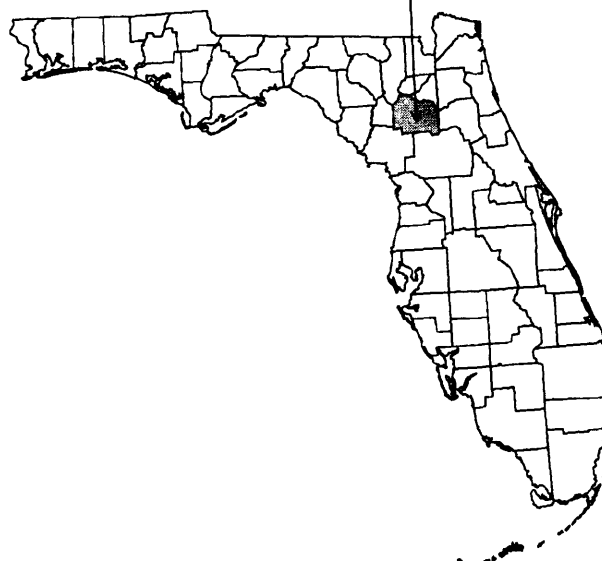


FLOOD INSURANCE STUDY



ALACHUA COUNTY, FLORIDA AND INCORPORATED AREAS

Alachua County



COMMUNITY NAME
ALACHUA, CITY OF
ALACHUA COUNTY
(UNINCORPORATED AREAS)
ARCHER, CITY OF
GAINESVILLE, CITY OF
HAWTHORNE, CITY OF
HIGH SPRINGS, CITY OF
La CROSSE, TOWN OF
MICANOPY, TOWN OF
NEWBERRY, CITY OF
WALDO, CITY OF

COMMUNITY NUMBER
120664

120001
120670
125107
120682
120669
120626
120344
120679
120003

JUNE 16, 2006



Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
12001CV000A

**NOTICE TO
FLOOD INSURANCE STUDY USERS**

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

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

Initial Countywide FIS Effective Date: June 16, 2006

Revised Countywide FIS Date:

TABLE OF CONTENTS

	<u>Page</u>
1.0 <u>INTRODUCTION</u>	1
1.1 Purpose of Study	1
1.2 Authority and Acknowledgments	1
1.3 Coordination	2
2.0 <u>AREA STUDIED</u>	3
2.1 Scope of Study	3
2.2 Community Description	6
2.3 Principal Flood Problems	7
2.4 Flood Protection Measures	8
3.0 <u>ENGINEERING METHODS</u>	8
3.1 Hydrologic Analyses	9
3.2 Hydraulic Analyses	17
3.3 Vertical Datum	22
4.0 <u>FLOODPLAIN MANAGEMENT APPLICATIONS</u>	22
4.1 Floodplain Boundaries	23
4.2 Floodways	24
5.0 <u>INSURANCE APPLICATIONS</u>	40
6.0 <u>FLOOD INSURANCE RATE MAP</u>	42
7.0 <u>OTHER STUDIES</u>	42
8.0 <u>LOCATION OF DATA</u>	44
9.0 <u>BIBLIOGRAPHY AND REFERENCES</u>	44

TABLE OF CONTENTS – continued

Page

FIGURES

Figure 1 - Floodway Schematic	40
-------------------------------	----

TABLES

Table 1 - Flooding Sources Studied by Detailed Methods	3-4
Table 2 – Scope of Revision	4-5
Table 3 – Letters of Map Change	5-6
Table 4 - Summary of Discharges	12-16
Table 5 - Summary of Stillwater Elevations	16-17
Table 6 - Floodway Data	25-39
Table 7 - Community Map History	43

EXHIBITS

Exhibit 1 - Flood Profiles	
Hatchet Creek	Panels 01P-04P
Hatchet Creek Tributary 1	Panels 05P-07P
Hogtown Creek	Panels 08P-11P
Hogtown Creek Tributary 1	Panels 12P-15P
Hogtown Creek Tributary 2	Panels 16P-17P
Little Hatchet Creek	Panels 18P-24P
Little Hatchet Creek Tributary 1	Panels 25P-27P
Little Montechoa Creek	Panels 28P-30P
Little Montechoa Creek Diversion	Panels 31P-34P
Little Montechoa Creek Diversion Tributary	Panel 35P
Montechoa Creek	Panels 36P-38P
Newnans Lake Tributary 1	Panels 39P-45P
Newnans Lake Tributary 2	Panels 46P-47P
Newnans Lake Tributary 3	Panel 48P
Rhuda Branch	Panels 49P-53P
Rocky Creek	Panels 54P-64P
Rocky Creek Tributary	Panels 65P-66P
Santa Fe River	Panels 67P-71P
Sweetwater Branch	Panels 72P-78P
Tumblin Creek	Panels 79P-80P
Turkey Creek	Panel 81P
Turkey Creek Tributary 1	Panel 82P

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

FLOOD INSURANCE STUDY ALACHUA COUNTY, FLORIDA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This countywide Flood Insurance Study (FIS) investigates the existence and severity of flood hazards in, or revises and updates previous FISs/Flood Insurance Rate Maps (FIRMs) for the geographic area of Alachua County, Florida, including: the Cities of Alachua, Archer, Gainesville, Hawthorne, High Springs, Newberry, and Waldo; the Towns of La Crosse and Micanopy; and the unincorporated areas of Alachua County (hereinafter referred to collectively as Alachua County).

This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This FIS has developed flood risk data for various areas of the county that will be used to establish actuarial flood insurance rates. This information will also be used by Alachua County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and will also be used by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

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

1.2 Authority and Acknowledgments

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

This FIS was prepared to include all jurisdictions within Alachua County in a countywide format. Information on the authority and acknowledgments for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports, is shown below.

Alachua County:
(Unincorporated Areas);

the hydrologic and hydraulic analyses for the FIS report dated November 4, 1988, for the Santa Fe River, Santa Fe Lake, Little Santa Fe Lake, and Lake Alto were performed by the U.S. Army Corps of Engineers (USACE), for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-85-E-1822, and were completed in January 1987. Other hydrologic

and hydraulic analyses were completed in August 1978.

Gainesville, City of:

the hydrologic and hydraulic analyses for the FIS report dated February 17, 1993, were performed by the U.S. Geological Survey (USGS), for FEMA, under Inter-Agency Agreement No. IAA-H-17-75, Project Order No. 16. That work, which was completed in August 1978, covered all significant flooding sources affecting the City of Gainesville.

Waldo, City of:

the hydrologic and hydraulic analyses for the FIS report dated November 4, 1988, were performed by the USGS, Water Resources Division, for FEMA, under Inter-Agency Agreement No. EMW-85-E-1823. That work was completed in April 1987.

The authority and acknowledgments for the Cities of Alachua, Archer, Hawthorne, High Springs, and Newberry; and the Towns of La Crosse and Micanopy are not available because no FIS reports were ever published for those communities.

For this countywide FIS, revised hydrologic and hydraulic analyses were prepared by Engineering Methods & Applications, Inc., for FEMA, under Inter-Agency Agreement No. EMA-98-CO-0088. This work was completed on September 30, 1999.

On selected FIRM panels, planimetric base map information was provided in digital format. These files were compiled at scales of 1:12,000 from aerial photography dated 1994 or later. Additional information was derived from U.S. Geological Survey (USGS) Digital Line Graphs.

The coordinate system used for the production of the digital FIRM is Universal Transverse Mercator referenced to the North American Datum of 1927 and the GRS80 spheroid.

1.3 Coordination

Consultation Coordination Officer's (CCO) meetings may be held for each jurisdiction in this countywide FIS. An initial CCO meeting is held typically with representatives of FEMA, the community, and the study contractor to explain the nature and purpose of the FIS, and to identify the streams to be studied by detailed methods. A final CCO meeting is held typically with representatives of FEMA, the community, and the study contractor to review the results of the study.

The dates of the initial and final CCO meetings held prior to this countywide FIS have been compiled from previously printed FIS reports and are shown in the following tabulation.

<u>Community</u>	<u>Initial CCO Date</u>	<u>Final CCO Date</u>
Alachua County (Unincorporated Areas)	*	December 11, 1987
Gainesville, City of	March 1975	February 9, 1982
Waldo, City of	*	December 11, 1987

*Data not available

For this countywide FIS, an initial CCO meeting was held on May 6, 1998. These meetings were attended by representatives of the Alachua County Department of Public Works; Alachua County Emergency Management; Alachua County Fire and Rescue; Alachua County Codes Enforcement; Alachua County Growth Management; the Cities of Alachua, Archer, Gainesville, High Springs, and Waldo, and the Town of Micanopy; the Suwannee River Water Management District; the St. Johns River Water Management District; local engineering firms; Engineering Methods & Applications, Inc., and FEMA.

A final CCO meeting was held on April 26, 2005, and was attended by representatives of the county, the communities, and FEMA.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Alachua County, Florida.

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

TABLE 1 - FLOODING SOURCES STUDIED BY DETAILED METHODS

Grass Prairie	Levy Lake – East
Hatchet Creek	Levy Lake – West
Hatchet Creek Tributary 1	Levy Lake - North
Hogtown Creek	Little Hatchet Creek
Hogtown Creek Tributary 2	Little Hatchet Creek Tributary 1
Kanapaha Prairie	Little Montechoa Creek
Lake Alto	Little Montechoa Creek Diversion
Ledwith Lake	

TABLE 1 - FLOODING SOURCES STUDIED BY DETAILED METHODS - continued

Little Montechoa Creek Diversion Tributary	Rocky Creek
Little Santa Fe Lake	Rocky Creek Tributary
Lochloosa Lake	Santa Fe Lake
Montechoa Creek	Santa Fe River
Mud Pond	Sunshine Lake
Orange Lake	Sweetwater Branch
Newnans Lake Tributaries 1, 2, and 3	Tumblin Creek
Kanapaha Sink	Unnamed Lake West of
Rhuda Branch	Sunshine Lake

As part of this countywide FIS, updated analyses were included for the flooding sources shown in Table 2, "Scope of Revision."

TABLE 2 - SCOPE OF REVISION

<u>Stream</u>	<u>Limits of Revised or New Detailed Study</u>
Grass Prairie	Entire ponding extent within county
Kanapaha Prairie	Entire ponding extent within county
Ledwith Lake	Shoreline within county
Levy Lake	Shoreline within county
Little Montechoa Creek Diversion	Confluence with Little Montechoa Creek Diversion to approximately 520 feet upstream of NE 10 th Street
Little Montechoa Creek Diversion Tributary	Confluence with Little Montechoa Creek Diversion to approximately 50 feet upstream of NE 21 st Street
Little Montechoa Creek	Confluence with Montechoa Creek to approximately 100 feet upstream of CR 340
Montechoa Creek	Confluence with Santa Fe River to approximately 2.5 miles upstream of CR 340
Mud Pond	Shoreline within county
Rhuda Branch 440 feet upstream of CR 231	Confluence with Sunshine Lake to approximately
Rocky Creek	Confluence with Santa Fe River to approximately 1.74 miles upstream of CR 329

TABLE 2 - SCOPE OF REVISION - continued

<u>Stream</u>	<u>Limits of Revised or New Detailed Study</u>
Rocky Creek Tributary	Confluence with Rocky Creek to approximately 1.5 miles upstream of confluence with Rocky Creek
Sunshine Lake	Shoreline within county
Unnamed Lake west of Sunshine Lake	Shoreline within county

The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

All or portions of numerous flooding sources in the county were studied by approximate methods. 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 Alachua County.

This countywide FIS also incorporates the determination of Letters of Map Revision (LOMRs), issued by FEMA as shown in Table 3, "Letters of Map Change."

TABLE 3 – LETTERS OF MAP CHANGE

<u>Community</u>	<u>Flooding Source(s)/Project Identifier</u>	<u>Effective Date</u>	<u>Type</u>
Unincorporated Areas	Depressional Wetland/Millhopper Forest	February 26, 2001	LOMR
City of Alachua	Turkey Creek, Tributary 1 to Turkey Creek/Turkey Creek PUD	February 9, 2000	LOMR
City of Gainesville	Hogtown Creek, Clear Lake and Holly Forest Pond Sugarfoot Berm in Anglewood Subdivision	January 16, 2000	LOMR
City of Gainesville	To Correct a Street Name on LOMR 97-04-385P	November 12, 1998	LOMR
City of Gainesville	Hatchet Creek/Northwest Industrial Park	September 27, 1998	LOMR
Alachua County, Unincorporated Areas, and the City of Gainesville	Lateral B Drainage Channel/ Cedar Grove Subdivision, Units 1 & 2	June 12, 1998	LOMR

TABLE 3 – LETTERS OF MAP CHANGE - continued

<u>Community</u>	<u>Flooding Source(s)/Project Identifier</u>	<u>Effective Date</u>	<u>Type</u>
City of Alachua	Unnamed Tributary to Turkey Creek/ Carrington Green of Turkey Creek Subdivision	October 29, 1996	LOMR
City of Gainesville	Millhopper Station Subdivision	September 28, 1993	LOMR
City of Gainesville	Howard Plaza Condos, Lots 5 & 6	September 9, 1992	LOMR-F
City of Gainesville	Hogtown Creek Tributary 1/ Zone A Revision*	July 9, 1991	LOMR
Alachua County, Unincorporated Areas	Hogtown Creek Tributary 2/ Summer Creek Development*	March 29, 1991	LOMR

*A portion of this LOMR has been superseded by updated analyses

2.2 Community Description

Alachua County is in north-central Florida. It is bordered by Putnam County on the east; Levy and Marion Counties on the south; and Gilchrist County on the west; and is separated from Columbia, Union, and Bradford Counties on the north by the Santa Fe River. The county is served by Interstate 75; U.S. Routes 27, 41, 441, and 301; and State Roads 20, 121, 24, and 236. The CSX Railroad also serves the county. According to the U.S. Census Bureau, the 2000 census population of Alachua County was 217,955, and the projection for the year 2020 is 282,400. Alachua County is the site of the main campus of the University of Florida at Gainesville with over 40,000 students. Gainesville is the most populous city in the county and the 14th largest city in Florida with a 2000 census population of 95,447, according to the Alachua County Board of County Commissioners.

Alachua County comprises approximately 622,080 acres, approximately one-half of which is farmland. The economy of the area is diversified and relies on agriculture, livestock, commercial timberlands, industry, and the University of Florida in the City of Gainesville.

Gainesville, the county seat, is located near the center of Alachua County. Newnans Lake Tributary 1, Sweetwater Branch, and Tumblin Creek originate inside the corporate limits of the city.

The soils in the county are mostly sands, causing lower peaks when preceded by periods of little rain. However, rainfall in Alachua County is abundant, averaging approximately 54 inches per year (U.S. Department of Commerce, 1982). Approximately 60 percent of this annual rainfall occurs from June through September in the form of afternoon and evening showers or thunderstorms. During this principal rainy season, saturated soils can cause rapid runoff and higher peaks

during intense storms. Rainfall during seasons other than the principal rainy season is usually the result of large-scale weather developments, such as frontal movements and hurricanes.

Alachua County may be divided into two general types of drainage basins: depression basins and stream basins. The topographical depressions have no perennial outlet for surface water except by infiltration to the ground water and by evapotranspiration. The stream basins accumulate surface water via streams and channels, which ultimately discharge into sinkholes, lakes, other depressions, or larger streams.

2.3 Principal Flood Problems

The most severe flooding usually occurs as the result of hurricanes. The streams overflow into ponds in the adjacent low-lying areas and discharge into the previously shallow flooded depressions.

The largest flood known to have occurred on the Santa Fe River in Alachua County was the flood of September 1964. The peak discharge for this flood was 20,000 cubic feet per second (cfs) at the USGS gage at the Town of Worthington Springs, and 20,000 cfs at the now non-existent USGS gage at the City of High Springs. The elevation of the flood was 71.14 feet National Geodetic Vertical Datum of 1929 (NGVD 29) at the Worthington Springs location and 45.32 feet NGVD 29 at the High Springs location. The flood reached an elevation of 54.9 feet NGVD 29 near the Oleno State Park about 2 miles downstream of Interstate 75 and exceeded the 100-year level at that location.

The City of Waldo is bordered on the east by a chain of lakes that includes Lake Alto, Little Santa Fe Lake, and Santa Fe Lake; and on the northeast by a large, unnamed swampy area that receives overflow from Lake Alto and Santa Fe Lake. These lakes form the headwaters of the Santa Fe River, which flows north and west from Little Santa Fe Lake. The Waldo Canal runs from the east-central incorporated area of Waldo to the northern end of Lake Alto. High water in Lake Alto and the Waldo Canal are believed to be the primary sources of possible flooding in the incorporated areas of Waldo. At higher elevations, Lake Alto will spill over into the swampy areas to the west and north. Lake Alto is connected to Little Santa Fe Lake by the Santa Fe Canal, which runs from the southeast corner of Lake Alto to the western edge of Little Santa Fe Lake. A staff gage read periodically by the Suwannee River Water Management District and the USGS is located at the western end of the Waldo-Lake Alto boat canal.

The Little Santa Fe Lake and Santa Fe lake are one lake and will be referred to hereafter as Santa Fe Lake. From information by local residents, Santa Fe Lake experienced an elevation of 143.9 feet NGVD 29 in 1946, which was greater than the 1-percent (100-year) annual chance event (U.S. Department of the Interior, 1983).

Heavy rains in late 1997 and early 1998 contributed to flooding in the Kanapaha Prairie, Paynes Prairie, and Levy Lake area. Rains of over 11 inches in December

1997 were followed by nearly 15 inches in February 1988 causing high water levels which persisted for many weeks and which caused partial closure of U.S. Highway 441. Although flooding was extensive and of long duration, water levels did not reach 50-year values.

There are no records concerning the history of flooding on other streams in Alachua County.

2.4 Flood Protection Measures

One levee exists in the study area that provides the community with 2 foot freeboard against the 1%-Annual Chance flood; the Sugarfoot Prairie Berm in the City of Gainesville. This berm protects the Anglewood subdivision from flooding from Hogtown Creek and was incorporated into the FIRM through Letter of Map Revision (LOMR) Case No. 96-04-183P, dated January 16, 2000. The structure of the berm is a combination of masonry wall and reinforced earth.

The criteria used to evaluate protection against the 1%-Annual Chance flood are 1) adequate design, including freeboard, 2) structural stability, and 3) proper operation and maintenance. Levees that do not protect against the 1%-Annual Chance flood are not considered in the hydraulic analysis of the 1%-Annual Chance floodplain.

In addition, several non-structural floodplain management measures exist within the county, including county zoning ordinances and building codes designed to reduce flood damage.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the county, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this FIS. Flood events of a magnitude which are 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 which equals or exceeds the 100-year flood (1-percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, 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 county at the time of completion of this FIS. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for the flooding sources studied in detail affecting the county.

Precountywide Analyses

The Cities of Gainesville and Waldo, and the unincorporated areas of Alachua County have a previously printed FIS report. The hydrologic analyses described in those reports have been compiled and are summarized below.

Unincorporated Areas of Alachua County

Generally, only sparse, short-term gaging station records have been collected within the county. The USGS gage on Hogtown Creek at Newberry Road has been in operation since 1959, the longest stream record in Alachua County. The lake level record for Newnan Lake dates back to 1936 and is the longest lake record in Alachua County. Two USGS stream gaging stations, Hogtown Creek near Arredondo and Sweetwater Branch Tributary at Gainesville, were established in 1971. Also, a USGS stage gage for Haile Sink and a lake-level station for Lake Kanapaha were established in 1971. One USGS crest-stage gage on Lochloosa Creek has been in operation since 1958; however, that stream is outside the Alachua County detailed study area.

Four USGS stream gages used in the Santa Fe River studies are located within the Alachua County reach. In addition, a fifth gage, the USGS gage near Ft. White (no. 02322500, 2.1 miles upstream from the State Route 47 bridge) is an active gage. It is just downstream from the Alachua County line. Two of the gages, one near High Springs (no. 02322000) and one at the Oleno State Park (no. 02321898) have been discontinued but records were used for the November 4, 1988, FIS. The gage at Oleno State Park has been replaced by a gage that is maintained by the Suwannee River Water Management District. Two additional gages are farther upstream at Worthington Springs and near Graham.

Values of the 10-, 2-, 1-, and 0.2-percent annual chance peak discharges were obtained for these records from a log-Pearson Type III distribution of annual peak flow data, as outlined in U.S. Water Resources Council Bulletin No. 17 (U.S. Water Resources Council, 1976). These records were the principal source of data for defining discharge-frequency relationships in the study area.

Hydrology for the Santa Fe River was performed using standard engineering methods. Statistical data from five long-term discharge gages were used to calibrate a hydrologic runoff model. A rainfall runoff model was developed for the Santa Fe River using the U.S. Soil Conservation Service (SCS) option in the HEC-1 computer program (USACE, 1973). Rainfall frequency was developed from U.S. Weather Bureau Technical Paper No. 40 (U.S. Department of Commerce, 1963), and runoff losses were accounted for by SCS curve number techniques.

To define discharge-frequency data for ungaged streams, several methods of analysis were used. A regional relationship of drainage area to the mean annual peak discharge and the 10-, 2-, 1-, and 0.2-percent annual chance floods, including adjustments for storage in lakes and swamps (U.S. Department of the Interior, 1966), was the principal method used. Other methods used included: (1) regional relationships of peak discharge and drainage area for nearby USGS gaging stations having similar hydrologic settings, and (2) ratios between smaller size peaks and the 2- and 1-percent annual chance flood peaks (U.S. Department of the Interior, 1973).

The 1- and 0.2-percent annual chance peak discharges for Hogtown Creek and Little Hatchet Creek were taken from a drainage study prepared for the North Central Florida Regional Planning Council (Sverdrup and Parcel and Associates, Inc., 1974).

City of Gainesville

Gaging station records collected within the study area were sparse and generally of short term. The USGS gage on Hogtown Creek at Newberry has been in operation since 1959. The lake level record for Newnans Lake dates back to 1936. Two stream-gaging stations, Hogtown Creek at Arredondo and Sweetwater Branch Tributary at Gainesville, were established in 1971. Also, a USGS stage gage for Haile Sink and a lake-level station for Lake Kanapaha were established in 1971.

Values of the 10-, 2-, 1-, and 0.2-percent annual chance peak discharges were obtained for these records from a log-Pearson Type III distribution of annual peak flow data as outlined in U.S. Water Resources Council Bulletin 17 (U.S. Water Resources Council, 1976). These records were the principal source of data for defining discharge-frequency relationships in the study area.

Sweetwater Branch peak discharges are larger than the normal for Florida runoff, based on records from Sweetwater Branch at Gainesville. Tumblin Creek is in a similar hydrologic setting and, therefore, discharges were adjusted to agree with Sweetwater Branch.

For the February 17, 1993, FIS, a hydrologic analysis for Hogtown Creek Tributary 1 was performed by estimating the magnitude and frequency of floods with recurrence intervals of 10, 50, 100, and 500 years using regression equations developed by the USGS. The USGS method of analysis estimates the peak discharges developed for rural streams (U.S. Department of the Interior, 1982) and adjustments are made for urbanization (U.S. Department of the Interior, 1983).

City of Waldo

A lake-volume frequency analysis was performed to determine the 1-percent annual chance flood elevations in the vicinity of Waldo. Lake Alto and Santa Fe Lake were treated as one system for the volume-frequency analysis for the following reasons: the lakes are closely connected by the Santa Fe Canal, the

elevations on the two lakes are usually about the same, and the two lakes at higher elevations flow into a common overflow area. Considering these three hydrologic facts, it seemed reasonable that at large recurrence-interval events, such as the 1-percent annual chance flood, the two lakes and adjoining wetlands act as a unit and have a common peak stage.

Thirty annual peaks and one historical peak in a 40-year period of record (1946 to 1986) for the Santa Fe Lake were used for the time-frequency analysis. A stage-volume relationship was determined using a planimeter on topographic maps at a scale of 1:24,000 with a contour interval of 10 feet (U.S. Department of the Interior, 1970, et cetera). The annual peaks and stage-volume relationship was used to determine the annual maximum lake volumes. These annual lake volumes were used in a log-Pearson Type III frequency analysis in place of discharge, as described in Bulletin No. 17B (U.S. Department of the Interior, 1982).

Countywide Analyses

Information on the methods used to determine peak discharge-frequency relationships for the streams restudied as part of this countywide FIS is shown below.

Hydrology for the Alachua County FIS was determined using a variety of methods. The USACE HEC-1 computer program was used for streams (USACE, 1973), while the adICPR computer program was used for lakes and ponding areas (Streamline Technologies, 1996). SCS hydrographs were used to determine basin runoff in both the HEC-1 and adICPR programs. Peak rate factors for various basin slopes were based on standard recommendations by NRCS (previously SCS) and by the St. Johns River Water Management District.

Times of concentration were determined using the SCS velocity method and rainfall infiltration calculations were based on SCS curve number methods (U.S. Soil Conservation Service, 1972). Curve numbers were based on soils and land-use data from the Florida Geographic Data Library (University of Florida, 1998) and from site visits.

Rainfall values were based on standard data from the National Weather Service (National Oceanic and Atmospheric Administration, 1961; National Oceanic and Atmospheric Administration, 1964). A 4-day storm was chosen for the southern Kanapaha Prairie-Levy Lake system because of the importance of storage in the basin; a 24-hour storm was chosen for the northern streams.

A summary of the drainage area-peak discharge relationships for all the streams studied by detailed methods is shown in Table 4, "Summary of Discharges."

TABLE 4 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA	PEAK DISCHARGES (cfs)			
	(sq. miles)	10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
HATCHET CREEK					
Approximately 3.46 miles upstream of mouth	39.70	1,160	1,770	2,030	2,640
Approximately 300 feet downstream of the confluence of Unnamed Tributary	36.90	1,090	1,660	1,910	2,480
Approximately 750 feet upstream of the confluence of Unnamed Tributary	29.80	902	1,380	1,580	2,050
Approximately 900 feet downstream of the confluence of Hatchet Creek Tributary	29.30	888	1,350	1,550	2,020
Approximately 1,075 feet upstream of Waldo Road	17.10	552	842	966	1,260
Approximately 1,450 feet upstream of Waldo Road	15.80	516	787	903	1,170
Approximately 0.8 mile downstream of County Highway 225	14.70	468	714	819	1,060
Just upstream of County Highway 225	13.00	434	662	760	987
Approximately 0.5 mile upstream of County Highway 225	10.00	346	528	606	787
Approximately 1.45 miles upstream of County Highway 225	9.28	322	491	564	733
HATCHET CREEK TRIBUTARY 1					
At mouth	11.90	400	610	700	910
Just downstream of Waldo Road	10.70	366	558	640	833
Approximately 0.64 mile upstream of Waldo Road	9.91	342	522	598	778
Approximately 2.31 miles upstream of Waldo Road	8.30	292	445	511	664

*Data not available

TABLE 4 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
HOGTOWN CREEK					
Just upstream of					
Southwest 20th Street	18.50	1,314	*	2,684	*
At Cross Section B	18.50	1,110	2,080	2,650	4,980
At Cross Section F	17.40	980	1,890	2,400	4,400
At Cross Section J	9.58	460	870	1,100	2,100
At Cross Section K	8.53	420	780	1,000	1,900
At Cross Section N	7.56	380	720	920	1,700
At Cross Section P	7.05	360	690	870	1,600
HOGTOWN CREEK					
TRIBUTARY 1					
At Northwest 34th Street	5.33	1,065	1,700	2,040	2,685
Just upstream of					
confluence of Three					
Lakes Creek	4.20	890	1,420	1,710	2,255
Just upstream of					
confluence of Monterey					
Creek	3.00	685	1,100	1,320	1,745
Just downstream of					
confluence of Hogtown					
Creek Tributary 2	2.59	615	990	1,185	1,570
Just upstream of					
confluence of Hogtown					
Creek Tributary 2	2.03	515	830	995	1,320
At Northwest 53rd Avenue	1.75	410	660	790	1,055
Just upstream of					
Northwest 53rd Avenue	1.00	275	445	530	720
HOGTOWN CREEK					
TRIBUTARY 2					
At mouth	1.56	210	405	515	950
Approximately 0.61 mile					
above mouth	1.13	200	385	490	910
Approximately 0.74 mile					
above mouth	0.78	195	375	475	880
LITTLE HATCHET CREEK					
At entrance to Gum Root					
Swamp	8.86	1,575	*	2,278	*
At Cross Section A	4.33	168	256	294	382
At Cross Section F	3.70	144	220	252	328

*Data not available

TABLE 4 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
LITTLE HATCHET CREEK					
TRIBUTARY 1					
At mouth	2.12	88	134	154	200
Approximately 0.6 mile above mouth	1.76	74	113	130	168
LITTLE MONTEOCHA CREEK					
At mouth	8.2	1,654	2,452	2,880	3,821
At County Route 340	3.5	1,052	1,564	1,838	2,393
MONTEOCHA CREEK					
At mouth	25.6	4,234	6,331	7,517	9,956
Upstream of confluence with Little Monteocho Creek	12.7	1,867	2,763	3,292	4,366
At County Route 340	7.9	1,172	1,760	2,102	2,764
NEWNANS LAKE					
TRIBUTARY 1					
At mouth	8.17	290	430	500	660
Approximately 400 feet upstream of confluence of Newnans Lake					
Tributary 2	4.06	155	230	275	355
Approximately 1,645 feet downstream of Southwest 43rd Street	3.23	125	190	220	290
Approximately 1,425 feet upstream of Southwest 43rd Street	2.91	110	165	195	255
At Cross Section A	0.66	46	69	85	105
NEWNANS LAKE					
TRIBUTARY 2					
At mouth	3.73	145	215	250	330
Approximately 0.66 foot above mouth	2.45	100	150	175	230
NEWNANS LAKE					
TRIBUTARY 3					
At mouth	1.49	64	96	110	150
At East University Avenue	1.23	55	82	95	125

TABLE 4 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
RHUDA BRANCH					
At NW 192nd Avenue (east and west structures)	2.8	912	1,293	1,503	1,887
Approximately 550 feet downstream of County Route 231	0.1	77	105	119	146
ROCKY CREEK					
At mouth	34.7	6,544	9,630	11,410	14,914
At railroad crossing	28.3	5,709	7,965	9,235	11,917
Just downstream of State Route 235	26.3	5,087	7,199	8,559	11,286
At NW 142nd Avenue	10.0	2,310	3,426	4,051	5,327
At road approximately 3,500 feet upstream of County Route 231	4.9	1,114	1,622	1,906	2,459
ROCKY CREEK TRIBUTARY					
At mouth	2.5	837	1,187	1,367	1,731
SANTA FE RIVER					
At mouth	1,380	8,500	13,400	16,400	22,200
At Ft. White	1,017	9,200	13,800	16,700	22,200
At High Springs	950	9,300	15,800	19,600	29,700
At Worthington Springs	630	12,800	20,700	25,200	36,500
At Graham	95	1,300	2,300	3,000	4,400
SWEETWATER BRANCH					
Approximately 0.67 mile downstream of State Road 331	2.73	2,500	3,000	3,200	3,800
Approximately 1,360 feet downstream of State Road 331	2.49	2,100	2,450	2,650	3,100
Just downstream of State Road 331	2.32	1,850	2,180	2,300	2,750
At Cross Section C	2.15	1,600	1,900	2,020	2,400
At Cross Section I	0.65	500	590	630	740
TUMBLIN CREEK					
At mouth	1.26	805	945	1,000	1,190
At Cross Section B	1.19	760	900	960	1,190
At Cross Section E	0.91	610	720	770	910

TABLE 4 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
TURKEY CREEK					
At a point approximately 0.39 mile downstream of Palmetto Boulevard	7.93	*	*	3,172	*
Upstream of confluence of Tributary 1 to Turkey Creek	6.94	*	*	2,882	*
TURKEY CREEK TRIBUTARY 1					
Upstream of confluence with Turkey Creek	1.00	*	*	654	*

*Data not available

The stillwater elevations have been determined for the 10-, 50-, 100-, and 500-year floods for the flooding sources studied by detailed methods and are summarized in Table 5, "Summary of Stillwater Elevations."

TABLE 5 - SUMMARY OF STILLWATER ELEVATIONS

<u>FLOODING SOURCE AND LOCATION</u>	<u>ELEVATION (feet NGVD*)</u>			
	<u>10-PERCENT</u>	<u>2-PERCENT</u>	<u>1-PERCENT</u>	<u>0.2-PERCENT</u>
GRASS PRAIRIE	60.6	62.7	63.6	64.8
KANAPAHA PRAIRIE	59.3	62.7	63.6	64.8
KANAPAHA SINK	59.3	62.7	63.6	64.8
LAKE ALTO Along shoreline	**	**	142.78	**
LEDWITH LAKE	68.9	69.2	69.4	69.8
LEVY LAKE EAST	64.3	64.6	64.7	65.5
LEVY LAKE WEST	63.6	64.2	64.6	65.5

*North American Vertical Datum of 1988

**Data not available

***St. Johns River Water Management District, 1999

TABLE 5 - SUMMARY OF STILLWATER ELEVATIONS - continued

<u>FLOODING SOURCE AND LOCATION</u>	<u>ELEVATION (feet NGVD*)</u>			
	<u>10-PERCENT</u>	<u>2-PERCENT</u>	<u>1-PERCENT</u>	<u>0.2-PERCENT</u>
LEVY LAKE NORTH	62.6	64.2	64.6	65.5
LITTLE SANTA FE LAKE Along shoreline	142.23	142.84	143.11	143.77
LOCHLOOSA LAKE***	60.0	61.0	61.3	**
MUD POND	70.4	70.7	70.8	71.1
ORANGE LAKE***	59.8	60.5	60.8	**
SANTA FE LAKE Along shoreline	142.23	142.84	143.11	143.77
SUNSHINE LAKE	84.7	87.1	88.5	90.9
UNNAMED LAKE WEST OF SUNSHINE LAKE	90.1	93.0	94.5	97.0

*North American Vertical Datum of 1988

**Data not available

***St. Johns River Water Management District, 1999

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source 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. For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Cross sections were determined from topographic maps and field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry. All topographic mapping used to determine cross sections is referenced in Section 4.1.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was

computed (Section 4.2), selected cross section locations are also shown on the FIRM (Exhibit 2).

The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Precountywide Analyses

The Cities of Gainesville and Waldo, and the unincorporated areas of Alachua County have a previously printed FIS report. The hydraulic analyses described in those reports have been compiled and are summarized below.

Unincorporated Areas of Alachua County

Cross-section data for Hogtown Creek and Little Hatchet Creek were obtained by field survey.

Stream cross sections and bridge geometries for the Santa Fe River were obtained by photogrammetric methods from aerial photography (USACE, 1985).

For the remaining streams in the study area, cross-section data were obtained from aerial photographs (Kimball, 1976) and below-water sections were obtained by field measurement. All bridges and culverts were surveyed to obtain elevation data and structural geometry.

Roughness coefficients (Manning's "n") for the hydraulic stream model for the Santa Fe River ranged from 0.035 to 0.100 for the main channel and 0.20 to 0.42 for the overbank. The hydraulic model was calibrated to reproduce the 1964 flood. The "n" values were chosen accordingly.

Roughness coefficients (Manning's "n") for all other streams were estimated by field inspection at each cross section and roadway structure. Roughness values for the main channels ranged from 0.020 to 0.20 and from 0.030 to 0.160 for the overbank.

Starting water-surface elevations for the following streams were taken from the determined 1-percent annual chance lake elevations at the confluence point: Hatchet Creek, Newnans Lake Tributary 1, Sweetwater Branch, and Tumblin Creek. Starting water-surface elevations for Hatchet Creek Tributary 1, Hogtown Creek Tributary 2, and Newnans Lake Tributaries 2 and 3 were obtained by profile convergence. The starting water-surface elevations for Hogtown Creek were determined from the storage outflow properties of Haile Sink (Sverdrup and Parcel and Associates, Inc., 1974). The starting water-surface elevations for Little Hatchet Creek were determined using the normal water-surface elevations at Gum Root Swamp. Starting water-surface elevations for the Santa Fe River were obtained from the published FIS for Columbia County, Florida (FEMA, 1988).

Water-surface profiles were developed for each recurrence interval, with the exception of the 2- and 0.2-percent annual chance recurrence intervals on Hogtown and Little Hatchet Creeks, using the USGS step-backwater computer model (U.S. Department of the Interior, 1976). Flood profiles for the 2-percent annual chance recurrence interval for Hogtown Creek and Little Hatchet Creek were interpolated. Flood profiles for the 0.2-percent annual chance recurrence interval for Hogtown Creek and Little Hatchet Creek were extrapolated. The elevations for Hogtown Creek downstream of Interstate Highway 75 remain constant; therefore, water-surface profiles are not shown for this area. Backwater effects at culverts were developed by analyzing each culvert on the basis of its geometry (U.S. Department of the Interior, 1968). Flood profiles for the Santa Fe River were developed using the USACE HEC-2 step-backwater computer model (USACE, 1989).

City of Gainesville

Water-surface profiles were developed for each recurrence interval using the USGS computer step-backwater model (U.S. Department of the Interior, Open File Report 76-499, 1976).

Cross-section data for streams in the area were obtained from aerial photographs (Kimball, 1976), from land survey, or by synthesis to get an average cross section when additional cross sections were needed; the below-water sections were obtained by field measurement. All bridges and culverts were field surveyed to obtain elevation data and structural geometry.

Cross sections were located at close intervals upstream and downstream of each bridge and culvert in order to compute the significant backwater effects of these structures. The USGS step-backwater model can analyze flow through bridges at roadway restrictions, but flow through culverts is not an integral part of that model. Backwater effects at culverts were developed by analyzing each culvert on the basis of its geometry (U.S. Department of the Interior, 1968).

Roughness coefficients (Manning's "n") for all streams were estimated by field inspection at each cross section and roadway structure. Roughness values for the main channels ranged from 0.035 to 0.065, and, for the floodplains, from 0.050 to 0.180.

Starting water-surface elevations for Hogtown Creek, Little Hatchet Creek, Sweetwater Branch, Tumblin Creek, and Newnans Lake Tributary 1 were determined from estimated 100-year lake levels at the confluence point. Starting water-surface elevations for Hogtown Creek Tributary 1 and 2 were obtained from profile convergence.

Elevations for the approximate study areas were determined by normal depth calculations from USGS floodprone area maps (U.S. Department of the Interior, 1970, et cetera).

For the February 17, 1993, revision, analyses of the hydraulic characteristics of Hogtown Creek Tributary 1 were carried out for floods of 10-, 2-, 1-, and 0.2-percent annual chance recurrence intervals (USACE, 1989).

Water-surface profiles for the selected recurrence intervals were computed using the HEC-2 step-backwater computer program (USACE, 1989). Four cross sections were surveyed by the City of Gainesville for use in the HEC-2 models. Cross sections in the Northwood Oaks and Pines Subdivisions were determined by using as-built construction plans. Roughness coefficients (Manning's "n") were determined from field reconnaissance. Values ranged from 0.020 to 0.07 in the channel and from 0.035 to 0.20 in the overbank areas. The Federal Highway Administration culvert computer program HY-8 was used for culvert analyses and the results were entered into the HEC-2 models.

Water-surface elevations for the 1- and 0.2-percent annual chance discharges were generally contained within the banks of the drainage canals upstream of Northwest 54th Avenue. Much of the low-lying areas northeast of the intersection of State Road 121 and Northwest 39th Street have been filled in, and canals have been dug to drain these areas. Since the canals are able to pass the 1- and 0.2-percent annual chance flows within their banks, much of the low-lying areas have been removed from the flood hazard zone.

For each stream studied in detail, 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 scales of 1:1,200 and 1:2,400, with a contour interval of 2 feet (North Central Florida Regional Planning Council, 1974).

Countywide Analyses

Information on the methods used to determine peak discharge-frequency relationships for the streams restudied as part of this countywide FIS is shown below.

For streams studied by detailed methods, water-surface elevations of the 10-, 2-, 1-, and 0.2-percent annual chance recurrence intervals were computed using the USACE HEC-RAS water-surface profile computer program (USACE, 1998). Lakes and ponding areas were studied using the adICPR program (Streamline Technologies, 1996), except for Sunshine Lake and Unnamed Lake West of Sunshine Lake which were studied using HEC-1 (USACE, 1973). Starting water-surface elevations for streams were taken to be normal depth; for lakes, the starting water-surface levels were determined based on controlling culvert invert elevations, 2-year return period levels as determined by the St. Johns River Water Management District (St. Johns River Water Management District, 1998), and levels indicated on topographic maps.

Channel cross sections and lake outlets were obtained from new surveys by DeGrove Surveyors, Inc., performed as part of this study. Floodplain topography

was based on new aerial photography and digital terrain models prepared for this study by 3di Corporation.

Channel roughness factors (Manning's "n") used in the hydraulic computations were selected based on field observations, aerial photos, and photographs of the stream and floodplain areas. Roughness values used for the main channels ranged from 0.03 to 0.08, with floodplain roughness values from 0.06 to 0.15 for all flood frequencies.

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

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

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

- Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)
- Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)
- Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monument below frost line)
- Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

In addition to NSRS bench marks, the FIRM may also show vertical control monuments established by a local jurisdiction; these monuments will be shown on the FIRM with the appropriate designations. Local monuments will only be placed on the FIRM if the community has requested that they be included, and if the monuments meet the aforementioned NSRS inclusion criteria.

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

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

3.3 Vertical Datum

All FISs 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 in use for newly created or revised FISs and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD 29). With the finalization of the North American Vertical Datum of 1988 (NAVD 88), many FIS reports and FIRMs are being prepared using NAVD 88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD 88. Structure and ground elevations in the community must, therefore, be referenced to NAVD 88. It is important to note that adjacent communities may be referenced to NGVD 29. This may result in differences in base flood elevations across the corporate limits between the communities.

Prior versions of the FIS report and FIRM were referenced to NGVD 29. When a datum conversion is effected for an FIS report and FIRM, the Flood Profiles, and Base Flood Elevations (BFEs) reflect the new datum values. To compare structure and ground elevations to BFEs shown in the FIS report and on the FIRM, the structure and ground elevations must be referenced to the new datum values.

As noted above, the elevations shown in the FIS report and on the FIRM for Alachua County and incorporated areas are referenced to NAVD 88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD 29 by applying a standard conversion factor to the NAVD 88 values. The conversion factor is 0.82 foot.

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

For more information on NAVD 88, see Converting the National Flood Insurance Program to the North American Vertical Datum of 1988, FEMA Publication FIA-20/June 1992, or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address <http://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 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 1-percent annual chance floodway. This information is presented on the FIRM and in many components of the FIS, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS 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 county. For the streams studied in detail, the 1- and 0.2-percent annual chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with contour intervals of 5 and 10 feet (U.S. Department of the Interior, 1966, et cetera), and at scales of 1:1,200 and 1:2,400 with a contour interval of 2 feet (North Central Florida Regional Planning Council, 1974), and Floodprone Area Maps at a scale of 1:24,000 and contour intervals of 5 and 10 feet (U.S. Department of the Interior, 1970, et cetera).

For this countywide FIS, between cross sections, the boundaries were interpolated using the computed flood elevations and surveyed cross sections. Between surveyed cross sections and around lakes, new topographic aerial maps with a contour interval of 4 feet were used.

For the flooding sources studied by approximate methods, the boundaries of the 1-percent annual chance floodplains were delineated using topographic maps taken from the previously printed FIS reports, FHBMs, and/or FIRMs for all of the incorporated and unincorporated jurisdictions within Alachua County with the exception of the the Cities of Alachua, Archer, Gainesville, Hawthorne, High Springs, and Newberry; and the Towns of La Crosse and Micanopy. The 1-percent annual chance floodplain boundaries within the City of Gainesville were delineated using topographic maps supplied by the North Central Florida Regional Planning Council with a contour interval of 2 feet, and a scale of 1:200 (Mapco Inc., 1974).

The 1- and 0.2-percent annual chance floodplain boundaries are shown on the FIRM (Exhibit 2). 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, the 1- or 0.2-percent annual chance floodplain boundary is shown on the FIRM (Exhibit 2).

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 1-percent annual chance flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this FIS are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this FIS were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (Table 6). The computed floodways are shown on the FIRM (Exhibit 2). In cases where the floodway and 1-percent annual chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

No floodways were computed for Turkey Creek and Turkey Creek Tributary 1.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 6 for certain downstream cross sections of Hogtown Creek Tributary 1, Hogtown Creek Tributary 2, Little Montecocha Creek, Newmans Lake Tributary 3, and Rocky Creek Tributary 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.

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 6, "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.

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 1-percent annual chance flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hatchet Creek								
A	18,280	600	2,898	0.70	95.6	95.6	96.6	1.0
B	18,840	600	2,711	0.75	96.2	96.2	97.0	0.8
C	19,880	600	2,534	0.80	97.4	97.4	97.9	0.5
D	21,320	600	2,495	0.81	99.0	99.0	99.3	0.3
E	22,470	600	2,182	0.93	100.5	100.5	100.8	0.3
F	23,640	600	2,140	0.95	102.5	102.5	102.7	0.2
G	24,640	600	2,008	0.95	104.3	104.3	104.5	0.2
H	25,680	600	1,923	0.82	106.2	106.2	106.3	0.1
I	26,740	600	1,894	0.83	107.8	107.8	108.3	0.5
J	27,720	600	1,899	0.83	109.2	109.2	110.2	1.0
K	28,600	600	2,028	0.83	109.2	109.2	110.2	1.0
L	30,400	600	1,834	0.53	113.8	113.8	114.2	0.4
M	31,310	95	286	3.38	114.5	114.5	114.8	0.3
N	31,515	90	188	5.14	115.3	115.3	115.4	0.1
O	32,835	240	717	1.35	119.8	119.8	120.2	0.4
P	34,155	240	887	1.02	122.3	122.3	122.9	0.6
Q	36,145	240	675	1.21	127.2	127.2	127.5	0.3
R	40,365	320	731	1.03	137.3	137.3	137.5	0.2
S	40,440	320	729	1.04	138.4	138.4	138.4	0.0
T	43,040	140	744	0.81	143.1	143.1	144.1	1.0
U	45,160	130	669	0.91	145.0	145.0	146.0	1.0
V	46,205	70	336	1.80	148.7	148.7	149.7	1.0
W	27,885	70	473	1.19	152.6	152.6	153.6	1.0

¹Feet above mouth

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

TABLE 6

FLOODWAY DATA

HATCHET CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hatchet Creek Tributary 1								
A	1,200	100	459	1.52	114.4	114.4	114.4	0.0
B	2,000	100	457	1.53	117.2	117.2	117.3	0.1
C	3,480	100	398	1.61	121.4	121.4	121.4	0.0
D	3,740	65	288	2.22	121.7	121.7	121.7	0.0
E	4,290	50	256	2.50	124.0	124.0	124.1	0.1
F	4,830	50	232	2.76	125.9	125.9	126.0	0.1
G	5,380	50	197	3.25	127.6	127.6	127.8	0.2
H	5,448	50	281	2.27	130.8	130.8	130.9	0.1
I	6,330	50	221	2.90	131.4	131.4	131.7	0.3
J	6,990	50	208	2.87	132.4	132.4	132.7	0.3
K	7,090	65	298	2.01	133.7	133.7	133.8	0.1
L	8,870	50	211	2.83	135.8	135.8	136.4	0.6
M	10,630	50	182	3.29	138.8	138.8	138.9	0.1
N	10,710	50	245	2.44	140.6	140.6	140.6	0.0
O	13,110	120	449	1.33	141.0	141.0	141.1	0.1
P	15,910	130	338	1.51	141.9	141.9	142.3	0.4

¹Feet above confluence with Hatchet Creek

FEDERAL EMERGENCY MANAGEMENT AGENCY

TABLE 6

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

HATCHET CREEK TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hogtown Creek								
A	17,940	998	2,469	3.7	69.2	69.2	69.3	0.1
B	18,440	543	1,930	4.8	71.0	71.0	72.0	1.0
C	19,495	90	527	5.03	73.3	71.2	71.4	0.2
D	20,375	95	528	4.46	73.3	72.7	72.7	0.0
E	20,515	95	576	4.17	73.3	73.2	73.2	0.0
F	20,715	75	521	4.61	73.3	73.2	73.2	0.0
G	20,770	100	1,291	1.86	75.9	75.9	75.9	0.0
H	22,560	150	455	2.44	80.9	80.9	81.8	0.9
I	25,670	150	398	2.51	88.6	88.6	88.6	0.0
J	28,420	50	150	6.67	100.6	100.6	100.8	0.2
K	28,510	65	190	5.25	101.4	101.4	102.0	0.6
L	30,583	50	201	4.58	105.5	105.5	106.3	0.8
M	30,750	70	214	4.30	106.7	106.7	107.1	0.4
N	32,575	70	593	1.47	111.0	111.0	111.7	0.7
O	34,080	65	292	2.98	112.3	112.3	113.3	1.0

¹Feet above Haile Sink

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

TABLE 6

FLOODWAY DATA

HOGTOWN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hogtown Creek Tributary 1								
A	855	70	269	3.49	81.0	78.9 ²	79.4	0.5
B	965	145	747	1.26	81.0	79.3 ²	79.8	0.5
C	1,890	150	325	2.89	81.0	80.3 ²	81.3	1.0
D	2,820	125	301	3.12	84.3	84.3	85.3	1.0
E	3,750	70	220	4.27	88.3	88.3	89.3	1.0
F	4,675	50	176	5.17	91.9	91.9	92.8	0.9
G	4,800	50	158	5.76	92.4	92.4	93.3	0.9
H	6,113	50	165	5.52	96.9	96.9	97.0	0.1
I	7,426	50	181	5.02	101.2	101.2	101.3	0.1
J	8,740	50	176	4.43	105.8	105.8	106.0	0.2
K	8,865	80	189	4.12	106.1	106.1	106.1	0.0
L	10,400	150	633	3.2	111.9	111.9	112.9	1.0
M	11,480	158	1,347	1.3	121.0	121.0	121.0	0.0
N	12,890	78	159	8.3	121.2	121.2	121.2	0.0
O	14,565	100	409	3.2	131.2	131.2	131.2	0.0
P	16,260	89	459	2.9	133.0	133.0	133.4	0.4
Q	16,695	69	497	2.6	136.0	136.0	136.4	0.4
R	17,700	70	291	4.5	138.5	138.5	138.5	0.0
S	18,815	70	324	3.7	140.0	140.0	140.2	0.2
T	19,050	75	236	4.2	140.2	140.2	140.5	0.3
U	19,220	76	402	2.5	142.7	142.7	142.7	0.0
V	20,490	97	532	1.9	143.2	143.2	143.5	0.3
W	21,155	64	151	6.6	143.6	143.6	144.0	0.4
X	22,060	64	311	3.2	146.0	146.0	146.5	0.5
Y	22,985	50	178	5.6	146.8	146.8	147.4	0.6
Z	24,840	48	113	8.8	154.6	154.6	154.6	0.0

¹Feet above confluence with Hogtown Creek

²Elevation computed without consideration of backwater effects from Hogtown Creek

FEDERAL EMERGENCY MANAGEMENT AGENCY

TABLE 6

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

HOGTOWN CREEK TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hogtown Creek Tributary 1 (continued)	25,640 ¹	76	708	0.7	166.6	166.6	166.7	0.1
	27,640 ¹	20	169	2.4	180.3	180.3	180.4	0.1
	28,470 ¹	16	121	3.3	180.5	180.5	180.8	0.3
	29,810 ¹	13	84	3.4	181.2	181.2	182.2	1.0
	31,040 ¹	12	150	0.7	189.8	189.8	189.8	0.0
	32,720 ¹	10	94	0.7	190.1	190.1	190.2	0.1
Hogtown Creek Tributary 2	200 ²	50	189	2.73	139.3	138.8 ³	139.6	0.8
	600 ²	42	65	7.90	143.8	143.8	143.8	0.0
	1,030 ²	70	76	6.81	150.4	150.4	150.4	0.0
	1,280 ²	80	120	4.28	155.1	155.1	155.1	0.0
	1,305 ²	80	299	1.72	157.7	157.7	157.7	0.0
	1,890 ²	35	126	4.10	158.8	158.8	159.4	0.6
	2,470 ²	220	293	1.67	160.7	160.7	161.0	0.3
	2,535 ²	230	793	0.62	165.5	165.5	165.5	0.0
	3,225 ²	160	287	1.71	165.5	165.5	165.6	0.1
	3,922 ²	90	191	2.56	167.1	167.1	167.8	0.7
	4,760 ²	95	206	2.31	169.3	169.3	170.3	1.0

¹Feet above confluence with Hogtown Creek

²Feet above confluence with Hogtown Creek Tributary 1

³Elevation computed without consideration of backwater effects from Hogtown Creek Tributary 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TABLE 6

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

HOGTOWN CREEK TRIBUTARY 1 -
HOGTOWN CREEK TRIBUTARY 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Little Hatchet Creek	0 ¹	1,135	3,519	0.6	72.2	72.2	72.2	0.0
	1,000 ¹	340	1,545	1.8	75.9	75.9	75.9	0.0
	2,000 ¹	260	847	2.7	78.5	78.5	79.0	0.5
	3,000 ¹	240	311	3.5	84.6	84.6	84.6	0.0
	4,800 ¹	90	290	1.0	89.3	89.3	90.3	1.0
	5,620 ¹	90	220	1.3	93.1	93.1	93.6	0.5
	6,435 ¹	90	245	1.2	97.8	97.8	98.1	0.3
	7,255 ¹	90	205	1.4	102.0	102.0	102.2	0.2
	8,040 ¹	80	279	1.0	107.0	107.0	107.0	0.0
	10,760 ¹	30	66	3.80	121.0	121.0	121.0	0.0
	12,565 ¹	40	239	1.06	129.1	129.1	129.5	0.4
Little Hatchet Creek Tributary 1	550 ²	60	53	2.9	83.4	83.4	83.4	0.0
	1,300 ²	60	64	2.4	87.9	87.9	88.3	0.4
	2,760 ²	60	75	2.0	94.9	94.9	95.2	0.3
	2,788 ²	100	292	0.5	96.2	96.2	96.4	0.2
	3,200 ²	40	82	1.6	96.5	96.5	96.7	0.2

¹Feet above entrance to Gum Root Swamp

²Feet above confluence with Little Hatchet Creek

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

LITTLE HATCHET CREEK -
LITTLE HATCHET CREEK TRIBUTARY 1

TABLE 6

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Little Monteocho Creek	1,000 ¹	391	1,868	2.2	101.6	97.7 ⁴	98.6	0.9
	3,383 ¹	202	755	3.7	102.5	102.5	102.9	0.4
	7,195 ¹	151	538	7.8	114.4	114.4	115.0	0.6
	8,039 ¹	276	954	5.3	118.9	118.9	119.9	1.0
	8,900 ¹	646	2,120	1.8	121.4	121.4	122.4	1.0
	12,799 ¹	492	1,996	3.9	125.2	125.2	126.2	1.0
	14,428 ¹	319	1,637	4.9	127.6	127.6	128.6	1.0
	16,707 ¹	274	1,142	4.9	133.7	133.7	134.6	0.9
	17,995 ¹	485	3,315	0.6	134.3	134.3	135.3	1.0
Little Monteocho Creek Diversion								
	2,061 ²	188	873	4.6	107.7	107.7	108.6	0.9
	3,679 ²	154	325	3.8	114.4	114.4	114.4	0.0
	5,273 ²	196	408	2.4	118.5	118.5	118.6	0.1
	7,043 ²	221	625	2.4	121.3	121.3	122.1	0.8
Little Monteocho Creek Diversion Tributary								
	630 ³	60	105	2.9	109.3	109.3	109.3	0.0

¹Feet above confluence with Monteocho Creek

²Feet above confluence with Little Monteocho Creek

³Feet above confluence with Little Monteocho Creek Diversion

⁴Elevation computed without consideration of backwater effects from Monteocho Creek

FEDERAL EMERGENCY MANAGEMENT AGENCY

TABLE 6

**ALACHUA COUNTY, FL
AND INCORPORATED AREAS**

FLOODWAY DATA

**LITTLE MONTEOCHA CREEK – LITTLE MONTEOCHA CREEK DIVERSION –
LITTLE MONTEOCHA CREEK DIVERSION TRIBUTARY**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Monteocha Creek								
A	2,495	620	4,875	3.8	99.0	99.0	99.5	0.5
B	4,601	640	4,995	3.2	99.8	99.8	100.5	0.7
C	7,103	700	5,681	3.9	101.1	101.1	101.7	0.6
D	8,173	750	6,644	3.4	101.5	101.5	102.2	0.7
E	8,819	750	5,000	1.7	101.6	101.6	102.5	0.9
F	11,159	312	1,212	9.0	104.9	104.9	105.0	0.1
G	12,406	220	974	6.5	108.9	108.9	109.6	0.7
H	14,201	150	944	7.9	114.7	114.7	115.4	0.7
I	15,907	120	700	7.1	119.4	119.4	120.2	0.8
J	17,967	173	926	3.6	123.9	123.9	124.6	0.7
K	19,744	147	733	4.0	128.6	128.6	129.0	0.4
L	21,262	137	592	3.7	132.5	132.5	132.9	0.4
M	22,318	95	525	8.5	137.0	137.0	137.0	0.0
N	23,793	130	865	5.4	139.5	139.5	140.5	1.0
O	28,584	420	2,689	1.6	150.6	150.6	151.5	0.9
P	31,294	400	1,061	4.0	153.3	153.3	153.4	0.1
Q	34,588	200	521	4.0	158.6	158.6	159.0	0.4

¹Feet above confluence with Santa Fe River

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

TABLE 6

FLOODWAY DATA

MONTEOCHA CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Newnans Lake Tributary 1 A ¹ B ¹ C ¹ D ¹ E F G H I J K L M N O	0 ²	*	*	*	70.4	70.4	*	*
	1,100 ²	*	*	*	70.5	70.5	*	*
	2,200 ²	*	*	*	70.6	70.6	*	*
	2,270 ²	*	*	*	72.7	72.7	*	*
	2,950 ²	850	*	*	73.6	73.6	*	*
	3,550 ²	300	830	0.33	75.9	75.9	76.5	0.6
	4,190 ²	150	403	0.68	76.1	76.1	76.8	0.7
	4,830 ²	100	138	2.00	78.9	78.9	79.0	0.1
	7,710 ²	80	162	1.70	93.2	93.2	93.2	0.0
	8,990 ²	30	93	2.38	99.7	99.7	100.5	0.8
	10,590 ²	20	115	1.92	107.5	107.5	108.2	0.7
	10,655 ²	30	167	1.31	107.7	107.7	108.4	0.7
	12,055 ²	30	165	1.18	110.5	110.5	111.2	0.7
	13,535 ²	25	84	2.33	113.7	113.7	114.4	0.7
	17,025 ²	25	72	1.18	121.7	121.7	122.3	0.6
Newnans Lake Tributary 2 A B	2,000 ³	410	816	0.31	70.9	70.9	71.1	0.2
	3,500 ³	30	100	1.75	72.1	72.1	73.1	1.0
Newnans Lake Tributary 3 A B	1,000 ³	125	186	0.59	116.0	114.6 ⁴	115.5	0.9
	2,000 ³	25	52	1.82	117.2	117.2	117.6	0.4

¹Floodway designated as 100-year boundary

²Feet above confluence with Newnans Lake

³Feet above confluence with Newnans Lake Tributary 1

⁴Elevation computed without consideration of backwater effects from Newnans Lake Tributary 1

*Data not available

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

NEWNANS LAKE TRIBUTARY 1 – NEWNANS LAKE TRIBUTARY 2 -
NEWNANS LAKE TRIBUTARY 3

TABLE 6

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rhuda Branch	2,338 ¹	37	151	8.1	99.0	99.0	99.1	0.1
	5,846 ¹	51	213	5.9	120.5	120.5	121.3	0.8
	8,060 ¹	211	306	2.7	128.1	128.1	128.2	0.1
	10,342 ¹	206	203	0.6	129.2	129.2	129.2	0.0
	11,821 ¹	164	151	0.8	135.8	135.8	135.8	0.0
Rocky Creek	1,219 ²	383	3,137	9.7	84.9	84.9	85.6	0.7
	5,452 ²	386	3,419	2.7	91.2	91.2	92.1	0.9
	7,021 ²	277	3,687	2.5	98.0	98.0	98.1	0.1
	9,039 ²	215	2,519	4.2	98.8	98.8	99.6	0.8
	11,096 ²	302	3,267	3.7	100.8	100.8	101.8	1.0
	13,326 ²	381	3,724	2.7	102.4	102.4	103.4	1.0
	15,806 ²	402	3,299	3.8	104.9	104.9	105.7	0.8
	16,604 ²	1,000	6,534	2.9	105.7	105.7	106.4	0.7
	17,454 ²	338	3,112	2.9	108.4	108.4	108.8	0.4
	19,679 ²	553	4,067	1.9	109.7	109.7	110.6	0.9
	20,850 ²	354	3,092	2.4	110.3	110.3	111.1	0.8
	22,277 ²	503	4,259	1.2	110.6	110.6	111.6	1.0
	24,755 ²	165	1,396	6.3	111.4	111.4	112.3	0.9
	29,828 ²	251	2,181	2.6	115.8	115.8	116.8	1.0

¹Feet above confluence with Sunshine Lake

²Feet above confluence with Santa Fe River

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

RHUDA BRANCH – ROCKY CREEK

TABLE 6

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Rocky Creek (continued)	31,198 ¹	324	2,329	1.8	116.3	116.3	117.2	0.9
	33,405 ¹	290	2,605	1.6	119.5	119.5	120.3	0.8
	35,306 ¹	210	1,323	6.4	121.8	121.8	122.8	1.0
	35,811 ¹	234	1,375	6.9	122.7	122.7	123.5	0.8
	37,629 ¹	255	1,276	7.1	126.9	126.9	127.8	0.9
	38,965 ¹	258	1,455	3.2	129.6	129.6	130.4	0.8
	39,870 ¹	169	1,102	4.1	132.4	132.4	133.2	0.8
	41,849 ¹	201	835	3.7	137.3	137.3	137.8	0.5
	44,269 ¹	536	1,210	1.9	141.7	141.7	141.7	0.0
	45,502 ¹	134	490	4.7	144.6	144.6	144.6	0.0
	47,195 ¹	220	815	2.3	148.4	148.4	148.9	0.5
	48,288 ¹	200	693	2.8	151.4	151.4	152.1	0.7
	49,134 ¹	728	1,696	2.7	153.2	153.2	153.3	0.1
	49,621 ¹	761	1,090	4.8	155.9	155.9	156.0	0.1
	52,769 ¹	192	429	0.9	159.2	159.2	159.9	0.7
	54,615 ¹	54	45	3.2	172.2	172.2	172.6	0.4
Rocky Creek Tributary	2,420 ²	259	1,025	1.3	114.1	109.1 ³	109.4	0.3
	4,520 ²	282	906	3.6	114.1	112.0 ³	112.7	0.7
	5,915 ²	158	361	3.5	117.2	117.2	117.8	0.6
	7,845 ²	37	27	5.5	138.3	138.3	138.3	0.0

¹Feet above confluence with Santa Fe River

²Feet above confluence with Rocky Creek

³Elevation computed without consideration of backwater effects from Rocky Creek

FEDERAL EMERGENCY MANAGEMENT AGENCY

TABLE 6

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

ROCKY CREEK – ROCKY CREEK TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH ² (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Santa Fe River								
A	22.24	524	6,489	3.0	39.8	39.8	40.7	0.9
B	23.14	741	7,772	2.5	41.2	41.2	42.1	0.9
C	23.82	491	7,448	2.6	42.6	42.6	43.6	1.0
D	24.15	539	5,980	3.3	43.0	43.0	44.0	1.0
E	25.19	550	6,796	2.9	45.7	45.7	46.5	0.8
F	26.52	3,100	30,598	0.7	46.5	46.5	47.5	1.0
G	27.68	2,448	27,617	0.8	47.1	47.1	48.0	0.9
H	28.94	4,740	29,891	0.8	48.2	48.2	49.1	0.9
I	30.42	6,705	37,442	0.7	49.9	49.9	50.6	0.7
J	32.18	2,115	27,858	0.9	51.4	51.4	52.2	0.8
K	33.09	2,322	30,800	0.8	52.3	52.3	53.3	1.0
L	33.85	4,222	50,494	0.5	52.9	52.9	53.9	1.0
M	35.58	5,589	43,347	0.8	53.8	53.8	54.7	0.9
N	37.98	2,490	36,149	0.9	55.1	55.1	55.9	0.8
O	39.02	622	9,525	3.4	55.6	55.6	56.5	0.9
P	39.81	1,753	28,981	1.1	56.9	56.9	57.8	0.9
Q	40.91	1,497	24,272	1.0	58.0	58.0	58.6	0.6
R	41.56	3,997	50,186	0.5	58.8	58.8	59.8	1.0
S	42.54	4,161	53,577	0.4	60.0	60.0	61.0	1.0
T	44.02	1,746	23,693	1.0	62.2	62.2	63.1	0.9
U	45.48	1,600	26,451	1.0	65.9	65.9	66.3	0.4
V	46.59	1,779	22,357	1.1	67.2	67.2	68.1	0.9
W	48.04	1,435	25,510	1.0	70.1	70.1	71.0	0.9
X	49.19	1,749	30,074	0.8	71.7	71.7	72.6	0.9
Y	49.38	1,792	29,035	0.9	72.1	72.1	73.1	1.0
Z	49.61	1,537	19,809	1.3	72.8	72.8	73.8	1.0

¹Miles above mouth

²This width extends beyond county boundary

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

SANTA FE RIVER

TABLE 6

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Santa Fe River (continued)								
AA	51.87	2,400 ²	30,621	0.3	76.2	76.2	77.0	0.8
AB	53.44	1,400 ²	18,534	0.5	77.2	77.2	77.9	0.7
AC	54.27	1,285 ²	14,063	0.6	78.1	78.1	78.9	0.8
AD	55.83	1,800 ²	17,818	0.5	80.2	80.2	81.0	0.8
AE	56.22	900 ²	9,705	0.9	81.1	81.1	82.0	0.9
AF	57.21	800 ²	8,538	1.0	84.2	84.2	84.9	0.7
AG	58.15	1,050 ²	13,768	0.3	86.8	86.8	87.6	0.8
AH	59.26	820 ²	9,430	0.5	88.5	88.5	89.3	0.8
AI	61.02	2,467 ²	29,075	0.2	89.7	89.7	90.6	0.9
AJ	62.24	2,761 ²	19,961	0.2	90.3	90.3	91.3	1.0
AK	63.60	1,687 ²	10,242	0.5	93.0	93.0	94.0	1.0
AL	64.57	497 ²	3,230	1.4	99.0	99.0	99.5	0.5
AM	65.86	886 ²	7,294	0.6	104.5	104.5	105.4	0.9
AN	67.11	590 ²	5,798	0.8	108.7	108.7	109.6	0.9
AO	67.83	811 ²	7,703	0.4	110.6	110.6	111.6	1.0
AP	68.72	478 ³	3,123	0.9	113.1	113.1	113.9	0.8
AQ	70.18	596 ²	5,464	0.5	123.8	123.8	124.6	0.8
AR	71.46	844 ²	6,414	0.5	126.4	126.4	127.4	1.0
AS	72.59	836 ²	3,113	1.0	131.4	131.4	132.3	0.9
AT	73.27	1,729 ²	9,179	0.3	136.9	136.9	137.5	0.6
AU	74.04	638	3,198	0.1	138.5	138.5	139.5	1.0
AV	74.35	376	1,725	0.2	138.5	138.5	139.5	1.0
AW	74.92	298	567	0.7	138.9	138.9	139.8	0.9
AX	75.15	322	1,132	0.3	140.0	140.0	140.6	0.6

¹Miles above mouth

²This width extends beyond county boundary

³This width is beyond county boundary

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

SANTA FE RIVER

TABLE 6

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sweetwater Branch								
A	0	180	527	6.06	69.2	69.2	70.2	1.0
B	346	180	528	6.06	71.2	71.2	71.6	0.4
C	693	180	779	4.11	72.4	72.4	73.0	0.6
D	1,040	180	750	4.27	72.7	72.7	73.4	0.7
E	1,440	180	519	6.17	73.8	73.8	74.0	0.2
F	1,840	180	824	3.88	75.7	75.7	75.7	0.0
G	2,205	400	840	3.15	76.2	76.2	76.2	0.0
H	2,443	300	757	3.50	76.4	76.4	76.8	0.4
I	2,682	150	560	4.73	76.9	76.9	77.5	0.6
J	2,920	150	507	5.23	78.2	78.2	78.4	0.2
K	3,220	120	402	6.58	80.1	80.1	80.1	0.0
L	3,520	70	248	9.26	80.9	80.9	81.1	0.2
M	3,680	96	768	3.0	87.0	87.0	88.0	1.0
N	5,193	43	323	7.1	89.0	89.0	89.8	0.8
O	5,950	22	171	11.8	92.4	92.4	93.4	1.0
P	6,055	46	757	2.7	106.1	106.8	106.8	0.7
Q	8,175	58	421	4.8	107.5	107.5	108.2	0.7
R	8,245	240	1,031	2.0	112.1	112.1	112.1	0.0
S	8,492	495	1,276	1.0	112.3	112.3	112.3	0.0
T	8,535	500	2,463	0.8	112.9	112.9	112.9	0.0
U	10,380	30	94	6.7	115.0	115.0	115.4	0.4

¹Feet above Limit of Detailed Study (Limit of Detailed Study is located approximately 900 feet above Paynes Prairie)

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

**ALACHUA COUNTY, FL
AND INCORPORATED AREAS**

FLOODWAY DATA

SWEETWATER BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tumblin Creek A B C D E F G	0	240	940	1.07	66.4	66.4	67.4	1.0
	243	240	982	1.02	66.8	66.8	67.8	1.0
	486	150	513	1.95	67.2	67.2	68.1	0.9
	730	150	548	1.75	67.6	67.6	68.4	0.8
	930	90	329	2.92	68.1	68.1	68.7	0.6
	1,130	90	345	2.78	69.3	69.3	69.5	0.2
	1,330	90	289	2.67	70.4	70.4	70.5	0.1

¹Feet above Limit of Detailed Study (Limit of Detailed Study is located approximately 130 feet above Bivans Arm)

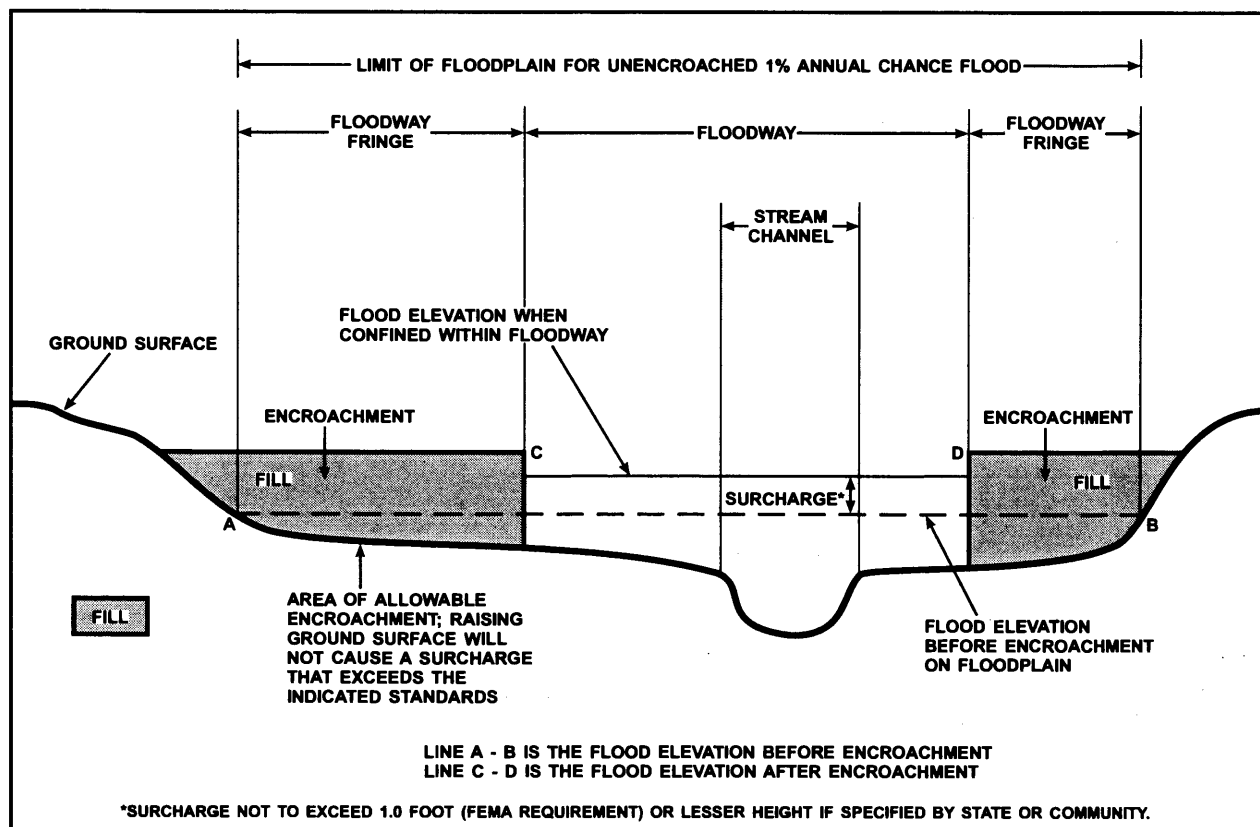
FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

TABLE 6

FLOODWAY DATA

TUMBLIN CREEK



FLOODWAY SCHEMATIC

Figure 1

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The 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 by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations 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 by detailed methods. In most instances, whole-foot base flood elevations 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 the areas of 1-percent annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations 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 the 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

Area of special flood hazard formerly protected from the 1-percent annual chance 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% 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 base flood elevations 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 base flood elevations 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 base flood elevations 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, and to 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, and areas protected from the

1-percent annual chance flood by levees. No base flood elevations or 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 base flood elevations or average depths. Insurance agents use the zones and base flood elevations 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 are shown where applicable.

The current FIRM presents flooding information for the entire geographic area of Alachua County. Previously, separate Flood Hazard Boundary Maps and/or FIRMs were prepared for each identified flood-prone incorporated community and the unincorporated areas of the county. This countywide FIRM also includes flood hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community, up to and including this countywide FIS, are presented in Table 7, "Community Map History."

7.0 OTHER STUDIES

FISs have been prepared for Bradford County (FEMA, 1989), Columbia County (FEMA, January 6, 1988), Gilchrist County (FEMA, August 16, 1988), Levy County (FEMA, 1992), Marion County (FEMA, 1983), Putnam County (FEMA, 1994), and Union County (FEMA, August 4, 1988).

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

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Alachua, City of	February 2, 1996	None	February 2, 1996	June 16, 2006
Alachua County (Unincorporated Areas)	September 28, 1984	None	September 28, 1984	November 4, 1988 June 16, 2006
Archer, City of	August 2, 1995	None	August 2, 1995	June 16, 2006
Gainesville, City of	October 13, 1971	None	October 13, 1971	July 1, 1974 March 19, 1976 January 19, 1983 February 17, 1993 June 16, 2006
Hawthorne, City of	June 16, 2006	None	June 16, 2006	
High Springs, City of	September 28, 1984 ¹	None	September 28, 1984 ¹	November 4, 1988 ¹ November 20, 1996 June 16, 2006
La Crosse, Town of	August 16, 1988	None	August 16, 1988	June 16, 2006
Micanopy, Town of	April 16, 1976	None	June 16, 2006	
Newberry, City of	September 28, 1984 ²	None	September 28, 1984 ²	November 4, 1988 June 16, 2006
Waldo, City of	January 9, 1974	January 30, 1976	November 4, 1988	June 16, 2006

¹This community did not have its own FIRM prior to the November 20, 1996, FIS date. The land area for this community was previously shown on the FIRM for the unincorporated areas of Alachua County, but was not identified as a separate NFIP community. Therefore, the dates for this community were taken from the FIRM for Alachua County.

²This community did not have its own FIRM prior to this countywide FIS. The land area for this community was previously shown on the FIRM for the unincorporated areas of Alachua County, but was not identified as a separate NFIP community. Therefore, the dates for this community were taken from the FIRM for Alachua County.

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

TABLE 7

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this FIS can be obtained by contacting FEMA, Federal Insurance and Mitigation Division, Koger Center - Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, Georgia 30341.

9.0 BIBLIOGRAPHY AND REFERENCES

Federal Emergency Management Agency. (August 16, 1994). Flood Insurance Study, Putnam County, Florida (Unincorporated Areas). Washington, D.C.

Federal Emergency Management Agency. (June 2, 1992). Flood Insurance Study, Levy County, Florida (Unincorporated Areas). Washington, D.C.

Federal Emergency Management Agency. (November 15, 1989). Flood Insurance Study, Bradford County, Florida (Unincorporated Areas). Washington, D.C.

Federal Emergency Management Agency. (January 6, 1988). Flood Insurance Study, Columbia County, Florida (Unincorporated Areas). Washington, D.C.

Federal Emergency Management Agency. (August 4, 1988). Flood Insurance Study, Union County, Florida (Unincorporated Areas). Washington, D.C.

Federal Emergency Management Agency. (August 16, 1988). Flood Insurance Study, Gilchrist County, Florida (Unincorporated Areas). Washington, D.C.

Federal Emergency Management Agency. (January 19, 1983). Flood Insurance Study, Marion County, Florida (Unincorporated Areas). Washington, D.C.

Federal Highway Administration. (November 1990). Culvert Analysis, HY-8.

Kimball, L. Robert, Consulting Engineers. (April 1976). Aerial Photographs, Alachua County, Florida, Scale 1:4,800. Edensburg, Pennsylvania.

Mapco Inc., Topographic Maps. (1974). Scale 1:200, Contour Interval 2 feet. Ormond Beach, Florida.

National Oceanic and Atmospheric Administration, National Weather Service. (1964). Two- to Ten-Day Precipitation for Return Periods of 2 to 100 years in the Contiguous United States, Technical Paper TP-49.

National Oceanic and Atmospheric Administration, National Weather Service. (1961). Rainfall-Frequency Atlas of the United States, Technical Paper TP-40.

North Central Florida Regional Planning Council. (June 1974). Topographic Maps, Gainesville Metropolitan Area, Scales 1:1,200 and 1:2,400, Contour Interval 2 Feet. Gainesville, Florida.

St. Johns River Water Management District. (December 1998). Storm and Flood Data for Kanapaha Prairie/Levy Lake. Unpublished study performed for Alachua County, Florida. Palatka, Florida.

Streamline Technologies. (November 1996). Advanced ICPR Computer Program, Version 2.1.

Sverdrup and Parcel and Associates, Inc., Consulting Engineers. (1974). Report No. NCFRPC 74-00003, Water and Flood Plain Management Study for the Gainesville Metropolitan Areas, prepared for the North Central Florida Regional Planning Council. Gainesville, Florida.

University of Florida. (1998). Florida Geographic Data Library. Alachua, GeoPlan Center, Version 1.

U.S. Army Corps of Engineers, Hydrologic Engineering Center. (September 1998). HEC-RAS River Analysis System. Davis, California.

U.S. Army Corps of Engineers, Hydrologic Engineering Center. (February 1989). HEC-2 Water-Surface Profiles, Generalized Computer Program. Davis, California.

U.S. Army Corps of Engineers, Jacksonville District. (October 1985). Stream Cross Sections, Southern Resource Mapping, Ormond Beach, Florida, compiled by photogrammetric methods from aerial photography.

U.S. Army Corps of Engineers, Hydrologic Engineering Center. (January 1973). HEC-1 Flood Hydrograph Package, Computer Program 823-X6-L2610. Davis, California.

U.S. Department of Commerce, Bureau of the Census. (February 1982). 1980 Census of Population, Number of Inhabitants, Florida. Washington, D.C.

U.S. Department of Commerce, Weather Bureau. (January 1963). Technical Paper No. 40, Rainfall Frequency Atlas of the United States. Washington, D.C.

U.S. Department of the Interior, Geological Survey. (1983). Water Data Report FL-82-4, Water Resources Data for Florida, Water Year 1982. Washington, D.C.

U.S. Department of the Interior, Geological Survey. (1983). Water-Supply Paper 2207, Flood Characteristics of Urban Watersheds in the United States.

U.S. Department of the Interior, Geological Survey, Interagency Advisory Committee on Water Data, Office of Water Data Coordination, Hydrology Subcommittee. (March 1982). Bulletin No. 17B, Guidelines for Determining Flood Flow Frequency.

U.S. Department of the Interior, Geological Survey. (1982). Water Resources Investigations Report 82-4012, Technique for Estimating Magnitude and Frequency of Floods on Natural-Flow Streams in Florida. Wayne C. Bridges (author).

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

U.S. Department of the Interior, Geological Survey. (1976). Open File Report 76-499, Computer Applications for Step-Backwater and Floodway Analyses. J. O. Shearman (author). Washington, D.C.

U.S. Department of the Interior, Geological Survey. (1973). Open-File Report, Estimation of 100-Year Flood Magnitudes at Ungaged Sites.

U.S. Department of the Interior, Geological Survey. (Alachua, Florida, 1970; Archer, Florida, 1973; Arredondo, Florida, 1973; Citia, Florida, 1973; Flemington, Florida, 1973; Gainesville East, Florida, 1970; Gainesville West, Florida, 1970; Hawthorne, Florida, 1970; High Springs, Florida, 1970; High Springs SW, Florida, 1973; Keystone Heights, Florida, 1974; McIntosh, Florida, 1973; Melrose, Florida, 1973; Micanopy, Florida, 1970; Mikesville, Florida, 1970; Montechoa, Florida, 1970; Newberry, Florida, 1973; Newberry SW, Florida, 1973; Orange Heights, Florida, 1973; Rochelle, Florida, 1973; Waldo, Florida, 1970; Waters Lake, Florida, 1973; Williston, Florida, 1973; Worthington Springs, Florida, 1970). 7.5-Minute Series Flood-Prone Area Maps, Scale 1:24,000, Contour Intervals 5 and 10 Feet.

U.S. Department of the Interior, Geological Survey. (Alachua County, Florida, 1970; Archer, Florida, 1973). 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet.

U.S. Department of the Interior, Geological Survey. (1968). "Measurement of Peak Discharge at Culverts by Indirect Methods," Techniques of Water-Resources Investigations, Book 3, Chapter A3. G. L. Bodhaine (author).

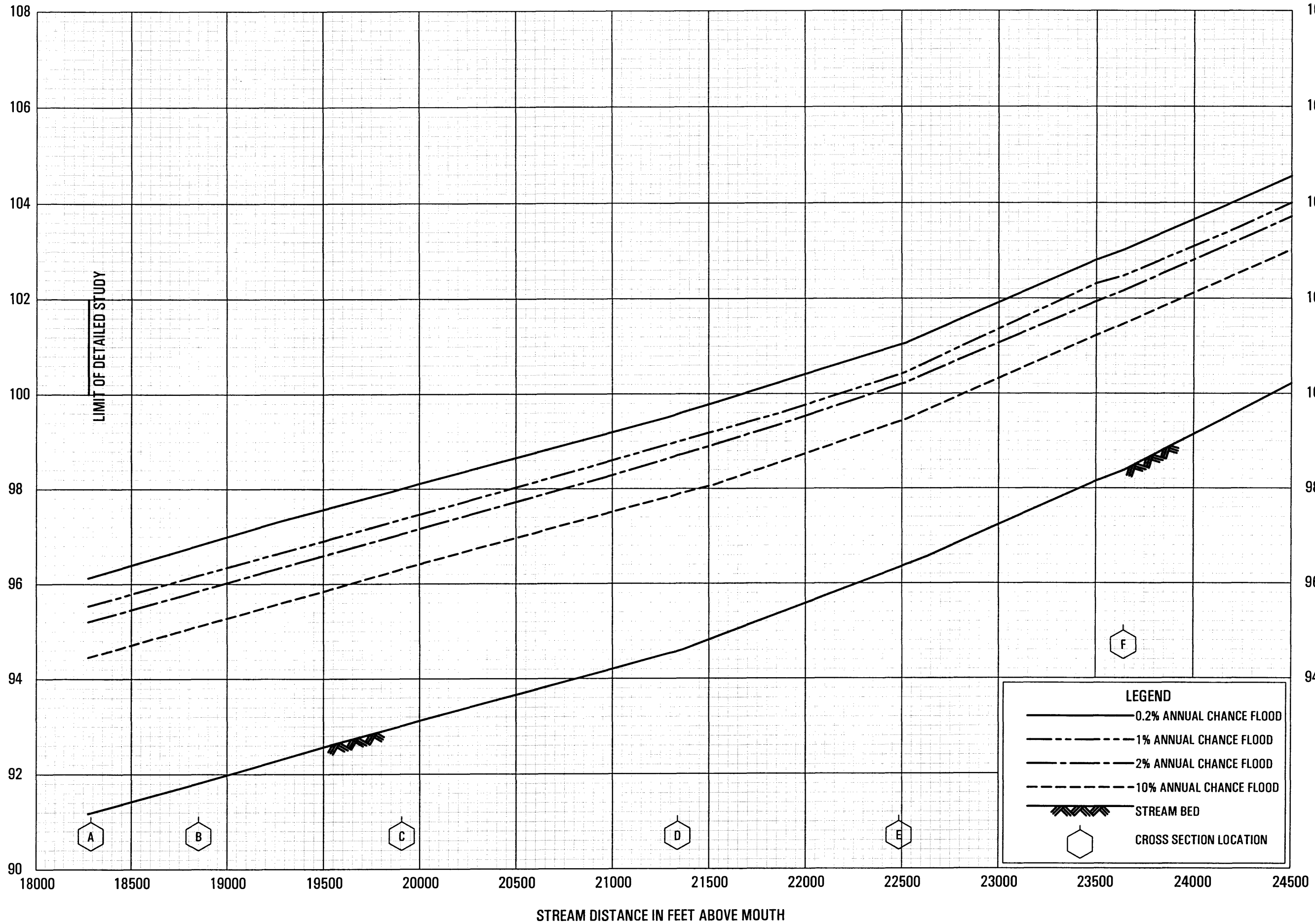
U.S. Department of the Interior, Geological Survey. (1966). Water-Supply Paper 1674, Magnitude and Frequency of Floods in the United States, Part 2-B, South Atlantic Slope and Eastern Gulf of Mexico Basins, Ogeechee River to Pearl River. Harry H. Barnes and Harold G. Golden (authors).

U.S. Department of the Interior, Geological Survey. (Gainesville East, Florida, 1966; Gainesville West, Florida, 1966; Micanopy, Florida, 1966, photorevised 1976; Orange Heights, Florida, 1966, photorevised 1976; Waldo, Florida, 1949, photorevised 1976). 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Intervals 5 and 10 Feet.

U.S. Soil Conservation Service. (August 1972). National Engineering Handbook, Section 4: Hydrology.

U.S. Water Resources Council. (March 1976). Bulletin No. 17, Guidelines for Determining Flood Flow Frequency.

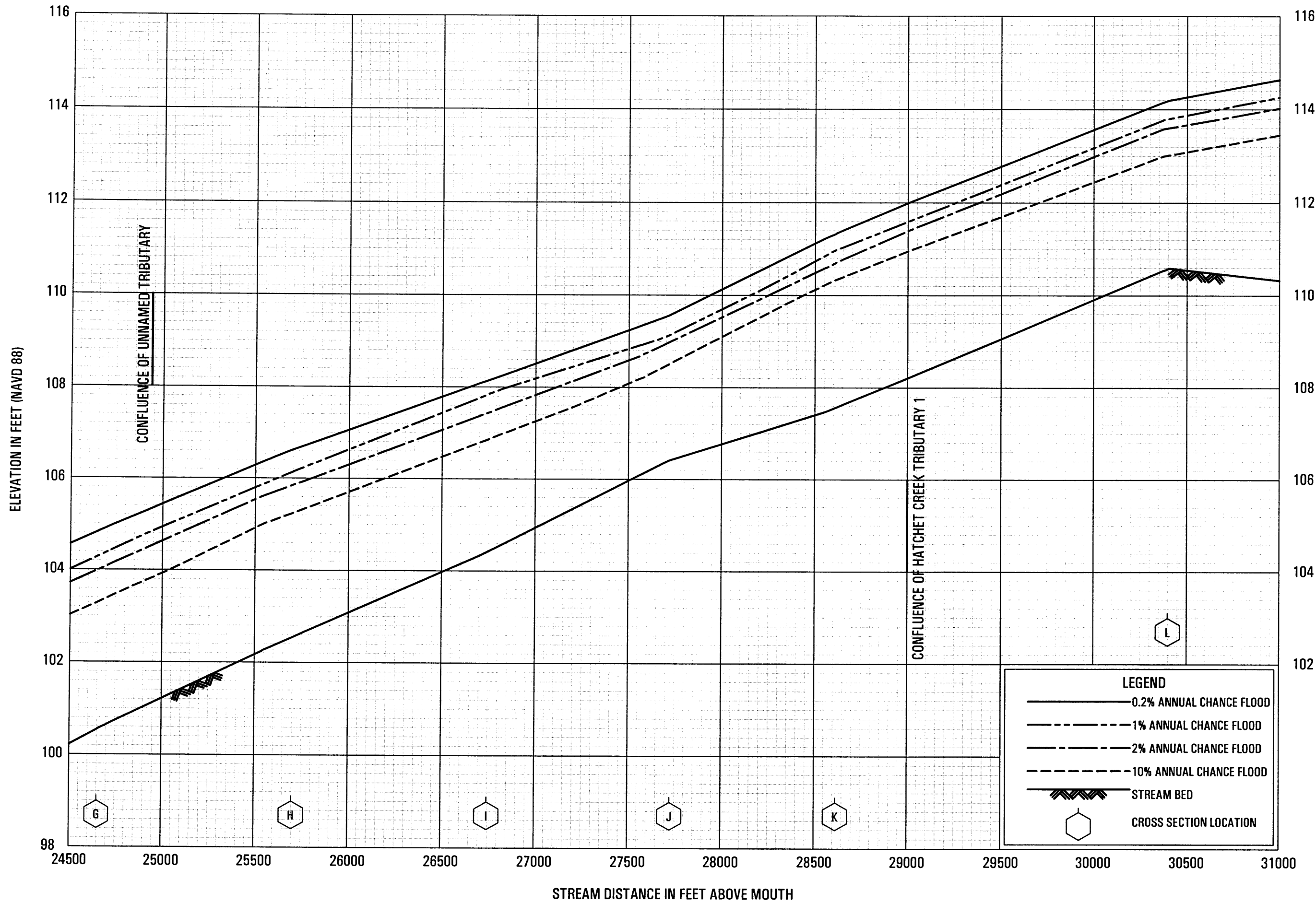
ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES

HATCHET CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

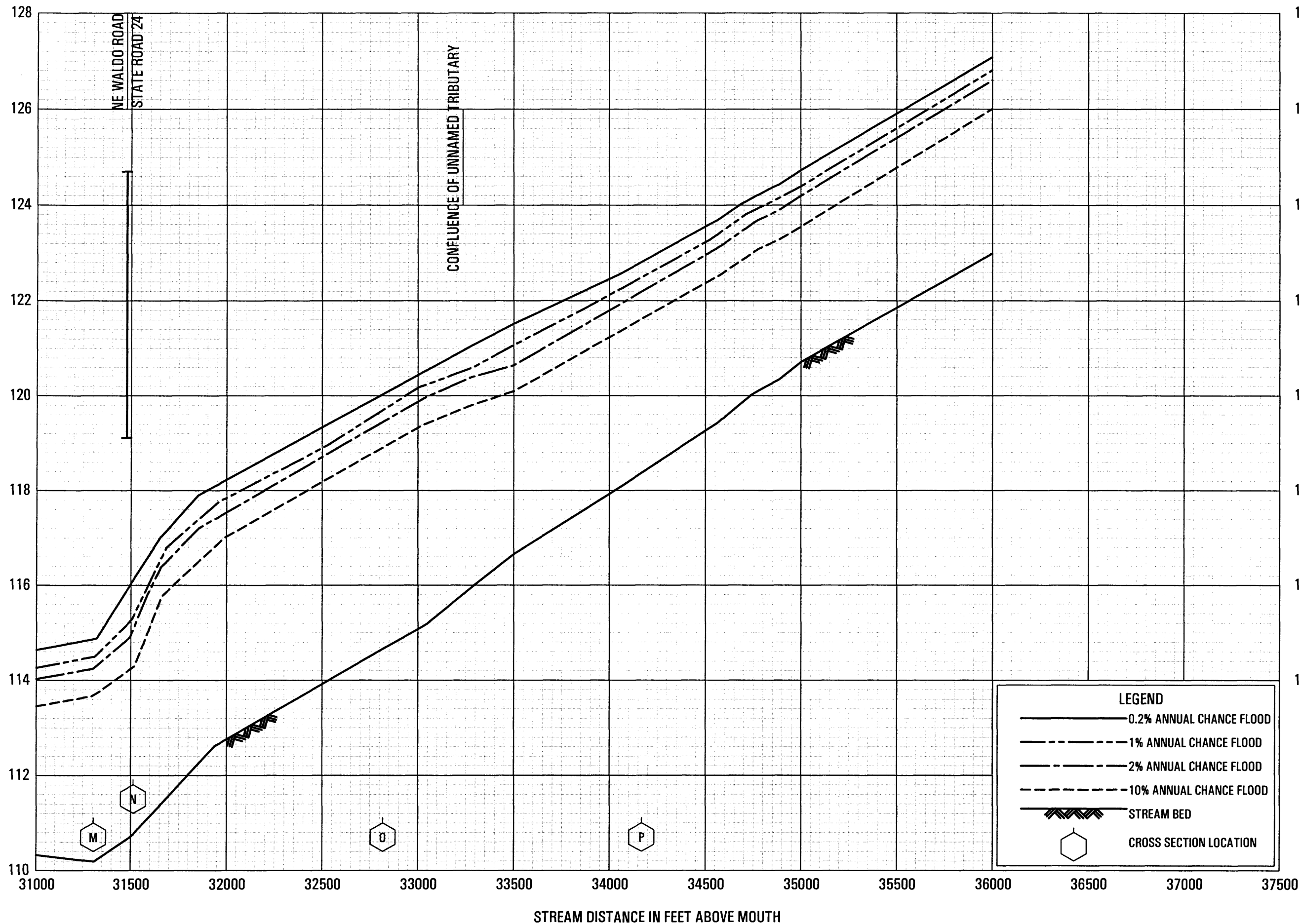


FLOOD PROFILES

HATCHET CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



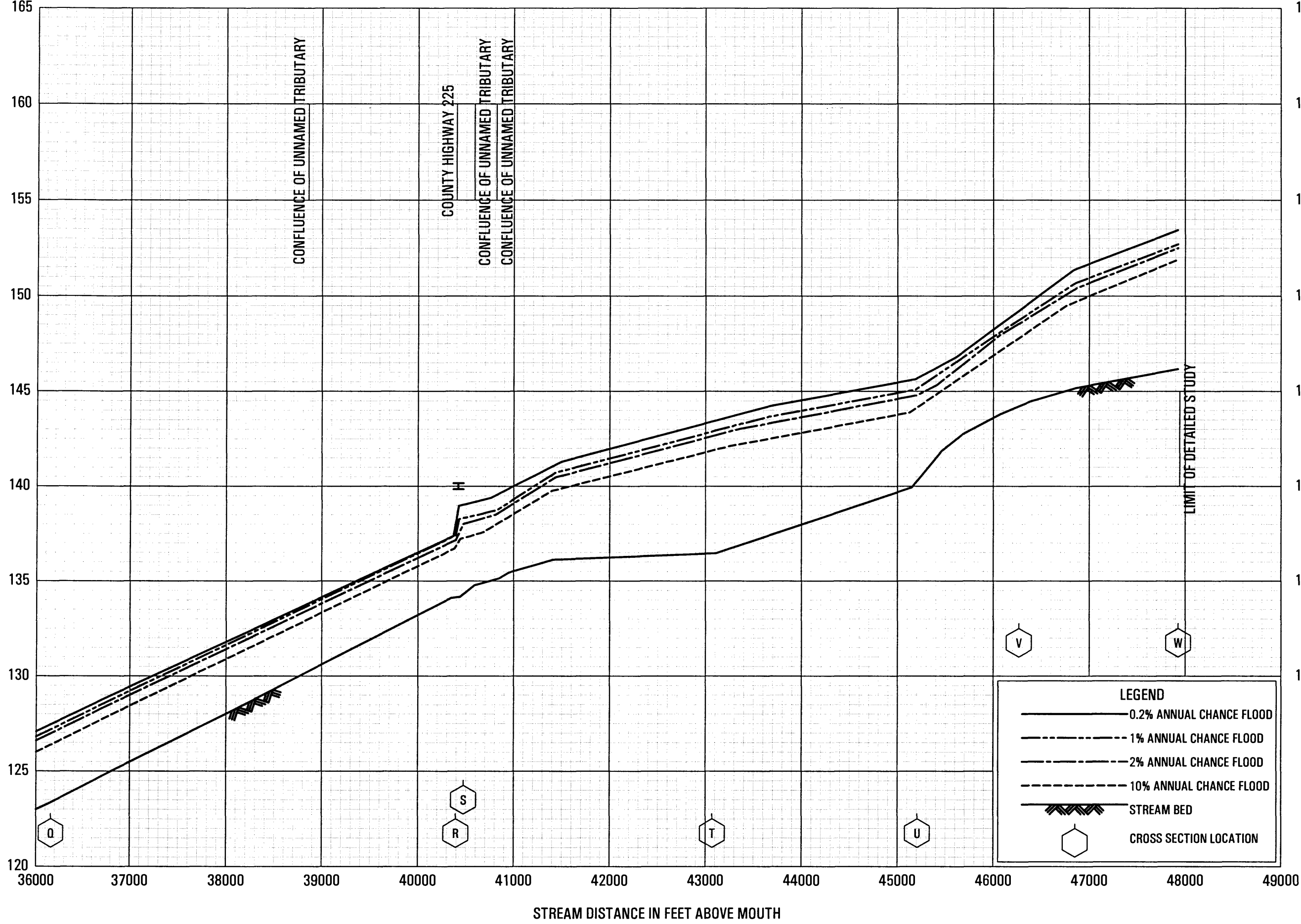
FLOOD PROFILES

HATCHET CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

03P

ELEVATION IN FEET (NAVD 88)

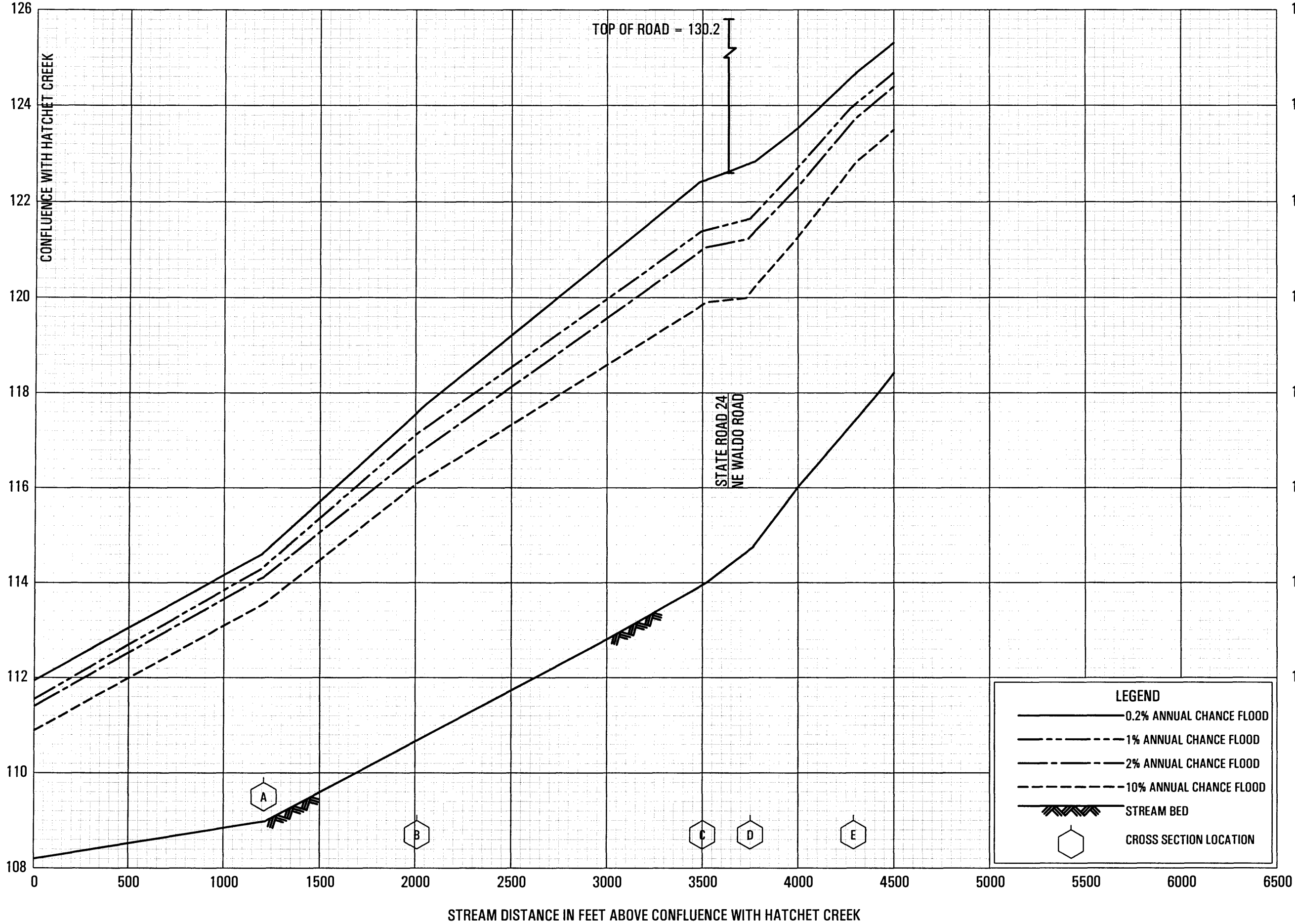


FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

04P

FLOOD PROFILES
HATCHET CREEK

ELEVATION IN FEET (NAVD 88)



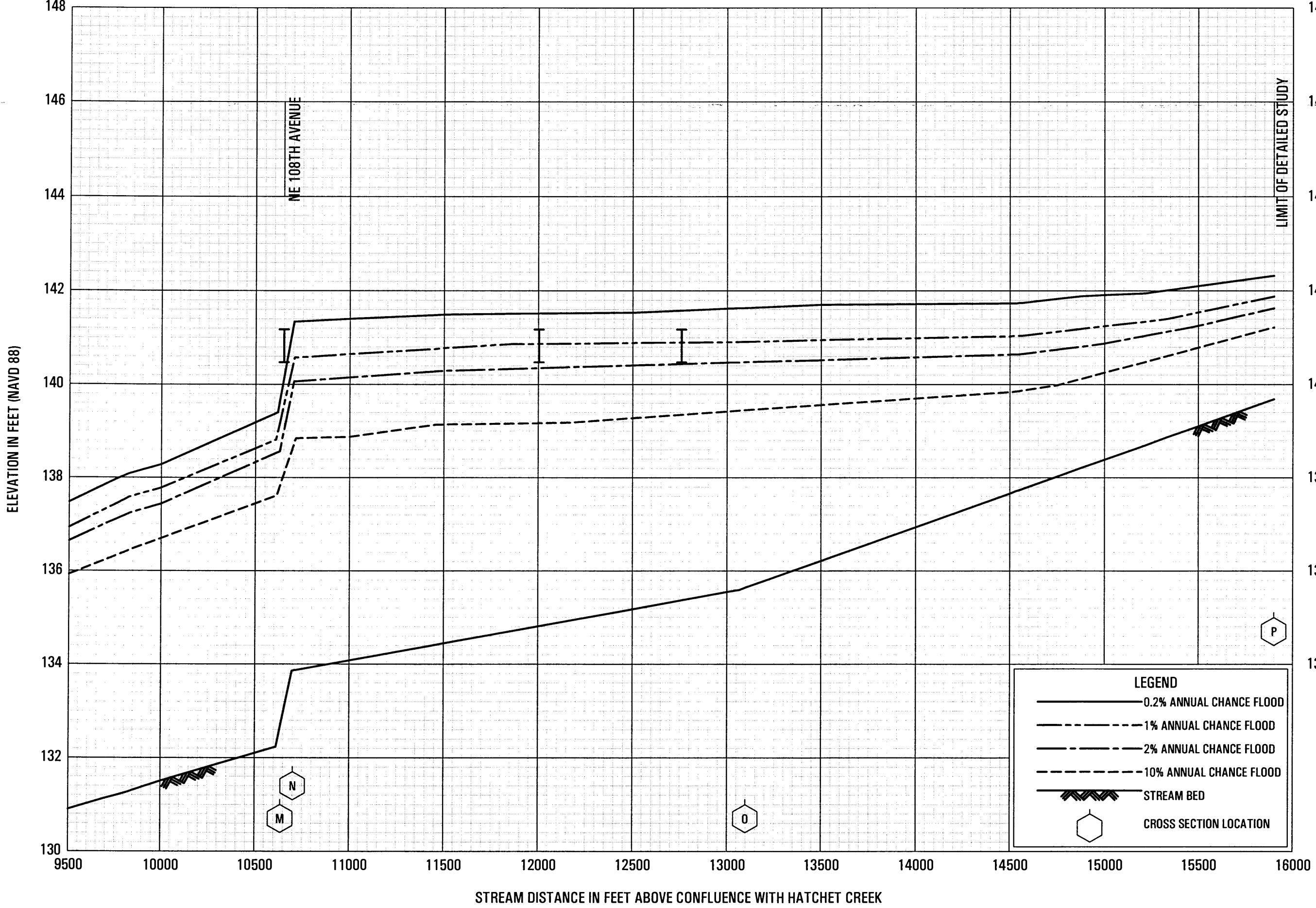
FLOOD PROFILES

HATCHET CREEK TRIBUTARY 1

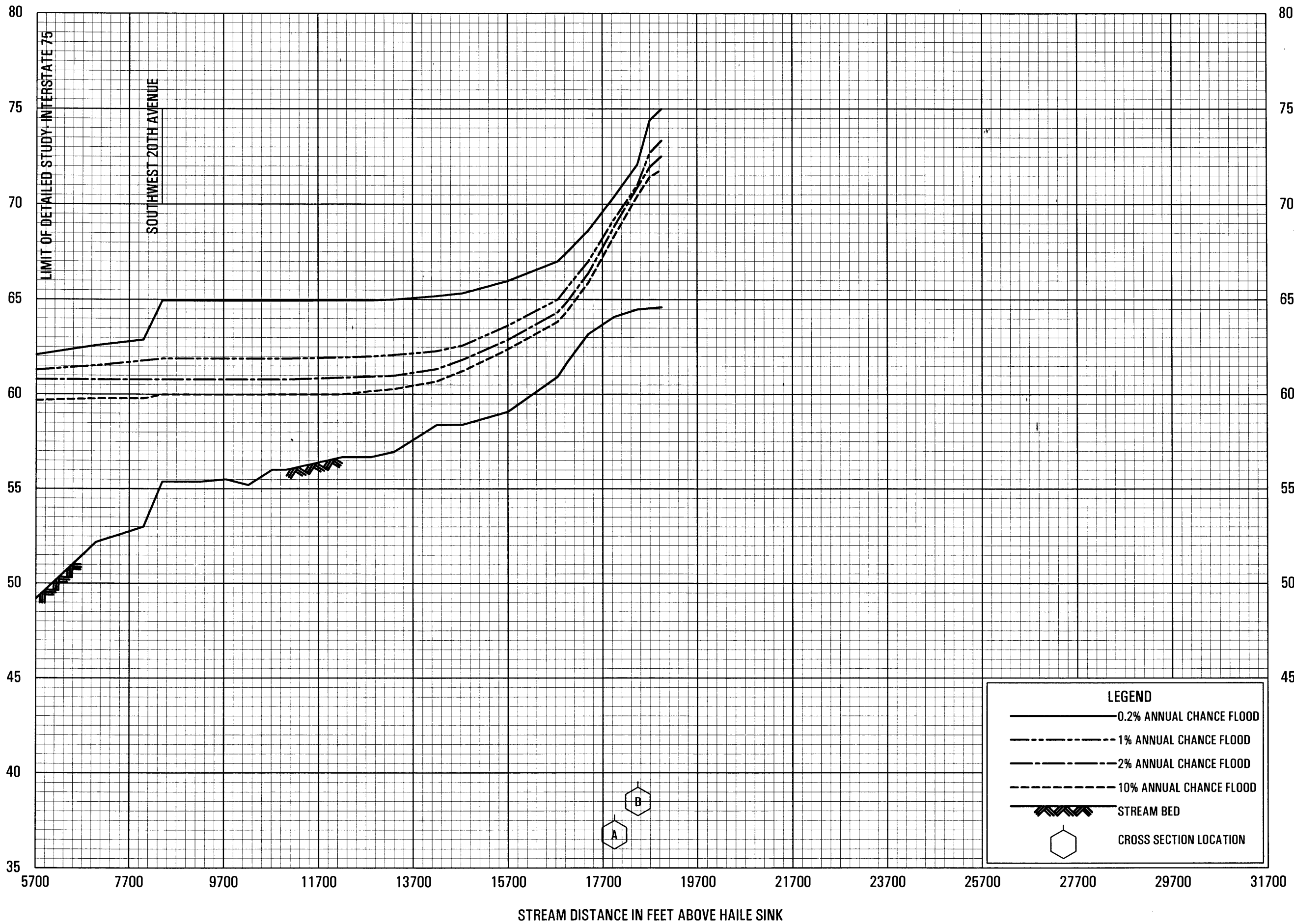
FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

05P



ELEVATION IN FEET (NAVD 88)



LEGEND

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

FLOOD PROFILES

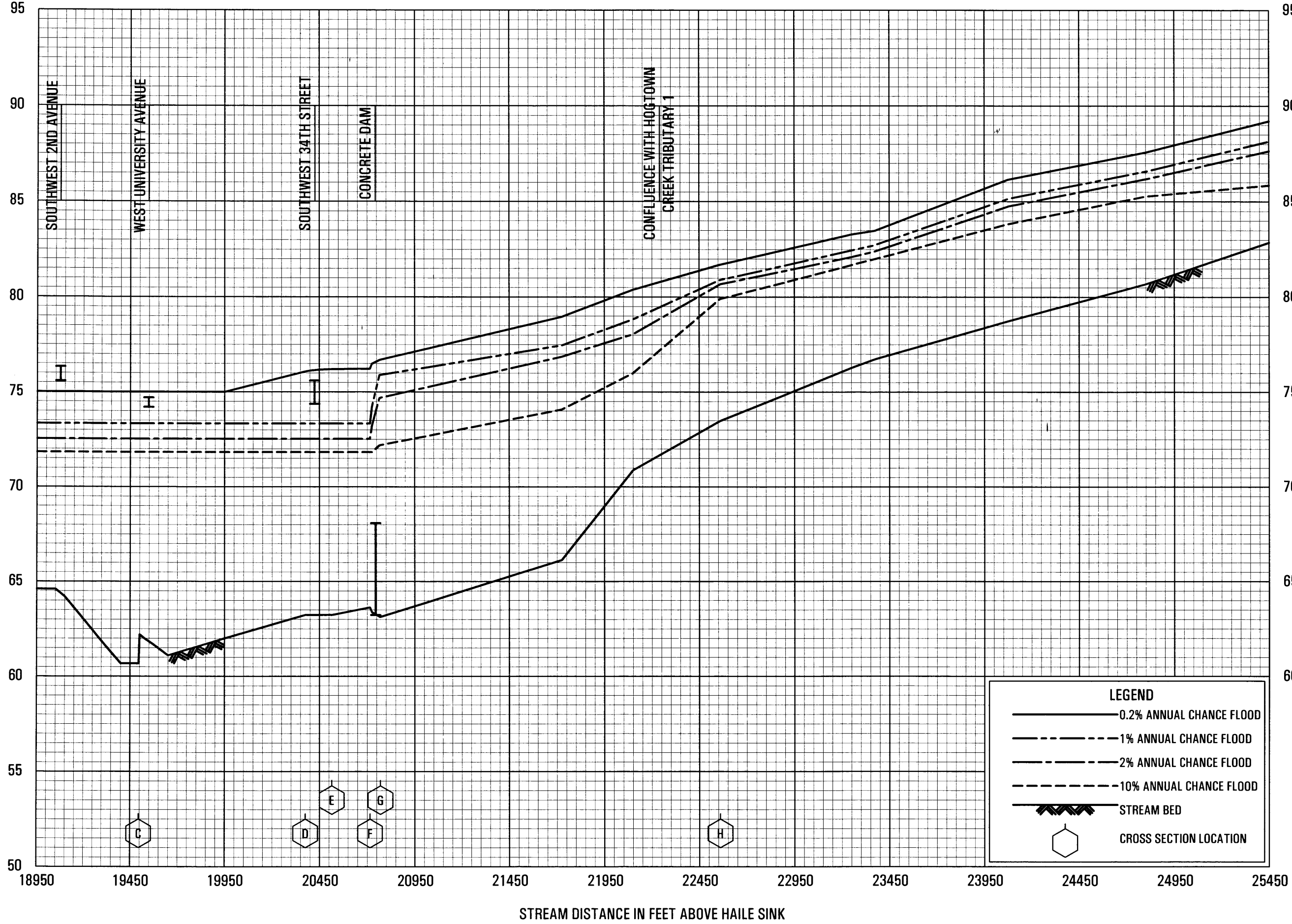
HOGTOWN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

08P

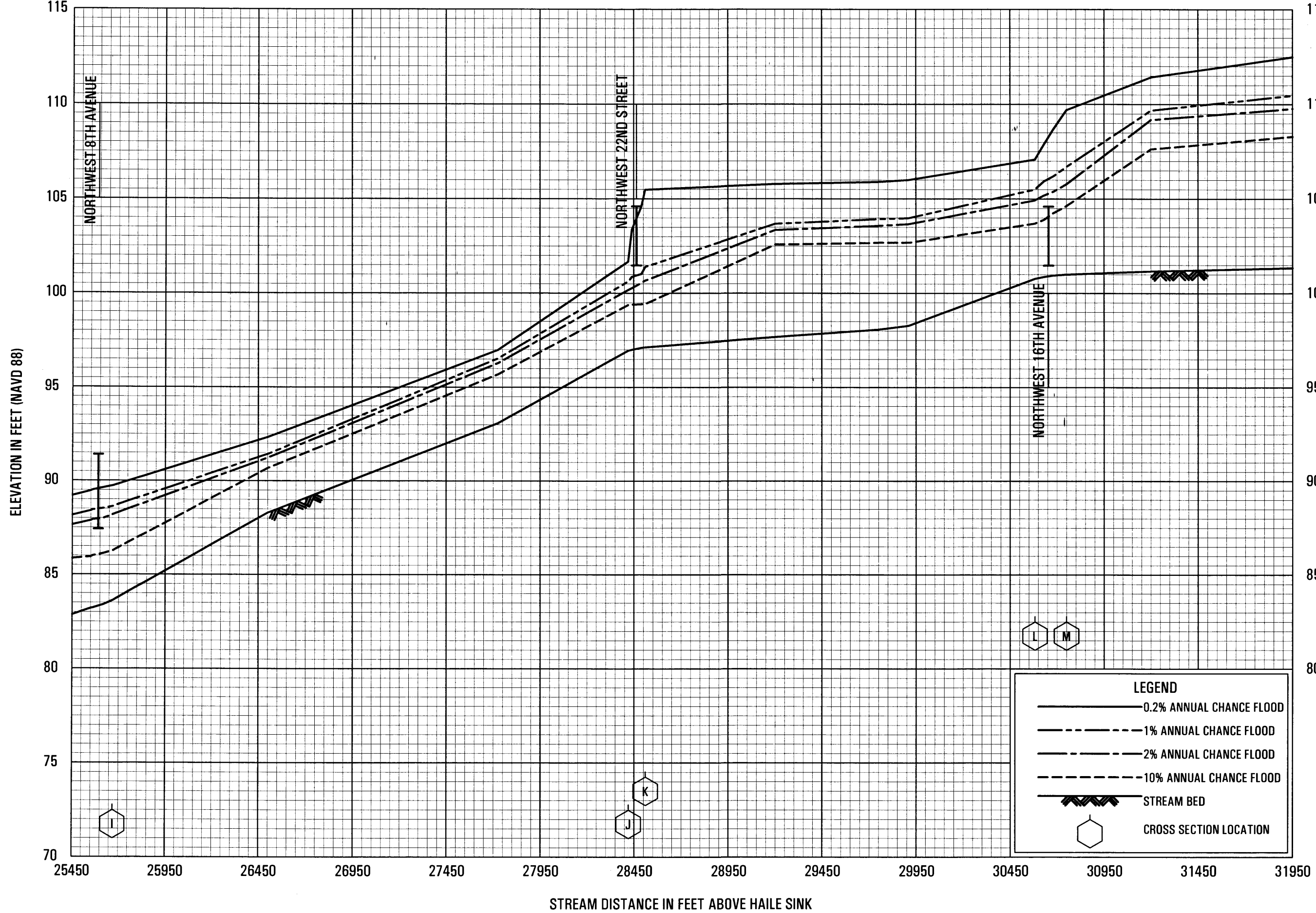
ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES

HOGTOWN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

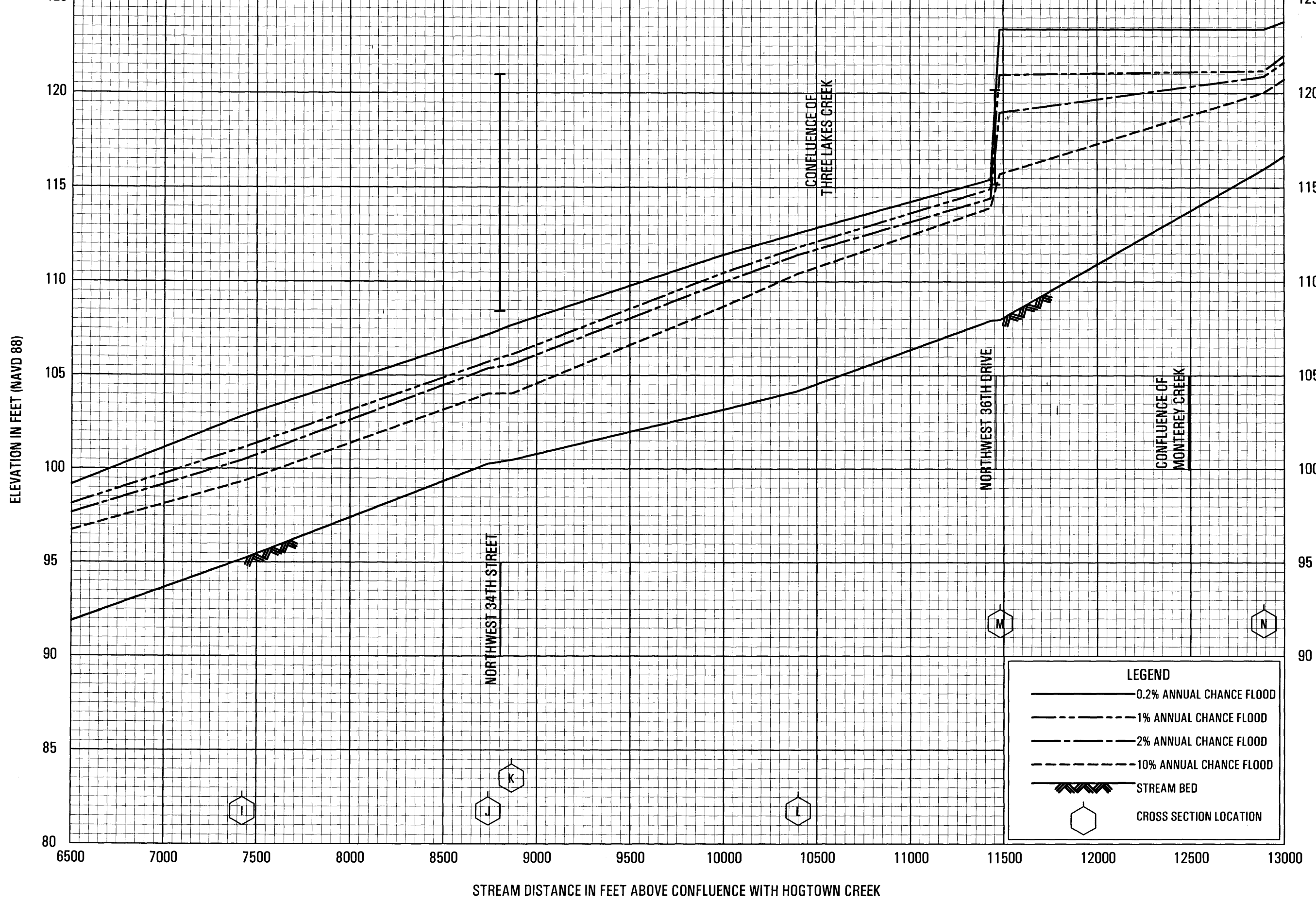


FLOOD PROFILES

HOGTOWN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS



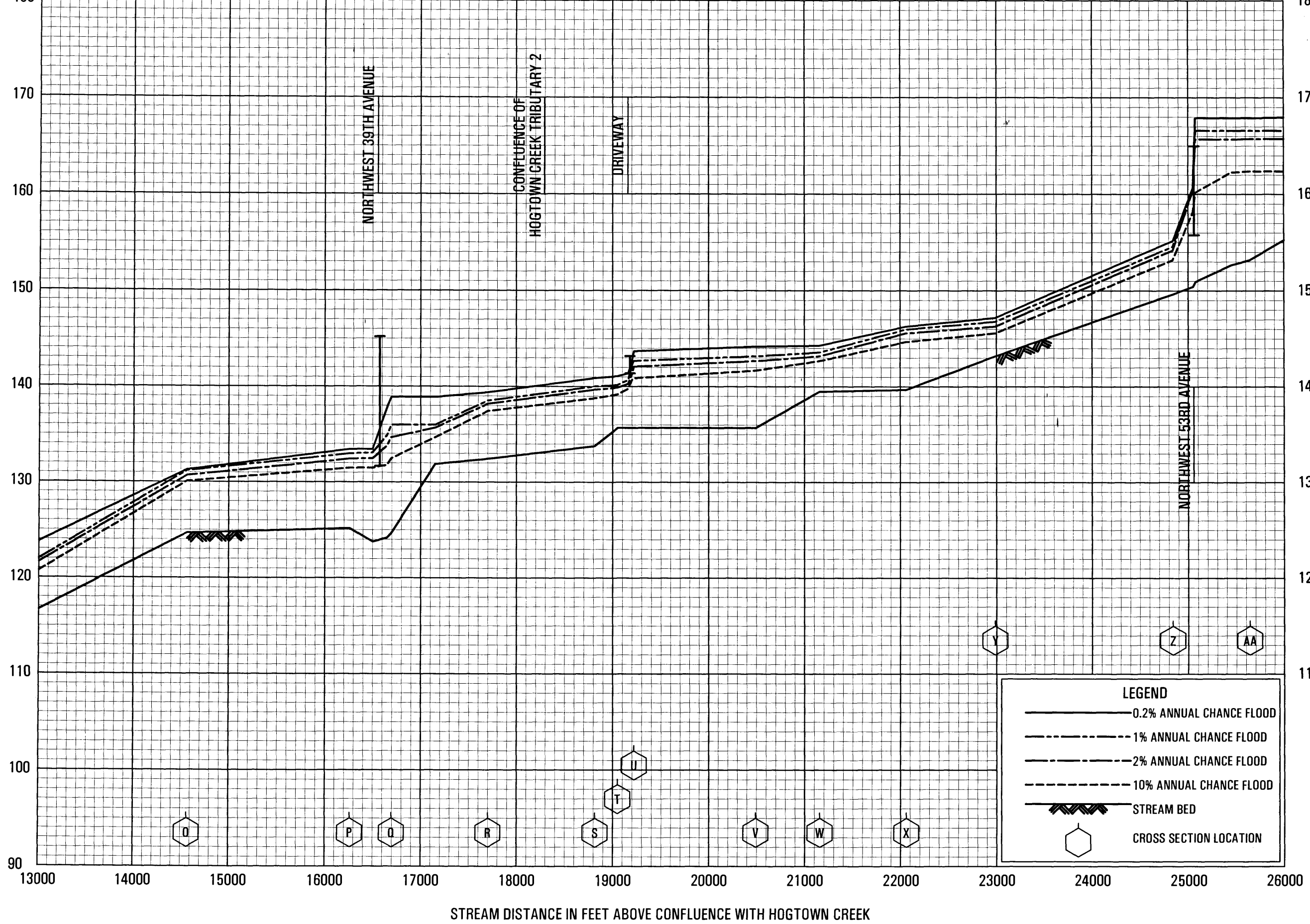
FLOOD PROFILES

HOGTOWN CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

**ALACHUA COUNTY, FL
AND INCORPORATED AREAS**

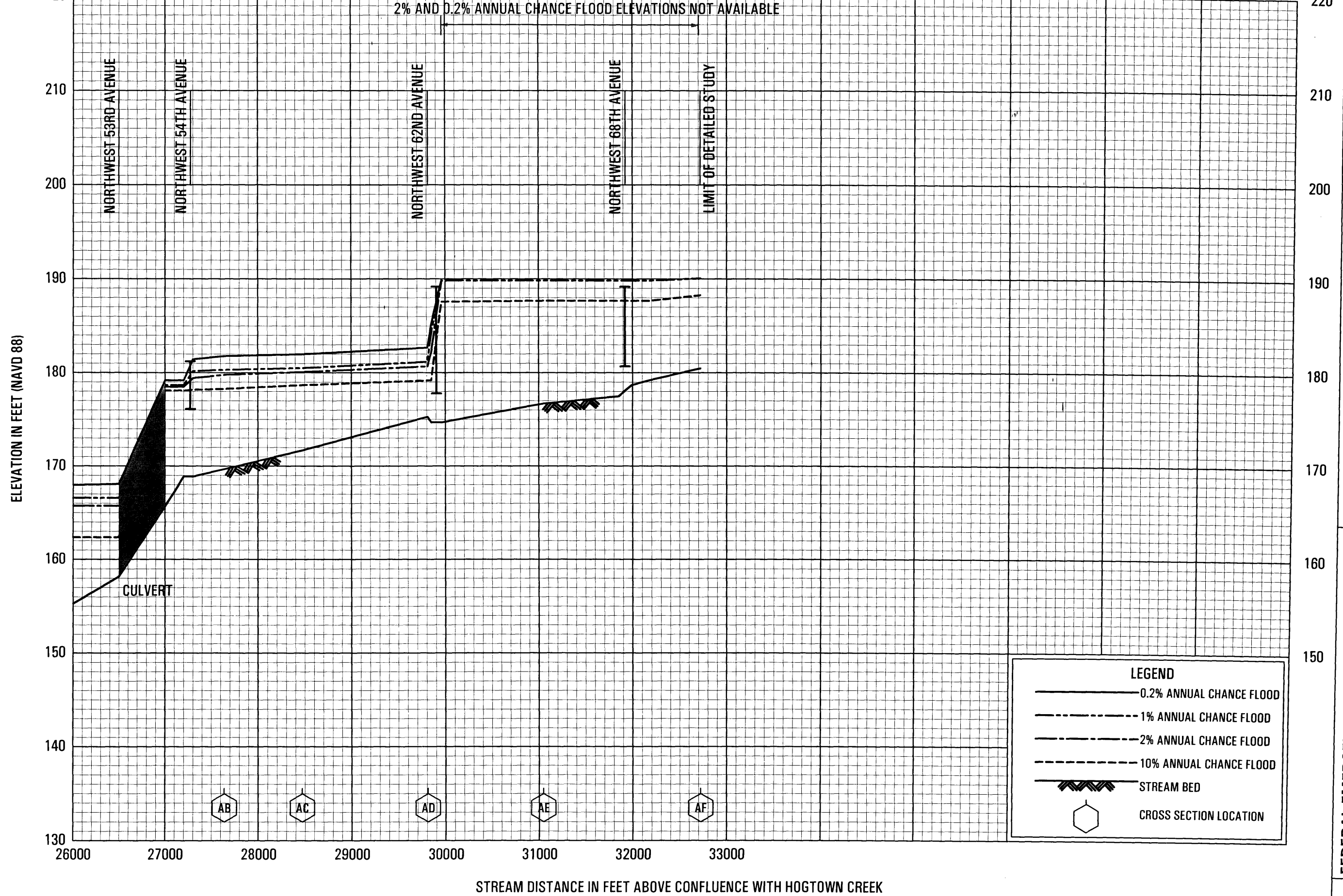
ELEVATION IN FEET (NAVD 88)



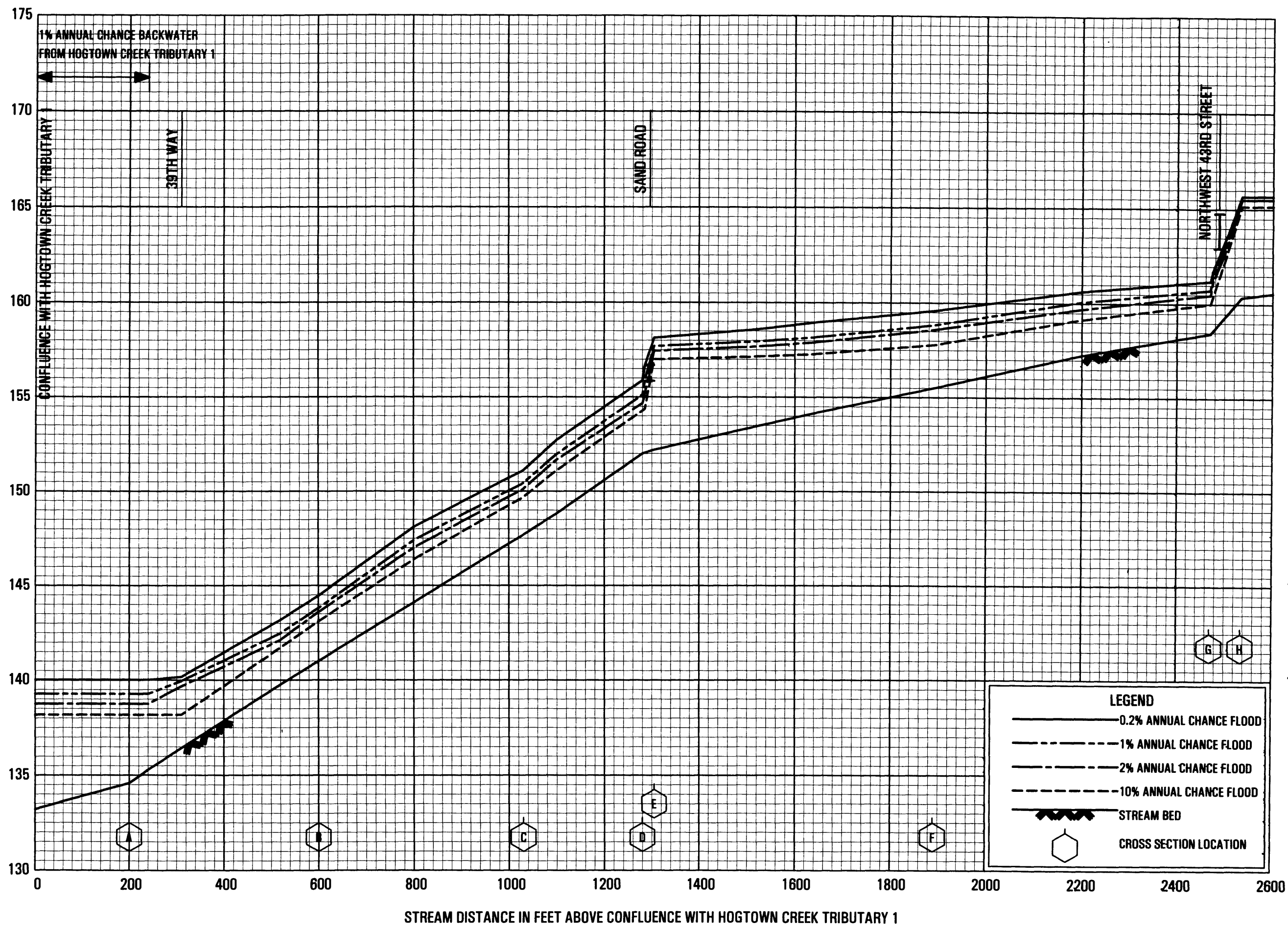
FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOOD PROFILES

HOGTOWN CREEK TRIBUTARY 1



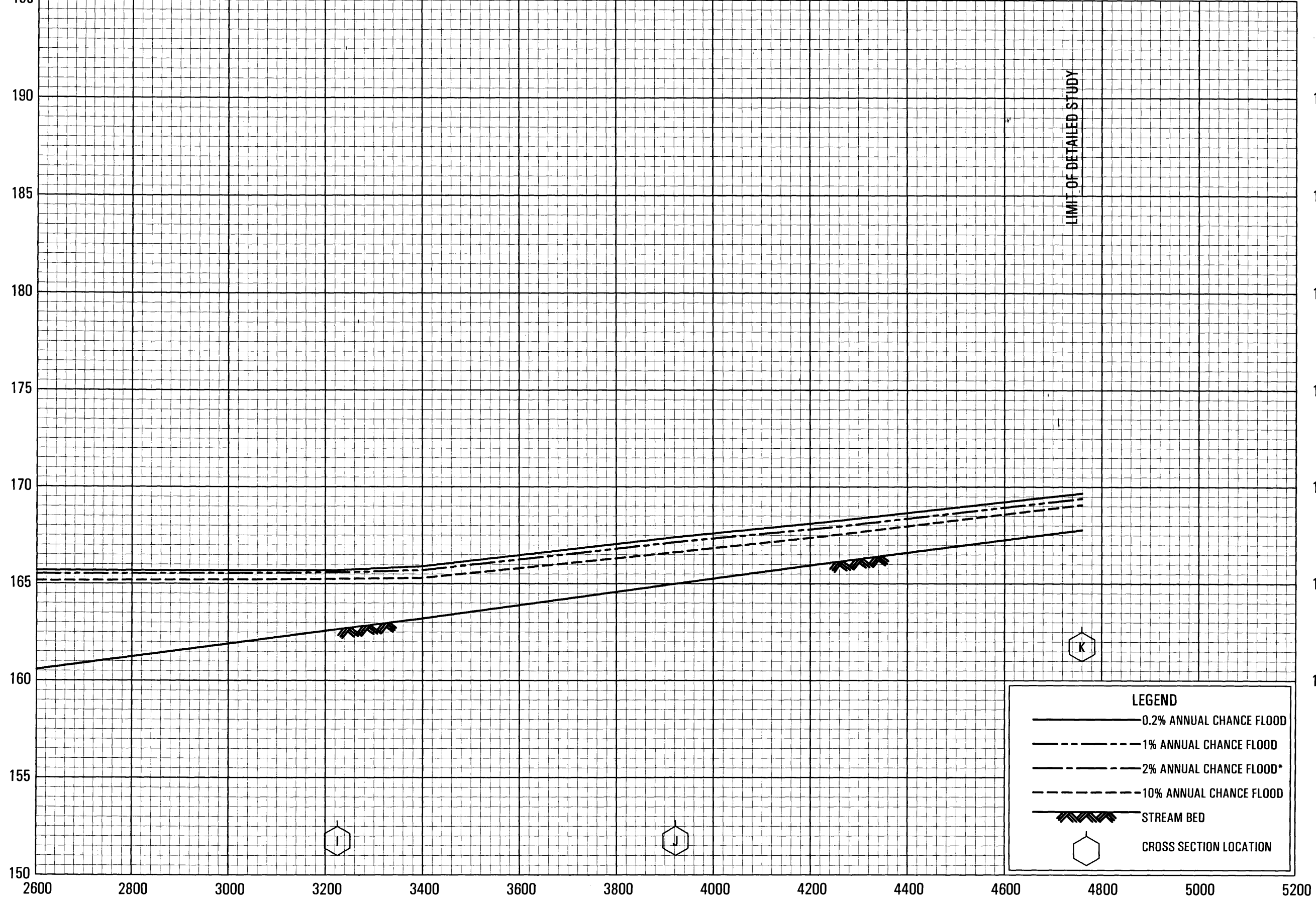
ELEVATION IN FEET (NAVD 88)



FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOOD PROFILES
HOGTOWN CREEK TRIBUTARY 2

ELEVATION IN FEET (NAVD 88)



* 50-YEAR FLOOD IS TOO CLOSE TO THE 100-YEAR FLOOD TO BE SHOWN SEPARATELY ON THIS PROFILE

FLOOD PROFILES

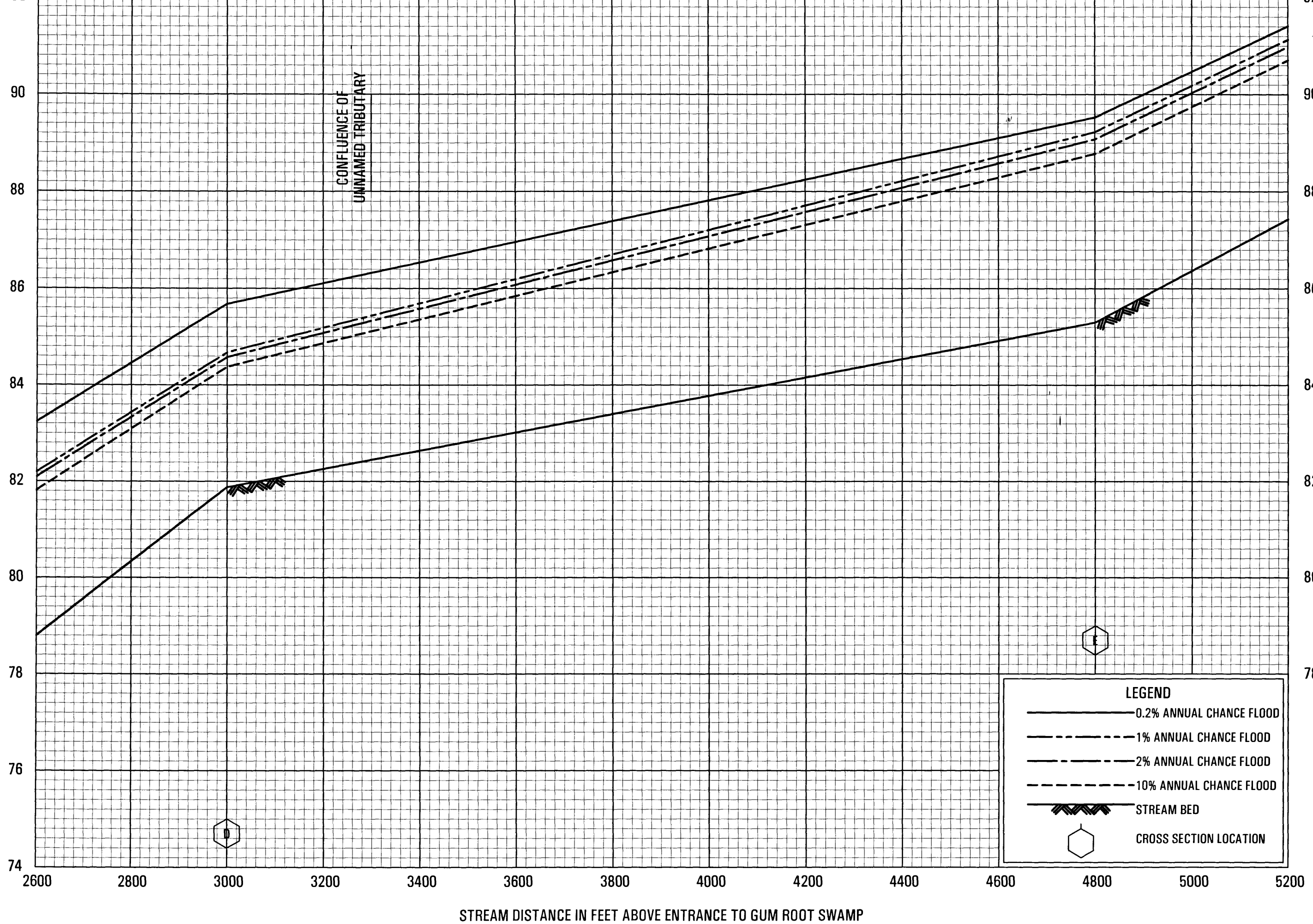
HOGTOWN CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

17P

ELEVATION IN FEET (NAVD 88)

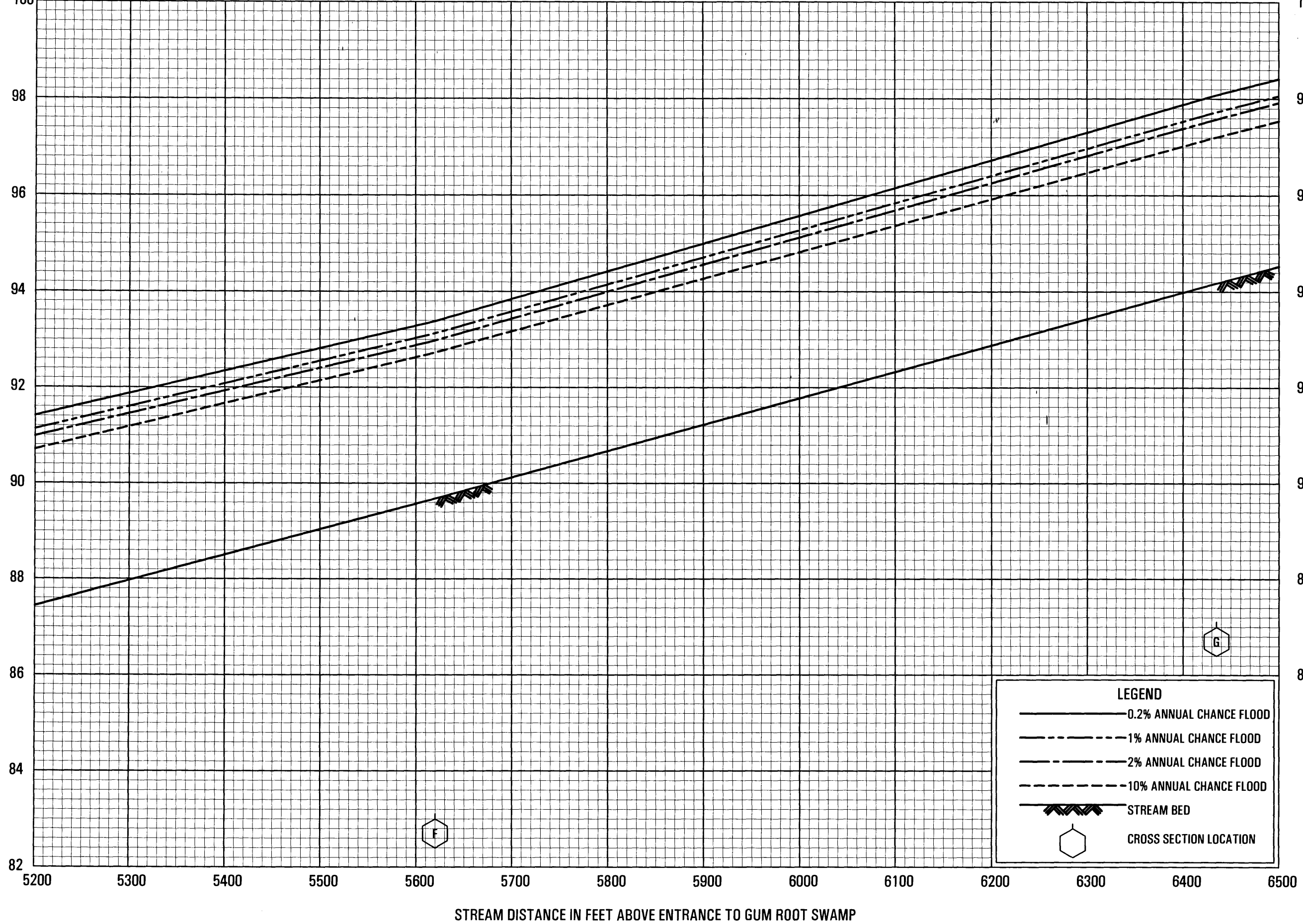


FLOOD PROFILES

LITTLE HATCHET CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES

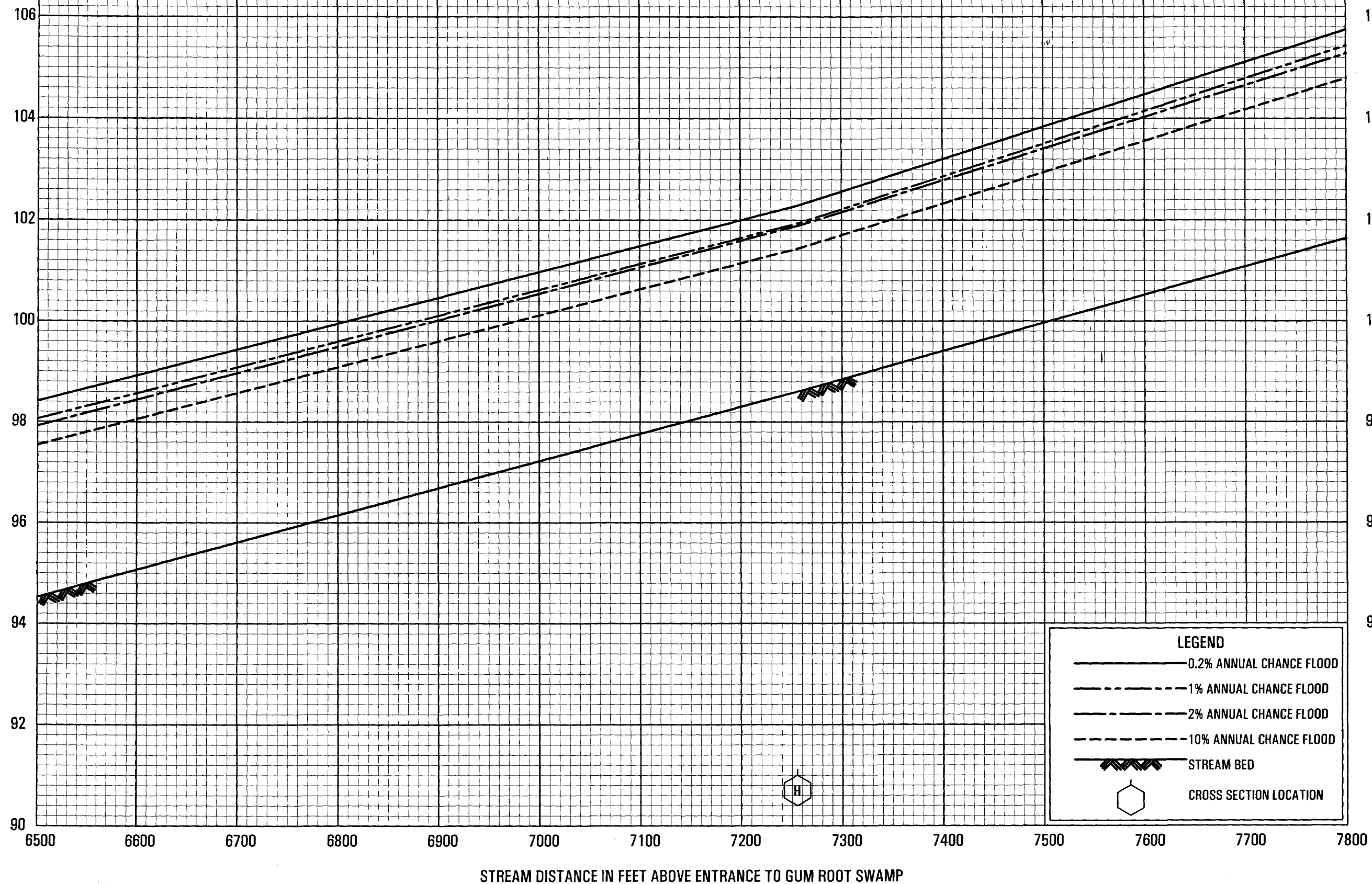
LITTLE HATCHET CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL

AND INCORPORATED AREAS

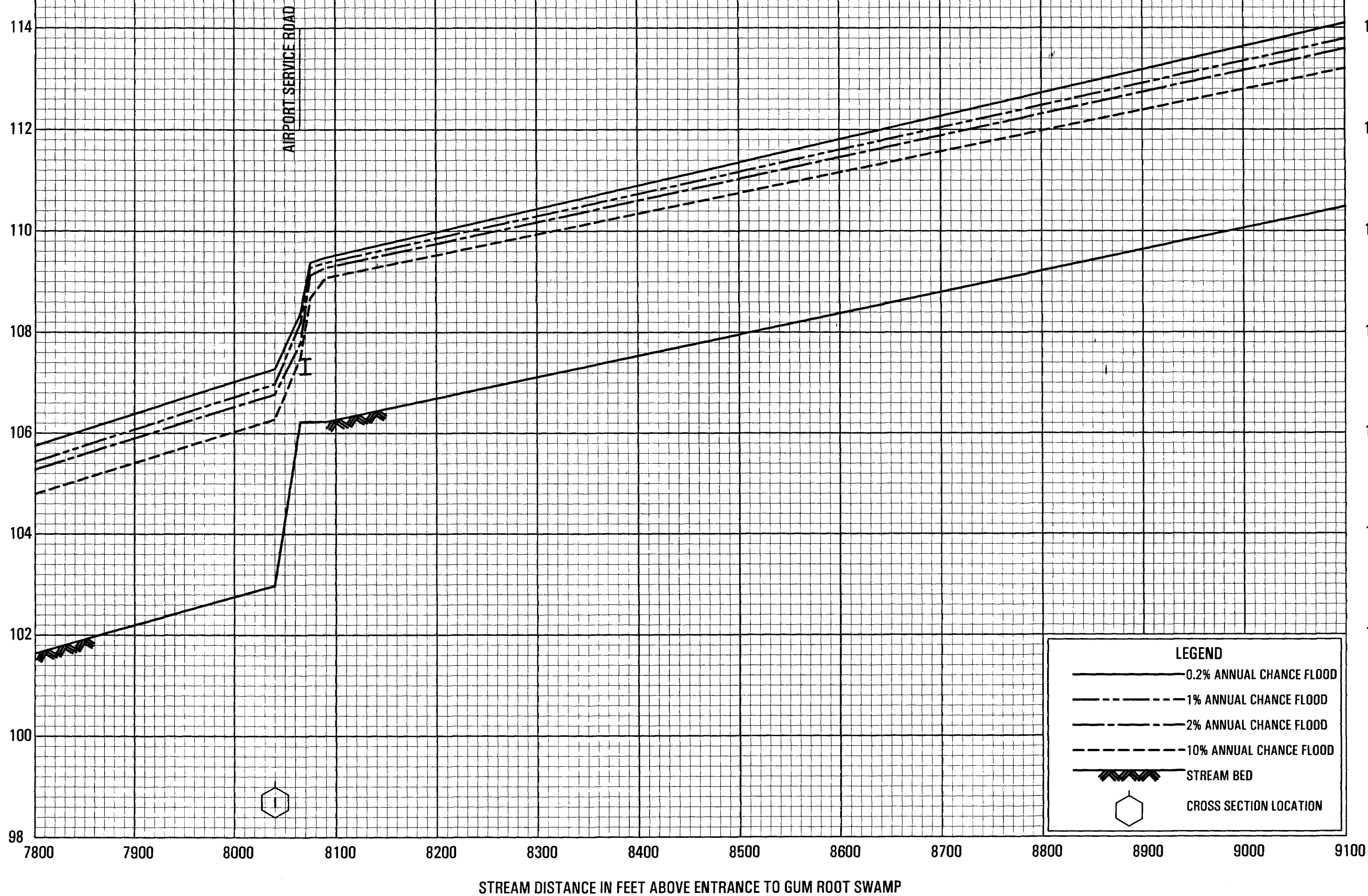
ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES
LITTLE HATCHET CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

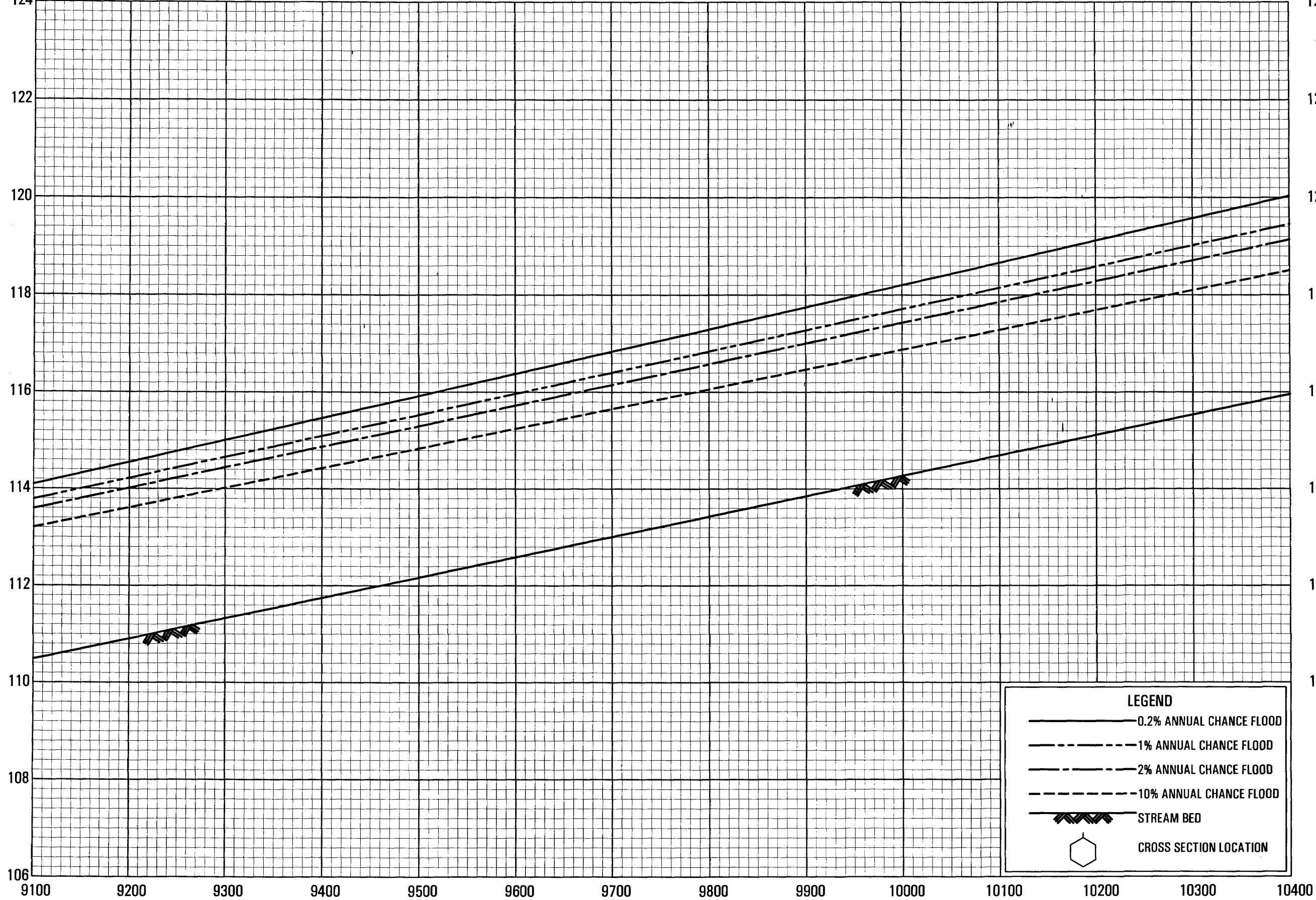
ELEVATION IN FEET (NAVD 88)



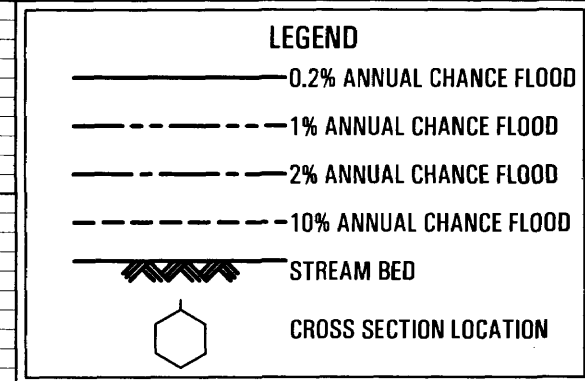
FLOOD PROFILES
LITTLE HATCHET CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



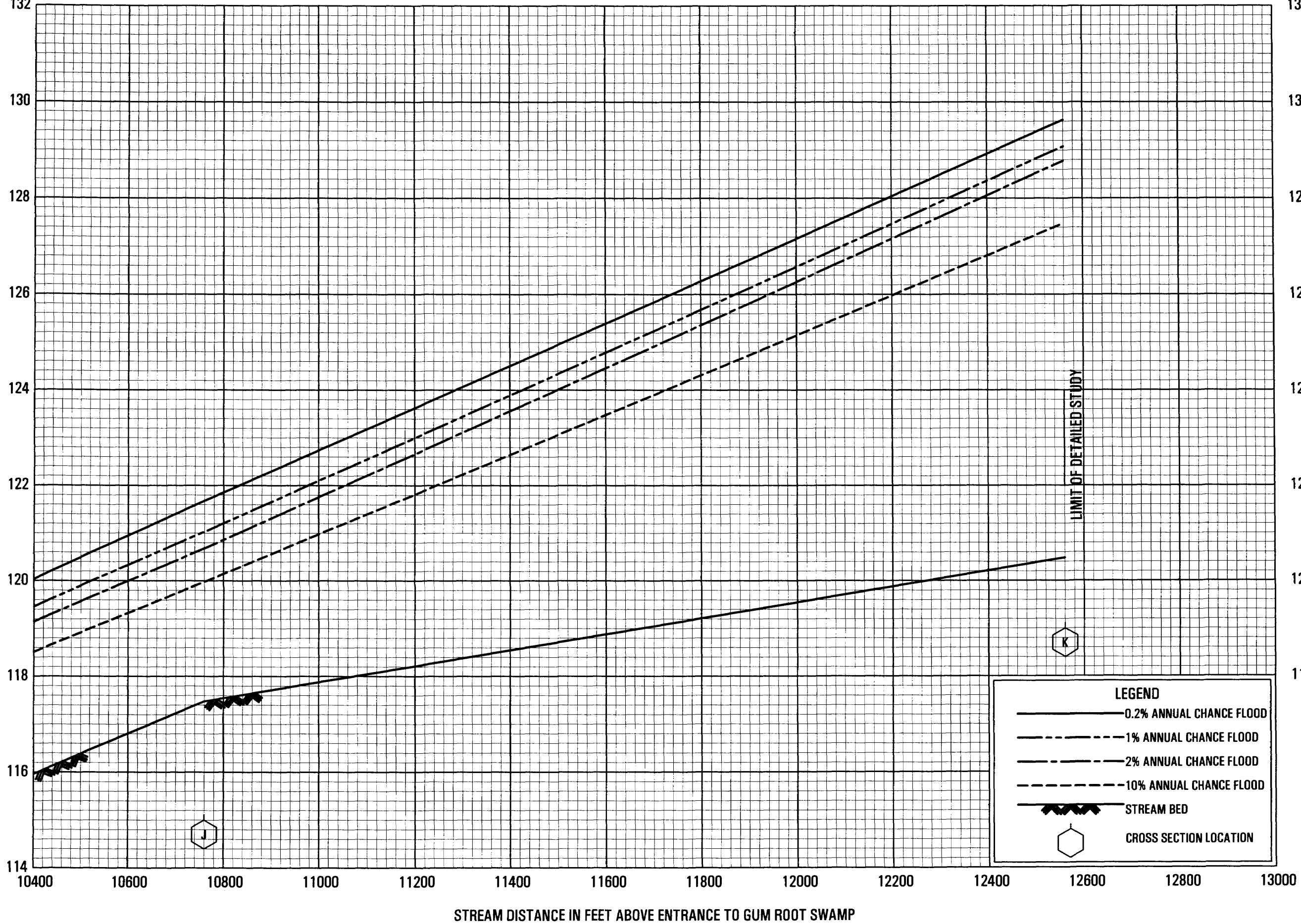
STREAM DISTANCE IN FEET ABOVE ENTRANCE TO GUM ROOT SWAMP



FLOOD PROFILES
LITTLE HATCHET CREEK

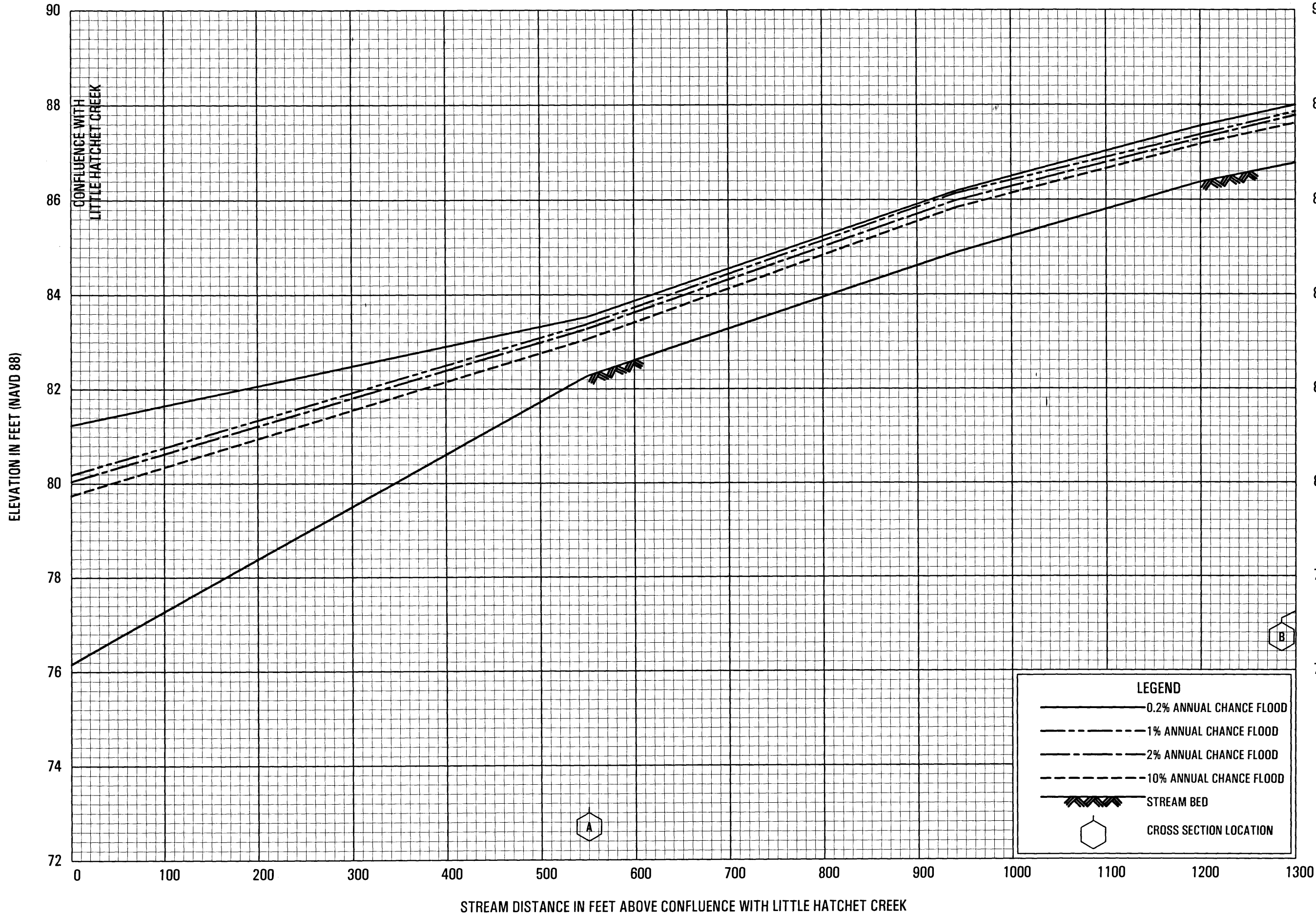
FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES
LITTLE HATCHET CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS



FLOOD PROFILES

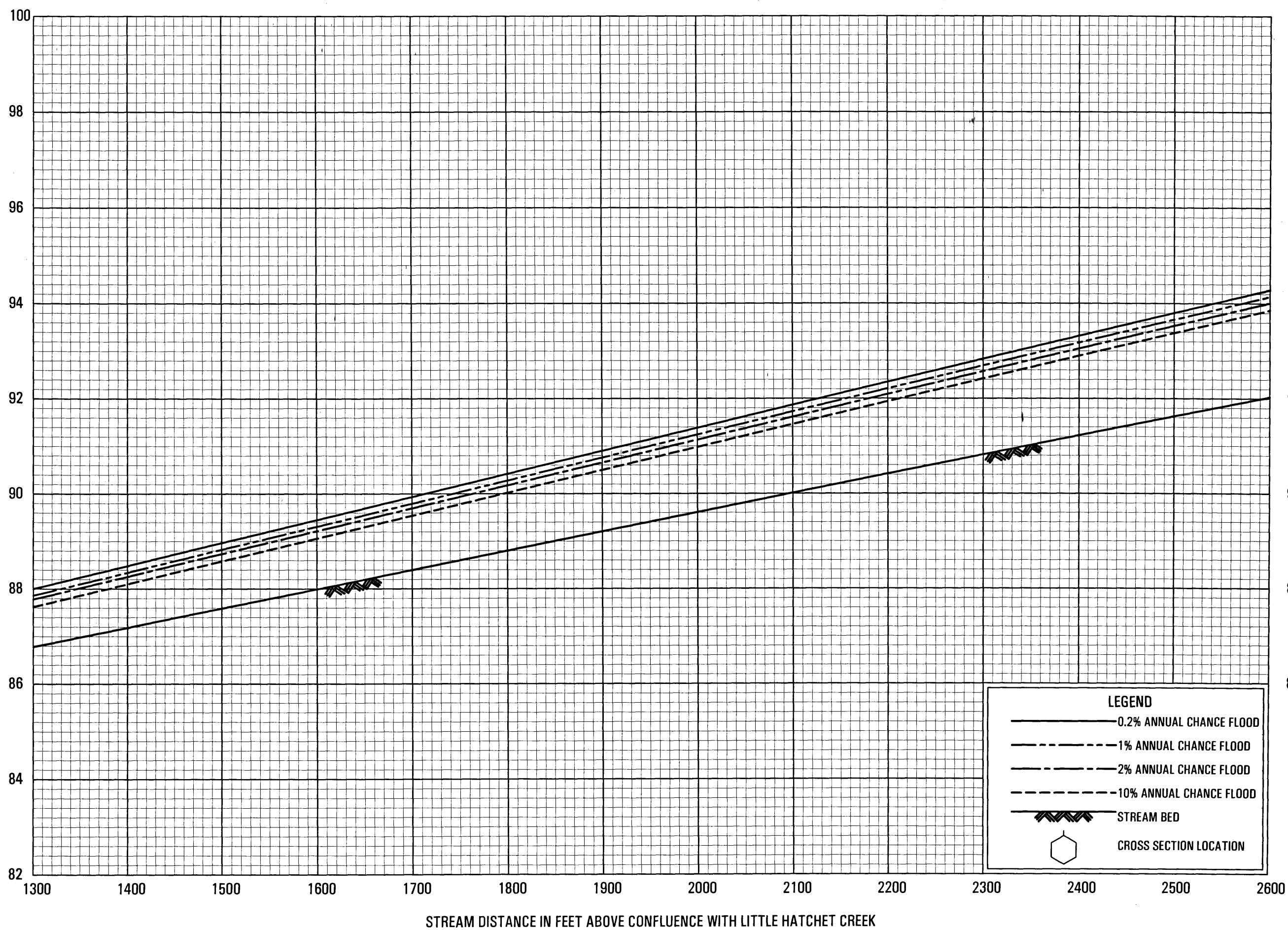
LITTLE HATCHET CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL

AND INCORPORATED AREAS

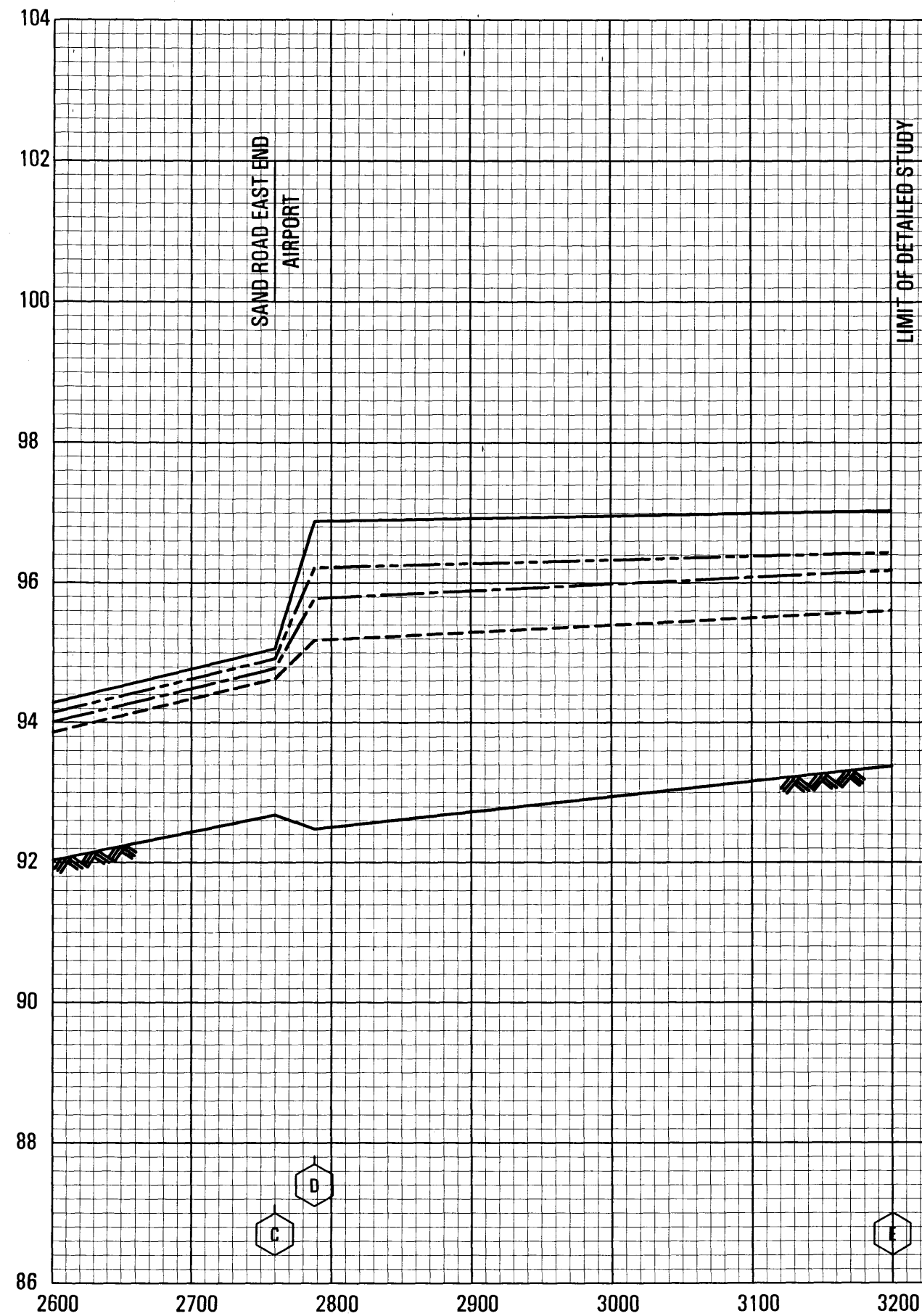
ELEVATION IN FEET (NAVD 88)



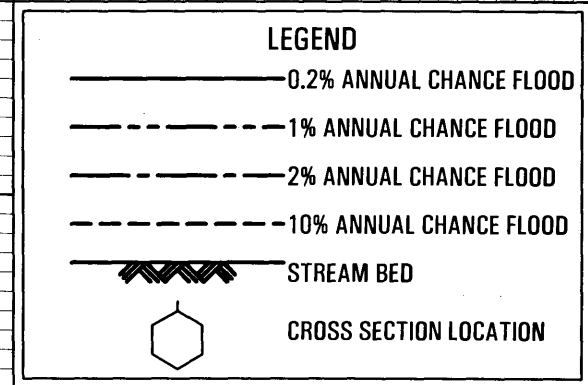
FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOOD PROFILES
LITTLE HATCHET CREEK TRIBUTARY 1

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH LITTLE HATCHET CREEK



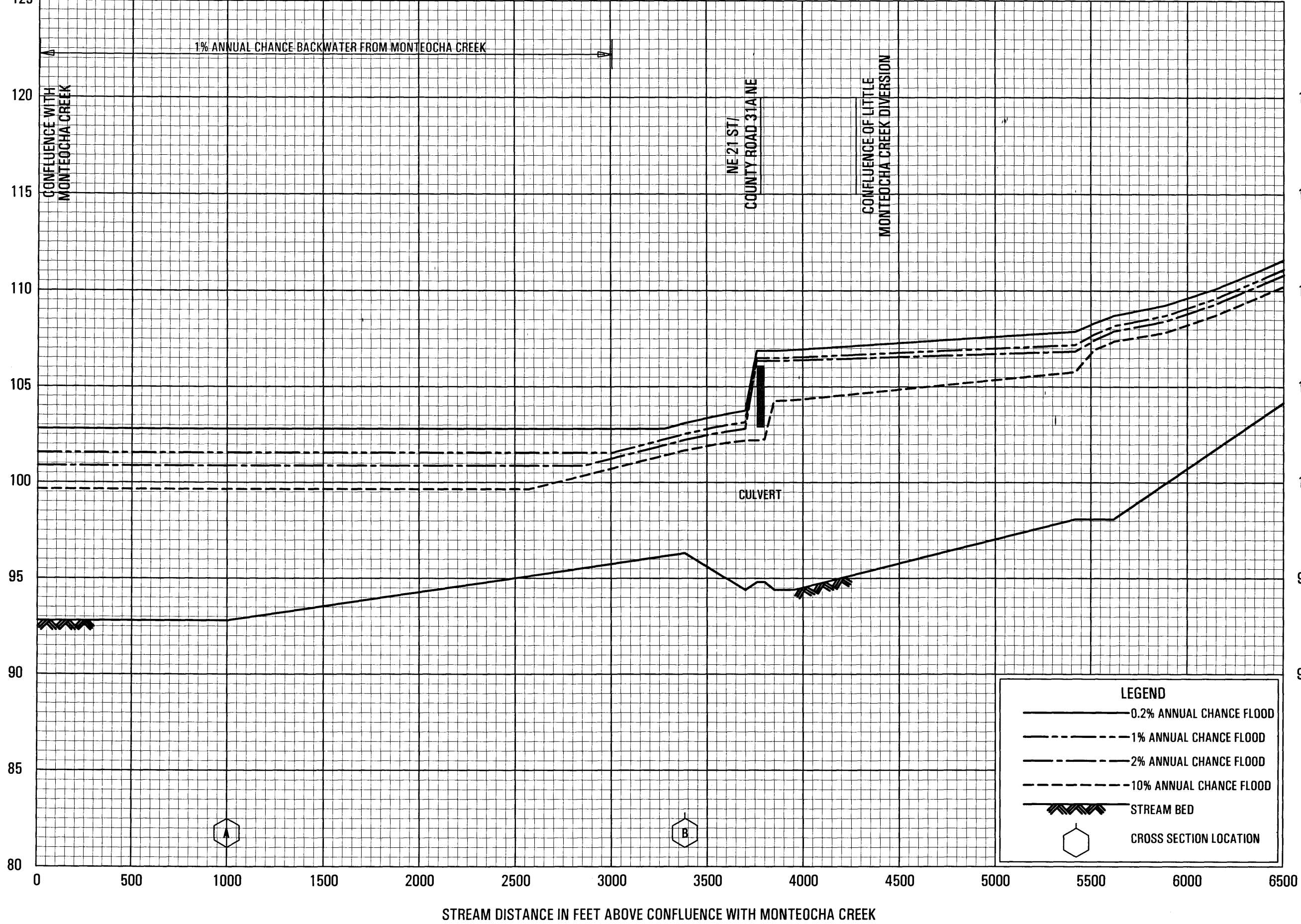
FLOOD PROFILES

LITTLE HATCHET CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



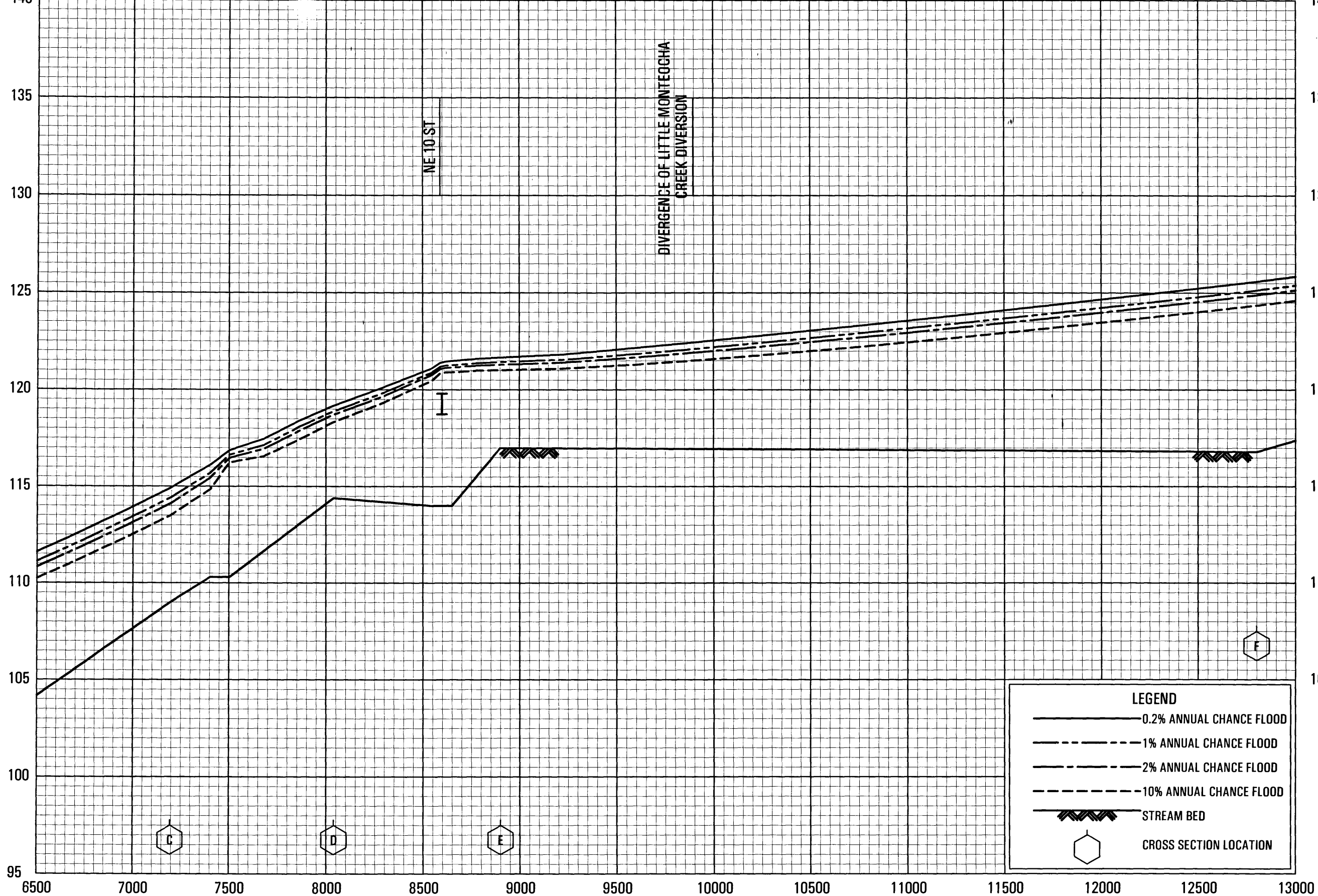
FLOOD PROFILES

LITTLE MONTEOCHA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH MONTEOCHA CREEK

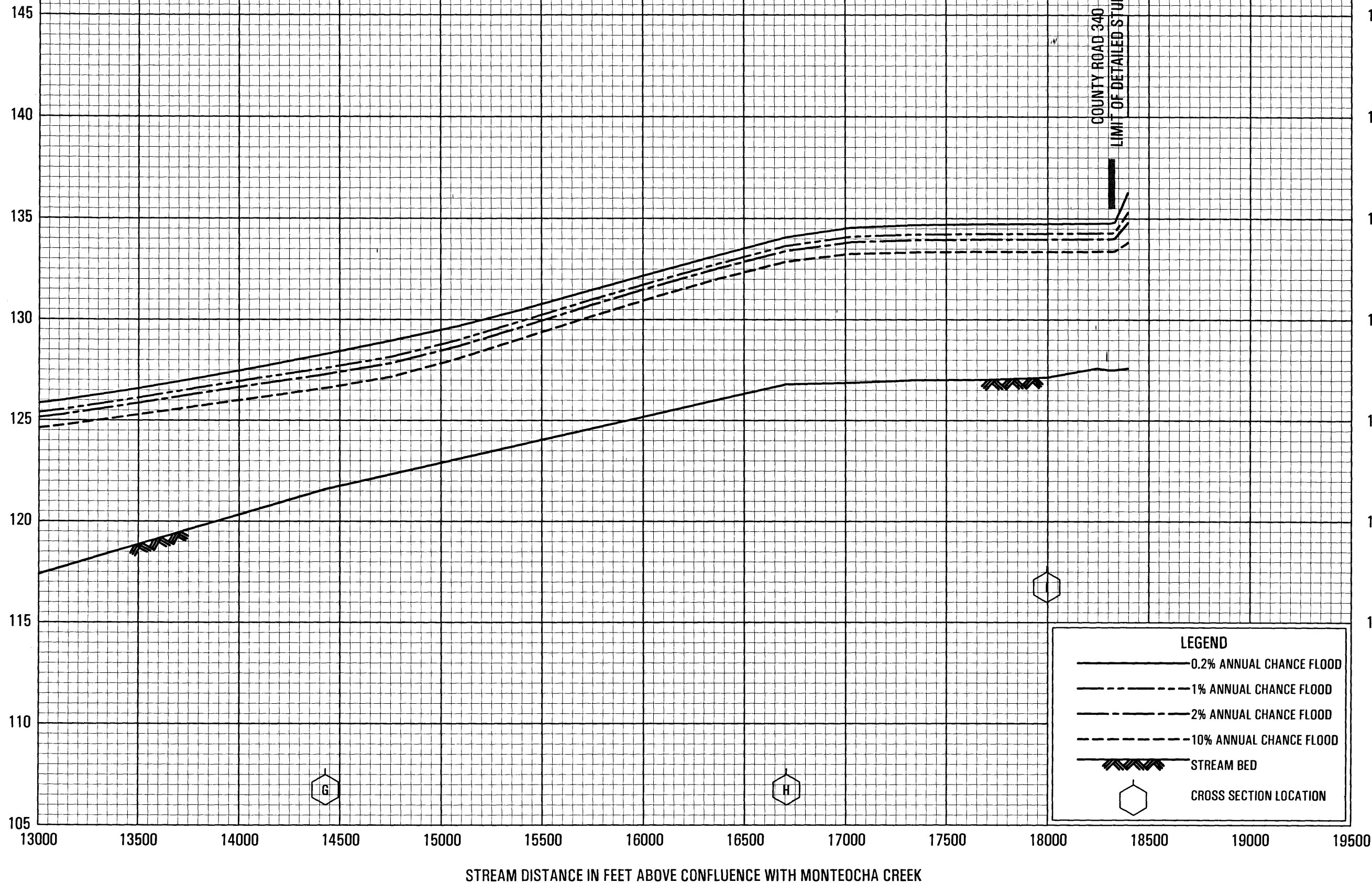
FLOOD PROFILES

LITTLE MONTEOCHA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

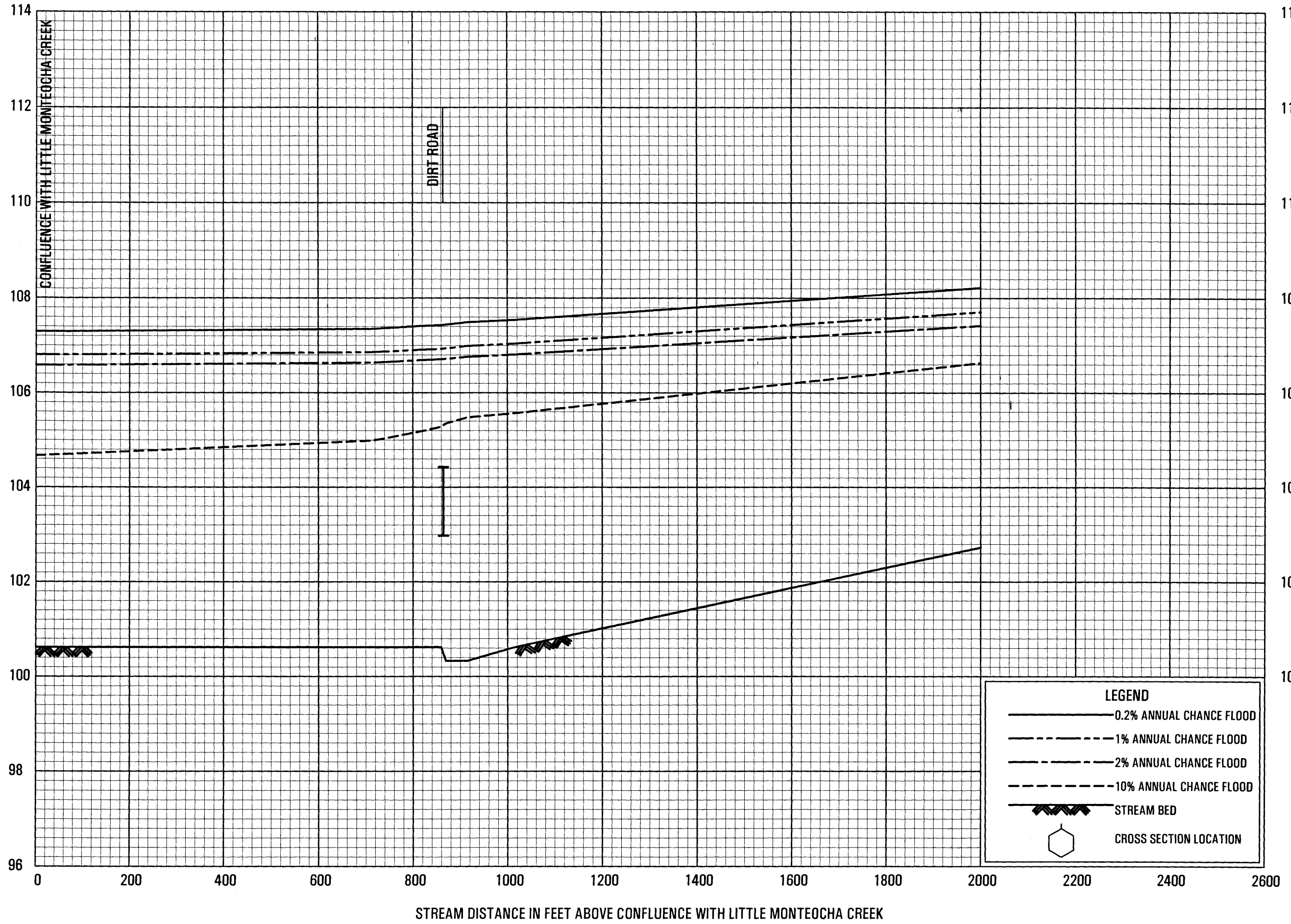
ELEVATION IN FEET (NAVD 88)



FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOOD PROFILES
LITTLE MONTEOCHA CREEK

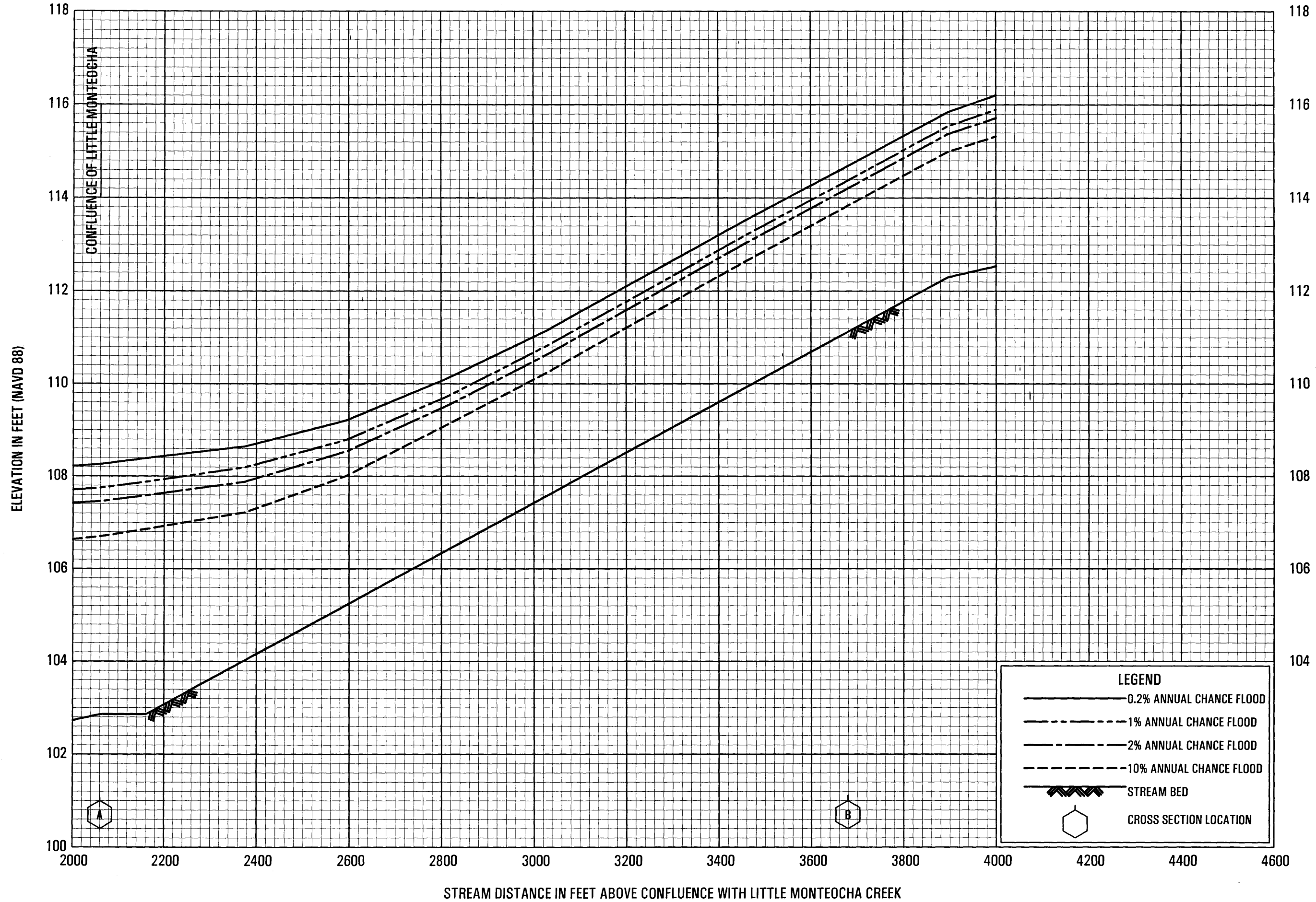
ELEVATION IN FEET (NAVD 88)



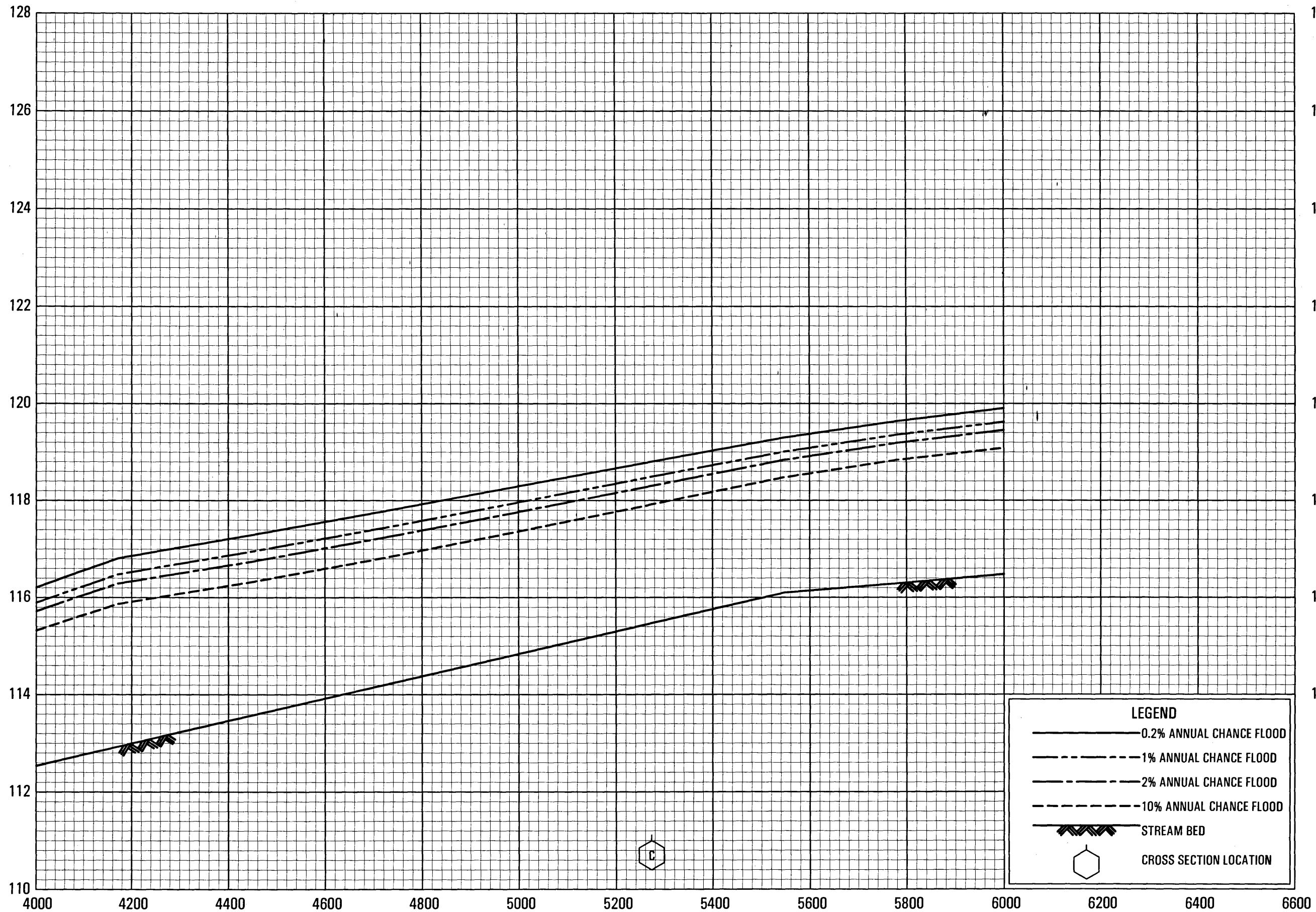
FLOOD PROFILES

LITTLE MONTEOCHA CREEK DIVERSION

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS



ELEVATION IN FEET (NAVD 88)

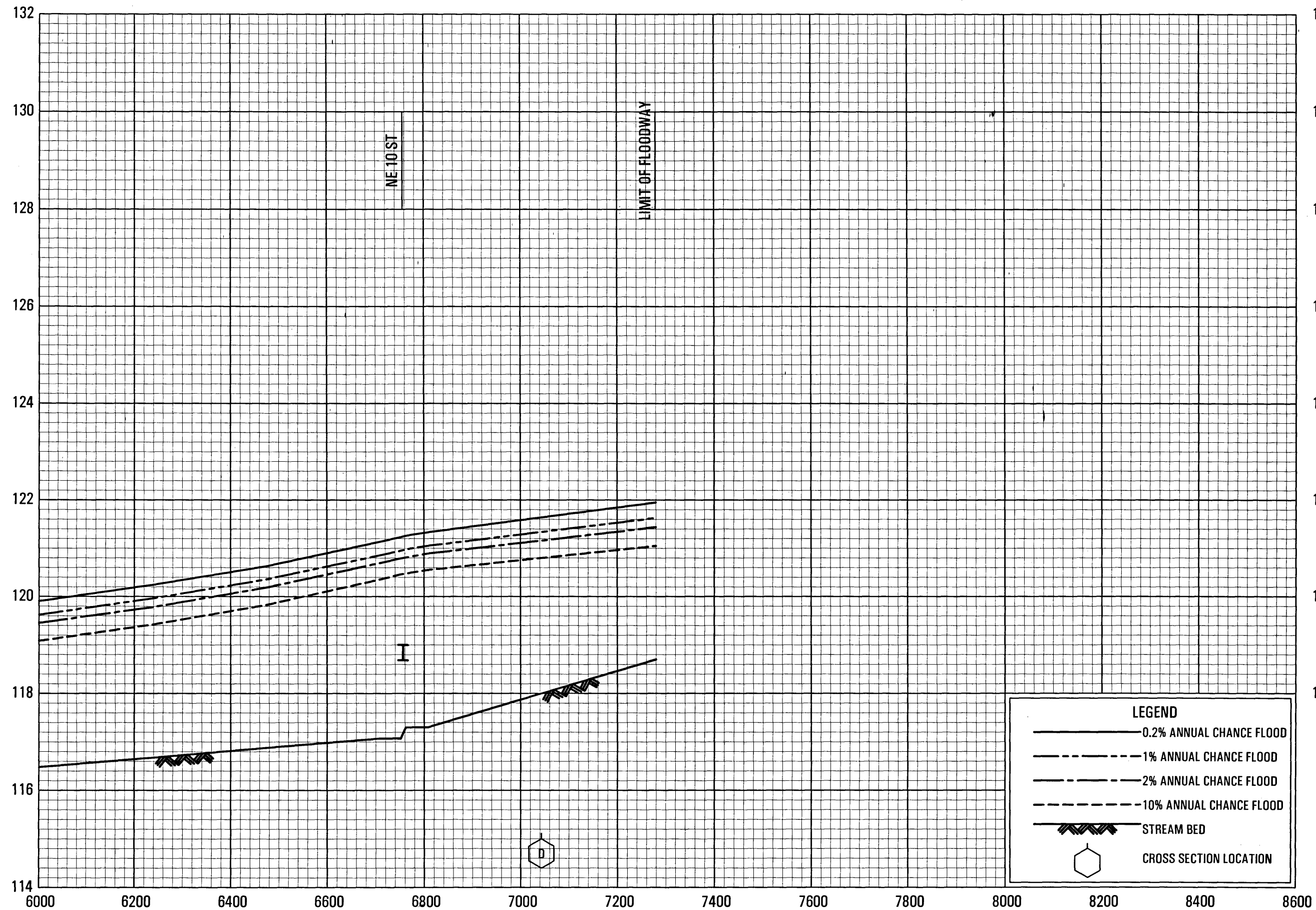


STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH LITTLE MONTEOCHA CREEK

FLOOD PROFILES
LITTLE MONTEOCHA CREEK DIVERSION

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)

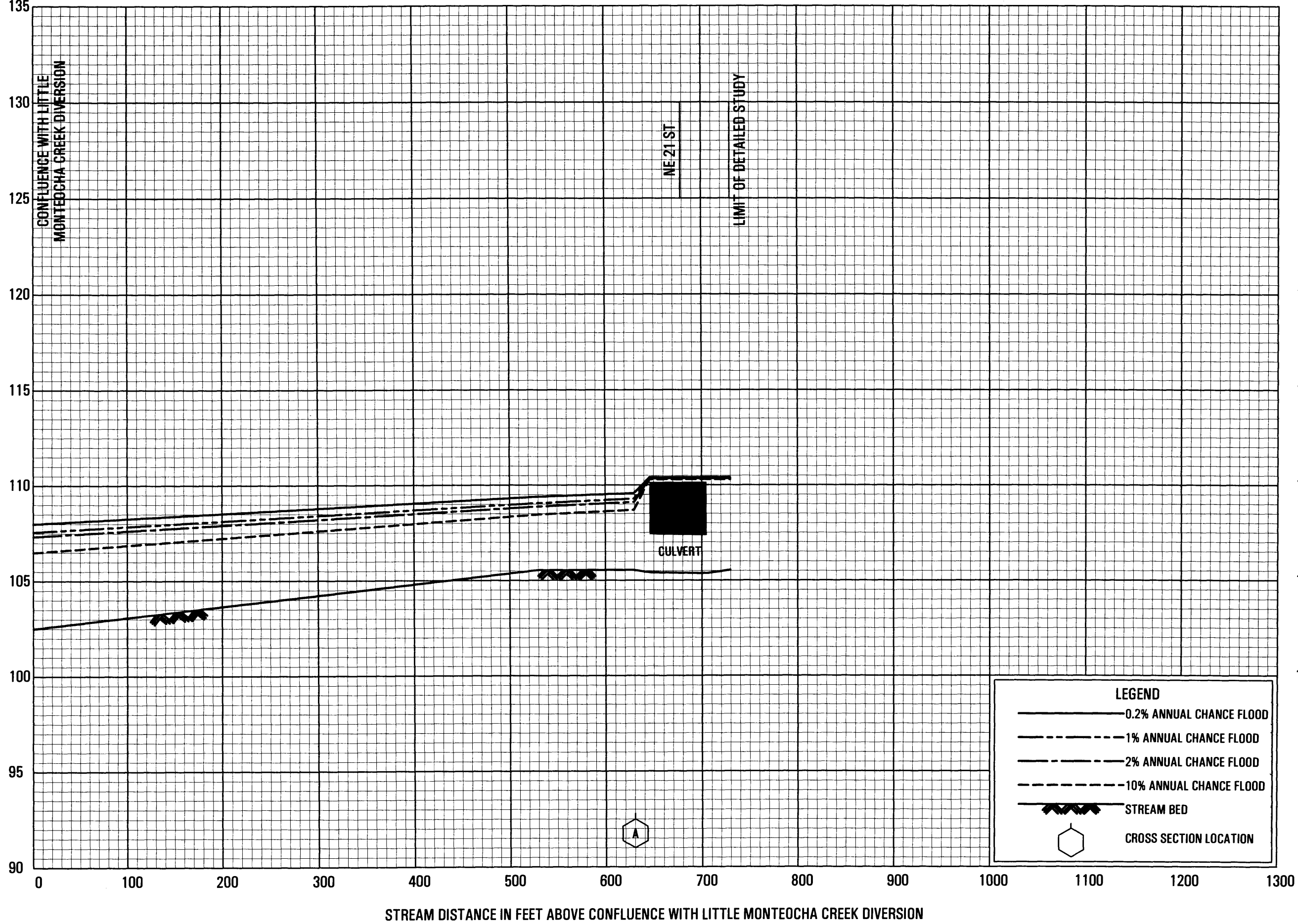


STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH LITTLE MONTEOCHA CREEK

FLOOD PROFILES
LITTLE MONTEOCHA CREEK DIVERSION

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

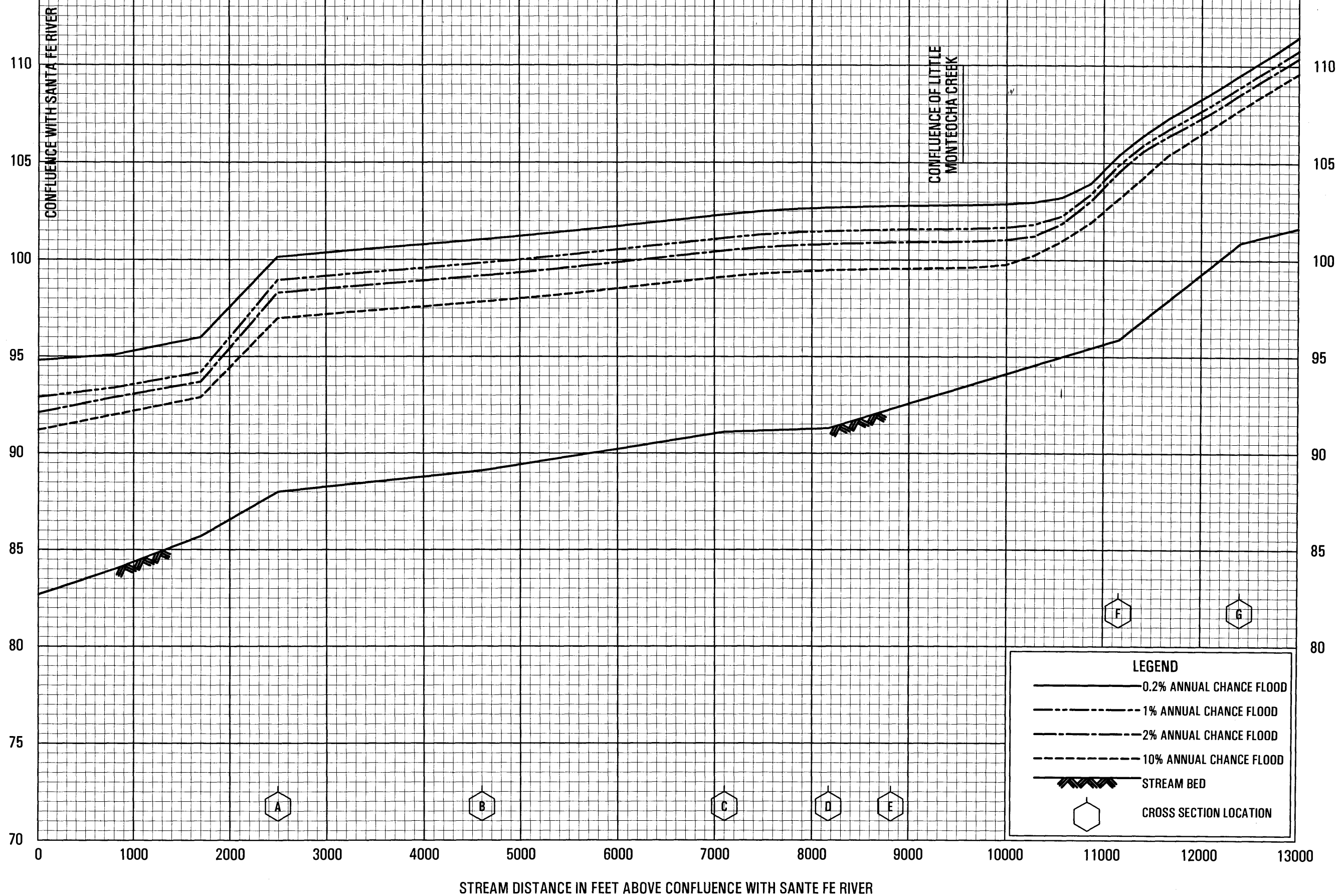
ELEVATION IN FEET (NAVD 88)



FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOOD PROFILES
LITTLE MONTEOCHA CREEK DIVERSION TRIBUTARY

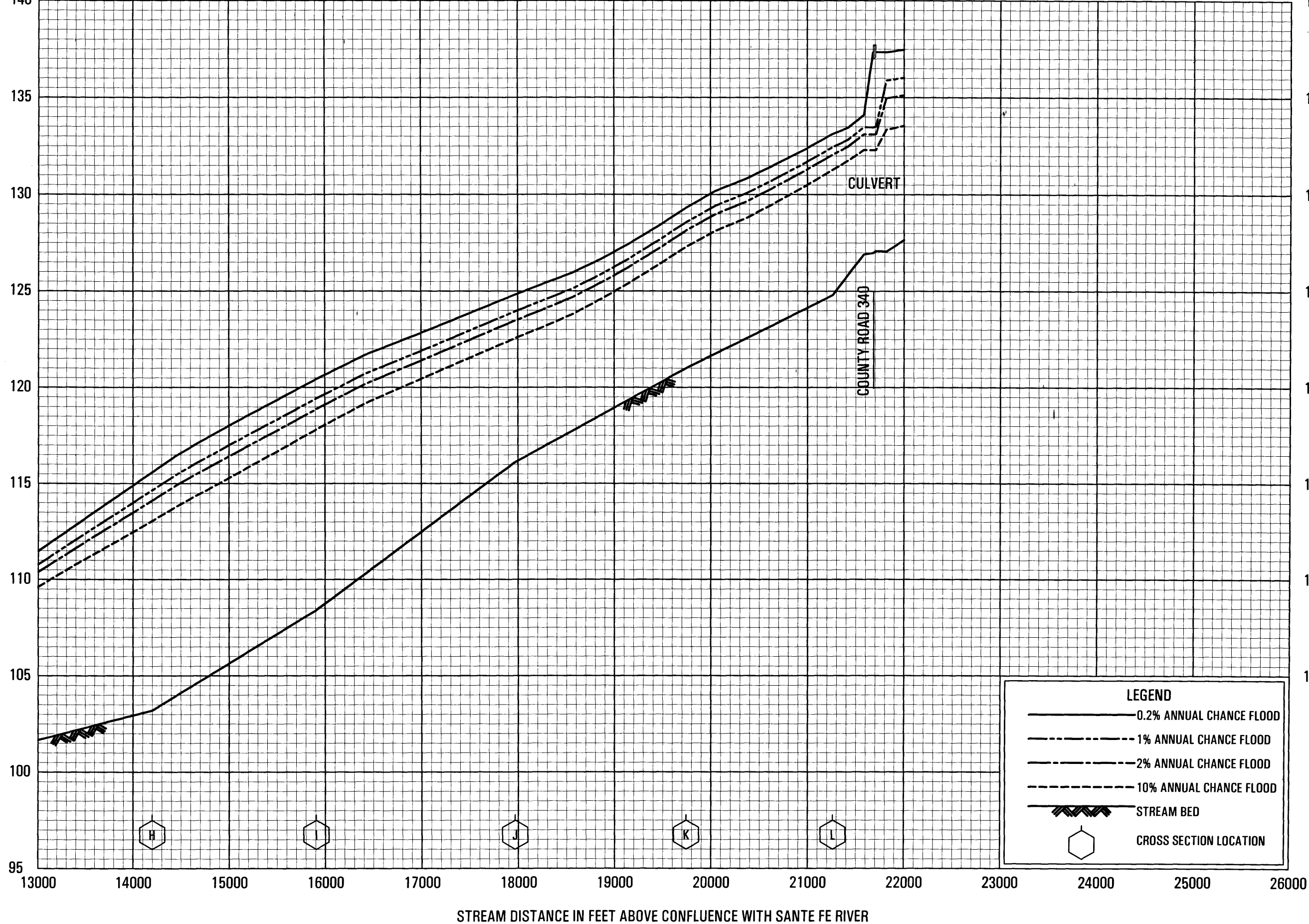
ELEVATION IN FEET (NAVD 88)



FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOOD PROFILES
MONTECOCHA CREEK

ELEVATION IN FEET (NAVD 88)



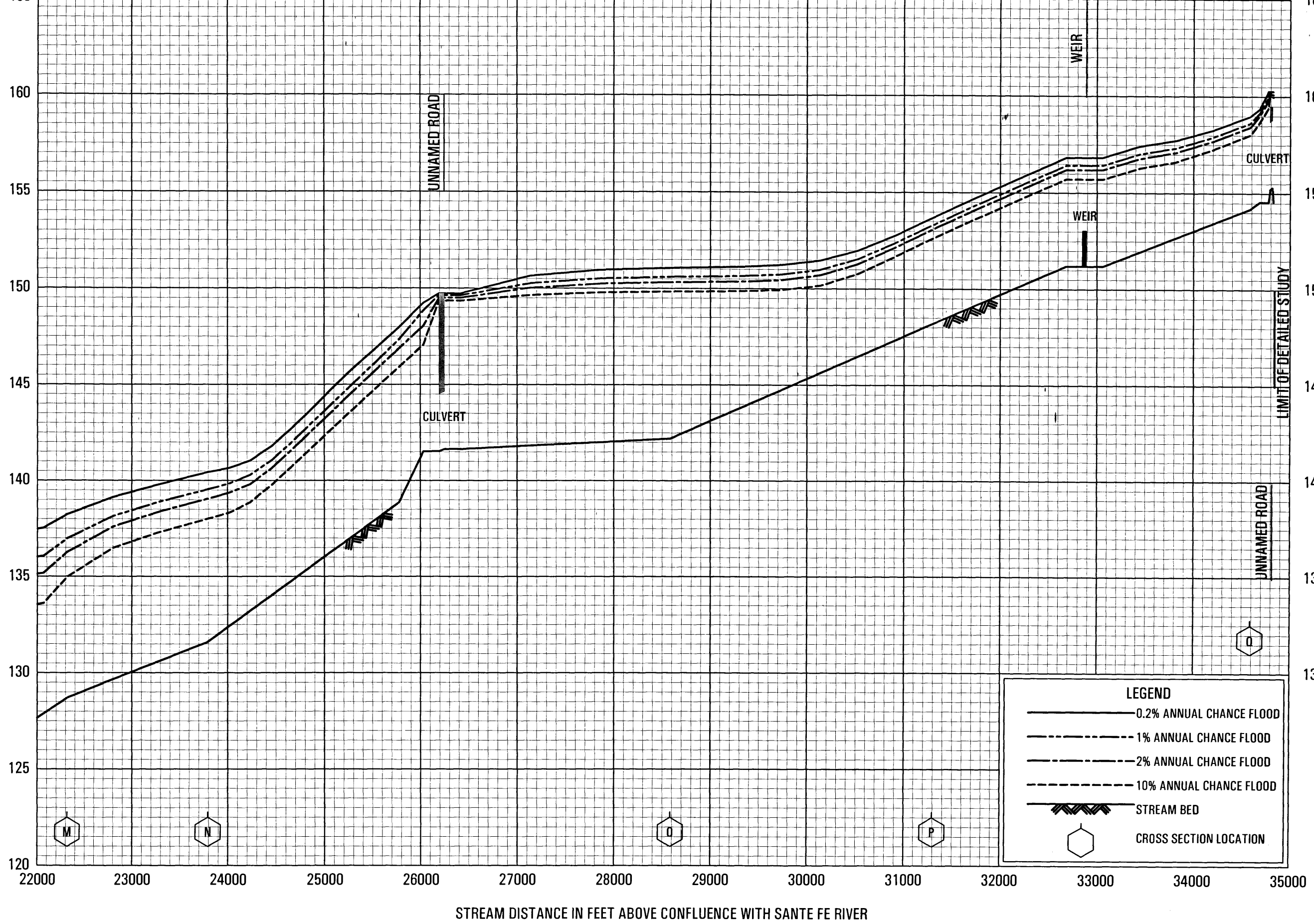
FLOOD PROFILES

MONTECOCHA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

37P

ELEVATION IN FEET (NAVD 88)

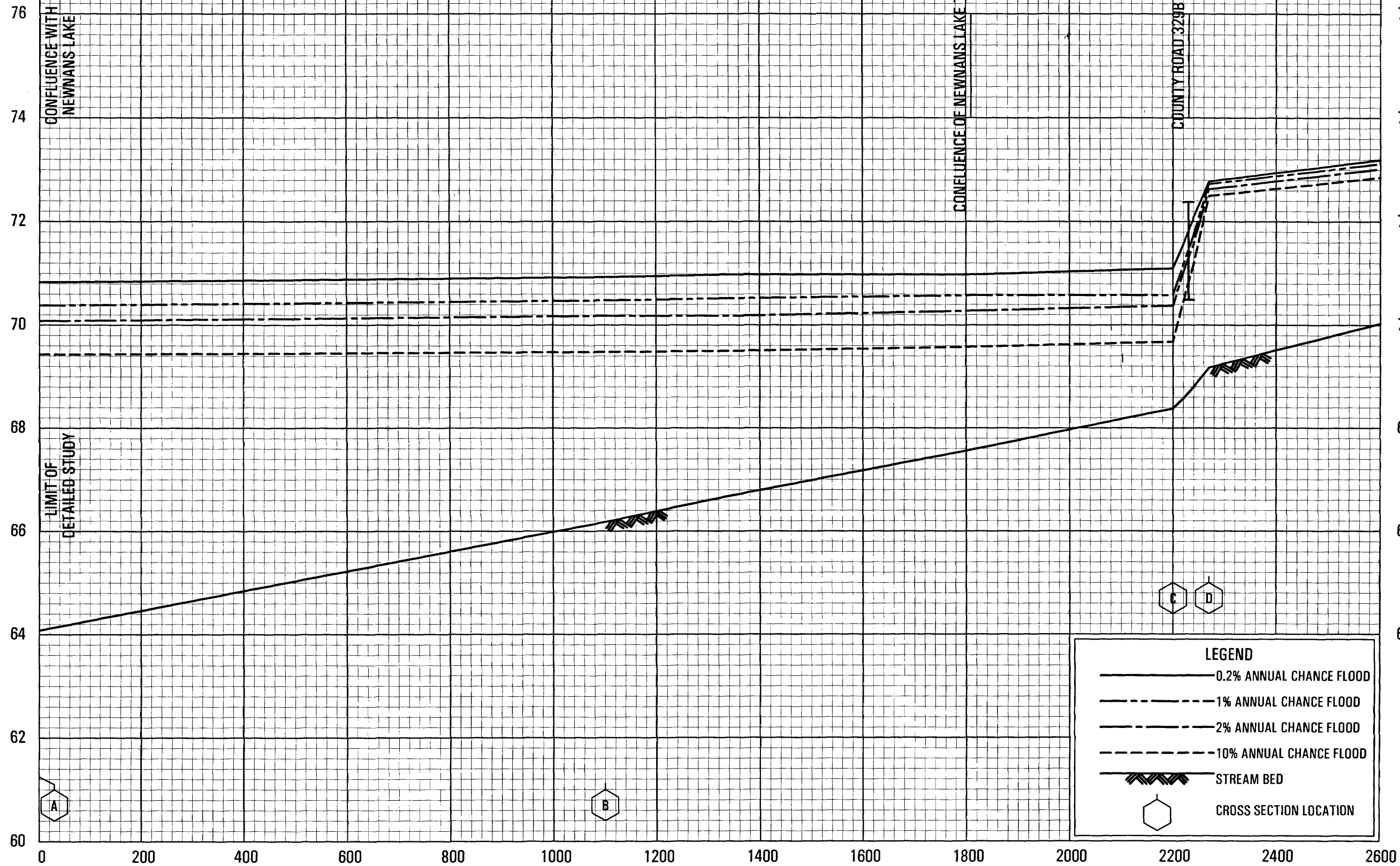


FLOOD PROFILES

MONTEOCHA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH NEWNANS LAKE

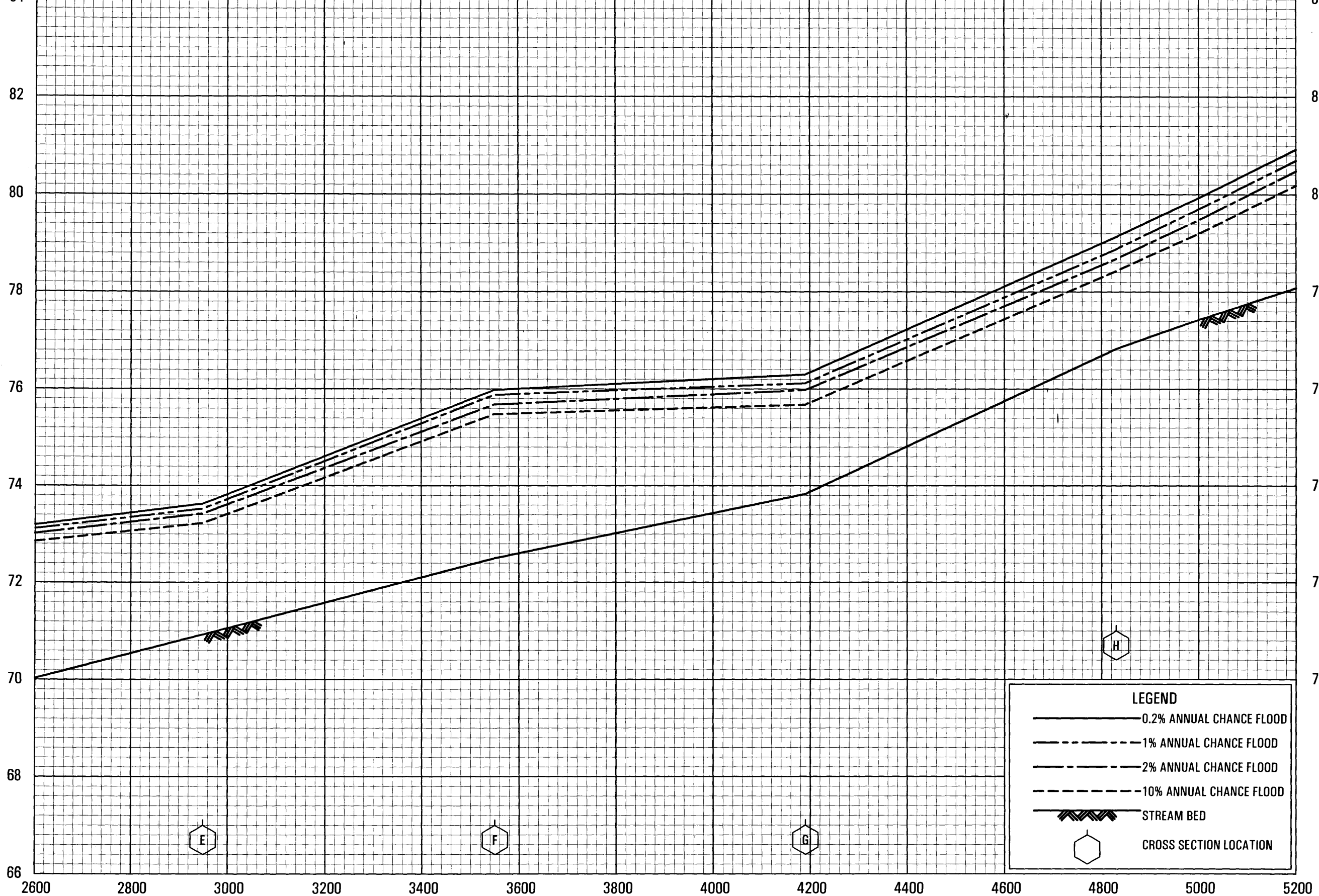
FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOOD PROFILES

NEWNANS LAKE TRIBUTARY 1

39P

ELEVATION IN FEET (NAVD 88)



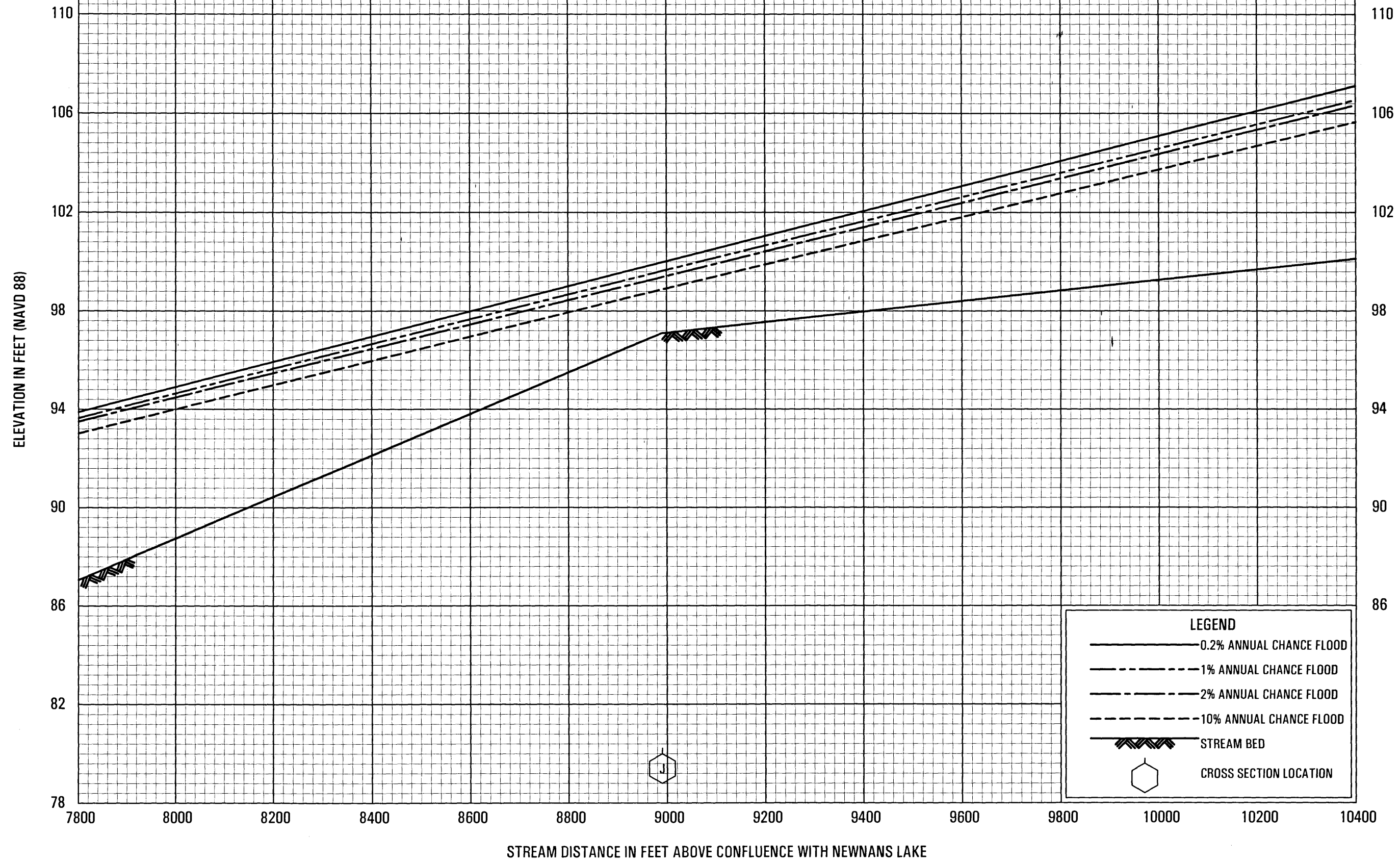
STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH NEWNANS LAKE

FLOOD PROFILES

NEWNANS LAKE TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

40P

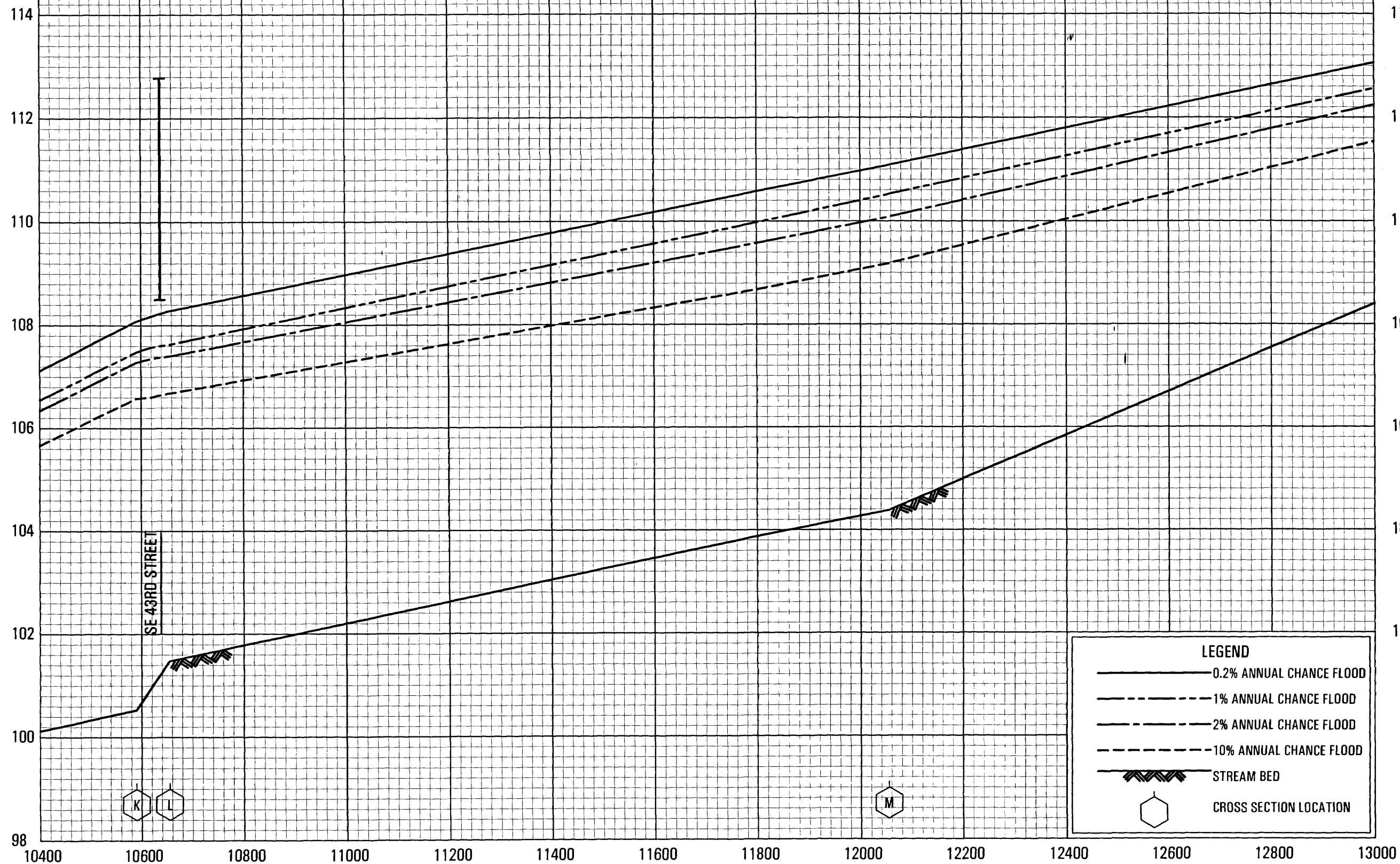


FLOOD PROFILES

NEWNANS LAKE TRIBUTARY 1

**FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS**

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH NEWNANS LAKE

FLOOD PROFILES

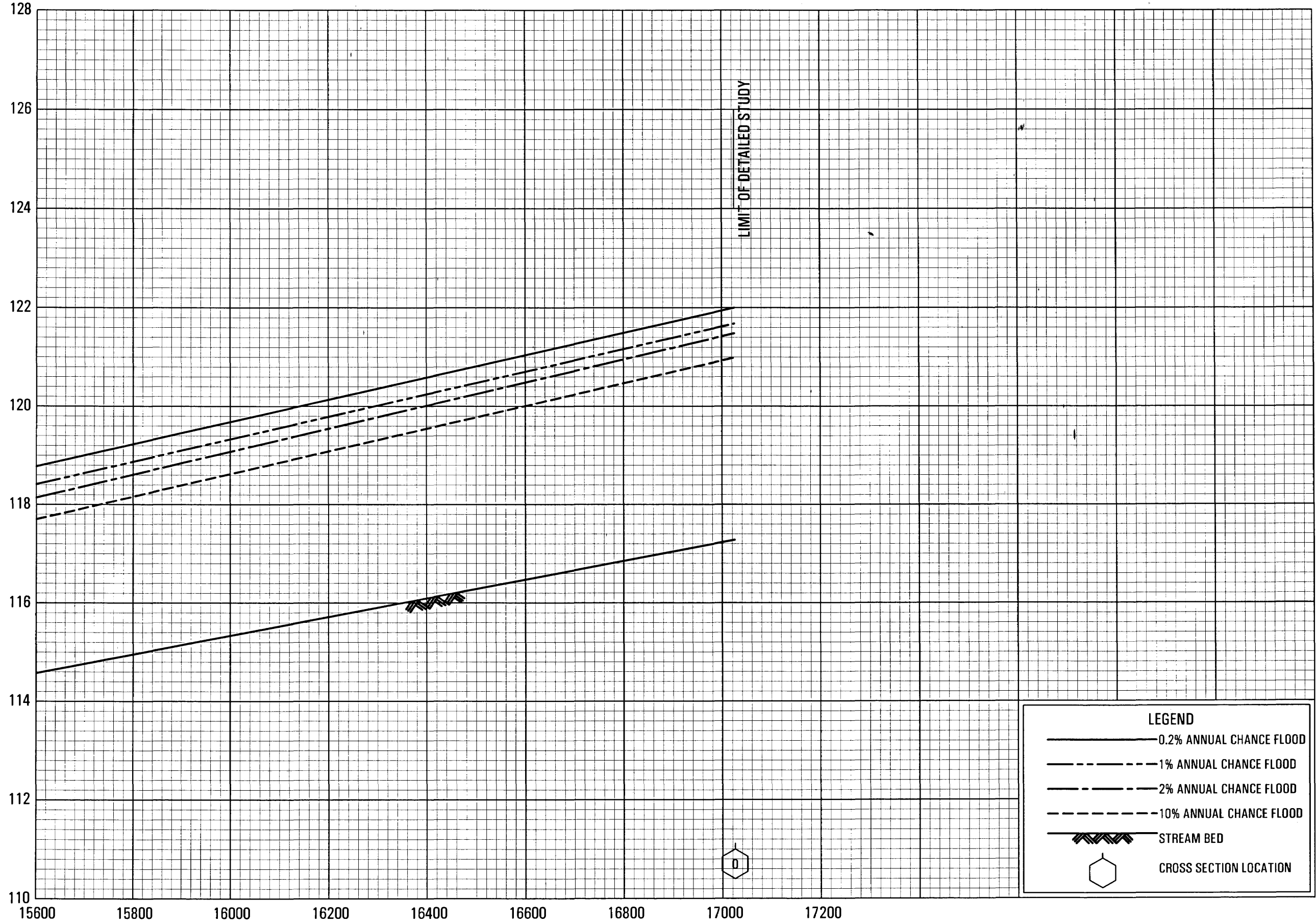
NEWNANS LAKE TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

43P

ELEVATION IN FEET (NAVD 88)



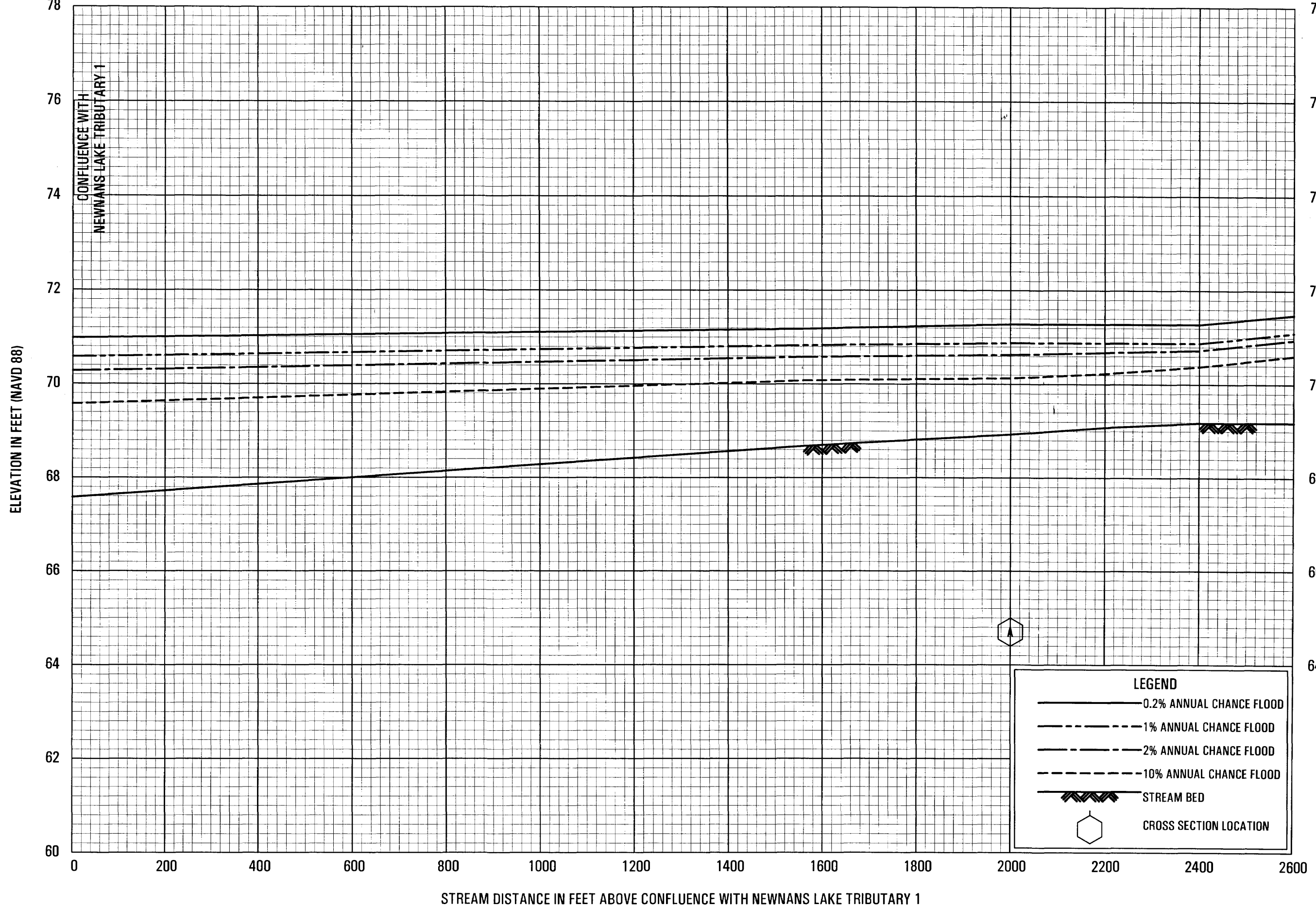
STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH NEWNANS LAKE

FLOOD PROFILES

NEWNANS LAKE TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

45P

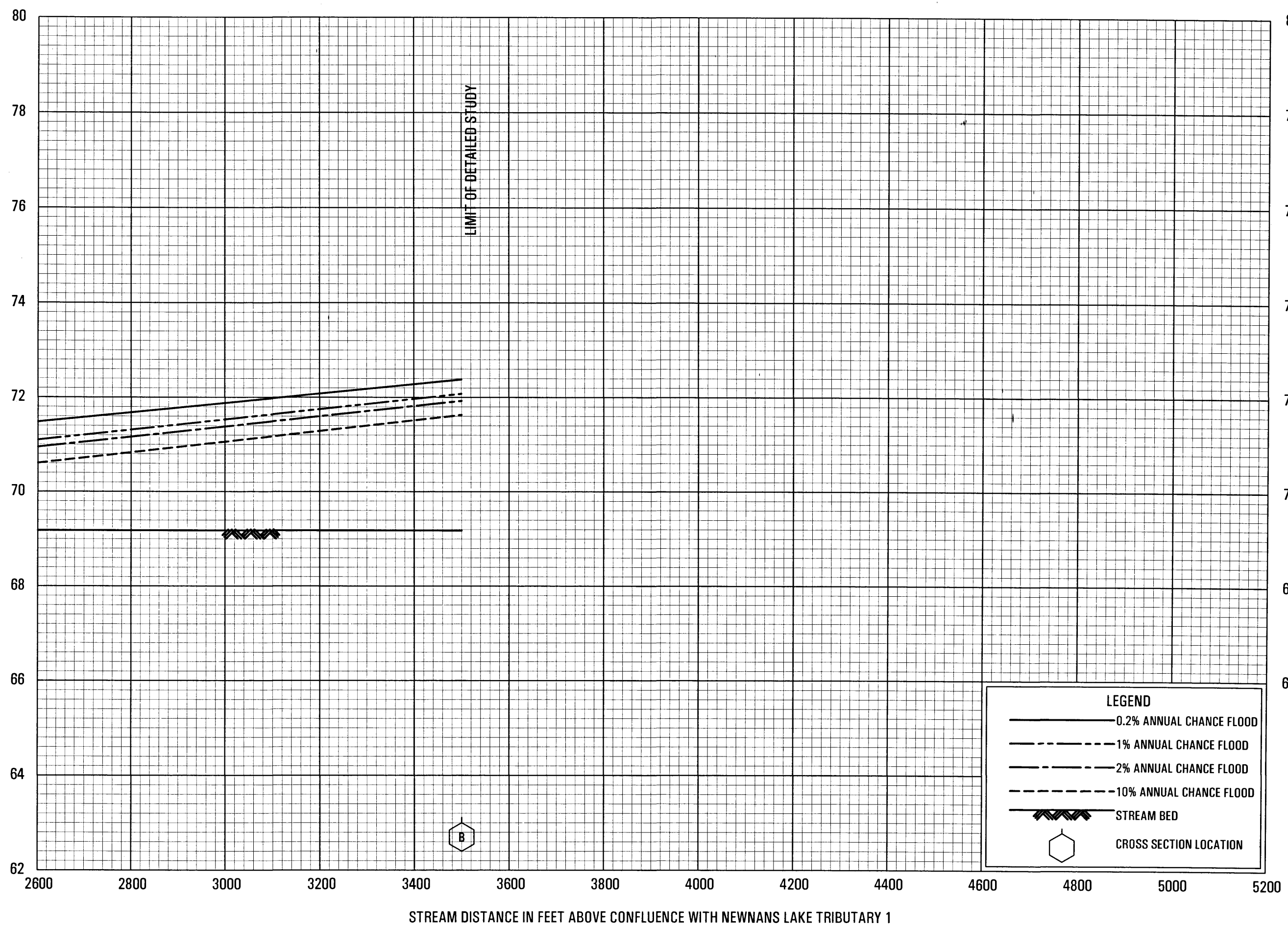


FLOOD PROFILES

NEWNANS LAKE TRIBUTARY 2

**FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS**

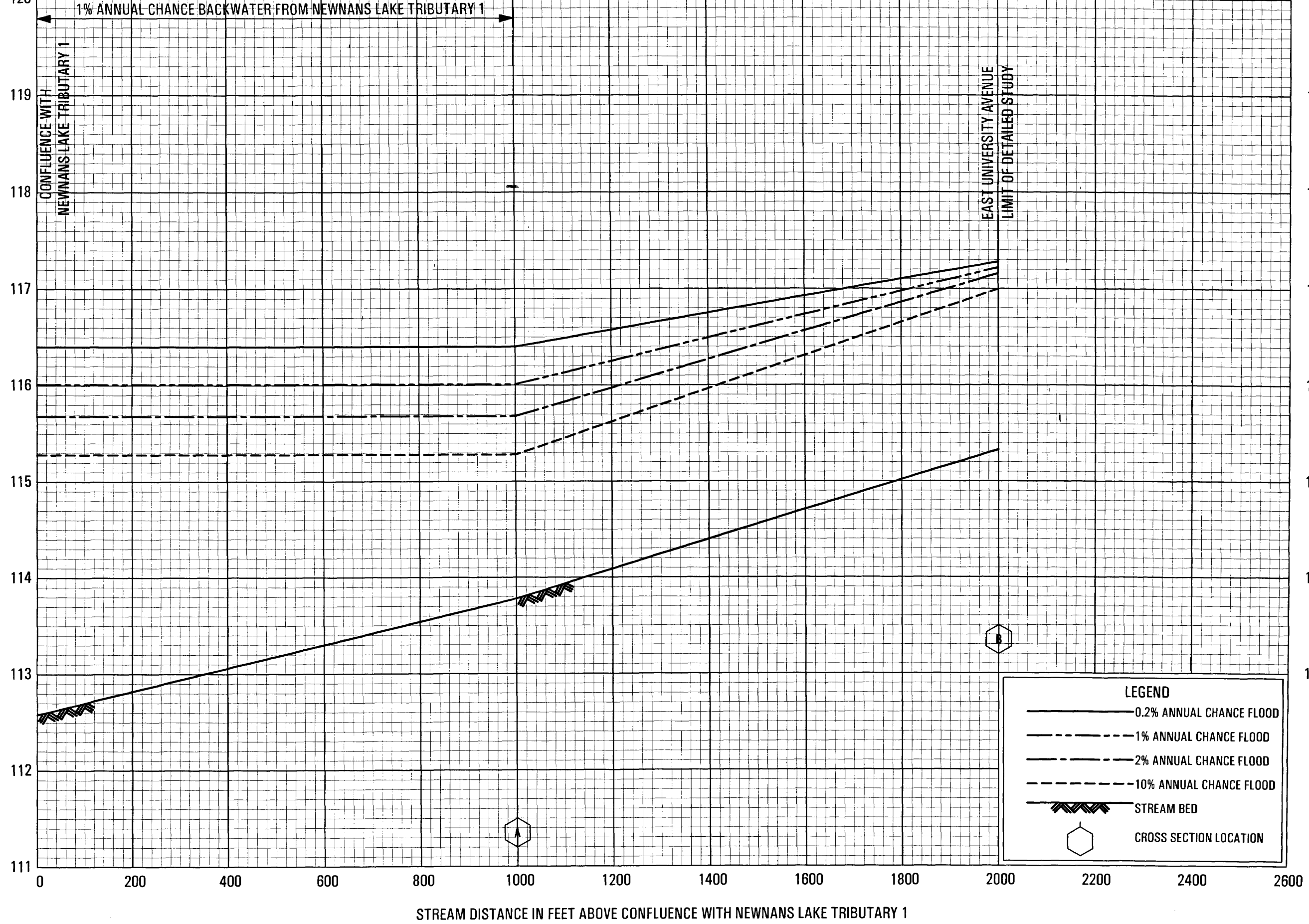
ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES
NEWNANS LAKE TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

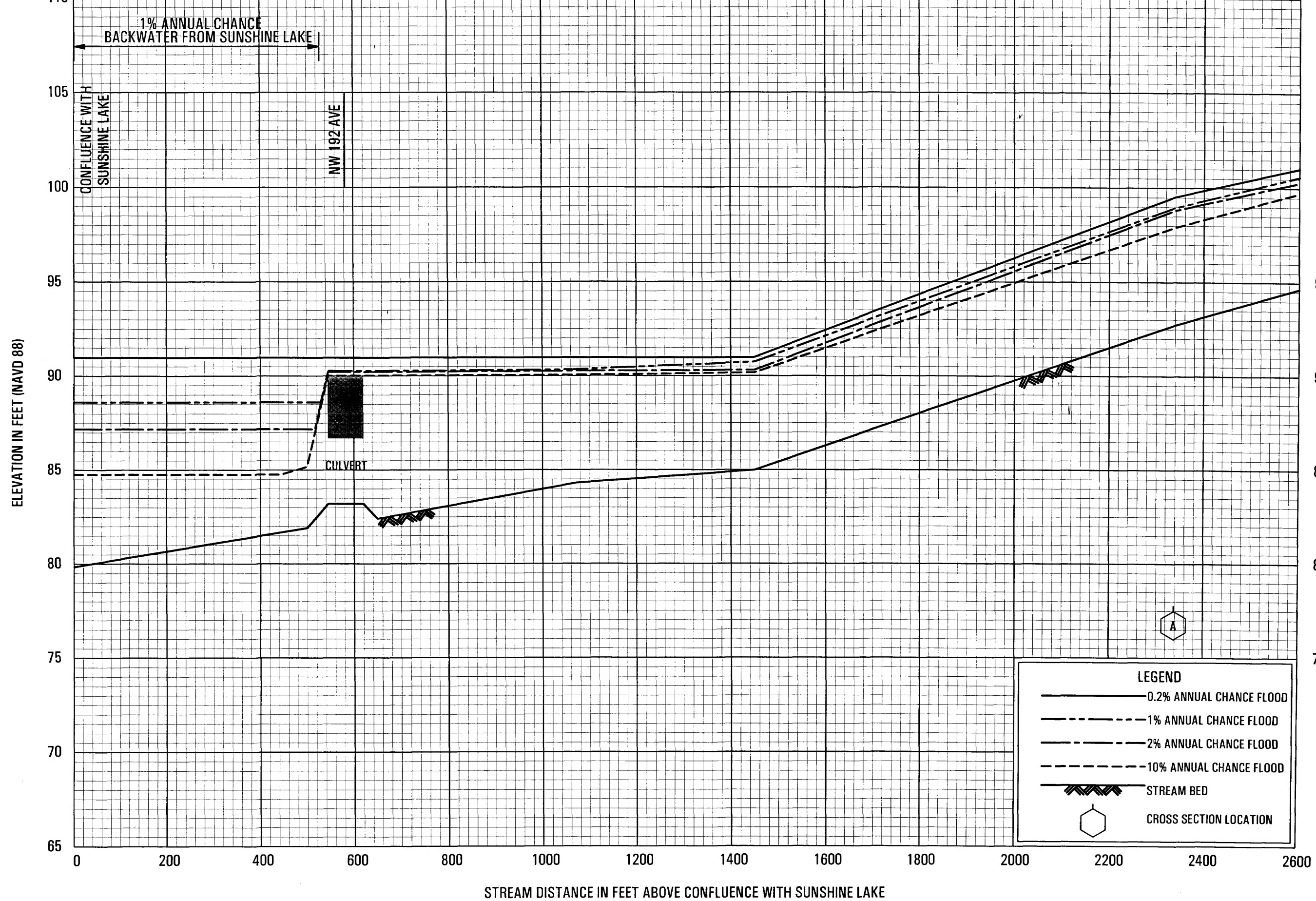
ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES

NEWNANS LAKE TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

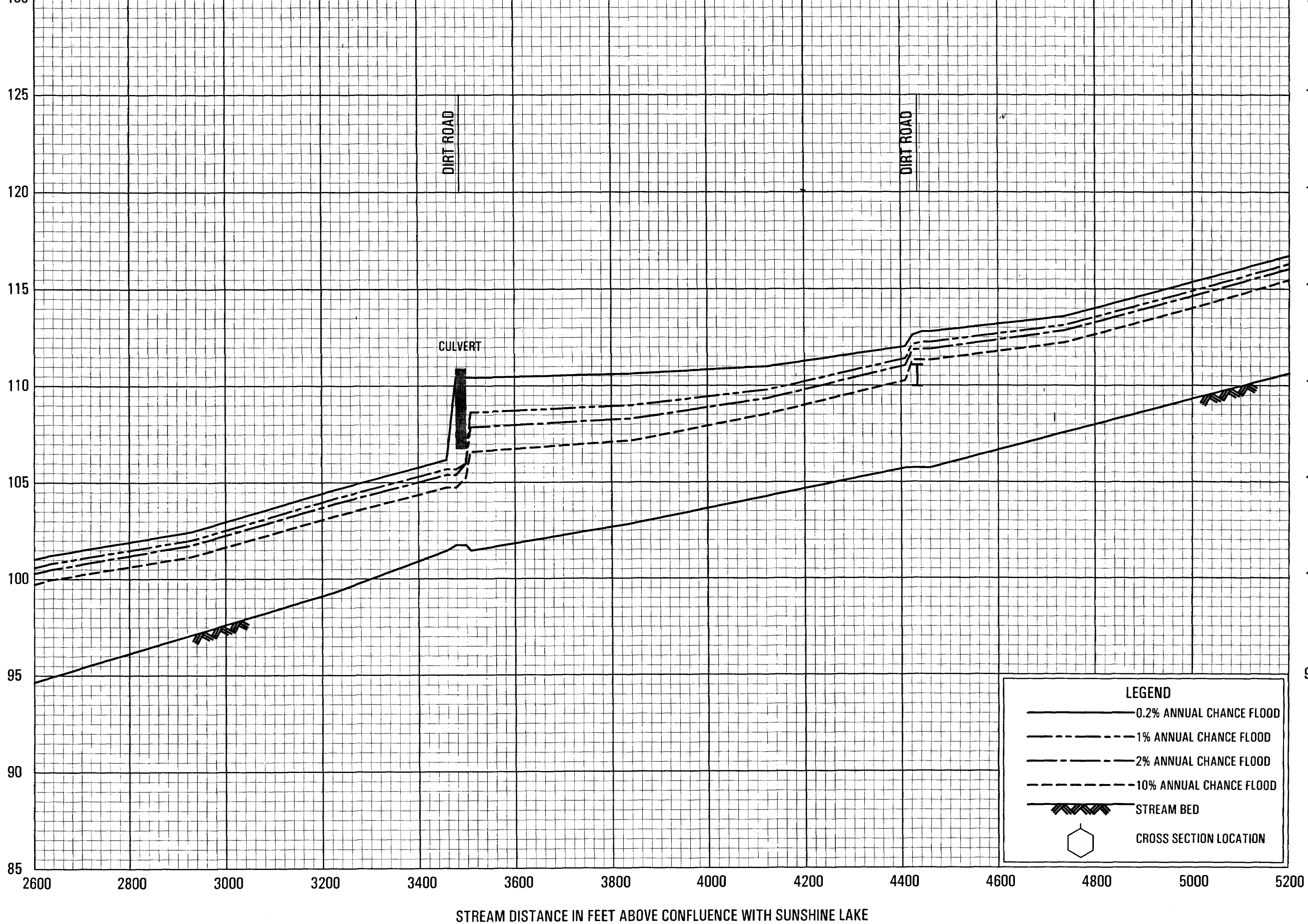


FLOOD PROFILES

RHUDA BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

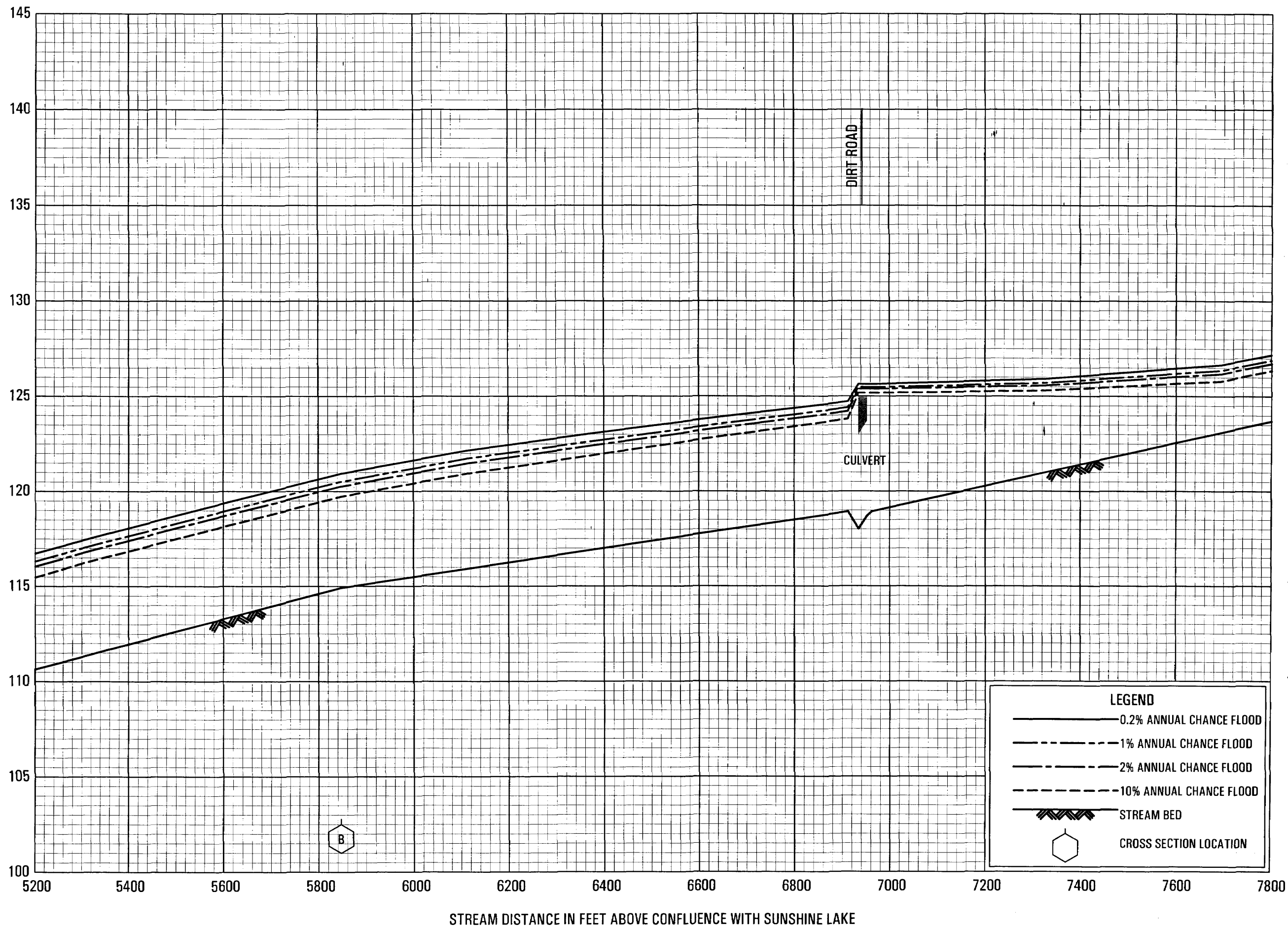
ELEVATION IN FEET (NAVD 88)



FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

FLOOD PROFILES
RHUDA BRANCH

ELEVATION IN FEET (NAVD 88)



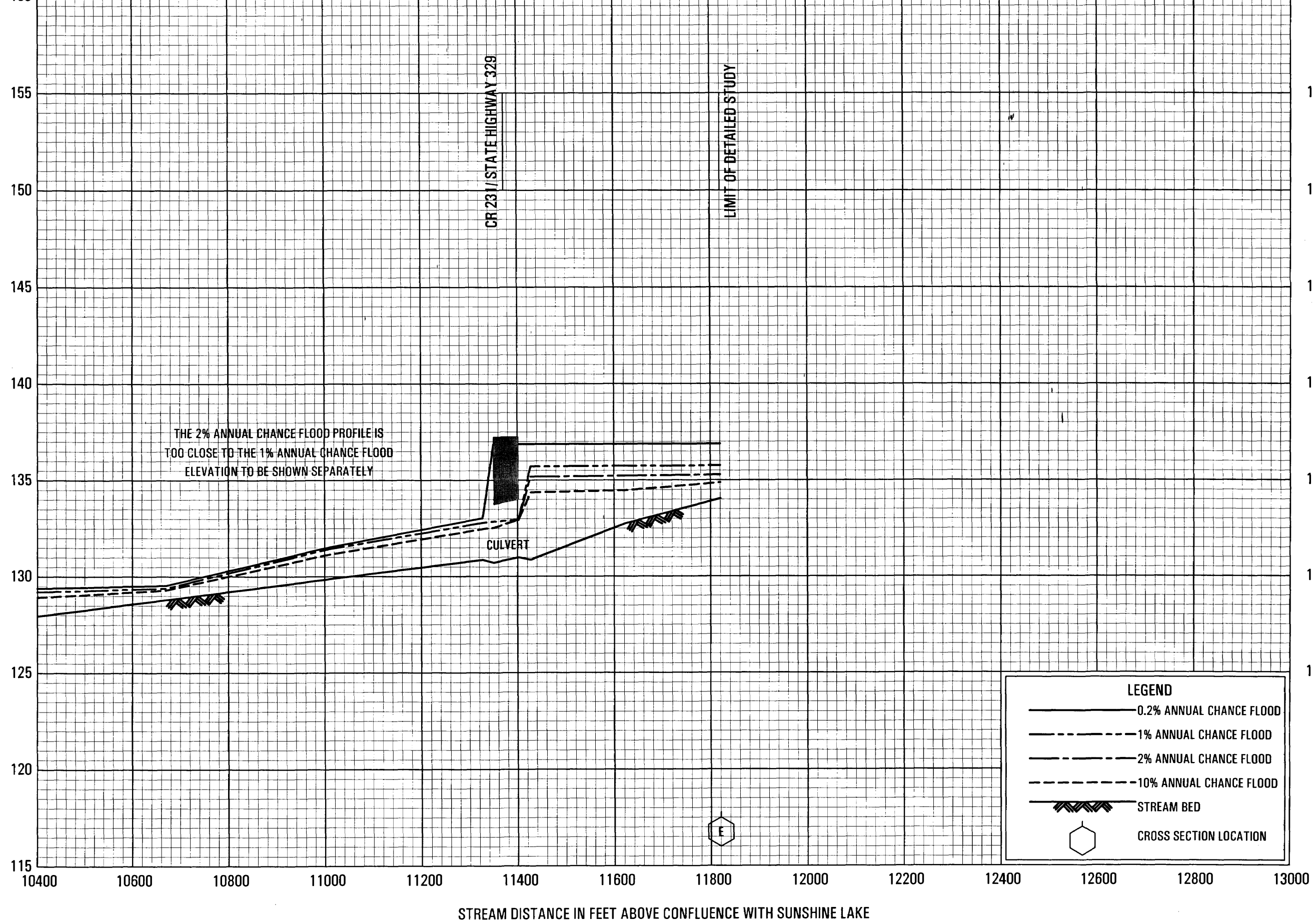
FLOOD PROFILES

RHUDA BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

51P

ELEVATION IN FEET (NAVD 88)



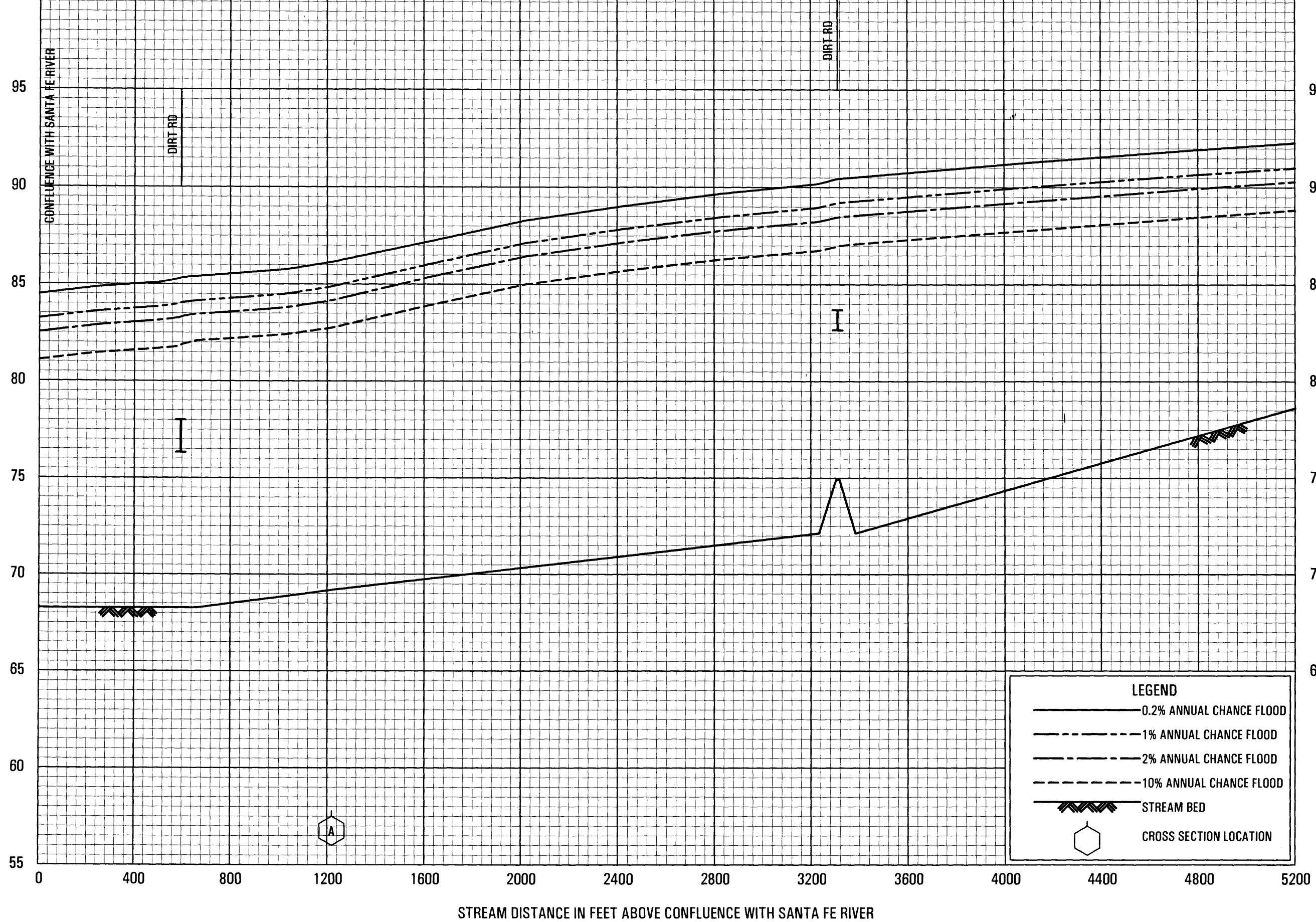
FLOOD PROFILES

RHUDA BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

53P

ELEVATION IN FEET (NAVD 88)



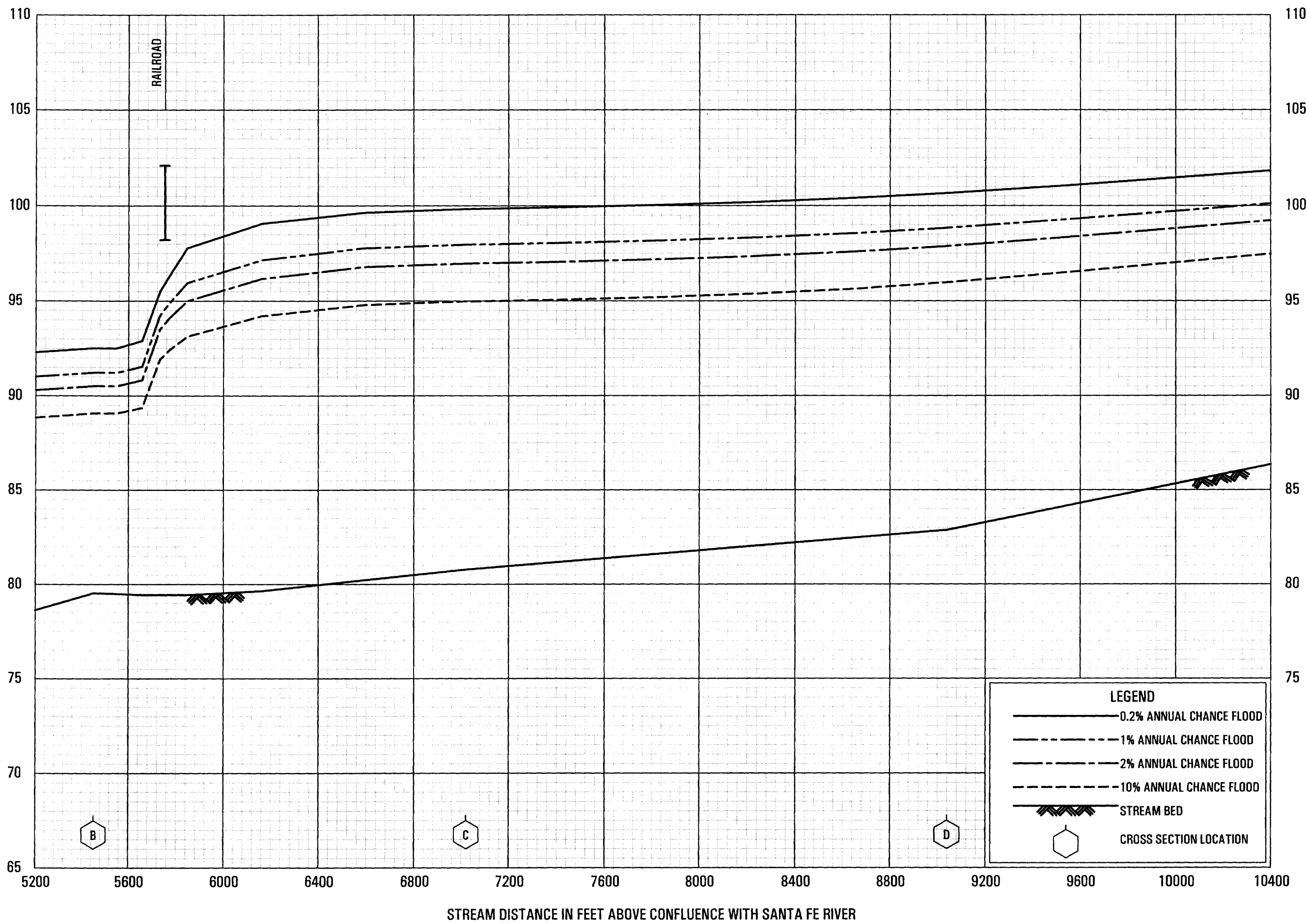
FLOOD PROFILES

ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

54P

ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES

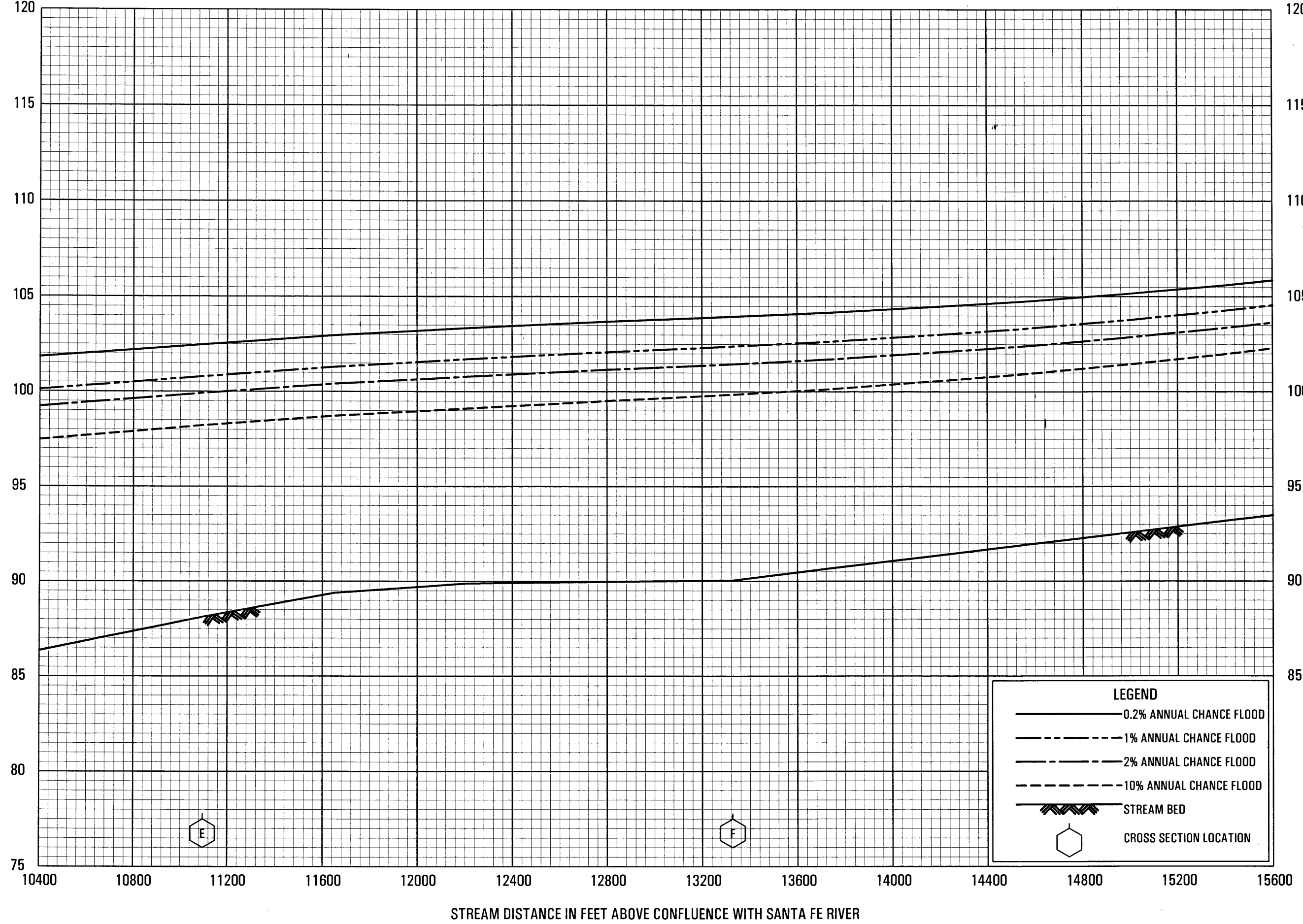
ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

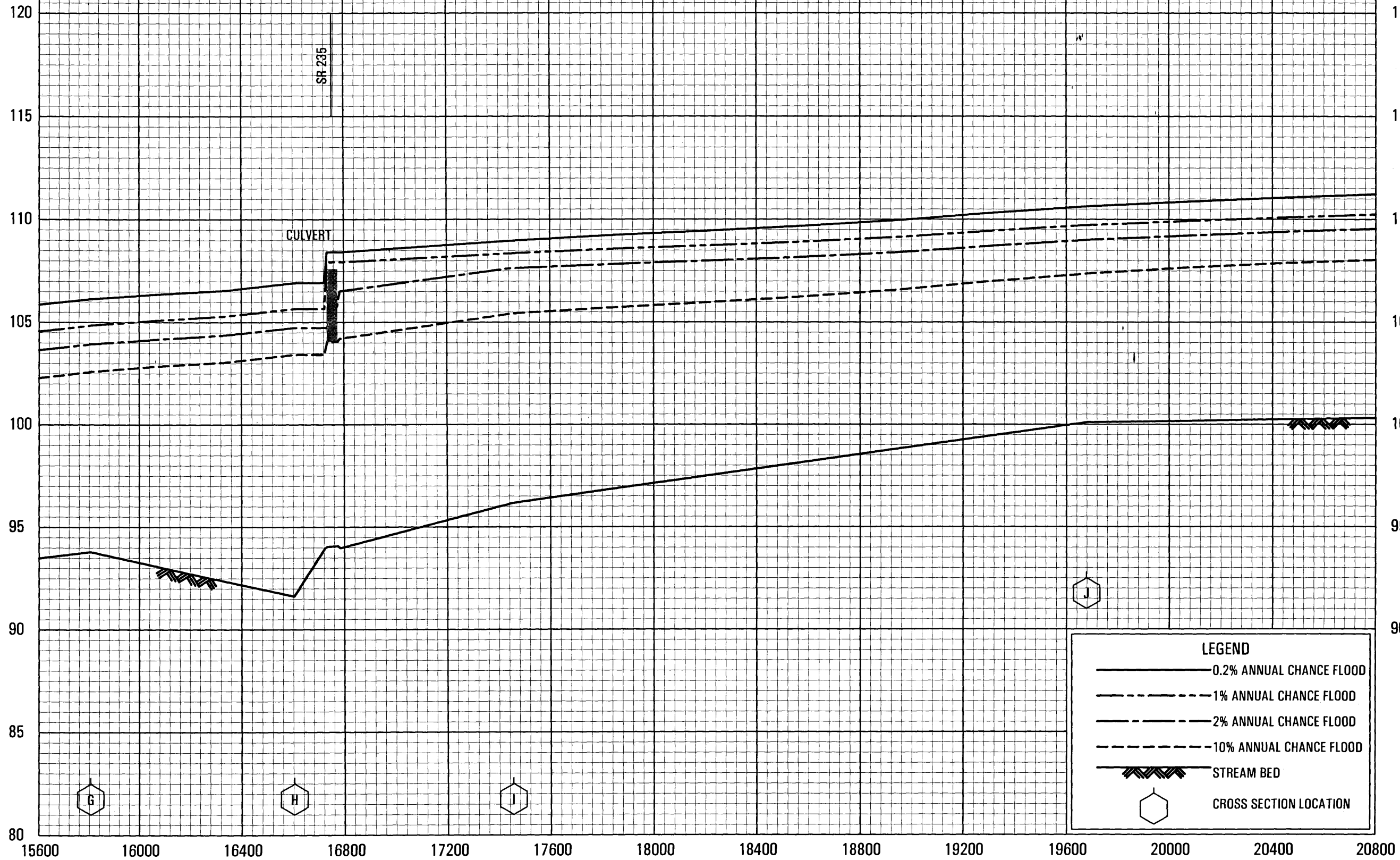
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

55P

ELEVATION IN FEET (NAVD 88)



ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SANTA FE RIVER

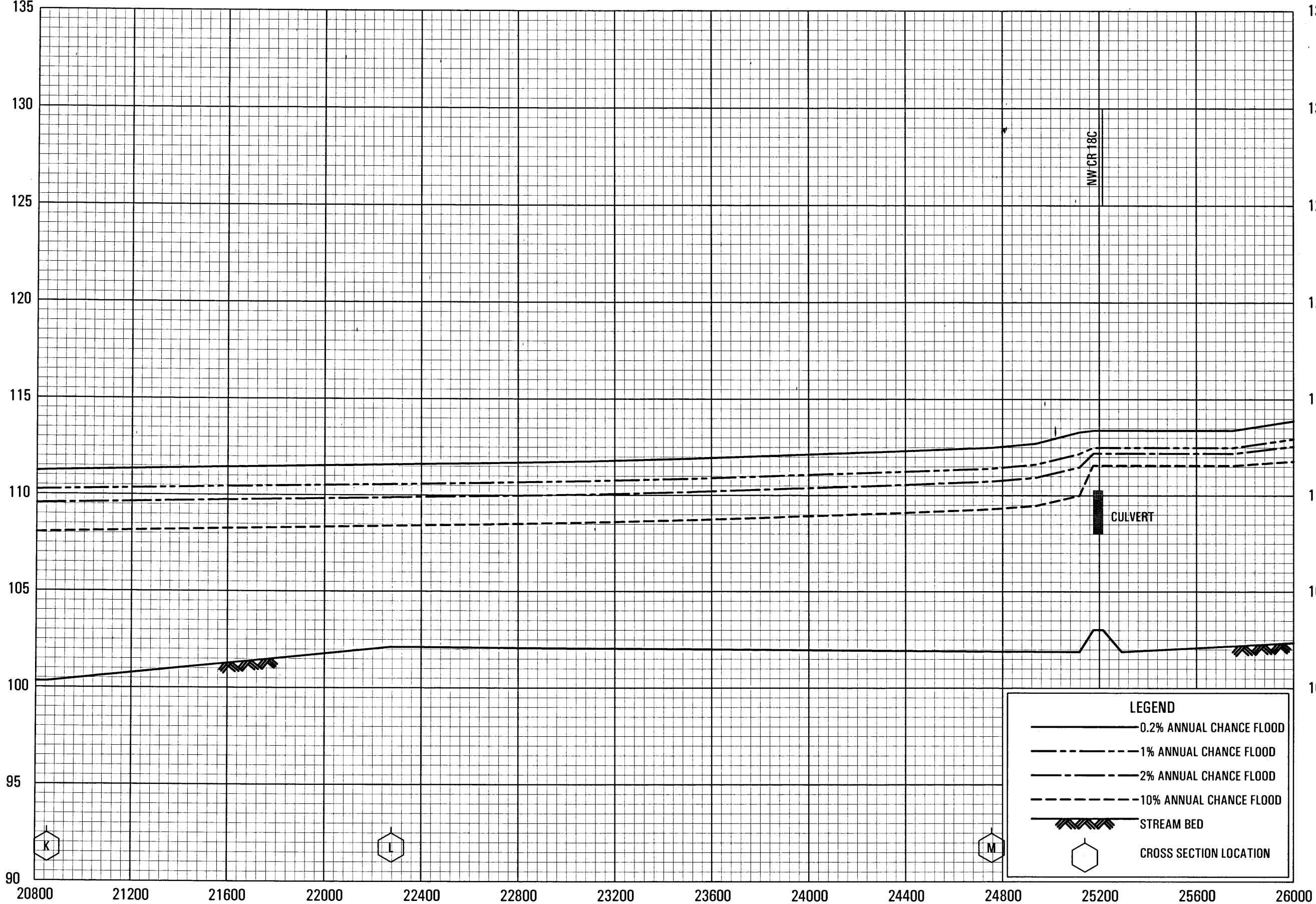
FLOOD PROFILES

ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

57P

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SANTA FE RIVER

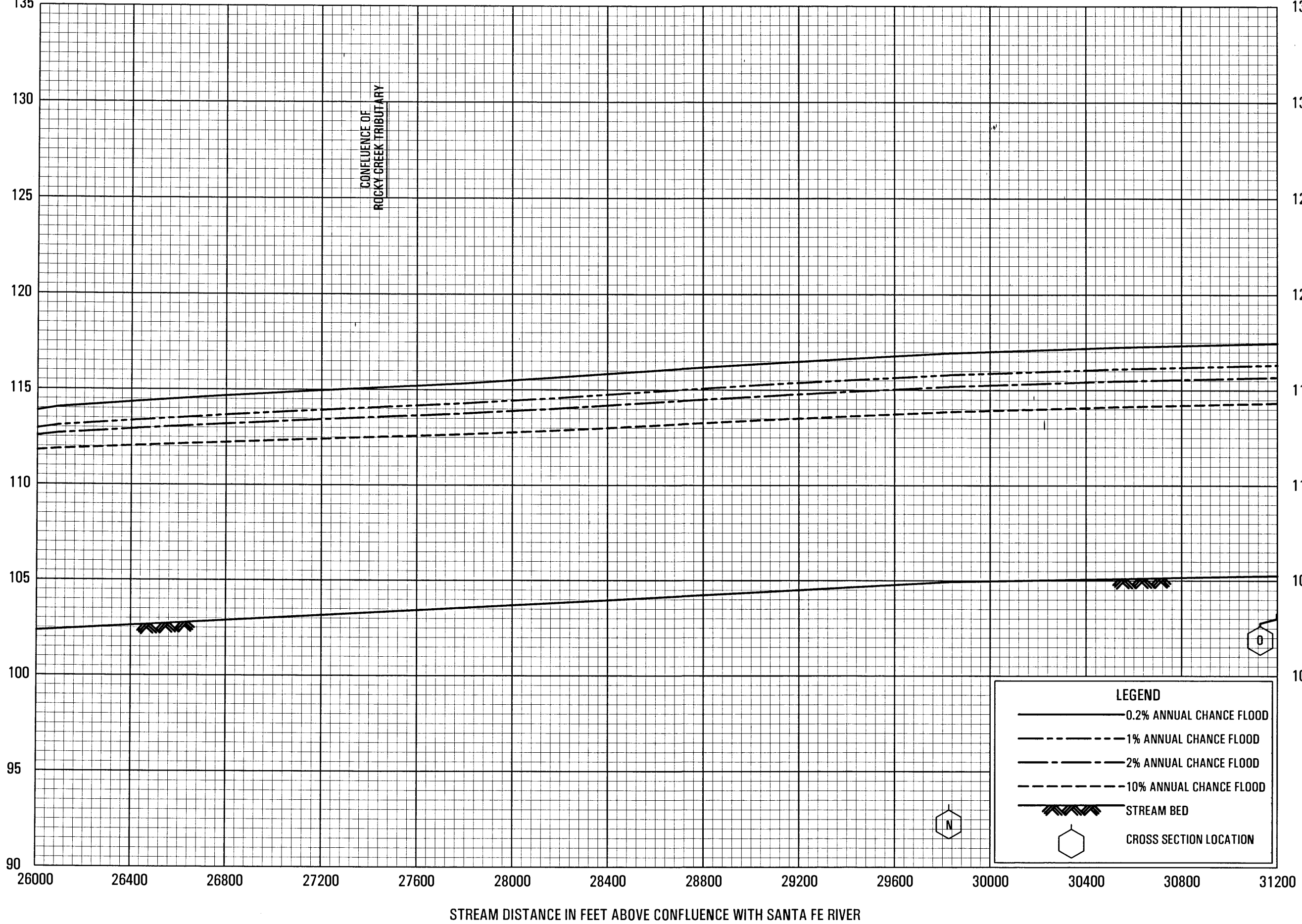
FLOOD PROFILES

ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

58P

ELEVATION IN FEET (NAVD 88)



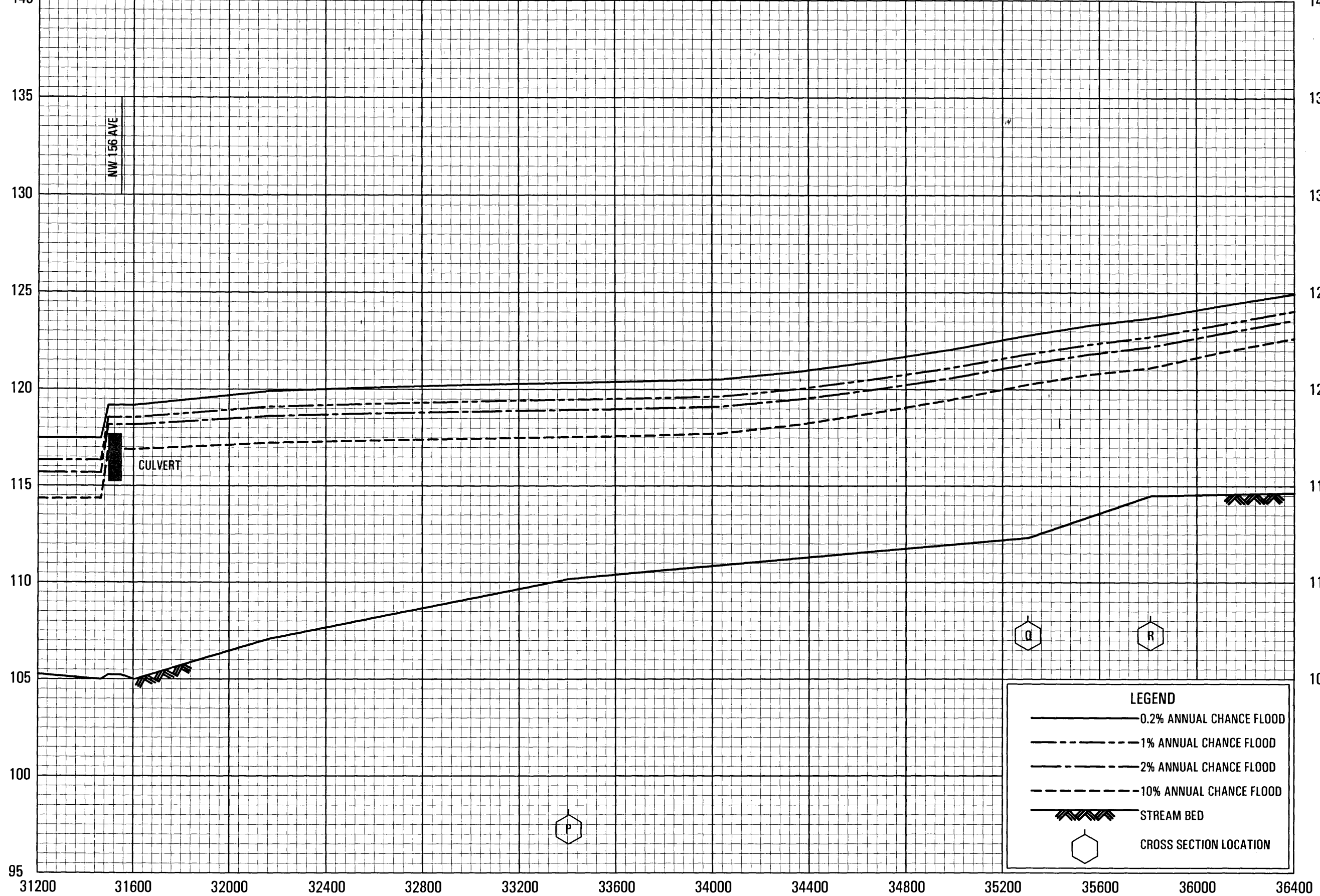
FLOOD PROFILES

ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

59P

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SANTA FE RIVER

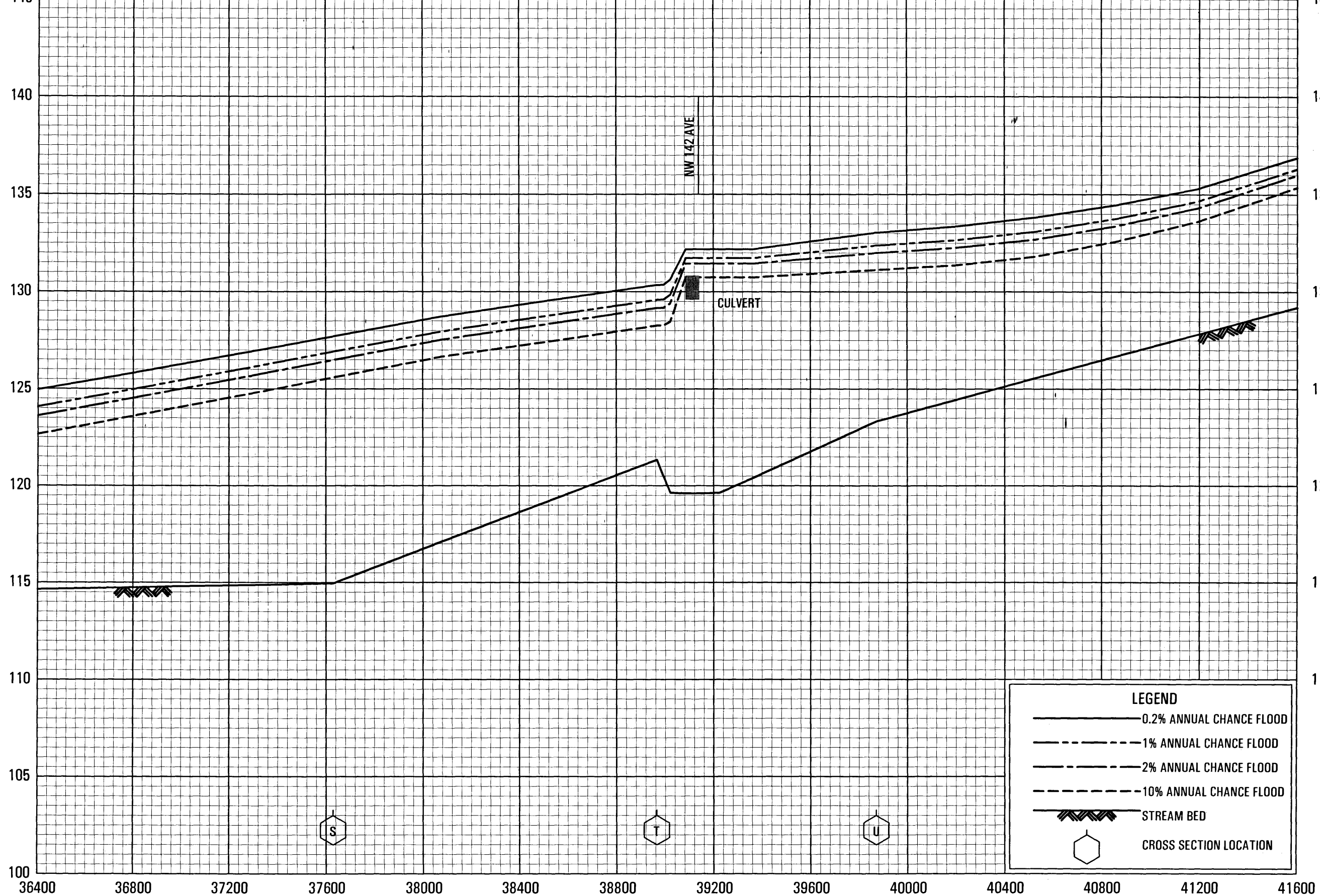
FLOOD PROFILES

ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

60P

ELEVATION IN FEET (NAVD 88)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SANTA FE RIVER

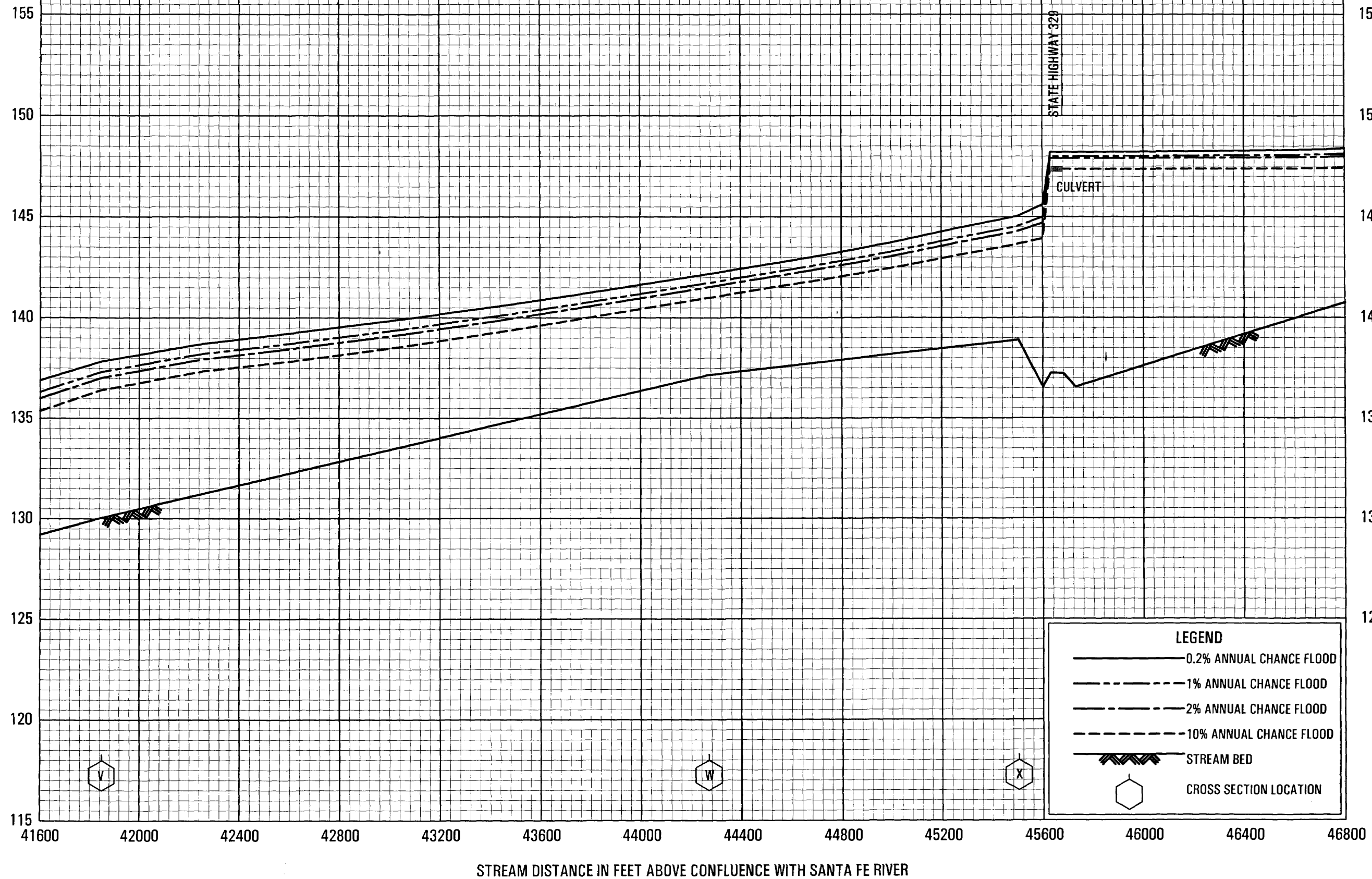
FLOOD PROFILES

ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

61P

ELEVATION IN FEET (NAVD 88)



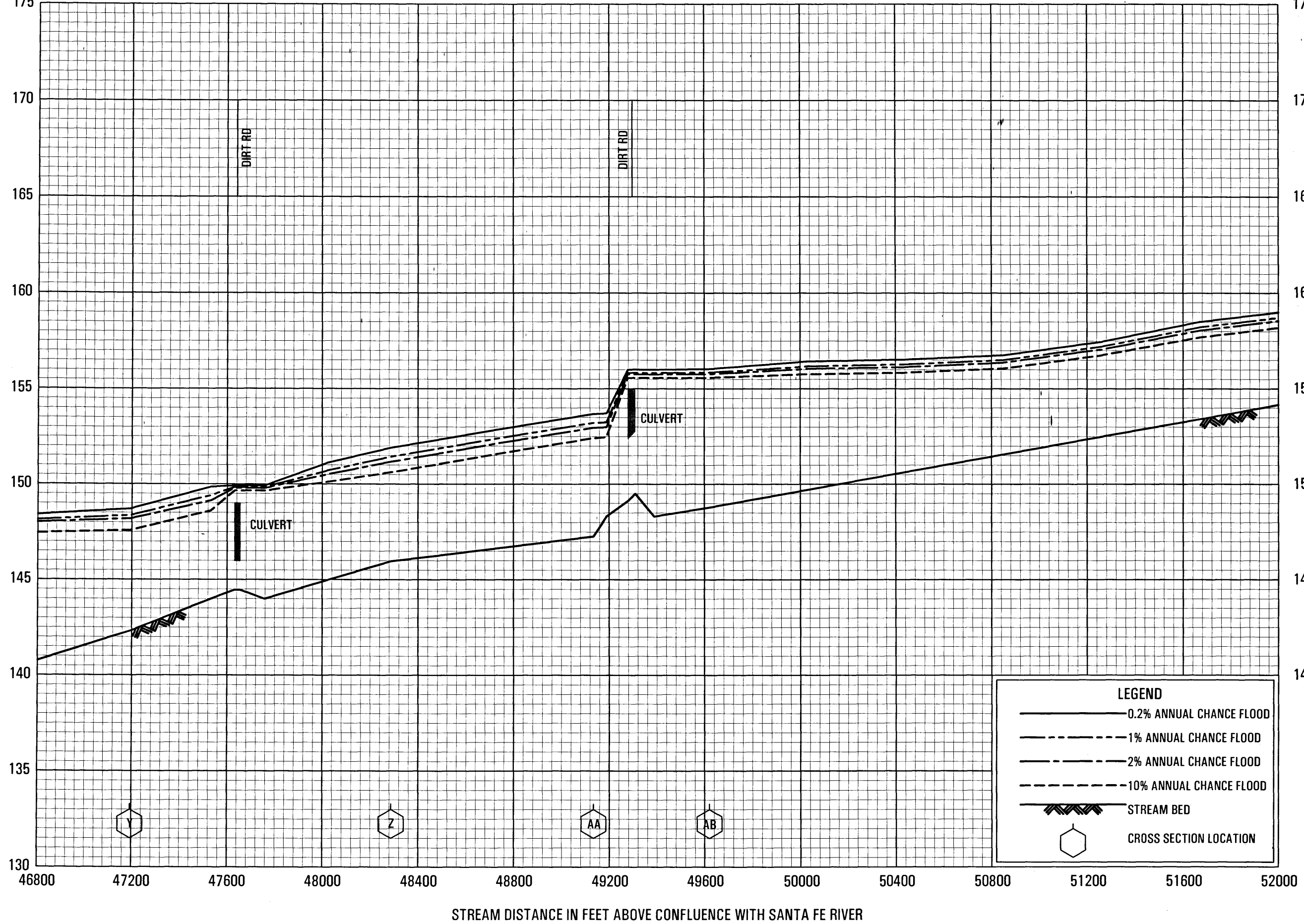
FLOOD PROFILES

ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

62P

ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES

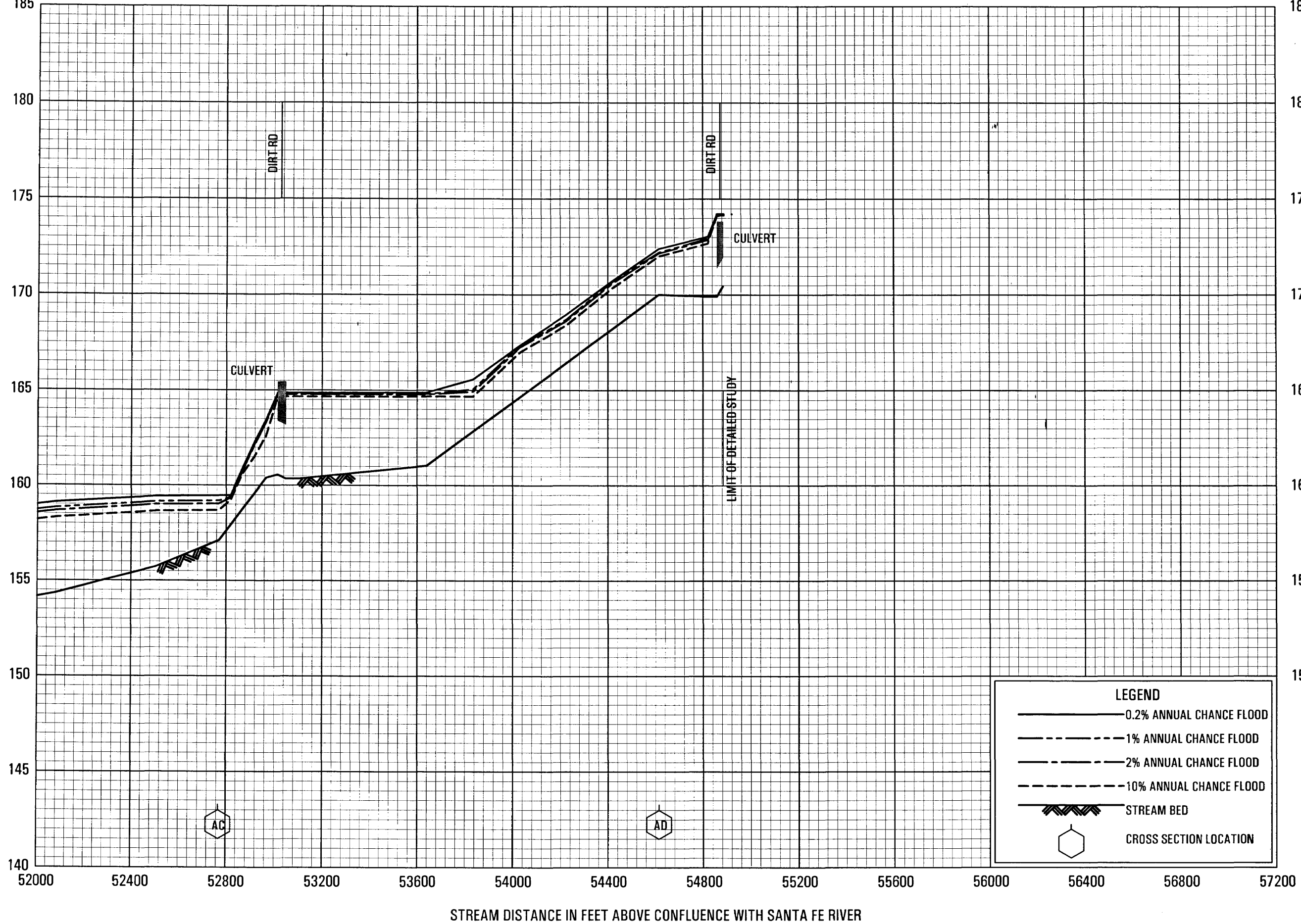
ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

63P

ELEVATION IN FEET (NAVD 88)



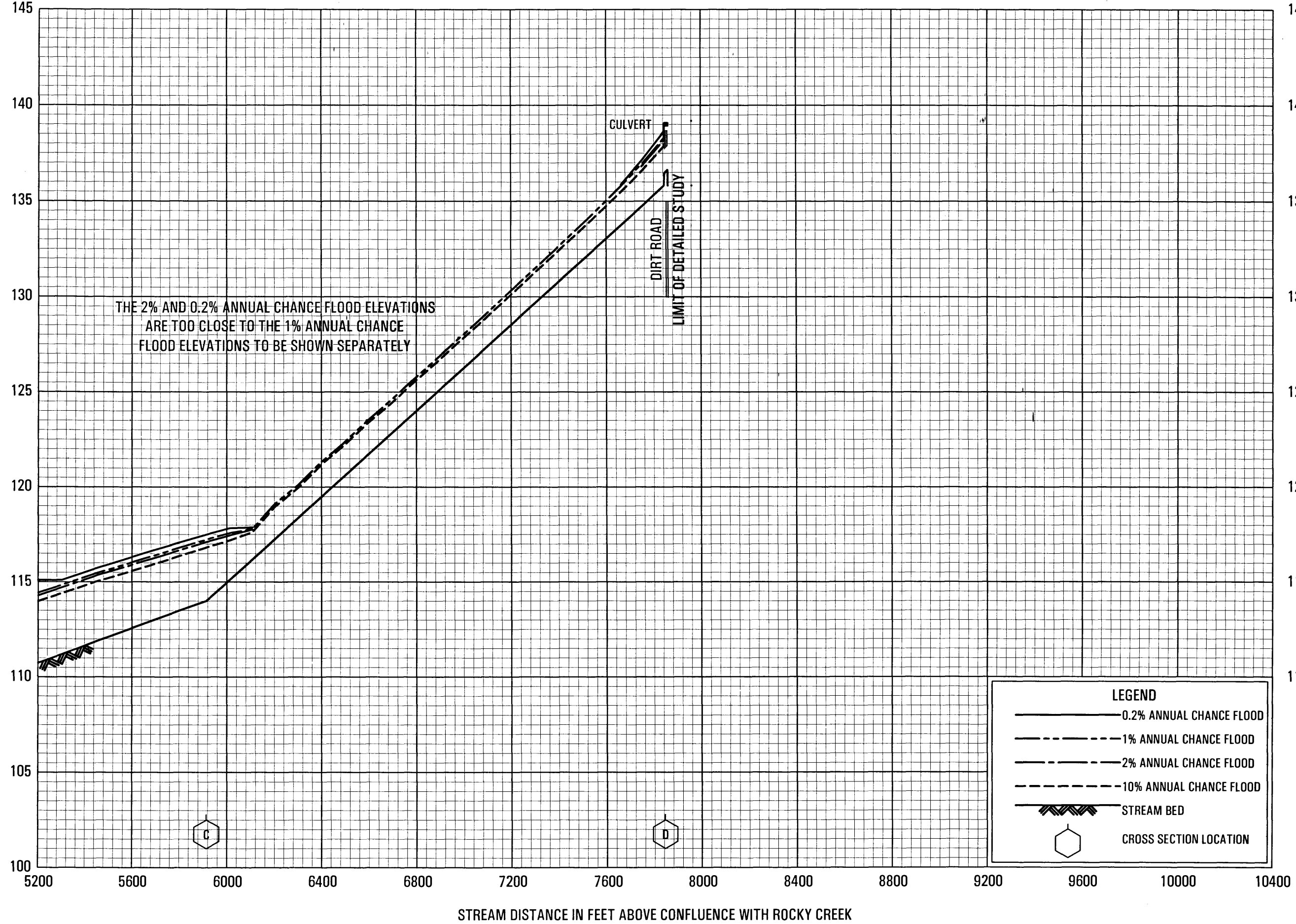
FLOOD PROFILES

ROCKY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

64P

ELEVATION IN FEET (NAVD 88)



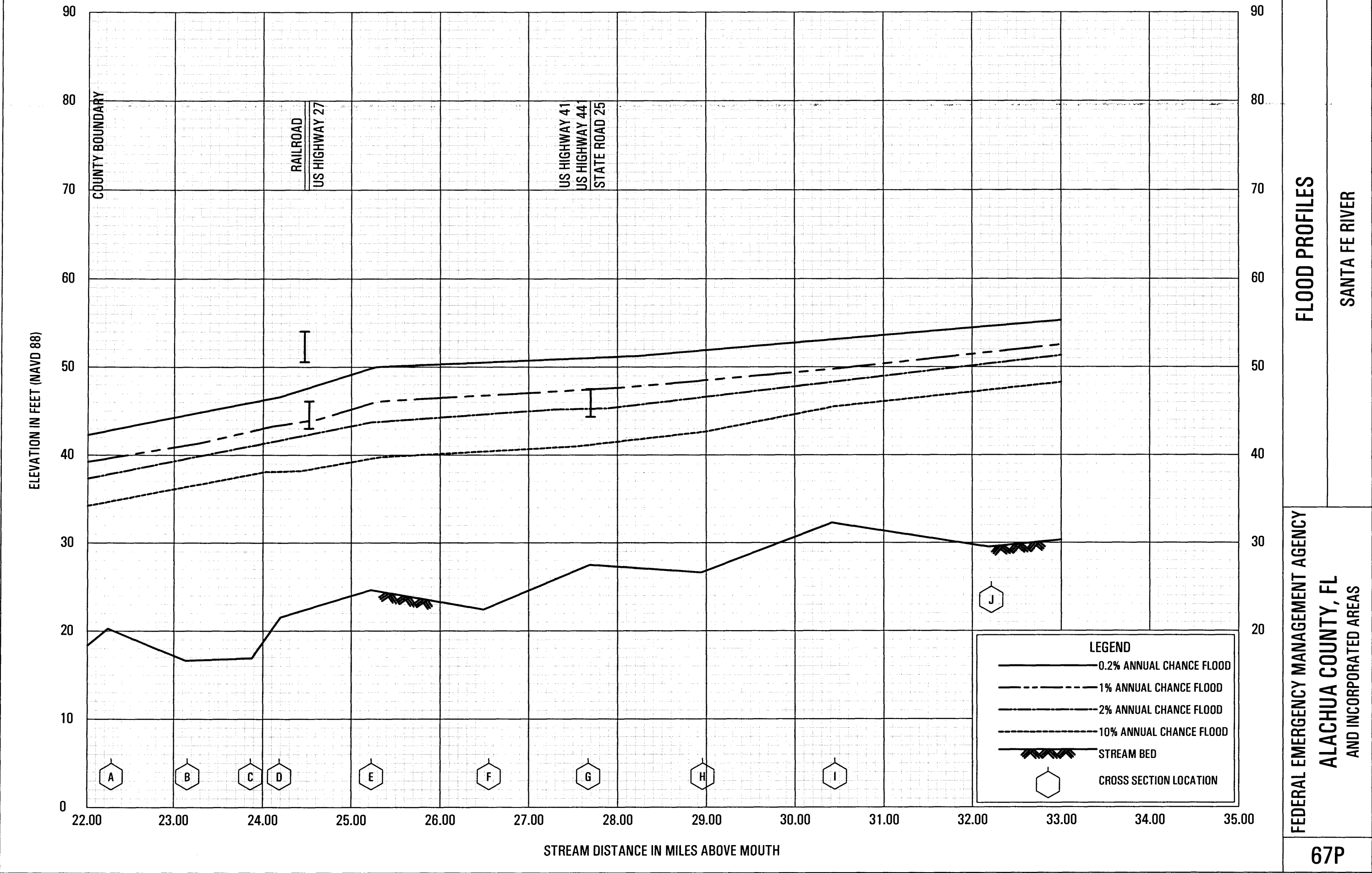
FLOOD PROFILES

ROCKY CREEK TRIBUTARY

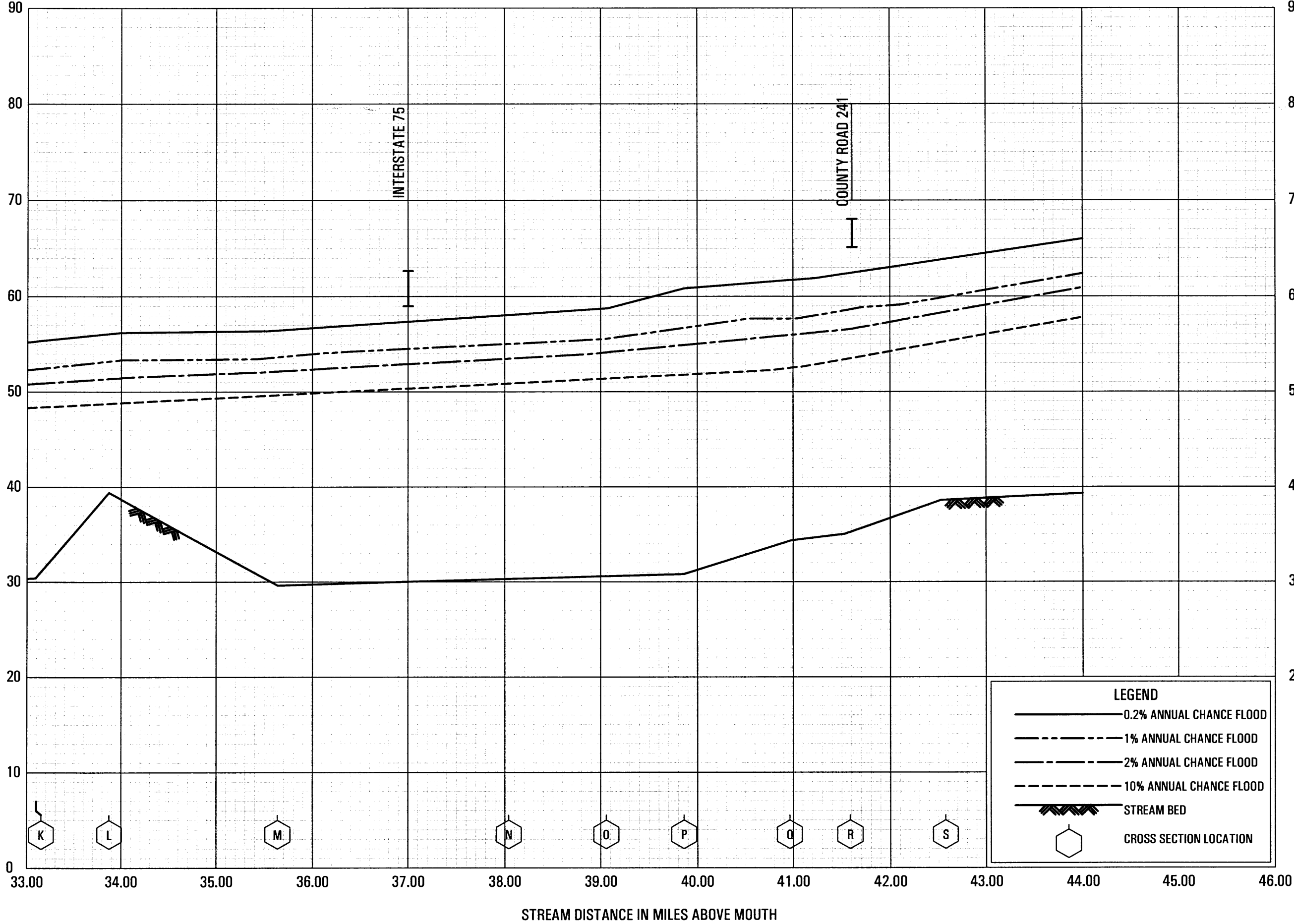
FEDERAL EMERGENCY MANAGEMENT AGENCY

ALACHUA COUNTY, FL
AND INCORPORATED AREAS

66P



ELEVATION IN FEET (NAVD 88)

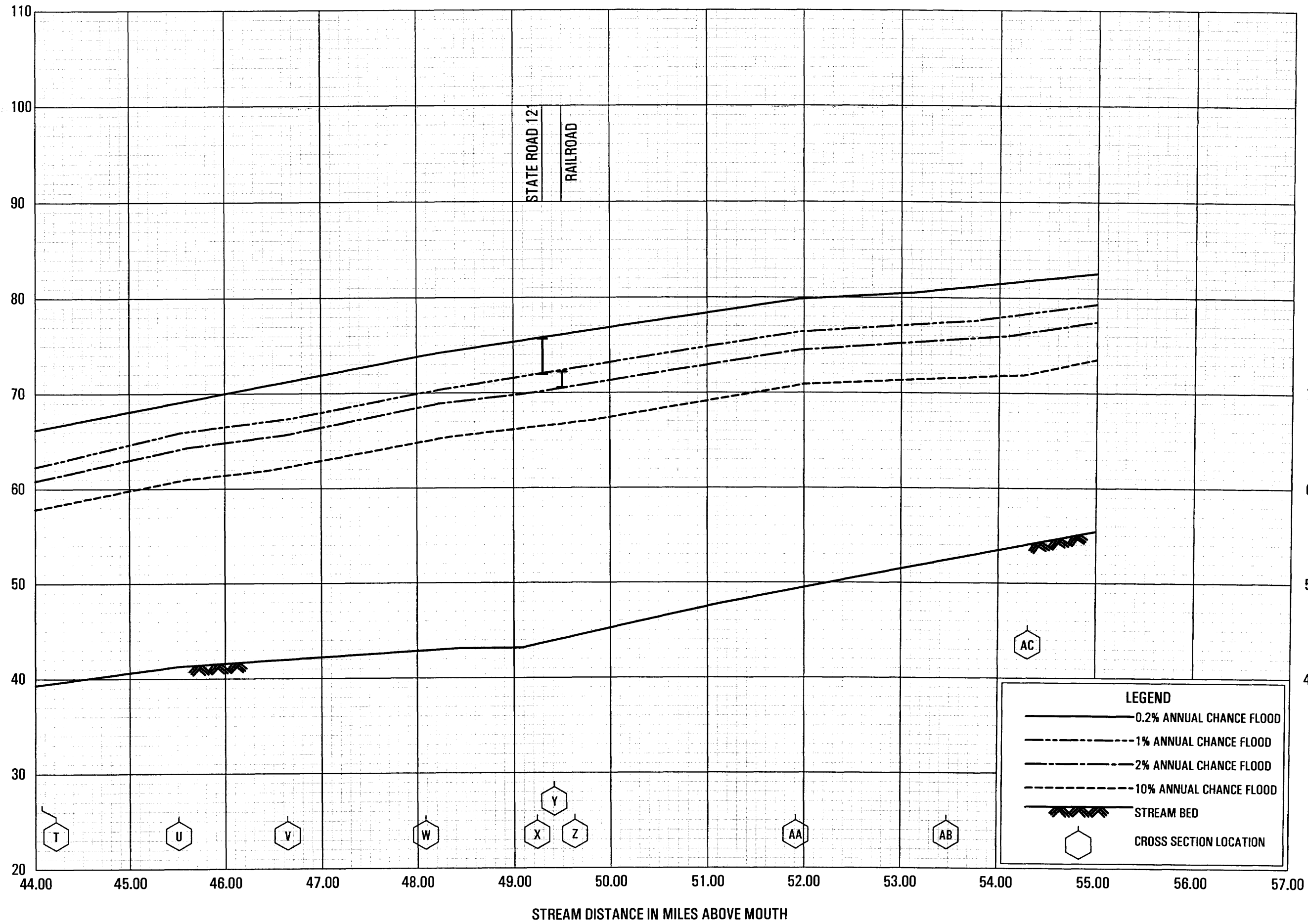


FLOOD PROFILES

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

SANTA FE RIVER

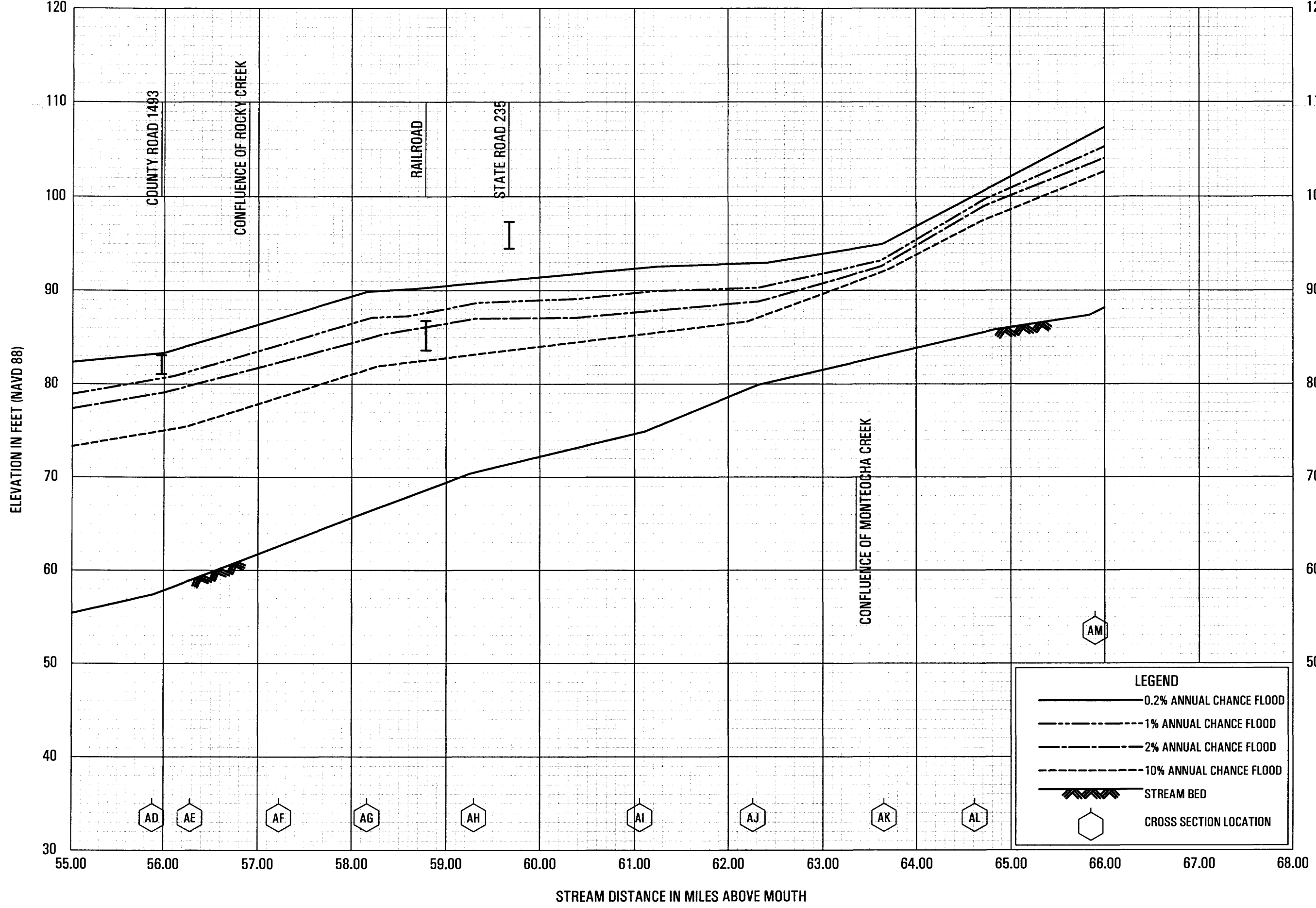
ELEVATION IN FEET (NAVD 88)



FLOOD PROFILES

SANTA FE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

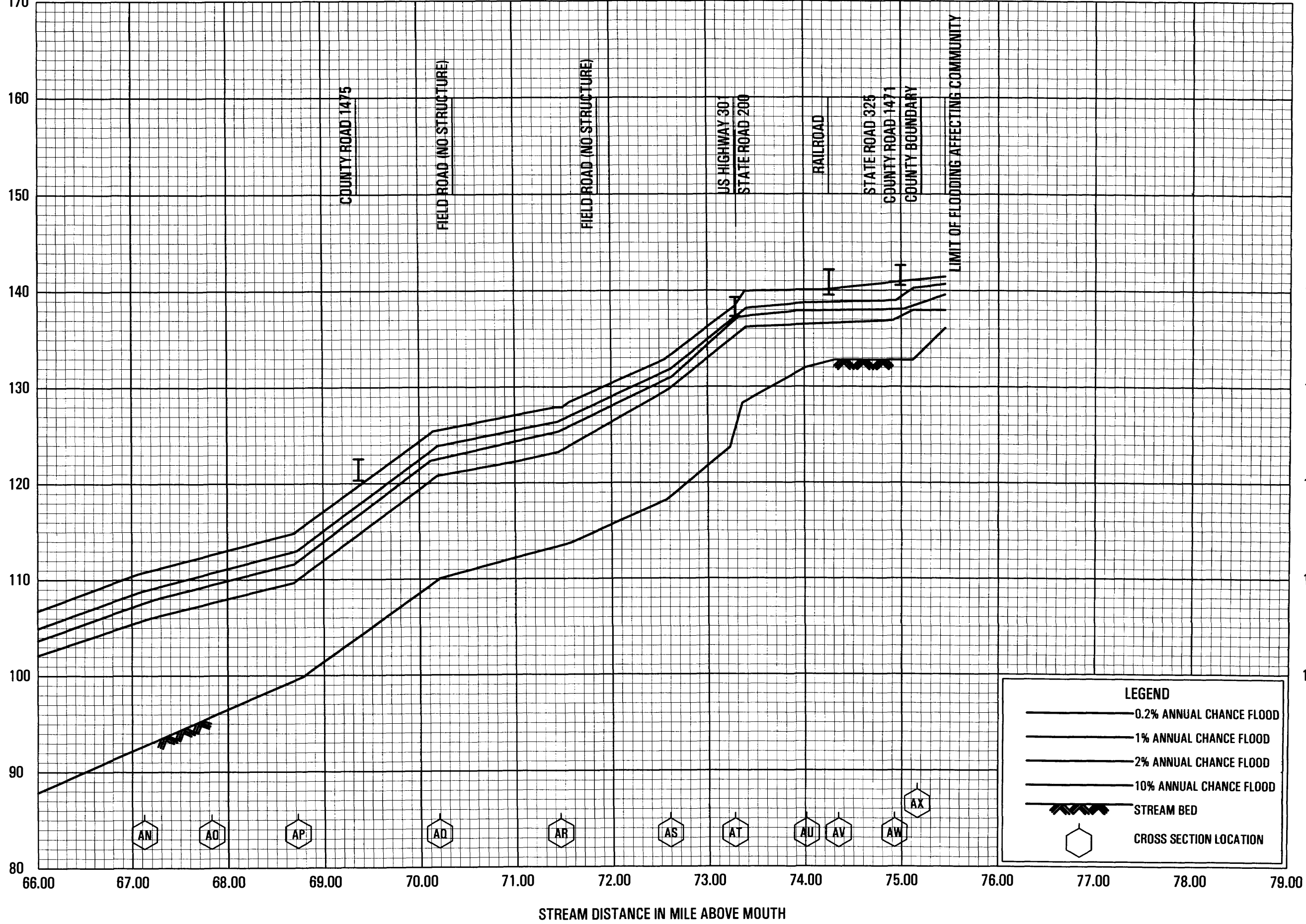


FLOOD PROFILES

SANTA FE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



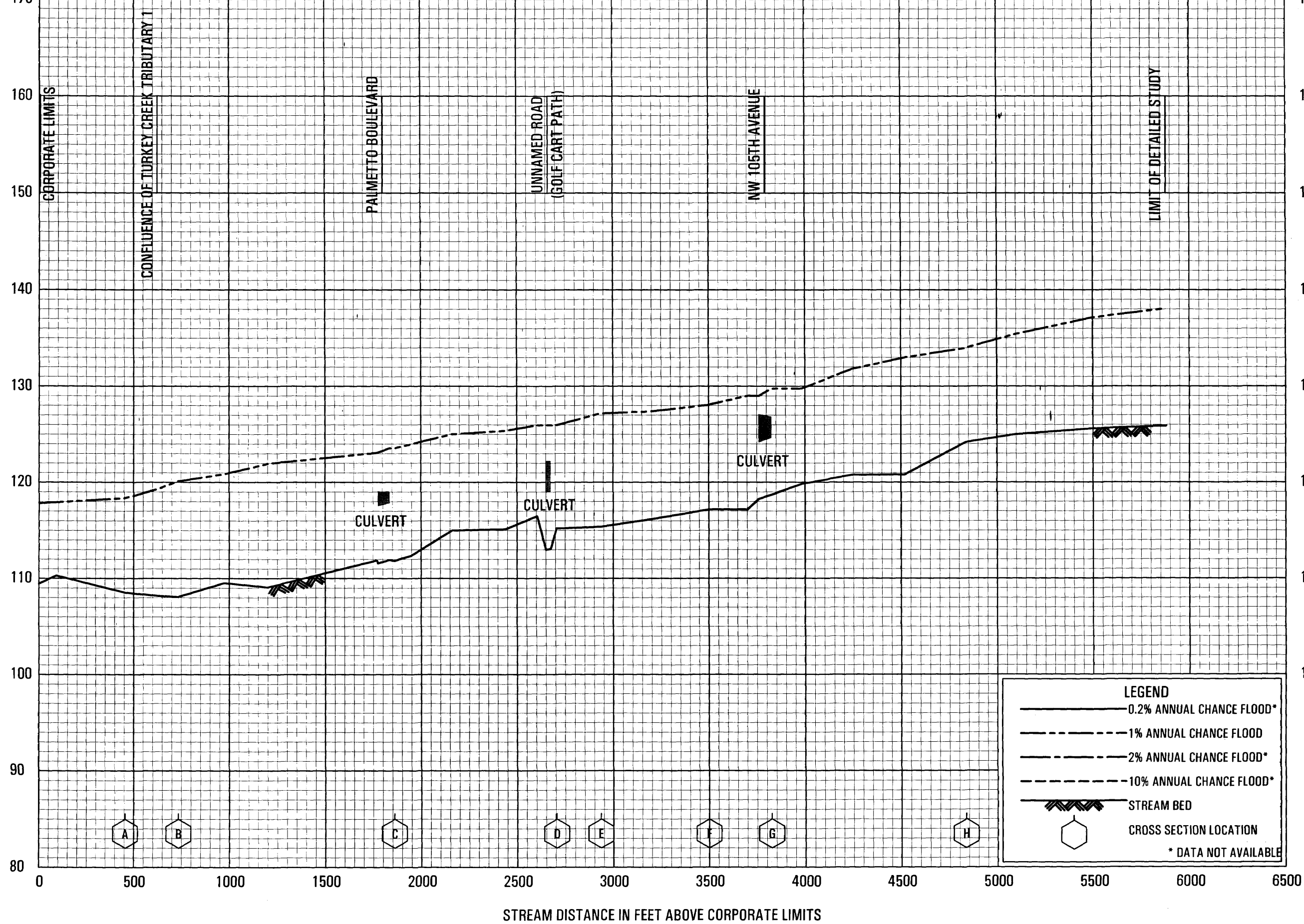
FLOOD PROFILES

SANTA FE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

71P

ELEVATION IN FEET (NAVD 88)

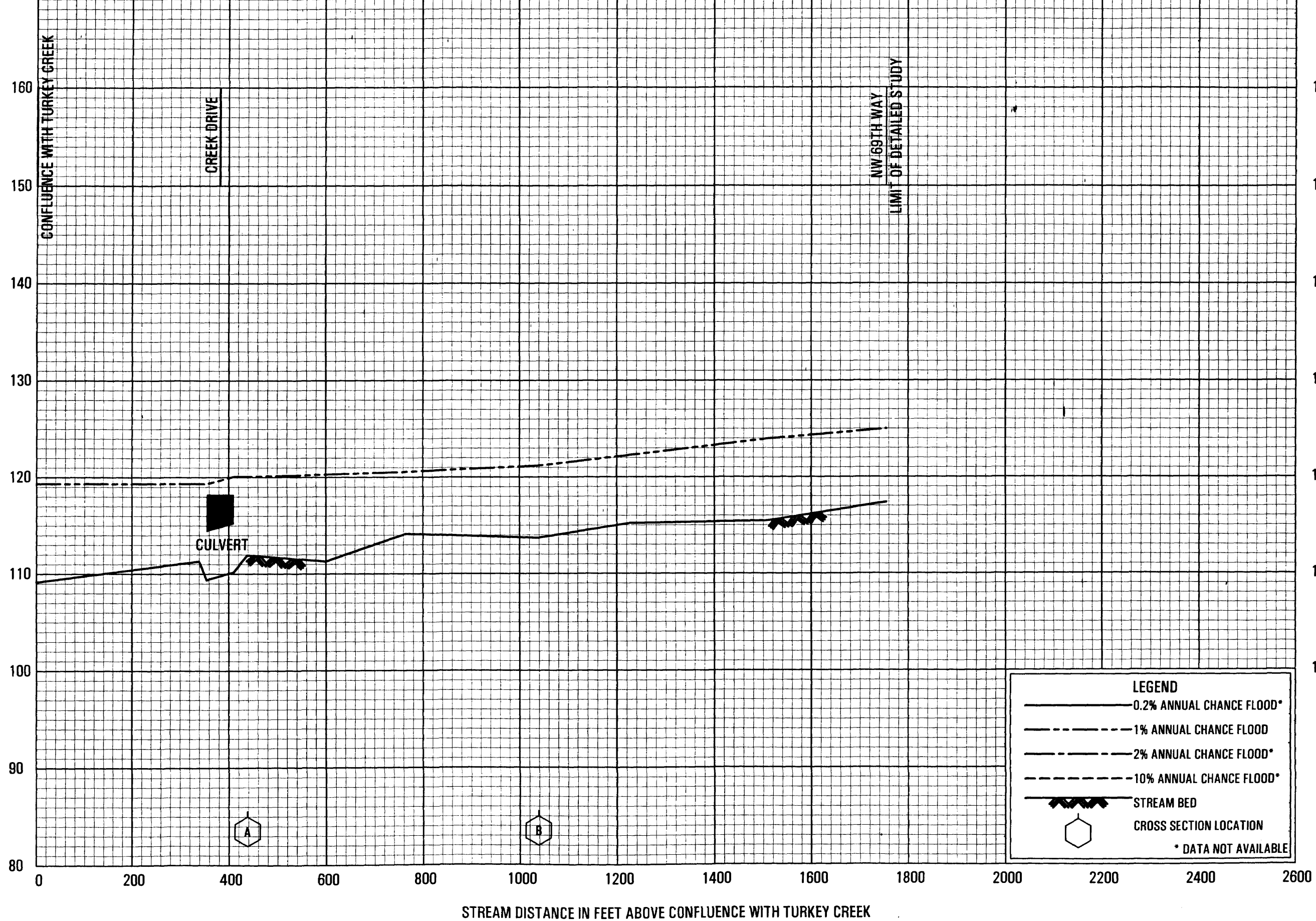


FLOOD PROFILES

TURKEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS

ELEVATION IN FEET (NAVD 88)



LEGEND

- 0.2% ANNUAL CHANCE FLOOD*
- - - 1% ANNUAL CHANCE FLOOD
- . - 2% ANNUAL CHANCE FLOOD*
- - - 10% ANNUAL CHANCE FLOOD*
- (sawtooth) — STREAM BED
- ⬡ CROSS SECTION LOCATION
- * DATA NOT AVAILABLE

FLOOD PROFILES

TURKEY CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY
ALACHUA COUNTY, FL
AND INCORPORATED AREAS