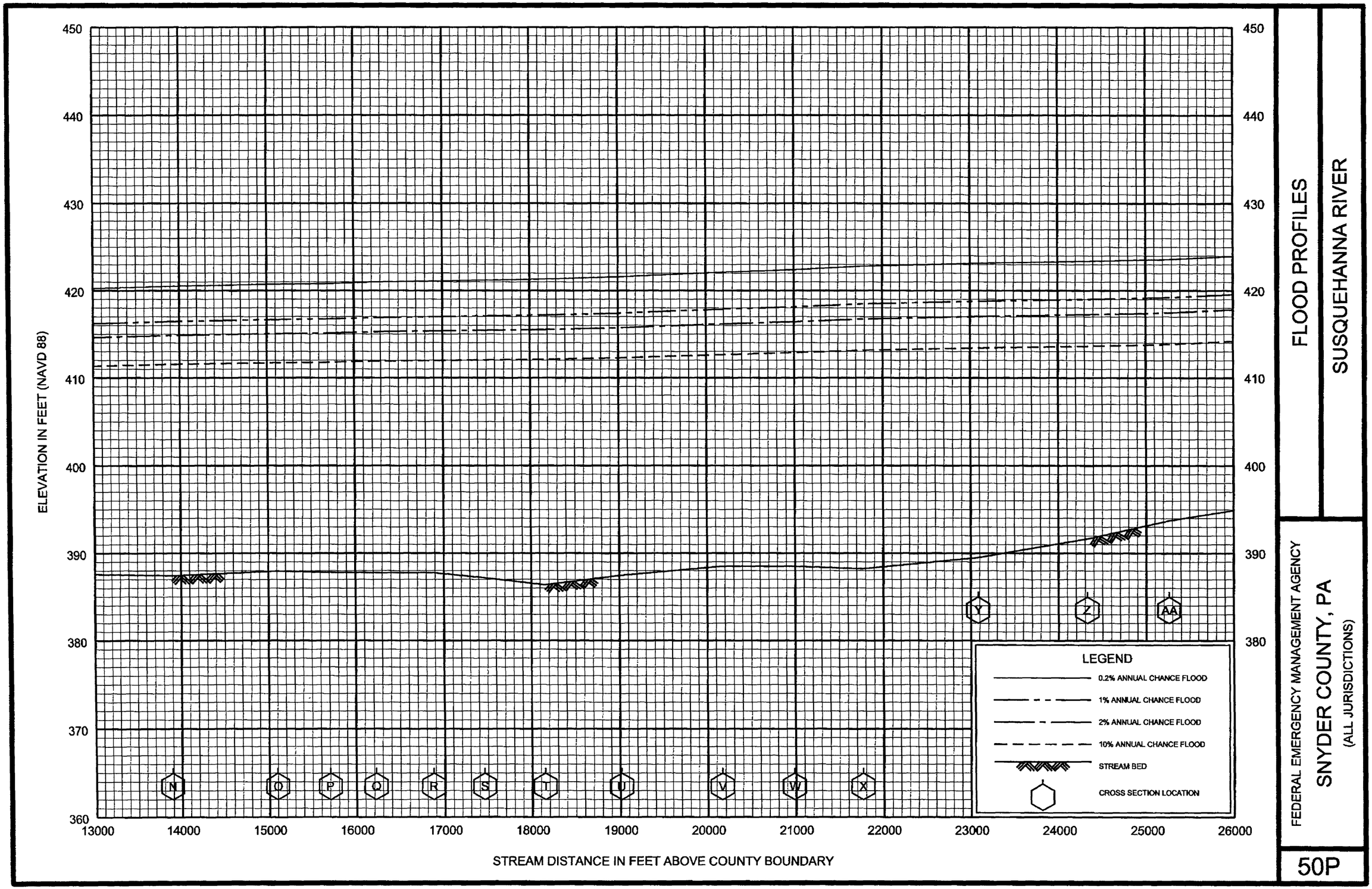
SUSQUEHANNA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

49P



FLOOD PROFILES

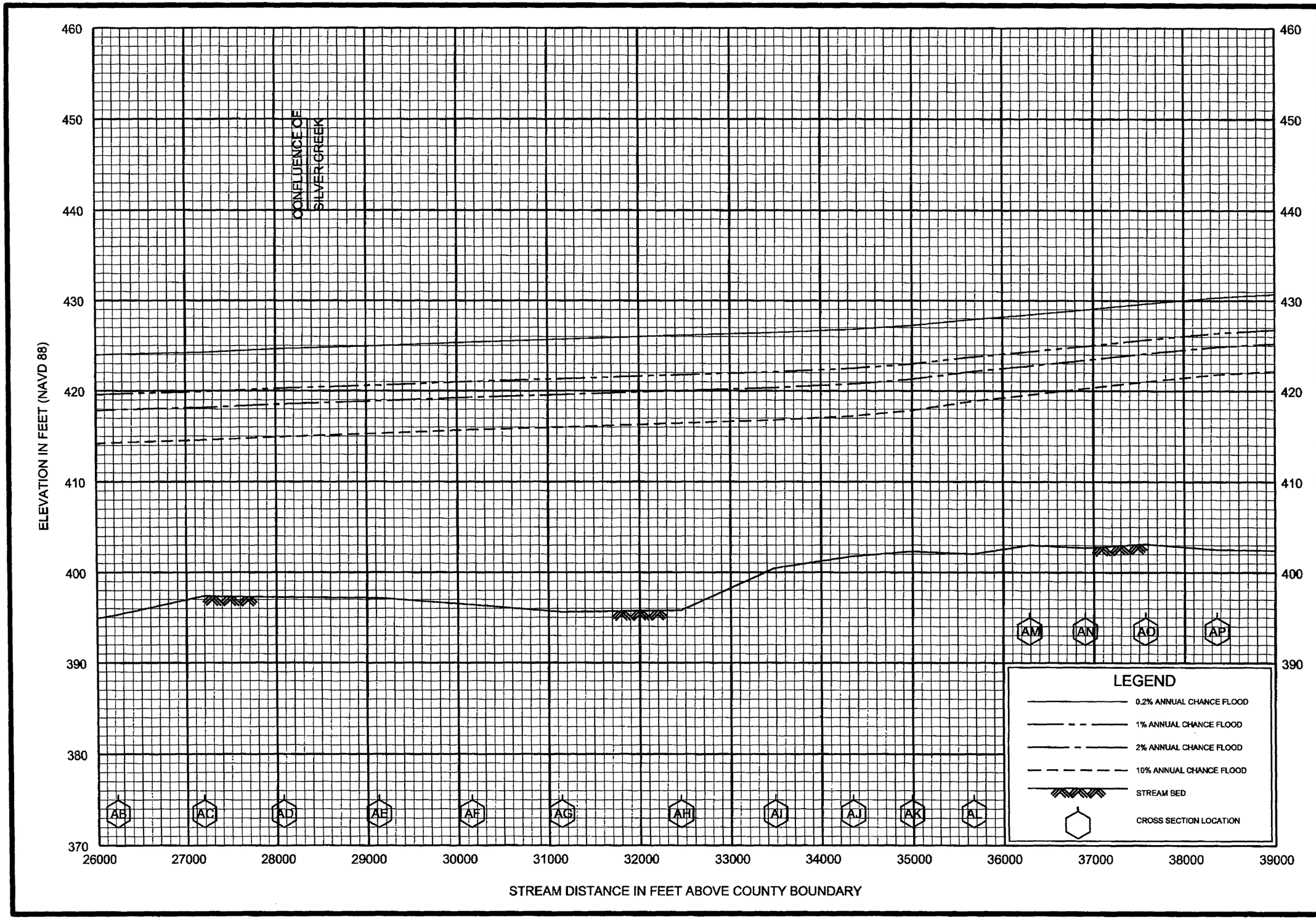
SUSQUEHANNA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

50P



FLOOD PROFILES

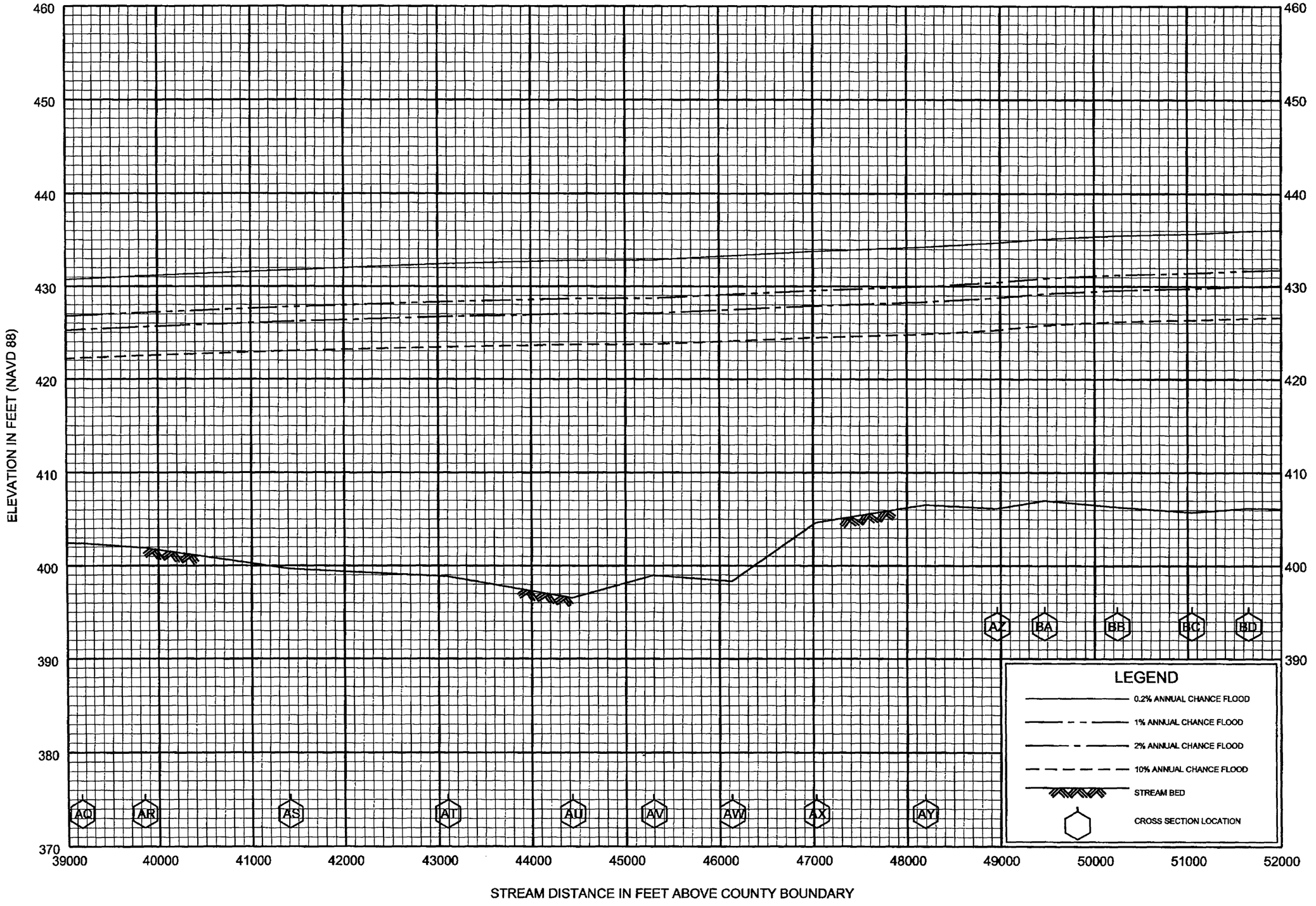
SUSQUEHANNA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

51P



FLOOD PROFILES

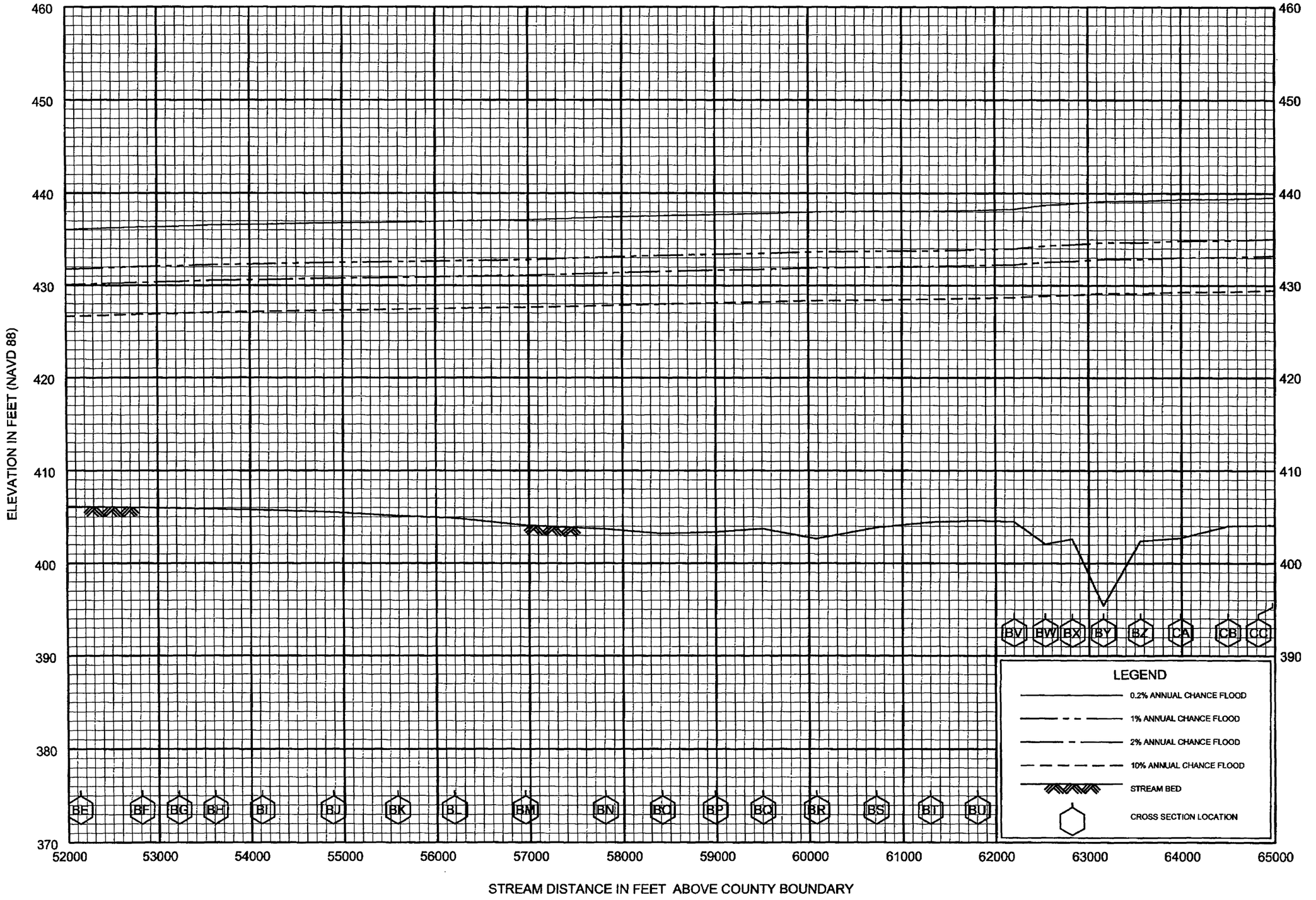
SUSQUEHANNA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

52P



FLOOD PROFILES

SUSQUEHANNA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

53P

FLOOD PROFILES

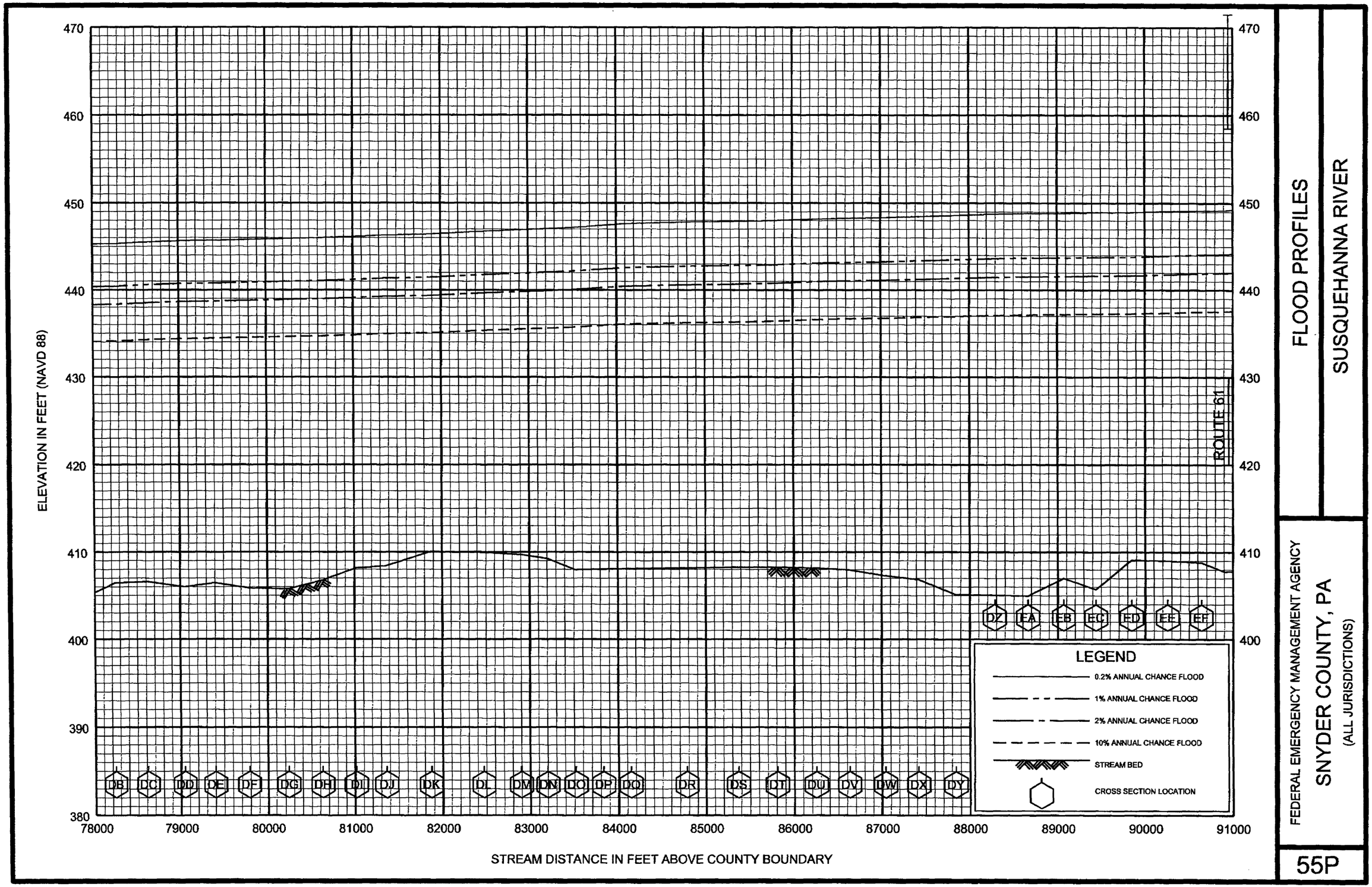
SUSQUEHANNA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

54P



FLOOD PROFILES

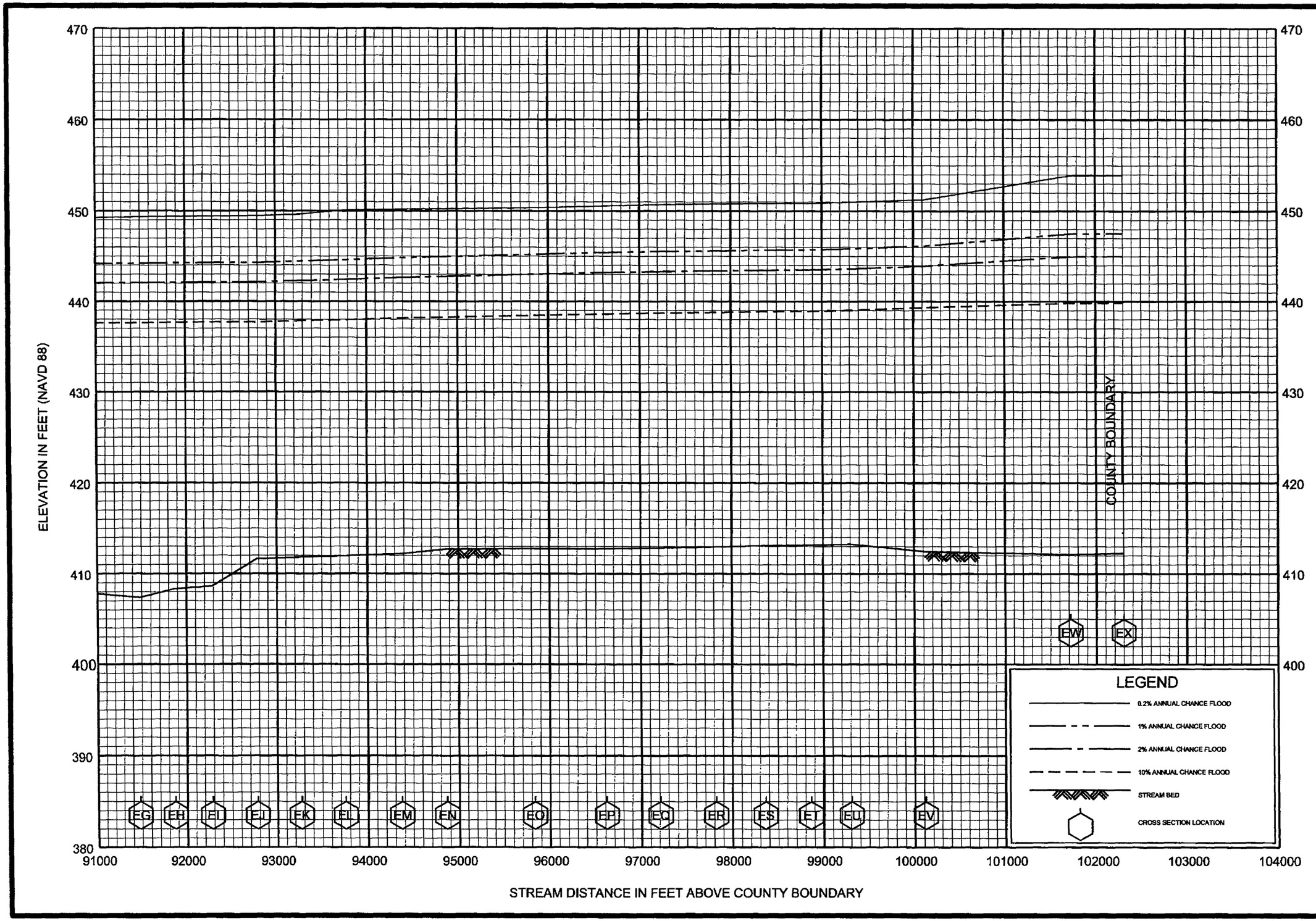
SUSQUEHANNA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

55P



FLOOD PROFILES

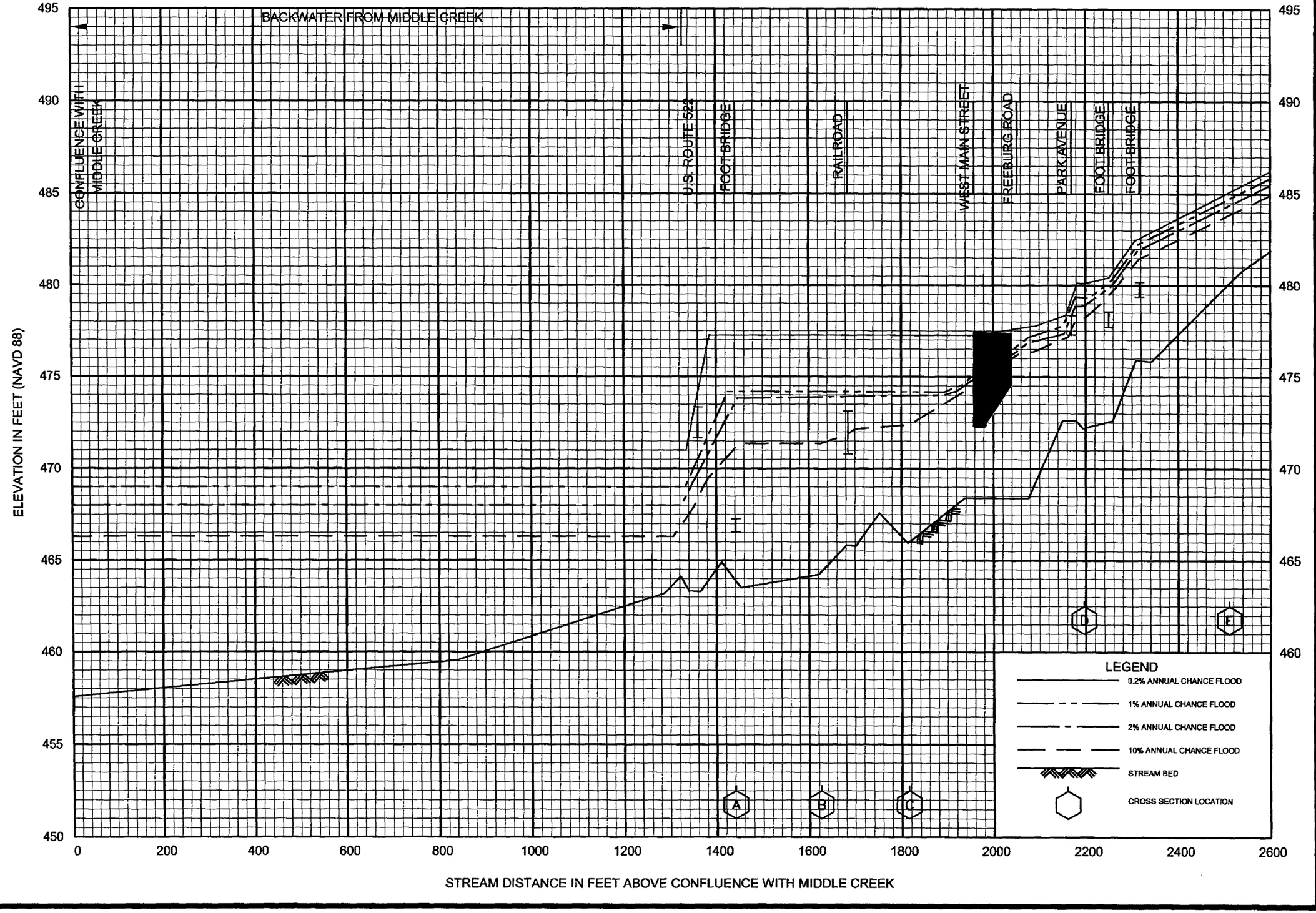
SUSQUEHANNA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

56P



FLOOD PROFILES

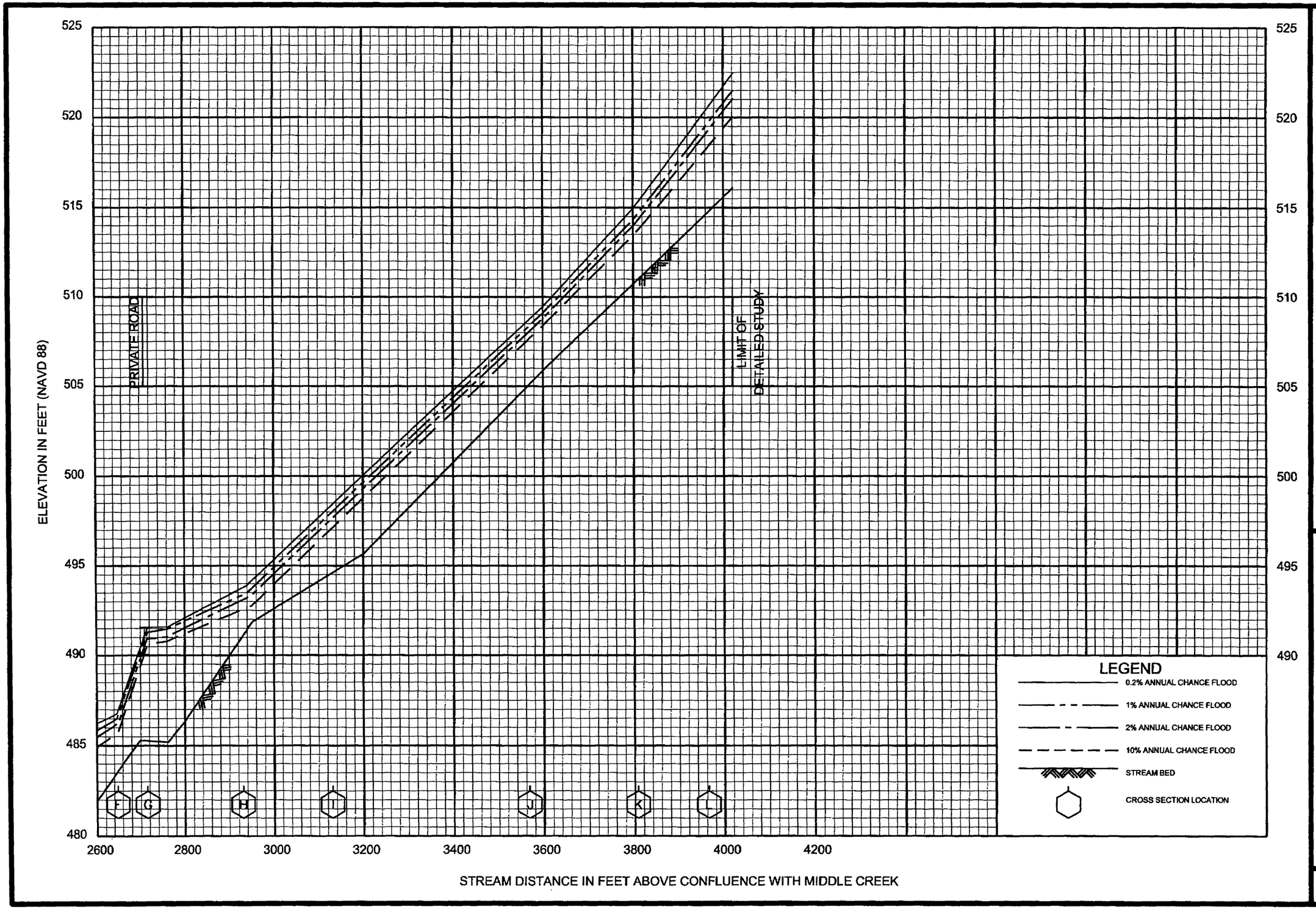
TRIBUTARY #1 TO MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

57P



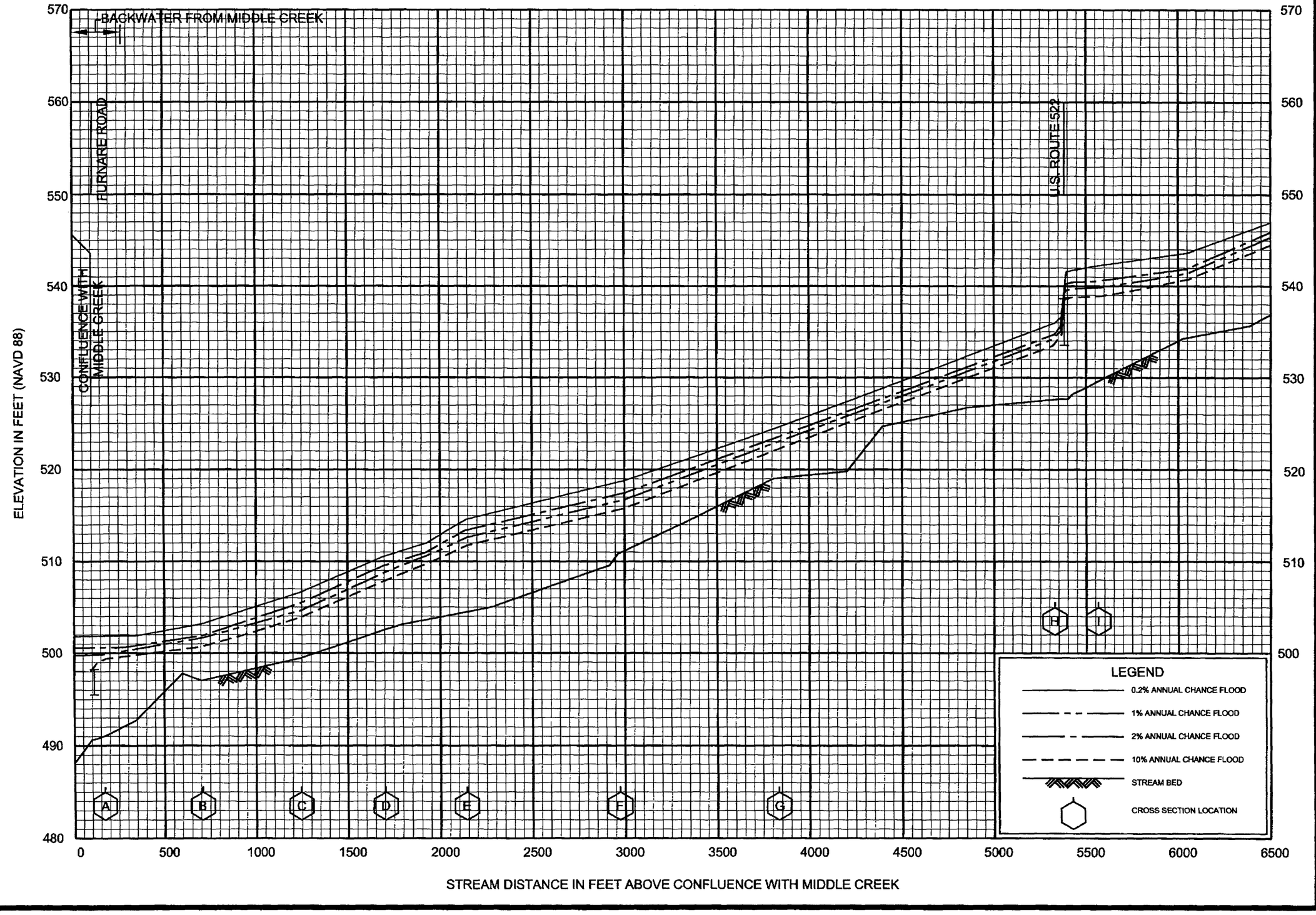
FLOOD PROFILES

TRIBUTARY #1 TO MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



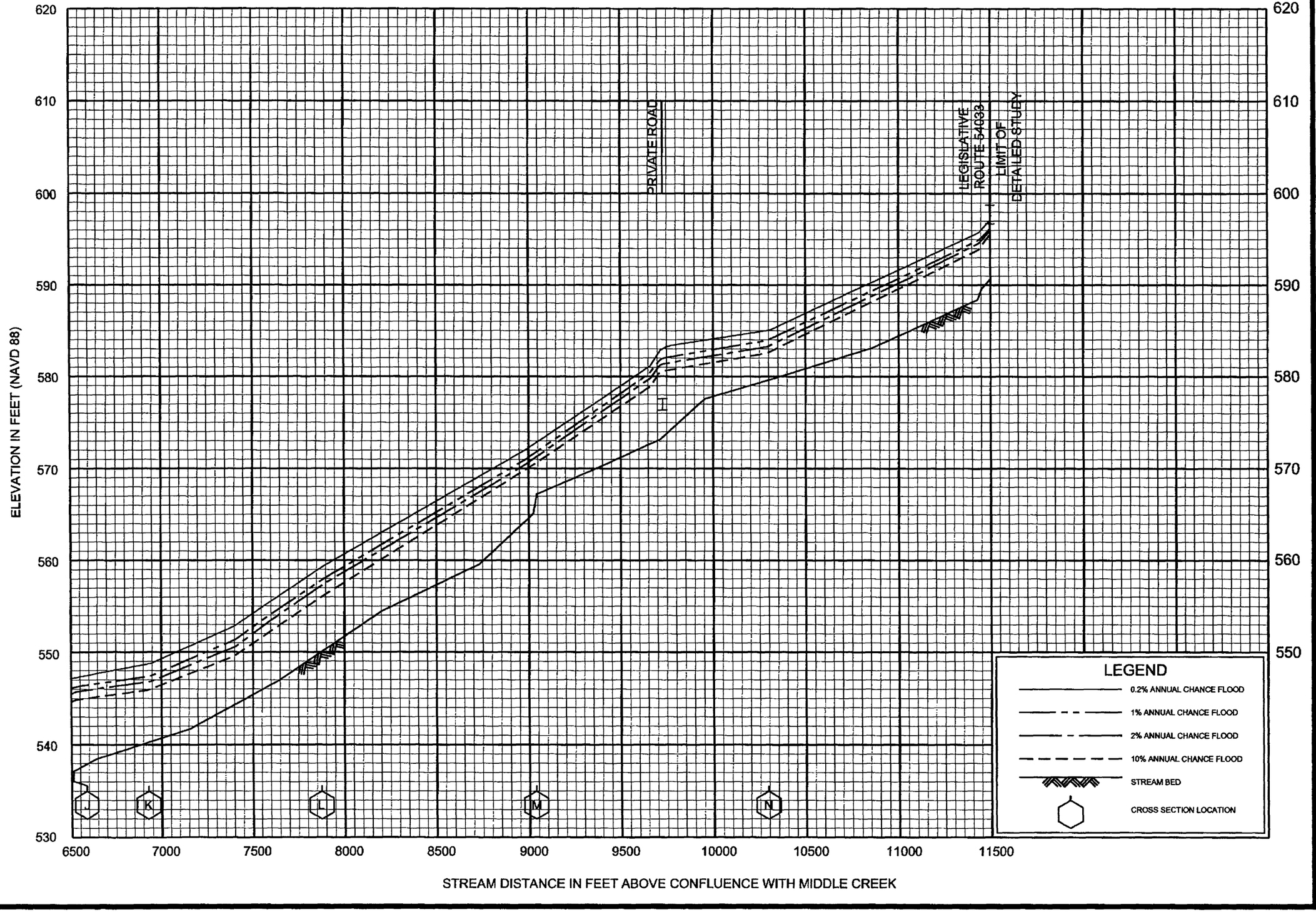
FLOOD PROFILES

TRIBUTARY #7 TO MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

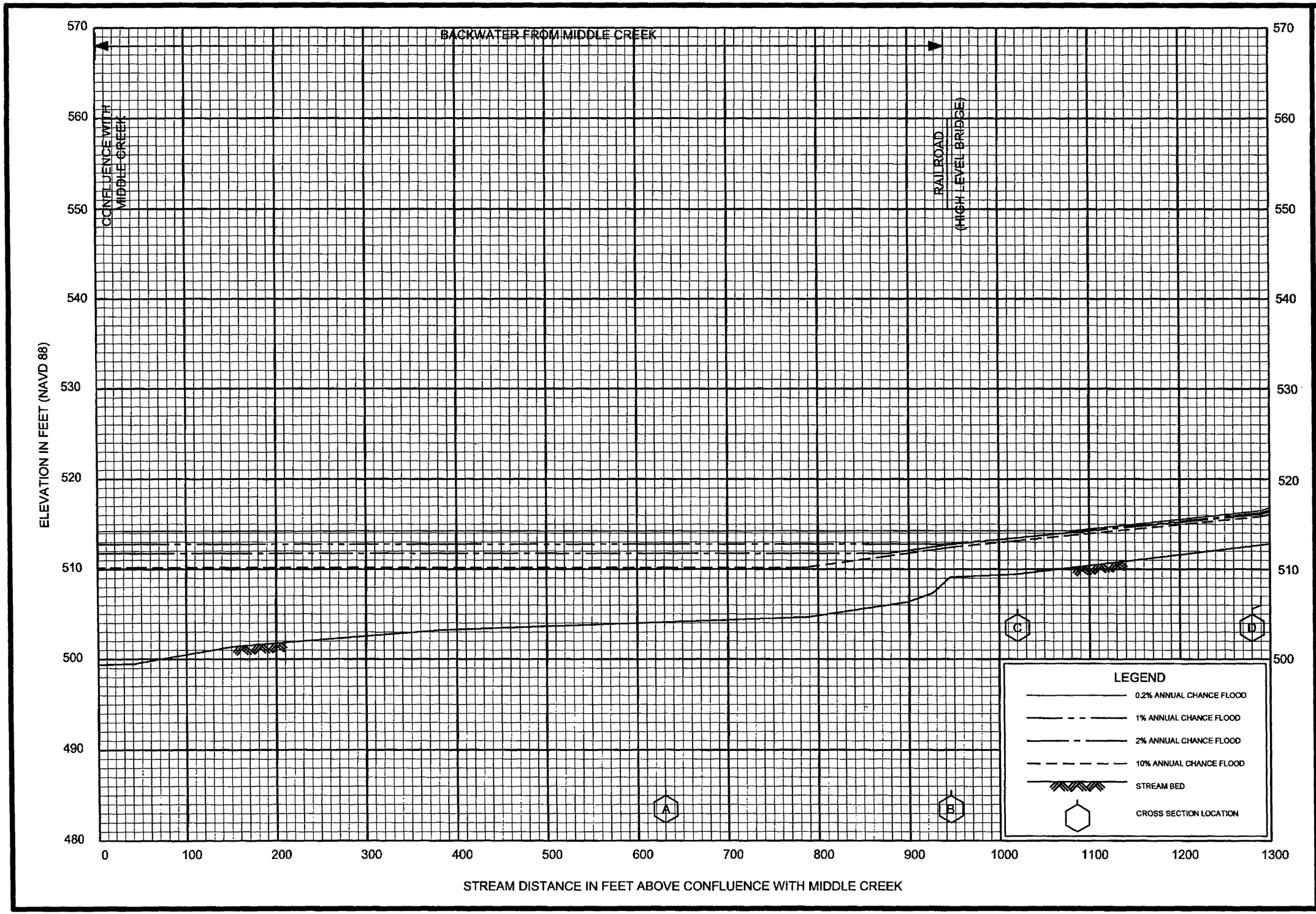
TRIBUTARY #7 TO MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

60P



FLOOD PROFILES

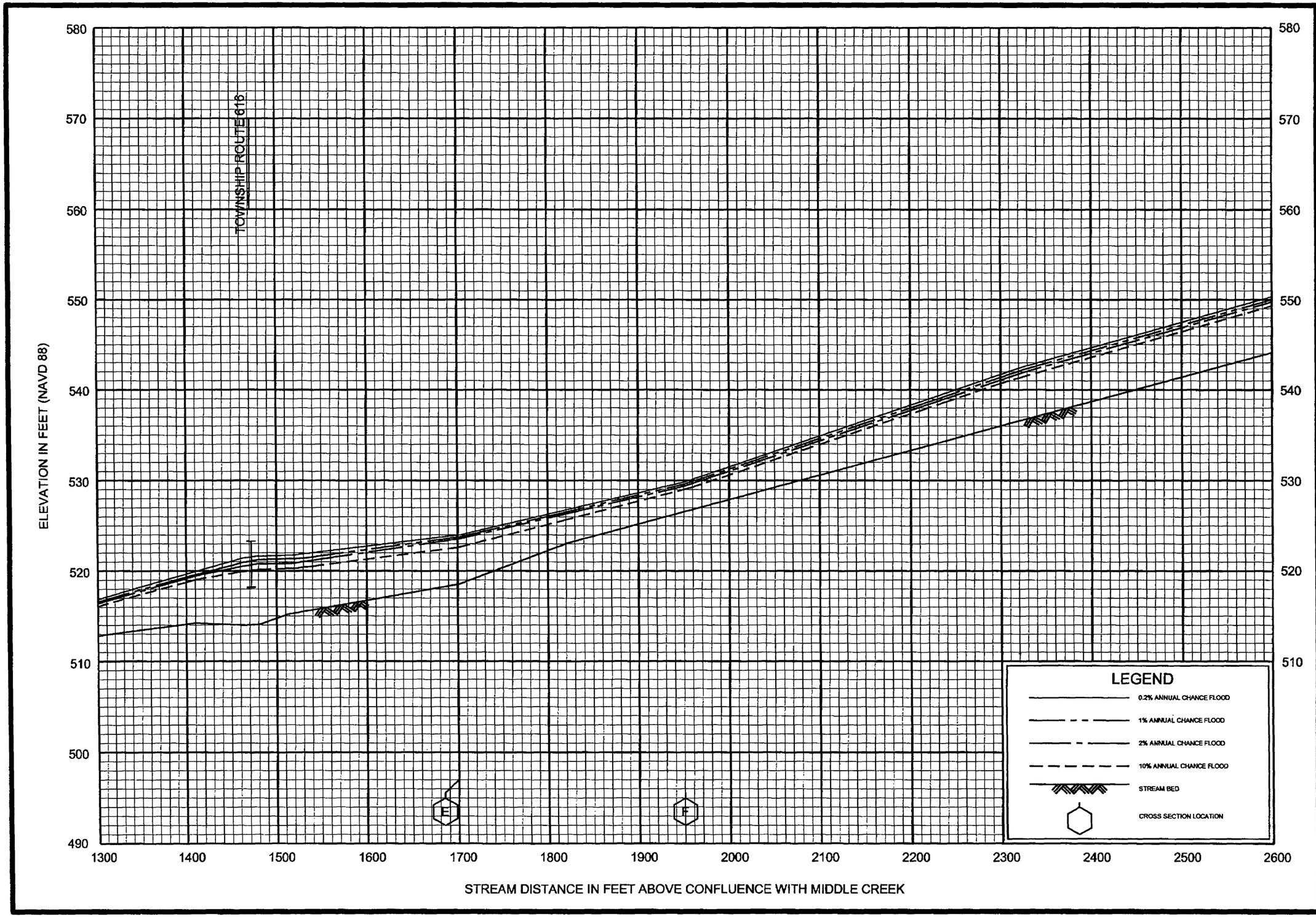
TRIBUTARY #12 TO MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

61P



FLOOD PROFILES

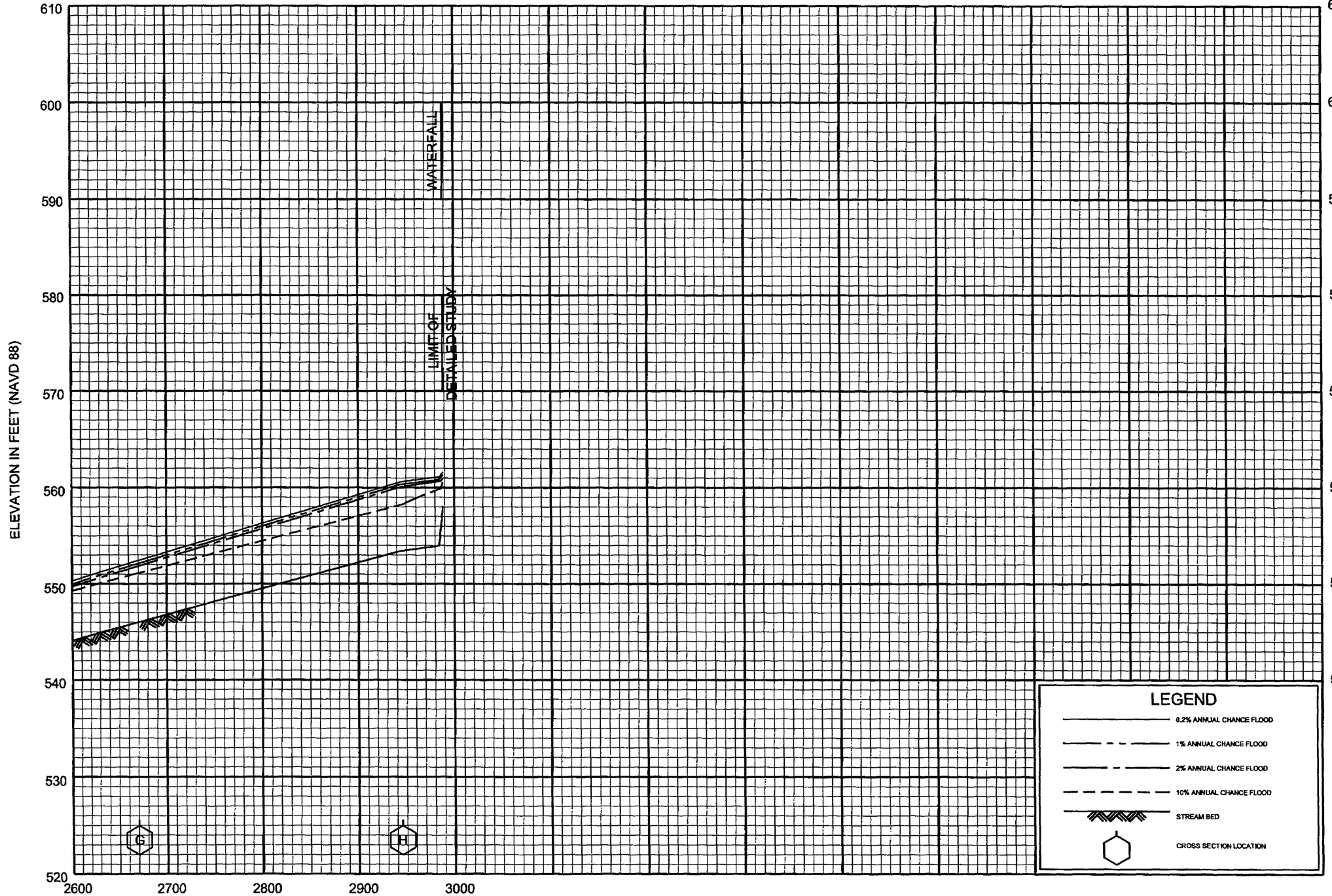
TRIBUTARY #12 TO MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

62P



FLOOD PROFILES

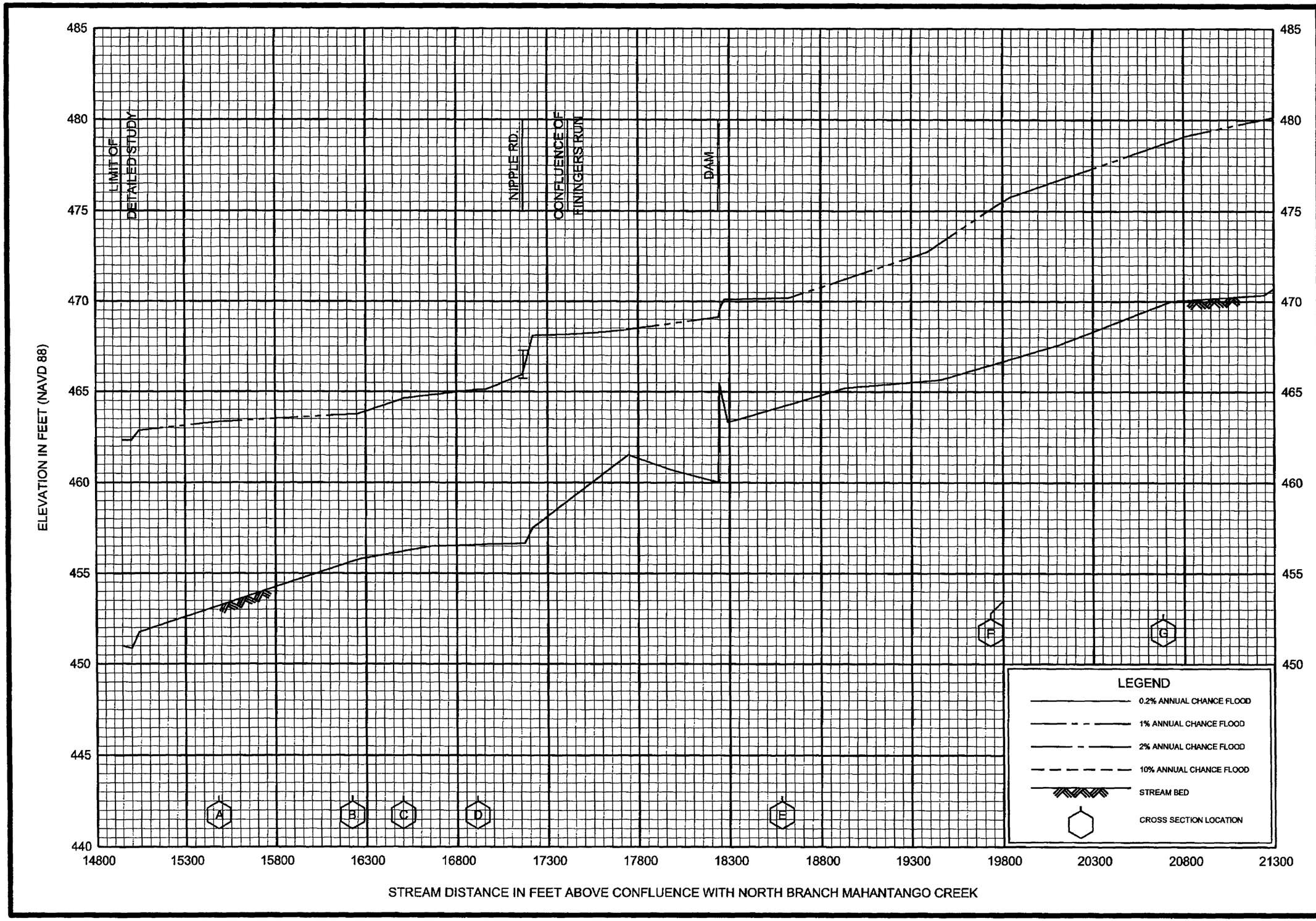
TRIBUTARY #12 TO MIDDLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

63P



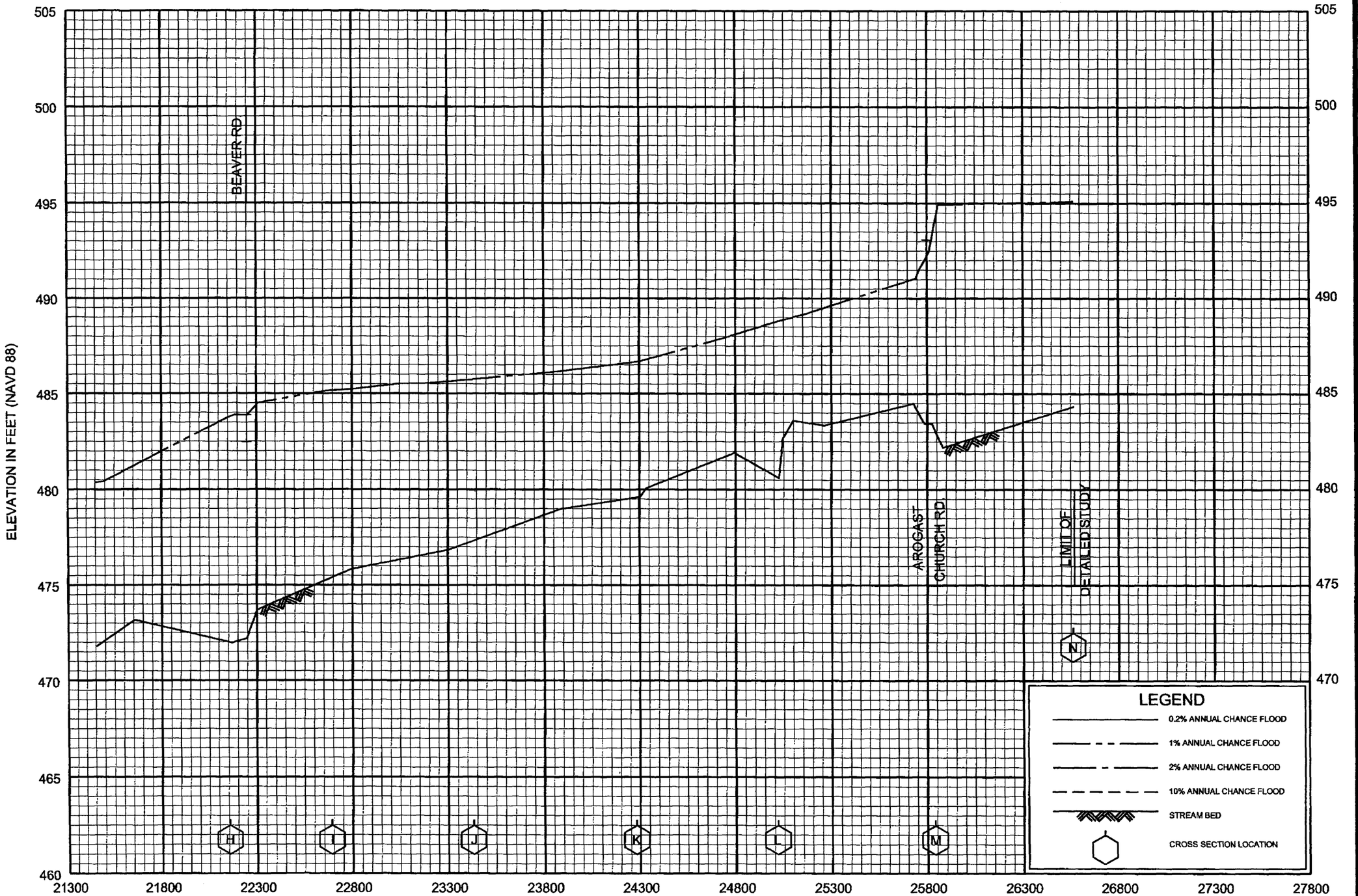
FLOOD PROFILES

WEST BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

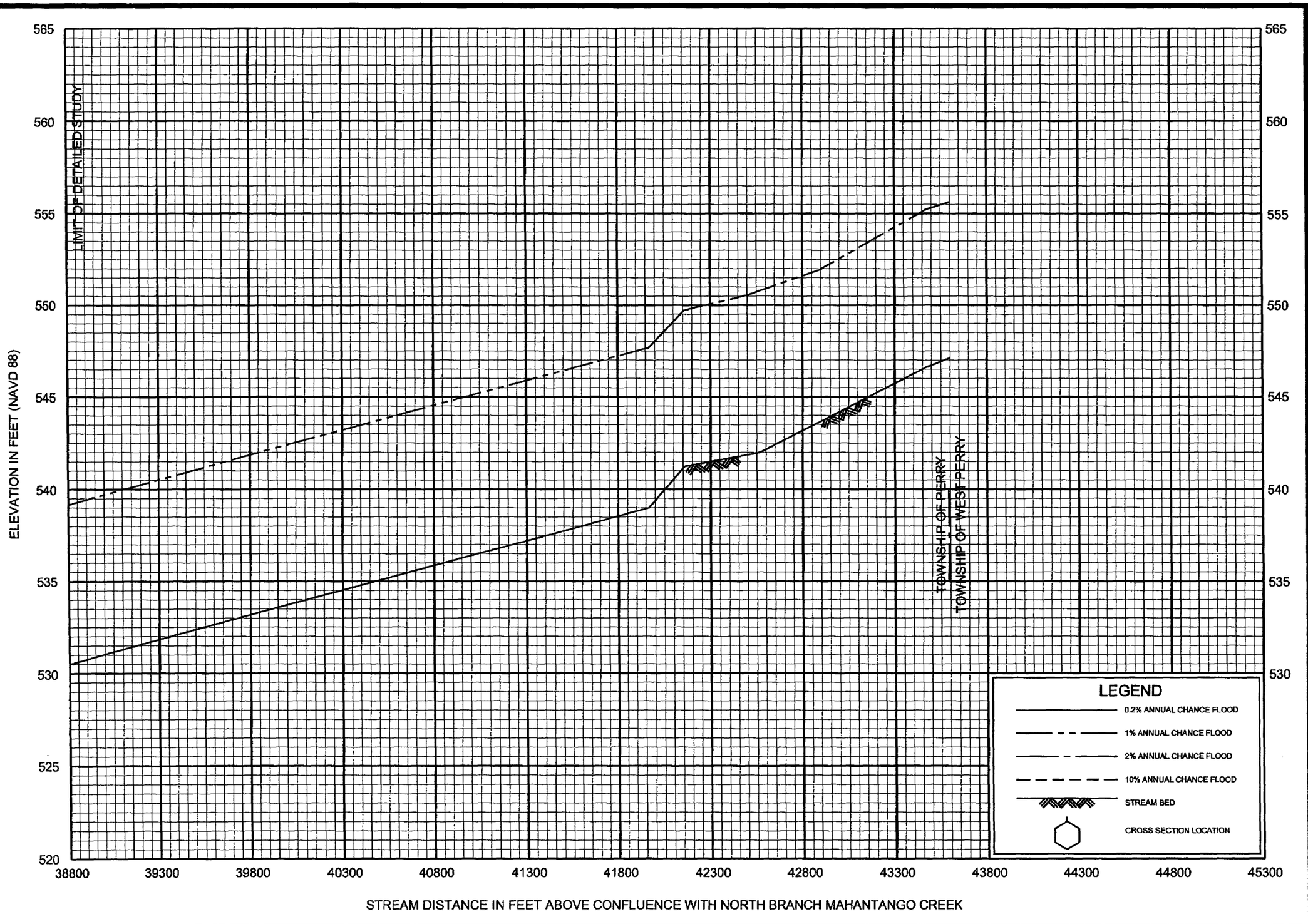
WEST BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER CO, PA

(ALL JURISDICTIONS)

65P



FLOOD PROFILES

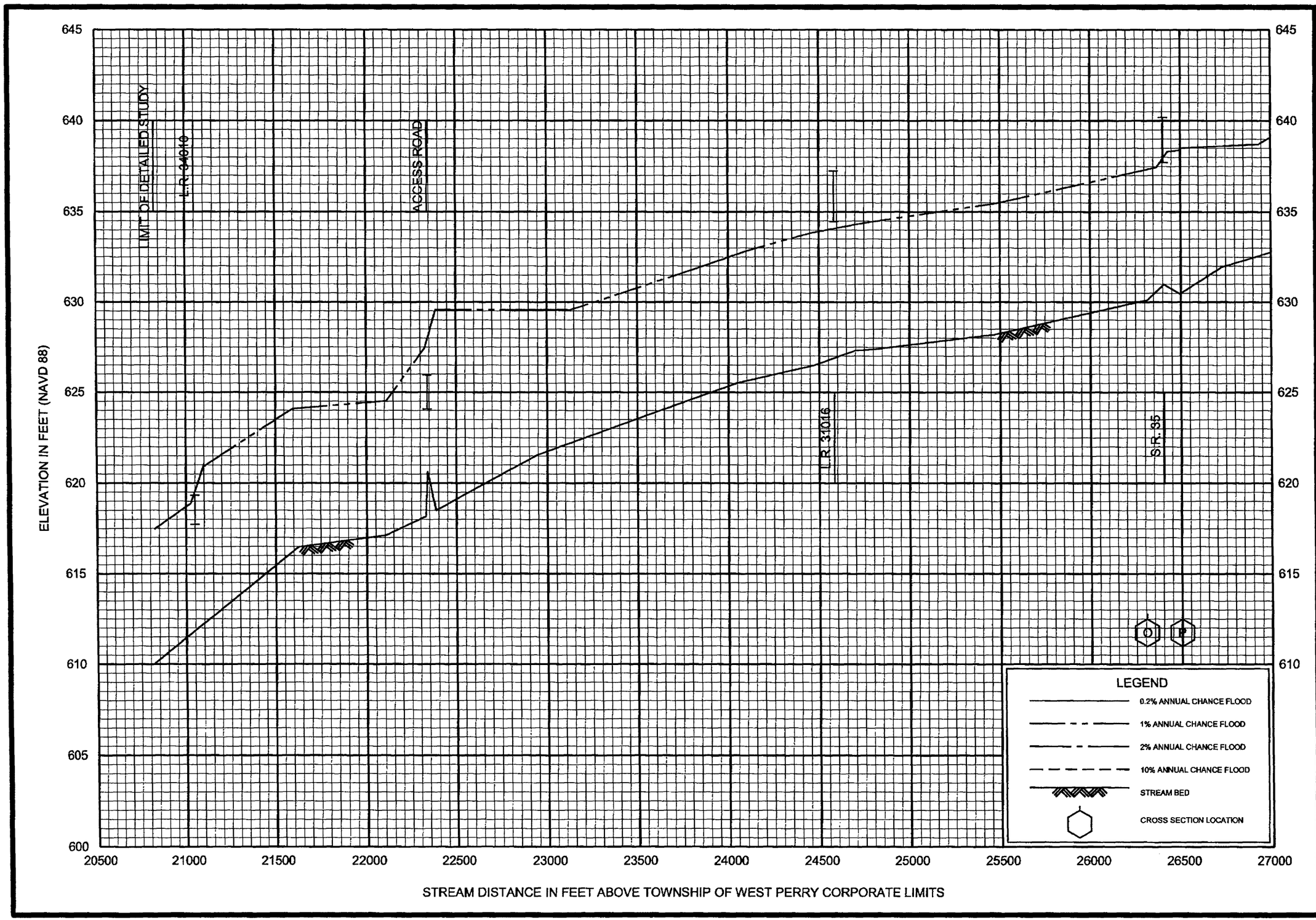
WEST BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

66P



FLOOD PROFILES

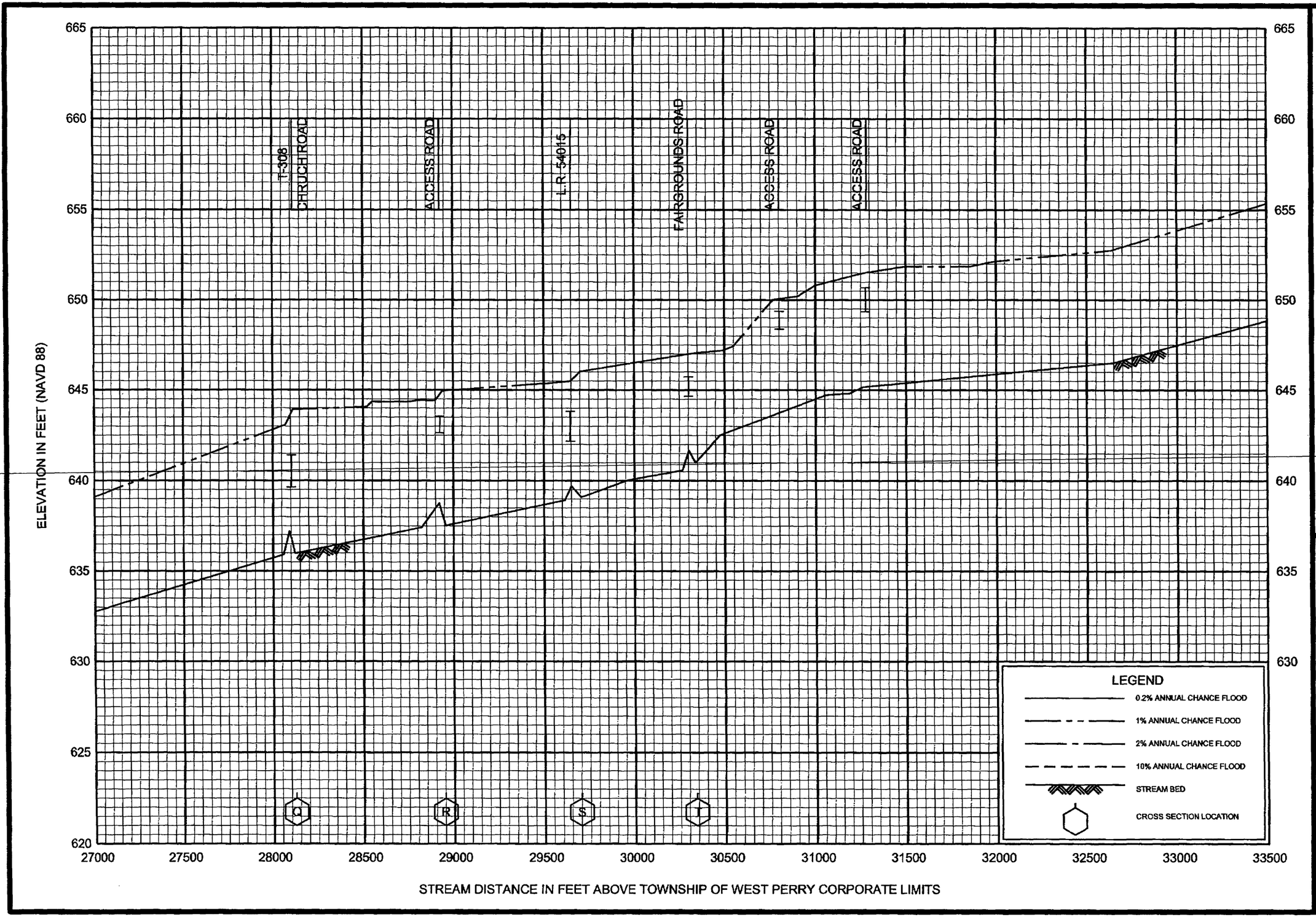
WEST BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

67P



FLOOD PROFILES

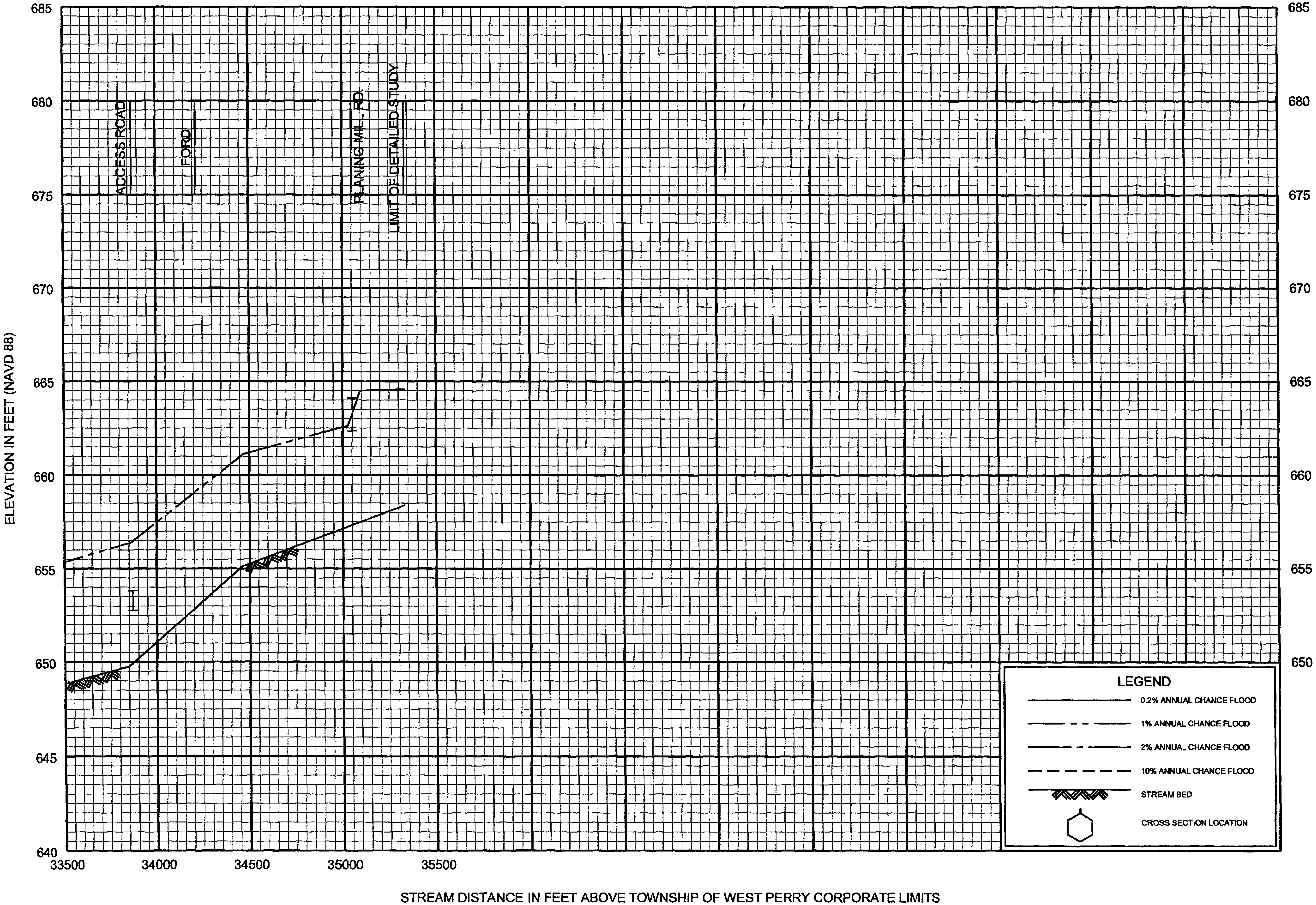
WEST BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

68P



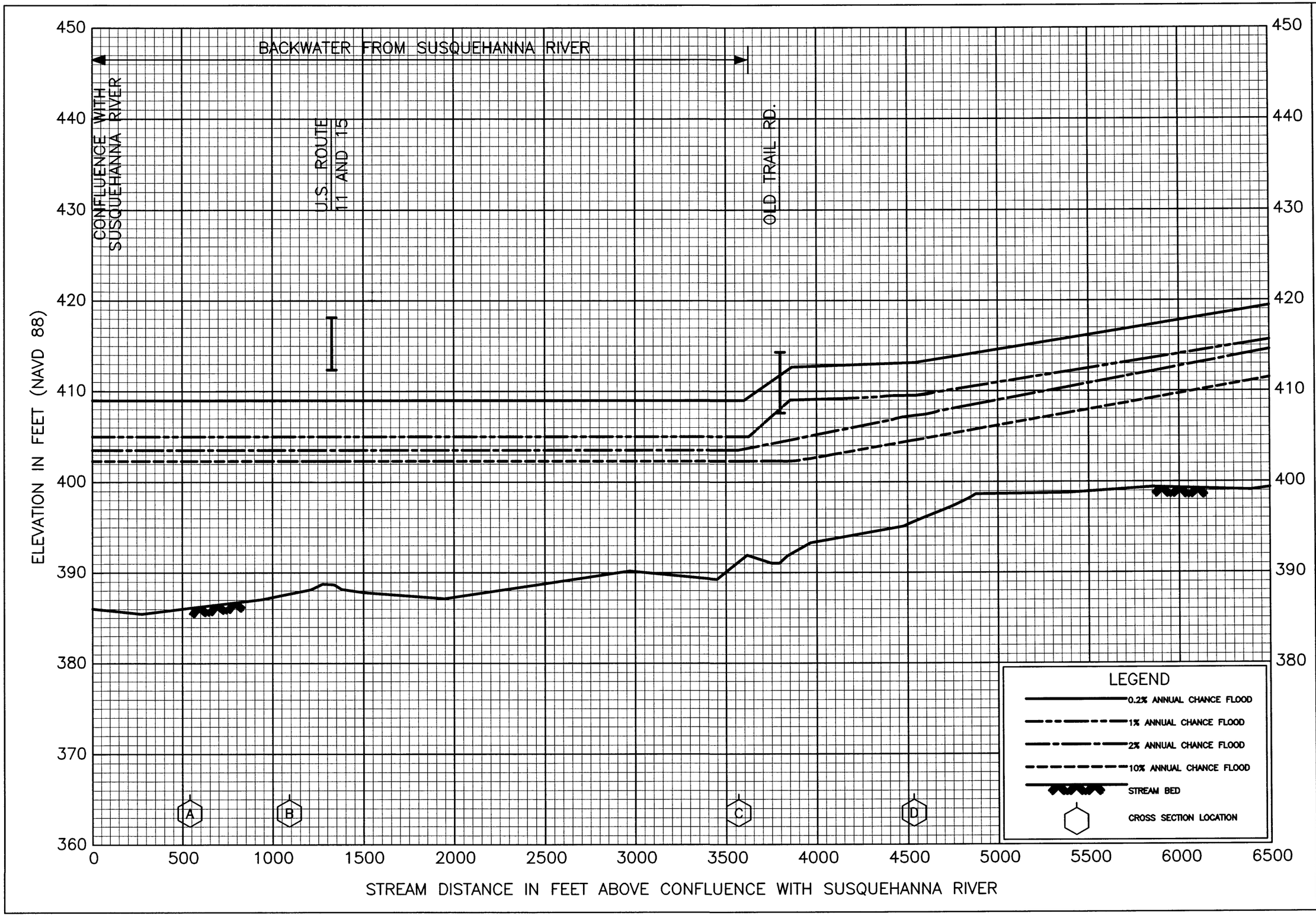
FLOOD PROFILES

WEST BRANCH MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)



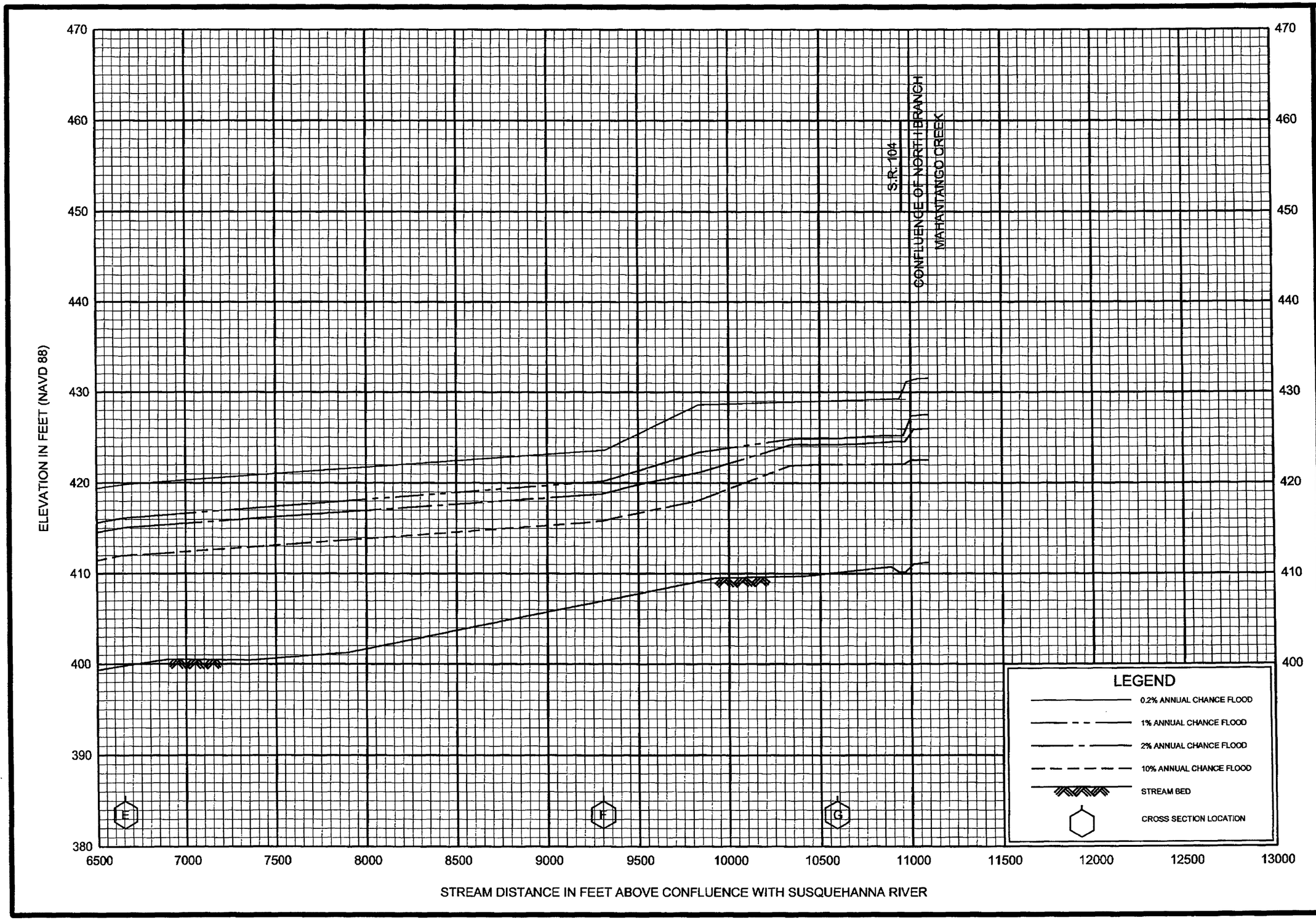
FLOOD PROFILES

WEST MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER CO, PA
(ALL JURISDICTIONS)

70P



FLOOD PROFILES

WEST MAHANTANGO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SNYDER COUNTY, PA

(ALL JURISDICTIONS)

71P